**SK TECH CO., LTD.**



# TEST REPORT

| | | | |
|---|---|---|---|
| **Test Report No.:** | **SKTRFC-120905-018** | | |
| **Applicant:** | **Nokia Corporation** | | |
| **Applicant Address:** | Joensuunkatu 7E P.O. Box 86 Salo FIN-24100 Finland | | |
| **Manufacturer:** | **Nokia Corporation** | | |
| **Manufacturer Address:** | Joensuunkatu 7E P.O. Box 86 Salo FIN-24100 Finland | | |
| **Device Under Test:** | **Nokia wireless charging plate DT-900** | | |
| **FCC ID:** | **PYADT-900** | **Model Name:** | **DT-900** |
| **Variant Model Name:** | - | | |
| **Brand/Trade Name:** | - | | |
| **Receipt No.:** | SKTEU12-1091 | **Date of receipt:** | August 17, 2012 |
| **Date of Issue:** | September 5, 2012 | | |
| **Location of Testing:** | **SK TECH CO., LTD.**<br>#820-2, Wolmoon-ri, Wabu-up, Namyangju-si, Kyunggi-do, 472-905 South Korea | | |
| **Test Procedure:** | **ANSI C63.4-2003** | | |
| **Test Specification:** | **47CFR, FCC Part 15 Rules** | | |
| **FCC Equipment Class:** | **DCD - Part 15 Low Power Transmitter Below 1705kHz**<br>**RSS-210 Issue 8: Category I Equipment** | | |
| **Test Result:** | The above-mentioned device has been tested and passed. | | |

**Tested & Reported by:** *Jungtae Kim*

*September 5, 2012*

*Signature* *Date*

**Approved by:** *Jongsoo Yoon*

*September5, 2012*

*Signature* *Date*

| | |
|---|---|
| **Other Aspects:** | - |
| **Abbreviations:** | · **OK, Pass = passed** · **Fail = failed** · **N/A = not applicable** |

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# 1. GENERAL

These tests were performed using the test procedure outlined in ANSI C63.4-2003 for intentional radiators, and in accordance with the limits set forth in FCC Part 15.209 and RSS-210.
The EUT (Equipment Under Test) has been shown to be capable of compliance with the applicable technical standards.

We attest to the accuracy of data. All measurements reported herein were performed by SK TECH CO., LTD. and were made under Chief Engineer's supervision.
We assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

# 2. TEST SITE

SK TECH Co., Ltd.

## 2.1 Location

#820-2, Wolmoon-ri, Wabu-up, Namyangju-si, Kyunggi-do, 472-905 South Korea
(FCC Registered Test Site Number: 938639)
(OPEN AREA TEST SITE INDUSTRY CANADA NUMBER: IC 5429A-1)

This laboratory is also notified to FCC by RRA as a Conformity Assessment Body, and designated to perform compliance testing on equipment subject to Declaration of Conformity (DOC) and Certification under Parts 15 and 18 of the FCC Rules. Designation number: KR0007

## 2.2 List of Test and Measurement Instruments

| No. | Description | Manufacturer | Model No. | Serial No. | Calibrated until | Used |
|---|---|---|---|---|---|---|
| 1 | Spectrum Analyzer | Agilent | E4405B | US40520856 | 2013.03 | |
| 2 | Spectrum Analyzer | Agilent | E4440A | MY46186322 | 2013.03 | ☒ |
| 3 | EMC Spectrum Analyzer | Agilent | E7405A | US40240203 | 2013.03 | |
| 4 | EMI Test Receiver | Rohde&Schwarz | ESPI7 | 101206 | 2013.07 | ☒ |
| 5 | EMI Test Receiver | Rohde&Schwarz | ESHS10 | 862970/019 | 2013.07 | ☒ |
| 6 | Artificial Mains Network | Rohde&Schwarz | ESH2-Z5 | 834549/011 | 2013.07 | ☒ |
| 7 | Pre-amplifier | HP | 8447F | 3113A05153 | 2013.07 | ☒ |
| 8 | Pre-amplifier | MITEQ | AFS44 | 1116321 | 2012.12 | |
| 9 | Pre-amplifier | MITEQ | AFS44 | 1116322 | 2013.07 | |
| 10 | Power Meter | Agilent | E4417A | MY45100426 | 2013.07 | |
| 11 | Power Meter | Agilent | E4418B | US39402176 | 2013.07 | |
| 12 | Power Sensor | Agilent | E9327A | MY44420696 | 2013.07 | |
| 13 | Power Sensor | Agilent | 8482A | MY41094094 | 2013.07 | |
| 14 | Attenuator (10dB) | HP | 8491B | 38067 | 2013.07 | |
| 15 | High Pass Filter | Wainwright | WHKX3.0/18G | 8 | 2013.07 | |
| 16 | VHF Precision Dipole Antenna (TX/RX) | Schwarzbeck | VHAP | 1014 / 1015 | 2012.11 | |
| 17 | UHF Precision Dipole Antenna (TX/RX) | Schwarzbeck | UHAP | 989 / 990 | 2012.11 | |
| 18 | Loop Antenna | Schwarzbeck | HFH2-Z2 | 863048/019 | 2013.01 | ☒ |
| 19 | TRILOG Broadband Antenna | Schwarzbeck | VULB9168 | 189 | 2013.05 | ☒ |
| 20 | Horn Antenna | AH Systems | SAS-200/571 | 304 | N/A | |
| 21 | Horn Antenna | EMCO | 3115 | 00040723 | 2013.04 | |
| 22 | Horn Antenna | EMCO | 3115 | 00056768 | 2012.09 | |
| 23 | Horn Antenna | Schwarzbeck | BBHA9170 | BBHA9170318 | 2013.09 | |
| 24 | Vector Signal Generator | Agilent | E4438C | MY42080359 | 2013.07 | |
| 25 | PSG analog signal generator | Agilent | E8257D-520 | MY45141255 | 2013.07 | |
| 26 | DC Power Supply | HP | 6622A | 3348A03223 | 2013.07 | |
| 27 | DC Power Supply | HP | 6633A | 3325A04972 | 2013.07 | |
| 28 | Hygro/Thermo Graph | SATO | PC-5000TRH-II | - | 2013.07 | ☒ |
| 29 | Temperature/Humidity Chamber | All Three | ATM-50M | 20030425 | 2013.03 | |
| 30 | Temperature/Humidity Chamber | DAEJIN | DJ-THC02 | 06071 | 2013.03 | |

## 2.3 Test Date

Date of Test: August 21, 2012 ~ August 23, 2012

## 2.4 Test Environment

See each test item's description.

# 3. DESCRIPTION OF THE EQUIPMENT UNDER TEST

The product specification described herein was obtained from the product data sheet or user's manual.

## 3.1 Rating and Physical Characteristics

| | |
|---|---|
| Power source | DC 12 V / 0.75 A(from AC Power adapter) |
| Local Oscillator or X-Tal | 32.768 kHz, 16 MHz |
| Transmit Frequency | 112 kHz ~ 205 kHz |
| Antenna Type | Integral loop antenna |
| Type of Modulation | - |
| RF Output power | 73.81 dBμV/m(PEAK)<br>(measured @ 3m) |
| External Ports | DC INPUT |

## 3.2 Equipment Modifications

None

## 3.3 Submitted Documents

Block diagram

Schematic diagram

Part List

User manual

# 4. MEASUREMENT CONDITIONS

## 4.1 Description of test configuration

The measurements were taken in normal operating/charging mode; continuously transmitting mode. The operating frequency was adjusted by placing the Receiver unit (wireless charging battery cover) on the Transmitter, according to the coil coupling efficiencies of both the charging and receiving loops in the Transmitter unit and Receiver unit.

## 4.2 List of Peripherals

| Equipment Type | Manufacturer | Model | S/N |
|---|---|---|---|
| Receiver unit | Nokia Corporation | - | - |
| Mobile phone | Nokia Corporation | N8 | - |
| - | - | - | - |

## 4.3 Type of Used Cables

| # | START | | END | | CABLE | |
|---|---|---|---|---|---|---|
| | NAME | I/O PORT | NAME | I/O PORT | LENGTH(m) | SHIELDED |
| 1 | EUT | DC Input | AC Adapter | DC Output | 1.75 | - |
| 2 | AC Adapter | AC Input | AC mains | - | - | - |

## 4.4 Uncertainty

| Measurement Item | Combined Standard Uncertainty<br>*Uc* | Expanded Uncertainty<br>$U = k \times Uc$ ($k = 2$) |
|---|---|---|
| Radiated disturbance | ± 2.30 dB | ± 4.60 dB |
| Conducted disturbance | ± 1.96 dB | ± 3.92 dB |

# 5. TEST AND MEASUREMENTS

**Summary of Test Results**

| Requirement | FCC, 47CFR15 | RSS Standards | Report Section | Test Result |
|---|---|---|---|---|
| Antenna Requirement | 15.203 | RSS-Gen, 7.1.2 | 5.1 | PASS |
| Radiated Spurious Emissions | 15.209 | RSS-Gen, 7.2.5 | 5.2 | PASS |
| Occupied Bandwidth | N/A | RSS-Gen, 4.6.1 | 5.3 | PASS |
| AC Power Line Conducted Emissions | 15.207 | RSS-Gen, 7.2.4 | 5.4 | PASS |

## 5.1 ANTENNA REQUIREMENT

### 5.1.1 Regulation / IC RSS-Gen 7.1.2

FCC section 15.203, An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of Part 15C. The manufacturer may design the unit so that the user can replace a broken antenna, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of Sections 15.211, 15.213, 15.217, 15.219, or 15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with Section 15.31 (d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this Part are not exceeded.

### 5.1.2 Result: PASS

The EUT has an integral loop coil antenna, and meets the requirements of this section.

# 5.2 RADIATED EMISSIONS

## 5.2.1 Regulation

**FCC 47CFR15 – 15.209 / RSS-Gen Section 7.2.5, Table 6**

(a) Except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

| Frequency (MHz) | Field strength limit (μV/m) | Field strength limit (dBμV/m) | Measurement Distance (m) |
|---|---|---|---|
| 0.009 – 0.490 | 2400/F (kHz) = 266.7 – 4.9 | 48.5 – 13.8 | 300 |
| 0.490 – 1.705 | 24000/F (kHz) = 49.0 – 14.1 | 33.8 – 23.0 | 30 |
| 1.705 – 30.0 | 30 | 29.5 | 30 |
| 30 – 88 | 100 | 40.0 | 3 |
| 88 – 216 | 150 | 43.5 | 3 |
| 216 – 960 | 200 | 46.0 | 3 |
| Above 960 | 500 | 54.0 | 3 |

* The emission limits shown in the above table are based on measurement instrumentation employing a CISPR quasi-peak detector. For the frequency bands 9 – 90 kHz, 110 – 490 kHz and above 1000 MHz, the radiated emission limits are based on measurements employing an average detector.

* The lower limit shall apply at the transition frequencies.

## 5.2.2 Measurement Procedure

### Radiated Emissions Test, 9 kHz to 30 MHz (Magnetic Field Test)

1. The preliminary radiated measurements were performed to determine the frequency producing the maximum emissions at a distance of 1 meter or 3 meters according to Section 15.31(f)(2).
2. The EUT was placed on the top of the 0.8-meter height, 1 × 1.5 meter non-metallic table.
3. Emissions from the EUT are maximized by adjusting the orientation of the Loop antenna and rotating the EUT on the turntable. Manipulating the system cables also maximizes EUT emissions if applicable.
4. To obtain the final measurement data, each frequency found during preliminary measurements was re-examined and investigated. The test-receiver system was set up to average, peak, and quasi-peak detector function with specified bandwidth.

### Radiated Emissions Test, above 30 MHz

1. The preliminary radiated measurements were performed to determine the frequency producing the maximum emissions in an anechoic chamber at a distance of 3 meters.
2. The EUT was placed on the top of the 0.8-meter height, 1 × 1.5 meter non-metallic table. To find the maximum emission levels, the height of a measuring antenna was changed and the turntable was rotated 360˚.
3. The antenna polarization was also changed from vertical to horizontal. The spectrum was scanned from 30 to 1000 MHz using the TRILOG broadband antenna.
4. To obtain the final measurement data, the EUT was arranged on a turntable situated on a 4 × 4 meter at the Open Area Test Site. The EUT was tested at a distance 3 meters.

5. Each frequency found during preliminary measurements was re-examined and investigated. The test-receiver system was set up to average, peak, and quasi-peak detector function with specified bandwidth.
6. The EUT is situated in three orthogonal planes (if appropriate)
7. The presence of ambient signals was verified by turning the EUT off. In case an ambient signal was detected, the measurement bandwidth was reduced temporarily and verification was made that an additional adjacent peak did not exist. This ensures that the ambient signal does not hide any emissions from the EUT.

### 5.2.3 Calculation of the field strength limits below 30 MHz

1. No special calculation for obtaining the field strength in dBμV/m is necessary, because the EMI receiver and the active loop antenna operate as a system, where the reading gives directly the field strength result (dBμV/m). The antenna factors and cable losses are already taken into consideration.
2. For test distance other than what is specified, but fulfilling the requirements of section 15.31 (f) (2) the field strength is calculated by adding additionally an extrapolation factor of 40dB/decade (inverse linear distance for field strength measurements).
3. All following emission measurements were performed using the test receiver's average, peak, and quasi-peak detector function with specified bandwidth.
4. The basic equation is as follows;

FS= RA + DF

Where

FS = Field strength in dBμV/m

RA = Receiver Amplitude in dBμV/m

DF = Distance Extrapolation Factor in dB

Where $DF = 40\log(D_{TEST} / D_{SPEC})$ where $D_{TEST}$ = Test Distance and $D_{SPEC}$ = Specified Distance

DF = 40log(3m/300m) = -80dB, for frequency band: 0.009 to 0.490MHz

DF = 40log(3m/30m) = -40dB, for frequency band: 0.490 to 30MHz

**5.2.4 Test Results:** **PASS**

**Table 1: Field strength below 30 MHz**

| Frequency [kHz] | RBW [kHz] | Reading [dB(μV/m)] | Cable Loss [dB] | Actual [dB(μV/m)] | Limit (at 3m) [dB(μV/m)] | Margin [dB] | |
|---|---|---|---|---|---|---|---|
| **Emissions (Average Detector)** | | | | | | | |
| 132.22 | 0.2 | 69.81 | 0.3 | 70.11 | 105.2 | 35.09 | Operating at 132.22 kHz |
| 391.22 | 9 | 44.52 | 0.3 | 44.82 | 95.8 | 50.98 | |
| | | | | | | | |
| 162.80 | 9 | 58.07 | 0.3 | 58.37 | 103.4 | 45.03 | Operating at 162.80 kHz |
| | | | | | | | |
| 203.12 | 9 | 57.47 | 0.3 | 57.77 | 101.4 | 43.63 | Operating at 203.12 kHz |
| | | | | | | | |
| **Emissions (Peak Detector)** | | | | | | | |
| 132.22 | 0.2 | 73.51 | 0.3 | 73.81 | 125.2 | 51.39 | Operating at 132.22 kHz |
| 391.22 | 9 | 45.16 | 0.3 | 45.46 | 115.8 | 70.34 | |
| | | | | | | | |
| 162.80 | 9 | 59.65 | 0.3 | 59.95 | 123.4 | 63.45 | Operating at 162.80 kHz |
| | | | | | | | |
| 203.12 | 9 | 59.10 | 0.3 | 59.40 | 121.4 | 62.00 | Operating at 203.12 kHz |
| | | | | | | | |
| **Emissions (Quasi-peak Detector); Frequency within 90 kHz ~ 110 kHz and above 490 kHz** | | | | | | | |
| 656.5 | 9 | 44.13 | 0.3 | 43.83 | 71.3 | 27.47 | Operating at 132.22 kHz |
| 918.6 | 9 | 44.02 | 0.3 | 43.72 | 68.3 | 24.58 | |
| | | | | | | | |
| 822.6 | 9 | 45.26 | 0.3 | 44.96 | 69.3 | 24.34 | Operating at 162.80 kHz |

**Actual (dBμV/m) = Reading + Cable Loss**

**Margin (dB) = Limit – Actual**

NOTE: The tests were performed at the 3 m distance.

**Table 2: Measured values of the Field strength (above 30 MHz)**

| Frequency [MHz] | RBW [kHz] | POL [V/H] | ANT [m] | Reading [dBμV] | AMP [dB] | AF [dB/m] | CL [dB] | Actual [dBμV/m] | Limit [dBμV/m] | Margin [dB] |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |
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| | | | | | | | | | | |

***No Spurious Radiated Emissions Found***

**Margin (dB) = Limit – Actual**

**[Actual = Reading + AF + CL]**

1. H = Horizontal, V = Vertical Polarization
2. AF/CL = Antenna Factor and Cable Loss

NOTE: 1. All emissions not reported were more than 20 dB below the specified limit or in the noise floor.

2. The tests were performed at the 3 m distance.

# 5.3 OCCUPIED BANDWIDTH

## 5.3.1 Regulation

**[RSS-Gen, Issue 3 – 4.6.1]**

When an occupied bandwidth value is not specified in the applicable RSS, the transmitted signal bandwidth to be reported is to be its 99% emission bandwidth, as calculated or measured.

The transmitter shall be operated at its maximum carrier power measured under normal test conditions.

The span of the analyzer shall be set to capture all products of the modulation process, including the emission skirts.

The resolution bandwidth shall be set to as close to 1% of the selected span as is possible without being below 1%.

The video bandwidth shall be set to 3 times the resolution bandwidth.

Video averaging is not permitted. Where practical, a sampling detector shall be used given that a peak or peak hold may produce a wider bandwidth than actual.

The trace data points are recovered and directly summed in linear terms. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5% of the total is reached and that frequency recorded. The process is repeated for the highest frequency data points. This frequency is recorded.

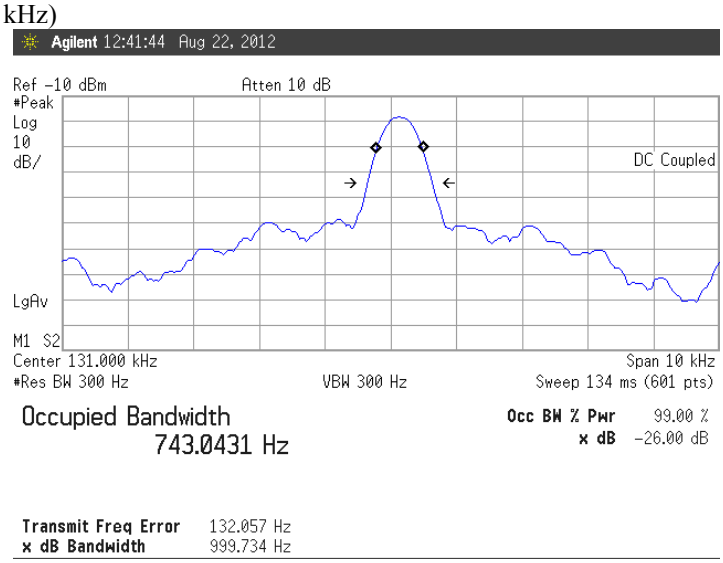
The span between the two recorded frequencies is the occupied bandwidth.

## 5.3.2 Test Results: PASS

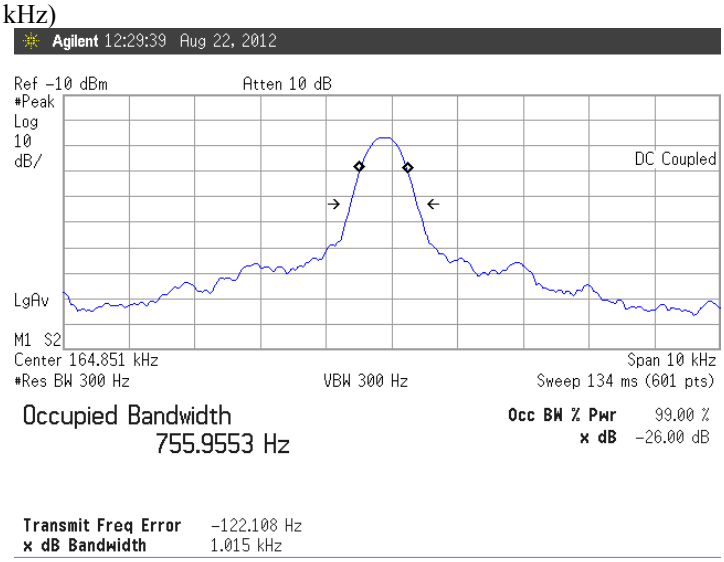
| Operating frequency (kHz) | RBW (kHz) | 99% BW (kHz) | Limit (kHz) |
|---|---|---|---|
| 132.22 | 0.3 | 0.743 | - |
| 162.80 | 0.3 | 0.756 | - |
| 203.12 | 0.3 | 0.773 | - |

**Figure 1. Plot of the Maximum Peak Output Power (Conducted)**

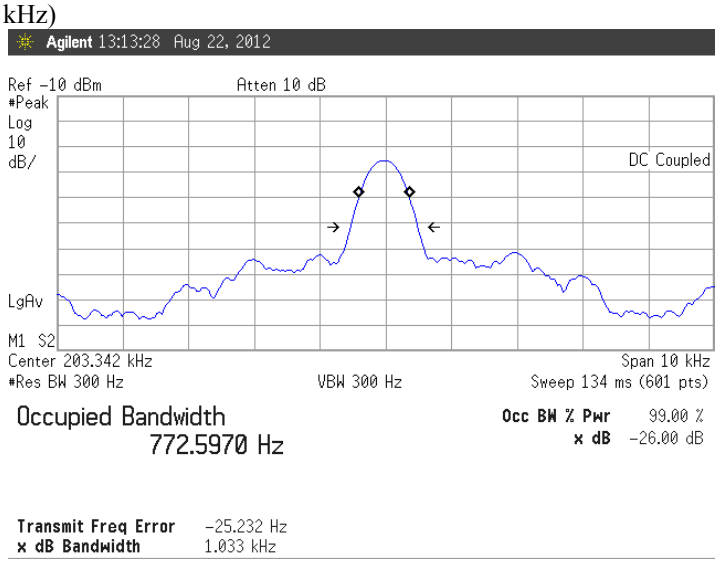
Lowest Channel (132.22 kHz)




Middle Channel (162.80 kHz)




Highest Channel (203.12 kHz)



# 5.4 AC POWER LINE CONDUCTED EMISSIONS

## 5.4.1 Regulation

**FCC 47CFR15 – 15.207(a) / IC RSS-Gen, 7.2.4**

According to §15.207(a), for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50μH/50Ω line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

| Frequency of emission (MHz) | Conducted limit (dBμV) | |
|---|---|---|
| | Qausi-peak | Average |
| 0.15 – 0.5 | 66 to 56 * | 56 to 46 * |
| 0.5 – 5 | 56 | 46 |
| 5 – 30 | 60 | 50 |

* Decreases with the logarithm of the frequency.

## 5.4.2 Test Procedure

1. The EUT was placed on a wooden table of size, 1 m by 1.5 m, raised 80 cm in which is located 40 cm away from the vertical wall and 1.5m away from the side wall of the shielded room.
2. Each current-carrying conductor of the EUT power cord was individually connected through a 50Ω/50μH LISN, which is an input transducer to a Spectrum Analyzer or an EMI/Field Intensity Meter, to the input power source.
3. Exploratory measurements were made to identify the frequency of the emission that had the highest amplitude relative to the limit by operating the EUT in a range of typical modes of operation, cable position, and with a typical system equipment configuration and arrangement. Based on the exploratory tests of the EUT, the one EUT cable configuration and arrangement and mode of operation that had produced the emission with the highest amplitude relative to the limit was selected for the final measurement.
4. The final test on all current-carrying conductors of all of the power cords to the equipment that comprises the EUT (but not the cords associated with other non-EUT equipment is the system) was then performed over the frequency range of 0.15 MHz to 30 MHz.
5. The measurements were made with the detector set to PEAK amplitude within a bandwidth of 10 kHz or to QUASI-PEAK and AVERAGE within a bandwidth of 9 kHz. The EUT was in transmitting mode during the measurements.

**5.4.3 Test Results:** **PASS**

**Table 3: Measured values of the Conducted Emissions**

| Frequency [MHz] | Reading [dBμV] | L / N | CF [dB] | CL [dB] | Actual [dBμV] | Limit [dBμV] | Margin [dB] |
|---|---|---|---|---|---|---|---|
| **QUASI-PEAK DATA(Operating at 132.22 kHz)** | | | | | | | |
| 0.495 | 44.90 | L | 0.22 | 0.04 | 45.16 | 56.08 | 10.92 |
| 0.575 | 48.98 | L | 0.22 | 0.04 | 49.24 | 56.00 | 6.76 |
| 0.580 | 44.44 | N | 0.22 | 0.04 | 44.70 | 56.00 | 11.30 |
| 0.660 | 48.98 | L | 0.23 | 0.04 | 49.25 | 56.00 | 6.75 |
| 0.740 | 47.12 | L | 0.22 | 0.04 | 47.38 | 56.00 | 8.62 |
| 0.825 | 48.20 | L | 0.19 | 0.05 | 48.44 | 56.00 | 7.56 |
| 0.825 | 44.66 | N | 0.23 | 0.05 | 44.94 | 56.00 | 11.06 |
| 1.650 | 43.48 | L | 0.26 | 0.08 | 43.82 | 56.00 | 12.18 |
| 1.815 | 43.46 | L | 0.26 | 0.08 | 43.80 | 56.00 | 12.20 |
| 1.895 | 43.90 | L | 0.27 | 0.09 | 44.26 | 56.00 | 11.74 |
| 2.970 | 40.98 | L | 0.31 | 0.14 | 41.43 | 56.00 | 14.57 |
| | | | | | | | |
| | | | | | | | |
| **AVERAGE DATA(Operating at 132.22 kHz)** | | | | | | | |
| 0.495 | 36.38 | L | 0.22 | 0.04 | 36.64 | 46.08 | 9.44 |
| 0.575 | 39.32 | L | 0.22 | 0.04 | 39.58 | 46.00 | 6.42 |
| 0.580 | 31.08 | N | 0.22 | 0.04 | 31.34 | 46.00 | 14.66 |
| 0.660 | 38.68 | L | 0.23 | 0.04 | 38.95 | 46.00 | 7.05 |
| 0.740 | 37.10 | L | 0.22 | 0.04 | 37.36 | 46.00 | 8.64 |
| 0.825 | 39.84 | L | 0.19 | 0.05 | 40.08 | 46.00 | 5.92 |
| 0.825 | 32.99 | N | 0.23 | 0.05 | 33.27 | 46.00 | 12.73 |
| 1.650 | 33.68 | L | 0.26 | 0.08 | 34.02 | 46.00 | 11.98 |
| 1.815 | 34.11 | L | 0.26 | 0.08 | 34.45 | 46.00 | 11.55 |
| 1.895 | 33.75 | L | 0.27 | 0.09 | 34.11 | 46.00 | 11.89 |
| 2.970 | 30.08 | L | 0.31 | 0.14 | 30.53 | 46.00 | 15.47 |
| | | | | | | | |
| | | | | | | | |

**Margin (dB) = Limit – Actual**
**[Actual = Reading + CF + CL]**
L/N = LINE / NEUTRAL
CF/CL = Correction Factor and Cable Loss

NOTE: All emissions not reported were more than 20 dB below the specified limit.

**Table 3: Measured values of the Conducted Emissions**

| Frequency [MHz] | Reading [dBμV] | L / N | CF [dB] | CL [dB] | Actual [dBμV] | Limit [dBμV] | Margin [dB] |
|---|---|---|---|---|---|---|---|
| **QUASI-PEAK DATA(Operating at 162.80 kHz)** | | | | | | | |
| 0.495 | 44.94 | L | 0.22 | 0.04 | 45.20 | 56.08 | 10.88 |
| 0.575 | 49.08 | L | 0.22 | 0.04 | 49.34 | 56.00 | 6.66 |
| 0.655 | 47.60 | L | 0.23 | 0.04 | 47.87 | 56.00 | 8.13 |
| 0.660 | 44.18 | N | 0.23 | 0.04 | 44.45 | 56.00 | 11.55 |
| 0.740 | 47.22 | L | 0.22 | 0.04 | 47.48 | 56.00 | 8.52 |
| 0.825 | 48.20 | L | 0.19 | 0.05 | 48.44 | 56.00 | 7.56 |
| 0.825 | 44.18 | N | 0.23 | 0.05 | 44.46 | 56.00 | 11.54 |
| 0.905 | 43.84 | L | 0.17 | 0.06 | 44.07 | 56.00 | 11.93 |
| 1.730 | 44.58 | L | 0.26 | 0.08 | 44.92 | 56.00 | 11.08 |
| 1.815 | 42.98 | L | 0.26 | 0.08 | 43.32 | 56.00 | 12.68 |
| 2.885 | 41.54 | L | 0.31 | 0.13 | 41.98 | 56.00 | 14.02 |
| | | | | | | | |
| | | | | | | | |
| **AVERAGE DATA(Operating at 162.80 kHz)** | | | | | | | |
| 0.495 | 36.43 | L | 0.22 | 0.04 | 36.69 | 46.08 | 9.39 |
| 0.575 | 39.40 | L | 0.22 | 0.04 | 39.66 | 46.00 | 6.34 |
| 0.655 | 37.39 | L | 0.23 | 0.04 | 37.66 | 46.00 | 8.34 |
| 0.660 | 30.93 | N | 0.23 | 0.04 | 31.20 | 46.00 | 14.80 |
| 0.740 | 37.15 | L | 0.22 | 0.04 | 37.41 | 46.00 | 8.59 |
| 0.825 | 39.92 | L | 0.19 | 0.05 | 40.16 | 46.00 | 5.84 |
| 0.825 | 32.91 | N | 0.23 | 0.05 | 33.19 | 46.00 | 12.81 |
| 0.905 | 33.97 | L | 0.17 | 0.06 | 34.20 | 46.00 | 11.80 |
| 1.730 | 34.78 | L | 0.26 | 0.08 | 35.12 | 46.00 | 10.88 |
| 1.815 | 34.18 | L | 0.26 | 0.08 | 34.52 | 46.00 | 11.48 |
| 2.885 | 30.98 | L | 0.31 | 0.13 | 31.42 | 46.00 | 14.58 |
| | | | | | | | |
| | | | | | | | |

**Margin (dB) = Limit – Actual**
**[Actual = Reading + CF + CL]**
L/N = LINE / NEUTRAL
CF/CL = Correction Factor and Cable Loss

NOTE: All emissions not reported were more than 20 dB below the specified limit.

**Table 3: Measured values of the Conducted Emissions**

| Frequency [MHz] | Reading [dBμV] | L / N | CF [dB] | CL [dB] | Actual [dBμV] | Limit [dBμV] | Margin [dB] |
|---|---|---|---|---|---|---|---|
| **QUASI-PEAK DATA(Operating at 203.12 kHz)** | | | | | | | |
| 0.495 | 44.84 | L | 0.22 | 0.04 | 45.10 | 56.08 | 10.98 |
| 0.575 | 49.06 | L | 0.22 | 0.04 | 49.32 | 56.00 | 6.68 |
| 0.575 | 45.10 | N | 0.22 | 0.04 | 45.36 | 56.00 | 10.64 |
| 0.660 | 49.00 | L | 0.23 | 0.04 | 49.27 | 56.00 | 6.73 |
| 0.740 | 47.20 | L | 0.22 | 0.04 | 47.46 | 56.00 | 8.54 |
| 0.825 | 47.62 | L | 0.19 | 0.05 | 47.86 | 56.00 | 8.14 |
| 1.650 | 42.64 | L | 0.26 | 0.08 | 42.98 | 56.00 | 13.02 |
| 1.730 | 44.48 | L | 0.26 | 0.08 | 44.82 | 56.00 | 11.18 |
| 1.810 | 41.30 | N | 0.27 | 0.08 | 41.65 | 56.00 | 14.35 |
| 2.965 | 42.40 | L | 0.31 | 0.14 | 42.85 | 56.00 | 13.15 |
| | | | | | | | |
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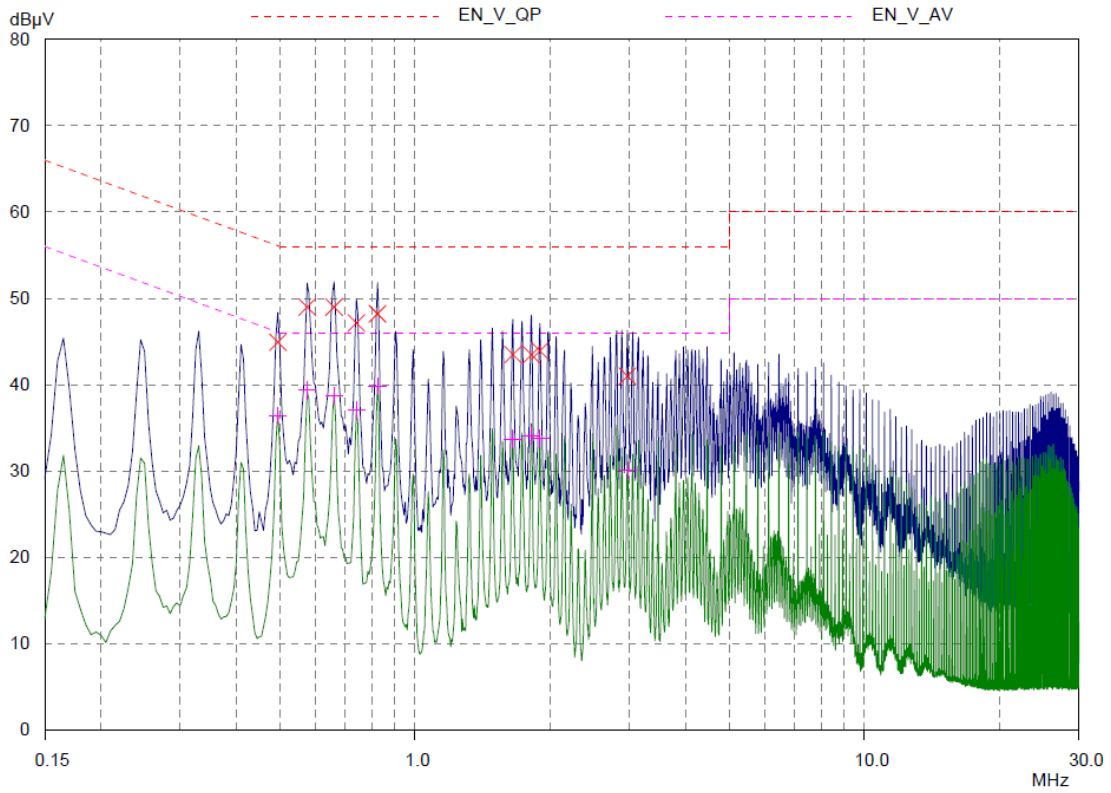
| | | | | | | | |
| **AVERAGE DATA(Operating at 203.12 kHz)** | | | | | | | |
| 0.495 | 36.27 | L | 0.22 | 0.04 | 36.53 | 46.08 | 9.55 |
| 0.575 | 39.32 | L | 0.22 | 0.04 | 39.58 | 46.00 | 6.42 |
| 0.575 | 31.75 | N | 0.22 | 0.04 | 32.01 | 46.00 | 13.99 |
| 0.660 | 38.68 | L | 0.23 | 0.04 | 38.95 | 46.00 | 7.05 |
| 0.740 | 37.15 | L | 0.22 | 0.04 | 37.41 | 46.00 | 8.59 |
| 0.825 | 39.24 | L | 0.19 | 0.05 | 39.48 | 46.00 | 6.52 |
| 1.650 | 32.91 | L | 0.26 | 0.08 | 33.25 | 46.00 | 12.75 |
| 1.730 | 34.45 | L | 0.26 | 0.08 | 34.79 | 46.00 | 11.21 |
| 1.810 | 27.10 | N | 0.27 | 0.08 | 27.45 | 46.00 | 18.55 |
| 2.965 | 31.93 | L | 0.31 | 0.14 | 32.38 | 46.00 | 13.62 |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

**Margin (dB) = Limit – Actual**
**[Actual = Reading + CF + CL]**
L/N = LINE / NEUTRAL
CF/CL = Correction Factor and Cable Loss

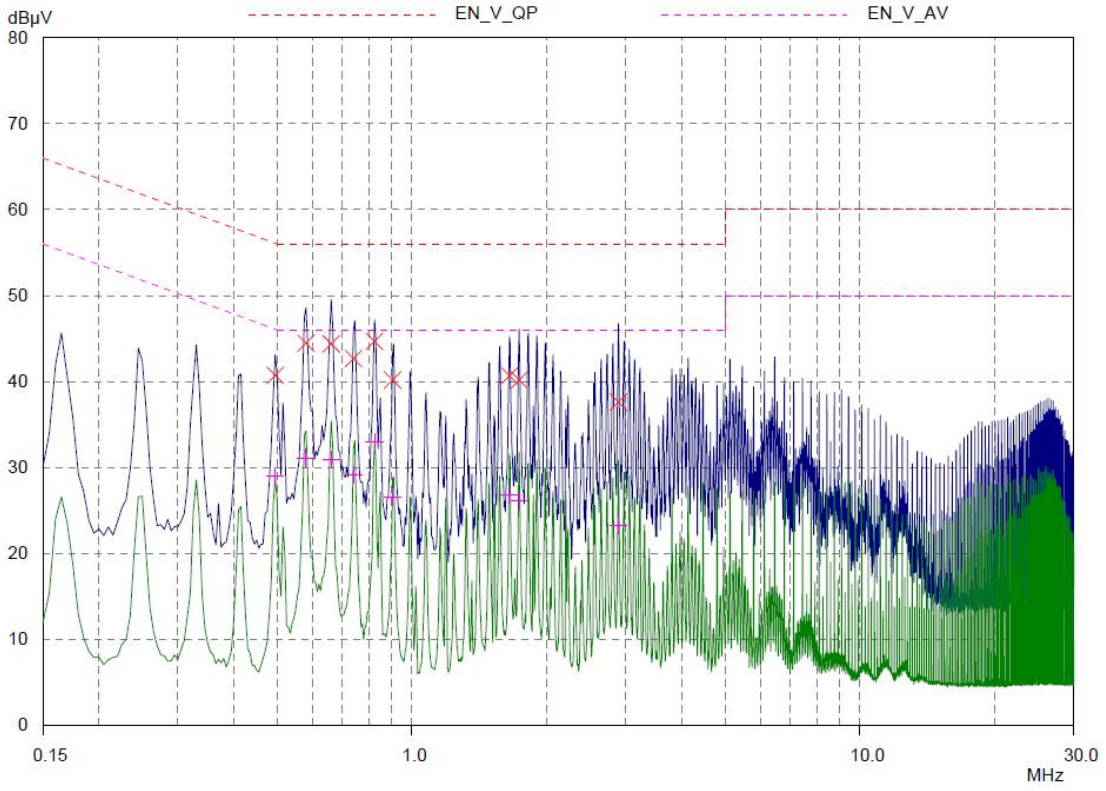
NOTE: All emissions not reported were more than 20 dB below the specified limit.

## Figure 2. Plot of the Conducted Emissions

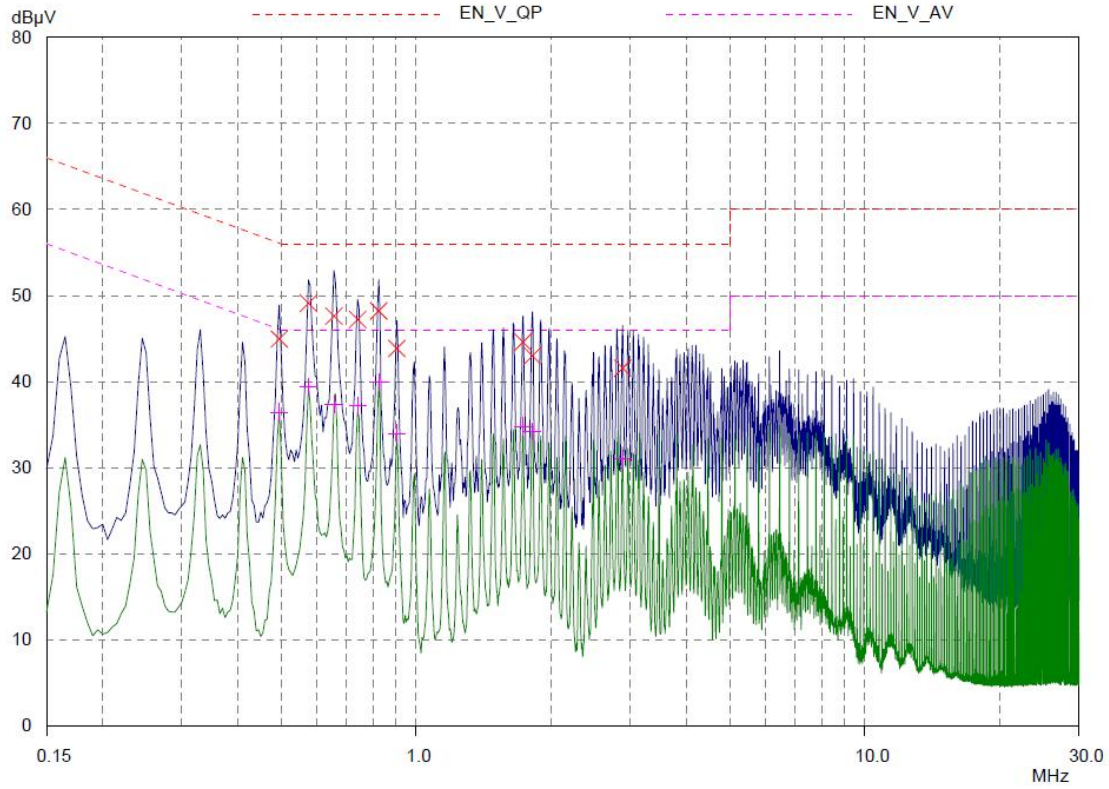
**Line – PE (Peak and Average detector used)(Operating at 132.22 kHz)**



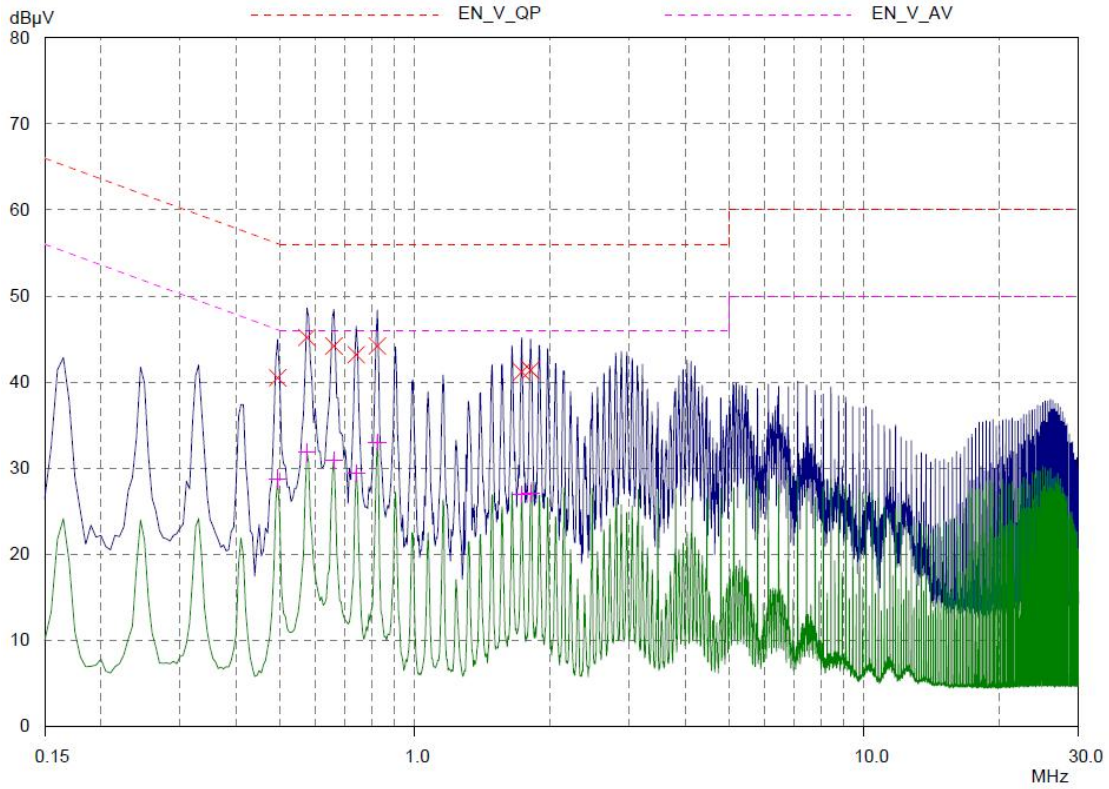

**Neutral – PE (Peak and Average detector used)(Operating at 132.22 kHz)**



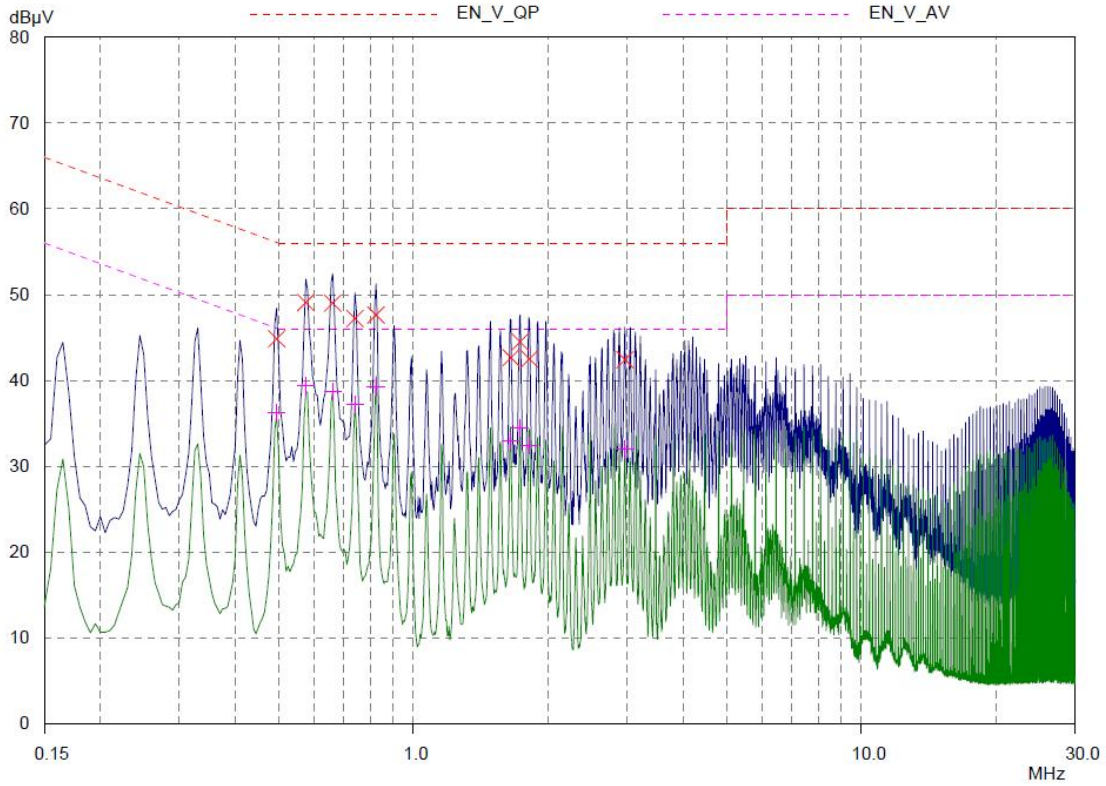
**Line – PE (Peak and Average detector used)(Operating at 162.80 kHz)**




**Neutral – PE (Peak and Average detector used)(Operating at 162.80 kHz)**



**Line – PE (Peak and Average detector used)(Operating at 203.12 kHz)**




**Neutral – PE (Peak and Average detector used)(Operating at 203.12 kHz)**