From: Ronald Center

To: Leann Nguyen
Date: September 21, 2010

Subject: FCC File# 0398-EX-PL-2010

Message:

In response to your inquiry the radar manufacturer has clarified the emission characteristics as follows. The maunfacturer has also revised the necessary bandwidth of the emission from 1G00 to 36M0, although the radar is able to operate across the entire band from 16.2 - 17.2 GHz. We will amend the application to reflect the revised emission bandwidth. The following emission explanation is quoted from the manufacturer representative, and includes the description of the X in the emission designator.

Revised Blighter radar emission code: 36M0WXN.

Emission Bandwidth

36M0 ? this denotes the necessary bandwidth. The necessary bandwidth is defined as the width of the frequency band for a given class of emission, which is just sufficient to ensure the transmission of information at the rate and with the quality required under specified conditions. Furthermore, DD Form 1494 goes on to state that the emission bandwidth should not include tuning or carrier movement. Although the Blighter radar operates over the range 16.2GHz to 17.2GHz (in order to scan over the require azimuth), this would involve tuning of the carrier frequency. Therefore the modulation bandwidth emission code is specified without carrier tuning.

Emission Classification Code ?WXN?

A) The first character describes the type of modulation. Blighter is FMCW. Although FM is a form of angle modulation the Blighter transmission consists of a series of FM chirps or pulses which are used to determine target range and velocity. Therefore the modulated signal consists of a series of frequency modulated pulses. Hence ?W? is the classification code that covers this case as the other class codes are quite specific to a single type of modulation (i.e Angle/FM or Amplitude or Pulse modulation only) and not combinations.

B) Regarding the classification ?X?:

1) The transmitted signal does contain a modulating signal, therefore we cannot use ?0?.

2) Information is defined as an ordered sequence of symbols. The transmitted chirp is a linear ramp consisting of, for want of a better description, 1 0 1 0 1 0 1 0 1 0 1 0?. There is zero information content in this ? i.e. it does not convey any meaningful data other than the ramp sequence. Because no information is transmitted, and by the definitions of the classification codes 1 to 9 which specify ?information?, this is why we cannot use these classes either.

3) Therefore ?X? is the only descriptor available.

C) N ? No information is transmitted

I hope that this provides the necessary information for processing this application. If you need anything else please let us know.

Sincerely,
Ron Center

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