

UNCLASSIFIED		
SECURITY SUMMARY & SPECIAL HANDLING REQUIREMENTS		
The System Name is : MM2-M13 @ 115.2 kbps The overall classification of this application is : UNCLASSIFIED		
Refer to your Security Manual for further guidance.		
The Application Level Special Handling is : A Approved for public release; distribution is unlimited (DoD Directive 5230.24)		
DOWNGRADING INSTRUCTIONS		
Special Handling Instruction : A		CLASSIFICATION
		UNCLASSIFIED

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TRANSMITTER EQUIPMENT CHARACTERISTICS			
1. NOMENCLATURE, MANUFACTURER'S MODEL NO. (U) MM2-M13 @ 115.2 kbps, (U) M13 Family		2. MANUFACTURER'S NAME (U) FREEWAVE INC.	
3. TRANSMITTER INSTALLATION		4. TRANSMITTER TYPE (U) Spread Spectrum Frequency Hopping	
5. TUNING RANGE (U) 1350.144 - 1389.773 MHz		6. METHOD OF TUNING (U) Digital Synthesizer	
7. RF CHANNELING CAPABILITY (U) 230.40 kHz Increments		8. EMISSION DESIGNATORS (U) 180KF1D	
9. FREQUENCY TOLERANCE (U) 1.5 ppm		12. EMISSION BANDWIDTH ☐ CALCULATED ☒ MEASURED	
10. FILTER EMPLOYED (U) Gaussian Low Pass Filter		a. -3 dB (U) 120 kHz	
11. SPREAD SPECTRUM (See Data Overflow Page) ☒ a. YES ☐ b. NO		b. -20 dB (U) 210 kHz	
13. MAXIMUM BIT RATE (U) 115200 bps		c. -40 dB (U) 326 kHz	
14. MODULATION TECHNIQUES AND CODING (U) Digital		d. -60 dB (U) 880 kHz	
16. PRE-EMPHASIS ☐ a. YES ☐ b. NO		e. OC-BW (U) 180.00 kHz	
17. DEVIATION RATIO (U) 0.668		15. MAXIMUM MODULATION FREQUENCY (U) 57.635 kHz	
18. PULSE CHARACTERISTICS		19. POWER	
a. MEAN (U) 0.0200 W - (U) 1.00 W		a. RATE	
b. PEP		b. WIDTH	
c. CARRIER		c. RISE TIME	
20. OUTPUT DEVICE (U) Field Effect Transistor		d. FALL TIME	
22. SPURIOUS LEVEL (U) -65.6 dB		e. COMP RATIO	
23. FCC TYPE ACCEPTANCE NO. (U) No		21. HARMONIC LEVEL	
		a. (U) -68.6 dB	
		b. (U) -81.2 dB	
		c.	
24. REMARKS (U) (U) 2. Depending on the channel selected, the radio will hop between a predetermined sequence of 112 different discrete frequencies. The system allows user specification of the hop sequence from 15 programmed orthogonal sequences. (U) 1. The radio supports single frequency and frequency hopping modes. For single frequency mode only 1 frequency is required. For frequency hopping, the number of frequencies used is selectable between 4 and 112.			
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TRANSMITTER DATA OVERFLOW PAGE		
11. SPREAD SPECTRUM Modulation (U) 180KF1D is Spread Spectrum		
24. REMARKS (U) 3. Previous known J/F 12/09955 received 9/19/2012.		
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1. NOMENCLATURE, MANUFACTURER'S MODEL NO. (U) MM2-M13 @ 115.2 kbps, (U) M13 Family				2. MANUFACTURER'S NAME (U) FREEWAVE INC.			
3. RECEIVER INSTALLATION				4. RECEIVER TYPE (U) Spread Spectrum Frequency Hopping			
5. TUNING RANGE (U) 1350.144 - 1389.773 MHz				6. METHOD OF TUNING (U) Digital Synthesizer			
7. RF CHANNELING CAPABILITY (U) 230.40 kHz Increments				8. EMISSION DESIGNATORS (U) 180KF1D			
9. FREQUENCY TOLERANCE (U) 1.5 ppm				11. RF SELECTIVITY ☐ CALCULATED ☒ MEASURED			
10. IF SELECTIVITY	1st (U)	2nd (U)	3rd	a. -3 dB (U) 46500 kHz			
a. -3 dB	(U) 510 kHz	(U) 165 kHz		b. -20 dB (U) 72800 kHz			
b. -20 dB	(U) 833 kHz	(U) 432 kHz		c. -60 dB (U) 77300 kHz			
c. -60 dB	(U) 1227 kHz	(U) 1003 kHz		d. Preselection Type (U) SAW Filter			
12. IF FREQUENCY				13. MAXIMUM POST DETECTION FREQUENCY			
a. 1st (U) 133.2000 MHz				14. MINIMUM POST DETECTION FREQUENCY			
b. 2nd (U) 0.9220000 MHz				16. MAXIMUM BIT RATE (U) 115200 bps			
c. 3rd				17. SENSITIVITY			
15. OSCILLATOR TUNED	1st	2nd	3rd	a. SENSITIVITY (U) -106 dBm			
a. ABOVE TUNED FREQUENCY	(U) X			b. CRITERIA (U) 0.000001 (U) BER - Bit Error Rate			
b. BELOW TUNED FREQUENCY				c. NOISE FIG (U) 3.40 dB			
c. EITHER ABOVE OR BELOW THE FREQUENCY				d. NOISE TEMP (U) 344 K			
18. DE-EMPHASIS ☐ a. YES ☐ b. NO				20. SPURIOUS REJECTION (U) 40.0 dB			
19. IMAGE REJECTION (U) 51.0 dB							

INTERMOD REJECTION : (U) 51.0 dB

21. REMARKS