CLASSIFICATION	PAGE
unclassified	1

TRANSMITTER EQUIPMENT CHARACTERISTICS

1. NOMENCLATURE, MANUFACTURER'S MODEL NO. RV-M7-VB	**2. MANUFACTURER'S NAME** Raveon Technologies Corporation
3. TRANSMITTER INSTALLATION	**4. TRANSMITTER TYPE** FM Data Radio Modem
5. TUNING RANGE 150-174MHz	**6. METHOD OF TUNING** Synthesized PLL
7. RF CHANNELING CAPABILITY 6	**8. EMISSION DESIGNATOR(S)** 11K0F1D (Narrow IF mode) 15K0F1D (Wide IF mode)
9. FREQUENCY TOLERANCE +/- 450Hz	
10. FILTER EMPLOYED *(X one)* [X] a. YES [ ] b. NO	
11. SPREAD SPECTRUM *(X one)* [ ] a. YES [X] b. NO	**12. EMISSION BANDWIDTH** *(X and complete as applicable)* [ ] CALCULATED [X] MEASURED
13. MAXIMUM BIT RATE 9600bps	a. -3 dB 5.5kHz b. -20 dB 7.0kHz
14. MODULATION TECHNIQUES AND CODING Gaussian filtered FSK data transmission using 2-level when transmitting at 1200, 2400, 4800, and 9600 bps and 4-levels when transmitting at 8000, 9600, 14400, and 19200 bps.	c. -40 dB 14kHz d. -60 dB 18kHz e. OC-BW 11kHz
	15. MAXIMUM MODULATION FREQUENCY 2400Hz narrow mode, 4800 wide mode
16. PRE-EMPHASIS *(X one)* [ ] a. YES [X] b. NO	**17. DEVIATION RATIO** 0.94 narrow, 0.70 wide
	18. PULSE CHARACTERISTICS
19. POWER	a. RATE
a. MEAN Programmable 1-5 watts	b. WIDTH
b. PEP	c. RISE TIME
20. OUTPUT DEVICE Mitsubishi RA07M4452M	d. FALL TIME e. COMP RATIO
	21. HARMONIC LEVEL
22. SPURIOUS LEVEL <-70dBc	a. 2ND < -80dBC b. 3RD < -80dBC
23. FCC TYPE ACCEPTANCE NO. SRS-RV-M7-VB	c. OTHER < -80dBC

24. REMARKS

CLASSIFICATION	
unclassified	

DD FORM 1494, AUG 96

Reset

INSTRUCTIONS FOR COMPLETING DD FORM 1494, "APPLICATION FOR EQUIPMENT FREQUENCY ALLOCATION" TRANSMITTER EQUIPMENT CHARACTERISTICS PAGE

ITEM 1 - Nomenclature, Manufacturer's Model No. Enter the Government assigned alphanumeric equipment designation. If above is not available, enter the manufacturer's model number, e.g., MIT 502, and complete Item 2. If above is not available, enter a short descriptive title, e.g., ATS-6 telemetry transmitter.

ITEM 2 - Manufacturer's Name. Enter the manufacturer's name if available. If a manufacturer's model number is listed in Item 1, this item must be completed.

ITEM 3 - Transmitter Installation. List specific type(s) of vehicle(s), ship(s), plane(s) or building(s), etc., where the transmitter(s) will be installed.

ITEM 4 - Transmitter Type. Enter the generic class of the trans- mitter, e.g., Frequency Scan, Scan While Track Radar, Monopulse Tracker, AM or FM Communications.

ITEM 5 - Tuning Range. Enter the frequency range through which the transmitter is capable of being tuned, e.g., 225-400 MHz. For equipment designed to operate only at a single frequency, enter this frequency. Indicate units, e.g., kHz, MHz or GHz.

ITEM 6 - Method of Tuning. Enter the method of tuning, e.g., crystal, synthesizer or cavity. If the equipment is not readily tunable in the field, indicate in Item 24, "Remarks," the complexity of tuning. Include complexity factors such as skill levels involved, major assemblies involved, time required, and location (factory or depot) where equipment is to be tuned.

ITEM 7 - RF Channeling Capability. Describe the RF channeling capability. For uniformly spaced channels, enter the center frequency of the first channel and channel spacing e.g., first channel 406 MHz, 100 kHz increments; for continuous tuning, enter the lowest frequency and the word "continuous;" for others, such as SSB or cases where a channel selection is under software control, enter a detailed description in Item 24, "Remarks." Any constraints on using any of these channels must be described in Item 24, "Remarks," e.g., degraded channels, internal hardwiring limitations or lockout capability for frequency hopping systems.

ITEM 8 - Emission Designator(s). Enter the emission designator(s) including the necessary bandwidth for each designator as described in Chapter 9 of the NTIA Manual, e.g., 16K0F3E. For systems with a frequency hopping mode as well as a non-hopping mode enter the emission designators for each mode. Identify each mode as hopping or non-hopping.

ITEM 9 - Frequency Tolerance. Enter the frequency tolerance, i.e., the maximum departure of a transmitter from its assigned frequency after normal warm-up time has been allowed. Indicate the units in parts per million (ppm) for all emission types except single sideband which shall be indicated in Hertz (Hz).

ITEM 10 - Filter Employed. Mark the appropriate block. Provide the characteristics of any filter used in Item 24, "Remarks."

ITEM 11 - Spread Spectrum. Mark the appropriate block. If "Yes," see instructions for Item 14.

ITEM 12 - Emission Bandwidth. Enter the emission bandwidths for which the transmitter is designed at the -3, -20, and -60 dB levels and the occupied bandwidth. The bandwidth at -40 dB shall also be entered for pulse radar transmitters. The emission bandwidth is defined as that appearing at the antenna terminals and includes any significant attenuation contributed by filtering in the output circuit or transmission lines. Values of emission bandwidth specified should be indicated as calculated or measured by marking the appropriate block. Indicate units used, e.g., Hz, kHz or MHz. Note that the Occupied Bandwidth (Item 12.e.) 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.

ITEM 13 - Maximum Bit Rate. Enter the maximum information bit rate for digital equipment, in bits per second. If spread spectrum is used, enter the bit rate after encoding.

ITEM 14 - Modulation Techniques and Coding. Describe in detail the modulation and/or coding techniques employed. For complex modulation schemes such as direct sequence spread spectrum, frequency hopping, frequency agile, etc., enter full details in Item 24, "Remarks."

ITEM 15 - Maximum Modulation Frequency. For frequency or phase modulated transmitter enter the maximum modulation or baseband frequency. This frequency is assumed to be the frequency at -3 dB point on the high frequency side of the modulator response curve. Indicate the units, e.g., Hz, kHz or MHz.

ITEM 16 - Pre-emphasis. For frequency or phase modulated transmitters mark the appropriate block to indicate whether pre-emphasis is available.

ITEM 17 - Deviation Ratio. For frequency or phase modulated transmitter enter the deviation ratio computed with the formula:

$$\text{Deviation Ratio} = \frac{\text{Maximum Frequency Deviation}}{\text{Maximum Modulation Frequency}}$$

ITEM 18 - Pulse Characteristics. For pulse modulated transmitters:

a. Enter the pulse repetition rate in pulses per second (pps).

b. Enter the pulse width at the half voltage levels in microseconds (usec).

c. Enter the pulse rise time in microseconds (usec). This is the time duration for the leading edge of the voltage pulse to rise from 10% to 90% of its peak amplitude.

d. Enter the pulse fall time in microseconds (usec). This is the time duration for the trailing edge of the voltage pulse to fall from 90% to 10% of its peak amplitude.

e. Enter the maximum pulse compression ratio, if applicable.

ITEM 19 - Power. Enter the mean power delivered to the antenna terminals for all AM and FM emissions, or the peak envelope power (PEP) for all other classes of emissions. If there are any unique situations such as interrupted CW, provide details in Item 24, "Remarks." Indicate the units, e.g., W or kW.

ITEM 20 - Output Device. Enter a description of the device used in the transmitter output stage, e.g., ceramic diode, reflex klystron, transistor or TWT.

ITEM 21 - Harmonic Level. Enter the harmonic level in dB relative to the fundamental of the 2nd and 3rd harmonics. Enter in Item c. the relative level in dB of the highest powered harmonic above the 3rd.

ITEM 22 - Spurious Level. Enter the maximum value of spurious emission in dB relative to the fundamental which occurs outside the -60 dB point on the transmitter fundamental emission spectrum (Item 12) and does not occur on a harmonic of the fundamental frequency.

ITEM 23 - FCC Type Acceptance No. Enter the FCC type acceptance number if applicable.