

TMR 5100 HF DIGITAL RECEIVERS



TMR5100D Dual Receiver

THE TMR5100 high performance LF/MF/HF receiver is part of Thales Communications' high performance Series 5000 integrated communication system.

Series 5000 is a fully integrated system of transmitters, receivers and transceivers, which shares a common module architecture and a common control protocol. DSP technology and a wide range of full function local and remote control options provide flexible and configurable solutions for ground-air and other critical applications.

The TMR5100 receiver is fully programmable and incorporates a wide range of operational features, including digital tuning, 1000 memory channels, optimised DSP filtering, AGC and demodulation, syllabic squelch and BITE.

Associated radio gateway, adaptive controllers and high-speed data modems define the cost-effective Series 5000 as a state of the art integrated communications system.

KEY FEATURES

- 10 kHz to 29.999999 MHz, 1 Hz tuning steps
- 1000 pre-programmable channels
- Single and dual receivers in a single 4U chassis
- Blank or operator control front panel
- Multimode including high speed data transmission and ALE capabilities
- Automatic scanning of channels and frequencies
- DSP technology and optional built-in high selectivity pre-selector
- Comprehensive BITE
- Control Options: Local Remote Computer
- ICAO Annex 10 and ITU Appendix 27

TMR5100 receivers share a common module architecture and a common software protocol with the associated Series 5000 transmitters and receivers. This flexibility of design enables complex HF systems, with facilities for voice, fax and data file transfer, to be configured and controlled. The receiver features high linearity RF design for use in areas of high spectral congestion. IF filtering, AGC and demodulation are implemented using digital signal processing techniques. TMR5100 receivers are available in single and dual versions in one 4U chassis, and are an ideal choice for racked multiple receiver installations using remote or computer control.

Technical Specifications

GENERAL

Stored Channels

1000 user-programmable preset channels

Frequency Stability

0.33 ppm from 0° C to +35° C
2 ppm from 0° C to +50° C typical

External Frequency Standard Input

0.1, 1, 5 or 10 MHz
Optional OCXO 0.01 ppm from 0° C to +50° C

Modes of Operation

USB, LSB, ISB, CW, AM, AME

Tuning

Direct frequency or channel entry from keyboard or keypad

Synthesizer Tune Time

<20 ms

Remote Control Interfaces

RS-232 or RS-485

Line Input

Two independent channels, -20 dBm to +10 dBm, 600 Ohms balanced audio

Power Supply

AC 85-132 / 170-264 V, 47-63 Hz

BITE

To module level at user command

Control Options

Local, Remote, Computer

ENVIRONMENTAL

Temperature Range

-5°C to +55°C Operating
-40°C to +70°C Storage

Weight and Size

<18.5 kg (configuration dependent)
Height 178, Width 483, Depth 460mm

RECEIVER

Frequency Range

10 kHz to 29.999999 MHz in 1 Hz steps
BFO: +/- 7.99 kHz in 10 Hz steps

Sensitivity

for 10 dB SINAD
SSB -113 dBm
CW -123 dBm
AM (30%) -99.5 dBm

Image/IF Rejection

80 dB minimum (100 dB with optional pre-selector)

Spurious Rejection

80 dB minimum (100 dB with optional pre-selector)

Internally Generated Spurious

< -121 dBm equivalent input for 99.5% of channels

Out of Band Intermodulation Products

< -80 dBc with 2 tones each at -20 dBm

In-band Intermodulation Products

< -50 dBc with 2 tones each at -6 dBm

AGC

Adjustable threshold, output level within 3 dB
For inputs greater than threshold up to +13 dBm

Voice

Attack < 20 ms. Decay selectable slow, medium or fast

Data

Attack < 10 ms. Decay < 25 ms

RF Input Protection

100 V emf

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