Product Description

1.1 Product Description

The EUT is an 18 mW UHF transmitter and is battery powered. The transmitter is a frequency modulated device operating at one of two fixed frequencies. The transmitter operates at 469.500 and 469.550 MHz. The necessary bandwidth of the transmitted signal is 18 kHz. The emission designator is 18K0F2D.

The EUT is a part of a pipe locating system.

The transmitter receives data from a sensor that acts a pipe locator and sends data to a remote monitor. The sensor is a Model Number MPL-H5E sensor. The sensor receives a signal at 38 kHz. The remote monitor has a UHF receiver. The transmitter cannot send voice transmissions.

The RF amplifier finals are supplied with 4.6 VDC and draw a current of 11 milliamperes under normal operation. The EUT will only be used for data transmission.

The EUT uses only frequency modulation. The transmission is a single channel containing quantized information using a modulating subcarrier of 1.28 kHz. The data is encoded into the modulation signal as binary steps from 1.28 to 2.1 kHz with a peak to peak voltage of 1.4 Volts. The deviation is proportional to modulation signal amplitude. It sends only data transmissions. Therefore according to FCC part 2.201, the emissions designator is F2D. There are no provisions for any external or alternate modulating sources.

The 18 kHz authorized bandwidth specified is larger than necessary bandwidth. The maximum modulation frequency (M) measured is 2.1 kHz. The peak deviation (D) measured is 2.5 kHz. The manufacturer allowable signal distortion is 10 per cent. Therefore K is equal to 1.1. The necessary bandwidth is 2M+2DK or 9.7 kHz.

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