Broadcast

CORTEX Modular FM Transmitters

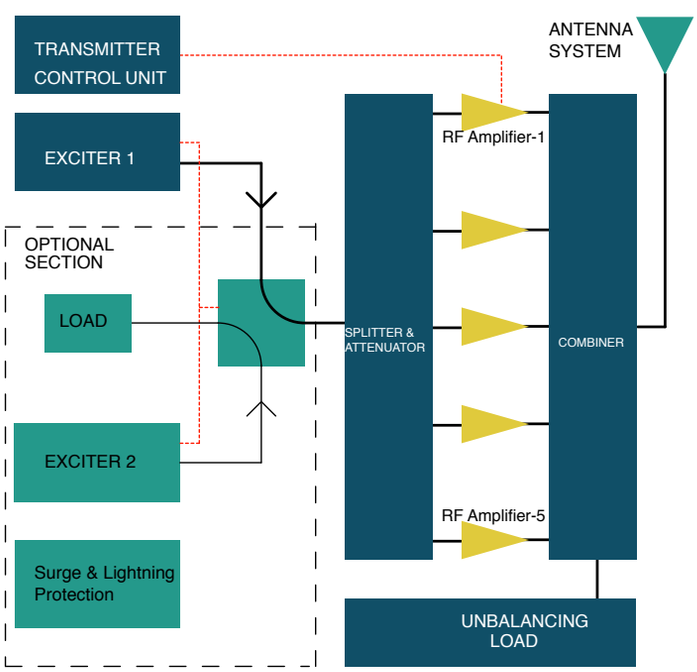
Analog and DDS Digital Direct Synthesis

SMP (Superior Modular Philosophy)
2kW to 80kW FM Transmitter Series
Standard and HOT PLUG-IN versions

Analog and Digital Ready for HD Radio and DRM
Based on CELL Series High Efficiency FM Ampliciers Modules
LDMOS Amplifiers 1,1kW or 2,2kW
Hot Plug-in Power Supply
Up to 75% Overal Efficiency
PLANAR LDMOS
65:1 VSWR Tollerant
Fully RF and Power Supply Redundant
Autonomous Power Supply M odules
HOT SWAP MODULES (Option)
UPGRADABLE POWER
Touch Screen Control

CORTEX 8/4 - 8kW Modular FM Transmitter (Based on CELL 2000 Amplifier)

CORTEX 10/4 - 10kW Modular FM Transmitter (Based on CELL 2500 Amplifier)



HOT PLUG-IN POWER SUPPLY

Replace the power supply in 2 minutes

Remove the front pannel, operating only fourscrews

Pull Off the sliding power supply

CORTEX HOT PLUG-IN Option

With this option it is possible to connect and disconnect the amplifier modules from the front of the rack without the need to open the rear door or other types of intervention inside the rack.
All operations can be carried out with the transmitter in the air and without service interruptions

WCU - WEB CONTROL UNIT
Fully WEB Based controls and remote all the transmitter's parameters

REVOLUTIONARY MODULAR COMBINER

BROKEN THE PORT NUMBER LIMITS.

- Ultra Compact Design.
- Low power to high power direct stepping.
- Low loss.
- Non Hierarchy Arbitrary odd and even port number.
- Ground referred balancing loads.
- Extemely high isolation value: more than 26dB.
- Up to 10 input way for 20 kW Output Power.
- Ultra-wideband, exceeds more stringent specifications.
- Phase stable.
- Best in class low loss performance: less than 0.1dB
- Mmore than 12 dB of additive harmonic filtering.
- Low Cost vs Power ratio.

The Combining system is composed by the COMBINER itsef, the ISOLATED SPLITTER 2-10 way and the UNBALANCED POWER LOAD 2-10 way

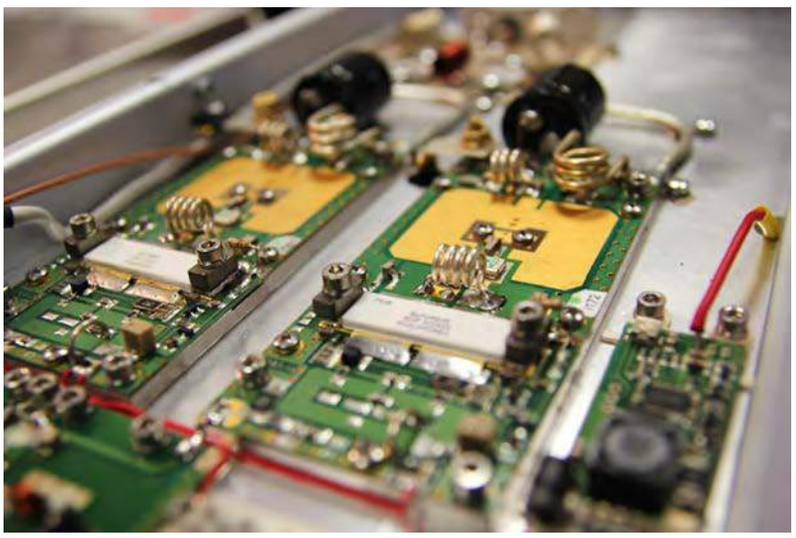
TXM SMP

Superior Modular Philofophy

When developing SMP Technology, Superior Modular Philosophy, the main target was: Always on Air, Less than 15 kg (35 lbs) of modules-weight, Easy maintenance, Low consumption and High Efficiency

The only way to reach this goal consists in the creation of a modular structure where each block of the system has been obsessively optimized for best results.
When each Brick is perfectly realized the overall structure benefits of this optimization obtaining the a global high optimization of the Transmitter.
Superior Modular Philosophy, means create big broadcast systems made by small highly optimized bricks. The Bricks are the small VL Series Amplifiers.
Superior Modular Philosophy is the synthesis of extreme reliability and flexibility.

FULLY REDUNDANT RF AMPLIFIER IN PLANAR TECHNOLOGY



TECHNICHAL CHARACTERISTICS

TRANSMITTER

Power Output: Adjustable from 2kW to 40kW build with 2kW Amplifier Module up to 10 Modules in une Rack: 2kW 1 Module, 3kW 2 Modules, 5kW 2 Modules, 8kW 4 Modules, 10kW 4 Modules, 12 kW 6 Modules, 16kW 8 Modules, 20kW 8 Modules

Power higher than 20kW are build combining more racks amplifiers:
24kW = 2 Racks 6 Modules each rack, 32kW = 2 Racks 8 Modules, 40kW = 2 Racks 10 Modules.

Output power on/off and adjustable from front panel and remotely.
Overall Efficiency (Typical): ≥75% for transmitter.
RF Output Impedance: 50 ohm.
RF Output Connector: 1+5/8 and 3+1/8 type. (other on request)
Monitor RF: -53 dBc, 50Ω post harmonic filter
VSWR: 1.5:1 Maximum with automatic fold-back at higher VSWR

DOUBLE EXCITER WITH AUTOMATIC CHANGE OVER SYSTEM
SNMP TELEMETRY INTERFACE
GSM AND PSTN TELEMETRY
TCP/IP TELEMETRY INTERFACE
SINCH-MODULE FOR SFN APPLICATION
OIRT & JPN VERSION
DIGITAL AUDIO INPUTS
LPFM CODE STATION:FCC IDENTIFICATION CODE
RDS CODER : EASY PROGRAMMABLE BY PC
SCA Encoder
Digital Composite 192kHz Input

ELECTRICAL (for 10kW to 40kW Transmitter)

AC Input Power: 90/260/400 VAC ±15%, 50/60 HZ(+/- 3HZ)
single phase or 3-phase+N Power factor > 0.98 Cooling: Forced air
MTBF>20.000Hours

ENVIRONMENTAL

Operating temperature: -10°C to +50°C.
Max Operating Altitude: 4000 mt.
Relative Humidity Range: 0 to 95% non condensing.
Protection against Lightening, Dust and Corrosion

PHYSICAL DIMENSIONS (For typocal 10kW Transmitter)

Mounting: 40 unit cabinet (Other size Rack on request) Size: 570mm. (W) x 1000mm. D) x 1800 mm. (H)
Weight: ~ 220 Kg.

WIRED TECHNOLOGY

The perfection of each single module brings to the perfection of the overall Transimitter.

PERFECTION: The only way to reach this goal consists in the creation of a modular structure where each block of the system has been obsessively optimized for best results.
When each part of the module is perfectly realized the overall structure benefits of this optimization obtaining the WIRED Family.

Model	Description
CORTEX 3/2	3000W modular high efficiency, Redundant Active Reserve, FM Transmitter composed by: SYNAPHSE 30 Exciter, Nr.2 SENSE 2000 Amplifier
CORTEX 5/2	5000W modular high efficiency, Redundant Active Reserve, FM Transmitter composed by: SYNAPHSE 30 Exciter, Nr.2 SENSE 2500 Amplifier
CORTEX 8/4	8000W modular high efficiency, Redundant Active Reserve, FM Transmitter composed by: SYNAPHSE 30 Exciter, Nr.4 SENSE 2000 Amplifier
CORTEX 10/4	10000W modular high efficiency, Redundant Active Reserve, FM Transmitter composed by: SYNAPHSE 30 Exciter, Nr.5 SENSE 2500 Amplifier
CORTEX 12/6	12000W modular high efficiency, Redundant Active Reserve, FM Transmitter composed by: SYNAPHSE 30 Exciter, Nr.6 SENSE 2000 Amplifier
CORTEX 15/6	14000W modular high efficiency, Redundant Active Reserve, FM Transmitter composed by: SYNAPHSE 30 Exciter, Nr.7 SENSE 2500 Amplifier
CORTEX 16/8	16000W modular high efficiency, Redundant Active Reserve, FM Transmitter composed by: SYNAPHSE 30 Exciter, Nr.8 SENSE 2000 Amplifier
CORTEX 20/8	20000W modular high efficiency, Redundant Active Reserve, FM Transmitter composed by: SYNAPHSE 30 Exciter, Nr.10 SENSE 2500 Amplifier
CORTEX 24/12	24000W modular high efficiency, Redundant Active Reserve, FM Transmitter composed by: SYNAPHSE 30 Exciter, Nr.12 SENSE 2000 Amplifier
CORTEX 32/16	32000W modular high efficiency, Redundant Active Reserve, FM Transmitter composed by: SYNAPHSE 30 Exciter, Nr.16 SENSE 2000 Amplifier
CORTEX 40/16	40000W modular high efficiency, Redundant Active Reserve, FM Transmitter composed by: SYNAPHSE 30 Exciter, Nr.20 SENSE 2500 Amplifier
CORTEX 80/40	80000W modular high efficiency, Redundant Active Reserve, FM Transmitter composed by: SYNAPHSE 30 Exciter, Nr.40 SENSE 2000 Amplifier

CORTEX 52/26	52KW	26	70270VA	4’	4 x Rack 40U
CORTEX 60/30	60KW	30	81080VA	6’	4 x Rack 40U
CORTEX 72/36	72KW	36	97300VA	6’	4 x Rack 40U
CORTEX 80/40	80KW	40	108110VA	6’	4 x Rack 40U
CORTEX 1,3/1	1,3KW	1	1760VA	7/16	1U Driver + 2U Amplifier
CORTEX 2,5/1	2,5KW	1	3380VA	7/16	1U Driver + 2U Amplifier
CORTEX 5/2	5KW	2	6760VA	7/8	Rack 20U
CORTEX 7,5/3	7,5KW	3	10140VA	1 5/8	Rack 30U
CORTEX 10/4	10KW	4	13510VA	1 5/8	Rack 30U
CORTEX 12,5/5	12,5KW	5	16890VA	1 5/8	Rack 30U
CORTEX 15/6	15KW	6	20270VA	1 5/8	Rack 40U
CORTEX 17,5/7	17,5KW	7	23650VA	3 1/8	Rack 40U
CORTEX 20/8	20KW	8	27030VA	3 1/8	2 x Rack 40U
CORTEX 25/10	25KW	10	33780VA	3 1/8	2 x Rack 40U
CORTEX 30/12	30KW	12	40540VA	3 1/8	2 x Rack 40U
CORTEX 35/14	35KW	14	47300VA	4’	2 x Rack 40U
CORTEX 40/16	40KW	16	54050VA	4’	2 x Rack 40U
CORTEX 45/18	45KW	18	60810VA	4’	4 x Rack 40U
CORTEX 50/20	50KW	20	67570VA	4’	4 x Rack 40U
CORTEX 60/24	60KW	24	81080VA	6’	4 x Rack 40U
CORTEX 70/28	70KW	28	94590VA	6’	4 x Rack 40U
CORTEX 80/32	80KW	32	108110VA	6’	4 x Rack 40U
CORTEX 100/40	100KW	40	135140VA	6’	4 x Rack 40U

OVERALL CHARACTERISTICS

TXM SMP© Superior Modular Philosophy allows relevant advantages:

• The entire system benefit of the optimum characteristics of the base module VL Amplifier.
• The VL Amplifier are each of them a complete a functioning module with it's own power supply ventilation, control logic and output filter, so, as the opposite of the standard plug-in transmitters bricke lives by themselves witch facilities the maintenance and the test: no need of special tools, each module can be connected and installed or tested as a single amplifier.
• Developping the VL Amplifier our engineers concentrate all the effort on: minimize weight, cost, power consumption and heat produced, and maximize: efficiency, reliability, electrical performance, connectivity and easy maintenance.
• A single VL Amplifier can be put on air as back-up of a bigger transmitter.
• Shock and vibration during the transportation process can compromise the result of an installation, optimizing the VL Amplifier package allow our engineers to meet the most demanding transport conditions for hermetic, temperature control and vibration and Shock Isolation. During installation and maintenance, handled light packs help the health to operators.

The TXM SMP© Superior Modular Philosophy

Is a family based on a very compact Amplifier and its various combinations. Thanks to a careful choice of size, 2 HE, power levels of the building blocks 2 kW FM, it can be considered as the New Reference for the modular transmitters.
The modularity is completed with special combiners, FM exciters and control logics.
FM exciter can be Analog or DDS both with integrated AES/EBU interface.

KEY FACTS

Combining System
•Compact and well isolated up to twelve way 20 kW PC Power Combiner, ultra-broadband, phase stable, low loss and showing more than 20 dB of additive harmonic filtering.
•Soft controlled sequential start-up reduce inrush current during OFF to ON transition.
•FM transmitters featuring only 800 mm rack depth and up to 40 kW FM in a single 19" rack.
•Digital TV Transmitters up to 8 KW Wide Band Doherty (WBD) output power in a single 19" rack.

Hardware and Software Protections

•Over and Under Voltage DC, Over and Under Voltage AC, RF and Power Supply Temperature, RF Coaxial Output Open or Short Circuit
•Capability of a long working time on Short/Open loads at all phase angles without any damage.
•Last generation 1400 W LDMOS, VSWR > 65:1 @ all Phase Angles, designed for enhanced ruggedness ISM applications and plasma generators.
• Integrated AC Mains filtering.
•Integrated lightning protection.
•Delayed energized of the system after Mains Power Blackout prevents against peaks and high variation voltages typical of this events.
•Soft controlled sequential start-up so to reduce the Inrush current during OFF to ON transition.

WEB/SNMP Telemetry and Remote Control

•Full Local or Remote control by logon username and password.
• Remote control with Smartphones or Tablet.
• Host Logic and tele-measurement (TM, TC & TA).
• Remote control and monitoring via SNMP and/or WEB interface.
• With logbook or log file to record error or alarm message.
• Display of forward/reflection power value and reflection high alarm.

Human Interface

•Each module is equipped with a logic controller that allows full control by a local operator.
•All transmitter and amplifier parameters required for diagnostics can be retrieved locally or remotely via standard (IP) protocol and standard software (web browser, SNMP).
•Multilingual user guidance.
•High Definition, high contrast Color Oled display.
•Quick set of thresholds for protections level. This set is based on assignment of three "flavors" or PERSONALITIES: Conservative (primary target = protect itself), Standard (balanced), Aggressive (primary target = transmission without interruptions).

N+1 and Backups systems

•Conventional standby systems such as: exciter standby, (n+1) Transmitter standby, passive standby and active output stage standby can be implemented.
•No additional control units are needed for the exciter standby and the active amplifier standby.

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MTBF>20.000Hours

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Operating temperature: -10°C to +50°C.
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Weight: ~ 220 Kg.

CORTEX HIGH Efficiency

• Very high efficiency (more than 75% for a complete 5 kW amplifier).
• Last LDMOS technology for power modules.
• Ultra High RF efficiency (>80 % typ.) software optimized for each power level.
• Lowest weight and dimensions in the industry.
• Lower device heating.
• Lower room heating.
• Lower space occupied.
• Lower maintenance needed.
• Small dimensions and low weight, reduce transportation costs and simplifying the logistic.
• Longer Component Lifespan.
• Reduced Electricity Costs.
• Lower Maintenance Costs.
• Reduced Cooling Costs.
• Fewer Fans.

Driver included on the VL Amplifier

• Maximum redundancy with virtual bottleneck elimination due to presence of a driver stage (LDMOS) on each plug.
• Low power exciter due to presence of a driver stage (LDMOS) on each plug.
• Low power splitters.
• No PA changeover required.

Power Supply Redundancy

• Maximum redundancy due to presence of a compact reliable power supply on each plug
• Highest reliability supply configuration.
• The SMP Module includes a very efficient AC-DC (typ > 95%) SMPS (Switch Mode Power Supply).

Electrical Characteristics

• Very high harmonics suppression (-90dB).
• Independent, individual APC (Automatic Power Control) circuit maintain a constant output power set.
• Frequency-response-compensated directional couplers and precision internal indicators.
• Distributed less binding Low Pass filter.

Maintenance Facility

• Power Unit and Amplifier Hot swapping: plugs can be extracted/inserted without switch-off the equipment.
• Zero-Current and Zero-RF Plug-in insertion/extraction system.
• Universal spare parts: each plug is phase and amplitude characterized.
• Worldwide available spare part for power Supply (GE-General Electric).
• Any VL amplifier can be interchanged with any other in the same TXM transmitter or with a spare. No adjustment or program of any kind are needed.
• Smart Air filter included easy to clean or replace.
• Zero-Current and Zero-RF Plug-in insertion/extraction system.
• 90% of spare parts shared between FM transmitters.
• Optimized Air Flow Paths avoid damages on the electronic boards.
• The path of the air inside the transmitter to avoid contact with the electronic boards.
• Tropicalizzation of all the components against dust, humidity and pollution.
• Exhaustive final quality test.

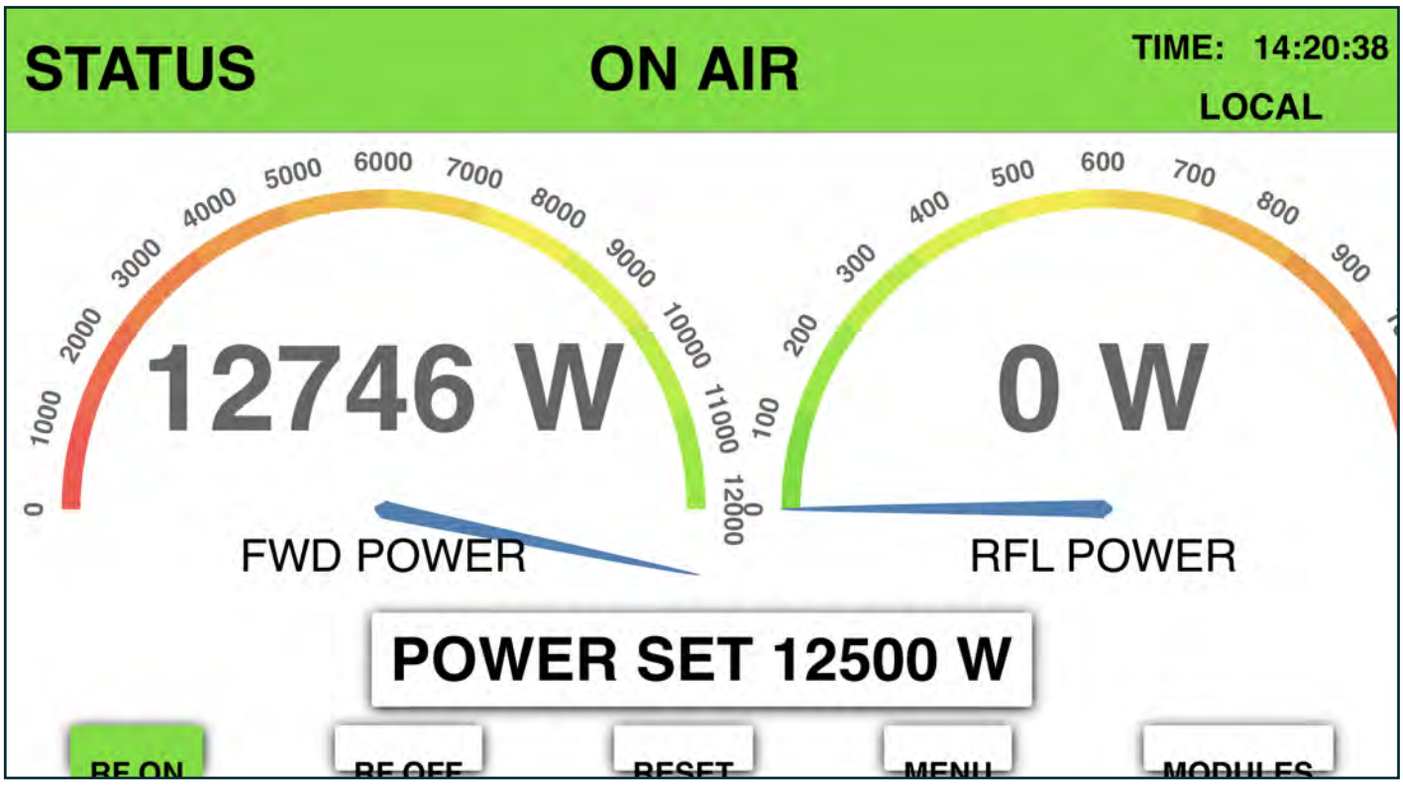
Wi-FI Remote Control with any Tablet or Smart Phone.
WIRED WEB TCP/IP and SNMP

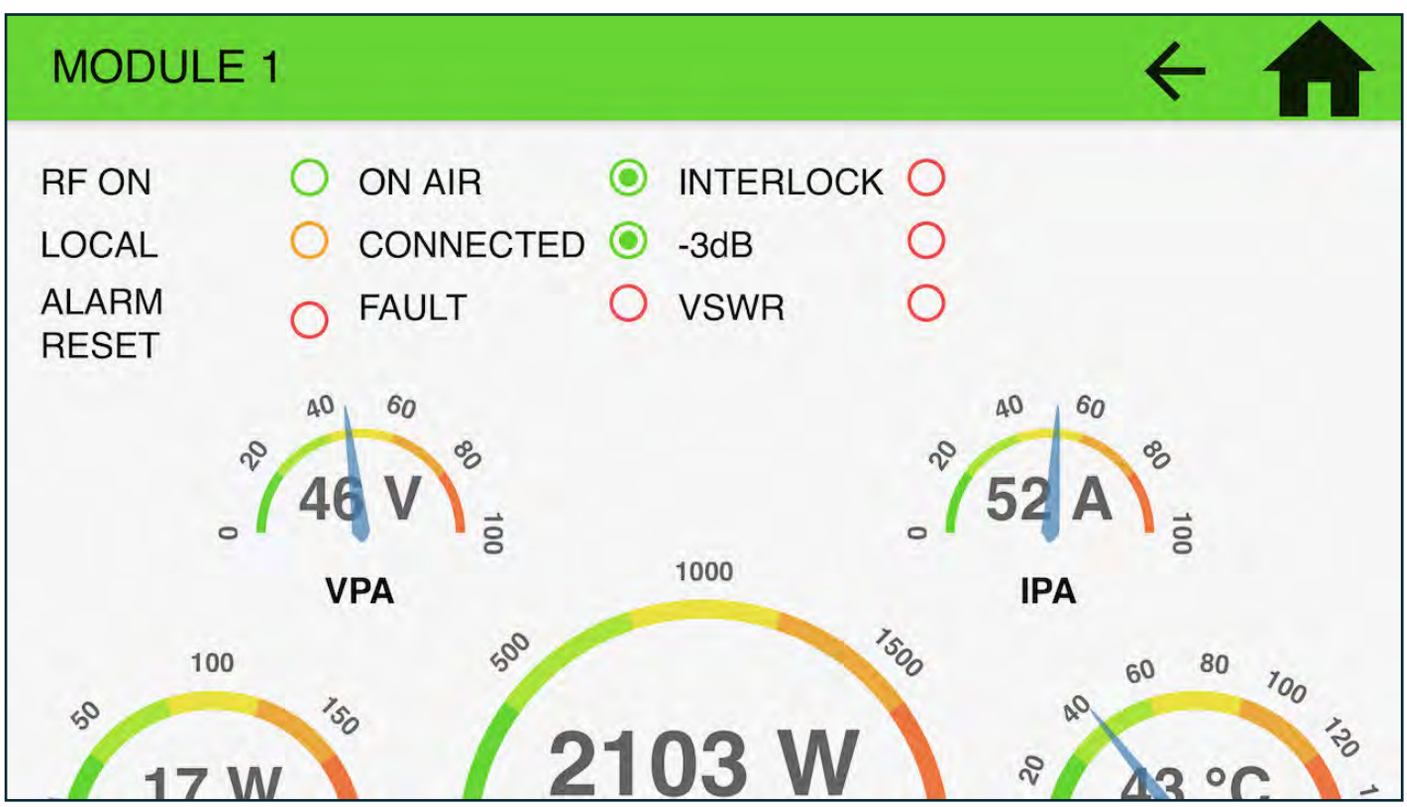
Works with any Browser, runs under any operating system, IOS, Android, Windows, OSX and in any kind of devices PC, Tablet or Smarphone.
Thanks to the WCU it's possible to see all the trasnsmitter parameter and the ones related to the amplifiers modules and fully control the transmitter.

All the parameters of the transmitter

All the Transmitters of the line WIRED shares the full HTML5 Respo\nsive Graphic Interface and implement a set of SNMP oids than cover the total remote control of the equipment.

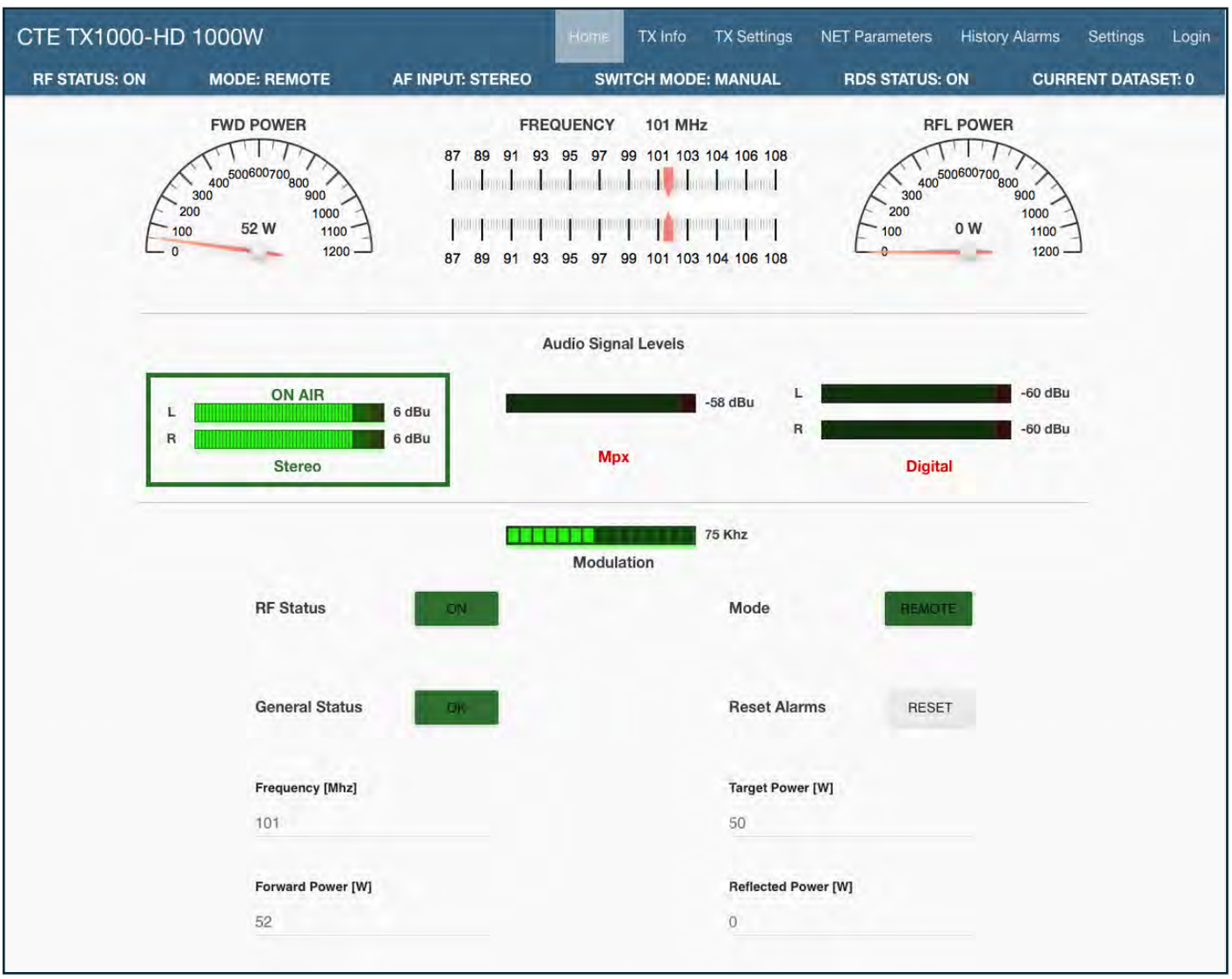
Touch Screen control logic with full WEBSNMP, Web page, no use JAVA, able to work in any Browser: Iphone, Android or any Tablet.
Fully remote controlled without any aditional option required.

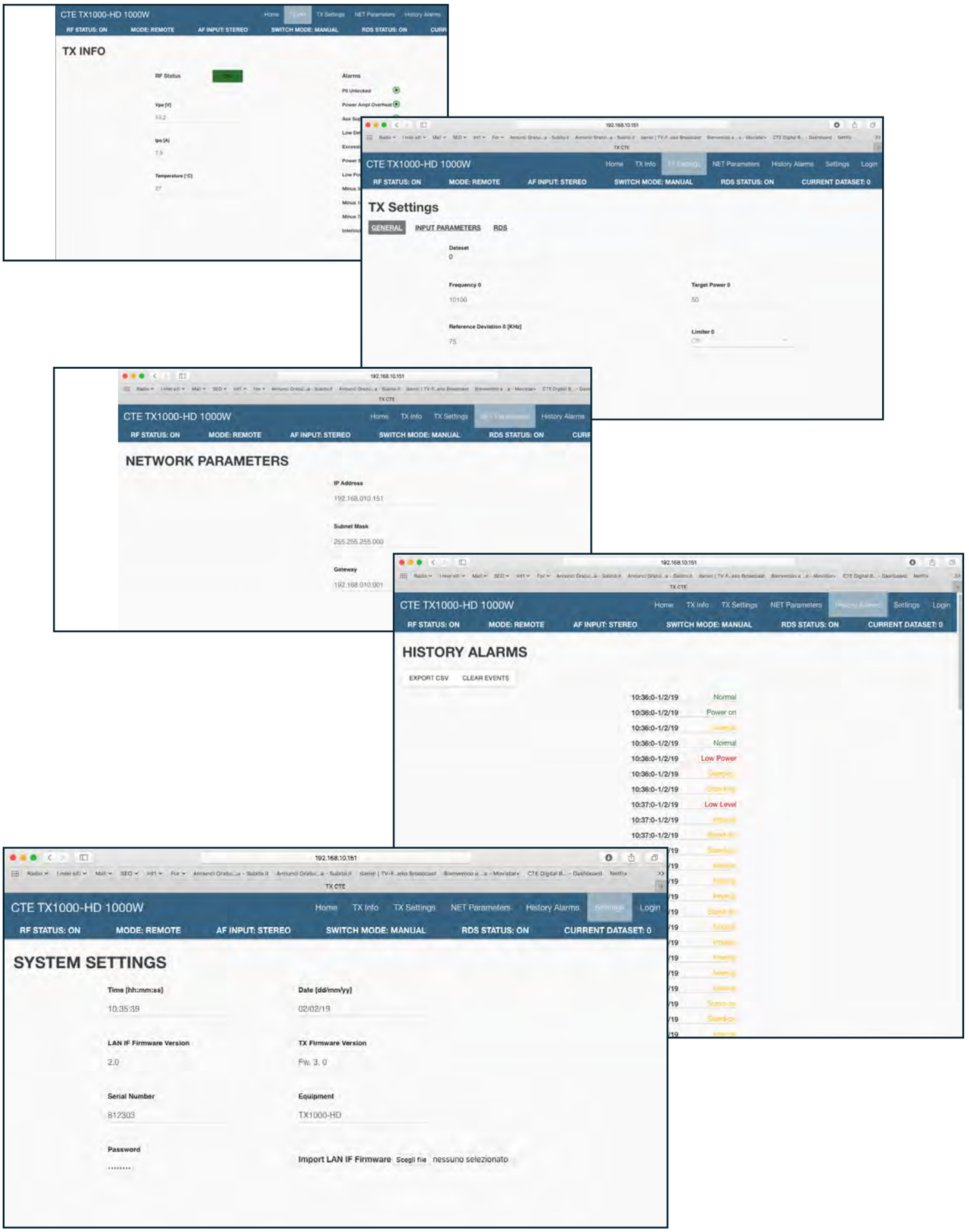

STATUS
ON AIR
TIME: 14:20:38
LOCAL
12746 W
FWD POWER
0 W
RFL POWER
POWER SET 12500 W
RF ON
RF OFF
RESET
MENU
MODULES


MODULE 1
RF ON
LOCAL
ALARM RESET
ON AIR
CONNECTED
FAULT
INTERLOCK
-3dB
VSWR
46 V
VPA
52 A
IPA
17 W
2103 W
43 °C

EXCITER WEB INTERFACE

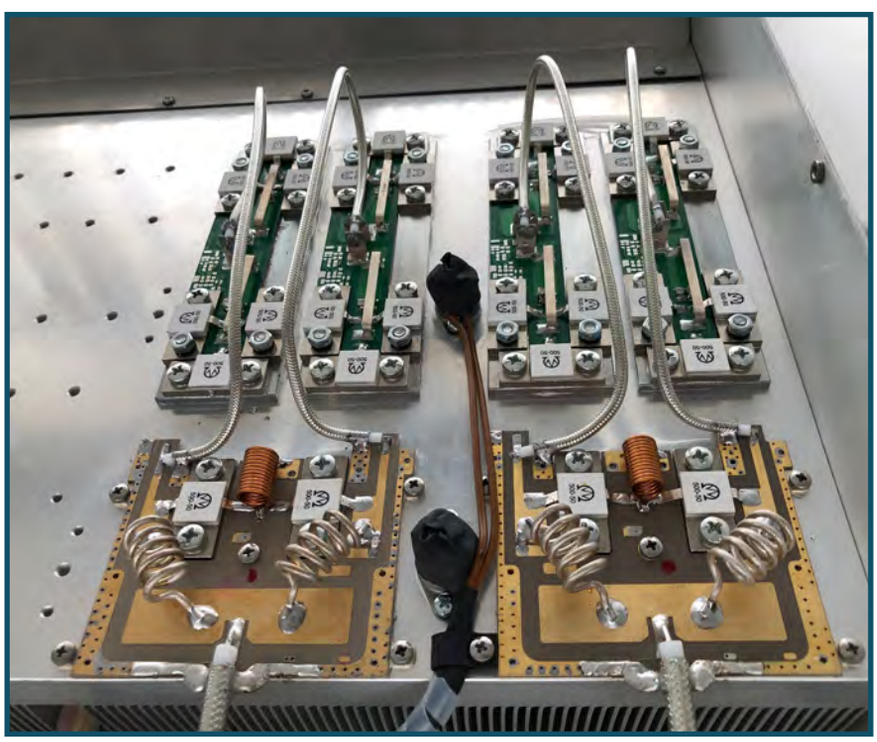
Main page of Web interface on Exciter/Modulator




CTE TX1000-HD 1000W
TX INFO
TX Settings
GENERAL
INPUT PARAMETERS
RDS
NETWORK PARAMETERS
HISTORY ALARMS
EXPORT CSV
CLEAR EVENTS
SYSTEM SETTINGS
Time [hh:mm:ss]
10:35:39
Date [dd/mm/yy]
02/02/19
LAN IF Firmware Version
2.0
TX Firmware Version
Fw. 3. 0
Serial Number
812303
Equipment
TX1000-HD
Password
Import LAN IF Firmware
Scegli file
nessuno selezionato

COMBINERS, SPLITTERS and DUMMY LOADS
Modular Passive components

2 to 10 Ways Input Splitter
3kW 2 to 10 Ways Dummy Load
WIRED Technology, Superior Modular Philosophy



OUTPUT COMBINER 2 to 8 Ways up to 12kW

Hyper modular Wilkinson Gysel

Broadcast

Dynamic RDS OPTION

The WIRED Series of FM Transmitters can al include the Dynamic RDS Option

- Fully dynamic FM broadcast RDS encoder with independent communication port
- Control interface based on ASCII commands and UECP protocol
- Text features include dynamic PS, parsing, scrolling, tagging, fixed messages, scheduling and HTTP reading
- Excellent compatibility with broadcast automation systems
- Control software includes powerful Windows GUI application
- Supports control from external PHP/ASP scripts
- Easy and fast set-up
- Excellent spectral purity, direct digital RDS signal synthesis; compliant with EN 50067 / EN 62106
- Two switchable program sets (with optional DSN and PSN setting)
- Internal real-time clock incl. backup battery
- No special 19 kHz input needed - pilot tone internally recovered from MPX signal using digital PLL

RDS services directly supported by the unit

- PI Program Identification
- PS Program Service
- PTY Program Type
- TP Traffic Program
- TA Traffic Announcemen
- AF Alternative Frequencies
- PTYN Program Type Name
- DI Decoder Identification
- EON Enhanced Other Networks information
- RT Radiotext
- RT+ Radiotext Plus
- M/S Music/Speech
- CT Clock-Time and Date
- PIN Program-Item Number
- ECC Extended Country Code
- LIC Language Identification Code
- TMC Traffic Message Channel
- UDG User Defined Groups

DYNAMIC RDS OPTION
User Instruction

PS - Program service name
This is the label of the program service consisting of not more than eight alphanumeric characters, which is displayed by RDS receivers in order to inform the listener what program service is being broadcast by the station to which the receiver is tuned.

RT - Radiotext
This refers to text transmissions, primarily addressed to consumer home receivers, which would be equipped with suitable display facilities. The text can be up to 64 characters long. Some receivers do not support the Radiotext service.
An additional feature of the Radiotext is the Text A/B flag. Two cases occur: If the receiver detects a change in the flag, then the whole radiotext display should be cleared and the newly received radiotext message segments should be written into the display. If the receiver detects no change in the flag, then the received text segments or characters should be written into the existing displayed message and those segments or characters for which no update is received should be left unchanged. For static RT (i.e. RT is not updated and shows only a general information like studio's phone number), the A/B flag has no meaning.

RT+ on iPodClick here for summarization of national character coding issues

RT+ - Radiotext Plus
The RT+ is designed to let the listener take additional benefit from the Radiotext service by enabling receivers to offer direct access to specific elements of Radiotext. Typically the RT+ feature supports song artist and song title elements. These elements anyway carried in the Radiotext, are identified by their class code, length and location within the Radiotext. The receiver must be equipped with the RT+ function (also called "tagging") to take advantage of this feature.

Click here for information about how to send RT+ tagging with our RDS encoders

AF - Alternative frequencies list
The list of alternative frequencies gives information on the various transmitters broadcasting the same program in the same or adjacent reception areas. This facility is particularly useful in the case of car and portable radios.
When the PI code indicates local coverage-area, i.e. only one frequency is used, AF list may contain this frequency.

PI - Program identification
This information consists of a code enabling the receiver to distinguish between countries, areas in which the same program is transmitted, and the identification of the program itself. The code is not intended for direct display and is assigned to each individual radio program, to enable it to be distinguished from all other programs. One important application of this information would be to enable the receiver to search automatically for an alternative frequency in case of bad reception of the program to which the receiver is tuned; the criteria for the change-over to the new frequency would be the presence of a better signal having the same PI code.
The PI code consists of four characters. The first two characters have special meaning, second two are used to clearly identify different stations.
The first character identifies country. The second character identifies program type in terms of area

coverage:
0 - Local (Local program transmitted via a single transmitter only during the whole transmitting time.)
1 - International (The same program is also transmitted in other countries.)
2 - National (The same program is transmitted throughout the country.)
3 - Supra-regional (The same program is transmitted throughout a large part of the country.)
4 to F - Regional (The program is available only in one location or region over one or more frequencies, and there exists no definition of its frontiers.)

ECC - Extended Country Code
It helps the receiver to recognise the country in cooperation with the PI code. The first most significant bits of the PI code carry the RDS country code. The four bit coding structure only permits the definition of 15 different codes, 1 to F (hex). Since there are much more countries to be identified, some countries have to share the same code which does not permit unique identification. The ECC byte determines the country unambigouesly.

Click here to find ECC and first PI digit for your country!

PTY - Program type
This is an identification number to be transmitted with each program item and which is intended to specify the current Program type within 31 possibilities. This code could be used for search tuning. The code will, moreover, enable suitable receivers and recorders to be pre-set to respond only to program items of the desired type. The last number, i.e. 31, is reserved for an alarm identification which is intended to switch on the audio signal when a receiver is operated in a waiting reception mode.

TA - Traffic announcement identification
This is an on/off switching signal to indicate when a traffic announcement is on air. The signal could be used in receivers to:
a) switch automatically from any audio mode to the traffic announcement;
b) switch on the traffic announcement automatically when the receiver is in a waiting reception mode and the audio signal is muted;
c) switch from a program to another one carrying a traffic announcement.
After the end of the traffic announcement the initial operating mode will be restored.

TP - Traffic program identification
This is a flag to indicate that the tuned program carries traffic announcements. The TP flag must only be set on programs which dynamically switch on the TA identification during traffic announcements. The signal shall be taken into account during automatic search tuning, so I recommend to turn this flag on even though you don’t transmit any traffic announcements.

DI - Decoder identification
Indicates which possible operating mode is appropriate for use with the broadcast audio. Many receivers ignore this service completely. For others, only the Stereo and Dynamic PTY flags have a sense. Set the Dynamic PTY if your PTY changes dynamically in dependence on actual program content. Flags Artificial head and Compressed are archaic and should be kept cleared unless you have a real reason for their use.

M/S - Music/speech switch
This is a two-state signal to provide information on whether music or speech is being broadcast. The signal would permit receivers to be equipped with two separate volume controls, one for music

and one for speech, so that the listener could adjust the balance between them to suit his individual listening habits.

CT - Clock-Time and Date
Time and date codes should use Coordinated Universal Time and Modified Julian Day. The listener, however, will not use this information directly and the conversion to local time and date will be made in the receiver's circuitry. CT is used as time stamp by various RDS applications and thus it must be accurate.

EON - Enhanced Other Networks information
This feature can be used to update the information stored in a receiver about program services other than the one received. Alternative frequencies, the PS name, Traffic Program and Traffic Announcement identification as well as Program Type and Program Item Number information can be transmitted for each other service. The relation to the corresponding program is established by means of the relevant Program Identification.

IH - In House Applications
This refers to data to be decoded only by the operator. Some examples noted are identification of transmission origin, remote switching of networks and paging of staff. The applications of coding may be decided by each operator itself.

PIN - Program-Item Number
The code should enable receivers and recorders designed to make use of this feature to respond to the particular program item(s) that the user has preselected. Use is made of the scheduled program time, to which is added the day of the month. The transmitted Program Item Number code will be the scheduled broadcast start time and day of month as published by the broadcaster.

PTYN - Program Type Name
The PTYN feature is used to further describe current PTY. PTYN permits the display of a more specific PTY description that the broadcaster can freely decide (e.g. PTY=4: Sport and PTYN: Football). The PTYN is not intended to change the default eight characters of PTY which will be used during search or wait modes, but only to show in detail the program type once tuned to a program. If the broadcaster is satisfied with a default PTY name, it is not necessary to use additional data capacity for PTYN.

TDC - Transparent Data Channels
The transparent data channels consist of 32 channels which may be used to send any type of data.