## 5.10. Conducted Emissions

The frequency spectrum from 0.15 MHz to 30 MHz was investigated. The LISN used was 50 ohm / 50 u Henry as specified by section 5.1 of ANSI C63.4-2014. Cables and peripherals were moved to find the maximum emission levels for each frequency.

#### <u>Limit</u>

#### FCC part 15.107(a)

Frequency of Emission (MHz)	Conducted Limit (dBµV)	
	Quasi-peak	Average
0.15-0.5	66 to 56 *	56 to 46 *
0.5-5	56	46
5-30	60	50

#### **TEST CONFIGURATION**



## TEST PROCEDURE

- 1 The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. The EUT is a tabletop system; a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.4-2014.
- 2 Support equipment, if needed, was placed as per ANSI C63.4-2014.
- 3 All I/O cables were positioned to simulate typical actual usage as per ANSI C63.4-2014.
- 4 If a EUT received AC120V/60Hz power through a Line Impedance Stabilization Network (LISN) which supplied power source and was grounded to the ground plane.
- 5 All support equipments received AC power from a second LISN, if any
- 6 The EUT test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
- 7 Analyzer / Receiver scanned from 150 kHz to 30MHz for emissions in each of the test modes.
- 8 During the above scans, the emissions were maximized by cable manipulation.

## TEST MODE:

Please reference to the section 3.4

## TEST RESULTS

#### ☑ Passed □ Not Applicable

Note:

Have pre-tested RX1 to RX3 mode, record the worst case mode RX3 on the report.





## 5.11. Radiated Emission

## <u>LIMIT</u>

For unintentional device, according to § 15.109(a) except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

Frequency (MHz)	Distance (Meters)	Radiated (dBµV/m)	Radiated (µV/m)
30-88	3	40.0	100
88-216	3	43.5	150
216-960	3	46.0	200
Above 960	3	54.0	500

For intentional device, according to § 15.209(a), the general requirement of field strength of radiated emissions from intentional radiators at a distance of 3 meters shall not exceed the above table.

## **TEST CONFIGURATION**

(A) Radiated Emission Test Set-Up, Frequency below 1000MHz



0.8m

#### TEST PROCEDURE

Receiver+

Ground Plane

- 1 The EUT was placed on a turn table which is 0.8m above ground plane.
- 2 Maximum procedure was performed by raising the receiving antenna from 1m to 4m and rotating the turn table from 0°C to 360°C to acquire the highest emissions from EUT
- 3 And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.

Coaxial Cable+

4 Repeat above procedures until all frequency measurements have been completed.

#### TEST MODE:

Please reference to the section 3.4

## TEST RESULTS

## ☑ Passed □ Not Applicable

Note:

- 1. The EUT shall be scanned from 30 MHz to the 5th harmonic of the highest oscillator frequency in the digital devices or 1 GHz whichever is higher.
- 2. Have pre-tested RX1 to RX3mode, record the worst case mode RX1 on the report.





# 6. <u>Test Setup Photos of the EUT</u>

Transmitter Radiated Spurious Emission:



Radiated Emission:



Conducted Emission:



Frequency stability:



## 7. External and Internal Photos of the EUT

Reference to the test report No.: TRE1704000101

-----End of Report------