

TRANSMITTER THESLA TX / EX / SLIM SERIES

USER MANUAL VOLUME 1





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THESLA TX / EX / SLIM SERIES - User Manual Version 1.0

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BIQUAD TECNOLOGIA LTDA.

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Notification of intended purpose and limitations of product use

This product is a FM transmitter intended for FM audio broadcasting. It utilises operating frequencies not harmonised in the intended countries of use. The user must obtain a license before using the product in intended country of use. Ensure respective country licensing requirements are complied with. Limitations of use can apply in respect of operating freuency, transmitter power and/or channel spacing.

Declaration of Conformity

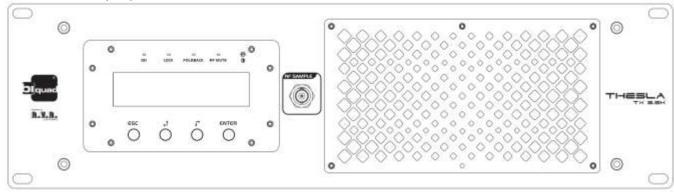
Hereby, Biquad Broadcast, declares that this FM transmitter is in compliance with the essential requirements and other relevant provisions of Directive 2014/53/EU.



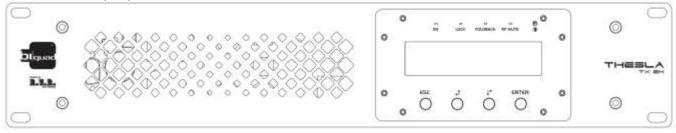


OVERVIEW OF THESLA FM TRANSMITTER FAMILY:

THESLA TX3.5K – FM TRANSMITTER, 10W - 3500W MAX POWER, 87-108MHz FREQUENCY OPERATION MPX / ANALOG (L/R) / DIGITAL AES INPUT / STEREO CODER - DEFAULT CONFIGURATION

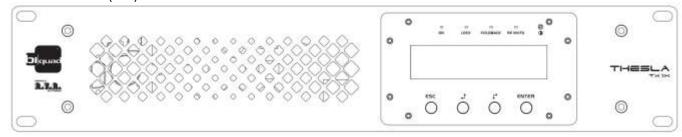


THESLA TX2K - FM TRANSMITTER, 10W - 2000W MAX POWER, 87-108MHz FREQUENCY OPERATION MPX / ANALOG (L/R) / STEREO CODER - DEFAULT CONFIGURATION



THESLA TX1K - FM TRANSMITTER, 10W - 1000W MAX POWER, 87-108MHz FREQUENCY OPERATION MPX / ANALOG (L/R) / STEREO CODER - DEFAULT CONFIGURATION

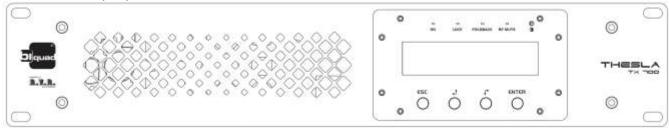
THESLA TX1KD - FM TRANSMITTER, 10W - 1000W MAX POWER, 87-108MHz FREQUENCY OPERATION MPX / ANALOG (L/R) / DIGITAL AES INPUT / STEREO CODER - DEFAULT CONFIGURATION



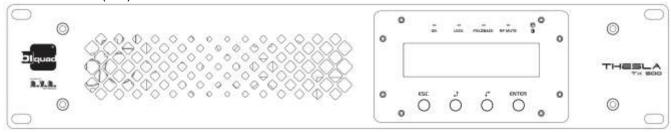


THESLA TX700 - FM TRANSMITTER, 10W - 700W MAX POWER, 87-108MHz FREQUENCY OPERATION MPX / ANALOG (L/R) / STEREO CODER - DEFAULT CONFIGURATION

THESLA EX700D - FM TRANSMITTER, 10W - 700W MAX POWER, 87-108MHz FREQUENCY OPERATION MPX / ANALOG (L/R) / DIGITAL AES INPUT / STEREO CODER - DEFAULT CONFIGURATION

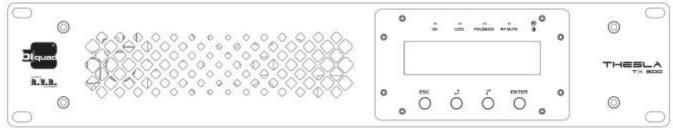


THESLA TX500 - FM TRANSMITTER, 10W - 500W MAX POWER, 87-108MHz FREQUENCY OPERATION MPX / ANALOG (L/R) / STEREO CODER - DEFAULT CONFIGURATION



THESLA TX300 - FM TRANSMITTER, 10W - 300W MAX POWER, 87-108MHz FREQUENCY OPERATION MPX / ANALOG (L/R) / STEREO CODER - DEFAULT CONFIGURATION

THESLA EX300D - FM TRANSMITTER, 10W - 300W MAX POWER, 87-108MHz FREQUENCY OPERATION MPX / ANALOG (L/R) / DIGITAL AES INPUT / STEREO CODER - DEFAULT CONFIGURATION

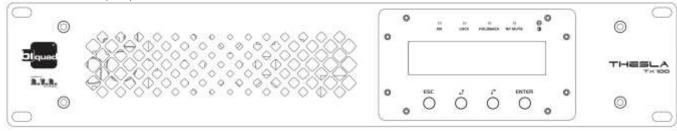




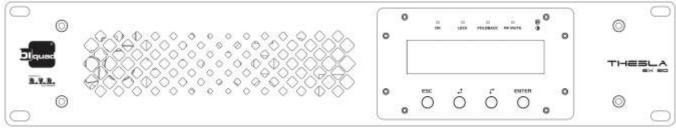
THESLA TX100 - FM TRANSMITTER, 5W - 100W MAX POWER, 87-108MHz FREQUENCY OPERATION MPX - DEFAULT CONFIGURATION

THESLA EX100 - FM TRANSMITTER, 5W - 100W MAX POWER, 87-108MHz FREQUENCY OPERATION MPX / ANALOG (L/R) / STEREO CODER - DEFAULT CONFIGURATION

THESLA EX100D - FM TRANSMITTER, 5W - 100W MAX POWER, 87-108MHz FREQUENCY OPERATION MPX / ANALOG (L/R) / DIGITAL AES INPUT / STEREO CODER - DEFAULT CONFIGURATION



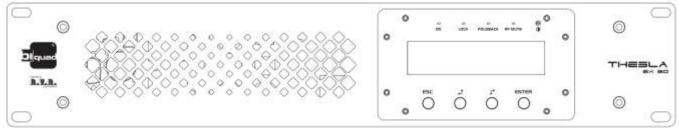
THESLA SLIM50 - FM TRANSMITTER, 1W - 50W MAX POWER, 87-108MHz FREQUENCY OPERATION MPX / ANALOG (L/R) / DIGITAL AES INPUT / STEREO CODER - DEFAULT CONFIGURATION



THESLA SLIM30 - FM TRANSMITTER, 1W - 30W MAX POWER, 87-108MHz FREQUENCY OPERATION MPX - DEFAULT CONFIGURATION

THESLA EX30 - FM TRANSMITTER, 1W - 30W MAX POWER, 87-108MHz FREQUENCY OPERATION MPX / ANALOG (L/R) / STEREO CODER - DEFAULT CONFIGURATION

THESLA EX30D - FM TRANSMITTER, 1W - 50W MAX POWER, 87-108MHz FREQUENCY OPERATION MPX / ANALOG (L/R) / DIGITAL AES INPUT / STEREO CODER - DEFAULT CONFIGURATION





Technical Specifications THESLA SLIM 30 1/2

Aggiornato il 21/08/2017	Legenda: Verde = Green Line Rosso = Obsoleto Giallo = Normali		THESLA SLIM 30	
Parameters		U.M.	Value	Notes
GENERALS		MHz	87.5 ÷ 108	
Frequency range Rated output power		W	30	Continuously variable by software from 0 to maximum
Modulation type		VV	Direct carrier frequency	Continuously variable by software from 0 to maximum
Operational Mode			Mono, Stereo, Multiplex	
Ambient working temperature		°C	-5 to + 50	
Ambient Working Humidity		%	85 (Without condensing)	
Frequency programmability		70	From software, with 10 kHz steps	
Frequency stability	WT from -10°C to 50°C	ppm	±1	
Modulation capability	WT HOIL TO C to 50 C	kHz	150 Stereo, 180 Mono/MPX	Meets or exceeds all FCC and CCIR rules
Pre-emphasis mode		μS	0, 50 (CCIR), 75 (FCC)	selectable by rear panel dip switches
Spurious & harmonic suppression		dBc	<75 (80 typical)	Meets or exceeds all FCC and CCIR rules
Asynchronous AM S/N ratio	Referred to 100% AM, with no de-emphasis	dB	≥ 65 (typical 70)	
Synchronous AM S/N ratio	Referred to 100% AM, FM deviation 75 kHz by 400Hz sine, without de-emphasis	dB	≥ 50 (typical 60)	
MONO OPERATION	Without do omphacio			
	RMS @ ± 75 kHz peak,			
	HPF 20Hz - LPF 23 kHz, 50 μS de-emphasis	dB	> 80 (typical 85)	
S/N FM Ratio	Qpk @ ± 75 kHz peak, CCIR weighted, 50 μS de-emphasis	dB	>73	
	Qpk @ ± 40 kHz peak, CCIR weighted, 50 μS de-emphasis	dB	>68	
Frequency Response	30Hz ÷ 15kHz	dB	better than ± 0.5 dB (typical ± 0.2)	
Total Harmonic Distortion	THD+N 30Hz ÷ 15kHz	%	< 0.1 (Typical 0.07%)	
Intermodulation distortion	Measured with a 1 KHz, 1.3 KHz tones, 1:1ratio, @ 75 kHz FM	%	< 0.02	
Transient intermodulation distortion	3.18 kHz square wave, 15 kHz sine wave @75 kHz FM	%	< 0.1 (typical 0.05)	
MPX OPERATION	@75 KLE1 W	-		
	RMS @ ± 75 kHz peak,			
Composite S/N FM Ratio	HPF 20Hz - no LPF,	dB	> 80 (typical 85)	
	50 μS de-emphasis			
Frequency Response	30Hz ÷ 53kHz	dB	± 0.2	
1 requeries response	53kHz ÷ 100kHz	dB	± 0.5	
Total Harmonic Distortion	THD+N 30Hz ÷ 53kHz	%	< 0.1	
	THD+N 53kHz ÷ 100kHz	%	< 0.15	
Intermodulation distortion	Measured with a 1 KHz, 1.3 KHz tones,	%	< 0.05	
	1:1ratio, @ 75 kHz FM	1		
Transient intermodulation distortion	3.18 kHz square wave, 15 kHz sine wave @75 kHz FM	%	< 0.1 (typical 0.05)	
Stereo separation	30Hz ÷ 53kHz	dB	> 50 dB (typical 60)	
STEREO OPERATION			(-) prod. 00/	
	RMS @ ± 75 kHz peak,			
	HPF 20Hz - LPF 23 kHz, 50 μS de-emphasis, L & R demodulated	dB	> 75 (78 typical)	
Stereo S/N FM Ratio	Qpk @ ± 75 kHz peak, CCIR weighted, 50 μS de-emphasis,	dB	> 65 dB	
	L & R demodulated Qpk @ ± 40 kHz peak, CCIR weighted, 50 µS de-emphasis,	dB	> 58 dB	
Frequency Response	L & R demodulated 30Hz ÷ 15kHz	dB	± 0.5	
Total Harmonic Distortion	30HZ + 15KHZ THD+N 30Hz + 15kHz	ив %	< 0.05	
Total Harmoriic Distortion	Measured with a 1 KHz,	/0	~ 0.00	
Intermodulation distortion	1.3 KHz tones, 1:1ratio, @ 75 kHz FM	%	≤ 0.03	
Transient intermodulation distortion	3.18 kHz square wave, 15 kHz sine wave @75 kHz FM	%	< 0.1 (typical 0.05)	
Stereo separation		dB	> 50 (typical 55)	
Main / Sub Ratio	30Hz ÷ 15kHz	dB	> 40 (typical 45)	

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Technical Specifications THESLA SLIM 30 2/2

			212	
SCA OPERATION				
Frequency response	40kHz ÷ 100kHz	dB	± 0.5	
	RMS, ref @ ± 75 kHz peak,			
	no HPF/LPF,	-10	75 (6-3-170)	
	0µS de-emphasis,	dB	> 75 (typical 78)	
	with 67 kHz tone on SCA input @ 7,5kHz FM deviation			
Crosstalk to main or to stereo channel	RMS, ref @ ± 75 kHz peak,			
	no HPF/LPF,			
	0μS de-emphasis,	dB	> 78 (typical 80)	
	with 92 kHz tone on SCA input		(ypical co)	
	@ 7,5kHz FM deviation			
OWER REQUIREMENTS				
	AC Cumply Voltage	VAC	80 ÷ 260	(*) Internal quitab (**) mananhaga (***) Threanhagas V
	AC Supply Voltage	VAC		(*) Internal switch (**) monophase (***) Threephases Y
	AC Apparent Power Consumption	VA	120	
AC Power Input	Active Power Consumption	W	70	
	Power Factor		0,5	
-	Overall Efficiency	%	1=====	
	Connector	100	VDE IEC Standard	
DC Power Input	DC Supply Voltage DC Current	VDC ADC	24 3,5 (*)	(*)max 25W (**) max 140W
IECHANICAL DIMENSIONS	DC Current	ADC	3,5 ()	()max25W()max140W
IECHANICAL DIMENSIONS	Front panel width	mm	483 (19")	19" EIA rack
	Front panel height	mm	44 (3 1/2") 1HE	convertire in pollici
Phisical Dimensions	Overall depth	mm	394	contorate in points
ŀ	Chassis depth	mm	372	escluso il pannello, esclusi i connettori, convertire in pollici
Weight		kg	about 5,5	,
/ARIOUS				
Cooling			Forced, with internal fan	
Acoustic Noise		dBA	< 58	
AUDIO INPUTS				
	Connector		XLR F	
Left / Mono	Туре		Balanced	
2011/ 112110	Impedance	Ohm	10 k or 600	Selectable by rear panel dip switches
	Input Level /Adjust	dBu	-13 to +13	continuosly variable
-	Connector		XLR F	
Right	Type	Ob	Balanced	Only stable borrows and the south-base
	Impedance	Ohm	10 k or 600	Selectable by rear panel dip switches
	Input Level Connector	dBu	-13 to +13 BNC	continuos ly variable
-	Type		unbalanced	
MPX	Impedance	Ohm	10 k or 50	Selectable by rear panel dip switches
	Input Level / Adjust	dBu	*-13 to +13	for 75 KHz FM, externally adjustable
	Connector	ава	2 x BNC	ior ro in izi w, exeminy adjustable
	Туре		unbalanced	
SCA/RDS	Impedance	Ohm	10 k	
	Input Level / Adjust	dBu	*-8 to +13	for 7,5 KHz FM, externally adjustable
	Connector		XLR F	
AES/EBU	Туре		Balanced	
(optional)	Impedance	Ohm	110	
	Input Level / Adjust	dBfs	0 to -10	for 7,5 KHz FM, externally adjustable
TOS/Link	Connector			
(optional)	Туре			
OUTPUTS		_		
RF Output	Connector	Ohm	N type	
	Impedance	Ohm	50	
RF Monitor	Connector Impedance	Ohm	BNC 50	
KF Worldon	Output Level	dB	approx -30	Referred to the RF output
	Connector	40	BNC	For RDS and isofrequency synchronizing purpose
Pilot output	Impedance	Ohm	>5 k	. S. 1.55 and isolitoquency syntamonizing purpose
	Output Level	Vpp	1	
AUXILIARY CONNECTIONS	24pac 20101			
Interlock	Connector		BNC	Input and output for remote power inhibition (short is RF off)
Service	Connector		DB9 F	Factory reserved for firmware program
Remote Interface	Connector		DB15F	IIC + 5 analog / digital inputs, 5 analog / digital outputs
USES				
On Mains			1 External fuse F 3,15 T - 5x20 mm	
		ļ	. 2.3110110301 0,101 - 0,2011111	
On services				
On PA Supply		 		
On Driver Supply				
IUMAN INTERFACES		T	Mechanical anador with	
Input device		1	Mechanical encoder with pushbutton	
Display		 	Aphanumerical LCD - 2 x 16	
TELEMETRY / TELECONTROL			Aspiranumental LOD - 2 X 10	
LLL.ALIKI / ILLLOOKINGL		10	FWD fold	For P.A. A.G.C. purpose, min 0,5 Vcc
	Analogical level	2	REF fold	For P.A. A.G.C. purpose, min 0,5 Vcc
Remote connector inputs	D. J. C	14	RF ON	
	Pulse to GND	15	RF OFF	
	Close to GND	1	Interlock	for remote power inhibition (short is RF off)
		6	FWD	max 5 Vcc
	Analogical level	13	REF	max 5 Vcc
Remote connector outputs	Analogical level	13 5	REF VPA	max 5 Vcc
Remote connector outputs	Analogical level Open Collector	13	REF	

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Technical Specifications THESLA SLIM 50 1/2

			1/2	
Aggiornato il 21/08/2017	Legenda: Verde = Green Line Rosso = Obsoleto Giallo = Normali		THESLA SLIM 50	
Parameters		U.M.	Value	Notes
GENERALS				
Frequency range		MHz	87.5 ÷ 108	
Rated output power		W	50	Continuously variable by software from 0 to maximum
Modulation type			Direct carrier frequency	
Operational Mode			Mono, Stereo, Multiplex	
Ambient working temperature		°C	-5 to +50	
Ambient Working Humidity		%	85 (Without condensing)	
Frequency programmability	ME 6 4000 to 5000		From software, with 10 kHz steps	
Frequency stability Modulation capability	WT from -10°C to 50°C	ppm kHz	±1 150 Stereo, 180 Mono/MPX	Meets or exceeds all FCC and CCIR rules
Pre-emphasis mode		μS	0, 50 (CCIR), 75 (FCC)	selectable by rear panel dip switches
Spurious & harmonic suppression		dBc	<75 (80 typical)	Meets or exceeds all FCC and CCIR rules
	Referred to 100% AM,			Woods of Gaoceds air i do aird doirthdies
Asynchronous AMS/N ratio	with no de-emphasis	dB	≥ 65 (typical 70)	
Synchronous AMS/N ratio	Referred to 100% AM, FMdeviation 75 kHzby 400Hzsine, without de-emphasis	dB	≥ 50 (typical 60)	
MONO OPERATION	William Co. Compilation			
	RMS @±75 kHz peak,			
	HPF 20Hz - LPF 23 kHz, 50 µS de-emphasis	dB	> 80 (typical 85)	
S/N FMRatio	Qpk @±75 kHz peak, CCIR weighted, 50 µS de-emphasis	dB	>73	
	Qpk @± 40 kHz peak, CCIR weighted, 50 μS de-emphasis	dB	>68	
Frequency Response	30Hz÷15kHz	dB	better than ± 0.5 dB (typical ± 0.2)	
Total Harmonic Distortion	THD+N 30Hz÷15kHz	%	< 0.1 (Typical 0.07%)	
Intermodulation distortion	Measured with a 1 KHz, 1.3 KHz tones, 1:1ratio, @75 kHz FM	%	<0.02	
Transient intermodulation distortion	3.18 kHz square wave, 15 kHz sine wave @75 kHz FM	%	< 0.1 (typical 0.05)	
MPX OPERATION				
	RMS @±75 kHz peak,			
Composite S/N FM Ratio	HPF 20Hz- no LPF,	dB	> 80 (typical 85)	
	50 μS de-emphasis			
Frequency Response	30Hz÷53kHz	dB	± 0.2	
	53kHz ÷ 100kHz	dB	± 0.5	
Total Harmonic Distortion	THD+N 30Hz ÷ 53kHz	%	< 0.1	
	THD+N 53kHz ÷ 100kHz Measured with a 1 KHz	%	< 0.15	
Intermodulation distortion	1.3 KHztones, 1:1ratio, @75 kHz FM	%	< 0.05	
Transient intermodulation distortion	3.18 kHz square wave, 15 kHz sine wave @75 kHz FM	%	< 0.1 (typical 0.05)	
Stereo separation	30Hz÷53kHz	dB	> 50 dB (typical 60)	
STEREO OPERATION	301 IZ · 0014 IZ	45	CO SID (typical OO)	
	RMS @±75 kHz peak,			
	HPF 20Hz - LPF 23 kHz, 50 μS de-emphasis, L & R demodulated	dB	> 75 (78 typical)	
Stereo S/N FM Ratio	Qpk @± 75 kHz peak, CCIR weighted, 50 µS de-emphasis, L & R demodulated	dB	> 65 dB	
	Qpk @± 40 kHz peak, CCIR weighted, 50 µS de-emphasis, L & R demodulated	dB	>58 dB	
Frequency Response	30Hz÷15kHz	dB	± 0.5	
Total Harmonic Distortion	THD+N 30Hz ÷ 15kHz	%	< 0.05	
Intermodulation distortion	Measured with a 1 KHz, 1.3 KHztones, 1:1ratio, @75 kHzFM	%	≤0.03	
Transient intermodulation distortion	3.18 kHz square wave, 15 kHz sine wave @75 kHz FM	%	< 0.1 (typical 0.05)	
Stereo separation		dB	> 50 (typical 55)	
Main / Sub Ratio	30Hz÷15kHz	dB	> 40 (typical 45)	

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Technical Specifications THESLA SLIM 50 2/2

			Z Z	
SCA OPERATION				
Frequency response	40kHz ÷ 100kHz	dB	± 0.5	
Crosstalk to main or to stereo channel	RMS, ref @±75 kHz peak, no HPF/LPF, 0µS de-emphasis, with 67 kHz tone on SCA input @7,5kHz FM deviation	dB	> 75 (typical 78)	
Crossian to main or to stereo criamier	RMS, ref @ ± 75 kHz peak, no HPFLPF, 0µS de-emphasis, with 92 kHz tone on SCA input @ 7,5kHz FM devlation	dB	> 78 (typical 80)	
POWER REQUIREMENTS	W 1,014 121 W downdard!			
	AC Supply Voltage	VAC	80 ÷ 260	(*) Internal switch (**) monophase (***) Threephases Y
AC Power Input	AC Apparent Power Consumption Active Power Consumption Power Factor Overall Efficiency	VA VA W	200 100 0,5	() Internal switch () Interpretate () Threepinases (
	Connector	,,,	VDE IEC Standard	
DC Power Input	DC Supply Voltage	VDC	***	
·	DC Current	ADC	***	(*)max 25W (**) max 140W
MECHANICAL DIMENSIONS Phisical Dimensions	Front panel width Front panel height Overall depth	mm mm	483 (19") 44 (3 1/2") 1HE 394	19" EIA rack convertire in pollici
	Chassis depth	mm	372	escluso il pannello, esclusi i connettori, convertire in pollici
Weight		kg	about 5,5	
VARIOUS			Earned with internal for	
Cooling Acoustic Noise		dBA	Forced, with internal fan < 58	
AUDIO INPUTS		UDA	\ 38	
AGDIO II II OTO	Connector	T	XLR F	
Left / Mono	Туре		Balanced	
Leit/ Morio	Impedance	Ohm	10 k or 600	Selectable by rear panel dip switches
	Input Level /Adjust	dBu	-13 to +13	continuos ly variable
	Connector		XLR F	
Right	Type Impedance	Ohm	Balanced 10 k or 600	Selectable by rear panel dip switches
	Input Level	dBu	-13 to +13	continuosly variable
	Connector	ава	BNC	Continuosiy variable
MPX	Туре		unbalanced	
IVIEA	Impedance	Ohm	10 k or 50	Selectable by rear panel dip switches
	Input Level / Adjust	dBu	*-13 to +13	for 75 KHz FM, externally adjustable
 	Connector Type	-	2 x BNC unbalanced	
SCA/RDS	Impedance	Ohm	10 k	
	Input Level / Adjust	dBu	*-8 to +13	for 7,5 KHz FM, externally adjustable
	Connector		XLR F	
AES/EBU	Туре	01	Balanced	
(optional)	Impedance Input Level / Adjust	Ohm dBfs	110 0 to -10	for 7,5 KHz FM, externally adjustable
TOS/Link	Connector	ubis	0.00-10	ioi 7,5 Ni izi ivi, externally aujustable
(optional)	Туре			
OUTPUTS				
RF Output	Connector	01	N type	
	Impedance Connector	Ohm	50 BNC	
RF Monitor	Impedance	Ohm	50	
	Output Level	dB	approx30	Referred to the RF output
	Connector		BNC	For RDS and isofrequency synchronizing purpose
Pilot output	Impedance	Ohm	>5 k	
AUXILIARY CONNECTIONS	Output Level	Vpp	1	
Interlock	Connector	1	BNC	Input and output for remote power inhibition (short is RF off)
Service	Connector		DB9 F	Factory reserved for firmware program
Remote Interface	Connector		DB15F	IIC + 5 analog / digital inputs, 5 analog / digital outputs
FUSES On Mains			1 External fuse F 6,3 T - 5x20 mm	
On services				
On PA Supply				
On Driver Supply HUMAN INTERFACES				
			Mechanical encoder with	
Input device		<u> </u>	pushbutton	
Display			Alphanumerical LCD - 2 x 16	
TELEMETRY / TELECONTROL		10	FWD fold	For P.A AG.C. purpose, min 0,5 Vcc
	Analogical level	2	REF fold	For P.A. A.G.C. purpose, min 0,5 Vcc
Remote connector inputs	Pulso to CND	14	RF ON	
	Pulse to GND	15	RF OFF	
	Close to GND	1	Interlock	for remote power inhibition (short is RF off)
		6	FWD	max5 Vcc
Remote connector outputs	Analogical level	13 5	REF VPA	max 5 Vcc max 5 Vcc
Transaction of page		12	IPA	max 5 Vcc
	Open Collector	7	Power Good	open collector

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Technical Specifications THESLA TX100 1/2

			1/2	
Aggiornato il 21/08/2017	Legenda: Verde = Green Line Rosso = Obsoleto Giallo = Normali		THESLA TX100	
Parameters GENERALS		U.M.	Value	Notes
Frequency range		MHz	87.5 ÷ 108	
Rated output power		W	100	Continuously variable by software from 0 to maximum
Modulation type		T	Direct carrier frequency	Continuously variable by converte from a to maximum
Operational Mode			Mono, Stereo, Multiplex	
Ambient working temperature		°C	-5 to +50	
Ambient Working Humidity		%	85 (Without condensing)	
Frequency programmability			From software, with 10 kHz steps	
Frequency stability	WT from -10°C to 50°C	ppm	±1	
Modulation capability		kHz	150 Stereo, 180 Mono/MPX	Meets or exceeds all FCC and CCIR rules
Pre-emphasis mode		μS	0, 50 (CCIR), 75 (FCC)	selectable by rear panel dip switches
Spurious & harmonic suppression		dBc	<75 (80 typical)	Meets or exceeds all FCC and CCIR rules
Asynchronous AMS/N ratio	Referred to 100% AM,	dB	≥ 65 (typical 70)	
, , , , , , , , , , , , , , , , , , , ,	with no de-emphasis		(5) ,	
O makananana AMACALanda	Referred to 100% AM,	٦D	> 50 (6 = 1 = 1 00)	
Synchronous AMS/N ratio	FM deviation 75 kHz by 400Hz sine,	dB	≥ 50 (typical 60)	
MONO OPERATION	without de-emphasis			
WONGOPERATION	RMS @ ± 75 kHzpeak,	_	I	
	HPF 20Hz - LPF 23 kHz	dB	> 80 (typical 85)	
	50 µS de-emphasis	ab	· oo (sproca oo)	
	Qpk @± 75 kHzpeak,			
S/N FM Ratio	CCIR weighted,	dB	>73	
	50 μS de-emphasis			
	Qpk @± 40 kHzpeak,			
	CCIR weighted,	dB	>68	
	50 μS de-emphasis			
Frequency Response	30Hz ÷ 15kHz	dB	better than ± 0.5 dB (typical ± 0.2)	
Total Harmonic Distortion	THD+N 30Hz ÷ 15kHz	%	< 0.1 (Typical 0.07%)	
	Measured with a 1 KHz,			
Intermodulation distortion	1.3 KHztones,	%	< 0.02	
	1:1ratio, @75 kHzFM			
	3.18 kHz square wave,			
Transient intermodulation distortion	15 kHz sine wave	%	< 0.1 (typical 0.05)	
MPX OPERATION	@75 kHz FM			
INFAOFEMION	RMS @±75 kHzpeak,	_		
Composite S/N FM Ratio	HPF 20Hz- no LPF,	dB	> 80 (typical 85)	
Composite GIVI III tale	50 µS de-emphasis	u.b	(gpical oo)	
	30Hz÷53kHz	dB	±0.2	
Frequency Response	53kHz÷100kHz	dB	± 0.5	
Total Harmonic Distortion	THD+N 30Hz ÷ 53kHz	%	< 0.1	
Total Harmonic Distortion	THD+N 53kHz ÷ 100kHz	%	< 0.15	
	Measured with a 1 KHz,			
Intermodulation distortion	1.3 KHztones,	%	< 0.05	
	1:1ratio, @75 kHzFM			
	3.18 kHz square wave,		.04# 1 1005	
Transient intermodulation distortion	15 kHz sine wave	%	< 0.1 (typical 0.05)	
Charas assausti	@75 kHz FM 30Hz ÷ 53kHz	٦D	> E0 dD /b missal CO\	
Stereo separation STEREO OPERATION	3U□Z ₹ 33K□Z	dB	> 50 dB (typical 60)	
J. L. CO. L. WILON	RMS @±75 kHzpeak,	T		
	HPF 20Hz - LPF 23 kHz,			
	50 µS de-emphasis,	dB	> 75 (78 typical)	
	L & R demodulated			
	Qpk @± 75 kHzpeak,			
Charge CAL FM Datio	CCIR weighted,	٦D	, cc ID	
Stereo S/N FMRatio	50 μS de-emphasis,	dB	>65 dB	
	L & R demodulated			
	Qpk @± 40 kHzpeak,			
	CCIR weighted,	dB	> 58 dB	
	50 μS de-emphasis,			
Francisco (December 2)	L & R demodulated	-JD	105	
Frequency Response Total Harmonic Distortion	30Hz÷15kHz THD+N 30Hz÷15kHz	dB %	± 0.5 < 0.05	
Total Harmonic Distortion	Measured with a 1 KHz,	70	\U.U0	
Intermodulation distortion	1.3 KHztones,	%	≤0.03	
intermodulation distortion	1:1ratio, @75 kHzFM	/0	_ 5.00	
	3.18 kHz square wave,	1		
Transient intermodulation distortion	15 kHzsine wave	%	< 0.1 (typical 0.05)	
	@75 kHz FM		(74)	
Stereo separation		dB	> 50 (typical 55)	
Main / Sub Ratio	30Hz ÷ 15kHz	dB	>40 (typical 45)	

User Manual V



Technical Specifications THESLA TX100 2/2

			Z Z	
SCA OPERATION				
Frequency response	40kHz÷ 100kHz	dB	± 0.5	
Crosstalk to main or to stereo channel	RMS, ref @ ± 75 kHz peak, no HPFLPF, 0µS de-emphasis, with 67 kHz tone on SCA input @ 7,5kHz FM deviation	dB	> 75 (typical 78)	
Glossian to main or to stereo diamier	RMS, ref @ ± 75 kHz peak, no HPFLPF, 0µS de-emphasis, with 92 kHz tone on SCA input @ 7.5kHz FM devlation	dB	> 78 (typical 80)	
POWER REQUIREMENTS	<u> </u>			
	AC Supply Voltage	VAC	115 / 230 ±15% (*)	(*) Internal switch (**) monophase (***) Threephases Y
AC Power Input	AC Apparent Power Consumption Active Power Consumption Power Factor Overall Efficiency	VA W	330 212 0,6	(утелья отпольные (уттернаес)
	Connector DC Supply Voltage	VDC	VDE IEC Standard 28	
DC Power Input	DC Supply Voltage DC Current	ADC	8,2 (**)	(*)max 25W (**) max 140W
MECHANICAL DIMENSIONS	DC Current	ADC	0,2 ()	()IIIax 25VV ()IIIax 140VV
Phisical Dimensions	Front panel width Front panel height Overall depth Chassis depth	mm mm mm	483 (19") 88 (3 1/2") 2HE 394 372	19" EIA rack convertire in pollici escluso il pannello, esclusi i connettori, convertire in pollici
Weight		kg	about 8,5	
VARIOUS			- 1 10111	
Cooling		40.4	Forced, with internal fan	
Acoustic Noise AUDIO INPUTS		dBA	< 58	
AUDIO INFOIS	Connector		XLR F	
	Туре		Balanced	
Left / Mono	Impedance	Ohm	10 k or 600	Selectable by rear panel dip switches
	Input Level /Adjust	dBu	-13 to +13	continuosly variable
	Connector		XLR F	
Right	Type	01	Balanced	
	Impedance Input Level	Ohm dBu	10 k or 600 -13 to +13	Selectable by rear panel dip switches continuosly variable
	Connector	ubu	BNC	continuosiy variable
NEW	Туре		unbalanced	
MPX	Impedance	Ohm	10 k or 50	Selectable by rear panel dip switches
	Input Level / Adjust	dBu	*-13 to +13	for 75 KHz FM, externally adjustable
	Connector		2 x BNC	
SCA/RDS	Type Impedance	Ohm	unbalanced 10 k	
ŀ	Input Level / Adjust	dBu	*-8 to +13	for 7,5 KHz FM, externally adjustable
	Connector		XLR F	,,,,
AES/EBU	Туре		Balanced	
(optional)	Impedance	Ohm	110	
TOS/Link	Input Level / Adjust Connector	dBfs	0 to -10 TOS-LINk	for 7,5 KHz FM, externally adjustable
(optional)	Type		Optical	
OUTPUTS	.,,,,,,			
RF Output	Connector		N type	
2 φαι	Impedance	Ohm	50	
RF Monitor	Connector Impedance	Ohm	BNC 50	
	Output Level	dB	approx60	Referred to the RF output
	Connector		BNC	For RDS and isofrequency synchronizing purpose
Pilot output	Impedance	Ohm	>5 k	
ALIVII IADV CONNECTIONS	Output Level	Vpp	1	
AUXILIARY CONNECTIONS Interlock	Connector		BNC	Input and output for remote power inhibition (short is RF off)
Service	Connector	1	DB9 F	Factory reserved for firmware program
Remote Interface	Connector		DB15F	IIC + 5 analog / digital inputs, 5 analog / digital outputs
FUSES				
On Mains On services			1 External fuse F 6,3 T - 5x20 mm	
On PA Supply				
On Driver Supply				
HUMAN INTERFACES				
Input device			4 pushbutton	
Display		1	Alphanumerical LCD - 2 x 16	
TELEMETRY / TELECONTROL				
	Analogical level	10	FWD fold	For P.A. A.G.C. purpose, min 0,5 Vcc
Domete connected in the		2	REF fold	For P.A AG.C. purpose, min 0,5 Vcc
Remote connector inputs	Pulse to GND	14 15	RF ON RF OFF	
ŀ	Close to GND	15	Interlock	for remote power inhibition (short is RF off)
	CIOSE IO CIAD	6	FWD	max 5 Vcc
	Analogical level	13	REF	max 5 Vcc
Remote connector outputs	Analogical level	5	VPA	max 5 Vcc
ļ	0- 0-	12	IPA	max 5 Vcc
	Open Collector	7	Power Good	open collector

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Technical Specifications THESLA TX300 1/2

			1/2	
Aggiornato il 21/08/2017	Legenda: Verde = Green Line Rosso = Obsoleto Giallo = Normali		THESLA TX300	
Parameters		U.M.	Value	Notes
GENERALS			_	
Frequency range		MHz	87.5 ÷ 108	
Rated output power		W	300	Continuously variable by software from 0 to maximum
Modulation type			Direct carrier frequency	
Operational Mode		°C	Mono, Stereo, Multiplex -5 to +50	
Ambient working temperature Ambient Working Humidity		%	85 (Without condensing)	
Frequency programmability		/0	From software, with 10 kHz steps	
Frequency stability	WT from -10°C to 50°C	ppm	±1	
Modulation capability	William to Global C	kHz	150 Stereo, 180 Mono/MPX	Meets or exceeds all FCC and CCIR rules
Pre-emphasis mode		μS	0, 50 (CCIR), 75 (FCC)	selectable by rear panel dip switches
Spurious & harmonic suppression		dBc	<75 (80 typical)	Meets or exceeds all FCC and CCIR rules
Asynchronous AMS/N ratio	Referred to 100% AW, with no de-emphasis	dB	≥ 65 (typical 70)	
Synchronous AMS/N ratio	Referred to 100% AM, FM deviation 75 kHz by 400Hz sine, without de-emphasis	dB	≥ 50 (typical 60)	
MONO OPERATION	William Co. Comprisco			
	RMS @± 75 kHz peak, HPF 20Hz - LPF 23 kHz, 50 µS de-emphasis	dB	> 80 (typical 85)	
S/N FMRatio	Opk @± 75 kHz peak, CCIR weighted, 50 μS de-emphasis	dB	>73	
	Qpk @± 40 kHz peak, CCIR weighted, 50 μS de-emphasis	dB	>68	
Frequency Response	30Hz÷15kHz	dB	better than ± 0.5 dB (typical ± 0.2)	
Total Harmonic Distortion	THD+N 30Hz ÷ 15kHz	%	< 0.1 (Typical 0.07%)	
Intermodulation distortion	Measured with a 1 KHz, 1.3 KHz tones, 1:1ratio, @75 kHz FM	%	< 0.02	
Transient intermodulation distortion	3.18 kHz square wave, 15 kHz sine wave @75 kHz FM	%	< 0.1 (typical 0.05)	
MPX OPERATION				
	RMS @±75 kHz peak,			
Composite S/N FM Ratio	HPF 20Hz - no LPF,	dB	> 80 (typical 85)	
	50 μS de-emphasis			
Frequency Response	30Hz÷53kHz	dB	± 0.2	
	53kHz÷100kHz	dB	± 0.5	
Total Harmonic Distortion	THD+N 30Hz ÷ 53kHz	%	<0.1	
	THD+N 53kHz ÷ 100kHz Measured with a 1 KHz,	%	< 0.15	
Intermodulation distortion	1.3 KHztones, 1:1ratio, @ 75 kHzFM	%	< 0.05	
Transient intermodulation distortion	3.18 kHzsquare wave, 15 kHzsine wave	%	< 0.1 (typical 0.05)	
Stereo separation	@75 kHz FM 30Hz÷53kHz	dB	> 50 dB (typical 60)	
STEREO OPERATION	001 E 0010 E	1 02	oo ab (yproar oo)	
	RMS@±75kHzpeak,			
	HPF 20Hz - LPF 23 kHz, 50 μS de-emphasis, L & R demodulated	dB	> 75 (78 typical)	
Stereo S/N FMRatio	Cpk @±75 kHz peak, CCIR weighted, 50 μS de-emphasis,	dB	>65 dB	
	L & R demodulated Qpk @± 40 kHz peak, CCIR weighted, 50 µS de-emphasis,	dB	> 58 dB	
Frequency Response	L & R demodulated 30Hz ÷ 15kHz	dB	± 0.5	
Total Harmonic Distortion	THD+N 30Hz ÷ 15kHz	ив %	< 0.05	
Intermodulation distortion	Measured with a 1 KHz, 1.3 KHz tones, 1:1ratio, @75 kHz FM	%	≤0.03	
Transient intermodulation distortion	3.18 kHz square wave, 15 kHz sine wave @75 kHz FM	%	< 0.1 (typical 0.05)	
Stereo separation		dB	> 50 (typical 55)	
Main / Sub Ratio	30Hz÷15kHz	dB	>40 (typical 45)	

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Technical Specifications THESLA TX300 2/2

			212	
SCA OPERATION				
Frequency response	40kHz ÷ 100kHz	dB	± 0.5	
Crosstalk to main or to stereo channel	RMS, ref @ ± 75 kHz peak, no HPFLPF, 0µS de-emphasis, with 67 kHz tone on SCA input @ 7,5kHz FM deviation	dB	> 75 (typical 78)	
Green and the second state of the second state of the second seco	RMS, ref @ ± 75 kHz peak, no HPFLPF, 0µS de-emphasis, with 92 kHz tone on SCA input @ 7,5kHz FM deviation	dB	> 78 (typical 80)	
POWER REQUIREMENTS				
	AC Supply Voltage	VAC	80 ÷ 260	(*) Internal switch (**) monophase (***) Threephases Y
•	AC Apparent Power Consumption	VA	560	(,,, ,, ,, ,,
AC Power Input	Active Power Consumption	W	520	
	Power Factor		0,98	
	Overall Efficiency	%		
	Connector		VDE IEC Standard	
DC Power Input	DC Supply Voltage DC Current	VDC ADC		(*)max 25W (**) max 140W
MECHANICAL DIMENSIONS	DC Current	ADC		()IIIax 25W () IIIax 140W
	Front panel width	mm	483 (19")	19" ElArack
Phisical Dimensions	Front panel height	mm	88 (3 1/2") 2HE	convertire in pollici
	Overall depth	mm	394	cooling il poppello a strati secondi di seco
Weight	Chassis depth	mm kg	372 about 9	escluso il pannello, esclusi i connettori, convertire in pollici
VARIOUS		- Ny	about 9	
Cooling			Forced, with internal fan	
Acoustic Noise		dBA	<75	
AUDIO INPUTS	0		MDE	
	Connector Type		XLR F Balanced	
Left / Mono	Impedance	Ohm	10 k or 600	Selectable by rear panel dip switches
	Input Level /Adjust	dBu	-13 to +13	continuosly variable
	Connector		XLR F	
Right	Туре		Balanced	
	Impedance Input Level	Ohm dBu	10 k or 600 -13 to +13	Selectable by rear panel dip switches continuosly variable
	Connector	иви	BNC	continuosiy variable
MPX	Type		unbalanced	
	Impedance	Ohm	10 k or 50	Selectable by rear panel dip switches
	Input Level / Adjust	dBu	*-13 to +13	for 75 KHz FM, externally adjustable
•	Connector		2 x BNC	
SCA/RDS	Type Impedance	Ohm	unbalanced 10 k	
	Input Level / Adjust	dBu	*-8 to +13	for 7,5 KHz FM, externally adjustable
	Connector		XLR F	
AES/EBU	Туре	-	Balanced	
(optional)	Impedance Input Level / Adjust	Ohm dBfs	110 0 to -10	for 7,5 KHz FM, externally adjustable
TOS/Link	Connector	ubis	TOS-LINk	ioi 7,5 Kriz Fivi, externally adjustable
(optional)	Туре		Optical	
OUTPUTS				
RF Output	Connector	Ohm	N type	
	Impedance Connector	Ohm	50 BNC	
RF Monitor	Impedance	Ohm	50	
	Output Level	dB	approx60	Referred to the RF output
	Connector		BNC	For RDS and isofrequency synchronizing purpose
Pilot output	Impedance Output Lovel	Ohm	>5 k 1	
AUXILIARY CONNECTIONS	Output Level	Vpp	1	
Interlock	Connector	L	BNC	Input and output for remote power inhibition (short is RF off)
Service	Connector		DB9 F	Factory reserved for firmware program
Remote Interface	Connector		DB15F	IIC + 5 analog / digital inputs, 5 analog / digital outputs
FUSES On Mains			1 External fuse F 8L - 5x20 mm	
On services				
On PA Supply		1		
On Driver Supply HUMAN INTERFACES				
			4 11 ::	
Input device			4 pushbutton	
Display			Alphanumerical LCD - 2 x 16	
TELEMETRY / TELECONTROL		10	FWD fold	For P.A.A.C.C. numana, min 0.5 \/aa
	Analogical level	2	REF fold	For P.A. A.G.C. purpose, min 0,5 Vcc For P.A. A.G.C. purpose, min 0,5 Vcc
Remote connector inputs	Distanta CND	14	RF ON	. 5
	Pulse to GND	15	RF OFF	
	Close to GND	1	Interlock	for remote power inhibition (short is RF off)
		6	FWD	max 5 Vcc
Remote connector outputs	Analogical level	13 5	REF VPA	max 5 Vcc max 5 Vcc
		12	IPA	max 5 Vcc
	Open Collector	7	Power Good	open collector

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Technical Specifications THESLA TX500 1/2

			1/2	
Aggiornato il 21/08/2017	Legenda: Verde = Green Line Rosso = Obsoleto Giallo = Normali		THESLA TX500	
Parameters GENERALS		U.M.	Value	Notes
Frequency range	T	MHz	87.5 ÷ 108	T
Rated output power		W	500	Continuously variable by software from 0 to maximum
Modulation type			Direct carrier frequency	
Operational Mode			Mono, Stereo, Multiplex	
Ambient working temperature		°C	-5 to +50	
Ambient Working Humidity		%	85 (Without condensing)	
Frequency programmability			From software, with 10 kHz steps	
Frequency stability	WT from -10°C to 50°C	ppm	±1	
Modulation capability		kHz	150 Stereo, 180 Mono/MPX	Meets or exceeds all FCC and CCIR rules
Pre-emphasis mode		μS	0, 50 (CCIR), 75 (FCC)	selectable by rear panel dip switches
Spurious & harmonic suppression		dBc	<75 (80 typical)	Meets or exceeds all FCC and CCIR rules
Asynchronous AMS/N ratio	Referred to 100% AM,	dB	≥ 65 (typical 70)	
	with no de-emphasis		= 55 (5)p. 55 57	
0 1 11401 5	Referred to 100% AM,	ID.	550 (1 : 100)	
Synchronous AMS/N ratio	FMdeviation 75 kHzby 400Hzsine,	dB	≥ 50 (typical 60)	
MONO OPERATION	without de-emphasis			
WONO OPERATION	RMS @±75 kHzpeak,			
	HPF 20Hz - LPF 23 kHz	dB	> 78 (typical 83)	
	50 µS de-emphasis	ab	r 10 (typical 00)	
	Qpk @± 75 kHzpeak,			
S/N FMRatio	CCIR weighted,	dB	>71	
	50 μS de-emphasis			
	Qpk @± 40 kHzpeak,			
	CCIR weighted,	dB	>67	
	50 μS de-emphasis			
Frequency Response	30Hz ÷ 15kHz	dB	better than ± 0.5 dB (typical ± 0.2)	
Total Harmonic Distortion	THD+N 30Hz ÷ 15kHz	%	< 0.1 (Typical 0.07%)	
	Measured with a 1 KHz,			
Intermodulation distortion	1.3 KHz tones,	%	< 0.02	
	1:1ratio, @75 kHz FM			
	3.18 kHz square wave,			
Transient intermodulation distortion	15 kHz sine wave	%	< 0.1 (typical 0.05)	
	@75 kHz FM			
MPX OPERATION				
	RMS @± 75 kHz peak,		"	
Composite S/N FMRatio	HPF 20Hz- no LPF,	dB	> 78 (typical 83)	
	50 µS de-emphasis	-ID	.00	
Frequency Response	30Hz ÷ 53kHz 53kHz ÷ 100kHz	dB dB	± 0.2 ± 0.5	
	7HD+N 30Hz ÷ 53kHz	ив %	<0.1	
Total Harmonic Distortion	THD+N 53kHz ÷ 100kHz	%	<0.15	
	Measured with a 1 KHz,	/0	10.10	
Intermodulation distortion	1.3 KHztones,	%	< 0.05	
intermodulation distribution	1:1ratio, @75 kHz FM	,,,	0.00	
	3.18 kHz square wave,			
Transient intermodulation distortion	15 kHz sine wave	%	< 0.1 (typical 0.05)	
	@75 kHz FM			
Stereo separation	30Hz ÷ 53kHz	dB	> 50 dB (typical 60)	
STEREO OPERATION				
	RMS @± 75 kHz peak,			
	HPF 20Hz - LPF 23 kHz,	dB	> 71 (74 typical)	
	50 μS de-emphasis,	u.b	1 T (T+ typical)	
	L & R demodulated			
	Qpk @± 75 kHzpeak,			
Stereo S/N FMRatio	CCIR weighted,	dB	>65 dB	
	50 μS de-emphasis,			
	L & R demodulated			
	Qpk @± 40 kHzpeak,			
	CCIR weighted, 50 µS de-emphasis,	dB	> 58 dB	
	L & R demodulated			
Frequency Response	30Hz÷15kHz	dB	± 0.5	
Total Harmonic Distortion	THD+N 30Hz ÷ 15kHz	%	< 0.05	
	Measured with a 1 KHz,			
Intermodulation distortion	1.3 KHztones,	%	≤0.03	
	1:1ratio, @75 kHz FM			
	3.18 kHz square wave,			
Transient intermodulation distortion	15 kHz sine wave	%	< 0.1 (typical 0.05)	
	@75 kHz FM		, ,	
Stereo separation		dB	> 50 (typical 55)	
Main / Sub Ratio	30Hz ÷ 15kHz	dB	> 40 (typical 45)	

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Technical Specifications THESLA TX500 2/2

			Z Z	
SCA OPERATION				
Frequency response	40kHz ÷ 100kHz	dB	± 0.5	
	RMS, ref @ ± 75 kHz peak, no HPF/LPF, 0µS de-emphasis, with 67 kHz tone on SCA input @ 7,5kHz FM devlation	dB	> 75 (typical 78)	
Crosstalk to main or to stereo channel	RMS, ref @ ± 75 kHz peak, no HPF/LPF, 0µS de-emphasis, with 92 kHz tone on SCA input @ 7,5kHz FM devlation	dB	> 78 (typical 80)	
POWER REQUIREMENTS	e i johi izi in deviation			
	AC Supply Voltage	VAC	80 ÷ 260	(*) Internal switch (**) monophase (***) Threephases Y
AC Power Input	AC Apparent Power Consumption Active Power Consumption Power Factor Overall Efficiency	VA W	653 650 0,998 Typical 70	() mental small () monophase () mecophases (
	Connector		VDE IEC Standard	
DC Power Input	DC Supply Voltage DC Current	VDC ADC		(*)max 25W (**) max 140W
MECHANICAL DIMENSIONS	DC Cullent	ADC		()IIIax25W ()IIIax140W
Phisical Dimensions	Front panel width Front panel height Overall depth	mm mm	483 (19") 88 (3 1/2") 2HE 394	19" ElA rack convertire in politici
Weight	Chassis depth	mm kg	372 about 9.5	escluso il pannello, esclusi i connettori, convertire in pollici
VARIOUS		9	2552.0,0	
Cooling			Forced, with internal fan	
Acoustic Noise		dBA	<75	
AUDIO INPUTS			W.D.E.	
-	Connector		XLR F	
Left / Mono	Type Impedance	Ohm	Balanced 10 k or 600	Selectable by rear panel dip switches
-	Input Level /Adjust	dBu	-13 to +13	continuosly variable
	Connector		XLR F	
Right	Туре		Balanced	
ragne	Impedance	Ohm	10 k or 600	Selectable by rear panel dip switches
	Input Level	dBu	-13 to +13	continuosly variable
-	Connector Type		BNC unbalanced	
MPX	Impedance	Ohm	10 k or 50	Selectable by rear panel dip switches
•	Input Level / Adjust	dBu	*-13 to +13	for 75 KHz FM, externally adjustable
	Connector		2 x BNC	
SCA/RDS	Туре		unbalanced	
-	Impedance	Ohm	10 k	
	Input Level / Adjust	dBu	*-8 to +13	for 7,5 KHz FM, externally adjustable
AES/EBU	Connector Type		XLR F Balanced	
(optional)	Impedance	Ohm	110	
	Input Level / Adjust	dBfs	0 to -10	for 7,5 KHz FM, externally adjustable
TOS/Link	Connector		TOS-LINk	
(optional)	Туре		Optical	
OUTPUTS	Connector		Nano	
RF Output	Impedance	Ohm	N type 50	
	Connector		BNC	
RF Monitor	Impedance	Ohm	50	
	Output Level	dB	approx60	Referred to the RF output
Pilot output	Connector Impedance	Ohm	BNC >5 k	For RDS and isofrequency synchronizing purpose
о. зафи	Output Level	Vpp	1	
AUXILIARY CONNECTIONS				
Interlock	Connector		BNC	Input and output for remote power inhibition (short is RF off)
Service	Connector	1	DB9 F	Factory reserved for firmware program
Remote Interface FUSES	Connector		DB15F	IIC + 5 analog / digital inputs, 5 analog / digital outputs
On Mains			1 External fuse F 16 A - 5x20 mm	
On services On PA Supply				
On PA Supply On Driver Supply				
HUMAN INTERFACES				
Input device			4 pushbutton	
		1	•	
Display TELEMETRY / TELECONTROL			Alphanumerical LCD - 2 x 16	
ILLEMENT / IELECONTROL		10	FWD fold	For P.A AG.C. purpose, min 0,5 Vcc
	Analogical level	2	REF fold	For P.A A.G.C. purpose, min 0,5 Vcc
Remote connector inputs	Pulse to GND	14	RF ON	
<u> </u>		15	RF OFF	
	Close to GND	1	Interlock	for remote power inhibition (short is RF off)
		6 13	FWD REF	max 5 Vcc max 5 Vcc
Remote connector outputs	Analogical level	5	VPA	max5 Vcc
		12	IPA	max 5 Vcc
	Open Collector	7	Power Good	open collector

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Technical Specifications THESLA TX700 1/2

			1/2	
Aggiornato il 21/08/2017	Legenda: Verde = Green Line Rosso = Obsoleto Giallo = Normali		THESLA TX700	
Parameters GENERALS		U.M.	Value	Notes
Frequency range		MHz	87.5 ÷ 108	
Rated output power		W	700	Continuously variable by software from 0 to maximum
Modulation type		- ''	Direct carrier frequency	Continuously variable by solivide a norm of the marrial in
Operational Mode			Mono, Stereo, Multiplex	
Ambient working temperature		°C	-5 to +50	
Ambient Working Humidity		%	85 (Without condensing)	
Frequency programmability			From software, with 10 kHz steps	
Frequency stability	WT from -10°C to 50°C	ppm	±1	
Modulation capability		kHz	150 Stereo, 180 Mono/MPX	Meets or exceeds all FCC and CCIR rules
Pre-emphasis mode		μS	0, 50 (CCIR), 75 (FCC)	selectable by rear panel dip switches
Spurious & harmonic suppression		dBc	<75 (80 typical)	Meets or exceeds all FCC and CCIR rules
Asynchronous AMS/N ratio	Referred to 100% AM,	dB	≥ 65 (typical 70)	
,	with no de-emphasis		,,,,,	
O makananana AMACALanda	Referred to 100% AM,	-ID	> 50 /6 : 50)	
Synchronous AMS/N ratio	FM deviation 75 kHzby 400Hzsine,	dB	≥ 50 (typical 60)	
MONO OPERATION	without de-emphasis			
INCHOOPERATION	RMS @ ± 75 kHz peak,			I
	HPF 20Hz - LPF 23 kHz	dB	> 80 (typical 85)	
	50 µS de-emphasis		-5 (sp.ss. 50)	
	Qpk @± 75 kHz peak,			
S/N FM Ratio	CCIR weighted,	dB	>73	
	50 μS de-emphasis			
	Qpk @± 40 kHz peak,			
	CCIR weighted,	dB	>68	
	50 μS de-emphasis			
Frequency Response	30Hz÷15kHz	dB	better than ± 0.5 dB (typical ± 0.2)	
Total Harmonic Distortion	THD+N 30Hz ÷ 15kHz	%	< 0.1 (Typical 0.07%)	
	Measured with a 1 KHz,			
Intermodulation distortion	1.3 KHztones,	%	< 0.02	
	1:1ratio, @75 kHzFM			
Transient intermodulation distortion	3.18 kHz square wave, 15 kHz sine wave	%	< 0.1 (h missal 0.05)	
Transient intermodulation distortion	@75 kHz FM	70	< 0.1 (typical 0.05)	
MPX OPERATION	W SN ET W	_		
IN AG EVIOR	RMS @±75 kHz peak,		Ι	T T
Composite S/N FMRatio	HPF 20Hz- no LPF,	dB	> 80 (typical 85)	
	50 μS de-emphasis		(9)	
Frequency Response	30Hz÷53kHz	dB	± 0.2	
Frequency Response	53kHz÷100kHz	dB	± 0.5	
Total Harmonic Distortion	THD+N 30Hz ÷ 53kHz	%	< 0.1	
Total Tital Tital District	THD+N 53kHz ÷ 100kHz	%	< 0.15	
	Measured with a 1 KHz,			
Intermodulation distortion	1.3 KHztones,	%	< 0.05	
	1:1ratio, @75 kHz FM	-		
Transient intermedulation distantis	3.18 kHz square wave,	0/	<0.1 (h picel 0.05)	
Transient intermodulation distortion	15 KHzsine wave @75 kHz FM	%	< 0.1 (typical 0.05)	
Stereo separation	30Hz÷53kHz	dB	> 50 dB (typical 60)	1
STEREO OPERATION	OU IE - OUII IE	QD	(yprodi 00)	
	RMS @±75 kHz peak,			
	HPF 20Hz - LPF 23 kHz,	in.	- 75 /70 · · · · ·	
	50 μS de-emphasis,	dB	> 75 (78 typical)	
	L & R demodulated			
	Qpk @± 75 kHz peak,			
Stereo S/N FMRatio	CCIR weighted,	dB	>65 dB	
Sister St. II Wil Wall	50 μS de-emphasis,	uD	- 00 UD	
	L & R demodulated	-		
	Qpk @± 40 kHz peak,			
	CCIR weighted,	dB	> 58 dB	
	50 μS de-emphasis, L & R demodulated			
Frequency Response	30Hz ÷ 15kHz	dB	± 0.5	
Total Harmonic Distortion	THD+N 30Hz ÷ 15kHz	%	< 0.05	
rota i sarriono Diotordori	Measured with a 1 KHz,	,0	-0.00	
Intermodulation distortion	1.3 KHztones,	%	≤0.03	
	1:1ratio, @75 kHzFM			
	3.18 kHz square wave,			
Transient intermodulation distortion	15 kHz sine wave	%	< 0.1 (typical 0.05)	
	@75 kHz FM			
Stereo separation		dB	> 50 (typical 55)	
Main / Sub Ratio	30Hz ÷ 15kHz	dB	> 40 (typical 45)	

User Manual XI



Technical Specifications THESLA TX700 2/2

			Z Z	
SCA OPERATION				
Frequency response	40kHz ÷ 100kHz	dB	± 0.5	
	RMS, ref @ ± 75 kHz peak, no HPF/LPF,			
	0μS de-emphasis, with 67 kHz tone on SCA input	dB	> 75 (typical 78)	
Crosstalk to main or to stereo channel	@ 7,5kHz FM deviation			
	RMS, ref @ ± 75 kHz peak, no HPF/LPF,			
	0μS de-emphasis,	dB	> 78 (typical 80)	
	with 92 kHz tone on SCA input @ 7,5kHz FM deviation			
POWER REQUIREMENTS	W 1,011 IZ 1 W do water			
	AC Supply Voltage	VAC	80 ÷ 260	(*) Internal switch (**) monophase (***) Threephases Y
	AC Apparent Power Consumption	VA	912	
AC Power Input	Active Power Consumption	W	910 0,998	
	Power Factor Overall Efficiency	%	0,998 Typical 70	
	Connector		VDE IEC Standard	
DC Power Input	DC Supply Voltage DC Current	VDC ADC		(*)max 25W (**) max 140W
MECHANICAL DIMENSIONS	Bo ounem	780		()max20V()max140V
	Front panel width	mm	483 (19")	19" ElArack
Phisical Dimensions	Front panel height Overall depth	mm mm	88 (3 1/2") 2HE 394	convertire in pollici
	Chassis depth	mm	372	escluso il pannello, esclusi i connettori, convertire in pollici
Weight VARIOUS		kg	about 9,5	
Cooling			Forced, with internal fan	
Acoustic Noise		dBA	<75	
AUDIO INPUTS	Connector		XLR F	
Left / Mono	Туре		Balanced	
Leit/ World	Impedance	Ohm	10 k or 600	Selectable by rear panel dip switches
	Input Level /Adjust Connector	dBu	-13 to +13 XLR F	continuosly variable
Pight	Туре		Balanced	
Right	Impedance	Ohm	10 k or 600	Selectable by rear panel dip switches
	Input Level Connector	dBu	-13 to +13 BNC	continuosly variable
MPX	Туре		unbalanced	
IVIEA	Impedance	Ohm	10 k or 50	Selectable by rear panel dip switches
	Input Level / Adjust Connector	dBu	*-13 to +13 2 x BNC	for 75 KHz FM, externally adjustable
SCA/RDS	Туре		unbalanced	
66,111,26	Impedance	Ohm dBu	10 k	for 7.5 VU= FM externally adjustable
	Input Level / Adjust Connector	ави	*-8 to +13 XLR F	for 7,5 KHz FM, externally adjustable
AES/EBU	Туре		Balanced	
(optional)	Impedance Input Level / Adjust	Ohm dBfs	110 0 to -10	for 7,5 KHz FM, externally adjustable
TOS/Link	Connector	ubis	TOS-LINK	ioi 7,5 iti iz i w, externally aujustable
(optional)	Туре		Optical	
OUTPUTS	Connector		N type	
RF Output	Impedance	Ohm	50	
RF Monitor	Connector Impedance	Ohm	BNC 50	
- A WOULD	Output Level	dB	50 approx60	Referred to the RF output
Dilata 1	Connector	0	BNC	For RDS and isofrequency synchronizing purpose
Pilot output	Impedance Output Level	Ohm Vpp	>5 k	
AUXILIARY CONNECTIONS				
Interlock	Connector		BNC	Input and output for remote power inhibition (short is RF off)
Service Remote Interface	Connector Connector		DB9 F DB15F	Factory reserved for firmware program IIC + 5 analog / digital inputs, 5 analog / digital outputs
FUSES				2 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
On Mains			1 External fuse F 16 A - 5x20 mm	
On services On PA Supply		<u> </u>		
On Driver Supply				
HUMAN INTERFACES				
Input device			4 pushbutton	
Display			Alphanumerical LCD - 2 x 16	
TELEMETRY / TELECONTROL		10	FWD fold	For P.A A.G.C. purpose, min 0,5 Vcc
	Analogical level	2	REF fold	For P.A. A.G.C. purpose, min 0,5 vcc
Remote connector inputs	Pulse to GND	14	RF ON	
	Close to GND	15 1	RF OFF Interlock	for remote power inhibition (short is RF off)
	CIOSE IO GIVD	6	FWD	max 5 Vcc
Demote come in the	Analogical level	13	REF	max 5 Vcc
Remote connector outputs		5 12	VPA IPA	max5 Vcc max5 Vcc
		7	Power Good	open collector

XII User Manual



Technical Specifications THESLA TX1K 1/2

			1/2	
Aggiornato il 21/08/2017	Legenda: Verde = Green Line Rosso = Obsoleto Giallo = Normali		THESLA TX1K	
Parameters		U.M.	Value	Notes
GENERALS				
Frequency range		MHz	87.5 ÷ 108	
Rated output power		W	1000	Continuously variable by software from 0 to maximum
Modulation type			Direct carrier frequency	
Operational Mode			Mono, Stereo, Multiplex	
Ambient working temperature		°C	-5 to +50	
Ambient Working Humidity		%	85 (Without condensing)	
Frequency programmability			From software, with 10 kHz steps	
Frequency stability	WT from -10°C to 50°C	ppm	±1	
Modulation capability		kHz	150 Stereo, 180 Mono/MPX	Meets or exceeds all FCC and CCIR rules
Pre-emphasis mode		μS	0, 50 (CCIR), 75 (FCC)	selectable by rear panel dip switches
Spurious & harmonic suppression		dBc	<75 (80 typical)	Meets or exceeds all FCC and CCIR rules
	Referred to 100% AM,		`	
Asynchronous AMS/N ratio	with no de-emphasis	dB	≥ 65 (typical 70)	
Synchronous AMS/N ratio	Referred to 100% AM, FM deviation 75 kHz by 400Hz sine, without de-emphasis	dB	≥ 50 (typical 60)	
MONO OPERATION	without de-emphasis			
IIIO O DVIION	RMS @±75 kHz peak,			
	HPF 20Hz - LPF 23 kHz, 50 µS de-emphasis	dB	> 80 (typical 85)	
S/N FM Ratio	Qpk @± 75 kHzpeak, CCIR weighted, 50 μS de-emphasis	dB	>73	
	Qpk @± 40 kHzpeak, CCIR weighted, 50 µS de-emphasis	dB	>68	
Frequency Response	30Hz ÷ 15kHz	dB	better than ± 0.5 dB (typical ± 0.2)	
Total Harmonic Distortion	THD+N 30Hz ÷ 15kHz	%	< 0.1 (Typical 0.07%)	
Total Fiarmonio Diotorion	Measured with a 1 KHz	70	-0.1 (Typical 0.07 70)	
Intermodulation distortion	1.3 KHztones, 1:1ratio, @75 kHz FM	%	<0.02	
Transient intermodulation distortion	3.18 kHz square wave, 15 kHz sine wave	%	< 0.1 (typical 0.05)	
MPX OPERATION	@75 kHz FM			
WIFXOFEIGN	RMS @±75 kHzpeak,	T		
Composite S/N FMRatio	HPF 20Hz- no LPF,	dB	> 80 (typical 85)	
Composite Sin Fiviratio	_	uБ	>60 (typical 65)	
	50 μS de-emphasis	ID.	± 0.2	
Frequency Response	30Hz ÷ 53kHz	dB		
Frequency Response	53kHz÷100kHz	dB	± 0.5	
Frequency Response Total Harmonic Distortion	53kHz÷100kHz THD+N 30Hz÷53kHz	dB %	± 0.5 < 0.1	
	53kHz ÷ 100kHz THD+N 30Hz ÷ 53kHz THD+N 53kHz ÷ 100kHz	dB	± 0.5	
Total Harmonic Distortion	53kHz + 100kHz THD+N 30Hz + 53kHz THD+N 53kHz + 100kHz Measured with a 1 KHz,	dB % %	±0.5 <0.1 <0.15	
	53kHz+100kHz THD+N 30Hz+53kHz THD+N 53kHz+100kHz Measured with a 1 KHz, 1.3 KHztones, 1:1ratio, @ 75 kHz FM	dB %	± 0.5 < 0.1	
Total Harmonic Distortion	53kHz + 100kHz THD+N 30Hz + 53kHz THD+N 53kHz + 100kHz Measured with a 1 KHz, 1.3 KHz tones, 1:1ratio, @ 75 kHz FM 3.18 kHz square wave, 15 kHz sine wave	dB % %	±0.5 <0.1 <0.15	
Total Harmonic Distortion Intermodulation distortion	53kHz+100kHz THD+N 30Hz+53kHz THD+N 53kHz+100kHz Measured with a 1 KHz, 1.3 KHztones, 1:1ratio, @75 kHz FM 3.18 kHz square wave,	dB % %	±0.5 <0.1 <0.15 <0.05	
Total Harmonic Distortion Intermodulation distortion Transient intermodulation distortion	53kHz+100kHz THD+N 30Hz+53kHz THD+N 53kHz+100kHz Measured with a 1 KHz, 1.3 KHztones, 1:1ratio, @ 75 kHzFM 3.18 kHzsquare wave, 15 kHz sine wave @ 75 kHzFM	dB % % %	± 0.5 < 0.1 < 0.15 < 0.05	
Total Harmonic Distortion Intermodulation distortion Transient intermodulation distortion Stereo separation	53kHz+100kHz THD+N 30Hz+53kHz THD+N 53kHz+100kHz Measured with a 1 KHz, 1.3 KHztones, 1:1ratio, @ 75 kHzFM 3.18 kHzsquare wave, 15 kHz sine wave @ 75 kHzFM	dB % % %	± 0.5 < 0.1 < 0.15 < 0.05	
Total Harmonic Distortion Intermodulation distortion Transient intermodulation distortion Stereo separation	53kHz+100kHz THD+N 30Hz+53kHz THD+N 53kHz+100kHz Measured with a 1 KHz, 1.3 KHztones, 1:1ratio, @ 75 kHz FM 3.18 kHz square wave, 15 kHz sine wave @ 75 kHz FM 30Hz+53kHz	dB % % %	± 0.5 < 0.1 < 0.15 < 0.05	
Total Harmonic Distortion Intermodulation distortion Transient intermodulation distortion Stereo separation	53kHz+100kHz THD+N 30Hz+53kHz THD+N 53kHz+100kHz Measured with a 1 KHz, 1.3 KHztones, 1:1ratio, @75 kHz FM 3.18 kHz square wave, 15 kHz sine wave @75 kHz FM 30Hz+53kHz RMS @±75 kHz peak, HPF 20Hz-LPF 23 kHz, 50 µS de-emphasis, L & R demodulated Opk @±75 kHz peak, CCIR weighted, 50 µS de-emphasis,	dB % % % % dB	± 0.5 < 0.1 < 0.15 < 0.05 < 0.1 (typical 0.05) > 50 dB (typical 60)	
Total Harmonic Distortion Intermodulation distortion Transient intermodulation distortion Stereo separation STEREO OPERATION	53kHz+100kHz THD+N 30Hz+53kHz THD+N 53kHz+100kHz Measured with a 1 KHz, 1.3 KHztones, 1:1ratio, @75 kHz FM 3.18 kHz square wave, 15 kHz sine wave @75 kHz FM 30Hz+53kHz RMS @±75 kHz peak, HPF 20Hz-LPF-23 kHz, 50 µS de-emphasis, L & R demodulated Qpk @±75 kHz peak, CCIR weighted, 50 µS de-emphasis, L & R demodulated Qpk @±40 kHz peak, CCIR weighted, 50 µS de-emphasis, L & R demodulated	dB % % % % dB dB	± 0.5 < 0.1 < 0.15 < 0.05 < 0.1 (typical 0.05) > 50 dB (typical 60) > 75 (78 typical)	
Total Harmonic Distortion Intermodulation distortion Transient intermodulation distortion Stereo separation STEREO OPERATION Stereo S/N FMRatio	53kHz+100kHz THD+N 30Hz+53kHz THD+N 53kHz+100kHz Measured with a 1 KHz, 1.3 KHztones, 1:1ratio, @75 kHz FM 3.18 kHz square wave, 15 kHz sine wave @75 kHz FM 30Hz+53kHz RMS @±75 kHz Peak, HPF 20Hz-LPF 23 kHz, 50 µS de-emphasis, L. & R demodulated Qpk @±75 kHz peak, CCIR weighted, 50 µS de-emphasis, L. & R demodulated Qpk @±40 kHz peak, CCIR weighted, 50 µS de-emphasis, L. & R demodulated Qpk @±40 kHz peak, CCIR weighted, 50 µS de-emphasis, L. & R demodulated	dB % % % % dB dB dB	± 0.5 < 0.1 < 0.15 < 0.05 < 0.1 (typical 0.05) > 50 dB (typical 60) > 75 (78 typical) > 65 dB > 58 dB	
Total Harmonic Distortion Intermodulation distortion Transient intermodulation distortion Stereo separation STEREO OPERATION Stereo S/N FMRatio	53kHz+100kHz THD+N 30Hz+53kHz THD+N 53kHz+100kHz Measured with a 1 KHz, 1.3 KHztones, 1:1ratio, @75 kHz FM 3.18 kHz square wave, 15 kHz sine wave @75 kHz FM 30Hz+53kHz RMS @±75 kHz peak, HPF 20Hz-LPF 23 kHz, 50 µS de-emphasis, L & R demodulated Qpk @±75 kHzpeak, CCIR weighted, 50 µS de-emphasis, L & R demodulated Qpk @±40 kHzpeak, CCIR weighted, 50 µS de-emphasis, L & R demodulated Qpk @±0 kHzpeak, CCIR weighted, 50 µS de-emphasis, L & R demodulated 30 Hz+15kHz	dB % % % % % dB dB dB dB	± 0.5 < 0.1 < 0.15 < 0.05 < 0.1 (typical 0.05) > 50 dB (typical 60) > 75 (78 typical) > 65 dB > 58 dB ± 0.5	
Total Harmonic Distortion Intermodulation distortion Transient intermodulation distortion Stereo separation STEREO OPERATION Stereo S/N FMRatio	53kHz+100kHz THD+N 30Hz+53kHz THD+N 53kHz+100kHz Measured with a 1 KHz, 1.3 KHztones, 1:1ratio, @ 75 kHz FM 3.18 kHz square wave, 15 kHz sine wave @/5 kHz FM 30Hz+53kHz RMS @ ± 75 kHz peak, HPF 20Hz-LPF 23 kHz, 50 µS de-emphasis, L & R demodulated Qpk @ ± 75 kHz peak, CCIR weighted, 50 µS de-emphasis, L & R demodulated Qpk @ ± 40 kHz peak, CCIR weighted, 50 µS de-emphasis, L & R demodulated Qpk @ ± 40 kHz peak, CCIR weighted, 50 µS de-emphasis, L & R demodulated	dB % % % % dB dB dB	± 0.5 < 0.1 < 0.15 < 0.05 < 0.1 (typical 0.05) > 50 dB (typical 60) > 75 (78 typical) > 65 dB > 58 dB	
Total Harmonic Distortion Intermodulation distortion Transient intermodulation distortion Stereo separation STEREO OPERATION Stereo S/N FMRatio	53kHz+100kHz THD+N 30Hz+53kHz THD+N 53kHz+100kHz Measured with a 1 KHz, 1.3 KHztones, 1:1ratio, @75 kHz FM 3.18 kHz square wave, 15 kHz sine wave @75 kHz FM 30Hz+53kHz RMS @±75 kHz peak, HPF 20Hz-LPF 23 kHz, 50 µS de-emphasis, L & R demodulated Qpk @±75 kHzpeak, CCIR weighted, 50 µS de-emphasis, L & R demodulated Qpk @±40 kHzpeak, CCIR weighted, 50 µS de-emphasis, L & R demodulated Qpk @±0 kHzpeak, CCIR weighted, 50 µS de-emphasis, L & R demodulated 30 Hz+15kHz	dB % % % % % dB dB dB dB	± 0.5 < 0.1 < 0.15 < 0.05 < 0.1 (typical 0.05) > 50 dB (typical 60) > 75 (78 typical) > 65 dB > 58 dB ± 0.5	
Total Harmonic Distortion Intermodulation distortion Transient intermodulation distortion Stereo separation STEREO OPERATION Stereo S/N FMRatio Frequency Response Total Harmonic Distortion	53kHz+100kHz THD+N 30Hz+53kHz THD+N 53kHz+100kHz Measured with a 1 KHz, 1.3 KHztones, 1:1ratio, @75 kHz FM 3.18 kHz square wave, 15 kHz sine wave @75 kHz FM 30Hz+53kHz RMS @±75 kHz peak, HPF 20Hz-LPF-23 kHz, 50 µS de-emphasis, L & R demodulated Qpk @±75 kHzpeak, CCIR weighted, 50 µS de-emphasis, L & R demodulated Qpk @±4 75 kHzpeak, CCIR weighted, 50 µS de-emphasis, L & R demodulated Qpk @±4 0 kHzpeak, CCIR weighted, 50 µS de-emphasis, L & R demodulated Apk @±4 0 kHzpeak, CCIR weighted, 50 µS de-emphasis, L & R demodulated 30 Hz+15kHz THD+N 30Hz+15kHz THD+N 30Hz+15kHz Measured with a 1 KHz, 1.3 KHztones,	dB % % dB dB dB dB dB dB	± 0.5 < 0.1 < 0.15 < 0.05 < 0.1 (typical 0.05) > 50 dB (typical 60) > 75 (78 typical) > 65 dB > 58 dB ± 0.5 < 0.05	
Total Harmonic Distortion Intermodulation distortion Transient intermodulation distortion Stereo separation Stereo S/N FMRatio Frequency Response Total Harmonic Distortion Intermodulation distortion	53kHz+100kHz THD+N 30Hz+53kHz THD+N 53kHz+100kHz Measured with a 1 KHz, 1.3 KHztones, 1:1ratio, @ 75 kHz FM 3.18 kHz square wave, 15 kHz sine wave @/5 kHz FM 30Hz+53kHz RNS @± 75 kHz peak, HPF 20Hz-LPF 23 kHz, 50 µS de-emphasis, L & R demodulated Qpk @± 75 kHzpeak, CCIR weighted, 50 µS de-emphasis, L & R demodulated Qpk @± 40 kHzpeak, CCIR weighted, 50 µS de-emphasis, L & R demodulated Qpk @± 40 kHzpeak, CCIR weighted, 50 µS de-emphasis, L & R demodulated Upk @± 15kHz Peak, CCIR weighted, 50 µS de-emphasis, L & R demodulated 30Hz+15kHz THD+N 30Hz+15kHz Measured with a 1 KHz, 1.3 KHz lones, 1:1ratio, @ 75 kHz FM 3.18 kHz square wave, 15 kHz sine wave	dB % % % %	± 0.5 <0.1 <0.15 <0.05 <0.1 (typical 0.05) >>50 dB (typical 60) >>75 (78 typical) >>65 dB ± 0.5 <0.05 <0.03	

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Technical Specifications THESLA TX1K 2/2

			Z Z	
SCA OPERATION				
Frequency response	40kHz÷ 100kHz	dB	± 0.5	
	RMS, ref @ ± 75 kHz peak, no HPF/LPF,			
	0μS de-emphasis,	dB	> 75 (typical 78)	
	with 67 kHz tone on SCA input			
Crosstalk to main or to stereo channel	@ 7,5kHz FM deviation			
	RMS, ref @ ± 75 kHz peak,			
	no HPF/LPF, 0µS de-emphasis,	dB	> 79 (h minol 90)	
	with 92 kHz tone on SCA input	uв	> 78 (typical 80)	
	@ 7,5kHz FM deviation			
POWER REQUIREMENTS	<u> </u>			
	AC Supply Voltage	VAC	230 ±15%	(*) Internal switch (**) monophase (***) Threephases Y
			1450	(,, (,, (,,)
AC Power Input	AC Apparent Power Consumption Active Power Consumption	VA W	1420	
, is i swel input	Power Factor		0,998	
	Overall Efficiency	%	Typical 70	
	Connector		Terminal Block	
DC Power Input	DC Supply Voltage	VDC		(I) 2-11/(I) 1/21/(I)
·	DC Current	ADC		(*)max 25W (**) max 140W
MECHANICAL DIMENSIONS	Front panel width	mm	483 (19")	19" EIA rack
Dhioisel Director	Front panel height	mm	88 (3 1/2") 2HE	convertire in pollici
Phisical Dimensions	Overall depth	mm	516	
	Chassis depth	mm	372	escluso il pannello, esclusi i connettori, convertire in pollici
Weight		kg	about 11	
VARIOUS			Formed with internal fee	
Cooling Acoustic Noise		dBA	Forced, with internal fan <75	
AUDIO INPUTS		UDA	73	
	Connector		XLR F	
Left / Mono	Туре		Balanced	
Leit / World	Impedance	Ohm	10 k or 600	Selectable by rear panel dip switches
	Input Level /Adjust	dBu	-13 to +13	continuosly variable
	Connector	-	XLR F Balanced	
Right	Type Impedance	Ohm	10 k or 600	Selectable by rear panel dip switches
	Input Level	dBu	-13 to +13	continuosly variable
	Connector		BNC	,
MPX	Туре		unbalanced	
/	Impedance	Ohm	10 k or 50	Selectable by rear panel dip switches
	Input Level / Adjust	dBu	*-13 to +13 2 x BNC	for 75 KHz FM, externally adjustable
	Connector Type		unbalanced	
SCA/RDS	Impedance	Ohm	10 k	
	Input Level / Adjust	dBu	*-8 to +13	for 7,5 KHz FM, externally adjustable
	Connector		XLR F	
AES/EBU	Туре		Balanced	
(optional)	Impedance Input Level / Adjust	Ohm	110 0 to -10	for 7.5 MHz FM externally adjustable
TOS/Link	Connector	dBfs	TOS-LINK	for 7,5 KHz FM, externally adjustable
(optional)	Type		Optical	
OUTPUTS				
RF Output	Connector		7/8"	
·	Impedance	Ohm	50	
RF Monitor	Connector	Ohm	BNC 50	
LZE IMOLITOL	Impedance Output Level	Ohm dB	50 approx60	Referred to the RF output
	Connector	45	BNC	For RDS and isofrequency synchronizing purpose
Pilot output	Impedance	Ohm	>5 k	
	Output Level	Vpp	1	
AUXILIARY CONNECTIONS			DNC T	
Interlock	Connector Connector	1	BNC DB9 F	Input and output for remote power inhibition (short is RF off) Factory reserved for firmware program
Service Remote Interface	Connector	+	DB9 F DB15F	IIC + 5 analog / digital inputs, 5 analog / digital outputs
FUSES	Confidence		55101	
On Mains			2 External fuse F 10 A - 6x30 mm	
		 	2 2.20ma 1000 1 10 A-0000 mill	
On services On PA Supply		1		
On Driver Supply		+		
HUMAN INTERFACES		1		
Input device			4 pushbutton	
		1	·	
Display			Alphanumerical LCD - 2 x 16	
TELEMETRY / TELECONTROL		10	FWD fold	For P A A G C numose min 0.5 \/co
	Analogical level	2	REF fold	For P.A A.G.C. purpose, min 0,5 Vcc For P.A A.G.C. purpose, min 0,5 Vcc
Remote connector inputs	Dules to CND	14	RF ON	
·	Pulse to GND	15	RF OFF	
	Close to GND	1	Interlock	for remote power inhibition (short is RF off)
		6	FWD	max 5 Vcc
Remote connector outputs	Analogical level	13 5	REF VPA	max 5 Vcc
Nome connector outputs		12	IPA	max 5 Vcc max 5 Vcc
	Open Collector	7	Power Good	open collector

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Technical Specifications THESLA TX2K 1/2

			1/2	
Aggiornato il 21/08/2017	Legenda: Verde = Green Line Rosso = Obsoleto Giallo = Normali		THESLA TX2K	
Parameters		U.M.	Value	Notes
GENERALS		1		
Frequency range		MHz	87.5 ÷ 108	
Rated output power		W	2000	Continuously variable by software from 0 to maximum
Modulation type			Direct carrier frequency	
Operational Mode		00	Mono, Stereo, Multiplex	
Ambient working temperature		°C	-5 to +50	
Ambient Working Humidity Frequency programmability		%	85 (Without condensing)	
Frequency programmability Frequency stability	WT from -10°C to 50°C	nnm	From software, with 10 kHz steps ±1	
Modulation capability	WI IIOIII-10 C to 30 C	ppm kHz	150 Stereo, 180 Mono/MPX	Meets or exceeds all FCC and CCIR rules
Pre-emphasis mode		μS	0, 50 (CCIR), 75 (FCC)	selectable by rear panel dip switches
Spurious & harmonic suppression		dΒc	<75 (80 typical)	Meets or exceeds all FCC and CCIR rules
Spullous & Hairrioriic suppression	Referred to 100% AM	ubc	175 (oo typicai)	IVEELS OF EXCECUS AILT OC AIRD CONTINUES
Asynchronous AMS/N ratio	with no de-emphasis	dB	≥ 65 (typical 70)	
Synchronous AMS/N ratio	Referred to 100% AM, FM deviation 75 kHz by 400Hz sine, without de-emphasis	dB	≥ 50 (typical 60)	
MONO OPERATION	without de-emphasis			
INCIDENTIAL PROPERTY OF THE PR	RMS @±75 kHzpeak,	T		
	HPF 20Hz - LPF 23 kHz, 50 µS de-emphasis	dB	> 78 (typical 83)	
S/N FM Ratio	Qpk @± 75 kHz peak, CCIR weighted, 50 µS de-emphasis	dB	>70	
	Qpk @± 40 kHz peak, CCIR weighted, 50 µS de-emphasis	dB	> 67	
Frequency Response	30Hz÷15kHz	dB	better than ± 0.5 dB (typical ± 0.2)	
Total Harmonic Distortion	THD+N 30Hz ÷ 15kHz	%	< 0.1 (Typical 0.07%)	
Intermodulation distortion	Measured with a 1 KHz, 1.3 KHztones, 1:1ratio, @75 kHzFM	%	<0.02	
Transient intermodulation distortion	3.18 kHz square wave, 15 kHz sine wave @75 kHz FM	%	< 0.1 (typical 0.05)	
MPX OPERATION	@/3 KF2 FIVI			
IN AG EVIIGI	RMS @±75 kHzpeak,			
Composite S/N FMRatio	HPF 20Hz - no LPF, 50 µS de-emphasis	dB	> 78 (typical 83)	
Frequency Response	30Hz÷53kHz	dB	± 0.2	
Troqueriey recipolise	53kHz÷100kHz	dB	± 0.5	
Total Harmonic Distortion	THD+N 30Hz ÷ 53kHz	%	< 0.1	
	THD+N 53kHz ÷ 100kHz	%	< 0.15	
Intermodulation distortion	Measured with a 1 KHz, 1.3 KHz tones, 1:1ratio, @75 kHz FM	%	< 0.05	
Transient intermodulation distortion	3.18 kHz square wave, 15 kHz sine wave @/75 kHz FM	%	< 0.1 (typical 0.05)	
Stereo separation	30Hz÷53kHz	dB	> 50 dB (typical 60)	
STEREO OPERATION			(-)procer 00)	
	RMS @±75 kHzpeak, HPF20Hz-LPF23 kHz, 50 µS de-emphasis, L & R demodulated	dB	> 73 (75 typical)	
Stereo S/N FMRatio	Qpk @± 75 kHz peak, CCIR weighted, 50 µS de-emphasis, L & R demodulated	dB	> 65 dB	
	Qpk @± 40 kHz peak, CCIR weighted, 50 μS de-emphasis, L & R demodulated	dB	>58 dB	
Frequency Response	30Hz ÷ 15kHz	dB	± 0.5	
Total Harmonic Distortion	THD+N 30Hz ÷ 15kHz	%	< 0.05	
Intermodulation distortion	Measured with a 1 KHz, 1.3 KHz tones, 1:1ratio, @75 kHz FM	%	≤0.03	
Transient intermodulation distortion	3.18 kHzsquare wave, 15 kHzsine wave @75 kHzFM	%	< 0.1 (typical 0.05)	
Stereo separation	1	dB	> 50 (typical 55)	
Main / Sub Ratio	30Hz ÷ 15kHz	dB	> 40 (typical 45)	

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Technical Specifications THESLA TX2K 2/2

SCA OPERATION		_		
Frequency response	40kHz÷100kHz	dB	± 0.5	
	RMS, ref @ ± 75 kHz peak,			
	no HPF/LPF,		()	
	0µS de-emphasis,	dB	> 75 (typical 78)	
	with 67 kHz tone on SCA input @ 7,5kHz FM deviation			
Crosstalk to main or to stereo channel	RMS, ref @ ± 75 kHz peak,			
	no HPF/LPF,			
	0μS de-emphasis,	dB	> 78 (typical 80)	
	with 92 kHz tone on SCA input	ub.	> 70 (typical 00)	
	@ 7,5kHz FM deviation			
POWER REQUIREMENTS	e r,ou iz i mae viduori			
	AC Complex (-14	1/40	220 +450/	/*\ -4 i4- - /**\ /***\ Th
	AC Supply Voltage	VAC	230 ±15%	(*) Internal switch (**) monophase (***) Threephases Y
	AC Apparent Power Consumption	VA	3380	
AC Power Input	Active Power Consumption	W	3340	
	Power Factor		0,998	
	Overall Efficiency	%		
	Connector		Terminal Block	
DC Power Input	DC Supply Voltage	VDC		
·	DC Current	ADC		(*)max 25W (**) max 140W
MECHANICAL DIMENSIONS	E	_	400 (400)	401514
ļ-	Front panel width	mm	483 (19")	19" EIA rack
Phisical Dimensions	Front panel height	mm	132 (3HE)	convertire in pollici
ļ-	Overall depth	mm	675 650	escluso il pannello, esclusi i connettori, convertire in pollici
Weight	Chassis depth	mm kg	about 31	escruso ii paririelio, escrusi i connettori, convertire in pollici
veight VARIOUS		Ng	about 31	
Cooling			Forced, with internal fan	
Acoustic Noise		dBA	<75	
AUDIO INPUTS				
T	Connector		XLR F	
	Туре		Balanced	
Left / Mono	Impedance	Ohm	10 k or 600	Selectable by rear panel dip switches
	Input Level /Adjust	dBu	-13 to +13	continuosly variable
	Connector		XLR F	•
Right	Туре		Balanced	
Night	Impedance	Ohm	10 k or 600	Selectable by rear panel dip switches
	Input Level	dBu	-13 to +13	continuosly variable
	Connector		BNC	
MPX	Туре		unbalanced	
	Impedance	Ohm	10 k or 50	Selectable by rear panel dip switches
	Input Level / Adjust	dBu	*-13 to +13	for 75 KHz FM, externally adjustable
	Connector		2 x BNC	
SCA/RDS -	Туре		unbalanced	
_	Impedance	Ohm	10 k	
	Input Level / Adjust	dBu	*-8 to +13	for 7,5 KHz FM, externally adjustable
AES/EBU	Connector	-		
	Type	Ohm		
(optional)	Impedance Input Level / Adjust	Ohm dBfs		for 7,5 KHz FM, externally adjustable
TOS/Link	Connector	uDia		ioi 7,5 KHZT W, externally adjustable
(optional)	Туре	1		
OUTPUTS	турс			
	Connector		7/8" EIA	
RF Output	Impedance	Ohm	50	
	Connector		BNC	
RF Monitor	Impedance	Ohm	50	
	Output Level	dB	approx60	Referred to the RF output
	Connector		BNC	For RDS and isofrequency synchronizing purpose
Pilot output	Impedance	Ohm	>5 k	
	Output Level	Vpp	1	
AUXILIARY CONNECTIONS				
Interlock	Connector	1	2 x BNC	Input and output for remote power inhibition (short is RF off)
Service	Connector	1	DB9 F	Factory reserved for firmware program
Remote Interface	Connector		DB15F	IIC + 5 analog / digital inputs, 5 analog / digital outputs
FUSES				
On Mains			2 External fuse F 25 T - 10 x 38 mm	
On services		1	1 External fuse F 3.15 T - 5x20 mm	
On Services On PA Supply		1	4 Internal fuses F 25 A 10 x 38 mm	
On Driver Supply		1	- International Factor (10 x 30 IIIIII	
HUMAN INTERFACES				
			4 - 11 - 11	
Input device			4 pushbutton	
Display			Alphanumerical LCD - 2 x 16	
TELEMETRY / TELECONTROL				
	Analogical level	10	FWD fold	For P.A A.G.C. purpose, min 0,5 Vcc
l l	/ vialogical ic voi	2	REF fold	For P.A A.G.C. purpose, min 0,5 Vcc
			RF ON	
Remote connector inputs				
Remote connector inputs	Pulse to GND	15	RF OFF	
Remote connector inputs		15 1	RF OFF Interlock	for remote power inhibition (short is RF off)
Remote connector inputs	Pulse to GND	15 1 6	RF OFF Interlock FWD	max 5 Vcc
	Pulse to GND Close to GND	15 1 6 13	RF OFF Interlock FWD REF	max 5 Vcc max 5 Vcc
Remote connector inputs Remote connector outputs	Pulse to GND	15 1 6 13 5	RF OFF Interlock FWD REF VPA	max5 Vcc max5 Vcc max5 Vcc
	Pulse to GND Close to GND	15 1 6 13	RF OFF Interlock FWD REF	max 5 Vcc max 5 Vcc

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Technical Specifications THESLA TX3.5K 1/2

			1/2	
Aggiornato il 21/08/2017	Legenda: Verde = Green Line Rosso = Obsoleto Giallo = Normali		THESLA TX3.5K	
Parameters		U.M.	Value	Notes
GENERALS Froguenaurongo		I MLI-	87.5 ÷ 108	
Frequency range Rated output power	+	MHz W	3500	Continuously variable by software from 0 to maximum
Modulation type	+	VV	Direct carrier frequency	Continuousty variable by sollware from 0 to maximum
Operational Mode			Mono, Stereo, Multiplex	
Ambient working temperature		°C	-5 to +50	
Ambient Working Humidity	+	%	85 (Without condensing)	
Frequency programmability	+	70	From software, with 10 kHz steps	
Frequency stability	WT from -10°C to 50°C	ppm	±1	
Modulation capability		kHz	150 Stereo, 180 Mono/MPX	Meets or exceeds all FCC and CCIR rules
Pre-emphasis mode		μS	0, 50 (CCIR), 75 (FCC)	selectable by rear panel dip switches
Spurious & harmonic suppression		dBc	< 82 (85 typical)	Meets or exceeds all FCC and CCIR rules
Asynchronous AMS/N ratio	Referred to 100% AM, with no de-emphasis	dB	≥ 65 (typical 70)	
Synchronous AMS/N ratio	Referred to 100% AW, FM deviation 75 kHz by 400Hz sine, without de-emphasis	dB	≥ 50 (typical 60)	
MONO OPERATION	Will four de d'inpridoie			
	RMS @ ± 75 kHz peak,		T	
	HPF 20Hz - LPF 23 kHz, 50 µS de-emphasis	dB	> 78 (typical 83)	
	Qpk @± 75 kHzpeak,			
S/N FMRatio	CCIR weighted, 50 µS de-emphasis	dB	>70	
	Qpk @± 40 kHzpeak, CCIR weighted, 50 μS de-emphasis	dB	>67	
Frequency Response	30Hz÷15kHz	dB	better than ± 0.5 dB (typical ± 0.2)	
Total Harmonic Distortion	THD+N 30Hz÷ 15kHz	%	<0.1 (Typical 0.07%)	
Intermodulation distortion	Measured with a 1 KHz, 1.3 KHz tones,	%	<0.02	
Transient intermodulation distortion	1:1ratio, @75 kHz FM 3.18 kHz square wave, 15 kHz sine wave	%	< 0.1 (typical 0.05)	
	@75 kHz FM			
MPX OPERATION				
	RMS @± 75 kHz peak,		*	
Composite S/N FM Ratio	HPF 20Hz- no LPF,	dB	> 78 (typical 83)	
	50 μS de-emphasis	ID.	.00	
Frequency Response	30Hz ÷ 53kHz	dB dB	±0.2 ±0.5	
	53kHz÷100kHz THD+N 30Hz÷53kHz	ив %	<0.1	
Total Harmonic Distortion	THD+N 53kHz ÷ 100kHz	%	< 0.15	
	Measured with a 1 KHz,	70	< 0.15	
Intermodulation distortion	1.3 KHz tones, 1:1ratio, @75 kHz FM	%	< 0.05	
Transient intermodulation distortion	3.18 kHz square wave, 15 kHz sine wave			
		%	< 0.1 (typical 0.05)	
	@75 kHz FM		< 0.1 (typical 0.05)	
Stereo separation		% dB	< 0.1 (typical 0.05) > 50 dB (typical 60)	
Stereo separation STEREO OPERATION	@75 kHz FM 30Hz÷53kHz			
	@75 kHz FM 30Hz + 53kHz RMS @± 75 kHz peak, HPF 20Hz - LPF 23 kHz, 50 µS de-emphasis,			
	@75 kHz FM 30Hz + 53kHz RMS @± 75 kHz peak, HPF 20Hz - LPF 23 kHz, 50 µS de-emphasis, L & R demodulated Qpk @± 75 kHz peak, CCIR weighted, 50 µS de-emphasis,	dB	> 50 dB (typical 60)	
STEREO OPERATION	@75 kHz FM 30Hz ÷ 53kHz RMS @ ± 75 kHz peak, HPF 20Hz - LPF 23 kHz, 50 µS de-emphasis, L & R demodulated Qpk @ ± 75 kHz peak, CCIR weighted,	dB dB	> 50 dB (typical 60) > 73 (75 typical)	
STEREO OPERATION	@75 kHz FM 30Hz + 53kHz RMS @ ± 75 kHz peak, HPF 20Hz - LPF 23 kHz, 50 µS de-emphasis, L & R demodulated Qpk @ ± 75 kHz peak, CCIR weighted, 50 µS de-emphasis, L & R demodulated Qpk @ ± 40 kHz peak, CCIR weighted, 50 µS de-emphasis,	dB dB	> 50 dB (typical 60) > 73 (75 typical) > 65 dB	
STEREO OPERATION Stereo S/N FMRatio	@75 kHz FM 30Hz ÷ 53kHz RMS @± 75 kHz peak, HPF 20Hz - LPF 23 kHz, 50 µS de-emphasis, L & R demodulated Qpk @± 75 kHz peak, CCIR weighted, 50 µS de-emphasis, L & R demodulated Qpk @± 40 kHz peak, CCIR weighted, 50 µS de-emphasis, L & R demodulated	dB dB dB	> 50 dB (typical 60) > 73 (75 typical) > 65 dB > 58 dB	
STEREO OPERATION Stereo S/N FMRatio Frequency Response	@75 kHz FM 30Hz ÷ 53kHz RMS @± 75 kHz peak, HPF 20Hz - LPF 23 kHz, 50 µS de-emphasis, L &R demodulated Qpk @± 75 kHz peak, CCIR weighted, 50 µS de-emphasis, L &R demodulated Qpk @± 40 kHz peak, CCIR weighted, 50 µS de-emphasis, L &R demodulated 30Hz + 15kHz THD+N 30Hz + 15kHz Measured with a 1 kHz, 1.3 KHz tones, 1:1ratio, @75 kHz FM	dB dB dB	> 50 dB (typical 60) > 73 (75 typical) > 65 dB > 58 dB ± 0.5	
Stereo S/N FMRatio Stereo S/N FMRatio Frequency Response Total Harmonic Distortion Intermodulation distortion Transient intermodulation distortion	@75 kHz FM 30Hz ÷ 53kHz RMS @ ± 75 kHz peak, HPF 20Hz - LPF 23 kHz, 50 µS de-emphasis, L & R demodulated Qpk @ ± 75 kHz peak, CCIR weighted, 50 µS de-emphasis, L & R demodulated Qpk @ ± 40 kHz peak, CCIR weighted, 50 µS de-emphasis, L & R demodulated 30 Hz + 15kHz THD+N 30Hz + 15kHz Measured with a 1 kHz, 1.3 kHz tones,	dB dB dB dB %	> 50 dB (typical 60) > 73 (75 typical) > 65 dB > 58 dB ± 0.5 < 0.05 ≤ 0.03 < 0.1 (typical 0.05)	
STEREO OPERATION Stereo S/N FMRatio Frequency Response Total Harmonic Distortion Intermodulation distortion	@75 kHz FM 30Hz ÷ 53kHz RNS @± 75 kHz peak, HPF 20Hz - LPF 23 kHz, 50 µS de-emphasis, L & R demodulated Qpk @± 75 kHz peak, CCIR weighted, 50 µS de-emphasis, L & R demodulated Qpk @± 40 kHz peak, CCIR weighted, 50 µS de-emphasis, L & R demodulated 30 Hz + 15kHz THD+N 30Hz + 15kHz Measured with a 1 kHz, 1.3 kHz tones, 1:1ratio, @75 kHz FM 3.18 kHz square wave, 15 kHz sine wave	dB dB dB %	> 50 dB (typical 60) > 73 (75 typical) > 65 dB > 58 dB ± 0.5 < 0.05 ≤ 0.03	

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Technical Specifications THESLA TX3.5K 2/2

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SCA OPERATION				
Frequency response	40kHz ÷ 100kHz	dB	± 0.5	
Crosstalk to main or to stereo channel	RMS, ref @ ± 75 kHz peak, no HPF/LPF, 0µS de-emphasis, with 67 kHz tone on SCA input @ 7,5kHz FM deviation	dB	> 75 (typical 78)	
	RMS, ref @ ± 75 kHz peak, no HPF/LPF, 0µS de-emphasis, with 92 kHz tone on SCA input @ 7,5kHz FM devlation	dB	> 78 (typical 80)	
POWER REQUIREMENTS				
	AC Supply Voltage AC Apparent Power Consumption	VAC VA	230 +10% -15%(**) 400 +10% -15% (***) 4996	(*) Internal switch (**) monophase (***) Threephases Y
AC Power Input	Active Power Consumption Power Factor Overall Efficiency Connector	W %	4987 0,998 Typical 70 Terminal Block	
DC Power Input	DC Supply Voltage	VDC		
·	DC Current	ADC		(*)max 25W (**) max 140W
MECHANICAL DIMENSIONS Phisical Dimensions	Front panel width Front panel height Overall depth	mm mm mm	483 (19") 132 (3HE) 675	19" EIA rack convertire in pollici
	Chassis depth	mm	650	escluso il pannello, esclusi i connettori, convertire in pollici
Weight		kg	about 29	
VARIOUS Cooling			Forced, with internal fan	
Acoustic Noise		dBA	<75	
AUDIO INPUTS				
	Connector		XLR F	
Left / Mono	Type Impedance	Ohm	Balanced 10 k or 600	Selectable by rear panel dip switches
	Input Level /Adjust	dBu	-13 to +13	continuosly variable
	Connector		XLR F	
Right	Туре		Balanced	
ŭ ·	Impedance	Ohm	10 k or 600	Selectable by rear panel dip switches
	Input Level Connector	dBu	-13 to +13 BNC	continuosly variable
MPX	Туре		unbalanced	
IVII X	Impedance	Ohm	10 k or 50	Selectable by rear panel dip switches
	Input Level / Adjust Connector	dBu	*-13 to +13 2 x BNC	for 75 KHz FM, externally adjustable
SCA/RDS	Type		unbalanced	
SCARDS	Impedance	Ohm	10 k	
	Input Level / Adjust Connector	dBu	*-8 to +13 XLR F	for 7,5 KHz FM, externally adjustable
AES/EBU	Type		Balanced	
(optional)	Impedance	Ohm	110	
TOS/Link	Input Level / Adjust	dBfs	0 to -10	for 7,5 KHz FM, externally adjustable
(optional)	Connector Type		TOS-LINk Optical	
OUTPUTS			Spinon.	
RF Output	Connector		7/8" EIA	
· ·	Impedance Connector	Ohm	50 BNC	
RF Monitor	Impedance	Ohm	50	
	Output Level	dB	approx60	Referred to the RF output
Pilot output	Connector Impedance	Ohm	BNC >5 k	For RDS and isofrequency synchronizing purpose
	Output Level	Vpp	1	
AUXILIARY CONNECTIONS				
Interlock Service	Connector Connector		2 x BNC DB9 F	Input and output for remote power inhibition (short is RF off) Factory reserved for firmware program
Remote Interface	Connector		DB15F	IIC + 5 analog / digital inputs, 5 analog / digital outputs
FUSES On Mains			3 External F 10 T - 6 x 30 mm	
On services				
On PA Supply			4 Internal F 32 A 10 x 38 mm	
On Driver Supply HUMAN INTERFACES				
			A	
Input device Display			4 pushbutton Alphanumerical LCD - 2 x 16	
TELEMETRY / TELECONTROL		10	בואום ביוא	For B A A C C numana min 0.53/5-
	Analogical level	10	FWD fold REF fold	For P.A A.G.C. purpose, min 0,5 Vcc For P.A A.G.C. purpose, min 0,5 Vcc
Remote connector inputs	Pulse to GND	14	RF ON	
		15	RF OFF	
	Close to GND	6	Interlock FWD	for remote power inhibition (short is RF off) max 5 Vcc
	Analogical laval	13	REF	max 5 Vcc
Remote connector outputs	Analogical level	5	VPA	max 5 Vcc
	Open C-IIt	12	IPA Power Cood	max 5 Vcc
	Open Collector	7	Power Good	open collector



Technical Specifications THESLA EX30 1/2

1/2					
Aggiornato il 18/03/2017	Legenda: Verde = Green Line Rosso = Obsoleto Giallo = Normali		THESLA EX30		
Parameters	Giano Norman	U.M.		Notes	
ENERALS					
Frequency range		MHz	87.5 ÷ 108		
Rated output power		W	30	Continuously variable by software from 0 to maximum	
Modulation type			Direct carrier frequency		
Operational Mode			Mono, Stereo, Multiplex		
Ambient working temperature		°C	-5 to + 50		
Ambient Working Humidity Frequency programmability		%	85 (Without condensing)		
Frequency programmability Frequency stability	WT from -5°C to 50°C	ppm	From software, with 10 kHz steps ±1		
Modulation capability	W1 110111-3 C to 30 C	kHz	150 Stereo, 200 Mono/MPX	Meets or exceeds all FCC and CCIR rules	
Pre-emphasis mode		μS	0, 25, 50 (CCIR), 75 (FCC)	Selectable by software	
Spurious & harmonic suppression		dBc	<75 (80 typical)	Meets or exceeds all FCC and CCIR rules	
Asynchronous AMS/N ratio	Referred to 100% AM, with no de-emphasis	dB	÷ 70 (so typical)	Wood of Occord and Contract	
Synchronous AMS/N ratio	Referred to 100% AM, FM deviation 75 kHz by 400Hz sine,	dB	≥ 50		
	without de-emphasis				
IONO OPERATION					
	RMS @ ± 75 kHz peak,				
	HPF 20Hz - LPF 23 kHz,	dB	> 85 (typical 87)		
	50 μS de-emphasis	_			
CAL TAID AL.	Qpk @± 75 kHz peak,	-10	.75		
S/N FM Ratio	CCIR weighted,	dB	>75		
	50 µS de-emphasis	+			
	Qpk @± 40 kHz peak,	dB	>70		
	CCIR weighted, 50 µS de-emphasis	ав	>/0		
Frequency Response	30Hz÷15kHz	dB	better than ± 0.5 dB (typical ± 0.2)		
Total Harmonic Distortion	THD+N 30Hz ÷ 15kHz	%	< 0.05 (Tipical 0.03%)		
Total Halmonic Distortion	Measured with a 1 KHz,	70	10.00 (Tipical 0.0070)		
Intermodulation Distortion	1.3 KHz tones, 1:1ratio, @ 75 kHz FM	%	< 0.02		
Transient intermodulation distortion	3.18 kHz square wave, 15 kHz sine wave	%	< 0.1 (typical 0.05)		
MPX OPERATION	@75 kHz FM				
MPA OPERATION	RMS @ ± 75 kHz peak,				
Composite S/N FM Ratio	HPF 20Hz - no LPF,	dB	> 85 (typical 87)		
Composite Charlinatio	50 µS de-emphasis	ub ub	r oo (typical or)		
	30Hz÷53kHz	dB	± 0.2		
Frequency Response	53kHz ÷ 100kHz	dB	± 0.5		
T. 111	THD+N 30Hz ÷ 53kHz	%	< 0.05		
Total Harmonic Distortion	THD+N 53kHz ÷ 100kHz	%	< 0.1		
	Measured with a 1 KHz,				
Intermodulation distortion	1.3 KHz tones,	%	< 0.05		
	1:1ratio, @ 75 kHz FM				
	3.18 kHz s quare wave,				
Transient intermodulation distortion	15 kHz sine wave	%	< 0.1 (typical 0.05)		
	@75 kHz FM				
Stereo separation	30Hz÷53kHz	dB	> 50 dB (typical 60)		
STEREO OPERATION	DMO C : 75 U				
	RMS @ ± 75 kHz peak,				
	HPF 20Hz - LPF 23 kHz,	dB	> 80 (Typical 82)		
	50 μS de-emphasis, L & R demodulated		•		
	Qpk @± 75 kHz peak,	+			
	CCIR weighted,				
Stereo S/N FM Ratio	50 µS de-emphasis,	dB	> 68 dB		
	L & R demodulated				
	Qpk @± 40 kHzpeak,				
	CCIR weighted,				
	50 μS de-emphasis,	dB	> 67 dB		
	L & R demodulated				
Frequency Response	30Hz÷15kHz	dB	± 0.5		
Total Harmonic Distortion	THD+N 30Hz ÷ 15kHz	%	< 0.05		
	Measured with a 1 KHz,				
Intermodulation distortion	1.3 KHz tones,	%	≤ 0.03		
	1:1ratio, @ 75 kHz FM				
	3.18 kHz square wave,				
Transient intermodulation distortion	15 kHz sine wave	%	< 0.1 (typical 0.05)		
	@75 kHz FM	1	<u></u>		
Stereo separation		dB	> 50 (typical 60)		
Main / Sub Ratio	30Hz÷15kHz	dB	> 40 (typical 45)	1	

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Technical Specifications THESLA EX30 2/2

SCA OPERATION				
Frequency response	40kHz ÷ 100kHz	dB	± 0.5	
	RMS, ref @ ± 75 kHz peak,			
	no HPF/LPF,		75 (1 : 170)	
	0μS de-emphasis, with 67 kHz tone on SCA inpu	dB	> 75 (typical 79)	
	@ 7,5kHz FM deviation	1		
Crosstalk to main or to stereo ch	RMS, ref @ ± 75 kHz peak,			
	no HPF/LPF,			
	0μS de-emphasis,	dB	> 80 (typical 81)	
	with 92 kHz tone on SCA inpu		,	
	@ 7,5kHz FM deviation			
POWER REQUIREMENTS				
	AC Supply Voltage	VAC	115 - 125 - 230 - 250	
			135	
AC Power Input	Active Power Consumption	W	95 0,7	
	Power Factor Overall Efficiency	%	31	
	Connector	/6	IEC Standard	
	DC Supply Voltage	VDC	24	
DC Power Input (option)	DC Current	ADC	3,5	max 60W RF out (PTX100LCD e PTX150LCD
MECHANICAL DIMENSIONS				
	Front panel width	m m	483 (19")	19" EIA rack
Phisical Dimensions	Front panel height	m m	88 (3 1/2") 2HE	
i melear Elmenelene	Overall depth	m m	400	
W-: 1	Chassis depth	m m	389	
Weigh VARIOUS		kg	About 10	
Cooling			Forced, with internal fan	
Acoustic Noise		dBA	< 56	Leq 3 min @ 1 m
AUDIO INPUTS				
	Connector		XLR F	
	Туре		Balanced	
Left / Mono	lm pedance	Ohm	10 k or 600	Selectable by software
23.1, 100110			-13 to +14	1 dB step variable by software
	externally fine adjustable	dB	±0,5	
	Internal jum per	dΒ	-12	
	Connector		XLR F	
	Туре		Balanced	
Right / MPX balanced	Im pedance Input Level, Adjustment Rang	Ohm	10 k or 600	Selectable by software
		dB dB	-13 to +14	1 dB step variable by software
	externally fine adjustable Internal jumper	dВ	±0,5 -12	
	Connector	ив	BNC	
	Type		unbalanced	
	Impedance	Ohm	10 k or 50	Selectable by internal jumper
MPX unbalanced	Input Level, Adjustment Rang		-13 to +14	1 dB step variable by software
	externally fine adjustable	dΒ	±0,5	
	Internal jum per	dΒ	-12	
	Connector		3 x BNC	
	Туре		unbalanced	
	Impedance	Ohm	10 k	
SCA/RDS	Input Level, Adjustment Rang	edBu	-3 to +15	externally adjustable
	2 Internal jumpers for SCA 1 &	² dB	-20	
	inputs	-10	20	
	Internal jumper for RDS input Connector	dB	-30 XLR F	
AES/EBU (option)	Type	-	Balanced	
ALS/LBO (Option)	Impedance	Ohm	110	
	Connector	0	TOS Link	
TOS/Link (option)	Туре	1	optical	
	Connector		RCA (chinch)	
S/P DIF (option)	Туре		unbalanced	
(/	Impedance	Ohm	75	
OUTPUTS				
RF Output	Connector		N type	
Ki Output	lm pedance	Ohm	50	
	Connector		BNC	
RF Monitor	Im pedance	Ohm	50	
	Output Level	dB	approx30	Referred to the RF output
Dilettt	Connector		BNC	
Pilot output	Im pedance Output Level	Ohm	> 4,7 k	
	Connector	Vpp	1 BNC	
MPX Monitor	Impedance	Ohm	>600	
	Output Level	dBu	0	@ ±75 kHz peak FM, externally adjustable +12 /-
AUXILIARY CONNECTIONS				
Interlock	Connector		BNC	for remote power inhibition (short is RF off)
RS232 Serial Interface	Connector		DB9 F	for modem and PC control software communication
Remote Interface	Connector		DB15F	IIC + 8 analog / digital input
Remote RDS Interface	Connector	ш		RDS coder commands
FUSES On Mains			1 External five a F.C.O.T. Five a	
On Mains On PA Supply			1 External fuse F 6,3 T - 5x20 m m 1 External fuse F 6,3 A - 5x20 m m	
On PA Supply HUMAN INTERFACE			LAGIII al iuse F 0,3 A - 5XZU M M	
Input device			Optical encoder with pushbutton	
Display		\vdash	Graphical LCD - 240 x 64 pixe s	
TELEMETRY / TELECONTROL				
	Analogical level		FWD fold	For P.A. A.G.C. purpose, max 2 Vcc
Bomot ' '	Analogical level		REF fold	For P.A. A.G.C. purpose, max 2 Vcc
Remote connector inputs	Analogical level		6 input for P.A. telemetry purpose	
	ON / OFF level		Interlock	for remote power inhibition (short is RF off)
Remote connector outrits	ON / OFF level		Power good 1	relay (software setted)
Remote connector outputs	ON / OFF level		Power good 2	relay (software setted)
Remote connector others			I2Cbus	
	ON / OFF level			For telecontrol purposes
Remote RDS connector input	ON / OFF level	\vdash		For telecontrol purposes
	ON / OFF level			For telecontrol purposes
i	1			For Isofrequency purposes

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Technical Specifications THESLA EX100 1/2

Aggiornato il 18/03/2017	Legenda: Verde = Green Line Rosso = Obsoleto Giallo = Normali		THESLA EX100	
Parameters		U.M.		Notes
GENERALS		_		
Frequency range		MHz	87.5 ÷ 108	
Rated output power		W	100	Continuously variable by software from 0 to maximum
Modulation type		\perp	Direct carrier frequency	
Operational Mode			Mono, Stereo, Multiplex	
Ambient working temperature		°C	-5 to + 50	
Ambient Working Humidity		%	85 (Without condensing)	
Frequency programmability	WE (500) 5000	_	From software, with 10 kHz steps	
Frequency stability	WT from -5°C to 50°C	ppm	±1	N / 1 1 1 1 1 1 1 1 1 1
Modulation capability		kHz	150 Stereo, 200 Mono/MPX	Meets or exceeds all FCC and CCIR rules
Pre-emphasis mode		μS	0, 25, 50 (CCIR), 75 (FCC)	Selectable by software
Spurious & harmonic suppression	Deferred to 1000/ AM	dBc	<75 (80 typical)	Meets or exceeds all FCC and CCIR rules
Asynchronous AMS/N ratio	Referred to 100% AM,	dB	≥70	
Synchronous AMS/N ratio	with no de-emphasis Referred to 100% AM, FM deviation 75 kHz by 400Hz sine,	dB	≥ 50	
- ,	without de-emphasis			
MONO OPERATION				<u></u>
	RMS @ ± 75 kHz peak,			
	HPF 20Hz - LPF 23 kHz, 50 μS de-emphasis	dB	> 80 (typical 84)	
S/N FM Ratio	Qpk @±75 kHz peak, CCIR weighted, 50 μS de-emphasis	dB	>73	
	Qpk @± 40 kHz peak, CCIR weighted, 50 μS de-emphasis	dB	>68	
Frequency Response	30Hz ÷ 15kHz	dB	better than ± 0.5 dB (typical ± 0.2)	
Total Harmonic Distortion	THD+N 30Hz ÷ 15kHz	%	< 0.05 (Tipical 0.03%)	
Intermodulation Distortion	Measured with a 1 KHz, 1.3 KHz tones, 1:1ratio, @ 75 kHz FM	%	< 0.02	
Transient intermodulation distortion	3.18 kHz square wave, 15 kHz sine wave	%	< 0.1 (typical 0.05)	
MDV ODEDATION	@75 kHz FM			
MPX OPERATION	RMS @ ± 75 kHz peak,			
Composite S/N FM Ratio	HPF 20Hz- no LPF,	dB	> 80 (typical 84)	
Composite 3/N i wiNatio	50 µS de-emphasis	uБ	> 00 (typical 04)	
	30Hz ÷ 53kHz	dB	± 0.2	
Frequency Response	53kHz÷100kHz	dB	± 0.5	
	THD+N 30Hz ÷ 53kHz	%	< 0.05	
Total Harmonic Distortion	THD+N 53kHz÷ 100kHz	%	< 0.1	
	Measured with a 1 KHz,		0.1	
Intermodulation distortion				
	1.3 KHz tones, 1:1ratio, @ 75 kHz FM	%	< 0.05	
Transient intermodulation distortion	1:1ratio, @ 75 kHzFM 3.18 kHzsquare wave, 15 kHzsine wave	%	< 0.05	
	1:1ratio, @ 75 kHz FM 3.18 kHz s quare wave, 15 kHz sine wave @75 kHz FM	%	< 0.1 (typical 0.05)	
Stereo separation	1:1ratio, @ 75 kHzFM 3.18 kHzsquare wave, 15 kHzsine wave			
	1:1ratio, @ 75 kHz FM 3.18 kHz square wave, 15 kHz sine wave @75 kHz FM 30Hz + 53kHz	%	< 0.1 (typical 0.05)	
Stereo separation	1:1ratio, @ 75 kHz FM 3.18 kHz square wave, 15 kHz sine wave @75 kHz FM 30Hz + 53kHz RMS @ ± 75 kHz peak, HPF 20Hz - LPF 23 kHz, 50 µS de-emphasis,	%	< 0.1 (typical 0.05)	
Stereo separation	1:1ratio, @ 75 kHz FM 3.18 kHz square wave, 15 kHz sine wave @75 kHz FM 30Hz ÷ 53kHz RMS @ ± 75 kHz peak, HPF 20Hz - LPF 23 kHz, 50 µS de-emphasis, L & R demodulated Opk @ ± 75 kHz peak, CCIR weighted, 50 µS de-emphasis,	% dB	< 0.1 (typical 0.05) > 50 dB (typical 60)	
Stereo separation STEREO OPERATION	1:1ratio, @ 75 kHz FM 3.18 kHz square wave, 15 kHz sine wave @75 kHz FM 30Hz + 53kHz RMS @ ± 75 kHz peak, HPF 20Hz - LPF 23 kHz, 50 µS de-emphasis, L & R demodulated Qpk @ ± 75 kHz peak, CCIR weighted, 50 µS de-emphasis, L & R demodulated Qpk @ ± 40 kHz peak, CCIR weighted, 50 µS de-emphasis,	% dB dB	< 0.1 (typical 0.05) > 50 dB (typical 60) > 80 (Typical 82)	
Stereo separation STEREO OPERATION Stereo S/N FMRatio	1:1ratio, @ 75 kHz FM 3.18 kHz square wave, 15 kHz sine wave @75 kHz FM 30Hz ÷ 53kHz RMS @ ± 75 kHz peak, HPF 20Hz - LPF 23 kHz, 50 µS de-emphasis, L & R demodulated Qpk @ ± 75 kHz peak, CCIR weighted, 50 µS de-emphasis, L & R demodulated Qpk @ ± 40 kHz peak, CCIR weighted, 50 µS de-emphasis, L & R demodulated Qpk @ ± 40 kHz peak, CCIR weighted, 50 µS de-emphasis, L & R demodulated	% dB dB dB	< 0.1 (typical 0.05) > 50 dB (typical 60) > 80 (Typical 82) > 68 dB > 67 dB	
Stereo separation STEREO OPERATION Stereo S/N FM Ratio Frequency Response	1:1ratio, @ 75 kHz FM 3.18 kHz square wave, 15 kHz sine wave @75 kHz FM 30Hz ÷ 53kHz RMS @ ± 75 kHz peak, HPF 20Hz - LPF 23 kHz, 50 µS de-emphasis, L & R demodulated Opk @ ± 75 kHz peak, CCIR weighted, 50 µS de-emphasis, L & R demodulated Opk @ ± 40 kHz peak, CCIR weighted, 50 µS de-emphasis, L & R demodulated 30 µS de-emphasis, L & R demodulated	% dB dB dB	< 0.1 (typical 0.05) > 50 dB (typical 60) > 80 (Typical 82) > 68 dB	
Stereo separation STEREO OPERATION Stereo S/N FMRatio	1:1ratio, @ 75 kHz FM 3.18 kHz square wave, 15 kHz sine wave @75 kHz FM 30Hz + 53kHz RMS @ ± 75 kHz peak, HPF 20Hz - LPF 23 kHz, 50 µS de-emphasis, L & R demodulated Qpk @ ± 75 kHz peak, CCIR weighted, 50 µS de-emphasis, L & R demodulated Opk @ ± 40 kHz peak, CCIR weighted, 50 µS de-emphasis, L & R demodulated Apk @ ± 40 kHz peak, CCIR weighted, 50 µS de-emphasis, L & R demodulated 30 Hz + 15kHz THD+N 30Hz + 15kHz THD+N 30Hz + 15kHz Measured with a 1 kHz, 1.3 KHz tones,	% dB dB dB	< 0.1 (typical 0.05) > 50 dB (typical 60) > 80 (Typical 82) > 68 dB > 67 dB ± 0.5	
Stereo separation STEREO OPERATION Stereo S/N FM Ratio Frequency Response Total Harmonic Distortion	1:1ratio, @ 75 kHz FM 3.18 kHz square wave, 15 kHz sine wave @75 kHz FM 30Hz + 53kHz RMS @ ± 75 kHz peak, HPF 20Hz - LPF 23 kHz, 50 µS de-emphasis, L & R demodulated Qpk @ ± 75 kHz peak, CCIR weighted, 50 µS de-emphasis, L & R demodulated Qpk @ ± 40 kHz peak, CCIR weighted, 50 µS de-emphasis, L & R demodulated Qpk @ ± 40 kHz peak, CCIR weighted, 50 µS de-emphasis, L & R demodulated 30 µS de-emphasis, L & R demodulated 30 µS de-emphasis, L & R demodulated	% dB dB dB	< 0.1 (typical 0.05) > 50 dB (typical 60) > 80 (Typical 82) > 68 dB > 67 dB ± 0.5 < 0.05	
Stereo separation STEREO OPERATION Stereo S/N FMRatio Frequency Response Total Harmonic Distortion Intermodulation distortion	1:1ratio, @ 75 kHzFM 3.18 kHz square wave, 15 kHz sine wave @75 kHz FM 30Hz + 53kHz RMS @ ± 75 kHz peak, HPF 20Hz - LPF 23 kHz, 50 µS de-emphasis, L & R demodulated Qpk @ ± 75 kHz peak, CCIR weighted, 50 µS de-emphasis, L & R demodulated Qpk @ ± 40 kHz peak, CCIR weighted, 50 µS de-emphasis, L & R demodulated Qpk @ ± 40 kHz peak, CCIR weighted, 50 µS de-emphasis, L & R demodulated 30 µS de-emphasis, L & R demodulated 30 µS de-emphasis, L & R demodulated 31 µS kHz Peak, CS R demodulated 31 µS kHz Shz kHz Measured with a 1 kHz, 1.3 kHz sine wave, 15 kHz sine wave	% dB dB dB % %	< 0.1 (typical 0.05) > 50 dB (typical 60) > 80 (Typical 82) > 68 dB > 67 dB ± 0.5 < 0.05 ≤ 0.03	

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Technical Specifications THESLA EX100 2/2

			Z 1 Z	
SCA OPERATION				
Frequencyresponse	40kHz ÷ 100kHz	dB	± 0.5	
	RMS, ref @ ± 75 kHz peak, no HPF/LPF, 0µS de-emphasis,	dB	> 75 (typical 79)	
Crosstalk to main or to stereo ch	with 67 kHz tone on SCA inpu @ 7,5kHz FM deviation RMS, ref @ ± 75 kHz peak,			
	no HPF/LPF, 0µS de-emphasis, with 92 kHz tone on SCA inpu	dB	> 80 (typical 81)	
	@ 7,5kHz FM deviation			
POWER REQUIREMENTS				
	AC Supply Voltage AC Apparent Power Consumpt	VAC onVA	115 - 125 - 230 - 250 350	
AC Power Input	Active Power Consumption	W	250	
AC Fower input	Power Factor		0,71	
	Overall Efficiency Connector	%	40 IEC Standard	
DC Bower Input (ontion)	DC Supply Voltage	VDC	24	
DC Power Input (option)	DC Current	ADC	6	max 60W RF out (PTX100LCD e PTX150LCD)
MECHANICAL DIMENSIONS	Front panel width	m m	483 (19")	19" EIA rack
Dhiainal Dimensiana	Front panel height	m m	88 (3 1/2") 2HE	13 LINIAUK
Phisical Dimensions	Overall depth	m m	400	
Weigh	Chassis depth	m m	389 About 15	
VARIOUS		kg	ADOULTS	
Cooling			Forced, with internal fan	
Acoustic Noise AUDIO INPUTS		dBA	< 56	Leq 3 m in @ 1 m
AUDIO INFUIS	Connector		XLR F	
	Туре		Balanced	
Left / Mono	Impedance	Ohm	10 k or 600	Selectable by software
	Input Level, Adjustment Rang externally fine adjustable	edBu dB	-13 to +14 ±0,5	1 dB step variable by software
	Internal jumper	dB	-12	
	Connector		XLR F	
	Type Im pedance	Ohm	Balanced 10 k or 600	Selectable by software
Right / MPX balanced		edBu	-13 to +14	1 dB step variable by software
	externally fine adjustable	dB	±0,5	,
	Internal jumper	dB	-12 BNC	
	Connector Type		unbalanced	
MPX unbalanced	lm pedance	Ohm	10 k or 50	Selectable by internal jumper
mi x ansaraneea			-13 to +14	1 dB step variable by software
	externally fine adjustable Internal jumper	dB dB	±0,5 -12	
	Connector		3 x BNC	
	Type		unbalanced	
SCA/RDS	Im pedance Input Level, Adjustment Rang	Ohm edBu	10 k -3 to +15	externally adjustable
	2 Internal jumpers for SCA 1 &	2 dB	-20	oxiomany adjaotablo
	inputs			
	Internal jumper for RDS input Connector	dB	-30 XLR F	
AES/EBU (option)	Туре		Balanced	
	Impedance	Ohm	110	
TOS/Link (option)	Connector		TOS Link	
	Type Connector		optical RCA (chinch)	
S/P DIF (option)	Type		unbalanced	
	Impedance	Ohm	75	
OUTPUTS	Consister		NI tors -	
RF Output	Connector Impedance	Ohm	N type 50	
	Connector	0.1111	BNC	
RF Monitor	Im pedance	Ohm	50	Deferred to " DE
	Output Level Connector	dB	approx30 BNC	Referred to the RF output
Pilot output	Impedance	Ohm	> 4,7 k	
	Output Level	Vpp	1	
MPX Monitor	Connector Impedance	Ohm	BNC >600	
WI X WOTHOT	Output Level	dBu	0	@ ±75 kHz peak FM, externally adjustable +12 / -6
AUXILIARY CONNECTIONS				
Interlock RS232 Serial Interface	Connector Connector	\vdash	BNC DB9 F	for remote power inhibition (short is RF off) for modem and PC control software communicat
RS232 Serial Interrace Remote Interface	Connector		DB9 F DB15F	IIC + 8 analog / digital input
Remote RDS Interface	Connector			RDS coder commands
FUSES On Mains			1 External fuse F 6,3 T - 5x20 m m	
On Mains On PA Supply			1 External fuse F 10 A - 5x20 mm	
HUMAN INTERFACE				
Input device	<u> </u>	\vdash	Optical encoder with pushbutten Graphical LCD - 240 x 64 pixe s	
Display TELEMETRY / TELECONTROL			Grapinical LCD - 240 x 64 pixels	
	Analogical level		FWD fold	For P.A. A.G.C. purpose, max 2 Vcc
Remote connector inputs	Analogical level		REF fold	For P.A. A.G.C. purpose, max 2 Vcc
	Analogical level ON / OFF level		6 input for P.A. telemetry purpose Interlock	max 5 Vcc for remote power inhibition (short is RF off)
Remote connector outputs	ON / OFF level		Power good 1	relay (software setted)
	ON / OFF level		Power good 2	relay (software setted)
Remote connector others	ON / OFF level		I2Cbus	For telecontrol purposes
Bomoto BDS	ON / OFF level			For telecontrol purposes
Remote RDS connector input	ON / OFF level			For telecontrol purposes
	1	l		For Isofrequency purposes

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Technical Specifications THESLA EX30D 1/2

			1/2	
Aggiornato il 18/03/2017	Legenda: Verde = Green Line Rosso = Obsoleto Giallo = Normali		THESLA EX30D	Notes
Parameters	Conditions	U.M.	Value	
GENERALS				
Frequency range		MHz	87.5 ÷ 108	
Rated output power		W	30	Continuously variable by software from 0 to maximum
Modulation type			Direct Digital Synthesis	
Operational Mode			Mono, Stereo, Multiplex	
Ambient working temperature		ů	-5 to + 50	
Ambient Working Humidity		%	85 (Without condensing)	
Frequency programmability			By software, with 1, 10, 100 , 1000 kHz steps	
Frequency stability	WT from -10°C to 50°C	ppm	±1	
Modulation capability		kHz	150	
Pre-emphasis mode		μS	0, 50 (CCIR), 75 (FCC)	
Spurious & harmonic suppression		dBc	< 80 (85 typical)	
Asynchronous AMS/N ratio	Referred to 100% AM, with no de-emphasis	dB	≥ 60 (65 typical)	
Synchronous AMS/N ratio	Referred to 100% AM, FM deviation 75 kHz by 400Hz sine,	dB	≥ 50 (55 typical)	
	without de-emphasis			
MONO OPERATION				
	RMS @ ± 75 kHz peak, HPF 20Hz - LPF 23 kHz, 50 µS de-emphasis	dB	> 80 (typical 83)	
S/N FM Ratio	Qpk @ ± 75 kHz peak, CCIR weighted,	dB	>76	
	50 μS de-emphasis Qpk @ ± 40 kHz peak, CCIR weighted,	dB	>70	
	50 μS de-emphasis			
Frequency Response	30Hz÷15kHz	dB	better than ± 0.5 dB (typical ± 0.2)	
Total Harmonic Distortion	THD+N 30Hz ÷ 15kHz	%	< 0.05 (Tipical 0.03%)	
	Measured with a 1 KHz,	1,4		
Intermodulation Distortion	1.3 KHz tones, 1:1ratio, @ 75 kHz FM	%	< 0.02	
Transient intermodulation distortion	3.18 kHz square wave, 15 kHz sine wave @75 kHz FM	%	< 0.1 (typical 0.05)	
MPX OPERATION				
	RMS @ ± 75 kHz peak,			
Composite S/N FM Ratio	HPF 20Hz - no LPF,	dB	> 75 (typical 79)	
	50 μS de-emphasis		(9p)	
	30Hz÷53kHz	dB	± 0.2	
Frequency Response	53kHz ÷ 100kHz	dB	± 0.5	
	THD+N 30Hz ÷ 53kHz	%	< 0.05	
Total Harmonic Distortion	THD+N 53kHz ÷ 100kHz	%	< 0.1	
	Measured with a 1 KHz.	1 7		
Intermodulation distortion	1.3 KHztones,	%	< 0.05	
20.000.000	1:1ratio, @ 75 kHz FM	~	0.00	
	3.18 kHz square wave,			
Transient intermodulation distortion	15 kHz sine wave @75 kHz FM	%	< 0.1 (typical 0.05)	
Stereo separation	30Hz÷53kHz	dB	>70	
STEREO OPERATION				·
	RMS @ ± 75 kHz peak,			
	HPF 20Hz - LPF 23 kHz, 50 µS de-emphasis,	dB	> 80 (Typical 83)	
	L & R demodulated Qpk @ ± 75 kHz peak, CCIR weighted,			
Stereo S/N FM Ratio	50 µS de-emphasis, L & R demodulated	dB	> 70 (Typical 73)	
	Qpk @ ± 40 kHz peak,			
	CCIR weighted,		- 00 (Tax: 170)	
	50 μS de-emphasis,	dB	> 68 (Typical 70)	
	L & R demodulated			
Frequency Response	30Hz÷15kHz	dB	± 0.2	
Total Harmonic Distortion	THD+N 30Hz ÷ 15kHz	%	< 0.03	
	Measured with a 1 KHz,			
Intermodulation distortion	1.3 KHz tones, 1:1ratio, @ 75 kHz FM	%	< 0.02	
Transient intermodulation distortion	3.18 kHz square wave, 15 kHz sine wave	%	< 0.1 (typical 0.05)	
	@75 kHz FM	—	. ==	
Stereo separation Main / Sub Ratio	0011 45111	dB	> 70	
	30Hz ÷ 15kHz	dB	> 45 (typical 50)	1

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Technical Specifications THESLA EX30D 2/2

SCA OPERATION				
Frequency response	40kHz + 100kHz	dB	± 0.5	
	RMS, ref @ ± 75 kHz peak,			
	no HPF/LPF,			
	0μS de-emphasis,	dB	> 75 (typical 79)	
	with 67 kHz tone on SCA input		,	
	@ 7,5kHz FM deviation			
Crosstalk to main or to stereo chan	RMS, ref@ ± 75 kHz peak,			
	no HPF/LPF,			
			- 00 (+!1 04)	
	0μS de-emphasis,	dB	> 80 (typical 81)	
	with 92 kHz tone on SCA input			
	@ 7,5kHz FM deviation			
POWER REQUIREMENTS				
	AC Supply Voltage	VAC	115 / 230 ±15%	Internal switch
	AC Apparent Power Consumption	VA	280	
AC Power Input	Active Power Consumption	W	160	
AC Fower input	Power Factor		0,57	
	Overall Efficiency	%	18	
	Connector		VDE IEC Standard	
	DC Supply Voltage	VDC		
DC Power Input (option)	DC Current	ADC		
MECHANICAL DIMENSIONS	Bo canent	ADO		
MECHANICAL DIMENSIONS	Frank namel width		492 (40!!)	10" FIA reals
	Front panel width	m m	483 (19")	19" EIA rack
Phisical Dimensions	Front panel height	m m	88 (3 1/2") 2HE	
	Overall depth	m m	400	
	Chassis depth	m m	389	
Weight		kg	About 10	
VARIOUS				
Cooling			Forced, with internal fan	
Acoustic Noise		dBA	< 56	Leq 3 min @ 1 m
AUDIO INPUTS				
	Connector		XLR F	
	Type	\vdash	Balanced	
Left		Ohm		Colootable buintarnal assitab
	Impedance		10 k or 600	Selectable by internal switch
	Input Level, Adjustment Range	dBu	-12.5 to +12.5	0.1 dB step variable by software
	Connector		XLR F	
Right	Туре		Balanced	
rtigiit	Impedance	Ohm	10 k or 600	Selectable by internal switch
	Input Level, Adjustment Range	dBu	-12.5 to +12.5	0.1 dB step variable by software
	Connector		BNC	
	Type		unbalanced	
MPX	Impedance	Ohm	10 k	
	Input Level, Adjustment Range	dBu	-12.5 to +12.5	0.1 dB step variable by software
	Connector	aba	2 x BNC	or as disp iditable by contrain
SCA/RDS	Type Impedance	Ohm	unbalanced 10 k	
				0.5 dD -t
	Input Level, Adjustment Range	dBu	-30 to +13	0.5 dB step variable by software
	Connector		XLR F	
AES/EBU	Туре		Balanced	
	Impedance	Ohm	110	
TOS/Link	Connector		TOS-LINk	
TOS/EIIIK	Type		Optical	
OUTPUTS				
RF Output	Connector		N type	
RF Output	Impedance	Ohm	50	
	Connector		BNC	
RF Monitor	Impedance	Ohm	50	
	Output Level	dB	approx30	Referred to the RF output
	Connector	u.b	BNC	reletted to the ret output
		05		
	Impedance	Ohm	>600	
Pilot output	Output Level	Vpp	2.2	
			-12.5 to +5;	0.1 dB step variable by software;
	Output Level, Adjustment Range	dBu	or -6.5 to +11 (*);	(*) internal jumper to increase the ouput level of +6dB
		$ldsymbol{ldsymbol{\sqcup}}$	or -0.5 to 17 (**)	(**) internal jumper to increase the ouput level of +12d
	Connector		BNC	
	Impedance	Ohm	>600	<u> </u>
MPX Monitor	·		-12.5 to +5;	0.1 dB step variable by software, @ ±75 kHz peak FM
	Output Level, Adjustment Range	dBu	or -6.5 to +11 (*);	(*) internally adjustable +6dBu by jumper;
	_a.pat 20.01, /lajabanent italiye	15u	or -0.5 to 17 (**)	(**) internally adjustable +0dBu by jumper;
ALIVII IADV CONNECTIONS			01 -0.5 (0 17 ()	/ / internany adjustable + 12dbd by juiliper;
AUXILIARY CONNECTIONS	Cannasta:		DNC	for romato names inhibition (-b-st !- DE - 00
Interlock	Connector		BNC	for remote power inhibition (short is RF off)
RS232 Serial Interface	Connector		DB9 F	for modem and PC control software communication
1PPS	Connector		BNC	for TTL signal input of 1PPS
Remote Interface	Connector		DB15F	IIC + 8 analog / digital input
Input 10 MHz	Connector		BNC	For otional 10 MHz external synch
FUSES				
On Mains			1 External fuse 6,3 AT - 5x20 mm	
HUMAN INTERFACE				
Input device			Optical encoder with pushbutton	
Display		\vdash	Graphical LCD - 240 x 64 pixels	
			Grapinicai LOD - 240 X 64 pixels	
TELEMETRY / TELECONTROL	A = -1 = -1		EIMP () .	
	Analogical level	\vdash	FWD fold	
Remote connector inputs	Analogical level REF fold			
	Analogical level		6 input for P.A. telemetry purpose	
	ON / OFF level		Interlock	
			Power good 1	
Demote	ON / OFF level			
Remote connector outputs			Power good 2	
	ON / OFF level		Power good 2	
Remote connector outputs Remote connector others	ON / OFF level		I2Cbus	
	ON / OFF level ON / OFF level		I2Cbus RDS TP	
	ON / OFF level ON / OFF level ON / OFF level		I2Cbus RDS TP RDS TA	
Remote connector others	ON / OFF level ON / OFF level		I2Cbus RDS TP RDS TA RDS MS	
Remote connector others	ON / OFF level ON / OFF level ON / OFF level		I2Cbus RDS TP RDS TA	

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Technical Specifications THESLA EX100D 1/2

			1/2	
Aggiornato il 18/03/2017	Legenda: Verde = Green Line Rosso = Obsoleto Giallo = Normali		THESLA EX100D	Notes
Parameters	Conditions	U.M.	Value	
GENERALS				
Frequency range	 	MHz	87.5 ÷ 108	
Rated output power		W	100	Continuously variable by software from 0 to maximum
Modulation type		\bot	Direct Digital Synthesis	
Operational Mode		\bot	Mono, Stereo, Multiplex	
Ambient working temperature		°C	-5 to + 50	
Ambient Working Humidity		%	85 (Without condensing)	
Frequency programmability			By software, with 1, 10, 100 , 1000 kHz steps	
Frequency stability	WT from -10°C to 50°C	ppm	±1	
Modulation capability		kHz	150	
Pre-emphasis mode		μS	0, 50 (CCIR), 75 (FCC)	
Spurious & harmonic suppression		dBc	< 80 (85 typical)	
Asynchronous AMS/N ratio	Referred to 100% AM, with no de-emphasis	dB	≥ 60 (65 typical)	
	Referred to 100% AM,			
Synchronous AMS/N ratio	FM deviation 75 kHz by 400Hz sine,	dB	≥ 50 (55 typical)	
	without de-emphasis			
MONO OPERATION				
	RMS @ ± 75 kHz peak,			
	HPF 20Hz - LPF 23 kHz,	dB	> 80 (typical 83)	
	50 μS de-emphasis			
	Qpk @ ± 75 kHz peak,			
S/N FM Ratio	CCIR weighted,	dB	>76	
	50 µS de-emphasis			
	Qpk @± 40 kHz peak,	1 1		
	CCIR weighted,	dB	>70	
	50 μS de-emphasis	"		
Frequency Response	30Hz÷15kHz	dB	better than ± 0.5 dB (typical ± 0.2)	
Total Harmonic Distortion	THD+N 30Hz ÷ 15kHz	%	< 0.05 (Tipical 0.03%)	
	Measured with a 1 KHz	 	(1)	
Intermodulation Distortion	1.3 KHz tones,	%	< 0.02	
momodulation Diotortion	1:1ratio, @ 75 kHz FM	/0	0.02	
	3.18 kHz square wave,	+		
Transient intermodulation distortion	15 kHz sine wave	%	< 0.1 (typical 0.05)	
Transient intermodulation distortion	@75 kHz FM	/0	(typical 0.03)	
MPX OPERATION	W/3 KI IZT W			
WIFA OF LIVATION	RMS @±75 kHzpeak,	$\overline{}$		
Composite S/N FMRatio	HPF 20Hz - no LPF,	dB	> 75 (typical 79)	
Composite on thin tago	50 µS de-emphasis	ub	- 13 (typical 13)	
	30Hz÷53kHz	dB	± 0.2	
Frequency Response	53kHz÷100kHz	dB	± 0.5	
	THD+N 30Hz ÷ 53kHz	ив %	< 0.05	
Total Harmonic Distortion	THD+N 53kHz ÷ 100kHz	%	< 0.1	
	Measured with a 1 KHz,	- /0	~ 0.1	
Intermodulation distortion	1.3 KHztones,	%	< 0.05	
intermodulation distortion	1:1ratio, @ 75 kHz FM	/0	~ 0.00	
	3.18 kHz square wave,	+		I
Transient intermodulation distortion	' '	1 1		
manatem miermodulation distortion		0/	< 0.1 (hpics) 0.05)	
	15 kHz sine wave	%	< 0.1 (typical 0.05)	
Storen constraint	@75 kHz FM			
Stereo separation		% dB	< 0.1 (typical 0.05)	
Stereo separation STEREO OPERATION	@75 kHz FM 30Hz ÷ 53kHz			
	@75 kHz FM 30Hz ÷ 53kHz RMS @ ± 75 kHz peak,	dB		
	@75 kHz FM 30Hz + 53kHz RMS @ ± 75 kHz peak, HPF 20Hz - LPF 23 kHz,			
	@75 kHz FM 30Hz + 53kHz RMS @ ± 75 kHz peak, HPF 20Hz - LPF 23 kHz, 50 μS de-emphasis,	dB	>70	
	@75 kHz FM 30Hz + 53kHz RMS @ ± 75 kHz peak, HPF 20Hz - LPF 23 kHz, 50 µS de-emphasis, L & R demodulated	dB	>70	
	@75 kHz FM 30Hz + 53kHz RMS @ ± 75 kHz peak, HPF 20Hz - LPF 23 kHz, 50 µS de-emphasis, L & R demodulated Qpk @ ± 75 kHz peak,	dB	>70	
	@75 kHz FM 30Hz + 53kHz RMS @ ± 75 kHz peak, HPF 20Hz - LPF 23 kHz, 50 µS de-emphasis, L & R demodulated Qpk @ ± 75 kHz peak, CCIR weighted,	dB	>70	
STEREO OPERATION	@75 kHz FM 30Hz + 53kHz RMS @ ± 75 kHz peak, HPF 20Hz - LPF 23 kHz, 50 µS de-emphasis, L & R demodulated Qpk @ ± 75 kHz peak, CCIR weighted, 50 µS de-emphasis,	dB	> 70 > 80 (Typical 83)	
STEREO OPERATION	@75 kHz FM 30Hz + 53kHz RMS @ ± 75 kHz peak, HPF 20Hz - LPF 23 kHz, 50 μS de-emphasis, L & R demodulated Qpk @ ± 75 kHz peak, CCIR weighted, 50 μS de-emphasis, L & R demodulated	dB	> 70 > 80 (Typical 83)	
STEREO OPERATION	@75 kHz FM 30Hz + 53kHz RMS @ ± 75 kHz peak, HPF 20Hz - LPF 23 kHz, 50 µS de-emphasis, L & R demodulated Qpk @ ± 75 kHz peak, CCIR weighted, 50 µS de-emphasis, L & R demodulated Qpk @ ± 40 kHz peak,	dB	> 70 > 80 (Typical 83)	
STEREO OPERATION	@75 kHz FM 30Hz + 53kHz RMS @ ± 75 kHz peak, HPF 20Hz - LPF 23 kHz, 50 µS de-emphasis, L & R demodulated Qpk @ ± 75 kHz peak, CCIR weighted, 50 µS de-emphasis, L & R demodulated Qpk @ ± 40 kHz peak, CCIR weighted,	dB	> 70 > 80 (Typical 83)	
STEREO OPERATION	@75 kHz FM 30Hz + 53kHz RMS @ ± 75 kHz peak, HPF 20Hz - LPF 23 kHz, 50 µS de-emphasis, L & R demodulated Qpk @ ± 75 kHz peak, CCIR weighted, 50 µS de-emphasis, L & R demodulated Qpk @ ± 40 kHz peak, CCIR weighted, 50 µS de-emphasis,	dB dB	> 70 > 80 (Typical 83) > 70 (Typical 73)	
STEREO OPERATION Stereo S/N FM Ratio	@75 kHz FM 30Hz + 53kHz RMS @ ± 75 kHz peak, HPF 20Hz - LPF 23 kHz, 50 μS de-emphasis, L & R demodulated Qpk @ ± 75 kHz peak, CCIR weighted, 50 μS de-emphasis, L & R demodulated Qpk @ ± 40 kHz peak, CCIR weighted, 50 μS de-emphasis, L & R demodulated	dB dB dB	> 70 > 80 (Typical 83) > 70 (Typical 73) > 68 (Typical 70)	
Stereo S/N FM Ratio Frequency Response	@75 kHz FM 30Hz + 53kHz RMS @ ± 75 kHz peak, HPF 20Hz - LPF 23 kHz, 50 μS de-emphasis, L & R demodulated Qpk @ ± 75 kHz peak, CCIR weighted, 50 μS de-emphasis, L & R demodulated Qpk @ ± 40 kHz peak, CCIR weighted, 50 μS de-emphasis, L & R demodulated 30 μS de-emphasis, L & R demodulated	dB dB dB	> 70 > 80 (Typical 83) > 70 (Typical 73) > 68 (Typical 70) ± 0.2	
Stereo S/N FM Ratio	@75 kHz FM 30Hz + 53kHz RMS @ ± 75 kHz peak, HPF 20Hz - LPF 23 kHz, 50 µS de-emphasis, L & R demodulated Qpk @ ± 75 kHz peak, CCIR weighted, 50 µS de-emphasis, L & R demodulated Qpk @ ± 40 kHz peak, CCIR weighted, 50 µS de-emphasis, L & R demodulated 30 µS de-emphasis, THD+N 30Hz + 15kHz	dB dB dB	> 70 > 80 (Typical 83) > 70 (Typical 73) > 68 (Typical 70)	
Stereo S/N FM Ratio Stereo S/N FM Ratio Frequency Response Total Harmonic Distortion	@75 kHz FM 30Hz + 53kHz RMS @ ± 75 kHz peak, HPF 20Hz - LPF 23 kHz, 50 µS de-emphasis, L & R demodulated Qpk @ ± 75 kHz peak, CCIR weighted, 50 µS de-emphasis, L & R demodulated Qpk @ ± 40 kHz peak, CCIR weighted, 50 µS de-emphasis, L & R demodulated 30 µS de-emphasis, THD+N 30Hz+15kHz THD+N 30Hz+15kHz Measured with a 1 KHz,	dB dB dB dB	> 70 > 80 (Typical 83) > 70 (Typical 73) > 68 (Typical 70) ± 0.2 < 0.03	
Stereo S/N FM Ratio Frequency Response	@75 kHz FM 30Hz + 53kHz RMS @ ± 75 kHz peak, HPF 20Hz - LPF 23 kHz, 50 µS de-emphasis, L & R demodulated Qpk @ ± 75 kHz peak, CCIR weighted, 50 µS de-emphasis, L & R demodulated Qpk @ ± 40 kHz peak, CCIR weighted, 50 µS de-emphasis, L & R demodulated 30 µS de-emphasis, L & R demodulated THD+N 30Hz + 15kHz THD+N 30Hz + 15kHz Measured with a 1 KHz, 1.3 KHz tones,	dB dB dB	> 70 > 80 (Typical 83) > 70 (Typical 73) > 68 (Typical 70) ± 0.2	
Stereo S/N FM Ratio Stereo S/N FM Ratio Frequency Response Total Harmonic Distortion	@75 kHz FM 30Hz + 53kHz RMS @ ± 75 kHz peak, HPF 20Hz - LPF 23 kHz, 50 μS de-emphasis, L & R demodulated Qpk @ ± 75 kHz peak, CCIR weighted, 50 μS de-emphasis, L & R demodulated Qpk @ ± 40 kHz peak, CCIR weighted, 50 μS de-emphasis, L & R demodulated 30 μS de-emphasis, L & R demodulated 30 Hz + 15kHz THD+N 30Hz + 15kHz Measured with a 1 KHz, 1.3 KHz tones, 1:1ratio, @ 75 kHz FM	dB dB dB dB	> 70 > 80 (Typical 83) > 70 (Typical 73) > 68 (Typical 70) ± 0.2 < 0.03	
Stereo S/N FM Ratio Stereo S/N FM Ratio Frequency Response Total Harmonic Distortion Intermodulation distortion	@75 kHz FM 30Hz + 53kHz RMS @ ± 75 kHz peak, HPF 20Hz - LPF 23 kHz, 50 μS de-emphasis, L & R demodulated Qpk @ ± 75 kHz peak, CCIR weighted, 50 μS de-emphasis, L & R demodulated Qpk @ ± 40 kHz peak, CCIR weighted, 50 μS de-emphasis, L & R demodulated 30 μS de-emphasis, L & R demodulated 30 Hz + 15kHz THD+N 30Hz + 15kHz Measured with a 1 KHz, 1.3 KHz tones, 1.1 ratio, @ 75 kHz FM 3.18 kHz square wave,	dB dB dB dB %	> 70 > 80 (Typical 83) > 70 (Typical 73) > 68 (Typical 70) ± 0.2 < 0.03 < 0.02	
Stereo S/N FM Ratio Stereo S/N FM Ratio Frequency Response Total Harmonic Distortion	@75 kHz FM 30Hz + 53kHz RMS @ ± 75 kHz peak, HPF 20Hz - LPF 23 kHz, 50 µS de-emphasis, L & R demodulated Opk @ ± 75 kHz peak, CCIR weighted, 50 µS de-emphasis, L & R demodulated Opk @ ± 40 kHz peak, CCIR weighted, 50 µS de-emphasis, L & R demodulated 30 Hz + 15kHz THD+N 30Hz + 15kHz Measured with a 1 KHz, 1.3 KHz tones, 1:1ratio, @ 75 kHz FM 3.18 kHz sine wave	dB dB dB dB	> 70 > 80 (Typical 83) > 70 (Typical 73) > 68 (Typical 70) ± 0.2 < 0.03	
Stereo S/N FM Ratio Stereo S/N FM Ratio Frequency Response Total Harmonic Distortion Intermodulation distortion Transient intermodulation distortion	@75 kHz FM 30Hz + 53kHz RMS @ ± 75 kHz peak, HPF 20Hz - LPF 23 kHz, 50 μS de-emphasis, L & R demodulated Qpk @ ± 75 kHz peak, CCIR weighted, 50 μS de-emphasis, L & R demodulated Qpk @ ± 40 kHz peak, CCIR weighted, 50 μS de-emphasis, L & R demodulated 30 μS de-emphasis, L & R demodulated 30 Hz + 15kHz THD+N 30Hz + 15kHz Measured with a 1 KHz, 1.3 KHz tones, 1.1 ratio, @ 75 kHz FM 3.18 kHz square wave,	dB dB dB % %	> 70 > 80 (Typical 83) > 70 (Typical 73) > 68 (Typical 70) ± 0.2 < 0.03 < 0.02 < 0.1 (typical 0.05)	
Stereo S/N FM Ratio Stereo S/N FM Ratio Frequency Response Total Harmonic Distortion Intermodulation distortion	@75 kHz FM 30Hz + 53kHz RMS @ ± 75 kHz peak, HPF 20Hz - LPF 23 kHz, 50 µS de-emphasis, L & R demodulated Opk @ ± 75 kHz peak, CCIR weighted, 50 µS de-emphasis, L & R demodulated Opk @ ± 40 kHz peak, CCIR weighted, 50 µS de-emphasis, L & R demodulated 30 Hz + 15kHz THD+N 30Hz + 15kHz Measured with a 1 KHz, 1.3 KHz tones, 1:1ratio, @ 75 kHz FM 3.18 kHz sine wave	dB dB dB dB %	> 70 > 80 (Typical 83) > 70 (Typical 73) > 68 (Typical 70) ± 0.2 < 0.03 < 0.02	

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Technical Specifications THESLA EX100D 2/2

SCA OPERATION				
Frequency response	40kHz + 100kHz	dB	± 0.5	
, , , , , , , , , , , , , , , , , , , ,	RMS, ref @ ± 75 kHz peak,			
	no HPF/LPF,			
	0μS de-emphasis,	dB	> 75 (typical 79)	
		uв	> 75 (typical 79)	
	with 67 kHz tone on SCA input			
Crosstalk to main or to stereo chan	@ 7,5kHz FM deviation			
Clossiaik to ilialii oi to stereo chan	RMS, ref @ ± 75 kHz peak,			
	no HPF/LPF,			
	0μS de-emphasis,	dB	> 80 (typical 81)	
		uБ	> 60 (typical 61)	
	with 92 kHz tone on SCA input			
	@ 7,5kHz FM deviation			
POWER REQUIREMENTS				
	AC Supply Voltage	VAC	115 / 230 ±15%	Internal switch
	AC Apparent Power Consumption		410	
	Active Power Consumption	W	250	
AC Power Input		- **		
	Power Factor		0,6	
	Overall Efficiency	%	40	
	Connector		VDE IEC Standard	
505 1 1/ ")	DC Supply Voltage	VDC		
DC Power Input (option)	DC Current	ADC		
MECHANICAL DIMENSIONS	De canent	7.00		
MECHANICAL DIMENSIONS				
	Front panel width	m m	483 (19")	19" EIA rack
Phisical Dimensions	Front panel height	m m	88 (3 1/2") 2HE	
Filisical Dillielisions	Overall depth	mm	400	
	Chassis depth	m m	389	
Weight	dopui		About 10	
		kg	ADOULTO	
VARIOUS				
Cooling			Forced, with internal fan	
Acoustic Noise		dBA	< 56	Leq 3 min @ 1 m
AUDIO INPUTS				
	Connector		XLR F	
		\vdash	Balanced	
Left	Type	<u> </u>		0.1.11.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.
	Impedance	Ohm	10 k or 600	Selectable by internal switch
	Input Level, Adjustment Range	dBu	-12.5 to +12.5	0.1 dB step variable by software
	Connector		XLR F	•
	Туре		Balanced	
Right		<u> </u>		
	Impedance	Ohm	10 k or 600	Selectable by internal switch
	Input Level, Adjustment Range	dBu	-12.5 to +12.5	0.1 dB step variable by software
	Connector		BNC	
	Type		unbalanced	
MPX	Impedance	Ohm	10 k	
				0.4.15.4
	Input Level, Adjustment Range	dBu	-12.5 to +12.5	0.1 dB step variable by software
	Connector		2 x BNC	
004/000	Type		unbalanced	
SCA/RDS	Impedance	Ohm	10 k	
	Input Level, Adjustment Range	dBu	-30 to +13	0.5 dB step variable by software
		иви		0.5 db step variable by soliware
	Connector		XLR F	
AES/EBU	Туре		Balanced	
	Impedance	Ohm	110	
T00#: 1	Connector		TOS-LINk	
TOS/Link	Туре		Optical	
OUTPUTS	. , , p =		opaoa.	
0017013			.	
RF Output	Connector		N type	
	Impedance	Ohm	50	
	Connector		BNC	
RF Monitor	Impedance	Ohm	50	
	Output Level	dB	approx40	Referred to the RF output
	Connector	- 25	BNC	TOTOTION TO THE PURPOR
		<u> </u>		
	Impedance	Ohm	>600	
Pilot output	Output Level	Vpp	2.2	
ι ποι σαιραί			-12.5 to +5;	0.1 dB step variable by software;
	Output Level, Adjustment Range	dBu	or -6.5 to +11 (*);	(*) internal jumper to increase the outul level of +6dB
	, ,		or -0.5 to 17 (**)	(**) internal jumper to increase the outual level of +12d
	Connector	\vdash	BNC	, microar jumper to morease the output level of +120
		<u> </u>		
	Impedance	Ohm	>600	
MPX Monitor			-12.5 to +5;	0.1 dB step variable by software, @ ±75 kHz peak FM
	Output Level, Adjustment Range	dBu	or -6.5 to +11 (*);	(*) internally adjustable +6dBu by jumper;
			or -0.5 to 17 (**)	(**) internally adjustable +12dBu by jumper;
AUXILIARY CONNECTIONS			2. 0.0 10 11 ()	, ,, aajas asis . izaba by jumper,
	Cannaste:		DNC	for romato newer inhibition (-bti
Interlock	Connector	\vdash	BNC	for remote power inhibition (short is RF off)
RS232 Serial Interface	Connector	$oxed{oxed}$	DB9 F	for modem and PC control software communication
1PPS	Connector		BNC	for TTL signal input of 1PPS
Remote Interface	Connector		DB15F	IIC + 8 analog / digital input
Input 10 MHz	Connector		BNC	For otional 10 MHz external synch
FUSES				
			4.5-4	
On Mains		$oldsymbol{oldsymbol{\sqcup}}$	1 External fuse 6,3 AT - 5x20 mm	
HUMAN INTERFACE				
Input device		L^{-1}	Optical encoder with pushbutton	
Display			Graphical LCD - 240 x 64 pixels	
TELEMETRY / TELECONTROL				
TELEMETRI / TELECONTROL	Ampleotections		EWD 5-14	
	Analogical level	\vdash	FWD fold	
Bomoto committee:	Analogical level		REF fold	
Remote connector inputs			6 input for P.A. telemetry purpose	
Remote connector inputs	Analogical level			
Remote connector inputs	Analogical level		Interlock	
Remote connector inputs	Analogical level ON / OFF level		Interlock	
Remote connector inputs Remote connector outputs	Analogical level ON / OFF level ON / OFF level		Power good 1	
Remote connector outputs	Analogical level ON / OFF level		Power good 1 Power good 2	
	Analogical level ON / OFF level ON / OFF level ON / OFF level		Power good 1 Power good 2 I2Cbus	
Remote connector outputs	Analogical level ON / OFF level ON / OFF level		Power good 1 Power good 2	
Remote connector outputs Remote connector others	Analogical level ON / OFF level ON / OFF level ON / OFF level ON / OFF level		Power good 1 Power good 2 I2Cbus	
Remote connector outputs	Analogical level ON / OFF level		Power good 1 Power good 2 I2Cbus RDS TP RDS TA	
Remote connector outputs Remote connector others	Analogical level ON / OFF level ON / OFF level ON / OFF level ON / OFF level		Power good 1 Power good 2 I2Cbus RDS TP RDS TA RDS MS	
Remote connector outputs Remote connector others	Analogical level ON / OFF level		Power good 1 Power good 2 I2Cbus RDS TP RDS TA	



Technical Specifications THESLA EX300D 1/2

1/2					
Aggiornato il 18/03/2017	Legenda: Verde = Green Line Rosso = Obsoleto Giallo = Normali		THESLA EX300D	Notes	
Parameters	Conditions	U.M.			
GENERALS Frequency range	T	MHz	87.5 ÷ 108		
Rated output power	 	W	300	Continuously variable by software from 0 to maximum	
Modulation type		1	Direct Digital Synthesis		
Operational Mode			Mono, Stereo, Multiplex		
Ambient working temperature		°C	-5 to + 50		
Ambient Working Humidity	-	%	85 (Without condensing)		
Frequency programmability			By software,		
Frequency stability	WT from -10°C to 50°C	ppm	with 1, 10, 100 , 1000 kHz steps ±1		
Modulation capability	WI HOILI-10 C to 30 C	kHz	150		
Pre-emphasis mode		μS	0, 50 (CCIR), 75 (FCC)		
Spurious & harmonic suppression		dBc	< 80 (85 typical)		
Asynchronous AMS/N ratio	Referred to 100% AM,	dB	≥ 60 (65 typical)		
7 Byllothorload 7 W On Claud	with no de-emphasis	L ub	= 00 (00 typical)		
0 1 444071 "	Referred to 100% AM,		50 (551)		
Synchronous AMS/N ratio	FM deviation 75 kHz by 400Hz sine,	dB	≥ 50 (55 typical)		
MONO OPERATION	without de-emphasis				
mone of Euritor	RMS @ ± 75 kHz peak,				
	HPF 20Hz - LPF 23 kHz,	dB	> 80 (typical 83)		
	50 μS de-emphasis				
	Qpk @ ± 75 kHz peak,				
S/N FM Ratio	CCIR weighted,	dB	>76		
	50 μS de-emphasis				
	Qpk @ ± 40 kHz peak,	-ID	- 70		
	CCIR weighted, 50 µS de-emphasis	dB	>70		
Frequency Response	30Hz÷15kHz	dB	better than ± 0.5 dB (typical ± 0.2)		
Total Harmonic Distortion	THD+N 30Hz ÷ 15kHz	%	< 0.05 (Tipical 0.03%)		
	Measured with a 1 KHz,		` .		
Intermodulation Distortion	1.3 KHz tones,	%	< 0.02		
	1:1ratio, @ 75 kHz FM				
	3.18 kHz square wave,				
Transient intermodulation distortion	15 kHz sine wave @75 kHz FM	%	< 0.1 (typical 0.05)		
MPX OPERATION	<u>@</u> /3 kHZ FW	_			
	RMS @ ± 75 kHz peak,				
Composite S/N FM Ratio	HPF 20Hz - no LPF,	dB	> 75 (typical 79)		
	50 μS de-emphasis				
Frequency Response	30Hz÷53kHz	dB	± 0.2		
. , , ,	53kHz ÷ 100kHz	dB	± 0.5		
Total Harmonic Distortion	THD+N 30Hz ÷ 53kHz THD+N 53kHz ÷ 100kHz	%	< 0.05 < 0.1		
	Measured with a 1 KHz	70	< 0.1		
Intermodulation distortion	1.3 KHz tones,	%	< 0.05		
	1:1ratio, @ 75 kHz FM				
	3.18 kHz square wave,				
Transient intermodulation distortion	15 kHz sine wave	%	< 0.1 (typical 0.05)		
	15 kHz sine wave @75 kHz FM				
Stereo separation	15 kHz sine wave	% dB	< 0.1 (typical 0.05) > 70		
	15 kHz sine wave @75 kHz FM 30Hz ÷ 53kHz				
Stereo separation	15 kHz sine wave @75 kHz FM 30Hz ÷ 53kHz RMS @ ± 75 kHz peak,	dB	>70		
Stereo separation	15 kHz sine wave @75 kHz FM 30Hz ÷ 53kHz				
Stereo separation	15 kHz sine wave @75 kHz FM 30Hz + 53kHz RMS @ ± 75 kHz peak, HPF 20Hz - LPF 23 kHz,	dB	>70		
Stereo separation	15 kHz sine wave @75 kHz FM 30Hz + 53kHz RMS @± 75 kHz peak, HPF 20Hz - LPF 23 kHz, 50 μS de-emphasis,	dB	>70		
Stereo separation STEREO OPERATION	15 kHz sine wave @75 kHz FM 30Hz + 53kHz RMS @ ± 75 kHz peak, HPF 20Hz - LPF 23 kHz, 50 µS de-emphasis, L & R demodulated Qpk @ ± 75 kHz peak, CCIR weighted,	dB	> 70 > 80 (Typical 83)		
Stereo separation	15 kHz sine wave @75 kHz FM 30Hz + 53kHz RMS @ ± 75 kHz peak, HPF 20Hz - LPF 23 kHz, 50 μS de-emphasis, L & R demodulated Opk @ ± 75 kHz peak, CCIR weighted, 50 μS de-emphasis,	dB	>70		
Stereo separation STEREO OPERATION	15 kHz sine wave @75 kHz FM 30Hz + 53kHz RMS @ ± 75 kHz peak, HPF 20Hz - LPF 23 kHz, 50 μS de-emphasis, L & R demodulated Qpk @ ± 75 kHz peak, CCIR weighted, 50 μS de-emphasis, L & R demodulated	dB	> 70 > 80 (Typical 83)		
Stereo separation STEREO OPERATION	15 kHz sine wave @75 kHz FM 30Hz + 53kHz RMS @ ± 75 kHz peak, HPF 20Hz - LPF 23 kHz, 50 μS de-emphasis, L & R demodulated Qpk @ ± 75 kHz peak, CCIR weighted, 50 μS de-emphasis, L & R demodulated Qpk @ ± 40 kHz peak,	dB dB	> 70 > 80 (Typical 83) > 70 (Typical 73)		
Stereo separation STEREO OPERATION	15 kHz sine wave @75 kHz FM 30Hz + 53kHz RMS @ ± 75 kHz peak, HPF 20Hz - LPF 23 kHz, 50 μS de-emphasis, L & R demodulated Qpk @ ± 75 kHz peak, CCIR weighted, 50 μS de-emphasis, L & R demodulated	dB	> 70 > 80 (Typical 83)		
Stereo separation STEREO OPERATION Stereo S/N FM Ratio	15 kHz sine wave @75 kHz FM 30Hz + 53kHz RMS @ ± 75 kHz peak, HPF 20Hz - LPF 23 kHz, 50 μS de-emphasis, L & R demodulated Opk @ ± 75 kHz peak, CCIR weighted, 50 μS de-emphasis, L & R demodulated Opk @ ± 40 kHz peak, CCIR weighted, 50 μS de-emphasis, L & R demodulated	dB dB dB	> 70 > 80 (Typical 83) > 70 (Typical 73) > 68 (Typical 70)		
Stereo separation STEREO OPERATION Stereo S/N FM Ratio Frequency Response	15 kHz sine wave @75 kHz FM 30Hz + 53kHz RMS @ ± 75 kHz peak, HPF 20Hz - LPF 23 kHz, 50 μS de-emphasis, L & R demodulated Qpk @ ± 75 kHz peak, CCIR weighted, 50 μS de-emphasis, L & R demodulated Qpk @ ± 40 kHz peak, CCIR weighted, 50 μS de-emphasis, L & R demodulated 30 μS de-emphasis, L & R demodulated	dB dB dB dB	> 70 > 80 (Typical 83) > 70 (Typical 73) > 68 (Typical 70) ± 0.2		
Stereo separation STEREO OPERATION Stereo S/N FM Ratio	15 kHz sine wave @75 kHz FM 30Hz + 53kHz RMS @ ± 75 kHz peak, HPF 20Hz - LPF 23 kHz, 50 μS de-emphasis, L & R demodulated Qpk @ ± 75 kHz peak, CCIR weighted, 50 μS de-emphasis, L & R demodulated Qpk @ ± 40 kHz peak, CCIR weighted, 50 μS de-emphasis, L & R demodulated 30 μS de-emphasis, L & R demodulated	dB dB dB	> 70 > 80 (Typical 83) > 70 (Typical 73) > 68 (Typical 70)		
Stereo separation STEREO OPERATION Stereo S/N FM Ratio Frequency Response Total Harmonic Distortion	15 kHz sine wave @75 kHz FM 30Hz + 53kHz RMS @ ± 75 kHz peak, HPF 20Hz - LPF 23 kHz, 50 µS de-emphasis, L & R demodulated Opk @ ± 75 kHz peak, CCIR weighted, 50 µS de-emphasis, L & R demodulated Opk @ ± 40 kHz peak, CCIR weighted, 50 µS de-emphasis, L & R demodulated Opk @ ± 40 kHz peak, CCIR weighted, 50 µS de-emphasis, L & R demodulated 30 µS de-emphasis, L & R demodulated 30 Hz + 15kHz THD+N 30Hz + 15kHz Measured with a 1 KHz,	dB dB dB	>70 >80 (Typical 83) >70 (Typical 73) >68 (Typical 70) ±0.2 <0.03		
Stereo separation STEREO OPERATION Stereo S/N FM Ratio Frequency Response	15 kHz sine wave @/75 kHz FM 30Hz + 53kHz RMS @ ± 75 kHz peak, HPF 20Hz - LPF 23 kHz, 50 μS de-emphasis, L & R demodulated Opk @ ± 75 kHz peak, CCIR weighted, 50 μS de-emphasis, L & R demodulated Opk @ ± 40 kHz peak, CCIR weighted, 50 μS de-emphasis, L & R demodulated Opk @ ± 40 kHz peak, CCIR weighted, 50 μS de-emphasis, L & R demodulated 30Hz + 15kHz THD+N 30Hz + 15kHz Measured with a 1 KHz, 1.3 KHz tones,	dB dB dB dB	> 70 > 80 (Typical 83) > 70 (Typical 73) > 68 (Typical 70) ± 0.2		
Stereo separation STEREO OPERATION Stereo S/N FM Ratio Frequency Response Total Harmonic Distortion	15 kHz sine wave @75 kHz FM 30Hz + 53kHz RMS @ ± 75 kHz peak, HPF 20Hz - LPF 23 kHz, 50 μS de-emphasis, L & R demodulated Opk @ ± 75 kHz peak, CCIR weighted, 50 μS de-emphasis, L & R demodulated Opk @ ± 40 kHz peak, CCIR weighted, 50 μS de-emphasis, L & R demodulated Opk @ ± 40 kHz peak, CCIR weighted, 50 μS de-emphasis, L & R demodulated 30Hz + 15kHz THD+N 30Hz + 15kHz Measured with a 1 KHz, 1.3 KHz tones, 1:1ratio, @ 75 kHz FM	dB dB dB	>70 >80 (Typical 83) >70 (Typical 73) >68 (Typical 70) ±0.2 <0.03		
Stereo separation STEREO OPERATION Stereo S/N FM Ratio Frequency Response Total Harmonic Distortion	15 kHz sine wave @/75 kHz FM 30Hz + 53kHz RMS @ ± 75 kHz peak, HPF 20Hz - LPF 23 kHz, 50 μS de-emphasis, L & R demodulated Opk @ ± 75 kHz peak, CCIR weighted, 50 μS de-emphasis, L & R demodulated Opk @ ± 40 kHz peak, CCIR weighted, 50 μS de-emphasis, L & R demodulated Opk @ ± 40 kHz peak, CCIR weighted, 50 μS de-emphasis, L & R demodulated 30Hz + 15kHz THD+N 30Hz + 15kHz Measured with a 1 KHz, 1.3 KHz tones,	dB dB dB	> 70 > 80 (Typical 83) > 70 (Typical 73) > 68 (Typical 70) ± 0.2 < 0.03 < 0.02		
Stereo separation STEREO OPERATION Stereo S/N FMRatio Frequency Response Total Harmonic Distortion Intermodulation distortion	15 kHz sine wave @75 kHz FM 30Hz + 53kHz RMS @ ± 75 kHz peak, HPF 20Hz - LPF 23 kHz, 50 μS de-emphasis, L & R demodulated Qpk @ ± 75 kHz peak, CCIR weighted, 50 μS de-emphasis, L & R demodulated Qpk @ ± 40 kHz peak, CCIR weighted, 50 μS de-emphasis, L & R demodulated 30 μS de-emphasis, L & R demodulated 30 Hz + 15kHz THD+N 30Hz + 15kHz Measured with a 1 KHz, 1.3 KHz tones, 1:1ratio, @ 75 kHz FM 3.18 kHz square wave,	dB dB dB dB %	>70 >80 (Typical 83) >70 (Typical 73) >68 (Typical 70) ±0.2 <0.03		
Stereo separation STEREO OPERATION Stereo S/N FMRatio Frequency Response Total Harmonic Distortion Intermodulation distortion	15 kHz sine wave @75 kHz FM 30Hz + 53kHz RMS @ ± 75 kHz peak, HPF 20Hz - LPF 23 kHz, 50 μS de-emphasis, L & R demodulated Qpk @ ± 75 kHz peak, CCIR weighted, 50 μS de-emphasis, L & R demodulated Qpk @ ± 40 kHz peak, CCIR weighted, 50 μS de-emphasis, L & R demodulated Apk @ ± 40 kHz peak, CCIR weighted, 50 μS de-emphasis, L & R demodulated 30Hz + 15kHz THD+N 30Hz + 15kHz Measured with a 1 KHz, 1.3 KHz tones, 1:1ratio, @ 75 kHz FM 3.18 kHz square wave, 15 kHz sine wave	dB dB dB dB %	> 70 > 80 (Typical 83) > 70 (Typical 73) > 68 (Typical 70) ± 0.2 < 0.03 < 0.02		



Technical Specifications THESLA EX300D 2/2

			212	
SCA OPERATION				
Frequency response	40kHz + 100kHz	dB	± 0.5	
Crosstalk to main or to stereo chan	RMS, ref @ ± 75 kHz peak, no HPF/LPF, 0µS de-emphasis, with 67 kHz tone on SCA input @ 7,5kHz FM deviation	dB	> 75 (typical 79)	
	RMS, ref @ ± 75 kHz peak, no HPF/LPF, 0µS de-emphasis, with 92 kHz tone on SCA input @ 7,5kHz FM deviation	dB	> 80 (typical 81)	
POWER REQUIREMENTS	40.0	1/40		
•	AC Supply Voltage AC Apparent Power Consumption	VAC VA	80 - 260 620	Internal switch
AC Power Input	Active Power Consumption Power Factor Overall Efficiency	W %	580 0,98	
	Connector	\ (D, 0	VDE IEC Standard	
DC Power Input (option)	DC Supply Voltage DC Current	VDC ADC		
MECHANICAL DIMENSIONS				
	Front panel width Front panel height	m m m m		19" EIA rack
Phisical Dimensions	Overall depth	m m		
Weight	Chassis depth	m m kg		
/ARIOUS		Kg		
Cooling		15.4	Forced, with internal fan	
Acoustic Noise		dBA	< 56	Leq 3 min @ 1 m
	Connector		XLR F	
Left	Type Impedance	Ohm	Balanced 10 k or 600	Selectable by internal switch
	Input Level, Adjustment Range	dBu	-12.5 to +12.5	0.1 dB step variable by software
	Connector		XLR F	
Right	Type Impedance	Ohm	Balanced 10 k or 600	Selectable by internal switch
ľ	Input Level, Adjustment Range	dBu	-12.5 to +12.5	0.1 dB step variable by software
	Connector		BNC	
MPX	Type Impedance	Ohm	unbalanced 10 k	
ľ	Input Level, Adjustment Range	dBu	-12.5 to +12.5	0.1 dB step variable by software
	Connector		2 x BNC	· · · ·
SCA/RDS	Type Impedance	Ohm	unbalanced 10 k	
	Input Level, Adjustment Range	dBu	-30 to +13	0.5 dB step variable by software
A50/50H	Connector		XLR F	
AES/EBU	Type Impedance	Ohm	Balanced 110	
TOS/Link	Connector		TOS-LINk	
DUTPUTS	Туре		Optical	
	Connector		N type	
RF Output	Impedance	Ohm	50	
RF Monitor	Connector	Ohm	BNC 50	
KF Monitor	Impedance Output Level	Ohm dB	approx40	Referred to the RF output
	Connector		BNC	·
	Impedance Output Level	Ohm Vpp	>600 2.2	
Pilot output	Output Level, Adjustment Range		-12.5 to +5; or -6.5 to +11 (*); or -0.5 to 17 (**)	0.1 dB step variable by software; (*) internal jumper to increase the ouput level of +6d (**) internal jumper to increase the ouput level of +12
	Connector	01	BNC	
MPX Monitor	Impedance	Ohm	>600 -12.5 to +5;	0.1 dB step variable by software, @ ±75 kHz peak F
AUXILIARY CONNECTIONS	Output Level, Adjustment Range	dBu	or -6.5 to +11 (*); or -0.5 to 17 (**)	(*) internally adjustable +6dBu by jumper; (**) internally adjustable +12dBu by jumper;
Interlock	Connector		BNC	for remote power inhibition (short is RF off)
RS232 Serial Interface 1PPS	Connector		DB9 F BNC	for modem and PC control software communication
Remote Interface	Connector Connector		DB15F	for TTL signal input of 1PPS IIC + 8 analog / digital input
Input 10 MHz	Connector		BNC	For otional 10 MHz external synch
On Mains			1 External fuse 6,3 AT - 5x20 mm	
HUMAN INTERFACE			. External lase 0,5 A1 - 5x20 IIIII	
Input device			Optical encoder with pushbutton	
Display TELEMETRY / TELECONTROL			Graphical LCD - 240 x 64 pixels	
	Analogical level		FWD fold	
Remote connector inputs	Analogical level		REF fold	
•	Analogical level ON / OFF level		6 input for P.A. telemetry purpose Interlock	
Remote connector outputs	ON / OFF level		Power good 1	
·	ON / OFF level		Power good 2	
Remote connector others	ON / OFF level		I2Cbus RDS TP	
Remote RDS connector inputs	ON / OFF level		RDS TA	
	ON / OFF level		RDS MS	
		<u> </u>	1 Hz	



Technical Specifications THESLA EX700D 1/2

			1/2	
Aggiornato il 18/03/2017	Legenda: Verde = Green Line Rosso = Obsoleto Giallo = Normali		THESLA EX700D	Notes
Parameters	Conditions	U.M.		
GENERALS				
Frequency range		MHz	87.5 ÷ 108	
Rated output power		W	700	Continuously variable by software from 0 to maximum
Modulation type			Direct Digital Synthesis	
Operational Mode			Mono, Stereo, Multiplex	
Ambient working temperature		°C	-5 to + 50	
Ambient Working Humidity		%	85 (Without condensing)	
7 thisient Working Humany		70	By software,	
Frequency programmability			with 1, 10, 100 , 1000 kHz steps	
F	ME 6 4000 to 5000			
Frequency stability	WT from -10°C to 50°C	ppm	±1	
Modulation capability		kHz	150	
Pre-emphasis mode		μS	0, 50 (CCIR), 75 (FCC)	
Spurious & harmonic suppression		dBc	< 80 (85 typical)	
Asynchronous AMS/N ratio	Referred to 100% AM,	dB	≥ 60 (65 typical)	
AS yricilionous Awi 3/N Tatio	with no de-emphasis	ub	≥ 00 (03 typicai)	
	Referred to 100% AM,			
Synchronous AMS/N ratio	FM deviation 75 kHz by 400Hz sine,	dB	≥ 50 (55 typical)	
Syriamonicus / Inchridus	without de-emphasis	"-	= 00 (00 t)ploat.)	
MONO OPERATION	without de-emphasis			
MONO OF ENATION	DMC @ L 75 ld learned.	1		
	RMS @ ± 75 kHz peak,		- 00 /: 100	
	HPF 20Hz - LPF 23 kHz,	dB	> 80 (typical 83)	
	50 μS de-emphasis			
	Qpk @ ± 75 kHz peak,	1 7		
S/N FM Ratio	CCIR weighted,	dB	>76	
	50 μS de-emphasis			
	Qpk @ ± 40 kHz peak,			
	CCIR weighted,	dB	>70	
	50 µS de-emphasis	ub l	-10	
Frequency Response	30Hz÷15kHz	dB	better than ± 0.5 dB (typical ± 0.2)	
Total Harmonic Distortion	THD+N 30Hz ÷ 15kHz	%	< 0.05 (Tipical 0.03%)	
	Measured with a 1 KHz,			
Intermodulation Distortion	1.3 KHz tones,	%	< 0.02	
	1:1ratio, @ 75 kHz FM			
	3.18 kHz square wave,			
Transient intermodulation distortion	15 kHz sine wave	%	< 0.1 (typical 0.05)	
	@75 kHz FM		,	
MPX OPERATION				
	RMS @ ± 75 kHz peak,			
Composite S/N FM Ratio	HPF 20Hz - no LPF,	dB	> 75 (typical 79)	
Composite 3/N I WINALO	•	ub	- 73 (typical 79)	
	50 μS de-emphasis	JD.	. 0.0	
Frequency Response	30Hz ÷ 53kHz	dB	± 0.2	
	53kHz÷100kHz	dB	± 0.5	
Total Harmonic Distortion	THD+N 30Hz ÷ 53kHz	%	< 0.05	
	THD+N 53kHz ÷ 100kHz	%	< 0.1	
	Measured with a 1 KHz,			
Intermodulation distortion	1.3 KHz tones,	%	< 0.05	
	1:1ratio, @ 75 kHz FM			
	3.18 kHz square wave,			
Transient intermodulation distortion	15 kHz sine wave	%	< 0.1 (typical 0.05)	
	@75 kHz FM	~	(5)5.55. 5.50)	
Stereo separation	30Hz÷53kHz	dB	>70	
	JULIZ F DOMIZ	UD	- 10	
STEREO OPERATION	DMC @ 1.75 ld learned.			
	RMS @ ± 75 kHz peak,			
	HPF 20Hz - LPF 23 kHz,	dB	> 80 (Typical 83)	
	50 μS de-emphasis,		· - (-)F 30/	
	L & R demodulated			
	Qpk @ ± 75 kHz peak,			
Ctores C/N FNAD-#-	CCIR weighted,		70 (Tari 170)	
Stereo S/N FM Ratio	50 µS de-emphasis,	dB	> 70 (Typical 73)	
	L & R demodulated			
	Qpk @ ± 40 kHz peak,			<u> </u>
	CCIR weighted,			
	50 μS de-emphasis,	dB	> 68 (Typical 70)	
Francis - Dece	L & R demodulated	15	. 0.0	
Frequency Response	30Hz÷15kHz	dB	± 0.2	
Total Harmonic Distortion	THD+N 30Hz ÷ 15kHz	%	< 0.03	
	Measured with a 1 KHz,			
Intermodulation distortion	1.3 KHz tones,	%	< 0.02	
	1:1ratio, @ 75 kHz FM	<u></u> _ l		
	3.18 kHz square wave,			
Torontostato 110 mm m	15 kHz sine wave	%	< 0.1 (typical 0.05)	
Transient intermodulation distortion				
Transient intermodulation distortion			,	
	@75 kHz FM			
Transient intermodulation distortion Stereo separation Main / Sub Ratio		dB dB	> 70 > 45 (typical 50)	

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Technical Specifications THESLA EX700D 2/2

			212	
SCA OPERATION				
Frequencyresponse	40kHz + 100kHz	dB	± 0.5	
Crosstalk to main or to stereo chan	RMS, ref @ ± 75 kHz peak, no HPF/LPF, 0µS de-emphasis, with 67 kHz tone on SCA input @ 7,5kHz FM deviation	dB	> 75 (typical 79)	
	RMS, ref @ ± 75 kHz peak, no HPF/LPF, 0µS de-emphasis, with 92 kHz tone on SCA input @ 7,5kHz FM deviation	dB	> 80 (typical 81)	
POWER REQUIREMENTS				
AC Power Input	AC Supply Voltage AC Apparent Power Consumption Active Power Consumption Power Factor Overall Efficiency	VAC VA W	80 + 260 970 980 0,998	Internal switch
	Connector DC Supply Voltage	VDC	VDE IEC Standard	
DC Power Input (option)	DC Supply Voltage DC Current	ADC		
MECHANICAL DIMENSIONS	Front panel width	m m		19" EIA rack
Phisical Dimensions	Front panel height Overall depth Chassis depth	m m m m		
Weight	Chassis depth	kg		
VARIOUS				
Cooling Acoustic Noise		dBA	Forced, with internal fan < 56	Leq 3 min @ 1 m
ACOUSTIC NOISE AUDIO INPUTS		ubA	\ 00	Led 2 min (%) i m
	Connector		XLR F	
Left	Type	01-	Balanced	Colorate black to the town
	Impedance Input Level, Adjustment Range	Ohm dBu	10 k or 600 -12.5 to +12.5	Selectable by internal switch 0.1 dB step variable by software
	Connector	ава	XLR F	o.r ab step variable by software
Right	Туре		Balanced	
Ĭ	Impedance Input Level, Adjustment Range	Ohm dBu	10 k or 600 -12.5 to +12.5	Selectable by internal switch 0.1 dB step variable by software
	Connector	иви	BNC	0.1 db step variable by software
MPX	Туре		unbalanced	
🗡	Impedance	Ohm	10 k	O. A. dD. atom consists to have a few and
	Input Level, Adjustment Range Connector	dBu	-12.5 to +12.5 2 x BNC	0.1 dB step variable by software
SCA/RDS	Туре		unbalanced	
CONTRACT	Impedance	Ohm	10 k	0.5.15.4
	Input Level, Adjustment Range Connector	dBu	-30 to +13 XLR F	0.5 dB step variable by software
AES/EBU	Туре		Balanced	
	Impedance	Ohm	110	
TOS/Link	Connector Type		TOS-LINk Optical	
OUTPUTS	турс		Ориса	
RF Output	Connector		7/16" type	
·	Impedance Connector	Ohm	50 BNC	
RF Monitor	Impedance	Ohm	50	
	Output Level	dB	approx40	Referred to the RF output
	Connector Impedance	Ohm	BNC >600	
Pilot output	Output Level	Vpp	2.2	
Filot output	Output Level, Adjustment Range	dBu	-12.5 to +5; or -6.5 to +11 (*); or -0.5 to 17 (**) BNC	0.1 dB step variable by software; (*) internal jumper to increase the ouput level of +6dBu (**) internal jumper to increase the ouput level of +12dE
	Impedance	Ohm	>600	
MPX Monitor	Output Level, Adjustment Range	dBu	-12.5 to +5; or -6.5 to +11 (*); or -0.5 to 17 (**)	0.1 dB step variable by software, @ ±75 kHz peak FM (*) internally adjustable +6dBu by jumper; (**) internally adjustable +12dBu by jumper;
AUXILIARY CONNECTIONS				
Interlock	Connector		BNC	for remote power inhibition (short is RF off)
RS232 Serial Interface 1PPS	Connector Connector		DB9 F BNC	for modem and PC control software communication for TTL signal input of 1PPS
Remote Interface	Connector		DB15F	IIC + 8 analog / digital input
Input 10 MHz	Connector		BNC	For otional 10 MHz external synch
FUSES On Mains			1 External fuse 6,3 AT - 5x20 mm	
HUMAN INTERFACE				
Input device			Optical encoder with pushbutton	
Display TELEMETRY / TELECONTROL			Graphical LCD - 240 x 64 pixels	
	Analogical level		FWD fold	-
Remote connector inputs	Analogical level Analogical level ON / OFF level		REF fold 6 input for P.A. telemetry purpose Interlock	
Domata and a state and a	ON / OFF level		Power good 1	
Remote connector outputs	ON / OFF level		Power good 2	
Remote connector others	ON / OFF level	-	I2Cbus RDS TP	
Remote RDS connector inputs	ON / OFF level ON / OFF level		RDS TA RDS MS	
			1 Hz	





Technical Specifications THESLA EX1000D 1/2

1/2					
Aggiornato il 18/03/2017	Legenda: Verde = Green Line Rosso = Obsoleto Giallo = Normali		THESLA EX1000D	Notes	
Parameters	Conditions	U.M.			
GENERALS		MHz	87.5 ÷ 108	T	
Frequency range Rated output power	<u> </u>	W	1000	Continuously variable by software from 0 to maximum	
Modulation type		**	Direct Digital Synthesis	Continuously variable by soliware from 0 to maximum	
Operational Mode		+	Mono, Stereo, Multiplex		
Ambient working temperature		°C	-5 to + 50		
Ambient Working Humidity		%	85 (Without condensing)		
Frequency programmability			By software,		
			with 1, 10, 100, 1000 kHz steps		
Frequency stability	WT from -10°C to 50°C	ppm	±1		
Modulation capability		kHz	150		
Pre-emphasis mode		μS	0, 50 (CCIR), 75 (FCC)		
Spurious & harmonic suppression	Referred to 100% AM,	dBc	< 80 (85 typical)		
Asynchronous AMS/N ratio	with no de-emphasis	dB	≥ 60 (65 typical)		
	Referred to 100% AM,	+			
Synchronous AMS/N ratio	FM deviation 75 kHz by 400Hz sine,	dB	≥ 50 (55 typical)		
Cyriolionous 7 W C/W Tauc	without de-emphasis	ub l	= 00 (00 typical)		
MONO OPERATION	maioarae emphaeie				
	RMS @ ± 75 kHz peak,				
	HPF 20Hz - LPF 23 kHz,	dB	> 80 (typical 83)		
	50 μS de-emphasis				
	Qpk @ ± 75 kHz peak,				
S/N FM Ratio	CCIR weighted,	dB	>76		
	50 μS de-emphasis				
	Qpk @ ± 40 kHz peak,				
	CCIR weighted,	dB	>70		
	50 μS de-emphasis	ID.	1 " " .05 15 " . 1.00		
Frequency Response	30Hz÷ 15kHz	dB %	better than ± 0.5 dB (typical ± 0.2)		
Total Harmonic Distortion	THD+N 30Hz ÷ 15kHz Measured with a 1 KHz	70	< 0.05 (Tipical 0.03%)		
Intermodulation Distortion	1.3 KHz tones,	%	< 0.02		
intermodulation distortion	1:3 KHZ lones, 1:1ratio, @ 75 kHz FM	70	₹0.02		
	3.18 kHz square wave,				
Transient intermodulation distortion	15 kHz sine wave	%	< 0.1 (typical 0.05)		
	@75 kHz FM	'	311 (9p. 200)		
MPX OPERATION					
	RMS @ ± 75 kHz peak,				
Composite S/N FM Ratio	HPF 20Hz- no LPF,	dB	> 75 (typical 79)		
	50 μS de-emphasis				
Frequency Response	30Hz÷53kHz	dB	± 0.2		
14.1.3	53kHz÷100kHz	dB	± 0.5		
Total Harmonic Distortion	THD+N 30Hz ÷ 53kHz	%	< 0.05		
	THD+N 53kHz ÷ 100kHz Measured with a 1 KHz,	%	< 0.1		
Intermodulation distortion	1.3 KHztones,	%	< 0.05		
intermodulation distortion	1:1ratio, @ 75 kHz FM	/0	V 0.05		
	3.18 kHz square wave,				
Transient intermodulation distortion	15 kHz sine wave	%	< 0.1 (typical 0.05)		
	@75 kHz FM				
Stereo separation	30Hz÷53kHz	dB	>70		
STEREO OPERATION					
	RMS @ ± 75 kHz peak,				
	HPF 20Hz - LPF 23 kHz,	dB	> 80 (Typical 83)		
	50 μS de-emphasis,		. (), /		
	L & R demodulated	+			
	Qpk @ ± 75 kHz peak,				
Stereo S/N FM Ratio	CCIR weighted,	dB	> 70 (Typical 73)		
	50 μS de-emphasis, L & R demodulated				
	Qpk @ ± 40 kHz peak,	1			
	CCIR weighted,				
	50 µS de-emphasis,	dB	> 68 (Typical 70)		
	L & R demodulated				
Frequency Response	30Hz÷ 15kHz	dB	± 0.2		
Total Harmonic Distortion	THD+N 30Hz ÷ 15kHz	%	< 0.03		
	Measured with a 1 KHz,				
Intermodulation distortion	1.3 KHz tones,	%	< 0.02		
	1:1ratio, @ 75 kHz FM				
Toronto Michigan and A. C. C. C. C.	3.18 kHz square wave,		104/6=: 1005		
Transient intermodulation distortion	3.18 kHz square wave, 15 kHz sine wave	%	< 0.1 (typical 0.05)		
	3.18 kHz square wave,				
Transient intermodulation distortion Stereo separation Main / Sub Ratio	3.18 kHz square wave, 15 kHz sine wave	% dB dB	< 0.1 (typical 0.05) > 70 > 45 (typical 50)		



Technical Specifications THESLA EX1000D 2/2

			Z Z	
SCA OPERATION				
Frequency response	40kHz + 100kHz	dB	± 0.5	
	RMS, ref @ ± 75 kHz peak,			
	no HPF/LPF,			
	0μS de-emphasis,	dB	> 75 (typical 79)	
	with 67 kHz tone on SCA input			
Crosstalk to main or to stereo chan	@ 7,5kHz FM deviation			
	RMS, ref @ ± 75 kHz peak,			
	no HPF/LPF,	ا ا	> 90 (hming) 94)	
	0μS de-emphasis,	dB	> 80 (typical 81)	
	with 92 kHz tone on SCA input			
POWER REQUIREMENTS	@ 7,5kHz FM deviation			
-OWER REQUIREMENTS	AC Supply Voltage	VAC	80 ÷ 260	Internal switch
	AC Apparent Power Consumption	VAC	1460	internal switch
	Active Power Consumption	W	1450	
AC Power Input	Power Factor		099	
	Overall Efficiency	%		
	Connector		Terminal Block	
D.O. D	DC Supply Voltage	VDC		
DC Power Input (option)	DC Current	ADC		
MECHANICAL DIMENSIONS				
	Front panel width	m m		19" EIA rack
Phisical Dimensions	Front panel height	m m		
	Overall depth	m m		
	Chassis depth	m m		
Weight		kg		
/ARIOUS				
Cooling			Forced, with internal fan	
Acoustic Noise		dBA	< 56	Leq 3 min @ 1 m
AUDIO INPUTS	0		W.F.5	
	Connector	_	XLR F	
Left	Type	01: :::	Balanced	Calcatable built-t
	Impedance	Ohm	10 k or 600	Selectable by internal switch
	Input Level, Adjustment Range	dBu	-12.5 to +12.5	0.1 dB step variable by software
	Connector		XLR F	
Right	Type	Ohm	Balanced 10 k or 600	Calastable by internal assitab
	Impedance Input Level, Adjustment Range	Ohm dBu	-12.5 to +12.5	Selectable by internal switch 0.1 dB step variable by software
	Connector	ави	-12.5 to +12.5 BNC	0.1 dB step variable by software
	Type		unbalanced	
MPX	Impedance	Ohm	10 k	
	Input Level, Adjustment Range	dBu	-12.5 to +12.5	0.1 dB step variable by software
	Connector	aba	2 x BNC	o.1 db step variable by software
	Type		unbalanced	
SCA/RDS	Impedance	Ohm	10 k	
	Input Level, Adjustment Range	dBu	-30 to +13	0.5 dB step variable by software
	Connector	ubu	XLR F	one and one prantable by continue
AES/EBU	Туре		Balanced	
	Impedance	Ohm	110	
	Connector		TOS-LINK	
TOS/Link	Туре		Optical	
DUTPUTS	.,,,-			
	Connector		7/8" type	
RF Output	Impedance	Ohm	50	
	Connector		BNC	
RF Monitor	Impedance	Ohm	50	
	Output Level	dB	approx40	Referred to the RF output
	Connector		BNC	
	lmpedance	Ohm	>600	
Pilot output	Output Level	Vpp	2.2	
, not output			-12.5 to +5;	0.1 dB step variable by software;
	Output Level, Adjustment Range	dBu	or -6.5 to +11 (*);	(*) internal jumper to increase the ouput level of +6d
			or -0.5 to 17 (**)	(**) internal jumper to increase the ouput level of +12
	Connector		BNC	
	Impedance	Ohm	>600	
MPX Monitor		l ī	-12.5 to +5;	0.1 dB step variable by software, @ ±75 kHz peak F
	Output Level, Adjustment Range	dBu	or -6.5 to +11 (*);	(*) internally adjustable +6dBu by jumper;
			or -0.5 to 17 (**)	(**) internally adjustable +12dBu by jumper;
AUXILIARY CONNECTIONS				
Interlock	Connector		BNC	for remote power inhibition (short is RF off)
RS232 Serial Interface	Connector		DB9 F	for modem and PC control software communication
1PPS	Connector		BNC	for TTL signal input of 1PPS
Remote Interface	Connector		DB15F	IIC + 8 analog / digital input
Input 10 MHz	Connector		BNC	For otional 10 MHz external synch
FUSES				
On Mains			1 External fuse 6,3 AT - 5x20 mm	
IUMAN INTERFACE				
Input device			Optical encoder with pushbutton	
Display			Graphical LCD - 240 x 64 pixels	
TELEMETRY / TELECONTROL	A			
	Analogical level		FWD fold	
Remote connector inputs	Analogical level		REF fold	
	Analogical level		6 input for P.A. telemetry purpose	
	ON / OFF level		Interlock	
Remote connector outputs	ON / OFF level		Power good 1	
	ON / OFF level		Power good 2	
Remote connector others	011/0==:		I2Cbus	
	ON / OFF level	_	RDS TP	
Remote RDS connector inputs	ON / OFF level	—	RDS TA	
	ON / OFF level	—	RDS MS	
			1 Hz	



A

IMPORTANT

The symbol of lightning inside a triangle placed on the product, evidences the operations for which is necessary gave it full attention to avoid risk of electric shocks.



The symbol of exclamation mark inside a triangle placed on the product, informs the user about the presence of instructions inside the manual that accompanies the equipment, important for the efficacy and the maintenance (repairs).

1. Preliminary Instructions

• General Warnings

This equipment should only be operated, installed and maintained by "trained" or "qualified" personnel who are familiar with risks involved in working on electric and electronic circuits. "Trained" means personnel who have technical knowledge of equipment operation and who are responsible for their own safety and that of other unqualified personnel placed under their supervision when working on the equipment.

"Qualified" means personnel who are trained in and experienced with equipment operation and who are responsible for their own safety and that of other unqualified personnel placed under their supervision when working on the equipment.

WARNING: Residual voltage may be present inside the equipment even when the ON/OFF switch is set to Off. Before servicing the equipment, disconnect the power cord or switch off the main power panel and make sure the safety earth connection is connected. Some service situations may require inspecting the equipment with live circuits. Only trained and qualified personnel may work on the equipment live and shall be assisted by a trained person who shall keep ready to disconnect power supply at need.

Biquad Broadcast shall not be liable for injury to persons or damage to property resulting from improper use or operation bytrained/untrainedandqualified/unqualifiedpersons.

WARNING: The equipment is not water resistant. Any water entering the enclosure might impair proper operation. To prevent the risk of electrical shock or fire, do not expose this equipment to rain, dripping or moisture.

Please observe local codes and fire prevention rules when installing and operating this equipment.

WARNING: This equipment contains exposed live parts involving an electrical shock hazard. Always disconnect power supply before removing any covers or other parts of the equipment.

Ventilation slits and holes are provided to ensure reliable operation and prevent overheating; do not obstruct or cover these slits. Do not obstruct the ventilation slits under any circumstances. The product must not be incorporated in a rack unless adequate ventilation is provided or the manufacturer's instructions are followed closely.

WARNING: This equipment can radiate radiofrequency energy and, if not installed in compliance with manual instructions and applicable regulations, may cause interference with radio communications.

WARNING: This equipment is fitted with earth connections both in the power cord and for the chassis. Make sure both are properly connected.

Operation of this equipment in a residential area may cause radio interference, in which case the user may be required to take adequate measures.

The specifications and data contained herein are provided for information only and are subject to changes without prior notice. **Biquad Broadcast** disclaims all warranties, express or implied. While **Biquad Broadcast** attempts to provide accurate information, it cannot accept responsibility or liability for any errors or inaccuracies in this manual, including the products and the software described herein. **Biquad Broadcast** reserves the right to make changes to equipment design and/or specifications and to this manual at any time without prior notice.

Notice concerning product intended purpose and use limitations.

This product is a radio transmitter suitable for frequency-modulation audio radio broadcasting. Its operating frequencies are not harmonised in designated user countries. Before operating this equipment, user must obtain a licence to use radio spectrum from the competent authority in the designated user country. Operating frequency, transmitter power and other characteristics of the transmission system are subject to restrictionsasspecifiedinthelicence.

2. Warranty

La Biquad Broadcast warrants this product to be free from defects in workmanship and its proper operation subject to the limitations set forth in the supplied Terms and Conditions. Please read the Terms and Conditions carefully, as purchase of the product or acceptance of the order acknowledgement imply acceptance of the Terms and Conditions. For the latest updated terms and conditions, please visit our web site at web site may be modified, removed or updated for any reason whatsoever without prior notice. The warranty will become null and void in the event the product enclosure is opened, the product is physically damaged, is repaired by unauthorised persons or is used for purposes other than its intended use, as well as in the event of improper use, unauthorised changes or neglect. In the event a defect is found, follow this procedure:

 Contact the seller or distributor who sold the equipment; provide a description of the problem or malfunction for theeventaquickfixisavailable.

Sellers and Distributors can provide the necessary information to troubleshoot the most frequently encountered problems. Normally, Sellers and Distributors can offer a faster repair service than the Manufacturer would. Please note that Sellers can pinpoint problems due to wrong installation.

- 2 If your Seller cannot help you, contact **Biquad Broadcast** and describe the problem; if our staff deems it appropriate, you will receive an authorisation to return the equipment along with suitable instructions;
- When you have received the authorisation, you may return the unit. Pack the unit carefully before shipment; use the original packaging whenever possible and seal the package perfectly. The customer bears all risks of

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loss (i.e., Biquad shall not be liable for loss or damage) until the package reaches the Biquad. factory. For this reason, we recommend insuring the goods for their full value. Returns must be sent on a C.I.F. basis (PREPAID) to the address stated on the authorisation as specified by the Biquad. Service Manager.



Units returned without a return authorisation may be rejected and sent back to the sender.

4 Be sure to include a detailed report mentioning all problems you have found and copy of your original invoice (to show when the warranty period began) with the shipment.

Please send spare and warranty replacement parts orders to the address provided below. Make sure to specify equipment model and serial number, as well as part description and quantity.



BIQUAD TECNOLOGIA LTDA. Rua Marcos Flávio e Dias, 260 - Jardim Beira Rio, Santa Rita do Sapucaí / MG - Brazil CEP: 37540-000 Telephone: +55 35 3471-6399

3. First Aid

All personnel engaged in equipment installation, operation and maintenance must be familiar with first aid procedures and routines.

3.1 Electric shock treatment

3.1.1 If the victim is unconscious

Followthefirstaidproceduresoutlinedbelow

- Lay the victim down on his/her back on a firm surface
- the neck and tilt the head backwards to free the airway system (Figure 1).

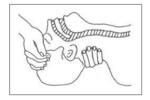


Figure 1

- If needed, open the victim's mouth and check for breathing.
- If there is no breathing, start artificial respiration without delay (Figure 2) as follows: tilt the head backwards, pinch the nostrils, seal your mouth around the victim's mouth and give four fast rescue breaths.



Figure 2

 Check for heartbeat (Figure 3); if there is no heartbeat, begin chest compressions immediately (Figure 4) placing your hands in the centre of the victim's chest (Figure 5).







Figure 3

Figure 4

Figure 5

- One rescuer: give 2 quick rescue breaths after each 15 compressions.
- Two rescuers: one rescue breath after each 5 compressions.
- Do not stop chest compressions while giving artificialbreathing.
- Call for medical help as soon as possible.

3.1.2 If the victim is conscious

- Cover victim with a blanket.
- · Try to reassure the victim.
- Loosen the victim's clothing and have him/her lie down.
- Call for medical help as soon as possible.

3.2 Treatment of electric burns

3.2.1 Large burns and broken skin

- Cover affected area with a clean cloth or linen.
- Do not break any blisters that have formed; remove any clothing or fabric that is stuck to the skin; apply adequate ointment.
- Administer adequate treatment for the type of accident.
- Get the victim to a hospital as quickly as possible.
- · Elevate arms and legs if injured.

If medical help is not available within an hour, the victim is conscious and is not retching, administer a solution of table salt and baking soda (one teaspoon of table salt to half teaspoon of baking soda every 250 ml of water).

Have the victim slowly drink half a glass of solution for four times during a period of 15 minutes.

Stopatthefirstsignofretching.

Do not administer alcoholic beverages.

3.2.2 Minor Burns

- Apply cold (not ice cold) strips of gauze or dress wound with clean cloth.
- Do not break any blisters that have formed; remove any clothing or fabric that is stuck to the skin; apply adequate ointment.
- If needed, have the victim change into clean, dry clothing.
- Administer adequate treatment for the type of accident.
- Get the victim to a hospital as quickly as possible.
- · Elevate arms and legs if injured.



4. General Description

THESLA FAMILY is a compact **FM transmitter** manufactured by Biquad Broadcast for audio radio broadcasting in the 87.5 to 108 MHz band in 10kHz steps, featuring adjustable RF output up to 3500 W, respectively, under 50 Ohm standard load.

THESLA FAMILY is designed to being contained into a 19" rack box of 2 and 3HE.

4.1 Unpacking

The package contains:

- 1 THESLA unit trasnmitter
- 1 User Manual
- 1 Mains power cables

The following accessories are also available from Your Biquad Dealer:

- Options for the machine
- Spare parts
- Cables

4.2 Features

The overall effciency of **THESLA FAMILY** is better than 78% across the bandwidth, for this reason are part of Biguad Green Line family

This performance characteristic is guaranteed in a range between +0.25 dB and -3 dB (+5% and -50%) referred to the nominal power of the equipment: for example from 1750W to 3675W in case of **THESLA TX3.5K**; outside these limits the equipment is able to work properly but can not guarantee an effciency of 78%.

This transmitter incorporate a low-pass filter to keep harmonics below the limits provided for by international standards (CCIR, FCC or ETSI) and can be connected directly to the antenna.

Two major features of **THESLA FAMILY** is compact design and user-friendliness. Another key feature is its modular-concept design: the different functions are performed by modules with most connections achieved through male and female connectors or through flat cables terminated by connectors. This design facilitates maintenance and module replacement.

The RF power section of **THESLA FAMILY** uses one LD-MOSFET module delivering up to 1000W output power



Operating frequency stability is ensured by a temperature-compensated reference oscillator and is maintained by a PLL (Phase Locked Loop) system. The transmitter will go into frequency lock within 30 seconds after power-on.

THESLA FAMILY can operate throughout the frequency bank with no need for calibration or set-up.

An LCD on the front panel and a push-button panel provide for user interfacing with the microprocessor control system, which implements the following features:

- Output power setup.
- Working frequency setup.
- Power output enable/disable.
- User-selectable threshold settings for output power alarm (Power Good feature)
- Measurement and display of transmitter operating parameters.
- Communication with external devices such as programming or telemetry systems via RS232 serial interface or I²C.

Four LEDs on the front panel provide the following status indications: **ON**, **LOCK**, **FOLDBACK** and **RF MUTE**.

The transmitter management firmware is based on a menu system. User has four navigation buttons available to browse submenus: **ESC**, , , ed **ENTER**.

The rear panel features the mains input connectors, as well as audio input connectors and RF output connector, telemetry connector, protection fuses and two inputs for signals modulated onto subcarriers by suitable external coders, such as RDS (Radio Data System) signals commonly used in Europe.



IMPORTANT: The equipment works in three-phase, with star-center connection, and can also be used in single-phase.



[1] ON

[2] LOCK

4.3 Frontal Panel Description - Model THESLA 3.5K

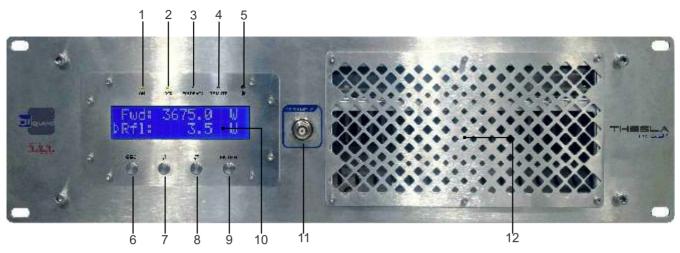
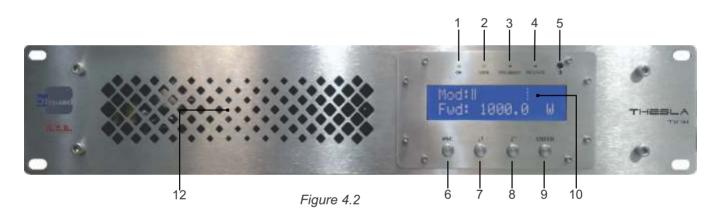


Figure 4.1

4.4 Frontal Panel Description - Model THESLA Family 30W to 2KW



[3]	FOLDBACK	Yellow LED, lit when the foldback function is operating (automatic
		reduction of the delivered RF power).
[4]	R.F. MUTE	Yellow LED, lit when the transmitter's power output is inhibited by
		an external interlock command.
[5]	CONTRAST	Display contrast adjusting trimmer (on the top of the equipment).
[6]	ESC	Push button to exit from a menu.
[7]		Push button to move in the menu system and to modify the
		parameters.
[8]		Push button to move in the menu system and to modify the

Green LED, lit when the transmitter is working.

Green led, lit when the PLL is locked on the working frequency.

[8] \bigcup^\to Push button to move in the menu system and to modify the parameters.

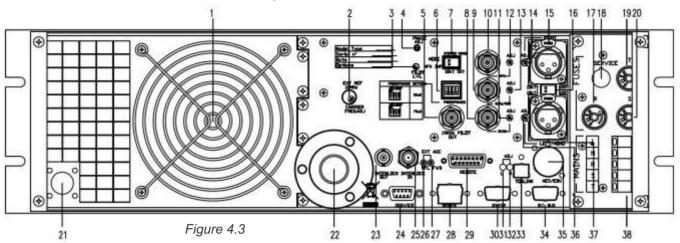
[9] ENTER Push button to confirm a parameter and to enterin a menu.
 [10] DISPLAY Liquid crystals display.
 [12] R.F. TEST Output with level -60 dBc lower than output power level,

suitable for modulation monitoring. Not suitable for spectrum analysis.

[12] AIRFLOW Air flow for the forced ventilation.



Rear Panel Description - Model THESLA 3.5K



[1] AIRFLOW

[2] EXT REF 10MHz

[3] PILOT ADJ

[4] PHASE ADJ

[5] 19 kHz PILOT OUT

[6] PREEMPHASIS

[7] MODE/MPX IMP

[8] SCA2 [9] SCA1/RDS [10] MPX [11] SCA2 ADJ [12] MPX ADJ [13] SCA1/RDS ADJ [14] RIGHT ADJ

[16]IMPEDANCE

[17] FUSE R

[15] RIGHT

[18] SERVICE

[19] FUSE T

[20] FUSE S

[21] INPUT POWER

[22]R.F.OUTPUT

[23] INTERLOCK OUT

[24] SERVICE

[25] INTERLOCK IN

[26] FWD EXT. AGC

[27] RFL EXT. AGC

[28] MODEM/LAN

[29] **REMOTE**

[30] RS232

Air flow for the forced ventilation. Reserved for future implementations.

Pilot tone adjustment trimmer.

Phase adjustment trimmer.

BNC output for the 19 kHz pilot tone. This can be used for

external devices (e.g. RDS coders) synchronization. Dip-switch to set the preenphasys at 50 or 75µs. The

preenphasys setting is relevant only for the Left and Right inputs in stereo mode and for the mono input in mono mode,

while MPX input is unaffected by this setting.

Dip-switch to set the operation mode (STEREO or MONO)

and the MPX input impedance $.50\Omega$ or $10k\Omega$. BNC connector, SCA2 unbalanced input.

BNC connector, SCA1/RDS unbalanced input.

BNC connector, MPX unbalanced input. Adjustment trimmer for SCA2 input. Adjustment trimmer for MPX input. Adjustment trimmer for SCA1/RDS input.

Adjustment trimmer for the Right channel input. XLR connector, balanced Right channel input.

Dip-switch to set the balanced input impedance, 600Ω or

10kΩ.

Mains power supply fuse.

Reserved for future implementations.

Mains power supply fuse. Mains power supply fuse.

Not used.

RF output connector, type 7/8" EIAFlange, 50Ω .

Interlock output BNC connector: when the transmitter goes

into stand-by mode, the (normally floating) central conductor

is switched to ground.

DB9 connector for interconnection with other devices and for

factory parameters programming.

Interlock input BNC connector: the exciter is forced in

standby mode when the inner conductor is grounded.

Trimmer for the control of the delivered power in function of

the FWD fold input.

Trimmer for the control of the delivered power in function of

the RFL fold input.

Reserved for optional implementations. DB15 connector for telemetry of the machine.

DB9 connector for direct serial communication or modem

(only with telemetry option).



[31] LEFT ADJ Adjustment trimmer for Left digital channel input.
[32] RIGHT ADJ Adjustment trimmer for Right digital channel input.

[33] TOSLINK TOS-LINK connector for digital audio input through fiber optic.

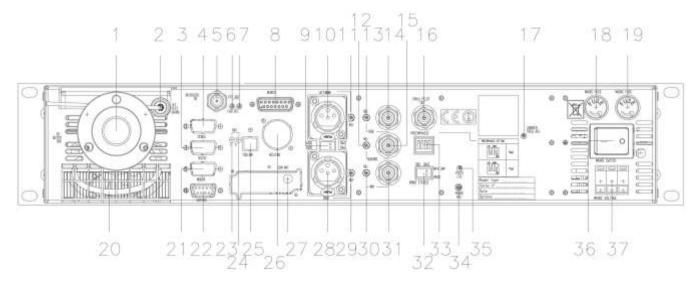
[34] I2C BUS Normally not used, or used for customized functions (only

with telemetry option).

[35] AES/EBUXLR connector for AES/EBU digital audio input.[36] LEFT/MONO ADJAdjustment trimmer for Left-Mono channel input.[37] LEFT/MONOXLR connector, balanced Left-Mono channel input.[38] MAINSConnectors for 230 V (+/- 15%) 50-60 Hz mains power

supply.

4.6 Rear Panel Description - Model THESLA 700 / 1K / 2k



[1] R.F. OUTPUT RF output connector, type 7/8" EIA Flange, 50Ω.
[2] R.F. TEST Output with level -60 dBc lower than output power

Output with level -60 dBc lower than output power level, suitable for modulation monitoring. Not suitable for spectrum

analysis.

[5] INTERLOCK IN

[6] FWD EXT. AGC

[3] RS232 DB9 connector for direct serial communication or modem

(only with telemetry option).

[4] I²C BUS Normally not used, or used for customized functions (only with telemetry option).

Interlock input BNC connector: by grounding the center

conductor, the transmitter is forced in stand-by mode.

Trimmer for the control of the delivered power in function of

the FWD fold input.

[7] RFL EXT. AGC Trimmer for the control of the delivered power in function of

the RFL fold input.

[8] REMOTE DB15 connector for telemetry of the machine.

[9] IMPEDANCE Dip-switch to set the balanced input impedance, 600Ω or

 $10k\Omega$.

[10] LEFT-MONO XLR connector, balanced Left-Mono channel input.

[11] LEFT-MONO ADJ Adjustment trimmer for Left-Mono channel input.

[12] SCA/RDS ADJ Adjustment trimmer for SCA/RDS input.

[13] SCA2 ADJ Adjustment trimmer for SCA2 input.
[14] SCA2 BNC connector, SCA2 unbalanced input

[14] SCA2 BNC connector, SCA2 unbalanced input. [15] SCA/RDS Adjustment trimmer for SCA/RDS input.

[16] 19 kHz PILOT OUT BNC output for the 19 kHz pilot tone. This can be used for external devices (e.g. RDS coders) synchronization.

external devices (e.g. RDS coders) synchronization.

[17] CARRIER FREQ. ADJ

Fine adjustment trimmer for the transmission frequency.

[18] MAINS FUSE
Mains power supply fuse.
[19] MAINS FUSE
Mains power supply fuse.



[20] AIR FLOW Air flow for the forced ventilation.

[21] MODEM DB9 connector connected to GSM modem (only with

telemetry option).

[22] SERVICE DB9 connector for interconnection with other devices

and for factory parameters programming (only for factory

programming).

[23] L ADJ Adjustment trimmer for Left digital channel input.[24] R ADJ Adjustment trimmer for Right digital channel input.

[25] TOSLINK TOS-LINK connector for digital audio input through fiber optic.

[26] AES/EBU XLR connector for AES/EBU digital audio input.

[27] GSM ANT SMA connector for GSM Antenna.

[28] RIGHT XLR connector, balanced Right channel input.
[29] RIGHT ADJ Adjustment trimmer for the Right channel input.

[30] MPX ADJ Adjustment trimmer for MPX input.
[31] MPX BNC connector, MPX unbalanced input.

[32] MODE/MPX IMP Dip-switch to set the operation mode (STEREO or MONO)

and the MPX input impedance, 50Ω or $10k\Omega$.

[33] PREEMPHASIS Dip-switch to set the preenphasys at 50 or 75 µs. The

preenphasys setting is relevant only for the Left and Right inputs in stereo mode and for the mono input in mono mode,

while MPX input is unaffected by this setting.

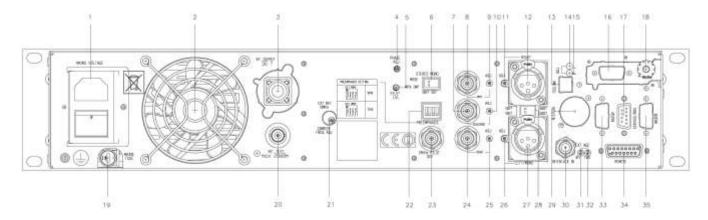
[34] PHASE ADJ Phase adjustment trimmer.
[35] PILOT LVL Pilot tone adjustment trimmer.

[36] POWER ON/OFF switch.

[37] MAINS Connectors for 230 V (+/- 15%) 50-60 Hz mains power

supply.

4.7 Rear Panel Description - Model THESLA 30 to 500W (all models)



PLUG VDE plug for mains supply.

[2] FAN Fan for the forced ventilation of the exciter.

[3] R.F. OUTPUT RF output connector, N-type, 50Ω.
 [4] PHASE ADJ Pilot tone phase adjustment trimmer.

PILOT LVL BNC output for the pilot tone. This can be used for external

devices (e.g. RDS coders) synchronization.

[6] MODE/MPX IMP Dip-switch to set the operation mode (STEREO or MONO)

and the MPX input impedance, 50Ω or 10kΩ.

[7] SCA 1/RDS BNC connector, SCA 1/RDS unbalanced input.
 [8] MPX BNC connector, MPX unbalanced input.

[9] MPX ADJ Adjustment trimmer for MPX input.

[10] SCA 1/RDS ADJ Adjustment trimmer for SCA 1/RDS input.
[11] RIGHT ADJ Adjustment trimmer for the Right channel input.

[12] RIGHT XLR connector, balanced Right channel input.
[13] TOSLINK TOS-LINK connector for digital audio input through fiber optic.



[14] L ADJ
 [15] R ADJ
 [16] SLOT
 Adjustment trimmer for Left digital channel input.
 Adjustment trimmer for Right digital channel input.
 Not used.

[17] SERVICE/RDS DB9 connector for interconnection with other devices and for factory parameters programming (only for factory

programming).

[18] 24 VDC IN External 24Vdc supply input. Positiv (red).

[19] FUSE BLOCK Fuse carrier. Use a screwdriver to acess the fuse.

[20] RF TEST POIN RF test output, ,approx. 20dBm wrt the RF output power level.

[21] CARRIER FREQ. ADJ

[22] PREEMPHASIS

Fine adjustment trimmer for the transmission frequency.

Dip-switch to set the preenphasys at 50 or 75 µs. The preenphasys setting is relevant only for the Left and Right inputs in stereo mode and for the mono input in mono mode,

while MPX input is unaffected by this setting.

[23] 19 kHz PILOT OUT BNC output for the 19 kHz pilot tone. This can be used for

external devices (e.g. RDS coders) synchronization.

[24] SCA2 BNC connector, SCA2 unbalanced input. [25] SCA2 ADJ Adjustment trimmer for SCA2 input.

[26] LEFT-MONO ADJAdjustment trimmer for Left-Mono channel input.[27] LEFT-MONOXLR connector, balanced Left-Mono channel input.[28] IMPEDANCEDip-switch to set the balanced input impedance, 600Ω or

 $10k\Omega$.

[29] AES/EBU XLR connector for AES/EBU digital audio input.
[30] INTERLOCK IN Interlock input BNC connector: the exciter is forced in standby mode when the inner conductor is grounded.

[31] RFL EXT. AGC Trimmer for the control of the delivered power in function of

the RFL fold input.

[32] FWD EXT. AGC Trimmer for the control of the delivered power in function of

the FWD fold input.

[33] RS232 Not used.

[34] REMOTE Db15 connector for telemetry of the machine.

[35] MODEM Not used.



4.8 Connector Pinouts

4.8.1 RS232 (optional)

Type: Female DB9



- 1 NC
- 2 TX_D
- 3 RX D
- 4 NC
- 5 GND
- 6 NC
- 7 NC
- 8 NC
- 9 NC

4.8.2 Service (for programming of factory parameters)

Type: Female DB9



- 1 NC
- 2 TX D
- 3 RX D
- 4 Internally connected to 6
- 5 GND
- 6 Internally connected to 4
- 7 Internally connected to 8
- 8 Internally connected to 7
- 9 NC

4.8.3 Left (MONO) / Right

Type: Female XLR



- 1 GND
- 2 Positive
- 3 Negative

4.8.4 AES (Digital Audio)

Type: Female XLR

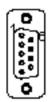


- 1 GND
- 2 Positive
- 3 Negative



4.8.5 I²C Bus

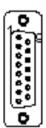
Type: Male DB9



- 1 NC
- 2 TX D
- 3 RX_D
- 4 Internally connected to 6
- 5 GND
- 6 Internally connected to 4
- 7 Internally connected to 8
- 8 Internally connected to 7
- 9 NC

4.8.6 Remote

Type: Female DB15



Pin	Name	Type	Purpose
1	Interlock	IN	Inhibits power if closed to GND
2	Ext AGC FWD	IN	Ext. signal,1-12V, for limitation (AGC)
3	GND		Ground
4	SDA IIC	I/O	Serial data for IIC communication
5	VPA TIm	ANL OUT	PA supply voltage: 3.9V F.S.
6	FWD TIm	ANL OUT	Forward power: 3.9V F.S.
7	Power Good	DIG OUT	Indicates activation by switching the normally-open contact
			to ground.
8	GND		Ground
9	GND		Ground
10	Ext AGC RFL	IN	Ext. signal,1-12V, for limitation (AGC)
11	SCL IIC	I/O	Clock for IIC communication
12	IPA TIm	ANL OUT	PA supply current: 3.9V F.S.
13	RFL TIm	ANL OUT	Reflected power: 3.9V F.S.
14	On cmd	DIG IN	A pulse towards ground (500 ms) triggers power output
15	OFF cmd	DIG IN	A pulse towards ground (500 ms) inhibits power output.



5. Installation and use

This section provides a step-by-step description of equipment installation and configuration procedure. Follow these procedures closely upon first power-on and each time any change is made to general configuration, such as when a new transmission station is added or the equipment is replaced.



IMPORTANT: always remove the mains voltage before carrying out any type of installation and/or maintenance. It is essential to interrupt the power supply to avoid the risk of electric shock which could cause material damage to people or property, serious injuries and even death.

The equipment must only be installed by qualified personnel.

With qualified personnel, it identifies personnel who respond to all directives, laws and regulations concerning safety, applicable to installation and operation of this device.

The choice of qualified, and appropriately trained, personnel is always under responsibility of the company in which this personnel is a part, because is the company in question that determines whether a worker is suitable for a particular job, in order to protect its safety by respecting the applicable law on workplace safety matter.

These companies must provide appropriate training to their staff on electrical devices, and make sure that they familiarize themselves with the contents of this manual.

The respect of the safety instructions set, forth in this manual or in the specified legislation, does not exempt you from compliance with other specific regulations regarding installation, place, Country or other circumstances affecting the equipment.



IMPORTANT: there is a possible danger due electric shock, therefore it is mandatory to comply with the applicable law on safety with regard to electrical aspects.

Once the desired configuration has been set up, no more settings are required for normal operation; at each power-up (even after an accidental shutdown), the equipment defaults to the parameters set during the initial configuration procedure.

The topics covered in this section are discussed at greater length in the next sections, with detailed descriptions of all hardware and firmware features and capabilities. Please see the relevant sections for additional detail.



IMPORTANT: When configuring and testing the transmitter in which the equipment is integrated, be sure to have the Final Test Table supplied with the equipment ready at hand throughout the whole procedure; the Final Test Table lists all operating parameters as set and tested at the factory.



5.1 Installation

5.1.1 Preliminary Requirements

The equiment ventilation and the work space must be suitable for maintenance operations according to the directive in force in the country in which this device is installed.

It is necessary to leave a minimum distance of 50 cm on the front and back sides of the device to have a proper functioning and to facilitate air circulation through the ventilation grids.

In any case, the device must respect the distance established by the safety directive in force in the country where this equipment is installed.

This device is designed to operate at -10 °C to 45 °C without loss of performance. The ambient air must be clean of dust and not condensed; the maximum humidity must never exceed 95%.

It is important to remember that strong changes in temperature can lead to generation of condensation, in particular environmental conditions. In case of the station where this device is located should be subjected to these physical events, it is good to monitor these devices, once you put it into service, in addition to trying to protect the device itself as much as possible.



IMPORTANT: never supply voltage to the equipment in presence of condensation. This problem can occur more frequently in devices warehoused for a long time or in those used as an active reserve.

The antenna RF, power supply and connection cables must have the section suitable for the maximum current intensity.

5.1.2 Preliminary checks

Unpack the transmitter and immediately inspect it for transport damage. Check carefully that all the connectors are in perfect condition and check for the absence of humidithy. Otherwise, wait until it is completely dry.

In case of problems in this step, immediately contact after-sales assistance.

The mains power supply protection fuses are conveniently located externally on rear panel. Remove the fuse holder with a screwdriver to check its integrity or to replace it if necessary. The following fuse are used:



	THESLA TX3.5K @ 230/380 Vac	THESLA TX 1k to 2kW @ 230 Vac	THESLA 30 to 700W @ 90 to 240 Vac
Mains fuses	(3x) 10A type 6x30	2KW - (2x) 20A type 6x30 1KW - (2x) 10A type 6x30	500/700 - (1x) 8A type 5x20 100/300 - (1x) 6.3A type 5x20 30/50 - (1x) 5A type 5x20

Table 5.1: Fuses

5.1.3 Placement of equipment

Useful tips for a correct installation:

- Do not use in presence of external elements near inlets and outlets ventilation systems, as they could prevent a proper ventilation of the device.
- Do not place near any source of heat or flammable gas.
- Avoid places subject to accumulation of humidity, dust, sand, salt or environments that could compromise the correct operation of the equipment.
- Avoid installing the equipment into inhabited places due to possible noise
 pollution or on fragile supports. The operation of the equipment can cause a
 noise due to forced ventilation. The mounting surface must be able to withstand
 the weight of the device and must be sturdy.



Note: below we will refer to a complete station, where the device can be a part of it. The same procedures also apply in case of the device is used individually.

The device is usually connected inside a 19 "rack and fixed with M5 screws in the appropriate holes.

The equipment must be installed at least 1 mt from the ground.

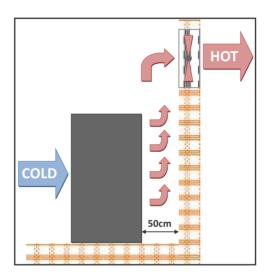
Install the rack in the point in which the transmitter will be put in operation. The rack is mounted on wheels for easy movement so that, once placed in the desired location, it is advisable to use the four screws located at the base of the rack to stabilize it perpendicularly to ground.

The environment, where you have decided to install the rack, should be set up for about 25°C of air conditioning and equipped with a filter to remove dust and salt air.

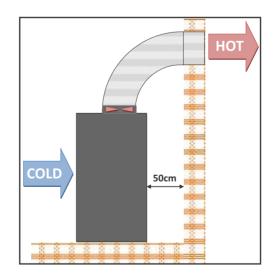




The transmitter normally have the outlet air in the back of machine. In this case, provide adequate ventilation of the room.

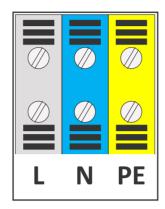


In alternative is cooled by forced ventilation and the air outlet is located on the roof of machine. Is recommended a length of tube approximetively of 1,5 meter.

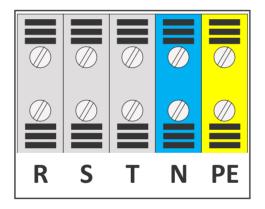




If transmitter require a single-phase power with F (black or brown or grey) + N (blue) + GND (green yellow), keep in mind this requirement to connect to your distribution board.



If transmitter require three-phase power with 3F (black, brown and grey) + N (blue) + GND (green yellow), keep in mind this requirement to connect to your distribution board.





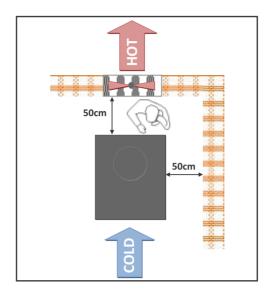
Note: the mains must be equipped with adequate earth connection properly connected to the equipment. This is a pre-requisite for ensuring operator safety and correct operation.

The following table shows the recommended cable cross-sections:

CONNECTOR	THREE-PHASE CABLE SECTION	SINGLE-PHASE CABLE SECTION
L	1	Ø 6mm
R	Ø 4mm	1
S	Ø 4mm	1
Ť	Ø 4mm	Ī
N	Ø4mm	Ø 6mm
PE	Ø 4mm	Ø 6mm



Is highly recommended to install the rack at least 50 cm from the rear and side wall as to allow an optimum airflow and to facilitate workers.



5.1.2.1 Rack power supply connections

Provide for the following (applicable to operating tests and putting into service):

- √ Single-phase 230 or Three Phases 380 (-15% / +10%) Vac mains power for, **THESLA TX3.5K** supply with adequate earth connection.
- √ For operating tests only: dummy load with 50 Ohm impedance and adequate capacity (minimum 5000W for THESLA TX3.5K).

Connect the overall power cord of machine. The cable can be slid through the cable gland located on the back, or on the roof, of the machine and conductors must be attached to the general disconnecting switch terminals.



Note: The connection of machine to power supply is done by fixing a multi-pole cable with exposed terminals to a terminal board. Make sure, with no possibility of error, that the cable is not under tension when you connect it to the machine.

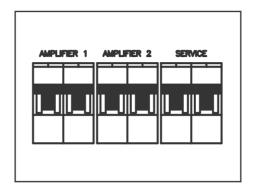


WARNING: Is highly recommended to don't turn on the machine without first having connected the RF output to antenna or dummy load!

If you have a dummy load capable to dissipate the RF power generated by the transmitter, it is advisable to carry out first tests by linking to it rather than to the transmission antenna.



Tipically the distribution board contains the thermal-magnetic circuit breakers for eachamplifierincludedinthesystemandoneforservice.





WARNING: Electric shock hazard! Never handle the RF output connector when the equipment is powered on and no load is connected. Injury or death may result.

Ensure that the distribution board of the transmitter is set to "OFF".

5.1.3 Device power supply connections

Provide for the following (applicable to operating tests and putting into service):

- √ Single-phase 230 or Three Phases 380 (-15% / +10%) Vac mains power for, **THESLA TX3.5K** supply with adequate earth connection.
- √ For operating tests only: dummy load with 50 Ohm impedance and adequate capacity (minimum 5000W for THESLA TX3.5K).



Note: to ensure the safety of the operators, carry out the wiring according to the laws and regulations in force in the country where this equipment is installed.

Check that the **POWER** switch on the rear and rear of **THESLA UNIT** is in the "**OFF**" position.

Connect the mains power cable to the MAINS connector on the rear panel.



Attention: Be sure to connect the equipment correctly, to **avoid the risk of damaging**. It is necessary connect the ground conductor of the power supply cable to the specific terminal in the multipole socket and check the efficiency of your own grounding system.





Note: The mains must be equipped with adequate ground connection properly connected to the machine. This is a pre-requisite for ensuring operator safety and correct operation.

Useful tips for a correct connection:

- Provide an adequate grounding of the electrical system. This has both a direct
 protection function, as it prevents receiving shocks by touching directly the
 metallic enclosures of the equipments, as well as an indirect protection function,
 as it interrupts the energy supply when a leak occurs due to poor insulation. This
 is possible on its own even through discharge devices, like the installation of
 a picket and an inspectable cockpit, through specific companies with qualified
 personnel to carry out the work.
- Provide an internal lightning protection such as a surge arrester (internal SPD)
 or a thermal-magnetic circuit breaker, requiring the installation in the distribution
 panel through qualified personnel. This solution allows you toprotect from
 violent atmospheric electric shocks that strike the surrounding ground up to
 several kilometers.
- Provide an internal protection against interference on the distribution line such as EMI filters or stabilizers online voltages, requiring the installation in the distribution panel through qualified personnel, which allow to filter the interferences caused by electrical equipment and sudden surges of the line, in addition to providing a voltage regulation.

5.1.4 RF Connections

Provide for the following setup (applicable to operating tests and putting into service):

- √ Connection cable kit including:
- Mains power cable.
- Coaxial cable with BNC connectors for interlock signal connection between exciter and amplifier.
- RF cable for output to load / antenna (50 Ohm coaxial cable with standard 7/8" connector).
- Audio cables between transmitter and audio signals sources.



WARNING: risk of burns due to RF. Make sure that the device can not emit RF at the output, before connecting the antenna cable.



WARNING: For electromagnetic compatibility reasons, only double shielded cables must be used on the RF output.



Don't forget to equip yourself with a 7/8" 50 Ohm RF cable for the connection between the Antenna and the device; the part that goes towards the device must be equipped with a 7/8" type connector.

Connect the RF output of the transmitter to an antenna cable or to a dummy load capable of dissipating the power generated by the amplifier. To begin with, set exciter to minimum output power and switch if off.

Connect the amplifier INTERLOCK OUT output to the matching INTERLOCK IN input fitted on all Biquad Broadcast exciters as standard; if your exciter is a different brand, identify an equivalent input.

Connect the RF output to an adequately rated dummy load or to the antenna.



WARNING: To avoid electrical shock and electrocution, never touch the RF output connector when the equipment is switched on and no dummy load is connected.

Ensure that the POWER switch on the front panel of **THESLA UNIT** is set to "**OFF**".

Connect the mains power cable to the MAINS connector on the rear panel.



Note: the mains must be equipped with adequate earth connection properly connected to the equipment. This is a pre-requisite for ensuring operator safety and correct operation.

Connect the audio and RDS/SCA signals from user's sources to the transmitter input connectors.

5.1.5 First power-on and setup

Perform this procedure upon first power-up and each time you make changes to the configuration of the transmitter this component is integrated into.



Note: Standard factory settings are RF output power off (**Pwr OFF**) and regulated output power set to upper limit (unless otherwise specified by customer).

5.1.5.1 Power-on

When you have performed all of the connections described in the previous paragraph, power on the transmitter using the suitable power switch on the back panel.



5.1.5.2 Power check

Ensure that the **ON** LED turns on. Forward power and modulation readings should appear briefly on the display. If the RF output is disabled, those readings will be zero.

When the **PLL** locks to operating frequency, the LOCK LED will turn on.

5.1.5.3 How to enable the RF output

Check output power level and set it to maximum level (unless it has already been set) from the *Power Setup* menu that you will have accessed by pressing the following sequence of key: **ESC** (opens **Default Menu**) \Rightarrow **ENTER** (hold down for 2 seconds) \Rightarrow **SET** \Rightarrow use keys to set bar to upper limit.

Check the state of the **Pwr** output power by the **Fnc** menu. If it is set to **OFF**, press **ENTER** to bring the selection to **ON**.

5.1.5.4 Output power level control



IMPORTANT: The exciter incorporates Automatic Gain Control (AGC) and output power is modulated based on the power level set by the user and actual operating conditions, such as temperature, reflected power and other parameters. Please read section 5.3 for more details of RF power modulation.

Access the **Power Setup Menu** pressing the following keys in the order: **ESC** (opens **Default Menu**) ⇒ **ENTER** (hold down for 2 seconds).

Use the keys and in the SET menu to set transmitter output power; the setting bar at the side of SET provides a graphic indication of power setting; please consider that the forward power readout provided on the display (FWD:xxxx W) reflects actual output power reading, which may be lower than regulated power supply when Automatic Gain Control is running in power supply limitation mode (please read section 5.3 about RF power supply modulation for more details).



Note: Output power may be set using the **Pwr OFF** control. In this condition, the output power readout (**Fwd**) on the display will read 0 (zero); the **SET** bar will reflect any adjustments you make using the keys and provides a graphic indication of how much power supply will be delivered the moment you return to **Pwr On** state.



5.1.5.5 Changing the *Power Good* alarm threshold

Change Forward Power Good alarm setting **PgD** from the **Fnc** menu as desired (factory setting is 50%).

5.1.5.6 Setting equipment I²C address

Change the **IIC** address in the **MIX** (Miscellaneous) menu as desired (factory setting is 01).

5.1.5.7 Adjustments and calibration

The only manual adjustments are the level adjustments and the audio mode adjustment.

The rear panel holds the trimmers for all transmitter inputs. Trimmer identification is printed on the rear panel and the input sensitivity can be set through these trimmers.

When setting input sensitivity, please consider that the default menu reports instantaneous modulation level and an indicator provides a 75 kHz reading. To ensure correct adjustment, apply a signal with the same level as user's audio broadcast maximum level and then adjust using the trimmer until instantaneous deviation matches the 75 kHz reading.

To set subcarrier input levels, you may use the same procedure and option "x10" available in the Fnc menu. With this option, modulation level is multiplied by a factor of 10, which means that default menu bar meter reflects a 7.5 kHz deviation.

A special menu with separate indications of Left and Right channel levels and relating indicators of nominal levels for maximum deviation (75 kHz) is provided.



· Preemphasis:



50 ms

75 ms

L and R (XLR type) input impedance:



Switch 1: R XLR input impedance, ON = 600 W, OFF = 10 kW

Switch 2: L XLR input impedance, ON = 600 W, OFF = 10 kW

• MPX input operation mode/impedance:



Switch 1: Mode of operation ON = Mono, OFF = Stereo

Switch 2: MPX input impedance, ON = 50 W, OFF = 10 kW

5.2 Operation

1) Power on the transmitter and ensure that the **ON** light turns on. Equipment names hould appear briefly on the display, quickly followed by modulation and forward power readings, provided that the transmitter is delivering output power.

Menu 1

1b) In case of a password has been set, through the Miscellaneous menu, enter the code and then confirm to be able to view or modify the parameters of the machine.

The screen that is shown is similar to the following:

PUK: 012x9z PSW: 0123

Menu 2



NOTE: It is advisable to write down the password set, if you forget the password it is not possible to recover it automatically. To recover the password, contact Customer Service by sending the alphanumeric PUK code of 6 characters generated automatically when entering the password.



1c) To **modify power level setting**, hold down the **ENTER** button until opening the **power setup menu**.

The edit screen will look like this:



Menu 3

The bottom line provides instantaneous power reading (in this example 3.5kW for THESLA TX3.5K, falling below 1.6kW the reading back to Watt. As result of hysteresis power up , exceeding 1400W the reading back to kWatt); press button $\stackrel{\rightharpoonup}{\searrow}$ to increase level, press $\stackrel{\rightharpoonup}{\Longrightarrow}$ to decrease it. When you have achieved the desired level, press ENTER to confirm and exit the **default menu**. Please note that the setting is stored automatically; in other words, if you press ESC or do not press any keys before the preset time times out, the latest power level set will be retained.



NOTE: This feature prevents the machine from delivering maximum power as soon as output is enabled from menu 4, or in the event the machine is already set to **ON** and energised.

1d) If the equipment is not used for some time, it will enter in **STAND-BY mode**, where the screen will remain backlit and indications on time and date will be indicated on the display.

Menu 0

Press press any button to exit from this screen.

2) Ensure that machine is not in a locked-out state. Press the **ESC** key to call up the selection screen (Menu 3). Highlight **Fnc** and press **ENTER** to confirm and access the appropriate menu (menu 4).

In the same menu, ensure that power limiting is disabled: if **PWR** is set to **OFF**, i.e. power output is disabled, move cursor to **PWR**. Press **ENTER** and label will switch to **ON**, i.e. power output enabled.

Press ESC twice to go back to the default menu (menu 1).

3) Fine tune power setting from menu 2 (see description of item 1b) until achieving the desired value.



WARNING: Machine is capable of delivering more than rated output power (3500 W for **THESLA TX3.5K**);however, never exceed the specified power rating .





NOTE: If power is set to 0 W in the **Power Setup Menu**, the INTERLOCK OUT contact is activated and any external appliances connected to it are immediately inhibited.

Next, you can review all operating parameters of the machine through the management firmware.

Normally, the machine can run unattended. Any alarm condition is handled automatically by the safety system or is signalled by the LED indicators on the panel or by display messages.



NOTE: Standard factory settings are: output power set to upper limit (unless otherwise specified by customer) and **OFF**.

5.3 Management Firmware

The machine features an LCD with two lines by 16 characters that displays a set of menus. Figure 5.2 below provides an overview of machine menus.

The symbols listed below appear in the left portion of the display as appropriate:

- _ (Cursor) Highlights selected (i.e. accessible) menu.
- (Filled arrow) Editable parameter marker. This symbol appears in menus that take up more than two lines to aid browsing.
- (Three empty arrows) Parameter is being edited.
- (Empty arrow) Current line marker; the parameter in this line cannot be edited. This symbol appears in menus that take up more than two lines to aid browsing.



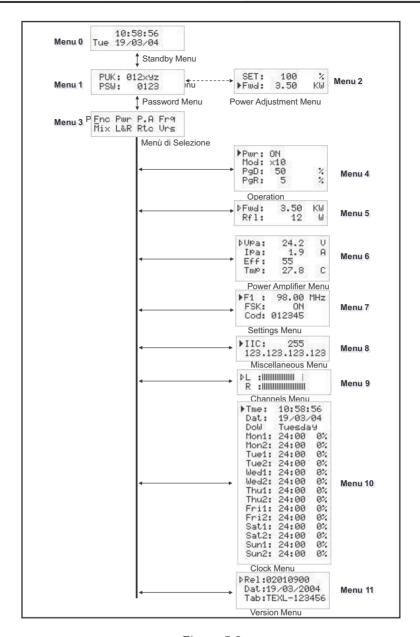
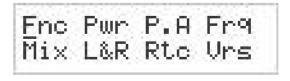


Figure 5.2

When the display is off, touching any key will turn on backlighting.

When the display is on, pressing the **ESC** button from the **default menu** (menu 1) calls up the **selection screen** (menu 3), which gives access to all other menus:



Menu 4

If the temperature alarm is enabled and the alarm threshold is exceeded, the following screen will be displayed (only if you are in the default screen):





State 1

As soon as operating conditions are restored, power output is re-enabled with the same settings in use prior to the alarm condition.

Under 20kHz, no modulation occurs. After a preset time of about 5 minutes (not editable), a NO AUDIO condition is indicated in the main screen, but power is not inhibited.



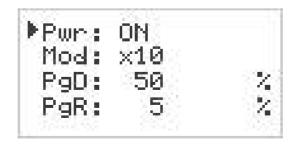
State 2

To gain access to a submenu, select menu name (name is highlighted by cursor) using button \forall or d and press the **ENTER** button.

To return to the **default menu** (menu 1), simply press **ESC** again.

5.3.1 Operation Menu (Fnc)

In this menu, you can toggle transmitter **power output** On/Off,set **deviation display mode** and the threshold rate for **Forward** (**PgD**) or **Reflected** (**PgR**) Power Good.



Menu 5

quad

THESLA TX / EX / SLIM SERIES

Pwr Enables (ON) or disables (OFF) transmitter power output.

Modifies modulation display (toggles between "x1" and "x10"). In "x10" mode, instantaneous deviation indication is multiplied by a factor of 10, and the bar meter on the default menu will reflect 7.5 kHz instead of 75 kHz. This display mode is convenient when you wish to display low deviation levels, such as those caused by pilot tone or subcarriers.

Modifies Power Good threshold for forward power. The Power Good rate is a percent of equipment rated power (3500W for THESLA TX3.5K), not of forward output power. This means that this threshold set at 50% will give 1750 W, respectively, regardless of set power level. The Power Good feature enables output power control and reporting. When output power drops below set Power Good threshold, the equipment changes the state of pin [7] of the DB15 "Remote" connector located on the rear panel.

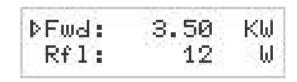
Modifies Power Good threshold for reflected power. The Power Good rate is a percent of equipment rated power (350W for THESLA TX3.5K), not of reflected output power. This means that this threshold set at 4%, respectively, will give 14W regardless of set power level. The Power Good feature enables output power control and alarm management.



NOTE: This alarm does not trip any contacts in the DB15 "Remote" connector and is only available in systems equipped with telemetry.

5.3.2 Power Menu (Pwr)

This screen holds all readings related to equipment output power:



Menu 6

Fwd Forward power reading.

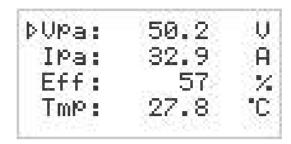
Rfl Reflected power reading.

Note that these are readings, rather than settings, and cannot be edited (note the empty triangle). To change power setting, go to the **default menu** as outlined earlier.



5.3.3 Power Amplifier(P.A)Menu

This screen is made up of four lines that can be scrolled using the \triangleleft and \forall buttons and shows the readings relating to final power stage:



Menu 7

Note that these are readings, rather than settings, and cannot be edited (note the empty arrow).

VPA Voltage supplied by amplifier module.

IPA Current draw of amplifier module.

Eff Efficiency based on ratio of forward power to amplifier module power, in percent (FWD PWR/(Vpa x Ipa) %).

Tmp Equipment internal temperature reading.

5.3.4 Setup Menu (Set)

This menu lets you view and set operating frequency.

The FSK function generates periodic carrier frequency shifts to generate a Morse-coded station ID code.



NOTE: This function is typically used in the USA.

The factory setting for frequency shift amplitude is +10KHz and code repetition period is 60 minutes (please contact Biquad Broadcast if you need different settings), whereas station identified may be programmed by the user following the indications provided in next section.

▶F1 : 98.00 MHz FSK: ON Cod: 012345

Menu 7



Operating frequency setup. Set a new frequency value and then press the **ENTER** button to confirm your selection; the transmitter unlocks from current frequency (the **LOCKLED** turns off) and will lock to the new operating frequency (**LOCK** turns back on again). If you press **ESC** or let the preset time time out, the previous frequency setting is retained.

FSK Enables / disables FSK code transmission.

Adjustment of the Morse code sent normally. The code is considered only if complete with 6 characters (alphanumeric and without spaces)

.

5.3.4.1 Changing the ID code

User may change the FSK code used as a station identifier at any time.

This procedure requires:

- 1 RS232 male-female cable;
- Hyper Terminal interface (make sure it has been installed together with Windows®) or equivalent serial communication software

A brief description of the procedure is provided below:

- Connect the PC serial port COM to the SERVICE connector on the rear panel of THESLA TX3.5K using a standard Male DB9 Female DB9 serial cable.
- Power on the transmitter;
- Launch the serial communication software;
- Set communication parameters as follows:

Baud Rate: 19200

Data Bit: 8
Parity: None
Stop Bit: 1

Flow control: None:

 Activate Caps-Lock through the communication software and send string CODE followed by the 6-character station ID code followed by Enter.



NOTE: To be treated as valid, the code must be made up of 6 alphanumeric characters and must contain no blank spaces; if acknowledged as valid, code is echoed back to the terminal, illegal codes are not echoed.



5.3.5 Miscellaneous Menu (Mix)

This menu lets you set equipment address in an I²C bus serial connection:



Menu 9

- IIC I²C address setting. The I²C network address becomes significant when the transmitter is connected in an Biquad transmission system that uses this protocol. Do not change it unless strictly required.
- Shows the IP address assigned to the equipment (with /TLW-TEX-E-3HE option).
- PSW Setting a numeric password of 4 characters.

 At the time of purchase, the password is set to [0000] by default; this configuration automatically disables the entry of the password in default screen.



NOTE: It is advisable to write down the password set, if you forget the password it is not possible to recover it automatically. To recover the password, contact Customer Service by sending the alphanumeric PUK code of 6 characters generated automatically when entering the password.

5.3.6 Channels Menu (L&R)

Right and left channel input levels are displayed as horizontal bars as shown in the figure below.

The bar meter reflects the level corresponding to a 100% devi ation for each channel and provides a convenient reference when setting audio channel input levels.



Menu 11

- Left channel Vmeter.
- R Right channel Vmeter.



5.3.7 Clock Menu (Rtc)

This menu it lets you to set the time and date of the equipment, as well as to set temporal events to modify the power of the equipment.

▶Tme:	10:58:	56
Dat:	197037	04
DoW	Tuesda	y
Mon1:	24:00	9%
Mon2:	24:00	0%
Tue1:	24:00	0%
Tue2:	24:00	9%
Wed1:	24:00	0%
Wed2:	24:00	0%
Thu1:	24:00	9%
Thu2:	24:00	9%
Fri1:	24:00	0%
Fri2:	24:00	9%
Sat1:	24:00	9%
Sat2:	24:00	9%
Sun1:	24:00	0%
Sun2:	24:00	0%

Menu 10

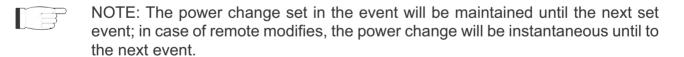
Tme	Adjustment of the hours, minutes and seconds of the equipment (HH: mm:ss)
Dat	Adjustment of the date of the equipment (dd/MM/yy).
DoW	Adjustment of the name of the day of the week.
Mon1	Adjusting the first Monday event in which occurs the power variation set in percentage.
Mon2	Adjusting the second Monday event in which occurs the power variation set in percentage.
Tue1	Adjusting the first Tuesday event in which occurs the power variation set in percentage.



- Tue2 Adjusting the second Tuesday event in which occurs the power variation set in percentage.
- Wed1 Adjusting the first Wednesday event in which occurs the power variation set in percentage.
- Wed2 Adjusting the second Wednesday event in which occurs the power variation set in percentage.
- Thu1 Adjusting the first Thursday event in which occurs the power variation set in percentage.
- Thu2 Adjusting the second Thursday event in which occurs the power variation set in percentage.
- Fri1 Adjusting the first Friday event in which occurs the power variation set in percentage.
- Fri2 Adjusting the second Friday event in which occurs the power variation set in percentage.
- Sat1 Adjusting the first Saturday event in which occurs the power variation set in percentage.
- Sat2 Adjusting the second Saturday event in which occurs the power variation set in percentage.
- Sun1 Adjusting the first Sunday event in which occurs the power variation set in percentage.
- Sun2 Adjusting the second Sunday event in which occurs the power variation set in percentage.



If the set time is 24:00, then the event is disabled.



5.3.6 Version Menu (Vrs)

This screen holds equipment version/release information:



PRe1:02010900

Dat:19/03/2004 Tab:TEXL-123456

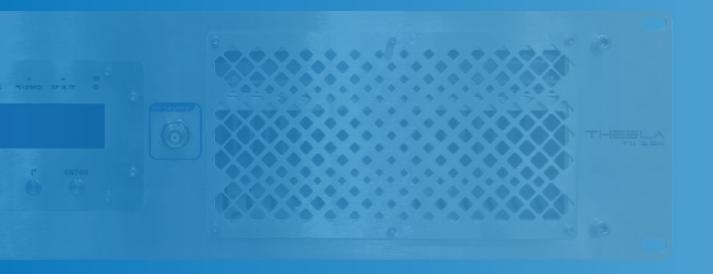
Menu 10

Note that these are readings, rather than settings, and cannot be edited (note the empty arrow).

Rel Firmware release information.

Dat Release date.

Tab Shows table loaded in the memory.





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BIQUAD TECNOLOGIA LTDA.

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