Testing Laboratory
3546

Bay Area Compliance Labs. Corp.

FCC Part 15.407; LP0002-2018

RSS-247 Issue 2, Feb 2017; RSS-Gen Issue 5, Feb 2019

TEST REPORT

For

Cisco Systems, Inc.

170 West Tasman Dr., San Jose, CA 95134, USA

FCC ID: LDKAX5122118
IC : 2461N-AX5122118

Report Type :	Original Report
Product Type :	Cisco Catalyst 9130AX Series Wi-Fi 6 Access Points
Product Name :	For FCC: **C9130AXI-B** For Canada: **C9130AXI-A** For Taiwan: **C9130AXI-T**
Report Number :	RLK190621001-00A
Report Date :	2019/08/07
Reviewed By :	Zeus Chen Zeus Chen

Prepared By:
Bay Area Compliance Laboratories Corp.(Linkou Laboratory)
No.6, Wende 2Rd., Guishan Dist., Taoyuan City 33382, Taiwan (R.O.C.)
Tel. (886-3)396-1072
Fax.(886-3)396-1027
www.bacl.com.tw

***Note**: This test report is prepared for the customer shown above and for the device described herein. It may not be duplicated or used in part without prior written consent from Bay Area Compliance Laboratories Corp. (Taiwan).*

Revision History

Revision	Report Number	Issue Date	Description
1.0	RLK190621001-00A	2019/08/07	Original Report

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1 General Information

1.1 Product Description for Equipment under Test (EUT)

Applicant	**Cisco Systems, Inc.** 170 West Tasman Dr., San Jose, CA 95134, USA
Manufacturer	**Cisco Systems, Inc.** 170 West Tasman Dr., San Jose, CA 95134, USA
Brand(Trade) Name	**Cisco**
Product (Equipment)	**Cisco Catalyst 9130AX Series Wi-Fi 6 Access Points**
Model Name	**For FCC: C9130AXI-B** **For Canada: C9130AXI-A** **For Taiwan: C9130AXI-T** *Note: These 3 models are using same hardware specification include antennas, only for market purpose.
Frequency Range	**UNII-1: 5150 MHz ~ 5250 MHz** **UNII-2a: 5250 MHz ~ 5350 MHz** **UNII-2c: 5470 MHz ~ 5725 MHz** **UNII-3: 5725 MHz ~ 5850 MHz**
Received Date	Jun. 21, 2019.
Date of Test	Jun. 21, 2019 ~ Aug. 06, 2019
Modulation Type	OFDM
Related Submittal(s)/Grant(s)	**FCC Part 15.247 DTS with FCC ID: LDKAX5122118** **ISEDC RSS-247: DTS IC: 2461N-AX5122118**

**All measurement and test data in this report was gathered from production sample serial number: KWC2317002 (Assigned by BACL-LK)*

1.2 Operation Condition of EUT

Power Operation (Voltage Range)	☒ DC Type ☒ PoE: 30W *Brand Name: Cisco* *Model: SB-PWR-INJ2* *I/P: 100-240Vac,50/60Hz, 0.67A* *O/P: 55Vdc,0.6A* ☐ By Power Core

1.3 Objective and Test Methodology

The Objective of this Test Report was to document the compliance of the Cisco System, Inc. Appliance (Model: For FCC: C9130AXI-B; For Canada: C9130AXI-A, For Taiwan: C9130AXI-T) to the requirements of the following Standards:

-Part 2, Subpart J, Part 15 Subparts A and Part 15 Subparts E of the Federal Communication Commission's rules.

-ANSI C63.10-2013 "American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.

-KDB 662911 D01 Multiple Transmitter Output v02r01.

-KDB 789033 D02 General U-NII Test Procedures New Rules v02r01.

-RSS-247 Issue 2, Feb 2017 — Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and Licence-Exempt Local Area Network (LE-LAN) Devices.

-RSS-Gen Issue 5, Feb 2019 — General Requirements for Compliance of Radio Apparatus.

-LP0002 — Low-power Radio-frequency Devices Technical Regulations.

1.4 Measurement Uncertainty

Parameter	Expanded Measurement uncertainty
RF output power with Power Meter	± 0.55 dB
Occupied Channel Bandwidth	± 4.45 %
RF Conducted test with Spectrum	± 1.45 dB
AC Power Line Conducted Emission	± 2.66 dB
Radiated Below 1G	± 3.57 dB
Radiated Above 1G-18G	± 4.29 dB
Radiated Above 18G-40G	± 4.67 dB

1.5 Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Taiwan) to collect test data is located on

☒ No.6, Wende 2Rd., Guishan Dist., Taoyuan City 33382, Taiwan (R.O.C.).

The test site has been approved by the FCC under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database. The FCC Registration No.: 0027578244. Designation No.: TW3546. The Test Firm Registration No.: 181430.

2 System Test Configuration

2.1 Test Channels and Description of Worst Test Configuration

The system was configured for testing in testing mode which was provided by manufacturer.

No special accessory, No modification was made to the EUT and No special equipment used during test.

- **For BW: 20MHz**

Channel	Frequency (MHz)	Channel	Frequency (MHz)
36	5180	120 Note	5600
40	5200	124 Note	5620
44	5220	128 Note	5640
48	5240	132	5660
52	5260	136	5680
56	5280	140	5700
60	5300	144 Note	5720
64	5320	149	5745
100	5500	153	5765
104	5520	157	5785
108	5540	161	5805
112	5560	165	5825
116	5580	-	--

Note: Canada not support.

- **For BW: 40MHz**

Channel	Frequency (MHz)	Channel	Frequency (MHz)
38	5190	118 Note	5590
46	5230	126 Note	5630
54	5270	134	5670
62	5310	142 Note	5710
102	5510	151	5755
110	5500	159	5795

Note: Canada not support.

- **For BW: 80MHz**

Channel	Frequency (MHz)	Channel	Frequency (MHz)
42	5210	122 Note	5610
58	5290	138 Note	5690
106	5530	155	5775

Note: Canada not support.

- **For BW: 160MHz**

Channel	Frequency (MHz)	Channel	Frequency (MHz)
50	5250	114 Note	5570

Note: Canada not support.

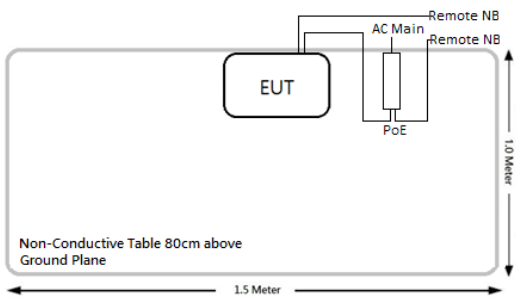
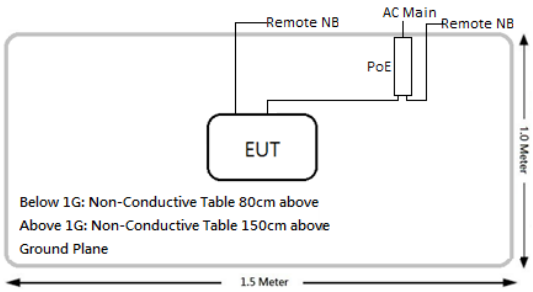
Radiated below 1G were tested worst output power mode.

2.2 Support Equipment List and External Cable List

No.	Description	Manufacturer	Model Number
A	Notebook PC*2	DELL	Latitude E5470
B	PoE Adapter	Cisco	AIR-PWRINJ6B01

No.	Cable Description	Manufacturer	Model Number	From	To
1	LAN Cable	BACL	BACL-LAN	EUT	NB
2	LAN Cable	BACL	BACL-LAN	EUT	PoE
3	LAN Cable	BACL	BACL-LAN	NB	PoE

2.3 Block Diagram of Test Setup

Conduction	Radiation
	

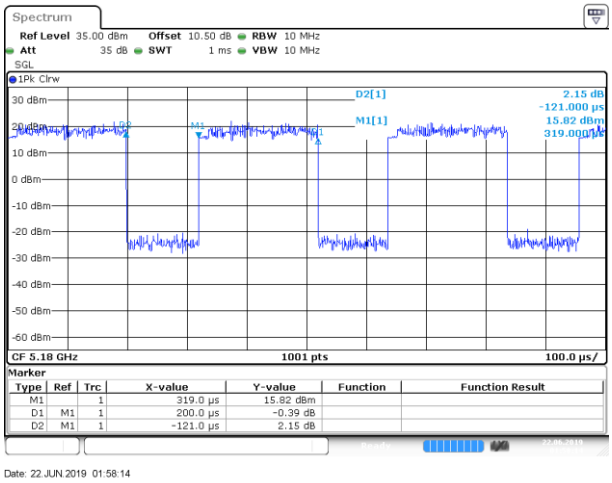
2.4 Duty Cycle

According to KDB 789033 D02 General UNII Test Procedures New Rules v02r01

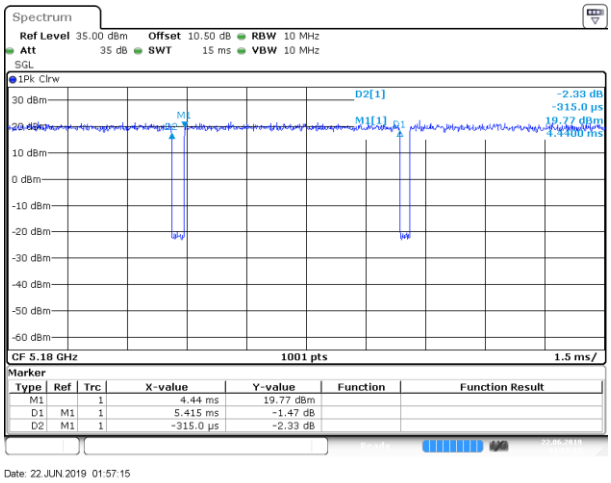
All measurements are to be performed with the EUT transmitting at 100% duty cycle at its maximum power control level; however, if 100% duty cycle cannot be achieved, measurements of duty cycle, x, and maximum power transmission duration, T, are required for each tested mode of operation.

Configuration	On Time (ms)	Period (ms)	Duty Cycle (%)	Duty Factor (dB)
802.11a mode	0.200	0.321	62.31	2.05
802.11n HT 20/ac VHT 20 mode	5.415	5.700	95.00	0.22
802.11n HT 40/ac VHT 40 mode	5.375	5.721	93.95	0.27
802.11ac VHT 80 mode	5.375	5.706	94.20	0.26
802.11ac VHT 160 mode	5.390	5.661	95.21	0.21
802.11ax HE 20 mode	5.430	5.715	95.01	0.22
802.11ax HE 40 mode	5.375	5.721	93.95	0.27
802.11ax HE 80 mode	5.420	5.706	94.99	0.22
802.11ax HE 160 mode	5.405	5.676	95.21	0.21

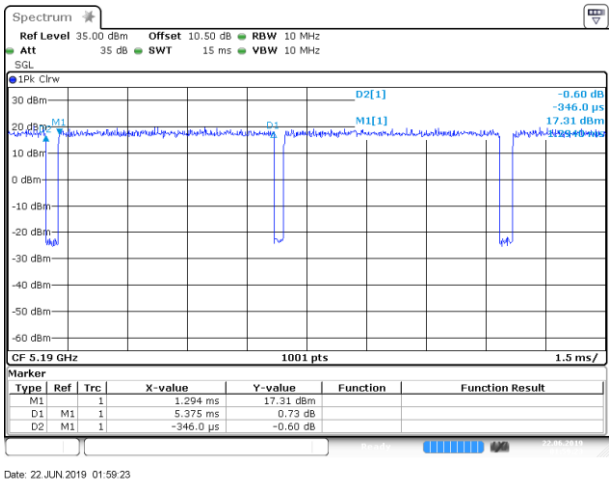
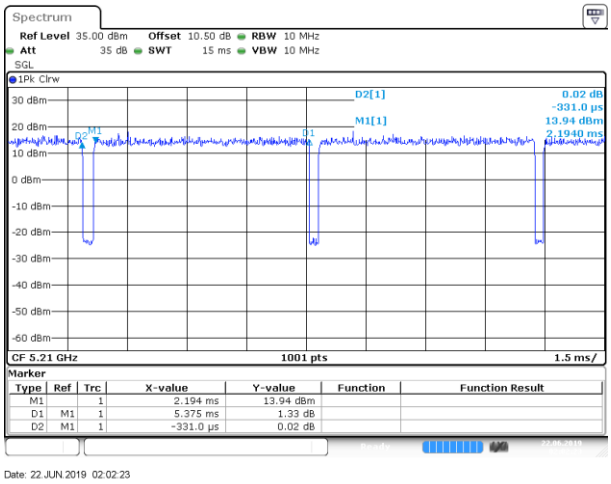
802.11a mode



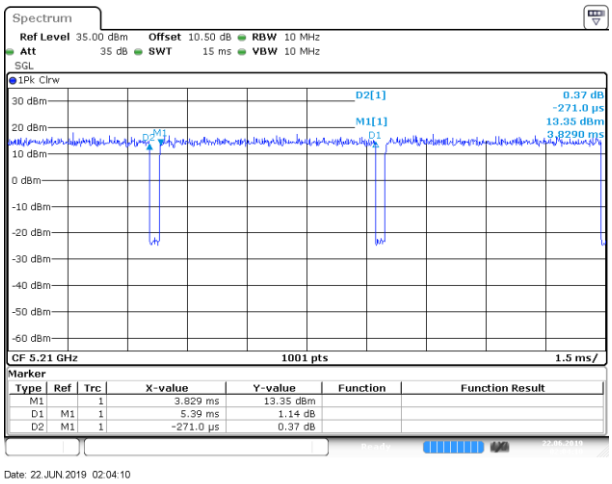
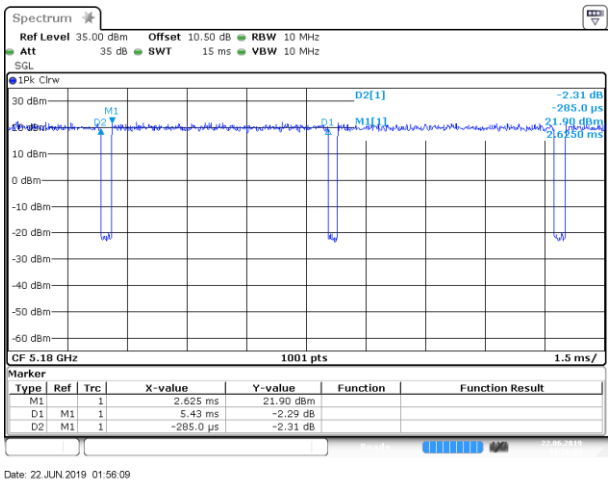
802.11n HT 20/ac VHT 20 mode



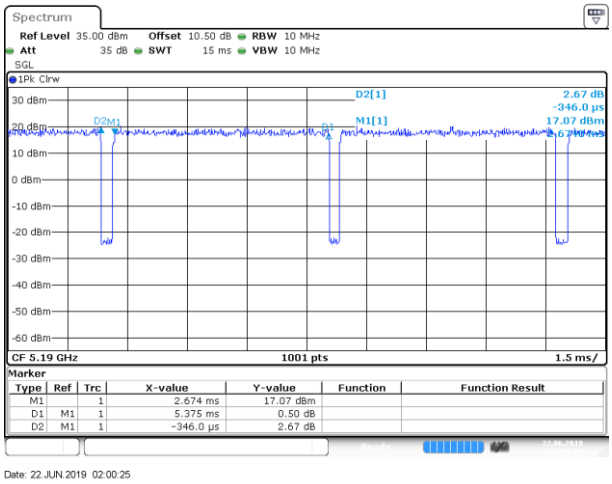
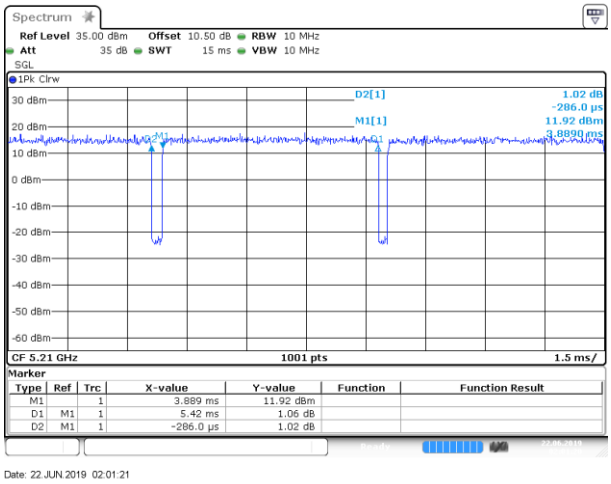
**Note: Duty Factor = 10*log (1/Duty cycle)*

802.11n HT 40/ac VHT 40 mode	802.11ac VHT 80 mode
	

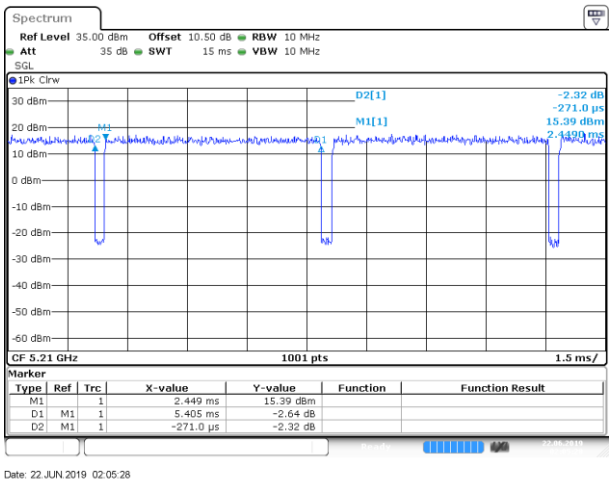
**Note: Duty Factor = 10*log (1/Duty cycle)*

802.11ac VHT 160 mode	802.11ax HE 20 mode
	

**Note: Duty Factor = 10*log (1/Duty cycle)*

802.11ax HE 40 mode	802.11ax HE 80 mode
	

**Note: Duty Factor = 10*log (1/Duty cycle)*

802.11ax HE 160 mode	-
	-

**Note: Duty Factor = 10*log (1/Duty cycle)*

3 Summary of Test Results

FCC/ISEDC/NCC Rules	Description of Test	Result
FCC §15.407 (f) & §1.1310 & §2.1091 ISEDC RSS-102 LP0002 Sec 5.20.2	Maximum Permissible Exposure (MPE)	Note[1]
FCC §15.203 ISEDC RSS-Gen Sec 6.8 LP0002-2018 Sec 2.2	Antenna Requirement	Compliance
FCC §15.207, FCC §15.407 (b) ISEDC RSS-Gen Sec 8.8 LP0002-2018 Sec 2.3	AC Line Conducted Emissions	Compliance
FCC §15.205, §15.209, §15.407(b), §2.1053 ISEDC RSS-Gen Sec 8.9 and 8.10 ISEDC RSS-247 Sec 6.2 LP0002-2018 Sec 3.10 and 4.7	Spurious Unwanted Emission	Compliance
FCC §15.407(a) (e) ISEDC RSS-247 Sec 6.2 LP0002 Sec 4.7	Emission Bandwidth	Note[2]
FCC §15.407(a) (1) ISED RSS-247 Sec 6.2 LP0002 Sec 4.7	Conducted Transmitter Output Power	Note[2]
FCC §2.1051, §15.407(b) ISEDC RSS-247 Sec 6.2 LP0002 Sec 4.7	Band Edge	Note[2]
FCC §15.407 (a) (1)(5) ISEDC RSS-247 Sec 6.2 LP0002 Sec 4.7	Power Spectral Density	Note[2]
FCC §15.407 (h) ISEDC RSS-247 Sec 6.3 LP0002 Sec 4.7	Dynamic Frequency Selections (DFS)	Note[3]

Note[1]**:** Compliance test data was recorded in a separate report, please refer to Test Report: R1906171

Note[2]**:** Compliance test data was recorded in a separate report, please refer to Test Report: R1906171

Note[3]**:** Compliance test data was recorded in a separate report, please refer to Test Report: EDCS-18179347

4 FCC §15.203, RSS-Gen and LP0002 Sec 2.2- Antenna Requirements

4.1 Applicable Standard

According to § 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 this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the user of a standard antenna jack or electrical connector is prohibited.

And according to FCC 47 CFR section 15.247 (b), if the transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna does not exceed 6dBi

4.2 Antenna List and Details

Radio	Item	Manufacturer	Antenna Type	Antenna Gain
BLE	BLE	Cisco	Internal antenna	4 dBi
XOR	Wi-Fi 2.4G Chain 0	Cisco	Internal antenna	4 dBi
	Wi-Fi 2.4G Chain 1	Cisco	Internal antenna	4 dBi
	Wi-Fi 2.4G Chain 2	Cisco	Internal antenna	4 dBi
	Wi-Fi 2.4G Chain 3	Cisco	Internal antenna	4 dBi
	Wi-Fi 5G Chain 0	Cisco	Internal antenna	6 dBi
	Wi-Fi 5G Chain 1	Cisco	Internal antenna	6 dBi
	Wi-Fi 5G Chain 2	Cisco	Internal antenna	6 dBi
	Wi-Fi 5G Chain 3	Cisco	Internal antenna	6 dBi
Regular	Wi-Fi 5G Chain 4	Cisco	Internal antenna	6 dBi
	Wi-Fi 5G Chain 5	Cisco	Internal antenna	6 dBi
	Wi-Fi 5G Chain 6	Cisco	Internal antenna	6 dBi
	Wi-Fi 5G Chain 7	Cisco	Internal antenna	6 dBi
Chillwave	Wi-Fi 2.4G	Cisco	Internal antenna	5 dBi
	Wi-Fi 5G	Cisco	Internal antenna	6 dBi

The EUT has an internal antenna arrangement, which was permanently attached, fulfill the requirement of this section.

5 FCC §15.207, §15.407 (b), RSS-Gen Sec 8.8 and LP0002 Sec 2.3 - AC Line Conducted Emissions

5.1 Applicable Standard

According to FCC §15.407(b) (6) , RSS-Gen Sec 8.8 and LP0002 Sec 2.3.

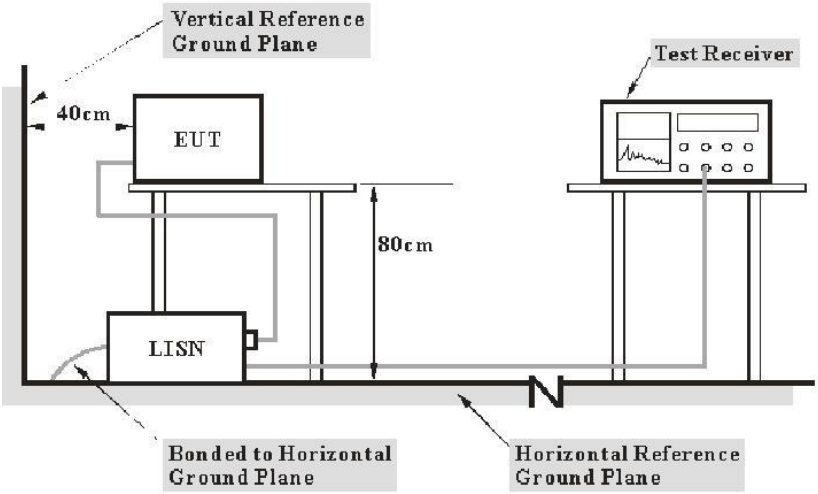
Any U-NII devices using an AC power line are required to comply also with the conducted limits set forth in §15.207.

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 50 µH/50 ohms 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 frequencies ranges.

Channel	Conducted Limit (dBuV)	
	Quasi-Peak	Average
0.15-0.5	66 to 56 Note 1	56 to 46 Note 2
0.5-5	56	46
5-30	60	50

Note 1: Decreases with the logarithm of the frequency. Note 2: A linear average detector is required

5.2 EUT Setup and Test Procedure



Note: 1. Support units were connected to second LISN.
2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The setup of EUT is according with per ANSI C63.10-2013 measurement procedure. The specification used was with the FCC Part 15.207 limits.

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz. During the conducted emission test, the EMI test receiver was set with the following configurations

Frequency Range	Receiver RBW
150 kHz - 30 MHz	9 kHz

During the conducted emission test, the adapter was connected to the outlet of the LISN. Maximizing procedure was performed on the six (6) highest emissions of the EUT. All data was recorded in the Quasi-peak and average detection mode.

5.3 Test Equipment List and Details

Description	Manufacture	Model	Serial No.	Cal. Date.	Cal. Due.
Conduction Room					
LISN	Rohde & Schwarz	ENV216	101612	2019/02/21	2020/02/20
LISN	Rohde & Schwarz	ENV216	101248	2019/06/26	2020/06/25
EMI Test Receiver	Rohde & Schwarz	ESR7	101419	2018/10/23	2019/10/22
Pulse Limiter	Rohde & Schwarz	ESH3Z2	TXZEM104	2018/08/03	2019/08/02
RF Cable	EMEC	EM-CB5D	001	2019/07/01	2020/06/30
Software	AUDIX	E3	LKCO01	N.C.R	N.C.R

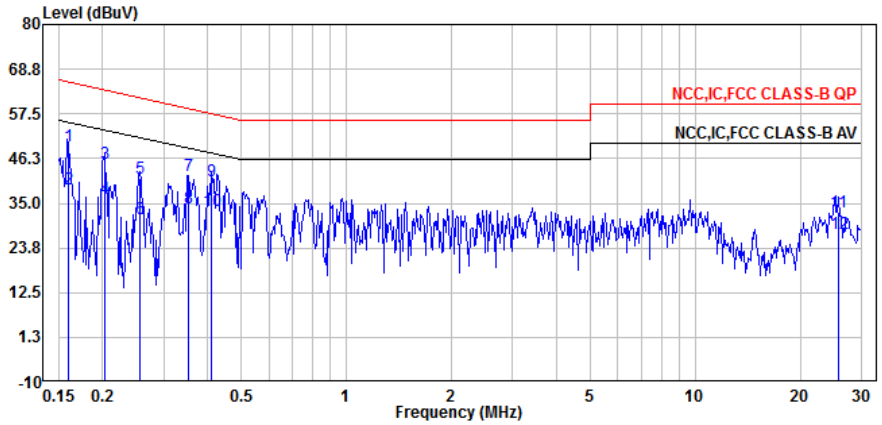
***Statement of Traceability:** The testing equipment's listed above have finished the calibration by Electronics Testing Center, Taiwan (ETC) or other laboratories which were accredited by TAF or equivalent organizations. The calibration result could be traceable to the International System of Units (SI).*

5.4 Test Environmental Conditions

Temperature:	20-25 ℃	**Relative Humidity:**	45-55 %
ATM Pressure:	1010 hPa	**Test Engineer:**	Ray Huang
Test Date:	2019-07-19~2019-07-30		

5.5 AC Line Conducted Emission Test Plot and Data

Mode: AC 120V/60 Hz (For FCC/IC), Co-location, Line



	Freq	Read Level	Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV	dB	dBuV	dB	
1	0.160	29.56	49.43	19.87	65.47	-16.04	QP
2	0.160	18.56	38.43	19.87	55.47	-17.04	Average
3	0.203	25.26	45.12	19.86	63.49	-18.37	QP
4	0.203	16.31	36.17	19.86	53.49	-17.32	Average
5	0.256	21.56	41.43	19.87	61.57	-20.14	QP
6	0.256	11.23	31.10	19.87	51.57	-20.47	Average
7	0.352	22.09	41.96	19.87	58.92	-16.96	QP
8	0.352	13.97	33.84	19.87	48.92	-15.08	Average
9	0.409	20.70	40.57	19.87	57.66	-17.09	QP
10	0.409	13.10	32.97	19.87	47.66	-14.69	Average
11	25.786	12.56	32.73	20.17	60.00	-27.27	QP
12	25.786	7.34	27.51	20.17	50.00	-22.49	Average

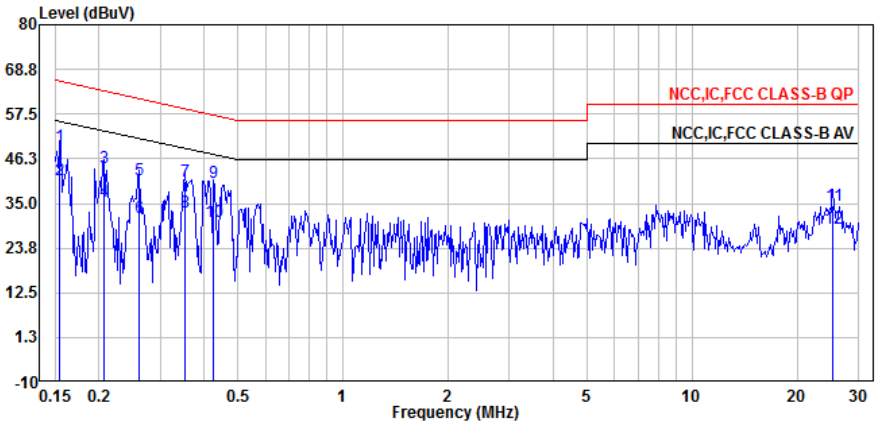
Note:

Level = Read Level + Factor

Over Limit (Margin) = Level – Limit Line

Factor = (LISN, ISN, PLC or current probe) Factor + Cable Loss + Attenuator

Mode: AC 120V/60 Hz (For FCC/IC), Co-location, Neutral



	Freq	Read Level	Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV	dB	dBuV	dB	
1	0.155	29.60	49.47	19.87	65.74	-16.27	QP
2	0.155	21.15	41.02	19.87	55.74	-14.72	Average
3	0.206	24.25	44.11	19.86	63.35	-19.24	QP
4	0.206	15.66	35.52	19.86	53.35	-17.83	Average
5	0.260	20.91	40.78	19.87	61.43	-20.65	QP
6	0.260	11.43	31.30	19.87	51.43	-20.13	Average
7	0.352	20.80	40.66	19.86	58.92	-18.26	QP
8	0.352	12.90	32.76	19.86	48.92	-16.16	Average
9	0.426	20.28	40.14	19.86	57.33	-17.19	QP
10	0.426	10.61	30.47	19.86	47.33	-16.86	Average
11	25.378	14.33	34.55	20.22	60.00	-25.45	QP
12	25.378	8.38	28.60	20.22	50.00	-21.40	Average

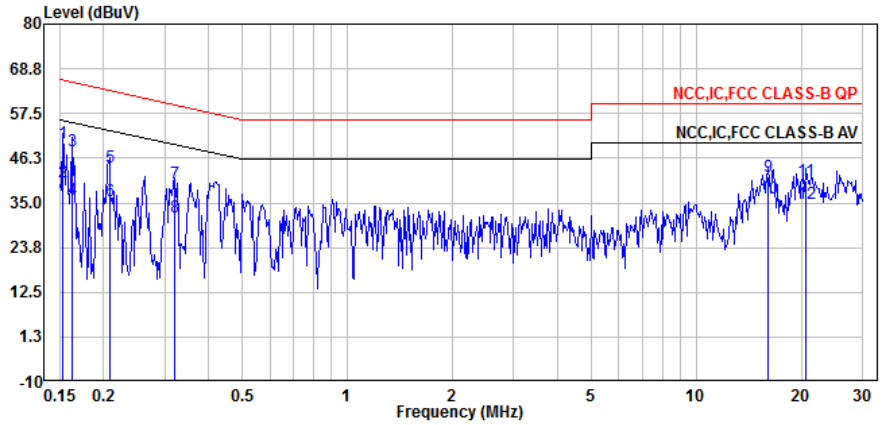
Note:

Level = Read Level + Factor

Over Limit (Margin) = Level – Limit Line

Factor = (LISN, ISN, PLC or current probe) Factor + Cable Loss + Attenuator

Mode: AC 110V/60 Hz (For NCC), Co-location, Line



	Freq	Read Level	Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV	dB	dBuV	dB	
1	0.152	30.40	50.27	19.87	65.87	-15.60	QP
2	0.152	20.42	40.29	19.87	55.87	-15.58	Average
3	0.162	28.35	48.22	19.87	65.34	-17.12	QP
4	0.162	15.98	35.85	19.87	55.34	-19.49	Average
5	0.208	24.17	44.03	19.86	63.29	-19.26	QP
6	0.208	15.51	35.37	19.86	53.29	-17.92	Average
7	0.320	20.01	39.88	19.87	59.71	-19.83	QP
8	0.320	11.65	31.52	19.87	49.71	-18.19	Average
9	16.115	21.59	41.74	20.15	60.00	-18.26	QP
10	16.115	15.93	36.08	20.15	50.00	-13.92	Average
11	20.630	20.34	40.52	20.18	60.00	-19.48	QP
12	20.630	14.76	34.94	20.18	50.00	-15.06	Average

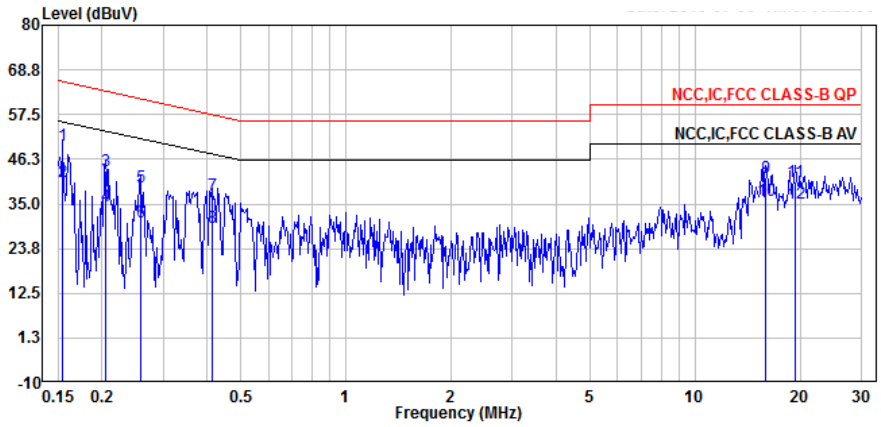
Note:

Level = Read Level + Factor

Over Limit (Margin) = Level – Limit Line

Factor = (LISN, ISN, PLC or current probe) Factor + Cable Loss + Attenuator

Mode: AC 110V/60 Hz (For NCC), Co-location, Neutral



	Freq	Read Level	Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV	dB	dBuV	dB	
1	0.155	29.90	49.77	19.87	65.74	-15.97	QP
2	0.155	20.66	40.53	19.87	55.74	-15.21	Average
3	0.205	23.51	43.37	19.86	63.42	-20.05	QP
4	0.205	14.69	34.55	19.86	53.42	-18.87	Average
5	0.258	19.50	39.37	19.87	61.50	-22.13	QP
6	0.258	10.42	30.29	19.87	51.50	-21.21	Average
7	0.413	17.21	37.07	19.86	57.60	-20.53	QP
8	0.413	9.27	29.13	19.86	47.60	-18.47	Average
9	15.987	21.43	41.62	20.19	60.00	-18.38	QP
10	15.987	15.52	35.71	20.19	50.00	-14.29	Average
11	19.356	20.51	40.73	20.22	60.00	-19.27	QP
12	19.356	14.93	35.15	20.22	50.00	-14.85	Average

Note:

Level = Read Level + Factor

Over Limit (Margin) = Level – Limit Line

Factor = (LISN, ISN, PLC or current probe) Factor + Cable Loss + Attenuator

6 FCC §15.209, §15.205, §15.407(b), §2.1053, RSS-Gen Sec 8.9, 8.10, RSS-247 Sec 6.2 and LP0002 Sec 3.10 and 4.7 – Spurious Unwanted Emissions

6.1 Applicable Standard

According to FCC §15.407(b), LP0002 Sec 3.10 and 4.7.
Undesirable emission limits. Except as shown in paragraph (b) (7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

(1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.
(2) For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.
(3) For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.
(4) For transmitters operating in the 5.725-5.85 GHz band:
(5) The emission measurements shall be performed using a minimum resolution bandwidth of 1 MHz. A lower resolution bandwidth may be employed near the band edge, when necessary, provided the measured energy is integrated to show the total power over 1 MHz.
(6) Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209. Further, any U-NII devices using an AC power line are required to comply also with the conducted limits set forth in §15.207.
(7) The provisions of §15.205 apply to intentional radiators operating under this section.

As per FCC §15.35(d): Unless otherwise specified, on any frequency or frequencies above 1000 MHz, the radiated emission limits are based on the use of measurement instrumentation employing an average detector function. Unless otherwise specified, measurements above 1000 MHz shall be performed using a minimum resolution bandwidth of 1MHz.

As Per FCC §15.205(a) except as show in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090-0.110	13.36-13.41	399.9-410	4.5-5.15
0.495-0.505	16.42-16.423	608-614	5.35-5.46
2.1735-2.1905	16.69475-16.69525	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	Above 38.6

As per NCC Section 2.7,

MHz	MHz	MHz
0.090 - 0.110	167.72 - 173.20	3260.0 - 3267.0
0.490 - 0.510	240.00 - 285.00	3332.0 - 3339.0
2.172 - 2.198	322.00 - 335.40	3345.8 - 3358.0
3.013 - 3.033	399.90 - 410.00	3500.0 - 4400.0
4.115 - 4.198	608.00 - 614.00	4500.0 - 5250.0
5.670 - 5.690	703.00 - 748.00	5350.0 - 5460.0
6.200 - 6.300	758.00 - 803.00	7250.0 - 7750.0
8.230 - 8.400	825.00 - 915.00	8025.0 - 8500.0
12.265 - 12.600	930.00 - 1240.0	9000.0 - 9200.0
13.340 - 13.430	1300.0 - 1427.0	9300.0 - 9500.0
14.965 - 15.020	1435.0 - 1626.5	10600 - 12700
16.700 - 16.755	1660.0 - 1785.0	13250 - 13400
19.965 - 20.020	1805.0 - 1880.0	14470 - 14500
25.500 - 25.700	1885.0 - 1900.0	15350 - 16200
37.475 - 38.275	1905.0 - 1985.0	17700 - 21400
73.500 - 75.400	2010.0 - 2025.0	22010 - 23120
108.00 - 138.00	2110.0 - 2170.0	23600 - 24000
149.90 - 150.05	2200.0 - 2300.0	31200 - 31800
156.70 - 156.90	2310.0 - 2390.0	36430 - 36500
162.01 - 167.17	2483.5 - 2900.0	Above 38600

As per FCC §15.209(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 (micro volts/meter)	Measurement Distance (meters)
0.009 - 0.490	2400/F(kHz)	300
0.490 - 1.705	24000/F(kHz)	30
1.705 - 30.0	30	30
30 - 88	100**	3
88 - 216	150**	3
216 - 960	200**	3
Above 960	500	3

** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g., Sections 15.231 and 15.241.

According to ISED RSS-247 Sec 6.2,

- The outermost carrier frequencies or channels shall be used when measuring unwanted emissions. Such carrier or channel centre frequencies are to be indicated in the test report.

- For transmitters with operating frequencies in the band 5150-5250 MHz, all emissions outside the band 5150-5350 MHz shall not exceed -27 dBm/MHz e.i.r.p. Any unwanted emissions that fall into the band 5250-5350 MHz shall be attenuated below the channel power by at least 26 dB, when measured using a resolution bandwidth between 1 and 5% of the occupied bandwidth (i.e. 99% bandwidth), above 5250 MHz. The 26 dB bandwidth may fall into the 5250-5350 MHz band; however, if the occupied bandwidth also falls within the 5250-5350 MHz band, the transmission is considered as intentional and the devices shall comply with all requirements in the band 5250-5350 MHz including implementing dynamic frequency selection (DFS) and TPC, on the portion of the emission that resides in the 5250-5350 MHz band

- Devices shall comply with the following:

a) All emissions outside the band 5250-5350 MHz shall not exceed -27 dBm/MHz e.i.r.p.; or
b) All emissions outside the band 5150-5350 MHz shall not exceed -27 dBm/MHz e.i.r.p. and its power shall comply with the spectral power density for operation within the band 5150-5250 MHz. The device, except devices installed in vehicles, shall be labelled or include in the user manual the following text “for indoor use only.”

- Emissions outside the band 5470-5725 MHz shall not exceed -27 dBm/MHz e.i.r.p. However, devices with bandwidth overlapping the band edge of 5725 MHz can meet the emission limit of -27 dBm/MHz e.i.r.p. at 5850 MHz instead of 5725 MHz.

- Devices operating in the band 5725-5850 MHz with antenna gain greater than 10 dBi can have unwanted emissions that comply with either the limits in this section or in section 5.5 until six (6) months after the publication date of this standard for certification. Certified devices that do not comply with emission limits in this section shall not be manufactured, imported, distributed, leased, offered for sale or sold after April 1, 2018.

- Devices operating in the band 5725-5850 MHz with antenna gain of 10 dBi or less can have unwanted emissions that comply with either the limits in this section or in section 5.5 until April 1, 2018 for certification. Certified devices that do not comply with emission limits in this section shall not be manufactured, imported, distributed, leased, offered for sale or sold after April 1, 2020.

Devices operating in the band 5725-5850 MHz shall have e.i.r.p. of unwanted emissions comply with the following:

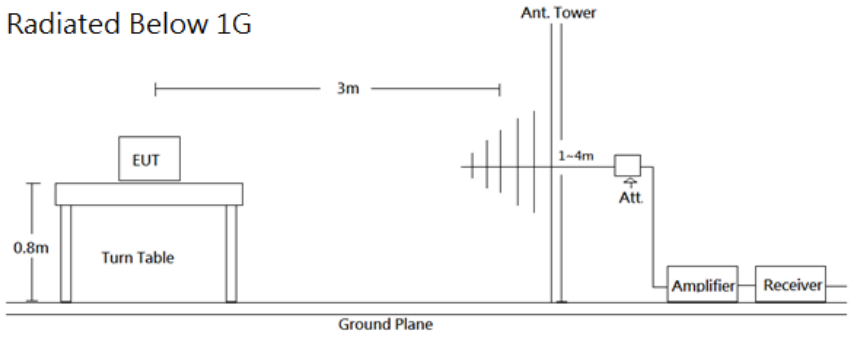
a) 27 dBm/MHz at frequencies from the band edges decreasing linearly to 15.6 dBm/MHz at 5 MHz above or below the band edges;

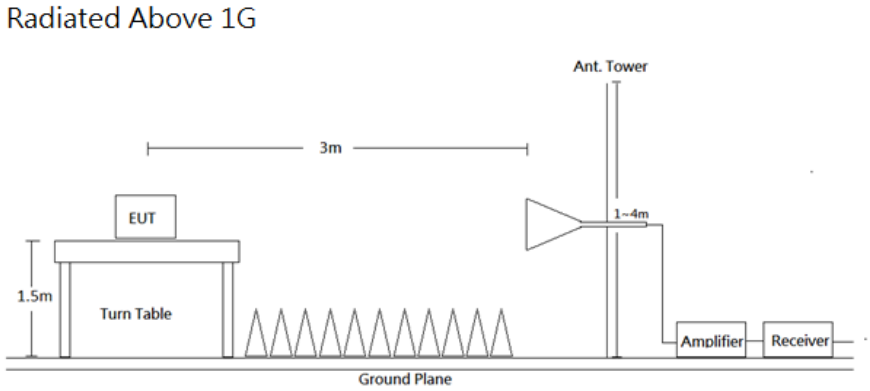
b) 15.6 dBm/MHz at 5 MHz above or below the band edges decreasing linearly to 10 dBm/MHz at 25 MHz above or below the band edges;

c) 10 dBm/MHz at 25 MHz above or below the band edges decreasing linearly to -27 dBm/MHz at 75 MHz above or below the band edges; and

d) -27 dBm/MHz at frequencies more than 75 MHz above or below the band edges.

6.2 EUT Setup and Test Procedure





Radiated emission tests were performed in the 3 meters chamber test site, using the setup accordance with the ANSI C63.10-2013. The specification used was the FCC Part 15.209 and FCC 15.407 Limits.

The system was investigated from 30 MHz to 40 GHz. During the radiated emission test, the EMI test receiver was set with the following configurations measurement method 6.3 in ANSI C63.10.

Frequency Range	RBW	VBW	Detector	Duty cycle	Measurement method
30-1000 MHz	120 kHz	/	QP	-	QP
Above 1 GHz	1 MHz	3 MHz	PK	-	PK
	1 MHz	3 MHz	RMS	>98%	Ave
	1 MHz	1/T	PK	<98%	Ave

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations. All data was recorded in the Quasi-peak detector mode from 30 MHz to 1 GHz and PK and average detector modes for frequencies above 1 GHz.

6.3 Test Equipment List and Details

Description	Manufacture	Model	Serial No.	Cal. Date.	Cal. Due.
966A Room					
Active Loop Antenna	ETS-Lindgren	6502	00035796	2019/03/12	2020/03/11
Bilog Antenna with 6 dB Attenuator	Sunol & Mini-Circuits	JB6/UNAT-6+	A050115/15542_01	2018/12/11	2019/12/10
Horn Antenna	EMCO	SAS-571	1983	2019/04/30	2020/04/29
Horn Antenna	ETS-Lindgren	3116	62638	2018/08/29	2019/08/28
Preamplifier	Sonoma	310N	130601	2018/09/20	2019/09/19
Preamplifier	EM Electronics Corp.	EM01G18G	060698	2019/04/12	2020/04/11
Microware Preamplifier	EM Electronics Corporatino	EM18G40G	060656	2019/01/11	2020/01/10
EMI Test Receiver	Rohde & Schwarz	ESR7	101419	2018/10/23	2019/10/22
Spectrum Analyzer	Rohde & Schwarz	FSV40	101204	2019/07/04	2020/07/03
Microflex Cable	UTIFLEX	UFB197C-1-2362-70U-70U	225756-001	2019/07/01	2020/06/30
Microflex Cable	UTIFLEX	UFA210A-1-3149-300300	MFR64639 226389-001	2018/11/19	2019/11/18
Microflex Cable	ROSNOL	K1K50-UP0264-K1K50-450CM	160309-1	2019/03/04	2020/03/03
Microflex Cable	ROSNOL	K1K50-UP0264-K1K50-80CM	160309-2	2019/01/16	2020/01/15
Turn Table	Champro	TT-2000	060772-T	N.C.R	N.C.R
Antenna Tower	Champro	AM-BS-4500-B	060772-A	N.C.R	N.C.R
Controller	Champro	EM1000	60772	N.C.R	N.C.R
Software	AUDIX	E3	LKCO01	N.C.R	N.C.R

***Statement of Traceability:** The testing equipment's listed above have finished the calibration by Electronics Testing Center, Taiwan (ETC) or other laboratories which were accredited by TAF or equivalent organizations. The calibration result could be traceable to the International System of Units (SI).*

6.4 Test Environmental Conditions

Temperature:	20-25 ℃	**Relative Humidity:**	45-55 %
ATM Pressure:	1014hPa	**Test Engineer:**	Leo Chang
Test Date:	2019-06-19~2019-08-06	-	-

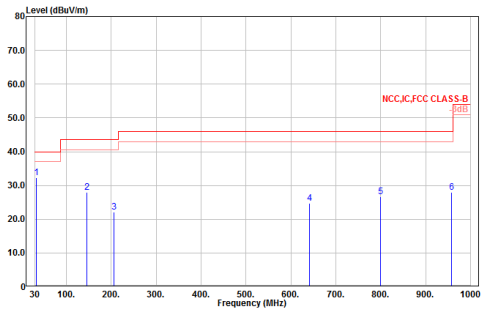
6.5 Radiated Emission Test Plot and Data

<u>5 GHz Regular- 4TX</u>

Transmitting mode (Pre-scan with three orthogonal axis, and worse case as Z axis)

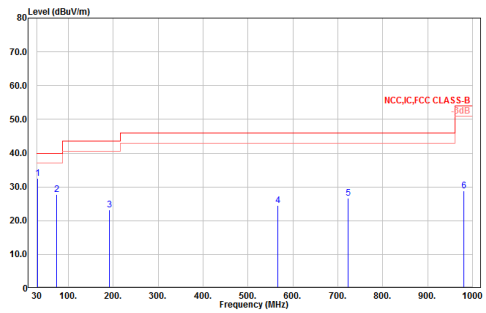
Below 1G (30 MHz-1 GHz) test the output power worst mode

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		
1	32.910	32.21	40.00	-7.79	40.23	-8.02	Peak	horizontal
2	146.400	27.96	43.50	-15.54	46.03	-18.07	Peak	horizontal
3	206.540	22.08	43.50	-21.42	41.81	-19.73	Peak	horizontal
4	641.100	24.63	46.00	-21.37	35.88	-11.25	Peak	horizontal
5	800.180	26.71	46.00	-19.29	35.76	-9.05	Peak	horizontal
6	957.320	27.89	46.00	-18.11	35.27	-7.38	Peak	horizontal

Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		
1	32.210	32.50	40.00	-7.50	39.06	-6.56	QP	vertical
2	74.620	27.79	40.00	-12.21	49.94	-22.15	Peak	vertical
3	191.020	23.30	43.50	-20.20	43.13	-19.83	Peak	vertical
4	566.410	24.56	46.00	-21.44	37.09	-12.53	Peak	vertical
5	722.580	26.64	46.00	-19.36	36.82	-10.18	Peak	vertical
6	980.600	28.88	54.00	-25.12	35.95	-7.07	Peak	vertical

Result = Reading + Correct Factor

Margin = Result – Limit

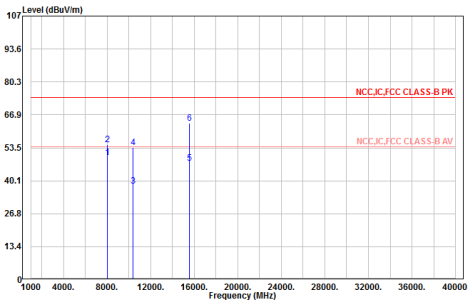
Correct Factor = Antenna Factor + Cable Loss – Amplifier Gain

Spurious emissions more than 20 dB below the limit were not reported

Above 1G (1 GHz-40 GHz): 5 GHz Regular- 4TX

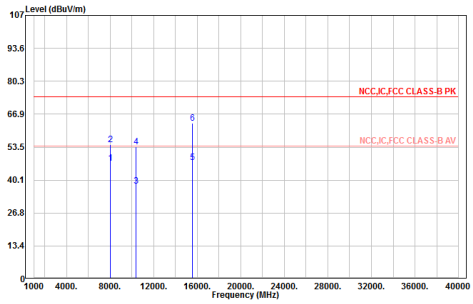
nonHT20 mode: 5180 MHz

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		
1 !	8000.000	49.46	54.00	-4.54	43.68	5.78	Average	horizontal
2 !	8000.000	54.84	74.00	-19.16	49.06	5.78	Peak	horizontal
3 !	10360.000	37.86	54.00	-16.14	29.11	8.75	Average	horizontal
4	10360.000	53.59	74.00	-20.41	44.84	8.75	Peak	horizontal
5 !	15540.000	47.30	54.00	-6.70	34.14	13.16	Average	horizontal
6 !	15540.000	63.47	74.00	-10.53	50.31	13.16	Peak	horizontal

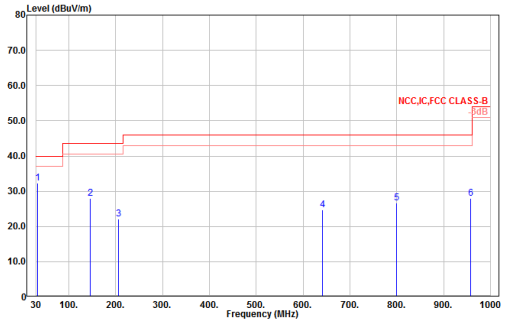
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		
1 !	8000.000	47.03	54.00	-6.97	41.25	5.78	Average	vertical
2 !	8000.000	54.55	74.00	-19.45	48.77	5.78	Peak	vertical
3 !	10360.000	37.81	54.00	-16.19	29.06	8.75	Average	vertical
4	10360.000	53.78	74.00	-20.22	45.03	8.75	Peak	vertical
5 !	15540.000	47.28	54.00	-6.72	34.12	13.16	Average	vertical
6 !	15540.000	63.34	74.00	-10.66	50.18	13.16	Peak	vertical

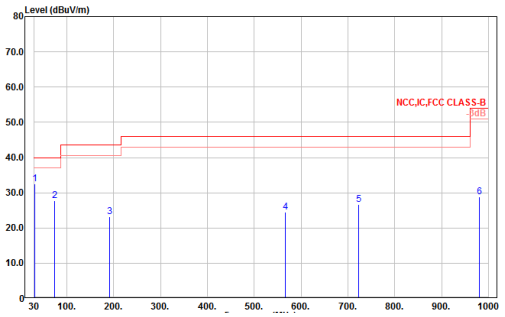
nonHT20 mode: 5200 MHz

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		
1	32.910	32.21	40.00	-7.79	40.23	-8.02	Peak	horizontal
2	146.400	27.96	43.50	-15.54	46.03	-18.07	Peak	horizontal
3	206.540	22.08	43.50	-21.42	41.81	-19.73	Peak	horizontal
4	641.100	24.63	46.00	-21.37	35.88	-11.25	Peak	horizontal
5	800.180	26.71	46.00	-19.29	35.76	-9.05	Peak	horizontal
6	957.320	27.89	46.00	-18.11	35.27	-7.38	Peak	horizontal

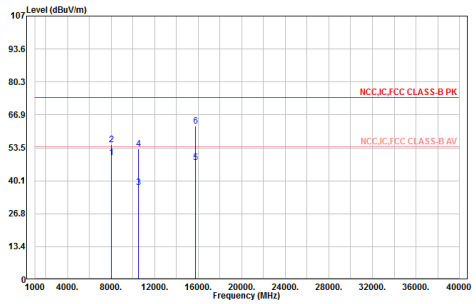
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		
1	32.210	32.50	40.00	-7.50	39.06	-6.56	QP	vertical
2	74.620	27.79	40.00	-12.21	49.94	-22.15	Peak	vertical
3	191.020	23.30	43.50	-20.20	43.13	-19.83	Peak	vertical
4	566.410	24.56	46.00	-21.44	37.09	-12.53	Peak	vertical
5	722.580	26.64	46.00	-19.36	36.82	-10.18	Peak	vertical
6	980.600	28.88	54.00	-25.12	35.95	-7.07	Peak	vertical

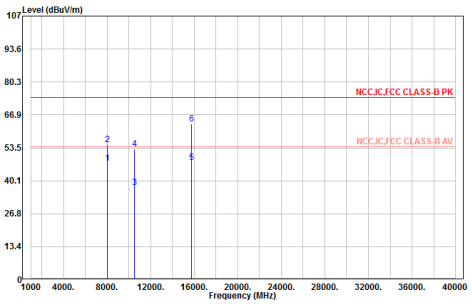
nonHT20 mode: 5240 MHz

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		
1 !	8000.000	49.70	54.00	-4.30	43.92	5.78	Average	horizontal
2 !	8000.000	54.87	74.00	-19.13	49.09	5.78	Peak	horizontal
3 !	10480.000	37.46	54.00	-16.54	28.82	8.64	Average	horizontal
4	10480.000	53.01	74.00	-20.99	44.37	8.64	Peak	horizontal
5 !	15720.000	47.47	54.00	-6.53	34.72	12.75	Average	horizontal
6 !	15720.000	62.29	74.00	-11.71	49.54	12.75	Peak	horizontal

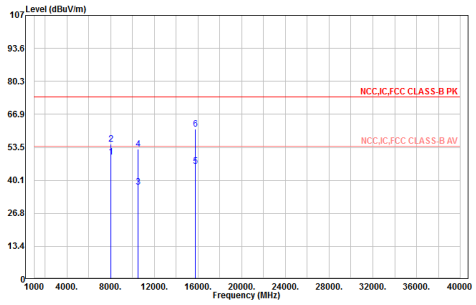
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		
1 !	8000.000	47.20	54.00	-6.80	41.42	5.78	Average	vertical
2 !	8000.000	54.74	74.00	-19.26	48.96	5.78	Peak	vertical
3 !	10480.000	37.52	54.00	-16.48	28.88	8.64	Average	vertical
4	10480.000	53.01	74.00	-20.99	44.37	8.64	Peak	vertical
5 !	15720.000	47.47	54.00	-6.53	34.72	12.75	Average	vertical
6 !	15720.000	63.36	74.00	-10.64	50.61	12.75	Peak	vertical

nonHT20 mode: 5260 MHz

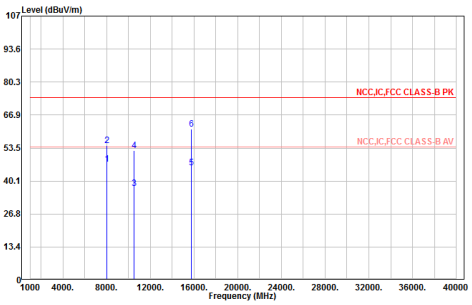
Horizontal



Site : LK-966A

	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		
1 !	8000.000	49.50	54.00	-4.50	43.72	5.78	Average	horizontal
2 !	8000.000	54.76	74.00	-19.24	48.98	5.78	Peak	horizontal
3 !	10520.000	37.28	54.00	-16.72	28.99	8.29	Average	horizontal
4	10520.000	52.88	74.00	-21.12	44.59	8.29	Peak	horizontal
5 !	15780.000	45.84	54.00	-8.16	33.50	12.34	Average	horizontal
6 !	15780.000	60.75	74.00	-13.25	48.41	12.34	Peak	horizontal

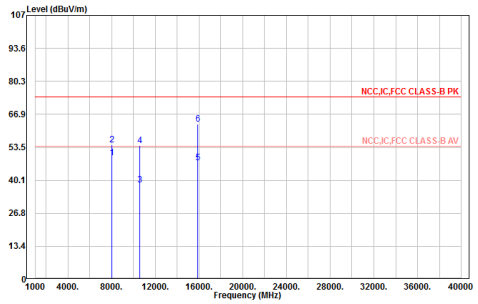
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		
1 !	8000.000	47.08	54.00	-6.92	41.30	5.78	Average	vertical
2 !	8000.000	54.53	74.00	-19.47	48.75	5.78	Peak	vertical
3 !	10520.000	37.16	54.00	-16.84	28.87	8.29	Average	vertical
4	10520.000	52.48	74.00	-21.52	44.19	8.29	Peak	vertical
5 !	15780.000	45.40	54.00	-8.60	33.06	12.34	Average	vertical
6 !	15780.000	61.12	74.00	-12.88	48.78	12.34	Peak	vertical

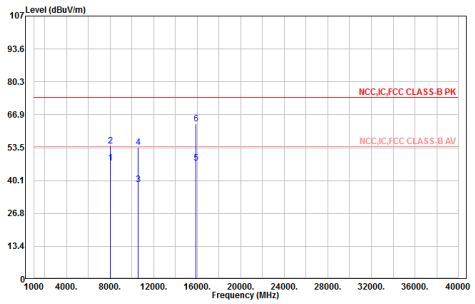
nonHT20 mode: 5300 MHz

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		
1 !	8000.000	49.32	54.00	-4.68	43.54	5.78	Average	horizontal
2 !	8000.000	54.63	74.00	-19.37	48.85	5.78	Peak	horizontal
3 !	10600.000	38.36	54.00	-15.64	29.63	8.73	Average	horizontal
4 !	10600.000	54.11	74.00	-19.89	45.38	8.73	Peak	horizontal
5 !	15900.000	47.34	54.00	-6.66	35.21	12.13	Average	horizontal
6 !	15900.000	62.95	74.00	-11.05	50.82	12.13	Peak	horizontal

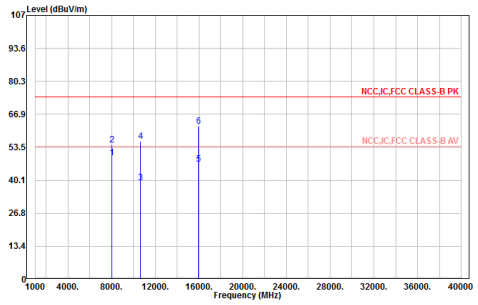
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		
1 !	8000.000	47.23	54.00	-6.77	41.45	5.78	Average	vertical
2 !	8000.000	54.13	74.00	-19.87	48.35	5.78	Peak	vertical
3 !	10600.000	38.46	54.00	-15.54	29.73	8.73	Average	vertical
4	10600.000	53.75	74.00	-20.25	45.02	8.73	Peak	vertical
5 !	15900.000	47.23	54.00	-6.77	35.10	12.13	Average	vertical
6 !	15900.000	63.19	74.00	-10.81	51.06	12.13	Peak	vertical

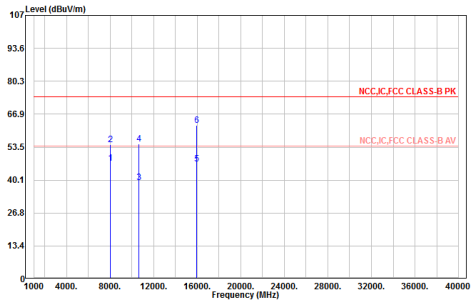
nonHT20 mode: 5320 MHz

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		
1 !	8000.000	49.41	54.00	-4.59	43.63	5.78	Average	horizontal
2 !	8000.000	54.46	74.00	-19.54	48.68	5.78	Peak	horizontal
3 !	10640.000	39.17	54.00	-14.83	29.86	9.31	Average	horizontal
4 !	10640.000	56.07	74.00	-17.93	46.76	9.31	Peak	horizontal
5 !	15960.000	46.79	54.00	-7.21	34.85	11.94	Average	horizontal
6 !	15960.000	62.11	74.00	-11.89	50.17	11.94	Peak	horizontal

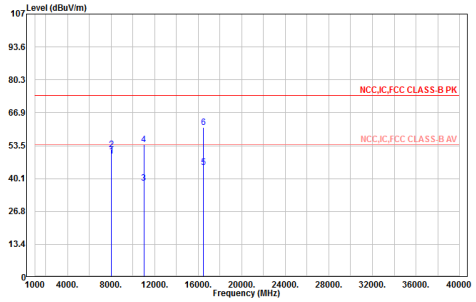
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		
1 !	8000.000	47.06	54.00	-6.94	41.28	5.78	Average	vertical
2 !	8000.000	54.54	74.00	-19.46	48.76	5.78	Peak	vertical
3 !	10640.000	39.19	54.00	-14.81	29.88	9.31	Average	vertical
4 !	10640.000	54.88	74.00	-19.12	45.57	9.31	Peak	vertical
5 !	15960.000	46.79	54.00	-7.21	34.85	11.94	Average	vertical
6 !	15960.000	62.47	74.00	-11.53	50.53	11.94	Peak	vertical

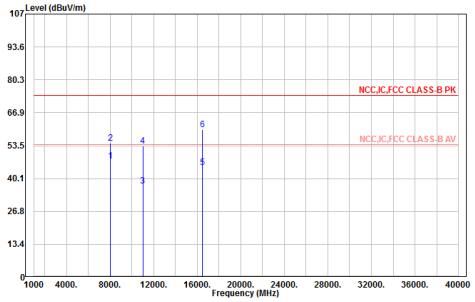
nonHT20 mode: 5500 MHz

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		
1 !	8000.000	49.27	54.00	-4.73	43.49	5.78	Average	horizontal
2	8000.000	51.98	74.00	-22.02	46.20	5.78	Peak	horizontal
3 !	11000.000	38.14	54.00	-15.86	28.71	9.43	Average	horizontal
4	11000.000	53.98	74.00	-20.02	44.55	9.43	Peak	horizontal
5 !	16500.000	44.62	54.00	-9.38	31.42	13.20	Average	horizontal
6 !	16500.000	60.97	74.00	-13.03	47.77	13.20	Peak	horizontal

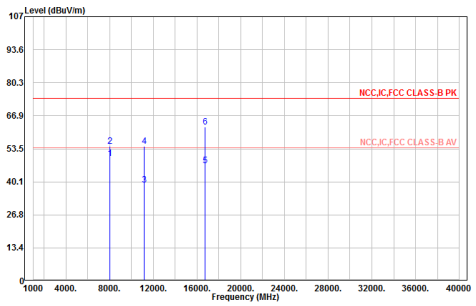
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		
1 !	8000.000	47.20	54.00	-6.80	41.42	5.78	Average	vertical
2 !	8000.000	54.40	74.00	-19.60	48.62	5.78	Peak	vertical
3 !	11000.000	37.25	54.00	-16.75	27.82	9.43	Average	vertical
4	11000.000	53.48	74.00	-20.52	44.05	9.43	Peak	vertical
5 !	16500.000	44.67	54.00	-9.33	31.47	13.20	Average	vertical
6 !	16500.000	60.13	74.00	-13.87	46.93	13.20	Peak	vertical

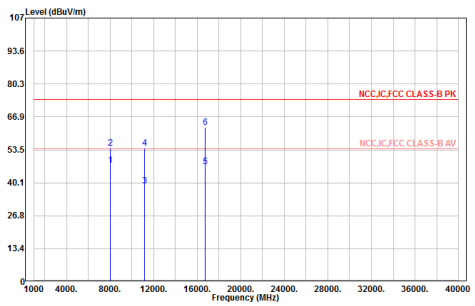
nonHT20 mode: 5580 MHz

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		
1 !	8000.000	49.55	54.00	-4.45	43.77	5.78	Average	horizontal
2 !	8000.000	54.44	74.00	-19.56	48.66	5.78	Peak	horizontal
3 !	11160.000	38.82	54.00	-15.18	28.87	9.95	Average	horizontal
4 !	11160.000	54.54	74.00	-19.46	44.59	9.95	Peak	horizontal
5 !	16740.000	46.79	54.00	-7.21	32.07	14.72	Average	horizontal
6 !	16740.000	62.41	74.00	-11.59	47.69	14.72	Peak	horizontal

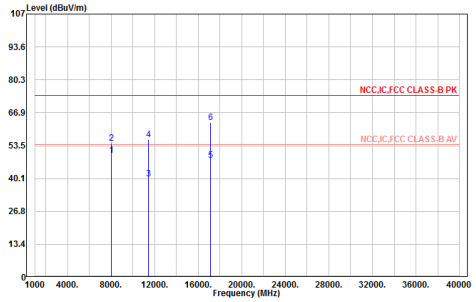
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		
1 !	8000.000	47.20	54.00	-6.80	41.42	5.78	Average	vertical
2 !	8000.000	54.17	74.00	-19.83	48.39	5.78	Peak	vertical
3 !	11160.000	38.82	54.00	-15.18	28.87	9.95	Average	vertical
4 !	11160.000	54.35	74.00	-19.65	44.40	9.95	Peak	vertical
5 !	16740.000	46.82	54.00	-7.18	32.10	14.72	Average	vertical
6 !	16740.000	62.62	74.00	-11.38	47.90	14.72	Peak	vertical

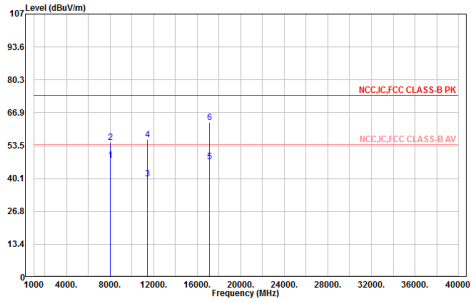
nonHT20 mode: 5700 MHz

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		
1 !	8000.000	49.49	54.00	-4.51	43.71	5.78	Average	horizontal
2 !	8000.000	54.53	74.00	-19.47	48.75	5.78	Peak	horizontal
3 !	11400.000	39.92	54.00	-14.08	29.38	10.54	Average	horizontal
4 !	11400.000	55.82	74.00	-18.18	45.28	10.54	Peak	horizontal
5 !	17100.000	47.50	54.00	-6.50	31.22	16.28	Average	horizontal
6 !	17100.000	62.86	74.00	-11.14	46.58	16.28	Peak	horizontal

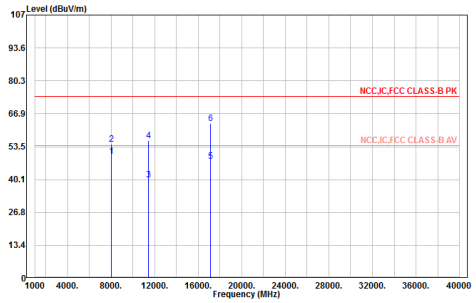
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		
1 !	8000.000	47.49	54.00	-6.51	41.71	5.78	Average	vertical
2 !	8000.000	54.73	74.00	-19.27	48.95	5.78	Peak	vertical
3 !	11400.000	39.93	54.00	-14.07	29.39	10.54	Average	vertical
4 !	11400.000	55.85	74.00	-18.15	45.31	10.54	Peak	vertical
5 !	17100.000	47.07	54.00	-6.93	30.79	16.28	Average	vertical
6 !	17100.000	62.95	74.00	-11.05	46.67	16.28	Peak	vertical

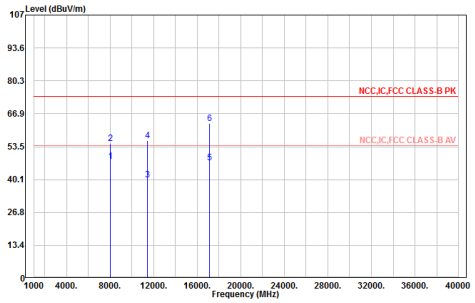
nonHT20 mode: 5720 MHz

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		
1 !	8000.000	49.49	54.00	-4.51	43.71	5.78	Average	horizontal
2 !	8000.000	54.53	74.00	-19.47	48.75	5.78	Peak	horizontal
3 !	11400.000	39.92	54.00	-14.08	29.38	10.54	Average	horizontal
4 !	11400.000	55.82	74.00	-18.18	45.28	10.54	Peak	horizontal
5 !	17100.000	47.50	54.00	-6.50	31.22	16.28	Average	horizontal
6 !	17100.000	62.86	74.00	-11.14	46.58	16.28	Peak	horizontal

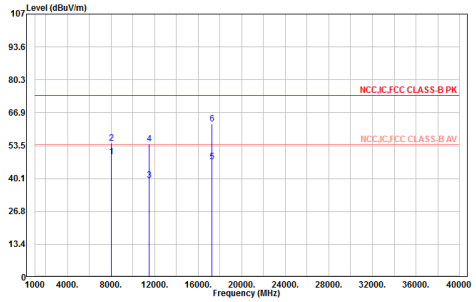
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		
1 !	8000.000	47.49	54.00	-6.51	41.71	5.78	Average	vertical
2 !	8000.000	54.73	74.00	-19.27	48.95	5.78	Peak	vertical
3 !	11400.000	39.93	54.00	-14.07	29.39	10.54	Average	vertical
4 !	11400.000	55.85	74.00	-18.15	45.31	10.54	Peak	vertical
5 !	17100.000	47.07	54.00	-6.93	30.79	16.28	Average	vertical
6 !	17100.000	62.95	74.00	-11.05	46.67	16.28	Peak	vertical

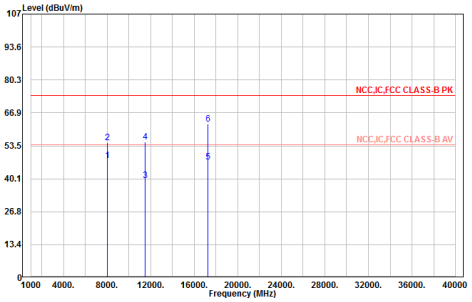
nonHT20 mode: 5745 MHz

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		
1 !	8000.000	49.04	54.00	-4.96	43.26	5.78	Average	horizontal
2 !	8000.000	54.44	74.00	-19.56	48.66	5.78	Peak	horizontal
3 !	11490.000	39.54	54.00	-14.46	28.95	10.59	Average	horizontal
4 !	11490.000	54.29	74.00	-19.71	43.70	10.59	Peak	horizontal
5 !	17235.000	47.07	54.00	-6.93	29.85	17.22	Average	horizontal
6 !	17235.000	62.30	74.00	-11.70	45.08	17.22	Peak	horizontal

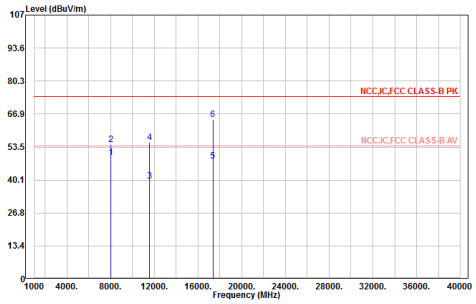
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		
1 !	8000.000	47.60	54.00	-6.40	41.82	5.78	Average	vertical
2 !	8000.000	54.80	74.00	-19.20	49.02	5.78	Peak	vertical
3 !	11490.000	39.50	54.00	-14.50	28.91	10.59	Average	vertical
4 !	11490.000	55.13	74.00	-18.87	44.54	10.59	Peak	vertical
5 !	17235.000	47.05	54.00	-6.95	29.83	17.22	Average	vertical
6 !	17235.000	62.42	74.00	-11.58	45.20	17.22	Peak	vertical

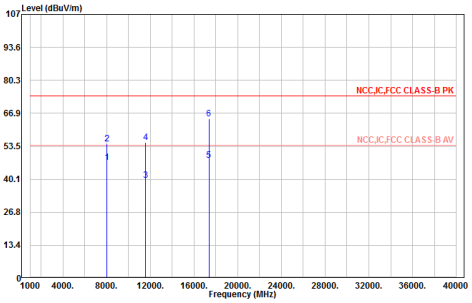
nonHT20 mode: 5785 MHz

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		
1 !	8000.000	49.26	54.00	-4.74	43.48	5.78	Average	horizontal
2 !	8000.000	54.49	74.00	-19.51	48.71	5.78	Peak	horizontal
3 !	11570.000	39.63	54.00	-14.37	28.76	10.87	Average	horizontal
4 !	11570.000	55.29	74.00	-18.71	44.42	10.87	Peak	horizontal
5 !	17355.000	47.73	54.00	-6.27	28.91	18.82	Average	horizontal
6 !	17355.000	64.57	74.00	-9.43	45.75	18.82	Peak	horizontal

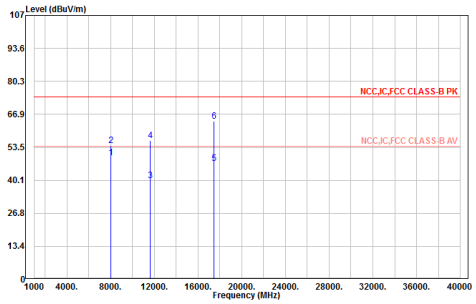
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		
1 !	8000.000	47.05	54.00	-6.95	41.27	5.78	Average	vertical
2 !	8000.000	54.41	74.00	-19.59	48.63	5.78	Peak	vertical
3 !	11570.000	39.74	54.00	-14.26	28.87	10.87	Average	vertical
4 !	11570.000	55.09	74.00	-18.91	44.22	10.87	Peak	vertical
5 !	17355.000	47.76	54.00	-6.24	28.94	18.82	Average	vertical
6 !	17355.000	64.61	74.00	-9.39	45.79	18.82	Peak	vertical

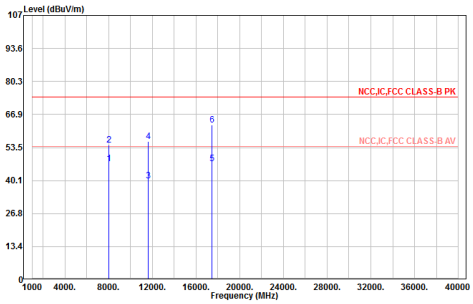
nonHT20 mode: 5825 MHz

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		
1 !	8000.000	49.31	54.00	-4.69	43.53	5.78	Average	horizontal
2 !	8000.000	54.35	74.00	-19.65	48.57	5.78	Peak	horizontal
3 !	11650.000	39.94	54.00	-14.06	28.71	11.23	Average	horizontal
4 !	11650.000	56.23	74.00	-17.77	45.00	11.23	Peak	horizontal
5 !	17475.000	47.10	54.00	-6.90	26.84	20.26	Average	horizontal
6 !	17475.000	64.00	74.00	-10.00	43.74	20.26	Peak	horizontal

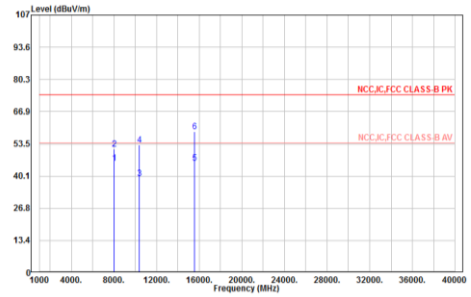
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		
1 !	8000.000	47.00	54.00	-7.00	41.22	5.78	Average	vertical
2 !	8000.000	54.40	74.00	-19.60	48.62	5.78	Peak	vertical
3 !	11650.000	39.95	54.00	-14.05	28.72	11.23	Average	vertical
4 !	11650.000	55.85	74.00	-18.15	44.62	11.23	Peak	vertical
5 !	17475.000	47.07	54.00	-6.93	26.81	20.26	Average	vertical
6 !	17475.000	62.76	74.00	-11.24	42.50	20.26	Peak	vertical

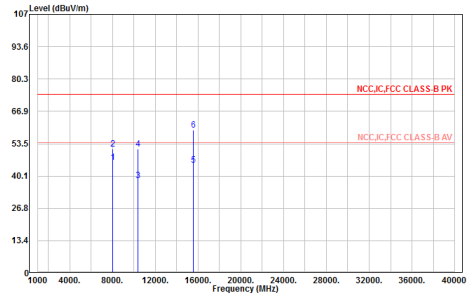
nonHT40 mode: 5190 MHz

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		
1 !	8000.000	45.63	54.00	-8.37	39.73	5.90	Average	horizontal
2	8000.000	51.23	74.00	-22.77	45.33	5.90	Peak	horizontal
3 !	10380.000	39.09	54.00	-14.91	30.23	8.86	Average	horizontal
4	10380.000	53.08	74.00	-20.92	44.22	8.86	Peak	horizontal
5 !	15570.000	45.63	54.00	-8.37	32.61	13.02	Average	horizontal
6 !	15570.000	58.67	74.00	-15.33	45.65	13.02	Peak	horizontal

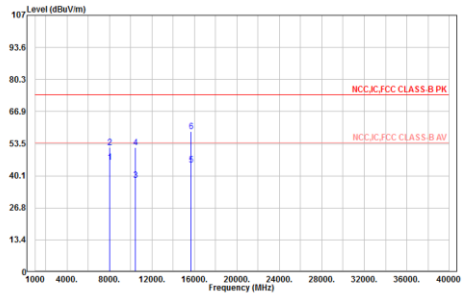
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		
1 !	8000.000	45.78	54.00	-8.22	39.88	5.90	Average	vertical
2	8000.000	51.26	74.00	-22.74	45.36	5.90	Peak	vertical
3 !	10380.000	38.17	54.00	-15.83	29.31	8.86	Average	vertical
4	10380.000	51.39	74.00	-22.61	42.53	8.86	Peak	vertical
5 !	15570.000	44.75	54.00	-9.25	31.73	13.02	Average	vertical
6 !	15570.000	59.13	74.00	-14.87	46.11	13.02	Peak	vertical

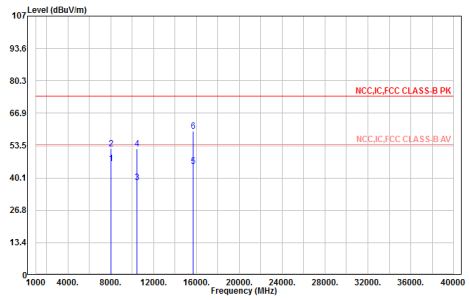
nonHT40 mode: 5230 MHz

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		
1 !	8000.000	45.77	54.00	-8.23	39.87	5.90	Average	horizontal
2	8000.000	51.77	74.00	-22.23	45.87	5.90	Peak	horizontal
3 !	10460.000	38.18	54.00	-15.82	29.44	8.74	Average	horizontal
4	10460.000	52.03	74.00	-21.97	43.29	8.74	Peak	horizontal
5 !	15690.000	44.52	54.00	-9.48	31.70	12.82	Average	horizontal
6 !	15690.000	58.52	74.00	-15.48	45.70	12.82	Peak	horizontal

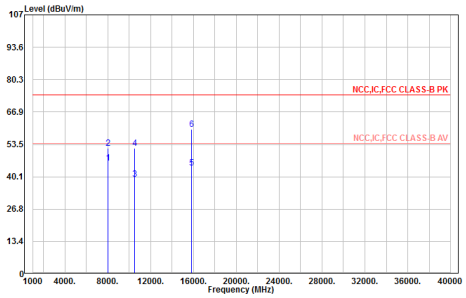
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		
1 !	8000.000	46.16	54.00	-7.84	40.26	5.90	Average	vertical
2	8000.000	52.10	74.00	-21.90	46.20	5.90	Peak	vertical
3 !	10460.000	38.16	54.00	-15.84	29.42	8.74	Average	vertical
4	10460.000	52.30	74.00	-21.70	43.56	8.74	Peak	vertical
5 !	15690.000	44.82	54.00	-9.18	32.00	12.82	Average	vertical
6 !	15690.000	59.57	74.00	-14.43	46.75	12.82	Peak	vertical

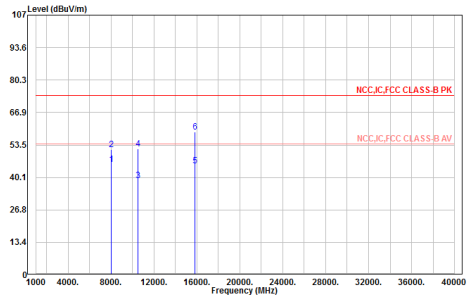
nonHT40 mode: 5270 MHz

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		
1 !	8000.000	45.91	54.00	-8.09	40.01	5.90	Average	horizontal
2	8000.000	51.91	74.00	-22.09	46.01	5.90	Peak	horizontal
3 !	10540.000	39.01	54.00	-14.99	30.78	8.23	Average	horizontal
4	10540.000	51.97	74.00	-22.03	43.74	8.23	Peak	horizontal
5 !	15810.000	43.83	54.00	-10.17	31.63	12.20	Average	horizontal
6 !	15810.000	59.88	74.00	-14.12	47.68	12.20	Peak	horizontal

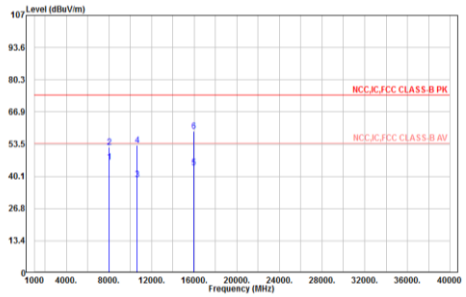
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		
1 !	8000.000	45.59	54.00	-8.41	39.69	5.90	Average	vertical
2	8000.000	51.66	74.00	-22.34	45.76	5.90	Peak	vertical
3 !	10540.000	38.77	54.00	-15.23	30.54	8.23	Average	vertical
4	10540.000	51.77	74.00	-22.23	43.54	8.23	Peak	vertical
5 !	15810.000	44.92	54.00	-9.08	32.72	12.20	Average	vertical
6 !	15810.000	58.98	74.00	-15.02	46.78	12.20	Peak	vertical

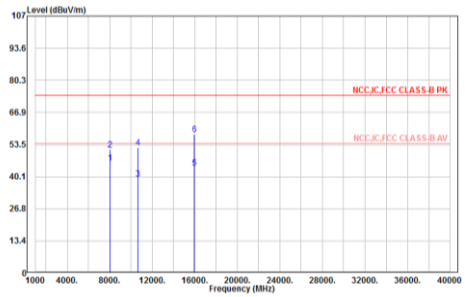
nonHT40 mode: 5310 MHz

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		
1 !	8000.000	46.07	54.00	-7.93	40.17	5.90	Average	horizontal
2	8000.000	52.11	74.00	-21.89	46.21	5.90	Peak	horizontal
3 !	10620.000	38.83	54.00	-15.17	29.72	9.11	Average	horizontal
4	10620.000	52.98	74.00	-21.02	43.87	9.11	Peak	horizontal
5 !	15930.000	43.73	54.00	-10.27	31.70	12.03	Average	horizontal
6 !	15930.000	58.73	74.00	-15.27	46.70	12.03	Peak	horizontal

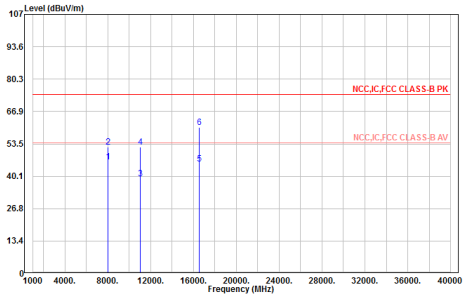
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		
1 !	8000.000	45.91	54.00	-8.09	40.01	5.90	Average	vertical
2	8000.000	51.22	74.00	-22.78	45.32	5.90	Peak	vertical
3 !	10620.000	39.08	54.00	-14.92	29.97	9.11	Average	vertical
4	10620.000	52.09	74.00	-21.91	42.98	9.11	Peak	vertical
5 !	15930.000	43.65	54.00	-10.35	31.62	12.03	Average	vertical
6 !	15930.000	57.84	74.00	-16.16	45.81	12.03	Peak	vertical

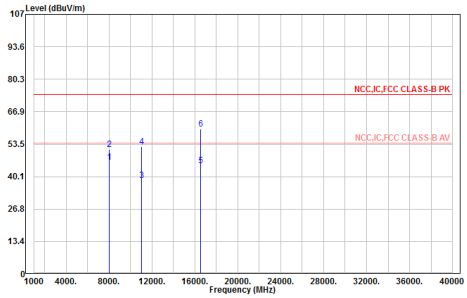
nonHT40 mode: 5510 MHz

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		
1 !	8000.000	46.19	54.00	-7.81	40.29	5.90	Average	horizontal
2	8000.000	52.12	74.00	-21.88	46.22	5.90	Peak	horizontal
3 !	11020.000	39.14	54.00	-14.86	29.57	9.57	Average	horizontal
4	11020.000	52.10	74.00	-21.90	42.53	9.57	Peak	horizontal
5 !	16530.000	45.37	54.00	-8.63	31.98	13.39	Average	horizontal
6 !	16530.000	60.37	74.00	-13.63	46.98	13.39	Peak	horizontal

Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Factor	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB/m		
1 !	8000.000	46.19	54.00	-7.81	40.29	5.90	Average	vertical
2	8000.000	51.40	74.00	-22.60	45.50	5.90	Peak	vertical
3 !	11020.000	38.60	54.00	-15.40	29.03	9.57	Average	vertical
4	11020.000	52.57	74.00	-21.43	43.00	9.57	Peak	vertical
5 !	16530.000	44.63	54.00	-9.37	31.24	13.39	Average	vertical
6 !	16530.000	59.64	74.00	-14.36	46.25	13.39	Peak	vertical