

RADIO PERFORMANCE TEST REPORT

Test Report No. : OT-205-RWD-063

AGR No. : A204A-242

Applicant : SEONG JI INDUSTRIAL CO., LTD

Address : 54-33, Dongtanhana 1-gil, Gyeonggi-do, Hwaseong-si, South Korea

Manufacturer : SEONG JI INDUSTRIAL CO., LTD

Address : 54-33, Dongtanhana 1-gil, Gyeonggi-do, Hwaseong-si, South Korea

Type of Equipment : Asset Tracker

Model Name : IET10MO

Multiple Model Name : N/A

Serial number : N/A

Total page of Report : 32 pages (including this page)

Date of Incoming : May 20, 2020

Date of issue : May 29, 2020

SUMMARY

The equipment complies with the standard; EN 300 328 V2.1.1.

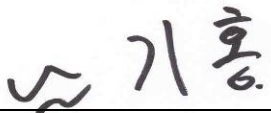
This test report only contains the result of a single test of the sample supplied for the examination.

It is not a generally valid assessment of the features of the respective products of the mass-production.

Reviewed by:


Tae-Ho, Kim / Senior Manager
ONETECH Corp.

Approved by:


Ki-Hong, Nam / Chief Engineer
ONETECH Corp.

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Revision History

| Rev. No. | Issue Report No. | Issued Date | Revisions | Section Affected |
|----------|------------------|--------------|-----------------|------------------|
| 0 | OT-205-RWD-063 | May 29, 2020 | Initial Release | All |
| | | | | |
| | | | | |

* Please contact us (e-mail: info@onetech.co.kr) for verification of this test report.

1. APPLICANT AND MANUFACTURER INFORMATION

- Applicant : SEONG JI INDUSTRIAL CO., LTD
- Address : 54-33, Dongtanhana 1-gil, Gyeonggi-do, Hwaseong-si, South Korea
- Manufacturer : SEONG JI INDUSTRIAL CO., LTD
- Address : 54-33, Dongtanhana 1-gil, Gyeonggi-do, Hwaseong-si, South Korea

2. TEST SUMMARY

2.1 Test standards and results

| CLAUSE | TEST ITEMS | RESULTS | REMARK |
|----------------------|--------------------------------------------------------------------|---------|--------|
| 4.3.1.2 or 4.3.2.2 | RF output power | - | Note1 |
| 4.3.2.3 | Power Spectral Density | - | Note1 |
| 4.3.1.3 or 4.3.2.4 | Duty Cycle, Tx-sequence, Tx-gap | - | Note1 |
| 4.3.1.4 | Accumulated Transmit Time, Frequency Occupation & Hopping Sequence | - | Note1 |
| 4.3.1.5 | Hopping Frequency Separation | - | Note1 |
| 4.3.1.6 or 4.3.2.5 | Medium Utilisation (MU) factor | - | Note1 |
| 4.3.1.7 or 4.3.2.6 | Adaptivity (Adaptive Frequency Hopping) | - | Note1 |
| 4.3.1.8 or 4.3.2.7 | Occupied Channel Bandwidth | - | Note1 |
| 4.3.1.9 or 4.3.2.8 | Transmitter Unwanted emissions in the out-of-band domain | - | Note1 |
| 4.3.1.10 or 4.3.2.9 | Transmitter Unwanted emissions in the Spurious domain | PASS | - |
| 4.3.1.11 or 4.3.2.10 | Receiver spurious emissions | PASS | - |
| 4.3.1.12 or 4.3.2.11 | Receiver Blocking | - | Note1 |
| 4.3.1.13 or 4.3.2.12 | Geo-location capability | - | Note1 |

Note1 - The EUT have a RF Test already approved. (Model: SRM200A / Report Number: HCT-RF-1911-CE017)

2.2 Additions, deviations, exclusions from standards

No additions, deviations or exclusions have been made from standard.

2.3 Purpose of the test

To determine whether the equipment under test fulfills the RF spectrum electro magnetic compatibility requirements of the standards stated in section 2.1.

2.4 Test Facility

The Onetech Corp. has been designated to perform equipment testing in compliance with ISO/IEC 17025.

The Electromagnetic compatibility measurement facilities are located at 43-14, Jinsaegol-gil, Chowol-eup, Gwangju-si, Gyeonggi-do, 12735, Korea.

-. Site Filing:

VCCI (Voluntary Control Council for Interference) – Registration No. R-4112/ C-14617/ G-10666/ T-11842

ISED (Innovation, Science and Economic Development Canada) – Registration No. Site# 3736A-3

KOLAS (Korea Laboratory Accreditation Scheme) - Accreditation NO. KT085

FCC (Federal Communications Commission) - Accreditation No. KR0013

RRA (Radio Research Agency) – Designation No. KR0013

3. EUT (Equipment Under Test)

3.1 Identification of EUT

| | |
|------------------|--------------------------------|
| -. Equipment | : Asset Tracker |
| -. Model Name | : IET10MO |
| -. Brand Name | : - |
| -. Serial number | : N/A |
| -. Manufacturer | : SEONG JI INDUSTRIAL CO., LTD |

3.2 Additional information about the EUT

The SEONG JI INDUSTRIAL CO., LTD, Model IET10MO (referred to as the EUT in this report) is a Asset Tracker. The product specification described herein was obtained from product data sheet or user's manual.

| | | |
|-------------------------------------------------------|----------------|------------------------------------------------------------------------------------------------------|
| DEVICE TYPE | Asset Tracker | |
| Temperature Range | -30 °C ~ 60 °C | |
| OPERATING FREQUENCY | Sig Fox | 868.034 MHz ~ 868.226 MHz (Tx) 869.429 MHz ~ 869.621 MHz (Rx) |
| | GPS | 1 559 MHz ~ 1 610 MHz |
| | Bluetooth LE | 2 402 MHz ~ 2 480 MHz |
| | WLAN 2.4 GHz | 2 412 MHz ~ 2 472 MHz (802.11b/g/n(HT20)) |
| MODULATION TYPE | Sig Fox | DBPSK |
| | Bluetooth LE | GFSK |
| | WLAN 2.4 GHz | 802.11b: DSSS Modulation(DBPSK/DQPSK/CCK) 802.11g/n(HT20): OFDM Modulation(BPSK/QPSK/16QAM/64QAM) |
| ANTENNA TYPE | | Sig Fox : Metal Antenna Bluetooth LE / WLAN 2.4 GHz : Chip Antenna GPS : Ceramic Patch Antenna |
| ANTENNA GAIN | | Sig Fox: 2.50 dBi Bluetooth LE: 2.50 dBi WLAN 2.4 GHz: 2.50 dBi |
| List of each Osc. or crystal Freq.(Freq. >= 1 MHz) | | 32.768 kHz, 26 MHz, 32 MHz |

3.3 Peripheral equipment

-. None

3.4 Mode of operation during the test

For WLAN the testing, software used to control the EUT for staying in continuous transmitting and receiving mode is programmed. For determining which data rate is the worst case, for following modes were investigated and then selected the worst test mode for all test items. To get a maximum radiated emission levels from the EUT, the EUT was moved throughout the XY, XZ, and YZ planes and the worst case is “XZ” axis, but the worst data was recorded in this test report.

3.5 Alternative type(s)/model(s); also covered by this test report.

-. None

4. EUT MODIFICATIONS

-. None

5. Transmitter Unwanted emissions in the Spurious domain

5.1 Operating environment

Temperature : 24 °C
Relative humidity : 49 % R.H.

5.2 Test set-up and procedure

EN 300 328 V2.1.1 clause 5.4.9

5.3 Measurement uncertainty

Radiated emission electric field intensity, 30 MHz ~ 1 000 MHz : 3.7 dB
Radiated emission electric field intensity, 1 GHz ~ 12.75 GHz : 3.9 dB

5.4 Test equipment used

| Model Number | Manufacturer | Description | Serial Number | Last Cal.(Interval) |
|------------------------|--------------------|------------------------------------|---------------|---------------------|
| ■ - FSV40 | Rohde & Schwarz | Signal Analyzer | 101009 | Feb. 21, 2020 (1Y) |
| ■ - OSP120 | Rohde & Schwarz | Open Switch and Control Unit | 101364 | N/A |
| ■ - OSP150 | Rohde & Schwarz | Open Switch and Control Unit | 100871 | N/A |
| ■ - Controller CO 2000 | Innco systems GmbH | Digital Controller | N/A | N/A |
| ■ - VULB9163 | Schwarzbeck | TRILOG Broadband Antenna | 777 | Apr. 08, 2020 (2Y) |
| □ - DT3000 | Innco System | Turn Table | 930611 | N/A |
| ■ - BBHA 9120D | Schwarzbeck | Horn Antenna | 9120D-1366 | Jul. 16, 2019 (1Y) |
| □ - BBHA 9170 | Schwarzbeck | Horn Antenna | BBHA9170179 | Jan. 07, 2020 (1Y) |
| □ - QMS-00208 | Schwarzbeck | Horn Antenna | 16111 | Nov. 25, 2019 (1Y) |
| ■ - MA 2000 | Innco systems GmbH | Antenna master | N/A | N/A |
| ■ - AS1700-EP | Innco systems GmbH | Antenna master | N/A | N/A |
| ■ - DS 1200 S | Innco systems GmbH | Turn table | N/A | N/A |
| □ - FPA3-0.8-6.0R/1329 | Innco systems GmbH | Communication antenna | 411068-0003 | N/A |
| □ - FPA3-0.8-6.0R/1329 | Innco systems GmbH | Communication antenna | 411068-0001 | N/A |
| ■ - DE3700-RH | Innco systems GmbH | Antenna master | N/A | N/A |
| ■ - SFI101 | Rohde & Schwarz | Wlan RSE Switching Aad Filter Unlt | N/A | N/A |
| ■ - SCU03 | Rohde & Schwarz | Signal Conditioning unit | 100333 | Feb. 19, 2020 (1Y) |
| ■ - SCU18 | Rohde & Schwarz | Signal Conditioning unit | 102266 | Jul. 24, 2019 (1Y) |
| □ - SCU40A | Rohde & Schwarz | Signal Conditioning unit | N/A | Feb. 20, 2020 (1Y) |
| □ - HPF 3GHz | Rohde & Schwarz | High Pass Filter | N/A | Feb. 19, 2020 (1Y) |
| □ - HPF 1.5GHz | Rohde & Schwarz | High Pass Filter | N/A | Feb. 19, 2020 (1Y) |
| □ - HPF 3GHz | Rohde & Schwarz | High Pass Filter | N/A | Feb. 19, 2020 (1Y) |
| □ - F1 GSM 850 | Rohde & Schwarz | Filter | N/A | Feb. 19, 2020 (1Y) |
| □ - F2 GSM 900 | Rohde & Schwarz | Filter | N/A | Feb. 19, 2020 (1Y) |
| □ - F3 GSM 1800 | Rohde & Schwarz | Filter | N/A | Feb. 19, 2020 (1Y) |
| □ - F4 GSM 1900 | Rohde & Schwarz | Filter | N/A | Feb. 19, 2020 (1Y) |
| □ - F5 CDMA CELL | Rohde & Schwarz | Filter | N/A | Feb. 19, 2020 (1Y) |
| □ - F6 CDMA PCS | Rohde & Schwarz | Filter | N/A | Feb. 19, 2020 (1Y) |

All test equipment used is calibrated on a regular basis.

5.5 Test data for Radiated

5.5.1 Test data for 802.11b

5.5.1.1 Test data (Below 1 GHz)

- . Test Date : May 21, 2020 ~ May 25, 2020
- . Resolution bandwidth : 100 kHz
- . Frequency range : 30 MHz ~ 1 GHz
- . Operating condition : Highest Output Power Transmitting Mode
- . Measurement distance : 3 m

| Frequency (MHz) | Level (dBm) | Pol | Limit (dBm) | Margin (dB) |
|------------------------------------------------------------------------------|----------------|-----|----------------|----------------|
| Low Channel | | | | |
| Measurements are 6 dB below these limits, the measurements are not reported. | | | | |
| High Channel | | | | |
| Measurements are 6 dB below these limits, the measurements are not reported. | | | | |

Remark: "H": Horizontal, "V": Vertical

5.5.1.2 Test data (Above 1 GHz)

- . Test Date : May 21, 2020 ~ May 25, 2020
- . Resolution bandwidth : 1 MHz
- . Frequency range : 1 GHz ~ 12.75 GHz
- . Operating condition : Highest Output Power Transmitting Mode
- . Measurement distance : 3 m

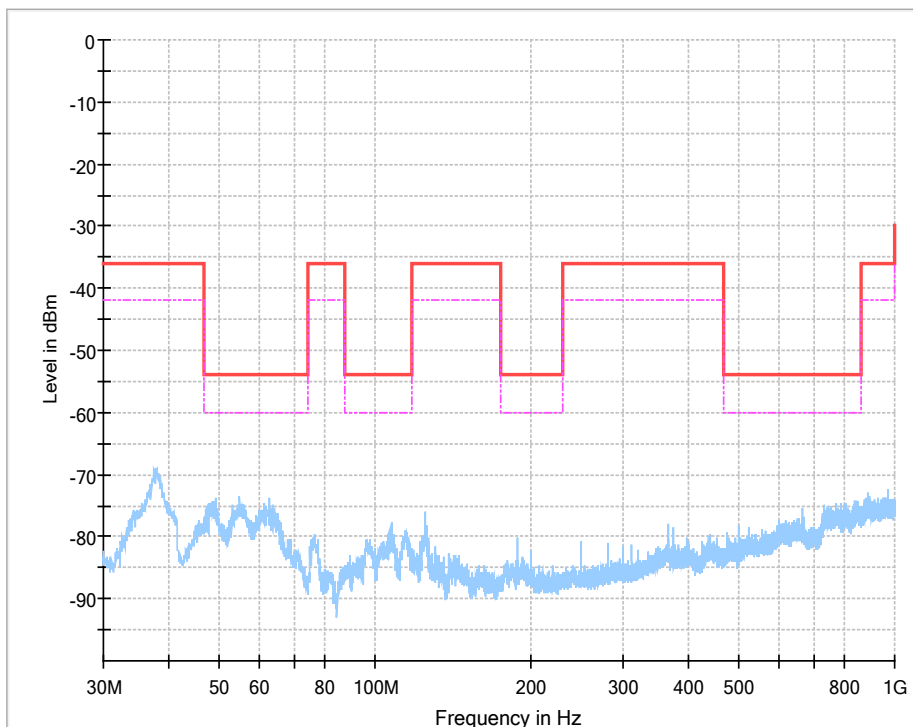
| Frequency (MHz) | Level (dBm) | Pol | Limit (dBm) | Margin (dB) |
|------------------------------------------------------------------------------|----------------|-----|----------------|----------------|
| Low Channel | | | | |
| Measurements are 6 dB below these limits, the measurements are not reported. | | | | |
| High Channel | | | | |
| Measurements are 6 dB below these limits, the measurements are not reported. | | | | |

Remark: "H": Horizontal, "V": Vertical

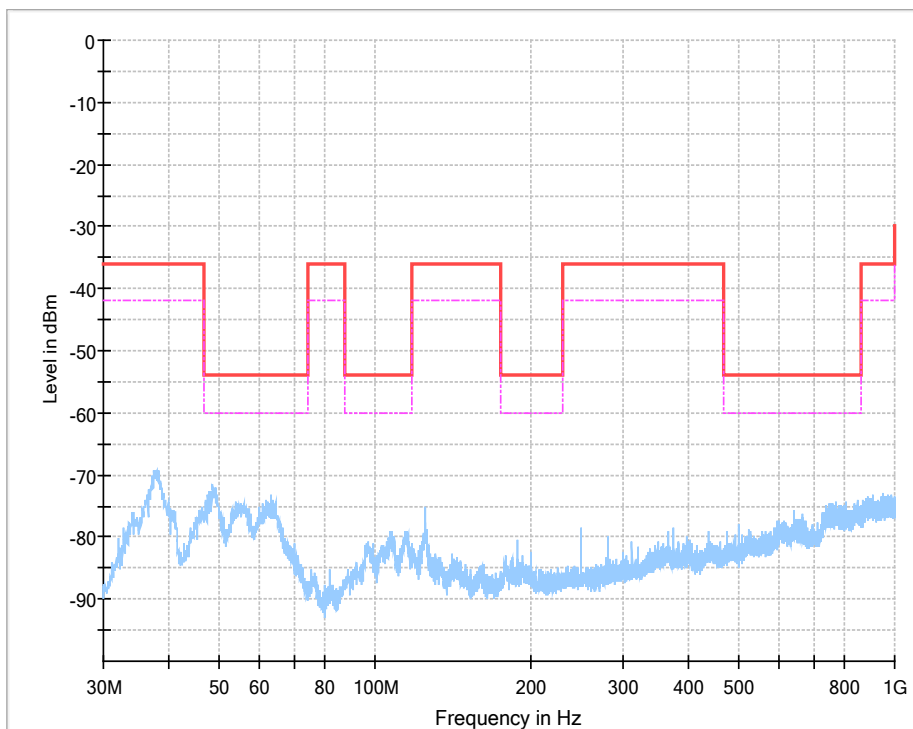


Tested by: Hyung-Kwon, Oh / Assistant Manager

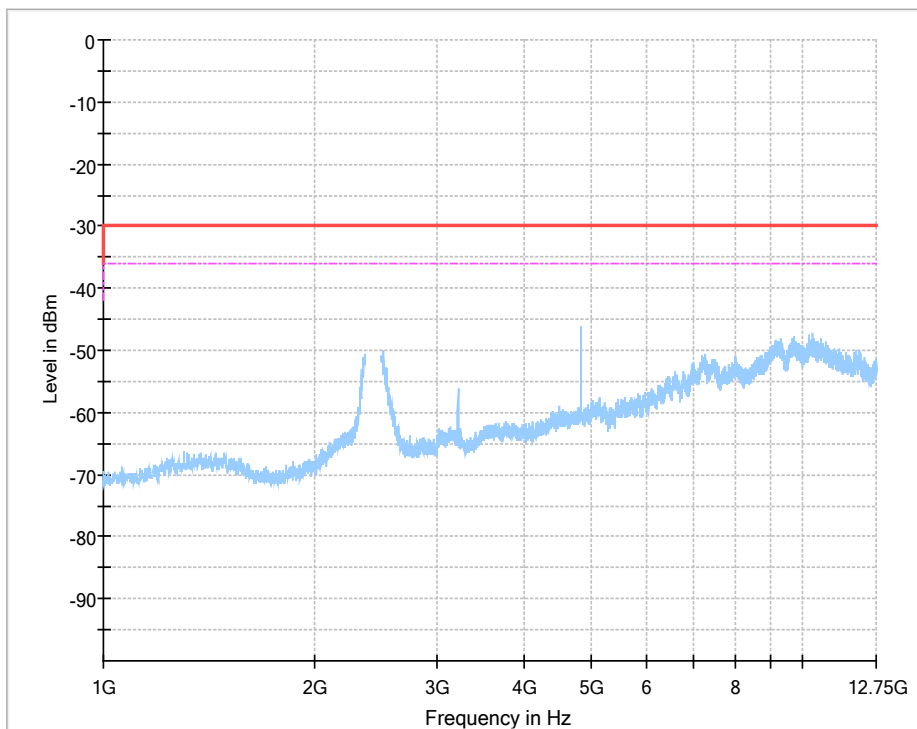
5.5.1.3 Plots of measurement data



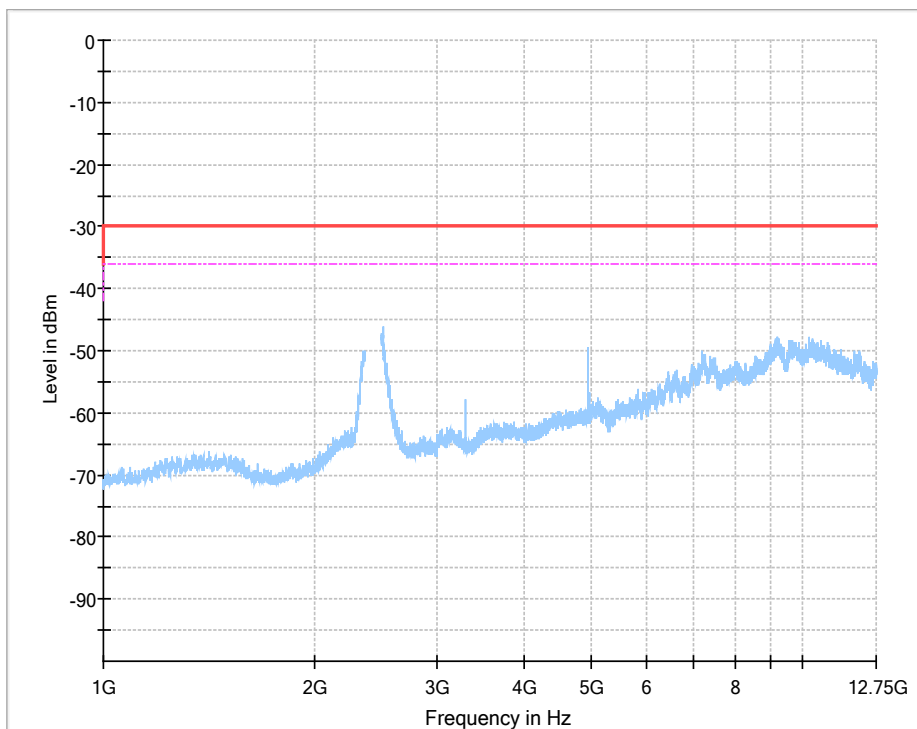
Low Channel - Transmitting Mode (Below 1 GHz)



High Channel - Transmitting Mode (Below 1 GHz)



Low Channel - Transmitting Mode (Above 1 GHz)



High Channel - Transmitting Mode (Above 1 GHz)

5.5.2 Test data for 802.11g

5.5.2.1 Test data (Below 1 GHz)

- Test Date : May 21, 2020 ~ May 25, 2020
- Resolution bandwidth : 100 kHz
- Frequency range : 30 MHz ~ 1 GHz
- Operating condition : Highest Output Power Transmitting Mode
- Measurement distance : 3 m

| Frequency (MHz) | Level (dBm) | Pol | Limit (dBm) | Margin (dB) |
|------------------------------------------------------------------------------|----------------|-----|----------------|----------------|
| Low Channel | | | | |
| Measurements are 6 dB below these limits, the measurements are not reported. | | | | |
| High Channel | | | | |
| Measurements are 6 dB below these limits, the measurements are not reported. | | | | |

Remark: "H": Horizontal, "V": Vertical

5.5.2.2 Test data (Above 1 GHz)

- Test Date : May 21, 2020 ~ May 25, 2020
- Resolution bandwidth : 1 MHz
- Frequency range : 1 GHz ~ 12.75 GHz
- Operating condition : Highest Output Power Transmitting Mode
- Measurement distance : 3 m

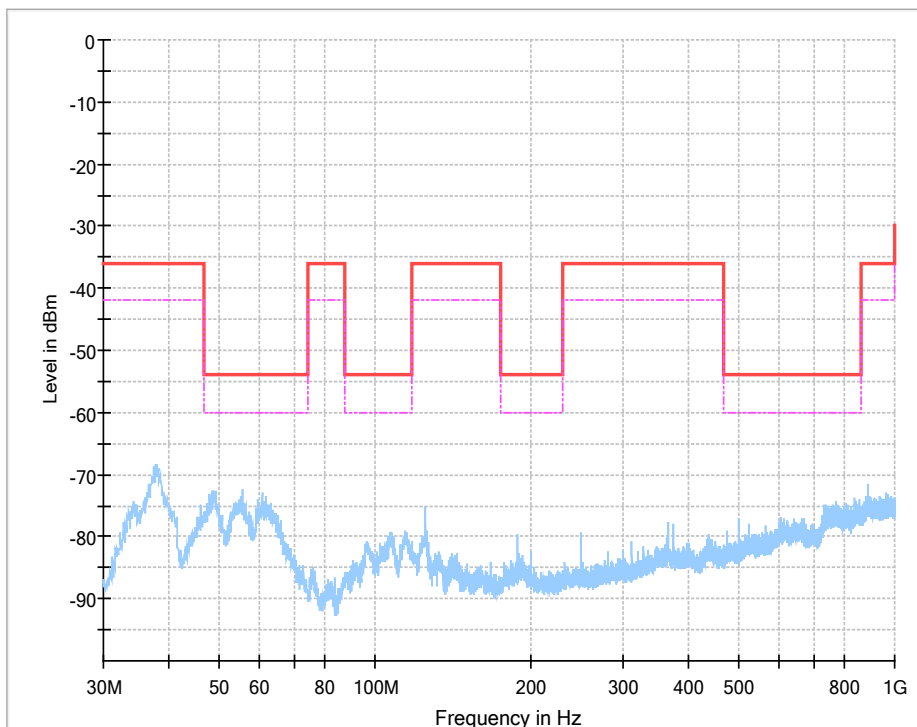
| Frequency (MHz) | Level (dBm) | Pol | Limit (dBm) | Margin (dB) |
|------------------------------------------------------------------------------|----------------|-----|----------------|----------------|
| Low Channel | | | | |
| Measurements are 6 dB below these limits, the measurements are not reported. | | | | |
| High Channel | | | | |
| Measurements are 6 dB below these limits, the measurements are not reported. | | | | |

Remark: "H": Horizontal, "V": Vertical

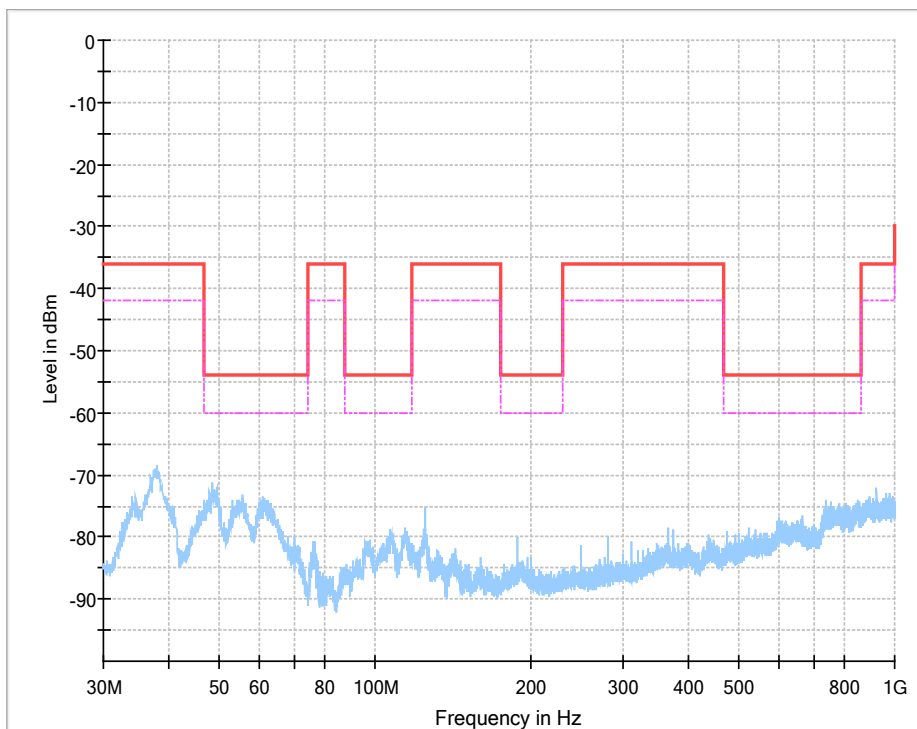


Tested by: Hyung-Kwon, Oh / Assistant Manager

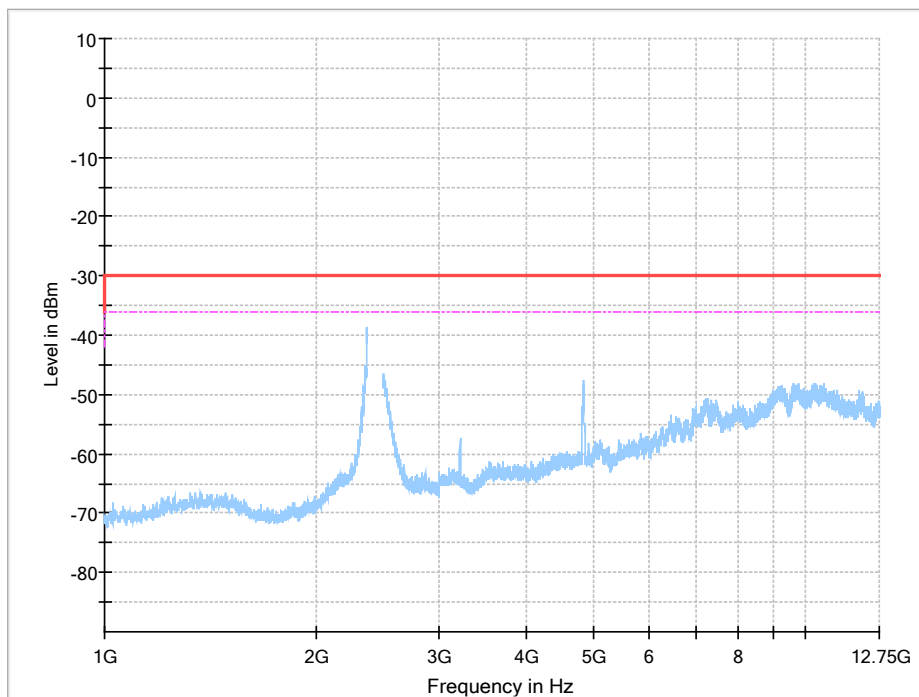
5.5.2.3 Plots of measurement data



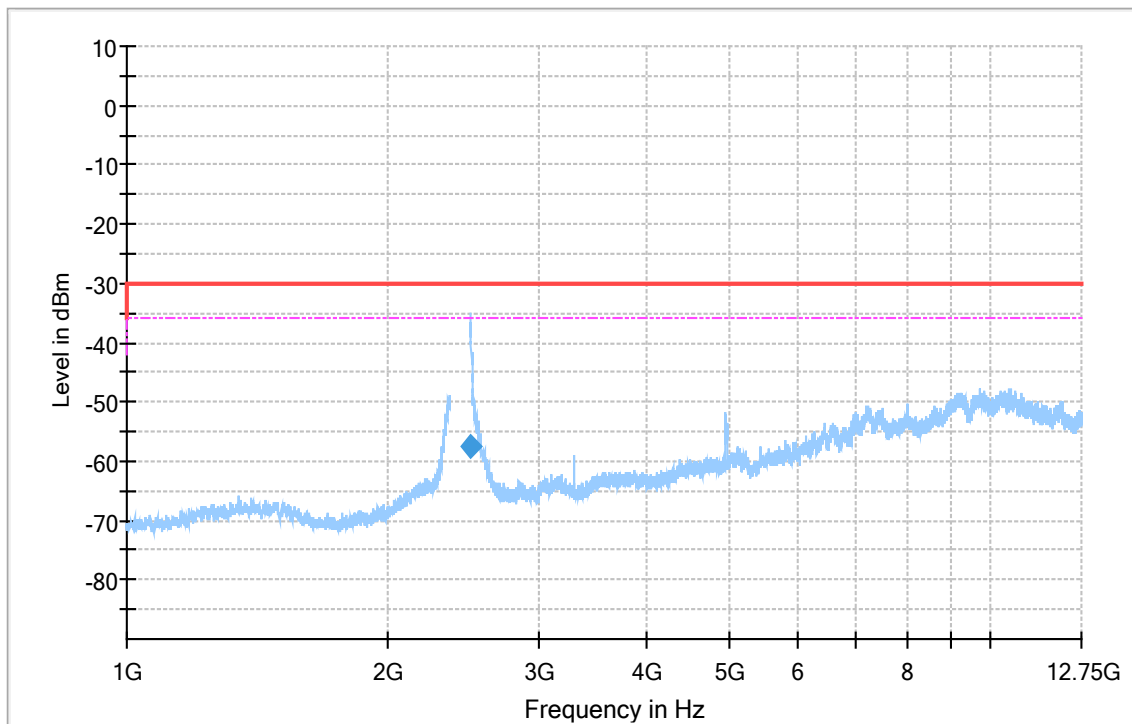
Low Channel - Transmitting Mode (Below 1 GHz)



High Channel - Transmitting Mode (Below 1 GHz)



Low Channel - Transmitting Mode (Above 1 GHz)



High Channel - Transmitting Mode (Above 1 GHz)

5.5.3 Test data for 802.11n_HT20

5.5.3.1 Test data (Below 1 GHz)

- . Test Date : May 21, 2020 ~ May 25, 2020
- . Resolution bandwidth : 100 kHz
- . Frequency range : 30 MHz ~ 1 GHz
- . Operating condition : Highest Output Power Transmitting Mode
- . Measurement distance : 3 m

| Frequency (MHz) | Level (dBm) | Pol | Limit (dBm) | Margin (dB) |
|------------------------------------------------------------------------------|----------------|-----|----------------|----------------|
| Low Channel | | | | |
| Measurements are 6 dB below these limits, the measurements are not reported. | | | | |
| High Channel | | | | |
| Measurements are 6 dB below these limits, the measurements are not reported. | | | | |

Remark: "H": Horizontal, "V": Vertical

5.5.3.2 Test data (Above 1 GHz)

- . Test Date : August 08, 2019 ~ August 16, 2019
- . Resolution bandwidth : 1 MHz
- . Frequency range : 1 GHz ~ 12.75 GHz
- . Operating condition : Highest Output Power Transmitting Mode
- . Measurement distance : 3 m

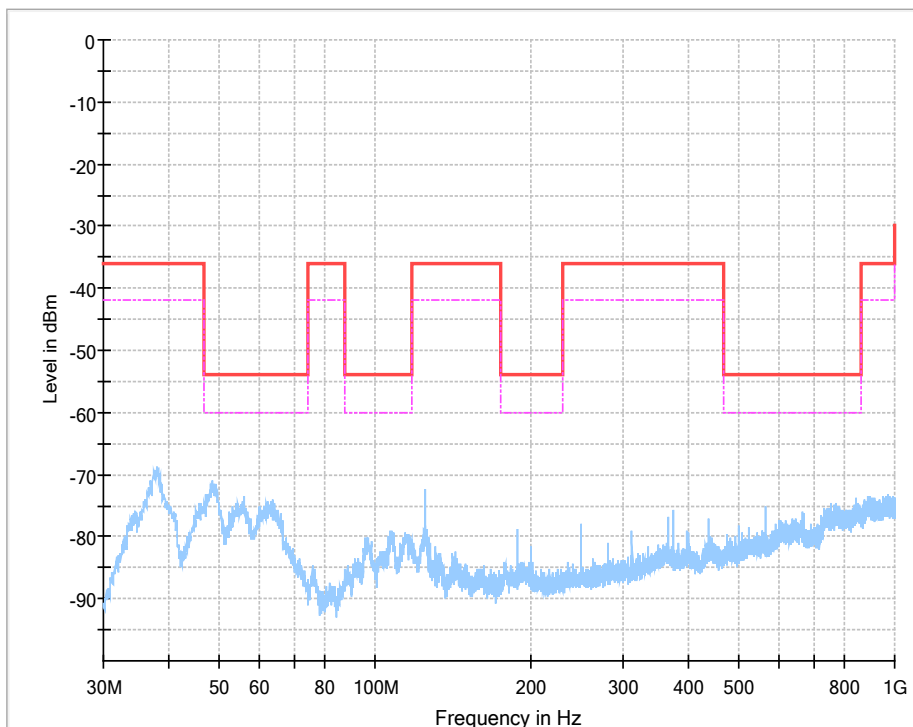
| Frequency (MHz) | Level (dBm) | Pol | Limit (dBm) | Margin (dB) |
|------------------------------------------------------------------------------|----------------|-----|----------------|----------------|
| Low Channel | | | | |
| Measurements are 6 dB below these limits, the measurements are not reported. | | | | |
| High Channel | | | | |
| Measurements are 6 dB below these limits, the measurements are not reported. | | | | |

Remark: "H": Horizontal, "V": Vertical

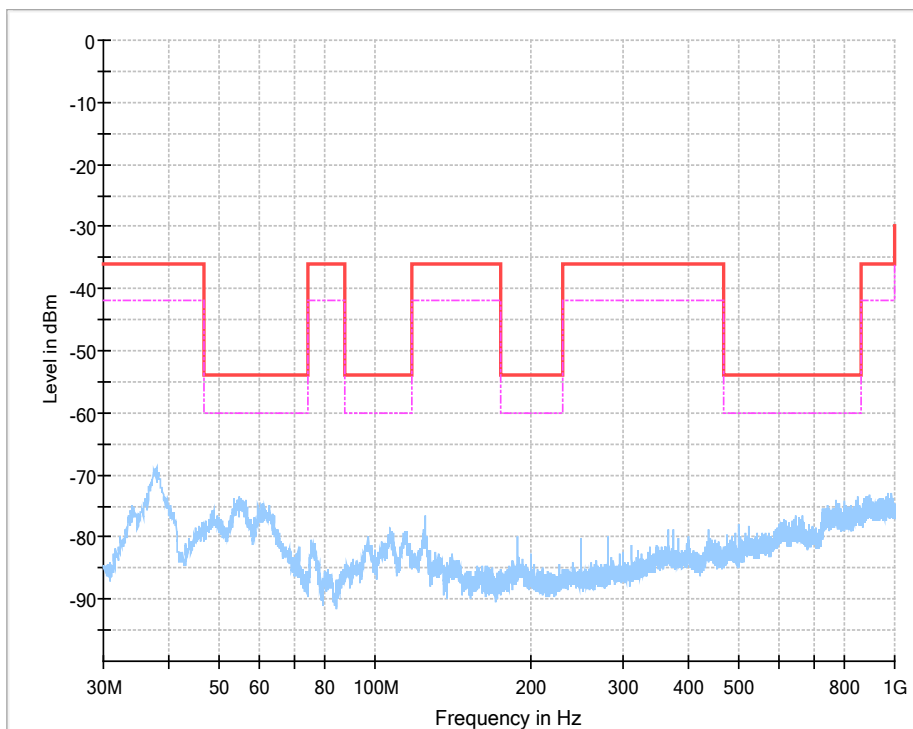


Tested by: Hyung-Kwon, Oh / Assistant Manager

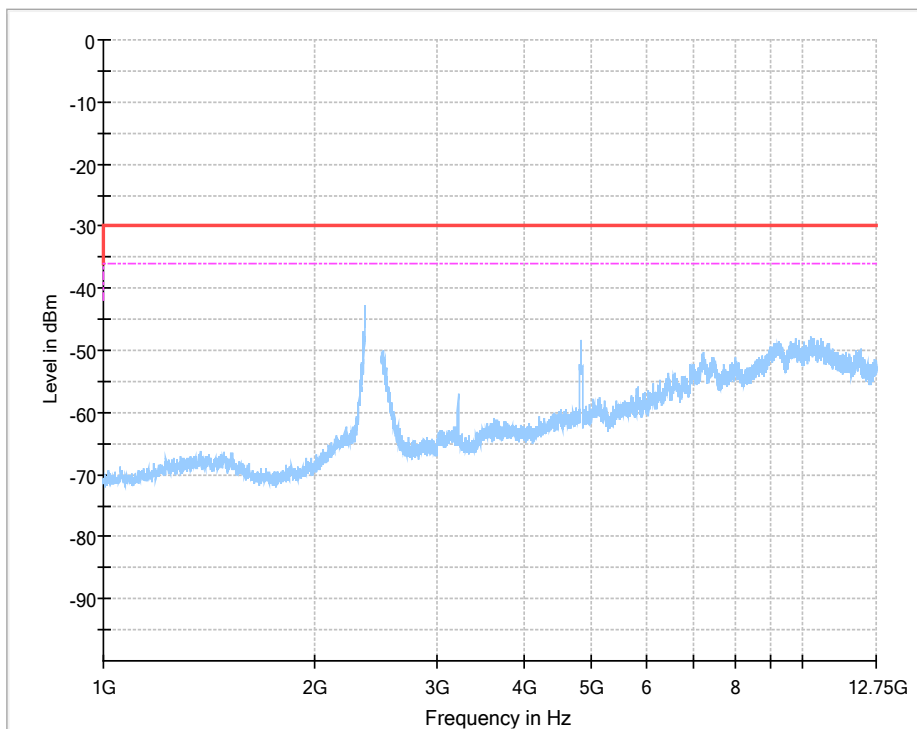
5.5.3.3 Plots of measurement data



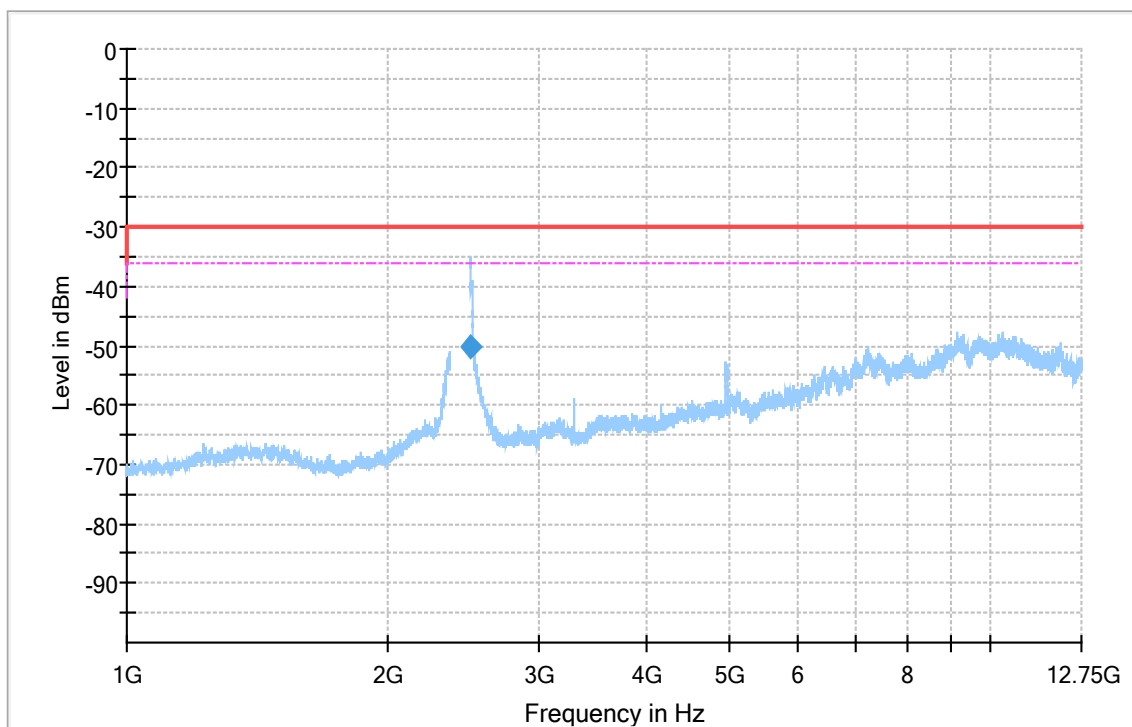
Low Channel - Transmitting Mode (Below 1 GHz)



High Channel - Transmitting Mode (Below 1 GHz)



Low Channel - Transmitting Mode (Above 1 GHz)



High Channel - Transmitting Mode (Above 1 GHz)

5.6 Limit

Subclause: 4.3.2.9.3 Table 12

| Frequency Range | Narrowband Spurious Emission | |
|---------------------|----------------------------------------------------------------|-----------|
| | Maximum power, e.r.p. (≤ 1 GHz) e.i.r.p. (> 1 GHz) | Bandwidth |
| 30 MHz to 47 MHz | -36 dBm | 100 kHz |
| 47 MHz to 74 MHz | -54 dBm | 100 kHz |
| 74 MHz to 87.5 MHz | -36 dBm | 100 kHz |
| 87,5 MHz to 118 MHz | -54 dBm | 100 kHz |
| 118 MHz to 174 MHz | -36 dBm | 100 kHz |
| 174 MHz to 230 MHz | -54 dBm | 100 kHz |
| 230 MHz to 470 MHz | -36 dBm | 100 kHz |
| 470 MHz to 862 MHz | -54 dBm | 100 kHz |
| 862 MHz to 1 GHz | -36 dBm | 100 kHz |
| 1 GHz to 12.75 GHz | -30 dBm | 1 MHz |



Tested by: Hyung-Kwon, Oh / Assistant Manager

6. Receiver spurious emissions

6.1 Operating environment

Temperature : 24.3 °C
Relative humidity : 43.9 % R.H.

6.2 Test set-up and procedure

EN 300 328 V2.1.1 clause 5.4.10

6.3 Measurement uncertainty

Radiated emission electric field intensity, 30 MHz ~ 1 000 MHz : 3.7 dB
Radiated emission electric field intensity, 1 GHz ~ 12.75 GHz : 3.9 dB

6.4 Test equipment used

| Model Number | Manufacturer | Description | Serial Number | Last Cal.(Interval) |
|------------------------|--------------------|------------------------------------|---------------|---------------------|
| ■ - FSV40 | Rohde & Schwarz | Signal Analyzer | 101009 | Feb. 21, 2020 (1Y) |
| ■ - OSP120 | Rohde & Schwarz | Open Switch and Control Unit | 101364 | N/A |
| ■ - OSP150 | Rohde & Schwarz | Open Switch and Control Unit | 100871 | N/A |
| ■ - Controller CO 2000 | Innco systems GmbH | Digital Controller | N/A | N/A |
| ■ - VULB9163 | Schwarzbeck | TRILOG Broadband Antenna | 777 | Apr. 08, 2020 (2Y) |
| □ - DT3000 | Innco System | Turn Table | 930611 | N/A |
| ■ - BBHA 9120D | Schwarzbeck | Horn Antenna | 9120D-1366 | Jul. 16, 2019 (1Y) |
| □ - BBHA 9170 | Schwarzbeck | Horn Antenna | BBHA9170179 | Jan. 07, 2020 (1Y) |
| □ - QMS-00208 | Schwarzbeck | Horn Antenna | 16111 | Nov. 25, 2019 (1Y) |
| ■ - MA 2000 | Innco systems GmbH | Antenna master | N/A | N/A |
| ■ - AS1700-EP | Innco systems GmbH | Antenna master | N/A | N/A |
| ■ - DS 1200 S | Innco systems GmbH | Turn table | N/A | N/A |
| □ - FPA3-0.8-6.0R/1329 | Innco systems GmbH | Communication antenna | 411068-0003 | N/A |
| □ - FPA3-0.8-6.0R/1329 | Innco systems GmbH | Communication antenna | 411068-0001 | N/A |
| ■ - DE3700-RH | Innco systems GmbH | Antenna master | N/A | N/A |
| ■ - SFI101 | Rohde & Schwarz | Wlan RSE Switching Aad Filter Unlt | N/A | N/A |
| ■ - SCU03 | Rohde & Schwarz | Signal Conditioning unit | 100333 | Feb. 19, 2020 (1Y) |
| ■ - SCU18 | Rohde & Schwarz | Signal Conditioning unit | 102266 | Jul. 24, 2019 (1Y) |
| □ - SCU40A | Rohde & Schwarz | Signal Conditioning unit | N/A | Feb. 20, 2020 (1Y) |
| □ - HPF 3GHz | Rohde & Schwarz | High Pass Filter | N/A | Feb. 19, 2020 (1Y) |
| □ - HPF 1.5GHz | Rohde & Schwarz | High Pass Filter | N/A | Feb. 19, 2020 (1Y) |
| □ - HPF 3GHz | Rohde & Schwarz | High Pass Filter | N/A | Feb. 19, 2020 (1Y) |
| □ - F1 GSM 850 | Rohde & Schwarz | Filter | N/A | Feb. 19, 2020 (1Y) |
| □ - F2 GSM 900 | Rohde & Schwarz | Filter | N/A | Feb. 19, 2020 (1Y) |
| □ - F3 GSM 1800 | Rohde & Schwarz | Filter | N/A | Feb. 19, 2020 (1Y) |
| □ - F4 GSM 1900 | Rohde & Schwarz | Filter | N/A | Feb. 19, 2020 (1Y) |
| □ - F5 CDMA CELL | Rohde & Schwarz | Filter | N/A | Feb. 19, 2020 (1Y) |
| □ - F6 CDMA PCS | Rohde & Schwarz | Filter | N/A | Feb. 19, 2020 (1Y) |

All test equipment used is calibrated on a regular basis.

6.5 Test data for Radiated

6.5.1 Test data for 802.11b

6.5.1.1 Test data (Below 1 GHz)

- . Test Date : May 21, 2020 ~ May 25, 2020
- . Resolution bandwidth : 100 kHz
- . Frequency range : 30 MHz ~ 1 GHz
- . Operating condition : Receiving Mode
- . Measurement distance : 3 m

| Frequency (MHz) | Level (dBm) | Pol | Limit (dBm) | Margin (dB) |
|------------------------------------------------------------------------------|----------------|-----|----------------|----------------|
| Low Channel | | | | |
| Measurements are 6 dB below these limits, the measurements are not reported. | | | | |
| High Channel | | | | |
| Measurements are 6 dB below these limits, the measurements are not reported. | | | | |

Remark: "H": Horizontal, "V": Vertical

6.5.1.2 Test data (Above 1 GHz)

- . Test Date : May 21, 2020 ~ May 25, 2020
- . Resolution bandwidth : 1 MHz
- . Frequency range : 1 GHz ~ 12.75 GHz
- . Operating condition : Receiving Mode
- . Measurement distance : 3 m

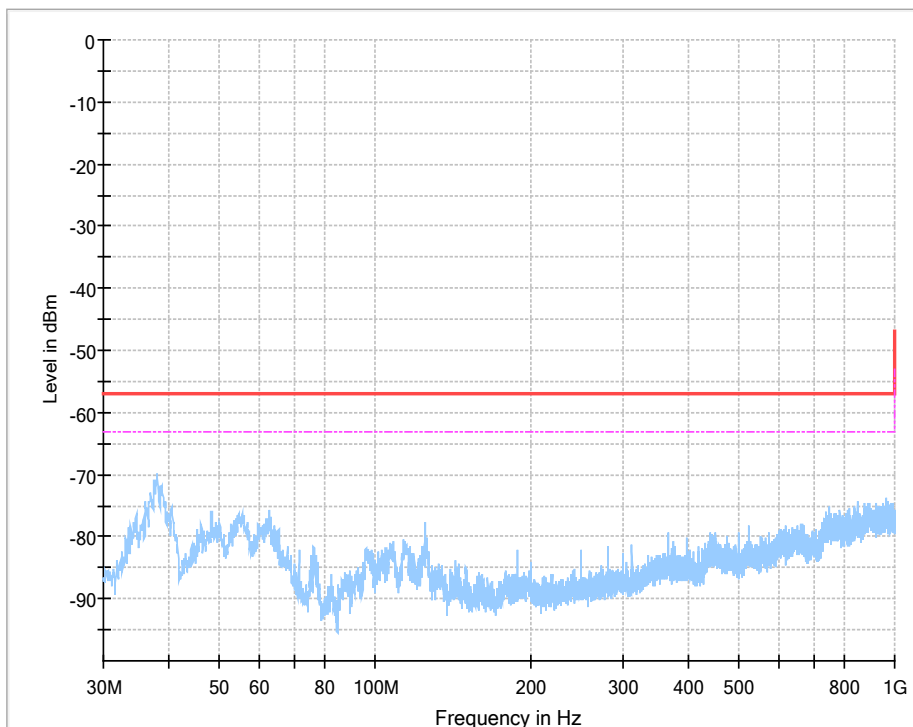
| Frequency (MHz) | Level (dBm) | Pol | Limit (dBm) | Margin (dB) |
|------------------------------------------------------------------------------|----------------|-----|----------------|----------------|
| Low Channel | | | | |
| Measurements are 6 dB below these limits, the measurements are not reported. | | | | |
| High Channel | | | | |
| Measurements are 6 dB below these limits, the measurements are not reported. | | | | |

Remark: "H": Horizontal, "V": Vertical

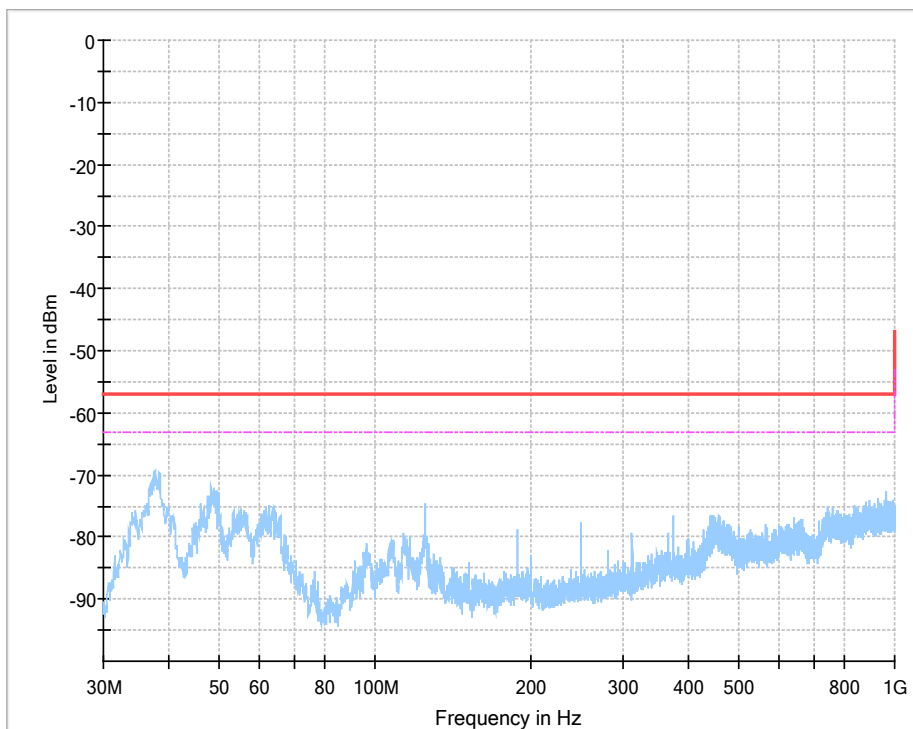


Tested by: Hyung-Kwon, Oh / Assistant Manager

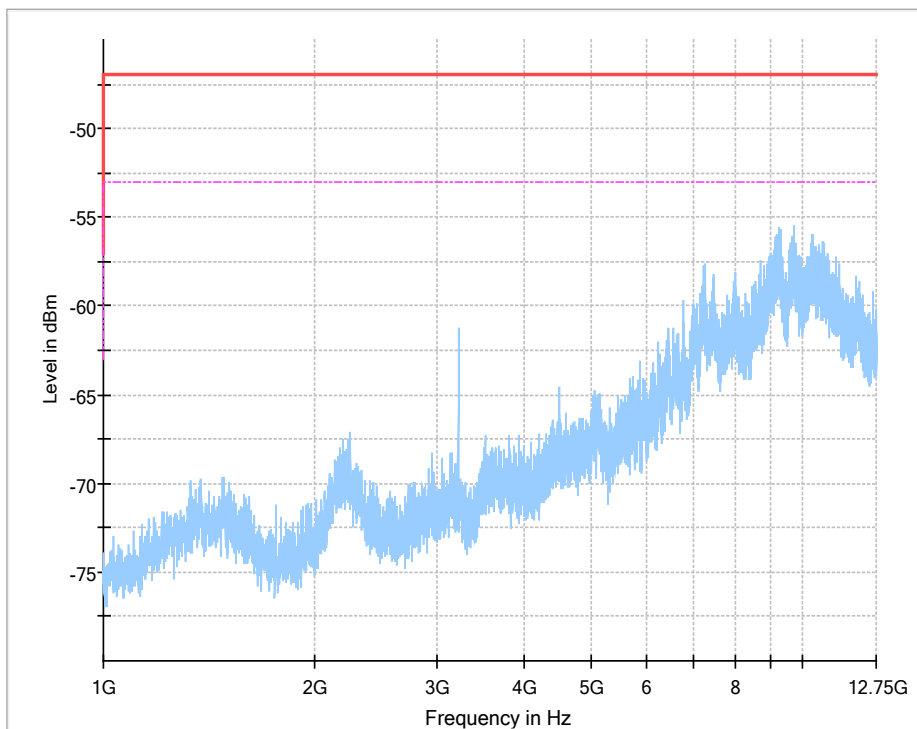
6.5.1.3 Plots of measurement data



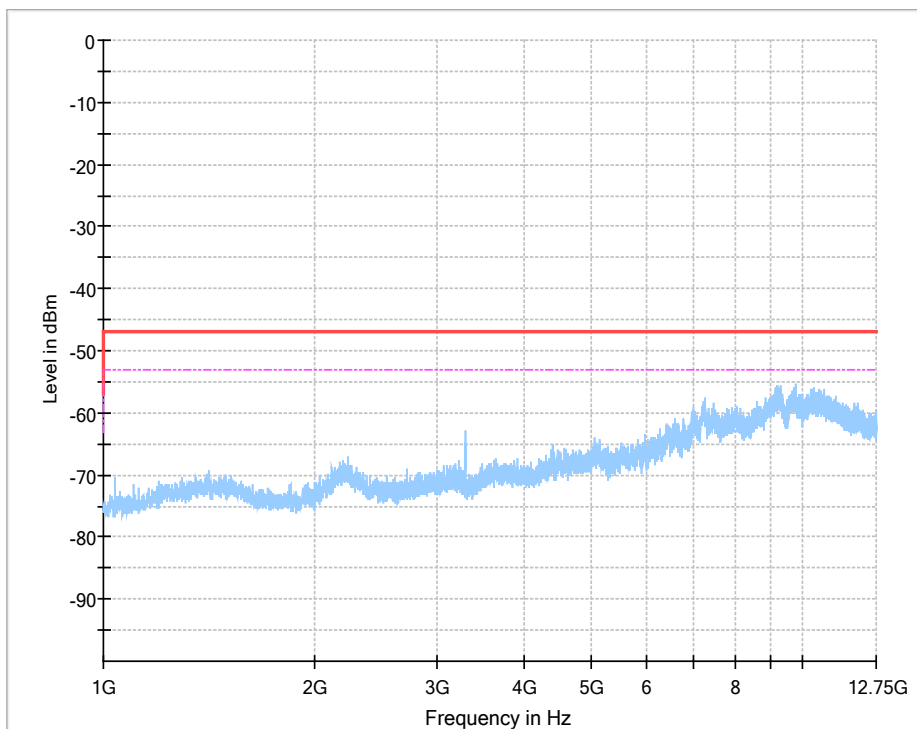
Low Channel - Receiving Mode (Below 1 GHz)



High Channel - Receiving Mode (Below 1 GHz)



Low Channel - Receiving Mode (Above 1 GHz)



High Channel - Receiving Mode (Above 1 GHz)

6.5.2 Test data for 802.11g

6.5.2.1 Test data (Below 1 GHz)

- . Test Date : May 21, 2020 ~ May 25, 2020
- . Resolution bandwidth : 100 kHz
- . Frequency range : 30 MHz ~ 1 GHz
- . Operating condition : Receiving Mode
- . Measurement distance : 3 m

| Frequency (MHz) | Level (dBm) | Pol | Limit (dBm) | Margin (dB) |
|------------------------------------------------------------------------------|----------------|-----|----------------|----------------|
| Low Channel | | | | |
| Measurements are 6 dB below these limits, the measurements are not reported. | | | | |
| High Channel | | | | |
| Measurements are 6 dB below these limits, the measurements are not reported. | | | | |

Remark: "H": Horizontal, "V": Vertical

6.5.2.2 Test data (Above 1 GHz)

- . Test Date : May 21, 2020 ~ May 25, 2020
- . Resolution bandwidth : 1 MHz
- . Frequency range : 1 GHz ~ 12.75 GHz
- . Operating condition : Receiving Mode
- . Measurement distance : 3 m

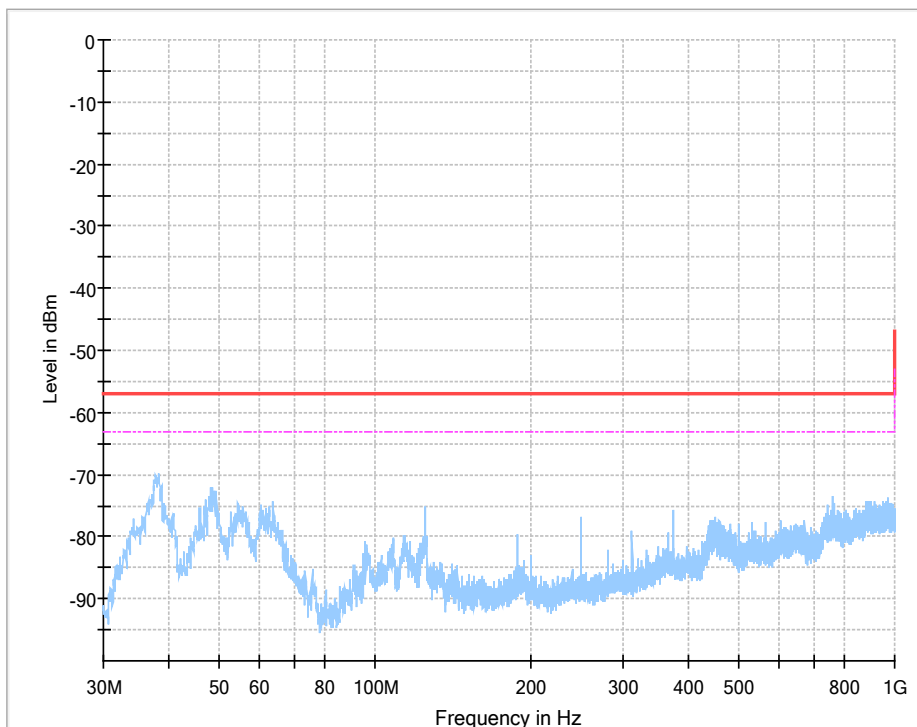
| Frequency (MHz) | Level (dBm) | Pol | Limit (dBm) | Margin (dB) |
|------------------------------------------------------------------------------|----------------|-----|----------------|----------------|
| Low Channel | | | | |
| Measurements are 6 dB below these limits, the measurements are not reported. | | | | |
| High Channel | | | | |
| Measurements are 6 dB below these limits, the measurements are not reported. | | | | |

Remark: "H": Horizontal, "V": Vertical

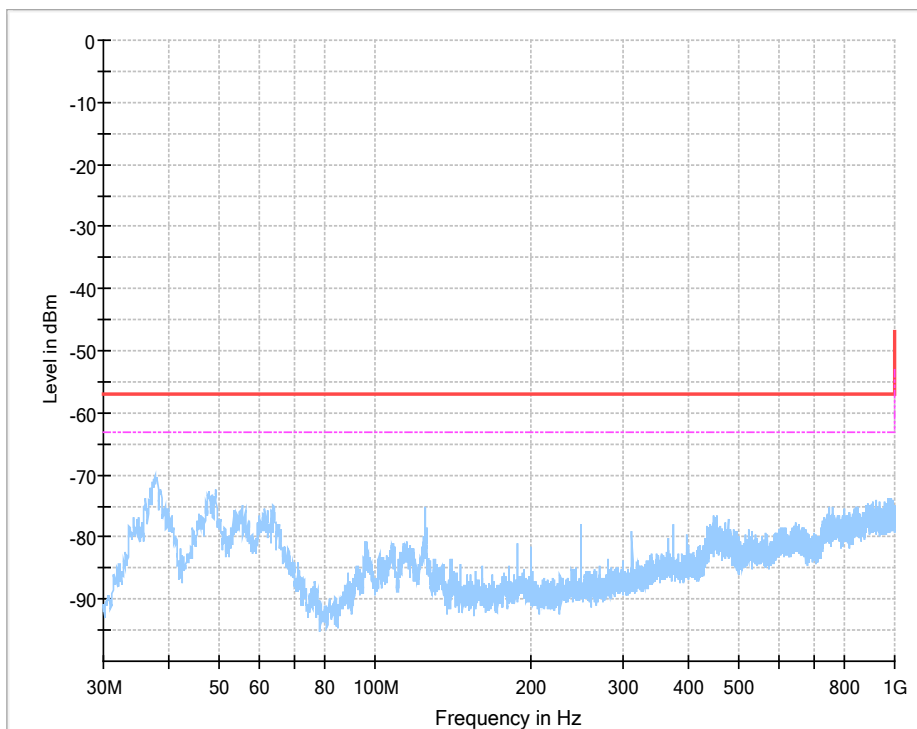


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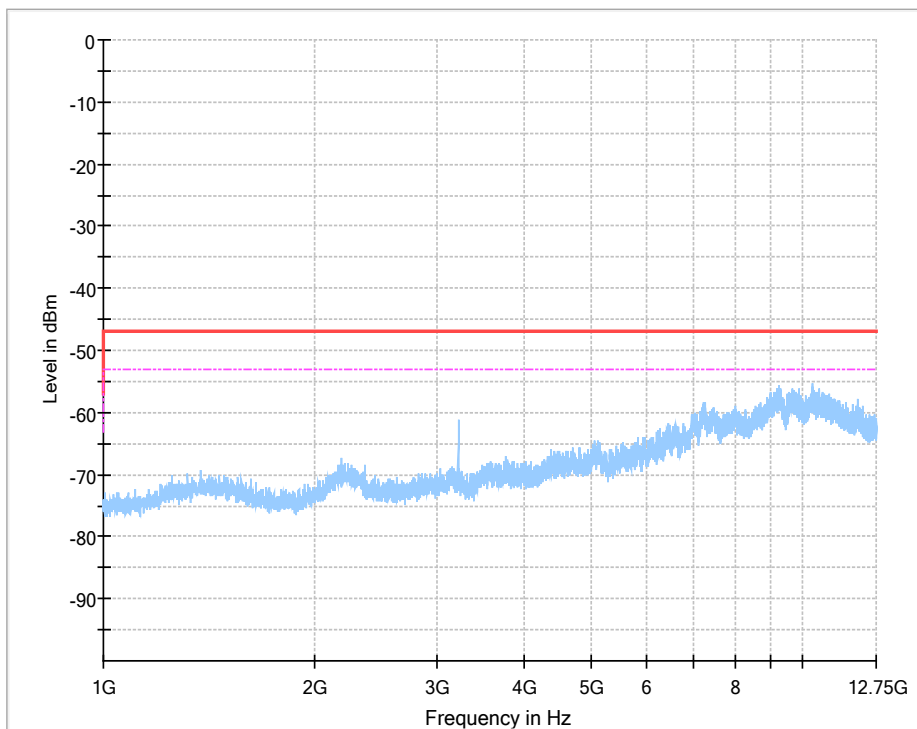
6.5.2.3 Plots of measurement data



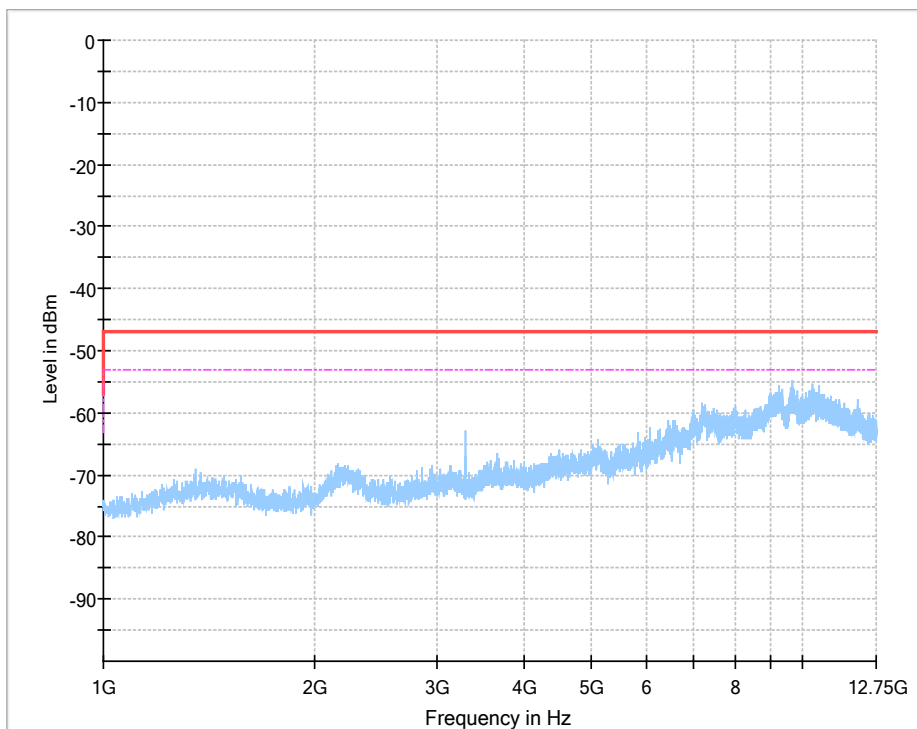
Low Channel - Receiving Mode (Below 1 GHz)



High Channel - Receiving Mode (Below 1 GHz)



Low Channel - Receiving Mode (Above 1 GHz)



High Channel - Receiving Mode (Above 1 GHz)

6.5.3 Test data for 802.11n_HT20

6.5.3.1 Test data (Below 1 GHz)

- . Test Date : May 21, 2020 ~ May 25, 2020
- . Resolution bandwidth : 100 kHz
- . Frequency range : 30 MHz ~ 1 GHz
- . Operating condition : Receiving Mode
- . Measurement distance : 3 m

| Frequency (MHz) | Level (dBm) | Pol | Limit (dBm) | Margin (dB) |
|------------------------------------------------------------------------------|----------------|-----|----------------|----------------|
| Low Channel | | | | |
| Measurements are 6 dB below these limits, the measurements are not reported. | | | | |
| High Channel | | | | |
| Measurements are 6 dB below these limits, the measurements are not reported. | | | | |

Remark: "H": Horizontal, "V": Vertical

10.5.3.2 Test data (Above 1 GHz)

- . Test Date : May 21, 2020 ~ May 25, 2020
- . Resolution bandwidth : 1 MHz
- . Frequency range : 1 GHz ~ 12.75 GHz
- . Operating condition : Receiving Mode
- . Measurement distance : 3 m

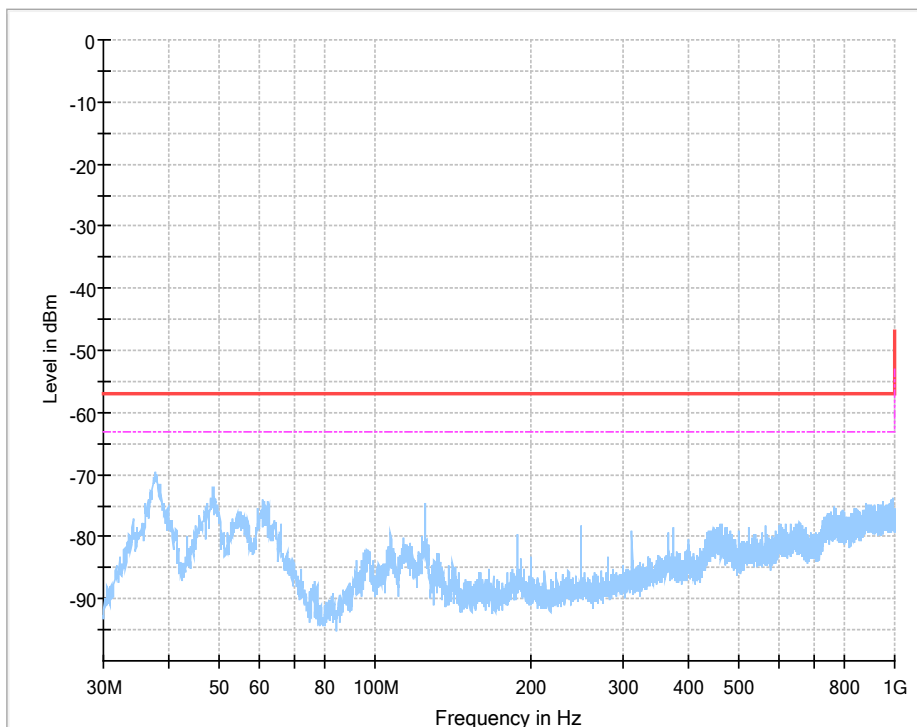
| Frequency (MHz) | Level (dBm) | Pol | Limit (dBm) | Margin (dB) |
|------------------------------------------------------------------------------|----------------|-----|----------------|----------------|
| Low Channel | | | | |
| Measurements are 6 dB below these limits, the measurements are not reported. | | | | |
| High Channel | | | | |
| Measurements are 6 dB below these limits, the measurements are not reported. | | | | |

Remark: "H": Horizontal, "V": Vertical

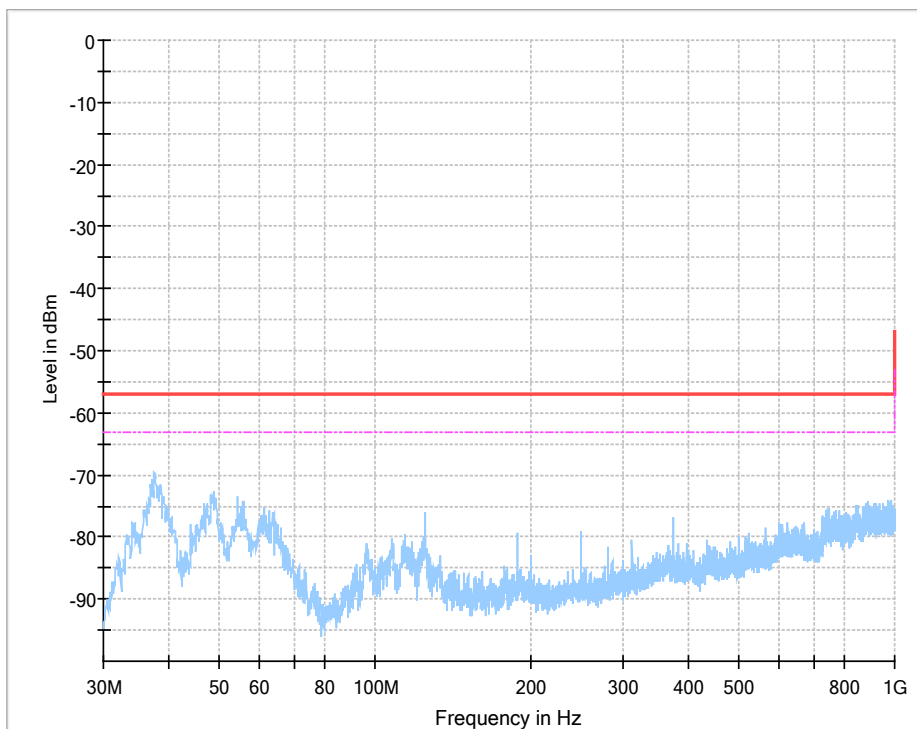


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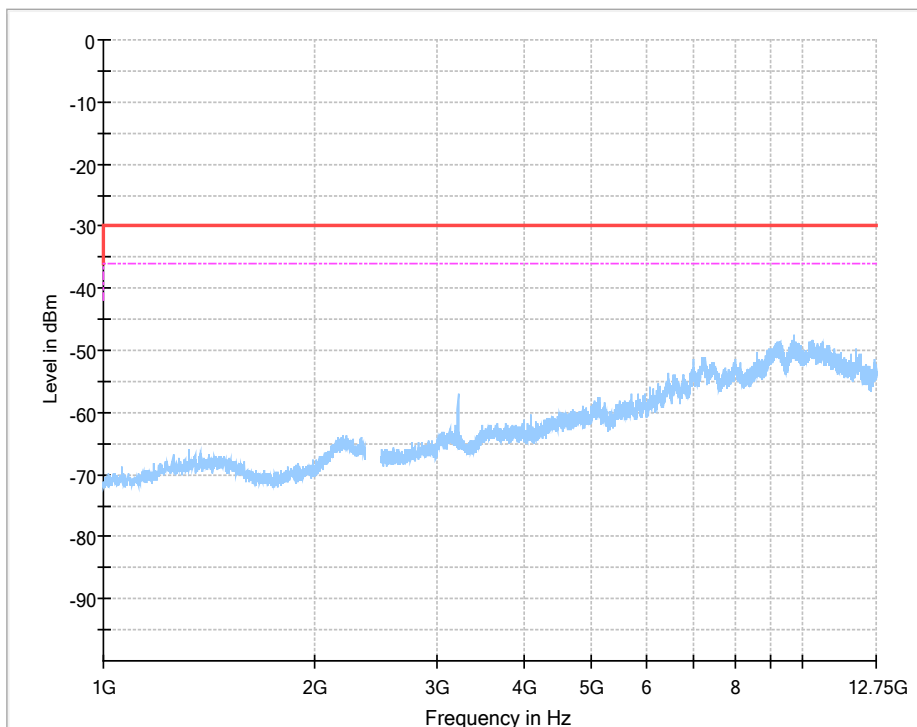
6.5.3.3 Plots of measurement data



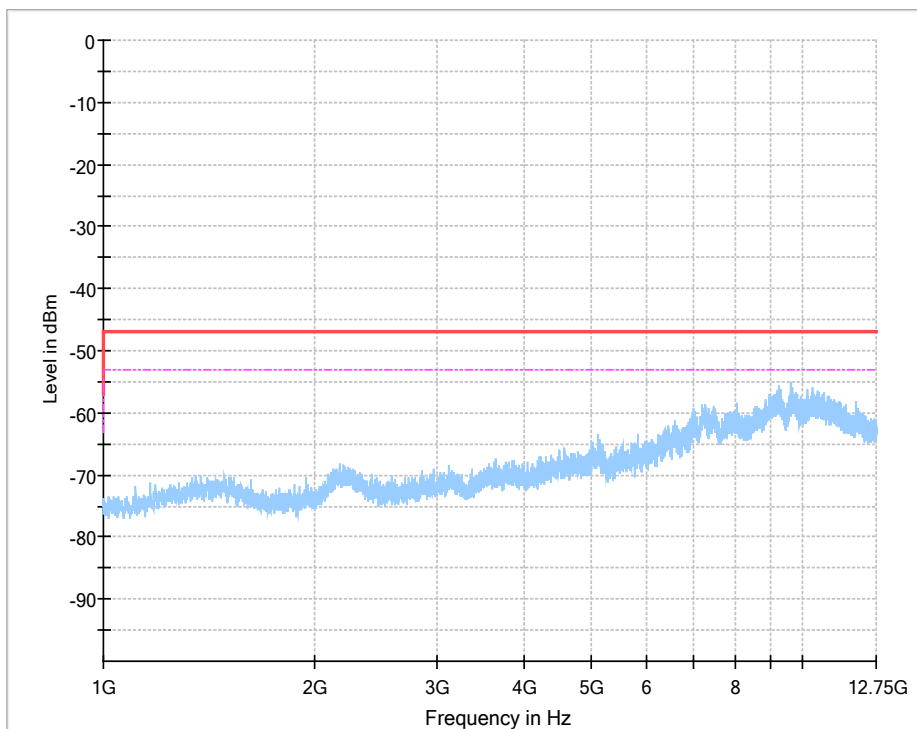
Low Channel - Receiving Mode (Below 1 GHz)



High Channel - Receiving Mode (Below 1 GHz)



Low Channel - Receiving Mode (Above 1 GHz)



High Channel - Receiving Mode (Above 1 GHz)

6.6 Limit

Subclause: 4.3.2.10.3 Table 13

| Frequency (MHz) | Maximum power, e.r.p. | Measurement bandwidth |
|--------------------|-----------------------|-----------------------|
| 30 MHz to 1 GHz | -57 dBm | 100 kHz |
| 1 GHz to 12.75 GHz | -47 dBm | 1 MHz |



Tested by: Hyung-Kwon, Oh / Assistant Manager

APPENDIX I - TEST SET-UP PHOTO

