

CLASSIFICATION UNCLASSIFIED		PAGE of Pages	
TRANSMITTER EQUIPMENT CHARACTERISTICS			
1. NOMENCLATURE, MANUFACTURER'S MODEL NO. IPnDDL2450		2. MANUFACTURER'S NAME Microhard Systems Inc.	
3. TRANSMITTER INSTALLATION		4. TRANSMITTER TYPE COFDM	
5. TUNING RANGE 2.405 – 2.470 GHz		6. METHOD OF TUNING Synthesis PLL	
7. RF CHANNELING CAPABILITY 1 MHz step (4 MHz and 8 MHz Channels)		8. EMISSION DESIGNATOR(S) 5M7D1DEF 11M1D1DEF	
9. FREQUENCY TOLERANCE 2 ppm		12. EMISSION BANDWIDTH <i>(X and complete as applicable)</i> ☐ CALCULATED ☒ MEASURED	
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 18 Mbps (RAW)		a. -3 dB 4 MHz / 8 MHz (Half/Full BW) b. -20 dB 4.3 MHz / 8.48 MHz	
14. MODULATION TECHNIQUES AND CODING COFDM (QPSK/16QAM)		c. -40 dB 5.2 MHz / 9.7 MHz d. -60 dB 14.5 MHz / 25.0 MHz e. OC-BW 4.2 MHz / 8.38 MHz	
16. PRE-EMPHASIS <i>(X one)</i> a. YES ☐ b. NO ☒		15. MAXIMUM MODULATION FREQUENCY N/A	
19. POWER a. MEAN up to 1W b. PEP up to 1W		17. DEVIATION RATIO N/A	
		18. PULSE CHARACTERISTICS N/A	
20. OUTPUT DEVICE InGaP HBT		d. FALL TIME N/A e. COMP RATIO	
22. SPURIOUS LEVEL -60 dB		21. HARMONIC LEVEL a. 2nd -55 dBc	
23. FCC TYPE ACCEPTANCE NO. NS9NBG30		b. 3rd -60 dBc	
c. OTHER			
24. REMARKS Item 10: There is a filter employed between the final RF stage and the transmitter antenna. It is a Lowpass filter with less that 1 dB of insertion loss. Microhard Systems Inc., 150 Country Hills Landing NW Calgary, AB, T3K 5P3, Canada Phone: (403) 248-0028 Fax: (403) 248-2762 Attn: Hany Shenouda			
CLASSIFICATION UNCLASSIFIED			

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RECEIVER EQUIPMENT CHARACTERISTICS					
1. NOMENCLATURE, MANUFACTURER'S MODEL NO. IPnDDL2450			2. MANUFACTURER'S NAME Microhard Systems Inc.		
3. RECEIVER INSTALLATION			4. RECEIVER TYPE Zero IF Receiver		
5. TUNING RANGE 2.405 GHz to 2.470 GHz			6. METHOD OF TUNING Synthesis PLL		
7. RF CHANNELING CAPABILITY 1 MHz step (4 MHz and 8 MHz channels)			8. EMISSION DESIGNATOR(S) 5M7D1DEF 11M1D1DEF		
9. FREQUENCY TOLERANCE 2 ppm					
10. IF SELECTIVITY	1st	2nd	3rd	11. RF SELECTIVITY (X and complete as applicable) ☐ CALCULATED ☒ MEASURED	
a. -3 dB	+/- 4 MHz +/- 7 MHz			a. -3 dB 75 MHz	
b. -20 dB	+/- 10 MHz +/- 12 MHz			b. -20 dB 120 MHz	
c. -60 dB	+/- 21 MHz +/- 26 MHz (40dB)			c. -60 dB 180 MHz	
12. IF FREQUENCY				d. Preselection Type SAW Bandpass Filter	
a. 1st Zero IF Receiver				13. MAXIMUM POST DETECTION FREQUENCY N/A	
b. 2nd				14. MINIMUM POST DETECTION FREQUENCY N/A	
c. 3rd				16. MAXIMUM BIT RATE 18 Mbps	
15. OSCILLATOR TUNED	1st	2nd	3rd	17. SENSITIVITY	
a. ABOVE TUNED FREQUENCY				a. SENSITIVITY -97 dBm @ 6 Mbps	
b. BELOW TUNED FREQUENCY				b. CRITERIA <10% Packet Error Rate	
c. EITHER ABOVE OR BELOW THE FREQUENCY				c. NOISE FIG ~ 3 dB	
18. DE-EMPHASIS (X one) ☐ a. YES X b. NO				d. NOISE TEMP N/A	
19. IMAGE REJECTION N/A				20. SPURIOUS REJECTION > 70 dBc (Out of Band)	
21. REMARKS Microhard Systems Inc., 150 Country Hills Landing NW Calgary, AB, T3K 5P3, Canada Phone: (403) 248-0028 Fax: (403) 248-2762 Attn: Hany Shenouda					