Product Description
MT-4E Receiver – Class B

Description:

The MT-4E receiver (shown to the right) is a high performance, low current FM receiver capable of P25 digital or analog operation in 12.5 KHz (narrowband) or 25 KHz (wideband) channels. The MT-4E receiver is available in the frequency bands: 136 - 174 MHz, 406 – 430 MHz, 450-470 MHz and 470-520 MHz.

Daniels MT-4E receivers can be used in either repeater or base station configurations. When used in base station applications they will receive clear or secure (encrypted) P25 and analog voice radio communications. When used in repeater applications they will repeat clear or secure (encrypted) P25 and analog voice radio communications. (Secure mode operation is optional.) P25 operation is supported via a purchasable P25 firmware option.

A modular design allows each of the receiver's internal modules to be individually assembled and tested. This facilitates construction, tuning and maintenance as well as troubleshooting procedures. The receiver can be programmed with up to 2 banks of 16 channels each. P25 receiver options such as Frequency, CTCSS, NAC and analog / digital operation are software programmed with the Daniels Radio Service Software package.

Specifications:

Frequency Band	136 – 174 MHz	406-430 MHz, 450-470 MHz or 470-520 MHz
Channel Spacing	12.5, 15, 25 and 30 KHz	12.5 and 25 KHz
Channel Selection	2.5, 5.0, 6.25 kHz increments	6.25 kHz increments
Receiver Switching Range	+/- 2 MHz	+/- 2 MHz
Reference Sensitivity (12 dB SINAD)	≤ -118 dBm (0.28 µV)	≤ -118 dBm (0.28 µV)
Reference Sensitivity (5% BER)	≤ -118 dBm (0.28 µV)	≤ -118 dBm (0.28 µV)
Adjacent Channel Rejection (Selectivity)	≥ 40 dB Analog Narrowband TIA 603-C ≥ 70 dB Analog Wideband TIA 603-C ≥ 60 dB P25 Digital TIA 102.CAAA-B	≥ 40 dB Analog Narrowband TIA 603-C ≥ 70 dB Analog Wideband TIA 603-C ≥ 60 dB P25 Digital TIA 102.CAAA-B
Spurious Response Rejection	≥ 70 dB Analog TIA 603-C ≥ 70 dB P25 TIA 102.CAAA-B	≥ 70 dB Analog TIA 603-C ≥ 70 dB P25 TIA 102.CAAA-B
Intermodulation Rejection	≥ 70 dB Analog TIA 603-C ≥ 70 dB P25 Digital TIA 102.CAAA-B	≥ 70 dB Analog TIA 603-C ≥ 70 dB P25 Digital TIA 102.CAAA-B
Hum & Noise Ratio	≥ 34 dB Analog Narrowband TIA 603-C ≥ 40 dB Analog Wideband TIA 603-C	≥ 34 dB Analog Narrowband TIA 603-C ≥ 40 dB Analog Wideband TIA 603-C
L.O. Frequency Stability	+/- 1.0 ppm (-30°C to +60°C)	+/- 0.5 ppm (-30°C to +60°C)
Modulation Type (Analog)	11K0F3E (FM) or 16K0F3E (FM)	11K0F3E (FM) or 16K0F3E (FM)
Modulation Type (Digital)	8K10F1E (FM), 8K10F1D (FM), 9K2F1D	8K10F1E (FM), 8K10F1D (FM), 9K2F1D
Audio Distortion	<2.0% @25°C	<2.0% @25°C
Audio Distortion (-30°C to +60°C)	<= 3 %	<= 3 %
Squelch Threshold	-121 to -115 dBm	-121 to -115 dBm
Audio Output (600 Ω balanced)	+3.0 dBm de-emphasized max.	+3.0 dBm de-emphasized max.
Input Impedance	50 Ω (Type N Connector)	50 Ω (Type N Connector)
Operating Temperature	-30°C to +60°C	-30°C to +60°C
Operating Current (Squelched)	105 mA maximum	105 mA maximum
Operating Current (Unsquelched)	150 mA maximum	150 mA maximum

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