



# Minimum Technical Requirements for Rapidly Procured Spectrum-Dependent Equipment

The Department of the Navy (DON) recognizes numerous challenges are associated with acquisitions supporting “urgent need” requirements. As such, the DON has developed minimum technical spectrum requirements that must be identified, known, and available to the DON’s naval forces before and during the fielding of rapidly procured Communications and Electronics (C-E) systems and devices. These minimum technical requirements are to be used only for rapid acquisitions supporting urgent need requirements and do not meet all Department of Defense requirements, including National Telecommunications Information Administration certification.

The rapid procurement of DON C-E devices and systems to support the Global War on Terror presents significant challenges for deployed Marine Corps and Navy forces. Devices and systems fielded prior to the identification of technical spectrum data often cause radio frequency interference to existing communications, navigation, and other mission critical capabilities. In this regard, all rapidly procured C-E devices requiring electromagnetic spectrum (radio frequencies), including radios, unmanned aerial and ground systems, and radio frequency jamming devices and systems, must be fielded with spectrum data that prevents radio frequency fratricide to existing C-E capabilities.

## The minimum technical spectrum requirements include:

### - Transmitter Tuning Range

Identify the frequency band or discrete frequency that is required for operation of the equipment/system. If applicable, identify the reference frequency (also known as the window or dial frequency) for suppressed or reduced carrier sideband. Identify the operating frequency band by noting the lower frequency and the upper frequency (separated by a dash) with below identified frequency unit indicator preceding the lower frequency. An upper frequency range unit indicator is required if the units of the upper frequency range is different from the units of the lower frequency range, e.g., 110. K2000-M35.

#### Indicator Description

K - if frequency is less than 30 MHz

M - if frequency is at least 30 MHz, but less than 100 GHz

G - if frequency is at least 100 GHz, but less than 3 THz

T - if frequency is 3 THz or greater.

Insert a decimal point only if there is a significant digit to the right of the decimal point.

#### Examples:

K17034 (a discrete frequency)

K6737.5(6736) (a discrete frequency with a reference frequency)

K2000-M30 (a frequency band)

### - Transmitter Tuning Increments

Identify the channel spacing (tuning increments) of the transmitter.

#### Example:

25 kHz (a common tuning increment for VHF and UHF radios)

### - Frequency Separation Requirements

Identify in MHz the required frequency separation between different radio sets operated at one transmitter or receiver location or if radio relay, identify the minimum frequency separation between the transmitter and receiver frequencies that must be observed. Enter the value in MHz. Use the following abbreviations and separate them with slashes:

TX - Transmitter    RX - Receiver

Example: TX/TX40MHZ/TX/RX100MHZ

### - Transmitter Power

Identify all known transmitter power data: Identify (1) carrier power (pZ) for A3E sound broadcasting in the broadcasting service, (2) mean power (pY) for other amplitude modulated emissions using unkeyed full carrier, and for all frequency modulated emissions, and (3) peak envelope power (pX) for all emission designators other than those referred to in (1) and (2) above, including C3F television (video only). Express the power to a maximum of five decimal places and precede the entry with the unit designator as follows:

#### Code Description

W - if power is less than 1000 watts

K - if power is at least 1 kW but less than 1000 kW

M - if power is at least 1 MW but less than 1000 MW

G - if power is 1 GW or greater.

Examples:            W0.5    K1.5

### - Operating Bandwidth

Identify the necessary bandwidth of the transmitter using four characters (three digits and a unit designator letter) with the unit designator in the position the decimal would normally occupy.

#### Code Description:

H - If the value is less than 1000 Hz

K - 1 kHz to values less than 1000 kHz

M - 1 MHz to values less than 1000 MHz

G - 1 GHz or greater.

Examples:            3K00    1M25

### - Modulation

Identify the modulation type of the transmitting signal

Examples:            FM        AM

### - Antenna Type

Identify the type of the antenna. If transmit and receive antenna are different, provide the type for both.

Examples:            Whip      Dipole

### - Antenna Gain

Identify the antenna gain (in decibels) with reference to an isotropic source (dBi) in the direction of maximum radiation. To identify negative gain enter a dash before the value of the gain. If transmit and receive antenna are different, provide the antenna gain for both separating the entries with a /.

Examples:            -10      20      1.5 TX/3 RX