FULL RECORD PRINT FOR Transmitter

TRANSMITTER MM2-EX Family

Nomenclature : (U) MM2-EX Family
Other Nomenclature : (U) MM2-EX-P
Other Nomenclature : (U) MM2-EX-T
Manufacturer : (U) FREEWAVE INC

Tx Type : (U) Spread Spectrum Frequency Hopping
NTIA Approval Status : (U) Unapproved
Coordination ID : J/F 12
Date of Import : 4/9/2015 4:15:16 PM (GMT)
Date/Time Last Mod. : 10/16/2014 3:17:50 PM (GMT)
Filter Type : (U) Gaussian Low Pass Filter

Freq. Stability : (U) 1.5ppm
Output Device : (U) Field Effect Transistor
Tuning Method : (U) Digital Synthesizer
Radar/Comm : (U) Communications
Supp. of Harmonics : (U) No

Powers

Power Type : Peak Envelope
Lower Limit : (U) 0.00500 W
Upper Limit : (U) 1.50 W

Frequencies

Tuned Frequency : (U) 902.2464 MHz - 927.8208 MHz
Tuning Increment : (U) 230.40 kHz
Number Freq. Required : (U) 50
Min. Separation : (U) 0.2304000 MHz
Freq. Blocking Indicator : (U) No
Lowest Usable Channel : (U) 902.2464 MHz
Em. Designator : (U) 210KF1D
Necessary BW : (U) 0.21000 MHz

Modulation - 210KF1D

Occupied Bandwidth : (U) 0.21762 MHz
Measured/Calculated : (U) Measured
Radar/Communications : (U) Communications
Modulation Type : (U) Digital Modulation
Max. Modulation Frequency : (U) 0.057600 MHz
Low Freq. Hop : (U) 902.2462 MHz
High Frequency Hop : (U) 927.8202 MHz
Spread Spectrum : Yes
Spread Spectrum Type : (U) Frequency Hopped
SS Processing Gain : (U) 20.4 dB
Dig. Modulation Type : (U) GFSK - Gaussian Frequency Shift Keying

Number of Digital States : (U) 2
Digital Bit Rate : (U) 0.115 Mbps
Deviation Ratio : (U) 0.803
Digital Peak Deviation : (U) 0.046253 MHz
Number Freq. Hop Sets : (U) 7
Number Freq. Per Hop : (U) 112
Number of Freq. Hop Pulses Per Dwell : (U) 16
Lowest Frequency in Hop : (U) 902.2462 MHz

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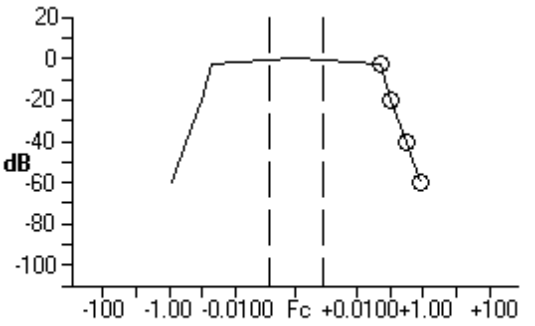
Highest Frequency in Hop : (U) 927.8202 MHz
Frequency Hop Rate : (U) 47.0 /sec
Frequency Hop Dwell Time : (U) 6.00 ms

Figure 1 - Fundamental Curve (U)

Meas/Calc : Measured

Level	Offset (Fo)
-3.00 dB	0.055000 MHz
-20.0 dB	0.11000 MHz
-40.0 dB	0.31000 MHz
-60.0 dB	0.78500 MHz



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Em. Designator : (U) 220KF1D
Necessary BW : (U) 0.22000 MHz

Modulation - 220KF1D

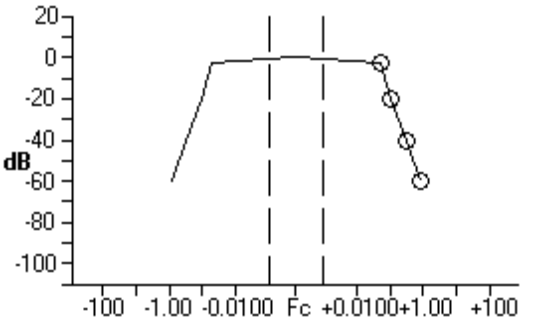
Occupied Bandwidth : (U) 0.22300 MHz
Measured/Calculated : (U) Measured
Radar/Communications : (U) Communications
Modulation Type : (U) Digital Modulation
Max. Modulation Frequency : (U) 0.076800 MHz
Low Freq. Hop : (U) 902.2464 MHz
High Frequency Hop : (U) 927.8202 MHz
Spread Spectrum : Yes
Spread Spectrum Type : (U) Frequency Hopped
SS Processing Gain : (U) 20.4 dB
Dig. Modulation Type : (U) GFSK - Gaussian Frequency Shift Keying

Number of Digital States : (U) 2
Digital Bit Rate : (U) 0.154 Mbps
Deviation Ratio : (U) 0.603
Digital Peak Deviation : (U) 0.046310 MHz
Number Freq. Hop Sets : (U) 7
Number Freq. Per Hop : (U) 112
Number of Freq. Hop Pulses Per Dwell : (U) 16
Lowest Frequency in Hop : (U) 902.2464 MHz
Highest Frequency in Hop : (U) 927.8202 MHz
Frequency Hop Rate : (U) 47.0 /sec
Frequency Hop Dwell Time : (U) 6.00 ms

Figure 2 - Fundamental Curve (U)

Meas/Calc : Measured

Level	Offset (Fo)
-3.00 dB	0.055000 MHz
-20.0 dB	0.11000 MHz
-40.0 dB	0.31000 MHz
-60.0 dB	0.78500 MHz



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Remark(s) (U)

(U) 1. The RF rate is selectable which affects the transmission bit rate so an emissions designator is included for both.

(U) 2. The configuration of the radio affects various frequency hopping parameters.

(U) 2a. The number of frequencies within the hop set is user selectable from 50 to 112.

(U) 2b. The hop rate varies between 47 to 167 hops per second depending on the configuration.

(U) 2c. The hop dwell time varies from 6 to 21 milliseconds depending on the configuration.

(U) 2d. The hop pulses per dwell varies from 16 to 317 milliseconds depending on the configuration.