SPORTON LAB. RADIO TEST REPORT

Report No. : FR380235-01



# **RADIO TEST REPORT**

FCC ID	: Z8H89FT0081
Equipment	: 6084HH
Brand Name	: Cambium Networks
Model Name	: 6084HH
Applicant	: Cambium Networks Inc. 3800 Golf Road, Suite 360 Rolling Meadows, IL 60008, USA
Manufacturer	: Cambium Networks, Ltd. Ashburton, TQ13 7UP, UK
Standard	: 47 CFR FCC Part 15.407

The product was received on Oct. 17, 2023, and testing was started from Oct. 17, 2023 and completed on Apr. 17, 2024. 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.)

TEL : 886-3-656-9065 FAX : 886-3-656-9085 Report Template No.: CB-A12\_5 Ver1.1

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**Appendix F. Test Photos** 

Photographs of EUT v01



## History of this test report

Report No.	Version	Description	Issued Date
FR380235-01	01	Initial issue of report	Mar. 15, 2024
FR380235-01	02	<ol> <li>Revising the test measurement method of Maximum Equivalent Isotopically Radiated Power (E.I.R.P.) to "Conducted" from "Radiated" and its data has been replaced.</li> <li>Revising the test measurement method of Peak Power Spectral Density (E.I.R.P.) to "Conducted" from "Radiated" and its data has been replaced.</li> </ol>	Apr. 30, 2024

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## 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(a)	Emission Bandwidth	PASS	-
3.3	15.407(a)	Maximum Equivalent Isotopically Radiated Power (E.I.R.P.)	PASS	-
3.4	15.407(a)	Peak Power Spectral Density (E.I.R.P.)	PASS	-
3.5	15.407(b)	Unwanted Emissions	PASS	-
-	15.407(d)	Contention-Based Protocol	N/A	Standard Power AP w/o test

#### **Conformity Assessment Condition:**

1. The test results (PASS/FAIL) with all measurement uncertainty excluded are presented against the regulation limits or in accordance with the requirements stipulated by the applicant/manufacturer who shall bear all the risks of non-compliance that may potentially occur if measurement uncertainty is taken into account.

2. The measurement uncertainty please refer to each test result in the chapter "Measurement Uncertainty".

#### Disclaimer:

The product specifications of the EUT presented in the test report that may affect the test assessments are declared by the manufacturer who shall take full responsibility for the authenticity.

Reviewed by: Sam Chen Report Producer: Cathy Chiu



## 1 General Description

## 1.1 Information

#### 1.1.1 **RF General Information**

Frequency Range (MHz)	y Range (MHz) IEEE Std. 802.11 Ch. Frequency (MHz)		Ch. Space (MHz)
5925-6425	F	5928-6422	1
6525-6875	Э	6528-6872	1
5925-6425	40	5945-6405	1
6525-6875	40	6545-6855	1

Band	Mode	BWch (MHz)	Nant
5.925-6.425GHz	QPSK5	5	2TX
5.925-6.425GHz	QPSK40	40	2TX
6.525-6.875GHz	QPSK5	5	2TX
6.525-6.875GHz	QPSK40	40	2TX

Note:

• BWch is the nominal channel bandwidth.

<sup>•</sup> The 6GHz function uses QPSK modulation.



#### 1.1.2 Antenna Information

			Port					Antonno		Cain
Ant.		5G	Hz	60	θHz	Brand Model Name		Brand Model Name Antenna Type Con		Gain (dBi)
	R1	R2	R1+R2	R1	R2			.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		(
1	-	1	3	-	1	Cambium	Canopy V 4X4 Array Antenna	Array	RP-SMA	
2	-	2	4	1	2	Cambium	Canopy V 4X4 Array Antenna	Array	RP-SMA	Note1
3	2	1	2	2	-	Cambium	Canopy V 4X4 Array Antenna	Array	RP-SMA	NOLET
4	1	-	1	1	-	Cambium Canopy V 4X4 Array Antenna		Array	RP-SMA	
Note1	:									
			Port				Gain (dBi)			
Ant.		5G	Hz	60	θHz	5GHz 6GHz			<u>сн</u> ,	
	R1	R2	R1+R2	R1	R2		36112	0	GHZ	
1	-	1	3	-	1	15.922		15	5.892	
2	-	2	4	-	2	15.958		15	5.958	
3	2	-	2	2	-	15.962		15	5.893	
4	1	-	1	1	-		15.906	15	5.906	

Note 2: The above information was declared by manufacturer.



#### Note 3: Directional gain information

Туре	Maximum Output Power	Power Spectral Density
Non-BF	Directional gain = Max.gain + array gain. For power measurements on IEEE 802.11 devices Array Gain = 0 dB (i.e., no array gain) for N ANT ≤ 4	Directiona lGain = $10 \cdot \log \left[ \frac{\sum_{j=1}^{N_{ANT}} \left\{ \sum_{j=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right]$
BF	Directiona lGain = $10 \cdot \log \left[ \frac{\sum_{j=1}^{N_{ANT}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right]$	$Directiona  lGain = 10 \cdot \log \left[ \frac{\sum_{j=1}^{N_{ANT}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right]$

Ex.

Directional Gain (NSS1) formula :

Directiona	lGain	= 10 · 100	$\left[\sum_{j=1}^{N_{SS}} \left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^{2}\right]$
2			N <sub>ANT</sub>

```
\begin{split} &\text{NSS1(g1,1) = } 10^{\text{G1/20}} \text{ ; } \text{NSS1(g1,2) = } 10^{\text{G2/20}} \text{ ; } \text{NSS1(g1,2) = } 10^{\text{G3/20}} \text{; } \text{NSS1(g1,2) = } 10^{\text{G4/20}} \\ &\text{gj,k = } (\text{Nss1(g1,1) + } \text{Nss1(g1,2) + } \text{Nss1(g1,3) + } \text{Nss1(g1,4) })^2 \\ &\text{DG = } 10 \log[(\text{Nss1(g1,1) + } \text{Nss1(g1,2) + } \text{Nss1(g1,3) + } \text{Nss1(g1,4)})^2 / \text{N}_{\text{ANT}} / \text{Nss]} => 10 \\ &\log[(10^{\text{G1/20}} + 10^{\text{G2/20}} + 10^{\text{G3/20}} + 10^{\text{G4/20}} )^2 / \text{N}_{\text{ANT}}] \\ &\text{Where ;} \end{split}
```

Cross-Polarized Antenna

5G UNII-1 G1 = 15.962 dBi; G2 = 15.906 dBi; 5G UNII-3 G1 = 15.922 dBi; G2 = 15.958 dBi; 5G UNII-1 DG = 15.962 dBi 5G UNII-3 DG = 15.958 dBi

6E UNII-5 G1 = 15.893 dBi; G2 = 15.906 dBi; 6E UNII-7 G1 = 15.892 dBi; G2 = 15.958 dBi; 6E UNII-5 DG = 15.906 dBi 6E UNII-7 DG = 15.958 dBi

#### For 5GHz function:

#### For Radio 1 (R1) (2TX/2RX):

Port 1~2 can be used as transmitting/receiving antenna. Port 1~2 could transmit/receive simultaneously. **For Radio 2 (R2) (2TX/2RX):** Port 1~2 can be used as transmitting/receiving antenna. Port 1~2 could transmit/receive simultaneously.



#### For Radio 1 + Radio 2 (R1+R2) (2TX/2RX):

Port 1~4 can be used as transmitting/receiving antenna.

Port 1~4 could transmit/receive simultaneously.

#### For 6GHz function:

#### For Radio 1 (R1) (2TX/2RX):

Port 1~2 can be used as transmitting/receiving antenna.

Port 1~2 could transmit/receive simultaneously.

#### For Radio 2 (R2) (2TX/2RX):

Port 1~2 can be used as transmitting/receiving antenna.

Port 1~2 could transmit/receive simultaneously.

#### 1.1.3 Mode Test Duty Cycle

Mode	DC	DCF(dB)	T(s)	VBW(Hz) ≥ 1/T
QPSK5	0.933	0.3	2.333m	1k
QPSK40	0.817	0.88	2.04m	1k

Note:

• DC is Duty Cycle.

DCF is Duty Cycle Factor.

#### 1.1.4 EUT Operational Condition

EUT Power Type		From PoE					
Beamforming Function		With beamforming	$\boxtimes$	Without beamforming			
		Indoor Access Point		Subordinate			
Device Type		Indoor Client	$\boxtimes$	Standard Power Access Point			
Device Type		Dual Client		Standard Client			
		Fixed Client		Very Low Power			
Condition of EUT		Indoor	$\boxtimes$	Outdoor			
Test Software VersionDOS [ver 6.1.7601]		6 [ver 6.1.7601]					

Note: The above information was declared by manufacturer.

#### 1.1.5 Table for Radio Function

Radio (R)	Function
R1	Support 5GHz UNII 1 and 6GHz UNII 5
R2	Support 5GHz UNII 3 and 6GHz UNII 7

Note: The above information was declared by manufacturer.



### 1.1.6 Table for Permissive Change

This product is an extension of original one reported under Sporton project number: FR380235

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

Modifications	Performance Checking
Add the Standard Power Access Point for 5MHz and 40MHz	
in UNII-5, UNII-7 through SW change.	All test items



## **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 987594 D02 v02r01
- 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
RF Conducted (Other tests)	TH03-CB	Owen Hsu	21.4~22.2 / 65~72	Nov. 16, 2023~ Nov. 20, 2023
RF Conducted (E.I.R.P. Power/PSD)	TH03-CB	Owen Hsu	21.4~22.2 / 65~72	Apr. 17, 2024
Radiated (Above 1GHz)	03CH03-CB	Black Lu	22-23 / 55-58	Oct. 17, 2023~ Oct. 18, 2023
Radiated (Below 1GHz)	10CH01-CB	Gray Lee	22~23 / 52~53	Jan. 16, 2024
AC Conduction	CO02-CB	Gray Lee	22~23 / 55~56	Dec. 20, 2023



## **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)	3.4 dB	Confidence levels of 95%
Radiated Emission (9kHz ~ 30MHz)	3.7 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	5.1 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	4.1 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	4.2 dB	Confidence levels of 95%
Conducted Emission	3.1 dB	Confidence levels of 95%
Output Power Measurement	0.8 dB	Confidence levels of 95%
Power Density Measurement	3.1 dB	Confidence levels of 95%
Bandwidth Measurement	2.2%	Confidence levels of 95%



## 2 Test Configuration of EUT

## 2.1 Test Channel Mode

Mode
QPSK5_5MHz_Nss1_2TX
5928MHz
6175MHz
6422MHz
6528MHz
6700MHz
6872MHz
QPSK40_40MHz_Nss1_2TX
5945MHz
6175MHz
6405MHz
6545MHz
6700MHz
6855MHz Straddle 6.525-6.875GHz



## 2.2 The Worst Case Measurement Configuration

The Worst Case Mode for Following Conformance Tests		
Tests Item         AC power-line conducted emissions		
Condition	AC power-line conducted measurement for line and neutral Test Voltage: 120Vac / 60Hz	
Operating Mode	СТХ	
1	EUT + PoE	

The Worst Case Mode for Following Conformance Tests		
Tests Item	Emission Bandwidth Maximum Equivalent Isotopically Radiated Power (E.I.R.P.) Maximum E.I.R.P. at any elevation angle above 30 degrees Peak Power Spectral Density (E.I.R.P.)	
Test Condition	Conducted measurement at transmit chains	

The Worst Case Mode for Following Conformance Tests				
Tests Item Unwanted Emissions				
Test ConditionRadiated measurementIf EUT consist of multiple antenna assembly (multiple antenna are used in E regardless of spatial multiplexing MIMO configuration), the radiated test sho be performed with highest antenna gain of each antenna type.				
Operating Mode CTX				
After evaluating, the worst case was found at Y axis, thus the measurement will follow this same test configuration.				
1 EUT in Y axis + PoE				

The Worst Case Mode for Following Conformance Tests			
Tests Item Emission MASK			
Test Condition         Conducted measurement at transmit chains			
Note: The PoE was for measurement only and would not be marketed. Its information is shown as below:			

Power Brand Name	Model Name	
PoE	Cambium Networks	NET-P60-56IN

## 2.3 EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

## 2.4 Accessories

Wall bracket\*1



## 2.5 Support Equipment

#### For AC Conduction and Radiated (below 1GHz):

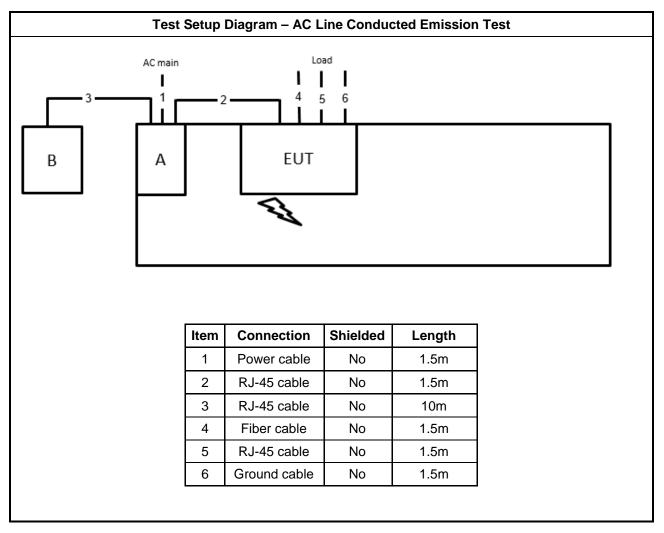
Support Equipment					
No.	No. Equipment Brand Name Model Name FCC ID				
А	PoE	Cambium Networks	NET-P60-56IN	N/A	
В	LAN NB	DELL	E6430	N/A	

#### For RF Conducted and Radiated (above 1GHz):

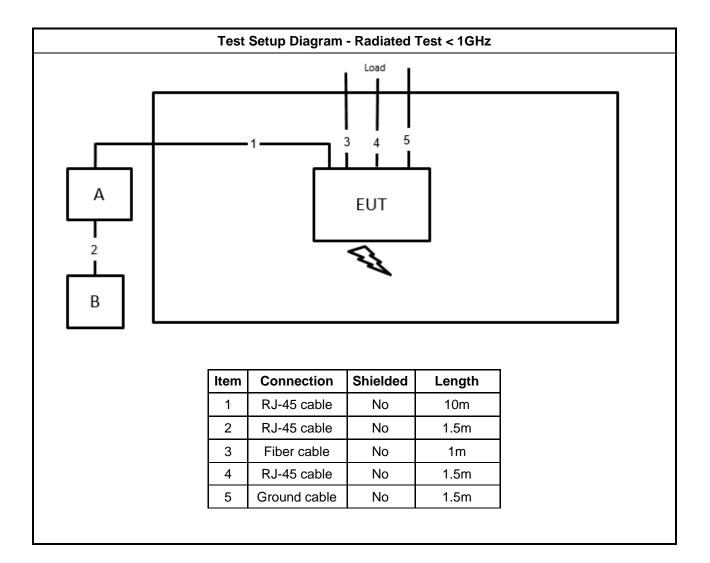
Support Equipment					
No.	No. Equipment Brand Name Model Name FCC ID				
А	NB	DELL	E4300	N/A	
В	PoE	Cambium Networks	NET-P60-56IN	N/A	



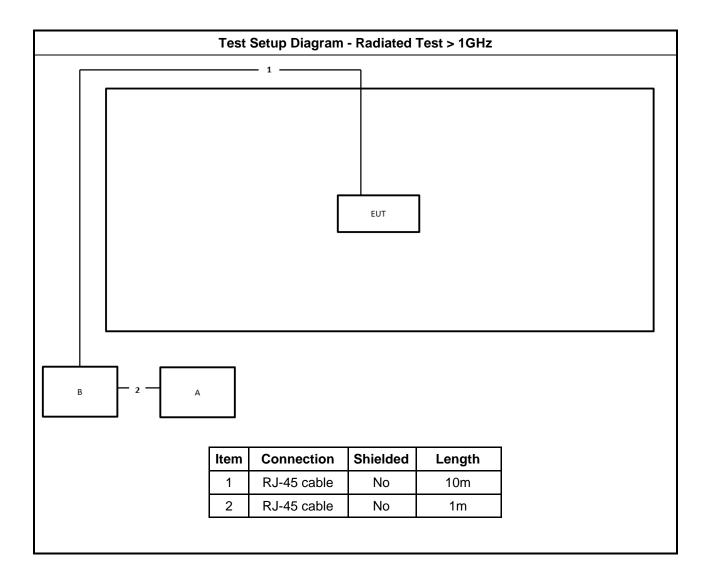
## 2.6 Test Setup Diagram













## 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.

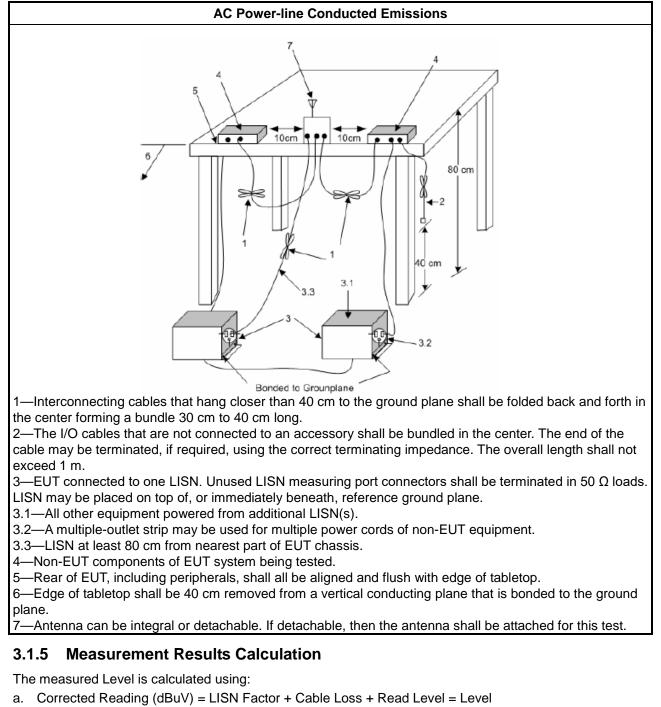
#### 3.1.3 Test Procedures

**Test Method** 

Refer as ANSI C63.10-2013, clause 6.2 for AC power-line conducted emissions.



#### 3.1.4 Test Setup



b. Margin = - Limit + (Read Level + LISN Factor + Cable Loss)

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

Refer as Appendix A



## 3.2 Emission Bandwidth

#### 3.2.1 Emission Bandwidth Limit

Emission Bandwidth Limit				
UNII Devices				
For the 5925-6425 GHz band, N/A				
For the 6425-6525 GHz band, N/A				
For the 6525-6875 GHz band, N/A				
For the 6875-7125 GHz band, N/A				
RLAN Devices				
For the 5925-6425 GHz band, N/A				
For the 6425-6525 GHz band, N/A				
For the 6525-6875 GHz band, N/A				
For the 6875-7125 GHz band, N/A				

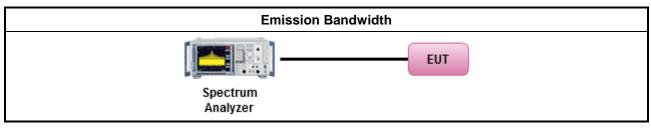
#### 3.2.2 Measuring Instruments

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

#### 3.2.3 Test Procedures

	Test Method					
•	For the emission bandwidth shall be measured using one of the options below:					
		According to FCC KDB 987594 D02 clause II.C, measurement procedure shall refer to FCC KDB 789033 D02, clause C for EBW and clause D for OBW measurement.				
		Refer as ANSI C63.10, clause 6.9.1 for occupied bandwidth testing.				
		Refer as IC RSS-Gen, clause 4.6 for bandwidth testing.				
-						

### 3.2.4 Test Setup



#### 3.2.5 Test Result of Emission Bandwidth

Refer as Appendix B



## 3.3 Maximum Equivalent Isotopically Radiated Power (E.I.R.P.)

### 3.3.1 Maximum Equivalent Isotopically Radiated Power (E.I.R.P.) Limit

	Maximum Equivalent Isotopically Radiated Power (E.I.R.P.) Limit				
UN	III Devices				
$\boxtimes$	For the 5.925 ~ 6.425 GHz band:				
	• For standard power access point and fixed client device : e.i.r.p < 36 dBm. For outdoor devices, the maximum e.i.r.p. at any elevation angle above 30 degrees not exceed 125 mW (21 dBm).				
	• For indoor access point : e.i.r.p < 30 dBm.				
	• For subordinate device control of an indoor access point : e.i.r.p < 30 dBm.				
	• For client device control of a standard power access point : e.i.r.p < 30 dBm.				
	• For client device control of an indoor access point : e.i.r.p < 24 dBm.				
	• For very low power device : e.i.r.p < 14 dBm.				
	For the 6.425 ~ 6.525 GHz band:				
	For indoor access point : e.i.r.p < 30 dBm.				
	For client device control of an indoor access point : e.i.r.p < 24 dBm.				
$\boxtimes$	For the 6.525 ~ 6.875 GHz band:				
	• For standard power access point and fixed client device : e.i.r.p < 36 dBm. For outdoor devices, the maximum e.i.r.p. at any elevation angle above 30 degrees not exceed 125 mW (21 dBm).				
	For indoor access point : e.i.r.p < 30 dBm.				
	• For subordinate device control of an indoor access point : e.i.r.p < 30 dBm.				
	For client device control of a standard power access point : e.i.r.p < 30 dBm.				
	• For client device control of an indoor access point : e.i.r.p < 24 dBm.				
	• For very low power device : e.i.r.p < 14 dBm.				
	For the 6.875 ~ 7.125 GHz band:				
	• For indoor access point : e.i.r.p < 30 dBm.				
	• For client device control of an indoor access point : e.i.r.p < 24 dBm.				
RL	AN Devices				
	For the 5.925 ~ 7.125 GHz band:				
	<ul> <li>For low-power indoor access-points &amp; indoor subordinate devices &lt; 30 dBm.</li> </ul>				
	For low-power client devices < 24 dBm.				
	For the 5.925 ~ 6.875 GHz band:				
	• For standard-power access points & fixed client devices < 36 dBm. For outdoor devices, the maximum e.i.r.p. at any elevation angle above 30 degrees not exceed 125 mW (21 dBm).				
	For standard client devices < 30 dBm.				



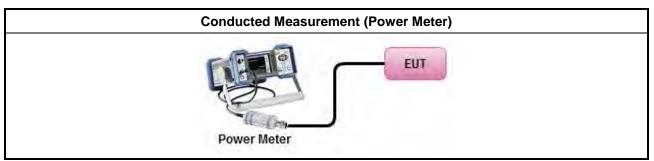
#### 3.3.2 Measuring Instruments

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

#### 3.3.3 Test Procedures

		Test Method				
•	According to FCC KDB 987594 D02 clause II.E, the test measurement procedure shall refer to KDB 789033.					
	Average over on/off periods with duty factor					
		Refer as FCC KDB 789033 D02, clause E Method SA-2 (spectral trace averaging). Spectrum analyzer setting: RBW/VBW : 1/3MHz ; Detector : RMS ; Trace mode : Average ; Sweep Count 100.				
		Refer as FCC KDB 789033 D02, clause E Method SA-2 Alt. (RMS detection with slow sweep speed)				
	Wid	eband RF power meter and average over on/off periods with duty factor				
	$\square$	Refer as FCC KDB 789033 D02, clause E Method PM-G (using an RF average power meter).				
$\boxtimes$	For conducted measurement.					
	•	If the EUT supports multiple transmit chains using options given below: Refer as FCC KDB 662911, In-band power measurements. Using the measure-and-sum approach, measured all transmit ports individually. Sum the power (in linear power units e.g., mW) of all ports for each individual sample and save them.				
	•	If multiple transmit chains, EIRP calculation could be following as methods: $P_{total} = P_1 + P_2 + + P_n$ (calculated in linear unit [mW] and transfer to log unit [dBm]) EIRP <sub>total</sub> = P <sub>total</sub> + DG				
	For	radiated measurement.				
	•	Refer as FCC KDB 789033 D02 clause II A.1.F "Antenna-port Conducted versus Radiated Testing"				
	•	Refer as ANSI C63.10, clause 6.6 for radiated emissions above 1GHz.				
	Refer as FCC KDB 412172 D01 clause 2.2 for EIRP calculation.					

#### 3.3.4 Test Setup



#### 3.3.5 Test Result of Maximum Equivalent Isotopically Radiated Power (E.I.R.P)

Refer as Appendix C



## 3.4 Peak Power Spectral Density (E.I.R.P.)

### 3.4.1 Peak Power Spectral Density (E.I.R.P.) Limit

	Peak Power Spectral Density (E.I.R.P.) Limit
UNI	I Devices
$\boxtimes$	For the 5.925 ~ 6.425 GHz band:
	<ul> <li>For standard power access point and fixed client device : e.i.r.p PSD &lt; 23 dBm/MHz.</li> </ul>
	<ul> <li>For indoor access point : e.i.r.p PSD &lt; 5 dBm/MHz.</li> </ul>
	<ul> <li>For subordinate device control of an indoor access point : e.i.r.p PSD &lt; 5 dBm/MHz.</li> </ul>
	<ul> <li>For client device control of a standard power access point : e.i.r.p PSD &lt; 17 dBm/MHz.</li> </ul>
	<ul> <li>For client device control of an indoor access point : e.i.r.p PSD &lt; -1 dBm/MHz.</li> </ul>
	<ul> <li>For very low power device : e.i.r.p PSD &lt; -5 dBm/MHz.</li> </ul>
	For the 6.425 ~ 6.525 GHz band:
	<ul> <li>For indoor access point : e.i.r.p PSD &lt; 5 dBm/MHz.</li> </ul>
	<ul> <li>For client device control of an indoor access point : e.i.r.p PSD &lt; -1 dBm/MHz.</li> </ul>
$\boxtimes$	For the 6.525 ~ 6.875 GHz band:
	<ul> <li>For standard power access point and fixed client device : e.i.r.p PSD &lt; 23 dBm/MHz.</li> </ul>
	For indoor access point : e.i.r.p PSD < 5 dBm/MHz.
	<ul> <li>For subordinate device control of an indoor access point : e.i.r.p PSD &lt; 5 dBm/MHz.</li> </ul>
	<ul> <li>For client device control of a standard power access point : e.i.r.p PSD &lt; 17 dBm/MHz.</li> </ul>
	<ul> <li>For client device control of an indoor access point : e.i.r.p PSD &lt; -1 dBm/MHz.</li> </ul>
	<ul> <li>For very low power device : e.i.r.p PSD &lt; -5 dBm/MHz.</li> </ul>
	For the 6.875 ~ 7.125 GHz band:
	<ul> <li>For indoor access point : e.i.r.p PSD &lt; 5 dBm/MHz.</li> </ul>
	<ul> <li>For client device control of an indoor access point : e.i.r.p PSD &lt; -1 dBm/MHz.</li> </ul>
RL	AN Devices
	For the 5.925 ~ 7.125 GHz band:
	<ul> <li>For low-power indoor access-points &amp; indoor subordinate devices &lt; 5 dBm / MHz.</li> </ul>
	<ul> <li>For low-power client devices &lt; -1 dBm / MHz.</li> </ul>
	For the 5.925 ~ 6.875 GHz band:
	<ul> <li>For standard-power access points &amp; fixed client devices &lt; 23 dBm / MHz.</li> </ul>
	<ul> <li>For standard client devices &lt; 17 dBm / MHz.</li> </ul>

#### 3.4.2 Measuring Instruments

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



#### 3.4.3 Test Procedures

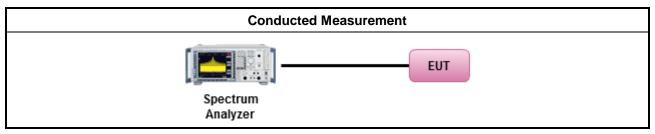
	Test Method						
•	According to FCC KDB 987594 D02 clause II.F, the measurement procedure shall refer to KDB 789033. Peak power spectral density procedures that the same method as used to determine the conducted output power shall be used to determine the peak power spectral density and use the peak search function on the spectrum analyzer to find the peak of the spectrum. For the peak power spectral density shall be measured using below options:						
	Refer as FCC KDB 789033 D02, F)5) power spectral density can be measured using resolution bandwidths < 1 MHz provided that the results are integrated over 1 MHz bandwidth						
	[duty cycle ≥ 98% or external video / power trigger]						
	Refer as FCC KDB 789033 D02, clause E Method SA-1 (spectral trace averaging).						
	Refer as FCC KDB 789033 D02, clause E Method SA-1 Alt. (RMS detection with slow sweep speed)						
	duty cycle < 98% and average over on/off periods with duty factor						
	Refer as FCC KDB 789033 D02, clause E Method SA-2 (spectral trace averaging).						
	Refer as FCC KDB 789033 D02, clause E Method SA-2 Alt. (RMS detection with slow sweep speed)						
$\square$	For conducted measurement.						
	<ul> <li>If the EUT supports multiple transmit chains using options given below:</li> </ul>						
	☑ Option 1: Measure and sum the spectra across the outputs. Refer as FCC KDB 662911, In-band power spectral density (PSD). Sample all transmit ports simultaneously using a spectrum analyzer for each transmit port. Where the trace bin-by-bin of each transmit port summing can be performed. (i.e., in the first spectral bin of output 1 is summed with that in the first spectral bin of output 2 and that from the first spectral bin of output 3, and so on up to the NTX output to obtain the value for the first frequency bin of the summed spectrum.). Add up the amplitude (power) values for the different transmit chains and use this as the new data trace.						
	Option 2: Measure and sum spectral maxima across the outputs. With this technique, spectra are measured at each output of the device at the required resolution bandwidth. The maximum value (peak) of each spectrum is determined. These maximum values are then summed mathematically in linear power units across the outputs. These operations shall be performed separately over frequency spans that have different out-of-band or spurious emission limits,						
	Option 3: Measure and add 10 log(N) dB, where N is the number of transmit chains. Refer as FCC KDB 662911, In-band power spectral density (PSD). Performed at each transmit chains and each transmit chains shall be compared with the limit have been reduced with 10 log(N). Or each transmit chains shall be add 10 log(N) to compared with the limit.						
	<ul> <li>If multiple transmit chains, EIRP PPSD calculation could be following as methods: PPSD<sub>total</sub> = PPSD<sub>1</sub> + PPSD<sub>2</sub> + + PPSD<sub>n</sub> (calculated in linear unit [mW] and transfer to log unit [dBm]) EIRP<sub>total</sub> = PPSD<sub>total</sub> + DG     </li> </ul>						
	For radiated measurement.						
	<ul> <li>Refer as FCC KDB 789033 D02 clause II A.1.F "Antenna-port Conducted versus Radiated Testing"</li> </ul>						
	<ul> <li>Refer as ANSI C63.10, clause 6.6 for radiated emissions above 1GHz.</li> </ul>						



#### **Test Method**

#### • Refer as FCC KDB 412172 D01 clause 2.2 for EIRP calculation.

### 3.4.4 Test Setup



#### 3.4.5 Test Result of Peak Power Spectral Density (E.I.R.P.)

Refer as Appendix D



### 3.5 Unwanted Emissions

#### 3.5.1 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(20 x log (standard distance/ test distance) = 20log(3/1) = 9.54dB. EX. Above 18GHz emission limit calculation (3m to 1m) = 54dBuV/m at 3m + 9.54dB = 63.54 dBuV/m at 1m.

Un-restricted band emissions above 1GHz Limit				
Frequency	Limit			
Any outside the 5.945 -	e.i.r.p27 dBm [68.2 dBuV/m@3m]			
7.125 GHz emission	<ul> <li>Note 1: Using the distance of 1m during the test for above 18 GHz, and the test value to correct for the distance factor at 3m(20 x log (standard distance/ test distance) = 20log(3/1) = 9.54dB.</li> <li>EX. Above 18GHz emission limit calculation (3m to 1m) = 68.2dBuV/m at 3m + 9.54dB = 77.74 dBuV/m at 1m.</li> <li>Note 2:-27 dBm EIRP OOBE is measured RMS which is a deviation from the current 15E rules for 5 GHz bands. In addition, 15.35(b) applies where the peak emissions must be limited to no more than 20 dB above the average limit.</li> </ul>			



Frequency	Emission MASK Limit			
5.945 – 7.125 GHz	Power spectral density must be suppressed by 20 dB at 1 MHz outside of channel edge, by 28 dB at one channel bandwidth from the channel center, and by 40 dB at one- and one-half times the channel bandwidth away from channel center. At frequencies between one megahertz outside an unlicensed device's channel edge and one channel bandwidth from the center of the channel, the limits must be linearly interpolated between 20 dB and 28 dB suppression, and at frequencies between one and one-half times an unlicensed device's channel bandwidth, the limits must be linearly interpolated between 28 dB and 40 dB suppression. Emissions removed from the channel center by more than one- and one-half times the channel bandwidth must be suppressed by at least 40 dB.			



### 3.5.2 Measuring Instruments

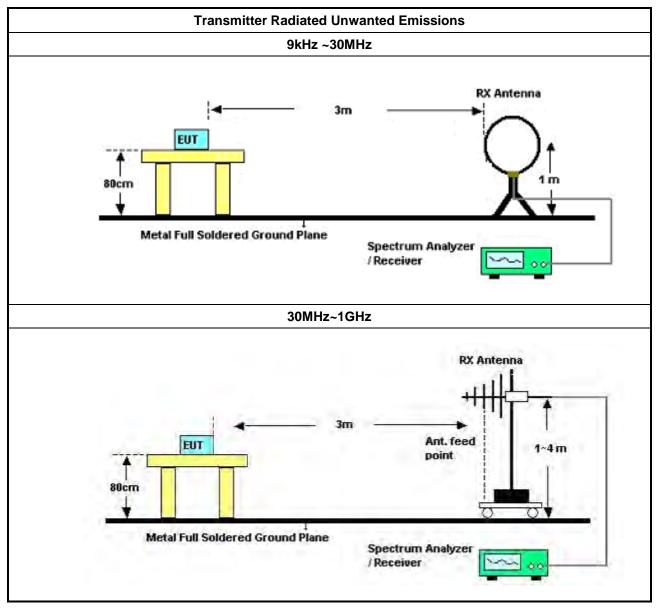
Refer a test equipment and calibration data table in this test report.

#### 3.5.3 Test Procedures

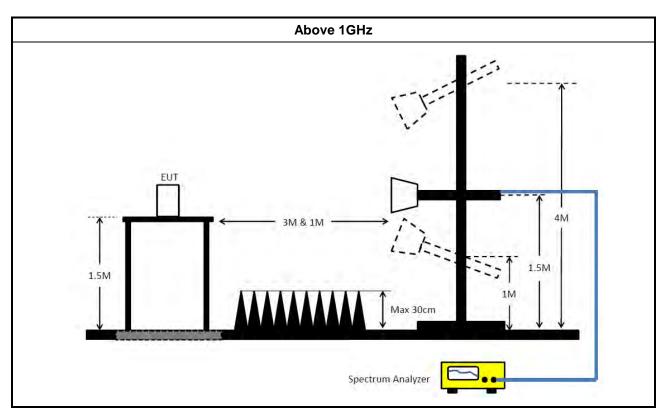
	Test Method					
•	According to FCC KDB 987594 D02 II.G. the unwanted emission measurement procedure shall refer to KDB 789300(except emission MASK). Measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured 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).					
•	The average emission levels shall be measured in [duty cycle $\geq$ 98 or duty factor].					
•	For the transmitter unwanted emissions shall be measured using following options below:					
	<ul> <li>Refer as FCC KDB 789033 D02, clause G)2) for unwanted emissions into non-restricted bands.</li> </ul>					
	<ul> <li>Refer as FCC KDB 789033 D02, clause G)1) for unwanted emissions into restricted bands.</li> </ul>					
	<ul> <li>Refer as FCC KDB 789033 D02, G)6) Method AD (Trace Averaging).</li> <li>(For unrestricted band measurement)</li> </ul>					
	Refer as FCC KDB 789033 D02, G)6) Method VB (Reduced VBW).					
	Refer as ANSI C63.10, clause 11.12.2.5.3 (Reduced VBW). VBW ≥ 1/T, where T is pulse time.( For restricted band average measurement)					
	Refer as ANSI C63.10, clause 7.5 average value of pulsed emissions.					
	Refer as FCC KDB 789033 D02, clause G)5) measurement procedure peak limit.					
	Refer as ANSI C63.10, clause 4.1.4.2.2 measurement procedure peak limit.					
	Refer as FCC KDB 789033 D02, clause G)3)d)ii) for Band edge Integration measurements.					
•	For emission MASK shall be measured using following options below:					
	Refer as FCC KDB 987594 D02, J) In-Band Emissions					
•	For radiated measurement.					
	• Refer as ANSI C63.10, clause 6.4 for radiated emissions below 30 MHz and test distance is 3m.					
	<ul> <li>Refer as ANSI C63.10, clause 6.5 for radiated emissions 30 MHz to 1 GHz and test distance is 3m</li> </ul>					
	<ul> <li>Refer as ANSI C63.10, clause 6.6 for radiated emissions above 1GHz.</li> </ul>					
•	The any unwanted emissions level shall not exceed the fundamental emission level.					
•	All amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.					

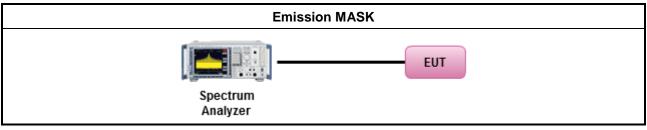


#### 3.5.4 Test Setup









#### 3.5.5 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

#### 3.5.6 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.

### 3.5.7 Test Result of Transmitter Unwanted Emissions

Refer as Appendix E

TEL : 886-3-656-9065 FAX : 886-3-656-9085 Report Template No.: CB-A12\_5 Ver1.1



## 4 Test Equipment and Calibration Data

Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
LISN	Schwarzbeck	NSLK 8127	8127650	9kHz ~ 30MHz	Apr. 06, 2023	Apr. 05, 2024	Conduction (CO02-CB)
LISN	Schwarzbeck	NSLK 8127	8127647	9kHz ~ 30MHz	Apr. 27, 2023	Apr. 26, 2024	Conduction (CO02-CB)
EMI Receiver	Agilent	N9038A	MY52260140	9kHz ~ 8.4GHz	May 18, 2023	May 17, 2024	Conduction (CO02-CB)
COND Cable	Woken	Cable	2	0.15MHz ~ 30MHz	Oct. 17, 2023	Oct. 16, 2024	Conduction (CO02-CB)
Pulse Limiter	Schwarzbeck	VTSD 9561F-N	00378	9kHz ~ 30MHz	Oct. 17, 2023	Oct. 16, 2024	Conduction (CO02-CB)
Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Conduction (CO02-CB)
Loop Antenna	Teseq	HLA 6121	65417	9kHz - 30 MHz	Oct. 13, 2023	Oct. 12, 2024	Radiation (10CH01-CB)
10m Semi Anechoic Chamber NSA	TDK	SAC-10M	10CH01-CB	30MHz~1GHz 10m,3m	Jan. 18, 2023	Jan. 17, 2024	Radiation (10CH01-CB)
Amplifier	Agilent	8447D	2944A10783	9kHz ~ 1.3GHz	Mar. 10, 2023	Mar. 09, 2024	Radiation (10CH01-CB)
Amplifier	Agilent	8447D	2944A10784	9kHz ~ 1.3GHz	Mar. 10, 2023	Mar. 09, 2024	Radiation (10CH01-CB)
Low Cable	Woken	SUCOFLEX 104	low cable-01	25MHz ~ 1GHz	Oct. 17, 2023	Oct. 16, 2024	Radiation (10CH01-CB)
Low Cable	Woken	SUCOFLEX 104	low cable-02	25MHz ~ 1GHz	Oct. 17, 2023	Oct. 16, 2024	Radiation (10CH01-CB)
Biconical Antenna	Schwarzbeck	VHBB 9124	324	30MHz ~ 200MHz	May 02, 2023	May 01, 2024	Radiation (10CH01-CB)
Log Antenna	Schwarzbeck	VUSLP 9111	247	200MHz ~ 1GHz	May 02, 2023	May 01, 2024	Radiation (10CH01-CB)
EMI Test Receiver	Rohde&Schwarz	ESCI	100186	9kHz ~ 3GHz	Jul. 11, 2023	Jul. 10, 2024	Radiation (10CH01-CB)
Spectrum Analyzer	Rohde&Schwarz	FSV30	101026	9kHz ~ 30GHz	Apr. 19, 2023	Apr. 18, 2024	Radiation (10CH01-CB)
Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (10CH01-CB)
3m Semi Anechoic Chamber VSWR	TDK	SAC-3M	03CH03-CB	1GHz ~18GHz 3m	May 04, 2023	May 03, 2024	Radiation (03CH03-CB)
Horn Antenna	ETS·Lindgren	3115	6821	750MHz~ 18GHz	Feb. 03, 2023	Feb. 02, 2024	Radiation (03CH03-CB)



Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Sep. 04, 2023	Sep. 03, 2024	Radiation (03CH03-CB)
Pre-Amplifier	Agilent	8449B	3008A02097	1GHz ~ 26.5GHz	Jun. 30, 2023	Jun. 29, 2024	Radiation (03CH03-CB)
Pre-Amplifier	SGH	SGH184	20221107-3	18GHz ~ 40GHz	Nov. 16, 2022	Nov. 15, 2023	Radiation (03CH03-CB)
Spectrum Analyzer	R&S	FSP40	100019	9kHz ~ 40GHz	Jun. 12, 2023	Jun. 11, 2024	Radiation (03CH03-CB)
RF Cable-high	Woken	RG402	High Cable-20+29	1GHz ~ 18GHz	Oct. 02, 2023	Oct. 01, 2024	Radiation (03CH03-CB)
RF Cable-high	Woken	RG402	High Cable-29	1GHz ~ 18GHz Oct. 02, 2023		Oct. 01, 2024	Radiation (03CH03-CB)
High Cable	Woken	WCA0929M	40G#5+6	1GHz ~ 40 GHz	Oct. 02, 2023	Oct. 01, 2024	Radiation (03CH03-CB)
High Cable	Woken	WCA0929M	40G#5	1GHz ~ 40 GHz	Oct. 02, 2023	Oct. 01, 2024	Radiation (03CH03-CB)
High Cable	Woken	WCA0929M	40G#6	1GHz ~ 40 GHz	Oct. 02, 2023	Oct. 01, 2024	Radiation (03CH03-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (03CH03-CB)
Spectrum analyzer	R&S	FSV40	101028	9kHz~40GHz	Dec. 30, 2022	Dec. 29, 2023	Conducted (TH03-CB)
Spectrum analyzer	R&S	FSV40	101028	9kHz~40GHz	Dec. 22, 2023	Dec. 21, 2024	Conducted (TH03-CB)
Power Sensor	Anritsu	MA2411B	1726195	300MHz~ 40GHz Sep. 04, 2023		Sep. 03, 2024	Conducted (TH03-CB)
Power Meter	Anritsu	ML2495A	1035008	300MHz~ 40GHz Sep. 04, 2023		Sep. 03, 2024	Conducted (TH03-CB)
RF Cable	Woken	RG402	High Cable-11	30MHz –18 GHz	Oct. 02, 2023	Oct. 01, 2024	Conducted (TH03-CB)
RF Cable	Woken	RG402	High Cable-12	30MHz –18 GHz	Oct. 02, 2023	Oct. 01, 2024	Conducted (TH03-CB)
RF Cable	Woken	RG402	High Cable-13	30MHz –18 GHz	Oct. 02, 2023	Oct. 01, 2024	Conducted (TH03-CB)
RF Cable-high	Woken	RG402	High Cable-14	1 GHz –18 GHz	Oct. 02, 2023	Oct. 01, 2024	Conducted (TH03-CB)
RF Cable-high	Woken	RG402	High Cable-15	1 GHz –18 GHz	Oct. 02, 2023	Oct. 01, 2024	Conducted (TH03-CB)
Switch	SPTCB	SP-SWI	SWI-03	1 ~26.5 GHz	Oct. 03, 2023	Oct. 02, 2024	Conducted (TH03-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Conducted (TH03-CB)

Note: Calibration Interval of instruments listed above is one year.

NCR means Non-Calibration required.



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### **Conducted Emissions at Powerline**

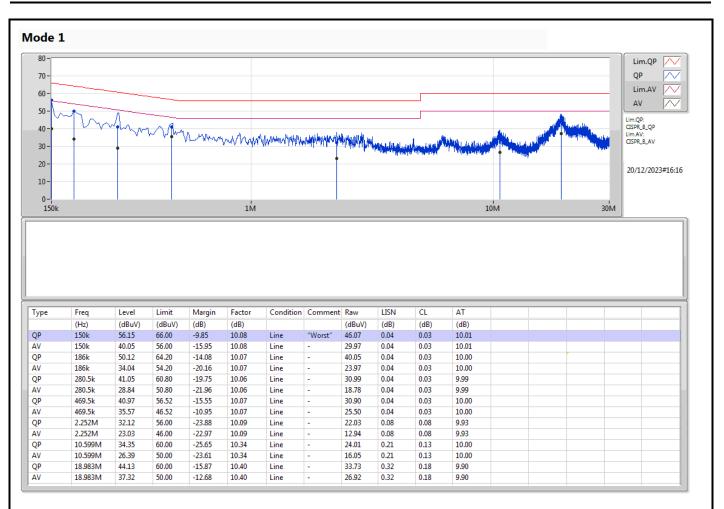
## Appendix A

Summary									
Mode	Result	Туре	Freq	Level	Limit	Margin	Condition		
			(Hz)	(dBuV)	(dBuV)	(dB)			
Mode 1	Pass	QP	150k	56.15	66.00	-9.85	Line		



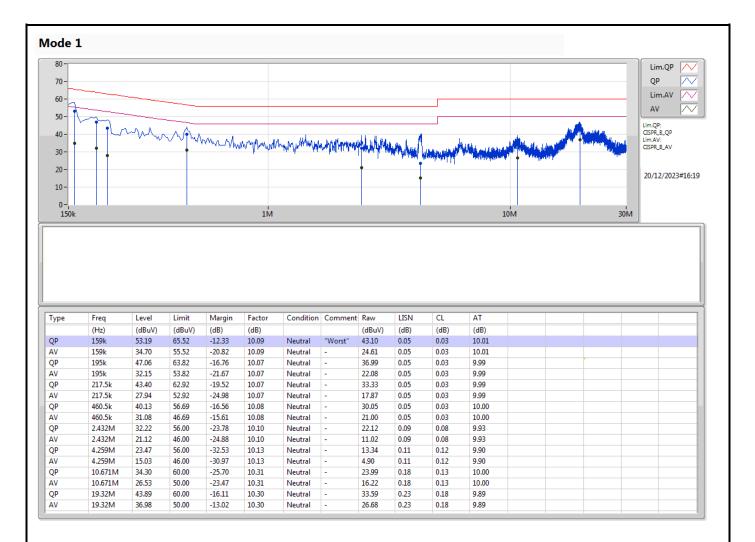
#### **Conducted Emissions at Powerline**

### Appendix A





### Appendix A





#### Summarv

Mode	Max-N dB	Max-OBW	ITU-Code	Min-N dB	Min-OBW
	(Hz)	(Hz)		(Hz)	(Hz)
5.925-6.425GHz	-	-	-	-	-
QPSK5_5MHz_Nss1_2TX	4.936M	4.604M	4M60G7D	4.813M	4.591M
QPSK40_40MHz_Nss1_2TX	52.69M	36.382M	36M4G7D	37.73M	35.732M
6.525-6.875GHz	-	-	-	-	-
QPSK5_5MHz_Nss1_2TX	5.005M	4.604M	4M60G7D	4.813M	4.585M
QPSK40_40MHz_Nss1_2TX	39.82M	36.032M	36M0G7D	37.73M	35.932M

Max-N dB = Maximum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band; Max-OBW = Maximum 99% occupied bandwidth; Min-N dB = Minimum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band; Min-OBW = Minimum 99% occupied bandwidth



#### Result

Mode	Result	Limit	Port 1-N dB	Port 1-OBW	Port 2-N dB	Port 2-OBW
		(Hz)	(Hz)	(Hz)	(Hz)	(Hz)
QPSK5_5MHz_Nss1_2TX	-	-	-	-	-	-
5928MHz	Pass	Inf	4.868M	4.591M	4.881M	4.604M
6175MHz	Pass	Inf	4.813M	4.591M	4.813M	4.591M
6422MHz	Pass	Inf	4.936M	4.598M	4.923M	4.598M
6528MHz	Pass	Inf	4.936M	4.604M	4.936M	4.598M
6700MHz	Pass	Inf	5.005M	4.585M	4.936M	4.604M
6872MHz	Pass	Inf	4.813M	4.598M	4.826M	4.598M
QPSK40_40MHz_Nss1_2TX	-	-	-	-	-	-
5945MHz	Pass	Inf	37.95M	35.832M	37.95M	35.732M
6175MHz	Pass	Inf	37.73M	36.032M	39.38M	36.082M
6405MHz	Pass	Inf	42.9M	36.082M	52.69M	36.382M
6545MHz	Pass	Inf	37.73M	35.982M	37.84M	36.032M
6700MHz	Pass	Inf	37.84M	35.982M	37.84M	35.932M
6855MHz Straddle 6.525-6.875GHz	Pass	Inf	39.82M	35.952M	38.06M	35.952M

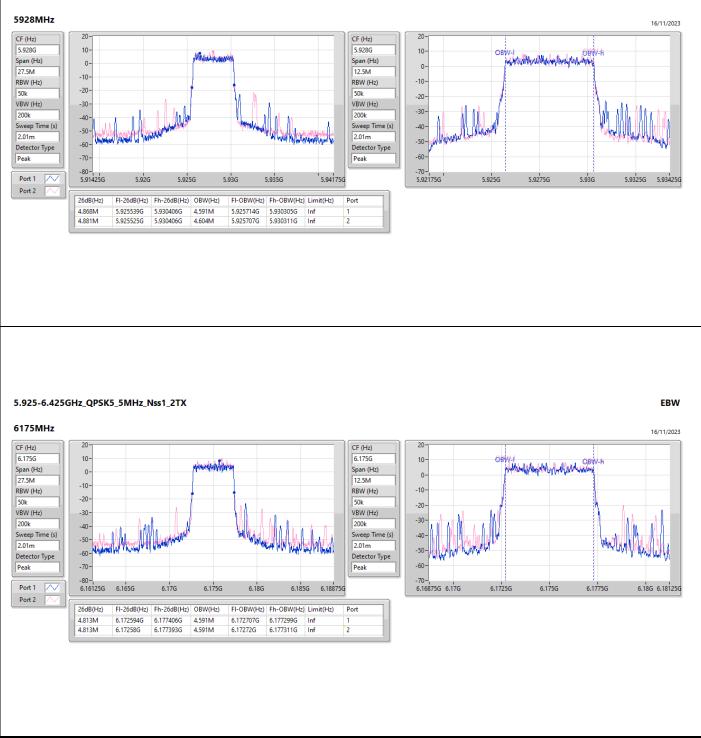
Port X-N dB = Port X 6dB down bandwidth for 5.725-5.85GHz band / 26dB down bandwidth for other band Port X-OBW = Port X 99% occupied bandwidth



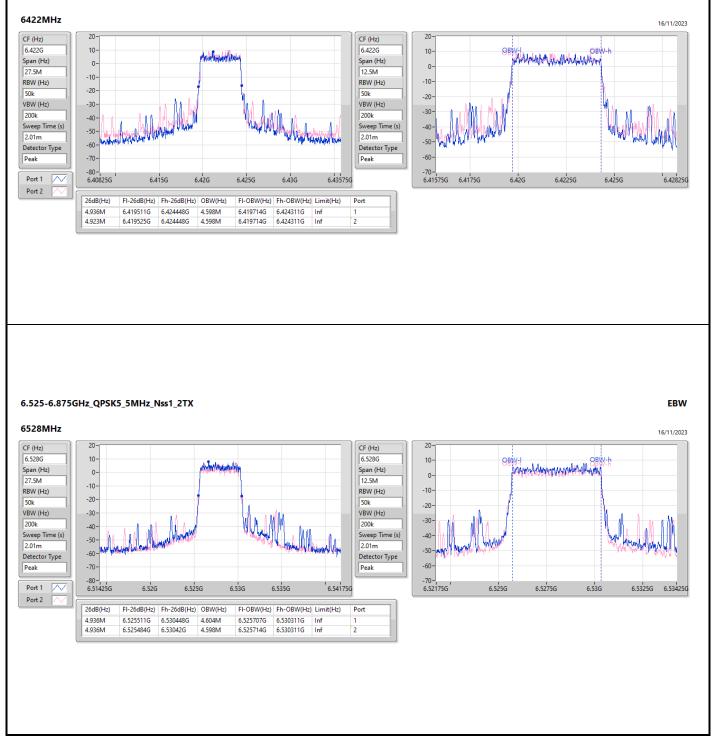
EBW



## EBW

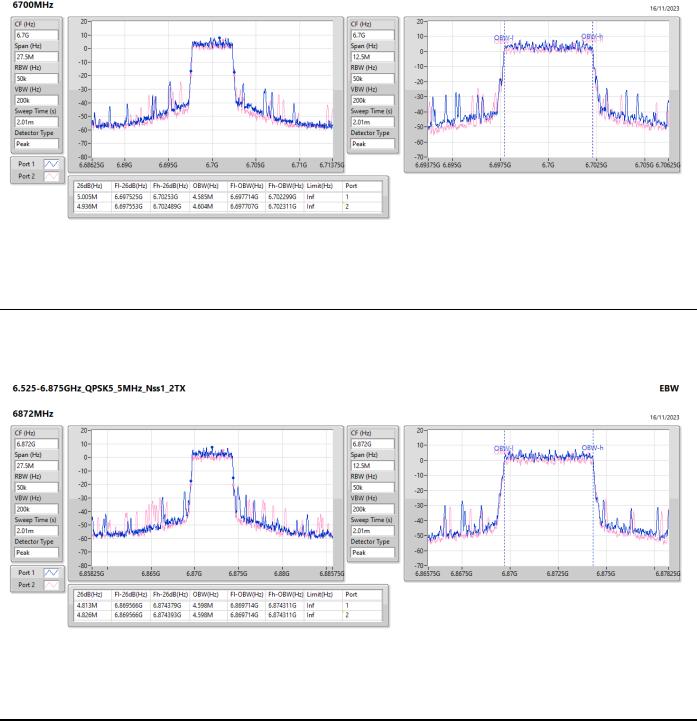




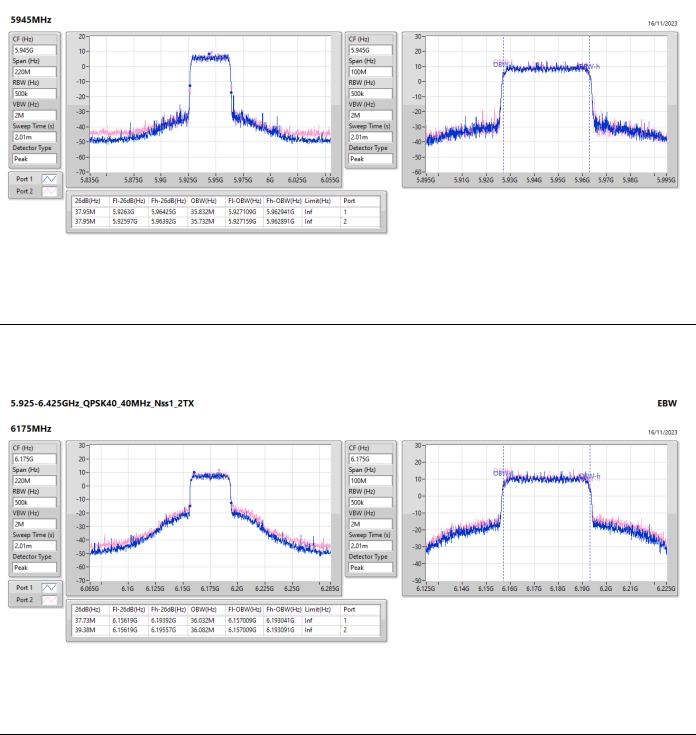




6700MHz



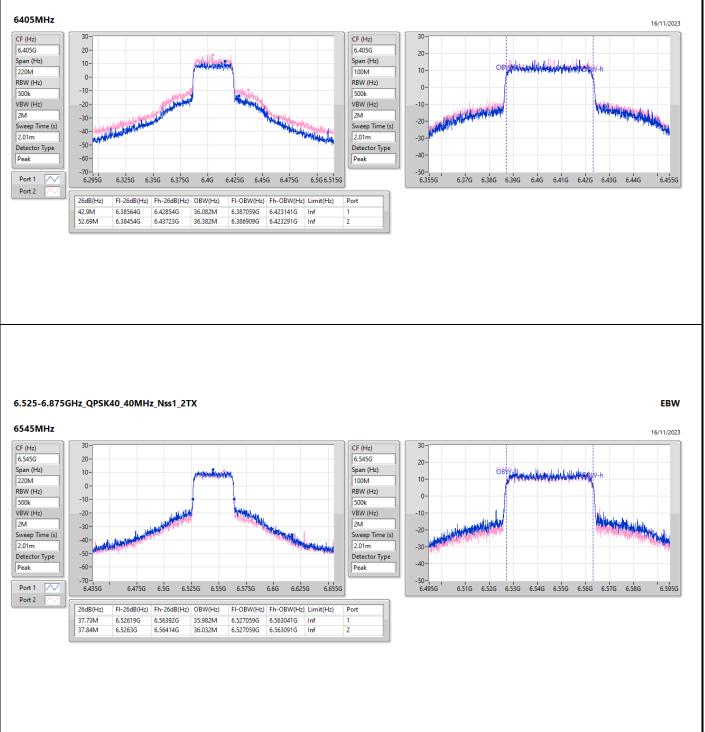






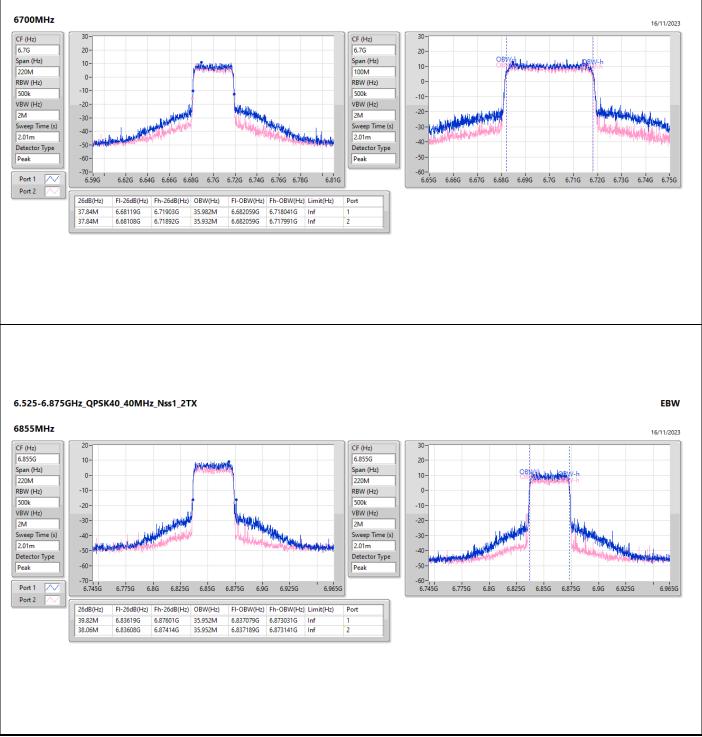
EBW







#### 6.525-6.875GHz\_QPSK40\_40MHz\_Nss1\_2TX





# Average Power

# Appendix C

### Summary

Mode	Total Power (dBm)	Total Power (W)	EIRP / EIRP [Phi 30°] (dBm)	EIRP / EIRP [Phi 30°] (W)
5.925-6.425GHz	-	-	-	-
QPSK5_5MHz_Nss1_2TX	14.52	0.02831	30.43/13.84	1.10408/0.024210
QPSK40_40MHz_Nss1_2TX	19.94	0.09863	35.85/19.26	3.84592/0.084333
6.525-6.875GHz	-	-	-	-
QPSK5_5MHz_Nss1_2TX	14.77	0.02999	30.73/14.54	1.18304/0.028445
QPSK40_40MHz_Nss1_2TX	19.94	0.09863	35.90/19.71	3.89045/0.093541



# Average Power

# Appendix C

#### Result

Mode	Result	Directional Gain [Power] / Gain [Phi 30°]	Port 1	Port 2	Total Power	EIRP / EIRP [Phi 30°]	EIRP Limit / EIRP Limit [Phi 30°]
		(dBi)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)
QPSK5_5MHz_Nss1_2TX	-	-	-	-	-	-	-
5928MHz	Pass	15.906/-0.68	11.12	11.39	14.27	30.18/13.59	36.00/21.00
6175MHz	Pass	15.906/-0.68	11.43	11.58	14.52	30.43/13.84	36.00/21.00
6422MHz	Pass	15.906/-0.68	11.37	11.49	14.44	30.35/13.76	36.00/21.00
6528MHz	Pass	15.958/-0.23	11.72	11.74	14.74	30.70/14.51	36.00/21.00
6700MHz	Pass	15.958/-0.23	11.65	11.86	14.77	30.73/14.54	36.00/21.00
6872MHz	Pass	15.958/-0.23	11.49	11.50	14.51	30.47/14.28	36.00/21.00
QPSK40_40MHz_Nss1_2TX	-	-	-	-	-	-	-
5945MHz	Pass	15.906/-0.68	16.45	16.78	19.63	35.54/18.95	36.00/21.00
6175MHz	Pass	15.906/-0.68	16.72	17.13	19.94	35.85/19.26	36.00/21.00
6405MHz	Pass	15.906/-0.68	16.79	16.92	19.87	35.78/19.19	36.00/21.00
6545MHz	Pass	15.958/-0.23	17.20	16.43	19.84	35.80/19.61	36.00/21.00
6700MHz	Pass	15.958/-0.23	17.43	15.93	19.75	35.71/19.52	36.00/21.00
6855MHz Straddle 6.525-6.875GHz	Pass	15.958/-0.23	17.65	16.06	19.94	35.90/19.71	36.00/21.00

DG = Directional Gain; Port X = Port X output power



### Summary

Mode	PD	EIRP PD
	(dBm/RBW)	(dBm/RBW)
5.925-6.425GHz	-	-
QPSK5_5MHz_Nss1_2TX	6.65	22.56
QPSK5_5MHz_Nss1_2TX	6.84	22.75
QPSK5_5MHz_Nss1_2TX	6.77	22.68
QPSK40_40MHz_Nss1_2TX	4.23	20.14
QPSK40_40MHz_Nss1_2TX	4.66	20.57
QPSK40_40MHz_Nss1_2TX	4.58	20.49
6.525-6.875GHz	-	-
QPSK5_5MHz_Nss1_2TX	6.97	22.93
QPSK5_5MHz_Nss1_2TX	7.03	22.99
QPSK5_5MHz_Nss1_2TX	6.77	22.73
QPSK40_40MHz_Nss1_2TX	4.55	20.51
QPSK40_40MHz_Nss1_2TX	6.17	22.13
QPSK40_40MHz_Nss1_2TX	4.38	20.34

RBW = 500kHz for 5.725-5.85GHz band / 1MHz for other band;



#### Result

Mode	Result	DG	Port 1	Port 2	PD	EIRP PD	EIRP PD Limit
		(dBi)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
QPSK5_5MHz_Nss1_2TX	-	-	-	-	-	-	-
5928MHz	Pass	15.906	3.51	3.83	6.65	22.56	23.00
6175MHz	Pass	15.906	3.87	4.07	6.84	22.75	23.00
6422MHz	Pass	15.906	3.80	3.97	6.77	22.68	23.00
6528MHz	Pass	15.958	3.98	4.24	6.97	22.93	23.00
6700MHz	Pass	15.958	3.88	4.19	7.03	22.99	23.00
6872MHz	Pass	15.958	3.92	3.83	6.77	22.73	23.00
QPSK40_40MHz_Nss1_2TX	-	-	-	-	-	-	-
5945MHz	Pass	15.906	1.33	1.56	4.23	20.14	23.00
6175MHz	Pass	15.906	1.58	1.71	4.66	20.57	23.00
6405MHz	Pass	15.906	1.62	1.73	4.58	20.49	23.00
6545MHz	Pass	15.958	1.95	1.29	4.55	20.51	23.00
6700MHz	Pass	15.958	3.63	2.78	6.17	22.13	23.00
6855MHz Straddle 6.525-6.875GHz	Pass	15.958	2.07	0.76	4.38	20.34	23.00

DG = Directional Gain; RBW = 500kHz for 5.725-5.85GHz band / 1MHz for other band; PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; Port X = Port X Power Density;

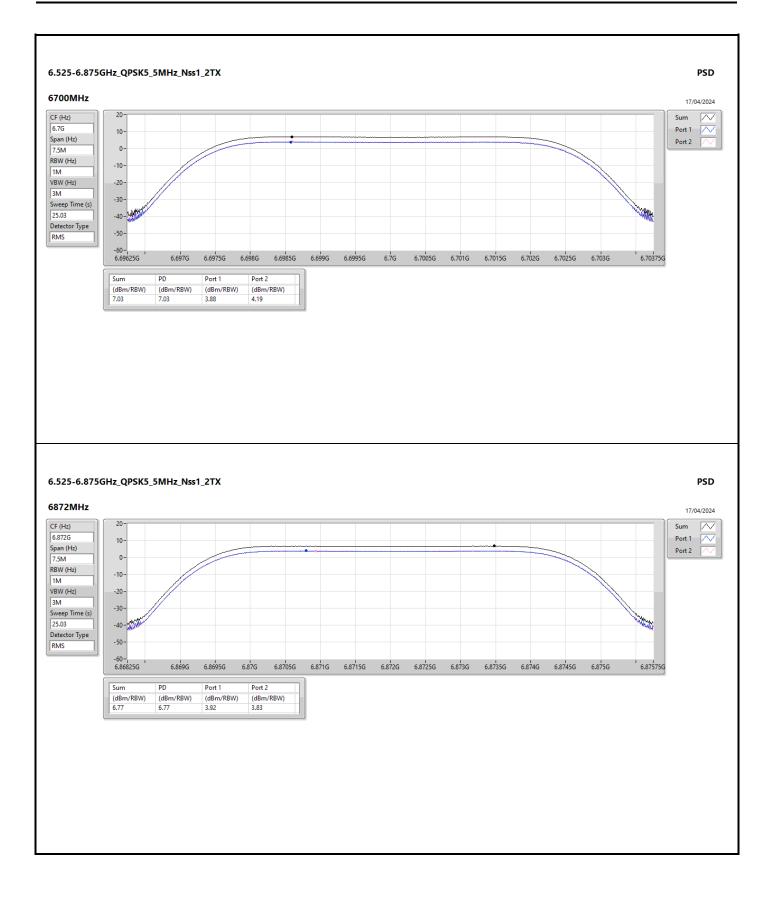








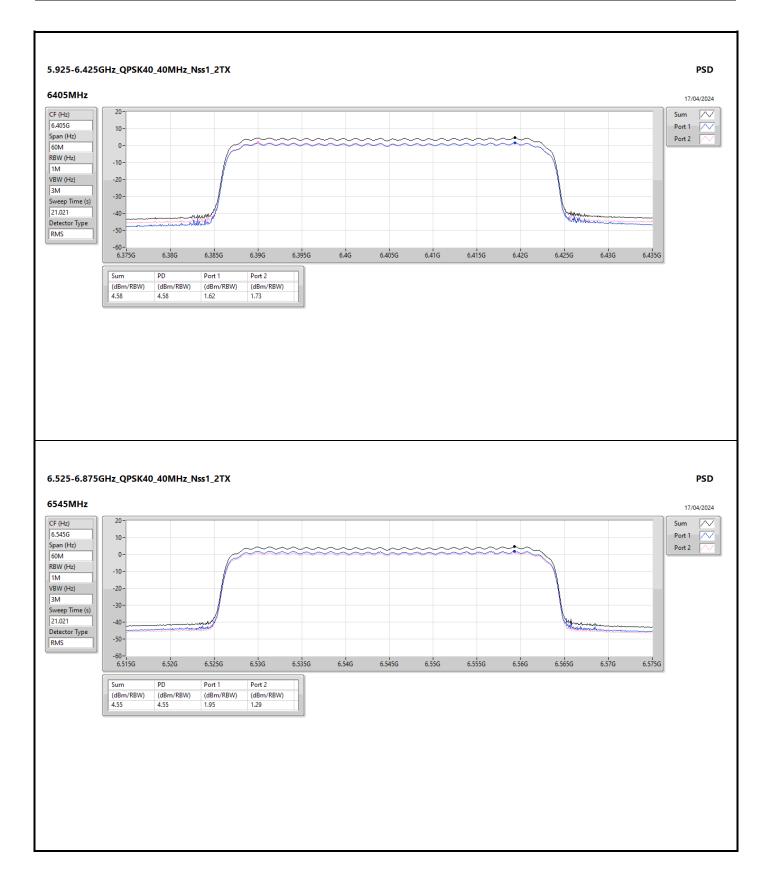




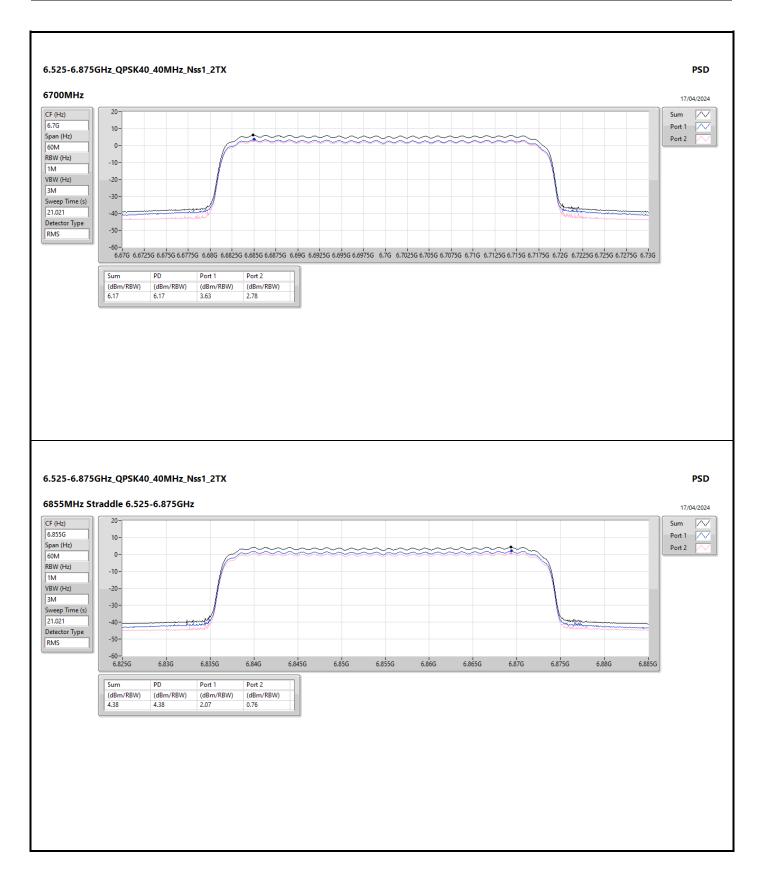














# Radiated Emissions below 1GHz

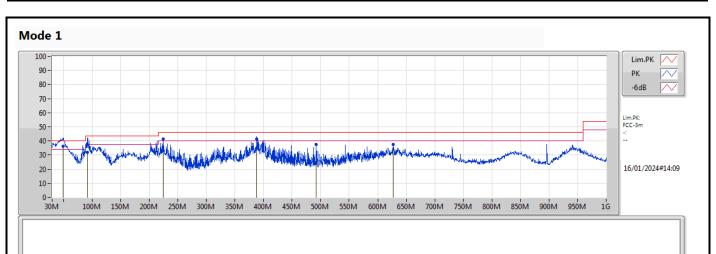
# Appendix E.1

Summary							
Mode	Result	Туре	Freq	Level	Limit	Margin	Condition
			(Hz)	(dBuV/m)	(dBuV/m)	(dB)	
Mode 1	Pass	PK	896.21M	42.50	46.00	-3.50	Horizontal



# Radiated Emissions below 1GHz

# Appendix E.1

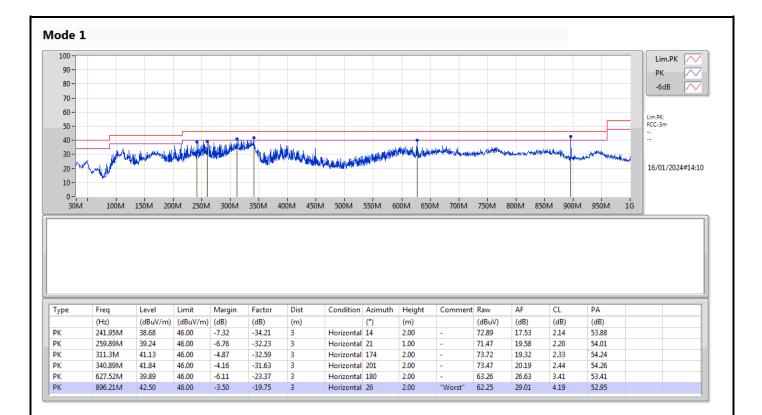


Туре	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comment	Raw	AF	CL	PA	
	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)		(dBuV)	(dB)	(dB)	(dB)	
QP	49.4M	36.10	40.00	-3.90	-37.00	3	Vertical	23	1.00	"Worst"	73.10	16.10	1.12	54.22	
QP	91.11M	31.78	43.50	-11.72	-37.72	3	Vertical	155	1.00	-	69.50	15.13	1.35	54.20	
PK	224M	41.32	46.00	-4.68	-36.22	3	Vertical	46	1.00	-	77.54	15.47	2.04	53.73	
QP	388.42M	41.44	46.00	-4.56	-29.86	3	Vertical	231	2.00	-	71.30	21.56	2.55	53.97	
PK	492.21M	37.58	46.00	-8.42	-27.05	3	Vertical	314	2.00	-	64.63	23.68	3.00	53.73	
PK	627.52M	37.62	46.00	-8.38	-23.37	3	Vertical	17	1.00	-	60.99	26.63	3.41	53.41	



## Radiated Emissions below 1GHz

# Appendix E.1





# RSE TX above 1GHz

# Appendix E.2

### Summary

Mode	Result	Туре	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments
5.925-6.425GHz	-	-		-	-	-	-	-			-
QPSK5_5MHz_Nss1_2TX	Pass	RMS	5.9245G	68.14	68.20	-0.06	3	Horizontal	-0	1.59	BP 1MHz



RMS

RMS

РК

5.9245G

5.9295G

5.9295G

63.33

125.71

115.64

68.20

Inf

Inf

-4.87

-Inf

-Inf

55.11

117.49

107.42

3

3

3

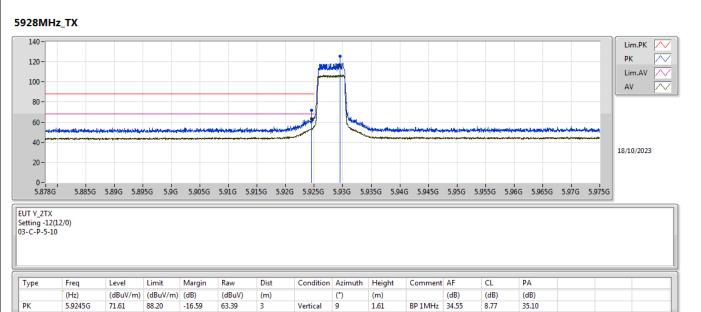
Vertical 9

Vertical 9

Vertical 9

# Appendix E.2

#### 5.925-6.425GHz\_QPSK5\_5MHz\_Nss1\_2TX



1.61

1.61

1.61

BP1MHz 34.55

BP1MHz 34.56

BP1MHz 34.56

8.77

8.77

8.77

35.10

35.11

35.11

Sporton International Inc.	Hsinchu Laboratory
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РК

RMS

5.9295G

5.9295G

126.48

117.14

Inf

Inf

-Inf

-Inf

118.26

108.92

3

3

Horizontal -0

Horizontal -0

1.59

1.59

BP1MHz 34.56

BP1MHz 34.56

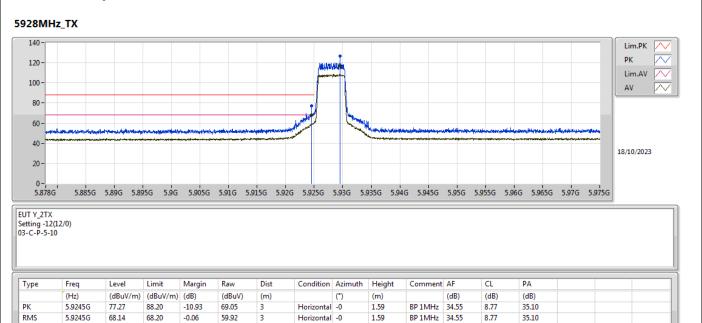
8.77

8.77

35.11

35.11

# Appendix E.2





AV

17.76936G

48.11

54.00

-5.89

21.24

3

Vertical

325

2.58

### 5.925-6.425GHz\_QPSK5\_5MHz\_Nss1\_2TX



41.55

24.01

44.41



PK

AV

17.79399G

17.78097G

60.30

48.81

74.00

54.00

-13.70

-5.19

33.28

21.87

3

3

Horizontal 181

Horizontal 181

1.05

1.05

44.48

44.44

24.05

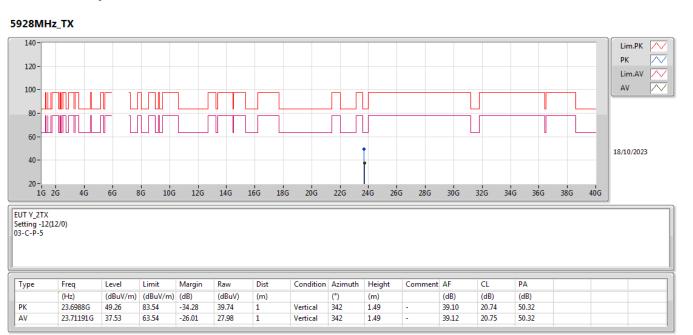
24.03

41.51

41.53













# Appendix E.2

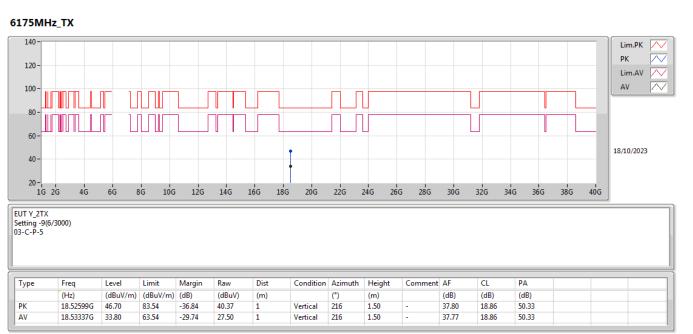




# Appendix E.2





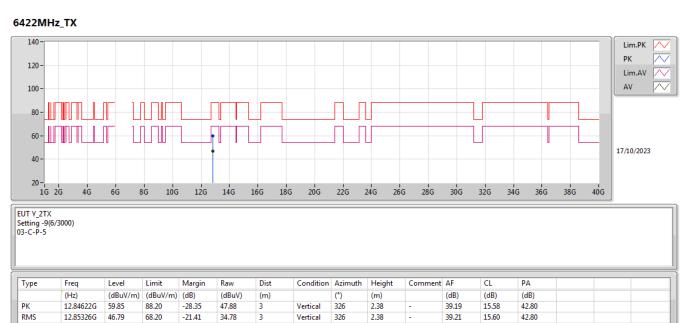






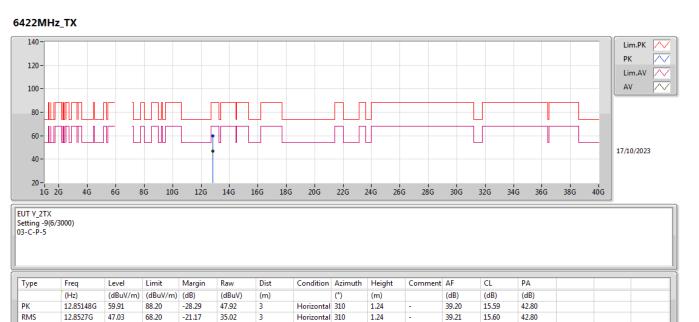


# Appendix E.2

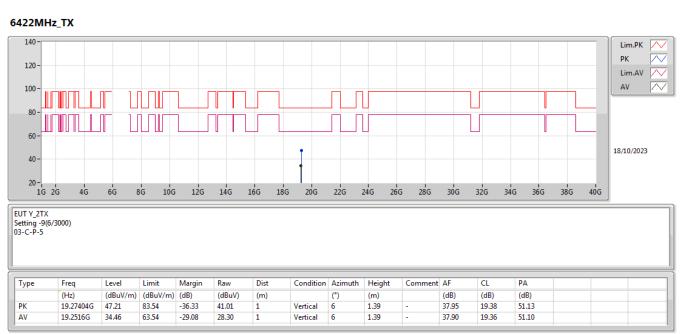




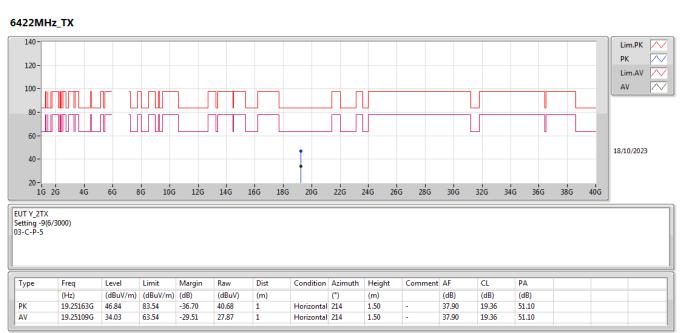
# Appendix E.2













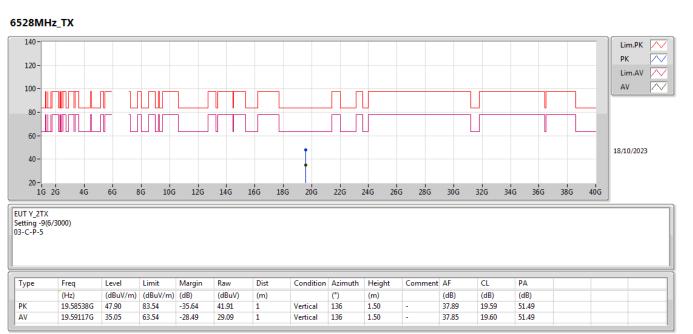
# Appendix E.2



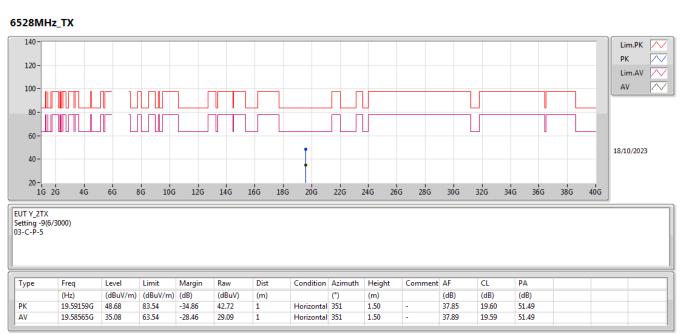












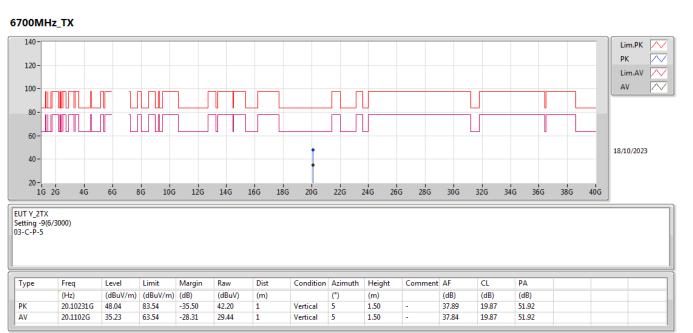
















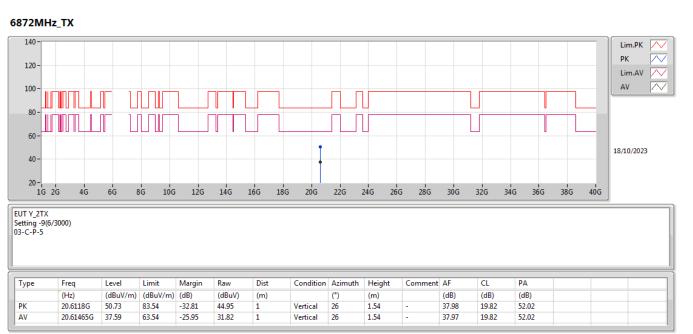




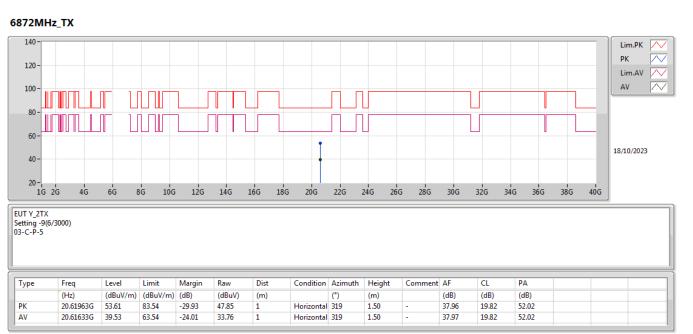




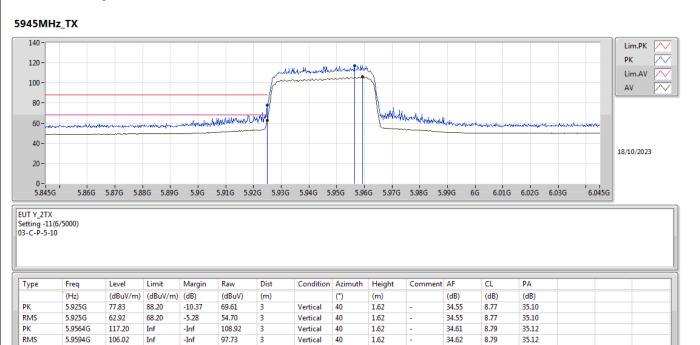




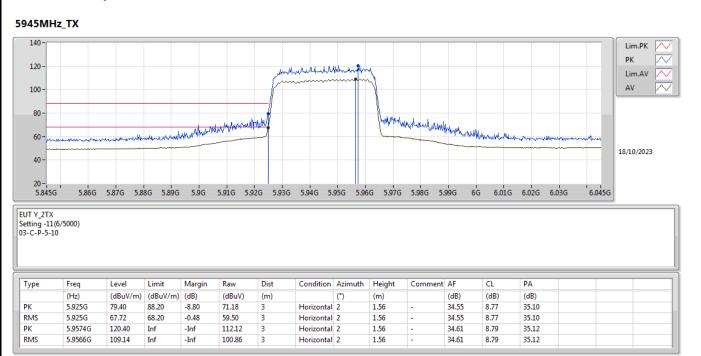














AV

17.83623G

47.19

54.00

-6.81

19.95

3

Vertical

164

1.32

### Appendix E.2

### 5.925-6.425GHz\_QPSK40\_40MHz\_Nss1\_2TX



44.57

24.12

41.45



РК

AV

17.84379G

17.84292G

61.76

48.65

74.00

54.00

-12.24

-5.35

34.46

21.37

3

3

Horizontal 289

Horizontal 289

2.88

2.88

44.59

44.59

24.14

24.13

41.43

41.44

### Appendix E.2

