

Classification

TRANSMITTER EQUIPMENT CHARACTERISTICS

Page

1. Nomenclature, Manufacturer's Model No.		2. Manufacturer's Name	
3. Transmitter Installation		4. Transmitter Type	
5. Tuning Range	5b. Duplex spacing	6. Method of Tuning	
7. RF Channeling Capability		8. Emission Designator(s)	
9. Frequency Tolerance			
10. Filter Employed	Yes <input type="checkbox"/> No <input type="checkbox"/>	12. Emission Bandwidth	Calculated <input type="checkbox"/> Measured <input type="checkbox"/>
11. Spread Spectrum	Yes <input type="checkbox"/> No <input type="checkbox"/>	(a) -3 dB (b) -20 dB (c) -40 dB (d) -60 dB (e) OCCBW	
13. Maximum Bit Rate		15. Maximum Modulation Frequency	
14. Modulation Techniques and Coding		16. Pre-emphasis Yes <input type="checkbox"/> No <input type="checkbox"/>	
		17. Deviation Ratio	
18. Pulse Characteristics (a) Rate: (b) Width: (c) Rise Time: (d) Fall Time: (e) Comp Ratio:		19. Power (a) Mean (b) PEP	19b. Adjustable Power Yes <input type="checkbox"/> No <input type="checkbox"/>
21. Harmonic Level (a) 2nd (b) 3rd (c) Other		20. Output Device	
22. Spurious Level			
23. Remarks			

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1. Enter the government assigned equipment designation. If above is not available, enter the manufacturer's model number, e.g. MIT502, and complete item 2. If above is not available enter a short descriptive title, e.g. ATS-6 telemetry transmitter.
2. Enter if available. If a manufacturer's model number is listed in item 1, this item must be completed.
3. List specific type(s) of vehicle(s), ship(s), plane(s) or buildings(s) etc. where the transmitter(s) will be installed.
4. Enter the generic class of the transmitter, e.g. Frequency scan, Scan While Track Radar, Monopulse Tracker, AM or PM communications. In addition, for radar enter the radar type e.g. Non-FM Pulse, FM-Pulse, Frequency Hopping, CW or FM-CW.
5. 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 the frequency indicate units e.g. kHz, MHz or GHz.
6. Enter the method of tuning, e.g. crystal, synthesiser or cavity. If the equipment is not readily tuneable in the field. Indicate in Remarks (item 23) the complexity factors such as skill levels involved, major assemblies involved, time required and location (factory or depot) where equipment is to be tuned.
7. Describe the RF channelling capability. For uniformly spaced channels, enter the centre frequency of the first channel and channel spacing e.g. first channel 406MHz, 100kHz increments; for continuous tuning, enter the lowest frequency and the word "continuous"; for others, such as SSB or cases where channel selection is under software control, enter a detailed description in Remarks (23), e.g. degraded channels, internal hardwiring limitations or lockout capability for frequency hopping systems.
8. Enter the emission designator(s) including the necessary bandwidth for each designator 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 such as hopping or non-hopping.
9. 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 part per million (ppm) for all emission types except single side band, which shall be indicated in Hertz (Hz).
10. Check the appropriate box.
11. Check the appropriate box. If YES see instructions for item 14.
12. Enter the emission bandwidths for which the transmitter is designed at the -3, -20 and -60dB levels and the occupied bandwidth. The bandwidth at -40dB 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 checking the appropriate block. 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.
13. Enter the maximum information bit rate for digital equipment, in bits per second. If spread spectrum is used, enter the bit rate after encoding.
14. Describe in detail the modulation and/or coding techniques employed. For complex modulation schemes such as direct sequence spread spectrum, frequency hopping, frequency agile, provide information relating to hop rate, processing gain, clock rate, No of hop sets, No of frequencies per hop set, etc. If too lengthy, use item 23.
15. For frequency or phase-modulated transmitter, enter the maximum modulation or base band frequency. The frequency is assumed to be the frequency at -3dB point on the high frequency side of the modulator response curve. Indicate the units, e.g. Hz, kHz or MHz.
16. For frequency or phase modulated transmitter check the appropriate block to indicate whether pre-emphasis is available.
17. For frequency or phase modulated transmitter enter the deviation ratio computed with the formula:

$$\text{Deviation ratio} = \frac{\text{maximum frequency deviation}}{\text{maximum modulation frequency}}$$
18. 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 usec
 - c. enter the pulse rise time in microseconds (usec). This is the time duration for the loading 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.
 For coded pulse waveform see instructions for item 14.
19. 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 Remarks (23). Indicate the units e.g. W or kW.
20. Enter a description of the device used in the transmitter output stage e.g. ceramic diode, reflex klystron, transistor or TWT.
21. Enter the harmonic level of the 2nd and 3rd harmonics in dB relative to the fundamental. Enter in item (c) the relative level in dB of the highest-powered harmonic above the 3rd.
22. Enter the maximum value of spurious emission in dB relative to the fundamental which occurs outside the -60dB point on the transmitter fundamental emission spectrum (item 12) and does not occur on a harmonic of the fundamental emission spectrum (item 12) and does not occur on a harmonic of the fundamental frequency. Indicate in kHz or MHz the location of the spurious from the fundamental frequency.
23. Remarks.