

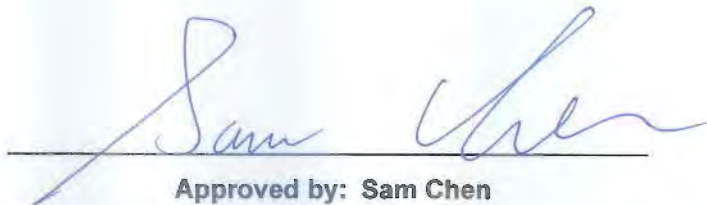


# RADIO TEST REPORT

**FCC ID** : XIA-IFWA-40  
**Equipment** : Wireless Home Internet  
**Brand Name** : Netcomm  
**Model Name** : IFWA-40  
**Applicant** : NetComm Wireless Pty Ltd  
Level 5, 18-20 Orion Road Lane Cove NSW 2066  
Australia  
**Manufacturer** : NetComm Wireless Pty Ltd  
Level 5, 18-20 Orion Road Lane Cove NSW 2066  
Australia  
**Standard** : 47 CFR FCC Part 15.407

The product was received on Mar. 16, 2021, and testing was started from Mar. 17, 2021 and completed on May 07, 2021. We, Sporton International Inc. Hsinchu Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2013 and shown compliance with the applicable technical standards.

The test results in this variant report apply exclusively to the tested model / sample. Without written approval of Sporton International Inc. Hsinchu Laboratory, the test report shall not be reproduced except in full.



Approved by: Sam Chen

**Sporton International Inc. Hsinchu Laboratory**  
No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County 302010, Taiwan (R.O.C.)



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### History of this test report

Report No.	Version	Description	Issued Date
FR801751-07AB	01	Initial issue of report	Jun. 01, 2021



### Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
1.1.2	15.203	Antenna Requirement	PASS	-
3.1	15.207	AC Power-line Conducted Emissions	PASS	-
3.2	15.407(b)	Unwanted Emissions	PASS	-

**Declaration of Conformity:**

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

**Comments and Explanations:**

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

Reviewed by: **Sam Chen**

Report Producer: **Vicky Huang**



# 1 General Description

## 1.1 Information

### 1.1.1 RF General Information

Frequency Range (MHz)	IEEE Std. 802.11	Ch. Frequency (MHz)	Channel Number
5150-5250	a, n (HT20), ac (VHT20)	5180-5240	36-48 [4]
5725-5850		5745-5825	149-165 [5]
5150-5250	n (HT40), ac (VHT40)	5190-5230	38-46 [2]
5725-5850		5755-5795	151-159 [2]
5150-5250	ac (VHT80)	5210	42 [1]
5725-5850		5775	155 [1]

Band	Mode	BWch (MHz)	Nant
5.15-5.25GHz	802.11a	20	2TX
5.15-5.25GHz	802.11n HT20	20	2TX
5.15-5.25GHz	802.11ac VHT20	20	2TX
5.15-5.25GHz	802.11n HT40	40	2TX
5.15-5.25GHz	802.11ac VHT40	40	2TX
5.15-5.25GHz	802.11ac VHT80	80	2TX
5.725-5.85GHz	802.11a	20	2TX
5.725-5.85GHz	802.11n HT20	20	2TX
5.725-5.85GHz	802.11ac VHT20	20	2TX
5.725-5.85GHz	802.11n HT40	40	2TX
5.725-5.85GHz	802.11ac VHT40	40	2TX
5.725-5.85GHz	802.11ac VHT80	80	2TX

**Note:**

- ♦ 11a, HT20 and HT40 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM modulation.
- ♦ VHT20, VHT40, VHT80 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM, 256QAM modulation.
- ♦ BWch is the nominal channel bandwidth.



1.1.2 Antenna Information

Ant.	Port	Brand	Model Name	Antenna Type	Connector	Gain (dBi)		
						2.4G	5G Band 1	5G Band 4
1	1	Netcomm	-	Printed PIFA Antenna	N/A	5.17	-	-
2	2	Netcomm	-	Printed PIFA Antenna	N/A	3.9	-	-
3	1	Netcomm	-	Printed PIFA Antenna	N/A	-	5	4.45
4	2	Netcomm	-	Printed PIFA Antenna	N/A	-	5.79	5.1

Note: The above information was declared by manufacturer.

Note: The EUT has four WLAN antennas.

For WLAN 2.4GHz (2TX/2RX):

Ant. 1 (Port 1) and Ant. 2 (Port 2) could transmit/receive simultaneously.

For WLAN 5GHz (2TX/2RX):

Ant. 3 (Port 1) and Ant. 4 (Port 2) could transmit/receive simultaneously.

1.1.3 EUT Operational Condition

<b>EUT Power Type</b>	From Power Adapter or Lithium-ion Battery Pack (For backup purposes only during a power outage)			
<b>Beamforming Function</b>	<input type="checkbox"/>	With beamforming	<input checked="" type="checkbox"/>	Without beamforming
<b>Function</b>	<input type="checkbox"/>	Outdoor P2M	<input checked="" type="checkbox"/>	Indoor P2M
	<input type="checkbox"/>	Fixed P2P	<input type="checkbox"/>	Client
<b>Test Software Version</b>	QRCT (ver.4.0.00088)			

Note: The above information was declared by manufacturer.

1.1.4 Table for Multiple Source Listing

There are two sources of Crystal and DRAM, the detail information as following:

Source	Crystal	DRAM memory
Main	Kyocera - CX2016DB48000E0DLFA1	Winbond Electronics p/n: W632GU6MB-12
Second	Siward - XTL501100-P120-137	ESMT p/n: M15T2G16128A-DEBG2R

Note: The above information was declared by manufacturer.



### 1.1.5 Table for Class II Change

This product is an extension of original one reported under Sporton project number: FR8O1751AB

Below is the table for the change of the product with respect to the original one.

<b>Modifications</b>	<b>Performance Checking</b>
1. Removing 1x capacitor C305 only , C305 pcb trace is not related to WWAN or WIFI , It's related to ethernet connection, address a booting up and packet loss pinging issue.	AC Power-line Conducted Emissions
	Radiated Emission below 1GHz
2. Adding the second source of crystal and DRAM memory.	Radiated Emission below 1GHz
	Radiated Emission above 1GHz After evaluating, the worst case is found at 802.11ac VHT20 CH165, and based on original power to retest this channel only.
3. Changing the applicant's company and manufacturer's company to "NetComm Wireless Pty Ltd" from "NetComm Wireless Limited".	After evaluating it does not need to re-test.
4. Changing the applicant address and manufacturer address to "Level 5, 18-20 Orion Road Lane Cove NSW 2066 Australia" from "18-20 Orion Road Lane Cove NSW 2066 Australia"	
5. Changing the FCC ID to "XIA-IFWA-40" from "XIA-IFWA40"	



### 1.2 Applicable Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- ♦ 47 CFR FCC Part 15.407
- ♦ ANSI C63.10-2013
- ♦ FCC KDB 789033 D02 v02r01

The following reference test guidance is not within the scope of accreditation of TAF.

- ♦ FCC KDB 662911 D01 v02r01
- ♦ FCC KDB 412172 D01 v01r01
- ♦ FCC KDB 414788 D01 v01r01

### 1.3 Testing Location Information

Testing Location Information	
Test Lab. : Sporton International Inc. Hsinchu Laboratory	
Hsinchu	ADD: No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County 302010, Taiwan (R.O.C.)
(TAF: 3787)	TEL: 886-3-656-9065 FAX: 886-3-656-9085
	Test site Designation No. TW3787 with FCC.
	Conformity Assessment Body Identifier (CABID) TW3787 with ISED.

Test Condition	Test Site No.	Test Engineer	Test Environment (°C / %)	Test Date
Radiated (Below 1GHz-Mode 1)	03CH03-CB	Bruce Yang	20.2~21.3 / 56~58	Mar. 17, 2021
Radiated (Below 1GHz-Mode 2)	03CH05-CB	Cola Fan	21.4~22.5 / 55~57	May 07, 2021
Radiated (Above 1GHz)	03CH02-CB	Caster Chang	20.2~21.3 / 55~57	May 07, 2021
AC Conduction	CO01-CB	Wei Li	23~24 / 57~59	Mar. 18, 2021

### 1.4 Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2))

Test Items	Uncertainty	Remark
Conducted Emission (150kHz ~ 30MHz)	2.0 dB	Confidence levels of 95%
Radiated Emission (9kHz ~ 30MHz)	3.8 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	5.6 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	5.0 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	4.9 dB	Confidence levels of 95%





## 2 Test Configuration of EUT

### 2.1 The Worst Case Measurement Configuration

The Worst Case Mode for Following Conformance Tests	
<b>Tests Item</b>	AC power-line conducted emissions
<b>Condition</b>	AC power-line conducted measurement for line and neutral Test Voltage: 120Vac / 60Hz
<b>Operating Mode</b>	Normal Link
The EUT(Main Source) performed testing at the WCDMA Band 2 and LTE Band 5. After evaluating, EUT(Main Source) Normal Link with LTE Band 5 has been evaluated to be the worst case from original test report, thus measurement will follow this same test configuration.	
1	EUT(Main Source)T Normal Link with LTE Band 5 and WLAN with Adapter

The Worst Case Mode for Following Conformance Tests	
<b>Tests Item</b>	Unwanted Emissions
<b>Test Condition</b>	Radiated measurement If EUT consist of multiple antenna assembly (multiple antenna are used in EUT regardless of spatial multiplexing MIMO configuration), the radiated test should be performed with highest antenna gain of each antenna type.
<b>Operating Mode &lt; 1GHz</b>	Normal Link
The EUT(Main Source) performed testing at the WCDMA Band 2 and LTE Band 5. The EUT(Main Source) performed testing at the Z-axis and Y-axis. After evaluating, EUT(Main Source) Normal Link with WCDMA Band 2 and EUT in Z axis has been evaluated to be the worst case from original test report, thus measurement will follow this same test configuration.	
1	EUT(Main Source) in Z axis Normal Link with WCDMA Band 2 and WLAN with Adapter
2	EUT(Second Source) in Z axis Normal Link with WCDMA Band 2 and WLAN with Adapter
Mode 1 generated the worst test result, so it was recorded in this report.	
<b>Operating Mode &gt; 1GHz</b>	CTX
The EUT was performed at Y axis and Z axis position for Radiated emission above 1GHz test, and the worst case was found at Z axis from original test report. So the measurement will follow this same test configuration.	
1	EUT(Second Source) in Z axis



## 2.2 EUT Operation during Test

For CTX Mode:

The EUT was programmed to be in continuously transmitting mode.

For Normal Link:

During the test, the EUT operation to normal function.

## 2.3 Accessories

Accessories				
No.	Equipment Name	Brand Name	Model Name	Rating
1	Adapter	DVE/CUI	DSA-18PFR-12 FUS 090200	Input: 100-240V~50/60Hz, 0.6A Output: +9V, 2A
2	Lithium-ion Battery	NetComm	BAT-40	3.7VDC, 3000mAh, 11.1Wh

## 2.4 Support Equipment

For AC Conduction:

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	NB	DELL	E6430	N/A
B	NB	DELL	E6430	N/A
C	NB	DELL	E6430	N/A
D	LTE base station	Anritsu	MT8820C	N/A
E	Phone	SAMPO	HT-B 907WL	N/A
F	Phone	SAMPO	HT-B 907WL	N/A
G	SIM card	N/A	N/A	N/A

For Radiated (below 1GHz):

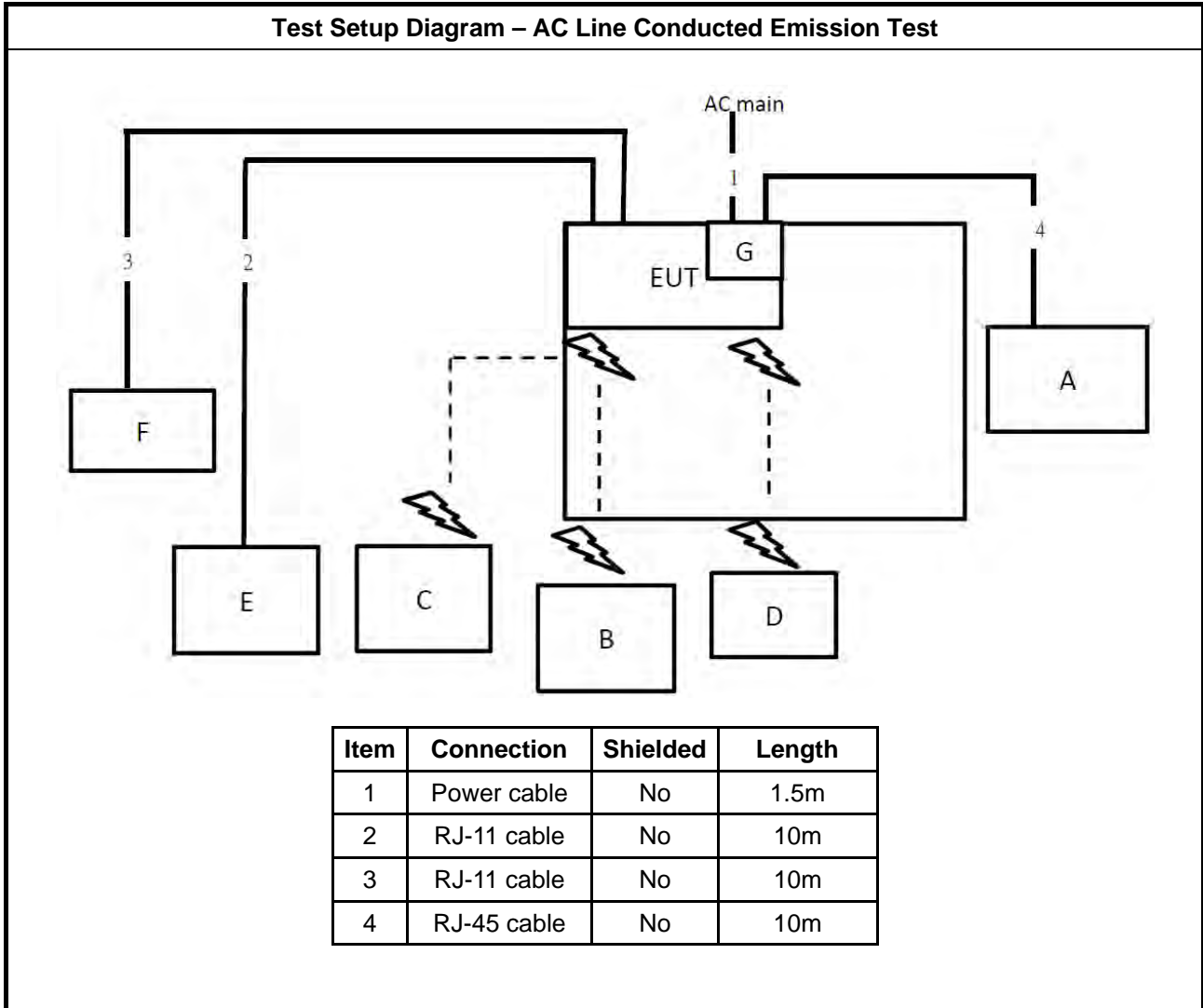
Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	NB	DELL	E4300	N/A
B	NB	DELL	E4300	N/A
C	NB	DELL	E4300	N/A
D	LTE base station	Anritsu	MT8820C	N/A
E	Phone	PHILIPS	M20	N/A
F	Phone	PHILIPS	M20	N/A
G	SIM card	Anritsu	N/A	N/A



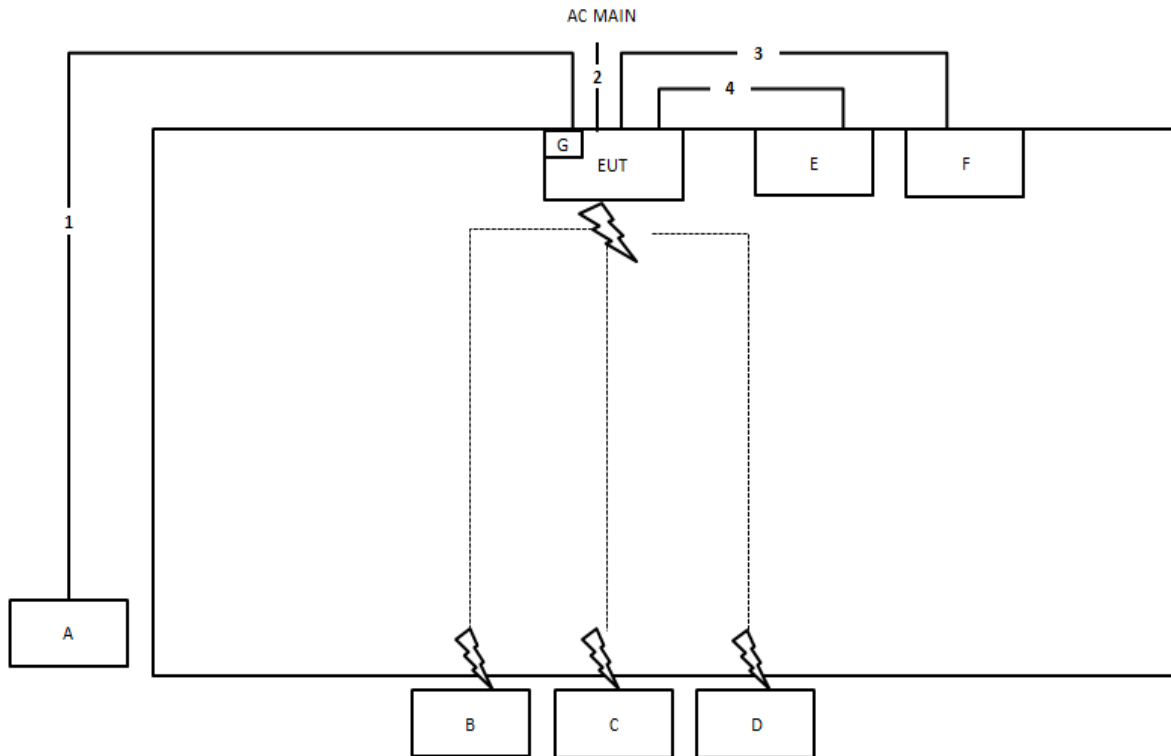
**For Radiated (above 1GHz):**

<b>Support Equipment</b>				
<b>No.</b>	<b>Equipment</b>	<b>Brand Name</b>	<b>Model Name</b>	<b>FCC ID</b>
A	NB	DELL	E4300	N/A

### 2.5 Test Setup Diagram

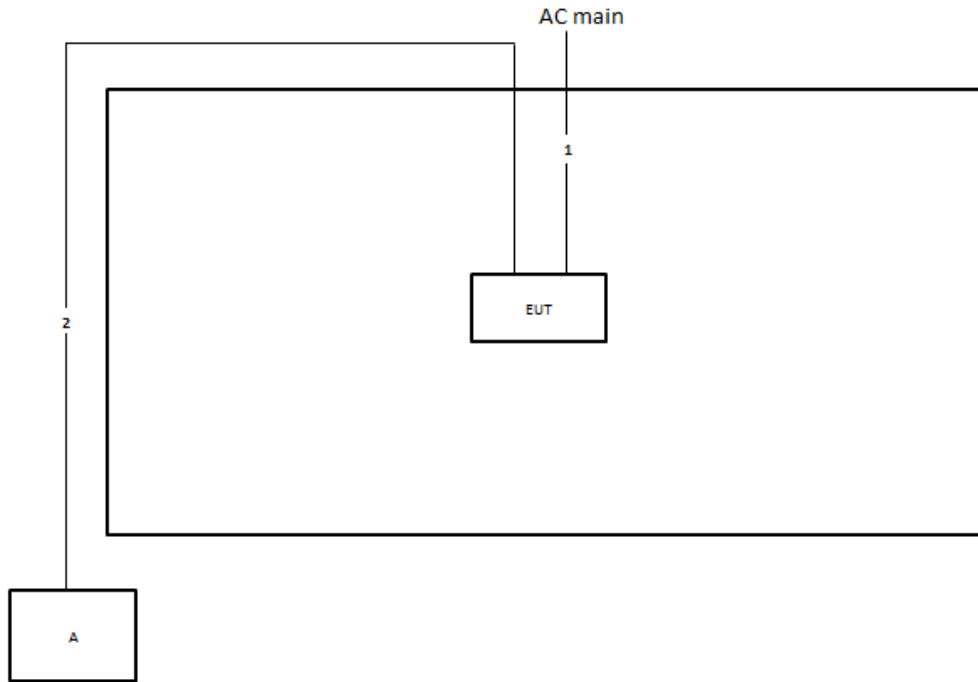


**Test Setup Diagram - Radiated Test < 1GHz**



Item	Connection	Shielded	Length
1	RJ-45 cable	No	1.5m
2	Power cable	No	10m
3	RJ-11 cable	No	1.5m
4	RJ-11 cable	No	1.5m

**Test Setup Diagram - Radiated Test > 1GHz**



Item	Connection	Shielded	Length
1	Power cable	No	1.5m
2	RJ-45 cable	No	10m



### 3 Transmitter Test Result

#### 3.1 AC Power-line Conducted Emissions

##### 3.1.1 AC Power-line Conducted Emissions Limit

AC Power-line Conducted Emissions Limit		
Frequency Emission (MHz)	Quasi-Peak	Average
0.15-0.5	66 - 56 *	56 - 46 *
0.5-5	56	46
5-30	60	50

Note 1: \* Decreases with the logarithm of the frequency.

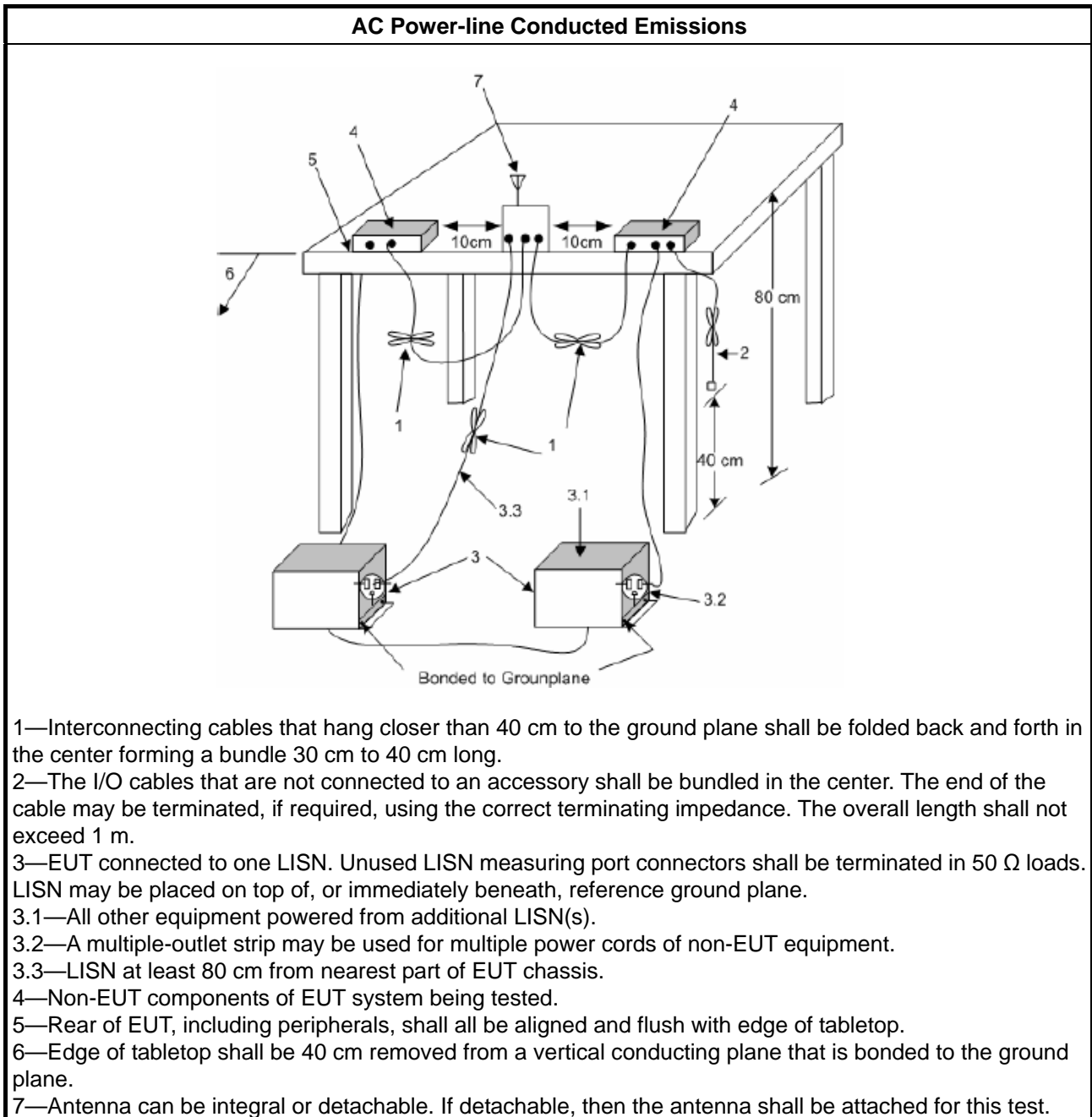
##### 3.1.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

##### 3.1.3 Test Procedures

Test Method
<input checked="" type="checkbox"/> Refer as ANSI C63.10-2013, clause 6.2 for AC power-line conducted emissions.

### 3.1.4 Test Setup



### 3.1.5 Measurement Results Calculation

The measured Level is calculated using:

- a. Corrected Reading: LISN Factor (LISN) + Attenuator (AT/AUX) + Cable Loss (CL) + Read Level (Raw) = Level
- b. Margin = -Limit + Level

### 3.1.6 Test Result of AC Power-line Conducted Emissions

Refer as Appendix A





### 3.2 Unwanted Emissions

#### 3.2.1 Transmitter Unwanted Emissions Limit

Unwanted emissions below 1 GHz and restricted band emissions above 1GHz limit			
Frequency Range (MHz)	Field Strength (uV/m)	Field Strength (dBuV/m)	Measure Distance (m)
0.009~0.490	2400/F(kHz)	48.5 - 13.8	300
0.490~1.705	24000/F(kHz)	33.8 - 23	30
1.705~30.0	30	29	30
30~88	100	40	3
88~216	150	43.5	3
216~960	200	46	3
Above 960	500	54	3

Note 1: Test distance for frequencies at or above 30 MHz, measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).

Note 2: Test distance for frequencies at below 30 MHz, measurements may be performed at a distance closer than the EUT limit distance; however, an attempt should be made to avoid making measurements in the near field. When performing measurements below 30 MHz at a closer distance than the limit distance, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two or more distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade). The test report shall specify the extrapolation method used to determine compliance of the EUT.

Note 3: Using the distance of 1m during the test for above 18 GHz, and the test value to correct for the distance factor at 3m.

Un-restricted band emissions above 1GHz Limit	
Operating Band	Limit
<input checked="" type="checkbox"/> 5.15 - 5.25 GHz	e.i.r.p. -27 dBm [68.2 dBuV/m@3m]
<input type="checkbox"/> 5.25 - 5.35 GHz	e.i.r.p. -27 dBm [68.2 dBuV/m@3m]
<input type="checkbox"/> 5.47 - 5.725 GHz	e.i.r.p. -27 dBm [68.2 dBuV/m@3m]
<input checked="" type="checkbox"/> 5.725 - 5.85 GHz	all emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

Note 1: Measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of



linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).

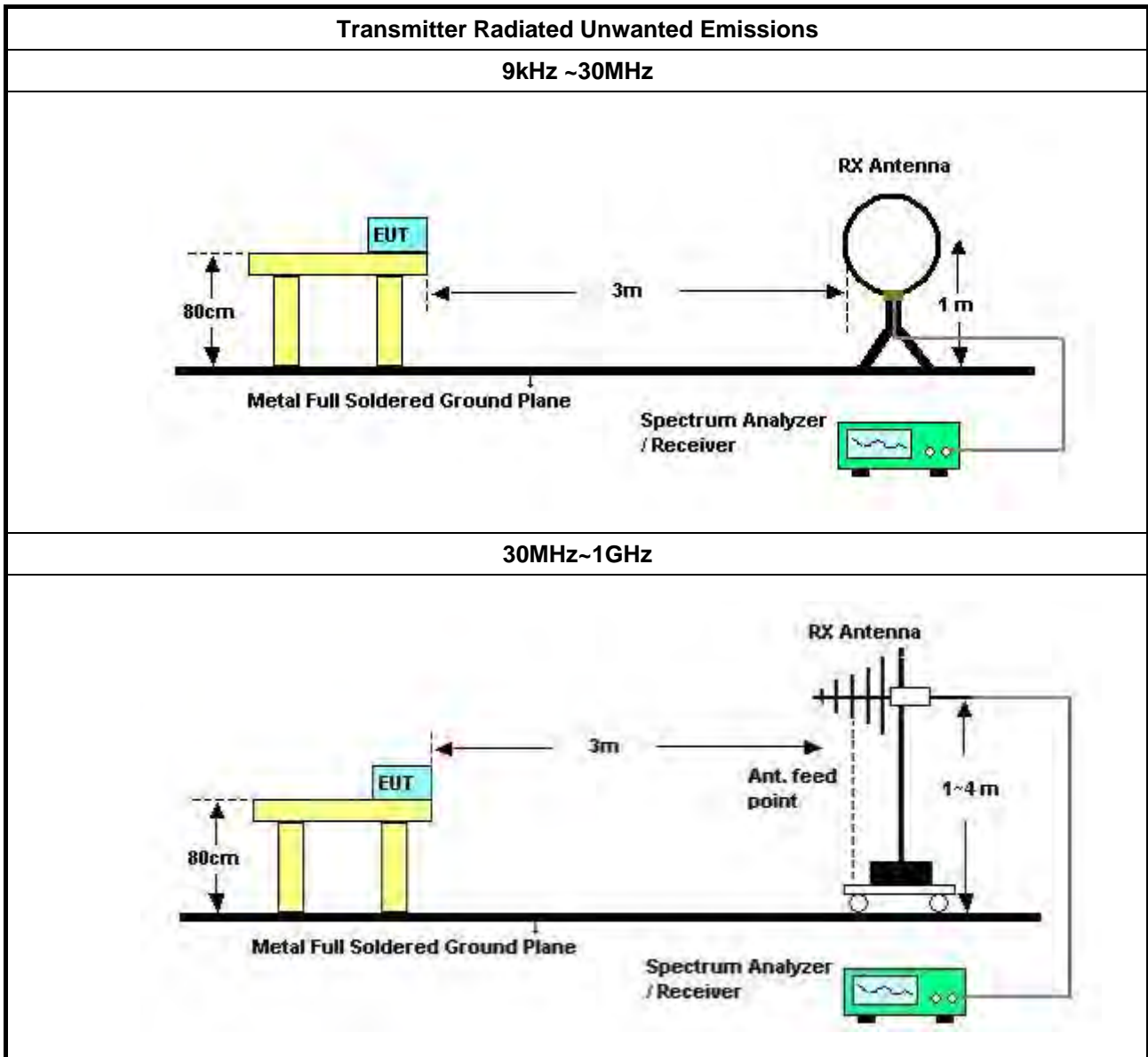
**3.2.2 Measuring Instruments**

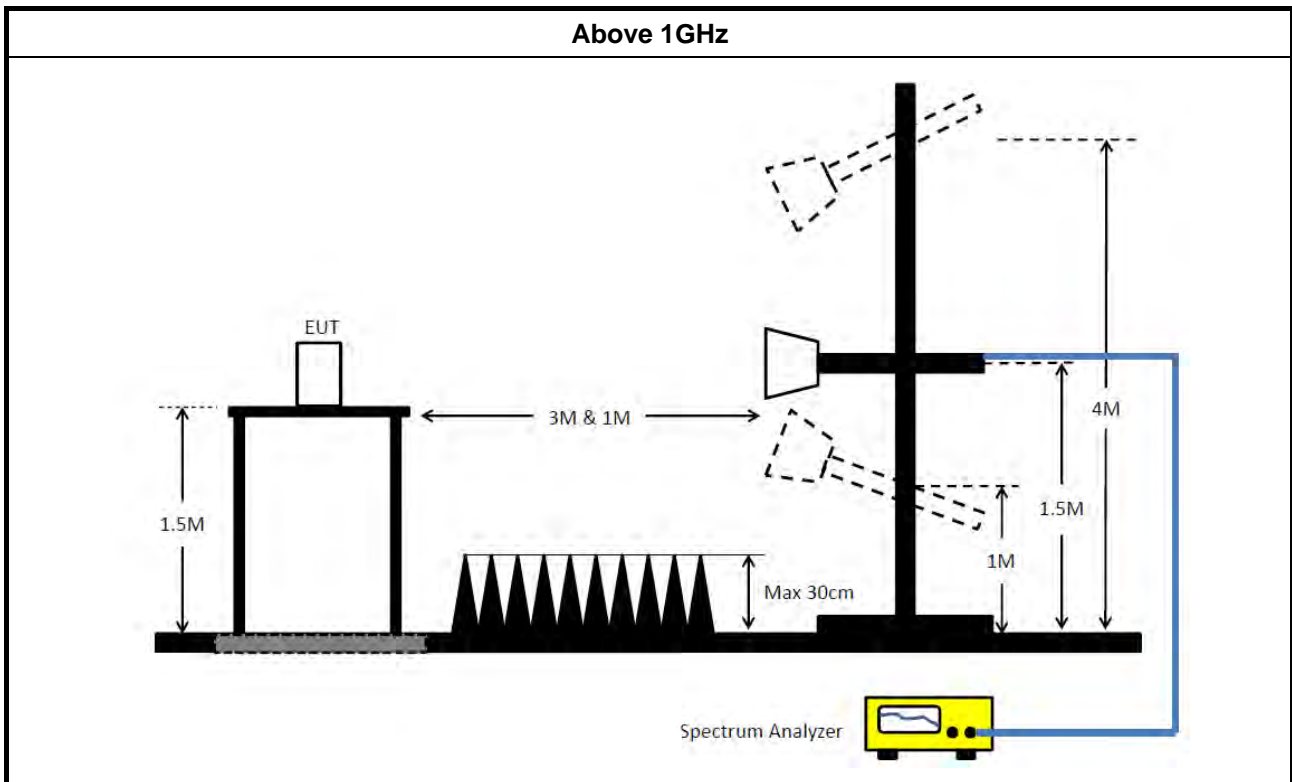
Refer a test equipment and calibration data table in this test report.

**3.2.3 Test Procedures**

<b>Test Method</b>	
<ul style="list-style-type: none"> <li>▪ Measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. Measurements shall not be performed at a distance greater than 30 m for frequencies above 30 MHz, unless it can be further demonstrated that measurements at a distance of 30 m or less are impractical. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).</li> </ul>	
<ul style="list-style-type: none"> <li>▪ The average emission levels shall be measured in [duty cycle ≥ 98 or duty factor].</li> </ul>	
<ul style="list-style-type: none"> <li>▪ For the transmitter unwanted emissions shall be measured using following options below:               <ul style="list-style-type: none"> <li>▪ Refer as FCC KDB 789033, clause G)2) for unwanted emissions into non-restricted bands.</li> <li>▪ Refer as FCC KDB 789033, clause G)1) for unwanted emissions into restricted bands.                   <ul style="list-style-type: none"> <li><input type="checkbox"/> Refer as FCC KDB 789033, G)6) Method AD (Trace Averaging).</li> <li><input checked="" type="checkbox"/> Refer as FCC KDB 789033, G)6) Method VB (Reduced VBW).</li> <li><input type="checkbox"/> Refer as ANSI C63.10, clause 11.12.2.5.3 (Reduced VBW). VBW ≥ 1/T, where T is pulse time.</li> <li><input type="checkbox"/> Refer as ANSI C63.10, clause 7.5 average value of pulsed emissions.</li> <li><input checked="" type="checkbox"/> Refer as FCC KDB 789033, clause G)5) measurement procedure peak limit.</li> <li><input type="checkbox"/> Refer as ANSI C63.10, clause 4.1.4.2.2 measurement procedure peak limit.</li> </ul> </li> </ul> </li> </ul>	
<ul style="list-style-type: none"> <li>▪ For radiated measurement.               <ul style="list-style-type: none"> <li>▪ Refer as ANSI C63.10, clause 6.4 for radiated emissions below 30 MHz and test distance is 3m.</li> <li>▪ Refer as ANSI C63.10, clause 6.5 for radiated emissions 30 MHz to 1 GHz and test distance is 3m.</li> <li>▪ Refer as ANSI C63.10, clause 6.6 for radiated emissions above 1GHz.</li> </ul> </li> </ul>	
<ul style="list-style-type: none"> <li>▪ The any unwanted emissions level shall not exceed the fundamental emission level.</li> </ul>	
<ul style="list-style-type: none"> <li>▪ All amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.</li> </ul>	

**3.2.4 Test Setup**





### 3.2.5 Measurement Results Calculation

The measured Level is calculated using:

Corrected Reading: Antenna factor (AF) + Cable loss (CL) + Read level (Raw) - Preamp factor (PA)(if applicable) = Level.

### 3.2.6 Transmitter Unwanted Emissions (Below 30MHz)

There is a comparison data of both open-field test site and alternative test site - semi-Anechoic chamber according to KDB414788 Radiated Test Site, and the result came out very similar.

All amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.

The radiated emissions were investigated from 9 kHz or the lowest frequency generated within the device, up to the 10th harmonic or 40 GHz, whichever is appropriate.

### 3.2.7 Test Result of Transmitter Unwanted Emissions

Refer as Appendix B



## 4 Test Equipment and Calibration Data

Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
EMI Receiver	Agilent	N9038A	My52260123	9kHz ~ 8.4GHz	Mar. 03, 2021	Mar. 02, 2022	Conduction (CO01-CB)
LISN	F.C.C.	FCC-LISN-50-16-2	04083	150kHz ~ 100MHz	Jan. 06, 2021	Jan. 05, 2022	Conduction (CO01-CB)
LISN	Schwarzbeck	NSLK 8127	8127478	9kHz ~ 30MHz	Nov. 20, 2020	Nov. 19, 2021	Conduction (CO01-CB)
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100430	9kHz ~ 30MHz	Jan. 30, 2021	Jan. 29, 2022	Conduction (CO01-CB)
COND Cable	Woken	Cable	Low cable-CO01	9kHz ~ 30MHz	May 20, 2020	May 19, 2021	Conduction (CO01-CB)
3m Semi Anechoic Chamber NSA	TDK	SAC-3M	03CH05-CB	30 MHz ~ 1 GHz	Aug. 10, 2020	Aug. 09, 2021	Radiation (03CH05-CB)
Bilog Antenna with 6dB Attenuator	TESEQ & EMCI	CBL 6112D & N-6-06	35236 & AT-N0610	30MHz ~ 2GHz	Mar. 26, 2021	Mar. 25, 2022	Radiation (03CH05-CB)
Pre-Amplifier	EMCI	EMC330N	980331	20MHz ~ 3GHz	Apr. 27, 2021	Apr. 26, 2022	Radiation (03CH05-CB)
Spectrum Analyzer	R&S	FSP40	100304	9kHz ~ 40GHz	Nov. 10, 2020	Nov. 09, 2021	Radiation (03CH05-CB)
EMI Test Receiver	R&S	ESR7	102171	9kHz ~ 26GHz	Jul. 01, 2020	Jun. 30, 2021	Radiation (03CH05-CB)
RF Cable-low	Woken	RG402	Low Cable-04+23	30MHz~1GHz	Oct. 05, 2020	Oct. 04, 2021	Radiation (03CH05-CB)
Loop Antenna	Teseq	HLA 6120	24155	9kHz - 30 MHz	Apr. 14, 2021	Apr. 13, 2022	Radiation (03CH05-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (03CH05-CB)
3m Semi Anechoic Chamber NSA	TDK	SAC-3M	03CH03-CB	30 MHz ~ 1 GHz	Jan. 27, 2021	Jan. 26, 2022	Radiation (03CH03-CB)
Bilog Antenna with 6 dB attenuator	Schaffner & EMCI	CBL6112B & N-6-06	2928 & AT-N0608	20MHz ~ 2GHz	Feb. 22, 2021	Feb. 21, 2022	Radiation (03CH03-CB)
Pre-Amplifier	Agilent	8447D	2944A10259	9kHz ~ 1.3GHz	Jan. 11, 2021	Jan. 10, 2022	Radiation (03CH03-CB)
Spectrum Analyzer	R&S	FSP40	100019	9kHz ~ 40GHz	Jun. 09, 2020	Jun. 08, 2021	Radiation (03CH03-CB)
EMI Test Receiver	R&S	ESCS	826547/017	9kHz ~ 2.75GHz	May 13, 2020	May 12, 2021	Radiation (03CH03-CB)
RF Cable-low	Woken	RG402	Low Cable-02+29	30MHz ~ 1GHz	Oct. 05, 2020	Oct. 04, 2021	Radiation (03CH03-CB)
Loop Antenna	Teseq	HLA 6120	24155	9kHz - 30 MHz	Apr. 13, 2020	Apr. 12, 2021	Radiation (03CH03-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (03CH03-CB)



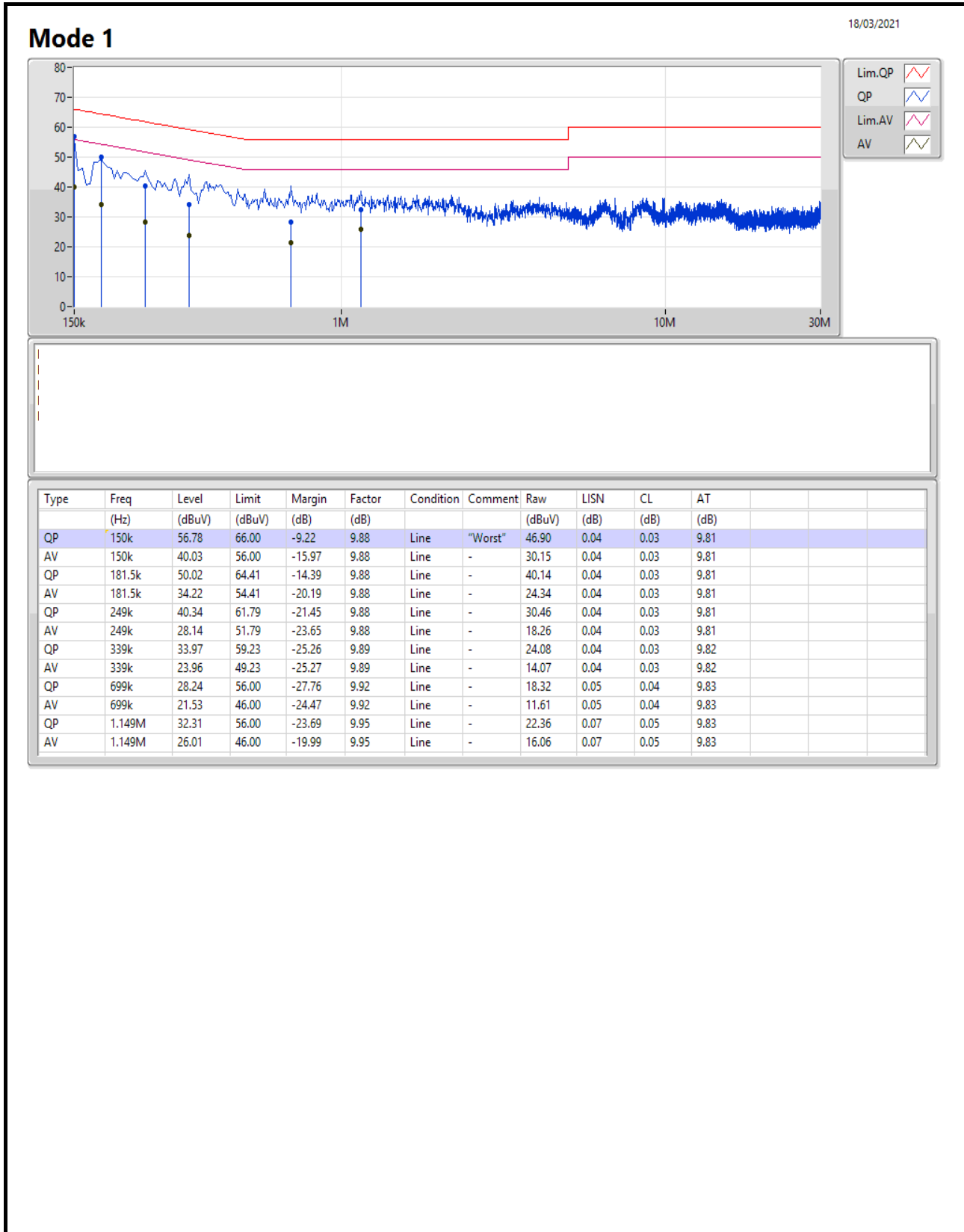
3m Semi Anechoic Chamber VSWR	RIKEN	SAC-3M	03CH02-CB	1GHz ~18GHz 3m	Mar. 27, 2021	Mar. 26, 2022	Radiation (03CH02-CB)
Horn Antenna	EMCO	3115	9610-4976	1GHz ~ 18GHz	May 04, 2021	May 03, 2022	Radiation (03CH02-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Jul. 21, 2020	Jul. 20, 2021	Radiation (03CH02-CB)
Pre-Amplifier	Agilent	83017A	MY39501305	1GHz ~ 26.5GHz	Jul. 13, 2020	Jul. 12, 2021	Radiation (03CH02-CB)
Spectrum analyzer	R&S	FSU	100015	9kHz~26GHz	Oct. 15, 2020	Oct. 14, 2021	Radiation (03CH02-CB)
RF Cable-high	Woken	RG402	High Cable-18	1GHz ~ 18GHz	Oct. 05, 2020	Oct. 04, 2021	Radiation (03CH02-CB)
RF Cable-high	Woken	RG402	High Cable-40G#1	18GHz~40 GHz	Jul. 16, 2020	Jul. 15, 2021	Radiation (03CH02-CB)
RF Cable-high	Woken	RG402	High Cable-18+19	1GHz ~ 18GHz	Oct. 05, 2020	Oct. 04, 2021	Radiation (03CH02-CB)
RF Cable-high	Woken	RG402	High Cable-40G#2	18GHz~40 GHz	Jul. 16, 2020	Jul. 15, 2021	Radiation (03CH02-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (03CH02-CB)

Note: Calibration Interval of instruments listed above is one year.  
NCR means Non-Calibration required.

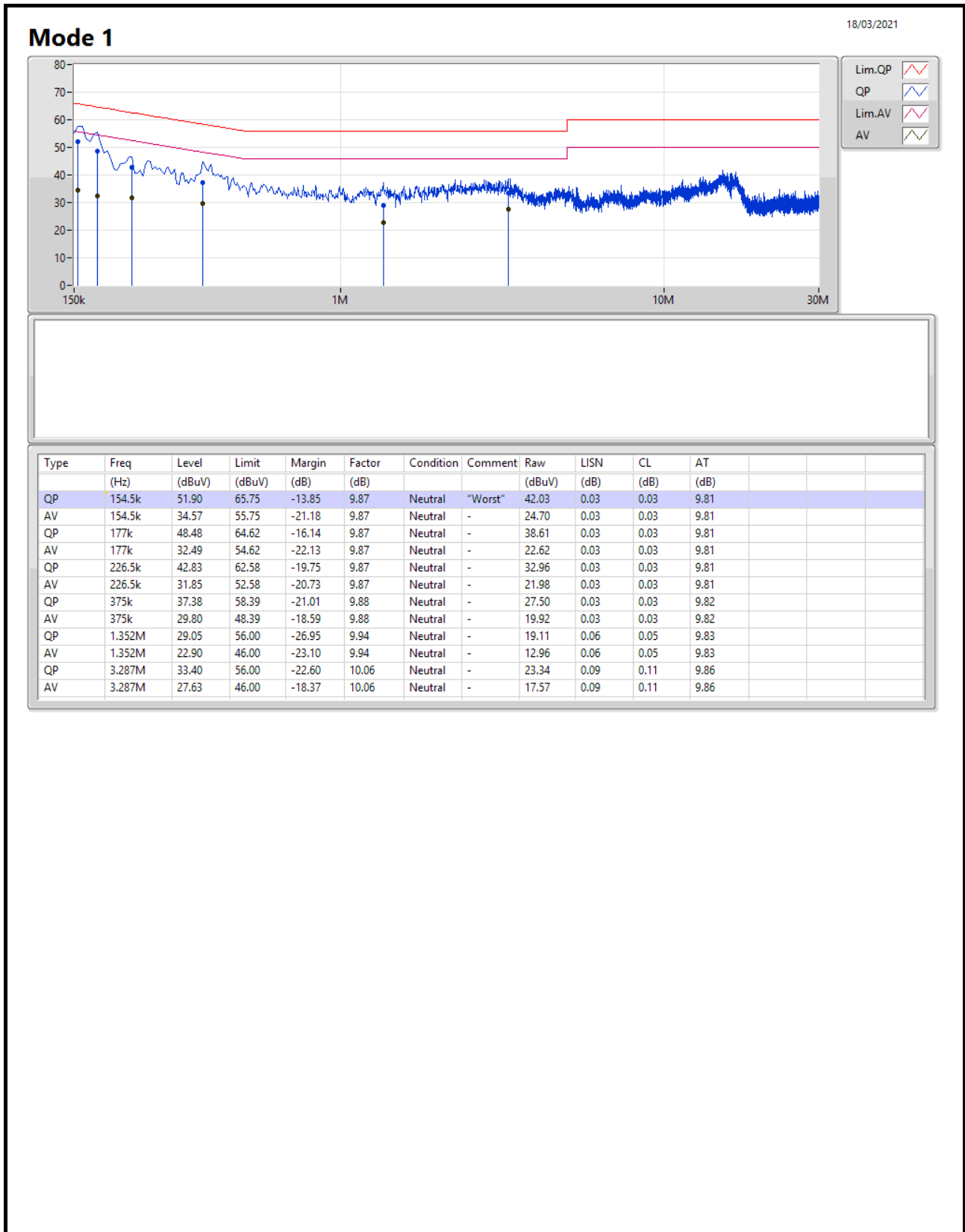


Test Mode	Mode 1	Frequency Range	0.15 MHz to 30 MHz
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Line



Neutral

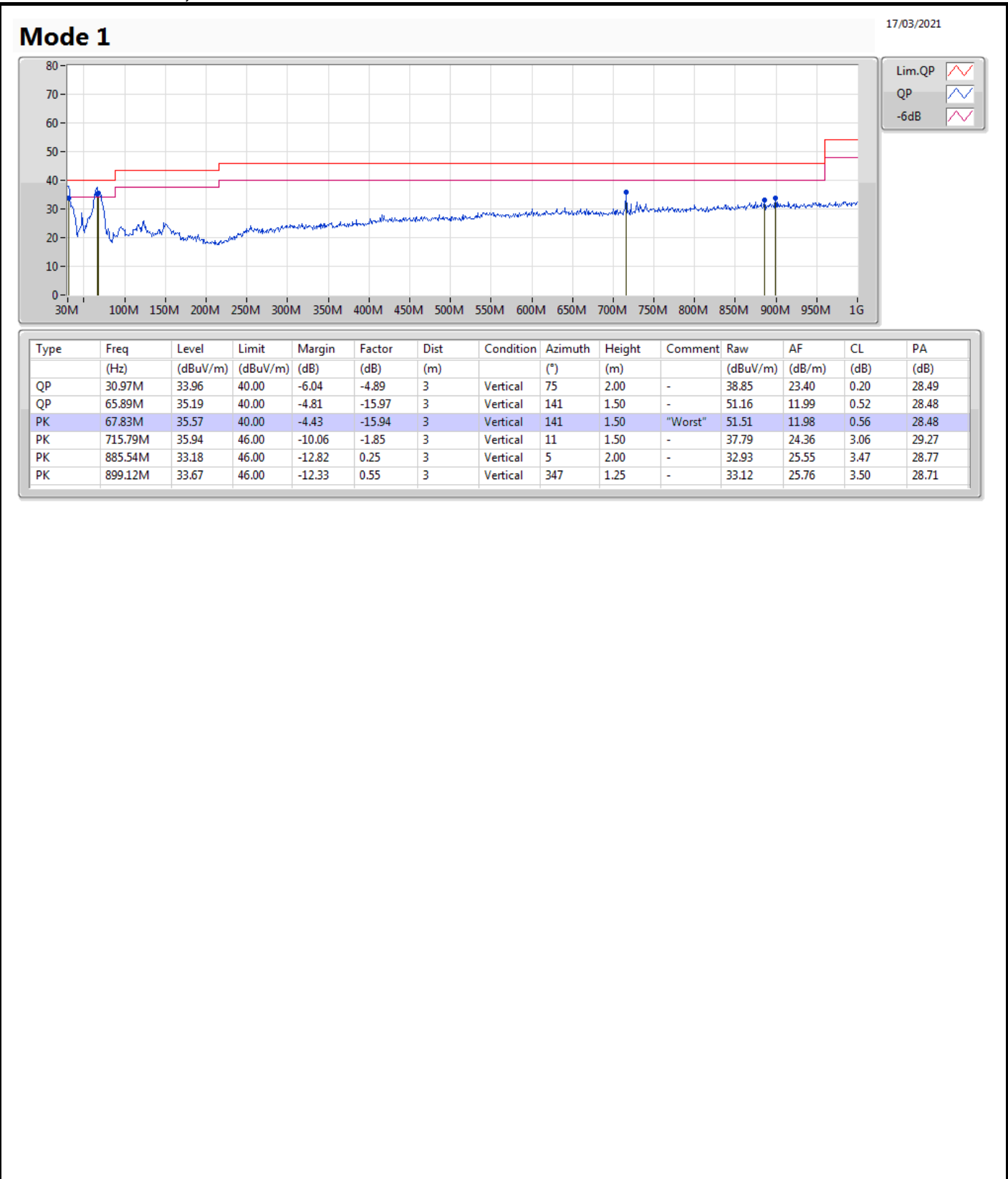






Test Mode	Mode 1	Frequency Range	30 MHz to 1,000 MHz
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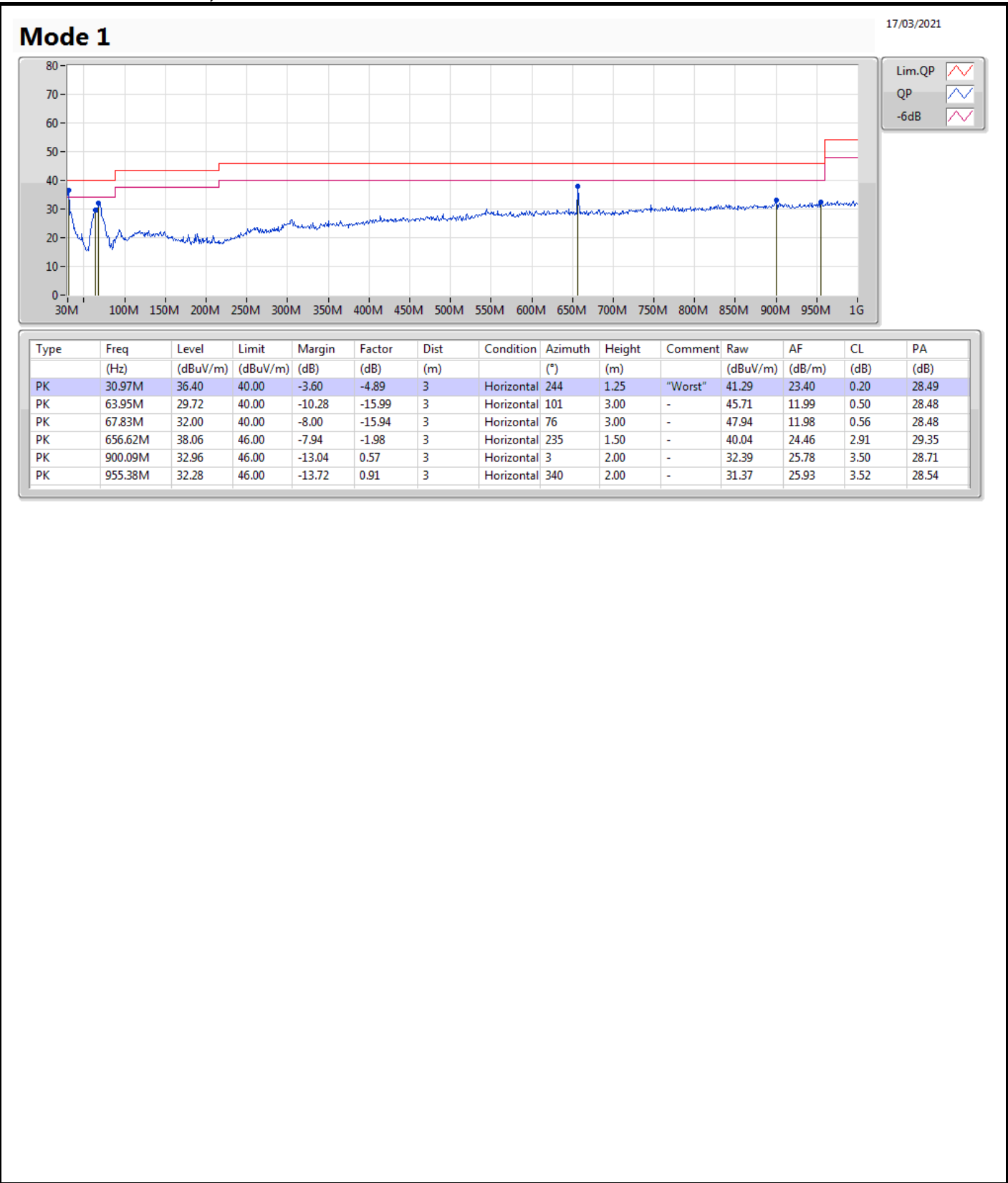
Vertical 30 MHz to 1,000 MHz





Test Mode	Mode 1	Frequency Range	30 MHz to 1,000 MHz
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Horizontal 30 MHz to 1,000 MHz





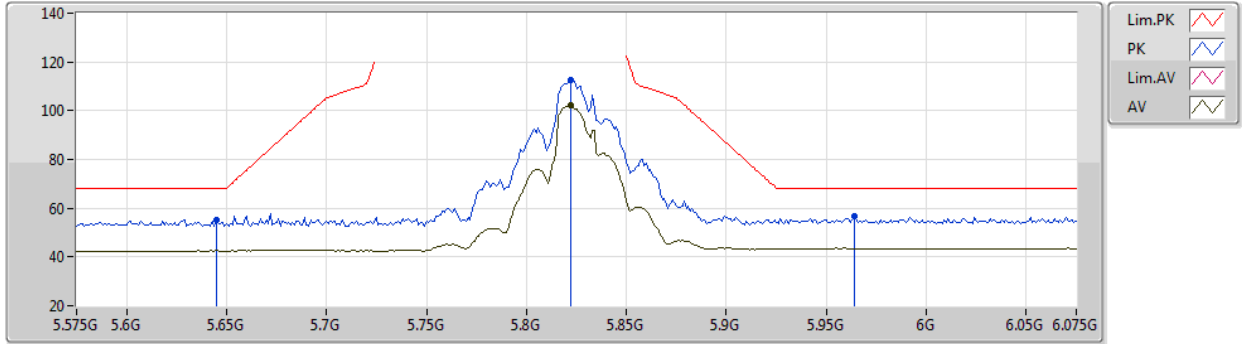
Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
5.725-5.85GHz	-	-	-	-	-	-	-	-	-	-	-
802.11ac_VHT20_Nss1,(MCS0)_2TX	Pass	PK	5.964G	56.50	68.20	-11.70	3	Vertical	215	2.66	-

802.11ac VHT20\_Nss1,(MCS0)\_2TX

07/05/2021

5825MHz\_TX



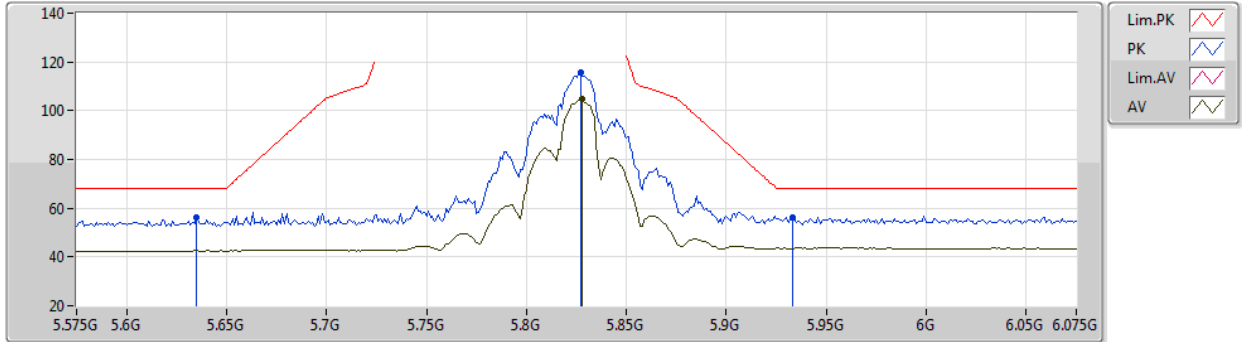
EUT\_Z\_2TX  
Setting 25  
02-B-C-5-10

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	5.645G	55.26	68.20	-12.94	49.96	3	Vertical	215	2.66	-	31.60	5.16	31.46
PK	5.822G	112.68	Inf	-Inf	107.08	3	Vertical	215	2.66	-	31.99	5.07	31.46
AV	5.822G	102.00	Inf	-Inf	96.40	3	Vertical	215	2.66	-	31.99	5.07	31.46
PK	5.964G	56.50	68.20	-11.70	50.19	3	Vertical	215	2.66	-	32.27	5.49	31.45

802.11ac VHT20\_Nss1,(MCS0)\_2TX

07/05/2021

5825MHz\_TX



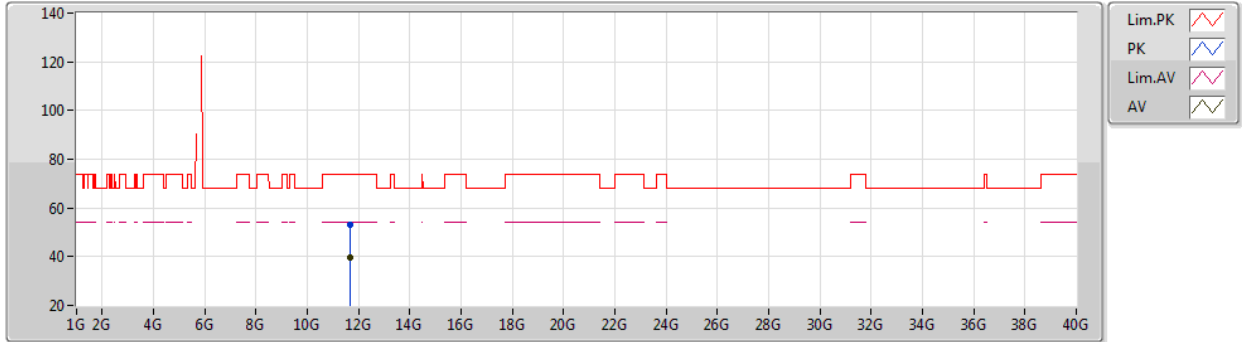
EUT\_Z\_2TX  
Setting 25  
02-B-C-5-10

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	5.635G	56.14	68.20	-12.06	50.83	3	Horizontal	336	2.70	-	31.60	5.17	31.46
PK	5.827G	115.64	Inf	-Inf	110.01	3	Horizontal	336	2.70	-	32.01	5.08	31.46
AV	5.828G	104.61	Inf	-Inf	98.98	3	Horizontal	336	2.70	-	32.01	5.08	31.46
PK	5.933G	56.39	68.20	-11.81	50.21	3	Horizontal	336	2.70	-	32.23	5.40	31.45

802.11ac VHT20\_Nss1,(MCS0)\_2TX

07/05/2021

5825MHz\_TX



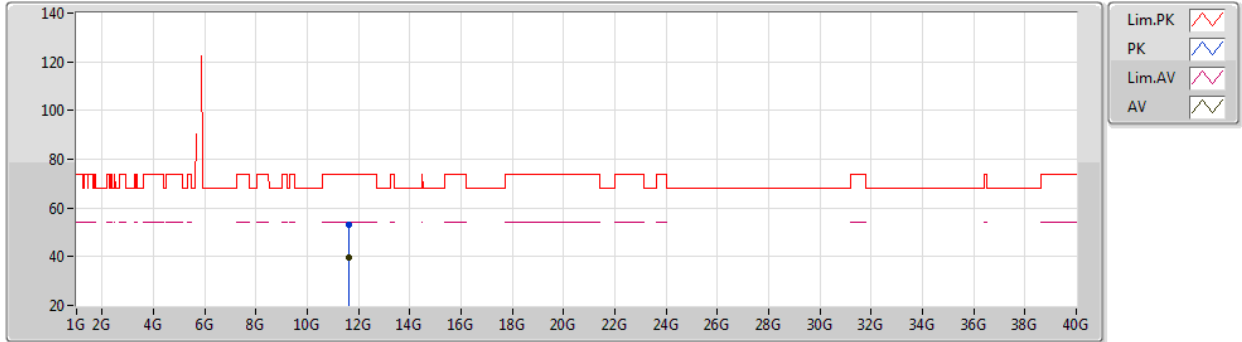
EUT Z\_2TX  
Setting 25  
02-B-C-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	11.6512G	53.26	74.00	-20.74	38.87	3	Vertical	135	1.80	-	39.64	7.68	32.93
AV	11.65774G	39.63	54.00	-14.37	25.28	3	Vertical	135	1.80	-	39.60	7.68	32.93

802.11ac VHT20\_Nss1,(MCS0)\_2TX

07/05/2021

5825MHz\_TX



EUT Z\_2TX  
Setting 25  
02-B-C-5

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Raw (dBuV)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	AF (dB)	CL (dB)	PA (dB)
PK	11.63788G	53.17	74.00	-20.83	38.70	3	Horizontal	4	2.24	-	39.73	7.67	32.93
AV	11.64124G	39.72	54.00	-14.28	25.27	3	Horizontal	4	2.24	-	39.71	7.67	32.93