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Subject: Statement of Compliance to FCC 15.407 (C)

To Whom It May Concern:

The HZB-US5358-GX1 radio was designed with networking capability, which demands the radio to carry networking traffic (polling, reporting) on a constant basis. Therefore, the radio is designed to transmit all the time (when operational). We designed the product in such a way that whenever a radio hardware failure is detected, the system firmware turns off the radio transmitter.

A handwritten signature in black ink, appearing to read "Caroline Yu".

Caroline Yu

Homologation Manager
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Compliance with 15.407(g) frequency stability for HZB-U5358-GX1

The transmitter frequency stability of the HZB-US5358-GX1 is controlled by two reference oscillators, one controls the 748 MHz transmit modulator, and one controls the transmit up converter LO frequency synthesizer (maximum LO operating frequency = 5.1 GHz). The two TCXOs are identical, and operate at a frequency of 10 MHz. The stability of the TCXO for temperature from -30 to + 70 °C and other instantaneous effects is ± 4 ppm maximum. The effects of ageing or long term stability is ± 1 ppm per year.

Therefore the overall stability of the transmitter is equal the maximum error produced in the transmit modulator plus the maximum error produced in the LO frequency synthesizer.

Calculation:

Spec.	TCXO Stability	748 MHz TX Modulator error in Hz	5.1 GHz TX PLL error in Hz	Total error in Hz
Temp. $\pm$	4 ppm	2.99E+03	2.04E+04	2.34E+04
10 yrs. $\pm$	10 ppm	7.48E+03	5.10E+04	5.85E+04
Total@10yrs.	14 ppm	1.05E+04	7.14E+04	8.19E+04

The maximum total error possible after ten years is +/- 82 KHz.

- For the 5.725-5.825 GHz band, the lowest channel center frequency is 5741.5 MHz, with a 26dBc bandwidth of 16.6 MHz. The margin below the 26dBc points to the band edge is 8.2 MHz. The highest channel center frequency is 5808.5 MHz with a 26dBc width of 16.5 MHz. The margin above 26dBc points to the band edge is 8.25 MHz.
- For the 5.25-5.35 GHz band, the lowest channel center frequency is 5274 MHz, with a 26dBc bandwidth of 32.5 MHz. The margin below the 26dBc points to the band edge is 7.75 MHz. The highest channel center frequency is 5326 MHz with a 26dBc width of 32.2 MHz. The margin above 26dBc points to the band edge is 7.9 MHz.
- Therefore, the frequency stability of the HZB-US5358-GX1 product ensures the compliance to 15.407(g).

Caroline Yu

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