Continental Tensa

93%

NEW
EMBEDDED
REMOTE
CONTROL
TELEMETRY & CONTROL

X.DA 10
TRANSMITTER
DIGITAL AM

HD Radio Pure Digital Clear Radio. drm

10KW

(*)Optional (**)Packed

cec@cecchile.com www.cecchile.com

AM Digital Transmitter
Serie X.DA

GENERAL INFORMATION

High RF Efficiency

Efficiency higher than 85%, obtained with the use of HEXFET power transistors in the output RF circuit (*)

Excellent Audio Quality

PWM modulation system and amplifier circuits, inherently linear, allow us to ensure a linear frequency response between 20 y 15.000 Hertz, with low levels of distortion (less than 1%).

Digital Protection

X.DA transmitters have a sophisticated digital protection system that allows them to operate in a stable and uninterruped way, despite external disturbances (atmospherics and others). Among them, we can mention: protections against excessive stationary waves (VSWR) and excessive voltage of the main power supply, R.F. overcurrent, DC overcurrent.

Modulation Capability

In analog operation, and thanks to the design of the main power supply and the PWM circuits, our equipments are capable of operate with modulations up to 150% (positive peak), resulting in an excellent volume in the dial.

In simulcast operation (analog and digital simultaneously) the X.DA transmitters are capable to operate with modulations up to 125% for analog signal, considering a bandwidth of 8 kHz, plus digital modulation.

Power And Modulation Automatic Control

A modern two-phase PWM circuit and, related to it a micro processing control, allow the equipment to operate at nominal power, despite the normal variations of the electricity network and also keep its modulation level unchanged.

Surge Protection

All our transmitters are equipped with protection circuits against peaks coming from the electricity network (spikes) built with MOV´s (metal oxide varistors) and input coils to reduce the peaks above mentioned.

Digital Synthesizer Or DDS

The normal condition is to build the transmitter with a digital synthesizer, an option is represented by a DDS, a digital integrated circuit that directly synthesizes the desired frequency by a program. This circuit is integrated on top of the control board, which is planned to host two of them. Automatic change over is ready to operate in the event of failure of one.

VDR's At The Network Input

Voltage Dependant Resistor (VDR) is a device that changes its resistance depending on the voltage applied on its terminals. The transmitter uses three of them, one for each phase. Its function is to cause "short-circuit" when a spike that exceeds the pre-setted limit comes. This fact shuts down the main breaker. After this work, they remain unusable.

(*) Depending on ambient conditions, should be necessary to use an external exhaust and/or air conditioned system.

GENERAL INFORMATION

Automatic Fold-back In Remote Operation

Capability that allows the transmitter turn on again, in the same condition it was operating, alter a power failure. In case of power option reduction, due to momentary VSWR at the radiating system, the equipment will come back to the power with wich operated before the fact.

Redundant Power Modules

12 digital broad band 1 KW amplifiers in normal operation. Thus, the maximum total power output capability is 12KW. In other words, it has 20% (or 2KW) power reserve.

Soft Fail

The power structure based on 1.000 watts modules allows that a fail in any module has an insignicant impact into the total system.

Redundant Circuits

Double DDS with automatic switch over and duplicated PWM with automatic switch (optional).

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The new feature we offer in our X.DA AM Transmitter Family considers the inclusion into the Panel Control PCB (embedded) of the intelligence necessary to manage and operate completely the equipment, including on off function, power up and power down, alarms reset, direct power output, reflected power output, DC Current, DC Voltage and alarm status. All mentioned features are performed through a web browser linked to a server locate in our facility.

All events that may happen during the transmitter operation will be recorded for later observation, which can be done at any time.
This system allows the customer to operate and monitoring the transmitter from his computer, lap top or even from his smart phone.

TECHNICAL INFORMATION

Transmitter Type

Medium wave transmitter, 100% solid state.

Emission Type

Analog, Digital and Hybrid (simulcast).

Operating Frequency

531-1.705 KHz. Tuned, adjusted and tested in factory at one frequency assigned.

Carrier Shift

Less than 1% at 95% modulation, with 1KHz. Typically smaller than 0,5%.

Redundancy

Offers the possibility of continue operating after the failure of one or more power modules.

Digital Broadcasting

All equipment of this family are prepared for digital broadcasting signals (IBOC and DRM), it is only necessary to add the digital exciter.

TECHNICAL INFORMATION

- **Analog Modulation Capability**
  150% positive peak at nominal power

- **Frequency Stability**
  ± 5Hz between 0 y 45°C. With digital or hybrid mode the stability depends on the exciter

- **Audio Response**
  ± 0,5 db between 20 and 15.000Hz with

- **Total Harmonic Distortion**
  Less than 1% between 20 y 15.000Hz with 95% modulation and nominal power

- **Intermodulation Distortion**
  Less than 2% with 85% modulation and

- **Harmonic Emission and No Essential Radiations**
  Meets FCC or better

- **Electric Energy Consumption**
  12.500 VA or less with 0% modulation

- **Input Impedance (Audio)**
  600 Ohms balanced

- **Audio Input Level**
  +10dbm for 100% modulation

- **RF Efficiency**
  85% under normal conditions

- **RF Output Power**
  10 kW

- **Modulation Capability**
  150% positive peak

- **RF Output Impedance**
  50 Ohms unbalanced

- **Electrical Energy Sources**
  Three-phase power supply, 220/380 VAC, 50/60Hz

(*) Depending on ambient conditions, should be necessary to use an external exhaust and/or air conditioned system

Temperature
0 a +45° Celsius

Humidity
95% Max. no condensation

Height
3.900 M.O.S.L

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