

December 13, 2012

CKC Certification Services, LLC
Attn: Randy Clark
5046 Sierra Pines Drive
Mariposa, CA 95338

Subject: Application for Permissive Change of transmitter with FCC ID: BIB63020 and
Industry Canada ID IC: 1300A-63020

Dear Sir:

This regards a minor firmware change we propose to make in our 50 W PEP 220-222 MHz locomotive transceiver with the subject FCC and IC IDs and hereafter called the transmitter. Although the modified transmitter readily complies with all emissions limitations, there is some indication that one of the transmitter spurious emissions may have increased enough compared to the originally submitted measurements to warrant a type 2 permissive change. Therefore we are submitting this application and transmitter test data.

Please refer to Section 2 and Figure 1 of the operational description. Although not shown explicitly, the originally certified version of this transmitter generated two different sample clock frequencies for input to the direct digital synthesizer (DDS) that produces a carrier at twice the transmitter output frequency. The DDS sample clock frequency for the transmitter output frequency range 220.0125 to 220.9875 MHz was and is 1000 MHz. The alternate sample clock frequency was 960 MHz for the 221.0025 to 221.9875 MHz output range. Early in the product validation phase this feature was added to make the power of certain spurious transmitter outputs comply with the -25 dBm limit. Prior to certification and quantity production an additional analog filter was added to the transmitter carrier generation circuits that reduced transmitter spurs adequately and eliminated the need for the alternate DDS sample clock frequency.

We now propose to install our Release 1.3 firmware that eliminates the 960 MHz DDS clock frequency in favor of exclusively using the 1000 MHz sample clock frequency for all transmitter channels. This provides a desirable timing efficiency improvement in the digital packet messaging system operations of the transceiver. It also affects the transmitter spurious emission products to some extent, therefore we are submitting new test data.

We have not changed the transmitter in any other way, i.e., the RF power output, frequency range, modulation, occupied bandwidth, and channelization are the same as specified in the original submittal. Neither has the block diagram, schematics, parts list or user manual changed. The original RF exposure calculations and antenna specifications also still apply.



Because explicit mention of the alternate 960 MHz sampling clock frequency was inadvertently omitted from the operational description and block diagram as submitted, no change is required to those either.

Accompanying this letter is a test report and application for Permissive Change. The test report presents new transmitter conducted and radiated spurious emissions data that should replace the spurious emission data in Section 8.5 of TUV SUD America test report WC110224.4B Rev A for frequencies \geq 30 MHz. Test data collection was supervised by me.

Sincerely,

John F. "Fred" Cleveland
Principal RF Design Engineer