

**TRANSMITTER EQUIPMENT CHARACTERISTICS**

<b>1. NOMENCLATURE, MANUFACTURER'S MODEL NO.</b> MaxStream 9XTend-PKG Wireless Modem, Model XT09-PKI-R or -U, XT09-MI or SI	<b>2. MANUFACTURER'S NAME</b> MaxStream
<b>3. TRANSMITTER INSTALLATION</b> Fixed antenna outside the building.	<b>4. TRANSMITTER TYPE</b> Digital communication (FM)
<b>5. TUNING RANGE</b>	<b>6. METHOD OF TUNING</b> Synthesizer
<b>7. RF CHANNELING CAPABILITY</b> 50 channels, 905 – 925 MHz, 350 KHz spacing, auto freq hop	<b>8. EMISSION DESIGNATOR(S)</b> 350K0F1D
<b>9. FREQUENCY TOLERANCE</b> Max +/- 20 PPM	
<b>10. FILTER EMPLOYED (X one)</b> <input checked="" type="checkbox"/> a. YES <input type="checkbox"/> b. NO	
<b>11. SPREAD SPECTRUM (X one)</b> <input checked="" type="checkbox"/> a. YES <input type="checkbox"/> b.	<b>12. EMISSION BANDWIDTH (X and complete as applicable)</b> <input type="checkbox"/> CALCULATED <input checked="" type="checkbox"/> MEASURED
<b>13. MAXIMUM BIT RATE</b> 120 kbps	a. -3 dB    17.5kHz b. -20 dB    263 kHz c. -40 dB    3.6 MHz d. -60 dB    29.5 MHz e. OC-BW    265 kHz; See Remarks.
<b>14. MODULATION TECHNIQUES AND CODING</b> FSK modulation.	<b>15. MAXIMUM MODULATION FREQUENCY</b> 20 kHz
<b>16. PRE-EMPHASIS (X one)</b> <input type="checkbox"/> a. YES <input checked="" type="checkbox"/> b. NO	<b>17. DEVIATION RATIO (D/R = Max. Freq. Dev/Max. Mod. Freq.)</b> D/R = 200 kHz/20kHz = 10
<b>19. POWER</b> a. MEAN    1W b. PEP	<b>18. PULSE CHARACTERISTICS</b> a. RATE b. WIDTH c. RISE TIME d. FALL TIME e. COMP RATIO
<b>20. OUTPUT DEVICE</b> Transistor	<b>21. HARMONIC LEVEL</b> a. 2 <sup>nd</sup> -85dB b. 3 <sup>rd</sup> -86 dB c. OTHER -90 dB
<b>22. SPURIOUS LEVEL</b> -60 dBm @ 1.8 GHz, -53.48 dBm @ 4.5GHz, -56.53 dBm @ 5.4GHz	
<b>23. FCC TYPE ACCEPTANCE NO.</b> OUR-9XTend	

**24. REMARKS**

For question 10, Filters Employed include:

1. 10.7 MHz, 330kHz bandwidth    These are monolithic-type ceramic filters. The in band insertion loss at 3dB bandwidth is 330 KHz. The out-of-band spurious attenuation is 30dB minimum.
2. 915 MHz, 30 MHz bandwidth    Image rejection SAW filter

For questions 11: Spread Spectrum  
 Frequency hopping – hopping time on each channel is at most 400ms before hopping to the next channel in a pseudorandom fashion.

For question 12e, OC-BW (occupied bandwidth is defined as the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5% of the total mean power radiated).

**RECEIVER EQUIPMENT CHARACTERISTICS**

<b>1. NOMENCLATURE, MANUFACTURER'S MODEL NO.</b> MaxStream 9XTend-PKG Wireless Modem, Model XT09-PK1-R or U, XT09-MI or SI				<b>2. MANUFACTURER'S NAME</b> MaxStream			
<b>3. RECEIVER INSTALLATION</b> Fixed antenna via RSC-232 serial to a PC/laptop, outside				<b>4. RECEIVER TYPE</b> Superheterodyne			
<b>5. TUNING RANGE</b> 902-928 MHz				<b>6. METHOD OF TUNING</b> Synthesizer			
<b>7. RF CHANNELING CAPABILITY</b> 902-928 MHz, 350 kHz channel spacing				<b>8. EMISSION DESIGNATOR(S)</b> 350KOF1D			
<b>9. FREQUENCY TOLERANCE</b> Max +/- 20 PPM							
<b>10. IF SELECTIVITY</b>		<b>1st</b>	<b>2nd</b>	<b>11. RF SELECTIVITY (X and complete as applicable)</b>			
a. -3 dB		338 kHz		<input type="checkbox"/> CALCULATED <input checked="" type="checkbox"/> MEASURED			
b. -20 dB		480 kHz		a. -3 dB      42 MHz			
c. -45 dB		658 kHz		b. -20 dB      45 MHz			
d. -60 dB		815 kHz		c. -60 dB      144 MHz			
<b>12. IF FREQUENCY</b>				d. Preselection Type			
a. 1st		10.7 MHz		SAW Filter			
b. 2nd				<b>13. MAXIMUM POST DETECTION FREQUENCY</b>			
c. 3rd				125 kHz			
b. 2nd				<b>14. MINIMUM POST DETECTION FREQUENCY</b>			
c. 3rd				10 kHz			
<b>15. OSCILLATOR TUNED</b>				<b>16. MAXIMUM BIT RATE</b>			
		<b>1st</b>	<b>2nd</b>	125kbpd			
a. ABOVE TUNED FREQUENCY				<b>17. SENSITIVITY</b>			
b. BELOW TUNED FREQUENCY		X		a. SENSITIVITY      -110.0 dBm			
c. EITHER ABOVE OR BELOW THE FREQUENCY				b. CRITERIA      90% packet throughput			
<b>18. DE-EMPHASIS (X one)</b>				c. NOISE FIG      5 dB			
<input type="checkbox"/> a. YES <input checked="" type="checkbox"/> b. NO				d. NOISE TEMP      Kelvin			
<b>19. IMAGE REJECTION</b>				<b>20. SPURIOUS REJECTION</b>			
52 dB				80 dB			

**21. REMARKS**

For question 20, Since the filter specs were recorded in #11 (RF Selectivity), MaxStream measured the rejection of the IF signal component produced by the RF signal located at the second harmonic of the local oscillator plus and minus the IF frequency. At either of these two frequencies, MaxStream was unable to detect an IF signal. From these measurements, the spurious rejection is at least 80dB.

**ANTENNA EQUIPMENT CHARACTERISTICS**

1. <input type="checkbox"/> a. TRANSMITTING <input type="checkbox"/> b. RECEIVING <input checked="" type="checkbox"/> c. TRANSMITTING AND RECEIVING	
2. <b>NOMENCLATURE, MANUFACTURER'S MODEL NO.</b>  C467AH-925S	3. <b>MANUFACTURER'S NAME</b>  Nearson
4. <b>FREQUENCY RANGE</b>  890-960 MHz	5. <b>TYPE</b>  Half wave dipole
6. <b>POLARIZATION</b> Vertical	7. <b>SCAN CHARACTERISTICS</b> N/A
8. <b>GAIN</b>	a. <b>TYPE</b>
a. <b>MAIN BEAM</b> 2.1 dBi	b. <b>VERTICAL SCAN</b>
b. <b>1st MAJOR SIDE LOBE</b> N/A	(1) Max Elev
	(2) Min Elev
	(3) Scan Rate
9. <b>BEAMWIDTH</b>	c. <b>HORIZONTAL SCAN</b>
a. <b>HORIZONTAL</b> 360 degrees	(1) Sector Scanned
b. <b>VERTICAL</b> 80 degrees	(2) Scan Rate
	d. <b>SECTOR BLANKING</b> ( <i>X one</i> ) <input type="checkbox"/> (1) YES <input type="checkbox"/> (2) NO

10. REMARKS