

0100 ADD TELEVISION TRANSMITES

GENERAL CATALOGUE 2009



RADIO AND TELEVISION TRANSMITTERS

W.



S TU EQUIPMENT 5

- DUAL CAST AGILE DIGITAL TRANSMITTERS & TRANSPOSERS UHF & VHF 6
 - TRANSMITTERS & TRANSPOSERS UHF & UHF 10
 - TV MICROWAVE LINKS ANALOGUE AND DIGITAL 30
 - TV POWER DIVIDERS 36
 - TV ANTENNA SYSTEMS VHF & UHF 38

SAREDUNDANT SYSTEMS 41

- 1 + 1 AUTOMATIC CONTROL UNIT 42
- N + 1 AUTOMATIC CONTROL UNIT 44

S DAB-OMB EQUIPMENT 47

TRANSMITTERS & TRANSPOSERS UHF 48

S FM EQUIPMENT 51

- FM EXCITERS & TRASMITTERS 52
 - FM POWER AMPLIFIERS 60
 - FM STUDIO EQUIPMENT 64
- FM ANALOGUE LINKS & TRANSPOSERS 66
- CAVITY FILTERS / STAR POINT COMBINERS 72
- DOUBLE BRIDGE COMBINERS / POWER SPLITTERS / FM ANTENNA 74
 - FM DIPOLE ANTENNAS 76
 - FM ANTENNA SYSTEM 78
 - FM OMNIDIRETIONAL CIRCULARLY POLARIZED DIPOLES 80

ly UPS system 83

SINGLE PHASE 84 THREE PHASE 86



Radio and Television Transmitters



MORE THAN 60 YEARS EXPERIENCE

CTE DIGITAL BROADCAST, with premises in Milan, Reggio Emilia and Bologna, together with its share holder partners Meta System, CTE International, Teko Telecom and Midland International combines into one company more than 60 years of experience and skills in the Broadcast Transmitter field, as well as a considerable capacity for constant innovation.

CTE Digital Broadcast was established in the year 2002, and in the March 2008 the following high reputation Broadcast transmitters companies have been integrated:

ELIT, established in Milan in 1946 and leading the start-up of Television in Italy, in tight cooperation with the public network RAI (Radiotelevisione Italiana);

TEKO TELECOM, established in 1972 and mainly committed in TV broadcasting and repeaters and in TELECOM equipment.; **CTE BROADCAST**, established in 1973 and soon becoming an important leader in manufacturing Radio and TV Transmitters for the FM/TV Broadcasting Industry.







The principal focus of CTE Digital Broadcast is to emerge as a major participant in the worldwide radio and television transition from analog to digital transmission and in the new Mobile Television market by utilizing its diverse expertise to provide state-of-the-art solutions. Designing and producing our solutions for broadcast trasmissions,

"Zero Defect" is the constant approch to set our excellent quality-price ratio.

By means of its consistent investments in research and development CTE Digital Broadcast is able to secure customer satisfaction throughout the products entire life. The performance and the reliability of CTE Broadcast products are kept as the main focus of the whole production process, offering a real value-for-money option in the market. With the effective reorganisation of its Production Area, CTE Digital Broadcast srl is capable of warranting total control of its purchasing, logistics, production and testing

groups, thus ensuring a product that meets all aspects of technical specifications and fulfils the needs of the customer. The Corporate Headquarters is composed by two buildings for a total of 2.800 square meters placed in Origgio (Varese), Via Per Cantalupo n. 5 (Milan-Malpensa Airport area).

The premises in Milan, Reggio Emilia and Bologna include:

- More than 8.000 square metres of factory floor for production and supporting structures
- Ultra-modern instrumentation for testing, research and development
- Modern and automated machinery for packing and despatch
- Anechoic chambers up to 18 GHz
- Platforms for vibration tests
- Equipment for thermal, humidity and fog controls
- └ Equipment for thermal shock testing -40°C + 220°C

Line of products

- New 5 in 1 DVB-T/H Transmitter Dual Cast Agile Digital Transposer
- DVB-T/H Transmitters up to 5kW rms
- TV Transmitters VHF-UHF up to 20kW p.sync
- DAB-DMB transmitters up to 5kW rms
- FM Transmitters up to 20kW
- Mand TV Links, Analogue and Digital up to 23GHz
- Antenna, filters, combiners, passive components for FM and TV application
- Redundancy System 1+1 & N+1 for FM and TV application

CTE Digital Broadcast operates a quality management system in compliance with the requirements of UNI EN ISO 9001:2000

N THE WORLD



CTE DIGITAL BROADCAST SRL

Via Per Cantalupo, 5 21040 Origgio (VA) - ITALY North Milan, Malpensa Airport Area Tel. +39 02 96738811 Fax +39 02 96738868 *info@cte-elit.it* - **www.cte.it**

BRANCH OFFICE IN REGGIO EMILIA

CTE INTERNATIONAL SRL

Via R. Sevardi, 7 42010 Reggio Emilia Tel. +39 0522 509 452 Fax +39 0522 509 448 broad.com@cte.it



CTE dB C/O TEKO TELECOM

Via Meucci, 24/A 40024 Castel San Pietro Terme (BO) Tel. +39 051 6946853 Fax +39 051 948473 felice.agostini@tekotelecom.it

SISTER COMPANIES AND JOINT-VENTURES

CTE INTERNATIONAL s.r.l.

Via R. Sevardi, 7 42010 zona Ind. Mancasale - Reggio Emilia - Italy Tel. +39 0522 509450 Fax. +39 0522 509448 broad.com@cte.it www.cte.it

CTE DIGITAL BROADCASTING

Malaysia Sdn Bhd Suite 15.03, Level 15, Menara Haw Par, Jalan Sultan Ismail, 50250 Kuala Lampur - Malaysia Tel. +60 3 2031 7800 Fax +60 3 2031 5800 darwin@cteasia.com www.cte.it

ALAN TELECOM PTE LTD

111 North bridge Road 08-28 Peninsula Plaza Singapore 179098 Tel. +65 6883 0618 Fax +65 6883 0748 alancom@singnet.com.sg

ALAN ELECTRONICS GMBH

Daimlerstraße 1K D-63303 Dreieich - Germany Tel. +49 6103 / 9481-0 Fax +49 6103 / 9481-60 www.alan-germany.com

ALAN COMMUNICATION JSC

Fortunatoskaya Str. 31A/2 Moscow 105187 - Russia Tel. +7 495 918 0352 Fax +7 495 918 0832 www.midland.ru

ALAN TELEKOMUNIKACJA Sp. z o.o.

Jawczyce, ul. Poznanska 64 05-850 Oïarów Maz., Poland Tel. +22 7223500 Fax +22 7222995 info@alan.pl

ALAN TELECOMMUNICATION Ltd

No.185, Slivnitza Blvd. 1233 Sofia - Bulgaria Tel. +359 2 9312101 Fax +359 2 9311534 www.alanbulgaria.com

ALAN HELLAS Itd

25th Martiou 13, Tavros 177 78 Athens - Greece Tel. + 30 210 4829634 Fax + 30 210 4829635 info@alan.gr www.alan.gr





GENERAL CATALOGUE 2009





5 IN 1 DVB-T/H TRANSMITTER & DUAL CAST AGILE DIGITAL TRANSPOSER

SUITABLE FOR:

- DVB-T/H DIGITAL TRANSMITTER
- DVB-T/H DIGITAL TRANSPOSER WITH HIGH ADJACENT CHANNEL SELECTIVITY
- DVB-T/H DIGITAL GAP FILLER WITH DIGITAL ECHO CANCELLER

 ANALOGUE TRANSPOSER WITH HIGH ADJACENT CHANNEL
- SELECTIVITY
- DVB-T/H REGENERATIVE TRANSPOSER

THE VHF/UHF DUAL CAST AGILE DIGITAL TRANSPOSER/ DIGITAL TRANSMITTER SETS A NEW STANDARDS FOR ATV AND DVB-T/H GAP FILLER AND TRANSPOSER TECHNOLOGY BY COMBINING TOP PERFORMANCE WITH AN EXTENSIVE NUMBER OF FEATURES SECOND TO NONE.

THE EQUIPMENT IS CHARACTERIZED BY THE USE OF AN INTERNAL ADVANCED FPGA DIGITAL BOARD ABLE TO SATISFY ALL FUNCTIONALITY RELATED TO DVB-T NETWORK.

THE DIGITAL ECHO CANCELLER FUNCTION INCREASES THE POTENTIAL OUTPUT POWER OF THE GAP FILLER BY AUTOMATICALLY SUPPRESSING FEEDBACKS FROM THE TRANSMITTING TO THE RECEIVING ANTENNA. THE ECHO CANCELLER IS FURTHERMORE CAPABLE OF CLEANING UP THE RETRANSMITTED SIGNAL BY SUPPRESSING MULTI PATH CONTENT IN THE PRIMARY INPUT TO THE GAP FILLER.



E50/200-DRU

🕌 BY USING THE WEB-INTERFACE MANAGEMENT SYSTEM ALL THE FUNCTIONS CAN BE SET AND MONITORED.

THE RF SIGNAL, COMING FROM THE DIGITAL BOARD, IS BOOSTED BY AN INTERNAL POWER AMPLIFIER SOLID STATE DESIGN FOR OPTIMAL PERFORMANCE IN BOTH DIGITAL AND ANALOGUE BROADCAST APPLICATIONS. THE EQUIPMENTS IS ABLE TO OPERATE IN THE FREQUENCY BAND VHF BAND III AND UHF BAND IV & V. SIZE AND WEIGHT HAVE BEEN REDUCED TO OBTAIN A COMPACT UNIT. THE IMPROVED PERFORMANCE HAS BEEN ACHIEVED BY MEANS OF AN ADVANCED APPROACH IN THE DESIGN, FOCUSING ON LOW POWER CONSUMPTION AND ON EXCELLENT LINEARITY OVER THE ENTIRE OPERATIONAL BAND. HIGH RELIABILITY IS MAINLY GUARANTEED BY USING A LIMITED NUMBER OF TRANSISTORS TO ACHIEVE A GIVEN POWER TARGET AND BY USING OVER DIMENSIONED COOLING DEVICES: BROADCASTERS CAN THUS REDUCE THEIR LONG-TERM SYSTEM COSTS.

4 CODE	MODEL	DESCRIPTION
6002545538	E5/20-DRU	UHF DVB Agile Transposer 5/20W + In/Out Filter
6002545539	E10/50-DRU	UHF DVB Agile Transposer 10/50W + In/Out Filter
6002545540	E50/200-DRU	UHF DVB Agile Transposer 50/200W +In/Out Filter
6002545542	E125/500-DRU	UHF DVB Agile Transposer 125/500W + In/Out Filter
6002545543	E5/20-DRV	VHF DVB Agile Transposer 5/20W + In/Out Filter
6002545544	E10/50-DRV	VHF DVB Agile Transposer 10/50W + In/Out Filter
6002545545	E50/200-DRV	VHF DVB Agile Transposer 50/200W + In/Out Filter
6002545547	E125/500-DRV	VHF DVB Agile Transposer 125/500W + In/Out Filter
6003545034	E5-DTU	UHF DVB-T/H Agile Transmitter 5W + Out Filter
6003545035	E10-DTU	UHF DVB-T/H Agile Transmitter 10W + Out Filter
6003545036	E50-DTU	UHF DVB-T/H Agile Transmitter50W + Out Filter
6003545038	E125-DTU	UHF DVB-T/H Agile Transmitter 125W + Out Filter
6003545039	E5-DTV	VHF DVB-T/H Agile Transmitter 5W + Out Filter
6003545040	E10-DTV	VHF DVB-T/H Agile Transmitter 10W + Out Filter
6003545041	E50-DTV	VHF DVB-T/H Agile Transmitter 50W + Out Filter
6003545042	E65-DTV	VHF DVB-T/H Agile Transmitter 65W + Out Filter
6003545043	E125-DTV	VHF DVB-T/H Agile Transmitter 125W + Out Filter

S RF INPUT

Connector	Ν
Input impedance	50 ohm
Return loss	>16 dB
Frequency range	30MHz -1000MHz
Input level	-77dBm to -7dBm *
Input noise figure	<8dB@max gain (typ. 6.5dB)
Immunity to other channels	adj ch N1 analog signal sync/OFDM >40dB* digital signal OFDM/OFDM >30dB* other ch analog signal sync/OFDM >46dB* digital signal OFDM/OFDM >40dB*

Selectivity

>65 dB attenuation outside ±4.2MHz relative to centre frequency *

* Measured as the threshold for QEF reception, mode=8K, 64QAM, CR2/3 (subj. to change) ** Depending on selectivity-filter choice

S RF OUTPUT

Frequency Range	VHF Band III and UHF IV&V
Impedance	50 ohm
Class	AB
Output Power	See above specifications chart
Spurious emission	< -60 dBc with ext. output filter
Protections	Overpower, VSWR, Over voltage, Over current, Over temperature
Probe	SMA Female connector RF for forward and reflected power
Gain	up to 40 dB
Load Mismatch	1.8:1 typical
** For GAP-FILLER	
Effective output power w	vill depend from antenna separation condition

S DIGITAL SPECIFICATION Synchronism Type Internal GPS(output with 1PPS and 10Mhz) Input 1PPS and 10Mhz **IF Filter** Digital with three level selectivity Digital non-linear precorrection by software: curve Vo/Vi e S21, 256 point, gain correction up to +12dB, phase correction $-6^{\circ}+30^{\circ}$ Precorrection Digital linear precorrection by software: amplitude ±10dB with 0.01dB step; group delay ±1000ns 1ns step, 21 point 1/20 BW resolution Echo canceller The size of the "cancelling window" can be configured to either 7 µSec (default) or 14 µSec for an 8 MHz system bandwidth. **SAREMOTE CONTROL Ethernet WEB Server** LAN RJ45, TCP/IP protocol **SNMP** Agent version 2 RS232/RS485 DB9 male connector A I/O Parallel Interface DB25 female connector Interlock **Y RTTE STANDARD COMPLIANCE** EN 302 296 - EN302 297 **Frequency Spectrum** EMC

Safety

EN 300-489-1 EN 301 489-14 EN 60950 - EN 60215

SI TEMPERATURE

Operating range Storage range Maximum relative Humidity Max Operating Altitude

0° to 45° C (Meets ETS 300 019 requirements) -10° to 80°C 90% non condensing 2500 mt. a.s.l.

& SPECIFICATIONS	E125/500-DRU / DRV	E50/200-DRU / DRV	E10/50-DRU / DRV	E5/20-DRU / DRV
RF output power rms	125W	50W	10W	5W
Output Connector	7/16 f	Nf	Nf	Nf
Dimensions (W x H X D) mm	3U 485X132X720	3U 485X132X720	2U 485X88 X570	2U 485X88 X570
Weight	22	18	16	16
Power consumption @ DVB-T/H	<1.2KVA	400VA	200VA	100VA
Nr. of power supply boards	1	1	1	1
DC Power Supply	230 Vac +/- 10%	230 Vac +/- 10%	230 Vac +/- 10%	230 Vac +/- 10%
Number of fans				



FEATURES:

- STANDARDS AND BANDWIDTHS(5, 6, 7 & 8MHz) WITHOUT ANY HW CHANGES.
- POWERFUL POWER PC MICRO CONTROLLER RUNNING AN OPEN SOURCE LINUX OPERATING SYSTEM
- SECONDARY, EFFICIENT MICRO CONTROLLER TO ENSURE "HARD-REALTIME" RESPONSE OF THE SOFTWARE SYSTEM
- BUILD-IN GPS SYSTEM CAPABLE TO WORK WITH PASSIVE- AND ACTIVE-ANTENNAS, ALWAYS INCLUDED IN ALL VERSION
- POWERFUL DIGITAL SIGNAL PROCESSOR
- LARGE FIELD PROGRAMMABLE GATE ARRAY, FPGA
- SEVERAL UP- AND DOWN- CONVERTERS FOR CONVERSION TO/FROM IF AND RF

- Seal TIME CLOCK FOR AVAILABILITY OF CLOCK AND DATE FOR USE WITH EVENT LOG ETC.
- BUILT-IN DIGITAL LINEAR/NON LINEAR PRECORRECTOR
- BEST IN CLASS ECHO CANCELLER
- SCALABLE DIGITAL FILTERING FOR OPTIMISATION OF SELECTIVITY VS. LATENCY
- SOPTIONAL ADAPTIVE PRECORRECTOR FOR LINEAR/NON-LINEAR CORRECTION (SEAMLESSLY INTEGRATED)
- HIGH LINEARITY OVER THE ENTIRE BAND
- VSWR AND INPUT OVER-DRIVE AMPLIFIER PROTECTION FUNCTIONS
- S RJ 45 ETHERNET CONNECTION WITH WEB MONITORING / PROGRAMMING AND SNMP FOR REMOTE CONTROL
- SUPPLY WITH ACTIVE PFC ■ POWER SUPPLY WITH ACTIVE PFC



E125/500-DRU

÷.,

THE ECHO CANCELLER WILL REDUCE THE POWER LEVEL OF SELF-INDUCED ECHOES (FEEDBACK FROM TX-ANTENNA RADIATING BACK INTO RX-ANTENNA) AS WELL AS ECHOES PRESENT IN THE ORIGINAL INPUT SIGNAL (ARISING EITHER FROM MULTI PATH RECEPTION CONDITIONS OR DIFFERENT ARRIVAL TIMES OF THE MAIN-SIGNAL STEMMING FROM SIMULTANEOUS RECEPTION OF DIFFERENT BASE-STATIONS).

THE OBJECTIVE OF THE ECHO CANCELLING FUNCTIONALITY IS TO EASE INSTALLATION, IMPROVE USABLE OUTPUT POWER LEVEL AND HENCE REPEATER COVERAGE, AND IMPROVE QUALITY OF SERVICE BY "CLEANING UP" THE INPUT SIGNAL PRIOR TO TRANSMISSION. THE PRIMARY BENEFIT OF USING THE ECHO CANCELLER ON A REPEATER SITE IS, THAT THE SYSTEM WILL BECOME STABLE EVEN WITH A NEGATIVE GAIN MARGIN – ALLOWING MORE POWER TO BE TRANSMITTED FROM THE SITE. THE ECHO CANCELLER WILL OPERATE UNDER STEADY STATE LAB CONDITIONS WITH A NEGATIVE GAIN MARGIN APPROACHING 25DB.THE ACTUAL IMPROVEMENT OF THE GAIN MARGIN FOR A GIVEN SITE WILL DEPEND ON SEVERAL SITE RELATED CONDITIONS, BUT TYPICALLY AN IMPROVEMENT IN GAIN MARGIN IN THE ORDER OF 10dB WILL BE ACHIEVED.

THE ALGORITHM OF THE ECHO CANCELLER CONSTANTLY TRACKS AND ADJUSTS FOR DYNAMIC CHANGES IN THE SIGNAL CONDITIONS – THEREBY OPTIMIZING PERFORMANCE UNDER CHANGING CONDITIONS. ECHOES OCCURRING WITHIN THE "CANCELLING WINDOW" WILL BE SUPPRESSED IN ABSOLUTE POWER, IN THE OUTPUT SIGNAL OF THE DIGITAL REPEATER. THE SIZE OF THE "CANCELLING WINDOW" CAN BE CONFIGURED TO EITHER 7 msec (DEFAULT) OR 14 msec FOR AN 8 MHz SYSTEM BANDWIDTH.

THE "CANCELLING WINDOW" CAN BE LOCATED WITHIN AN "OPERATIONAL WINDOW" THAT STARTS AT 3 msec DELAY AND ENDS AT 56 msec DELAY. THE CANCELLING WINDOW IS SCALED PROPORTIONALLY ACCORDING TO THE SYSTEM BANDWIDTH WITH A FACTOR EQUAL TO 8/BW. THEREFORE, BY SYSTEM BANDWIDTH 5 MHz, THE "CANCELLING WINDOW" CAN BE 11.2 msec (DEFAULT) OR 22.4 msec, AND THE "OPERATIONAL WINDOW" STARTS AT 5 msec AND ENDS AT 89.6 msec. THE OPTIMAL POSITION OF THE "CANCELLING WINDOW" IS AUTOMATICALLY DETERMINED BY THE ECHO CANCELLER, BUT CAN ALTERNATIVELY BE PROGRAMMED UNDER USER CONTROL. THE POWER LEVEL OF ECHOES IS TYPICALLY REDUCED MORE THAN 40 dB. THE ECHO CANCELLER IS COMPLETELY AUTOMATIC IN USE, IT IS ONLY NECESSARY TO CONFIGURE THE "LOOP GAIN LIMIT" MANUALLY.

ALL SIGNAL MODE PARAMETERS ARE AUTOMATICALLY DETECTED BY THE DIGITAL REPEATER, AND CAN BE MONITORED. FURTHERMORE, PARAMETERS LIKE SIGNAL TO NOISE RATIO (SNR) FOR THE DIGITAL INPUT SIGNAL, LOOP GAIN AND ECHO POWER LEVEL CAN BE MONITORED. AT POWER UP, INITIAL SYNCHRONIZATION WILL TYPICALLY BE ACCOMPLISHED WITHIN 20 sec. IF FOR, SOME REASON, SYNCHRONIZATION IS LOST DURING OPERATION, RE-SYNCHRONIZATION WILL BE ACCOMPLISHED WITHIN APPROX. 2 sec. IN THE EVENT THAT THE INPUT SIGNAL IS LOST, THE ECHO CANCELLER WILL AUTOMATICALLY MUTE THE OUTPUT SIGNAL – AND GRADUALLY RAMP UP THE OUTPUT AGAIN ONCE OPERATING CONDITIONS ARE VALID. UNDER CONDITIONS LIKE THIS, NO INSTABILITY OF OPERATION WILL OCCUR AND SEVERAL ALARM EVENTS ARE AVAILABLE FOR REPORTING (E-MAIL, EVENT-LOGGING, SNMP-TRAP ETC.).

RESIDUAL ECHO SUPPRESSION

THE RESIDUAL ECHO SUPPRESSION IS DEFINED AS THE SUPPRESSION IN dB OF THE ECHO LEVEL WHEN THE ECHO CANCELLER FUNCTION IS ACTIVATED RELATIVE TO THE UNSUPPRESSED LEVEL OF THE ECHO. FOR EXAMPLE, FOR A LOOP GAIN OF 15dB (ECHO IS 15dB ABOVE THE INPUT SIGNAL LEVEL) AND AN OBSERVED ECHO LEVEL ON THE OUTPUT 35dB BELOW THE MAIN SIGNAL THE ECHO SUPPRESSION IS DEFINED AS 15 + 35 = 50dB.





E05-DU 5W rms E05-DV 5W rms

E 10-DU 10W rms **E 10-DV** 10W rms

EK 50-DU 50W rms **EK 50-DV** 50W rms

THE E SERIES DIGITAL TRANSMITTER IS DESIGNED TO CONVERT A TRANSPORT STREAM INTO A CODED ORTHOGONAL FREQUENCY DIVISION MULTIPLEX (COFDM) WITH AN OUTPUT POWER OF 10W rms. THE GENERATION AND TRANSMISSION OF COFDM SIGNALS AT 2K, 4K OR 8K IS POSSIBLE WITH OPSK, 160AM OR 640AM MODULATION WITH PAYLOADS FROM 3,73 TO 31.67 Mb/s.

THANKS TO AN INTERNAL 32-BIT PROCESSOR, THE INNOVATIVE SOFTWARE IMPLEMENTED IN THE EQUIPMENT ALLOWS THE ELABORATION OF A ZERO ERROR SIGNAL.

THE INTEGRATED SFN INTERFACE ALLOWS OPERATIONS IN PRECISION OFFSET CONDITIONS WITH FREQUENCY LOCK ONTO THE GPS REFERENCE SIGNAL AND COMPENSATION OF THE NETWORK DELAY.

THE UNIT INCLUDES A STANDARD HIERARCHICAL CAPABILITY AND IT IS EQUIPPED WITH FOUR ASI INPUTS IN DUAL ASI BOTH FOR UNIFORM MODULATION AND HIERARCHICAL MODULATION. THE FRIENDLY USE OF THIS DIGITAL TRANSMITTER, THE STURDINESS OF THE MODULAR CONSTRUCTION AND ITS HIGH PERFORMANCE CAPABILITY, OPEN UP NEW PERSPECTIVES ABOUT THE REALIZATION OF DVB-T/H NETWORKS BOTH IN SFN AND MFN APPLICATIONS. A WEB INTERFACE THAT ALLOWS REMOTE CONTROL THROUGH TCP/IP ON ETHERNET IS AVAILABLE AS OPTION.



E10-DU

COMPLIANT WITH ETS 300 744 REQUIREMENTS. CHANNEL BANDWIDTH 6, 7, 8 MHz ALL UNIFORM. DVB-H SUPPORT THANKS TO 4K IFFT MODE, CELL - ID AND 8K SYMBOL INTERLEAVER. SUPERIOR LINEAR AND NON LINEAR DIGITAL PRE-CORRECTOR. DUAL ASI FOR EACH INPUT (LP & HP). MIP DECODER FOR AUTOMATIC CONFIGURATION. DE-JITTER ON INPUT SIGNAL PRIOR TO TRANSMISSION. GPS REFERENCE LOCK SIGNAL. SUPERIOR MER PERFORMANCE (DESIGNED TO MEET 45 dB). ALL REDUNDANCY CONFIGURATIONS AVAILABLE ON REQUEST (DUAL DRIVER; ACTIVE RESERVE; N+1; 1+1).

9 CODE	MODEL	DESCRIPTION
6003545025	E 05-DU_DRIVER	5 W rms UHF DVB-T/H Digital DRIVER (3U)
6003545027	E 05-DU	5 W rms UHF DVB-T/H Digital Transmitter (3+1U out filter incl.)
6003545026	E 10-DU	10 W rms UHF DVB-T/H Digital Transmitter (3+1U out filter incl.)
6003545017	EK 50-DU	50 W rms UHF DVB-T/H Digital Transmitter COMPACT
6003545028	E 05-DV_DRIVER	5 W rms VHF DVB-T/H Digital DRIVER (3U)
6003545029	E 05-DV	5 W rms VHF DVB-T/H Digital Transmitter (3+1U out filter incl.)
6003545030	E 10-DV	10 W rms VHF DVB-T/H Digital Transmitter (3+1U out filter incl.)
6003545031	EK 50-DV	50 W rms VHF DVB-T/H Digital Transmitter COMPACT (3+1U out filter incl.)

S FREQUENCY

Range

Internal Setting Mode Output Frequency Stability In Band Flatness Impedance Rf Connector UHF (470-860MHz) VHF Band III (174-260 MHz) 1 Hz steps Precision TCXO (0,01 ppm) ± 0.1 Db 50 Ohm

S RF OUTPUT SPECIFICATIONS

Output Power stability	± 0.5 dB
Intermodulation distortion	< -60 dB at rated output power (With pre- correction inserted)
Harmonics emission	< -75 dBc (with output filter)
Spurious emission	< -75 dBc (with output filter)
Impedance RF Connector	50 Ohm
BER	Zero over five hour period before RS decoding
MER	> 37 dB
Protections	Over power, Over voltage, Over current, Over temperature
Prohe	IE monitor SMA connector (36.15 Mbz)

S COFOM MODULATOR

Input signal Input data	MPEG Transport Stream rate 3.73 to 31.67 Mbits/s (according to selected BW and mode)
Transport packet length	188 bytes - 204 bytes (SPI)
IFFT	2k, 8K and 4k (DVB-H)
Guard intervals	1/4, 1/8, 1/16, 1/32
Code rates	1/2, 2/3, 3/4, 5/6, 7/8
Modulation	QPSK,16QAM, 64QAM
Precision offset	Integrated (Exact 1 Hz steps @ all BW)
SFN function	Integrated
Network delay compensation	Automatic

Bandwidth Eye aperture on vector constellation w/o I.F. filter Virtual elastic store function to prevent data overflow Serial data input Frequency reference input Time reference input Reference output Hierarchical mode Spectrum inversion Test functions

8 MHz, 7MHz, 6 MHz, 5 MHz > 32 dB

Integrated

	4 x ASI, BNC 75 Ohm
put	10 MHz, BNC 50 Ohm
	1 PPS, BNC 50 Ohm
	TS clock signal
	Integrated, all modes supported
	Supported
	Programmable carrier packet removal CW mode Null packet only stream

S REMOTE CONTROL	
Output Connector	RS232 interface Connector DB9 Male Two DB9 Female programmable connector Alarms via separate relays
Input Connector	Reset and muting control activated by ground closure
Ethernet interface (option)	Connector RJ 46 WEB browser or SNMP client
и станларас самон	TANCE

a stultoukos courctuluci

Frequency Spectrum	EN 302 296 - EN302 297 - ETS 300-744
EMC	EN 300-489-1 EN 301 489-14
Safety	EN 60215

S TEMPERATURE

0° to 45° C (Meets ETS 300 019 requirements)
90% non condensing
2500 mt. a.s.l.



Output Connector
Dimensions (W x H X D) mm
Weight
Power consumption
Nr. of power supply boards
DC Power Supply
Number of fans

adj. 1-5 Wrms N Type Female 482 x 132 (+ 44) x 450 15 Kg Approx. < 100 VA 1 from 230 V a.c. ± 20% 48 V (36-60 V) 2 blowers, 24 Vdc

adj. 2-10 Wrms N Type Female 482 x 132 (+ 44) x 450 15 Kg Approx. < 200 VA

1 from 230 V a.c. ± 20%

48 V (36-60 V)

2 blowers, 24 Vdc

adj. 10-50 Wrms
N Type Female
482 x 132 (+ 44) x 450
17 Kg
Approx. < 400 VA
1 from 230 V a.c. ± 20%
48 V (36-60 V)
2 blowers, 24 Vdc



www.cte.it

E 20-TU	20W p.sync
E 20-TV	20W p.sync



EK 200-TU 200W p.sync EK 200-TV 200W p.sync

THE GENERAL DESIGN OF OUR TELEVISION TRANSMITTERS INCLUDES AN EXT. IF TV MODULATOR WITH A PLUG-IN MODULES WITH OUTPUT POWER UP TO 200 W SOLID STATE. THE DIRECTIONAL COUPLER, THE OUTPUT FILTER AND THE SWITCHING POWER SUPPLY MODULE ARE BUILT-IN STAGES IN ANY EOUIPMENT. THE TRANSMITTERS ARE AVAILABLE TO OPERATE ON ANY BANDS AND IN COMPLIANCE WITH SEVERAL TV STANDARDS.

TO GREATLY SIMPLIFY THE CONVERSION TO DIGITAL TECHNOLOGY, THE TV MODULATOR IS AN EXTERNAL UNIT. THE MODULATOR CAN OPERATE AS A FINAL STAGE DIRECTLY CONNECTED TO A RADIATING SYSTEM OR AS A DRIVER IN AN INDEPENDENT POWER AMPLIFIER.

IN ANY EQUIPMENT, RJ-45, RS-485 AND PARALLEL INTERFACE CONNECTORS ARE AVAILABLE FOR REMOTE CONTROL MONITORING.

THE TELEVISION MODULATOR IS A HIGH PERFORMANCE DEVICE WHICH MEETS THE STRICTEST TECHNICAL REQUIREMENTS NECESSARY TO OBTAIN A REALLY OUTSTANDING QUALITY OF THE TELEVISION SIGNAL. IT IS AVAILABLE IN DIFFERENT VERSIONS FOR THE PAL, SECAM, NTSC WORLD STANDARDS.

THE EQUIPMENT IS A SINGLE 19" 1U HEIGHT MAINFRAME: INSIDE IT, EACH MODULE IS LOCATED IN A SEALED ALUMINIUM CASE FOR AN OUTSTANDING SHIELD PROTECTION AND EASY REMOVING FOR QUICK SERVICE.

A FRONT PANEL MULTIFUNCTION DISPLAY IS AVAILABLE TO MONITOR ALL THE MAIN PARAMETERS THAT CAN BE EASILY SET BY MEANS OF A KEYBOARD PLACED ON THE FRONT PANEL OF THE EQUIPMENT.



E20-TU

5 CODE	MODEL	DESCRIPTION
6003545033	E 20-U	20 W p.sync UHF Analogue DRIVER (3+1U ext. PAL IF Modulator)
7003300118	E 20-TU	20 W p.sync UHF Analogue Transmitter (3+1U ext. PAL IF Modulator)
7003300119	E 50-TU	50 W p.sync UHF Analogue Transmitter (3+1U ext. PAL IF Modulator)
7003300120	EK 200-TU	200 W p.sync UHF Analogue Transmitter (3+1U ext. PAL IF Modulator)
6003545032	E 20-V	20 W p.sync VHF Analogue DRIVER (3+1U ext. PAL IF Modulator)
7003300106	E 20-TV	20 W p.sync VHF Analogue Transmitter (3+1U ext. PAL IF Modulator)
7003300107	E 50-TV	50 W p.sync VHF Analogue Transmitter (3+1U ext. PAL IF Modulator)
7003300108	EK 200-TV	200 W p.sync VHF Analogue Transmitter (3+1U ext. PAL IF Modulator)

S FREQUENCY

Range

Internal Setting Mode Output Frequency Stability Impedance Rf Connector

UHF (470-860MHz) VHF Band III (174-260 MHz) 1 Hz steps Precision TCXO (0,01 ppm) 50 Ohm

BNC type connector

75 Ohm

S RF OUTPUT SPECIFICATIONS

Output Power stability Intermodulation distortion

Harmonics emission Spurious emission Impedance RF Connector Protections

± 0.5 dB < -60 dB at rated output power (With pre-correction inserted) < -75 dBc (with output filter) < -75 dBc (with output filter) 50 Ohm Over power, Over voltage, Over current, Over temperature IF monitor SMA connector (36.15 Mhz)

Probe

S VIDEO PARAMETERS

Input connector
Input impedance
Input level
K factor
Tilt
Frequency response
Differential gain
Differential phase
IF Output impedance
IF Nicam
Input return loss
Group delay
S/N ratio (weighted)

Pre – emphasis

Frame distortion

Line distortion Vision IF

Luminance Non Linearity

1 V p.p. ± 6 dB < 1 % < 1 % ± 0.5 dB (on the entire video band) $<\pm1$ % < ± 2 ° 50 Ohm Optional 33.050 MHz (others upon request) < 0 – 30 dB ± 50 ns (Within the vision band) > 68 dB (weighted according to CCIR) > 60 dB (unweighted according to CCIR) Flat or 75 or 50 µs $<\pm2\%$ < 2 % < 2 % 38,9 MHz

S AUDIO PARAMETERS

Input connector	XLR type male connector 600 Ohm (balanced) or > 10 kOhm
Input impedance	(unbalanced) (jumper selectable)
Input level Frequency response (30 Hz - 15 kHz) Audio pre-emphasis	0 dBm ± 8 dB 0.5 step ± 0.5 dB (± 0.2 dB typically) Flat or 75 or 50 μs < 0.3%
S/N ratio (un-weighted) Stereo / Dual mode Stereo Separation Audio IF	 > 50 dB unweighted for 50 Khz deviation Available > 37 dB (better than 40 dB typically) 33,4 MHz and 33,1578 MHz
SI REMOTE CONTROL	
Output Connector	RS232 interface Connector DB9 Male Two DB9 Female programmable connector Alarms via separate relays
Input Connector	Reset and muting control activated by ground closure
Ethernet interface (option)	Connector RJ 46 WEB browser
STANDARDS COMPL	IANCE
Frequency Spectrum	EN 302 296 - EN302 297 - ETS 300-744

Fr

S TEMPERATURE

Temperature Operating range Maximum relative Humidity 90% non condensing Max Operating Altitude

0° to 45° C (Meets ETS 300 019 requirements)

2500 mt. a.s.l.

EN 60215





SPECIFICATIONS	E 20-TU / E 20-TV	E 50-TU / E 50-TV	EK 200-TU / EK 200-TV
RF output power	adj. 1-20 W p.sync	adj. 20-50 W p.sync	adj. 20-50 W p.sync
Output Connector	N Type Female	N Type Female	N Type Female
Dimensions (W x H X D) mm	482 x 132 (+ 44) x 450	482 x 132 (+ 44) x 450	482 x 132 (+ 44) x 450
Weight	15 Kg	15 Kg	15 Kg
Power consumption	Approx. < 400 VA	Approx. < 400 VA	Approx. < 400 VA
Nr. of power supply boards	1 from 230 V a.c. ± 20%	1 from 230 V a.c. ± 20%	1 from 230 V a.c. ± 20%
DC Power Supply	48 V (36-60 V)	48 V (36-60 V)	48 V (36-60 V)
Number of fans	2 blowers, 24 Vdc	2 blowers, 24 Vdc	2 blowers, 24 Vdc





E 50-UU 50W p.sync/10Wrms

EK 200-UU 200W p.sync/50Wrms EK 200-VV 200W p.sync/50Wrms

THIS DUALCAST TRANSPOSER FAMILY IS SUITABLE FOR APPLICATIONS IN ANALOGUE AND DIGITAL TERRESTRIAL BROADCASTING OF TV PROGRAMS, WITH THE CLASSICAL TRANSPOSER METHOD WITH RELAY RECEPTION AND NON REMODULATION BROADCASTING. COMPACT DESIGN, MODULAR CONSTRUCTION, PLUG-IN MODULES FROM THE FRONT PANEL LCD GRAPHIC DISPLAY AND SOFT KEYS TO CONTROL THE MODULE

PARAMETERS

SUPERIOR CLASS AB PRE-CORRECTOR, FOR BOTH DIGITAL AND ANALOGUE TV FOR HIGH POWER TRANSMISSION OR SIMPLIFIED CLASS A PRE-CORRECTOR FOR LOW POWER TRANSMISSION ULTRA LOW PHASE NOISE LOCAL OSCILLATOR MODULES FOR RELAY APPLICATIONS **BROADBAND AMPLIFIERS** HIGH RELIABILITY, LONG MAINTENANCE-FREE PERIODS, FRIENDLY-SERVICE DESIGN ALL REDUNDANCY CONFIGURATIONS AVAILABLE ON REQUEST (DUAL DRIVER; ACTIVE RESERVE; N+1; 1+1) WEB MONITORING FOR REMOTE CONTROL



E20-UU

у CODE	MODEL	DESCRIPTION
6002545535	E 20-UU	20 W UHF Transposer with output filter
6002545531	E 20-VV	20 W VHF Band III Transposer with output filter
6002545536	E 50-UU	50 W UHF Band Transposer with output filter
6002545526	E50-VV	50 W UHF Band Transposer with output filter
6002545537	EK 200-UU	200 W p.sync UHF Analogue Transposer (3+1U ext. filter)
6002545533	EK 200-VV	200 W p.sync VHF Analogue Transposer (3+1U ext. filter)

S FREQUENCY

Frequency drift

Amplitude/frequency

Range

Internal reference frequency External reference frequency Output frequency stability

VHF Band I (45-90 MHz) 5 MHz (or 10 MHz) Input From the front 5 MHz (or 10 MHz) TCXO 1 p.p.m / year (opt.: OVEN < 0.2 p.p.m / years) Better than 10 exp-7 ± 0.5 dB throughout the vision

< -60 dB at rated output power (With pre-correction inserted)

UHF (470-860MHz) - VHF Band III (174-260 MHz) -

response band

S RF OUTPUT SPECIFICATIONS

± 0.5 dB

Output Power stability Intermodulation distortion

Harmonics emission Spurious emission Impedance RF Connector Group delay deviation Up converter A.G.C. dynamic Sync pulse compression Differential gain Differential phase MER Phase noise

Protections

Probe

THD

VSWR

Load mismatch

Off Lock Attenuation

S/N RATIO (weighted)

< -75 dBc (with output filter) < -75 dBc (with output filter) 50 Ohm ± 30 ns within the vision band > 10 dB < 3 % < 5 ° < 3 % Better than 36 dB - 70 dBc @ 10 Hz ; - 85 dBc @ 100 Hz – 1 KHz; -100 dBc @ 10 KHz Over power, Over voltage, Over current, Over temperature 10 dB IF monitor SMA connector (36.15 Mhz) > 60 dBc > 73 dB (referred to \pm 75 KHz) 0,10% Less then 1,5:1

U TRANSPOSER SPECIFICATION

nput Frequency	UHF (470-860MHz) - VHF Band III (174-260 MHz) - VHF Band I (45-90 MHz)
Input Impedance Input field Level Input Matching Selectivity Synthesis Resolution Noise figure IF Input level	50 Ohm N (Female) connector -30 to -65 dBm > 20dB S.A.W. Filter 50° C 1 Hz < 8 dB -4 dBm ± 0.5 dB at RF input digital (0 dBm ± 0.5 dB at RF input analog)
Input matching	VSWR better than 1.2:1 in channel
S REMOTE CONTROL	
Output Connector Ethernet interface (option)	RS232 interface Connector DB9 Male, RS 485, Auxiliary port 25-pole Connector Connector RJ 45 WEB browser or SNMP client
STANDARDS COMPLI	(ANCE
Frequency Spectrum EMC Safety	EN 302 296 – EN302 297 EN 300-489-1 EN 301 489-14 EN 60215
S TEMPERATURE	

Temperature Operating range Storage temperature Maximum relative Humidity Max Operating Altitude 0° to 45° C (Meets ETS 300 019 requirements) From -30°C to +80°C 90% non condensing 2500 mt. a.s.l.





			112 - 0 0010
SPECIFICATIONS	E 20	E 50	EK 200
RF output power DTV(rms)	5 W	10 W	50 W
RF output power ATV(p.sync)	20 W	50 W	200 W
Output Connector	N Type Female	N Type Female	N Type Female
Dimensions (W x H X D) mm	482 x 132 x 450	482 x 132 x 450	482 x 132 (+ 44) x 450
Weight	15 Kg	15 Kg	15 Kg
Power consumption	Approx. < 200 VA	Approx. < 400 VA	Approx. < 600 VA
Nr. of power supply boards	1: 230 V a.c. ± 20%	1 : 230 V a.c. ± 20%	1 from 230 V a.c. ± 20%
DC Power Supply	48 V (36-60 V)	48 V (36-60 V)	48 V (36-60 V)
Number of fans	2 blowers, 24 Vdc	2 blowers, 24 Vdc	2 blowers, 24 Vdc





E 500-DU 500W p.sync

E 500-DV 500W p.sync

E 125-UU | 500W p.sync/125Wrms E 125-VV 500W p.sync/125Wrms

THE E 125-DU AND E500-TU ARE DUALCAST TELEVISION TRANSMITTERS COMPOSED BY THE E SERIES DRIVER, DTA SERIES POWER AMPLIFIER AND OUTPUT FILTER. ALL THESE EQUIPMENT ARE ASSEMBLED IN A 19" CABINET, 24U.

THIS FAMILY OF MEDIUM POWER TRANSMITTER IS A DUAL CAST TECHNOLOGY THAT, USING THE AMPLIFIERS OF THE DTA SERIES, CAN ACHIEVE DIFFERENT SOLUTIONS AND APPLICATIONS, JUST CHANGING THE DRIVER MODEL: ATV ANALOGUE DRIVER OR DVB-T DRIVER. CONFIGURATIONS AS DUAL DRIVE OR FULL REDUNDANCY 1+1 ARE AVAILABLE UPON REQUEST.

- FORCED COOLING S
- S. HIGH EFFICIENCY AND RELIABILITY
- HIGH LINEARITY OVER THE ENTIRE BAND S
- ALC AND INPUT OVER DRIVE PROTECTION FUNCTIONS S
- S. LCD MULTIFUNCTIONAL DISPLAY
- S RJ 45 ETHERNET CONNECTION AND RS 232 AND RS 485 IN & OUT
- S METERING BOARD CONTROLLED BY MICROPROCESSOR
- S POWER SUPPLY WITH PFC ACTIVE
- S. WEB MONITORING AND SNMP FOR REMOTE CONTROL



E125-DU

THE AMPLIFIERS OF THE DTA SERIES DISTINGUISH THEMSELVES BY THEIR VERY HIGH EFFICIENCY AND EXCELLENT LINEARITY OVER THE ENTIRE BAND, OBTAINED THANKS TO THE OPTIMIZATION OF THE RF CIRCUITS.

HIGH RELIABILITY IS GUARANTEED BY THE USE OF OVER DIMENSIONED COOLING DEVICES AND BY APPLYING THE LATEST MICROPROCESSOR TECHNOLOGIES TO THE PROTECTION AND CONTROL CIRCUITS.

THE DTA 125 MODELS ARE SOLID STATE AMPLIFIERS DESIGNED FOR USE IN THE UHF FREQUENCY BAND (BAND IV & V) AND WITH DIFFFERENT INTERNAL PALLETS IN VHF BAND III. FINAL POWER MODULES INCORPORATE MICROSTRIP TECHNOLOGY AND LDMOS PUSH-PULL TRANSISTORS. THE PRACTICAL MULTIFUNCTIONAL LCD DISPLAY ALLOWS VISUALIZATION OF THE WORKING PARAMETERS OF THE APPARATUS SUCH AS: REFLECTED AND DIRECT OUTPUT POWER, CURRENT CONSUMPTION OF EACH MODULE, INTERNAL TEMPERATURE, ALARM STATUS (OVERPOWER, HIGH SWR, HIGH TEMPERATURE, POWER SUPPLY FAULTY), ALARM THRESHOLD LEVELS AND OTHERS.

S CODE	MODEL	DESCRIPTION	MOD. DRIVER / AMPLIFIER
7003300084	E125 DU	125 W r.m.s UHF DVB-T/H Transmitter	E05 DU / DTA125U
7003300071	E500 TU	500 W psync UHF ATV Transmitter	E20 U / DTA125U
7003000012	E500 UU	125W r.m.s / 500W psync UHF DVB-T/H & ATV Transposer	E20 UU / DTA125U
7003300097	E125 DTV	125 W r.m.s VHF III DVB-T/H Transmitter	E05 DV / DTA125V
7003300109	E500 TV	VHF III 500 W psync ATV Transmitter	E20 V / DTA125V
7003000007	E500 VV	VHF III 125W r.m.s / 500W psync DVB-T/H & ATV Transposer	E20 VV / DTA125V

M FREQUENCY

Frequency drift

response band

Amplitude/frequency

Range

Internal reference frequency External reference frequency Output frequency stability

VHF Band I (45-90 MHz) 5 MHz (or 10 MHz) Input From the front 5 MHz (or 10 MHz) TCXO 1 p.p.m / year (opt.: OVEN < 0.2 p.p.m / years) Better than 10 exp-7 ± 0.5 dB throughout the vision

< -60 dB at rated output power (With pre-

UHF (470-860MHz) - VHF Band III (174-260 MHz) -

S ANALOGUE SPECIFICATION

± 0.5 dB

correction inserted)

Output Power stability Intermodulation distortion

Harmonics emission Spurious emission Impedance RF Connector Group delay deviation Up converter A.G.C. dynamic Sync pulse compression Differential gain Differential phase MER Phase noise

Protections

Probe

THD

VSWR

Load mismatch

Off Lock Attenuation

S/N RATIO (weighted)

< -75 dBc (with output filter) < -75 dBc (with output filter) 50 Ohm ± 30 ns within the vision band > 10 dB < 3 % < 5 ° < 3 % Better than 36 dB - 70 dBc @ 10 Hz ; - 85 dBc @ 100 Hz – 1 KHz; -100 dBc @ 10 KHz Over power, Over voltage, Over current, Over temperature 10 dB IF monitor SMA connector (36.15 Mhz) > 60 dBc > 73 dB (referred to \pm 75 KHz) 0,10% Less then 1,5:1

V DIGITAL SPECIFICATION

MER BER Shoulder	>37dB 0 before RS decoding > -45dBc
⊔ TRANSPOSER VERS	ION
Input Frequency	UHF (470-860MHz) - VHF Band III (174-260 MHz) - VHF Band I (45-90 MHz)
Input Impedance Input field Level Input Matching Selectivity Synthesis Resolution Noise figure IF Input level	50 Ohm N (Female) connector -30 to -65 dBm > 20dB S.A.W. Filter 50° C 1 Hz < 8 dB -4 dBm ± 0.5 dB at RF input digital (0 dBm ± 0.5 dB at RF input analog)
Input matching	VSWR better than 1.2:1 in channel
S REMOTE CONTROL	
Output Connector Ethernet interface (option)	RS232 interface Connector DB9 Male, RS 485, Auxiliary port 25-pole Connector Connector RJ 45 WEB browser or SNMP client
⊻ STANDARDS COMPL	IANCE
Frequency Spectrum EMC Safety	EN 302 296 – EN302 297 EN 300-489-1 EN 301 489-14 EN 60215
S TEMPERATURE	
Temperature Operating range Storage temperature Maximum relative Humidity Max Operating Altitude	0° to 45° C (Meets ETS 300 019 requirements) From -30°C to +80°C 90% non condensing 2500 mt. a.s.l.





SPECIFICATIONS	E 125 DU / E 125 DV	E 500 TU / E 500 TV	E 125 UU / E 125 UV	
RF output power	125W rms	500W p.sync	125Wrms/500Wp.sync	
Output Connector		7/8 Flange (7/16 f for amplifier module)		
Dimensions (W x H X D) mm	RACK 19" 24U 600 x 800 x1260			
Weight	130kg			
Power consumption	1,2 KVA @ Pmax	1,6 KVA @ Pmax	1,2 KVA/1,6KVA @ Pmax	
Nr. of power supply boards		1		
Power Supply Req.	230Vac single phase			
Number of fans	2 for Heatsink + 1 for Power Supply			
Application	DVB-T/H	ATV	DUAL CAST TRANSPOSER	



E 250-DU/ E 250-DV 250W rms E 1000-TU / E 1000-TV 1000W p.sync E 250-DU R/ E 250-DV R 250W rms E 1000-TU R / E 1000-TV R 1000W p.sync

THE E 250-DU AND E1000-TU ARE DUALCAST TELEVISION TRANSMITTERS COMPOSED BY THE E SERIES DRIVER, DTA SERIES POWER AMPLIFIER AND OUTPUT FILTER. ALL THESE EQUIPMENT ARE ASSEMBLED IN A CABINET 19"24U.

THIS FAMILY OF MEDIUM POWER TRANSMITTER IS A DUAL CAST TECHNOLOGY THAT, USING THE AMPLIFIERS OF THE DTA SERIES, CAN ACHIEVE DIFFERENT SOLUTIONS AND APPLICATIONS, JUST CHANGING THE DRIVER MODEL: ATV ANALOGUE DRIVER OR DVB-T DRIVER. CONFIGURATIONS AS DUAL DRIVE OR FULL REDUNDANCY 1+1 ARE AVAILABLE UPON REQUEST.

- S FORCED COOLING
- S HIGH EFFICIENCY AND RELIABILITY
- S. HIGH LINEARITY OVER THE ENTIRE BAND
- S ALC AND INPUT OVER DRIVE PROTECTION FUNCTIONS
- Q. LCD MULTIFUNCTIONAL DISPLAY
- S. RJ 45 ETHERNET CONNECTION AND RS 232 AND RS 485 IN & OUT
- S. METERING BOARD CONTROLLED BY MICROPROCESSOR
- POWER SUPPLY WITH PFC ACTIVE S.
- WEB MONITORING AND SNMP FOR REMOTE CONTROL



E250-DU

THE AMPLIFIERS OF THE DTA SERIES DISTINGUISH THEMSELVES BY THEIR VERY HIGH EFFICIENCY AND EXCELLENT LINEARITY OVER THE ENTIRE BAND, OBTAINED THANKS TO THE OPTIMIZATION OF THE RF CIRCUITS.

HIGH RELIABILITY IS GUARANTEED BY THE USE OF OVER DIMENSIONED COOLING DEVICES AND BY APPLYING THE LATEST MICROPROCESSOR TECHNOLOGIES TO THE PROTECTION AND CONTROL CIRCUITS.

THE DTA SERIES ARE SOLID STATE AMPLIFIERS DESIGNED FOR USE IN THE UHF FREQUENCY BAND (BAND IV & V) AND WITH DIFFFERENT INTERNAL PALLETS VHF BAND III. FINAL POWER MODULES INCORPORATE MICROSTRIP TECHNOLOGY AND LDMOS PUSH-PULL TRANSISTORS.

THE PRACTICAL MULTIFUNCTIONAL LCD DISPLAY ALLOWS VISUALIZATION OF THE WORKING PARAMETERS OF THE APPARATUS SUCH AS: REFLECTED AND DIRECT OUTPUT POWER, CURRENT CONSUMPTION OF EACH MODULE, INTERNAL TEMPERATURE, ALARM STATUS (OVERPOWER, HIGH SWR, HIGH TEMPERATURE, POWER SUPPLY FAULTY), ALARM THRESHOLD LEVELS AND OTHERS.

NOTE: R VERSION (REDUNDANCY): THE TRANSMITTER CAN BE SUPPLIED USING COMBINED AMPLIFIER TO ACHIVE REQUESTED NOMINAL POWER.

500E	MODEL	DESCRIPTION	MOD. DRIVER / AMPLIFIER
7003300085	E250 DU	250 W r.m.s UHF DVB-T/H Transmitter	E05 DU / DTA250U
7003300086	E250 DU R	250 W r.m.s UHF DVB-T/H Redundancy Transmitter (25W+125W)	E05 DU / DTA125U+DTA125U
7003300074	E1000 TU	1000 W psync UHF ATV Transmitter	E20 U / DTA250U
7003300121	E1000 TU R	1000 W psync UHF ATV Transmitter Redundancy Transmitter (500W+500W)	E20 U / DTA125U+DTA125U
7003000013	E1000 UU	250W r.m.s/1000W psync UHF DVB-T/H & ATV Transposer	E20 UU / DTA250U
7003300098	E250 DV	250 W r.m.s VHF III DVB-T/H Transmitter	E05 DV / DTA250V
7003300099	E250 DV R	250 W r.m.s VHF DVB-T/H Redundancy Transmitter (125W+125W)	E05 DV / DTA125V+DTA125V
7003300110	E1000 TV	1000 W psync VHF III ATV Transmitter	E20 V / DTA250V
7003300111	E1000 TV R	1000 W psync VHF ATV Transmitter Redundancy Transmitter (500W+500W)	E20 V / DTA125V+DTA125V
700300008	E1000 VV	250W r.m.s/1000W psync VHF DVB-T/H & ATV Transposer	E20 VV / DTA250V

S FREQUENCY

Frequency drift

response band

Amplitude/frequency

Range

Internal reference frequency External reference frequency Output frequency stability UHF (470-860MHz) - VHF Band III (174-260 MHz) -VHF Band I (45-90 MHz) 5 MHz (or 10 MHz) Input From the front 5 MHz (or 10 MHz) TCXO 1 p.p.m / year (opt.: OVEN < 0.2 p.p.m / years) Better than 10 exp-7 ± 0.5 dB throughout the vision

< -60 dB at rated output power (With pre-

ANALOGUE SPECIFICATION

± 0.5 dB

correction inserted)

Output Power stability Intermodulation distortion

Harmonics emission Spurious emission Impedance RF Connector Group delay deviation Up converter A.G.C. dynamic Sync pulse compression Differential gain Differential phase MER Phase noise

Protections

Probe

THD

VSWR

Load mismatch

Off Lock Attenuation

S/N RATIO (weighted)

< -75 dBc (with output filter) < -75 dBc (with output filter) 50 Ohm ± 30 ns within the vision band > 10 dB < 3 % < 5 ° < 3 % Better than 36 dB - 70 dBc @ 10 Hz ; - 85 dBc @ 100 Hz – 1 KHz; -100 dBc @ 10 KHz Over power, Over voltage, Over current, Over temperature 10 dB IF monitor SMA connector (36.15 Mhz) > 60 dBc > 73 dB (referred to \pm 75 KHz) 0,10% Less then 1,5:1

S DIGITAL SPECIFICATION MER >37dB BER 0 before RS decoding Shoulder > -45dBc **J TRANSPOSER VERSION** UHF (470-860MHz) - VHF Band III (174-260 MHz) -Input Frequency VHF Band I (45-90 MHz) Input Impedance 50 Ohm N (Female) connector -30 to -65 dBm Input field Level Input Matching > 20dB Selectivity S.A.W. Filter 50° C Synthesis Resolution 1 Hz Noise figure $< 8 \, \text{dB}$ -4 dBm \pm 0.5 dB at RF input digital (0 dBm \pm 0.5 IF Input level dB at RF input analog) VSWR better than 1.2:1 in channel Input matching **S REMOTE CONTROL Output Connector** RS232 interface Connector DB9 Male, RS 485, Auxiliary port 25-pole Connector Ethernet interface (option) Connector RJ 45 WEB browser or SNMP client **STANDARDS COMPLIANCE**

Frequency Spectrum EMC Safety EN 302 296 - EN302 297 EN 300-489-1 EN 301 489-14 EN 60215

S TEMPERATURE

Temperature Operating range Storage temperature Maximum relative Humidity Max Operating Altitude 0° to 45° C (Meets ETS 300 019 requirements) From -30°C to +80°C 90% non condensing 2500 mt. a.s.l.





5 SPECIFICATIONS	E 250 DU / E 250 DV	E 1000 TU / E 1000 TV	E 250 UU / E 250 UV	
RF output power	250W rms	1000W p.sync	250Wrms/1000Wp.sync	
Output Connector		7/8 Flange (7/16 f for amplifier module)		
Dimensions (W x H X D) mm	RACK 19" 24U 600 x 800 x1260			
Weight	150kg			
Power consumption	2,4 KVA @ Pmax	3,2 KVA @ Pmax	2,4 KVA/3,2KVA @ Pmax	
Nr. of power supply boards	2 4 for th	ne Redundancy version composed with tw	vo amplifier	
Power Supply Req.	400V ac Three Phase + Null			
Number of fans	4 for Heatsink + 2 for Power Supply			
Application	DVB-T/H	ATV	DUAL CAST TRANSPOSER	



E 500-DU/ E 500-DV 500W rms E 500-DU R/ E 500-DV R 500W rms

E 2000-TU / E 2000-TV 2000W p.sync E 1000-TU R / E 1000-TV R 2000W p.sync

THE E 500-DU AND E2000-TU ARE DUALCAST TELEVISION TRANSMITTERS COMPOSED BY THE E SERIES DRIVER, DTA SERIES POWER AMPLIFIER AND OUTPUT FILTER. ALL THESE EQUIPMENT ARE ASSEMBLED IN A CABINET 19" 38U.

THIS FAMILY OF MEDIUM POWER TRANSMITTER IS A DUAL CAST TECHNOLOGY THAT, USING THE AMPLIFIERS OF THE DTA SERIES, CAN ACHIEVE DIFFERENT SOLUTIONS AND APPLICATIONS, JUST CHANGING THE DRIVER MODEL: ATV ANALOGUE DRIVER OR DVB-T DRIVER. CONFIGURATIONS AS DUAL DRIVE OR FULL REDUNDANCY 1+1 ARE AVAILABLE UPON REQUEST.

- S FORCED COOLING
- S. HIGH EFFICIENCY AND RELIABILITY
- S. HIGH LINEARITY OVER THE ENTIRE BAND
- S. ALC AND INPUT OVER DRIVE PROTECTION FUNCTIONS
- N LCD MULTIFUNCTIONAL DISPLAY
- S. RJ 45 ETHERNET CONNECTION AND RS 232 AND RS 485 IN & OUT
- S METERING BOARD CONTROLLED BY MICROPROCESSOR
- N POWER SUPPLY WITH PFC ACTIVE
- ŝ, WEB MONITORING AND SNMP FOR REMOTE CONTROL



E500-DU

THE AMPLIFIERS OF THE DTA SERIES DISTINGUISH THEMSELVES BY THEIR VERY HIGH EFFICIENCY AND EXCELLENT LINEARITY OVER THE ENTIRE BAND, OBTAINED THANKS TO THE OPTIMIZATION OF THE RF CIRCUITS.

HIGH RELIABILITY IS GUARANTEED BY THE USE OF OVER DIMENSIONED COOLING DEVICES AND BY APPLYING THE LATEST MICROPROCESSOR TECHNOLOGIES TO THE PROTECTION AND CONTROL CIRCUITS.

THE DTA SERIES ARE SOLID STATE AMPLIFIERS DESIGNED FOR USE IN THE UHF FREQUENCY BAND (BAND IV & V) AND WITH DIFFFERENT INTERNAL PALLETS VHF BAND III. FINAL POWER MODULES INCORPORATE MICROSTRIP TECHNOLOGY AND LDMOS PUSH-PULL TRANSISTORS.

THE PRACTICAL MULTIFUNCTIONAL LCD DISPLAY ALLOWS VISUALIZATION OF THE WORKING PARAMETERS OF THE APPARATUS SUCH AS: REFLECTED AND DIRECT OUTPUT POWER, CURRENT CONSUMPTION OF EACH MODULE, INTERNAL TEMPERATURE, ALARM STATUS (OVERPOWER, HIGH SWR, HIGH TEMPERATURE, POWER SUPPLY FAULTY), ALARM THRESHOLD LEVELS AND OTHERS.

ч соре	MODEL	DESCRIPTION	MOD. DRIVER / AMPLIFIER
7003300087	E500 DU	500 W r.m.s UHF DVB-T/H Transmitter	E05 DU / DTA500U
7003300088	E500 DU R	500 W r.m.s UHF DVB-T/H Redundancy Transmitter (250W+250W)	E05 DU / DTA250U+DTA250U
7003300122	E2000 TU	2000 W psync UHF ATV Transmitter	E20 U / DTA500U
7003300123	E2000 TU R	2000 W psync UHF ATV Transmitter Redundancy Transmitter (1000W+1000W)	E20 U / DTA250U+DTA250U
7003000015	E2000 UU	500W r.m.s/2000W psync UHF DVB-T/H & ATV Transposer	E20 UU / DTA500U
7003300100	E500 DV	500 W r.m.s VHF III DVB-T/H Transmitter	E05 DV / DTA500V
7003300101	E500 DV R	500 W r.m.s VHF DVB-T/H Redundancy Transmitter (250W+250W)	E05 DV / DTA250V+DTA250V
7003300112	E2000 TV	2000 W psync VHF III ATV Transmitter	E20 V / DTA500V
7003300113	E2000 TV R	2000 W psync VHF ATV Transmitter Redundancy Transmitter (1000W+1000W)	E20 V / DTA500V+DTA500V
7003000010	E2000 VV	500W r.m.s/2000W psync VHF DVB-T/H & ATV Transposer	E20 VV / DTA500V

M FREQUENCY

Range

Internal reference frequency External reference frequency Output frequency stability

VHF Band I (45-90 MHz) 5 MHz (or 10 MHz) Input From the front 5 MHz (or 10 MHz) TCXO 1 p.p.m / year (opt.: OVEN < 0.2 p.p.m / years) Better than 10 exp-7 ± 0.5 dB throughout the vision

< -60 dB at rated output power (With pre-

UHF (470-860MHz) - VHF Band III (174-260 MHz) -

Frequency drift Amplitude/frequency response band

S ANALOGUE SPECIFICATION

± 0.5 dB

Output Power stability Intermodulation distortion

Harmonics emission Spurious emission Impedance RF Connector Group delay deviation Up converter A.G.C. dynamic Sync pulse compression Differential gain Differential phase MER Phase noise

Protections

Probe

THD

VSWR

Load mismatch

Off Lock Attenuation

S/N RATIO (weighted)

correction inserted) < -75 dBc (with output filter) < -75 dBc (with output filter) 50 Ohm ± 30 ns within the vision band > 10 dB < 3 % < 5 ° < 3 % Better than 36 dB - 70 dBc @ 10 Hz ; - 85 dBc @ 100 Hz – 1 KHz; -100 dBc @ 10 KHz Over power, Over voltage, Over current, Over temperature 10 dB IF monitor SMA connector (36.15 Mhz) > 60 dBc > 73 dB (referred to \pm 75 KHz) 0,10% Less then 1,5:1

S DIGITAL SPECIFICATION

MER BER Shoulder	>37dB 0 before RS decoding > -45dBc
S TRANSPOSER VERS	ION
Input Frequency	UHF (470-860MHz) - VHF Band III (174-260 MHz) - VHF Band I (45-90 MHz)
Input Impedance Input field Level Input Matching Selectivity Synthesis Resolution Noise figure IF Input level	50 Ohm N (Female) connector -30 to -65 dBm > 20dB S.A.W. Filter 50° C 1 Hz < 8 dB -4 dBm ± 0.5 dB at RF input digital (0 dBm ± 0.5 dB at RF input analog)
Input matching	VSWR better than 1.2:1 in channel
S REMOTE CONTROL	
Output Connector Ethernet interface (option)	RS232 interface Connector DB9 Male, RS 485, Auxiliary port 25-pole Connector Connector RJ 45 WEB browser or SNMP client
STANDARDS COMPL	IANCE
Frequency Spectrum EMC Safety	EN 302 296 – EN302 297 EN 300-489-1 EN 301 489-14 EN 60215
S TEMPERATURE	
Temperature Operating range Storage temperature Maximum relative Humidity Max Operating Altitude	0° to 45° C (Meets ETS 300 019 requirements) From -30°C to +80°C 90% non condensing 2500 mt. a.s.l.





& SPECIFICATIONS	E 500 DU / E 500 DV	E 2000 TU / E 2000 TV	E 500 UU / E 500 VV	
RF output power	500W rms	2000W p.sync	500Wrms/2000Wp.sync	
Output Connector		7/8 Flange (7/16 f for amplifier module)	
Dimensions (W x H X D) mm	RACK 19" 24U 600 x 800 x 1260			
Weight	250kg			
Power consumption	4,8 KVA @ Pmax	6,4 KVA @ Pmax	4,8 KVA/6,4KVA @ Pmax	
Nr. of power supply boards	3 6 fc	or the Redundancy version composed with t	wo amplifier	
Power Supply Req.		400V ac Three Phase + Null		
Number of fans	4 for Heatsink + 2 for Power Supply			
Application	DVB-T/H	ATV	DUAL CAST TRANSPOSER	



E 1000-DU/ E 1000-DV 1000W rms E 1500-DU / E 1500-DV 1500W rms

E 4000-TU / E 4000-TV 4000W p.sync E 5000-TU / E 5000-TV 5000W p.sync

THE E 1000-DU AND E4000-TU ARE DUALCAST TELEVISION TRANSMITTERS COMPOSED BY THE E SERIES DRIVER, DTA SERIES POWER AMPLIFIER AND OUTPUT FILTER. ALL THESE EQUIPMENT ARE ASSEMBLED IN A CABINET 19"38U.

THIS FAMILY OF MEDIUM POWER TRANSMITTER IS A DUAL CAST TECHNOLOGY THAT, USING THE AMPLIFIERS OF THE DTA SERIES, CAN ACHIEVE DIFFERENT SOLUTIONS AND APPLICATIONS, JUST CHANGING THE DRIVER MODEL: ATV ANALOGUE DRIVER OR DVB-T DRIVER. CONFIGURATIONS AS DUAL DRIVE OR FULL REDUNDANCY 1+1 ARE AVAILABLE UPON REQUEST.

- S FORCED COOLING
- S HIGH EFFICIENCY AND RELIABILITY
- HIGH LINEARITY OVER THE ENTIRE BAND S.
- S ALC AND INPUT OVER DRIVE PROTECTION FUNCTIONS
- S. LCD MULTIFUNCTIONAL DISPLAY
- S. RJ 45 ETHERNET CONNECTION AND RS 232 AND RS 485 IN & OUT
- METERING BOARD CONTROLLED BY MICROPROCESSOR S.
- POWER SUPPLY WITH PFC ACTIVE N
- Na. WEB MONITORING AND SNMP FOR REMOTE CONTROL



E1000-DU

THE AMPLIFIERS OF THE DTA SERIES DISTINGUISH THEMSELVES BY THEIR VERY

HIGH EFFICIENCY AND EXCELLENT LINEARITY OVER THE ENTIRE BAND, OBTAINED THANKS TO THE OPTIMIZATION OF THE RF CIRCUITS. HIGH RELIABILITY IS GUARANTEED BY THE USE OF OVER DIMENSIONED COOLING DEVICES AND BY APPLYING THE LATEST MICROPROCESSOR TECHNOLOGIES TO THE PROTECTION AND CONTROL CIRCUITS.

THE DTA SERIES ARE SOLID STATE AMPLIFIERS DESIGNED FOR USE IN THE UHF FREQUENCY BAND (BAND IV & V) AND WITH DIFFFERENT INTERNAL PALLETS VHF BAND III. FINAL POWER MODULES INCORPORATE MICROSTRIP TECHNOLOGY AND LDMOS PUSH-PULL TRANSISTORS. THE PRACTICAL MULTIFUNCTIONAL LCD DISPLAY ALLOWS VISUALIZATION OF THE WORKING PARAMETERS OF THE APPARATUS SUCH AS: REFLECTED AND DIRECT OUTPUT POWER, CURRENT CONSUMPTION OF EACH MODULE, INTERNAL TEMPERATURE, ALARM STATUS (OVERPOWER, HIGH SWR, HIGH TEMPERATURE, POWER SUPPLY FAULTY), ALARM THRESHOLD LEVELS AND OTHERS.

7 CODE	MODEL	DESCRIPTION	MOD. DRIVER / AMPLIFIER
7003300089	E1000 DU	1000 W r.m.s UHF DVB-T/H Transmitter	E05 DU / 2 x DTA500U
7003300090	E1500 DU	1500 W r.m.s UHF DVB-T/H Transmitter	E05 DU / 3x DTA500U
7003300124	E4000 TU	4000 W psync UHF ATV Transmitter	E20 U / 2xDTA500U
7003300125	E5000 TU	5000 W psync UHF ATV Transmitter	E20 U / 3xDTA500U
7003300102	E1000 DV	1000 W r.m.s VHFIII DVB-T/H Transmitter	E05 DV / 2 x DTA500V
7003300103	E1500 DV	1500 W r.m.s VHFIII DVB-T/H Transmitter	E05 DV / 3x DTA500V
7003300114	E4000 TV	4000 W psync VHFIII ATV Transmitter	E20 V / 2xDTA500U
7003300115	E5000 TV	5000 W psync VHFIII ATV Transmitter	E20 V / 3xDTA500V

S FREQUENCY

Range

Internal reference frequency External reference frequency Output frequency stability UHF (470-860MHz) - VHF Band III (174-260 MHz) -VHF Band I (45-90 MHz) 5 MHz (or 10 MHz) Input From the front 5 MHz (or 10 MHz) TCXO 1 p.p.m / year (opt.: OVEN < 0.2 p.p.m / years) Better than 10 exp-7 ± 0.5 dB throughout the vision

< -60 dB at rated output power (With pre-

Frequency drift Amplitude/frequency response band

MANALOGUE SPECIFICATION

± 0.5 dB

correction inserted)

Output Power stability Intermodulation distortion

Harmonics emission Spurious emission Impedance RF Connector Group delay deviation Up converter A.G.C. dynamic Sync pulse compression Differential gain Differential phase MER Phase noise

Protections

Probe

THD

VSWR

Load mismatch

Off Lock Attenuation

S/N RATIO (weighted)

< -75 dBc (with output filter) < -75 dBc (with output filter) 50 Ohm ± 30 ns within the vision band > 10 dB < 3 % < 5 ° < 3 % Better than 36 dB - 70 dBc @ 10 Hz ; - 85 dBc @ 100 Hz – 1 KHz; -100 dBc @ 10 KHz Over power, Over voltage, Over current, Over temperature 10 dB IF monitor SMA connector (36.15 Mhz) > 60 dBc > 73 dB (referred to \pm 75 KHz) 0,10% Less then 1,5:1

S DIGITAL SPECIFICATION MER >37dB 0 before RS decoding BER Shoulder > -45dBc **SAREMOTE CONTROL** RS232 interface Connector DB9 Male, RS 485, **Output Connector** Auxiliary port 25-pole Connector Ethernet interface (option) Connector RJ 45 WEB browser or SNMP client STANDARDS COMPLIANCE **Frequency Spectrum** EN 302 296 - EN302 297 EMC EN 300-489-1 EN 301 489-14 Safety EN 60215 **STEMPERATURE** 0° to 45° C (Meets ETS 300 019 requirements) Temperature Operating range Storage temperature From -30°C to +80°C Maximum relative Humidity 90% non condensing Max Operating Altitude 2500 mt. a.s.l.







ら SPECIFICATIONS	E 1000 DU/E 1000 DV	E 1500 DU/E 1500 DV	E 4000 TU/E 4000 TV	E 5000 TU/E 5000 TV
RF output power	1000W rms	1500W rms	4000W p.sync	5000W p.sync
Output Connector		1+ 5/8 Flange		
Dimensions (W x H X D) mm		RACK 19" 38U 600 x 800 x 1800)	
Weight	290 kg	350 kg	290 kg	350 kg
Power consumption	9,6 KVA @ Pmax	14,4 KVA @ Pmax	12 KVA@ Pmax	15 KVA@ Pmax
Nr. of power supply boards	6	9	6	9
Power Supply Req.		400V ac Three Phase + Null		
Number of fans	4 for He	atsink + 2 for Power Supply (per	amplifier)	
Application	DVB-T/H	DVB-T/H	ATV	ATV



E 2000-DU/ E 2000-DV 2000W rms E 3000-DU / E 3000-DV 3000W rms

E 8000-TU / E 8000-TV 8000W p.sync E 10000-TU / E 10000-TV 10000W p.sync

THE E 2000-DU AND E8000-TU ARE DUALCAST TELEVISION TRANSMITTERS COMPOSED BY THE E SERIES DRIVER, DTA SERIES POWER AMPLIFIER AND OUTPUT FILTER. ALL THESE EQUIPMENT ARE ASSEMBLED IN A CABINET 19" 38U.

THIS FAMILY OF MEDIUM POWER TRANSMITTER IS A DUAL CAST TECHNOLOGY THAT, USING THE AMPLIFIERS OF THE DTA SERIES, CAN ACHIEVE DIFFERENT SOLUTIONS AND APPLICATIONS, JUST CHANGING THE DRIVER MODEL: ATV ANALOGUE DRIVER OR DVB-T DRIVER. CONFIGURATIONS AS DUAL DRIVE OR FULL REDUNDANCY 1+1 ARE AVAILABLE UPON REQUEST.

- └ FORCED COOLING
- HIGH EFFICIENCY AND RELIABILITY
- HIGH LINEARITY OVER THE ENTIRE BAND
- ALC AND INPUT OVER DRIVE PROTECTION FUNCTIONS
- LCD MULTIFUNCTIONAL DISPLAY
- S RJ 45 ETHERNET CONNECTION AND RS 232 AND RS 485 IN & OUT
- METERING BOARD CONTROLLED BY MICROPROCESSOR
- POWER SUPPLY WITH PFC ACTIVE
- WEB MONITORING AND SNMP FOR REMOTE CONTROL



2000-DU WITH DUAL DRIVER OPTION

•...

THE AMPLIFIERS OF THE DTA SERIES DISTINGUISH THEMSELVES BY THEIR VERY HIGH EFFICIENCY AND EXCELLENT LINEARITY OVER THE ENTIRE BAND, OBTAINED THANKS TO THE OPTIMIZATION OF THE RF CIRCUITS.

HIGH RELIABILITY IS GUARANTEED BY THE USE OF OVER DIMENSIONED COOLING DEVICES AND BY APPLYING THE LATEST MICROPROCESSOR TECHNOLOGIES TO THE PROTECTION AND CONTROL CIRCUITS.

THE DTA SERIES ARE SOLID STATE AMPLIFIERS DESIGNED FOR USE IN THE UHF FREQUENCY BAND (BAND IV & V) AND WITH DIFFFERENT INTERNAL PALLETS VHF BAND III. FINAL POWER MODULES INCORPORATE MICROSTRIP TECHNOLOGY AND LDMOS PUSH-PULL TRANSISTORS.

THE PRACTICAL MULTIFUNCTIONAL LCD DISPLAY ALLOWS VISUALIZATION OF THE WORKING PARAMETERS OF THE APPARATUS SUCH AS: REFLECTED AND DIRECT OUTPUT POWER, CURRENT CONSUMPTION OF EACH MODULE, INTERNAL TEMPERATURE, ALARM STATUS (OVERPOWER, HIGH SWR, HIGH TEMPERATURE, POWER SUPPLY FAULTY), ALARM THRESHOLD LEVELS AND OTHERS.

500E	MODEL	DESCRIPTION	MOD. DRIVER / AMPLIFIER
7003300091	E2000 DU	2000 W r.m.s UHF DVB-T/H Transmitter	E05 DU / 4 x DTA500U
7003300092	E3000 DU	3000 W r.m.s UHF DVB-T/H Transmitter	E05 DU / 6x DTA500U
7003300126	E8000 TU	8000 W psync UHF ATV Transmitter	E20 U / 4xDTA500U
7003300127	E10000 TU	10000 W psync UHF ATV Transmitter	E20 U / 6xDTA500U
7003300104	E2000 DV	2000 W r.m.s VHFIII DVB-T/H Transmitter	E05 DV / 4 x DTA500V
7003300105	E3000 DV	3000 W r.m.s VHFIII DVB-T/H Transmitter	E05 DV/ 6x DTA500V
7003300116	E8000 TV	8000 W psync VHFIII ATV Transmitter	E20 V / 4xDTA500V
7003300117	E10000 TV	10000 W psync VHFIII ATV Transmitter	E20 U / 6xDTA500V

M FREQUENCY

Range

Internal reference frequency External reference frequency Output frequency stability UHF (470-860MHz) - VHF Band III (174-260 MHz) -VHF Band I (45-90 MHz) 5 MHz (or 10 MHz) Input From the front 5 MHz (or 10 MHz) TCXO 1 p.p.m / year (opt.: OVEN < 0.2 p.p.m / years) Better than 10 exp-7 ± 0.5 dB throughout the vision

< -60 dB at rated output power (With pre-

Frequency drift Amplitude/frequency response band

SANALOGUE SPECIFICATION

± 0.5 dB

Output Power stability Intermodulation distortion

Harmonics emission Spurious emission Impedance RF Connector Group delay deviation Up converter A.G.C. dynamic Sync pulse compression Differential gain Differential phase MER Phase noise

Protections

Probe

THD

VSWR

Load mismatch

Off Lock Attenuation

S/N RATIO (weighted)

correction inserted) < -75 dBc (with output filter) < -75 dBc (with output filter) 50 Ohm ± 30 ns within the vision band > 10 dB < 3 % < 5 ° < 3 % Better than 36 dB - 70 dBc @ 10 Hz ; - 85 dBc @ 100 Hz – 1 KHz; -100 dBc @ 10 KHz Over power, Over voltage, Over current, Over temperature 10 dB IF monitor SMA connector (36.15 Mhz) > 60 dBc > 73 dB (referred to \pm 75 KHz) 0,10% Less then 1,5:1

MER BER Shoulder	>37dB 0 before RS decoding > -45dBc
S REMOTE CONTROL	
Output Connector Ethernet interface (option)	RS232 interface Connector DB9 Male, RS 485, Auxiliary port 25-pole Connector Connector RJ 45 WEB browser or SNMP client
STANDARDS COMPL	IANCE
Frequency Spectrum EMC Safety	EN 302 296 – EN302 297 EN 300-489-1 EN 301 489-14 EN 60215
S TEMPERATURE	
Temperature Operating range Storage temperature Maximum relative Humidity Max Operating Altitude	0° to 45° C (Meets ETS 300 019 requirements) From -30°C to +80°C 90% non condensing 2500 mt. a.s.l.

UNIGITAI SPECIFICATION





SPECIFICATIONS	E 2000 DU/E 200	10 DV E 3808 DU/E 308	9 DV E 8809 TU/E 891	30 TV E10020 TU/E10200 TV
RF output power	2000W rms	3000W rms	8000W p.sync	10000W p.sync
Output Connector		3+ 1/8 Flange		
Dimensions (W x H X D) mm		N°2 RACK 19"42U 600 x 8	00 x2100	
Weight	290 kg + 290 kg	350 kg + 350 kg	290 kg + 290 kg	350 kg + 350 kg
Power consumption	19,2 KVA @ Pmax	28,8 KVA @ Pmax	24 KVA@ Pmax	30 KVA@ Pmax
Nr. of power supply boards	12	18	12	18
Power Supply Req.		400V ac Three Phase +	Null	
Number of fans	4	for Heatsink + 2 for Power Supp	ly (per amplifier)	
Application	DVB-T/H	ATV	DVB-T/H	ATV





THE HIGH RELIABILITY OF THE EQUIPMENT, IS MAINLY ASSURED BY USING A LIMITED NUMBER OF TRANSISTORS TO ACHIEVE A GIVEN RF POWER TARGET AND BY MEANS OF OVER DIMENSIONED COOLING DEVICES: BROADCASTERS CAN THUS SIGNIFICANTLY REDUCE THEIR LONG-TERM OPERATING COSTS.

ULTIMATE AND INNOVATIVE MICROPROCESSOR TECHNOLOGIES HAVE BEEN IMPLEMENTED FOR THE PROTECTION OF THE EQUIPMENT IN CASE OF EXCESSIVE SWR, AND A REALLY FAST PROTECTION CIRCUIT IS USED TO SAVE THE RF MODULES FROM OVERDRIVE, BAD SWR FIGURES AND OVER-TEMPERATURE.

THE FINAL POWER MODULES INCORPORATE MICRO-STRIP TECHNOLOGY AND LDMOS, MRF377H, TRANSISTORS IN PUSH-PULL CONFIGURATION, THE RF MODULE DESIGN ASSURES A TOTAL REDUNDANCY BY MEANS OF AN INDEPENDENT AND HIGH RELIABILITY DRIVER ON EACH FINAL STAGE.

- HIGH LINEARITY OVER THE ENTIRE BAND
- LCD MULTIFUNCTIONAL DISPLAY Sr.
- S. RJ 45 ETHERNET CONNECTION AND RS 232 AND RS 485 IN & OUT
- WEB MONITORING AND SNMP FOR REMOTE CONTROL N

5 CODE	MODEL	DESCRIPTION	
7003300045	EG 02-TU	2,5 kW UHF Transmitter, Out Filter incl. (38U cabinet incl.)	
7003300015	EG 05-TU	5 kW UHF Transmitter, Out Filter incl. (38U cabinet incl.)	
7003300070	EG 10-TU	10 kW UHF Transmitter, Out Filter incl. (2X38U cabinet incl.)	
7003300128	EG 20-TU	20 kW UHF Transmitter, Out Filter incl. (4X38U cabinet incl.)	
7003300093	EG 10-DU	650W rms DVB-T/H UHF Transmitter, Out Filter incl. (38U cabinet incl.)	
7003300094	EG 20-DU	1300 W rms DVB-T/H UHF Transmitter, Out Filter incl. (38U cabinet incl.)	
7003300095	EG 40-DU	2,5 kW rms DVB-T/H UHF Transmitter, Out Filter incl. (2X38U cabinet incl.)	
7003300096	EG 80-DU	5 kW rms DVB-T/H UHF Transmitter, Out Filter incl. (4X38U cabinet incl.)	

W FREQUENCY

Range	UHF (470-860MHz)
Class	AB
Input Connector	N female
Impedance Input / Output RF Connector	50 Ohm
Internal Setting mode Stability	1 Hz steps Frequency stability Locked to external reference or 1 ppm reference or 1 ppm
In band flatness	± 0.1 Db
Gain	24 ÷ 25 dB
Input VSWR	1.7:1 typical (2:1 max.)

S RF OUTPUT SPECIFICATIONS

Intermodulation distortion (DVB-T)	< -36 dB at rated output power (With pre- correction inserted)
Intermodulation distortion (Analog)	< -58 dB at rated output power (V.C8 dB; S.1C -10 dB; C.Sb16 dB)
Spurious emission (with output filter)	< -60 dBc
Load mismatch	1,8:1 Max
BER	Zero over five hour period before RS decoding
MER	> 37 dB
Protections	Overpower, SWR, Over voltage, Over current, Over temperature
Probe	BNC connector RF – 60 dBc

LI REMOTE CONTROL	
Dutput Connector	RS232 interface Connector DB9 Male – Two DB9 Female programmable connectors– RS 485
nput Connector	Reset and muting control activated by ground closure
Ethernet interface (option)	Connector RJ 46 WEB browser or SNMP client
STANDARDS COMPL	IANCE
Frequency Spectrum EMC Gafety	EN 302 296 – EN302 297 EN 300-489-1 EN 301 489-14 EN 60950 - EN 60215
LI TEMPERATURE	

Temperature range
Storage range
Maximum relative Humidity
Max Operating Altitude

0° to 45° C (Meets ETS 300 019 requirements) - 10° to 80° C 90% non condensing 2000 mt. a.s.l.

STANDARD TV VERSION

TV standards analogue TV Standards digital

B,G others on request DVB-T/H

SPECIFICATIONS EG 10-DU / EG 02-TU EG 20-DU / EG 05-TU EG 40-DU / EG 10-TU EG 80-DU / EG 20-TU CEON 1200 \//

Rf output power rms		1300 W mis	2500 W IIIIS	5000 W mis
RF output power (+0dB –0,5dB)	2500 W p.sync	5000 W p.sync	10000 W p.sync	20000 W p.sync
RF modules	1	2	4	8
RF Input (Nominal Level)	≤ 1 W rms (5 W ps)	\leq 2 W rms (10 W ps)	\leq 2 W rms (10 W ps)	\leq 10 W rms (50 W ps)
Output Connector	1-5/8 Flange	1-5/8 Flange	3-1/8 Flange	3-1/8 Flange
Dimensions (W x H X D) mm	600 x 1800x 1000	600 x 1800x 1000	2x600 x 1800x 1000	2x600 x 1800x 1000
Weight	200 Kg	250 Kg	500 Kg	1000 Kg
Power consumption DVB @ Pmax ATV @ Pmax	< 6000 VA < 9000 VA	< 12000 VA < 18000 VA	< 24000 VA < 36000 VA	< 48000 VA < 72000 VA
Power supply req.	three-phase 380 V a.c. \pm 20%			
Nr. of power supply boards	2	4	8	16
Number of fans	3 blower	6 blower	12 blower	24 blower
Nominal air volume at at 1000 hPa barometric pressure		1600 m3/min for e	each amplifier module	

THESE AIR-COOLED TRANSMITTERS ARE SUITABLE FOR ANALOGUE AND DIGITAL TV.

THE GOLD SERIES IS A NEW GENERATION OF HIGH POWER TV TRANSMITTERS BASED ON LDMOS TECHNOLOGY.



THE TRANSMITTERS CONSIST OF THE FOLLOWING MODULES AND STAGES:

- LED SERIES EXCITER
- POWER AMPLIFIER WITH COOLING SYSTEM V10 SERIES
- POWER SUPPLY AND DISTRIBUTION
- 9 POWER COMBINER AND OUTPUT FILTER
- Land TRANSMITTER RACK WITH COOLING SYSTEM
- SCONTROL LOGIC UNIT ALU SERIES





V10 SERIES POWER AMPLIFIERS

THANKS TO THE ADVANCED LDMOS TECHNOLOGY, THE POWER AMPLIFIERS ARE CHARACTERIZED BY HIGH LINEARITY, HIGH EFFICIENCY AND COMPACT DESIGN. THROUGH THE INNOVATIVE AND UNIQUE 5 WAYS A/4 90° BROADBAND COMBINER, EACH PLUG-IN AMPLIFIER CONTAINS 10 SUPERMODULES THAT ARE COMBINED TO OBTAIN THE V10 (VERTICAL 10) "BRICK". THIS SOLUTION PROVIDES A +20% OF RF OUTPUT POWER IN COMPARISON TO COMPETITORS (650W rms DVB-T, REAL 530W rms AFTER FILTER WITH 37 dB MER).

THE V10 "BRICK" FEATURES A PHASE ADJUSTMENT TO COMPENSATE ANY UNBALANCING, A SUPERFAST OVERDRIVE AND VSWR PROTECTION CIRCUITRY AND A PLUG-IN BLOWER MODULE TO INCREASE OPERATION STABILITY. THE VERTICAL SOLUTION ALLOWS ALL THE FINAL STAGES TO WORK IN A PARALLEL WAY AT THE SAME CONDITIONS (SAME HEATSINK TEMPERATURE).

V10 BRICK IS EQUIPPED WITH TWO EXTERNAL POWER SUPPLIES GRANTING A REAL DC ACTIVE RESERVE. V10 BRICK IS COMBINED WITH ANOTHER V10 BRICK TO OBTAIN THE V20 CONFIGURATION WITH A RATED OUTPUT POWER OF 1.3 kW rms DVB-T OR 5kW ANALOG TV IN A STANDARD 19" CABINET 1000 mm DEPTH.

FOUR BRICKS V10 ARE COMBINED TO OBTAIN THE V40 CONFIGURATION WITH A RATED OUTPUT POWER OF 2.3 kW rms DVB-T OR 10kW ANALOG TV IN 19" CABINET 1600 mm DEPTH OR TWO 19" 1000 mm DEPTH SIDE BY SIDE COUPLED.





TRANSMITTER RACK CONFIGURATION

THE DESIGN OF THE RACK –FRAME IS VERY SUITABLE FOR EASY MAINTENANCE AND SERVICE: EACH UNIT CAN BE EASILY REMOVED AND CHECKED; ALL THE INTERNAL CABLES ARE ALLOCATED IN THE PROPER RACEWAYS.

MOREOVER, EVERY SUB UNIT OF THE TRANSMITTER IS CONTINUOUSLY AND IN REAL TIME MONITORED BY THE SUITABLE SENSOR AND DISPLAY. A LOGIC UNIT IS CONNECTED TO THE AMPLIFIER MODULES, THE EXCITER AND THE VARIOUS METERS VIA A RS 485 BUS, IN SUCH A WAY THAT ALL THE TRANSMITTER FUNCTIONS ARE KEPT UNDER CONTROL.

THE MAIN DISTRIBUTION UNIT FEEDS THE ABOVE POWER SUPPLIES WITH THE NECESSARY VOLTAGE.





EL 2,3 ÷23,6 GHz ANALOGUE TV LINK

THE FULL INDOOR VERSION EL SERIES MICROWAVE LINKS ARE DESIGNED FOR LONG AND MEDIUM DISTANCE APPLICATIONS, STL'S, BACKBONES, MULTI-HOP SYSTEMS, AND OTHER BROADCAST REQUIREMENTS TO DELIVER WITH BROADCAST-QUALITY ONE VIDEO AND UP TO FOUR HIGH-QUALITY AUDIO CHANNELS. THE TV LINK IS AVAILABLE FROM 5.2 UP TO 14.5 GHZ IN A SINGLE 1-UNIT RACK THAT ALLOWS A FAST AND EASY INTEGRATION WITH EXISTING TELECOMMUNICATION SYSTEMS IN THE FULL RESPECT OF THE LEVELS OF THE MODULATIONS AND OF THE IMPEDANCE.

SEPARATE RACK IS AVAILABLE FOR IF MODULATOR AND IF DEMODULATOR.

OUTPUT POWER UP TO 1W AND SEVERAL ALARMS TO CHECK THE AMPLIFIER WORKING CONDITIONS ARE AVAILABLE. THE EXCELLENT SPECTRAL PURITY AND THE SPECIAL DESIGN OF THE CONVERSION OSCILLATORS ENDOW THESE UNITS WITH AN EXCELLENT SIGNAL TO NOISE RATIO BOTH IN TRANSMISSION AND RECEPTION.



EL1010-30 10GHz FULL-INDOR

÷.,

THE OUTDOOR VERSION RADIO LINKS ARE COMPOSED BY TWO UNITS; AN INDOOR UNIT (IDU) SUPPLIED IN A SINGLE 1U RACK CONTAINING THE MO/DEMODULATOR STAGE, AND AN OUTDOOR UNIT (ODU) IN AERIAL HEAD CONTAINING SHF PART. THE OUTDOOR HEAD IS CONNECTED TO THE INDOOR CONSOLE BY MEANS OF A SINGLE COAXIAL CABLE TO LEAD BOTH THE L.F. SIGNAL AND THE POWER SUPPLY.

FOR HEAVY DUTY APPLICATIONS, A SERIES OF EXTERNAL SOLID-STATE AMPLIFIERS IN A SINGLE 1U RACK CAN BE CONNECTED TO EVERY MICROWAVE TRANSMITTER. SYSTEM COMPOSED BY:

- TX IF MODULATOR
- TX UP-CONVERTER AMPLIFIER
- RX DOWN_CONVERTER
- STATE RX IF DEMODULATOR
- 2XPARABOLIC DISH
- 2XROLL LOW LOSS CABLE 50MT
- LIGNMENT METER

S VERSION	MODEL	DESCRIPTION	
Full Indoor	EL5358-30	ATV Link 1W@5.2-5.89GHz N Connector	
Full Indoor	EL5965-30	ATV Link 1W@5.9-6.5GHz N Connector	
Full Indoor	EL6472-30	ATV Link 1W@6.4-7.2GHz N Connector	
IF + RF Indoor	EL2327-30	ATV Link 2U 2W@2.3-2.7GHz N Connector	
IF + RF Indoor	EL5358-30	ATV Link 2U 1W@5.2-5.89GHz N Connector	
IF + RF Indoor	EL5965-30	ATV Link 2U 1W@5.9-6.5GHz N Connector	
IF + ODU	EL2327-ODU	ATV Link 16CH 2W@2.3-2.7GHz N Connector	
IF + ODU	EL5254-ODU	ATV Link 16CH 1W@5.2-5.4GHz PDR70	
IF + ODU	EL5964-ODU	ATV Link 16CH 1W@5.9-6.4GHz PDR70	
Note: check the full avai	lable model on the price list		

S FREQUENCY

Modulation Range System Capacity System Deviation Output frequency stability I.F. Frequency I.F. I/O Level / Impedance I.F. I/O Return loss Impedance RF Connector

Type FM positive, Heterodyne Microwave Band: 2.3 - 23 GHz One video plus two audio signals 8 MHz p.p. ± 10 p.p.m. or better (synthesized version) 70 MHz + 5 dBm / 75 Ohm > 26 dB 50 Ohm

S RECEIVER

I.F. Bandwidth Dynamic range Noise figure weighted 33 dB S/N Threshold Rejection @ 70 Mhz **Return loss**

28 MHz > 50 dB Better then 5 dB at – 40 dBm -86 dBm 60 dB (Band pass filter) 26 dB minimum (Band pass filter)

₩ RF OUTPUT SPECIFICATIONS VIDEO PERFORMANCE

Bandwidth Frequency response Pre-emphasis Video I/O level / impedance Group delay deviation Up converter A.G.C. dynamic Sync pulse compression Differential gain Differential phase S/N ratio

From 25 Hz tp 5 Mhz ± 0.5 dB CCIR REC. 405-1 or FCC 1 V P.P / 75 Ohm < 10 ns p.p within the vision band > 10 dB < 1 % < 2 % < 2 ° > 70 dB rms (10 kHz - 5 MHz Weighted) > 55 dB rms (20 Hz - 10 KHz Weighted)

₩ RF OUTPUT SPECIFICATIONS AUDIO PERFORMANCE

Bandwidth Pre-emphasis Capacity Audio I/O level / Impedance Frequency Deviation S/N ratio Distortion	80 Hz –12 Khz ± 0.5 dB 50 uS Up to 4 channels + 9 dBm / 600 Ohm 7.020 MHz - 7.500 MHz - 8.065 MHz - 8.590 MHz (CCIR) 6.200 MHz - 6.800 MHz - 7.500 MHz - 8.300 MHz (FCC) 300 kHz eff. (Single or non adjacent dual channel) 200 kHz eff. (Multi Channel) > 65 dB (100 kHz peak deviation) < 0.5% at 1 kHz (30 Hz - 15 kHz)
S REMOTE CONTROL	
Output Connector	dB 25 Connector
STANDARD COMPLIA	TE
R&TTE	Declaration of Conformity with regards to the Directive 1999/5/EC
STEMPERATURE	
Nominal range Storage range Maximum relative Humidity Max Operating Altitude	0° to 45° C (Meets ETS 300 019 requirements) - 30° to 50° C 90% non condensing 2500 mt. a.s.l.







TX = IF Modulator + UP_Converter Amplifier **IF + RF version**



 $RX = IF De_Modulator +$ DownConverter

⊔ SPECIFICATIONS	5,2 ÷ 8,5 GHZ	10 ÷ 14,5 GHZ	2,3 ÷ 7,2 GHZ	7,2÷14,5 GHZ	22 ÷ 23,6 GHZ
RF output power	1 W	1 W	1 W	1 W	1 W
Output Connector	N Type Female	UBR120	N Type	UDR120	UDR120
Dimensions (W x H X D) mm	482 x 44 x 312	482 x 44 x 312			
Weight	2X5 Kg	2X5 Kg	2X5 Kg	2X5 Kg	2X5 Kg
Power consumption	Approx. < 30 VA	Approx. < 30 VA			
Power suply req.	1 from 230 V a.c. ± 10%	1 from 230 V a.c. ± 10%			
DC Power Supply	24 V (20-31 V)	24 V (20-31 V)			
Type of ventilation	Forced Air	Forced Air	Forced Air	Forced Air	Forced Air
Rack composition	single	e 19″ S.U	1 S.U. fc	or IF+1S.U. for UP_Converte	r Amplifier



EL 2,3-23 GHz - DIGITAL TV LINK

THESE RADIO LINKS ARE COMPOSED BY TWO UNITS; AN INDOOR UNIT SHF (IDUSHF) (OPTIONALLY OUTDOOR UNIT ODU IN AERIAL HEAD) SUPPLIED IN A SINGLE 1U RACK CONTAINING THE RF TRANSMITTER (OR RF RECEIVER) AND A SECOND INDOOR UNIT LF (IDU-LF) SUPPLIED IN A SINGLE 1U RACK CONTAINING MO/DEMODULATOR (QPSK OR 16QAM MO/DEM) AND CO/ DECODER (MPEG2 CO/DEC + MUX). ON THE FRONT PANEL, A COLOUR DISPLAY PROVIDES THE INFORMATION ABOUT THE FUNCTIONS OF EACH BOARD; THE VIDEO SIGNALS IN INPUT AND OUTPUT TO CODEC MPEG2 CAN BE EASILY CHECKED OUT.

THE POWER SUPPLY STAGE CAN RECEIVE EITHER ALTERNATE OR DIRECT VOLTAGE (EVEN SIMULTANEOUSLY); FURTHERMORE, IT CAN BE COMPLETELY REMOVED FROM ITS LOCATION TO ALLOW EASY AND QUICK MAINTENANCE.

THE PROGRAM OF THE FUNCTION CAN BE REALIZED EITHER LOCALLY BY THE KEYBOARD, OR REMOTELY BY MEANS OF AN INTERFACE ETHERNET 10 /100 BASE T WHICH ALLOWS A REMOTE CONNECTION ALSO THROUGH THE WEB.

TWO OTHER SERIAL INTERFACES RS 232 AND SIX RELÈ CONTACTS COMPLETE THE INTERFACES.





- TX DVB IF MODULATOR
- TX ODU TRANSMITTER
- S RX ODU RECEIVER
- RX DVB IF DEMODULATOR
- 2XPARABOLIC DISH





S VERSION	MODEL	DESCRIPTION	
IF +ODU	EDL2327-ODU	DTV Link 2W@2.3-2.7GHz N Connector	
IF +ODU	EDL5254-ODU	DTV Link 1W@5.2-5.4GHz PDR70	
IF +ODU	EDL5964-ODU	DTV Link 1W@5.9-6.4GHz PDR70	
IF +ODU	EDL6472-ODU	DTV Link 1W@6.4-7.2GHz PDR70	
IF +ODU	EDL7080-ODU	DTV Link 1W@7.1-8.5GHz PDR70	
IF +ODU	EDL8085-ODU	DTV Link 1W@8.0-8.5GHz PDR84	
IF +ODU	EDL1010-ODU	DTV Link 1W@10-10.7GHz UBR120	
IF +ODU	EDL1112-ODU	DTV Link 1W@11.7-12.4GHz UBR120	
IF +ODU	EDL1212-ODU	DTV Link 1W@12.1-12.5GHz UBR120	
IF +ODU	EDL1213-ODU	DTV Link 1W@12.7-13.3GHz UBR120	

S FREQUENCY

Modulation Range System Capacity

Output frequency stability I.F. Frequency I.F. I/O Level / Impedance

I.F. I/O Return loss Impedance RF Connector

S RECEIVER

I.F. Bandwidth Dynamic range Noise figure weighted 33 dB S/N Threshold Rejection @ 70 Mhz Return loss 1.75 to 28 MHz (software selectable) > 50 dB Better then 5 dB at – 40 dBm -86 dBm 60 dB (Band pass filter) 26 dB minimum (Band pass filter)

Type QPSK, 16 QAM

70 MHz +/- 5 KHz

BNC connector

> 26 dB

50 Ohm

Microwave Band: 2.3 - 23 GHz

System Capacity ASI /E3 G703 (with optional de/coder one video plus two audio signals)

± 10 p.p.m. or better (synthesized version)

From - 25 to 0 dBm in step 0,1 dBm / 75 Ohm

S GPSK DE/MODULATOR− 16 GAM DE/MODULATOR

Mode

FEC (code rate) Outer code Payload Selectable roll off Data scrambling QPSK - ETS 300 421 (DVB-S) 16 QAM - ETS 301 210 Viterbi 1/2, 2/3, ¾, 5/6, 7/8 selectable Reed Solomon (188 204) From 3 to 45 Mbits/s on 500 Kb/s steps 0,15 - 0,55 in 0,05 steps X15+X14+1

Video Input	Analogue PAL composite, 1 Vpp 75 Ohm, BNC connector
Video encoding standards Picture type I, P, B	ISO / IEC 13818-2 MP@ML (MPEG-2 4:2:0) Horizontal: up to 720 pixel in 32 pixel steps Vertical PAL: up to 576 pixel in 32 pixel steps
Supported resolution Audio input	Full D1, ¾ D1. 2/3 D1, HD1, SIF Analogue two channel, 0 dBm 600 Ohm, BNC connector
Audio encoding standards	ISO / IEC 11172-3 (MPEG-1 audio) layer ½ compliant
Sampling frequency Bit rate Stream type Stream multiplexing standards System Bit rate	32 KHz, 44,1 KHz, 48 KHz Video 0,8 – 14 Mb/s Audio max 384 kb/s Transport Stream on ASI interface ISO / IEC 13818-1 (MPEG-2) PAT table Up to 45 Mb/s on 100 Kbit steps
S REMOTE CONTROL	
Output Connector	Parallel Remote signals and controls with floating contacts
Ethernet interface	Connector RJ 46 TCP/IP Web server via Etherne 10/100 base T
STANDARD COMPLIA	11CE

S TEMPERATURE

Nominal range Storage range Maximum relative Humidity Max Operating Altitude 0° to 45° C (Meets ETS 300 019 requirements) - 30° to 50° C 90% non condensing 2500 mt. a.s.l.

≤ SPECIFICATIONS	2,3 ÷ 2,7 GHZ	5,2 ÷ 8,5 GHZ	10 ÷ 14,5 GHZ	21,1-236 GHZ
RF output power rms	1 W	1 W	1 W	0.5 W
Output Connector	N Type Female	PDR70	UDR120	UBR220
Dimensions (W x H X D) mm	482 x 44 x 312	482 x 44 x 312	482 x 44 x 312	482X44X312
Weight	2X5 Kg	2X5 Kg	2X5 Kg	2 X 5KG
Power consumption	Approx. < 30 VA	Approx. < 30 VA	Approx. < 30 VA	<30VA
Nr. of power supply boards	1 from 230 V a.c. ± 10%	1 from 230 V a.c. ± 10%	1 from 230 V a.c. ± 10%	1 from 230 Vac +-10%
DC Power Supply	24 V (20-31 V)	24 V (20-31 V)	24 V (20-31 V)	24 V
Type of ventilation	Forced Air	Forced Air	Forced Air	forced air



EML - EMDL MOBILE LINK

THIS ANALOGUE AND DIGITAL TV LINK WITH ODU UNIT CAN BE SUPPLIED IN A MOBILE VERSION ADDING THE EML-EMDL MOBIL LINK ACCESSORIES. THE EML SERIES MOBILE MICROWAVE LINKS ARE DESIGNED FOR LONG AND MEDIUM DISTANCE APPLICATIONS, STL'S, BACKBONES, MULTI-HOP SYSTEMS, AND OTHER BROADCAST REQUIREMENTS TO DELIVER WITH BROADCAST-QUALITY ONE VIDEO AND UP TO FOUR HIGH-QUALITY AUDIO CHANNELS (TWO ARE OPTIONAL) OR DATA FLOWS. THESE LINKS PROVIDE OUTSTANDING QUALITY AND RELIABILITY TOGETHER WITH EASE OF INSTALLATION AND FRIENDLY USE, ESPECIALLY BY MEANS OF THE FAST MECHANICAL ASSEMBLY SYSTEM. THE EML SERIES MICROWAVE LINKS ARE AVAILABLE IN DIFFERENT FREQUENCY RANGES AND ARE EQUIPPED WITH SYNTHESIZED OSCILLATORS WHICH ALLOW CHANGES OF THE

OPERATIONAL CHANNEL BOTH FROM THE OUTDOOR RF HEAD AND FROM THE INDOOR CONSOLE.

THE EML SERIES LINKS ARE USED FOR ANALOGUE APPLICATIONS OR DIGITAL DVB-T APPLICATION (EMDL SERIES).

TRIPODS ARE FUNDAMENTAL ACCESSORIES IN THE MOBILE RADIO LINKS SINCE THEY PLAY A BASIC ROLE IN THE ALIGNMENT OPERATION BETWEEN TWO PARABOLIC REFLECTORS.

TO AVOID PREJUDICE TO ALIGNMENT, OUR STANDARD TRIPODS ARE VERY STABLE DEVICES AND HAVE A GREAT CAPACITY OF ABSORBING VIBRATIONS. THANKS TO THEIR PATENTED DESIGN, THEY CAN BE QUICKLY ADAPTED TO ANY KIND OF GROUNDS.

AS AN OPTION, THE EML SERIES MOBILE LINKS MAY BE PROVIDED WITH A PROFESSIONAL TYPE OF TRIPODS AND A SET OF SPECIAL TRUNKS WITH WHEELS AND HANDLES FOR THEIR EASY TRANSPORTATION AND HANDLING.

THE OUTDOOR RECEIVING AND TRANSMITTING RF UNITS ARE PLACED IN A WATERPROOF MECHANICAL CASE.

TO FACILITATE THE SYSTEM'S TRACKING OPERATIONS, THE OUTPUT POWER LEVEL AND THE INPUT RF LEVEL ARE AVAILABLE BY MEANS OF AN EXTERNAL METER DEVICE. THE IF MONITORING CONNECTOR AND A SOCKET FOR THE "INTERCOM" CIRCUIT BETWEEN THE INDOOR CONSOLE AND THE OUTDOOR UNIT ARE ALSO AVAILABLE.



CODE MODEL

DESCRIPTION

EML-EMDL MOBILE LINK Note: available for ASDV version only ACCESSORIES FOR MOBILE APPLICATION ANALOGUE AND DIGITAL LINK
S TECHNICAL DATA

Structure of the tripod Single flowing tube Minimum operative elevation 780 mm from earth

Maximum operative elevation 1580 mm from earth

Tripod weight	8,0 Kg
Leg diameter	40 mm
Terminal diameter	35 mm
Maximum load	30,0 Kg
Height when closed	940 mm
Leg Material	Aluminium
Terminal leg Material	Chromium plated steel
Foot	Reversible with conical tip or antivibration rubber foot.
Pulling Special options	Adjustable allumium Antislide rubber handles





STANDARD SYSTEM COMPOSED BY:

- 2 X STANDARD PROFESIONAL TRIPOD
 2 X TRIPOD BOX
 2 X FLIGHT CASE
 2 X ROLL HANDLE FOR CABLES
 2 X 2U CARRY CASE





www.cte.it

PD U2 PD V2





ALL POWER DIVIDERS ARE CHARACTERISED BY WIDE OPERATING FREQUENCY RANGES IN VHF OR UHF BAND, AVAILABLE FOR DIFFERENT OUTPUT POWERS. THEY CAN BE SUPPLIED WITH ANY CONNECTOR OR FLANGE, ACCORDING TO USERS REQUIREMENTS AND FOR EVERY NEED

REGARDING THE NUMBER OF OUTPUT. THEY ARE MADE IN ALUMINUM TREATED WITH ALODYNE, THE BODY IS PAINTED WITH POEDER PAINT TO RESIST UNDER THE WORST WEATHER CONDITIONS.



4 CODE	DESCRIPTION	INPUT CONNECTOR		MAX IMPUT POWER (W)
		2 - WAY POWER DIVIDER VHF (175-	230 Mhz)	
0000170502	PDV2-S/N 2 ways	Ν	Ν	400
0000170528	PDV2-S/N 2 ways	7/16	Ν	800
0000170501	PDV2-S/S 2 ways	7/16	7/16	1000
0000170500	PDV2-F/S 2 ways	7/8″	7/16	2000
0000170529	PDV2-Y/F 2 ways	1-5/8″	7/8″	4000
0000170530	PDV2-Z/Y 2 ways	3-1/8″	1-5/8″	8000
		3 - WAY POWER DIVIDER VHF (175-	230 Mhz)	
0000170531	PDV3-S/N 3 ways	7/16	Ν	1000
0000170532	PDV3-S/S 3 ways	7/16	7/16	1000
0000170533	PDV3-F/S 3 ways	7/8″	7/16	2500
0000170534	PDV3-Y/F 3 ways	1-5/8″	7/8″	5000
		4 - WAY POWER DIVIDER FM (175-	230 Mhz)	
0000170498	PDV4-S/N 4 ways	7/16	Ν	1000
0000170526	PDV4-F/N 4 ways	7/8″	Ν	1600
0000170497	PDV4-S/S 4 ways	7/16	7/16	1000
0000170491	PDV4- F/S4 ways	7/8″	7/16	2500
0000170519	PDV4-F/F4 ways	7/8″	7/8″	2500
0000170492	PDV4-Y/F 4 ways	1-5/8″	7/8″	5000
0000170520	PDV4-Z/F 4 ways	3-1/8″	7/8″	10000
		2 - WAY POWER DIVIDER UHF (470-	-860 Mhz)	
0000170505	PDU2-N/N 2 ways	Ν	Ν	400
0000170535	PDU2-S/N 2 ways	7/16	Ν	1000
0000170503	PDU2- S/S 2 ways	7/16	7/16	1600
0000170536	PDU2-F/S 2 ways	7/8″	7/16	2500
0000170504	PDU2-F/F 2 ways	7/8″	7/8″	2500
0000170334	PDU2-Y/F 2 ways	1-5/8″	7/8″	5000
0000170537	PDU2-Z/Y 2 ways	3-1/8″	1-5/8″	10000
		3 - WAY POWER DIVIDER UHF (470-	-860 Mhz)	
0000170506	PDU3-S/N 3 ways	7/16	Ν	1000
0000170538	PDU3-S/S 3 ways	7/16	7/16	1000
0000170507	PDU3-F/S 3 ways	7/8″	7/16	2500
0000170539	PDU3-Y/F 3 ways	1-5/8″	7/8	5000
0000170540	PDU3-Z/Y 3 ways	3-1/8″	1-5/8″	10000
		4 - WAY POWER DIVIDER UHF (470-	-860 Mhz)	
0000170521	PDU4-S/N 4 ways	7/16	Ν	1000
0000170539	PDU4-S/S 4 ways	7/16	7/16	1000
0000170389	PDU4-F/S 4 ways	7/8″	7/16	2500
0000170523	PDU4-F/F 4 ways	7/8″	7/8″	2500
0002460005	PDU4-Y/F 4 ways	1-5/8″	7/8″	5000
0000170524	PDU4-Z/F 4 ways	3-1/8″	7/8	10000
0000170525	PDU4-Z/Y 4 ways	3-1/8″	1-5/8″	10000

ANALOGUE AND DIGITAL TV COMBINERS

A FULL RANGE OF TV COMBINERS AND FILTERS ARE AVAILABLE ALONG WITH OUR TV EQUIPMENT. SUITABLE FOR DAB, ATV, DVB - T/H ADJACENT CHANNEL SOLUTION FOR DTV APPLICATION TEMPERATURE COMPENSATED CUSTOMISED SOLUTION ON RACK ASSEMBLY



S DESCRIPTION

Analogue filters: a) 3BP +2 Notches b) 4 cavities eliptical Digital filter: a) available NON C.M. and C.M. up to 8 cavities Constant impedance multiplexerfor ATV and DTV adjacent channel Star point multiplexer for ATV and DTV



PTU/N UHF PANEL ANTENNA

THE UHF DIRECTIONAL WIDE-BAND ANTENNA PTU IS DESIGNED FOR HORIZONTAL OR VERTICAL POLARIZATION TRANSMITTING TV SYSTEMS. THE ANTENNA IS COMPOSED OF EIGHT HALF-WAVE DIPOLES ANTENNA WITH PANEL REFLECTOR AND PROTECTION RADOME. THE PTU ANTENNA IS SUITABLE FOR UHF LOW, MEDIUM AND HIGH POWER STACKED-ARRAY SYSTEMS FOR DIRECTIONAL, SEMIDIRECTIONAL AND OMNIDIRECTIONAL PATTERNS. ON A BACK SIDE THERE IS A COAXIAL ANTENNA CONNECTOR 7/16 (N FEMALE OR EIA 7/8 UPON REQUEST). THE PTU ANTENNA IS SUPPLIED WITH A STANDARD MOUNTING SYSTEM; A PROFESSIONAL MOUNTING KIT IS AVAILABLE AS AN OPTION.

Radiation Pattern



Gain





STECHNICAL DATA

Rf Input power Input Connector Polarization Weight Gain (Referred to Half-Wave Dipole) H Plane - V Plane Max Wind Velocity Wind Load (with speed at 150Km/h) Wind Surface **Frequency Range** Input Impedance VSWR Internal parts **External parts** Mounting Dimensions (W x H X D) mm

300 - 1000 - 2000 W N - 7/16 - 7/8 Horizontal 14 Kg 11 dB

60 ° - 25 ° 225 Km/h 89 Kgs.

0,65 SQM 470 ÷ 860 MHz 50 Ohm ≤ 1.13:1 Silver-plated traded copper and brass Hot Galvanized steel From 60 to 120 mm diam. 450 × 1000 × 250

A CODE	MODEL	DESCRIPTION
0000170494	PTU/N	UHF Panel with 8 dipole half wave, N type connector
0000170388	PTU/16	UHF Panel with 8 dipole half wave, 7/16 type connector
	PTU/F	UHF Panel with 8 dipole half wave, 7/8 type connector

PTV/N VHFIII PANEL ANTENNA

THESE VHF DIRECTIONAL WIDE-BAND AERIALS, PTV MODEL, ARE DESIGNED FOR HORIZONTAL OR VERTICAL POLARIZATION IN THE TRANSMISSION FOR TV AND DAB SYSTEMS. THE ANTENNA IS COMPOSED BY TWO STAINLESS STEEL DIPOLES AND A REFLECTING GRID REALIZED WITH HOT DIP GALVANIZED STEEL.

THE PTV MODEL IS SUITABLE FOR THE VHF BAND AND CAN OPERATE IN LOW, MEDIUM AND HIGH POWER STACKED-ARRAY SYSTEMS, ESPECIALLY FOR SQUARE AND ROUND TRANSMITTING TOWERS. THE PTV ANTENNA CAN BE DISASSEMBLED TO REDUCE FREIGHTING COSTS.

Radiation Pattern





Gain





STECHNICAL DATA

Rf Input power Input Connector Polarization Weight Gain (Referred to Half-Wave Dipole) H Plane - V Plane Max Wind Velocity Wind Load (with speed at 150Km/h) Wind Surface **Frequency Range** Input Impedance VSWR Internal parts **External parts** Mounting Dimensions (W x H X D) mm

1500 W 7/16 Vertical (or Horizontal) 25 Kg 7.5 dB

57 ° - 73 ° 225 Km/h 140 Kgs.

0,65 SQM 174 ÷ 225 MHz 50 Ohm ≤ 1.4:1 Silver-plated traded copper and brass Stainless steel From 60 to 120 mm diam. 1250 x 850 x 400

2 CODE	MODEL	DESCRIPTION
0000170499	PTV/16	VHF Panel with 2 Galvanized steel dipoles, 7/16 type connector







GENERAL CATALOGUE 2009





ACU 1+1

ACU - S 1+1

THE ACU MODEL IS A UNIVERSAL AND FLEXIBLE AUTOMATIC CHANGE-OVER UNIT DESIGNED FOR CONTROLLING FM RADIO AND TELEVISION TRANSMITTERS OR REPEATERS.

ACU INCLUDES A BASEBAND AND RF INTERNAL SWITCH. IT CAN ALSO CONTROL AN EXTERNAL HIGH POWER COAXIAL RELAY. IN CASE OF BREAKDOWN OF THE MAIN RF SIGNAL, THE EQUIPMENT OPERATES THE SUBSEQUENT SWITCH-OVER TO THE AUXILIARY SOURCE, THUS ENSURING CONTINUITY OF SERVICE.

THE INTERNAL COAXIAL RELAY ALLOWS SWITCH-OVER OF RF SIGNALS UP TO 350 W AVERAGE POWER UP TO 1 GHz, AND 150W UP TO 3 GHz. BY MEANS OF THE DEDICATED dB-25 CONNECTOR LOCATED IN THE REAR PANEL OF THE UNIT, IT CAN BE MATCHED WITH ANY TYPE OF EXTERNAL COAXIAL RELAY TO CONTROL ANY HIGH-POWER INSTALLATIONS.

THE UNIT, WHICH IS 100% MICROPROCESSOR-CONTROLLED, ALLOWS THE SOFTWARE-OPERATED CONFIGURATION OF ALL OPERATING PARAMETERS, SUCH AS LOW POWER THRESHOLD, WAITING AND SWITCHING TIME. THE GRAPHIC DISPLAY MAKES IT POSSIBLE TO CHECK THE PARAMETER SETTINGS AND THE OPERATIONAL STATUS OF THE SYSTEM.

AUTOMATIC OPERATION CAN BE DEACTIVATED FROM THE FRONT PANEL IN ORDER TO ALLOW THE MANUAL CONTROL OF SWITCHING. ALL BASE-BAND ROUTING IS MADE BY MEANS OF FULLY PASSIVE BISTABLE CIRCUITRY, IN ORDER TO GRANT THE SIGNAL CONTINUITY EVEN IN CASE THE CHANGEOVER UNIT GETS DAMAGED.

THE UNIT FEATURES A DUAL INDEPENDENT MAINS POWER SYSTEM AND, AS A STANDARD, IT IS EQUIPPED WITH LOW VOLTAGE DC INPUT FOR BATTERY SUPPLIED SYSTEMS.



У CODE	MODEL	DESCRIPTION
6001050615 6001050620	ACU 1+1 ACU-S 1+1	Automatic changeover for FM & TV Equipment Automatic changeover for FM & TV Equip. with Switch 350 W
Available Options		Internal DC Input 24 V or 48 V

S TECHNICAL DATA

Video A , Video B	BNC, 75 Ohm fully passive routing			
Audio stereo	Left A (main), Left B (aux), Right A (main), Righ B (aux),			
Audio Connector	standard XLR fully passive routing			
Output Connector	N Type Female 50 Ohm			
Input Sensitivity	-30 dBm nominal ± 20 dB			
Operating frequency	1 GHz			
Average output power	350 W			
Insertion loss	0.15 dB	2 Ghz	3 Ghz	
V.S.W.R	1.15	250 W	150 W	
Isolation between channels	85 dB	0.2 dB	0.25 dB	

Parallel port Unit A and Unit B

Can BUS (future option) Serial RS232/RS485

Ethernet TCP/IP Maximum relative Humidity Dimensions (W x H X D) mm 482 x 44 x 450 Weight Power consumption Nr of power supply boards DC Power Supply

25 pin sub-D connector 1.20 1.25 Fully isolated INPUTS and OUTPUTS 80 dB 75 dB 9 pin sub-D connector 9 pin sub-D connector (software selectable by user) RJ45 (optional) Temperature operating range 0° to 45° C (Meets ETS 300 019 requirements) 90% non condensing 5 Kg Approx. < 50 VA 2 from 230 V a.c. ± 20% 24 V or 48 V floating



INTERNAL VIEW



ACS (N + 1 SYSTEM)

THE ACS MODEL IS A UNIVERSAL AND FLEXIBLE AUTOMATIC CHANGE-OVER UNIT DESIGNED FOR CONTROLLING FM RADIO AND TELEVISION TRANSMITTERS OR REPEATERS. IN CASE OF DAMAGE OF ONE OF THE MAIN EQUIPMENT, THE ACS AUTOMATICALLY SWITCHES TO THE RESERVE EQUIPMENT.

THE EQUIPMENT CAN BE USED IN THE APPLICATIONS FOR ACTIVE AND PASSIVE RESERVE SYSTEMS, PRE- AND FINAL STAGE RESERVE, (N+1)-SYSTEMS AND FOR THE CONTROL OF ANTENNA SELECTOR SWITCHES. THE ACS IS DESIGNED TO CONTROL UP TO SIX SERVICE EQUIPMENTS AND ONE RESERVE ACCORDING TO (N+1)-SYSTEMS.

THE GENERAL SWITCHOVER CRITERIA AS WELL AS THE DELAY TIME BETWEEN MISSING RF SIGNAL AND SWITCHOVER, AND THE PRIORITY OF THE TRANSMITTER IN OPERATION ARE FREELY SELECTABLE. ALL SETTINGS OF TRANSMITTER UNDER SERVICE REMAIN EFFECTIVE IN CASE OF SWITCHING OVER TO THE SPARE TRANSMITTER. FURTHERMORE, MANUAL SWITCHOVER AND OPERATION OF THE EACH EQUIPMENT VIA THE ACS ARE POSSIBLE.

BY MEANS OF THE DEDICATED dB-25 CONNECTOR LOCATED IN THE

REAR PANEL, THE EQUIPMENT CAN BE CONNECTED WITH ANY TYPE OF EXTERNAL COAXIAL RELAYS TO CONTROL HIGH-POWER INSTALLATIONS.

THE UNIT, WHICH IS 100% MICROPROCESSOR-CONTROLLED, ALLOWS THE SOFTWARE-OPERATED CONFIGURATION OF ALL OPERATING PARAMETERS, SUCH AS LOW POWER THRESHOLD, WAITING AND SWITCHING TIME.

THE GRAPHIC DISPLAY IS A TFT 6" COLOUR VGA AND MAKES IT POSSIBLE TO CHECK THE PARAMETER SETTINGS AND THE OPERATIONAL STATUS OF THE SYSTEM. THE ESTABLISHED OPERATING FIGURES AND THE STATUS OF THE TRANSMITTERS AND ANTENNAS, ARE RESPECTIVELY SYMBOLICALLY REPRESENTED IN THE GRAPHIC DISPLAY.

ALL THE CONNECTIONS TO THE MODULES OF THE TRANSMITTER SYSTEM ARE ARRANGED IN THE REAR PART OF THE UNIT. THE UNIT FEATURES A DUAL INDEPENDENT MAINS SYSTEM AND OPTIONALLY INCLUDES A LOW VOLTAGE DC INPUT FOR BATTERY SUPPLIED SYSTEMS.



У CODE	MODEL	DESCRIPTION
	ACS	Automatic changeover System up to 6 FM & TV Equipment
Available Options		Internal DC Input 24 V or 48 V

S TECHNICAL DATA

Controls

Fast overview Status overview Serial RS232/RS485

Ethernet TCP/IP Maximum relative Humidity 90% non condensing Dimensions (W x H X D) mm 482 x 132 x 450 Weight Power consumption Nr of power supply boards DC Power Supply

up to six service transmitters and one reserve transmitter in a (n+1)-system operating status with LED's on the front panel TFT 6"VGA graphic colour display 9 pin sub-D connector (software selectable by user) RJ45 (optional) Temperature operating range 0° to 45° C (Meets ETS 300 019 requirements) 6 Kg Approx. < 100 VA 2 from 230 V a.c. ± 20% 24 V or 48 V floating (optional)











GENERAL CATALOGUE 2009





E250-DV DAB 250 W rms

E500-DV DAB 500 W rms

E1000-DV DAB 1 kW rms

THE DAB-DMB VHFIII TRANSMITTERS ARE COMPOSED BY A DMB IF MODULATOR, E SERIES DRIVER, DTA SERIES POWER AMPLIFIER AND OUTPUT FILTER. ALL THESE EQUIPMENT ARE ASSEMBLED IN A CABINET 19" 24U.

THIS FAMILY OF MEDIUM POWER TRANSMITTER EMPLOYS DUAL CAST TECHNOLOGY THAT, USING THE AMPLIFIERS OF THE DTA SERIES, CAN ACHIEVE DIFFERENT SOLUTIONS AND APPLICATIONS, JUST CHANGING THE DRIVER MODEL: DMB TRANSMITTER; ATV ANALOGUE DRIVER OR DVB-T DRIVER.

- Sector Se
- HIGH EFFICIENCY AND RELIABILITY
- HIGH LINEARITY OVER THE ENTIRE BAND
- ALC AND INPUT OVER DRIVE PROTECTION FUNCTIONS
- LCD MULTIFUNCTIONAL DISPLAY
- LI RJ 45 ETHERNET CONNECTION AND RS 232 AND RS 485 IN & OUT
- METERING BOARD CONTROLLED BY MICROPROCESSOR
- POWER SUPPLY WITH PFC ACTIVE
- WEB MONITORING AND SNMP FOR REMOTE CONTROL



E250-DV DAB

THE AMPLIFIERS OF THE DTA SERIES DISTINGUISH THEMSELVES BY THEIR VERY HIGH EFFICIENCY AND EXCELLENT LINEARITY OVER THE ENTIRE BAND, OBTAINED THANKS TO THE OPTIMIZATION OF THE RF CIRCUITS.

HIGH RELIABILITY IS GUARANTEED BY THE USE OF OVER DIMENSIONED COOLING DEVICES AND BY APPLYING THE LATEST MICROPROCESSOR TECHNOLOGIES TO THE PROTECTION AND CONTROL CIRCUITS.

THE DTASERIES ARE SOLID STATE AMPLIFIERS DESIGNED FOR USE IN VHF BAND III. FINAL POWER MODULES INCORPORATE MICROSTRIP TECHNOLOGY AND LDMOS PUSH-PULL TRANSISTORS.

THE PRACTICAL MULTIFUNCTIONAL LCD DISPLAY ALLOWS VISUALIZATION OF THE WORKING PARAMETERS OF THE APPARATUS SUCH AS: REFLECTED AND DIRECT OUTPUT POWER, CURRENT CONSUMPTION OF EACH MODULE, INTERNAL TEMPERATURE, ALARM STATUS (OVERPOWER, HIGH SWR, HIGH TEMPERATURE, POWER SUPPLY FAULTY), ALARM THRESHOLD LEVELS AND OTHERS.

ש MODEL	DESCRIPTION	MODEL AMPLIFIER
E 10-DV-DAB	Driver 10 W rms VHFIII Driver	
E 10-DV-DAB	10 W rms VHFIII Transmitter	
E 20-DV DAB	20 W rms VHFIII Transmitter	
EK 100-DV DAB	100 W rms VHFIII Transmitter	
E 250-DV DAB	250W rms VHFIII Transmitter (24U cabinet incl.)	DTA 125V
E 500-DV DAB	500 W rms VHFIII Transmitter (24U cabinet incl.)	DTA 250V
E 500-DV R DAB	500 W rms VHFIII Redundancy TX (24U cabinet incl.)	DTA 250V + DTA 250V
E 1000-DV DAB	1000 W rms VHFIII Transmitter (24U cabinet incl.)	DTA 500V
E 1000-DV R DAB	1000 W rms VHFIII redundancy TX (24U cabinet incl.)	DTA 500V + DTA 500V

S FREQUENCY

Range

Delay compensation Transmitter Offset Delay Network Padding Delay VHF Band III: Channel 5A to 13 F (174.928 to 239.200 MHz) L Band: 1450 – 1550 Mhz Up to 1.6 Seconds in steps of 488 ns 0 to 2047 microseconds 0 to 1 Second Automatically adjusted for each NA input. 488 nS steps

Setting mode

S RF OUTPUT SPECIFICATIONS

Mode Processing Delay Transmitter Trimming Delay	Mode 1 111000uS 111000 to 200000 uS	Mode 2 39000uS 39000 to 120000 uS	Mode 3 39000uS 39000 to 120000 uS	Mode 4 63000uS 63000 to 150000 uS
RF Stability MFN RF Stability SFN Stability of Frequency Shoulder	+/- 10 Hz < 10 Hz 1 Hz over 3 < 45 dBc (tr	+/- 40 Hz < 40 Hz months ypically)	+/- 80 Hz 3 < 80 Hz	+/- 20 Hz < 20 Hz
Probe	BNC connec	tor RF – 40 dl	3; BNC conne	ctor LF

S INPUT PARAMETERS

Input connector/Impedance Selection Type	10 KOhm unbal., 2 x BNC female Connector Dual NA or dual NI (Auto mode Inhibited) Automatic mode (seamless redundancy switchover between NA input 1 & NA input 2) ETI(NI) 2.048 MHz short haul or ETI(NA) protocols with support for either T1 or E1
Input Error conditions CRC Violations	User selectable Parameters to define Output muting (on-off and level) 1) muting off - on 2) number of detected errors from 1 to 6 3) number of frames to be detected over N= 10 to 60
Input Error conditions Reset period	User selectable Parameter to define how long the modulator should wait before restoring its output. number of frames to be error free $N = 20$ to 200
S INPUT PARAMETERS	
Input connector / Impedance Output level	1 dB 25 female type Digital I/Q 8 bit interleaved at 4MHz

Directly applied digitally at IF.

15 bits using 64 MHz samples

Analogue Modulation Number of bits

LI DAB MODE	
All modes	Selectable from the ETI stream (Auto) or manual from the front panel.
MNSC Control	Transmitter Offset Delay Transmitter Identification Information TII
Digital Linear Pre-correction	Allows correction of frequency domain distortion Tilt +/- 3dB; Sag +/- 3dB; S-Curve +/- 2dB; Group Delay +/- 1uSec
Digital Non Linear Pre- correction	Corrects for the non linear characteristic of the transmitter. 3rd and 5th order amplitude Range: 0 to 99.99 3rd and 5th order phase Range: -240 to +240 degrees
Memory Reak clipping adjustment	6 sets of Non Linear figures PC Stored
Differential delay between carriers	Less than 2.5uSeconds between any carrier
Local Control Interface	Interface no. 1 Front panel and keypad Password protected Interface standard no. 2: RS 232,Type: dB 9 (M) Protector TRD Password protected
Frequency reference input	10 MHz, BNC 50 Ohm
Time reference input	1 PPS, BNC 50 Ohm
S ALARM	
Internal Alarms	Complete list TBD, GPS Failure of RF Input Internal failure
Rear Panel Alarm contacts	10 voltage free, contacts. High impedance indicating a Fault. Low impedance indicating correct operation. User configurable from any of the available internal alarms. User configurable Filtering scheme of up to 10 sec for each alarm.
S REMOTE CONTROL	
Input / Output Connector	All front panel commands available (Alarm, Modulator configuration)
Ethernet interface (option)	Connector RJ 46 WEB browser or SNMP client
STANDARDS COMPLIA	itice
Modulation	ETSI 300-401; Out of Band spurious TBA; Center carrier level TBA
Interface	ETSI 300 799
EMC Safety	ETSI 447 EN 60950 - EN 60215
Salety	
LI TEMPERATURE	
Nominal range Maximum relative Humidity	0° to 45° C (Meets ETS 300 019 requirements) 90% non condensing

2500 mt. a.s.l.

& SPECIFICATIONS	E250-DV DAB 250 Wirms	E500-DV DAB 500 W rm	s E1000-DV DAB 1 KW rms
RF output power rms	250 W	500 W	1000 W
Output Connector		7/8 Flange (7/16 f for amplifier n	nodule)
Dimensions (W x H X D) mm	RACK 19" 24U	RACK 19" 24U	RACK 19" 38U
Weight	130 Kg	160 Kg	250 Kg
Power consumption	1,2 KVA @ Pmax	2,4 KVA @ Pmax	4,8 KVA @ Pmax
Nr. of power supply boards	1	2	4
DC Power Supply	230Vac single phase	380Vac three phase	
Number of fans	2 for Heatsink + 1 for Power Supply		3 for Heatsink + 2 for Power Supply

Max Operating Altitude







GENERAL CATALOGUE 2009



TX 25 PLUS 25W

TX 250 PLUS 250W

THE TX 25 PLUS AND TX 250 PLUS FM EXCITERS ARE DESIGNED TO ACCEPT STEREO MONO MPX AUDIO SIGNALS TO BE MODULATED IN FM AND TO AMPLIFY THE RF.

THE TX 25 PLUS AND TX 250 PLUS FM ARE EQUIPPED WITH AN INNOVATIVE AND HIGH-PERFORMANCE POWER SUPPLY STAGE «SWITCHING-MODE MAINS DIRECT», WITHOUT MAINS TRANSFORMER (THE MAINS VOLTAGE CAN VARY FROM 80 TO 265 VAC WITH NO VARIATION ON THE OUTPUT POWER).

MAJOR FEATURES INCLUDE HIGH INSULATION FROM MAINS, HIGH OVERALL EFFICIENCY, MODULAR DESIGN FOR FRIENDLY MAINTENANCE, COMPLIANCE WITH EUROPEAN NOrms EN61000-4-3 AND LONG TERM RELIABILITY.

IN THESE FM EXCITERS, AN AGC AUDIO CIRCUIT CONTROL IS INCLUDED TO KEEP THE MODULATION LEVEL BELOW THE MAXIMUM FIGURES ALLOWED IN COMPLIANCE WITH CEPT/ERC 5401 E. THE RF OUTPUT SPECIFICATIONS HAVE BEEN DRASTICALLY IMPROVED, THUS OBTAINING FIGURES WHICH ARE COMPARABLE TO DIGITAL TRANSMITTERS.

THESE FM EXCITERS CAN BE CONTROLLED LOCALLY BY A PC OR REMOTELY BY MODEM.

THE TX 25 PLUS IS A COMPLETELY SOLID STATE EXCITER, FREQUENCY AGILE CONTROLLABLE FROM THE FRONT PANEL WITH ADJUSTABLE OUTPUT POWER UP TO 25 W.

THE POWER DEVICE USED TO OBTAIN 25 W IS THE PHILIPS BLF 245. IN TX 250 PLUS FM EXCITER, WHICH CAN BE USED AS A STAND-ALONE TRANSMITTER AS WELL, A POWER AMPLIFIER MODULE WITH THE POWER DEVICE PHILIPS 278, ABLE TO GRANT 250 W OUTPUT POWER IN THE ENTIRE FREQUENCY RANGE HAS BE ADDED.



SODE	MODEL	DESCRIPTION
0005310001	TX 25/S PLUS	25 W Stereo, Mono MPX Transmitter
0005310003	TX 250/S PLUS	250 W Stereo, Mono MPX Transmitter

M FREQUENCY

Range
Internal Setting mode
External Setting mode
Generation
Control
Output frequency stability
Reference
Nominal deviation
Stability of Frequency Deviation
Impedance RF Connector

87,5 ÷ 108 MHz 10 KHz steps 10 KHz steps by remote control RS232-RS485 PLL synthesizer Microprocessor ± 300 Hz / 3 months TCXO 12,8 MHz ± 75 KHz ± 2,5 % over 6 months 50 Ohm

S RF OUTPUT SPECIFICATIONS

Harmonics suppression Spurious Emission Off Lock Attenuation S/N RATIO (weighted) THD VSWR Probe < - 75 dBc < - 90 dBc > 60 dBc > 73 dB (referred to ± 75 KHz) 0,10% Less then 1,5:1 BNC connector RF – 40 dB BNC connector LF

S MONO MPX SPECIFICATIONS

Mono/MPX Impedance Mono Level MPX Level Audio Filter Response THD Suppression of 19 KHz

RDS and SCA Impedance

600 Ohm bal. or 10 KOhm unbal., XLR female Connector From - 6 to + 12 dBm - 6 dBm > 30 dB (from 19 KHz to 100 KHz) < 0,2% From 40 Hz to 15 KHz > 46 dB 10 KOhm unbal., BNC Connector (with 30 Hz to 100 KHz Filter)

STEREO SPECIFICATIONS

Left, and Right Impedance	600 Ohm bal. or 10 KOhm unbal, XLR female Connector
Left, Right Level Crosstalk THD on Encoded channels Suppression of 38 KHz Spurious suppression outside band	From – 6 to + 12 dBm > 50 dB (@ 19 KHz) < 0,3 % From 0,4 Hz to 15 KHz > 50 dB According to ETSI 300-384
Sub Carrier Generation Pilot Frequency	Internal Cristal 19 KHz ± 1 Hz
S DESIGN DATA	
Type Pre –emphasis Audio frequency response Unbalance rejection Modulation	Solid state direct FM frequency Flat or 75 or 50 µs ± 0,2 dB (from 40 Hz to 15 KHz) (stereo) ± 0,3 dB (from 40 Hz to 100 KHz) (MPX) > 40 dB Type: Direct VCO frequency modulation F3E/F8E Capability: Meets or exceeds all CE 99/ 05 R&TTE requirements
S REMOTE CONTROL	
Output Connector	RS 232 – PC connection (front panel) RS 232 Amplifier connection (rear panel) RS 485 (rear panel) RS 485 (rear panel)
STANDARDS COMPLIA	ME
Radio spectrum EMC Safety	ETSI 300-384; ETS 302-018 ETSI 300-447; ETS 301-489 EN 60950 - EN 60215
LI TEMPERATURE	
Operating range	0° to 45° C

Storage range-Maximum relative Humidity9Max Operating Altitude2

- 40° to 60° C 90% non condensing 2500 mt. a.s.l.



SPECIFICATIONS	TX 25 PLUS	TX 250 PLUS
RF output power rms	From 0 to 25 W	From 0 to 250 W
Output Connector	N Type Female	N Type Female
Dimensions (W x H X D) mm	482 x 88 x 500 (550 x 220 x 60 Package)	482 x 88 x 500 (550 x 220 x 60 Package)
Weight	10 Kg (12.6Kg. Package)	12 Kg (15.5 Kg. Package)
Power consumption	< 100 VA	< 800 VA
Nr. of power supply boards	1 From 80 to 265 Vac, single phase;	1 From 80 to 265 Vac, single phase;
DC Power Supply	Not included	Not included
Type of ventilation	1 blower 220 V ac	2 blowers 220 V ac

TX 500 PLUS | 500 W

VL 500 PLUS 500 W



www.cte.it

TX 1000 PLUS 1000 W VL 1000 PLUS 1000 W

THE TX 500/S PLUS AND THE TX 1000/S PLUS ARE COMPLETE FM TRANSMITTERS DEVELOPED TO CONNECT THE FM MONO, MPX, STEREO EXCITER TX 25/S PLUS WITH THE VL 500 PLUS OR VL 1000 PLUS IN THE SAME MECHANICAL 5U RACK.

WITH THIS SOLUTION TWO INDEPENDENT UNITS, FM EXCITER AND FM POWER SUPPLY FULLY REDUNDANT IN THE POWER SUPPLY, ARE PLACED IN THE SAME RACK.

THE BEST ADVANTAGE OF THIS SOLUTION IS THAT IT IS POSSIBLE TO SWITCH OFF ONE OF THE TWO EQUIPMENT AND USE THE OTHER ONE AS A STAND ALONE EQUIPMENT.

THIS SOLUTION ALSO ALLOWS A GOOD REDUCTION IN THE WITH RESPECT TO THE ARRAY OF TWO SEPARATE EQUIPMENT (EXCITER AND AMPLIFIER) AND ALSO REPRESENTS THE IDEAL SOLUTION TO GET A SPARE UNIT IN CASE OF DAMAGE OF THE MAIN TRANSMITTER. THE TX 25 PLUS IS AN EXCITER, FREQUENCY AGILE CONTROLLABLE FROM THE FRONT PANEL WITH ADJUSTABLE OUTPUT POWER UP TO 25 W. THE POWER DEVICE USED TO OBTAIN 25 W IS THE PHILIPS BLF 245. IN TX 250 PLUS FM EXCITER, USED AS A STAND-ALONE TRANSMITTER AS WELL, A POWER AMPLIFIER MODULE WITH THE POWER DEVICE PHILIPS 278, ABLE TO GRANT 250 W OUTPUT POWER IN THE ENTIRE FREQUENCY RANGE HAS BE ADDED.



у соре	MODEL	DESCRIPTION
0005310002	TX 500/S PLUS	500 W Stereo, Mono MPX Transmitter
0005310006	TX 1000/S PLUS	1000 W Stereo, Mono MPX Transmitter
0000130289	VL 500/S PLUS	500 W Amplifier
0000130265	VL 1000/S PLUS	1000 W Amplifier

M FREQUENCY

Ran	ge
14/14/	Inte

wwInternal Setting mode External Setting mode Generation Control Output frequency stability Reference Nominal deviation Stability of Frequency Deviation

Impedance RF Connector

87,5 ÷ 108 MHz 10 KHz steps 10 KHz steps by remote control RS232-RS485 PLL synthesizer Microprocessor ± 300 Hx / 3months TCXO 12,8 MHz ± 75 KHz ± 2,5 % over 6 months

S RF OUTPUT SPECIFICATIONS

Harmonics suppression Spurious Emission Off Lock Attenuation S/N RATIO (weighted) THD VSWR Probe

< - 75 dBc < - 90 dBc > 60 dBc > 73 dB (referred to ± 75 KHz) 0,10% Less then 1,5:1 BNC connector RF – 40 dB BNC connector LF

50 Ohm

S MONO MPX SPECIFICATIONS

Mono/MPX Impedance Mono Level MPX Level Audio Filter Response THD Suppression of 19 KHz RDS and SCA Impedance 600 Ohm bal. or 10 KOhm unbal., XLR female Connector From - 6 to + 12 dBm - 6 dBm > 30 dB (from 19 KHz to 100 KHz) < 0,2% From 40 Hz to 15 KHz > 46 dB 10 KOhm unbal., BNC Connector (with 30 Hz to100 KHz Filter)

STEREO SPECIFICATIONS

Left, and Right Impedance	600 Ohm bal. or 10 KOhm unbal, XI R female Connector
Left, Right Level Crosstalk THD on Encoded channels Suppression of 38 KHz Spurious suppression outside band	From – 6 to + 12 dBm > 50 dB (@ 19 KHz) < 0,3 % From 0,4 Hz to 15 KHz > 50 dB According to ETSI 300-384
Sub Carrier Generation Pilot Frequency	Internal Cristal 19 KHz ± 1 Hz
LI DESIGN DATA	
Type Pre –emphasis Audio frequency response Unbalance rejection Modulation	Solid state direct FM frequency Flat or 75 or 50 µs ± 0,2 dB (from 40 Hz to 15 KHz) (stereo) ± 0,3 dB (from 40 Hz to 100 KHz) (MPX) > 40 dB Type: Direct VCO frequency modulation F3E/F8E Capability: Meets or exceeds all CE 99/ 05 R&TTE requirements
S REMOTE CONTROL	
Output Connector	RS 232 – PC connection (front panel)
Input Connector STANDARDS COMPLIANCE	RS 232 Amplifier connection (rear panel) RS 485 (rear panel) RS 485 (rear panel)
Input Connector STANDARDS COMPLIANCE Radio spectrum EMC Safety	RS 232 Amplifier connection (rear panel) RS 485 (rear panel) RS 485 (rear panel) ETSI 300-384; ETS 302-018 ETSI 447; ETS 301-489 EN 60950 - EN 60215
Input Connector STANDARDS COMPLIANCE Radio spectrum EMC Safety	RS 232 Amplifier connection (rear panel) RS 485 (rear panel) RS 485 (rear panel) ETSI 300-384; ETS 302-018 ETSI 447; ETS 301-489 EN 60950 - EN 60215
Input Connector STANDARDS COMPLIANCE Radio spectrum EMC Safety INTEMPERATURE Operating range Storage range Maximum relative Humidity Max Operating Altitude	RS 232 Amplifier connection (rear panel) RS 485 (rear panel) RS 485 (rear panel) ETSI 300-384; ETS 302-018 ETSI 447; ETS 301-489 EN 60950 - EN 60215 0° to 45° C - 40° to 60° C 90% non condensing 2500 mt. a.s.l.





TX 30 30W



THE TX 30 AND TX 300 ARE NEW FM DRIVER/TRANSMITTERS FEATURING HIGH RELIABILITY, ULTIMATE DESIGN SOLUTIONS, FRIENDLY USE AND MAINTENANCE, COST - EFFECTIVENESS. FULL NOMINAL POWER IS GUARANTEED IN ANY CONDITION AND THANKS TO THE SWITCH MODE AC MAINS POWER SUPPLY(90 TO260VAC) THESE TRANSMITTERS CAN BE INSTALLED IN ANY COUNTRY.

THE UNITS CAN BE EASILY PROGRAMMED BY REMOTE SOFTWARE (WEB OR GSM MODEM) OR USED IN A N+1 SYSTEM ALSO BY MEANS OF A NEW AUDIO INTERFACE WITH AUTOMATIC INPUT SELECTION AND DIGITAL AES/EBU.



REMOTE CONTROL SOFTWARE

					Date:
МНZ кнахто	Watt	PLL SW	R OVH OVL	VAUX	Time:
Set Freq	Set Pwr	^	LARM LED	7. 97	LOC/REM N
	CONNECTION	St	+6	75	View
StandBy	NONE	Mo	-6+12	50	Rst
On	DATE/TIME	Dig	0	Off	
Off	Set Menu	AF INP	LFL	PREEMPH	LOGGE

5 CODE	MODEL	DESCRIPTION	OPTIONS
0005310033	TX 30	30 W Stereo Mono MPX FM Transmitter	
0005310037	TX 30	30 W Stereo Mono MPX FM Transmitter with option	AES/EBU + Remote Control
0005310034	TX 300	300 W Stereo Mono MPX FM Transmitter	
0005310038	TX 300	300 W Stereo Mono MPX FM Transmitter with option	AES/EBU + Remote Control
Option and accessories			
0000170073	TC35	KIT GSM-TX remote control FM Equipement	
	TC35	KIT GSM-PC remote control FM Equipement	

M FREQUENCY

Range
Internal Setting mode
External Setting mode
Generation
Control
Output frequency stability
Reference
Nominal deviation
Stability of Frequency Deviatio
Impedance RF Connector

87,5 ÷ 108 MHz 10 KHz steps 10 KHz steps by remote control RS232-RS485 PLL synthesizer Microprocessor ± 300 Hz / 3 months TCXO 12,8 MHz ± 75 KHz n ± 2,5 % over 6 months 50 Ohm

S RF OUTPUT SPECIFICATIONS

Harmonics suppression Spurious Emission Off Lock Attenuation S/N RATIO (weighted) THD VSWR Probe < - 75 dBc < - 90 dBc > 60 dBc > 73 dB (referred to ± 75 KHz) 0,10% Less then 1,5:1 BNC connector RF – 40 dB BNC connector LF

S MONO MPX SPECIFICATIONS

Mono/MPX Impedance Mono Level MPX Level Audio Filter Response THD Suppression of 19 KHz RDS and SCA Impedance 600 Ohm bal. or 10 KOhm unbal., XLR female Connector From - 6 to + 12 dBm - 6 dBm > 30 dB (from 19 KHz to 100 KHz) < 0,2% From 40 Hz to 15 KHz > 46 dB 10 KOhm unbal., BNC Connector (with 30 Hz to 100 KHz Filter)

STEREO SPECIFICATIONS

Left, and Right Impedance Left, Right Level Crosstalk	600 Ohm bal. or 10 KOhm unbal, XLR female Connector From – 6 to + 12 dBm > 50 dB (@ 19 KHz)		
THD on Encoded channels Suppression of 38 KHz Spurious suppression outside band	< 0,3 % From 0,4 Hz to 15 KHz > 50 dB According to ETSI 300-384		
Sub Carrier Generation Pilot Frequency	Internal Cristal 19 KHz ± 1 Hz		
S DESIGN DATA			
Type Pre –emphasis Audio frequency response	Solid state direct FM frequency Flat or 75 or 50 μs ± 0,2 dB (from 40 Hz to 15 KHz) (stereo) ± 0,3 dB (from 40 Hz to 100 KHz) (MPX)		
Unbalance rejection Modulation	> 40 dB Type: Direct VCO frequency modulation F3E/F8E Capability: Meets or exceeds all CE 99/ 05 R&TTE requirements		
Digital Input	AES/EBU		
S REMOTE CONTROL			
LAN	WEB Broser by TCCP/IP SNMP Protocoll (RJ45)		
RS232	Software Remote Controller by GSM Modem (DB9f)		
RS485	Internal BUS connection for syste connectivyity(DB9 in&out)		
Parallel	A I/O DB15		
STANDARDS COMPLIANCE			
Radio spectrum EMC Safety	ETSI 300-384; ETS 302-018 ETSI 300-447; ETS 301-489 EN 60950 - EN 60215		
S TEMPERATURE			
Operating range Storage range Maximum relative Humidity Max Operating Altitude	0° to 45° C - 40° to 60° C 90% non condensing 2500 mt. a.s.l.		

」 SPECIFICATIONS	TX 30	TX 300
RF output power	From 0 to 30 W	From 300 W
Output Connector	N Type Female	N Type Female
Dimensions (W x H X D) mm	482 x 88 x 500 (550 x 220 x 60 Package)	482 x 88 x 500 (550 x 220 x 60 Package)
Weight	10 Kg (12.6Kg. Package)	12 Kg (15.5 Kg. Package)
Power consumption	< 100 VA	< 800 VA
Nr. of power supply boards	1 From 80 to 265 Vac, single phase;	1 From 80 to 265 Vac, single phase;
Type of ventilation	1 blower 220 V ac	2 blowers 220 V ac



TX 1	1000W
VL 1	1000W



THE TX 1 AND TX 05 ARE REALLY INNOVATIVE FM TRANSMITTERS WITH 1000W AND 500W OUTPUT POWER RESPECTIVELY. THANKS TO THE NEW SOLUTIONS THAT OUR ENGINEERS HAVE IMPLEMENTED IN THE CIRCUITRY AND TO THE COMPACT DESIGN, FOR THESE TRANSMITTERS WE HAVE ESTIMATED A 20% LONGER MTBF WITH RESPECT TO THE AVERAGE SIMILAR MODELS AVAILABLE IN THE MARKET. THE TX 1 AND TX 05 ARE EQUIPPED WITH A MICROPROCESSOR BOARD THAT ALLOWS THE PROGRAMMING LOCALLY OR REMOTELY BY WEB (SNMP PROTOCOL). THANKS TO THE ULTIMATE ELECTRONIC COMPONENTS THAT HAVE BEEN LARGELY IMPLEMENTED IN THE DESIGN, THE OVERALL SPECIFICATIONS NOW ACHIEVED, SET TX 1 AND TX 05 AS "TOP CLASS EQUIPMENT".



1. j

- THE EQUIPMENT COMPLIES WITH THE RTTE EUROPEAN REQUIREMENTS.
- SOLID STATE AMPLIFIER WITH MOSFET TECHNOLOGY.
- UUTPUT POWER ADJUSTABLE FROM 100W TO 1000W
- USER FRIENDLY FOR MONITORING AND CONTROL
- DOUBLE STAGE POWER SUPPLY
- SAST AND MULTIPLE PROTECTIONS
- SCOMPACT AND MODULAR DESIGN FOR QUICK AND EASY MAINTENANCE
- SEEXIBLE TELEMETRY SYSTEM AND REMOTE CONTROL
- N+1 HARDWARE AND SOFTWARE CONTROL FACILITY

REMOTE CONTROL SOFTWARE



ሬ CODE	MODEL	DESCRIPTION
0005310008	TX05	500 W Stereo, Mono, MPX Transmitter
0005310036	TX05	500 W Stereo, Mono, MPX Transmitter with option AES/EBU + Remote Control
0005310009	TX1	1 kW Stereo, Mono, MPX Transmitter
0005310035	TX1	1 kW Stereo, Mono, MPX Transmitter with option AES/EBU + Remote Control
0000130266	VL05	500 W Power Amplifier 87.5-108 MHz
0000130308	VL05	500 W Power Amplifier 87.5-108 MHz with option AES/EBU + Remote Control
0000130267	VL1	1 kW Power Amplifier 87.5-108 MHz
0000130307	VL1	1 kW Power Amplifier 87.5-108 MHz with option AES/EBU + Remote Control
Option and accessories		
0000170073	TC35	KIT GSM-TX remote control FM Equipement
	TC35	KIT GSM-PC remote control FM Equipement

S FREQUENCY

Range
Internal Setting mode
External Setting mode
Generation
Control
Output frequency stability
Reference
Nominal deviation
Stability of Frequency Deviation
Impedance RF Connector

87,5 ÷ 108 MHz 10 KHz steps 10 KHz steps by remote control RS232-RS485 PLL synthesizer Microprocessor ± 300 Hz / 3 months TCXO 12,8 MHz ± 75 KHz ± 2,5 % over 6 months 50 Ohm

SRF OUTPUT SPECIFICATIONS

Harmonics suppression Spurious Emission **Off Lock Attenuation** S/N RATIO (weighted) THD VSWR Probe

< - 75 dBc < - 90 dBc > 60 dBc > 73 dB (referred to \pm 75 KHz) 0,10% Less then 1,5:1 BNC connector RF – 40 dB BNC connector LF

MONO MPX SPECIFICATIONS

Mono/MPX Impedance Mono Level MPX Level Audio Filter Response THD Suppression of 19 KHz RDS and SCA Impedance 600 Ohm bal. or 10 KOhm unbal., XLR female Connector From - 6 to + 12 dBm - 6 dBm > 30 dB (from 19 KHz to 100 KHz) < 0,2% From 40 Hz to 15 KHz > 46 dB 10 KOhm unbal., BNC Connector (with 30 Hz to100 KHz Filter)

S TEMPERATURE

Operating range Storage range Maximum relative Humidity Max Operating Altitude

0° to 45° C - 40° to 60° C 90% non condensing 2500 mt. a.s.l.

STEREO SPECIFICATIONS

Left, and Right Impedance	600 Ohm bal. or 10 KOhm unbal, XLR female Connector
Left, Right Level	From – 6 to + 12 dBm
Crosstalk	> 50 dB (@ 19 KHz)
THD on Encoded channels	< 0,3 % From 0,4 Hz to 15 KHz
Spurious suppression	According to ETSI 300-384
outside band	
Sub Carrier Generation Pilot Frequency	Internal Cristal 19 KHz ± 1 Hz
L DESIGN DATA	
Туре	Solid state direct FM frequency
Pre –emphasis	Flat or 75 or 50 µs
Audio frequency response	± 0,2 dB (from 40 Hz to 15 KHz) (stereo) + 0.3 dB (from 40 Hz to 100 KHz) (MPX)
Unbalance rejection	> 40 dB
Modulation	Type: Direct VCO frequency modulation F3E/F8E
	Capability: Meets or exceeds all CE 99/ 05 R&TTE requirements
Digital Input	AES/EBU
LI REMOTE CONTROL	
LAN	WEB Broser by TCCP/IP SNMP Protocoll (RJ45)
RS232	Software Remote Controller by GSM Modem (DB9f)
RS485	Internal BUS connection for syste connectivyity(DB9 in&out)
Parallel	A I/O DB15
STANDARDS COMPLI	ANCE
Radio spectrum	ETSI 300-384; ETS 302-018
EMC	ETSI 300-447; ETS 301-489
Safety	EN 60950 - EN 60215



SPECIFICATIONS	TX1/VL1	TX 05 / VL 05
RF output power	From 100 to 1000 W	From 50 to 500 W
Output Connector	7/16 Type Female	7/16 Type Female
Dimensions (W x H X D) mm	482 x 132 x 700 (550 x 270 x 800 Package)	482 x 132 x 700 (550 x 270 x 800 Package)
Weight	18 Kg (20 Kg. Package)	17 Kg (19 Kg. Package)
Power consumption	Approx. < 1800 VA	Approx. < 900 VA
Power supply req.	230 Vac±15%, single phase;	230 Vac±15%, single phase;
Number of fans	2 blowers 24 V dc	2 blowers 24 V dc

VL 3 2500W

THIS INNOVATIVE AND COMPACT AMPLIFIER IS ABLE TO SATISFY THE STRICTEST REQUESTS OF ALL END-USERS WHO ARE LOOKING FOR HIGH RELIABLE AND TOP-QUALITY EQUIPMENT AT COMPETITIVE PRICES.

ALL THE DECLARED OPERATIONAL PARAMETERS ARE ASSURED IN THE ENTIRE FREQUENCY RANGE AND FOR EXTREME ENVIRONMENTAL CONDITIONS.

THANKS TO THE ADVANCED APPROACH IN THE DESIGN FOCUSED ON LOW POWER CONSUMPTION AND LINEARITY OVER THE ENTIRE OPERATIVE BAND, WE ESTIMATE A 20% LONGER MTBF WITH RESPECT TO THE AVERAGE STANDARD EQUIPMENT AVAILABLE IN THE MARKET.

www.cte.it



THE EQUIPMENT COMPLIES WITH THE RTTE EUROPEAN REQUIREMENTS.

- TWO 1,3 kW RF STAGES WITH ULTIMATE MOSFET TECHNOLOGY S
- S USER FRIENDLY FOR MONITORING AND CONTROL
- THREE STAGES POWER SUPPLY S.
- N FAST AND MULTIPLE PROTECTIONS
- S. MODULAR DESIGN FOR QUICK AND EASY MAINTENANCE
- FLEXIBLE TELEMETRY SYSTEM AND REMOTE CONTROL S
- S. N+1 HARDWARE AND SOFTWARE CONTROL FACILITY

MODEL	DESCRIPTION
VL 3	2500 W Power Amplifier 87.5-108 MHz
DRIVER	TX250/S PLUS 250 W Stereo, Mono, MPX Transmitter
DRIVER	TX300 300 W Stereo, Mono, MPX Transmitter
DRIVER	TX300 300W TRASM. FM STEREO, MONO, MPX OPZ. A e B
RACK	Cabinet 15 Unit 19" complete with cable and Earth Bar for transmitter
	MODEL VL 3 DRIVER DRIVER DRIVER RACK

SRF OUTPUT SPECIFICATIONS

Range Overall efficiency Impedance RF Connector Output power stability Harmonics suppression Spurious Emission Residual Asynchrony AM Residual Synchrony AM Probe Protections	$\begin{array}{l} 87,5 \div 108 \mbox{ MHz} \\ \mbox{Better than 58 \%} \\ 50 \mbox{ Ohm input and output} \\ \pm 3 \\ \ge -80 \mbox{ dBc (typically better than 90 \mbox{ dBc})} \\ < 1 \\ + 1 \mbox{ Without Modulation} \\ -74 \mbox{ dB Weighed} \\ -58 \mbox{ dB Weighed} \\ \mbox{ BNC connector } \mbox{ RF} - 60 \mbox{ dBc} \\ \mbox{ RF Amplifier module over-temperature 70} \\ \mbox{ Excessive reflected power} \\ \mbox{ Permissible VSWR} \le 1.5 \\ \end{array}$
Programmable logic protection	Stopping of the unit after 8 alarms Stopping of the unit after 16 alarms
Logic protections reset	Manual , Remote or Automatically every 24 hours
Controls	Mains - dB 15 Connector (Stand-by and Reset command)
Alarm	Excessive output SWR (red led) 50 W adj. – Alarm (red led) - Stand –by (yellow led) - Mains - DC out – ALC

Settings Switch mode (Double conversion voltage direct mains)

J REMOTE CONTROL

Output Connector	RS232 interface Connector DB9 Male – Two Connector DB9 Female programmable – RS 485 - Connector DB15 Male		
Output Connector Analogue	Signal proportional to the output voltage of the power supply module Signal proportional to the current supplied by the power supply module Signal proportional to the square root of the direct power Signal proportional to the square root of the reflected power		
Output Connector Digital	"Stand-by" signal (contact is N.C. in normal operations, connected to GND in stand-by mode) "N.O." alarm contact (contact is not connected in normal operation, connected to pin 15 in alarm) "N.C." alarm contact (connected to pin 15 in alarm, contact is not connected in normal operation)		
Input Connector	Stand-by command Reset command		
Ethernet interface (option)	Connector RJ 46 WEB browser or SNMP client		
⊻ STANDARDS COMPLIANCE			
Radio spectrum EMC	ETSI 302-018 ETSI 301-489		

Safety

Operating range Storage range Maximum relative Humidity Max Operating Altitude

0° to 45° C - 40° to 70° C 90% @ 26 °C non condensing 2500 mt. a.s.l.

EN 60950 - EN 60215

SPECIFICATIONS צ	VL 3
RF output power	2500 W
Nr. of Transistors	8 MOS-FET SD 2942
RF Input (Nominal Level)	40 W
Output Connector	7/8 EIA
Dimensions (WxHXD) mm	(482 x 220 x 700) + (482 x 88 x 700)
Weight	30 + 14 Kg
Power consumption	Approx. < 4800 VA
Power supply req.	three-phase 380 Vac \pm 15% / 230 Vac mono-phase
Nr. of power supply boards	3
Number of fans	2 fan per each power supply module 2 fan per RF module
Nominal air volume at at 1000 hPa barometric pressure	740 m3/min



VL 5 5KW





THIS INNOVATIVE AND COMPACT AMPLIFIER IS ABLE TO SATISFY THE STRICTEST REQUESTS OF ALL END-USERS WHO ARE LOOKING FOR HIGH RELIABLE AND TOP-QUALITY EQUIPMENT AT COMPETITIVE PRICES. ALL THE DECLARED OPERATIONAL PARAMETERS ARE ASSURED IN THE ENTIRE FREQUENCY RANGE AND FOR EXTREME ENVIRONMENTAL CONDITIONS.

BY MEANS OF THE ADVANCED APPROACH IN THE DESIGN FOCUSED ON LOW POWER CONSUMPTION AND LINEARITY OVER THE ENTIRE OPERATIVE BAND, WE ESTIMATE A 20% LONGER MTBF WITH RESPECT TO THE AVERAGE STANDARD EQUIPMENT AVAILABLE IN THE MARKET. THE EQUIPMENT COMPLIES WITH THE EN 302-018 EUROPEAN REQUIREMENT.

- ULTIMATE MOSFET TECHNOLOGY
- USER FRIENDLY FOR MONITORING AND CONTROL
- Market Stages Power Supply
- SAST AND MULTIPLE PROTECTIONS
- MODULAR DESIGN FOR QUICK AND EASY MAINTENANCE
- STEM AND REMOTE CONTROL.



S CODE	MODEL	DESCRIPTION
0000130269	VL 5	5 kW Power Amplifier 87.5-108 MHz (30U cabinet incuded)
0000130294	VL 5	5 kW Power Amplifier 87.5-108 MHz (42U cabinet incuded)
0000130302	VL 5	5 kW Power Amplifier 87.5-108 MHz (42U cabinet incuded+Fan)
0000130270	VL 10	10 kW Power Amplifier 87.5-108 MHz (42U cabinet incuded+Fan)
	VL 20	20 kW Power Amplifier 87.5-108 MHz (2x42U cabinet incuded+Fan)

S RF OUTPUT SPECIFICATIONS

Range

Protections

Overall efficiency Impedance RF Connector Output power stability Harmonics suppression Spurious Emission Residual Asynchrony AM Residual Synchrony AM Probe Power supply 87,5 ÷ 108 MHz
Better than 58 %
50 Ohm input and output
± 3 %
≥ - 80 dBc (typically better than 90 dBc)
< 1 µW (without Modulation)
- 74 dB Weighed
- 58 dB Weighed
BNC connector RF – 60 dBc
Switch mode (Double conversion voltage direct mains)
Overheating 70 °C (by means of the General Control stage)
Over charge
Short Circuit on the output voltage
Crow - Bar protection: (Excessive output voltage limit)
Excessive current consumption of the RF module Over-voltage

S REMOTE CONTROL LAN WEB Broser by TCCP/IP SNMP Protocoll (RJ45) RS232 Software Remote Controller by GSM Modem (DB9f) Internal BUS connection for syste connectivyity(DB9 in&out) RS485 Parallel A I/O DB15 STANDARDS COMPLIANCE Radio spectrum ETS 302-018 EMC ETS 301-489 Safety EN 60950 - EN 60215 S TEMPERATURE Operating range 0° to 45° C Storage range - 40° to 70° C 90% @ 26 °C non condensing Maximum relative Humidity Max Operating Altitude 2500 mt. a.s.l.





SPECIFICATIONS	VL 5	VL 10	VL 20
RF output power	5 kW	10 kW	20 kW
Nr. of Transistors	16 MOS-FET SD 2942	32 MOS-FET SD 2942	64 MOS-FET SD 2942
RF Input (Nominal Level)	80 W	300 W	600 W
Output Connector	1-5/8 EIA	1-5/8 EIA	3-1/8 EIA
Dimensions (WxHXD) mm	540 x 1380 x 1000	540 x 2000 x 1000	540 x 2000 x 1000 (2 pcs)
Weight	150 Kg	250 Kg	500 Kg
Power consumption	Approx. < 9500 VA	Approx. < 19000 VA	Approx. < 38000 VA
Power supply req.	three-phase 380 Vac \pm 15%	three-phase 380 Vac \pm 15%	three-phase 380 Vac \pm 15%
Nr. of power supply boards	6	12	24
Number of fans	2 blowers for each PA & PS module	2 blowers for each PA & PS module	2 blowers for each PA & PS module

5 BAND DIGITAL AUDIO PROCESSOR

CONDOR 50 IS A 5 BAND DIGITAL AUDIO PROCESSOR INTEGRATING A BASS ENHANCER, A NOISE GATE, A DIGITAL STEREO ENHANCER, A MPX STEREO CODER AND AN RDS CODER.

CONDOR 50 HAS TWO RS 232 SERIAL PORTS OPTICALLY ISOLATED (NOT OPTICALLY COUPLED) WHICH ASSURE MAXIMUM IMMUNITY FOR DISTURBING NOISES COMING FROM OTHER EQUIPMENT. THE EQUIPMENT IS SUPPLIED WITH A PC CONTROL SOFTWARE FOR

BOTH LOCAL AND REMOTE CONTROL, TO GREATLY SIMPLIFY THE MANAGEMENT TO BROADCASTERS.

BY A STANDARD PC, THE SOFTWARE ALLOWS THE REMOTE MONITORING AND CONTROL OF ALL THE PROCESSOR STAGES (STARTING FROM THE GENERATION OF THE MPX SIGNAL AT AGC LEVEL) AS WELL AS THE STATEMENT OF THE MESSAGES AND INFORMATION PROVIDED BY THE RDS ENCODER.

BY MEANS OF ITS EXCLUSIVE DESIGN, THE CONDOR 50 ALLOWS AN EXTRAORDINARY SAVING OF SPACE AND MONEY, SINCE IT INCLUDES FOUR DIGITAL UNITS IN A SINGLE BOX, THUS AVOIDING COMPATIBILITY PROBLEMS WITH THE CONNECTION TO ANY TYPE OF EQUIPMENT AND MANUFACTURERS. THE CONDOR 50, FULLY DIGITAL UNIT BASED ON 9 POWERFUL DSP, FEATURES:

- S BAND DIGITAL PROCESSOR OPERATED BY 30 FACTORY PRE-SETS PROGRAMMED CURVES.
- LE EDITING UP TO 10 DIFFERENT USER PRE-SETS (IN NON-VOLATILE MEMORY) PERSONALISED EQUALIZATIONS, EASILY SAVEABLE AND RECALLABLE.
- SETTING PARAMETERS TO CREATE A UNIQUE SOUND, WHICH WILL IDENTIFY THE RADIO STATION IN AN UNMISTAKABLE WAY.

ALTERNATIVE PARAMETERS THAT CAN BE SET ARE: SUPER BASS TYPE, SUPER BASS LEVEL, BASS COMPRESSOR, MID1 COMPRESSOR, MID2

COMPRESSOR, MID3 COMPRESSOR, HIGH COMPRESSOR, BROADBAND DENSITY, BRILLIANCE.

DIGITAL MPX CLIPPER BUILT-IN INTO THE STEREO CODER, ASSURING NO AUDIBLE ARTEFACTS AND A PERFECT CONTROL OF MAX FREQUENCY DEVIATION. DIGITAL STEREO ENHANCER WITH SETTING PARAMETERS, NEEDED TO REACH THE PSYCHOACOUSTIC DESIRED EFFECT. THIS INTEGRATED FEATURE ALLOWS MAXIMUM EXPRESSION OF STEREOPHONIC EFFECT AND FULL CONTROL OF THE PARAMETERS WITHOUT AFFECTING THE MODULATION STABILITY.



SPECIFICATIONS	CONDOR 50	
Power supplies	From 220/230 V (110/115 V internal setting); 50-60Hz, single phase.	
Dimensions (W x H X D) mm	482 x 44 x 352 (570 x 130 x 420 Package)	
Weight	6 Kg (7 Kg. Package)	
Output filter characteristics	Low Pass 15 KHz (FIR-84 Taps, 15 KHz / -0.1 dB, 17 KHz / -70 dB)	
Output Connectors	Type XLR male	
Conversion	24 bit Codec	
Configuration	Pre-emphasized (50μs or 75 μs) internal or external	
Output Level	-4 dBu to 20 dBu (Adjustable with 1 dBu Steps)	
Output Impedance	600 Ohm balanced EMI suppressed	
Input / Output Delay	< 1.5 m sec.	
Tone generation	1 KHz, Ref 100 % Modulation	

Ч CODE	MODEL	DESCRIPTION
0000170387	CONDOR 50	Digital 5 Band Audio Processor
0000170052	CONDOR 50A	Digital 5 Band Audio Processor with Option A
0000170053	CONDOR 50B	Digital 5 Band Audio Processor with Option B
0000170445	CONDOR 50AB	Digital 5 Band Audio Processor with Option A + B
Available Options		
0000170397		AES/EBU (Digital Input) for CONDOR 50
0000170396		RDS (RDS Software) for CONDOR 50

CR 102 RDS CODER

CR 102 IS A FRIENDLY USE DYNAMIC RDS ENCODER WHICH SUPPORTS ALL THE MOST POPULAR SERVICES AND FEATURES USED BY BROADCASTERS. THE EQUIPMENT PROVIDES:

- 5 FULL-DIGITAL RDS CODER TOTAL SOFTWARE REMOTE CONTROL
- ADVANCED DYNAMIC PS MANAGEMENT (I-PS TECHNOLOGY)
- LASY INTERFACE TO HARD DISK AUTOMATION SYSTEMS RDS.

CHARACTERS CUSTOMIZABLE FOR DIFFERENT COUNTRIES - DEDICATED SW INTERFACE FOR DJ AND ANNOUNCERS.

THE CR 102 SPECIFICATIONS AND BENEFITS HAVE BEEN ACCURATELY DESIGNED TO SATISFY THE MOST DEMANDING REQUIREMENTS CONCERNING THE RDS GENERATION IN THE BROADCASTING FIELD. USING STATE-OF-ART, HIGH-SPEED DSP TECHNOLOGY, CR 102 ENSURES THE PUREST MODULATION QUALITY (THE WHOLE PROCESSING IS PERFORMED BY PHASE LINEAR FILTERS). ITS DIGITAL ARCHITECTURE ALSO GUARANTEES LONG TERM RELIABILITY AND EASY FIRMWARE UPDATES. A POWERFUL PC CONTROL SOFTWARE IS INTEGRATED IN THE EQUIPMENT. THE CR 102 ALLOWS THE CONTROL AND SETTING IN AN EASY AND INTUITIVE WAY OF ALL RDS DATA AND OF SIGNAL GENERATION PARAMETERS (LEVEL AND PHASE, SYNCHRONISM SOURCE, ETC). THE BASIC SOFTWARE SCREEN, ALWAYS DISPLAYS IN REAL TIME PS AND RT CONTENT CURRENTLY ON AIR, ALLOWING A FULL AND IMMEDIATE MONITORING OF RDS BROADCASTING, EVEN WHEN AN FM TUNER IS NOT AVAILABLE.

A SOFTWARE MODULE AVAILABLE AS AN OPTION (I-PS TECHNOLOGY), FURTHER BOOSTS THE NEW PS MANAGEMENT FEATURES: IT ELIMINATES EVERY PS PROGRAMMING CONSTRAINT LEAVING MAXIMUM FREEDOM IN TERMS OF MESSAGE LENGTH, SAVE / RECALLING FACILITIES AND MESSAGE EDITING MASKS. ANY TEXT CAN BE ENTERED AND BROADCASTED 'ON-THE-FLY', BOTH AS A FULL PS SEQUENCE OR IN A SCROLLING MODE.

FURTHERMORE, FEATURING A TRUE ASCII COMMUNICATION PROTOCOL, I-PS SOFTWARE MODULE ENABLES CR 102 CODER TO BE EASILY AND QUICKLY INTERFACED TO ANY HARD DISK AUTOMATION SYSTEM, FOR SONG AND ARTIST IDENTIFICATION ON PS FIELDS AND MUCH MORE...!



SPECIFICATIONS	CR 102
RF output power	type floating BNC, EMI suppr. (50 Ohm)
Nr. of Transistors	482 x 44 x 352 (570 x 130 x 420 Package)
RF Input (Nominal Level)	10 Kg (12.6Kg. Package)
Output Connector	Approx. < 10 VA
Dimensions (WxHXD) mm	From 220/230 V (110/115 V internal setting); 50-60Hz, single phase.
Weight	24 V
Power consumption	1 blower 220 V ac

L RDS PROGRAMMING		
Command formats	compliant to UECP Forum document SPB 490 (Version 5.1 - 22.08.97) + extended manufacturer's commands list ASCII interface for dynamic mode only	
Static services	DI, PI, TP, TA, M/S, RT , AF, PS, PTY	
Dynamic services	PS SEQUENCE, PS SCROLLING	
RDS groups	0A (75%), 2A (25%) – FIXED SEQUENCE (0A, 0A, 0A, 2A)	
Character tables	ISO 8859-1 (Latin 1), 8859-2 (Latin 2), 8859-5 (Cyrillic), 8859-7 (Greek), 8859-9 (Turkish), 8859- 10 (Nordic)	
AF lists	24, containing up to 25 freq each one	
PS (basic version)	8 pages containing 20 PS each one + 1 Scrolling message - 24 hours / day scheduling capabilities	
RT	8, with 24 Hours Day scheduling capabilities	
INSTANT PS	8 pages containing 48 PS each one + 32 scrolling messages – instant broadcasting capabilities (up to 384 dynamic PS includes software dedicated interface for DJ and ASCII programming support)	

4 CODE	MODEL	DESCRIPTION
0000170508	CR 102-IPS	Digital Radio Data System (RDS) Coder with Instant PS



www.cte.it

UTX - 15M UTX - 15/S

URX - 15M URX - 15/S

RX - 12 RX - 12/S

THESE NEW UHF LINKS ARE DESIGNED FOR LONG AND MEDIUM DISTANCE APPLICATIONS, STL'S, BACKBONES, MULTI-HOP SYSTEMS AND OTHER BROADCAST REQUIREMENTS, WHENEVER THE PURPOSE IS TO DELIVER WITH BROADCAST-QUALITY UP TO FOUR HIGH-QUALITY AUDIO CHANNELS (TWO ARE OPTIONAL) OR DATA FLOWS. THE RADIO LINK IS AVAILABLE IN UHF BAND: IT IS HOSTED IN A SINGLE 2-UNIT RACK THAT PERMITS A FAST AND EASY INTEGRATION WITH EXISTING TELECOMMUNICATION SYSTEMS, WITHOUT ANY DEGRADATIONS ABOUT LEVELS, MODULATIONS AND IMPEDANCE.

THE OUTPUT POWER IS CONTINUOUSLY ADJUSTABLE UP TO 15W; SEVERAL ALARMS TO KEEP UNDER CONTROL THE WORKING CONDITIONS OF THE AMPLIFIER ARE AVAILABLE.

THE EXCELLENT SPECTRAL PURITY AND THE SPECIAL DESIGN OF THE CONVERSION OSCILLATORS ENDOW THESE EQUIPMENT WITH AN EXCELLENT SIGNAL TO NOISE RATIO, BOTH IN TRANSMISSION AND RECEPTION STAGE.

BOTH TRANSMITTER AND RECEIVER ARE AGILE THUS GRANTING FRIENDLY USE FOR INSTALLATION AND READJUSTMENTS.



7 CODE HODEL DESCRIPTION	
UTX-15/M 15W Mono/MPX UHF Transmitter 180-450 MHz	
0005310019 UTX-15/S 15 W Stereo/UHF Transmitter 180-450 MHz	
URX-15/M UHF Mono/MPX Receiver 180-450 MHz	
0004700016 URX-15/S Digital 5 Band Audio Processor with Option A + B	
0004700005 RX-12 FM Mono/MPX Receiver 87.5-108 MHz	
0000170510 Rx-12/S FM Mono/MPX/Stereo Receiver 87.5-108 MHz	

S FREQUENCY

Modulation	solid state direct FM frequency synthesised crystal ref. thermal compensated
Range	180-450MHz (tx_range 50Mhz bandwidth; rx_range 5MHz /for 50MHz bandwidth tuning filter is required)
System Capacity	1 stereo program or 1 mono program and one subcarrier (SCA) Better than 2 pp
Setting	Directly digitally programmable on the front panel in 100 kHz steps
Fine frequency Adjustment	International multiturn trimmer

S RF OUTPUT SPECIFICATIONS VIDEO PERFORMANCE

Harmonics suppression	< - 80 dBc
Spurious Emission	< - 80 dBc
Residual Asynchrony AM	> 60 dB Weighed
Residual Synchrony AM	> 60 dB Weighed
S/N RATIO (weighted)	$>$ 70 dB (referred to \pm 75 KHz)
Distortion	0.05% or less for 75 kHz FM deviation
Probe	BNC connector RF 0 dBm; BNC connector LF 12 dBm

S AUDIO SPECIFICATIONS

Mono/MPX Impedance	600 Ohm bal. or 10 KOhm unbal., XLR female Connector
SCA Impedance	10 KOhm unbal., BNC Connector
Mono/MPX SCA Level	From 0 to + 12 dBm
Left, and Right Impedance	600 Ohm bal. or 10 KOhm unbal, XLR female Connector
Left, Right Level	From – 6 to + 12 dBm
Stereo Separation	> 60 dB (40 Hz to 15KHz)
THD	< 0,15% From 30 Hz to 15 KHz with de-emphasis

S RECEIVER SPECIFICATIONS

Selectivity Static	3 dB @ ± 150 KHz; dB @ ± 600 KHz	60 dB @ ± 450 KHz;	80
Selectivity Dynamic	± 300 KHz @ +5 dB; ± 500 KHz @ +40 dB	± 400 KHz @ +38 dB;	
Sensitivity Mono (deviation ± 75 KHz)	15 mV (S/N = 60 dB with bandwidth = 30 \div 15 KHz)		
Sensitivity Stereo (deviation ± 75 KHz)	: 150 mV (S/N = 60 dB with bandwidth = $30 \div 15$ KHz decoded, de-emphasis)		15

S DESIGN DATA	
Pre & De emphasis Amplitude response TX	Flat or 75 or 50 μs (Mono) ± 0,15 dB (from 30 Hz to 15 KHz) - 40dB from 19 kHz to 100 kHz (MPX) ± 0,1 dB (from 40 Hz to 100 KHz) (SCA) 1 dB (from 20 KHz to 100 KHz)
Audio frequency response RX	(Mono) < 0,15 dB (from 30 Hz to 53 kHz); < -45 dB (from 19 kHz to 100 kHz) (MPX) < 0,2 dB (from 30 Hz to 53 kHz) < 1 dB (from 53 Hz to 75 kHz) < 3 dB (from 75 kHz to 100 kHz) > 40 dB (from 120 kHz to 1 MHz)
Display Meter	Frequency, power output, voltage, temperature, lock, input level meter, input level set, pre-emphasis value, pre-emphasis set, carrier enable, temperature alarm set, -3dB power down alarm set
Protections	Alarm Frequency programming error Local oscillator locked in - Heat sink temperature exceeds that set - RF output power below 2,5 W (TX version) - RF output power below squelch threshold (RX version) - Power supply voltage of a module outside the permitted range
S REMOTE CONTROL	
Output Connector	DB9 connectors (command - CD: transmitter power ; RX: RS232 signal; TX: RS232 signal; ALL1 & ALL 2: alarm output signal; GND: earth ;
」 STANDARDS COMPLI	ANCE
Radio spectrum EMC	RTTE ETS 449, ETS-339, ETS-384, CCIR-450, CCIR-412, CCIR-559, CCIR-468
Safety R&TTE	EN 60950 - EN 60215 Declaration of Conformity with regards to the Directive 1999/5/EC

S TEMPERATURE

Nominal range Storage range Maximum relative Humidity Max Operating Altitude 0° to 45° C (Meets ETS 300 019 requirements) - 30° to 50° C 90% non condensing 2500 mt. a.s.l.

5 SPECIFICATIONS	UTX15	URX15	RX12
Rf output power	15 W		
Output Connector	N Type Female 50 Ohm	N Type Female	N Type Female 50 Ohm
Dimensions (W x H X D) mm	482 x 88 x 500	482 x 884 x 500	482 x 88 x 500
Weight	12 Kg	12 Kg	12 Kg
Power consumption	Approx. < 130 VA	Approx. < 90 VA	Approx. < 90 VA
Nr. of power supply	1 from 230 V a.c. ± 10%	1 from 230 V a.c. ± 10%	1 from 230 V a.c. ± 10%
DC Power Supply	24 V (18-26 V)	24 V (18-26 V)	24 V (18-26 V)
Cooling	Forced Air	Forced Air	Forced Air



www.cte.it

MTL/M-P MTL/S-P

MR/P MR/S-P

MTL/M-UK MTL/S-UK



THESE STUDIO TRANSMITTER LINKS OPERATE ON THE FOLLOWING FREQUENCY BANDS: 1.400–2.700 GHZ (EUROPEAN BAND 1.377-1.382 GHZ; 1.429-1.434 GHZ; 1.517-1.525 GHZ; 1.660-1.670 GHZ; 2.367-2.372 GHZ; 2.468-2.483 GHZ.)

THE MTL EQUIPMENT ARE SUITABLE FOR TRANSMITTING A HIGH-QUALITY MONO OR STEREO AUDIO SIGNAL FOR BROADCASTING WITH OUTPUT POWER UP TO 5 W.

IN THE TRANSMITTER THERE ARE NO TUNED CIRCUITS OR ADJUSTABLE COMPONENTS FOR TUNING ONTO THE REQUIRED FREQUENCY. ALSO, SINCE ALL THE CIRCUITS ARE WIDE BAND, THE ABSENCE OF SPURIOUS EMISSIONS IS ASSURED.

THE FREQUENCY STEPS OF THE SYNTHESISED OSCILLATOR ARE 100 KHZ. IN THE UK VERSION, A CIRCULATOR ENSURES EFFECTIVE PROTECTION AGAINST POSSIBLE INTERMODULATION PRODUCTS CAUSED BY OTHER TRANSMITTERS FEEDING THE SAME DISH, AND A LOW-LOSS BAND PASS FILTER WHICH RESTRICTS HARMONIC EMISSIONS TO THE LEVELS IN COMPLIANCE WITH THE STRICTEST CURRENT STANDARDS. THE EQUIPMENT CAN BE SUPPLIED BY AN EXTERNAL 24 VDC BATTERY.

- SAME SYNTHESISED OSCILLATOR FOR THE TRANSMITTER AND THE RECEIVER.
- Second Line Band Pass Filter to ensure image-frequency Rejection exceeding 60DB.
- HIGH SENSITIVITY IN MONO OF ABOUT 10MV @ 60DB OF S/N.
- LOW PHASE AND FREQUENCY DISTORTION OF THE OUTPUT BASE-BAND ARE ENSURED BY THE AGC, COMPENSATED FILTERS, DIGITAL - PULSE FREQUENCY DEMODULATOR, AMPLITUDE AND PHASE EQUALISER AND AN ELLIPTIC LOW-PASS FILTER WITH CUT-OFF OF 100 KHZ..



S CODE	MODEL	DESCRIPTION
0000170038	MTL/M-P	4 W Mono/MPX Microwave Transmitter with Output Filter
0000170433	MTL/M-UK	3,5 W Mono/MPX Microwave Transmitter +Circulator + LPF
0005310027	MTL/S-P	4 W Stereo Microwave Transmitter with Output Filter
0000170434	MTL/S-UK	3,5 W Stereo Microwave Transmitter + Circulator + LPF
0000170037	MR/P	Microwave Mono/MPX Receiver
0000170432	MR2/UK	Microwave Mono/MPX Receiver 1377-1382; 1429-1434 MHz
0004700009	MR/S-P	Microwave Stereo Receiver

<u>S FREQUENCY</u>

Modulation	solid state direct FM frequency synthesised crystal ref. thermal compensated
Range	P Version: 1517÷1525; 1650÷1680; 2367÷2372; 2468÷2435 MHz UK Version: 1429÷1434; 1377÷1382 MHz
System Capacity	1 stereo program or 1 mono program and one subcarrier (SCA)
Output frequency stability Setting	Better than 2 ppm Directly digitally programmable on the front panel in 100 kHz steps
Fine frequency Adjustment	International multiturn trimmer

S RF OUTPUT SPECIFICATIONS VIDEO PERFORMANCE

Harmonics suppression	< - 80 dBc
Spurious Emission	< - 80 dBc
Residual Asynchrony AM	> 60 dB Weighed
Residual Synchrony AM	> 60 dB Weighed
5/N RATIO (weighted)	$>$ 70 dB (referred to \pm 75 KHz)
Distortion	0.05% or less for 75 kHz FM deviation
Probe	BNC connector RF 0 dBm; BNC connector LF 12 dBm

SAUDIO SPECIFICATIONS

Lef

Mono/MPX Impedance	600 Ohm bal. or 10 KOhm unbal., XLR female Connector
SCA Impedance	10 KOhm unbal., BNC Connector
Mono/MPX SCA Level	From 0 to + 12 dBm
Left, and Right Impedance	600 Ohm bal. or 10 KOhm unbal, XLR female Connector
Left, Right Level	From – 6 to + 12 dBm
Stereo Separation	> 60 dB (40 Hz to 15KHz)
THD	< 0,15% From 30 Hz to 15 KHz with de-emphasis

SRECEIVER SPECIFICATIONS

Selectivity Static	3 dB @ ± 150 KHz; 80 dB @ ± 600 KHz	60 dB @ ± 450 KHz;
Selectivity Dynamic	± 300 KHz @ +5 dB; ± 500 KHz @ +40 dB	± 400 KHz @ +38 dB;
Sensitivity Mono (deviation ± 75 KHz)	15 mV (S/N = 60 dB v KHz)	with bandwidth = $30 \div 15$
Sensitivity Stereo (deviation \pm 75 KHz)	150 mV (S/N = 60 dB KHz decoded, de-em	with bandwidth = $30 \div 15$ apphasis)

S DESIGN DATA Pre & De emphasis Flat or 75 or 50 μs (Mono) \pm 0,15 dB (from 30 Hz to 15 KHz) - 40dB Amplitude response TX from 19 kHz to 100 kHz (MPX) \pm 0,1 dB (from 40 Hz to 100 KHz) (SCA) 1 dB (from 20 KHz to 100 KHz) Audio frequency response RX (Mono) < 0,15 dB (from 30 Hz to 53 kHz); < -45 dB (from 19 kHz to 100 kHz) (MPX) < 0,2 dB (from 30 Hz to 53 kHz) < 1 dB (from 53 Hz to 75 kHz) < 3 dB (from 75 kHz to 100 kHz) > 40 dB (from 120 kHz to 1 MHz) Frequency, power output, voltage, temperature, lock, input level meter, input level set, pre-emphasis value, **Display Meter** pre-emphasis set, carrier enable, temperature alarm set, -3dB power down alarm set Alarm Frequency programming error Local oscillator locked in - Heat sink temperature exceeds that set - RF output power below 2,5 W Protections (TX version) - RF output power below squelch threshold (RX version) - Power supply voltage of a module outside the permitted range **S REMOTE CONTROL** DB9 connectors (command - CD: transmitter power ; RX: RS232 signal; TX: RS232 signal; ALL1 & ALL 2: alarm output signal; GND: earth ; **Output Connector** STANDARDS COMPLIANCE Radio spectrum ETSI 300-384 ETS 449, ETS-339, ETS-384, CCIR-450, CCIR-412, EMC

⊻ TEMPERATURE	
Safety &TTE	EN 60950 - EN 60215 Declaration of Conformity with regards to the Directive 1999/5/EC
	CCIR-559, CCIR-468

Nominal range Storage range Maximum relative Humidity Max Operating Altitude

F

0° to 45° C (Meets ETS 300 019 requirements) - 30° to 50° C 90% non condensing 2500 mt. a.s.l.

SPECIFICATIONS	MTL P	MTL UK	MR P	MR UK
Rf output power	5 W	5 W		
Output Connector	N Type Female 50 Ohm	N Type Female	N Type Female 50 Ohm	N Type Female
Dimensions (W x H X D) mm	482 x 88 x 500	482 x 884 x 500	482 x 88 x 500	482 x 884 x 500
Weight	12 Kg	12 Kg	12 Kg	12 Kg
Power consumption	Approx. < 130 VA			
Nr. of power supply	1 from 230 V a.c. ± 10%			
DC Power Supply	24 V (18-26 V)			
Cooling	Forced Air	Forced Air	Forced Air	Forced Air



FM TRANSPOSER TRC-5530 30W TRC-55100 100W TRC-55250 250W

THE GENERAL PURPOSE OF THIS FM RADIO TRANSPOSER TRC SERIES, IS REBROADCAST THE SIGNALS IN THE SAME FM BAND GRANTING AN EFFECTIVE COVERAGE FOR ALL THOSE AREAS WHERE RF SIGNAL IS TOO WEAK.

THIS EQUIPMENT CAN BE PROVIDES AT THREE OUTPUT POWER FIGURES AND BROADCAST QUALITY.

A COMPLETE ELECTRICAL SHIELD SEPARATES THE TRANSMITTING AND RECEIVING SECTIONS, THUS AVOIDING UNDESIRED MUTUAL INTERACTIONS. ALL THE CIRCUITRIES HAVE BEEN DESIGNED ACCORDING TO "MODULARITY CONCEPT", TO GRANT EASY AND QUICK MAINTENANCE. THIS CONCEPT ALSO ALLOWS USING THE EQUIPMENT AS SINGLE RECEIVER OR SINGLE TRANSMITTER, SINCE THE CONNECTION BETWEEN THESE TWO SECTIONS IS EXTERNALLY PLACED AND ACCESSIBLE BY BNC CONNECTORS. BOTH SECTIONS CAN BE REMOTELY CONTROLLED VIA RS232 PORT.

IN THE DESIGN OF THE TRC SERIES TRANSPOSERS, A SPECIAL ATTENTION HAS BEEN DEVOTED TO THE CONSUMPTION ASPECT: AC-DC SWTICH-MODE POWER SUPPLIES HAVE BEEN THEREFORE IMPLEMENTED, WITH PFC (POWER FACTOR CONNECTOR) TO DRASTICALLY REDUCE THE ABSORPTION OF REACTIVE POWER.



S CODE	MODEL	DESCRIPTION
0005320003	TRC-5530	30W FM Transposer
0005320004	TRC-55100	100W FM Transposer
0005320005	TRC-55250	250W FM Transposer
» TECHNICAL DATA »

S FREQUENCY

Modulation

Range Setting solid state direct FM frequency synthesised crystal ref. thermal compensated 87,5 - 108MHz Directly digitally programmable on the front panel in 10 kHz steps Internal trimmer

S RF OUTPUT SPECIFICATIONS VIDEO PERFORMANCE

Harmonics suppression Spurious Emission Residual Asynchrony AM Residual Synchrony AM S/N RATIO (weighted) Distortion Probe

Fine frequency Adjustment

< - 65 dBc < - 80 dBc > 60 dB Weighed > 60 dB Weighed > 70 dB (referred to ± 75 KHz) 0.1% for 75 kHz FM deviation BNC RF test

S AUDIO SPECIFICATIONS

Mono/MPXBNC 2 K ohmSCA3 x BNC fMono/MPX SCA LevelFrom 0 to + 12 dBmStereo Separation> 55dB@1Khz (Transmitter section)

SRECEIVER SPECIFICATIONS

Selectivity Static	3 dB @ ± 150 KHz; 70 dB @ ± 600 KHz	60 dB @ ± 450 KHz;
Selectivity Dynamic	± 300 KHz @ +5 dB; ± 500 KHz @ +30 dB	± 400 KHz @ +25 dB;
Sensitivity Mono (deviation ± 75 KHz)	15 mV (S/N = 60 dB v KHz)	with bandwidth = $30 \div 15$
Sensitivity Stereo (deviation ± 75 KHz)	150 mV (S/N = 60 dB KHz decoded, de-em	with bandwidth = $30 \div 15$ aphasis)
Setting	Frequency from from Input filter by standa	t panel display, 10kz step. rd procedure.

S DESIGN DATA	
Display Meter	Frequency, power output, voltage, lock, input level meter, input level set, carrier enable, temperature alarm set, -3dB power down alarm set
Protections	Alarm Frequency programming error Local oscillator locked in - Heat sink temperature exceeds that set - RF output power below 2,5 W (TX version) - RF output power below squelch threshold (RX version) - Power supply voltage of a module outside the permitted range
S REMOTE CONTROL	
Output Connector	DB9 connectors RX: RS232 signal; TX: RS232 signal;
STANDARDS COMPL	IANCE
Radio spectrum EMC	ETSI 300-384 ETS 449, ETS-339, ETS-384, CCIR-450, CCIR-412, CCIR-559, CCIR-468
Safety R&TTE	EN 60950 - EN 60215 Declaration of Conformity with regards to the Directive 1999/5/EC
S TEMPERATURE	
Nominal range Storage range	0° to 45° C (Meets ETS 300 019 requirements) - 30° to 50° C

90% non condensing

2500 mt. a.s.l.

SPECIFICATIONS	TRC-5530	TRC-55100	TRC-55250
Rf output power	30 W	100 W	250 W
Output Connector	N Type Female 50 Ohm	N Type Female	N Type Female 50 Ohm
Dimensions (W x H X D) mm		482 x 132 x 380	
Weight		3,5 Kg	
Power consumption	Approx. < 120 VA	Approx. < 160 VA	Approx. < 260 VA
Power supply Req.		100 ÷ 240 V a.c.: 47 ÷ 63Hz	
Cooling		Forced Air	

Maximum relative Humidity

Max Operating Altitude



DCF 500DCF 2000DCF 5000DCF 1000DCF 3000DCF 10000TCF 3000

THE DCF ARE ONE-QUARTER WAVELENGTH COAXIAL CAVITIES, DESIGNED AND MANUFACTURED ACCORDING TO HIGH QUALITY STANDARDS, CONCEIVED FOR 87,5 ÷ 108 MHz BAND. USING A BANDPASS DOUBLE CAVITY INSTALLED BETWEEN TRANSMITTER AND ANTENNA, THEY DRASTICALLY REDUCE SPURIOUS SIGNALS, BESIDES OTHER INTERMOTOR DESIGN FOR WATCH DESIGN AND TAKEN AND ACTIVE ACTIVE AND ACTIVE ACTIVE AND ACTIVE ACTIVE AND ACTIVE ACT

DCF'S AND TCF'S, DOUBLE AND TRIPLE CAVIOTY FILTERS RESPECTIVELY, ARE PROVIDED WITH ROTATING KNOBS TO ALLOW EASY TUNING OF THE CIRCUIT FOR A DIFFERENT SIDEBAND ATTENUATION AND WITH A VARIABLE COUPLING.



SPECIFICATIONS	DCF500	DCF1000	DCF2000	DCF3000	DCF5000	DCF10000	TCF3000
Rf Input power	800	1000	2000	3000	5000	10000	3000
Input Connector	Ν	7/16	7/16	7/8	7/8	1+5/8	7/8
Output Connector	Ν	7/16	7/16	7/8	7/8	1+5/8	7/8
Weight	10 Kg	11 Kg	18 Kg	19 Kg	29 Kg	40 Kg	27 Kg
Bandwidth (-3dB)	800Khz	800Khz	800Khz	600Khz	600Khz	600Khz	500Khz
Typical Insertion loss	< 0,4 dB	< 0,4 dB	< 0,3 dB	< 0,3 dB	< 0,2 dB	< 0,2 dB	from 0,3 to 0,8 dB
Frequency Range				87,5 ÷ 108 MHz			
Input Impedance				50 Ohm			
VSWR				≤ 1.15:1			
Internal parts			Silv	ver-plated brass and	PTFE		
External parts				Aluminium			
Colour	Black						
Temperature operating range	From -10°C to +50°C						
Туре	Double	Double	Double	Double	Double	Double	Triple

N CODE	MODEL	DESCRIPTION
0000170411	DCF 500	800 W Power rate per channel IN/OUT N
0000170601	DCF 1000	1000W Power rate per channel IN/ OUT N
0000170019	DCF 2000	2 kW Power rate per channel IN/OUT 7/16"
0000170602	DCF 3000	3000W Power rate per channel IN/ OUT N
0000170412	DCF 5000	5 kW Power rate per channel IN/OUT 7/8"
0000170603	DCF 10000	10000W Power rate per channel IN/ OUT N
0000170488	TCF 3000	3 kW Power rate per channel IN/OUT 7/8"

DSX DIPLEXER

TTX TRIPLEXER

QPX QUADRIPLEXER

THE "STARPOINT" COMBINING FILTERS ARE PRE-SET IN OUR LABS, AT THE FREQUENCIES REQUIRED BY THE CUSTOMER. EVEN AT 100% MODULATION, THEY ASSURE A GOOD SEPARATION FOR ADJACENT FREQUENCIES UP TO 2 MHz. THEY ARE COMPOSED OF TWO OR MORE COAXIAL CAVITY FILTERS CONNECTED TO RIGID LINES, ALL OF THEM EQUIPPED WITH ARROW BAND INPUT LINES. COMBINING SYSTEMS FOR LOW FIGURES OF FREQUENCY CHANNELS SEPARATION AND HIGH RF POWER, WILL BE DESIGNED ON REQUEST BY OUR TECHNICAL DEPARTMENT.



VSVVR	5 1.2.1	
Internal parts	Silver-plated brass and PTFE	
External parts	Aluminium	
Colour	Black	
Temperature operating range	From -10°C to +50°C	

5 CODE	MODEL	DESCRIPTION
0000170421	DSX 1000	Diplexer 800 W power rate per channel, IN N, OUT 7/16"
0000170422	DSX 2000	Diplexer 2 kW power rate per channel, IN 7/16", OUT 7/8"
0000170423	DSX 5000	Diplexer 4 kW power rate per channel, IN 7/8", OUT 1-5/8"
0000170509	DPX 2000T	Diplexer 2 kW power rate per channel, with TRIPLE CAVITY IN 7/16", OUT 7/8"
0000170424	TTX 500	Triplexer 800 W power rate per channel, IN N, OUT 7/8"
0000170425	TTX 2000	Triplexer 2 kW power rate per channel, IN 7/16", OUT 1-5/8"
0000170386	TTX 5000	Triplexer 4 kW power rate per channel, IN 1-5/8" , OUT 3-1/8"
0000170480	QPX 500	Quadriplexer 500 W power rate per channel, IN N, OUT 7/8"
0000170483	QPX 1000	Quadriplexer 2 kW power rate per channel, IN 7/8", OUT 1-5/8"
Special versions for I	ow channel spacing (up to 1,	5MHz)
	DSX3 1000	Diplexer FM 800W per channel with quadruple CAVITY IN "N" - OUT "7/16"
	DSX3 2000	Diplexer FM 3 kW per channel with triple CAVITY IN "7/8" - OUT "1+5/8"
	TTX3 3000	Triplexer FM 3 kWper channel with triple IN "7/8" - OUT "1+5/8"
	QPX3 3000	Quadriplexer FM 3 kWper channel with triple IN "7/8" - OUT "1+5/8"



DPX DIPLEXER DOUBLE BRIDGE

THE "DOUBLE BRIDGE" COMBINING FILTERS ALLOW EASY CHANGES TO NEW FIGURES OF THE OPERATING FREQUENCIES. WITH 100% MODULATION, THEY CAN SATISFACTORY SEPARATE TWO ADJACENT FREQUENCIES UP TO 2 MHz. THEY ARE COMPOSED OF TWO DIFFERENT DOUBLE CAVITY FILTERS AND TWO HYBRID COUPLERS, INCLUDING A NARROW BAND AND WIDE BAND INPUT LINES. LOW FIGURES OF FREQUENCY CHANNELS SEPARATION AND HIGH RF POWER, WILL BE DESIGNED ON REQUEST BY OUR TECHNICAL DEPARTMENT.





い SPECIFICATIONS	DPX 1000	DPX 2000	DPX 4000	DPX3-5000	TLX 5000	
Rf Input power	800	2000	4000	5000	5000	
Input Connector	Ν	7/16	7/86	7/8	1-5/8	
Output Connector	7/16	7/8	7/8	1-5/8	3-1/8	
Weight	28 Kg	58 Kg	60 Kg	107 Kg	230 Kg	
Minimum Frequency Spacing	2,2 MHz	2,2 MHz	2,2 MHz	1,5 MHz	2,2 MHz	
Typical Insertion loss	< 0,6 dB	< 0,5 dB	< 0,5 dB	< 0,5 dB	< 0,4 dB	
Isolation Between Channels	> 30 dB	> 35 dB	> 35 dB	> 35 dB	> 35 dB	
Frequency Range		87,5 ÷ 108 MHz				
Input Impedance			50 Ohm			
VSWR			≤ 1.2:1			
Internal parts			Silver-plated brass and PT	FE		
External parts		Aluminium				
Colour		Black				
Temperature operating range		From -10°C to +50°C				
Cavity Type	Double		Т	riple		

Y CODE	MODEL	DESCRIPTION
0000170414	DPX 1000	Diplexer Double Bridge 800 W Power rate per channel, IN N, OUT 7/16"
0000170415	DPX 2000	Diplexer Double Bridge 2 kW Power rate per channel, IN 7/16", OUT 7/8"
0000170416	DPX 4000	Diplexer Double Bridge 4 kW Power rate per channel, IN 7/8", OUT 1+5/8"
0000170417	DPX3-5000	Diplexer Double Bridge 5 kW per channel with triple cavity, IN 7/8" , OUT 1+5/8"

FM POWER DIVIDER PD 2

PD4

PD₆

THESE POWER DIVIDERS ARE AVAILABLE FOR ANY REOUTPUT POWER WITH 50 OHM IMPEDANCE (OR 75 OHM ON REQUEST). THEY CAN BE SUPPLIED WITH ANY CONNECTOR OR FLANGE, ACCORDING TO USER REQUIREMENTS AND FOR EVERY NEED REGARDING THE NUMBER OF OUTPUTS. OUR POWER DIVIDERS ARE BROADBAND FROM 87,5 TO 108 MHz AND 22 MHz BANDWIDTH.

THE TYPICAL INSERTION LOSS IS FROM 0,2 TO 0,5 dB WITH VSWR <1.08:1.

OUR POWER DIVIDERS ARE MADE IN ALUMINIUM TREATED WITH ALODYNE WITH INSULATOR IN PTFE AND O-RING TYPE WASHERS; THE BODY OF THE DEVICE IS TREATED AND COVERED BY A SPECIAL PAINT FOR LIFETIME DURATION IN ANY CLIMATE CONDITIONS. POWER DIVIDERS FOR OTHER FREQUENCY RANGES ARE AVAILABLE UPON REQUEST.



S CODE	DESCRIPTION	INPUT CONNECTOR	OUTPUT CONNECTOR	MAX INPUT POWER (W)
		2 - WAY POWER DIVIDER VHF II		
0000170004	PD2-N/N (1single step)	Ν	Ν	800
0000170352	PD2-S/N (1single step)	7/16	Ν	1.600
0000170054	PD2-S/S (1single step)	7/16	7/16	2000
0000170460	PD2-F/N	7/8	Ν	1.600
0000170458	PD2-F/S	7/8	7/16	4000
0000170459	PD2-F/F	7/8	7/8	5000
0000170406	PD2-Y/S	1+5/8	7/16	4000
0000170416	PD2-Y/F	1+5/8	7/8	10000
0000170407	PD2-Z/Y	3+1/8	1+5/8	20000
		3 - WAY POWER DIVIDER VHF II		
0000170446	PD3-N/N (1single step)	Ν	Ν	800
0000170451	PD3-S/N (1single step)	7/16	Ν	2000
0000170452	PD3-F/N (1single step)	7/8	Ν	2.400
0000170453	PD3-F/S	7/8	7/16	5000
0000170454	PD3-F/F	7/8	7/8	5000
0000170455	PD3-Y/S	1+5/8	7/16	6000
0000170408	PD3-Y/F	1+5/8	7/8	10000
		4 - WAY POWER DIVIDER VHF II		
0000170005	PD4-N/N (1single step)	Ν	Ν	1.000
0000170024	PD4-S/N	7/16	Ν	2.000
0000170403	PD4-S/S (1single step)	7/16	7/16	2.000
0000170450	PD4-F/N	7/8	Ν	3.200
0000170055	PD4-F/S	7/8	7/16	5.000
0000170460	PD4-F/F	7/8	7/8	5.000
0000170017	PD4-Y/S	1+5/8	7/16	8.000
0000170408	PD4-Y/F	1+5/8	7/8	10.000
		6 - WAY POWER DIVIDER VHF II		
0000170022	PD6-S/N	7/16	Ν	2.000
0000170409	PD6-F/N	7/8	Ν	4.800
0000170018	PD6-F/S	7/8	7/16	5.000
0000170410	PD6-F/F	7/8	7/8	5.000
0000170437	PD6-Y/S	1+5/8	7/16	10.000
0000170460	PD6-Y/F	1+5/8	7/8	10.000







DIP 11

DIP 13



THESE DIPOLE ANTENNAS ARE RUGGED BROADBAND AERIALS ESPECIALLY DESIGNED FOR ARRAYS COMPOSED OF SEVERAL ELEMENTS. THE DIPOLE IS MADE OF HOT GALVANIZED STEEL TO PROVIDE HIGH CORROSION RESISTANCE, FOR A LIFETIME DURATION AND OPERATION IN ANY CLIMATE CONDITIONS.

A THICK INTERNAL GROUND CONNECTION ACROSS THE FEEDING LINE ASSURES HEAVY DUTY SERVICE AND PROTECTION IN CASE OF

LIGHTNING. THE DESIGN OF THE INTERNAL LINES AND THE PTFE INSULATOR PROVIDE RELIABILITY AND LONG LASTING OPERATION FOR POWER RATINGS UP TO 1500 W ON THE DIP 11 MODEL, AND UP TO 5000 W ON THE DIP 15 MODEL. THE ALUMINIUM DIPOLE PLS 1 MODEL IS A SMART, EFFECTIVE AND BUDGET SOLUTION . AN ACCURATE TESTING PROCESS IS CARRIED OUT AT FACTORY ON EACH OF THESE DIPOLES TO CONTROL THE COMPLIANCE TO ALL THE STATED FIGURES.







DISASSEMBLING ANTENNA MOD. DIP13 SAVE TRANSPORT COSTS! PACKAGE DIMENSIONS: 35X90X6 CM SAME USE AND PERFORMANCES OF THE TRADITIONAL ALUMINIUM ANTENNAS

יא CODE	MODEL	DESCRIPTION
0000170003	PLS1	Aluminium Dipole, 600 W N Connector
0000170003	PLS16	Aluminium Dipole, 1500 W 7/16 Connector
0000170013	DIP11/N	Galvanized steel Dipole, 600 W N Connector
0000170014	DIP11/16	Galvanized steel Dipole, 1.5 kW 7/16" Connector
0000170015	DIP11/F	Galvanized steel Dipole, 1.5 kW 7/8" Flange
0000170011	DIP15/F	Galvanized steel Dipole, 5 kW 7/8" Flange
0000170597	DIP 13/N	Aluminium dipole, 500 W , De Montable N Connector
0000170596	DIP 13H/N	Aluminium dipole, 800 W , De Montable N Connector
0000170484	DIP 13/16	Aluminium dipole, 1500 W , De Montable 7/16 Connector

DIP13

» TECHNICAL DATA »

N° BAYS	dB GAIN	POWER GAIN	ANTENNA APERTURE (mt.)	ИЕІБНТ (Кд.)			WIND LOAD (v = 150m/h)		
				PLS 1	DIP 11	DIP 15	PLS 1	DIP 11	DIP 15
1	2	1.58	1.4	4	7	16	10	18	25
2	5	3.16	4.1	8	14	32	20	36	50
4	8	6.3	9.5	16	28	64	40	72	100
6	9.8	9.5	14.9	24	42	96	60	108	150
8	11	12.6	20.3	32	56	128	80	144	200



Radiation Pattern H PLANE --- V PLANE



Stacked Array Stacked-Array Antenna System composed of 4 dipoles

SPECIFICATIONS	PLS 1	DIP 11	DIP 13	DIP 15
RF intput power	500 W	800-2kW-3kW	800-2kW	5kW
Input Connector	Ν	N - 7/16 - 7/8	N - 7/16	7/8
Polarization	Vertical	Vertical	Vertical	Vertical
Weight	4 Kg	7 Kg	4 Kg	16 Kg
Gain (Referred to Half-Wave Dipole)	2 dB	2 dB	2 dB	2 dB
H Plane - V Plane	180°-78°	180°-78°	180°-78°	180 ° - 78 °
Max Wind Velocity	150 Km/h	150 Km/h	150 Km/h	150 Km/h
Wind Load (with speed at 150Km/h)	10 Kgs.	18 Kgs.	10 Kgs.	25 Kgs.
Wind Surface	0,11 SQM	0,11 SQM	0,11 SQM	0,18 SQM
Frequency Range	87,5 ÷ 108 MHz	87,5 ÷ 108 MHz	87,5 ÷ 108 MHz	87,5 ÷ 108 MHz
Input Impedance	50 Ohm	50 Ohm	50 Ohm	50 Ohm
VSWR	≤ 1.4:1	≤ 1.4:1	≤ 1.4:1	≤ 1.4:1
Internal parts		Silver-plated brass and PTFE		
External parts	Aluminium	Hot Galvanized steel	Aluminium	Hot Galvanized steel
Mounting		From 60 to 120 mm diam.		
Dimensions (W x H X D) mm	60 x 1400 x 850	60 x 1400 x 850	60 x 1400 x 850	100 x 1340 x 910

77 ×



APL 1 PANEL DIPOLES

THESE ADVANCED AND HOT GALVANIZED STEEL PANEL ANTENNAS ARE SUCCESSFULLY USED IN HIGH POWER ANTENNA SYSTEM ARRAYS. THE STANDARD APPLICATION OF THE PANEL ANTENNA IS TO BE MOUNTED ON ONE SIDE OF THE TRANSMITTING TOWER FOR RADIATING SYSTEMS WITH DIRECTIONAL COVERAGE. WHENEVER A CIRCULAR PATTERN ON A LARGE AREA SHOULD BE ACHIEVED, FOUR ANTENNAS CAN BE MOUNTED IN CORRESPONDANCE OF THE FOUR SIDES OF THE TRANSMITTING TOWER.

AN ACCURATE TESTING PROCESS IS CARRIED OUT AT FACTORY ON EACH ANTENNA TO CONTROL THE COMPLIANCE TO ALL THE STATED FIGURES.



ら SPECIFICATIONS	APL 1
Rf Input power	800 – 2000 - 3000
Input Connector	N – 7/16 – 7/8
Polarization	Vertical
Weight	23 Kg
Gain (Referred to Half-Wave Dipole)	6 dB
H Plane - V Plane	130 ° - 73 ° (78 ° - 160 °)
Max Wind Velocity	225 Km/h
Wind Load (with speed at 150Km/h)	110 Kgs.
Wind Surface	0,46 SQM
Frequency Range	87,5 ÷ 108 MHz
Input Impedance	50 Ohm
VSWR	≤ 1.4:1
Internal parts	Silver-plated brass and PTFE
External parts	Hot Galvanized steel
Mounting	From 60 to 120 mm diam.
Dimensions (W x H X D) mm	2000 x 1280 x 850



Radiation Pattern H PLANE ---- V PLANE

N° BAYS	dB GAIN	POWER GAIN	ANTENNA APERTURE (mt.)	WEIGHT (Kg.)	WIND LOAD (v = 150m/h)
1	6	4	2	27	110
2	9	8	4,7	54	220
4	12	16	10,1	108	440
б	13,8	24	15,5	162	660
8	15,1	32	20,9	216	880

N CODE	MODEL	DESCRIPTION	
0000170439	APL1/16	Dipole Panel Galvanized steel, 7/16" Connector	
0000170440	APL1/F	Dipole Panel Galvanized steel, 7/8" Flange	
0000170441	APL1/N	Dipole Panel Galvanized steel, N Connector	

APL 5 PANEL DIPOLES

THESE ADVANCED AND HOT GALVANIZED STEEL PANEL ANTENNAS ARE SUCCESSFULLY USED IN HIGH POWER ANTENNA SYSTEM ARRAYS. THE STANDARD APPLICATION OF THE PANEL ANTENNA IS TO BE MOUNTED ON ONE SIDE OF THE TRANSMITTING TOWER FOR RADIATING SYSTEMS WITH DIRECTIONAL COVERAGE. WHENEVER A CIRCULAR PATTERN ON A LARGE AREA SHOULD BE ACHIEVED, FOUR ANTENNAS CAN BE MOUNTED IN CORRESPONDANCE OF THE FOUR SIDES OF THE TRANSMITTING TOWER.

AN ACCURATE TESTING PROCESS IS CARRIED OUT AT FACTORY ON EACH ANTENNA TO CONTROL THE COMPLIANCE TO ALL THE STATED FIGURES.





Radiation Pattern ---- V PLANE



Stacked Array Stacked-Array Antenna System composed of 4 dipoles

N° BAYS	dB GAIN	POWER GAIN	ANTENNA APERTURE (mt)	WEIGHT (Kg.)	$\begin{array}{l} \text{WIND LOAD} \\ (v = 150 \text{m./h}) \end{array}$
1	7,5	5,6	2,5	45	140
2	10,5	11,2	5,2	90	280
4	13,5	22,4	10,6	180	560
6	15,3	33,6	16	270	840
8	16,5	44,8	21,4	360	1120

S CODE	MODEL	DESCRIPTION
0000170012	APL5/16	Double Dipole Panel Galvanized steel, 2kW 7/16" Connector
0000170404	APL5/F	Double Dipole Panel Galvanized steel, 5kW 7/8" Flange



PLC4



THESE ANTENNAS HAVE BEEN DESIGNED TO OBTAIN CIRCULARLY POLARIZED RADIATION PATTERNS, FOR LOW AND MEDIUM OUTPUT POWER FM RADIO TRANSMITTERS.

FOR EASY AND LOW COST TRANSPORTATION, THE PLC4 MODELS ARE DISASSEMBLED AND PACKED.

THE PLC 5 MODEL IS FACTORY TUNED ONTO ANY CHANNELS WITHIN 87.5 - 108 MHz ACCORDING TO THE CUSTOMER'S REQUESTS.

STANDARD PLC4 ARE REALIZED IN STAINLESS STEEL. DUE TO THEIR HIGHER DIMENSIONS AND TO REDUCE EXCESSIVE WEIGHT OF ANTENNA SYSTEM, PLC4-H (HIGH POWER ANTENNAS) ARE REALIZED IN ALUMINIUM COVERED BY A SPECIAL PAINT TREATMENT, FOR HEAVY DUTY SERVICE AND LONG TERM DURATION.



SPECIFICATIONS	PLC 4	PLC 4H	PLC 4R	PLC 5
Rf Input power	600 – 1500 - 3000 W	5000	600 – 1500 - 3000 W	500 W
Input Connector	N – 7/16 – 7/8	7/8	N - 7/16 - 7/8	Ν
Polarization	Circular	Circular	Circular	Circular
Weight	12 Kg	14 Kg	14 Kg	4 Kg
Gain (Referred to Half-Wave Dipole)	-1.5 dB	-1.5 dB	0 dB	-1.5 dB
H Plane - V Plane	Omnidirectional	Omnidirectional	Directional	270 ° - 330 °
Max Wind Velocity	150 Km/h	150 Km/h	150 Km/h	150 Km/h
Wind Load (with speed at 150Km/h)	45 Kgs.	80 Kgs.	75 Kgs.	25 Kgs.
Wind Surface	0,1 SQM	0,16 SQM	0,15 SQM	0,09 SQM
Frequency Range	87,5 ÷ 108 MHz	87,5 ÷ 108 MHz	87,5 ÷ 108 MHz	87,5 ÷ 108 MHz
Input Impedance	50 Ohm	50 Ohm	50 Ohm	50 Ohm
VSWR	≤ 1.4:1	≤ 1.4:1	≤ 1.4:1	≤ 1.4:1
Internal parts	Silver-plated brass and PTFE	Aluminium treatment	Silver-plated brass and PTFE	Silver-plated brass and PTFE
External parts	Stainless steel	Alodyne	Stainless steel	Stainless steel
Mounting		From 60 to	120 mm diam.	
Dimensions (W x H X D) mm	1240 x 1520 x 1150	1240 x 1520 x 1150	1240 x 1520 x 1150	580 x 850 x 350

7 CODE	MODEL	DESCRIPTION
0000170044	PLC4/N	Double-crossed Dipole Stainless steel, 800 W N Connector
0000170043	PLC4/16	Double-crossed Dipole Stainless steel, 2 kW 7/16" Connector
0000170436	PLC4/F	Double-crossed Dipole Stainless steel, 3 kW 7/8" Flange
0000170448	PLC4/H/F	Double-crossed Dipole Aluminium, 5 kW 7/8" Flange
0000170467	PLC5/N	Tuned Dipole Narrow Band Stainless steel, 600 W N Connector
0000170489	RPLC4	Reflector for Double-Cross Dipole model PLC4
0000170490	RPLC4/H	Reflector for Double-Cross Dipole model PLC4/H

ADR3

ADR5

.

THESE WIDEBAND DIRECTIONAL ANTENNAS ARE AVAILABLE IN TWO VERSIONS WITH 3 OR 5 ELEMENTS. THEY ARE MADE OF HOT GALVANIZED STEEL AND ARE ESPECIALLY DESIGNED FOR MEDIUM AND HIGH OUTPUT POWER TRANSMITTERS.

THE ROBUST DESIGN OF THESE ANTENNAS MAKE THEM SUITABLE FOR ANY CLIMATE CONDITIONS AND LIFETIME DURATION. HIGH QUALITY AND SELECTED MATERIALS HAVE BEEN USED IN ANY DETAILS: ALL INSULATORS ARE MADE OF PTFE AND THE SCREWS ARE STAINLESS STEEL. THE METALLIC PARTS ARE ELECTRICALLY GROUNDED.

THE ADR 3 MODEL IS ALSO AVAILABLE FOR 140-174 MHz BAND AND 174 – 215 MHz.

THESE AERIALS CAN BE DISASSEMBLED IN TWO PARTS, THUS ALLOWING LOWER FREIGHTING COSTS.





ム SPECIFICATIONS	ADR3	ADRS	LOG5	LOG8
Rf Input power	800 2kW 3kW	800 2kW 4kW	500W	2kW
Input Connector	N – 7/16 – 7/8	N - 7/16 - 7/8	Ν	7/16
Polarization	Vertical	Vertical	H/V	H/V
Weight	10 Kg	17 Kg	4,5 Kg	15,5 Kg
Gain (Referred to Half-Wave Dipole)	5 dB	6,5 dB	6dB	7,9dB
H Plane - V Plane	118°-70°	118°-70°		
Max Wind Velocity	200 Km/h	200 Km/h		
Wind Load (with speed at 150Km/h)	21,5 Kgs.	32 Kgs.		
Wind Surface	0,19 SQM	0,30 SQM		
Frequency Range	87,5 ÷ 108 MHz	87,5 ÷ 108 MHz		
Input Impedance	50 Ohm	50 Ohm		
VSWR	≤ 1.4:1	≤ 1.4:1		
Internal parts		Silver-plated	brass and PTFE	
External parts		Hot Galv	anized steel	
Mounting		From 60 to	120 mm diam.	
Dimensions (W x H X D) mm	1250 x 1800 x 60	1850 x 1800 x 70		

S CODE	MODEL	DESCRIPTION
0000170001	ADR3/N	Yagi 3 Elements galvanized steel, 800W (N connector)
0000170002	ADR3/16	Yagi 3 Elements galvanized steel, 2kW (7/16 connector)
0000170400	ADR3/F	Yagi 3 Elements galvanized steel, 3W (7/16 connector)
0000170385	ADR5/N	Yagi 5 Elements galvanized steel, 800W (N connector)
0000170401	ADR5/16	Yagi 5 Elements galvanized steel, 2kW (7/16 connector)
0000170402	ADR5/F	Yagi 5 Elements galvanized steel, 3kW (7/8 connector)
	LOG 5	FM Log Periodic 5-Elements Aluminium 500W Demontable "N"
	LOG 8	FM Log Periodic 8-Elements Aluminium 2000W Demontable "7/16"







GENERAL CATALOGUE 2009





MEGALINE

UPS'S CAN PROTECT SYSTEMS AGAINST LIGHTNING STRIKES, POWER FAILURES, BROWNOUTS, SURGES, POORLY CONDITIONED POWER FEEDS AND OFFER AN ECONOMICAL SAFEGUARD AGAINST MANY FOrms OF ELECTRICAL SPIKES IN THE FREQUENCY OR THE AMPLITUDE OF THE INPUT VOLTAGE. IN CASE OF CRITICAL ENVIRONMENT WITH NO PROPER PROTECTION INSTALLED, THESE KINDS OF OCCURRENCES CAN CAUSE DAMAGE TO THE EQUIPMENT OR CAUSE COMPONENTS NOT TO WORK OR FUNCTION PROPERLY.

IN OUR MEGALINE UPS'S, THE DECOUPLING OF THE OUTPUT FROM THE INPUT MAKES IT POSSIBLE TO OPERATE THE EQUIPMENT WITH A WIDE INPUT VOLTAGE RANGE, REDUCING THE NUMBER OF BATTERY SWITCHOVERS AND ALLOWING OPERATION WITH GEN-SETS AND FREQUENCY CONVERSION. THANKS TO THE SPECIAL DESIGN OF THE INVERTER STAGE WHICH IS ALWAYS ON LINE, THE INTERVENTION TIME IS NIL.

THE MODULAR ARCHITECTURE OF ELECTRONICS AND BATTERIES ADMITS REDUNDANT CONFIGURATIONS, SIMPLIFIED MAINTENANCE AND THE POSSIBILITY OF FAST EXPANSIONS, TO PROVIDE YOUR UPS WITH ADDITIONAL INCREASED CAPABILITY.



÷.,

REDUNDANCY IN TErms OF BOTH THE POWER MODULES AND THE BATTERIES: RECTIFIER, INVERTER AND BATTERY CHARGER ARE ALL FITTED ON EACH OF THE POWER BOARDS.

OPERATING CONTINUITY IS ALWAYS GUARANTEED, EVEN IF ONE OF THE MODULES SHOULD FAIL, WITHOUT ANY INTERRUPTION OR SWITCHOVER, THANKS TO PARALLEL LOAD SHARING (ALL THE BOARDS PARTICIPATE IN THE SUPPLY OF POWER TO THE LOAD).

THE LEVEL OF REDUNDANCY IS SET VIA SOFTWARE USING THE DISPLAY, TO WARN WHEN REDUNDANCY, BUT NOT OPERATION, MAY BE ENDANGERED BECAUSE OF AN INCREASE IN CONSUMPTION.

ALL THE OPERATING DATA AND UPS SETTINGS ARE READILY ACCESSIBLE BY WAY OF THE LCD PANEL. THE OPERATING PARAMETERS CAN BE SET IN UPS SETUP IN ORDER TO OPTIMISE THEIR APPLICATION.

IT IS ALSO POSSIBLE TO PROGRAMME UPS SWITCH ON, SWITCH OFF AND TESTING WITH A DAILY, WEEKLY OR MONTHLY SCHEDULE, OR ON COMMAND. THE LCD DISPLAY IS EXTREMELY USER FRIENDLY, SO THAT THESE OPERATIONS ARE ALSO ACCESSIBLE TO THE LESS EXPERIENCED. PASSWORD PROTECTION, HOWEVER, IS ENVISAGED.

EASY TO EXPAND IN POWER AND AUTONOMY THANKS TO THE FULL MODULARITY OF THE BOARDS AND THE LOW VOLTAGE (36V) BATTERY KITS, ENABLING THE BATTERY OPERATION TIME TO BE CUSTOMISED ACCORDING TO THE SPECIFIC APPLICATION. ALL THE MODELS, EVEN THE SINGLE CABINET VERSIONS UP TO 5000 VA, CAN BE EASILY CONNECTED TO EXTERNAL BATTERY CABINETS WITHOUT THE NEED FOR ANY MODIFICATION THANKS TO THE STANDARD, PLUG&PLAY-TYPE CONNECTION.

S MODEL	DESCRIPTION
MEGA 1250	UPS 1250 VA MEGALINE (Back up 11 min. at 80%)
MEGA 2500	UPS 2500 VA MEGALINE (Back up 11 min. at 80%)
MEGA 3750	UPS 3750 VA MEGALINE (Back up 11 min. at 80%)
MEGA 5000	UPS 5000 VA MEGALINE (Back up 11 min. at 80%)
MEGA 5000/2	UPS 5000 VA MEGALINE (Back up 11 min. at 80%)
MEGA 6250/2	UPS 6250 VA MEGALINE (Back up 11 min. at 80%)
MEGA 7500/2	UPS 7500 VA MEGALINE (Back up 11 min. at 80%)
MEGA 8750/2	UPS 8750 VA MEGALINE (Back up 11 min. at 80%)
MEGA 10000/2	UPS 10 KVA MEGALINE (Back up 11 min. at 80%)

Technology Input voltage range

Input frequency Input current THD Input power factor On line dual conversion 184÷264 V with 100% load - 100÷264 V with 50% load 50 / 60 Hz \pm 2% autosensing < 3% > 0,99 from 20% of load on

J OUTPUT SPECIFICATIONS

Nominal output voltage	$230 V \pm 1\%$
Nominal output frequency	50 / 60 Hz synchronized
Output voltage THD	< 1%
Batteries	3 pcs 12 V 9 Ah seald, lead-acid, maintenance free batteries each power board
Back up – 80%	load 11
Back up – 50%	load 20
Bypass	Static + electromechanical - zero transfer time
Overload capability (mains mode)	150% for 30 sec 200% for 5 sec. Without bypass intervention
Acoustic noise @ 1m	40 dBA



Typical Features EMC

EN 50091-3 EN 50091-2 EN 50091-1

Safety

Nominal range Maximum relative Humidity 0° to 40° C (Meets ETS 300 019 requirements) From 20% to 80% non condensing



SPECIFICATIONS	MEGALINE 1250	MEGALINE 2500	MEGALINE 3750	MEGALINE 5000
Nominal power	1250	2500	3750	5000
Active power	875	1750	2625	3500
Batteries number	3	6	9	12
Dimensions (W x H X D) mm	270 x 475 x 570			
Weight	23 Kg	34 Kg	43 Kg	53 Kg
Installed power boards	1	2	3	4
Available power slots	3	2	1	0
Installed battery kits	1	2	3	4
Available battery slots	3	2	1	0

SPECIFICATIONS	MEGALINE 6250/2	MEGALINE 7500/2	MEGALINE 8750/2	MEGALINE 10000/2
Nominal power	6250	7500	8750	10000
Active power	4375	5250	6125	7000
Batteries number	15	18	21	24
Dimensions (W x H X D) mm	2X270 x 475 x 570			
Weight	26+58 Kg	29+65 Kg	31+73 Kg	34+80 Kg
Installed power boards	5	6	7	8
Available power slots	4	3	2	1
Installed battery kits	4	5	6	7
Available battery slots	6	5	4	3





www.cte.it

TRIMOD

UPSES CAN PROTECT SYSTEMS AGAINST LIGHTNING STRIKES, POWER FAILURES, BROWNOUTS, SURGES, POORLY CONDITIONED POWER FEEDS AND OFFER AN ECONOMICAL SAFEGUARD AGAINST MANY FOrms OF ELECTRICAL SPIKES IN THE FREQUENCY OR THE AMPLITUDE OF THE INPUT VOLTAGE. IN CASE OF CRITICAL ENVIRONMENT WITH NO PROPER PROTECTION INSTALLED, THESE KINDS OF OCCURRENCES CAN CAUSE DAMAGE TO THE EQUIPMENT OR CAUSE COMPONENTS NOT TO WORK OR FUNCTION PROPERLY.

MODULARITY, REDUNDANCY, SCALABILITY, VERSATILITY, EFFICIENCY, ALL THE SAME TIME. THESE ARE THE REASONS WHY THE TRIMOD LINE IS TRULY A UNIQUE AND REVOLUTIONARY UPS.

WITH ITS INNOVATIVE MODULAR STRUCTURE AND EXCELLENT QUALITY OF THE COMPONENTS, TRIMOD GUARANTEES ABSOLUTE RELIABILITY. IN FACT, THE MODULAR SOLUTION APPLIED TO THESE UPS ALLOWS REDUNDANT CONFIGURATIONS WITH RESPECT TO THE LOAD SO THAT ANY FAILURES OF ONE MODULE IS COMPENSATED BY THE REMAINING MODULES, WITH NO DOWNTIME.

THANKS TO THE MODULAR CONCEPT, TO THE EXTREMELY COMPACT SIZE AND TO THE SIMPLE INSTALLATION PROCESS, TRIMOD CAN BE UP-GRADED ACCORDING TO THE CUSTOMER'S REAL NEEDS BY SIMPLY ADDING POWER MODULES AND BATTERY MODULES JUST AS NEEDED. THE ENERGY EFFICIENCY OFFERED BY TRIMOD IS AMONG THE BEST ONES AVAILABLE IN THE MARKET TODAY. THIS MEANS A SIGNIFICANT SAVE OF ENERGY WHEN THE EQUIPMENT IS UNDER OPERATION. MOREOVER, TRIMOD CONTRIBUTES TO ELIMINATE THE COSTS RELATED TO THE ABSORPTION OF REACTIVE POWER THANKS TO THE POWER

FACTOR CORRECTION OF THE INPUT CURRENT, PROVIDING GREAT POWER SAVINGS IN OPERATING COSTS AS WELL AS SAVINGS IN THE INSTALLATION AND EQUIPMENT COSTS.

THE EXCLUSIVE "SMART CHARGER" FUNCTION ENSURES THAT BATTERY OPERATES UNDER EQUALISED AND BALANCED CONDITIONS AT ANY TIME, GRANTING A LONGER WORKING LIFE AND PROVIDING THE BENEFITS OF GREAT SAVINGS IN MAINTENANCE COSTS. TRIMOD IS EASILY TRANSPORTABLE BY A SINGLE PERSON IN A REGULAR VAN, MOVABLE TO ITS INSTALLING POSITION AND INSTALLABLE INSIDE

SHELTERS OR BUILDINGS, WITH THE MAXIMUM OF EASE AND IN A MINIMUM OF TIME. TRIMOD MEETS THE NEEDS OF A WIDE VARIETY OF APPLICATIONS

DEMANDING ENHANCED VERSATILITY TO BE ADAPT TO THE VARIOUS TYPES OF ELECTRICAL SYSTEMS. THE UNIT IS AVAILABLE FOR SINGLE-OR THREE-PHASE INPUT, SINGLE-OR THREE-PHASE OUTPUT WITH THE POSSIBILITY OF ADAPTING THE OUTPUT VOLTAGE AND FREQUENCY PARAMETERS, WITH INSULATION OR PASSING NEUTRAL: TRIMOD REALLY COVERS ALL TYPES OF APPLICATION.



L MODEL	DESCRIPTION
TRIMOD 8	UPS 8 KVA TRIMOD (Back up 10 min. at 80%)
TRIMOD 10	UPS 10 KVA TRIMOD (Back up 8 min. at 80%)
TRIMOD 16	UPS 16 KVA TRIMOD (Back up 10 min. at 80%)
TRIMOD 20	UPS 20 KVA TRIMOD (Back up 6 min. at 80%)
TRIMOD 30	UPS 30 KVA TRIMOD (Back up 9 min. at 80%) - 2 cabinet
TRIMOD 45	UPS 20 KVA TRIMOD (Back up 6 min. at 80%)
TRIMOD 60	UPS 30 KVA TRIMOD (Back up 9 min. at 80%) - 2 cabinet

S TECHNICAL DATA

Technology Input/Output Configuration Input voltage range Input frequency

Input current THD

Input power factor

Batteries Back up – 80%

Bypass

mode)

Crest Factor

Back up – 50%

On line dual conversion 1/1, 3/1, 3/3, 1/3 (user selectable during installation) 3/3 230 +15% -20% / 400 +15% -20% (neutral line is needed) 50 / 60 Hz ± 2% auto-sensing < 5 % > 0,99

SOUTPUT SPECIFICATIONS

Nominal output voltage Nominal output frequency Output voltage THD

Overload capability (mains

Acoustic noise @ 1m

230 ± 1% / 400 ± 1% 50 / 60 Hz synchronized < 1% 3 pcs 12 V 9 Ah sealed, lead-acid, maintenance free batteries each power board load 11 load 20 Static and electromechanical (independent on each power module) 150% for 30 sec. - 200% for 5 sec. Without bypass intervention 3.5 42 ÷ 46 dBA

S EFFICIENCY	
Typical Features EMC Safety	EN 50091-3 EN 50091-2 EN 50091-1
STANDARDS COMPLI	ANCE
Typical Features EMC Safety	EN 50091-3 EN 50091-2 EN 50091-1
S TEMPERATURE	
Nominal range Maximum relative Humidity	0° to 40° C (Meets ETS 300 019 requirements) From 20% to 80% non condensing
Cooling System	Fan assisted, independent on each power module. Smart electronic control based on the ambient temperature and the load percentage



MODULARITY



> Three-phase input / Single-phase output

Three-phase input / Three-phase output

> Single-phase input / Single-phase output

> Single-phase input / Three-phase output

SPECIFICATIONS	TRIMOD 8	TRIMOD 10	TRIMOD 16	TRIMOD 20	TRIMOD 30	TRIMOD 45	TRIMOD 60
Nominal power VA	8000	10000	16000	20000	30000	45000	60000
Active power W	6400	8000	12800	16000	24000	36000	48000
Installed Power Modules	3X2.7	3X 3.4	6 X 2.7	6 X 3.4	9X3.4	9 x 5	12x5
Dimensions (W x H X D) mm	414 x 1345 x 628	2 x 414 x 1345 x 628	2 CABINET	2 CABINET			
Weight	110 Kgs	110 Kgs	130 Kgs	130 Kgs	1540 + 70 Kgs	165+70Kgs	194+70Kgs

NOTES	 	 	
\			





Factory & Engineering Via Per Cantalupo, 5 - 21040 Origgio (VA) - ITALY North Milan, Malpensa Airport Area Tel. +39 02 96738811 - Fax +39 02 96738868 info@cte-elit.it - www.cte.it