5. RF EXPOSURE EVALUATION

5.1 Applicable Standard

According to §1.1310, systems operating under the provisions of this section shall be operated in a manner that ensure that the public is not exposed to radio frequency energy level in excess of the Commission's guideline.

According to KDB447498 D01 General RF Exposure Guidance v06:

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:
[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] · [√f(GHz)] ≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, where

- f(GHz) is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- The result is rounded to one decimal place for comparison
- 3.0 and 7.5 are referred to as the numeric thresholds in the step 2 below

The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm according to 5) in section 4.1 is applied to determine SAR test exclusion.

5.2 Measurement Result

The max Field Strength of Fundamental is 99.59 dBμV/m at 3m,
EIRP (dBm)=Field Strength of Fundamental(dBuV/m)-95.2 = 99.59 -95.2 =4.39 dBm.
Conducted power (dBm) = EIRP –Antenna gain(dBi) = 4.39-0=4.39 dBm.

So the max conducted power including tune-up tolerance is 5 dBm (3.16 mW).
[(max. power of channel, mW)/(min. test separation distance, mm)][√f(GHz)]
=3.16/5*(√2.452) = 1.0< 3.0

Result: Compliant. The stand-alone SAR test is not necessary.