



RADIO TEST REPORT

FCC ID : 2A9R2-ATM-G1A

Equipment : ATOM Audio Mesh Wi-Fi

Brand Name : iMicro

Model Name : ATM-G1A

Applicant : iMicro Systems Inc.

8583 Irvine Center Drive #237, CA, 92618, USA

Manufacturer : iMicro Systems Inc.

8583 Irvine Center Drive #237, CA, 92618, USA

Standard : 47 CFR FCC Part 15.407

The product was received on Sep. 06, 2023, and testing was started from Sep. 15, 2023 and completed on Sep. 18, 2023. 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 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_1 Ver1.4

Page Number : 1 of 29

Issued Date

: Nov. 01, 2023

Report Version

: 03

Table of Contents

Histo	ry of this test report	3
Sumr	mary of Test Result	4
1	General Description	5
1.1	Information	5
1.2	Applicable Standards	9
1.3	Testing Location Information	9
1.4	Measurement Uncertainty	9
2	Test Configuration of EUT	10
2.1	Test Channel Mode	10
2.2	The Worst Case Measurement Configuration	11
2.3	EUT Operation during Test	12
2.4	Accessories	12
2.5	Support Equipment	12
2.6	Test Setup Diagram	13
3	Transmitter Test Result	16
3.1	AC Power-line Conducted Emissions	16
3.2	Emission Bandwidth	18
3.3	Maximum Output Power	19
3.4	Power Spectral Density	21
3.5	Unwanted Emissions	24
4	Test Equipment and Calibration Data	28

Appendix A. Test Results of AC Power-line Conducted Emissions

Appendix B. Test Results of Emission Bandwidth

Appendix C. Test Results of Maximum Output Power

Appendix D. Test Results of Power Spectral Density

Appendix E. Test Results of Unwanted Emissions

Appendix F. Test Photos

Photographs of EUT v01

TEL: 886-3-656-9065 FAX: 886-3-656-9085

Report Template No.: CB-A12_1 Ver1.4

Page Number : 2 of 29

Issued Date : Nov. 01, 2023

Report No.: FR381847AB

Report Version : 03

History of this test report

Report No.: FR381847AB

Report No.	Version	Description	Issued Date
FR381847AB	01	Initial issue of report	Oct. 13, 2023
FR381847AB	02	Revising Manufacturer's information	Oct. 17, 2023
FR381847AB	03	Adding Bridge mode in section 1.1.6 Nov. 01	

TEL: 886-3-656-9065 Page Number : 3 of 29
FAX: 886-3-656-9085 Issued Date : Nov. 01, 2023

Summary of Test Result

Report No.: FR381847AB

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 Output Power	PASS	-
3.4	15.407(a)	Power Spectral Density	PASS	-
3.5	15.407(b)	Unwanted Emissions	PASS	-

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: Sophia Shiung

TEL: 886-3-656-9065 Page Number : 4 of 29
FAX: 886-3-656-9085 Issued Date : Nov. 01, 2023

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	ax (HEW20)	5745-5825	149-165 [5]
5150-5250	n (HT40), ac (VHT40),	5190-5230	38-46 [2]
5725-5850	ax (HEW40)	5755-5795	151-159 [2]
5150-5250	ac (VHT80), ax (HEW80)	5210	42 [1]
5725-5850		5775	155 [1]

Report No.: FR381847AB

Band	Mode	BWch (MHz)	Nant
5.15-5.25GHz	802.11a	20	4TX
5.15-5.25GHz	802.11n HT20	20	4TX
5.15-5.25GHz	802.11ac VHT20	20	4TX
5.15-5.25GHz	802.11ax HEW20	20	4TX
5.15-5.25GHz	802.11n HT40	40	4TX
5.15-5.25GHz	802.11ac VHT40	40	4TX
5.15-5.25GHz	802.11ax HEW40	40	4TX
5.15-5.25GHz	802.11ac VHT80	80	4TX
5.15-5.25GHz	802.11ax HEW80	80	4TX
5.725-5.85GHz	802.11a	20	4TX
5.725-5.85GHz	802.11n HT20	20	4TX
5.725-5.85GHz	802.11ac VHT20	20	4TX
5.725-5.85GHz	802.11ax HEW20	20	4TX
5.725-5.85GHz	802.11n HT40	40	4TX
5.725-5.85GHz	802.11ac VHT40	40	4TX
5.725-5.85GHz	802.11ax HEW40	40	4TX
5.725-5.85GHz	802.11ac VHT80	80	4TX
5.725-5.85GHz	802.11ax HEW80	80	4TX

TEL: 886-3-656-9065 Page Number : 5 of 29
FAX: 886-3-656-9085 Issued Date : Nov. 01, 2023

Note:

- 11a, HT20 and HT40 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM modulation.
- VHT20, VHT40 and VHT80 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM, 256QAM modulation.

Report No.: FR381847AB

- HEW20, HEW40 and HEW80 use a combination of OFDMA-BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM modulation.
- BWch is the nominal channel bandwidth.

1.1.2 Antenna Information

Ant.	Port	Brand Model Name	Model Name	Antenna	Connector	Gain	
Aiit.	WLAN 2.4GHz	WLAN 5GHz	Brana	Wodel Name	Type	Connection	(dBi)
1	1	-	TAC	AC10204-01A	Dipole	I-Pex	4.3
2	2	-	TAC	AC10204-01B	Dipole	I-Pex	4.3
3	-	2	TAC	AC10506-01A	Dipole	I-Pex	5
4	-	3	TAC	AC10506-01B	Dipole	I-Pex	5
5	-	4	TAC	AC10506-01C	Dipole	I-Pex	5
6	-	1	TAC	AC10507-01	Dipole	I-Pex	5

Note 1: The above information was declared by manufacturer.

Note 2: Directional gain information

Type	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	$Directional Gain = 10 \cdot log \left[\frac{\sum_{j=1}^{N_{AST}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^{2}}{N_{ANT}} \right]$

Ex.

Directional Gain (NSS1) formula:

$$Directiona\ lGain = 10 \cdot log \left[\frac{\sum\limits_{j=1}^{N_{ss}} \left\{ \sum\limits_{k=1}^{N_{sNT}} g_{j,k} \right\}^{2}}{N_{.aNT}} \right]$$

 $NSS1(g1,1) = 10^{G1/20}$; $NSS1(g1,2) = 10^{G2/20}$;

 $gj,k = (Nss1(g1,1) + Nss1(g1,2))^2$

 $DG = 10 \log[(Nss1(g1,1) + Nss1(g1,2))^{2} / N_{ANT}] => 10 \log[(10^{G1/20} + 10^{G2/20})^{2} / N_{ANT}]$

Where ;

2.4G G1= 4.3 dBi; G2= 4.3 dBi; DG= 7.31dBi

5G G1= 5 dBi ; G2= 5 dBi ; G3= 5 dBi ; G4= 5 dBi ;DG= 11.02dBi

TEL: 886-3-656-9065 Page Number : 6 of 29
FAX: 886-3-656-9085 Issued Date : Nov. 01, 2023

Note 3: For 2.4GHz function:

For IEEE 802.11 b/g/n/VHT/ax (2TX/2RX):

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

Port 1 and Port 2 could transmit/receive simultaneously.

For 5GHz function:

For IEEE 802.11a/n/ac/ax (4TX/4RX):

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

Port 1~4 could transmit/receive simultaneously.

1.1.3 Mode Test Duty Cycle

Mode	DC	DCF(dB)	T(s)	VBW(Hz) ≥ 1/T
802.11a	0.94	0.27	1.978m	1k
802.11ax HEW20	0.778	1.09	5.449m	300
802.11ax HEW40	0.815	0.89	5.449m	300
802.11ax HEW80	0.772	1.12	5.449m	300

Report No.: FR381847AB

N	Oto.	

- DC is Duty Cycle.
- DCF is Duty Cycle Factor.

1.1.4 EUT Operational Condition

EUT Power Type		From Power Adapter				
Beamforming Function	☐ With beamforming ☐ Without beamforming		Without beamforming			
		Outdoor P2M	\boxtimes	Indoor P2M		
Function		Fixed P2P		Client		
		Point-to-multipoint		Point-to-point		
Channel Puncturing Function		Supported	\boxtimes	Unsupported		
Support RU		Full RU		Partial RU		
Test Software Version		PR V_5.0-00202				

Note: The above information was declared by manufacturer.

1.1.5 Table for EUT Information

EUT	Housing Color
1	White
2	Gray

Note 1: The EUT 1 and EUT 2 are identical except for the housing color; the EUT 1 was selected to test AC power-line conducted emissions and Unwanted Emissions below 1GHz, and the EUT 2 was selected to test other test items.

Note 2: The above information was declared by manufacturer.

TEL: 886-3-656-9065 Page Number : 7 of 29
FAX: 886-3-656-9085 Issued Date : Nov. 01, 2023

1.1.6 Table for EUT supports Function

Function
AP Router
Bridge
Mesh

Report No.: FR381847AB

Note 1: The AP Router mode was tested and recorded in this test report.

Note 2: The above information was declared by manufacturer.

TEL: 886-3-656-9065 Page Number : 8 of 29
FAX: 886-3-656-9085 Issued Date : Nov. 01, 2023

1.2 Applicable Standards

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

Report No.: FR381847AB

- 47 CFR FCC Part 15
- 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

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	TH02-CB	KJ Chang	22.6~23 / 62~66	Sep. 18, 2023
Radiated < 1GHz	03CH05-CB	George Fan	21.2-22.3 / 56-59	Sep. 15, 2023
Radiated > 1GHz	03CH01-CB	Eason chen	21.2-22.3 / 56-59	Sep. 15, 2023~ Sep. 16, 2023
AC Conduction	CO01-CB	Elvin Yeh	22~23 / 55~56	Sep. 15, 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%

TEL: 886-3-656-9065 Page Number : 9 of 29
FAX: 886-3-656-9085 Issued Date : Nov. 01, 2023

2 Test Configuration of EUT

2.1 Test Channel Mode

Mode	Power Setting
802.11a_Nss1,(6Mbps)_4TX	-
5180MHz	17.5
5200MHz	17.5
5240MHz	17.5
5745MHz	23.5
5785MHz	23.5
5825MHz	23.5
802.11ax HEW20_Nss1,(MCS0)_4TX	-
5180MHz	17
5200MHz	17
5240MHz	17
5745MHz	23.5
5785MHz	23.5
5825MHz	23.5
802.11ax HEW40_Nss1,(MCS0)_4TX	-
5190MHz	20
5230MHz	20
5755MHz	23
5795MHz	23
802.11ax HEW80_Nss1,(MCS0)_4TX	-
5210MHz	20
5775MHz	22

Report No.: FR381847AB

Note:

HEW20 / HEW40 / HEW80 covers HT20 / HT40 / VHT20 / VHT40 / VHT80 due to similar modulation.
 The power setting for HT20 / HT40 / VHT20 / VHT40 / VHT80 is the same or lower than HEW20 / HEW40 / HEW80.

 TEL: 886-3-656-9065
 Page Number : 10 of 29

 FAX: 886-3-656-9085
 Issued Date : Nov. 01, 2023

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 Normal Link			
1 EUT 1 (AP Router mode) + Adapter			

Report No.: FR381847AB

The Worst Case Mode for Following Conformance Tests				
Tests Item	Max	Emission Bandwidth Maximum Output Power Power Spectral Density		
Test Condition	Con	Conducted measurement at transmit chains		
Test Mode	1	1 EUT 2		

Th	The Worst Case Mode for Following Conformance Tests			
Tests Item	Unwanted Emissions			
Radiated measurement If EUT consist of multiple antenna assembly (multiple antenna are use regardless of spatial multiplexing MIMO configuration), the radiated to be performed with highest antenna gain of each antenna type.				
	Normal Link			
Operating Mode < 1GHz	After evaluating, EUT in Y axis was the worst case, so the measurement will follow this same test configuration.			
1	EUT 1 (AP Router mode) in Y axis + Adapter			
	CTX			
Operating Mode > 1GHz	After evaluating, EUT in Y axis was the worst case, so the measurement will follow this same test configuration.			
1	EUT 2 in Y axis			

The Worst Case Mode for Following Conformance Tests				
Tests Item Simultaneous Transmission Analysis - Co-location RF Exposure Evaluation				
Operating Mode	Operating Mode			
1 EUT 2_WLAN 2.4GHz + WLAN 5GHz				
Refer to Sporton Test Report No.: FA381847 for Co-location RF Exposure Evaluation.				

TEL: 886-3-656-9065 Page Number : 11 of 29
FAX: 886-3-656-9085 Issued Date : Nov. 01, 2023

2.3 EUT Operation during Test

For CTX Mode:

The EUT was programmed to be in continuously transmitting mode.

For Normal Link Mode:

During the test, the EUT operation to normal function.

2.4 Accessories

Accessories					
Equipment Name	Brand Name	Model Name	Rating	Remark	
Adapter	AtechOEM	A0605TD-190034	Input: 100-240V ~ 50-60Hz, 1.8A Output: 19.0V, 3.42A, 65.0W	DC power cable: Non-shielded, 1m	
Others					
Power cable*1: Non-shielded, 1.8m					
RJ-45 cable*1: Non-shielded, 1.5m					

Report No.: FR381847AB

2.5 Support Equipment

For AC Conduction:

	Support Equipment					
No.	No. Equipment Brand Name Model Name FCC ID					
Α	LAN NB	DELL	E6430	N/A		
В	2.4G NB	DELL	E6430	N/A		
С	5G NB	DELL	E6430	N/A		
D	WLAN AP	D-LINK	DIR860L	N/A		

For Radiated (below 1GHz):

Support Equipment					
No.	No. Equipment Brand Name Model Name FCC ID				
Α	2.5G LAN NB	DELL	E4300	N/A	
В	2.4G NB	DELL	E4300	N/A	
С	5G NB	DELL	E4300	N/A	
D	WLAN AP	D-LINK	DIR860L	N/A	

For Radiated (above 1GHz) and RF Conducted:

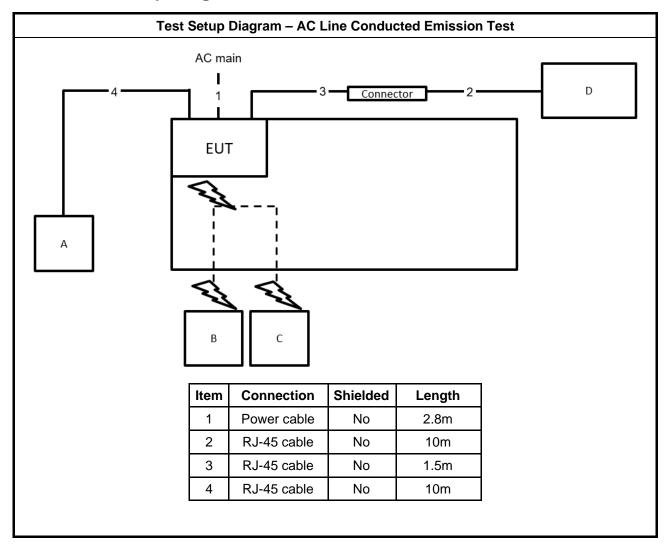
	Support Equipment					
No.	No. Equipment Brand Name Model Name FCC ID					
Α	A NB DELL E4300 N/A					

 TEL: 886-3-656-9065
 Page Number : 12 of 29

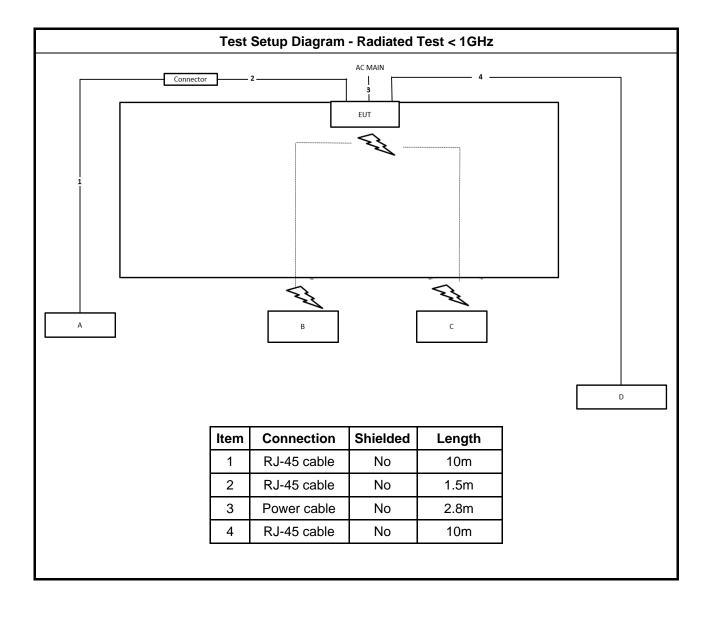
 FAX: 886-3-656-9085
 Issued Date : Nov. 01, 2023



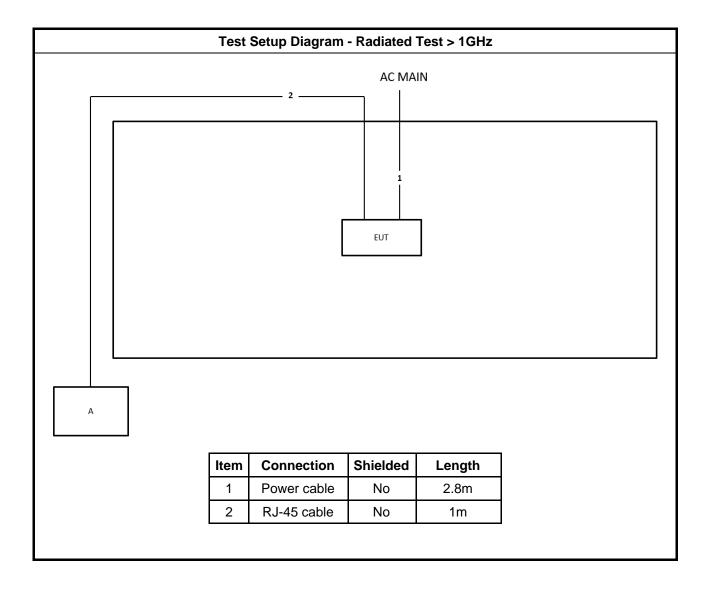
2.6 Test Setup Diagram



TEL: 886-3-656-9065 Page Number : 13 of 29
FAX: 886-3-656-9085 Issued Date : Nov. 01, 2023



TEL: 886-3-656-9065 Page Number : 14 of 29
FAX: 886-3-656-9085 Issued Date : Nov. 01, 2023



TEL: 886-3-656-9065 Page Number : 15 of 29
FAX: 886-3-656-9085 Issued Date : Nov. 01, 2023

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.							

Report No.: FR381847AB

3.1.2 Measuring Instruments

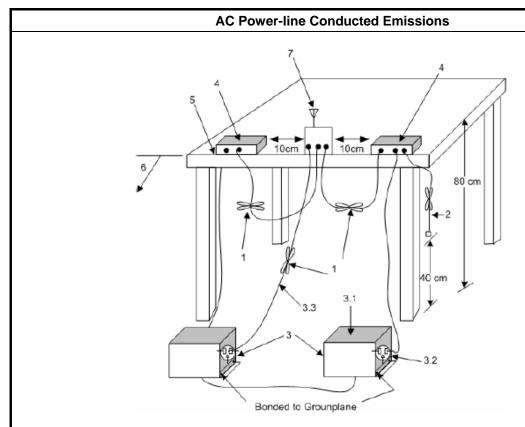
Refer a test equipment and calibration data table in this test report.

3.1.3 Test Procedures

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

TEL: 886-3-656-9065 Page Number : 16 of 29
FAX: 886-3-656-9085 Issued Date : Nov. 01, 2023

3.1.4 Test Setup



1—Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 cm to 40 cm long.

Report No.: FR381847AB

- 2—The I/O cables that are not connected to an accessory shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- 3—EUT connected to one LISN. Unused LISN measuring port connectors shall be terminated in 50 Ω loads. LISN may be placed on top of, or immediately beneath, reference ground plane.
- 3.1—All other equipment powered from additional LISN(s).
- 3.2—A multiple-outlet strip may be used for multiple power cords of non-EUT equipment.
- 3.3—LISN at least 80 cm from nearest part of EUT chassis.
- 4—Non-EUT components of EUT system being tested.
- 5—Rear of EUT, including peripherals, shall all be aligned and flush with edge of tabletop.
- 6—Edge of tabletop shall be 40 cm removed from a vertical conducting plane that is bonded to the ground plane.
- 7—Antenna can be integral or detachable. If detachable, then the antenna shall be attached for this test.

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

TEL: 886-3-656-9065 Page Number : 17 of 29
FAX: 886-3-656-9085 Issued Date : Nov. 01, 2023

3.2 Emission Bandwidth

3.2.1 Emission Bandwidth Limit

	Emission Bandwidth Limit
UNI	I Devices
\boxtimes	For the 5.15-5.25 GHz band, N/A
	For the 5.25-5.35 GHz band, the maximum conducted output power shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz.
	For the $5.47-5.725$ GHz band, the maximum conducted output power shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz.
\boxtimes	For the 5.725-5.85 GHz band, 26 dB emission bandwidth ,N/A. 6 dB emission bandwidth ≥ 500kHz.
LE-	LAN Devices
	For the band 5.15-5.25 GHz, the maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz.
	For the 5.25-5.35 GHz band, the maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz
	For the 5.47-5.6 GHz band and 5.65-5.725 GHz band, the maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz
	For the 5.725-5.85 GHz band, 6 dB emission bandwidth ≥ 500kHz.

Report No.: FR381847AB

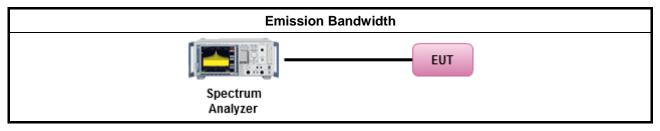
3.2.2 Measuring Instruments

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:						
Refer as 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

TEL: 886-3-656-9065 Page Number : 18 of 29
FAX: 886-3-656-9085 Issued Date : Nov. 01, 2023

3.3 Maximum Output Power

3.3.1 Limit

	Maximum Output Power Limit							
UN	JNII Devices							
\boxtimes	For the 5.15-5.25 GHz band:							
	 Outdoor AP: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If G_{TX} > 6 dBi, then P_{Out} = 30 - (G_{TX} - 6). e.i.r.p. at any elevation angle above 30 degrees ≤ 125mW [21dBm] 							
	■ Indoor AP: the maximum conducted output power (P _{Out}) shall not exceed the lesser of 1 W. If G _{TX} > 6 dBi, then P _{Out} = 30 - (G _{TX} - 6)							
	 Point-to-point AP: the maximum conducted output power (Pout) shall not exceed the lesser of 1 W If G_{TX} > 23 dBi, then Pout = 30 - (G_{TX} - 23). 							
	■ Mobile or Portable Client: the maximum conducted output power (P _{Out}) shall not exceed the lesser of 250 mW. If G _{TX} > 6 dBi, then P _{Out} = 24 - (G _{TX} - 6).							
	For the 5.25-5.35 GHz band, the maximum conducted output power (P_{Out}) shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz. If $G_{TX} > 6$ dBi, then $P_{Out} = 24 - (G_{TX} - 6)$.							
	For the 5.47-5.725 GHz band, the maximum conducted output power (P_{Out}) shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz. If $G_{TX} > 6$ dBi, then $P_{Out} = 24 - (G_{TX} - 6)$.							
\boxtimes	For the 5.725-5.85 GHz band:							
	Point-to-multipoint systems (P2M): the maximum conducted output power (P _{Out}) shall not exceed the lesser of 1 W. If G _{TX} > 6 dBi, then P _{Out} = 30 − (G _{TX} − 6).							
	 Point-to-point systems (P2P): the maximum conducted output power (Pout) shall not exceed the lesser of 1 W. 							
LE-	LAN Devices							
	For the 5.15-5.25 GHz band, the maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz.							
	For the 5.25-5.35 GHz band, the maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz							
	For the 5.47-5.6 GHz band and 5.65-5.725 GHz band, the maximum e.i.r.p. shall not exceed 1.0 W or $17 + 10 \log B$, dBm, whichever power is less. B is the 99% emission bandwidth in MHz							
	For the 5.725-5.85 GHz band:							
	Point-to-multipoint systems (P2M): the maximum conducted output power (P _{Out}) shall not exceed the lesser of 1 W. If G _{TX} > 6 dBi, then P _{Out} = 30 − (G _{TX} − 6).							
	 Point-to-point systems (P2P): the maximum conducted output power (Pout) shall not exceed the lesser of 1 W. 							
	t = maximum conducted output power in dBm, t = the maximum transmitting antenna directional gain in dBi.							

Report No.: FR381847AB

 TEL: 886-3-656-9065
 Page Number : 19 of 29

 FAX: 886-3-656-9085
 Issued Date : Nov. 01, 2023

3.3.2 Measuring Instruments

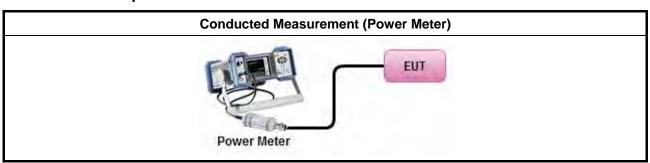
Refer a test equipment and calibration data table in this test report.

3.3.3 Test Procedures

		Test Method						
	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)						
	Wid	eband RF power meter and average over on/off periods with duty factor						
	\boxtimes	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]) $EIRP_{total} = P_{total} + DG$						
	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.						

Report No.: FR381847AB

3.3.4 Test Setup



3.3.5 Test Result of Maximum Output Power

Refer as Appendix C

TEL: 886-3-656-9065 Page Number : 20 of 29
FAX: 886-3-656-9085 Issued Date : Nov. 01, 2023

3.4 Power Spectral Density

3.4.1 Limit

	Peak Power Spectral Density Limit
UN	II Devices
\boxtimes	For the 5.15-5.25 GHz band:
	 Outdoor AP: the peak power spectral density (PPSD) shall not exceed the lesser of 17dBm/MHz. If GTX > 6 dBi, then Pout = 17 - (GTX - 6).
	Indoor AP: the peak power spectral density (PPSD) shall not exceed the lesser of 17dBm/MHz. If G _{TX} > 6 dBi, then P _{Out} = 17 − (G _{TX} − 6).
	■ Point-to-point AP: the peak power spectral density (PPSD) shall not exceed the lesser of 17dBm/MHz. If $G_{TX} > 23$ dBi, then $P_{Out} = 17 - (G_{TX} - 23)$.
	 Mobile or Portable Client: the peak power spectral density (PPSD) ≤ 11 dBm/MHz. If G_{TX} > 6 dBi, then PPSD= 11 - (G_{TX} - 6)
	For the 5.25-5.35 GHz band, the peak power spectral density (PPSD) \leq 11 dBm/MHz. If $G_{TX} > 6$ dBi, then PPSD= 11 $-$ ($G_{TX} - 6$).
	For the 5.47-5.725 GHz band, the peak power spectral density (PPSD) \leq 11 dBm/MHz. If $G_{TX} > 6$ dBi, then PPSD= 11 – ($G_{TX} - 6$).
\boxtimes	For the 5.725-5.85 GHz band:
	 Point-to-multipoint systems (P2M): the peak power spectral density (PPSD) ≤ 30 dBm/500kHz. If G_{TX} > 6 dBi, then PPSD= 30 – (G_{TX} – 6).
	Point-to-point systems (P2P): the peak power spectral density (PPSD) ≤ 30 dBm/500kHz.
LE-	LAN Devices
	For the 5.15-5.25 GHz band, the e.i.r.p. peak power spectral density (PPSD) ≤ 10 dBm/MHz.
	For the 5.25-5.35 GHz band, the peak power spectral density (PPSD) ≤ 11 dBm/MHz.
	 e.i.r.p. greater than 200 mW shall comply with the following e.i.r.p. at different elevations, where θ is the angle above the local horizontal plane (of the Earth) as shown below: -13 dBW/MHz for 0° ≤ θ < 8°; -13 - 0.716 (θ-8) dBW/MHz for 8° ≤ θ < 40° -35.9 - 1.22 (θ-40) dBW/MHz for 40° ≤ θ ≤ 45°; -42 dBW/MHz for θ > 45°
	For the 5.47-5.6 GHz band and 5.65-5.725 GHz band, the peak power spectral density (PPSD) \leq 11 dBm/MHz.
	For the 5.725-5.85 GHz band:
	 Point-to-multipoint systems (P2M): the peak power spectral density (PPSD) ≤ 30 dBm/500kHz. If G_{TX} > 6 dBi, then PPSD= 30 – (G_{TX} – 6).
	Point-to-point systems (P2P): the peak power spectral density (PPSD) ≤ 30 dBm/500kHz.
pov	SD = peak power spectral density that he same method as used to determine the conducted output wer shall be used to determine the power spectral density. And power spectral density in dBm/MHz = the maximum transmitting antenna directional gain in dBi.

Report No.: FR381847AB

3.4.2 Measuring Instruments

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

TEL: 886-3-656-9065 Page Number : 21 of 29
FAX: 886-3-656-9085 Issued Date : Nov. 01, 2023



3.4.3 Test Procedures

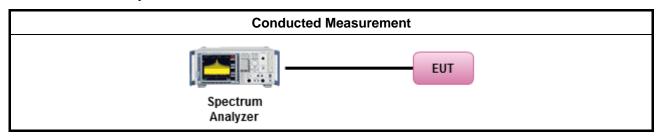
		Test Method								
•	outp func	k power spectral density procedures that the same method as used to determine the conducted ut power shall be used to determine the peak power spectral density and use the peak search tion on the spectrum analyzer to find the peak of the spectrum. For the peak power spectral density 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	v cycle ≥ 98% or external video / power trigger]								
	\boxtimes	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)								
	For	conducted measurement.								
	•	If the EUT supports multiple transmit chains using options given below:								
		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.								
	•	If multiple transmit chains, EIRP PPSD calculation could be following as methods: PPSD _{total} = PPSD ₁ + PPSD ₂ + + PPSD _n (calculated in linear unit [mW] and transfer to log unit [dBm]) EIRP _{total} = PPSD _{total} + 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.								

Report No.: FR381847AB

 TEL: 886-3-656-9065
 Page Number : 22 of 29

 FAX: 886-3-656-9085
 Issued Date : Nov. 01, 2023

3.4.4 Test Setup



Report No.: FR381847AB

3.4.5 Test Result of Power Spectral Density

Refer as Appendix D

TEL: 886-3-656-9065 Page Number : 23 of 29
FAX: 886-3-656-9085 Issued Date : Nov. 01, 2023

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				

Report No.: FR381847AB

- 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.

TEL: 886-3-656-9065 Page Number : 24 of 29
FAX: 886-3-656-9085 Issued Date : Nov. 01, 2023

Un-restricted band emissions above 1GHz Limit					
Operating Band	Limit				
☑ 5.15 - 5.25 GHz	e.i.r.p27 dBm [68.2 dBuV/m@3m]				
☐ 5.25 - 5.35 GHz	e.i.r.p27 dBm [68.2 dBuV/m@3m]				
☐ 5.47 - 5.725 GHz	e.i.r.p27 dBm [68.2 dBuV/m@3m]				
⊠ 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).

3.5.2 Measuring Instruments

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

3.5.3 Test Procedures

Test Method 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 ≥ 98 or duty factor]. For the transmitter unwanted emissions shall be measured using following options below: Refer as FCC KDB 789033 D02, clause G)2) for unwanted emissions into non-restricted bands. Refer as FCC KDB 789033 D02, clause G)1) for unwanted emissions into restricted bands. Refer as FCC KDB 789033 D02, G)6) Method AD (Trace Averaging). 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. 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.

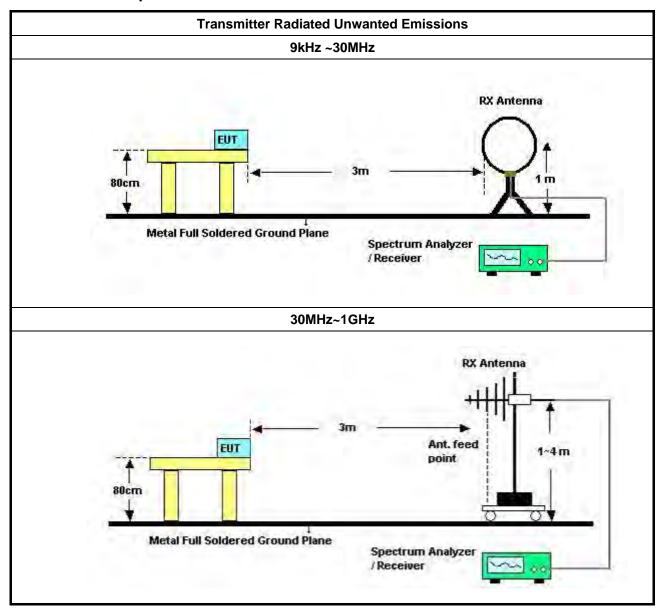
TEL: 886-3-656-9065 Page Number : 25 of 29
FAX: 886-3-656-9085 Issued Date : Nov. 01, 2023

Refer as ANSI C63.10, clause 4.1.4.2.2 measurement procedure peak limit.

Test Method

- For radiated measurement.
 - Refer as ANSI C63.10, clause 6.4 for radiated emissions below 30 MHz and test distance is 3m.
 - Refer as ANSI C63.10, clause 6.5 for radiated emissions 30 MHz to 1 GHz and test distance is 3m.
 - Refer as ANSI C63.10, clause 6.6 for radiated emissions above 1GHz.
- 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



 TEL: 886-3-656-9065
 Page Number : 26 of 29

 FAX: 886-3-656-9085
 Issued Date : Nov. 01, 2023

Above 1GHz

BUT

3M & 1M

1.5M

Max 30cm

Spectrum Analyzer

Report No.: FR381847AB

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 Page Number : 27 of 29
FAX: 886-3-656-9085 Issued Date : Nov. 01, 2023

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	Feb. 20, 2023	Feb. 19, 2024	Conduction (CO01-CB)
LISN	F.C.C.	FCC-LISN-50- 16-2	04083	150kHz ~ 100MHz	Feb. 16, 2023	Feb. 15, 2024	Conduction (CO01-CB)
LISN	Schwarzbeck	NSLK 8127	8127647	9kHz ~ 30MHz	Apr. 27, 2023	Apr. 26, 2024	Conduction (CO01-CB)
Pulse Limiter	Rohde& Schwarz	ESH3-Z2	100430	9kHz ~ 30MHz	Feb. 09, 2023	Feb. 08, 2024	Conduction (CO01-CB)
COND Cable	Woken	Cable	Low cable-CO01	9kHz ~ 30MHz	Oct. 18, 2022	Oct. 17, 2023	Conduction (CO01-CB)
Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Conduction (CO01-CB)
Loop Antenna	Teseq	HLA 6120	31244	9kHz - 30 MHz	Mar. 23, 2023	Mar. 22, 2024	Radiation (03CH05-CB)
3m Semi Anechoic Chamber NSA	TDK	SAC-3M	03CH05-CB	30 MHz ~1 GHz	Aug. 02, 2023	Aug. 01, 2024	Radiation (03CH05-CB)
Bilog Antenna with 6dB Attenuator	TESEQ & EMCI	CBL 6112D & N-6-06	35236 & AT-N0610	30MHz ~ 2GHz	Mar. 24, 2023	Mar. 23, 2024	Radiation (03CH05-CB)
Amplifier	EMCI	EMC330N	980331	20MHz ~ 3GHz	May 03, 2023	May 02, 2024	Radiation (03CH05-CB)
Spectrum Analyzer	R&S	FSP40	100304	9kHz ~ 40GHz	Apr. 18, 2023	Apr. 17, 2024	Radiation (03CH05-CB)
EMI Test Receiver	R&S	ESCS	826547/017	9kHz ~ 2.75GHz	Jun. 13, 2023	Jun. 12, 2024	Radiation (03CH05-CB)
RF Cable-low	Woken	RG402	Low Cable-04+23	30MHz~1GHz	Aug. 16, 2023	Aug. 15, 2024	Radiation (03CH05-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (03CH05-CB)
3m Semi Anechoic Chamber VSWR	TDK	SAC-3M	03CH01-CB	1GHz ~18GHz 3m	May 05, 2023	May 04, 2024	Radiation (03CH01-CB)
Horn Antenna	ETS-LINDGREN	3115	00075790	750MHz ~ 18GHz	Nov. 04, 2022	Nov. 03, 2023	Radiation (03CH01-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Sep. 04, 2023	Sep. 03, 2024	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8449B	3008A02121	1GHz ~ 26.5GHz	May 18, 2023	May 17, 2024	Radiation (03CH01-CB)
Pre-Amplifier	SGH	SGH184	20221107-3	18GHz ~ 40GHz	Nov. 16, 2022	Nov. 15, 2023	Radiation (03CH01-CB)
Signal Analyzer	R&S	FSV3044	101437	10kHz ~ 44GHz	Nov. 29, 2022	Nov. 29, 2023	Radiation (03CH01-CB)

TEL: 886-3-656-9065 FAX: 886-3-656-9085

Report Template No.: CB-A12_1 Ver1.4

Page Number : 28 of 29 Issued Date : Nov. 01, 2023

Report No.: FR381847AB

Report Version : 03

Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
RF Cable-high	Woken	RG402	High Cable-16	1 GHz ~ 18 GHz	Oct. 03, 2022	Oct. 02, 2023	Radiation (03CH01-CB)
RF Cable-high	Woken	RG402	High Cable-16+17	1 GHz ~ 18 GHz	Oct. 03, 2022	Oct. 02, 2023	Radiation (03CH01-CB)
High Cable	Woken	WCA0929M	40G#5+6	1GHz ~ 40 GHz	Dec. 07, 2022	Dec. 06, 2023	Radiation (03CH01-CB)
High Cable	Woken	WCA0929M	40G#5	1GHz ~ 40 GHz	Dec. 07, 2022	Dec. 06, 2023	Radiation (03CH01-CB)
High Cable	Woken	WCA0929M	40G#6	1GHz ~ 40 GHz	Dec. 07, 2022	Dec. 06, 2023	Radiation (03CH01-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Radiation (03CH01-CB)
Spectrum analyzer	R&S	FSV40	101027	9kHz~40GHz	Aug. 14, 2023	Aug. 13, 2024	Conducted (TH02-CB)
Power Sensor	Anritsu	MA2411B	1126203	300MHz~40GHz	Oct. 17, 2022	Oct. 16, 2023	Conducted (TH02-CB)
Power Meter	Anritsu	ML2495A	1210004	300MHz~40GHz	Oct. 17, 2022	Oct. 16, 2023	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-01	1 GHz – 18 GHz	Oct. 03, 2022	Oct. 02, 2023	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-02	1 GHz – 18 GHz	Oct. 03, 2022	Oct. 02, 2023	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-03	1 GHz – 18 GHz	Oct. 03, 2022	Oct. 02, 2023	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-04	1 GHz – 18 GHz	Oct. 03, 2022	Oct. 02, 2023	Conducted (TH02-CB)
RF Cable-high	Woken	RG402	High Cable-05	1 GHz – 18 GHz	Oct. 03, 2022	Oct. 02, 2023	Conducted (TH02-CB)
Switch	SPTCB	SP-SWI	SWI-02	1 GHz –26.5 GHz	Oct. 04, 2022	Oct. 03, 2023	Conducted (TH02-CB)
Test Software	SPORTON	SENSE	V5.10	-	N.C.R.	N.C.R.	Conducted (TH02-CB)

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

NCR means Non-Calibration required.

 TEL: 886-3-656-9065
 Page Number : 29 of 29

 FAX: 886-3-656-9085
 Issued Date : Nov. 01, 2023



Conducted Emissions at Powerline

Appendix A

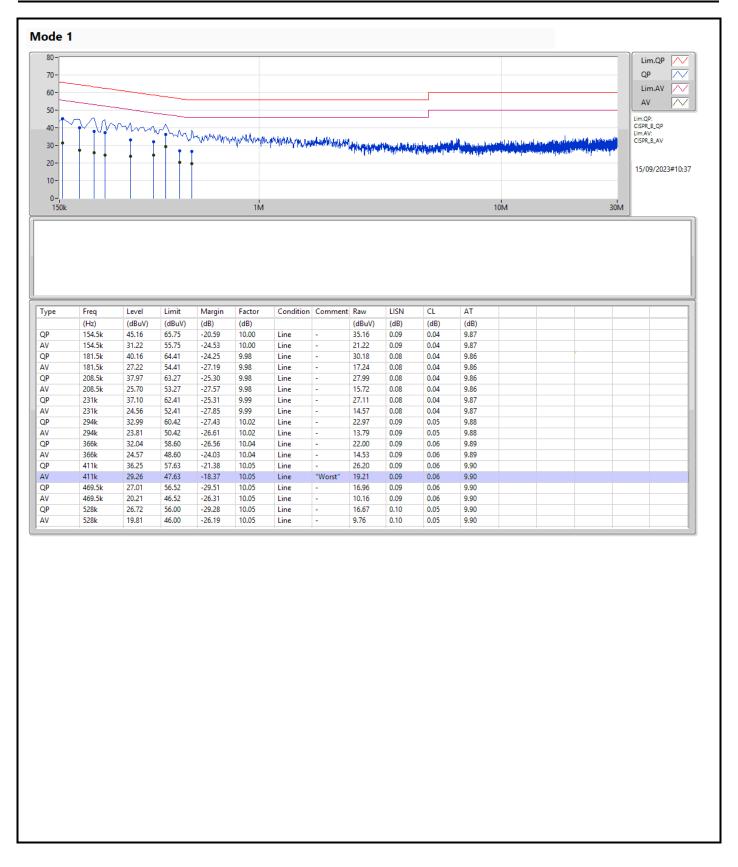
Summary

Mode	Result	Туре	Freq (Hz)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Condition
Mode 1	Pass	AV	402k	29.66	47.82	-18.16	Neutral

Sporton International Inc. Hsinchu Laboratory Page No. : 1 of

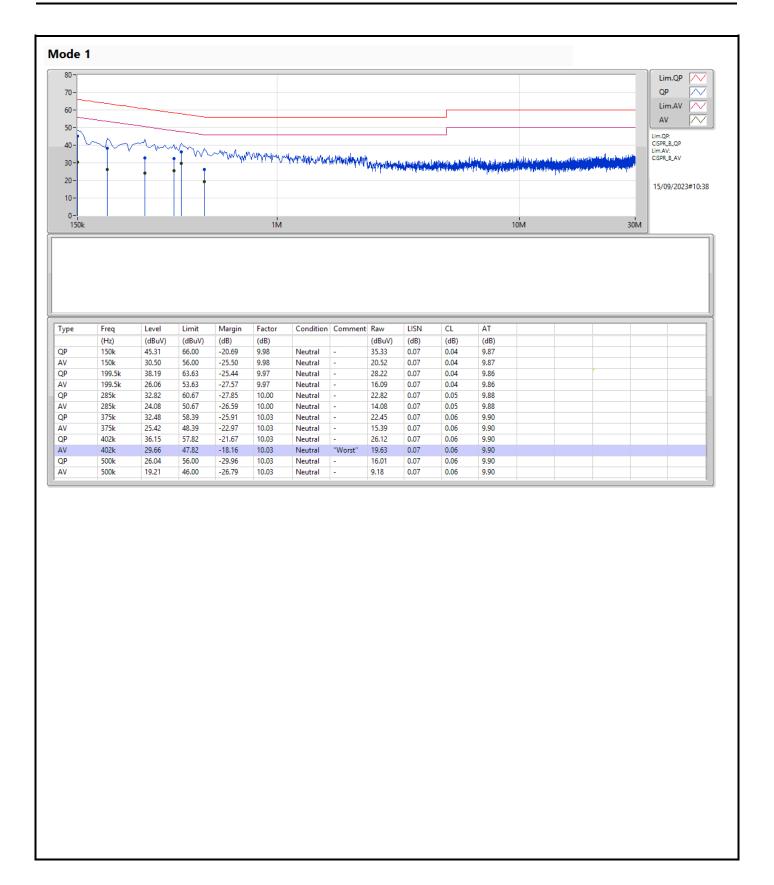
Report No. : FR381847AB





Page No. : 2 of 3

Report No. : FR381847AB



Page No. : 3 of 3

Report No. : FR381847AB



Appendix B **EBW**

Summary

Mode	Max-N dB	Max-OBW	ITU-Code	Min-N dB	Min-OBW	
	(Hz)	(Hz)		(Hz)	(Hz)	
5.15-5.25GHz	-	=	=	=	=	
802.11a_Nss1,(6Mbps)_4TX	18.865M	16.433M	16M4D1D	17.82M	16.306M	
802.11ax HEW20_Nss1,(MCS0)_4TX	20.68M	18.973M	19M0D1D	19.855M	18.791M	
802.11ax HEW40_Nss1,(MCS0)_4TX	39.6M	37.765M	37M8D1D	38.83M	37.583M	
802.11ax HEW80_Nss1,(MCS0)_4TX	81.18M	77.222M	77M2D1D	M80.08	76.737M	
5.725-5.85GHz	-	÷	ū	ū	=	
802.11a_Nss1,(6Mbps)_4TX	16.39M	16.468M	16M5D1D	15.675M	16.312M	
802.11ax HEW20_Nss1,(MCS0)_4TX	19.085M	18.957M	19M0D1D	17.875M	18.826M	
802.11ax HEW40_Nss1,(MCS0)_4TX	37.95M	37.828M	37M8D1D	33.11M	37.457M	
802.11ax HEW80_Nss1,(MCS0)_4TX	78.32M	77.425M	77M4D1D	77.44M	76.801M	

 $\label{eq:max-NdB} \mbox{ Asximum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band;} \mbox{ Max-OBW = Maximum 99% occupied bandwidth;} \mbox{ Min-N dB = Minimum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band;} \mbox{ Min-OBW = Minimum 99% occupied bandwidth} \mbox{ } \mbox{ Coupled bandwidth} \mbox{ Min-OBW = Minimum 99% occupied bandwidth} \mbox{ } \mbox{ Min-OBW = Minimum 99% occupied bandwidth} \mbox{ } \mbox{ }$

Page No. Sporton International Inc. Hsinchu Laboratory Report No. : FR381847AB



EBW Appendix B

Result

Mode	Result	Limit	Port 1-N dB	Port 1-OBW	Port 2-N dB	Port 2-OBW	Port 3-N dB	Port 3-OBW	Port 4-N dB	Port 4-OBW
		(Hz)	(Hz)	(Hz)	(Hz)	(Hz)	(Hz)	(Hz)	(Hz)	(Hz)
802.11a_Nss1,(6Mbps)_4TX	-	-	-	-	-	-	-	-	-	-
5180MHz	Pass	Inf	18.37M	16.315M	18.26M	16.359M	18.095M	16.335M	18.48M	16.37M
5200MHz	Pass	Inf	18.315M	16.361M	18.26M	16.306M	18.865M	16.34M	18.37M	16.34M
5240MHz	Pass	Inf	17.82M	16.336M	18.26M	16.308M	18.37M	16.433M	18.59M	16.345M
5745MHz	Pass	500k	16.39M	16.339M	16.39M	16.336M	16.335M	16.468M	16.39M	16.383M
5785MHz	Pass	500k	16.39M	16.342M	15.675M	16.372M	16.39M	16.411M	16.39M	16.373M
5825MHz	Pass	500k	16.39M	16.312M	16.39M	16.355M	16.39M	16.454M	16.39M	16.407M
802.11ax HEW20_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5180MHz	Pass	Inf	20.075M	18.826M	20.24M	18.928M	20.02M	18.831M	20.075M	18.973M
5200MHz	Pass	Inf	20.13M	18.927M	19.965M	18.912M	19.855M	18.852M	19.965M	18.829M
5240MHz	Pass	Inf	20.68M	18.935M	20.405M	18.791M	20.35M	18.819M	20.515M	18.895M
5745MHz	Pass	500k	18.92M	18.834M	18.645M	18.947M	18.92M	18.84M	18.865M	18.878M
5785MHz	Pass	500k	18.975M	18.829M	18.59M	18.839M	18.535M	18.846M	19.085M	18.912M
5825MHz	Pass	500k	17.875M	18.941M	18.755M	18.957M	18.975M	18.853M	19.03M	18.826M
802.11ax HEW40_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5190MHz	Pass	Inf	38.83M	37.583M	39.38M	37.728M	39.05M	37.689M	39.6M	37.725M
5230MHz	Pass	Inf	39.27M	37.765M	39.27M	37.626M	38.94M	37.675M	39.16M	37.73M
5755MHz	Pass	500k	37.95M	37.545M	37.95M	37.526M	37.07M	37.658M	37.84M	37.655M
5795MHz	Pass	500k	37.62M	37.457M	33.11M	37.669M	37.95M	37.637M	37.62M	37.828M
802.11ax HEW80_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-	-	-
5210MHz	Pass	Inf	80.08M	77.168M	80.74M	77.131M	80.08M	77.222M	81.18M	76.737M
5775MHz	Pass	500k	78.32M	76.801M	77.44M	77.129M	77.88M	77.425M	77.66M	77.198M

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

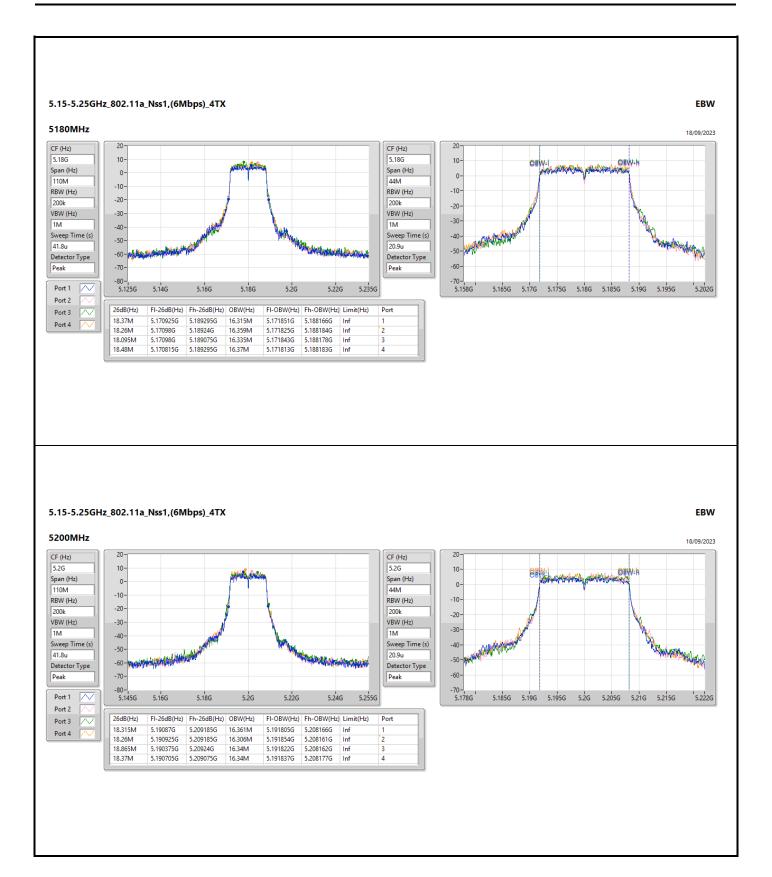
Sporton International Inc. Hsinchu Laboratory

Page No. : 2 of 16

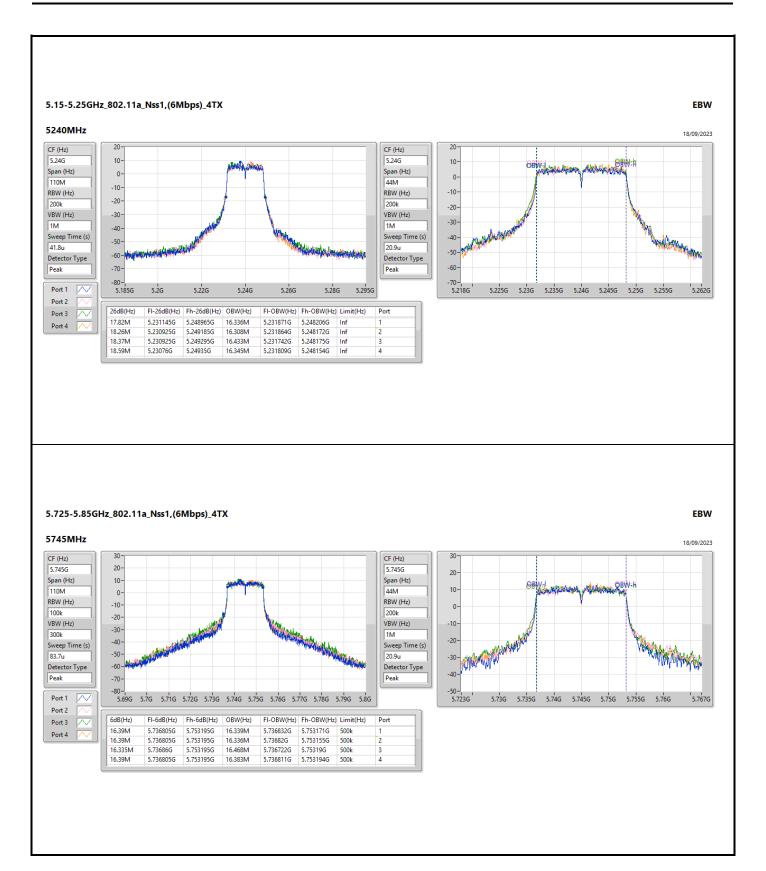
Report No. : FR381847AB

SPORTON LAB.

EBW Appendix B

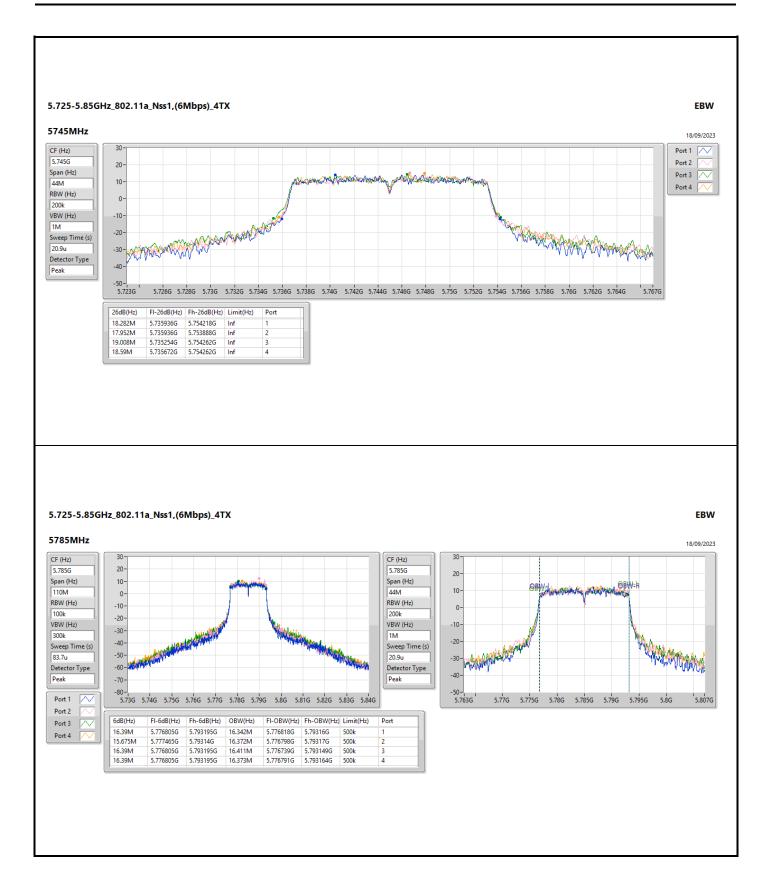


Page No. : 3 of 16 Report No. : FR381847AB EBW Appendix B



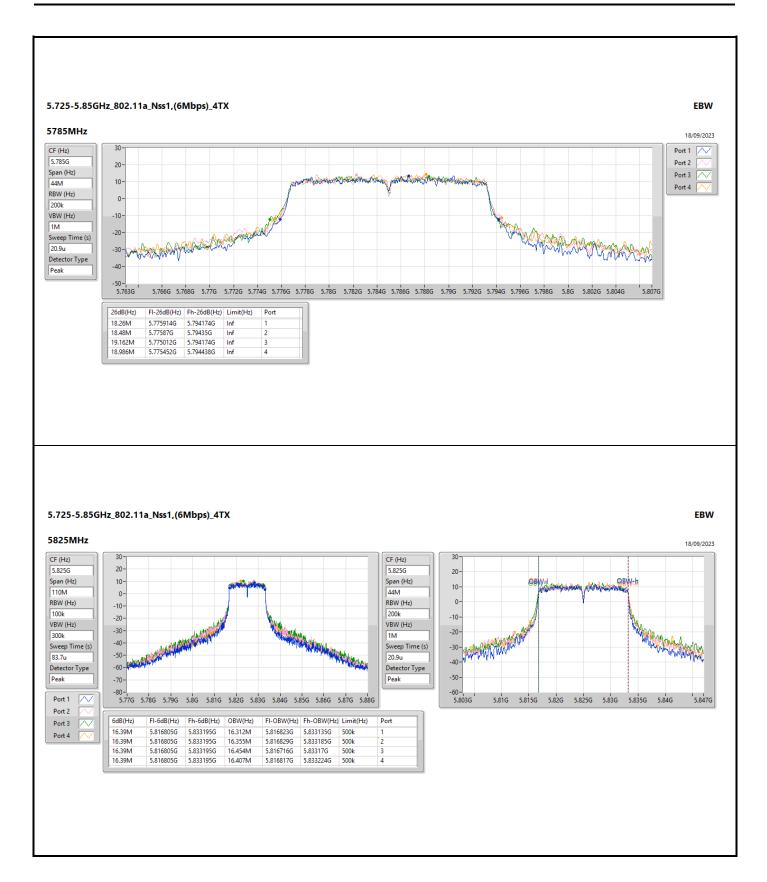
Page No. : 4 of 16 Report No. : FR381847AB





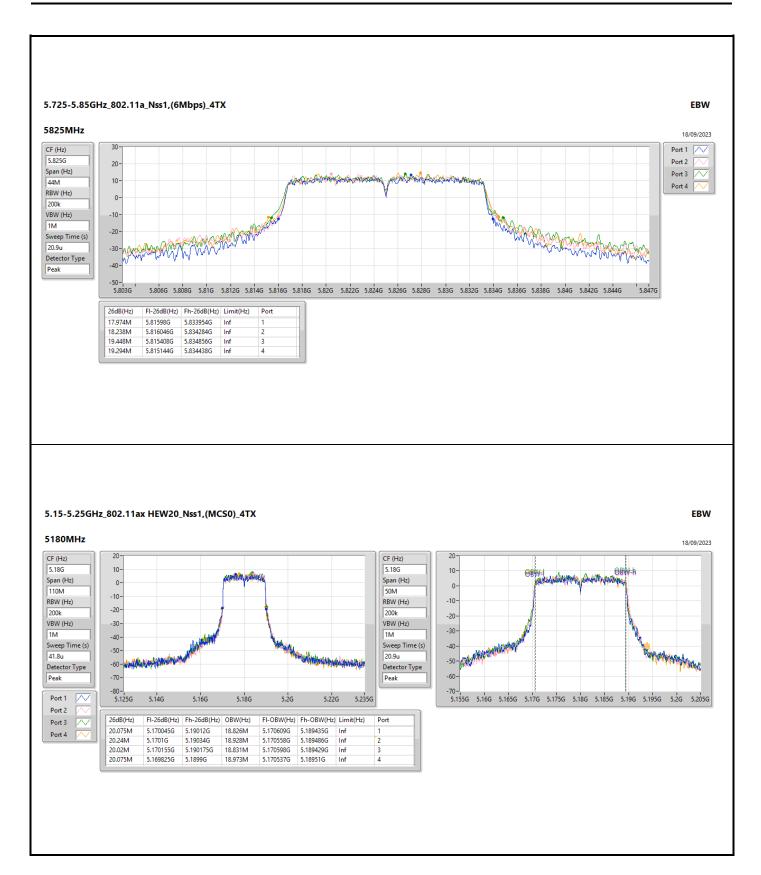
Page No. : 5 of 16 : FR381847AB Report No.



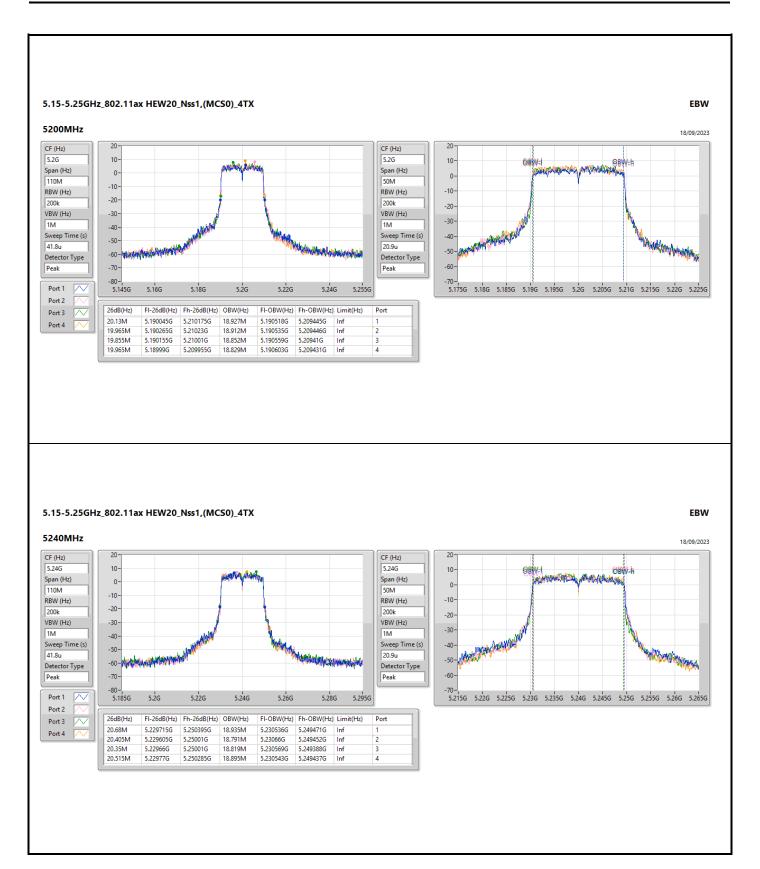


Page No. : 6 of 16 : FR381847AB Report No.

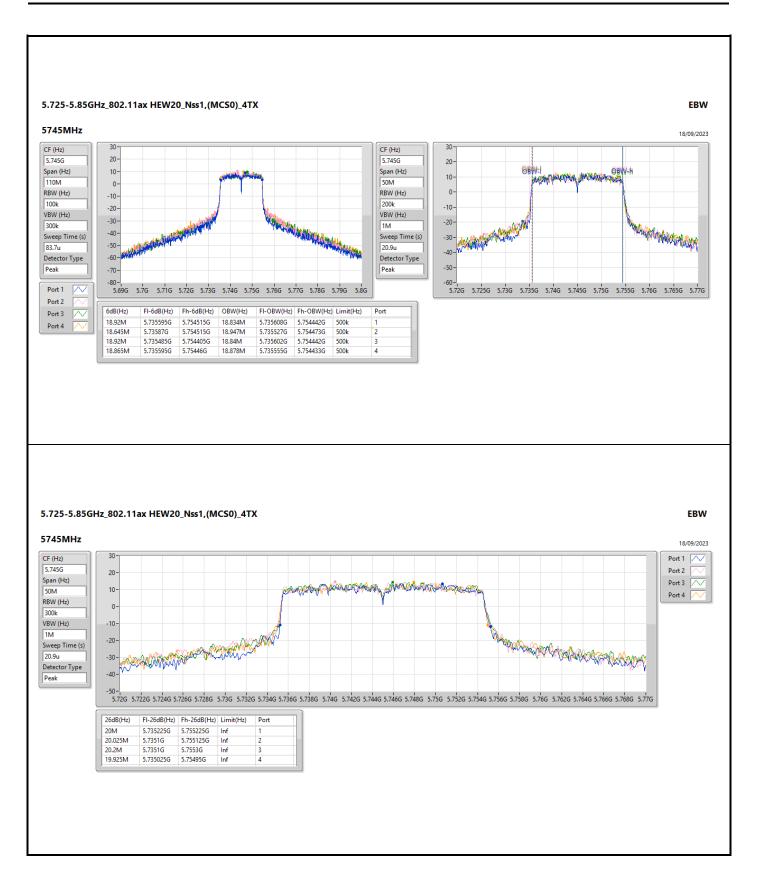




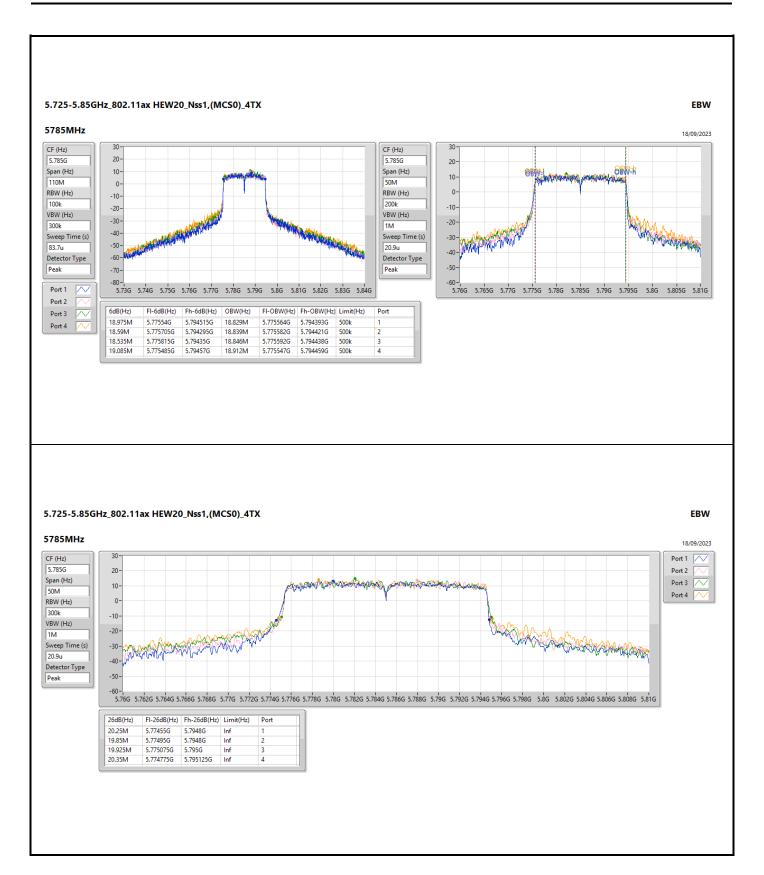
Page No. : 7 of 16 Report No. : FR381847AB



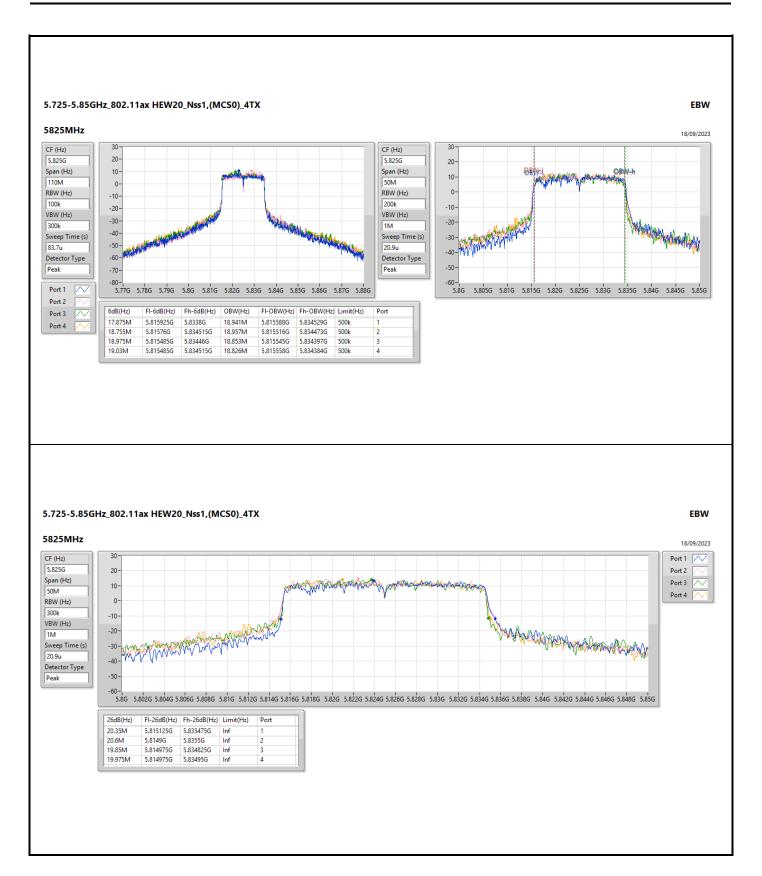
Page No. : 8 of 16 Report No. : FR381847AB



Page No. : 9 of 16 Report No. : FR381847AB

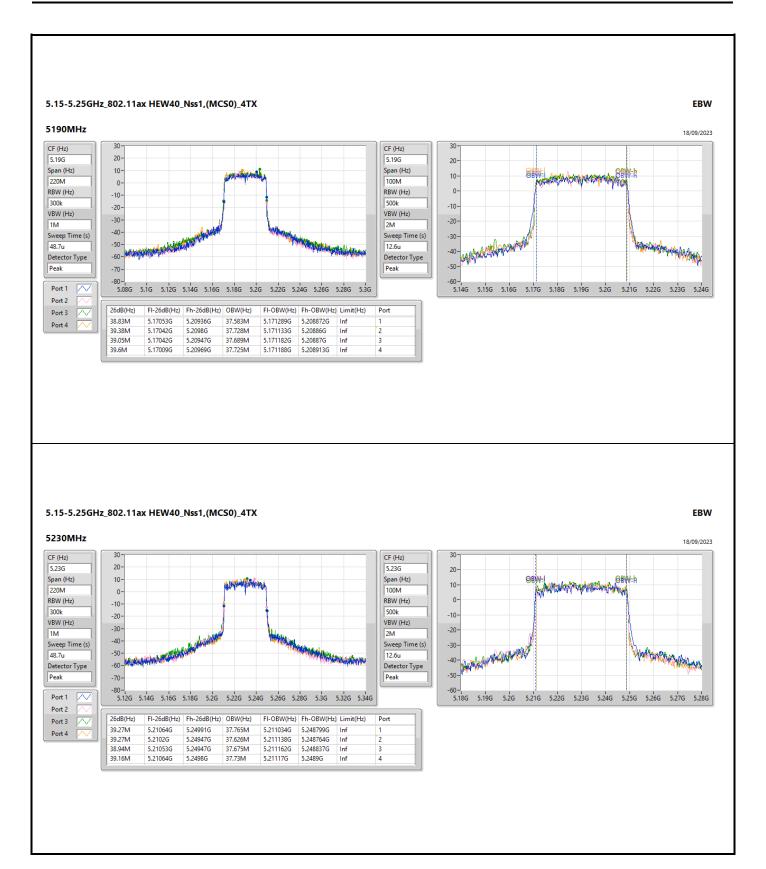


Page No. : 10 of 16 Report No. : FR381847AB



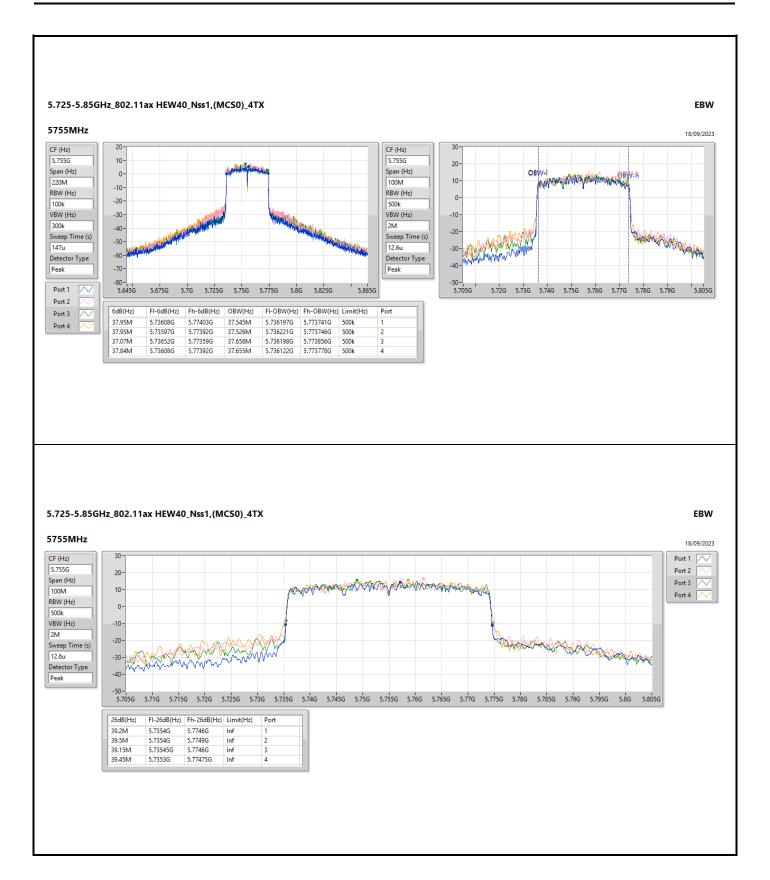
Page No. : 11 of 16

Report No. : FR381847AB



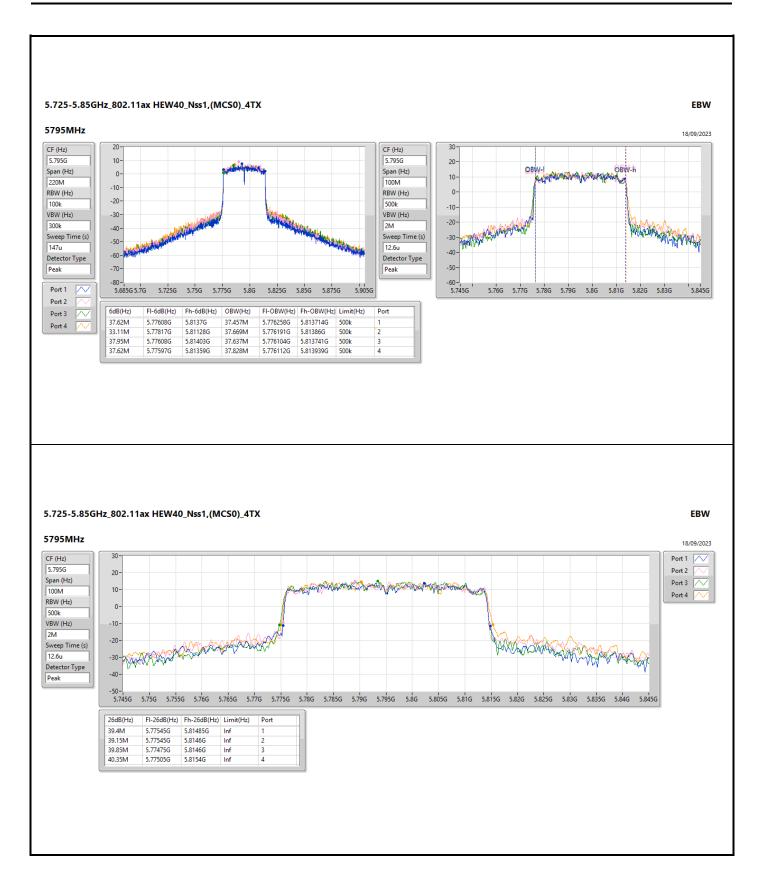
Page No. : 12 of 16

Report No. : FR381847AB



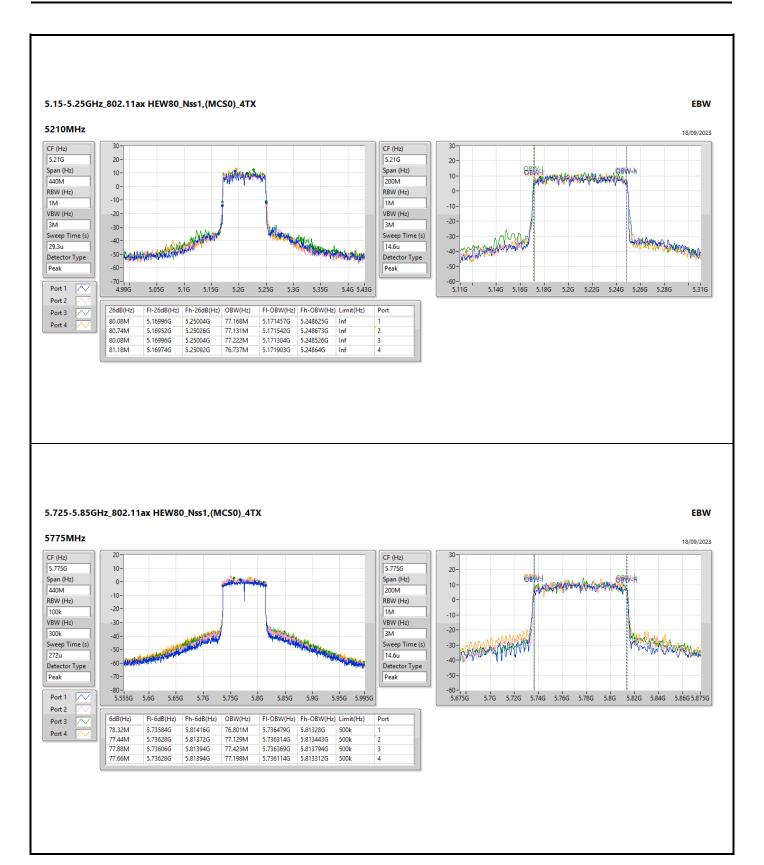
Page No. : 13 of 16

Report No. : FR381847AB



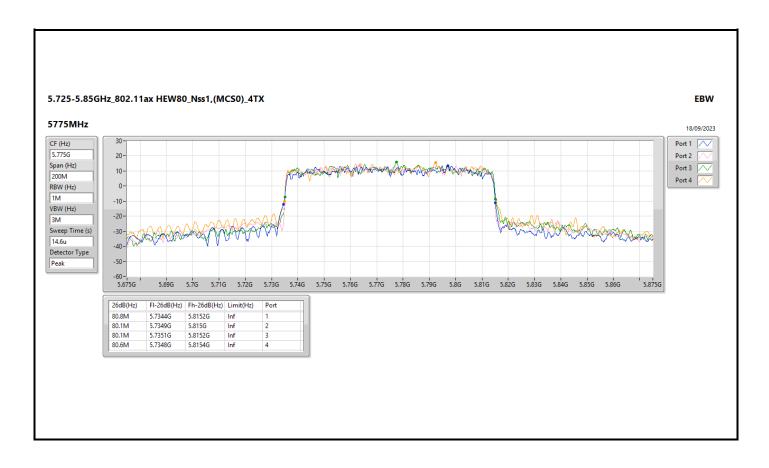
Page No. : 14 of 16

Report No. : FR381847AB



Page No. : 15 of 16 Report No. : FR381847AB





Page No. : 16 of 16 Report No. : FR381847AB



Average Power Appendix C

Summary

Mode	Total Power	Total Power
	(dBm)	(W)
5.15-5.25GHz	÷	-
802.11a_Nss1,(6Mbps)_4TX	24.31	0.26977
802.11ax HEW20_Nss1,(MCS0)_4TX	24.55	0.28510
802.11ax HEW40_Nss1,(MCS0)_4TX	26.92	0.49204
802.11ax HEW80_Nss1,(MCS0)_4TX	27.38	0.54702
5.725-5.85GHz	-	-
802.11a_Nss1,(6Mbps)_4TX	29.93	0.98401
802.11ax HEW20_Nss1,(MCS0)_4TX	29.80	0.95499
802.11ax HEW40_Nss1,(MCS0)_4TX	29.60	0.91201
802.11ax HEW80_Nss1,(MCS0)_4TX	28.57	0.71945

Sporton International Inc. Hsinchu Laboratory Page No. : 1 of 2

Report No. : FR381847AB



Average Power Appendix C

Result

Mode	Result	DG	Port 1	Port 2	Port 3	Port 4	Total Power	Power Limit
		(dBi)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)
802.11a_Nss1,(6Mbps)_4TX	-	-	-	-	-	-	-	-
5180MHz	Pass	5.00	17.62	17.96	18.71	18.77	24.31	30.00
5200MHz	Pass	5.00	17.28	17.73	18.61	18.64	24.12	30.00
5240MHz	Pass	5.00	17.79	17.81	18.73	18.44	24.23	30.00
5745MHz	Pass	5.00	23.50	23.94	24.16	24.00	29.93	30.00
5785MHz	Pass	5.00	23.41	23.80	24.02	24.02	29.84	30.00
5825MHz	Pass	5.00	23.12	23.57	23.92	23.73	29.62	30.00
802.11ax HEW20_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
5180MHz	Pass	5.00	18.11	18.33	18.84	18.78	24.55	30.00
5200MHz	Pass	5.00	17.72	18.14	18.68	18.70	24.35	30.00
5240MHz	Pass	5.00	18.18	18.26	18.82	18.72	24.52	30.00
5745MHz	Pass	5.00	23.36	23.85	23.80	23.99	29.78	30.00
5785MHz	Pass	5.00	23.52	23.80	23.78	24.01	29.80	30.00
5825MHz	Pass	5.00	23.28	23.40	23.57	23.87	29.56	30.00
802.11ax HEW40_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
5190MHz	Pass	5.00	20.26	20.46	21.37	21.37	26.92	30.00
5230MHz	Pass	5.00	20.20	20.46	21.38	21.10	26.83	30.00
5755MHz	Pass	5.00	23.19	23.59	23.58	23.93	29.60	30.00
5795MHz	Pass	5.00	23.25	23.54	23.68	23.81	29.60	30.00
802.11ax HEW80_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
5210MHz	Pass	5.00	20.69	21.05	21.89	21.69	27.38	30.00
5775MHz	Pass	5.00	22.07	22.56	22.57	22.96	28.57	30.00

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

Sporton International Inc. Hsinchu Laboratory Page No. :

Report No. : FR381847AB



Summary

Mode	PD (dBm/RBW)
5.15-5.25GHz	-
802.11a_Nss1,(6Mbps)_4TX	11.91
802.11ax HEW20_Nss1,(MCS0)_4TX	11.76
802.11ax HEW40_Nss1,(MCS0)_4TX	11.60
802.11ax HEW80_Nss1,(MCS0)_4TX	8.96
5.725-5.85GHz	-
802.11a_Nss1,(6Mbps)_4TX	15.75
802.11ax HEW20_Nss1,(MCS0)_4TX	15.03
802.11ax HEW40_Nss1,(MCS0)_4TX	12.06
802.11ax HEW80_Nss1,(MCS0)_4TX	8.20

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

Sporton International Inc. Hsinchu Laboratory

Page No. : 1 of 11

Report No. : FR381847AB



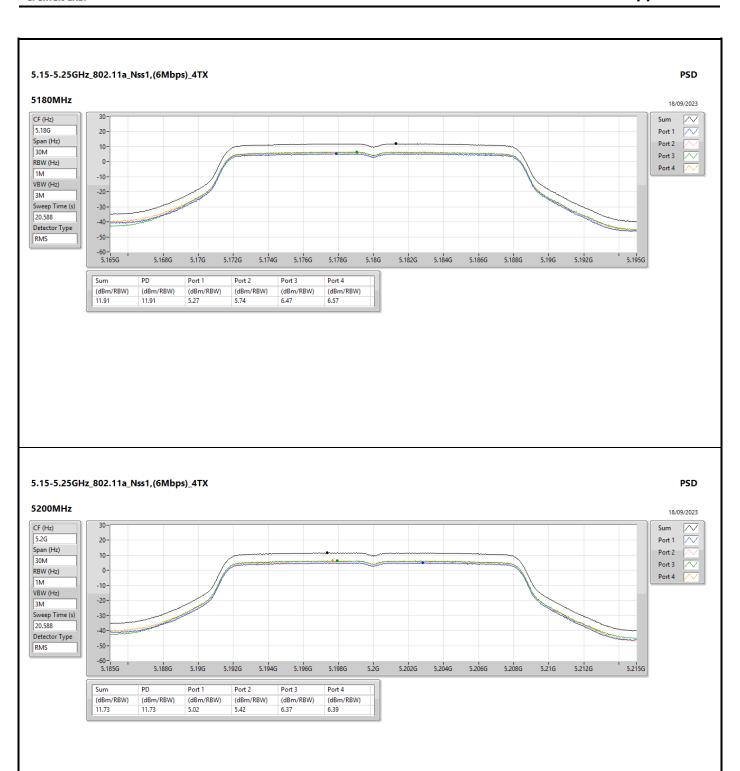
Result

Mode	Result	DG	Port 1	Port 2	Port 3	Port 4	PD	PD Limit
		(dBi)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
802.11a_Nss1,(6Mbps)_4TX	-	-	-	-	-	-	-	-
5180MHz	Pass	11.02	5.27	5.74	6.47	6.57	11.91	11.98
5200MHz	Pass	11.02	5.02	5.42	6.37	6.39	11.73	11.98
5240MHz	Pass	11.02	5.36	5.40	6.36	6.12	11.70	11.98
5745MHz	Pass	11.02	9.52	10.03	10.10	9.91	15.75	24.98
5785MHz	Pass	11.02	9.49	9.71	9.94	10.10	15.75	24.98
5825MHz	Pass	11.02	9.29	9.68	10.02	9.83	15.53	24.98
802.11ax HEW20_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
5180MHz	Pass	11.02	5.30	5.53	6.16	6.28	11.76	11.98
5200MHz	Pass	11.02	4.99	5.42	6.08	6.16	11.60	11.98
5240MHz	Pass	11.02	5.37	5.32	6.00	6.00	11.58	11.98
5745MHz	Pass	11.02	9.03	9.21	9.21	9.28	15.03	24.98
5785MHz	Pass	11.02	8.78	8.99	9.02	9.39	14.93	24.98
5825MHz	Pass	11.02	8.76	9.04	9.19	9.17	14.93	24.98
802.11ax HEW40_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
5190MHz	Pass	11.02	5.20	5.31	6.19	6.34	11.58	11.98
5230MHz	Pass	11.02	5.06	5.20	6.28	5.96	11.60	11.98
5755MHz	Pass	11.02	5.84	6.11	6.29	6.46	12.06	24.98
5795MHz	Pass	11.02	5.76	5.87	6.03	6.06	11.85	24.98
802.11ax HEW80_Nss1,(MCS0)_4TX	-	-	-	-	-	-	-	-
5210MHz	Pass	11.02	2.37	2.80	3.73	3.29	8.96	11.98
5775MHz	Pass	11.02	2.04	2.13	2.53	2.60	8.20	24.98

Page No. Sporton International Inc. Hsinchu Laboratory

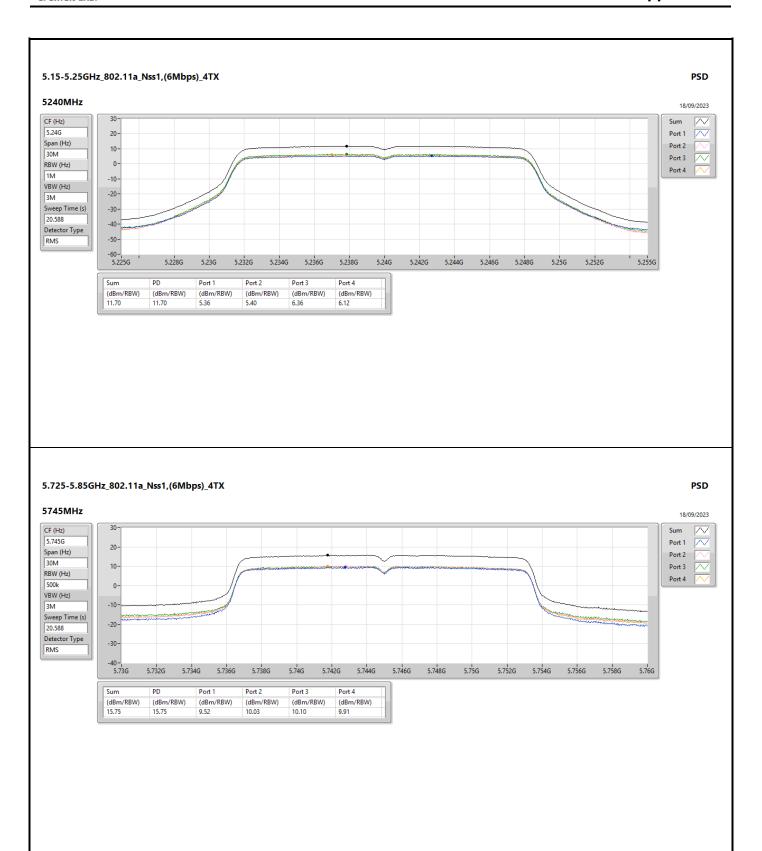
Report No. : FR381847AB

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;



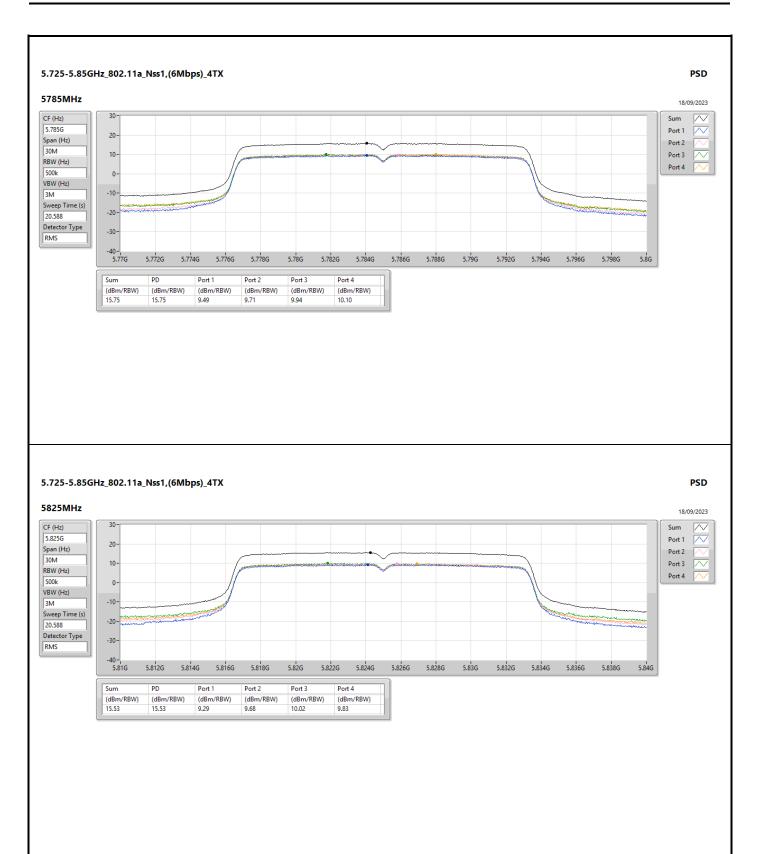
Page No. : 3 of 11

Report No. : FR381847AB



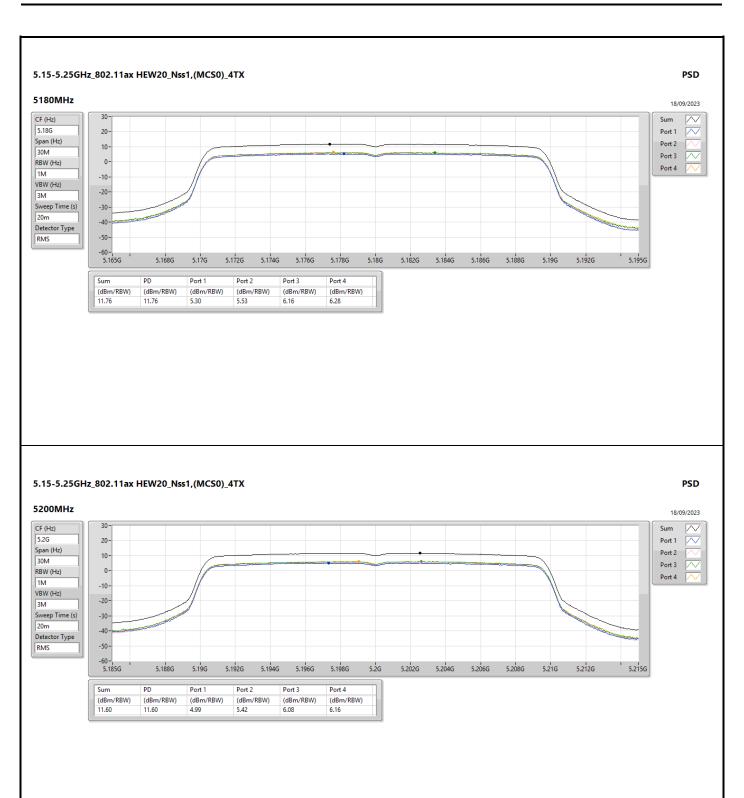
Page No. : 4 of 11

Report No. : FR381847AB



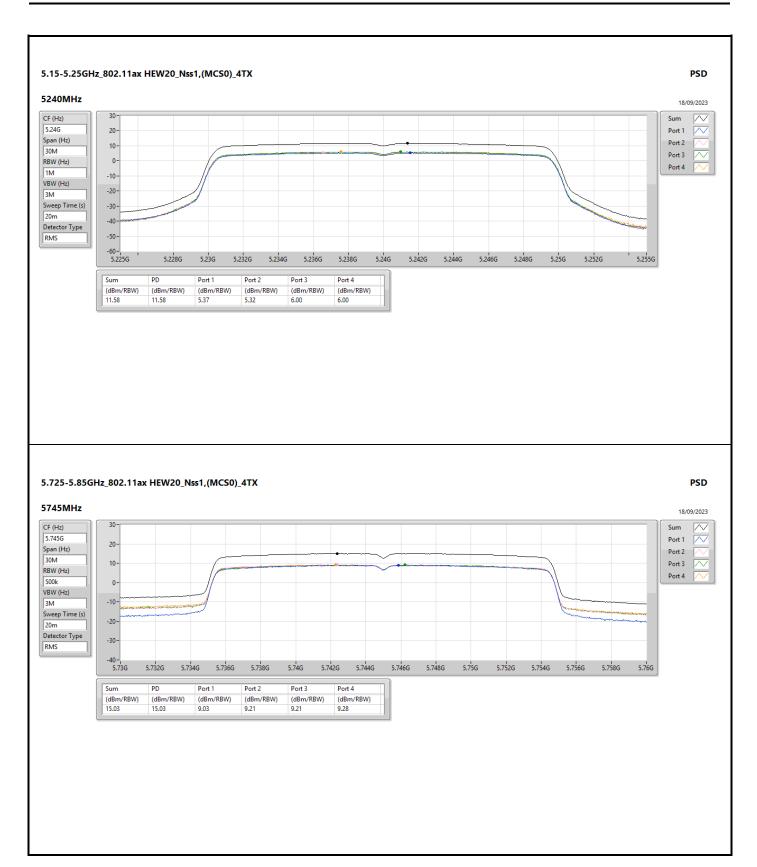
Page No. : 5 of 11

Report No. : FR381847AB



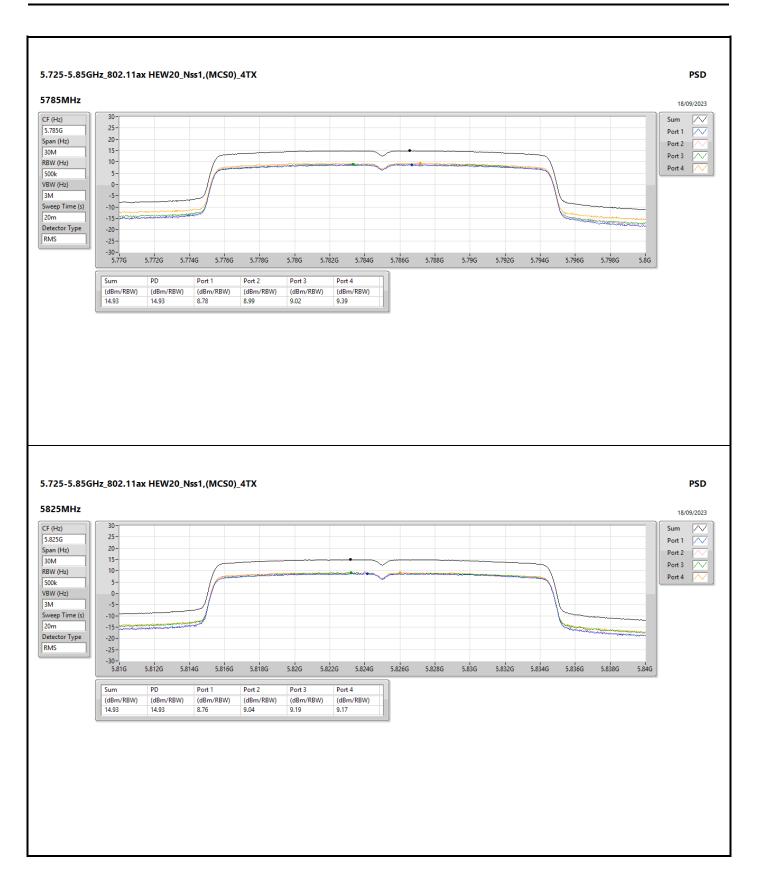
Page No. : 6 of 11

Report No. : FR381847AB



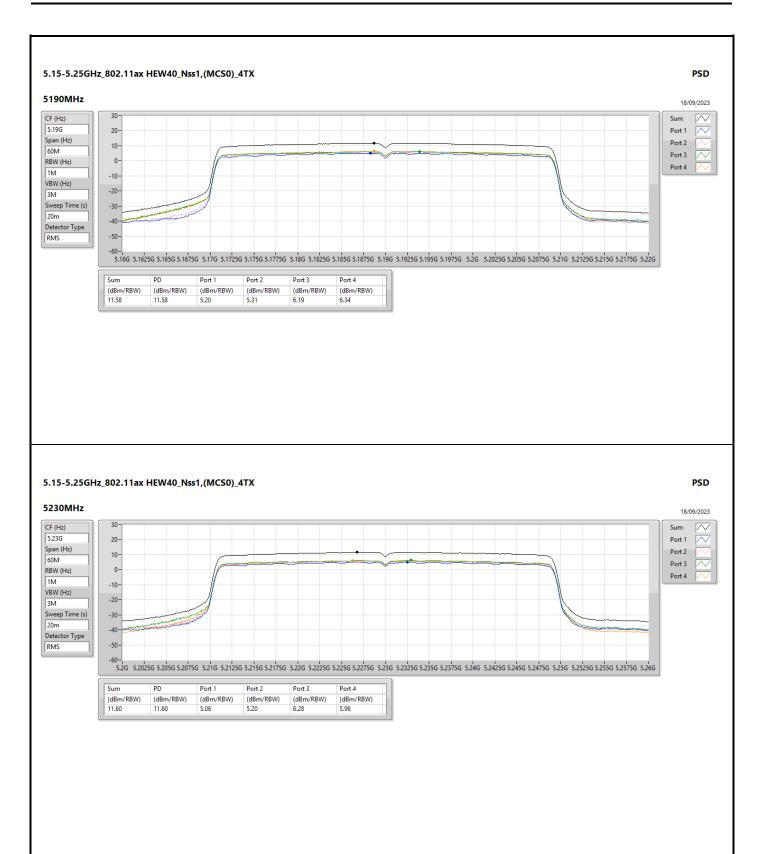
Page No. : 7 of 11

Report No. : FR381847AB



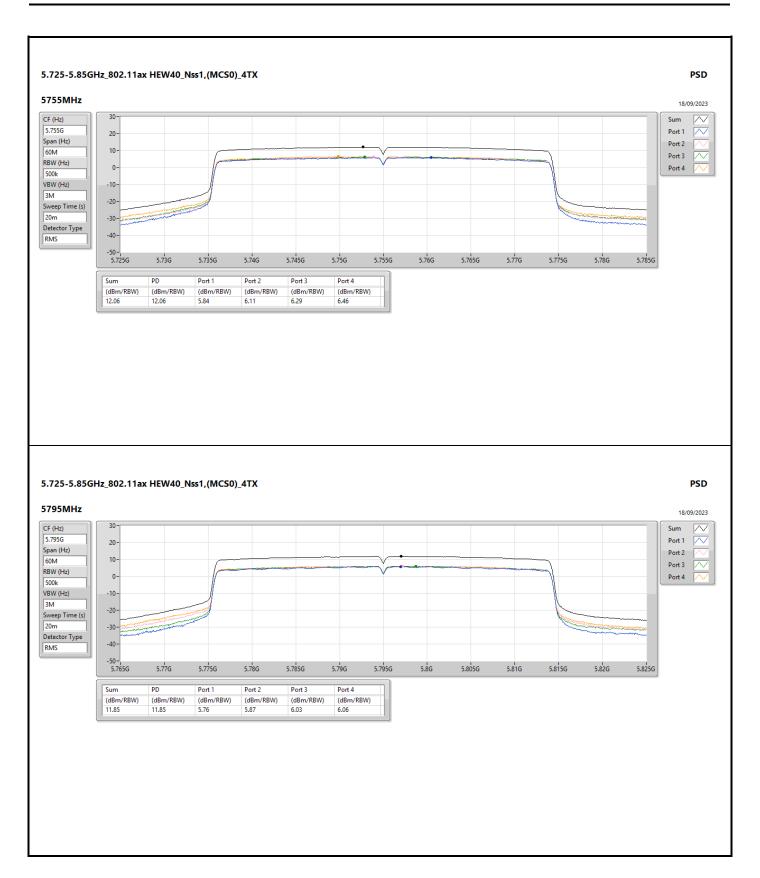
Page No. : 8 of 11

Report No. : FR381847AB



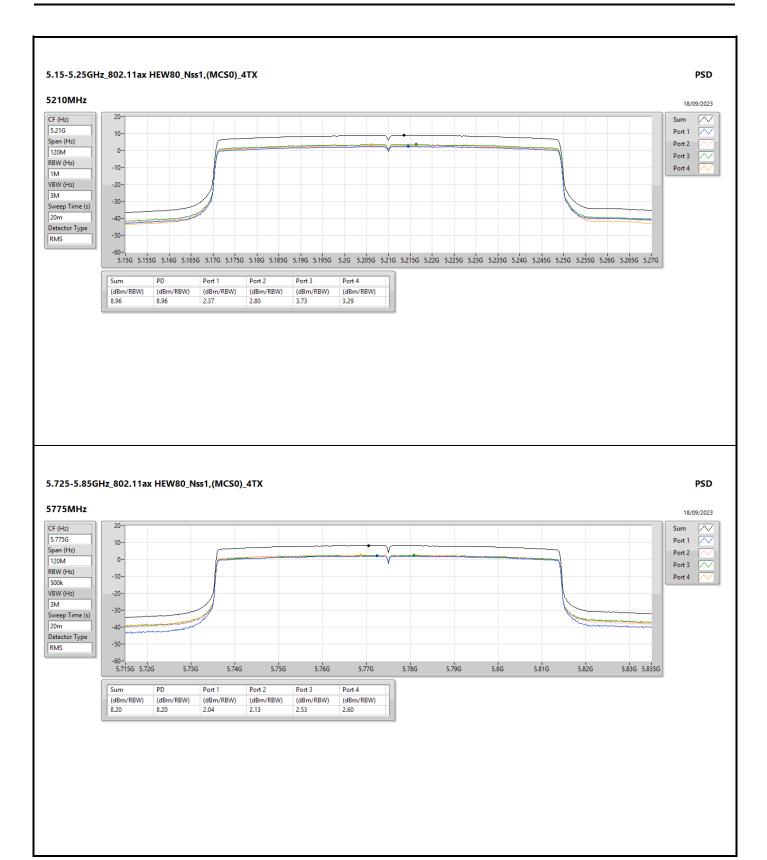
Page No. : 9 of 11

Report No. : FR381847AB



Page No. : 10 of 11

Report No. : FR381847AB



Page No. : 11 of 11

Report No. : FR381847AB



Radiated Emissions below 1GHz

Appendix E.1

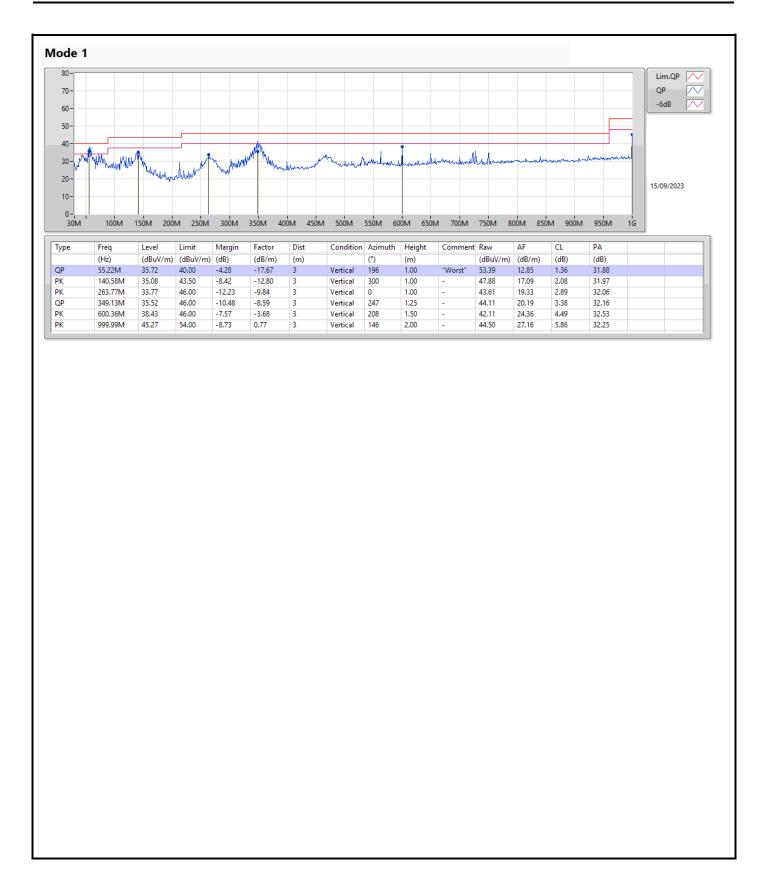
Summary

Mode	Result	Туре	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Condition
Mode 1	Pass	QP	55.22M	35.72	40.00	-4.28	Vertical

Sporton International Inc. Hsinchu Laboratory

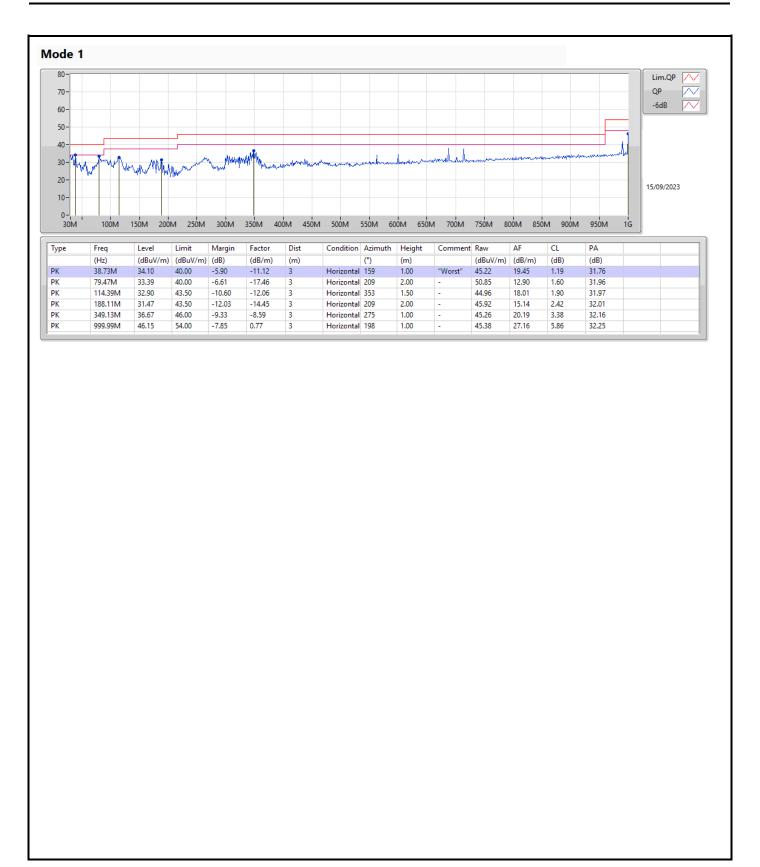
Page No. : 1 of 3

Report No. : FR381847AB



Page No. : 2 of 3

Report No. : FR381847AB



Page No. : 3 of 3

Report No. : FR381847AB



RSE TX above 1GHz

Appendix E.2

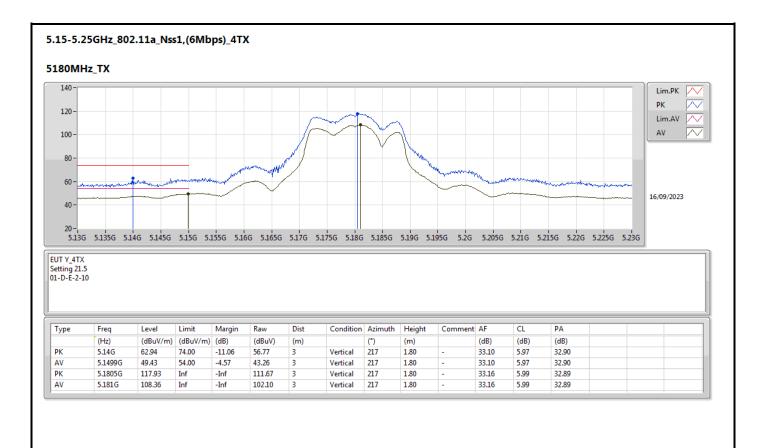
Summary

Mode	Result	Туре	Freq	Level	Limit	Margin	Dist	Condition	Azimuth	Height	Comments
			(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(m)		(°)	(m)	
5.15-5.25GHz	-	-	-	-	-	-	-	-	-	-	-
802.11ax HEW80_Nss1,(MCS0)_4TX	Pass	AV	5.145G	53.99	54.00	-0.01	3	Vertical	33	1.80	-

Sporton International Inc. Page No. : 1 of 73

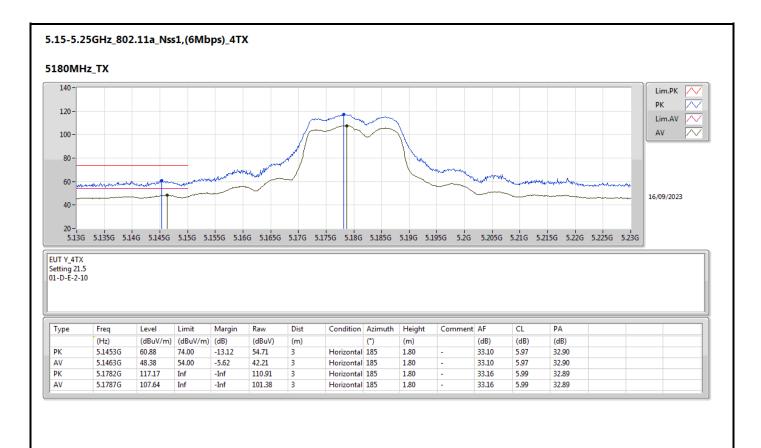
Report No. : FR381847AB





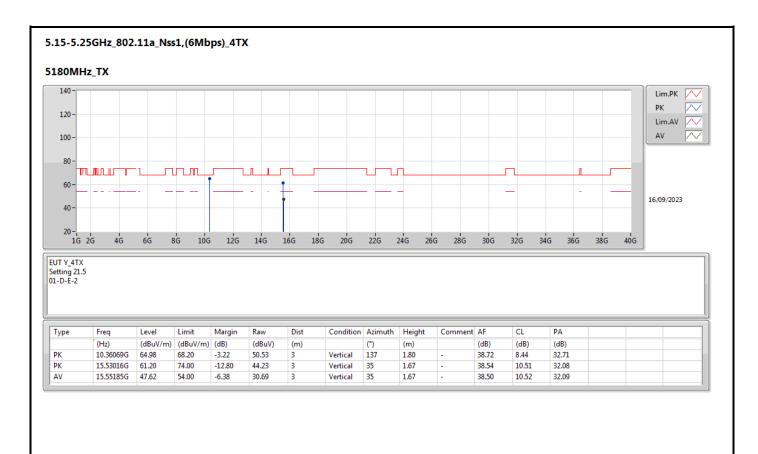
Sporton International Inc. Page No. : 2 of 73 : FR381847AB Report No.





Sporton International Inc. Page No. : 3 of 73
Report No. : FR381847AB

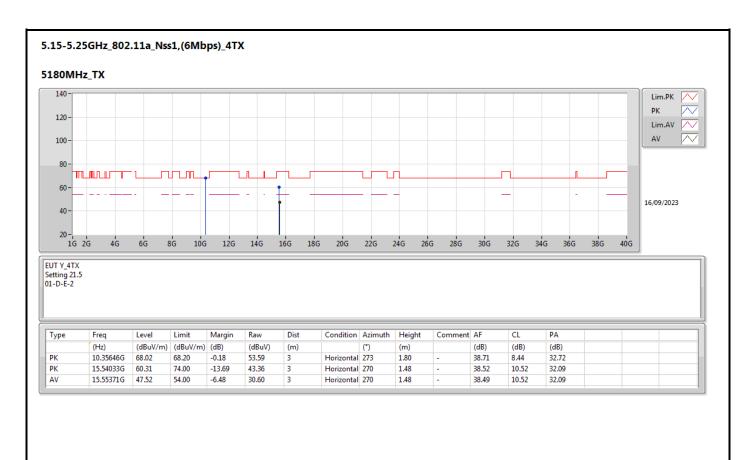




 Sporton International Inc.
 Page No.
 : 4 of 73

 Report No.
 : FR381847AB

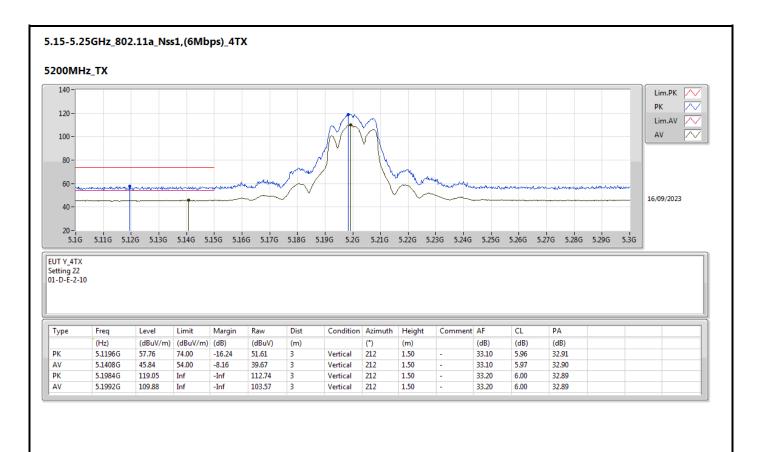




Sporton International Inc. : 5 of 73 Page No. Report No.

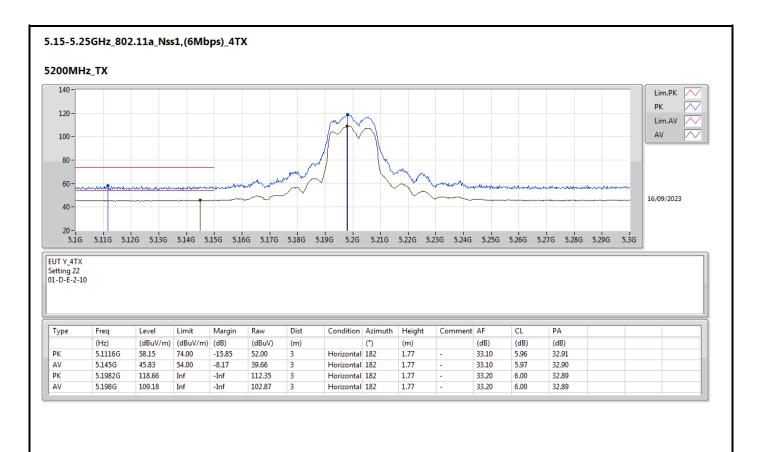
: FR381847AB





Sporton International Inc. Page No. : 6 of 73 : FR381847AB Report No.

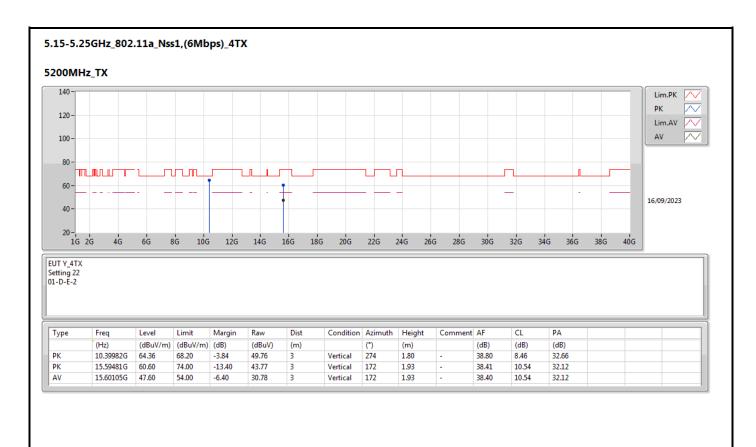




 Sporton International Inc.
 Page No.
 : 7 of 73

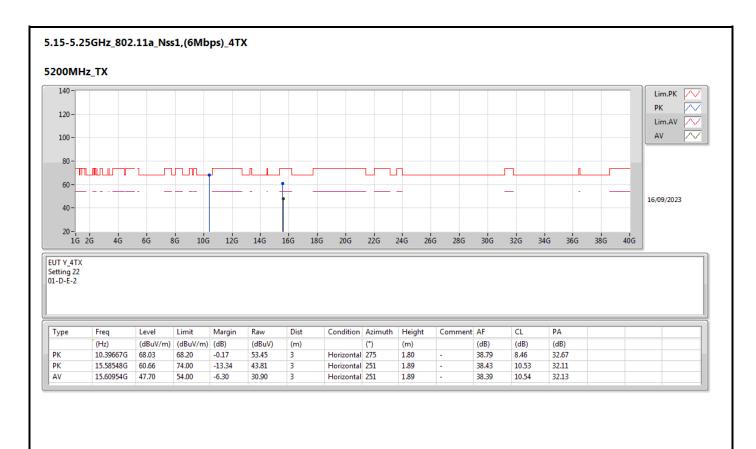
 Report No.
 : FR381847AB





Sporton International Inc. : 8 of 73 Page No. : FR381847AB Report No.

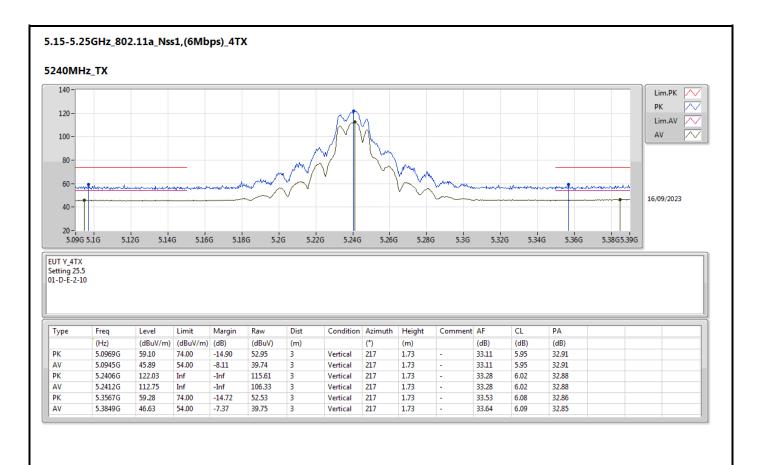




 Sporton International Inc.
 Page No.
 : 9 of 73

 Report No.
 : FR381847AB

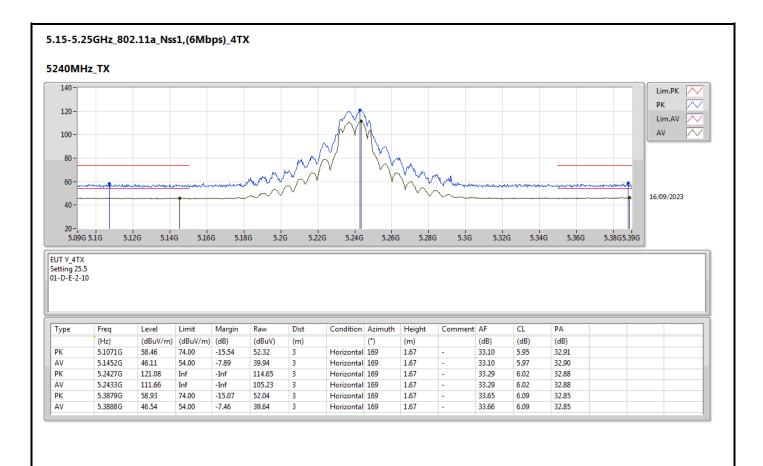




Sporton International Inc. : 10 of 73 Page No.

: FR381847AB Report No.

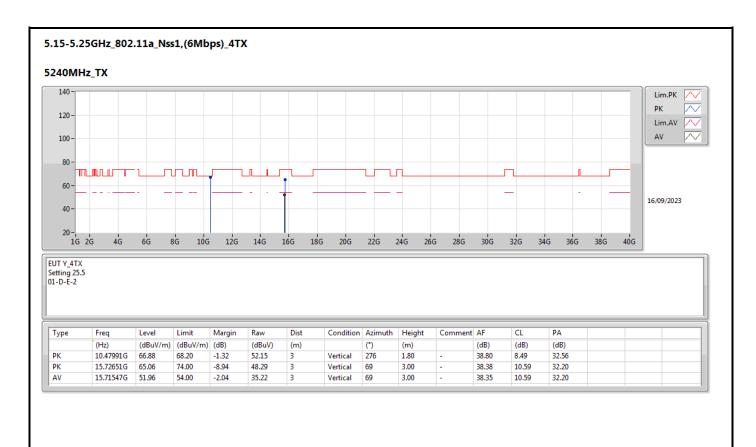




 Sporton International Inc.
 Page No.
 : 11 of 73

 Report No.
 : FR381847AB

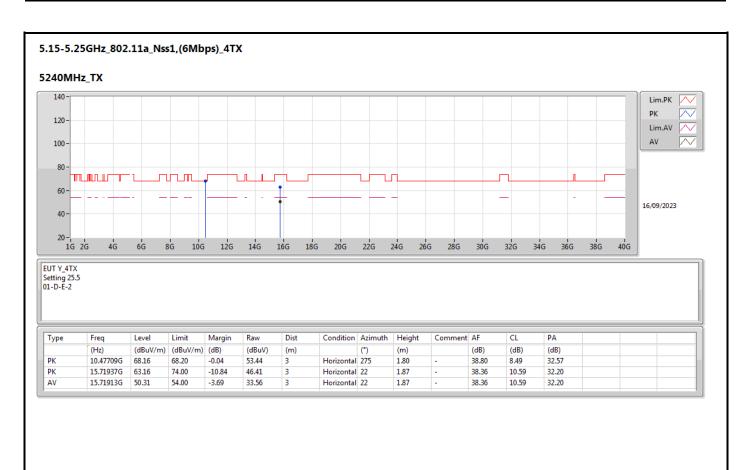




 Sporton International Inc.
 Page No.
 : 12 of 73

 Report No.
 : FR381847AB

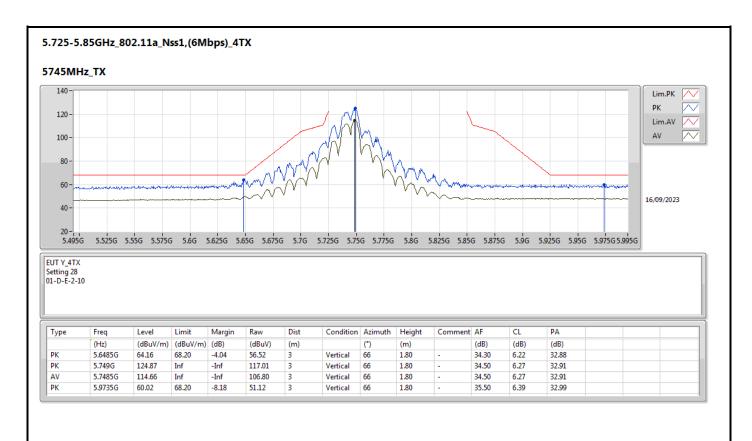




 Sporton International Inc.
 Page No.
 : 13 of 73

 Report No.
 : FR381847AB



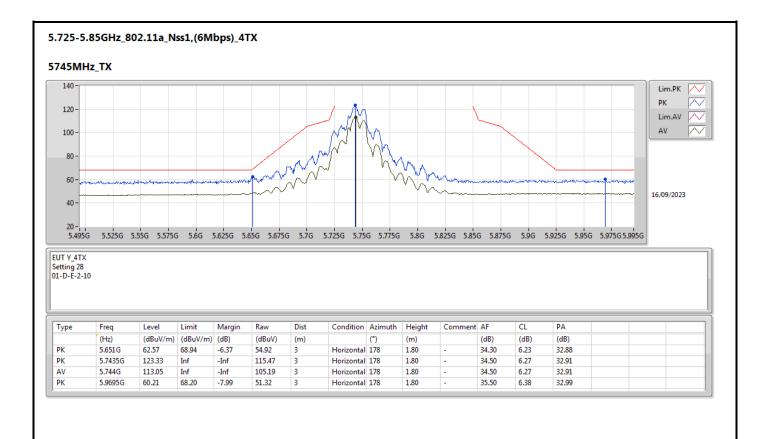


Sporton International Inc.

Page No. : 14 of 73

Report No. : FR381847AB

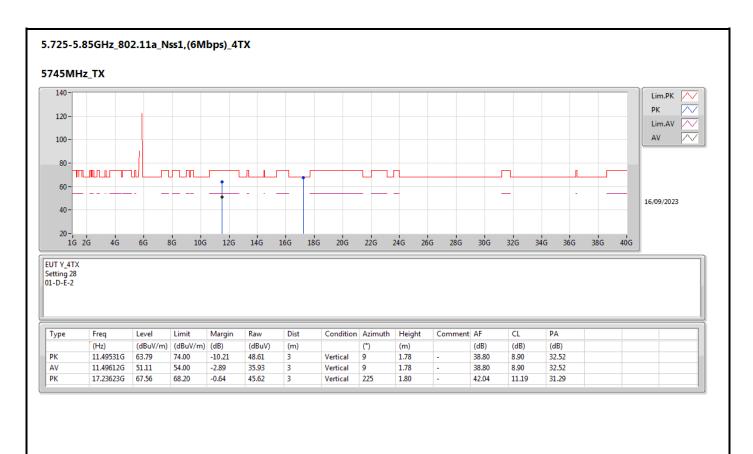




Sporton International Inc. Page No. : 15 of 73 Report No.

: FR381847AB

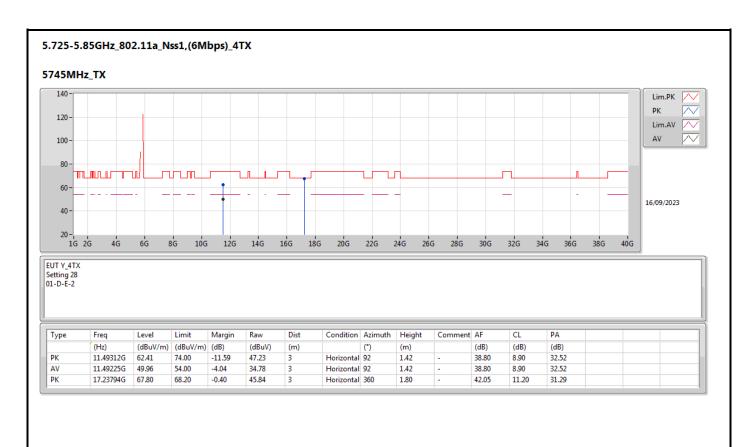




Sporton International Inc. : 16 of 73 Page No.

: FR381847AB Report No.

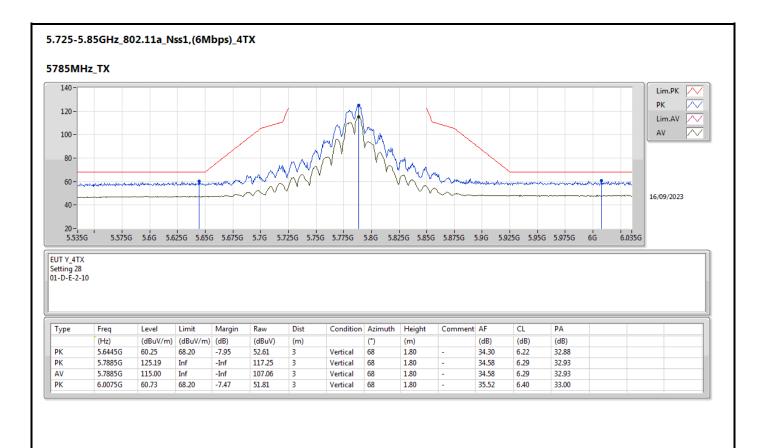




 Sporton International Inc.
 Page No.
 : 17 of 73

 Report No.
 : FR381847AB

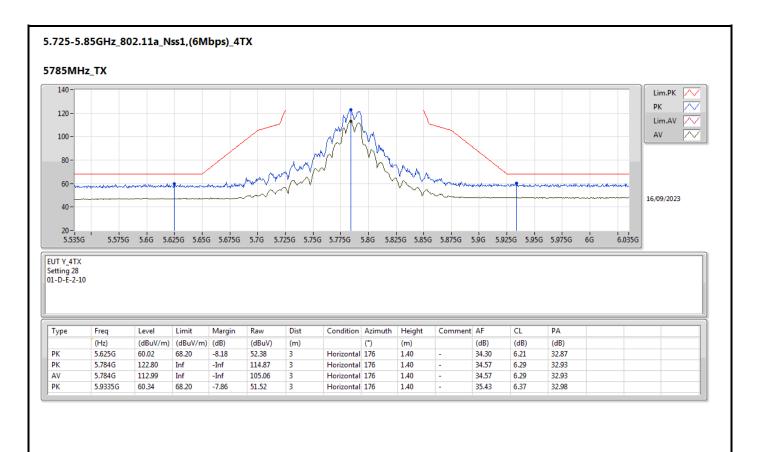




 Sporton International Inc.
 Page No.
 : 18 of 73

 Report No.
 : FR381847AB

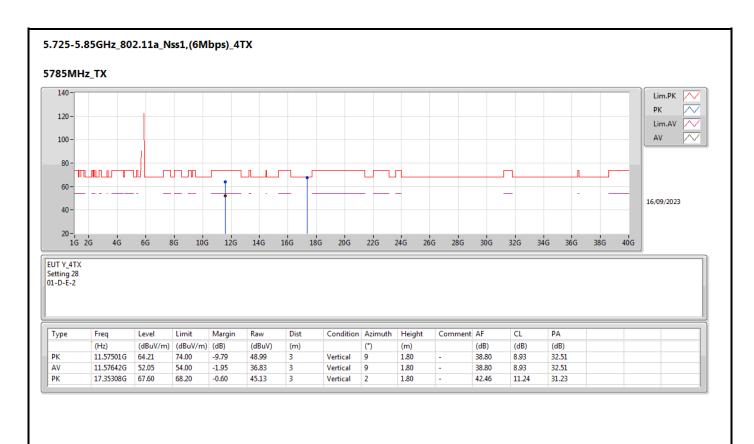




 Sporton International Inc.
 Page No.
 : 19 of 73

 Report No.
 : FR381847AB

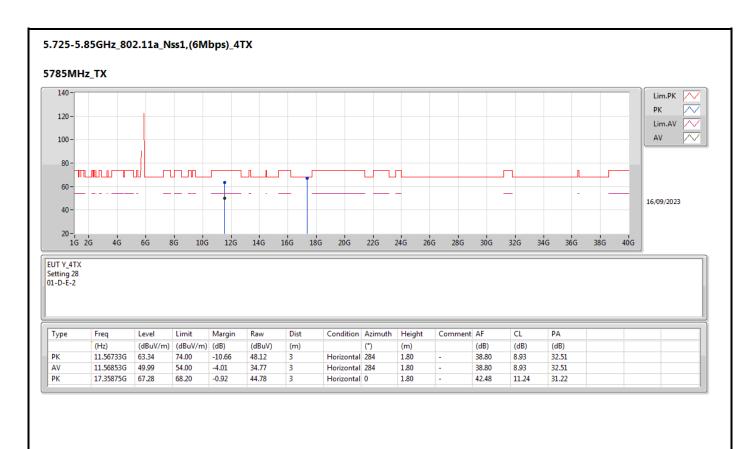




 Sporton International Inc.
 Page No.
 : 20 of 73

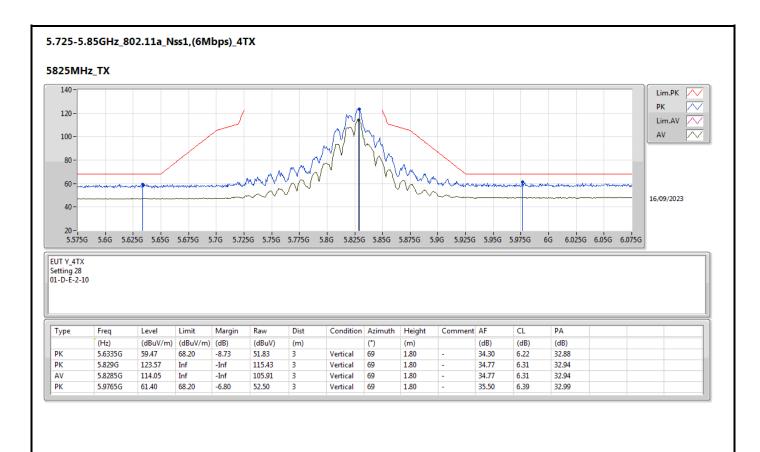
 Report No.
 : FR381847AB





Sporton International Inc. Page No. : 21 of 73
Report No. : FR381847AB

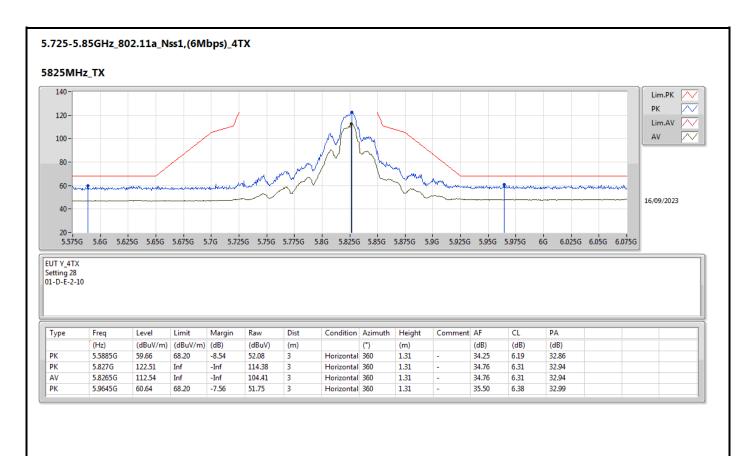




 Sporton International Inc.
 Page No.
 : 22 of 73

 Report No.
 : FR381847AB

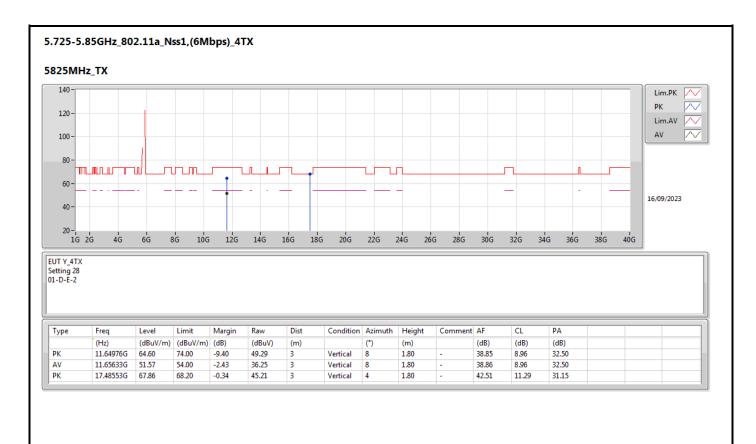




 Sporton International Inc.
 Page No.
 : 23 of 73

 Report No.
 : FR381847AB

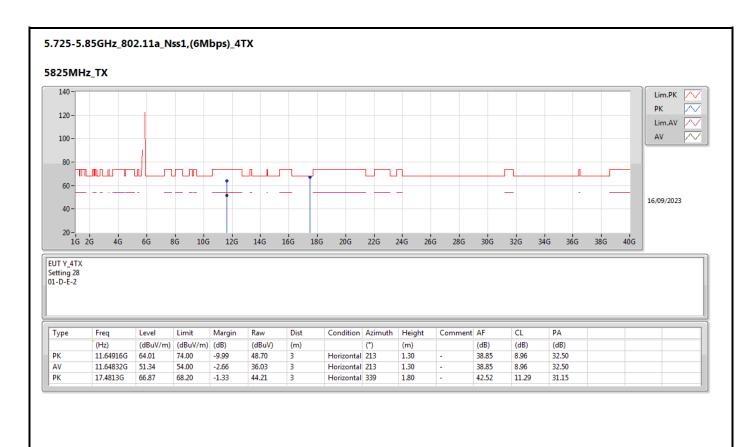




 Sporton International Inc.
 Page No.
 : 24 of 73

 Report No.
 : FR381847AB

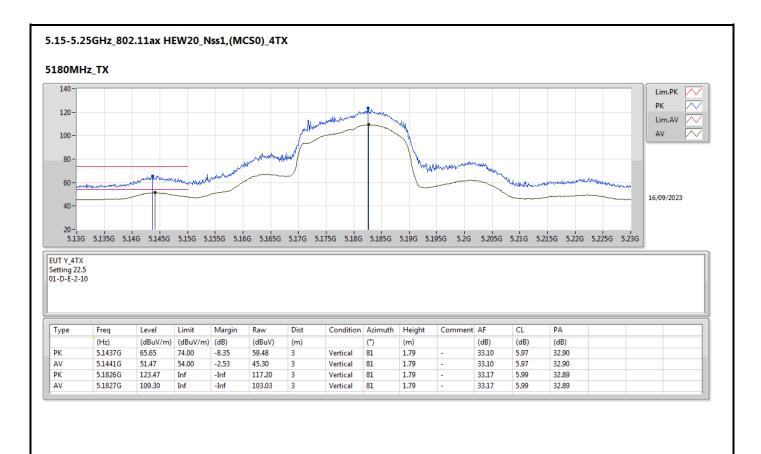




 Sporton International Inc.
 Page No.
 : 25 of 73

 Report No.
 : FR381847AB

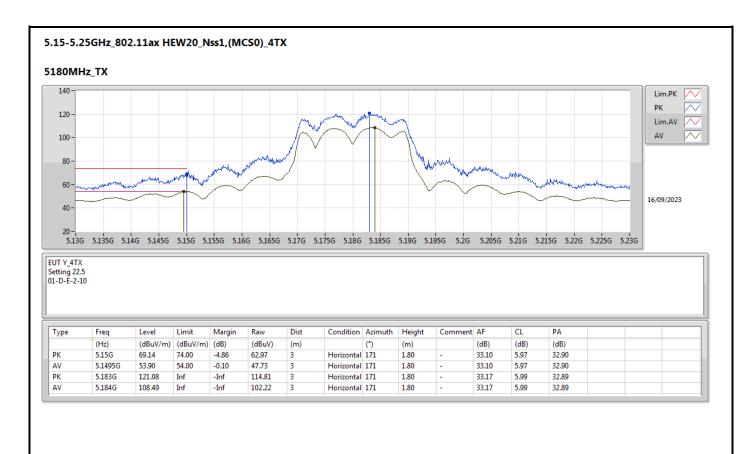




Sporton International Inc. Page No.

Report No. : FR381847AB



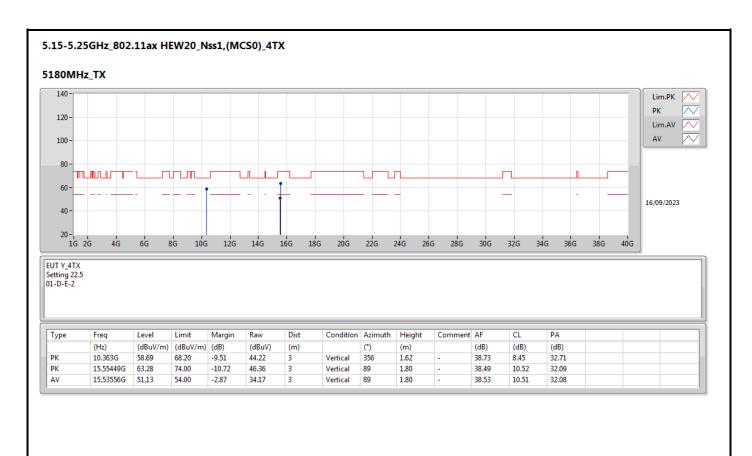


Sporton International Inc.

Page No. : 27 of 73

Report No. : FR381847AB

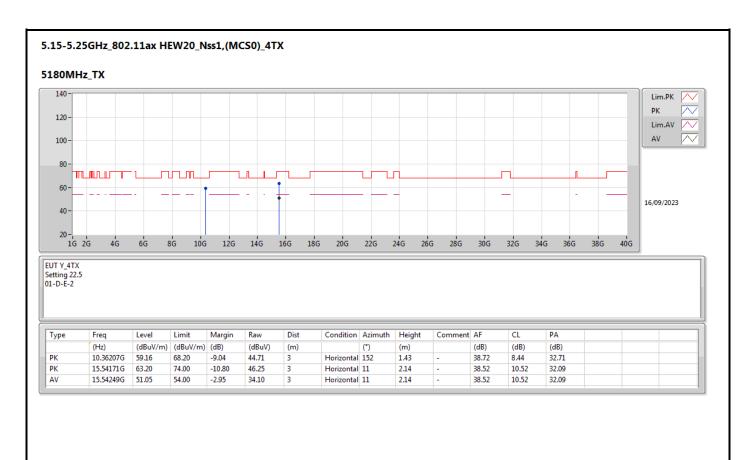




 Sporton International Inc.
 Page No.
 : 28 of 73

 Report No.
 : FR381847AB

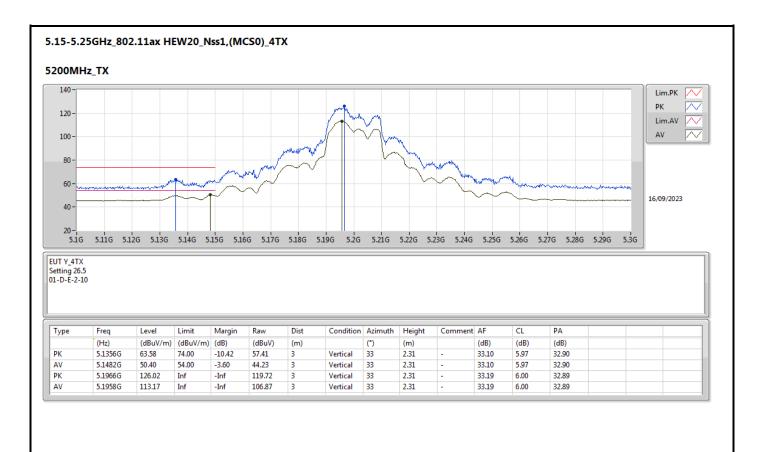




 Sporton International Inc.
 Page No.
 : 29 of 73

 Report No.
 : FR381847AB

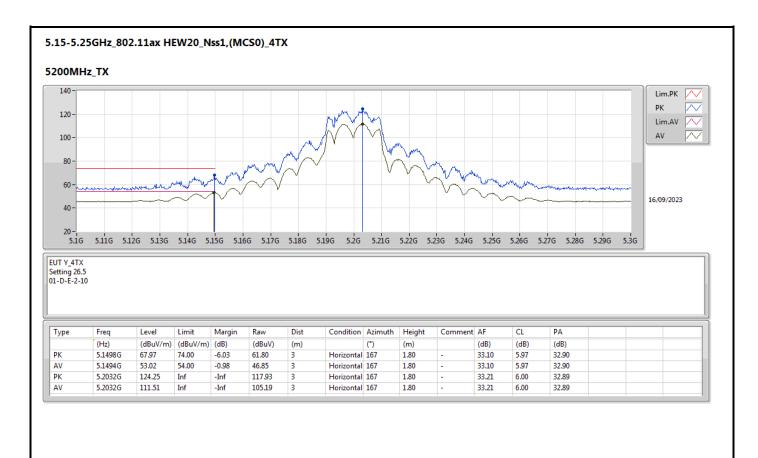




Sporton International Inc. Page No. : 30 of 73 Report No.

: FR381847AB

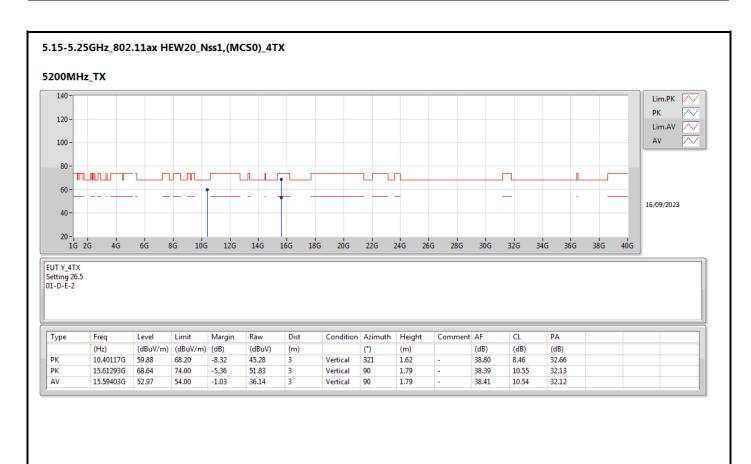




 Sporton International Inc.
 Page No.
 : 31 of 73

 Report No.
 : FR381847AB

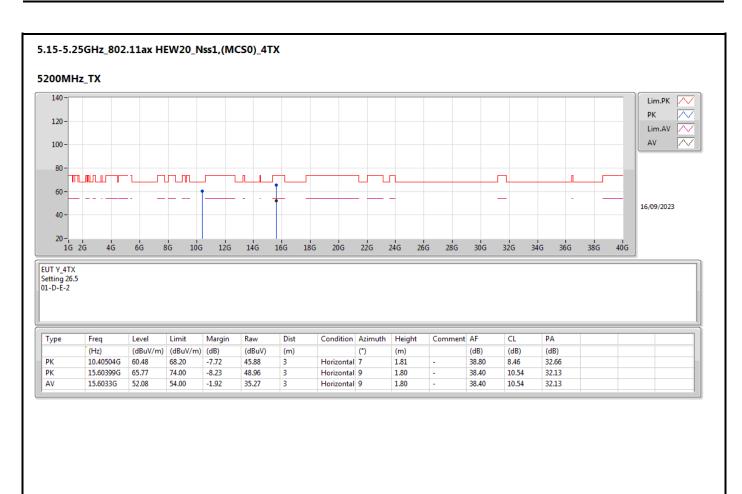




 Sporton International Inc.
 Page No.
 : 32 of 73

 Report No.
 : FR381847AB

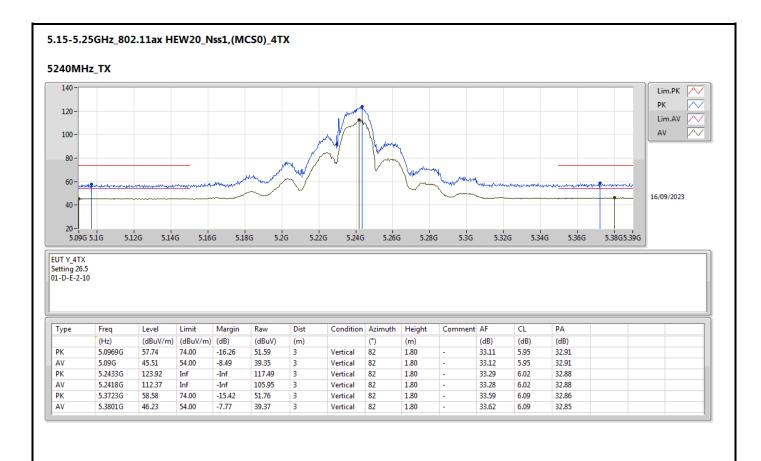




 Sporton International Inc.
 Page No.
 : 33 of 73

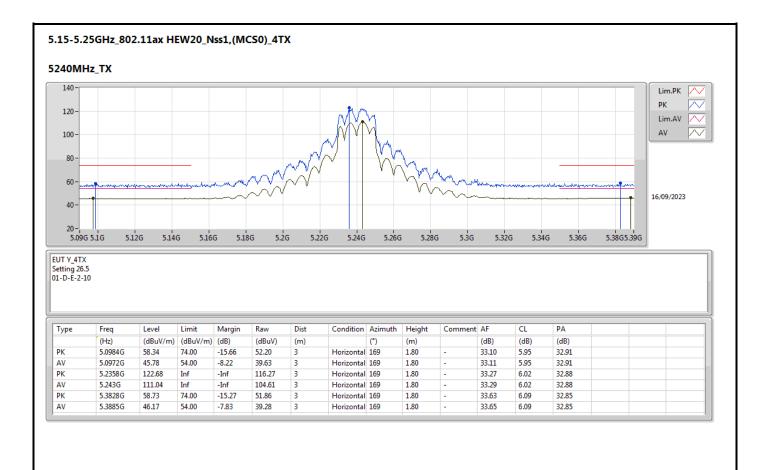
 Report No.
 : FR381847AB





Sporton International Inc. Page No. : 34 of 73 : FR381847AB Report No.

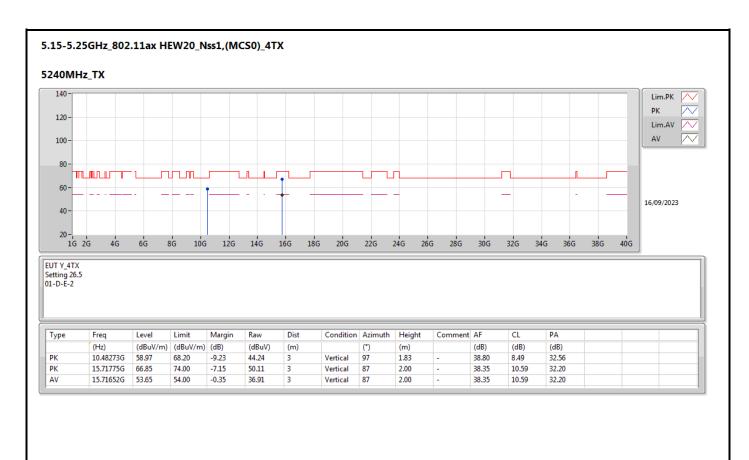




Sporton International Inc. Page No. : 35 of 73 Report No.

: FR381847AB

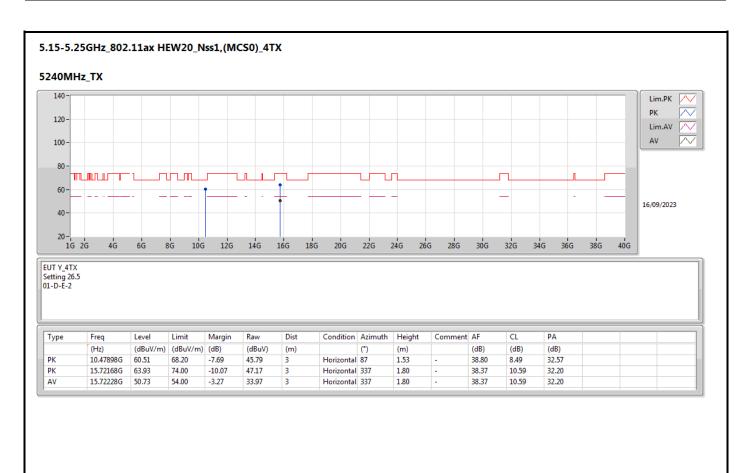




 Sporton International Inc.
 Page No.
 : 36 of 73

 Report No.
 : FR381847AB

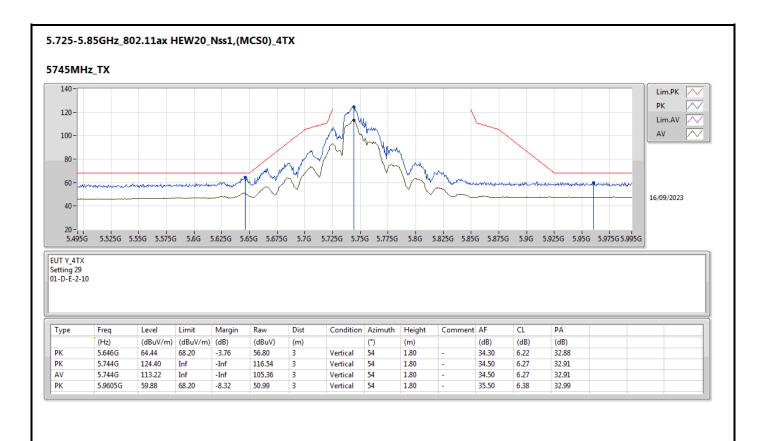




Sporton International Inc. : 37 of 73 Page No. Report No.

: FR381847AB

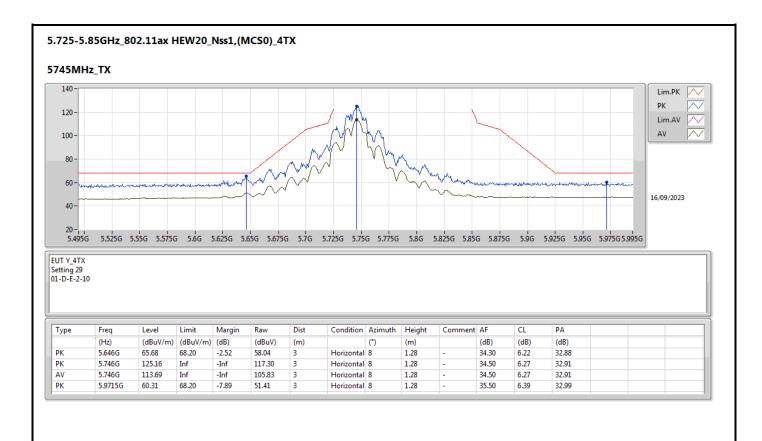




 Sporton International Inc.
 Page No.
 : 38 of 73

 Report No.
 : FR381847AB

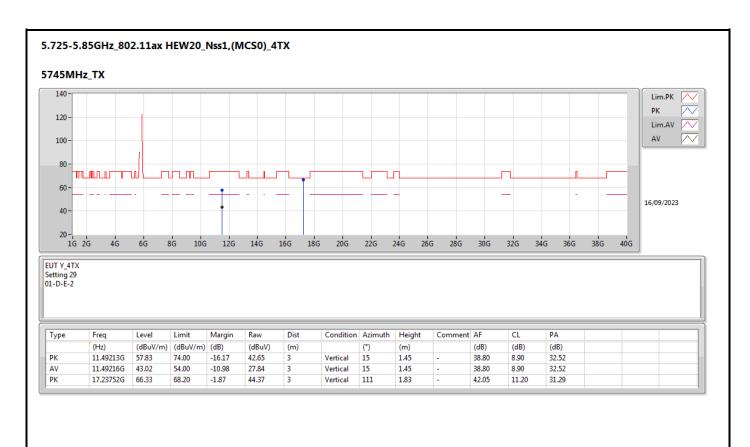




Sporton International Inc. Page No. : 39 of 73 Report No.

: FR381847AB

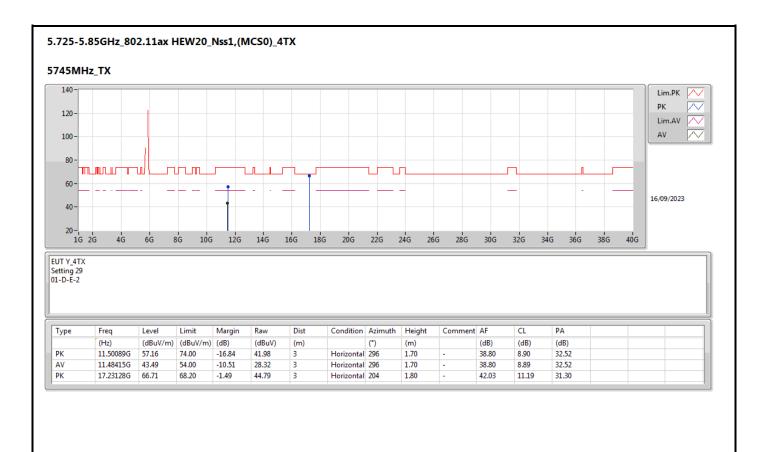




 Sporton International Inc.
 Page No.
 : 40 of 73

 Report No.
 : FR381847AB



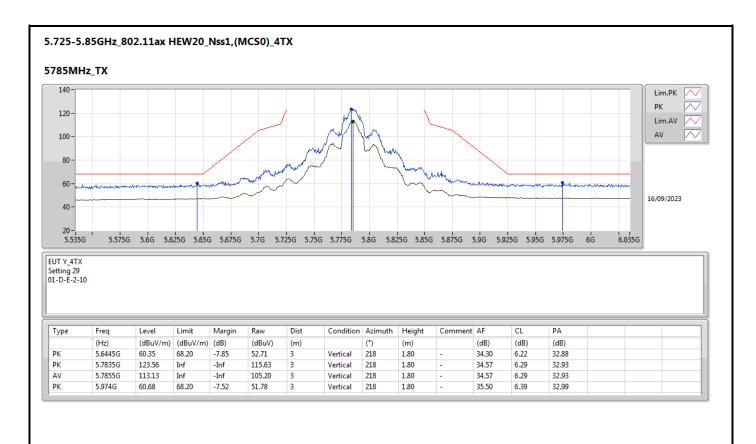


Sporton International Inc.

Page No. : 41 of 73

Report No. : FR381847AB

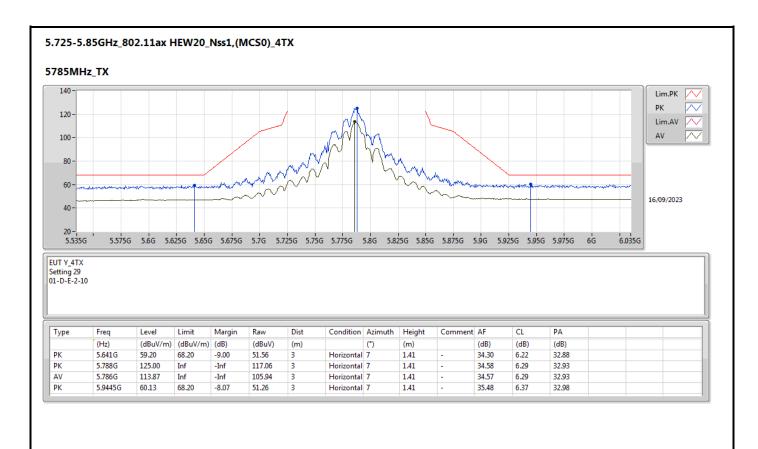




 Sporton International Inc.
 Page No.
 : 42 of 73

 Report No.
 : FR381847AB

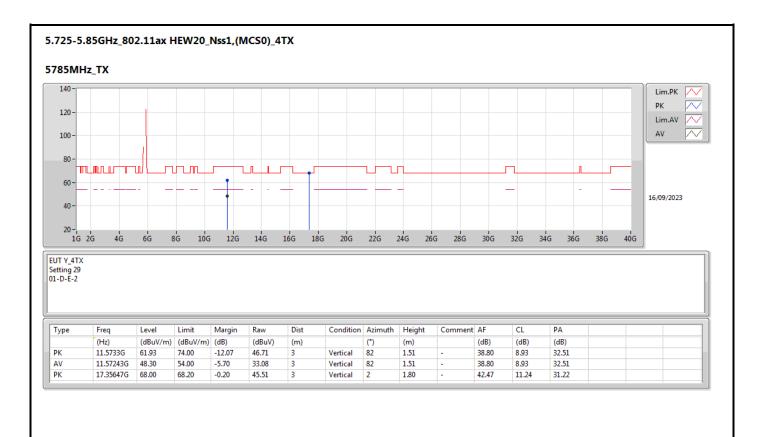




 Sporton International Inc.
 Page No.
 : 43 of 73

 Report No.
 : FR381847AB

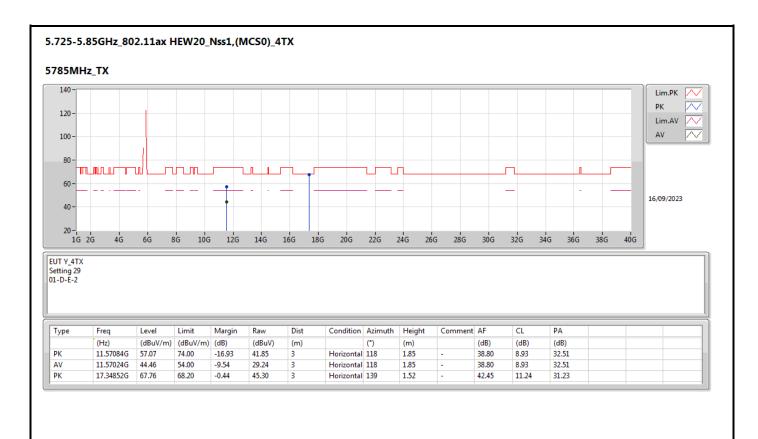




 Sporton International Inc.
 Page No.
 : 44 of 73

 Report No.
 : FR381847AB

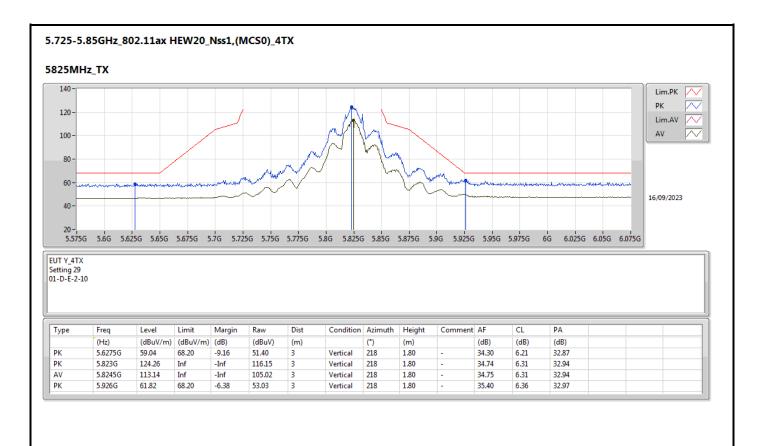




 Sporton International Inc.
 Page No.
 : 45 of 73

 Report No.
 : FR381847AB

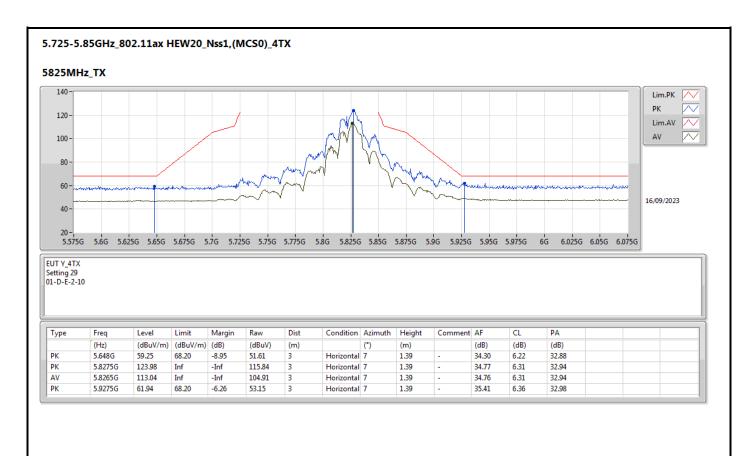




Sporton International Inc. Page No.

: FR381847AB Report No.

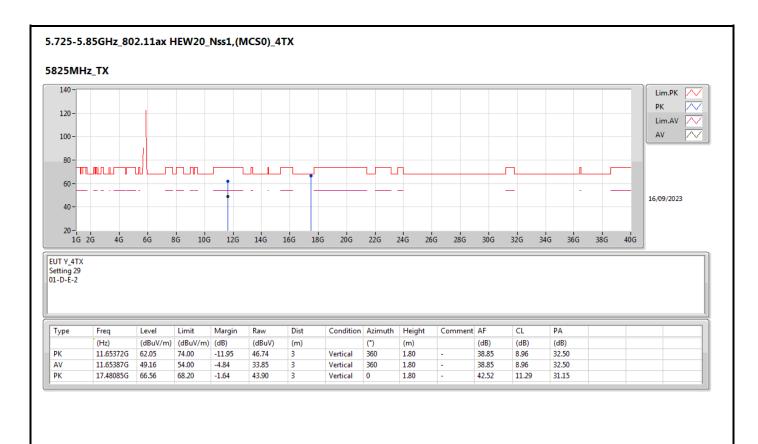




 Sporton International Inc.
 Page No.
 : 47 of 73

 Report No.
 : FR381847AB

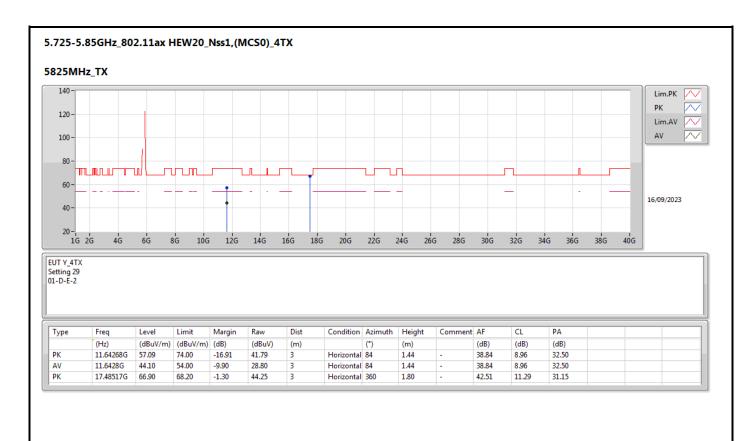




 Sporton International Inc.
 Page No.
 : 48 of 73

 Report No.
 : FR381847AB

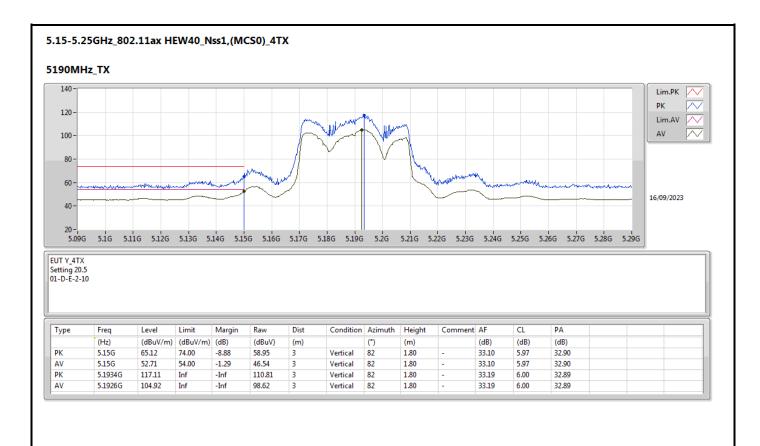




 Sporton International Inc.
 Page No.
 : 49 of 73

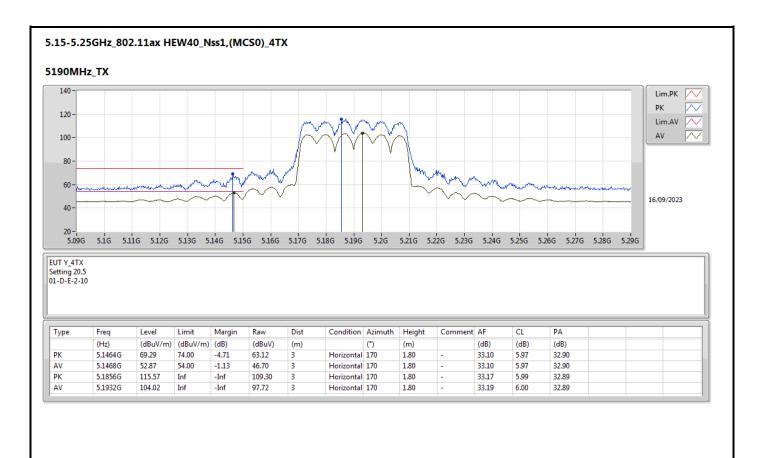
 Report No.
 : FR381847AB





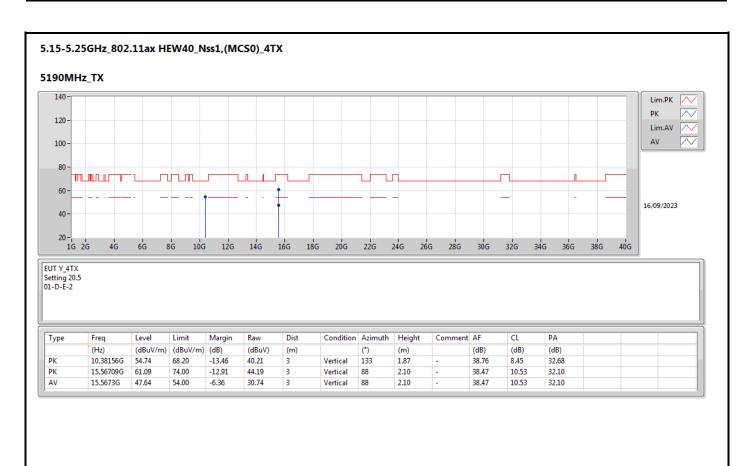
Sporton International Inc. Page No. : 50 of 73 : FR381847AB Report No.





Sporton International Inc. Page No. : 51 of 73 : FR381847AB Report No.

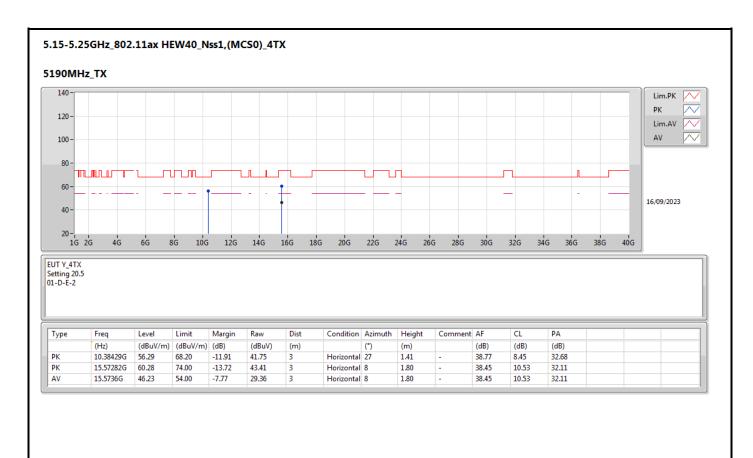




 Sporton International Inc.
 Page No.
 : 52 of 73

 Report No.
 : FR381847AB

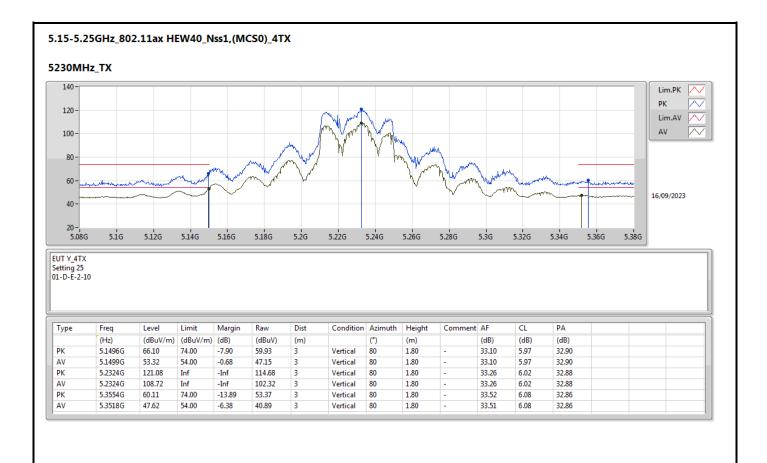




 Sporton International Inc.
 Page No.
 : 53 of 73

 Report No.
 : FR381847AB

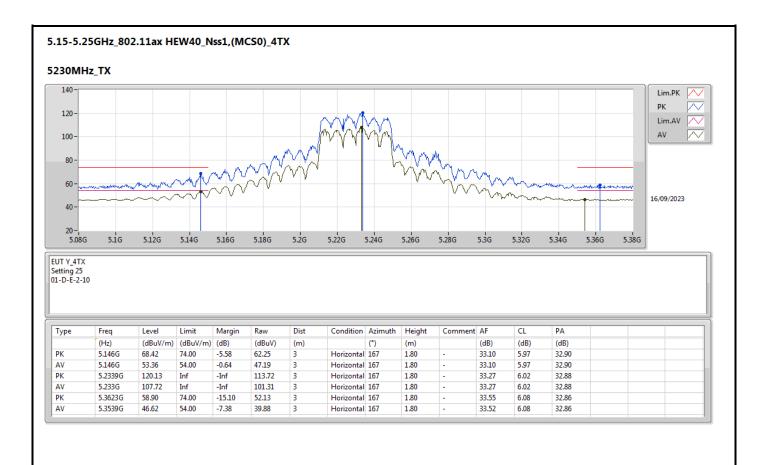




 Sporton International Inc.
 Page No.
 : 54 of 73

 Report No.
 : FR381847AB

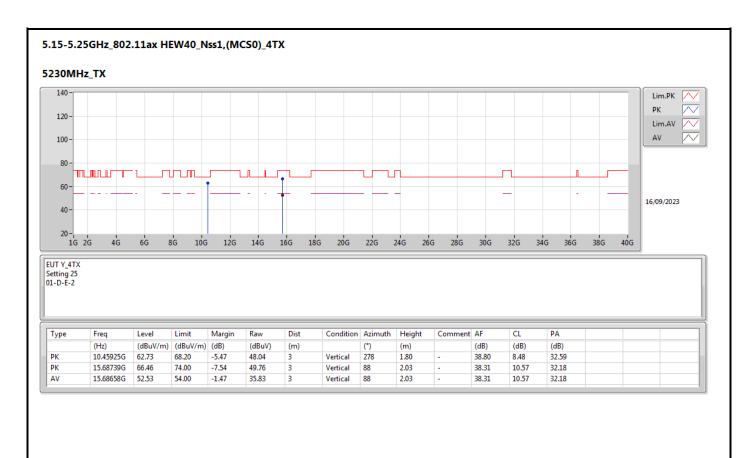




Sporton International Inc. Page No. : 55 of 73

: FR381847AB Report No.

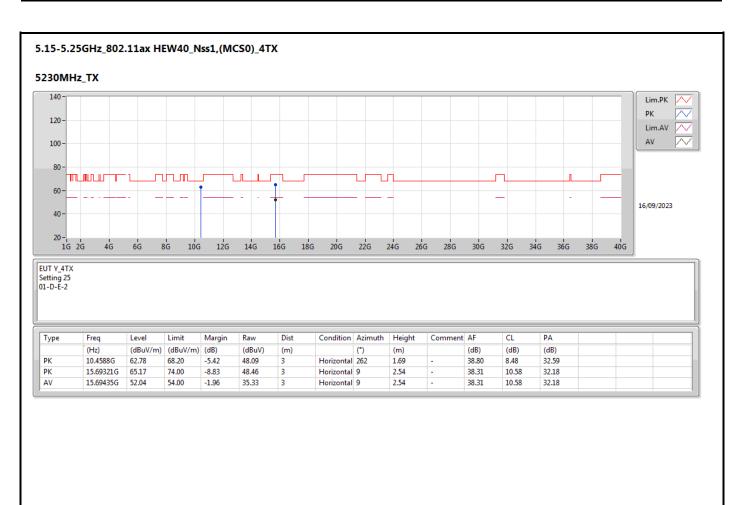




 Sporton International Inc.
 Page No.
 : 56 of 73

 Report No.
 : FR381847AB

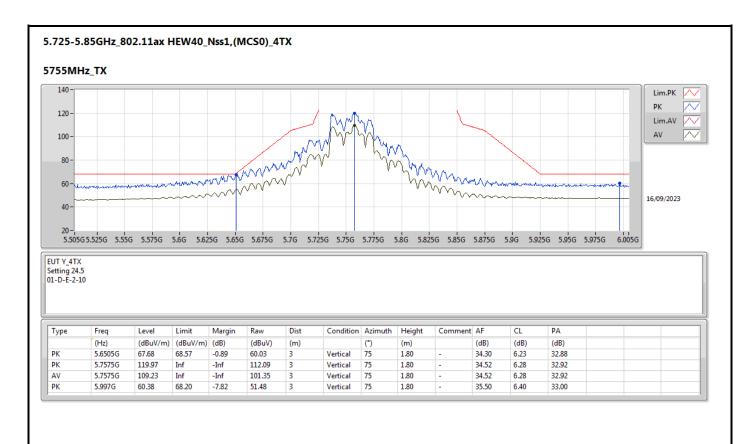




 Sporton International Inc.
 Page No.
 : 57 of 73

 Report No.
 : FR381847AB

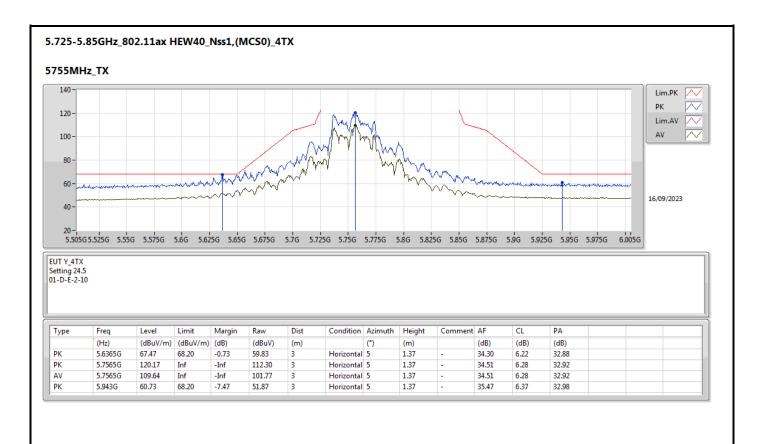




 Sporton International Inc.
 Page No.
 : 58 of 73

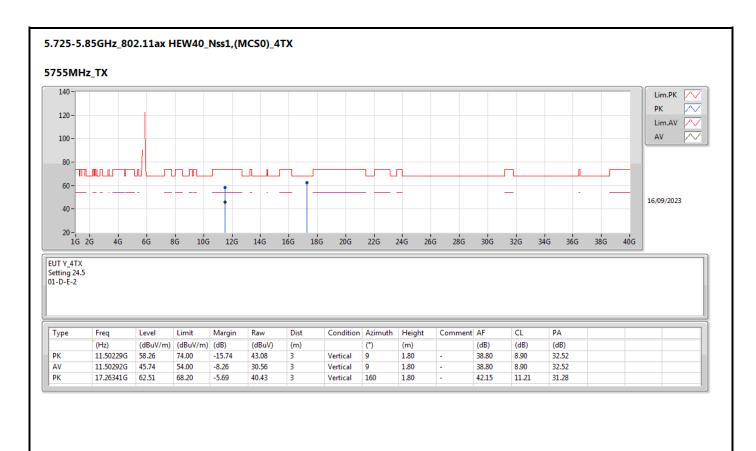
 Report No.
 : FR381847AB





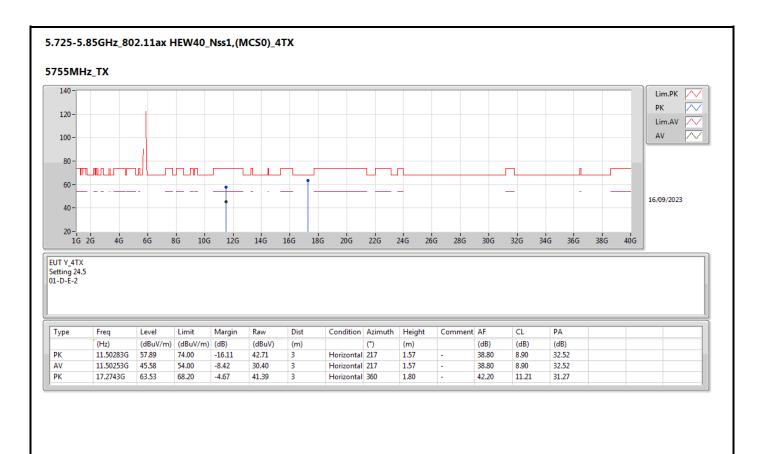
Sporton International Inc. Page No. : 59 of 73 Report No.





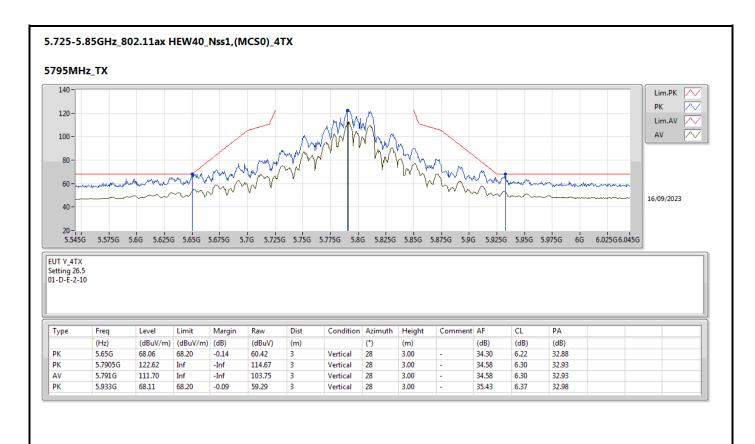
Sporton International Inc. : 60 of 73 Page No. : FR381847AB Report No.





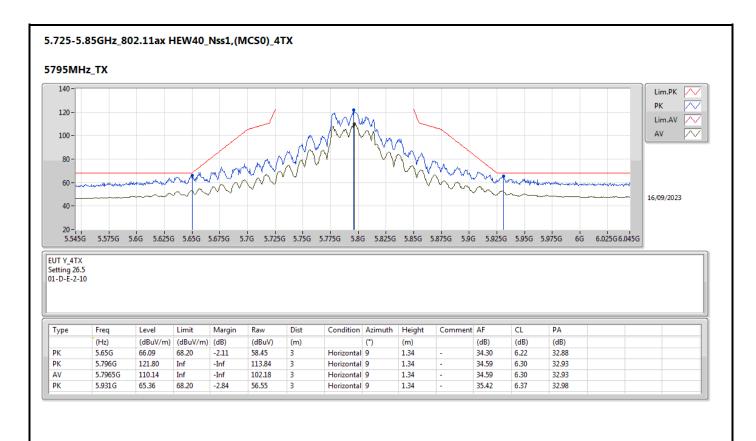
Sporton International Inc. Page No. : 61 of 73 Report No.





Sporton International Inc. Page No. : 62 of 73 Report No.

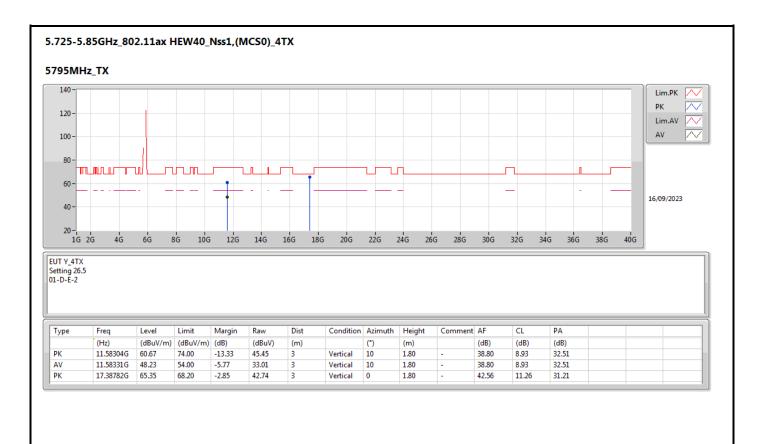




 Sporton International Inc.
 Page No.
 : 63 of 73

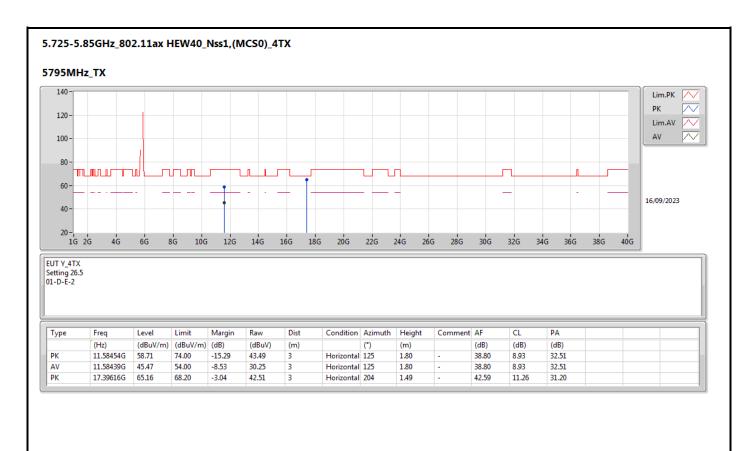
 Report No.
 : FR381847AB





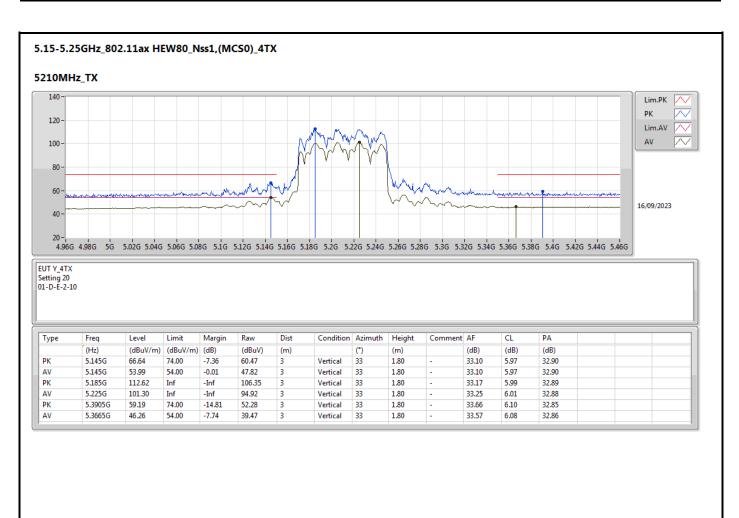
Sporton International Inc. Page No. : 64 of 73 Report No.





Sporton International Inc. Page No. : 65 of 73 Report No.

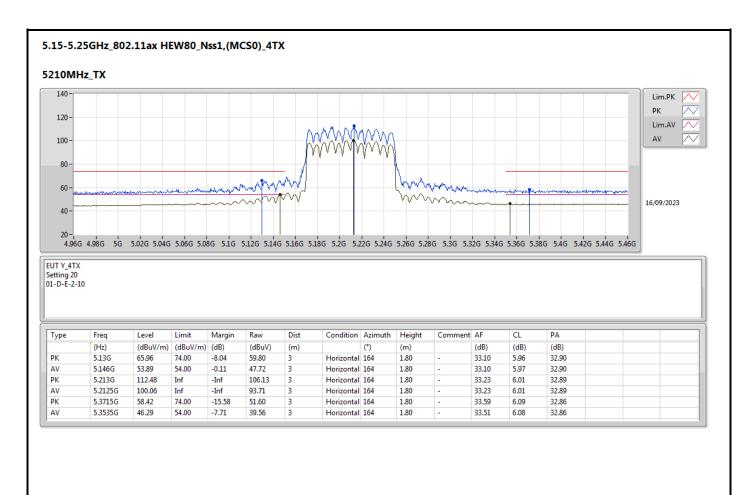




 Sporton International Inc.
 Page No.
 : 66 of 73

 Report No.
 : FR381847AB

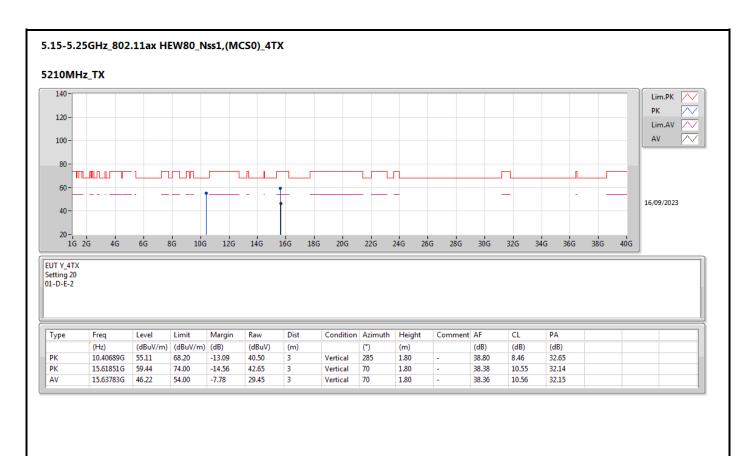




 Sporton International Inc.
 Page No.
 : 67 of 73

 Report No.
 : FR381847AB

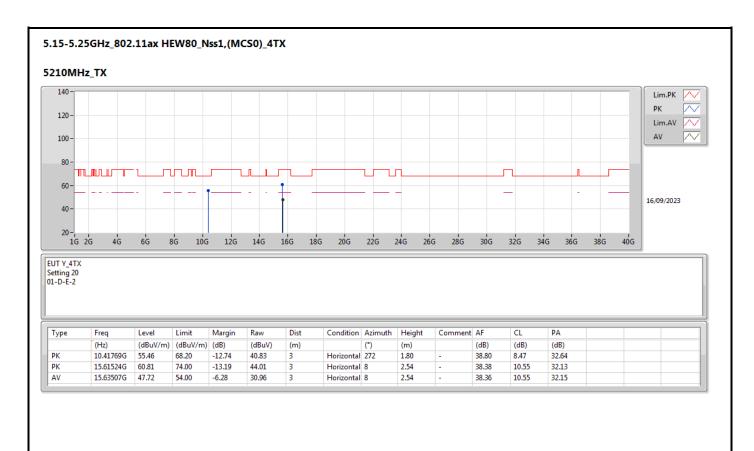




Sporton International Inc. : 68 of 73 Page No.

: FR381847AB Report No.

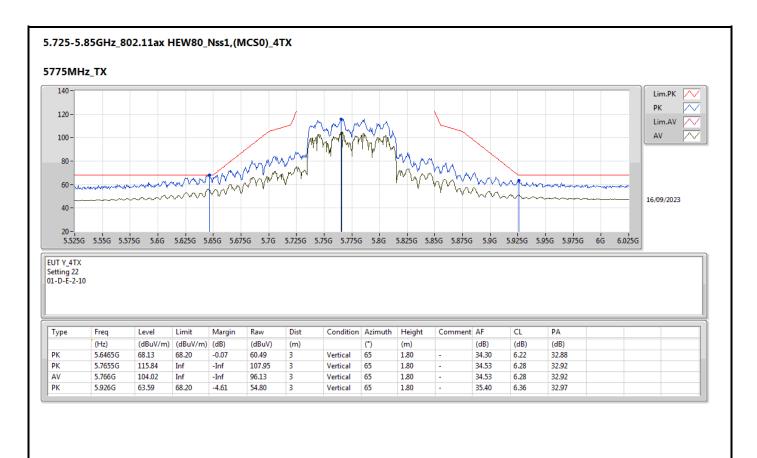




 Sporton International Inc.
 Page No.
 : 69 of 73

 Report No.
 : FR381847AB

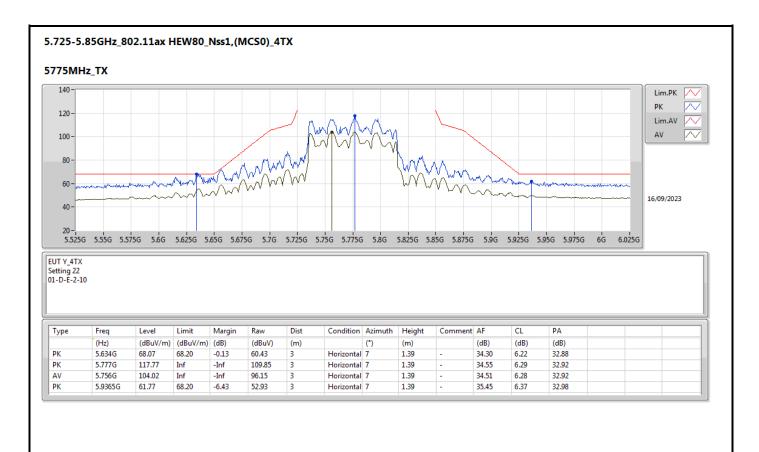




 Sporton International Inc.
 Page No.
 : 70 of 73

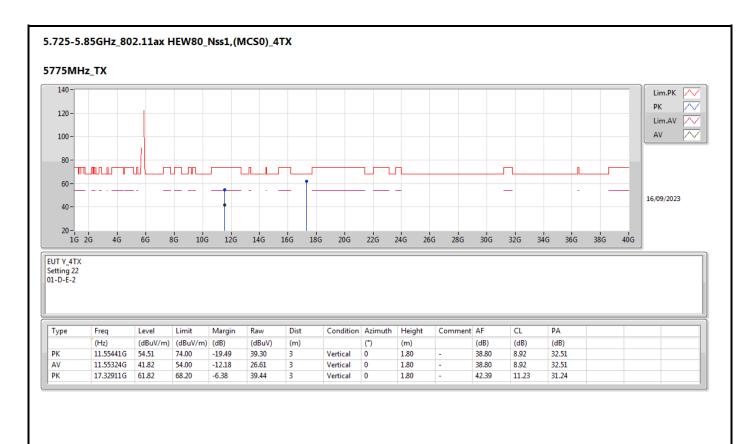
 Report No.
 : FR381847AB





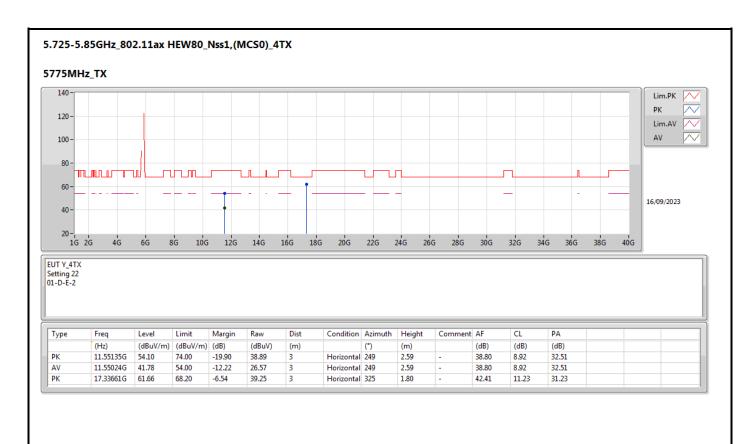
Sporton International Inc. Page No. : 71 of 73 Report No.





Sporton International Inc. : 72 of 73 Page No. Report No.





 Sporton International Inc.
 Page No.
 : 73 of 73

 Report No.
 : FR381847AB