

**FCC Test Report** 

Equipment : Philips Wireless Gateway

Brand Name : PHILIPS

Model No. : LCN1840/05

FCC ID : 2AGBW-LCN1840

Standard : 47 CFR FCC Part 15.247

Operating Band : 2400 MHz - 2483.5 MHz

Function : | Point-to-multipoint; | Point-to-point

Applicant / : Philips Lighting(China) Investment Co., Ltd.

Manufacturer Building 9, Lane 888, Tianlin Road, Minhang District,

Shanghai 200233 China

The product sample received on Oct. 19, 2017 and completely tested on Nov. 16, 2017. We, SPORTON, 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., the test report shall not be reproduced except in full.

Phoenix Chen / Assistant Manager



Page No.

Report Version

Issued Date



: 1 of 24

: Rev. 01

Report Template No.: HE1-C8 Ver1.0

: Dec. 12, 2017

Report No.: FR7O1918AC



# FCC Test Report

**Table of Contents** 

1	GENERAL DESCRIPTION	5
1.1	Information	5
1.2	Testing Location Information	7
1.3	Measurement Uncertainty	7
2	TEST CONFIGURATION OF EUT	8
2.1	Test Condition	8
2.2	Test Channel Mode	8
2.3	The Worst Case Measurement Configuration	g
2.4	Accessories	10
2.5	Support Equipment	10
2.6	Test Setup Diagram	11
3	TRANSMITTER TEST RESULT	13
3.1	AC Power-line Conducted Emissions	13
3.2	DTS Bandwidth	14
3.3	Maximum Conducted Output Power	15
3.4	Power Spectral Density	17
3.5	Emissions in Non-restricted Frequency Bands	18
3.6	Emissions in Restricted Frequency Bands	19
4	TEST EQUIPMENT AND CALIBRATION DATA	23
APPE	ENDIX A. TEST RESULTS OF AC POWER-LINE CONDUCTED EMISSIONS	
APPE	ENDIX B. TEST RESULTS OF DTS BANDWIDTH	
APPE	ENDIX C. TEST RESULTS OF MAXIMUM CONDUCTED OUTPUT POWER	
APPE	ENDIX D. TEST RESULTS OF POWER SPECTRAL DENSITY	
APPE	ENDIX E. TEST RESULTS OF EMISSIONS IN NON-RESTRICTED FREQUENCY BANDS	
APPE	ENDIX F. TEST RESULTS OF EMISSIONS IN RESTRICTED FREQUENCY BANDS	
APPE	ENDIX G. TEST PHOTOS	
PHO	TOGRAPHS OF EUT V01	

TEL: 886-3-3273456 FAX: 886-3-3270973 FCC ID: 2AGBW-LCN1840 Page No. : 2 of 24
Report Version : Rev. 01
Issued Date : Dec. 12, 2017

Report No.: FR7O1918AC

# **Summary of Test Result**

	Conformance Test Specifications							
Report Clause	Ref. Std. Clause	Description	Limit	Result				
1.1.2	15.203	Antenna Requirement	FCC 15.203	Complied				
3.1	15.207	AC Power-line Conducted Emissions	FCC 15.207	Complied				
3.2	15.247(a)	DTS Bandwidth	≥500kHz	Complied				
3.3	15.247(b)	Maximum Conducted Output Power	Power [dBm]:30	Complied				
3.4	15.247(e)	Power Spectral Density	PSD [dBm/3kHz]:8	Complied				
3.5	15.247(d)	Emissions in Non-restricted Frequency Bands	Non-Restricted Bands: > 30 dBc	Complied				
3.6	15.247(d)	Emissions in Restricted Frequency Bands	Restricted Bands: FCC 15.209	Complied				

 ${\tt SPORTON\,INTERNATIONAL\,INC}.$ 

TEL: 886-3-3273456 FAX: 886-3-3270973 FCC ID: 2AGBW-LCN1840 Page No. : 3 of 24
Report Version : Rev. 01
Issued Date : Dec. 12, 2017

Report No.: FR7O1918AC

# **Revision History**

Report No.	Version	Description	Issued Date
FR7O1918AC	Rev. 01	Initial issue of report	Dec. 12, 2017

SPORTON INTERNATIONAL INC.

TEL: 886-3-3273456 FAX: 886-3-3270973 FCC ID: 2AGBW-LCN1840 Page No. : 4 of 24
Report Version : Rev. 01

Issued Date : Dec. 12, 2017

Report No.: FR7O1918AC



# 1 General Description

# 1.1 Information

# 1.1.1 RF General Information

Frequency Range (MHz)	IEEE Std. 802.11	Ch. Frequency (MHz)	Channel Number
2400-2483.5	b, g, n (HT20)	2412-2462	1-11 [11]
2400-2483.5	n (HT40)	2422-2452	3-9 [7]

Band	Mode	BWch (MHz)	Nant
2.4-2.4835GHz	802.11b	20	1TX
2.4-2.4835GHz	802.11g	20	1TX
2.4-2.4835GHz	802.11n HT20	20	1TX
2.4-2.4835GHz	802.11n HT40	40	1TX

## Note:

- 11b mode uses a combination of DSSS-DBPSK, DQPSK, CCK modulation.
- 11g, HT20 and HT40 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM modulation.
- BWch is the nominal channel bandwidth.

# 1.1.2 Antenna Information

Ant.	Port	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	1	-	-	Printed PIFA Antenna	Murata	2.4

SPORTON INTERNATIONAL INC.

TEL: 886-3-3273456

FAX: 886-3-3270973

Report Version : Rev. 01
Issued Date : Dec. 12, 2017
Report Template No.: HE1-C8 Ver1.0

: 5 of 24

Page No.

Report No.: FR7O1918AC

FCC ID: 2AGBW-LCN1840

# FCC Test Report

# 1.1.3 EUT Information

	Identify EUT						
WiF	i Chip		Bra	nd: QUALCOMM	1 / Mod	lel N	ame: QCA4531
				Opera	ationa	Co	ndition
EU.	Γ Power T	уре	Fro	m AC Adapter			
Bea	mforming	g Function		With beamform	ing	$\boxtimes$	Without beamforming
					Туре с	f EU	т
$\boxtimes$	Stand-alo	ne					
	Combine	d (EUT where	e the	radio part is fully	y integi	rated	within another device)
	Combined Equipment - Brand Name / Model No.:						
	Plug-in radio (EUT intended for a variety of host systems)						
	Host System - Brand Name / Model No.:						
	Other:						

Report No.: FR7O1918AC

# 1.1.4 Mode Test Duty Cycle

Mode	DC	DCF(dB)	T(s)	VBW(Hz) ≥ 1/T
802.11b	1	0	n/a (DC>=0.98)	n/a (DC>=0.98)
802.11g	0.974	0.114	2.025m	1k
802.11n HT20	0.973	0.119	1.889m	1k
802.11n HT40	0.959	0.182	929.375u	3k

# 1.1.5 Testing Applied Standards

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

- 47 CFR FCC Part 15
- ANSI C63.10-2013
- KDB 558074 D01 v04

 SPORTON INTERNATIONAL INC.
 Page No.
 : 6 of 24

 TEL: 886-3-3273456
 Report Version
 : Rev. 01

 FAX: 886-3-3270973
 Issued Date
 : Dec. 12, 2017

 FCC ID: 2AGBW-LCN1840
 Report Template No.: HE1-C8 Ver1.0

# 1.2 Testing Location Information

	Testing Location						
$\boxtimes$	HWA YA	ADD	:	No. 52, Huaya 1st Rd.,	No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)		
		TEL	:	886-3-327-3456	FAX : 886-3-327-0973		
	Test site Designation No. TW1190 with FCC.						
	JHUBEI	ADD	:	No.8, Ln. 724, Bo'ai St.	, Zhubei City, Hsinchu County, Taiwan (R.O.C.)		
	TEL: 886-3-656-9065 FAX: 886-3-656-9085						
	Test site Designation No. TW0006 with FCC.						

Test Condition	Test Site No.	Test Engineer	Test Environment	Test Date
RF Conducted	TH01-HY	Tim	24.3°C / 65.2%	09/Nov/2017
Radiated	03CH09-HY	Eric	23°C / 60%	16/Nov/2017
AC Conduction	CO04-HY	Thor Wei	23°C / 60%	10/Nov/2017

# 1.3 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)	3.6 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	2.1 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	2.6 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	2.9 dB	Confidence levels of 95%
Conducted Emission	1.3 dB	Confidence levels of 95%

SPORTON INTERNATIONAL INC.
TEL: 886-3-3273456

FAX: 886-3-3270973 FCC ID: 2AGBW-LCN1840 Page No. : 7 of 24 Report Version : Rev. 01

Issued Date : Dec. 12, 2017

Report No.: FR7O1918AC



2 Test Configuration of EUT

# 2.1 Test Condition

RF Conducted	Abbreviation	Remark
TnomVnom	Tnom	20°C
-	Vnom	120V

# 2.2 Test Channel Mode

<b>Test Software Version</b>	CART 4.9
------------------------------	----------

Mode	Power Setting
802.11b_Nss1,(1Mbps)_1TX	-
2412MHz	16.5
2437MHz	17
2462MHz	17.5
802.11g_Nss1,(6Mbps)_1TX	-
2412MHz	17
2437MHz	21.5
2462MHz	18
802.11n HT20_Nss1,(MCS0)_1TX	-
2412MHz	16
2437MHz	21.5
2462MHz	17.5
802.11n HT40_Nss1,(MCS0)_1TX	-
2422MHz	14
2437MHz	17
2452MHz	14.5

SPORTON INTERNATIONAL INC.

TEL: 886-3-3273456 FAX: 886-3-3270973 FCC ID: 2AGBW-LCN1840 Page No. : 8 of 24
Report Version : Rev. 01
Issued Date : Dec. 12, 2017

Report Template No.: HE1-C8 Ver1.0

Report No.: FR7O1918AC

# 2.3 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		
Operating Mode CTX		
1	Adapter mode	

The Worst Case Mode for Following Conformance Tests	
Tests Item	DTS Bandwidth Maximum Conducted Output Power Power Spectral Density Emissions in Non-restricted Frequency Bands
Test Condition	Conducted measurement at transmit chains

The Worst Case Mode for Following Conformance Tests			
Tests Item	Emissions in Restricted From	equency Bands	
Test Condition	Radiated measurement If EUT consist of multiple antenna assembly (multiple antenna are used in EUT regardless of spatial multiplexing MIMO configuration), the radiated test should be performed with highest antenna gain of each antenna type.		
Operating Mode < 1GHz	СТХ		
1	Adapter mode		
Operating Mode > 1GHz	CTX		
	X Plane	Y Plane	Z Plane
Orthogonal Planes of EUT			
Worst Planes of EUT		V	

The Worst Case Mode for Following Conformance Tests		
Tests Item	Simultaneous Transmission Analysis	
Operating Mode	WLAN 2.4GHz+BT	
Operating Mode	WLAN 2.4GHz+Zigbee	
Refer to Sporton Test Report No.: FA7O1918 for Co-location RF Exposure Evaluation.		

SPORTON INTERNATIONAL INC.

TEL: 886-3-3273456 FAX: 886-3-3270973 FCC ID: 2AGBW-LCN1840 Page No. : 9 of 24
Report Version : Rev. 01
Issued Date : Dec. 12, 2017

Report No.: FR7O1918AC



FCC Test Report Report No.: FR7O1918AC

### 2.4 **Accessories**

Accessories				
	Brand Name	PHILIPS	Model Name	S005BMM0500100
AC Adapter	Power Rating	I/P: 100 - 240Vac, 300	m A, O/P: 5 Vdc,	5 W
	Power Cord	1.5 meter, Non-Shield	ed cable, w/o ferr	ite core

### 2.5 **Support Equipment**

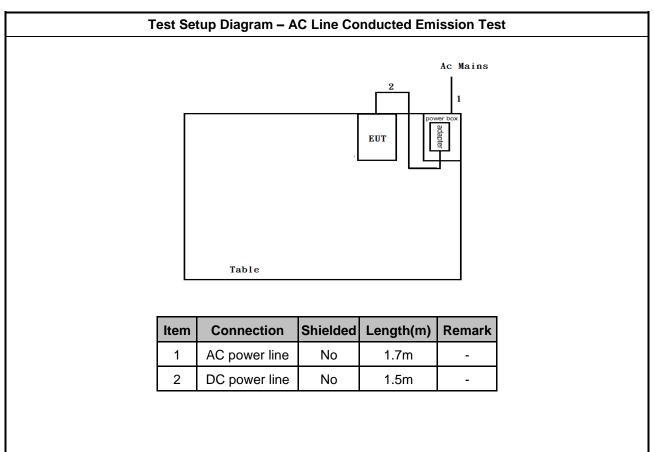
		Support Equipment -	RF Conducted	
No.	Equipment	Brand Name	Model Name	FCC ID
1	Notebook	DELL	E5410	DoC
2	Adapter for NB	DELL	HA65NM130	DoC
3	AC Source	G.W	APS-9102	-

SPORTON INTERNATIONAL INC. Page No. TEL: 886-3-3273456 FAX: 886-3-3270973 FCC ID: 2AGBW-LCN1840

: 10 of 24 Report Version : Rev. 01 Issued Date : Dec. 12, 2017



2.6 Test Setup Diagram



TEL: 886-3-3273456 FAX: 886-3-3270973 FCC ID: 2AGBW-LCN1840 Page No. : 11 of 24
Report Version : Rev. 01
Issued Date : Dec. 12, 2017
Report Template No.: HE1-C8 Ver1.0

Report No.: FR7O1918AC

FCC Test Report No.: FR701918AC

# **Test Setup Diagram - Radiated Test** AC Mains Turn Table Item Connection Shielded Length(m) Remark AC power line 1 No 1.7m 2 DC power line No 1.5m

TEL: 886-3-3273456 FAX: 886-3-3270973 FCC ID: 2AGBW-LCN1840 Page No. : 12 of 24
Report Version : Rev. 01
Issued Date : Dec. 12, 2017
Report Template No.: HE1-C8 Ver1.0



3 Transmitter Test Result

# 3.1 AC Power-line Conducted Emissions

# 3.1.1 AC Power-line Conducted Emissions Limit

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

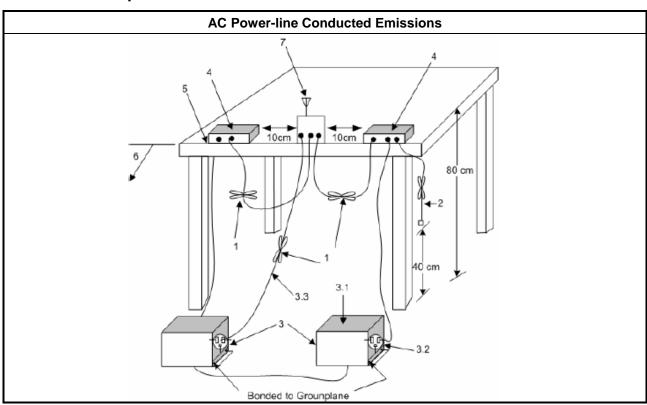
# 3.1.2 Measuring Instruments

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



# 3.1.5 Test Result of AC Power-line Conducted Emissions

Refer as Appendix A

SPORTON INTERNATIONAL INC. TEL: 886-3-3273456

FAX: 886-3-3270973 FCC ID: 2AGBW-LCN1840 Page No. : 13 of 24
Report Version : Rev. 01
Issued Date : Dec. 12, 2017

Report No.: FR7O1918AC

FCC Test Report No.: FR701918AC

# 3.2 DTS Bandwidth

# 3.2.1 6dB Bandwidth Limit

6dB Bandwidth Limit
Systems using digital modulation techniques:
■ 6 dB bandwidth ≥ 500 kHz.

# 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 KDB 558074, clause 8.1 Option 1 for 6 dB bandwidth measurement.
	Refer as KDB 558074, clause 8.2 Option 2 for 6 dB bandwidth measurement.
	Refer as RSS-Gen, clause 6.6 for for occupied bandwidth testing.
	Refer as ANSI C63.10, clause 6.9.3 for occupied bandwidth testing.

# 3.2.4 Test Setup

Emission Bandwidth						
Spectrum Analyzer						

# 3.2.5 Test Result of Emission Bandwidth

Refer as Appendix B

SPORTON INTERNATIONAL INC.

TEL: 886-3-3273456 FAX: 886-3-3270973 FCC ID: 2AGBW-LCN1840 Page No. : 14 of 24
Report Version : Rev. 01
Issued Date : Dec. 12, 2017
Report Template No.: HE1-C8 Ver1.0

# 3.3 Maximum Conducted Output Power

# 3.3.1 Maximum Conducted Output Power Limit

■ If $G_{TX} \le 6$ dBi, then $P_{Out} \le 30$ dBm (1 W)									
-									
_	Point-to-multipoint systems (P2M): If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)$ dBm								
•	Point-to-point systems (P2P): If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3$ dBm								
•	Smart antenna system (SAS):								
	- Single beam: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3$ dBm								
	- Overlap beam: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3$ dBm								
	- Aggregate power on all beams: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3 + 8$ dB dBm								
r.p. l	Power Limit:								
240	00-2483.5 MHz Band								
•	Point-to-multipoint systems (P2M): P <sub>eirp</sub> ≤ 36 dBm (4 W)								
•	Point-to-point systems (P2P): $P_{eirp} \le MAX(36, [P_{Out} + G_{TX}]) dBm$								
•	Smart antenna system (SAS)								
	- Single beam: P <sub>eirp</sub> ≤ MAX(36, P <sub>Out</sub> + G <sub>TX</sub> ) dBm								
	- Overlap beam: P <sub>eirp</sub> ≤ MAX(36, P <sub>Out</sub> + G <sub>TX</sub> ) dBm								
	- Aggregate power on all beams: P <sub>eirp</sub> ≤ MAX(36, [P <sub>Out</sub> + G <sub>TX</sub> + 8]) dBm								

# 3.3.2 Measuring Instruments

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

SPORTON INTERNATIONAL INC. TEL: 886-3-3273456

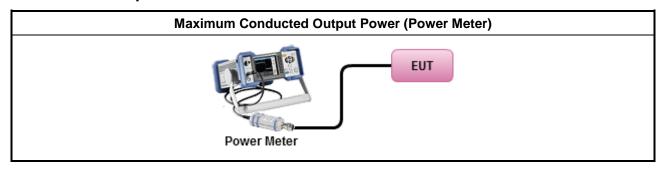
FAX: 886-3-3270973 FCC ID: 2AGBW-LCN1840 Page No. : 15 of 24
Report Version : Rev. 01
Issued Date : Dec. 12, 2017

Report No.: FR7O1918AC

# 3.3.3 Test Procedures

	Test Method
•	Maximum Peak Conducted Output Power
	☐ Refer as KDB 558074, clause 9.1.1 Option 1 (RBW ≥ EBW method).
	Refer as KDB 558074, clause 9.1.2 Option 2 (integrated band power method)
	☐ Refer as KDB 558074, clause 9.1.3 Option 3 (peak power meter for VBW ≥ DTS BW)
•	Maximum Average Conducted Output Power
	Duty cycle ≥ 98%
	Refer as KDB 558074, clause 9.2.2.4 Method AVGSA-2 (spectral trace averaging).
	Duty cycle < 98%
	Refer as KDB 558074, clause 9.2.2.5 Method AVGSA-2 Alt. (slow sweep speed)
	RF power meter and average over on/off periods with duty factor or gated trigger
	Refer as KDB 558074, clause 9.2.3.1 Method AVGPM (using an RF average power meter).
•	For conducted measurement.
	If the EUT supports multiple transmit chains using options given below: Refer as 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 <sub>total</sub> = P <sub>1</sub> + P <sub>2</sub> + + P <sub>n</sub> (calculated in linear unit [mW] and transfer to log unit [dBm])  EIRP <sub>total</sub> = P <sub>total</sub> + DG

# 3.3.4 Test Setup



# 3.3.5 Test Result of Maximum Conducted Output Power

Refer as Appendix C

SPORTON INTERNATIONAL INC. TEL: 886-3-3273456 FAX: 886-3-3270973

FCC ID: 2AGBW-LCN1840

Page No. : 16 of 24
Report Version : Rev. 01
Issued Date : Dec. 12, 2017
Report Template No.: HE1-C8 Ver1.0

Report No.: FR7O1918AC

# 3.4 Power Spectral Density

## 3.4.1 Power Spectral Density Limit

### **Power Spectral Density Limit**

Power Spectral Density (PSD) ≤ 8 dBm/3kHz

## 3.4.2 Measuring Instruments

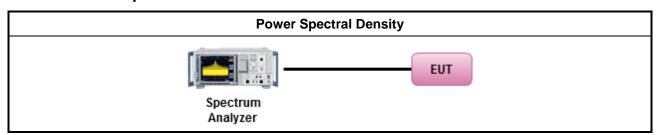
Refer a test equipment and calibration data table in this test report.

## 3.4.3 Test Procedures

### **Test Method**

- Peak power spectral density procedures that the same method as used to determine the conducted output power. If maximum peak conducted output power was measured to demonstrate compliance to the output power limit, then the peak PSD procedure below (Method PKPSD) shall be used. If maximum conducted output power was measured to demonstrate compliance to the output power limit, then one of the average PSD procedures shall be used, as applicable based on the following criteria (the peak PSD procedure is also an acceptable option).
  - Refer as KDB 558074, clause 10.2 Method PKPSD (RBW=3-100kHz; Detector=peak).
- For conducted measurement.
  - If The EUT supports multiple transmit chains using options given below:
    - Measure and sum the spectra across the outputs. Refer as 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.

## 3.4.4 Test Setup



## 3.4.5 Test Result of Power Spectral Density

Refer as Appendix D

SPORTON INTERNATIONAL INC. TEL: 886-3-3273456

FAX: 886-3-3270973 FCC ID: 2AGBW-LCN1840 Page No. : 17 of 24

Report Version : Rev. 01 Issued Date : Dec. 12, 2017

Report No.: FR7O1918AC

#### 3.5 **Emissions in Non-restricted Frequency Bands**

#### 3.5.1 **Emissions in Non-restricted Frequency Bands Limit**

Un-restricted Band Emissions Limit					
RF output power procedure Limit (dB)					
Peak output power procedure	20				
Average output power procedure	30				

Report No.: FR7O1918AC

: 18 of 24

- Note 1: If the peak output power procedure is used to measure the fundamental emission power to demonstrate compliance to requirements, then the peak conducted output power measured within any 100 kHz outside the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum measured in-band peak PSD level.
- Note 2: If the average output power procedure is used to measure the fundamental emission power to demonstrate compliance to requirements, then the power in any 100 kHz outside of the authorized frequency band shall be attenuated by at least 30 dB relative to the maximum measured in-band average PSD level.

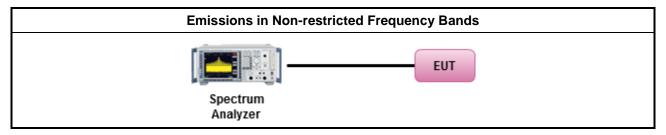
#### 3.5.2 **Measuring Instruments**

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

#### 3.5.3 Test Procedures

Test Method	
<ul> <li>Refer as KDB 558074, clause 11 for unwanted emissions into non-restricted bands.</li> </ul>	

#### 3.5.4 **Test Setup**



#### 3.5.5 **Test Result of Emissions in Non-restricted Frequency Bands**

Refer as Appendix E

SPORTON INTERNATIONAL INC. Page No. Report Version TEL: 886-3-3273456 FAX: 886-3-3270973 FCC ID: 2AGBW-LCN1840

: Rev. 01 Issued Date : Dec. 12, 2017 Report Template No.: HE1-C8 Ver1.0

# 3.6 Emissions in Restricted Frequency Bands

## 3.6.1 Emissions in Restricted Frequency Bands Limit

Restricted Band Emissions Limit								
Frequency Range (MHz) Field Strength (uV/m) Field Strength (dBuV/m) Measure D								
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.

## 3.6.2 Measuring Instruments

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

SPORTON INTERNATIONAL INC.

TEL: 886-3-3273456 FAX: 886-3-3270973 FCC ID: 2AGBW-LCN1840 Page No. : 19 of 24
Report Version : Rev. 01
Issued Date : Dec. 12, 2017

Report No.: FR7O1918AC

### 3.6.3 Test Procedures

### **Test Method**

- The average emission levels shall be measured in [duty cycle ≥ 98 or duty factor].
- Refer as ANSI C63.10, clause 6.10.3 band-edge testing shall be performed at the lowest frequency channel and highest frequency channel within the allowed operating band.
- For the transmitter unwanted emissions shall be measured using following options below:
  - Refer as KDB 558074, clause 12 for unwanted emissions into restricted bands.
    - Refer as KDB 558074, clause 12.2.5.3 (ANSI C63.10, clause 4.1.4.2.3), Reduced VBW≥1/T.
    - Refer as KDB 558074, clause 12.2.4 measurement procedure peak limit.
- For the transmitter band-edge emissions shall be measured using following options below:
  - Refer as KDB 558074 clause 13.1, When the performing peak or average radiated measurements, emissions within 2 MHz of the authorized band edge may be measured using the marker-delta method described below.
  - Refer as KDB 558074, clause 13.2 (ANSI C63.10, clause 6.10.6) for marker-delta method for band-edge measurements.
  - Refer as KDB 558074, clause 13.3 for narrower resolution bandwidth (100kHz) using the band power and summing the spectral levels (i.e., 1 MHz).
- For conducted and cabinet radiation measurement, refer as KDB 558074, clause 12.2.2.
  - For conducted unwanted emissions into restricted bands (absolute emission limits).
     Devices with multiple transmit chains using options given below:
    - (1) Measure and sum the spectra across the outputs or
    - (2) Measure and add 10 log(N) dB
  - For KDB 662911 The methodology described here may overestimate array gain, thereby resulting in apparent failures to satisfy the out-of-band limits even if the device is actually compliant. In such cases, compliance may be demonstrated by performing radiated tests around the frequencies at which the apparent failures occurred.

SPORTON INTERNATIONAL INC.

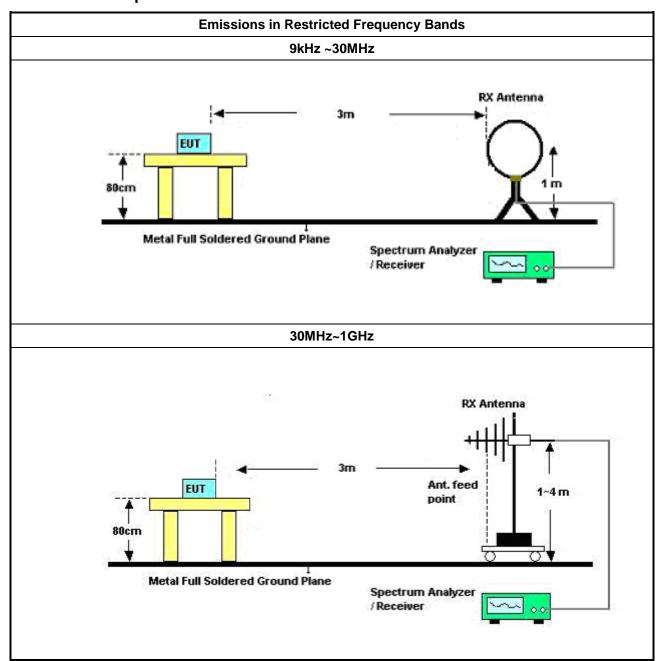
TEL: 886-3-3273456 FAX: 886-3-3270973 FCC ID: 2AGBW-LCN1840 Page No. : 20 of 24
Report Version : Rev. 01
Issued Date : Dec. 12, 2017

Report No.: FR7O1918AC

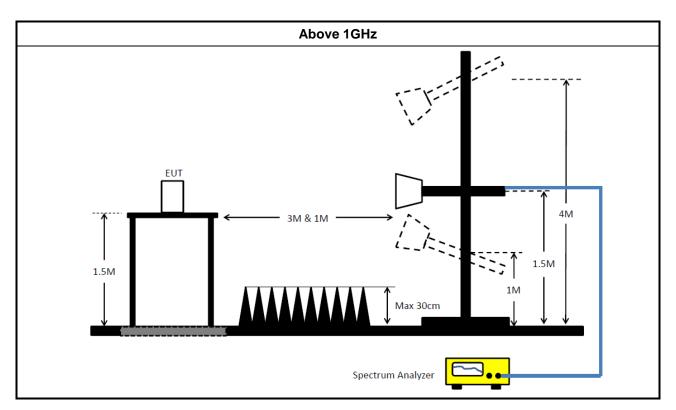


Report No.: FR7O1918AC

### **Test Setup** 3.6.4



TEL: 886-3-3273456 FAX: 886-3-3270973 FCC ID: 2AGBW-LCN1840 Page No. : 21 of 24 : Rev. 01 Report Version Issued Date : Dec. 12, 2017 Report Template No.: HE1-C8 Ver1.0



# 3.6.5 Test Result of Emissions in Restricted Frequency Bands (Below 30MHz)

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

# 3.6.6 Test Result of Emissions in Restricted Frequency Bands

Refer as Appendix F

TEL: 886-3-3273456 FAX: 886-3-3270973 FCC ID: 2AGBW-LCN1840 Page No. : 22 of 24
Report Version : Rev. 01
Issued Date : Dec. 12, 2017

Report No.: FR7O1918AC



4 Test Equipment and Calibration Data

# **Instrument for AC Conduction**

Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
EMC Receiver	R&S	ESR3	102052	9KHz ~ 3.6GHz	29/Apr/2017	28/Apr/2018
LISN	R&S	ENV216	101295	9kHz ~ 30MHz	15/Nov/2016	14/Nov/2017
RF Cable-CON	HUBER+SUHNER	RG213/U	07611832020001	9kHz ~ 30MHz	06/Oct/2017	05/Oct/2018
AC POWER	APC	AFC-11005G	F310050055	47Hz~63Hz 5~300V	NCR	NCR
Impuls Begrenzer Pulse Limiter	R&S	ESH3-Z2	100921	10 kHz ~ 30 MHz	12/Oct/2017	11/Oct/2018

NCR : Non-Calibration Require

## **Instrument for Radiated Test**

Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
3m Semi Anechoic Chamber	TDK	SAC-3M	03CH09-HY	30MHz ~ 1GHz	25/Apr/2017	24/Apr/2018
3m Semi Anechoic Chamber	TDK	SAC-3M	03CH09-HY	1GHz ~ 18GHz	21/Jun/2017	20/Jun/2018
Amplifier	Agilent	8449B	3008A02096	1GHz ~ 26.5GHz	25/Apr/2017	24/Apr/2018
Amplifier	EMC	EMC9135	980232	9KHz~1GHz	25/Apr/2017	24/Apr/2018
Spectrum Analyzer	KEYSIGHT	N9010A	MY54200885	10Hz ~ 44GHz	20/Jul/2017	19/Jul/2018
Bilog Antenna	TESEQ	CBL 6111D	35418	30MHz~1GHz	09/Sep/2017	08/Sep/2018
Horn Antenna	SCHWARZBECK	BBHA 9120D	BBHA9120D 1534	1GHz~18GHz	28/Apr/2017	27/Apr/2018
Horn Antenna	SCHWARZBECK	BBHA9170	BBHA9170614	18GHz ~ 40GHz	06/Feb/2017	05/Feb/2018
Loop Antenna	TESTQ	HLA 6120	31244	9 kHz~30 MHz	02/Mar/2017	01/Mar/2018
RF Cable-R03m	Jye Bao	RG142	CB021	9kHz ~ 1GHz	02/Feb/2017	01/Feb/2018
RF Cable-high	Jye Bao	RG142	03CH09-HY	1GHz ~ 40GHz	02/Feb/2017	01/Feb/2018
Receiver	R&S	ESR3	102052	9KHz ~ 3.6GHz	29/Apr/2017	28/Apr/2018

SPORTON INTERNATIONAL INC.

TEL: 886-3-3273456 FAX: 886-3-3270973 FCC ID: 2AGBW-LCN1840 Page No. : 23 of 24
Report Version : Rev. 01

Issued Date : Dec. 12, 2017

Report No.: FR7O1918AC



# FCC Test Report

**Instrument for Conducted Test** 

Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
Spectrum Analyzer	R&S	FSV 40	101013	9kHz~40GHz	30/Dec/2016	29/Dec/2017
Signal Generator	R&S	SMR40	100116	10MHz ~ 40GHz	27/Jul/2017	26/Jul/2018
Power Sensor	Anritsu	MA2411B	0917017	300MHz ~ 40GHz	10/Feb/2017	09/Feb/2018
Power Meter	Anritsu	ML2495A	0949003	300MHz ~ 40GHz	10/Feb/2017	09/Feb/2018
RF Cable-0.2m	HUBER+SUHNER	SUCOFLEX_104	MY10709/4	30MHz ~ 26.5GHz	25/Aug/2017	24/Aug/2018
RF Cable-0.2m	HUBER+SUHNER	SUCOFLEX_104	MY10712/4	30MHz ~ 26.5GHz	25/Aug/2017	24/Aug/2018
RF Cable-0.5m	HUBER+SUHNER	SUCOFLEX_104	MY10713/4	30MHz ~ 26.5GHz	25/Aug/2017	24/Aug/2018

SPORTON INTERNATIONAL INC.

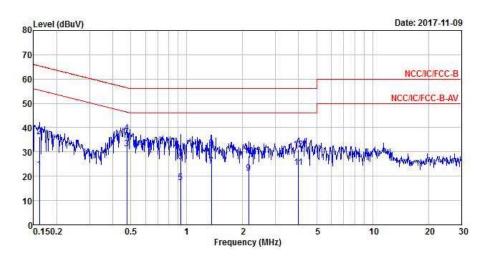
TEL: 886-3-3273456 FAX: 886-3-3270973 FCC ID: 2AGBW-LCN1840 Page No. : 24 of 24
Report Version : Rev. 01

Issued Date : Dec. 12, 2017

Report No.: FR7O1918AC



AC Power-line Conducted Emissions Result								
Operating Mode	Operating Mode 1 Power Phase Neutral							
Operating Function Adapter Mode								



	Freq	Level	Over Limit	Limit Line	Read Level	LISN	Cable Loss	Remark
9	MHz	dBuV	dB	dBuV	dBuV	dB	dB	-
1	0.16155	22.86	-32.52	55.38	13.21	9.62	0.03	Average
2	0.16155	36.20	-29.18	65.38	26.55	9.62	0.03	QP
3 MAX	0.47612	31.20	-15.21	46.41	21.50	9.62	0.08	Average
4	0.47612	37.65	-18.76	56.41	27.95	9.62	0.08	QP
5	0.92821	17.45	-28.55	46.00	7.85	9.59	0.01	Average
6	0.92821	26.04	-29.96	56.00	16.44	9.59	0.01	QP
6 7 8	1.35931	24.34	-21.66	46.00	14.72	9.62	0.00	Average
8	1.35931	31.72	-24.28	56.00	22.10	9.62	0.00	QP
9	2.15531	21.16	-24.84	46.00	11.49	9.66	0.01	Average
10	2.15531	28.37	-27.63	56.00	18.70	9.66	0.01	QP
11	3.98501	23.52	-22.48	46.00	13.72	9.71	0.09	Average
12	3.98501	30.88	-25.12	56.00	21.08	9.71	0.09	QP

Note 1: ">20dB" means emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found emissions (No emissions were detected.)

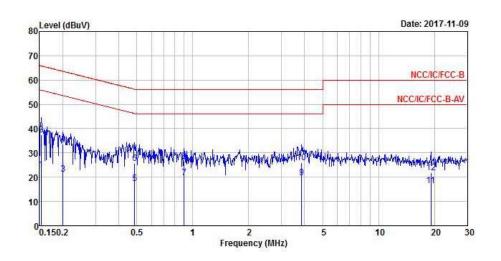
SPORTON INTERNATIONAL INC.

TEL: 886-3-3273456 FAX: 886-3-3270973 Page No.

: A1 of A2



AC Power-line Conducted Emissions Result							
Operating Mode	Operating Mode 1 Power Phase Line						
Operating Function Adapter Mode							



	Freq	Level	Over Limit	Limit Line	Read Level	LISN	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.15321	23.03	-32.79	55.82	13.33	9.66	0.04	Average
2	0.15321	37.44	-28.38	65.82	27.74	9.66	0.04	QP
3	0.20075	21.35	-32.23	53.58	11.70	9.65	0.00	Average
3 4 5	0.20075	33.74	-29.84	63.58	24.09	9.65	0.00	QP
5	0.48632	17.42	-28.81	46.23	7.67	9.67	0.08	Average
6	0.48632	25.64	-30.59	56.23	15.89	9.67	0.08	QP
7	0.89917	19.83	-26.17	46.00	10.18	9.64	0.01	Average
8	0.89917	26.64	-29.36	56.00	16.99	9.64	0.01	QP
9 MAX	3.86031	19.83	-26.17	46.00	9.98	9.77	0.08	Average
10	3.86031	25.96	-30.04	56.00	16.11	9.77	0.08	QP
11	19.12202	16.67	-33.33	50.00	6.61	9.89	0.17	Average
12	19.12202	21.74	-38.26	60.00	11.68	9.89	0.17	QP

Note 1: ">20dB" means emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found emissions (No emissions were detected.)

SPORTON INTERNATIONAL INC.

TEL: 886-3-3273456 FAX: 886-3-3270973 Page No.

: A2 of A2



EBW Result Appendix B

**Summary** 

Mode	e Max-N dB		ITU-Code	Min-N dB	Min-OBW
	(Hz)	(Hz)		(Hz)	(Hz)
2.4-2.4835GHz	-	-	-	-	-
802.11b_Nss1,(1Mbps)_1TX	10.025M	13.993M	14M0G1D	9.075M	13.768M
802.11g_Nss1,(6Mbps)_1TX	15.075M	18.666M	18M7D1D	13.75M	16.317M
802.11n HT20_Nss1,(MCS0)_1TX	15.05M	18.891M	18M9D1D	14.275M	17.366M
802.11n HT40_Nss1,(MCS0)_1TX	31.3M	36.032M	36M0D1D	29.8M	35.732M

**Max-N dB** = Maximum 6dB down bandwidth; **Max-OBW** = Maximum 99% occupied bandwidth; **Min-N dB** = Minimum 6dB down bandwidth; **Min-OBW** = Minimum 99% occupied bandwidth;

## Result

Mode	Result	Limit	Port 1-N dB	Port 1-OBW
		(Hz)	(Hz)	(Hz)
802.11b_Nss1,(1Mbps)_1TX	-	-	-	-
2412MHz_TnomVnom	Pass	500k	9.075M	13.768M
2437MHz_TnomVnom	Pass	500k	9.55M	13.968M
2462MHz_TnomVnom	Pass	500k	10.025M	13.993M
802.11g_Nss1,(6Mbps)_1TX	-	-	-	-
2412MHz_TnomVnom	Pass	500k	14.975M	16.317M
2437MHz_TnomVnom	Pass	500k	13.75M	18.666M
2462MHz_TnomVnom	Pass	500k	15.075M	16.417M
802.11n HT20_Nss1,(MCS0)_1TX	-	-	-	-
2412MHz_TnomVnom	Pass	500k	15.05M	17.366M
2437MHz_TnomVnom	Pass	500k	14.275M	18.891M
2462MHz_TnomVnom	Pass	500k	14.925M	17.491M
802.11n HT40_Nss1,(MCS0)_1TX	-	-	-	-
2422MHz_TnomVnom	Pass	500k	29.8M	35.732M
2437MHz_TnomVnom	Pass	500k	31.3M	36.032M
2452MHz_TnomVnom	Pass	500k	31.25M	35.782M

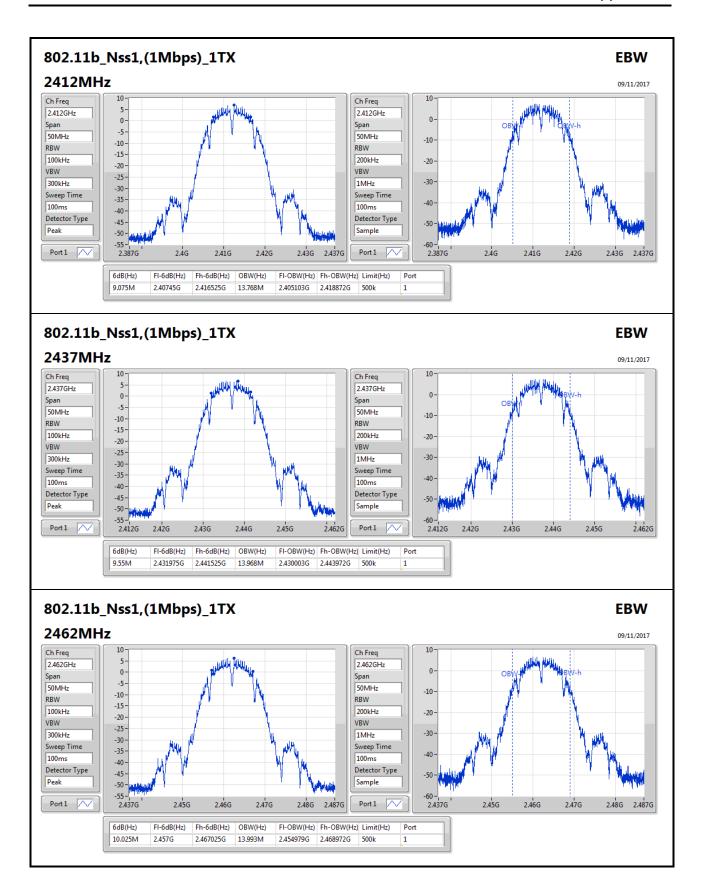
Port X-N dB = Port X 6dB down bandwidth; Port X-OBW = Port X 99% occupied bandwidth;

SPORTON INTERNATIONAL INC. Page No. : B1 of B5

701918

TEL: 886-3-327-3456 FAX: 886-3-327-0973 SPORTON LAB.

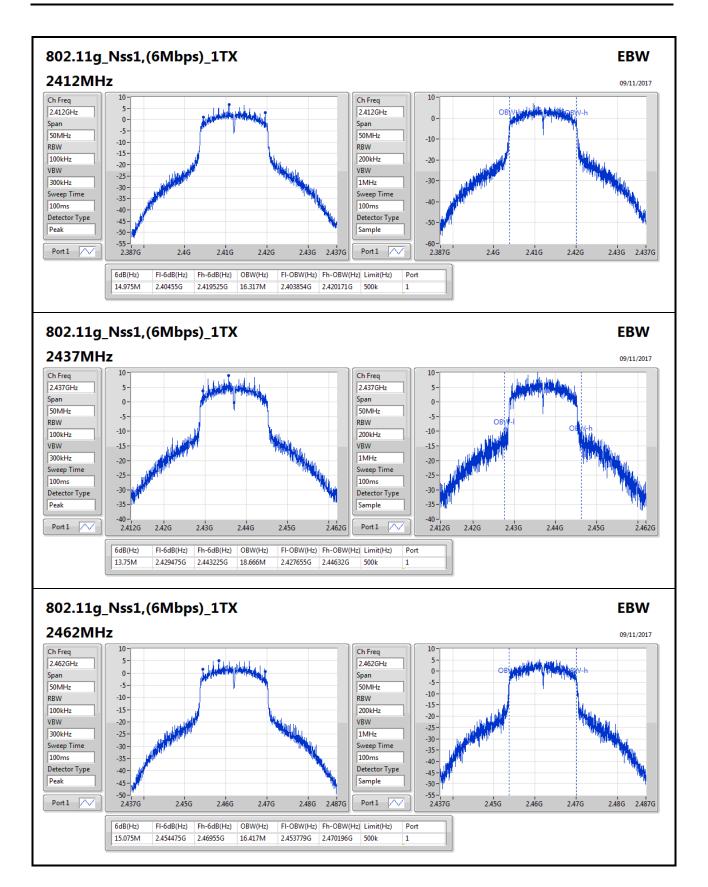
Appendix B EBW Result



SPORTON INTERNATIONAL INC.

TEL: 886-3-327-3456 FAX: 886-3-327-0973 SPORTON LAB.

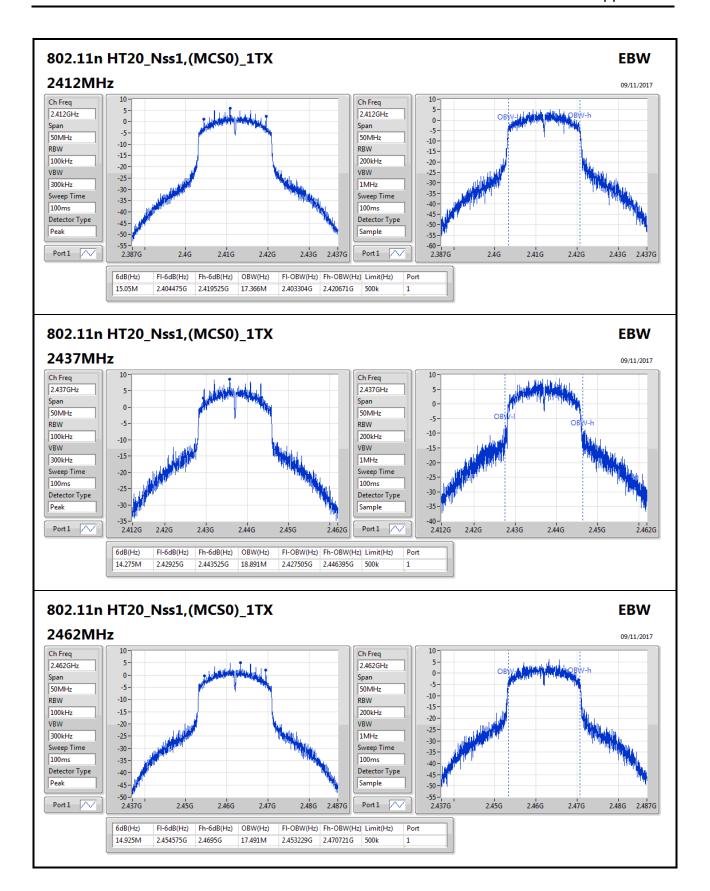
EBW Result Appendix B



SPORTON INTERNATIONAL INC.

TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : B3 of B5

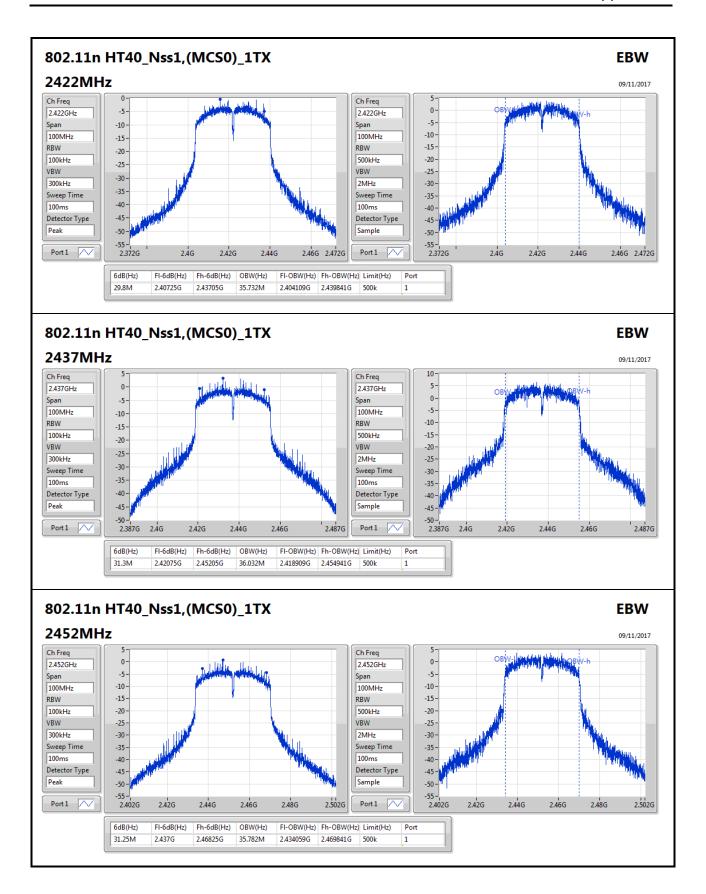
EBW Result Appendix B



SPORTON INTERNATIONAL INC.

TEL: 886-3-327-3456 FAX: 886-3-327-0973 SPORTON LAB.

Appendix B EBW Result



SPORTON INTERNATIONAL INC.

TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : B5 of B5



AV Power Result Appendix C

Summary

Mode	Total Power	Total Power		
	(dBm)	(W)		
2.4-2.4835GHz	-	-		
802.11b_Nss1,(1Mbps)_1TX	16.29	0.04256		
802.11g_Nss1,(6Mbps)_1TX	19.10	0.08128		
802.11n HT20_Nss1,(MCS0)_1TX	18.91	0.07780		
802.11n HT40_Nss1,(MCS0)_1TX	16.13	0.04102		

# Result

Mode	Result	DG	Port 1	Total Power	Power Limit
		(dBi)	(dBm)	(dBm)	(dBm)
802.11b_Nss1,(1Mbps)_1TX	-	-	-	-	-
2412MHz_TnomVnom	Pass	2.40	16.24	16.24	30.00
2437MHz_TnomVnom	Pass	2.40	16.29	16.29	30.00
2462MHz_TnomVnom	Pass	2.40	15.54	15.54	30.00
802.11g_Nss1,(6Mbps)_1TX	-	-	-	-	-
2412MHz_TnomVnom	Pass	2.40	16.92	16.92	30.00
2437MHz_TnomVnom	Pass	2.40	19.10	19.10	30.00
2462MHz_TnomVnom	Pass	2.40	16.30	16.30	30.00
802.11n HT20_Nss1,(MCS0)_1TX	-	-	-	-	-
2412MHz_TnomVnom	Pass	2.40	15.75	15.75	30.00
2437MHz_TnomVnom	Pass	2.40	18.91	18.91	30.00
2462MHz_TnomVnom	Pass	2.40	15.62	15.62	30.00
802.11n HT40_Nss1,(MCS0)_1TX	-	-	-	-	-
2422MHz_TnomVnom	Pass	2.40	13.78	13.78	30.00
2437MHz_TnomVnom	Pass	2.40	16.13	16.13	30.00
2452MHz_TnomVnom	Pass	2.40	13.62	13.62	30.00

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

SPORTON INTERNATIONAL INC. Page No. : C1 of C1

TEL: 886-3-327-3456 FAX: 886-3-327-0973 7O1918



Appendix D **PSD Result** 

**Summary** 

Mode	PD
	(dBm/RBW)
2.4-2.4835GHz	
802.11b_Nss1,(1Mbps)_1TX	-6.02
802.11g_Nss1,(6Mbps)_1TX	-5.70
802.11n HT20_Nss1,(MCS0)_1TX	-6.77
802.11n HT40_Nss1,(MCS0)_1TX	-11.31

RBW=3kHz.

## Result

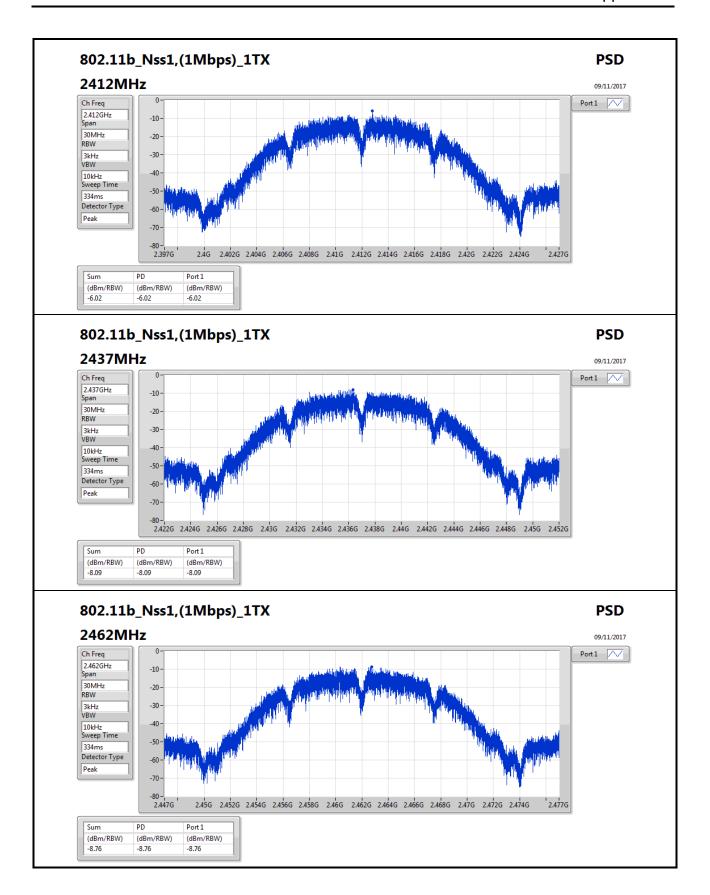
Mode	Result	DG	Port 1	PD	PD Limit
		(dBi)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
802.11b_Nss1,(1Mbps)_1TX	-	-	-	-	-
2412MHz_TnomVnom	Pass	2.40	-6.02	-6.02	8.00
2437MHz_TnomVnom	Pass	2.40	-8.09	-8.09	8.00
2462MHz_TnomVnom	Pass	2.40	-8.76	-8.76	8.00
802.11g_Nss1,(6Mbps)_1TX	-	-	-	-	-
2412MHz_TnomVnom	Pass	2.40	-7.93	-7.93	8.00
2437MHz_TnomVnom	Pass	2.40	-5.70	-5.70	8.00
2462MHz_TnomVnom	Pass	2.40	-9.96	-9.96	8.00
802.11n HT20_Nss1,(MCS0)_1TX	-	-	-	-	-
2412MHz_TnomVnom	Pass	2.40	-8.21	-8.21	8.00
2437MHz_TnomVnom	Pass	2.40	-6.77	-6.77	8.00
2462MHz_TnomVnom	Pass	2.40	-9.65	-9.65	8.00
802.11n HT40_Nss1,(MCS0)_1TX	-	-	-	-	-
2422MHz_TnomVnom	Pass	2.40	-13.19	-13.19	8.00
2437MHz_TnomVnom	Pass	2.40	-11.31	-11.31	8.00
2452MHz_TnomVnom	Pass	2.40	-14.42	-14.42	8.00

DG = Directional Gain; RBW=3kHz;
PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; Port X = Port X power density;

SPORTON INTERNATIONAL INC. Page No. : D1 of D5

TEL: 886-3-327-3456 FAX: 886-3-327-0973 SPORTON LAB

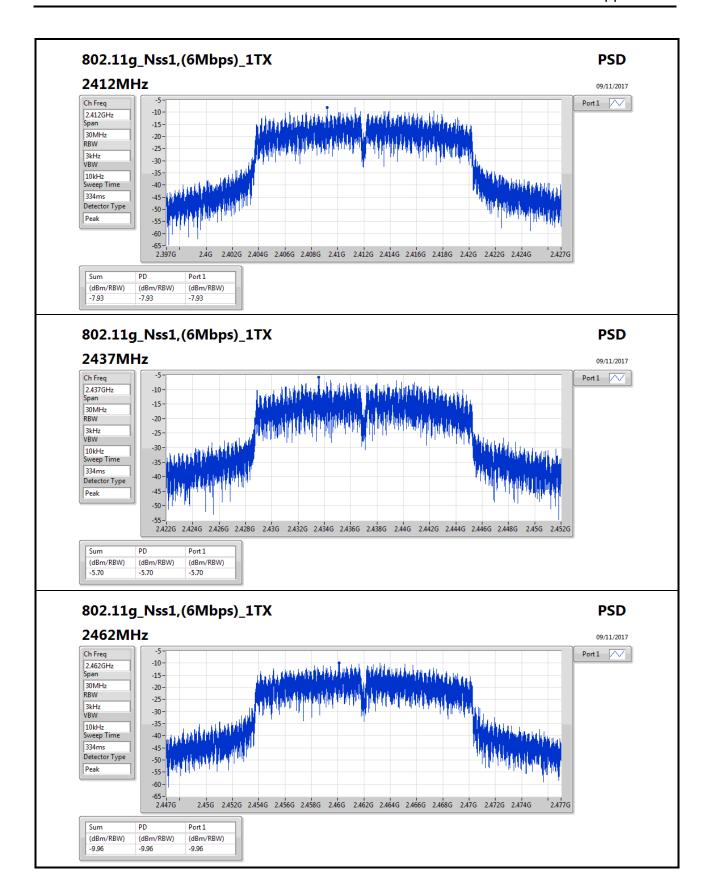
**PSD Result** Appendix D



SPORTON INTERNATIONAL INC.

TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : D2 of D5

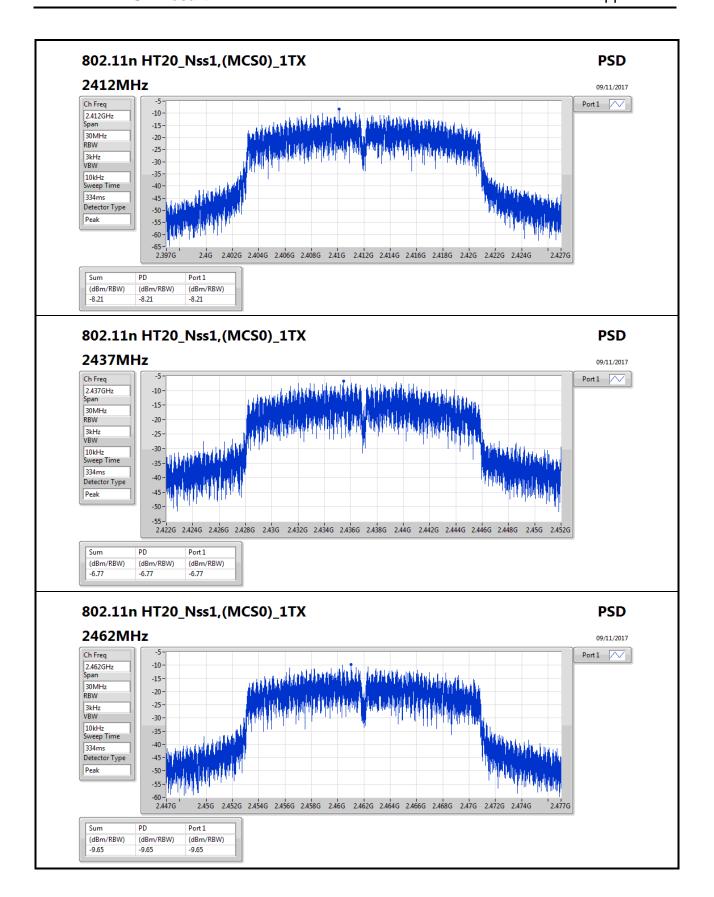
PSD Result Appendix D



SPORTON INTERNATIONAL INC.

TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : D3 of D5

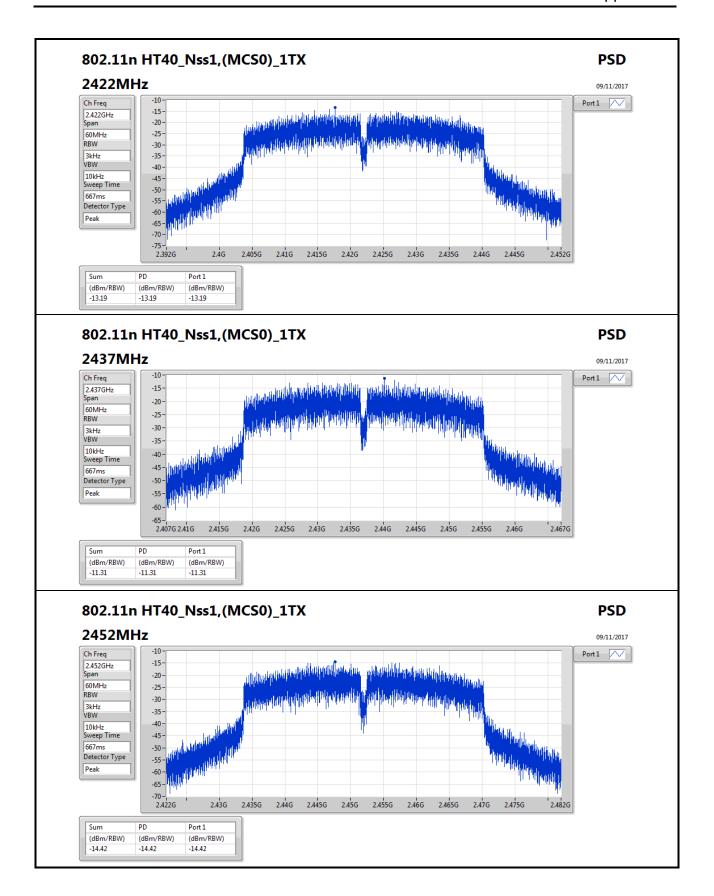
PSD Result Appendix D



SPORTON INTERNATIONAL INC.

TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : D4 of D5

PSD Result Appendix D



SPORTON INTERNATIONAL INC.

TEL: 886-3-327-3456 FAX: 886-3-327-0973



# **CSE Non-restricted Band Result**

Appendix E

Summary

Mode	Result	Ref	Ref	Limit	Freq	Level	Freq	Level	Freq	Level	Freq	Level	Port
		(Hz)	(dBm)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-	-
802.11b_Nss1,(1Mbps)_1TX	Pass	2.436072G	6.59	-23.41	2.11069G	-59.73	2.39704G	-33.78	2.51102G	-57.24	16.366214G	-53.98	1
802.11g_Nss1,(6Mbps)_1TX	Pass	2.438243G	8.65	-21.35	2.17593G	-58.15	2.39984G	-22.41	2.48934G	-57.93	6.973847G	-53.22	1
802.11n HT20_Nss1,(MCS0)_1TX	Pass	2.441917G	8.48	-21.52	2.12001G	-58.96	2.39952G	-25.92	2.48758G	-57.92	6.95418G	-53.51	1
802.11n HT40_Nss1,(MCS0)_1TX	Pass	2.440748G	2.61	-27.39	2.02001G	-58.38	2.39984G	-29.42	2.4891G	-57.93	6.975077G	-53.50	1

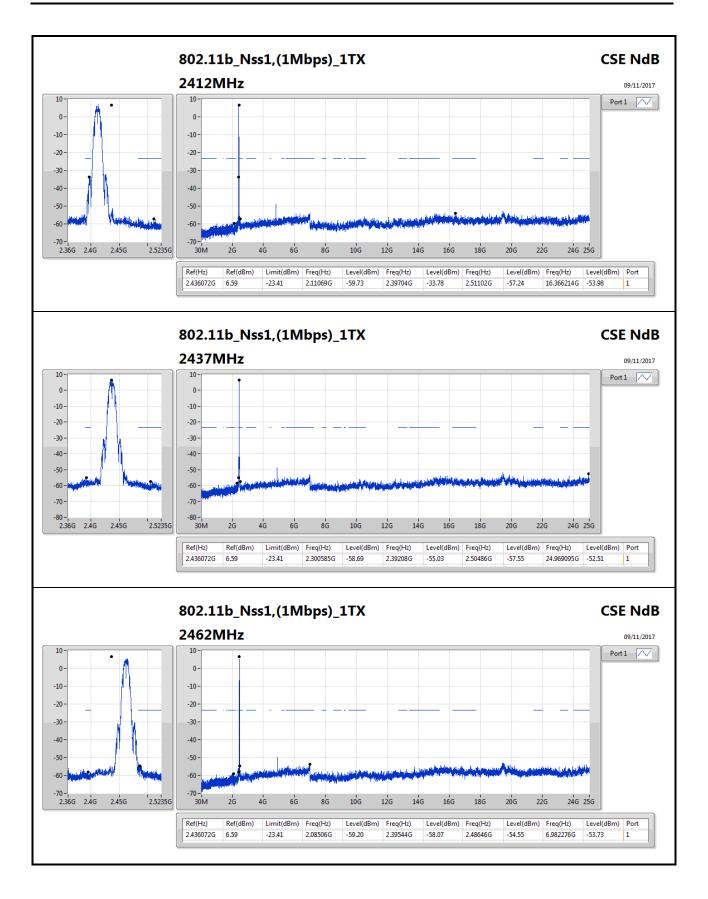
## Result

Mode	Result	Ref	Ref	Limit	Freq	Level	Freq	Level	Freq	Level	Freq	Level	Port
		(Hz)	(dBm)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	
802.11b_Nss1,(1Mbps)_1TX	-	-	-	-	-	-	-	-	-	-	-	-	-
2412MHz_TnomVnom	Pass	2.436072G	6.59	-23.41	2.11069G	-59.73	2.39704G	-33.78	2.51102G	-57.24	16.366214G	-53.98	1
2437MHz_TnomVnom	Pass	2.436072G	6.59	-23.41	2.300585G	-58.69	2.39208G	-55.03	2.50486G	-57.55	24.969095G	-52.51	1
2462MHz_TnomVnom	Pass	2.436072G	6.59	-23.41	2.08506G	-59.20	2.39544G	-58.07	2.48646G	-54.55	6.982276G	-53.73	1
802.11g_Nss1,(6Mbps)_1TX	-	-	-	-	-	-	-	-	-	-	-	-	-
2412MHz_TnomVnom	Pass	2.438243G	8.65	-21.35	2.17593G	-58.15	2.39984G	-22.41	2.48934G	-57.93	6.973847G	-53.22	1
2437MHz_TnomVnom	Pass	2.438243G	8.65	-21.35	2.10137G	-58.76	2.39984G	-45.25	2.48454G	-50.39	17.439467G	-53.69	1
2462MHz_TnomVnom	Pass	2.438243G	8.65	-21.35	1.780995G	-59.09	2.39176G	-58.74	2.48366G	-36.60	15.04853G	-53.46	1
802.11n HT20_Nss1,(MCS0)_1TX	-	-	-	-	-	-	-	-	-	-	-	-	-
2412MHz_TnomVnom	Pass	2.441917G	8.48	-21.52	2.12001G	-58.96	2.39952G	-25.92	2.48758G	-57.92	6.95418G	-53.51	1
2437MHz_TnomVnom	Pass	2.441917G	8.48	-21.52	2.309905G	-58.80	2.39984G	-46.88	2.48414G	-51.25	6.962609G	-53.00	1
2462MHz_TnomVnom	Pass	2.441917G	8.48	-21.52	2.013995G	-59.32	2.39168G	-57.85	2.48382G	-37.30	15.099102G	-53.95	1
802.11n HT40_Nss1,(MCS0)_1TX	-	-	-	-	-	-	-	-	-	-	-	-	-
2422MHz_TnomVnom	Pass	2.440748G	2.61	-27.39	2.02001G	-58.38	2.39984G	-29.42	2.4891G	-57.93	6.975077G	-53.50	1
2437MHz_TnomVnom	Pass	2.440748G	2.61	-27.39	1.96734G	-59.16	2.39968G	-31.10	2.48414G	-40.71	6.986295G	-53.14	1
2452MHz_TnomVnom	Pass	2.440748G	2.61	-27.39	1.959325G	-57.61	2.39936G	-54.42	2.48446G	-32.61	6.980686G	-52.70	1

SPORTON INTERNATIONAL INC. Page No. : E1 of E5

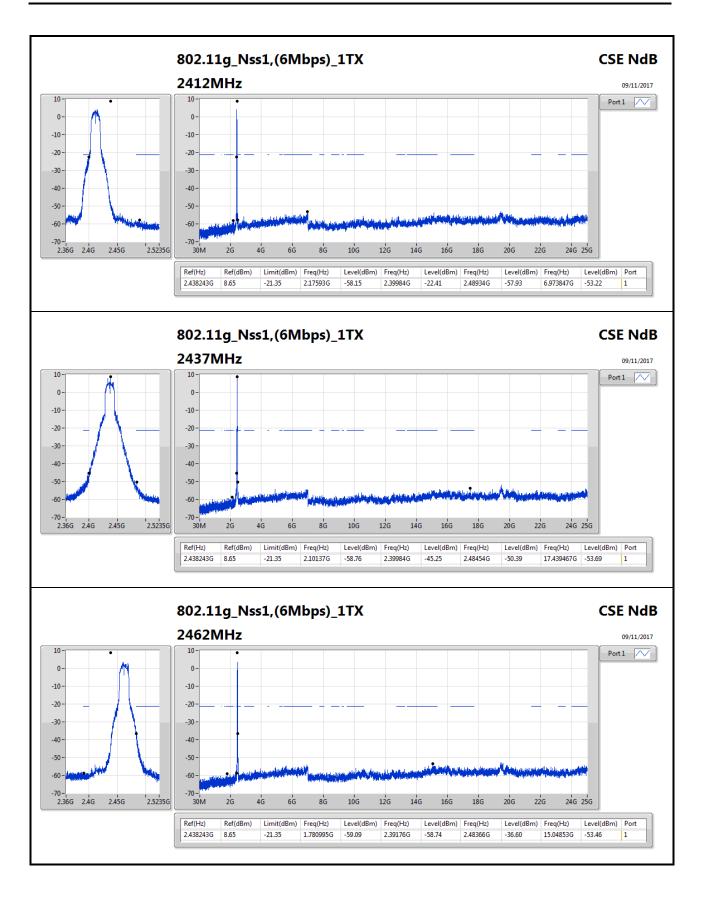
TEL: 886-3-327-3456 FAX: 886-3-327-0973





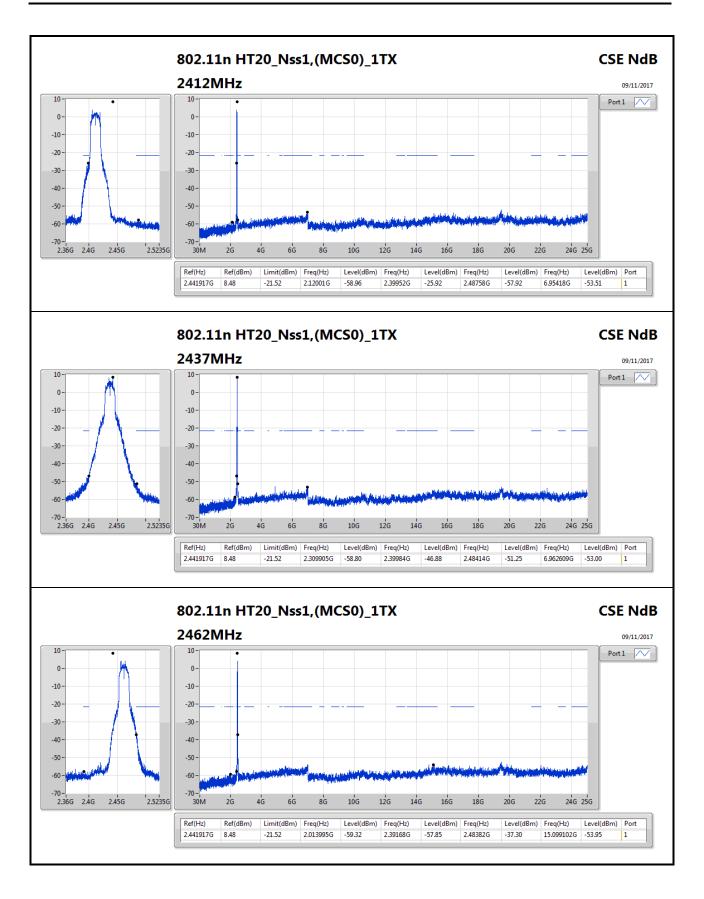
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : E2 of E5





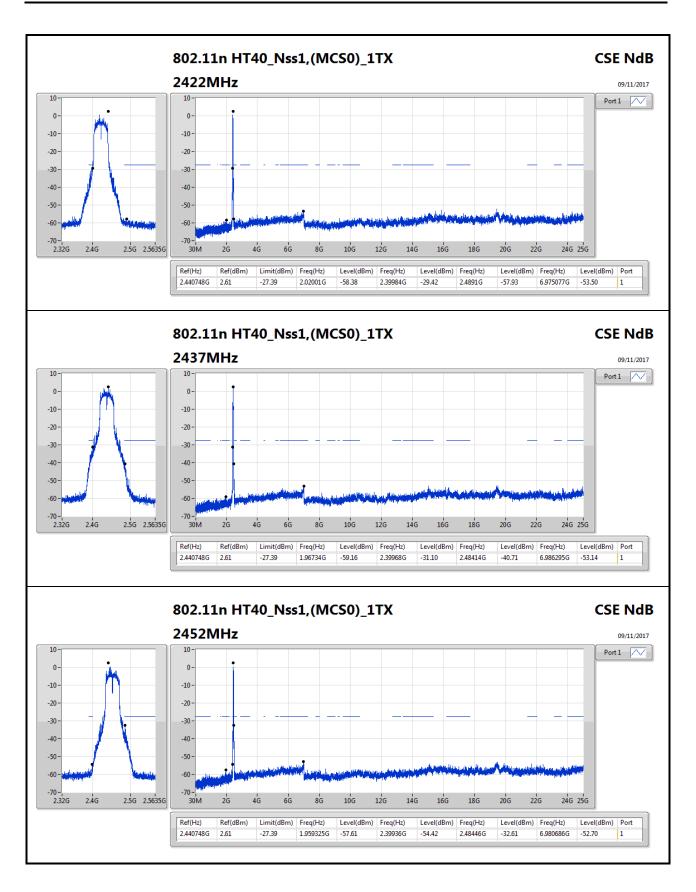
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : E3 of E5





TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : E4 of E5





TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : E5 of E5



# RSE TX below 1GHz Result

Appendix F.1

**Summary** 

Mode	Result	Туре	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
			(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-
802.11n HT40_Nss1,(MCS0)_1TX	Pass	PK	175.5M	40.10	43.50	-3.40	-19.89	3	Vertical	0	1.00	-

SPORTON INTERNATIONAL INC. Page No. : F1 of F4

TEL: 886-3-327-3456 FAX: 886-3-327-0973 7O1918



# RSE TX below 1GHz Result

Appendix F.1

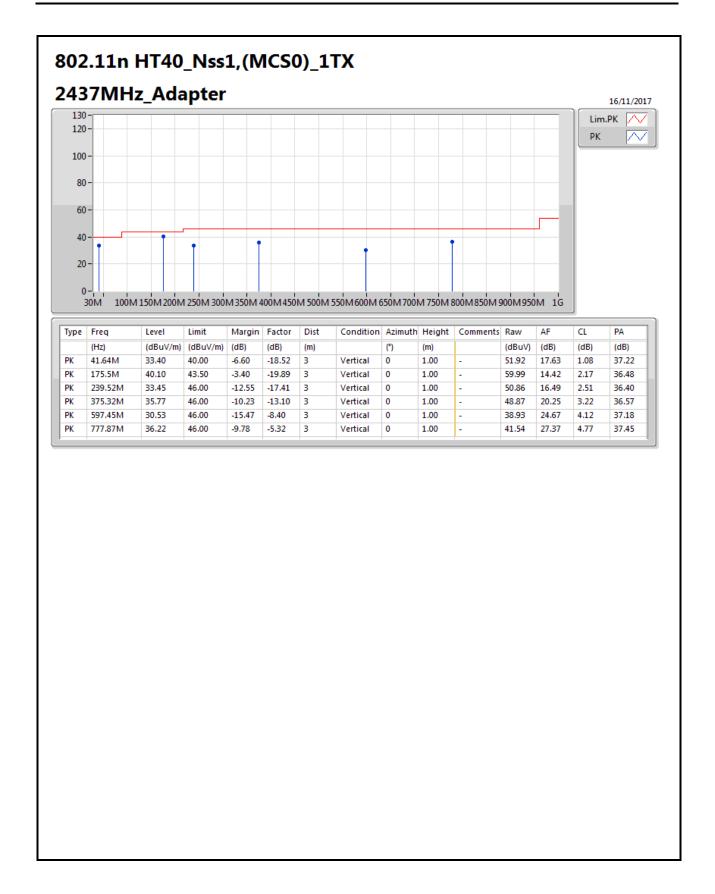
## Result

Mode	Result	Туре	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
			(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
802.11n HT40_Nss1,(MCS0)_1TX	-	-	-	-	-	-	-	-	-	-	-	-
2437MHz	Pass	PK	110.51M	30.84	43.50	-12.66	-18.87	3	Horizontal	360	1.00	-
2437MHz	Pass	PK	193.93M	38.83	43.50	-4.67	-20.09	3	Horizontal	360	1.00	-
2437MHz	Pass	PK	298.69M	42.03	46.00	-3.97	-15.11	3	Horizontal	360	1.00	-
2437MHz	Pass	PK	375.32M	38.53	46.00	-7.47	-13.10	3	Horizontal	360	1.00	-
2437MHz	Pass	PK	597.45M	32.64	46.00	-13.36	-8.40	3	Horizontal	360	1.00	-
2437MHz	Pass	PK	976.72M	37.69	54.00	-16.31	-1.66	3	Horizontal	360	1.00	-
2437MHz	Pass	PK	41.64M	33.40	40.00	-6.60	-18.52	3	Vertical	0	1.00	-
2437MHz	Pass	PK	175.5M	40.10	43.50	-3.40	-19.89	3	Vertical	0	1.00	-
2437MHz	Pass	PK	239.52M	33.45	46.00	-12.55	-17.41	3	Vertical	0	1.00	-
2437MHz	Pass	PK	375.32M	35.77	46.00	-10.23	-13.10	3	Vertical	0	1.00	-
2437MHz	Pass	PK	597.45M	30.53	46.00	-15.47	-8.40	3	Vertical	0	1.00	-
2437MHz	Pass	PK	777.87M	36.22	46.00	-9.78	-5.32	3	Vertical	0	1.00	-

SPORTON INTERNATIONAL INC. Page No. : F2 of F4

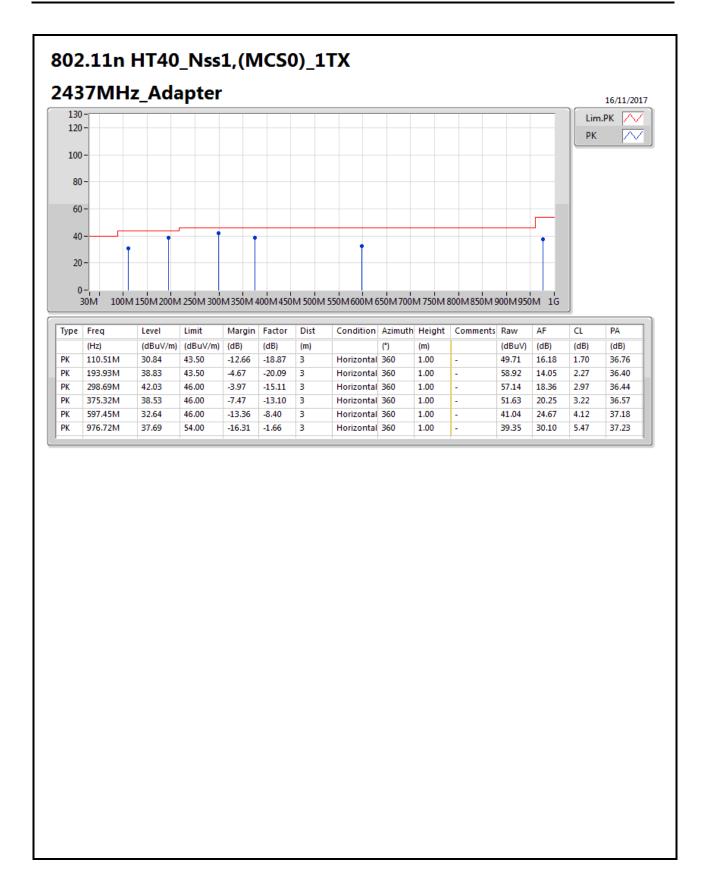
TEL: 886-3-327-3456 FAX: 886-3-327-0973





TEL: 886-3-327-3456 FAX: 886-3-327-0973





TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : F4 of F4



Appendix F.2

Summary

Mode	Result	Туре	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
			(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-
802.11b_Nss1,(1Mbps)_1TX	Pass	AV	4.874G	50.90	54.00	-3.10	6.01	3	Vertical	156	1.08	-
802.11g_Nss1,(6Mbps)_1TX	Pass	AV	2.483502G	52.98	54.00	-1.02	30.79	3	Vertical	214	1.57	-
802.11n HT20_Nss1,(MCS0)_1TX	Pass	AV	2.39G	52.48	54.00	-1.52	30.45	3	Vertical	216	1.50	-
802.11n HT40_Nss1,(MCS0)_1TX	Pass	AV	2.389998G	52.79	54.00	-1.21	30.45	3	Vertical	216	1.48	-

SPORTON INTERNATIONAL INC. Page No. : F1 of F53

TEL: 886-3-327-3456 FAX: 886-3-327-0973 7O1918



Appendix F.2

## Result

Mode	Result	Туре	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
			(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
802.11b_Nss1,(1Mbps)_1TX	-	-	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	AV	2.3892G	42.69	54.00	-11.31	30.93	3	Horizontal	218	1.34	-
2412MHz	Pass	AV	2.4102G	92.83	Inf	-Inf	31.01	3	Horizontal	218	1.34	-
2412MHz	Pass	PK	2.3832G	54.25	74.00	-19.75	30.91	3	Horizontal	218	1.34	-
2412MHz	Pass	PK	2.411G	96.63	Inf	-Inf	31.01	3	Horizontal	218	1.34	-
2412MHz	Pass	AV	2.385G	42.75	54.00	-11.25	30.92	3	Vertical	118	1.03	-
2412MHz	Pass	AV	2.4102G	94.98	Inf	-Inf	31.01	3	Vertical	118	1.03	-
2412MHz	Pass	PK	2.3696G	54.28	74.00	-19.72	30.86	3	Vertical	118	1.03	-
2412MHz	Pass	PK	2.411G	98.74	Inf	-Inf	31.01	3	Vertical	118	1.03	-
2412MHz	Pass	AV	4.824G	41.88	54.00	-12.12	5.90	3	Horizontal	184	1.76	-
2412MHz	Pass	PK	4.824G	48.34	74.00	-25.66	5.90	3	Horizontal	184	1.76	-
2412MHz	Pass	AV	4.824G	50.64	54.00	-3.36	5.90	3	Vertical	158	1.05	-
2412MHz	Pass	PK	4.824G	53.85	74.00	-20.15	5.90	3	Vertical	158	1.05	-
2437MHz	Pass	AV	2.389G	42.73	54.00	-11.27	30.93	3	Horizontal	217	1.50	-
2437MHz	Pass	AV	2.4354G	92.61	Inf	-Inf	31.10	3	Horizontal	217	1.50	-
2437MHz	Pass	AV	2.4974G	43.37	54.00	-10.63	31.32	3	Horizontal	217	1.50	-
2437MHz	Pass	PK	2.381G	54.41	74.00	-19.59	30.90	3	Horizontal	217	1.50	-
2437MHz	Pass	PK	2.4362G	96.47	Inf	-Inf	31.10	3	Horizontal	217	1.50	-
2437MHz	Pass	PK	2.485G	54.73	74.00	-19.27	31.28	3	Horizontal	217	1.50	-
2437MHz	Pass	AV	2.389G	42.85	54.00	-11.15	30.93	3	Vertical	119	1.17	-
2437MHz	Pass	AV	2.4362G	94.97	Inf	-Inf	31.10	3	Vertical	119	1.17	-
2437MHz	Pass	AV	2.499998G	43.36	54.00	-10.64	31.33	3	Vertical	119	1.17	-
2437MHz	Pass	PK	2.3862G	54.42	74.00	-19.58	30.92	3	Vertical	119	1.17	-
2437MHz	Pass	PK	2.4362G	98.87	Inf	-Inf	31.10	3	Vertical	119	1.17	-
2437MHz	Pass	PK	2.4862G	54.98	74.00	-19.02	31.28	3	Vertical	119	1.17	-
2437MHz	Pass	AV	4.874G	43.52	54.00	-10.48	6.01	3	Horizontal	184	1.29	-
2437MHz	Pass	PK	4.874G	48.80	74.00	-25.20	6.01	3	Horizontal	184	1.29	-
2437MHz	Pass	AV	4.874G	50.90	54.00	-3.10	6.01	3	Vertical	156	1.08	-
2437MHz	Pass	PK	4.874G	53.42	74.00	-20.58	6.01	3	Vertical	156	1.08	-
2462MHz	Pass	AV	2.4636G	91.86	Inf	-Inf	31.20	3	Horizontal	215	1.06	-
2462MHz	Pass	AV	2.4888G	43.45	54.00	-10.55	31.29	3	Horizontal	215	1.06	-
2462MHz	Pass	PK	2.463G	95.80	Inf	-Inf	31.20	3	Horizontal	215	1.06	-
2462MHz	Pass	PK	2.4836G	54.63	74.00	-19.37	31.27	3	Horizontal	215	1.06	-
2462MHz	Pass	AV	2.4638G	93.61	Inf	-Inf	31.20	3	Vertical	104	1.49	-
2462MHz	Pass	AV	2.4878G	43.67	54.00	-10.33	31.29	3	Vertical	104	1.49	-
2462MHz	Pass	PK	2.463G	97.38	Inf	-Inf	31.20	3	Vertical	104	1.49	-
2462MHz	Pass	PK	2.496G	54.88	74.00	-19.12	31.32	3	Vertical	104	1.49	-
2462MHz	Pass	AV	4.924G	44.89	54.00	-9.11	6.13	3	Horizontal	200	1.94	-
2462MHz	Pass	PK	4.924G	49.65	74.00	-24.35	6.13	3	Horizontal	200	1.94	-
2462MHz	Pass	AV	4.924G	50.51	54.00	-3.49	6.13	3	Vertical	158	1.39	-
2462MHz	Pass	PK	4.924G	53.47	74.00	-20.53	6.13	3	Vertical	158	1.39	-
802.11g_Nss1,(6Mbps)_1TX	-	-	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	AV	2.39G	50.43	54.00	-3.57	30.45	3	Horizontal	206	1.84	-
2412MHz	Pass	AV	2.4098G	93.88	Inf	-Inf	30.53	3	Horizontal	206	1.84	-
2412MHz	Pass	PK	2.39G	61.55	74.00	-12.45	30.45	3	Horizontal	206	1.84	-
2412MHz	Pass	PK	2.4092G	102.45	Inf	-Inf	30.52	3	Horizontal	206	1.84	-
2412MHz	Pass	AV	2.39G	52.89	54.00	-1.11	30.45	3	Vertical	214	1.72	-
2412MHz	Pass	AV	2.411G	98.33	Inf	-Inf	30.53	3	Vertical	214	1.72	-

SPORTON INTERNATIONAL INC.

TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : F2 of F53



Appendix F.2

Mode	Result	Туре	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
mode	Result	Type	(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)	Condition	(°)	(m)	Comments
2412MHz	Pass	PK	2.39G	66.60	74.00	-7.40	30.45	3	Vertical	214	1.72	_
2412MHz	Pass	PK	2.4102G	107.08	Inf	-7.40 -Inf	30.43	3	Vertical	214	1.72	-
2412MHz	Pass	AV	4.82388G	32.68	54.00	-21.32	2.10	3	Horizontal	176	1.50	_
2412MHz	Pass	PK	4.82706G	46.57	74.00	-27.43	2.10	3	Horizontal	176	1.50	_
2412MHz	Pass	AV	4.82622G	37.77	54.00	-16.23	2.11	3	Vertical	147	1.92	-
2412MHz	Pass	PK	4.81974G	51.34	74.00	-22.66	2.11	3	Vertical	147	1.92	-
2437MHz	Pass	AV	2.3898G	43.27	54.00	-10.73	30.93	3		217	1.50	-
2437MHz									Horizontal			-
	Pass	AV	2.4362G	93.13	Inf	-Inf	31.10	3	Horizontal	217	1.50	-
2437MHz	Pass	AV	2.4858G	43.66	54.00	-10.34	31.28	3	Horizontal	217	1.50	-
2437MHz	Pass	PK	2.3894G	53.73	74.00	-20.27	30.93	3	Horizontal	217	1.50	-
2437MHz	Pass	PK	2.435G	103.23	Inf	-Inf	31.10	3	Horizontal	217	1.50	-
2437MHz	Pass	PK	2.4838G	55.34	74.00	-18.66	31.27	3	Horizontal	217	1.50	-
2437MHz	Pass	AV	2.3886G	43.38	54.00	-10.62	30.93	3	Vertical	120	1.16	-
2437MHz	Pass	AV	2.4358G	95.27	Inf	-Inf	31.10	3	Vertical	120	1.16	-
2437MHz	Pass	AV	2.483502G	43.77	54.00	-10.23	31.27	3	Vertical	120	1.16	-
2437MHz	Pass	PK	2.3898G	53.68	74.00	-20.32	30.93	3	Vertical	120	1.16	-
2437MHz	Pass	PK	2.4342G	105.17	Inf	-Inf	31.09	3	Vertical	120	1.16	-
2437MHz	Pass	PK	2.4986G	54.95	74.00	-19.05	31.32	3	Vertical	120	1.16	-
2437MHz	Pass	AV	4.874G	41.16	54.00	-12.84	6.01	3	Horizontal	182	1.29	-
2437MHz	Pass	PK	4.874G	54.56	74.00	-19.44	6.01	3	Horizontal	182	1.29	-
2437MHz	Pass	AV	4.874G	48.87	54.00	-5.13	6.01	3	Vertical	158	1.13	-
2437MHz	Pass	PK	4.874G	62.84	74.00	-11.16	6.01	3	Vertical	158	1.13	-
2462MHz	Pass	AV	2.4636G	92.87	Inf	-Inf	30.72	3	Horizontal	204	1.95	-
2462MHz	Pass	AV	2.483502G	49.74	54.00	-4.26	30.79	3	Horizontal	204	1.95	-
2462MHz	Pass	PK	2.4646G	101.96	Inf	-Inf	30.72	3	Horizontal	204	1.95	-
2462MHz	Pass	PK	2.4844G	60.26	74.00	-13.74	30.79	3	Horizontal	204	1.95	-
2462MHz	Pass	AV	2.4628G	97.67	Inf	-Inf	30.72	3	Vertical	214	1.57	-
2462MHz	Pass	AV	2.483502G	52.98	54.00	-1.02	30.79	3	Vertical	214	1.57	-
2462MHz	Pass	PK	2.46G	106.36	Inf	-Inf	30.71	3	Vertical	214	1.57	-
2462MHz	Pass	PK	2.483502G	64.57	74.00	-9.43	30.79	3	Vertical	214	1.57	-
2462MHz	Pass	AV	4.92406G	34.15	54.00	-19.85	2.41	3	Horizontal	353	1.48	-
2462MHz	Pass	PK	4.9246G	47.88	74.00	-26.12	2.42	3	Horizontal	353	1.48	-
2462MHz	Pass	AV	4.9243G	39.43	54.00	-14.57	2.42	3	Vertical	151	1.72	-
2462MHz	Pass	PK	4.9219G	53.24	74.00	-20.76	2.41	3	Vertical	151	1.72	-
802.11n HT20_Nss1,(MCS0)_1TX	-	-	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	AV	2.39G	49.30	54.00	-4.70	30.45	3	Horizontal	205	1.84	-
2412MHz	Pass	AV	2.4104G	92.81	Inf	-Inf	30.53	3	Horizontal	205	1.84	-
2412MHz	Pass	PK	2.39G	59.55	74.00	-14.45	30.45	3	Horizontal	205	1.84	-
2412MHz	Pass	PK	2.4102G	101.45	Inf	-Inf	30.53	3	Horizontal	205	1.84	-
2412MHz	Pass	AV	2.39G	52.48	54.00	-1.52	30.45	3	Vertical	216	1.50	-
2412MHz	Pass	AV	2.4098G	96.90	Inf	-Inf	30.53	3	Vertical	216	1.50	-
2412MHz	Pass	PK	2.3898G	64.23	74.00	-9.77	30.45	3	Vertical	216	1.50	-
2412MHz	Pass	PK	2.4106G	105.62	Inf	-Inf	30.53	3	Vertical	216	1.50	-
2412MHz	Pass	AV	4.82364G	31.68	54.00	-22.32	2.10	3	Horizontal	177	1.50	-
2412MHz	Pass	PK	4.82214G	44.49	74.00	-29.51	2.10	3	Horizontal	177	1.50	_
2412MHz	Pass	AV	4.82646G	35.57	54.00	-18.43	2.10	3	Vertical	150	1.94	-
2412MHz	Pass	PK	4.82586G	49.63	74.00	-24.37	2.11	3	Vertical	150	1.94	
2437MHz	Pass	AV	2.3898G	43.20	54.00	-10.80	30.93	3	Horizontal	217	1.54	
2437MHz 2437MHz		AV	2.3898G 2.435G	92.96		-10.80 -Inf		3		217		-
2431 NITIZ	Pass	AV	2.4300	32.90	Inf	-1/11	31.10	ა	Horizontal	211	1.51	-

SPORTON INTERNATIONAL INC.

TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : F3 of F53



Appendix F.2

Mode	Result	Туре	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
			(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
2437MHz	Pass	AV	2.4862G	43.67	54.00	-10.33	31.28	3	Horizontal	217	1.51	-
2437MHz	Pass	PK	2.389G	54.40	74.00	-19.60	30.93	3	Horizontal	217	1.51	-
2437MHz	Pass	PK	2.4346G	103.03	Inf	-Inf	31.09	3	Horizontal	217	1.51	-
2437MHz	Pass	PK	2.4978G	54.98	74.00	-19.02	31.32	3	Horizontal	217	1.51	-
2437MHz	Pass	AV	2.389G	43.56	54.00	-10.44	30.93	3	Vertical	120	1.45	-
2437MHz	Pass	AV	2.4354G	95.36	Inf	-Inf	31.10	3	Vertical	120	1.45	-
2437MHz	Pass	AV	2.483502G	43.90	54.00	-10.10	31.27	3	Vertical	120	1.45	-
2437MHz	Pass	PK	2.389G	54.16	74.00	-19.84	30.93	3	Vertical	120	1.45	-
2437MHz	Pass	PK	2.4406G	106.13	Inf	-Inf	31.12	3	Vertical	120	1.45	-
2437MHz	Pass	PK	2.4902G	54.99	74.00	-19.01	31.29	3	Vertical	120	1.45	-
2437MHz	Pass	AV	4.874G	41.89	54.00	-12.11	6.01	3	Horizontal	183	1.27	-
2437MHz	Pass	PK	4.874G	54.99	74.00	-19.01	6.01	3	Horizontal	183	1.27	-
2437MHz	Pass	AV	4.874G	48.43	54.00	-5.57	6.01	3	Vertical	155	1.08	-
2437MHz	Pass	PK	4.874G	62.62	74.00	-11.38	6.01	3	Vertical	155	1.08	-
2462MHz	Pass	AV	2.463G	91.61	Inf	-Inf	30.72	3	Horizontal	203	1.97	-
2462MHz	Pass	AV	2.4836G	49.32	54.00	-4.68	30.79	3	Horizontal	203	1.97	-
2462MHz	Pass	PK	2.462G	100.61	Inf	-Inf	30.71	3	Horizontal	203	1.97	-
2462MHz	Pass	PK	2.4836G	59.90	74.00	-14.10	30.79	3	Horizontal	203	1.97	-
2462MHz	Pass	AV	2.461G	96.47	Inf	-Inf	30.71	3	Vertical	214	1.59	-
2462MHz	Pass	AV	2.483502G	51.60	54.00	-2.40	30.79	3	Vertical	214	1.59	-
2462MHz	Pass	PK	2.4644G	105.65	Inf	-Inf	30.72	3	Vertical	214	1.59	-
2462MHz	Pass	PK	2.483502G	62.88	74.00	-11.12	30.79	3	Vertical	214	1.59	-
2462MHz	Pass	AV	4.9267G	33.01	54.00	-20.99	2.42	3	Horizontal	351	1.72	-
2462MHz	Pass	PK	4.9183G	46.07	74.00	-27.93	2.40	3	Horizontal	351	1.72	-
2462MHz	Pass	AV	4.92508G	36.85	54.00	-17.15	2.42	3	Vertical	169	1.73	-
2462MHz	Pass	PK	4.92526G	51.24	74.00	-22.76	2.42	3	Vertical	169	1.73	-
802.11n HT40_Nss1,(MCS0)_1TX	-	-	-	-	-	-	-	-	-	-	-	-
2422MHz	Pass	AV	2.3896G	50.94	54.00	-3.06	30.45	3	Horizontal	206	1.77	-
2422MHz	Pass	AV	2.4188G	87.68	Inf	-Inf	30.56	3	Horizontal	206	1.77	-
2422MHz	Pass	AV	2.4984G	48.27	54.00	-5.73	30.84	3	Horizontal	206	1.77	-
2422MHz	Pass	PK	2.3828G	59.65	74.00	-14.35	30.43	3	Horizontal	206	1.77	-
2422MHz	Pass	PK	2.4184G	95.73	Inf	-Inf	30.56	3	Horizontal	206	1.77	-
2422MHz	Pass	PK	2.496G	58.48	74.00	-15.52	30.84	3	Horizontal	206	1.77	-
2422MHz	Pass	AV	2.3896G	52.75	54.00	-1.25	30.45	3	Vertical	217	1.23	-
2422MHz	Pass	AV	2.4172G	91.28	Inf	-Inf	30.55	3	Vertical	217	1.23	-
2422MHz	Pass	AV	2.4836G	47.65	54.00	-6.35	30.79	3	Vertical	217	1.23	-
2422MHz	Pass	PK	2.39G	64.03	74.00	-9.97	30.45	3	Vertical	217	1.23	-
2422MHz	Pass	PK	2.4184G	100.29	Inf	-Inf	30.56	3	Vertical	217	1.23	-
2422MHz	Pass	PK	2.4992G	58.93	74.00	-15.07	30.85	3	Vertical	217	1.23	-
2422MHz	Pass	AV	4.83482G	30.83	54.00	-23.17	2.14	3	Horizontal	79	1.50	-
2422MHz	Pass	PK	4.83314G	43.22	74.00	-30.78	2.13	3	Horizontal	79	1.50	-
2422MHz	Pass	AV	4.83818G	31.77	54.00	-22.23	2.15	3	Vertical	160	1.05	-
2422MHz	Pass	PK	4.83578G	44.16	74.00	-29.84	2.14	3	Vertical	160	1.05	-
2437MHz	Pass	AV	2.389998G	49.49	54.00	-4.51	30.45	3	Horizontal	204	1.81	-
2437MHz	Pass	AV	2.4298G	89.59	Inf	-Inf	30.60	3	Horizontal	204	1.81	-
2437MHz	Pass	AV	2.483502G	48.87	54.00	-5.13	30.79	3	Horizontal	204	1.81	-
2437MHz	Pass	PK	2.389998G	60.07	74.00	-13.93	30.45	3	Horizontal	204	1.81	-
2437MHz	Pass	PK	2.433G	98.45	Inf	-Inf	30.61	3	Horizontal	204	1.81	-
2437MHz	Pass	PK	2.4838G	58.93	74.00	-15.07	30.79	3	Horizontal	204	1.81	-

SPORTON INTERNATIONAL INC.

TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : F4 of F53



Appendix F.2

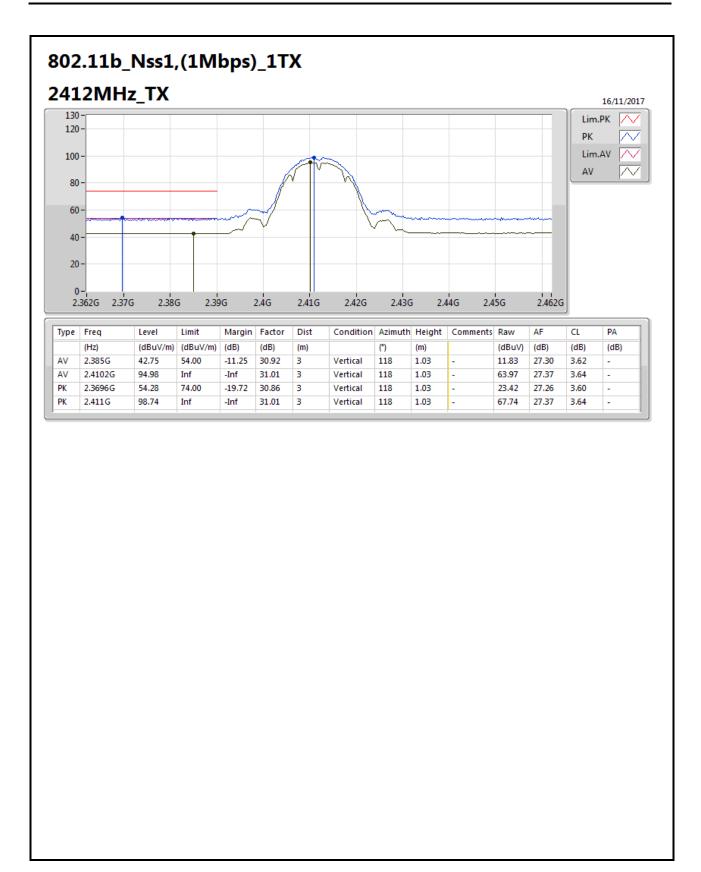
701918

Mode	Result	Туре	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
			(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
2437MHz	Pass	AV	2.389998G	52.79	54.00	-1.21	30.45	3	Vertical	216	1.48	-
2437MHz	Pass	AV	2.4318G	94.48	Inf	-Inf	30.60	3	Vertical	216	1.48	-
2437MHz	Pass	AV	2.4838G	51.08	54.00	-2.92	30.79	3	Vertical	216	1.48	-
2437MHz	Pass	PK	2.3886G	62.05	74.00	-11.95	30.45	3	Vertical	216	1.48	-
2437MHz	Pass	PK	2.431G	102.16	Inf	-Inf	30.60	3	Vertical	216	1.48	-
2437MHz	Pass	PK	2.4846G	60.20	74.00	-13.80	30.79	3	Vertical	216	1.48	-
2437MHz	Pass	AV	4.874G	35.32	54.00	-18.68	6.01	3	Horizontal	256	1.50	-
2437MHz	Pass	PK	4.874G	48.17	74.00	-25.83	6.01	3	Horizontal	256	1.50	-
2437MHz	Pass	AV	4.874G	38.51	54.00	-15.49	6.01	3	Vertical	335	1.92	-
2437MHz	Pass	PK	4.874G	50.93	74.00	-23.07	6.01	3	Vertical	335	1.92	-
2452MHz	Pass	AV	2.3584G	47.86	54.00	-6.14	30.34	3	Horizontal	205	1.70	-
2452MHz	Pass	AV	2.4468G	86.57	Inf	-Inf	30.66	3	Horizontal	205	1.70	-
2452MHz	Pass	AV	2.4852G	49.31	54.00	-4.69	30.80	3	Horizontal	205	1.70	-
2452MHz	Pass	PK	2.37G	57.98	74.00	-16.02	30.38	3	Horizontal	205	1.70	-
2452MHz	Pass	PK	2.4464G	95.17	Inf	-Inf	30.66	3	Horizontal	205	1.70	-
2452MHz	Pass	PK	2.4856G	59.39	74.00	-14.61	30.80	3	Horizontal	205	1.70	-
2452MHz	Pass	AV	2.3768G	48.23	54.00	-5.77	30.41	3	Vertical	214	1.67	-
2452MHz	Pass	AV	2.4468G	91.11	Inf	-Inf	30.66	3	Vertical	214	1.67	-
2452MHz	Pass	AV	2.4836G	52.24	54.00	-1.76	30.79	3	Vertical	214	1.67	-
2452MHz	Pass	PK	2.3804G	58.14	74.00	-15.86	30.42	3	Vertical	214	1.67	-
2452MHz	Pass	PK	2.4444G	99.65	Inf	-Inf	30.65	3	Vertical	214	1.67	-
2452MHz	Pass	PK	2.4852G	61.20	74.00	-12.80	30.80	3	Vertical	214	1.67	-
2452MHz	Pass	AV	4.90916G	31.87	54.00	-22.13	2.37	3	Horizontal	360	2.09	-
2452MHz	Pass	PK	4.91072G	44.17	74.00	-29.83	2.37	3	Horizontal	360	2.09	-
2452MHz	Pass	AV	4.90178G	33.32	54.00	-20.68	2.35	3	Vertical	164	1.92	-
2452MHz	Pass	PK	4.89542G	44.95	74.00	-29.05	2.33	3	Vertical	164	1.92	-

SPORTON INTERNATIONAL INC. Page No. : F5 of F53

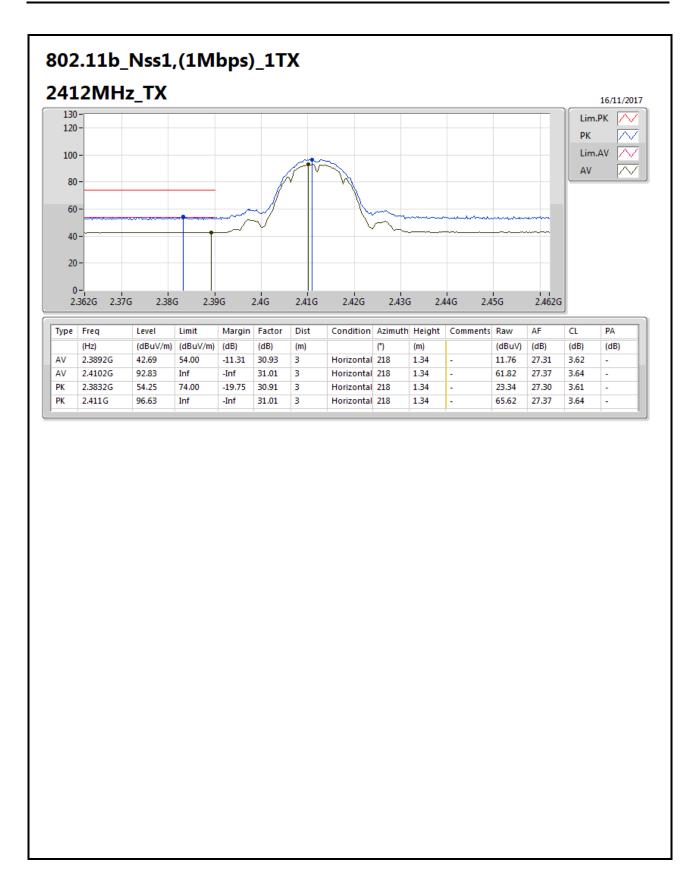
TEL: 886-3-327-3456 FAX: 886-3-327-0973





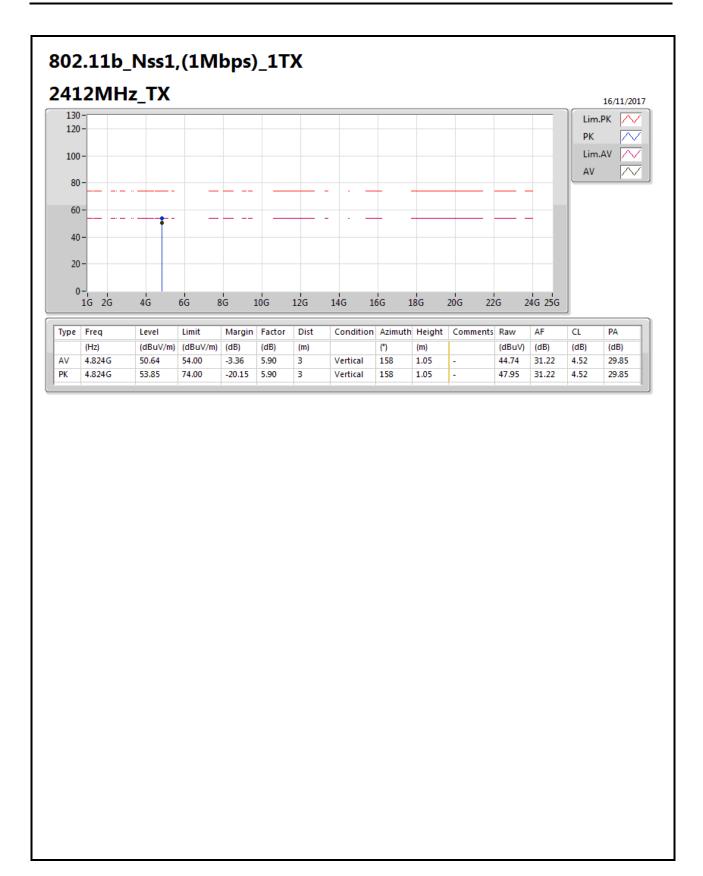
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : F6 of F53





TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : F7 of F53





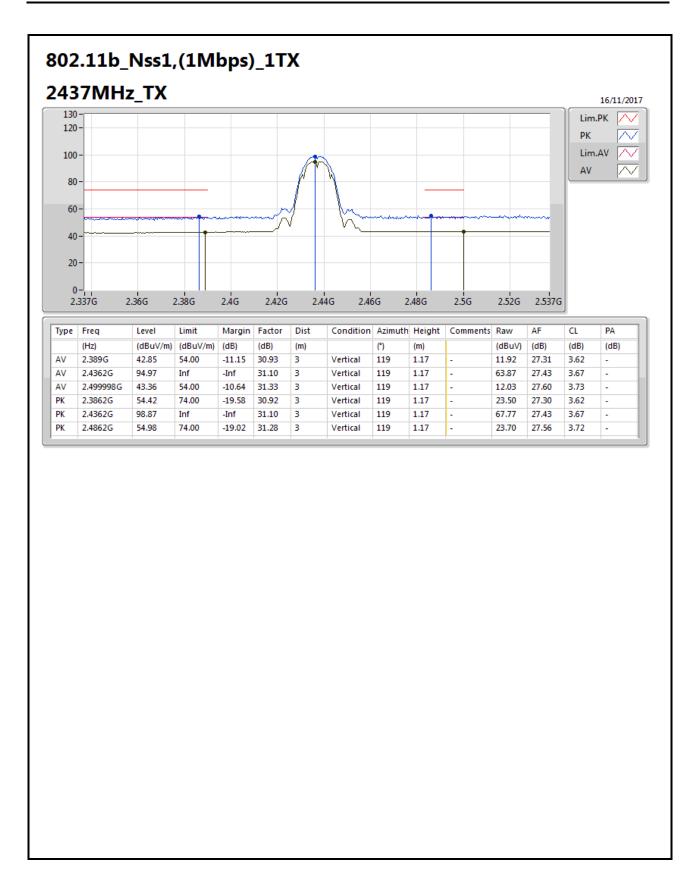
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : F8 of F53





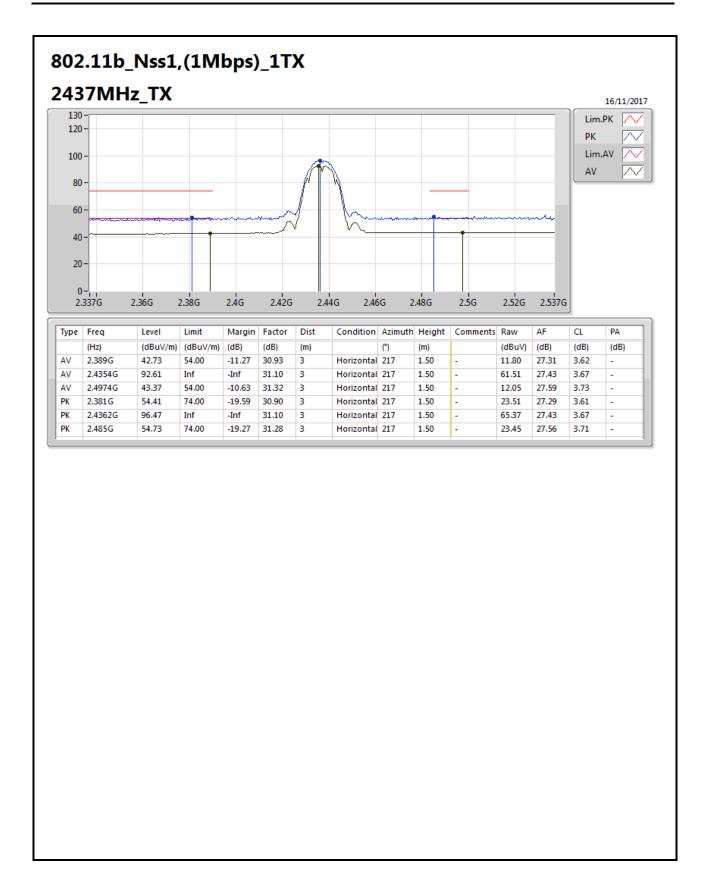
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : F9 of F53





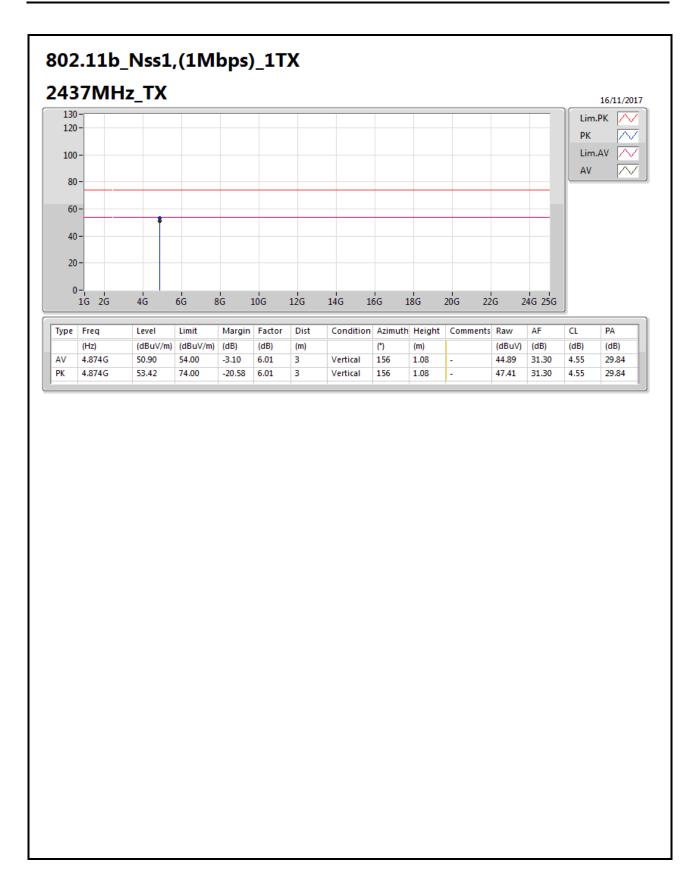
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : F10 of F53





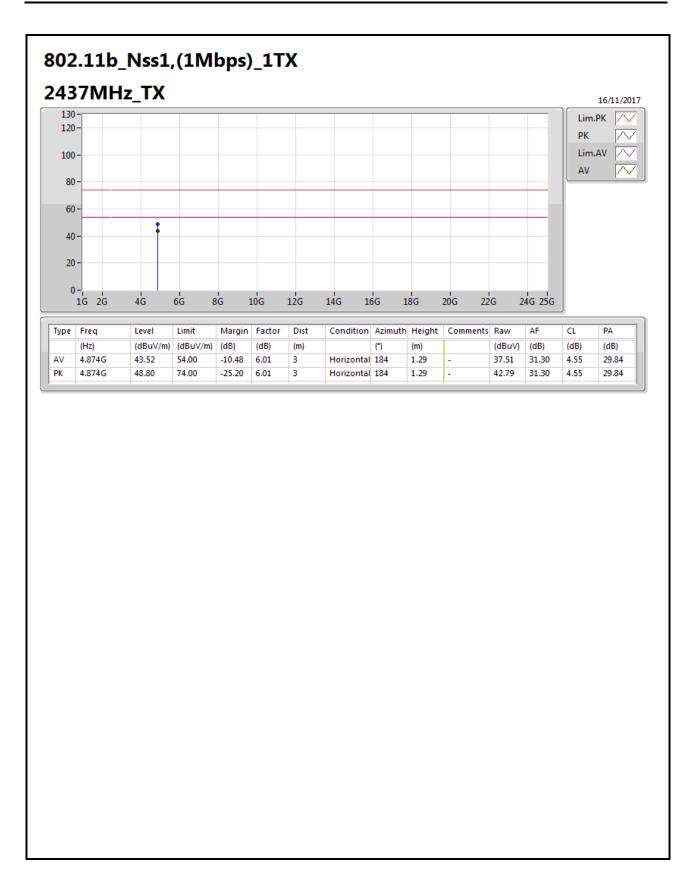
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : F11 of F53





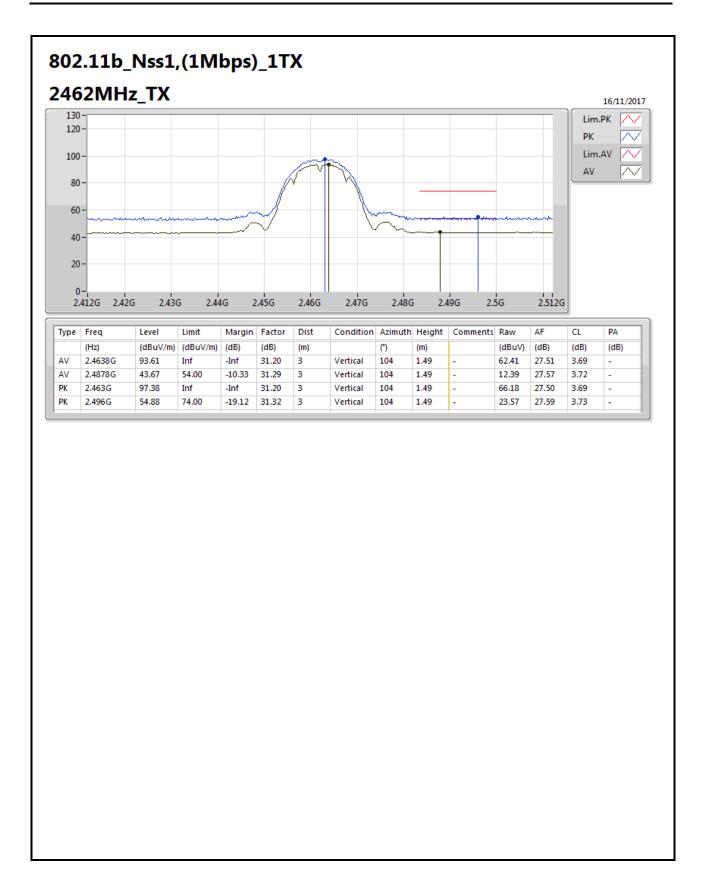
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : F12 of F53





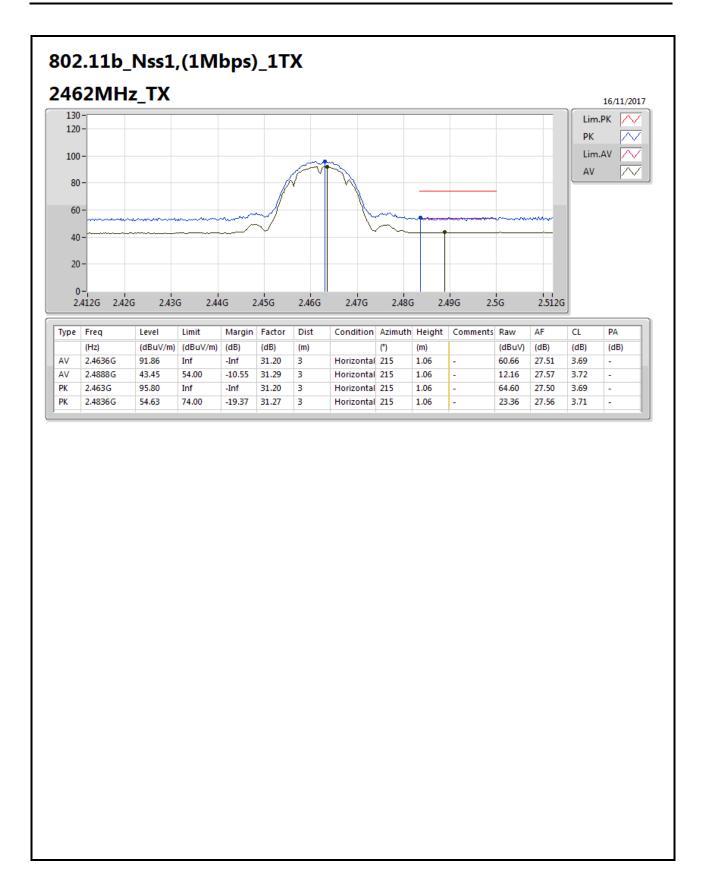
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : F13 of F53





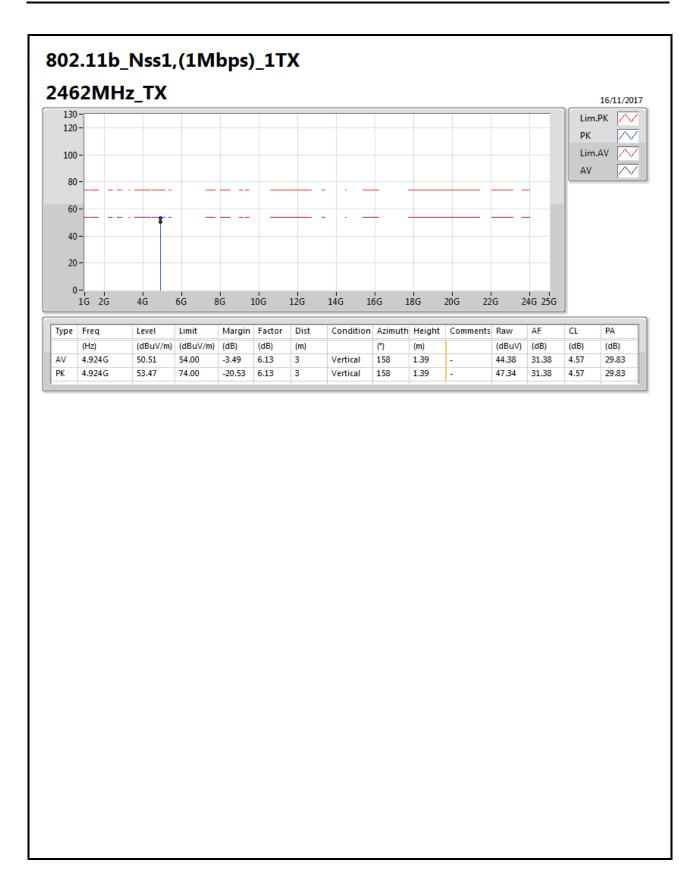
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : F14 of F53





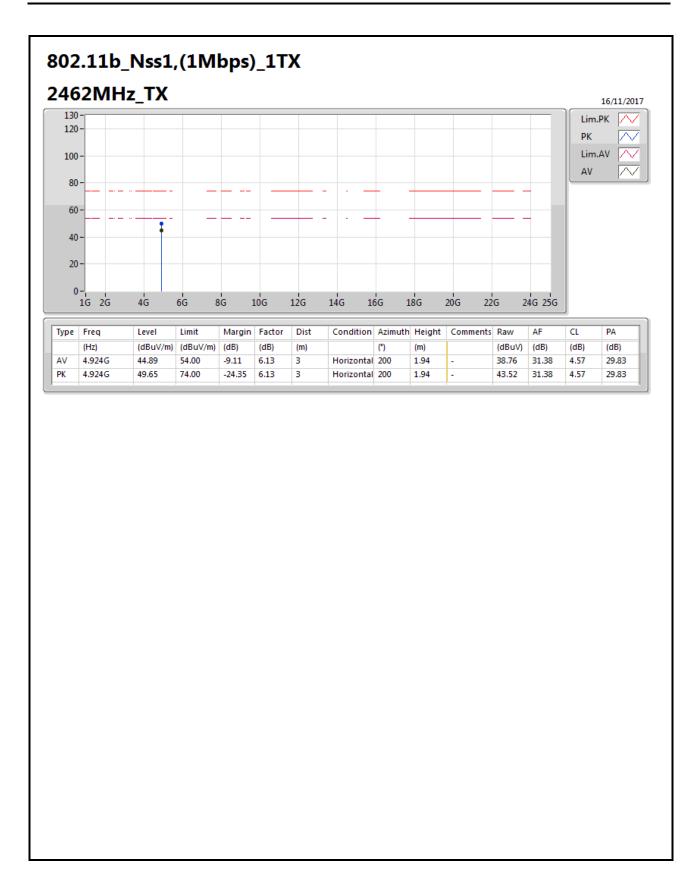
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : F15 of F53





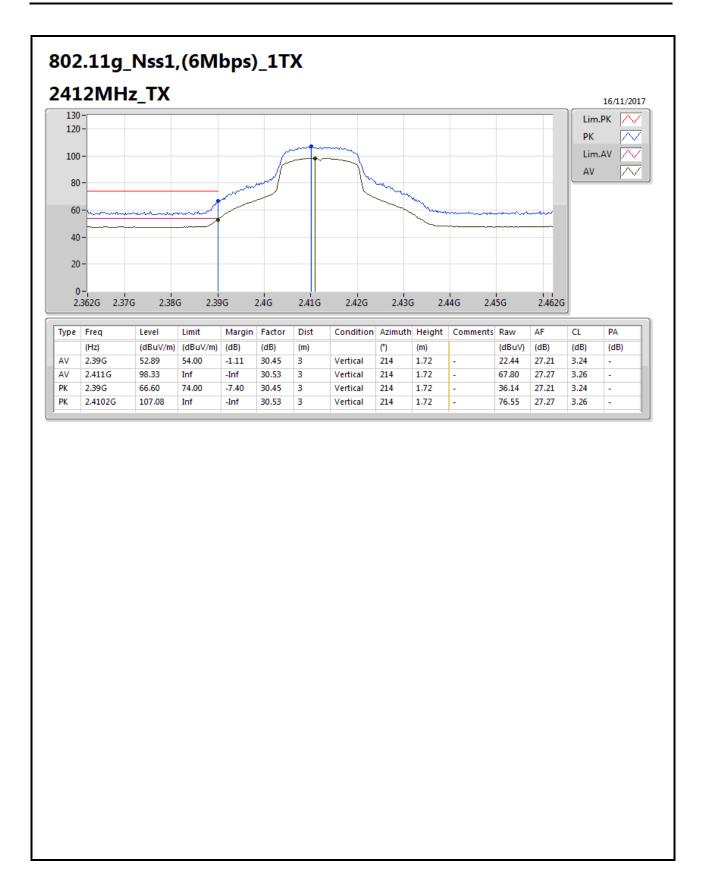
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : F16 of F53





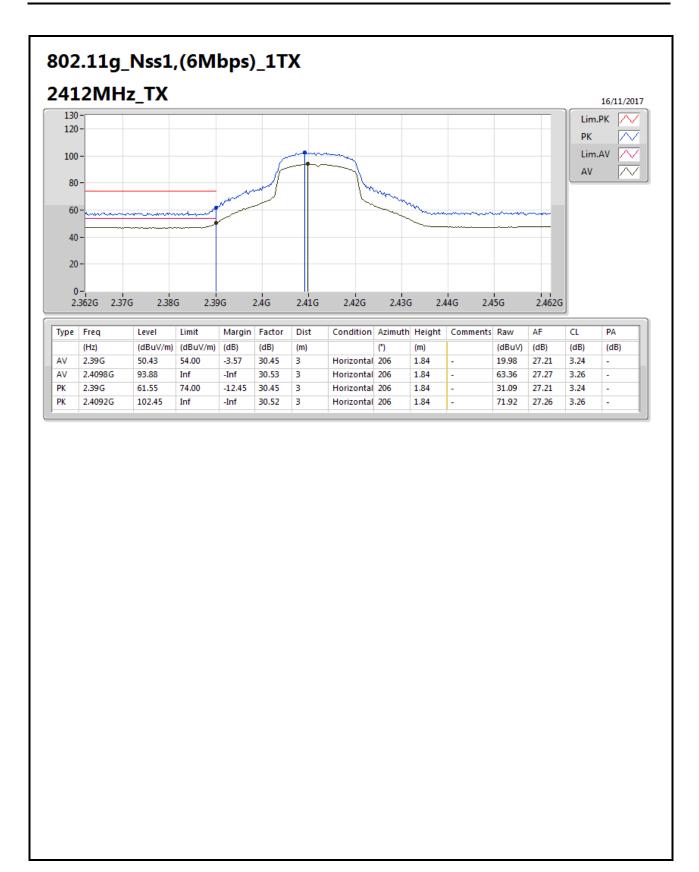
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : F17 of F53





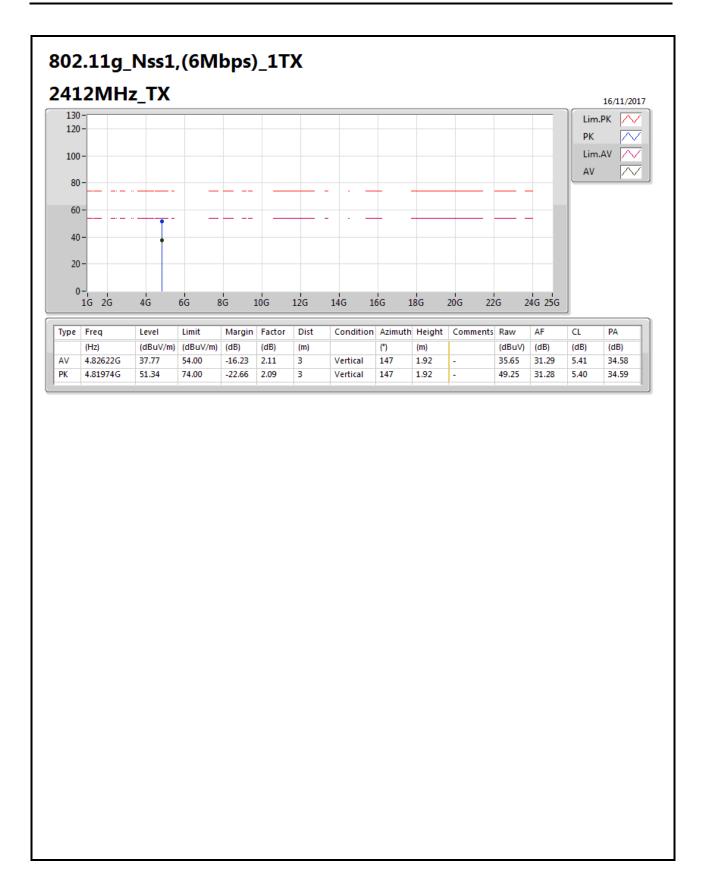
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : F18 of F53





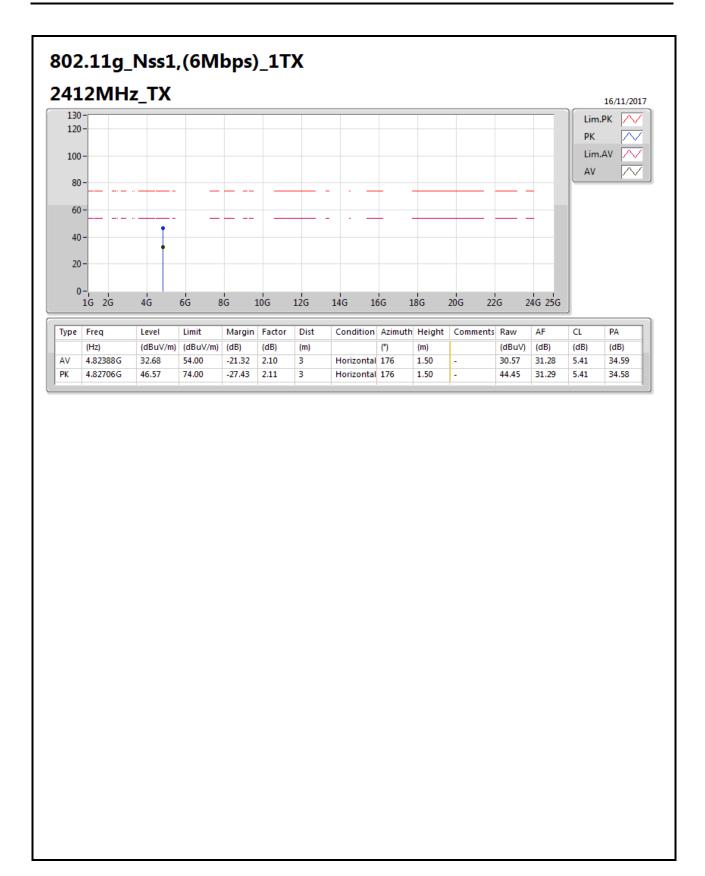
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : F19 of F53





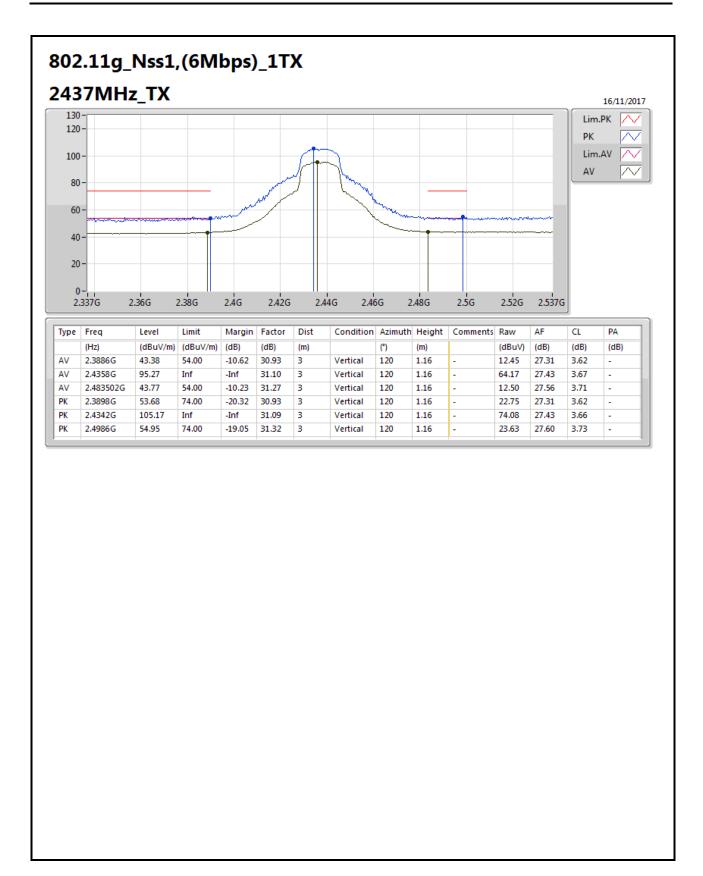
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : F20 of F53





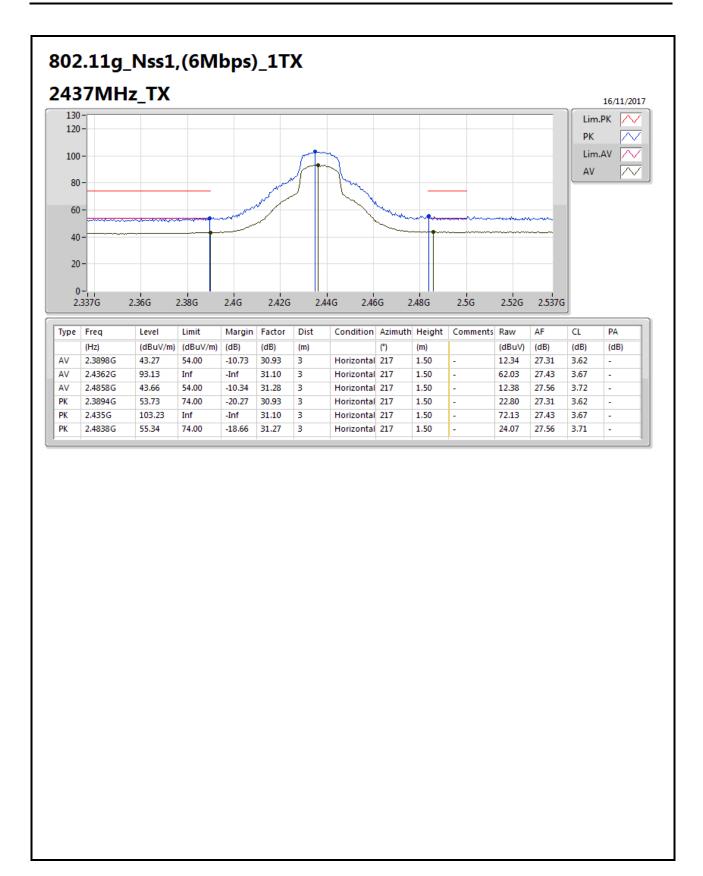
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : F21 of F53





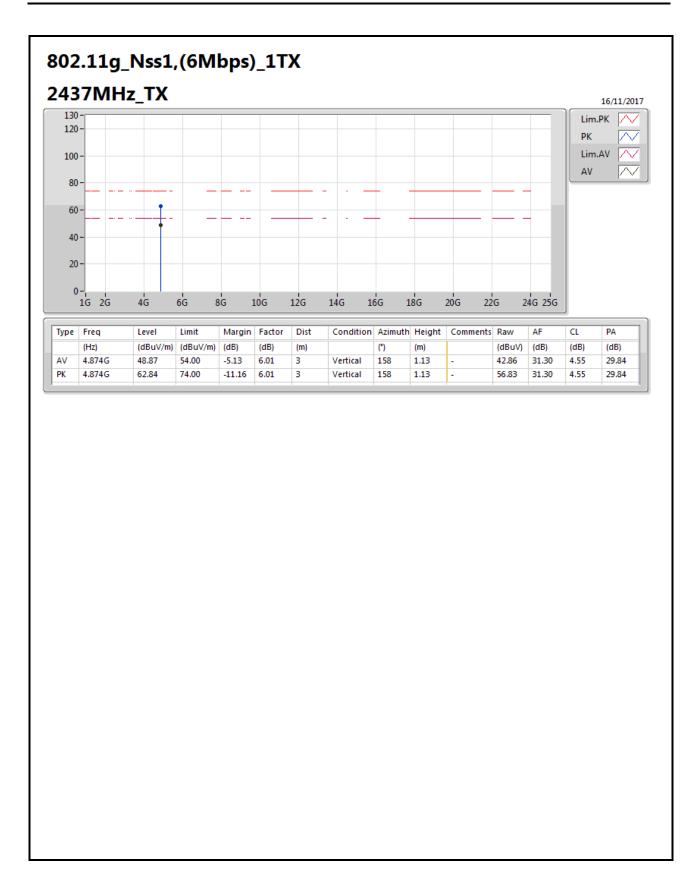
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : F22 of F53





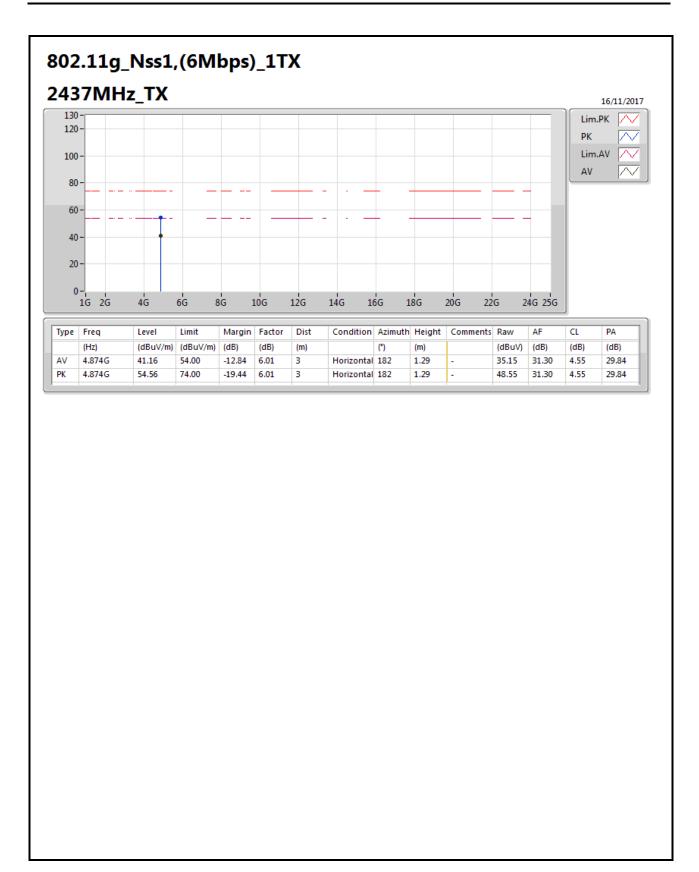
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : F23 of F53





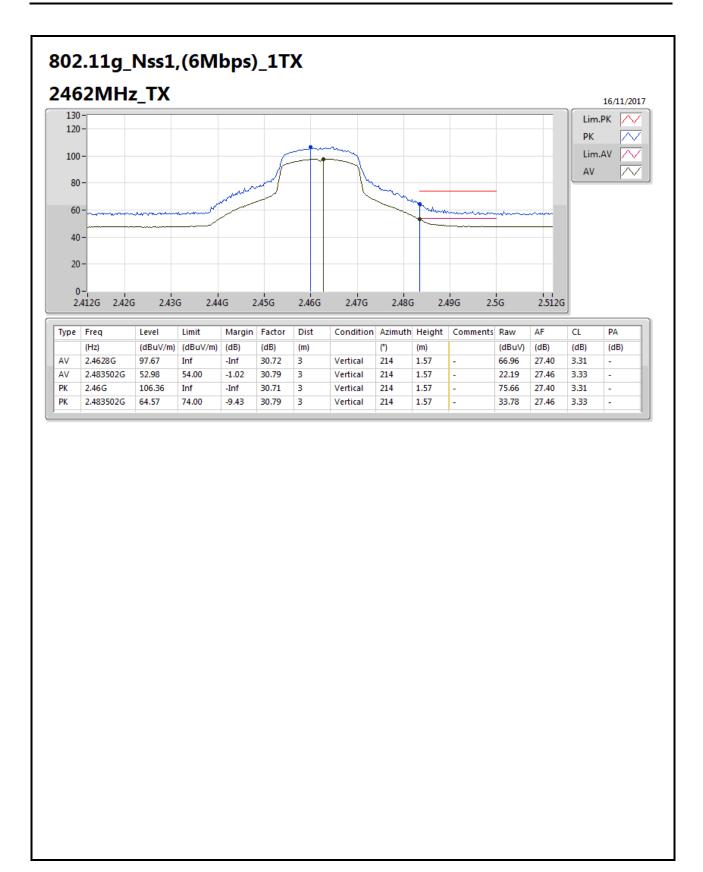
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : F24 of F53





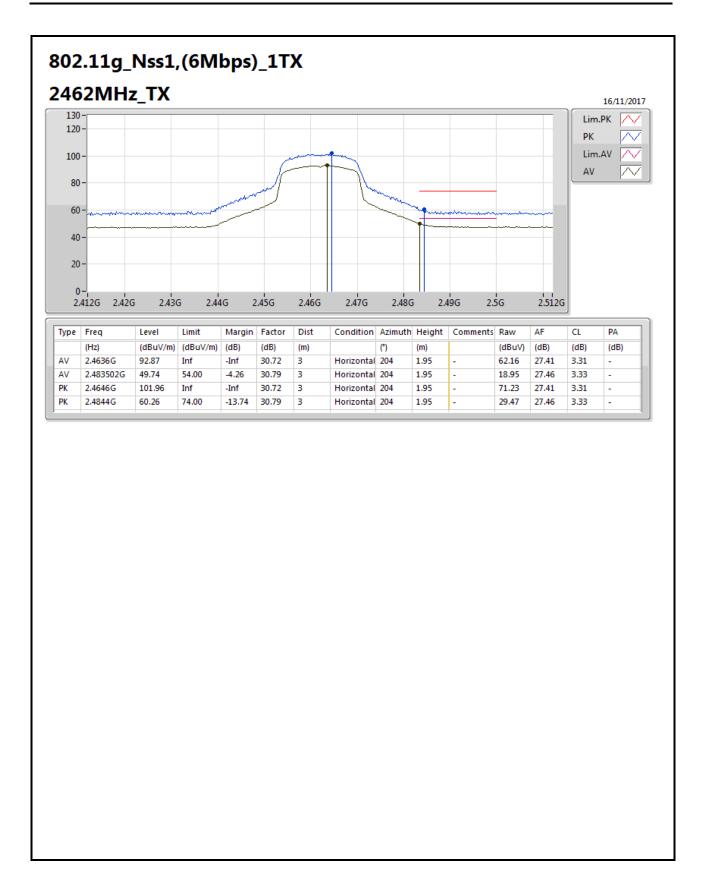
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : F25 of F53





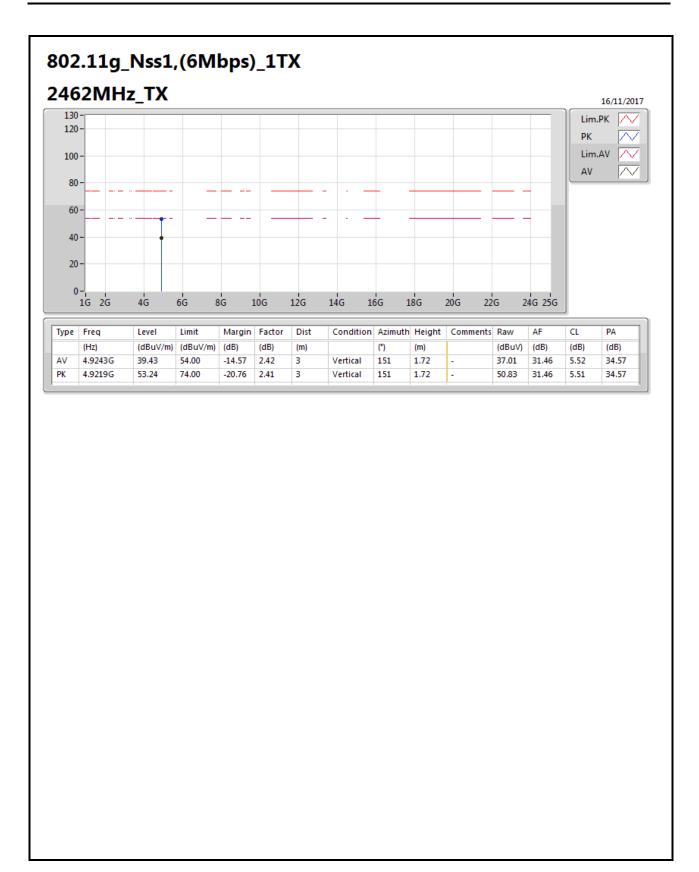
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : F26 of F53





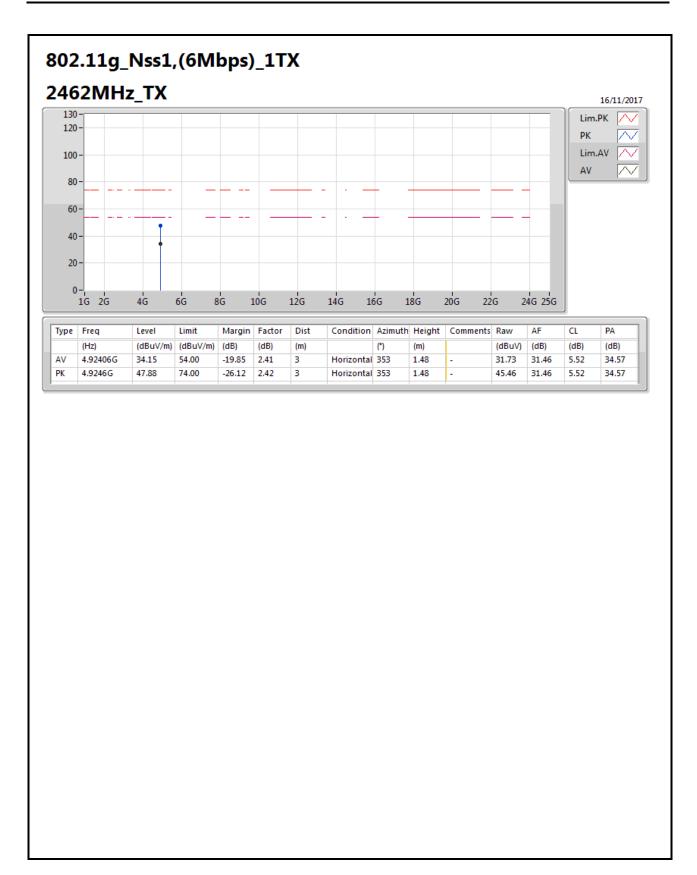
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : F27 of F53





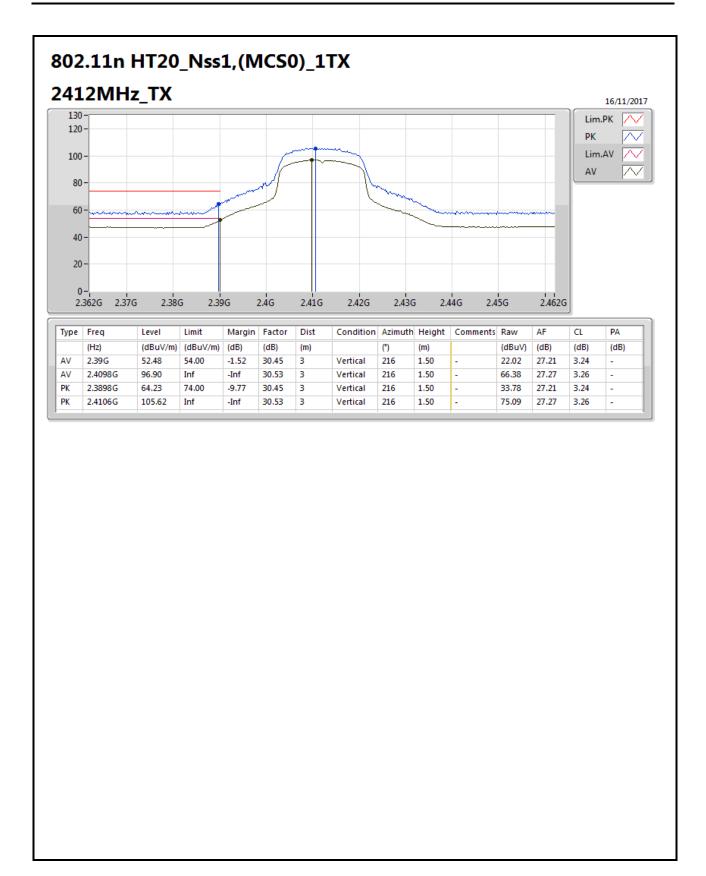
TEL: 886-3-327-3456 FAX: 886-3-327-0973





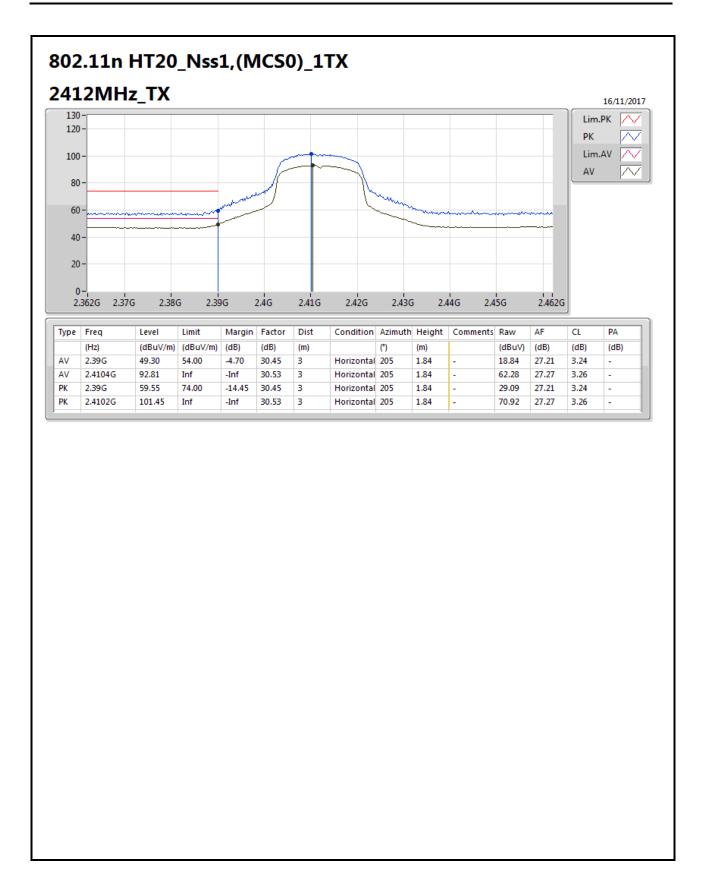
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : F29 of F53





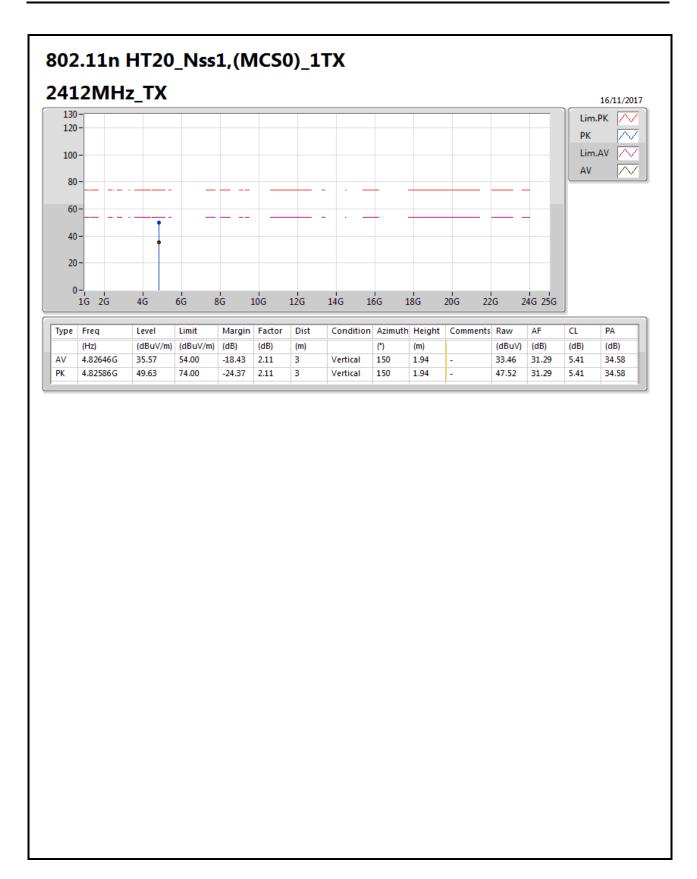
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : F30 of F53





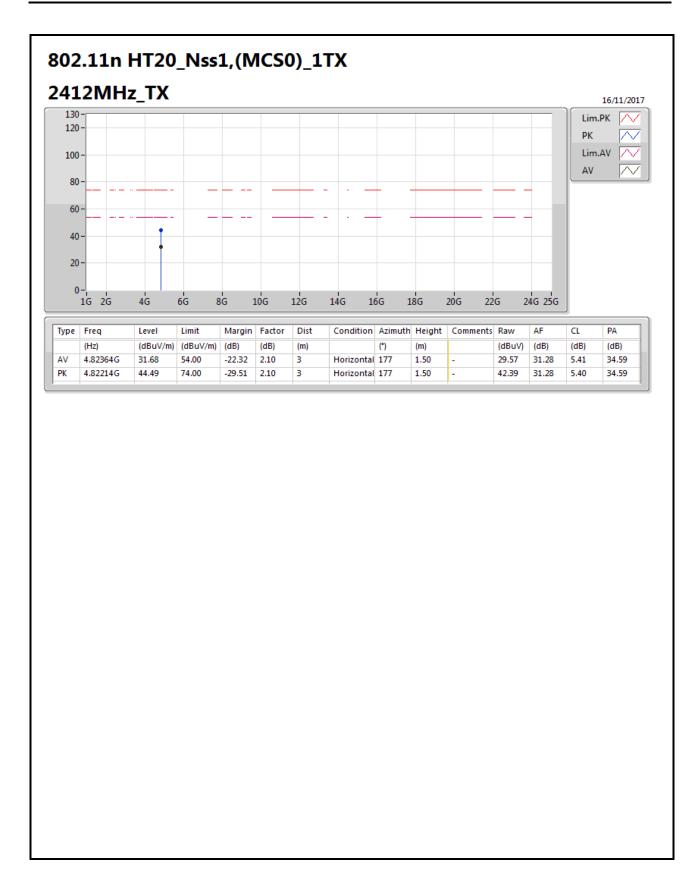
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : F31 of F53





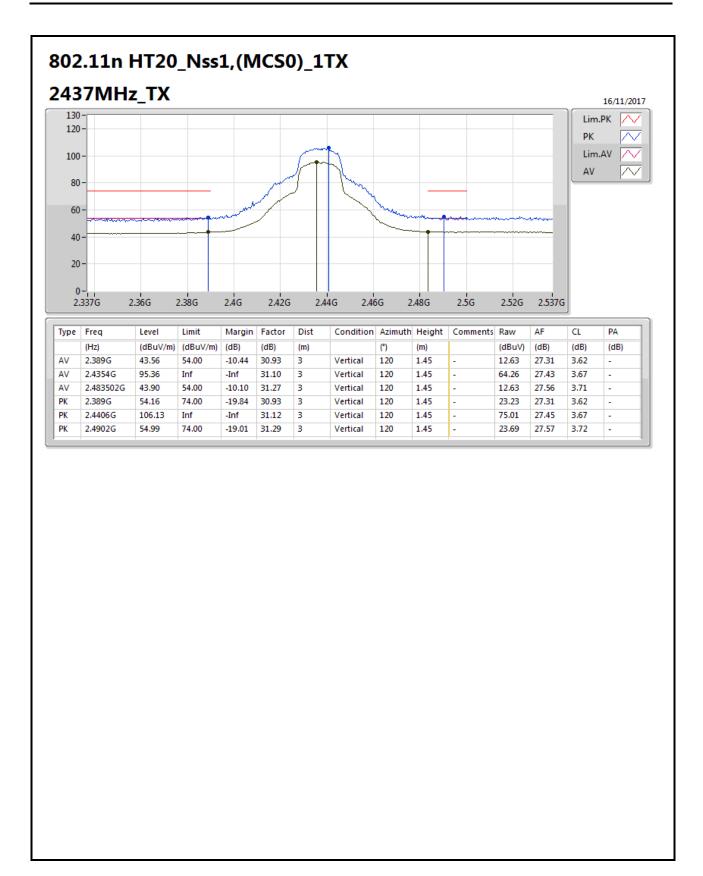
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : F32 of F53





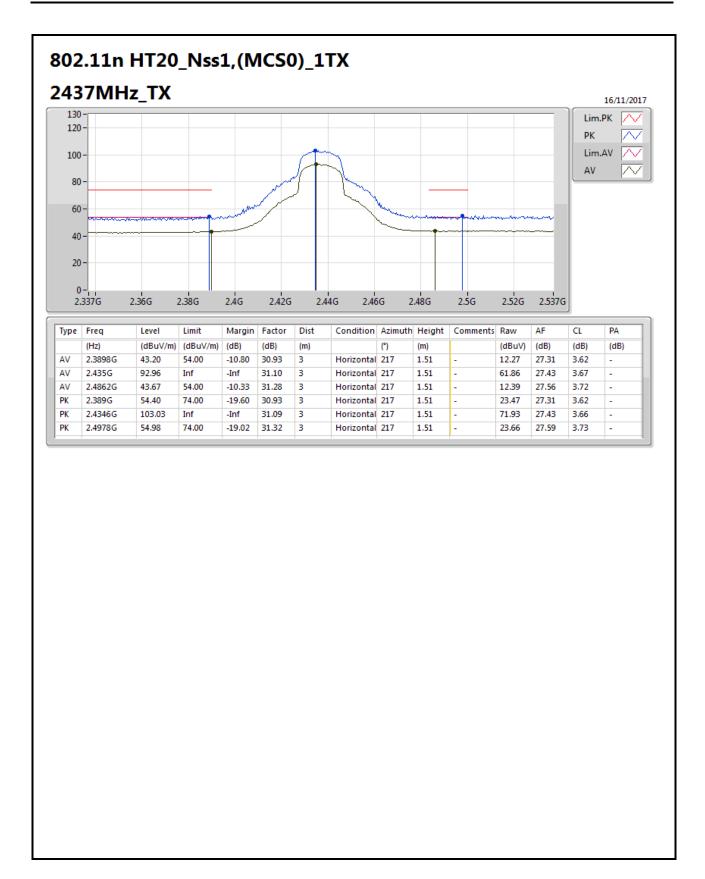
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : F33 of F53





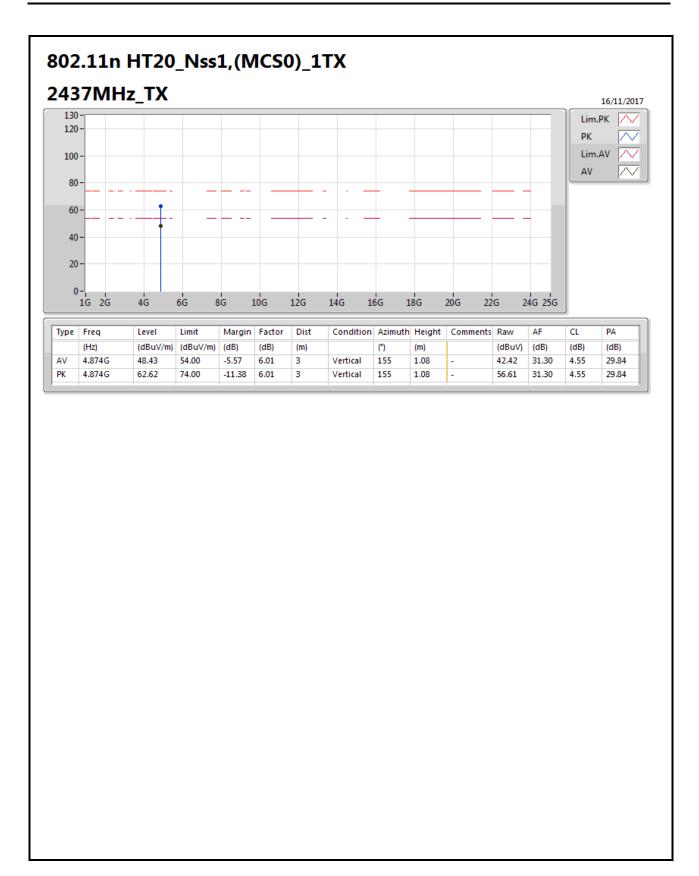
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : F34 of F53





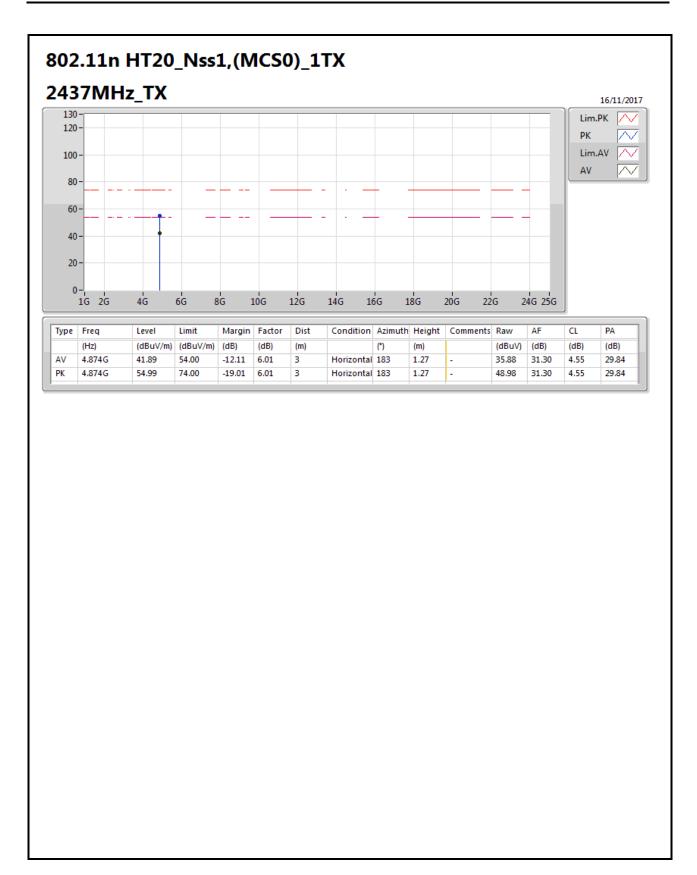
TEL: 886-3-327-3456 FAX: 886-3-327-0973





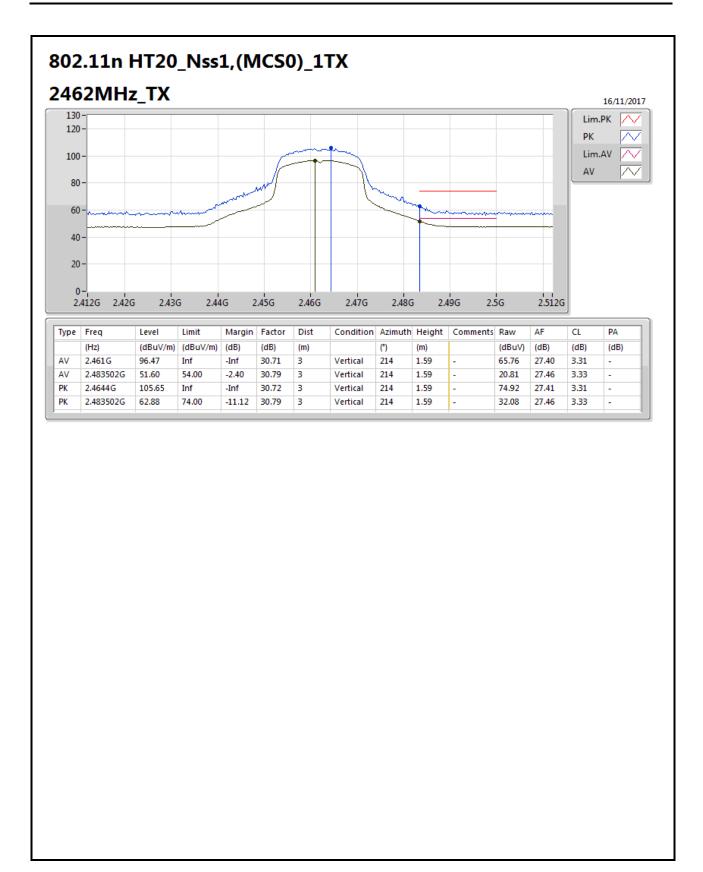
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : F36 of F53





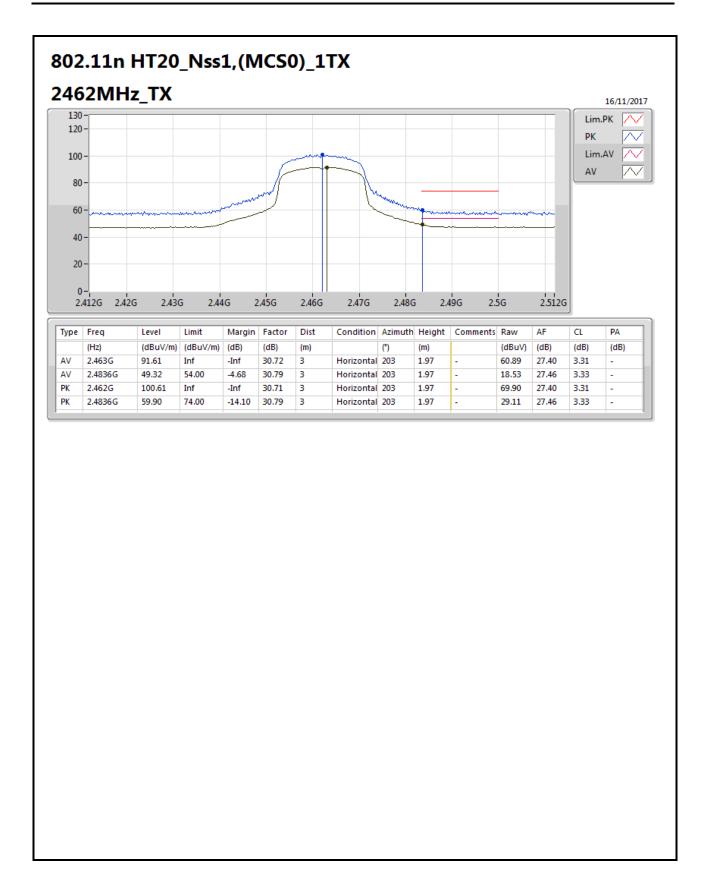
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : F37 of F53





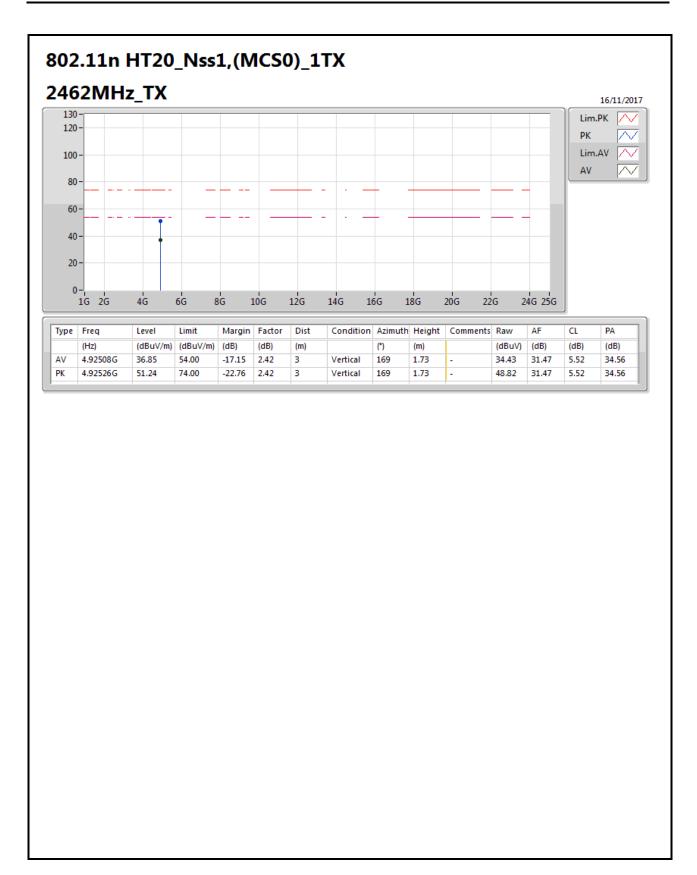
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : F38 of F53





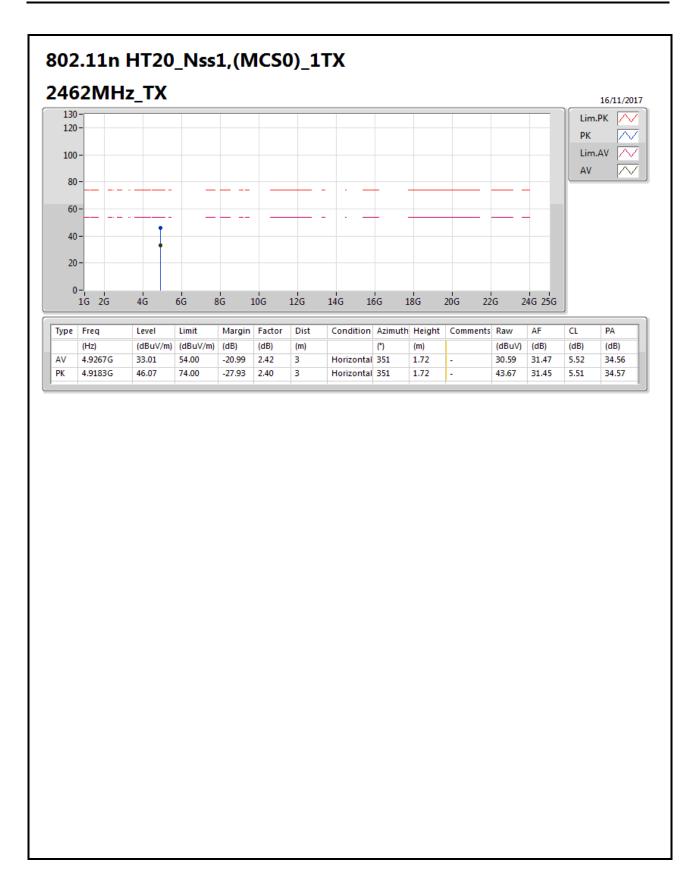
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : F39 of F53





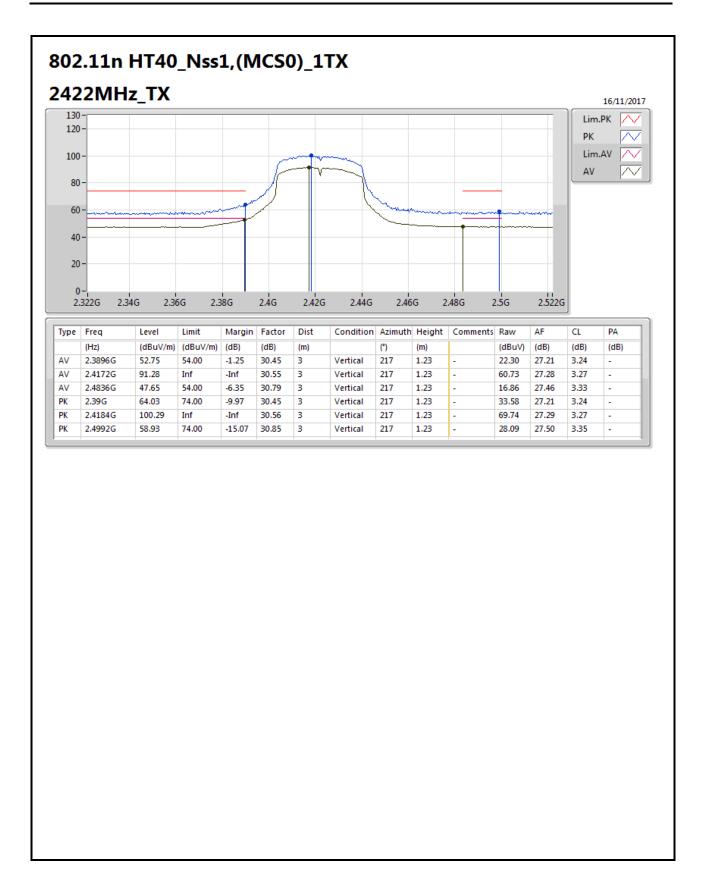
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : F40 of F53





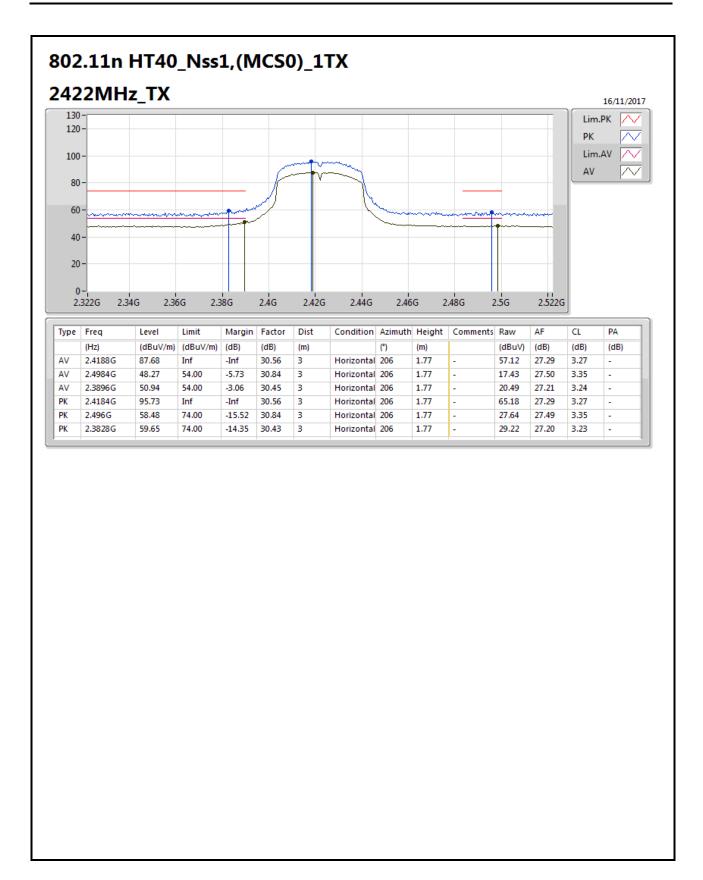
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : F41 of F53





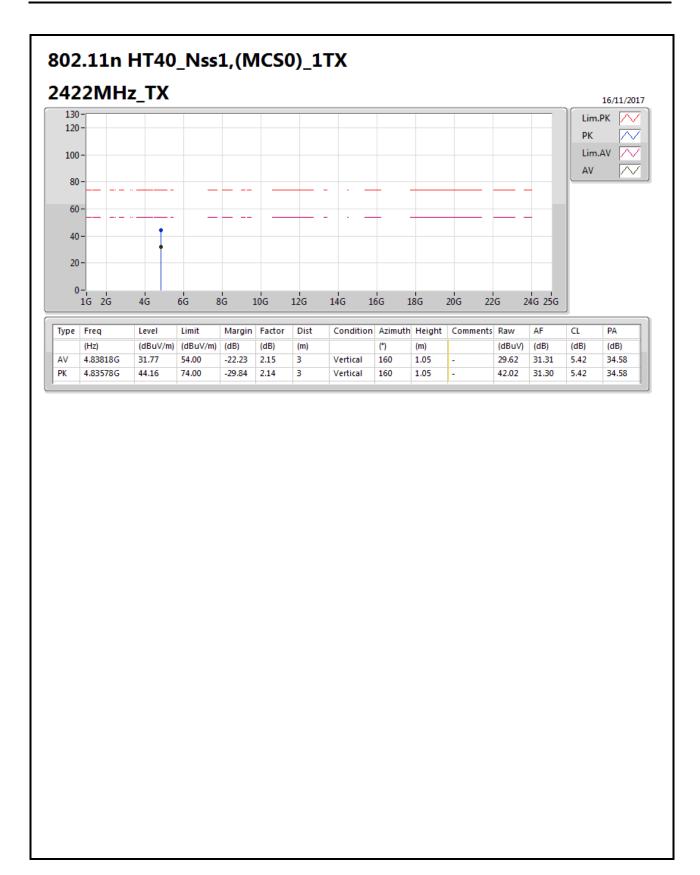
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : F42 of F53





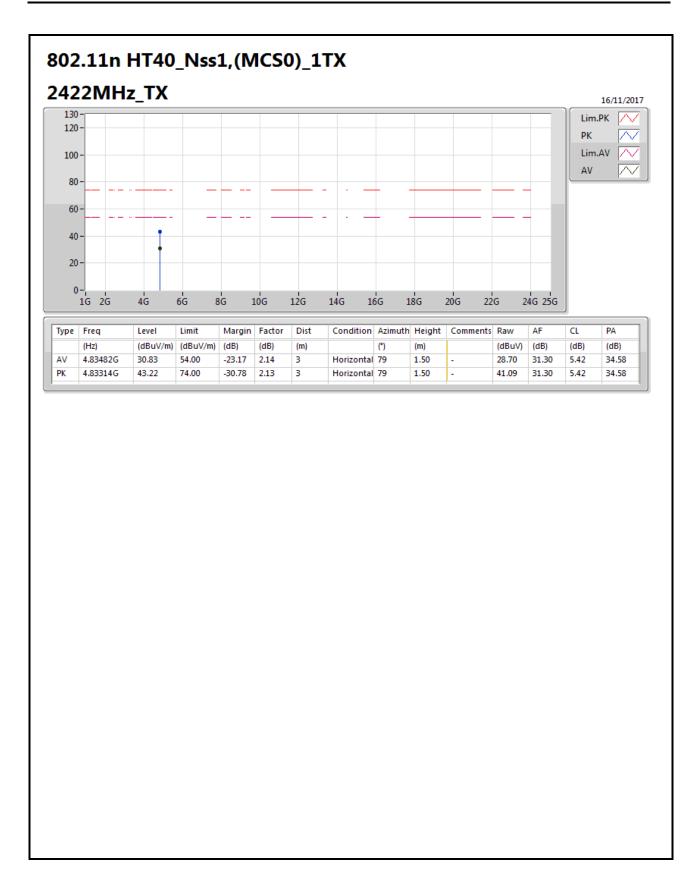
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : F43 of F53





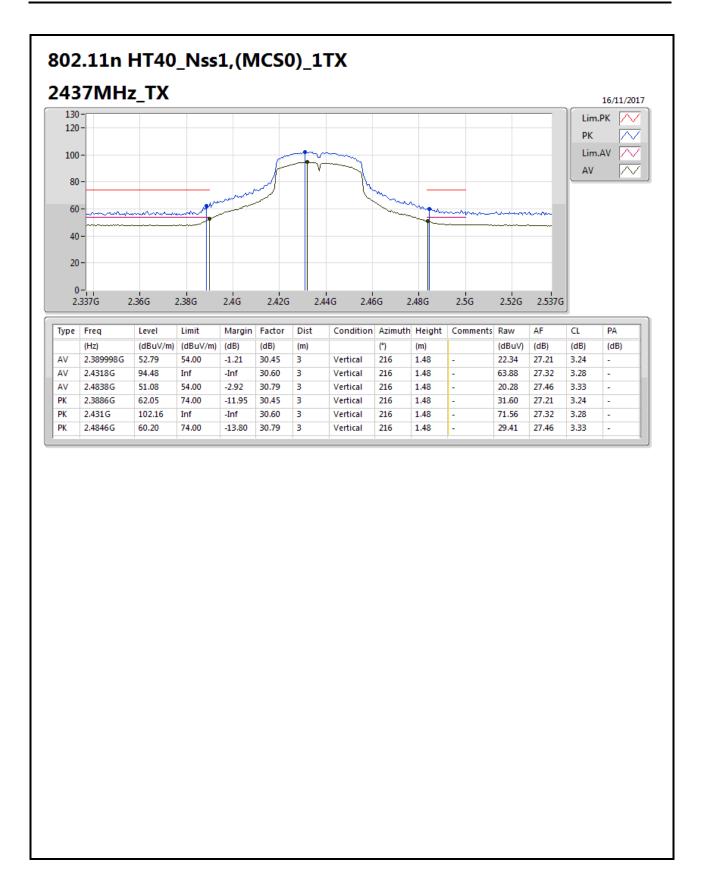
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : F44 of F53





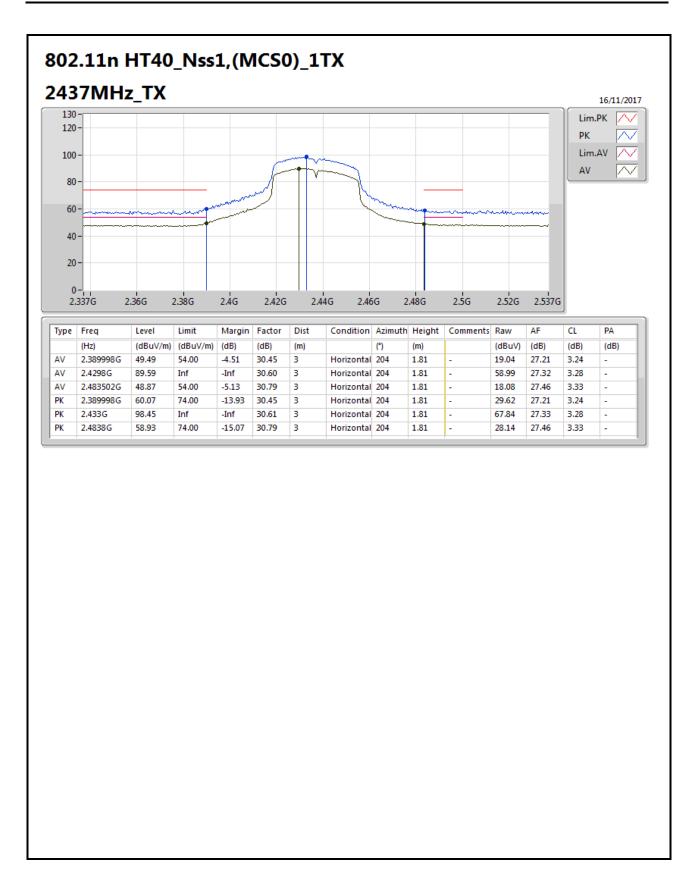
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : F45 of F53





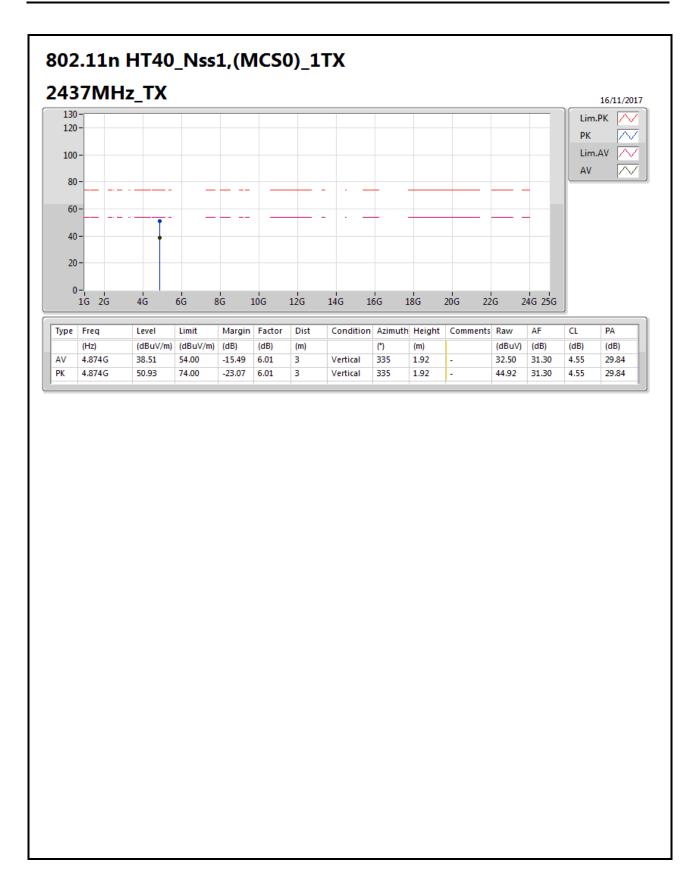
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : F46 of F53





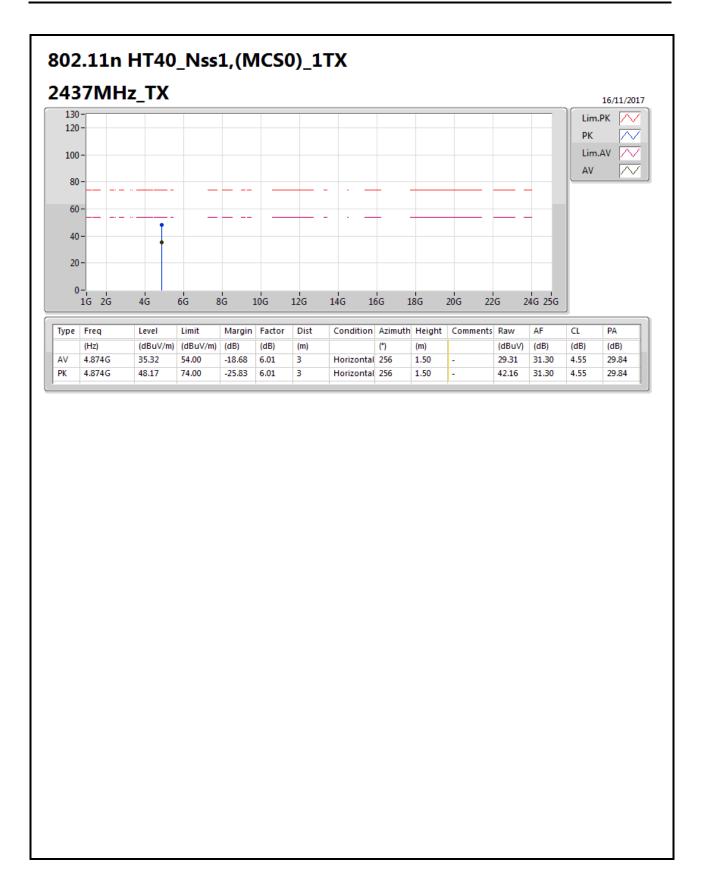
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : F47 of F53





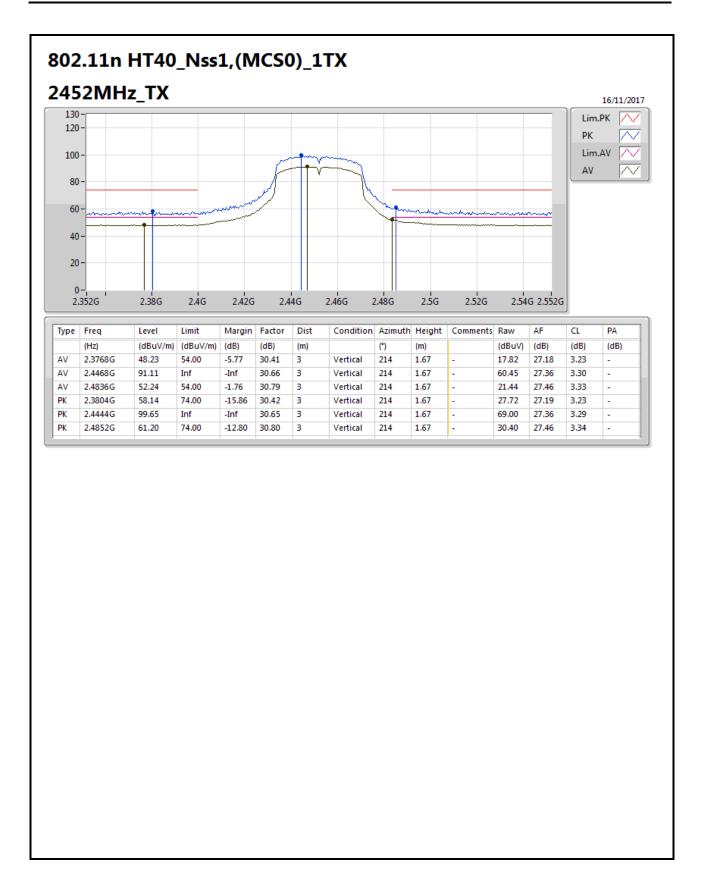
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : F48 of F53





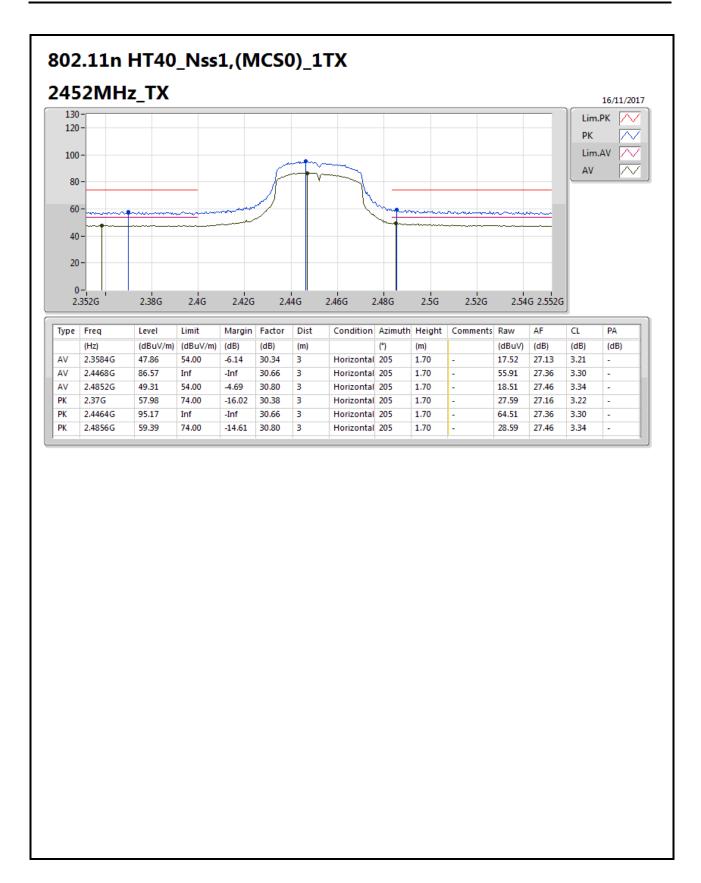
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : F49 of F53





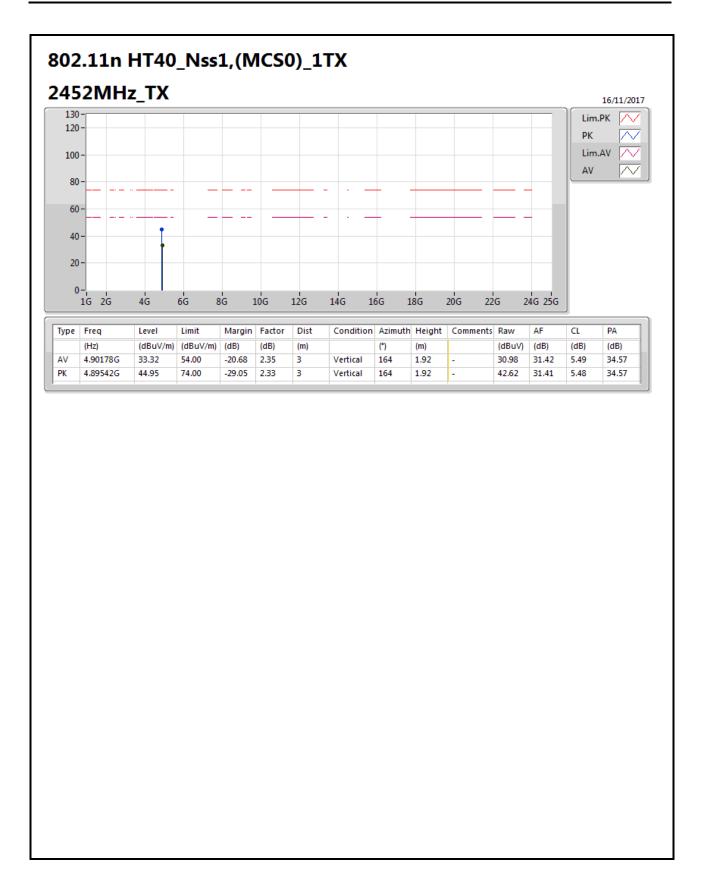
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : F50 of F53





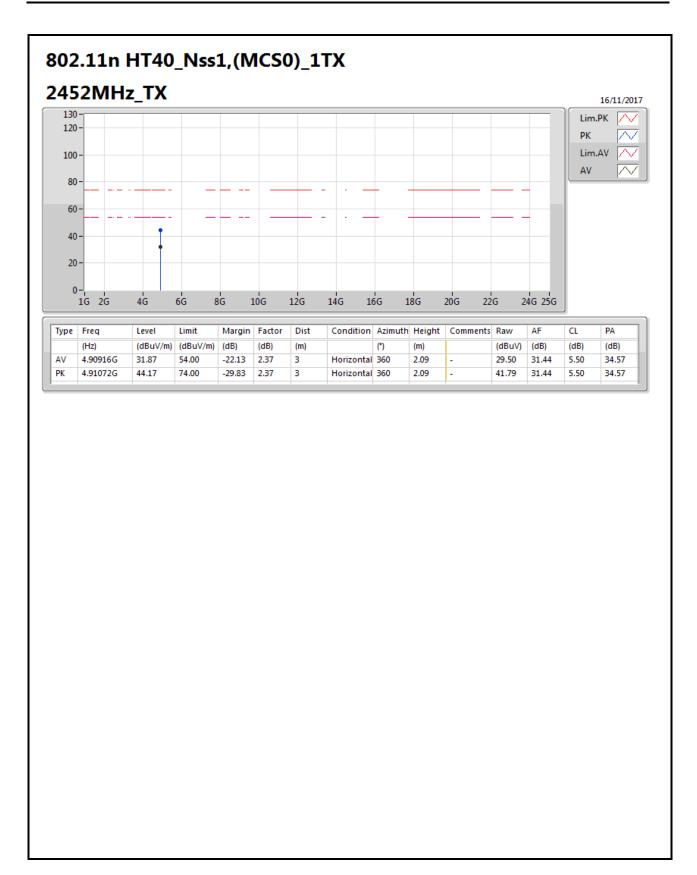
TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : F51 of F53





TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : F52 of F53





TEL: 886-3-327-3456 FAX: 886-3-327-0973 Page No. : F53 of F53