

CLASSIFICATION UNCLASSIFIED		PAGE of Pages	
TRANSMITTER EQUIPMENT CHARACTERISTICS			
1. NOMENCLATURE, MANUFACTURER'S MODEL NO. n920F (Serial Version) IPn920F (Ethernet / USB Version)		2. MANUFACTURER'S NAME Microhard Systems Inc.	
3. TRANSMITTER INSTALLATION		4. TRANSMITTER TYPE FM	
5. TUNING RANGE 902.4 to 927.6 MHz		6. METHOD OF TUNING Synthesis PLL	
7. RF CHANNELING CAPABILITY 250kHz or 280kHz @ 230.4kbps / 400kHz @ 345kbps		8. EMISSION DESIGNATOR(S) FM Modulated 280kF1D @ 230kbps 480kF1D @ 345kbps	
9. FREQUENCY TOLERANCE 2.5 PPM			
10. FILTER EMPLOYED (<i>X one</i>) ☒ a. YES ☐ b. NO			
11. SPREAD SPECTRUM (<i>X one</i>) ☒ a. YES ☐ b. NO			
13. MAXIMUM BIT RATE 230.4 kbps / 345 kbps –NT (option)		12. EMISSION BANDWIDTH (<i>X and complete as applicable</i>) ☐ CALCULATED ☒ MEASURED	
14. MODULATION TECHNIQUES AND CODING CPFSK		a. -3 dB 180 kHz (230kbps) 225kHz (345kbps)	
		b. -20 dB 280 kHz (230kbps) 375kHz (345kbps)	
		c. -40 dB 550 kHz (230kbps) 775kHz (345kbps)	
		d. -60 dB 950 kHz (230kbps) 1.25MHz (345kbps)	
		e. OC-BW 290 kHz (230kbps) 485kHz (345kbps)	
16. PRE-EMPHASIS (<i>X one</i>) ☐ a. YES ☒ b. NO		15. MAXIMUM MODULATION FREQUENCY 115.2 kHz	
19. POWER a. MEAN up to 1 Watt (optional higher power available 2W) b. PEP up to 1Watt		17. DEVIATION RATIO 0.5 to 1	
		18. PULSE CHARACTERISTICS N/A (frequency modulated)	
		a. RATE	
		b. WIDTH	
		c. RISE TIME	
20. OUTPUT DEVICE HBT		d. FALL TIME	
		e. COMP RATIO	
		21. HARMONIC LEVEL	
22. SPURIOUS LEVEL -60 dBc		a. 2nd -50 dBc	
23. FCC TYPE ACCEPTANCE NO. NS908P24		b. 3rd -60 dBc	
		c. OTHER	
24. REMARKS BOX 19. 2W order Option available for Government Users “-2W” Microhard Systems Inc. #17, 2135 – 32nd Avenue NE Calgary, AB, Canada T2E 6Z3 Phone: (403) 248-0028 Fax: (403) 248-2762 Attn: Hany Shenouda			
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RECEIVER EQUIPMENT CHARACTERISTICS													
1. NOMENCLATURE, MANUFACTURER'S MODEL NO. n920F (Serial Version) IPn920F (Ethernet / USB Version)			2. MANUFACTURER'S NAME Microhard Systems Inc.										
3. RECEIVER INSTALLATION			4. RECEIVER TYPE Dual Conversion Superheterodyne										
5. TUNING RANGE 902.4 to 927.6 MHz			6. METHOD OF TUNING Synthesis PLL										
7. RF CHANNELING CAPABILITY 250kHz or 280kHz @ 230.4kbps / 400kHz @ 345kbps			8. EMISSION DESIGNATOR(S) FM Modulated Receiver										
9. FREQUENCY TOLERANCE 2.5 PPM			11. RF SELECTIVITY (X and complete as applicable) ☐ CALCULATED ☒ MEASURED <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; padding: 5px;">a. -3 dB</td> <td style="width: 50%; padding: 5px;">38MHz</td> </tr> <tr> <td style="padding: 5px;">b. -20 dB</td> <td style="padding: 5px;">50 MHz</td> </tr> <tr> <td style="padding: 5px;">c. -60 dB</td> <td style="padding: 5px;">75 MHz</td> </tr> <tr> <td colspan="2" style="padding: 5px;">d. Preselection Type SAW Bandpass Filter</td> </tr> </table>			a. -3 dB	38MHz	b. -20 dB	50 MHz	c. -60 dB	75 MHz	d. Preselection Type SAW Bandpass Filter	
a. -3 dB	38MHz												
b. -20 dB	50 MHz												
c. -60 dB	75 MHz												
d. Preselection Type SAW Bandpass Filter													
10. IF SELECTIVITY	1st	2nd	3rd										
a. -3 dB	500 kHz	280kHz / 500kHz											
b. -20 dB	750kHz	740 kHz / 850 kHz											
c. -60 dB	1.3MHz	1600 kHz / 2000 kHz											
12. IF FREQUENCY				13. MAXIMUM POST DETECTION FREQUENCY 120kHz @ 230.4kbps 175 kHz @ 345kbps									
a. 1st 243.95MHz				14. MINIMUM POST DETECTION FREQUENCY N/A									
b. 2nd 10.7MHz				16. MAXIMUM BIT RATE 230.4 kbps / 345kbps									
c. 3rd				17. SENSITIVITY									
15. OSCILLATOR TUNED	1st	2nd	3rd	a. SENSITIVITY -108 dBm									
a. ABOVE TUNED FREQUENCY	X	X		b. CRITERIA 10 ⁻⁵ BER									
b. BELOW TUNED FREQUENCY				c. NOISE FIG ≈ 2.5 dB									
c. EITHER ABOVE OR BELOW THE FREQUENCY				d. NOISE TEMP N/A									
18. DE-EMPHASIS (X one) ☐ a. YES ☒ b. NO				20. SPURIOUS REJECTION > 70 dBc									
19. IMAGE REJECTION - 70 dBc													
21. REMARKS Microhard Systems Inc. Attn: Hany Shenouda Item 10. IF Selectivity (230.4kbps / 345kbps)													

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ANTENNA EQUIPMENT CHARACTERISTICS		
1. ☐ a. TRANSMITTING ☐ b. RECEIVING ☐ c. TRANSMITTING AND RECEIVING		
2. NOMENCLATURE, MANUFACTURER'S MODEL NO.	3. MANUFACTURER'S NAME	
4. FREQUENCY RANGE	5. TYPE	
6. POLARIZATION	7. SCAN CHARACTERISTICS	
8. GAIN	a. TYPE	
a. MAIN BEAM	b. VERTICAL SCAN	
b. 1st MAJOR SIDE LOBE	(1) Max Elev	
	(2) Min Elev	
	(3) Scan Rate	
9. BEAMWIDTH	c. HORIZONTAL SCAN	
a. HORIZONTAL	(1) Sector Scanned	
b. VERTICAL	(2) Scan Rate	
	d. SECTOR BLANKING (<i>X one</i>) ☐ (1) YES ☐ (2) NO	
10. REMARKS		
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