



TMR6300

Naval HF Digital Transmitters



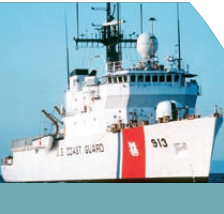
- One or Two High-Performance 500 W/1 kW Transmitters in a Single Cabinet
- Outstanding RF Performance Optimized for Severe Co-site Operation
- Multimode Operation Compatible with All Current Naval Standards
- DSP Technology and Built-in High Selectivity Pre/Post-Selector
- Wide Range of Remote Control Facilities
- High MTBF and Comprehensive BITE

Series 6000—High Performance, Compact, Naval HF System Solutions.



TMR6300

Naval HF Digital Transmitters



In keeping with all equipment in the Series 6000 HF naval range, TMR6300 transmitters are designed to meet the ship-shore and ship-ship multimode communication requirements of the naval environment, particularly demanding in terms of radio electrical performance, environmental constraints and logistical support.

Ideally suited for use on surface ships, from patrol boats to aircraft carriers, and submarines, TMR6300 transmitters can operate independently or within a totally integrated end-to-end naval communication system offering voice, data and facsimile high-speed message transfer capability.

EXCITER

EQUIPMENT CONFIGURATION

One or two independent exciters in a 4U chassis

GENERAL

Frequency Range

- 1.5 MHz to 30 MHz in 1 Hz steps

Tuning Time

- < 20 ms to within 20 Hz

Frequency Accuracy

- Standard TCXO 3 parts in 10^7 (0°C – 35°C)
- Optional high stability frequency reference (OCXO) in accordance with STANAG 5511 (Link-11)

External Frequency Input

- 1, 5 or 10 MHz
- Level between -13 dBm and +13 dBm

Modes of Operation

- CW A1A, A1B
- MCW A2A, A2B
- AM A3E, H3E
- FAX F1C, F3C
- FSK F1A, F1B, F2B
- USB/LSB H2A, H2B, H3E, J2A, J2B, J3E, R2A, R2B, R3E
- ISB B7B, B8E, B9W
- MIL-STDs MIL-STD-188-110B, MIL-STD-188-141B (App A), MIL-STD-188-203
- STANAGS 4197, 4198, 4203, 4285, 4529, 4538, 4539, 5066, 5511, 5514 and 5522 compatible

IF Filter

- Digital filters with bandwidths 2.3 kHz, 2.4 kHz, 2.75 kHz, 3.1 kHz

Channel Store

- 1000 channels
- Parameters stored in non-volatile memory include frequency, mode and transmitter power

BITE

- Automatic detection to module level

EXCITER

In-Band Noise

- <90 dBc/Hz (within 300 Hz to 3 kHz of the carrier)

Wideband Noise

- The noise level is <165 dBc/Hz for all frequencies removed by more than 5% from the tuned frequency

Carrier Suppression

- >60 dB

Unwanted Sideband Suppression

- >60 dB

Spurious Emissions:

- Better than -80 dB at all frequencies removed by more than 5% from the tuned frequency

INTERFACES

(Interfaces with * are duplicated in a dual exciter)

RF Outout*

- Load impedance: 50 Ohms

Power Output*

- 17 dBm \pm 1 dBm

AF Inputs*

- One line input for each sideband
- Level adjustable from -20 dBm to +10 dBm into 600 Ohms balanced

Sidetone Outputs*

- One line output for each sideband
- Level adjustable -20 dBm to +10 dBm into 600 Ohms balanced

Remote Control*

- One single RS-485 addressable bus (up to 99 radios and control units on the bus).
- Data rate selectable from 300 to 38,400 bits/s
- RS-232 serial point to point control interface also available

Power Supply

- 85 - 132 V and 170 - 264 V AC auto-ranging, 47 - 63 Hz

PHYSICAL CHARACTERISTICS

Temperature Range

- MIL-STD- 810E
- Methods 500.3, 501.3, 502.3
- Operating: -5°C to +50°C
- Storage: -30°C to +70°C

Humidity

- MIL-STD- 810E
- Method 507.3 88% at 40°C

Vibration

- MIL-STD- 810E cat 9 Random vibration

Shock

- MIL-STD 901D/30g, 25ms

EMC/EMI

- MIL-STD-461/462

MTBF

- MIL-HDBK-217F at 25°C NS >4100 hrs to 8200 hrs depending on the configuration

Size (H x W x D)

- 7 (4U) x 19 x 18 inches (178 x 483 x 460 mm)

Weight

- 28 - 42 lbs (depending on the configuration)
(13 kg - 19 kg)

OPTIONS

- Single or dual exciters in a 4 U chassis
- Operator or Passive front panel
- High Stability Frequency Standard
- Full duplex operation – single variants only

SERIES 6000—500 W AND 1 kW POWER AMPLIFIERS

GENERAL CHARACTERISTICS

Frequency Range

- 1.5 MHz to 30 MHz in 1 Hz steps

RF Output Power:

- 1 kW Amplifier: 1 kW \pm 1 dB into <1.05:1 VSWR
 - >600 W into 2:1 VSWR
- 500 W Amplifier: 500 W \pm 1 dB into <1.05:1 VSWR
 - >300 W into 2:1 VSWR
- Power reduction down to 1 W in 1 dB steps

Forward Intermodulation Products

- >38 dB (typically >41 dB below PEP)

Inter-Transmitter Intermodulation

- Based on an 18 dB coupling between two equal power transmitters (through a CAV or on the air through coupling between whips), third order inter-transmitter intermodulation products are <-45 dBc and typically <50 dBc with the standard low pass filter fitted
- With band pass filter option, <-80 dBc is achievable if the transmitters are operating in different frequency bands or when operating in the same frequency band for the products which fall outside the band

BITE

- To module level

Power Supply (3-phase)

- 440 V, 3-phase, 3-wire 47-63 Hz

Power Consumption

- 1 kW: 5 kW (power factor 0.9)
- 500 W: 2.7 kW (power factor 0.9)

ENVIRONMENTAL

Temperature Range

- MIL-STD-810E, Methods 500.3, 501.3, 502.3
- Operating -5°C to +50°C
- Storage -30°C to +70°C
- Operation to +55°C at reduced duty cycle or AM services

Humidity

- MIL-STD-810E, Method 507.3 88% at 40°C

Vibration

- MIL-STD-810E cat 9 Random vibration

Shock

- MIL-STD-901D 30g, 25 ms

EMC/EMI

- MIL-STD-461/462

MTBF

- MIL-HDBK-217F at 25°C NS
- Single 1 kW >3700 hrs
- Single 500 W >3800 hrs

Cooling

- Fan-assisted with front entry and exhaust. Water cooling (option)

Acoustic Noise

- <72 dBA at 1 m

Transmitter Cabinet:

	1 kW Single	1 kW Dual	500 W Single	500 W Dual
Height (in)	48.0	64.12	23.6	31.5
Weight (lbs)	7.87	8.66	9.25	10.83

ASSOCIATED EQUIPMENT

Transmit antennas

- Can be operated with whip antennas (via AEA177 fast antenna tuning unit), loop antennas (AS6000) or wideband antennas (via CA6000 common aerial working system)

OPTIONS

- 500 W and 1 kW in single and dual variants
- Low Pass or Band Pass output filter
- Water cooling





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