

Project No: CB10511189

**FCC Test Report** 

Equipment

: Digital Satellite Receiver(Headless DVR Server)

**Brand Name** 

: AT&T DIRECTV

Model No.

: HS17-500

FCC ID

: O6ZHS17

Standard

: 47 CFR FCC Part 15.247

**Operating Band** 

: 2400 MHz - 2483.5 MHz

**Function** 

: Doint-to-multipoint; Doint-to-point

**Applicant** 

: Humax Co., Ltd.

HUMAX Village, 11-4, Sunae-dong, Bundang-gu Seongnam city, Gyeonggi-do South Korea 463-825

Manufacturer

: Humax Co., Ltd.

HUMAX Village, 11-4, Sunae-dong, Bundang-gu Seongnam city, Gyeonggi-do South Korea 463-825

The product sample received on Oct. 28, 2016 and completely tested on Nov. 18, 2016. 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.

Cliff Chang

SPORTON INTERNATIONAL INC.







# FCC Test Report

**Table of Contents** 

1	GENERAL DESCRIPTION	5
1.1	Information	5
1.2	Testing Location Information	8
1.3	Measurement Uncertainty	8
2	TEST CONFIGURATION OF EUT	9
2.1	Test Channel Mode	g
2.2	The Worst Case Measurement Configuration	10
2.3	EUT Operation during Test	10
2.4	Accessories	11
2.5	Support Equipment	11
2.6	Test Setup Diagram	12
3	TRANSMITTER TEST RESULT	14
3.1	AC Power-line Conducted Emissions	14
3.2	DTS Bandwidth	16
3.3	Maximum Conducted Output Power	
3.4	Power Spectral Density	
3.5	Emissions in Non-restricted Frequency Bands	
3.6	Emissions in Restricted Frequency Bands	22
4	TEST EQUIPMENT AND CALIBRATION DATA	26
APPE	ENDIX A. TEST RESULTS OF AC POWER-LINE CONDUCTED EMISSIONS	
APP	ENDIX B. TEST RESULTS OF DTS BANDWIDTH	
APP	ENDIX C. TEST RESULTS OF MAXIMUM CONDUCTED OUTPUT POWER	
APPE	ENDIX D. TEST RESULTS OF POWER SPECTRAL DENSITY	
APP	ENDIX E. TEST RESULTS OF EMISSIONS IN NON-RESTRICTED FREQUENCY BANDS	
APP	ENDIX F. TEST RESULTS OF EMISSIONS IN RESTRICTED FREQUENCY BANDS	

**APPENDIX G. TEST PHOTOS** 

Report No.: FR6O2615AA

Issued Date

: Dec. 20, 2016

# **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				

 SPORTON INTERNATIONAL INC.
 Page No.

 TEL: 886-3-3273456
 Report V

 FAX: 886-3-3270973
 Issued D

FCC ID: O6ZHS17

Page No. : 3 of 27
Report Version : Rev. 02
Issued Date : Dec. 20, 2016

Report No.: FR6O2615AA

# **Revision History**

Report No.	Version	Description	Issued Date
FR6O2615AA	Rev. 01	Initial issue of report	Nov. 28, 2016
FR6O2615AA	Rev. 02	Updating the adapter model name to "EPS17R0-36" from "EPS17R0-35", After evaluating, it is not necessary to verify.	Dec. 20, 2016

SPORTON INTERNATIONAL INC.

TEL: 886-3-3273456 FAX: 886-3-3270973 FCC ID: O6ZHS17 Page No. : 4 of 27
Report Version : Rev. 02
Issued Date : Dec. 20, 2016

Report No.: FR6O2615AA



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]

Report No.: FR6O2615AA

Band	Mode	BWch (MHz)	Nant
2.4G	11b	20	1
2.4G	11g	20	1
2.4G HT20		20	2
2.4G	HT40	40	2

#### Note:

- 2.4G is the 2.4GHz Band (2.4-2.4835GHz).
- 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.
- Nss-Min is the minimum number of spatial streams.
- Nant is the number of outputs. e.g., 2(2,3) means have 2 outputs for port 2 and port 3. 2 means have 2 outputs for port 1 and port 2.

 SPORTON INTERNATIONAL INC.
 Page No.
 : 5 of 27

 TEL: 886-3-3273456
 Report Version
 : Rev. 02

 FAX: 886-3-3270973
 Issued Date
 : Dec. 20, 2016

#### 1.1.2 Antenna Information

#### <2.4GHz and Zigbee Antenna Gain>

Ant	Drand	Model Name	Antenna	Connector	Gain (dBi)	
Ant.	Brand	Woder Name	Туре	Connector	2.4GHz	Zigbee
1	Airgain	N24X2H2YN-W98U	PIFA	U.FL	4.6	1
2	Airgain	N24X2H2YW-B95U	PIFA	U.FL	4.6	-
3	-	-	PCB	N/A	_	4
			printed IFA			
4	_	_	PCB	N/A	_	4
	_		printed IFA	IN/A		<b>-T</b>

#### <5GHz Antenna Gain>

Ant.	Drond	Madel News	Antenna	Commontor	Gain	(dBi)
	Brand	Model Name	Type	Connector	5GHz Band 1	5GHz Band 4
5	Airgain	N5X35B2YN-E57U	PIFA	U.FL	2.89	4.34
6	Airgain	N5X35B2YN-R137U	PIFA	U.FL	4.38	4.53
7	Airgain	N5X35B2YW-G80U	PIFA	U.FL	3.65	3.49
8	Airgain	Airgain N5X35BYN-A100U		U.FL	5.40	4.62

#### <5GHz Directional Gain>

24	Directional Gain (dBi)			
Stream	5GHz Band 1	5GHz Band 4		
4T1S	7.02	7.06		
4T2S	4.14	4.11		

Note: The EUT has eight antennas.

SPORTON INTERNATIONAL INC.

TEL: 886-3-3273456 FAX: 886-3-3270973 FCC ID: O6ZHS17 Page No. : 6 of 27
Report Version : Rev. 02

Report No.: FR6O2615AA

Issued Date : Dec. 20, 2016

#### FCC Test Report

#### <For 2.4GHz Band>

#### For IEEE 802.11b/g Mode (1TX/1RX)

The EUT supports the antenna with TX and RX diversity functions.

Both Ant. 1 and Ant. 2 support transmit and receive functions, but only one of them will be used at one time.

Report No.: FR6O2615AA

The Ant. 2 generated the worst case, so it was selected to test and record in the report.

#### For IEEE 802.11n Mode (2TX/2RX)

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

Ant. 1 and Ant. 2 could transmit/receive simultaneously.

#### <For Zigbee Band> (1TX/1RX)

The EUT supports the antenna with TX and RX diversity functions.

Both Ant. 3 and Ant. 4 support transmit and receive functions, but only one of them will be used at one time.

The Ant. 4 generated the worst case, so it was selected to test and record in the report.

#### <For 5GHz Band >

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

Ant. 5, Ant. 6, Ant. 7 and Ant. 8 can be used as transmitting/receiving antenna.

Ant. 5, Ant. 6, Ant. 7 and Ant. 8 could transmit/receive simultaneously.

 SPORTON INTERNATIONAL INC.
 Page No.
 : 7 of 27

 TEL: 886-3-3273456
 Report Version
 : Rev. 02

 FAX: 886-3-3270973
 Issued Date
 : Dec. 20, 2016

FCC Test Report

#### 1.1.3 Mode Test Duty Cycle

Mode	DC	T(s)	VBW(Hz) ≥ 1/T
11b	1	n/a (DC>=0.98)	n/a (DC>=0.98)
11g	1	n/a (DC>=0.98)	n/a (DC>=0.98)
HT20	1	n/a (DC>=0.98)	n/a (DC>=0.98)
HT40	0.899	705.128u	3k

#### 1.1.4 EUT Operational Condition

<b>EUT Power Type</b>	From Power Adapter			
Beamforming Function	$\boxtimes$	With beamforming		Without beamforming

Note: The product has beamforming function for 802.11n/ac in 5GHz.

#### 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
- FCC KDB 558074 D01 v03r05
- FCC KDB 662911 D01 v02r01

# 1.2 Testing Location Information

	Testing Location								
	HWA YA ADD : No. 52, Hwa Ya 1st Rd., Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C.								
		TEL	:	886-3-327-3456 FAX : 886-3-318-0055					
$\boxtimes$	JHUBEI	ADD	:	No.8, Lane 724, Bo-ai St., Jhubei City, HsinChu County 302, Taiwan, R.O.C.					
		TEL	:	886-3-656-9065 FAX : 886-3-656-9085					

Test Condition	Test Condition Test Site No.  RF Conducted TH01-CB		Test Environment	Test Date
RF Conducted			25°C / 65%	Oct. 28, 2016~Nov. 18, 2016
Radiated	03CH01-CB	Steven Liang	22°C / 54%	Nov. 14, 2016~Nov. 18, 2016
AC Conduction	CO02-CB	Ryo Fan	23°C / 61%	Nov. 15, 2016

Test site Designation No. TW0006 with FCC.

Test site registered number IC 4086D with Industry Canada.

# 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)

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Test Items	Uncertainty	Remark
Conducted Emission (150kHz ~ 30MHz)	3.2 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	3.6 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	3.7 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	3.5 dB	Confidence levels of 95%
Conducted Emission	1.7 dB	Confidence levels of 95%

SPORTON INTERNATIONAL INC.

TEL: 886-3-3273456 FAX: 886-3-3270973 FCC ID: O6ZHS17 Page No. : 8 of 27
Report Version : Rev. 02

Issued Date : Dec. 20, 2016

Report No.: FR6O2615AA



2 Test Configuration of EUT

# 2.1 Test Channel Mode

Band	Mode	BWch (MHz)	Nss-Min	Nant	Ch. (MHz)	Range	Power Setting
2.4G	11b	20	1	1	2412	L	17
2.4G	11b	20	1	1	2437	М	17
2.4G	11b	20	1	1	2462	Н	16
2.4G	11g	20	1	1	2412	L	20
2.4G	11g	20	1	1	2437	М	23
2.4G	11g	20	1	1	2462	Н	20
2.4G	HT20	20	1,(M0)	2	2412	L	19
2.4G	HT20	20	1,(M0)	2	2437	М	23
2.4G	HT20	20	1,(M0)	2	2462	Н	18
2.4G	HT40	40	1,(M0)	2	2422	L	15
2.4G	HT40	40	1,(M0)	2	2437	М	19
2.4G	HT40	40	1,(M0)	2	2452	Н	16

#### Note:

• Test range channel consist of L (Low Ch.), M (Middle Ch.), H (High Ch.), S (Single Ch.) and C (Straddle Band Ch.).

SPORTON INTERNATIONAL INC.

TEL: 886-3-3273456 FAX: 886-3-3270973 FCC ID: O6ZHS17 Page No. : 9 of 27
Report Version : Rev. 02
Issued Date : Dec. 20, 2016

Report No.: FR6O2615AA

# 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			
Operating Mode CTX			
1	WiFi 2.4GHz Function		

Report No.: FR6O2615AA

Th	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		

Th	The Worst Case Mode for Following Conformance Tests			
Tests Item	Emissions in Restricted Frequency 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	CTX			
1	WiFi 2.4GHz Function			
Operating Mode > 1GHz	CTX			

The Worst Case Mode for Following Conformance Tests				
Tests Item Simultaneous Transmission Analysis				
Operating Mode	Operating Mode			
1 WLAN 2.4GHz + WLAN 5GHz + Zigbee				
Refer to Sporton Test Report No.: FA6O2615 for Co-location RF Exposure Evaluation.				

Note: The EUT can only be used at Y axis position

# 2.3 EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

 SPORTON INTERNATIONAL INC.
 Page No.
 : 10 of 27

 TEL: 886-3-3273456
 Report Version
 : Rev. 02

 FAX: 886-3-3270973
 Issued Date
 : Dec. 20, 2016

### 2.4 Accessories

	Accessories					
No.	Equipment Name	Brand Name	Model Name		Rating	Remark
1	AC Adapter	DIRECTV	EPS17R0-36	_	20V ~ 1.8A 60Hz 25.2V, 2.86A 72W	AC power cable: Non-Shielded, 1.9m DC power cable: Non-Shielded, 1.3m
				Other		
No.	Equipment Name	Brand Name	Model Name		F	Rating
1	Hard Drive	WD	WD20EURX-25T0FY0		5VDC, 0.60A 12VDC, 0.45A	

Report No.: FR6O2615AA

# 2.5 Support Equipment

For Test Site No: CO01-CB

	Support Equipment			
No.	Equipment	Brand Name	Model Name	FCC ID
1	NB	DELL	E6430	DoC
2	Flash disk3.0	ADATA	C103	DoC
3	SIM Card	DirecTV	N/A	DoC

For Test Site No: 03CH01-CB

	Support Equipment			
No.	. Equipment Brand Name Model Name FCC ID			
1	Notebook	DELL	E4300	DoC

For Test Site No: TH01-CB

	Support Equipment			
No.	Equipment Brand Name Model Name FCC ID			
1	Notebook	DELL	E4300	DoC

 SPORTON INTERNATIONAL INC.
 Page No.
 : 11 of 27

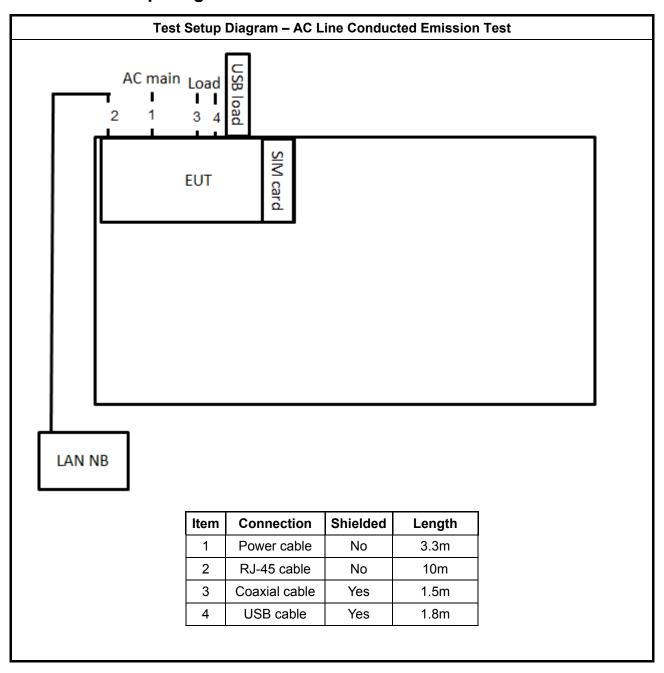
 TEL: 886-3-3273456
 Report Version
 : Rev. 02

 FAX: 886-3-3270973
 Issued Date
 : Dec. 20, 2016



Report No.: FR6O2615AA

#### **Test Setup Diagram** 2.6



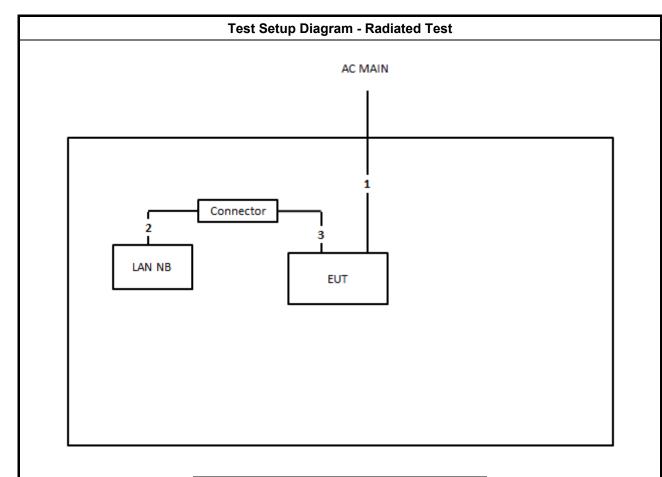
SPORTON INTERNATIONAL INC.

TEL: 886-3-3273456 FAX: 886-3-3270973 FCC ID: O6ZHS17

Page No. : 12 of 27 Report Version : Rev. 02 Issued Date : Dec. 20, 2016



Report No.: FR6O2615AA



Item	Connection	Shielded	Length
1	Power cable	No	3.3m
2	RS-232 cable	No	0.4m
3	Console cable	No	2m

TEL: 886-3-3273456 FAX: 886-3-3270973 FCC ID: O6ZHS17

Page No. : 13 of 27 Report Version : Rev. 02 Issued Date : Dec. 20, 2016



## 3 Transmitter Test Result

#### 3.1 AC Power-line Conducted Emissions

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

AC Power-line Conducted Emissions Limit				
Frequency Emission (MHz)	Quasi-Peak	Average		
0.15-0.5	66 - 56 *	56 - 46 *		
0.5-5	56	46		
5-30	60	50		
Note 1: * Decreases with the logarithm of the frequency.				

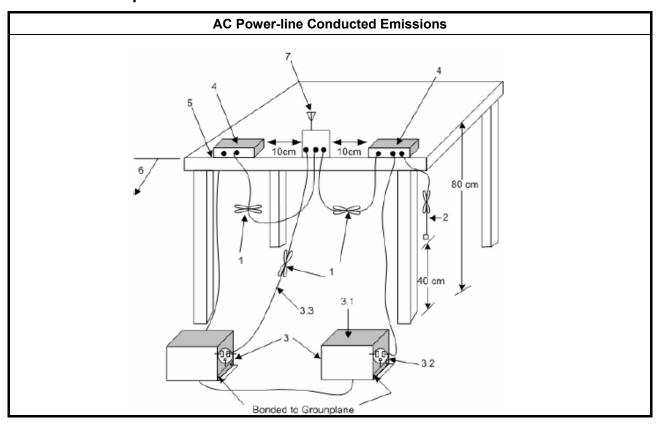
#### 3.1.2 Measuring Instruments

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

#### 3.1.3 Test Procedures

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

#### 3.1.4 Test Setup



SPORTON INTERNATIONAL INC. TEL: 886-3-3273456

FAX: 886-3-3270973 FCC ID: O6ZHS17 Page No. : 14 of 27
Report Version : Rev. 02
Issued Date : Dec. 20, 2016

Report No.: FR6O2615AA



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

Report No.: FR6O2615AA

Refer as Appendix A

 SPORTON INTERNATIONAL INC.
 Page No.
 : 15 of 27

 TEL: 886-3-3273456
 Report Version
 : Rev. 02

 FAX: 886-3-3270973
 Issued Date
 : Dec. 20, 2016

FCC Test Report No.: FR6O2615AA

#### 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 FCC KDB 558074, clause 8.1 Option 1 for 6 dB bandwidth measurement.					
	Refer as FCC KDB 558074, clause 8.2 Option 2 for 6 dB bandwidth measurement.					
	Refer as ANSI C63.10, clause 6.9.1 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.
 Page No.
 : 16 of 27

 TEL: 886-3-3273456
 Report Version
 : Rev. 02

 FAX: 886-3-3270973
 Issued Date
 : Dec. 20, 2016

## 3.3 Maximum Conducted Output Power

#### 3.3.1 Maximum Conducted Output Power Limit

#### **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

Report No.: FR6O2615AA

 $\mathbf{P}_{\text{Out}}$  = maximum peak conducted output power or maximum conducted output power in dBm,  $\mathbf{G}_{\text{TX}}$  = the maximum transmitting antenna directional gain in dBi.

#### 3.3.2 Measuring Instruments

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

 SPORTON INTERNATIONAL INC.
 Page No.
 : 17 of 27

 TEL: 886-3-3273456
 Report Version
 : Rev. 02

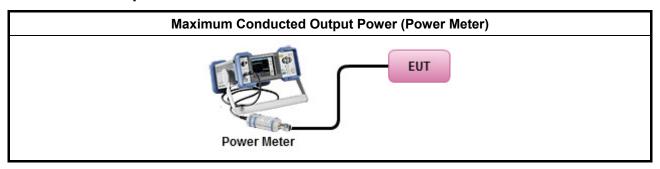
 FAX: 886-3-3270973
 Issued Date
 : Dec. 20, 2016

#### 3.3.3 Test Procedures

	Test Method
•	Maximum Peak Conducted Output Power
	Refer as FCC KDB 558074, clause 9.1.1 Option 1 (RBW ≥ EBW method).
	Refer as FCC KDB 558074, clause 9.1.2 Option 2 (peak power meter for VBW ≥ DTS BW)
•	Maximum Conducted Output Power
	duty cycle ≥ 98% or external video / power trigger]
	Refer as FCC KDB 558074, clause 9.2.2.2 Method AVGSA-1 (spectral trace averaging).
	Refer as FCC KDB 558074, clause 9.2.2.3 Method AVGSA-1 Alt. (slow sweep speed)
	duty cycle < 98% and average over on/off periods with duty factor
	Refer as FCC KDB 558074, clause 9.2.2.4 Method AVGSA-2 (spectral trace averaging).
	Refer as FCC 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 FCC KDB 558074, clause 9.2.3 Method AVGPM-G (using an RF average power meter).
	Refer as FCC KDB 558074, clause 9.1.2 PKPM1 Peak power meter method.
•	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 <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

Report No.: FR6O2615AA

#### 3.3.4 Test Setup



## 3.3.5 Test Result of Maximum Conducted Output Power

Refer as Appendix C

 SPORTON INTERNATIONAL INC.
 Page No.
 : 18 of 27

 TEL: 886-3-3273456
 Report Version
 : Rev. 02

 FAX: 886-3-3270973
 Issued Date
 : Dec. 20, 2016

# 3.4 Power Spectral Density

### 3.4.1 Power Spectral Density Limit

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

Report No.: FR6O2615AA

### 3.4.2 Measuring Instruments

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

#### 3.4.3 Test Procedures

		Test Method			
•	output pow the output conducted of the ave	er spectral density procedures that the same method as used to determine the conducted ver. If maximum peak conducted output power was measured to demonstrate compliance to power limit, then the peak PSD procedure below (Method PKPSD) shall be used. If maximum output power was measured to demonstrate compliance to the output power limit, then one rage PSD procedures shall be used, as applicable based on the following criteria (the peak edure is also an acceptable option).			
	□ Refer	as FCC KDB 558074, clause 10.2 Method PKPSD (RBW=3-100kHz; Detector=peak).			
	[duty cycle	≥ 98% or external video / power trigger]			
	Refer	as FCC KDB 558074, clause 10.3 Method AVGPSD-1 (spectral trace averaging).			
	Refer	as FCC KDB 558074, clause 10.4 Method AVGPSD-2 (slow sweep speed)			
	duty cycle	< 98% and average over on/off periods with duty factor			
	☐ Refer	as FCC KDB 558074, clause 10.5 Method AVGPSD-1 Alt (spectral trace averaging).			
	☐ Refer	as FCC KDB 558074, clause 10.6 Method AVGPSD-2 Alt. (slow sweep speed)			
•	For conduc	cted 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, n-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 irst 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 he amplitude (power) values for the different transmit chains and use this as the new data race.			
Option 2: Measure and sum spectral maxima across the outputs. With this technique are measured at each output of the device at the required resolution bands maximum value (peak) of each spectrum is determined. These maximum value summed mathematically in linear power units across the outputs. These operation performed separately over frequency spans that have different out-of-band of emission limits,					
	F	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			

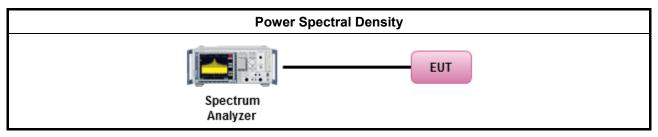
 SPORTON INTERNATIONAL INC.
 Page No.
 : 19 of 27

 TEL: 886-3-3273456
 Report Version
 : Rev. 02

 FAX: 886-3-3270973
 Issued Date
 : Dec. 20, 2016



#### 3.4.4 **Test Setup**



Report No.: FR6O2615AA

## **Test Result of Power Spectral Density**

Refer as Appendix D

SPORTON INTERNATIONAL INC. Page No. : 20 of 27 TEL: 886-3-3273456 Report Version : Rev. 02 FAX: 886-3-3270973 Issued Date : Dec. 20, 2016

## 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.: FR6O2615AA

- 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.

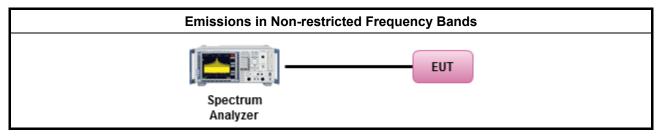
#### 3.5.2 Measuring Instruments

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

#### 3.5.3 Test Procedures

# Test Method ■ Refer as FCC KDB 558074, clause 11 for unwanted emissions into non-restricted bands.

#### 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.
 : 21 of 27

 TEL: 886-3-3273456
 Report Version
 : Rev. 02

 FAX: 886-3-3270973
 Issued Date
 : Dec. 20, 2016



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 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.: FR6O2615AA

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.

#### 3.6.2 Measuring Instruments

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

 SPORTON INTERNATIONAL INC.
 Page No.
 : 22 of 27

 TEL: 886-3-3273456
 Report Version
 : Rev. 02

 FAX: 886-3-3270973
 Issued Date
 : Dec. 20, 2016



## 3.6.3 Test Procedures

	Test Method								
•	The	average emission levels shall be measured in [duty cycle ≥ 98 or duty factor].							
•		er as ANSI C63.10, clause 6.9.2.2 band-edge testing shall be performed at the lowest frequency and highest frequency channel within the allowed operating band.							
•	For the transmitter unwanted emissions shall be measured using following options below:								
	<ul> <li>Refer as FCC KDB 558074, clause 12 for unwanted emissions into restricted bands.</li> </ul>								
		☐ Refer as FCC KDB 558074, clause 12.2.5.1 Option 1 (trace averaging for duty cycle ≥98%)							
		Refer as FCC KDB 558074, clause 12.2.5.2 Option 2 (trace averaging + duty factor).							
		Refer as FCC KDB 558074, clause 12.2.5.3 Option 3 (Reduced VBW≥1/T).							
		☐ Refer as ANSI C63.10, clause 4.2.3.2.3 (Reduced VBW). VBW ≥ 1/T, where T is pulse time.							
		Refer as ANSI C63.10, clause 4.2.3.2.4 average value of pulsed emissions.							
		Refer as FCC 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 FCC 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.							
	<ul> <li>Refer as FCC KDB 558074, clause 13.2 (ANSI C63.10, clause 6.9.3) for marker-delta method for band-edge measurements.</li> </ul>								
	•	Refer as FCC 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 FCC 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 FCC 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.							

Report No.: FR6O2615AA

 SPORTON INTERNATIONAL INC.
 Page No.
 : 23 of 27

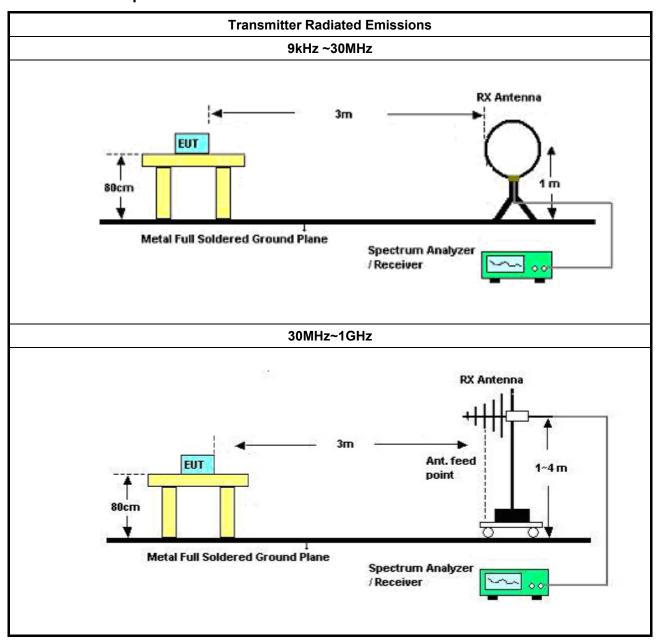
 TEL: 886-3-3273456
 Report Version
 : Rev. 02

 FAX: 886-3-3270973
 Issued Date
 : Dec. 20, 2016

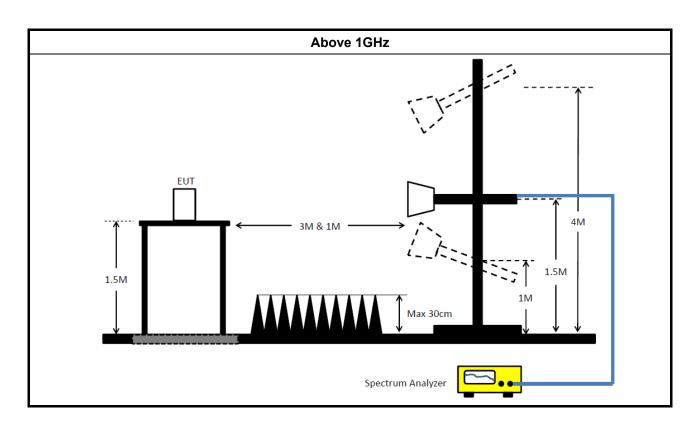


Report No. : FR6O2615AA

## 3.6.4 Test Setup



TEL: 886-3-3273456 FAX: 886-3-3270973 FCC ID: 06ZHS17 Page No. : 24 of 27
Report Version : Rev. 02
Issued Date : Dec. 20, 2016



## 3.6.5 Transmitter Radiated Unwanted Emissions (Below 30MHz)

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

### 3.6.6 Test Result of Transmitter Radiated Unwanted Emissions

Refer as Appendix F

SPORTON INTERNATIONAL INC.

TEL: 886-3-3273456 FAX: 886-3-3270973 FCC ID: O6ZHS17 Page No. : 25 of 27
Report Version : Rev. 02

Report No.: FR6O2615AA

Issued Date : Dec. 20, 2016



4 Test Equipment and Calibration Data

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
LISN	Schwarzbeck	NSLK 8127	8127650	9kHz ~ 30MHz	Nov. 16, 2015	Conduction (CO02-CB)
LISN	Schwarzbeck	NSLK 8127	8127647	9kHz ~ 30MHz	Dec. 23, 2015	Conduction (CO02-CB)
EMI Receiver	Agilent	N9038A	MY52260140	9kHz ~ 8.4GHz	Jan. 18, 2016	Conduction (CO02-CB)
Pulse Limiter	Schwarzbeck	VTSD 9561F	9561-F073	9kHz ~ 30MHz	Sep. 29, 2016	Conduction (CO02-CB)
COND Cable	Woken	Cable	01	0.15MHz ~ 30MHz	Dec. 01, 2015	Conduction (CO02-CB)
Software	Audix	E3	6.120210n	-	N.C.R.	Conduction (CO02-CB)
BILOG ANTENNA	TESEQ	CBL6112D	37880	20MHz ~ 2GHz	Aug. 30, 2016	Radiation (03CH01-CB)
Loop Antenna	Teseq	HLA 6120	24155	9kHz - 30 MHz	Mar. 16, 2016*	Radiation (03CH01-CB)
Horn Antenna	EMCO	3115	00075790	750MHz ~ 18GHz	Nov. 10, 2016	Radiation (03CH01-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Jul. 25, 2016	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8447D	2944A10991	0.1MHz ~ 1.3GHz	Mar. 15, 2016	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8449B	3008A02310	1GHz ~ 26.5GHz	Jan. 18, 2016	Radiation (03CH01-CB)
Pre-Amplifier	WM	TF-130N-R1	923365	26GHz ~ 40GHz	Feb. 23, 2016	Radiation (03CH01-CB)
Spectrum Analyzer	R&S	FSP40	100304	9kHz ~ 40GHz	May 05, 2016	Radiation (03CH01-CB)
EMI Test	R&S	ESCS	100355	9kHz ~ 2.75GHz	May 16, 2016	Radiation (03CH01-CB)
RF Cable-low	Woken	Low Cable-1	N/A	30 MHz ~ 1 GHz	Oct. 24, 2016	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-16	N/A	1 GHz ~ 18 GHz	Oct. 24, 2016	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-17	N/A	1 GHz ~ 18 GHz	Oct. 24, 2016	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-40G-1	N/A	18GHz ~ 40 GHz	Oct. 24, 2016	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-40G-2	N/A	18GHz ~ 40 GHz	Oct. 24, 2016	Radiation (03CH01-CB)
Test Software	Audix	E3	6.2009-10-7	N/A	N/A	Radiation (03CH01-CB)
Spectrum analyzer	R&S	FSV40	100979	9kHz~40GHz	Dec. 09, 2015	Conducted (TH01-CB)

SPORTON INTERNATIONAL INC.

TEL: 886-3-3273456 FAX: 886-3-3270973 FCC ID: O6ZHS17 Page No. : 26 of 27
Report Version : Rev. 02

Report No.: FR6O2615AA

Issued Date : Dec. 20, 2016



# FCC Test Report

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
RF Cable-high	Woken	RG402	High Cable-6	1 GHz – 26.5 GHz	Oct. 24, 2016	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-7	1 GHz – 26.5 GHz	Oct. 24, 2016	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-8	1 GHz – 26.5 GHz	Oct. 24, 2016	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-9	1 GHz – 26.5 GHz	Oct. 24, 2016	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-10	1 GHz – 26.5 GHz	Oct. 24, 2016	Conducted (TH01-CB)
Power Sensor	Agilent	U2021XA	MY54320014	50MHz~18GHz	Apr. 20, 2016	Conducted (TH01-CB)

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

N.C.R. means Non-Calibration required.

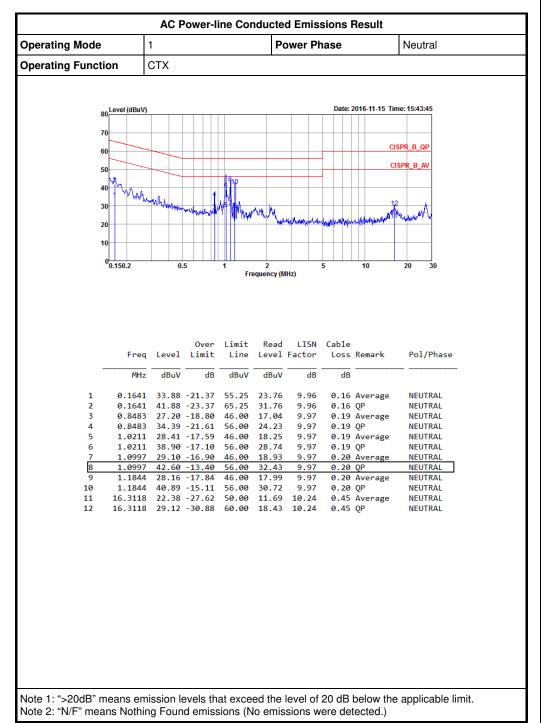
SPORTON INTERNATIONAL INC.
TEL: 886-3-3273456

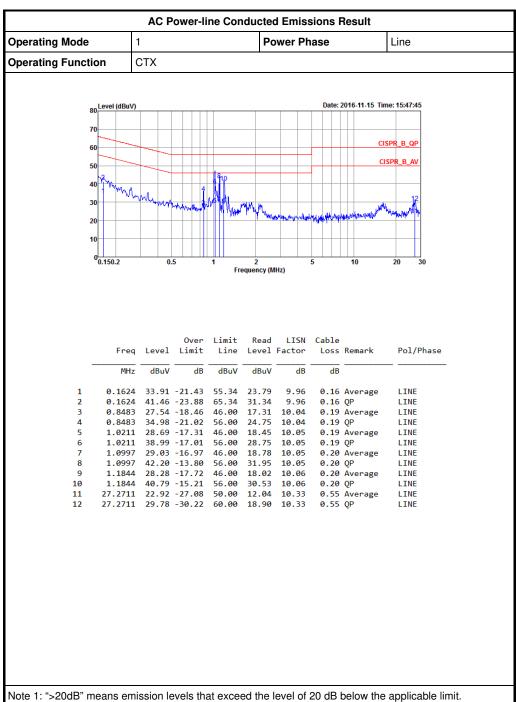
FAX: 886-3-3270973 FCC ID: O6ZHS17 Page No. : 27 of 27
Report Version : Rev. 02
Issued Date : Dec. 20, 2016

Report No.: FR6O2615AA

<sup>&</sup>quot;\*" Calibration Interval of instruments listed above is two years.







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

 SPORTON INTERNATIONAL INC.
 Page No.
 : 1 of 1

 TEL: 886-3-327-3456
 Report Version
 : Rev. 01

 FAX: 886-3-327-0973



EBW Result
Appendix B

Summary

Mode	Max-N dB	Max-OBW	ITU-Code	Min-N dB	Min-OBW
	(Hz)	(Hz)		(Hz)	(Hz)
2.4G;11b;Nss1;Ntx1	9.05M	11.719M	11M7G1D	9M	11.394M
2.4G;11g;Nss1;Ntx1	16.325M	16.842M	16M8D1D	16.3M	16.667M
2.4G;HT20;Nss1,(M0);Ntx2	17.575M	17.816M	17M8D1D	17.525M	17.766M
2.4G;HT40;Nss1,(M0);Ntx2	36.3M	36.282M	36M3D1D	35.9M	36.232M

SPORTON INTERNATIONAL INC. : 1 of 3



EBW Result
Appendix B

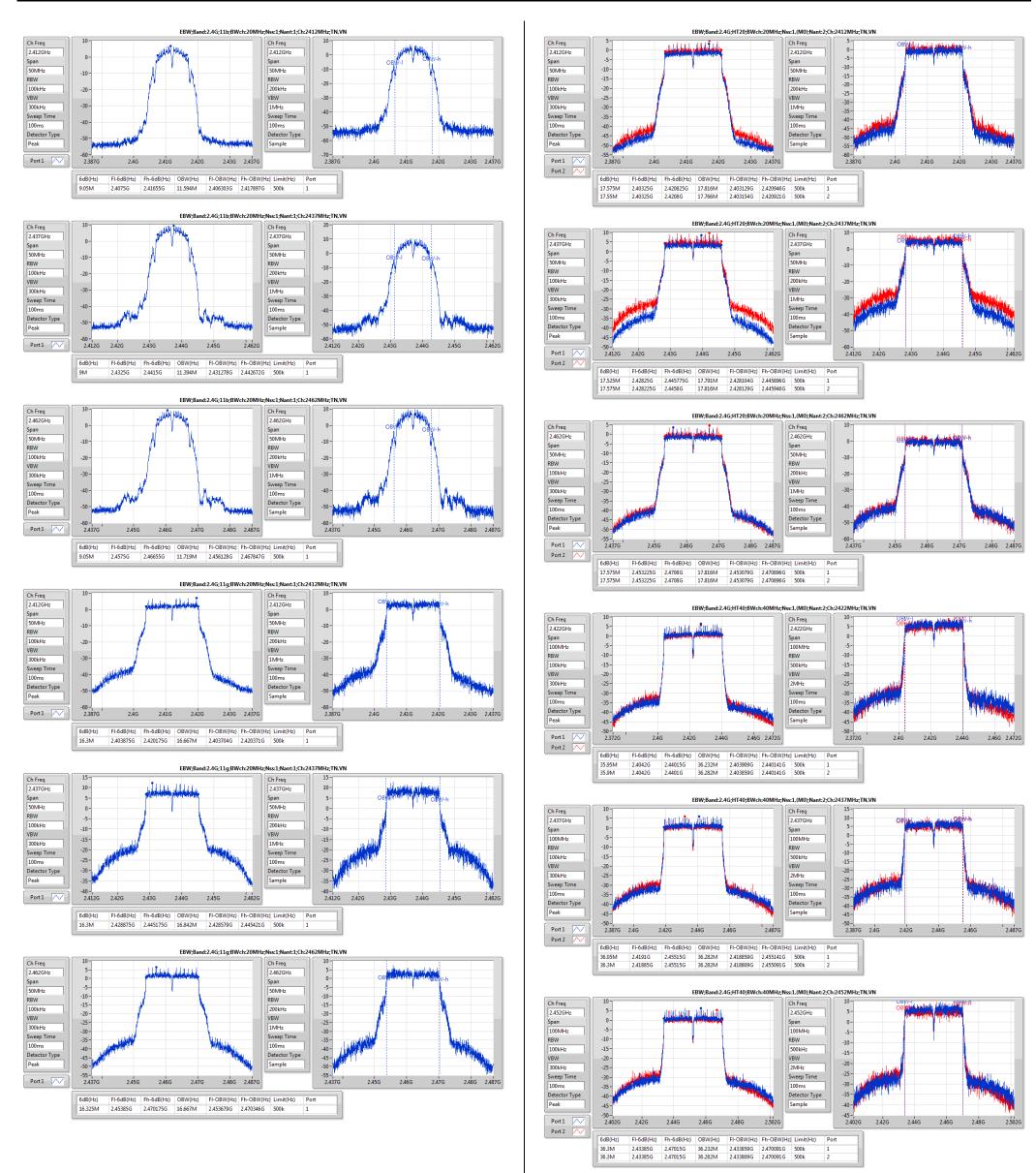
# Result

Mode	Result	Limit	P1-N dB	P1-OBW	P2-N dB	P2-OBW	
		(Hz)	(Hz)	(Hz)	(Hz)	(Hz)	
2.4G;11b;Nss1;Ntx1;2412	Pass	500k	9.05M	11.594M			
2.4G;11b;Nss1;Ntx1;2437	Pass	500k	9M	11.394M			
2.4G;11b;Nss1;Ntx1;2462	Pass	500k	9.05M	11.719M			
2.4G;11g;Nss1;Ntx1;2412	Pass	500k	16.3M	16.667M			
2.4G;11g;Nss1;Ntx1;2437	Pass	500k	16.3M	16.842M			
2.4G;11g;Nss1;Ntx1;2462	Pass	500k	16.325M	16.667M			
2.4G;HT20;Nss1,(M0);Ntx2;2412	Pass	500k	17.575M	17.816M	17.55M	17.766M	
2.4G;HT20;Nss1,(M0);Ntx2;2437	Pass	500k	17.525M	17.791M	17.575M	17.816M	
2.4G;HT20;Nss1,(M0);Ntx2;2462	Pass	500k	17.575M	17.816M	17.575M	17.816M	
2.4G;HT40;Nss1,(M0);Ntx2;2422	Pass	500k	35.95M	36.232M	35.9M	36.282M	
2.4G;HT40;Nss1,(M0);Ntx2;2437	Pass	500k	36.05M	36.282M	36.3M	36.282M	
2.4G;HT40;Nss1,(M0);Ntx2;2452	Pass	500k	36.3M	36.232M	36.3M	36.282M	

SPORTON INTERNATIONAL INC. : 2 of 3



EBW Result
Appendix B



SPORTON INTERNATIONAL INC. : 3 of 3



PowerAV Result

Appendix C

Summary

Mode	Sum	Sum	EIRP	EIRP
	(dBm)	(W)	(dBm)	(W)
2.4G;11b;Nss1;Ntx1	18.37	0.06871	22.97	0.19815
2.4G;11g;Nss1;Ntx1	23.25	0.21135	27.85	0.60954
2.4G;HT20;Nss1,(M0);Ntx2	25.55	0.35892	30.15	1.03514
2.4G;HT40;Nss1,(M0);Ntx2	22.02	0.15922	26.62	0.4592

SPORTON INTERNATIONAL INC. : 1 of 2



PowerAV Result

Appendix C

# Result

Mode	Result	DG	Sum	Sum Lim.	EIRP	EIRP Lim.	P1	P2
		(dBi)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)
2.4G;11b;Nss1;Ntx1;2412	Pass	4.60	18.15	30.00	22.75	36.00	18.15	
2.4G;11b;Nss1;Ntx1;2437	Pass	4.60	18.37	30.00	22.97	36.00	18.37	
2.4G;11b;Nss1;Ntx1;2462	Pass	4.60	17.59	30.00	22.19	36.00	17.59	
2.4G;11g;Nss1;Ntx1;2412	Pass	4.60	19.86	30.00	24.46	36.00	19.86	
2.4G;11g;Nss1;Ntx1;2437	Pass	4.60	23.25	30.00	27.85	36.00	23.25	
2.4G;11g;Nss1;Ntx1;2462	Pass	4.60	19.73	30.00	24.33	36.00	19.73	
2.4G;HT20;Nss1,(M0);Ntx2;2412	Pass	4.60	21.58	30.00	26.18	36.00	18.69	18.45
2.4G;HT20;Nss1,(M0);Ntx2;2437	Pass	4.60	25.55	30.00	30.15	36.00	22.65	22.42
2.4G;HT20;Nss1,(M0);Ntx2;2462	Pass	4.60	20.48	30.00	25.08	36.00	17.63	17.31
2.4G;HT40;Nss1,(M0);Ntx2;2422	Pass	4.60	18.37	30.00	22.97	36.00	15.56	15.15
2.4G;HT40;Nss1,(M0);Ntx2;2437	Pass	4.60	22.02	30.00	26.62	36.00	19.13	18.89
2.4G;HT40;Nss1,(M0);Ntx2;2452	Pass	4.60	18.24	30.00	22.84	36.00	15.43	15.02

SPORTON INTERNATIONAL INC. Page No. : 2 of 2
TEL: 886-3-327-3456

FAX: 886-3-327-0973



PSD Result
Appendix D

Summary

Mode	PD	EIRP.PD
	(dBm/RBW)	(dBm/RBW)
2.4G;11b;Nss1;Ntx1	-4.39	0.21
2.4G;11g;Nss1;Ntx1	-2.44	2.16
2.4G;HT20;Nss1,(M0);Ntx2	-4.90	2.71
2.4G;HT40;Nss1,(M0);Ntx2	-6.01	1.60

SPORTON INTERNATIONAL INC. : 1 of 3



PSD Result
Appendix D

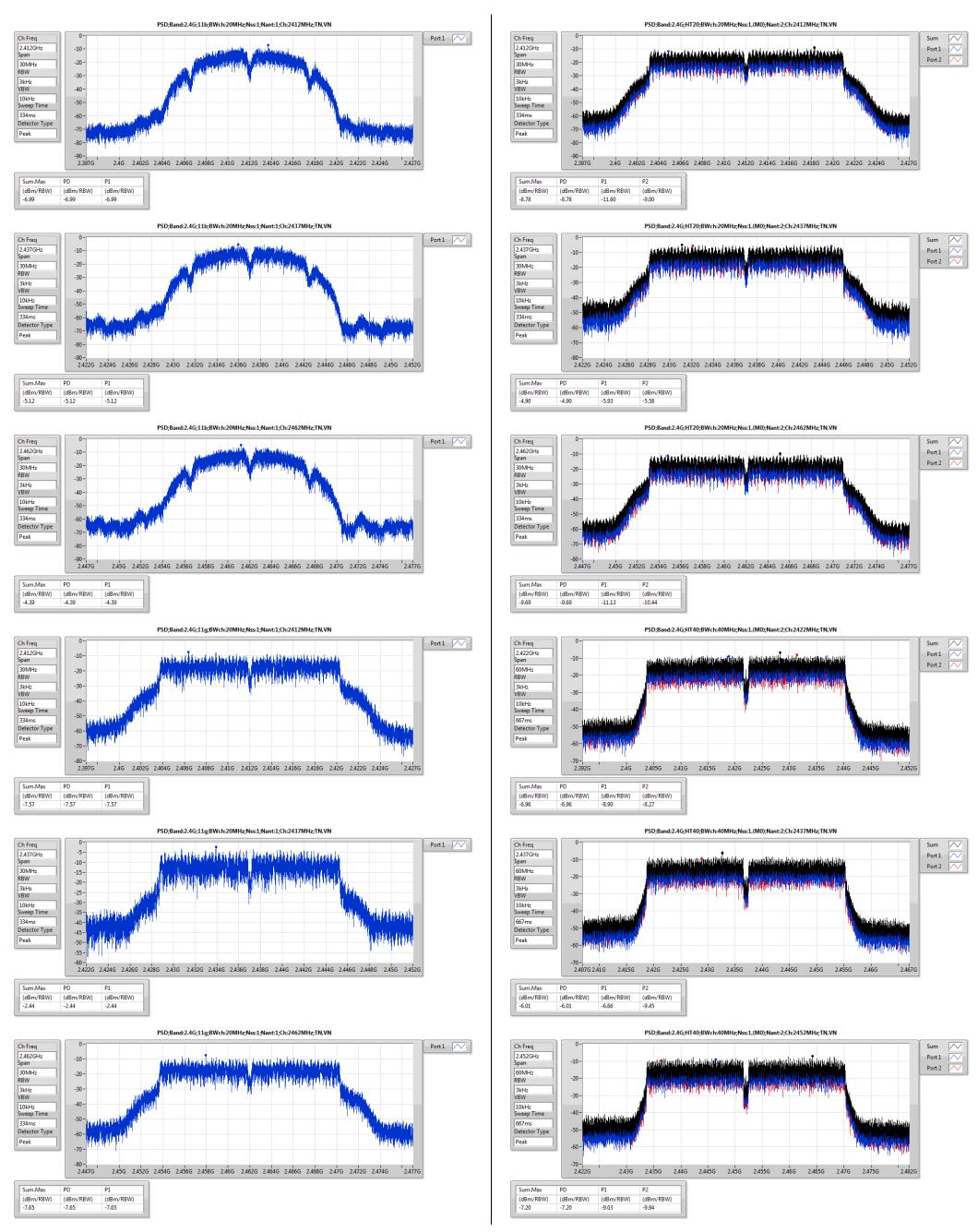
# Result

Mode	Result	Meas.RBW	Lim.RBW	BWCF	DG	PD	PD.Limit	EIRP.PD	EIRP.PD.Li m	P1	P2
		(Hz)	(Hz)	(dB)	(dBi)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
2.4G;11b;Nss1;Ntx1;2412	Pass	3k	3k	0.00	4.60	-6.99	8.00	-2.39	Inf	-6.99	
2.4G;11b;Nss1;Ntx1;2437	Pass	3k	3k	0.00	4.60	-5.12	8.00	-0.52	Inf	-5.12	
2.4G;11b;Nss1;Ntx1;2462	Pass	3k	3k	0.00	4.60	-4.39	8.00	0.21	Inf	-4.39	
2.4G;11g;Nss1;Ntx1;2412	Pass	3k	3k	0.00	4.60	-7.57	8.00	-2.97	Inf	-7.57	
2.4G;11g;Nss1;Ntx1;2437	Pass	3k	3k	0.00	4.60	-2.44	8.00	2.16	Inf	-2.44	
2.4G;11g;Nss1;Ntx1;2462	Pass	3k	3k	0.00	4.60	-7.65	8.00	-3.05	Inf	-7.65	
2.4G;HT20;Nss1,(M0);Ntx2;2412	Pass	3k	3k	0.00	7.61	-8.78	6.39	-1.17	Inf	-11.60	-9.00
2.4G;HT20;Nss1,(M0);Ntx2;2437	Pass	3k	3k	0.00	7.61	-4.90	6.39	2.71	Inf	-5.93	-5.58
2.4G;HT20;Nss1,(M0);Ntx2;2462	Pass	3k	3k	0.00	7.61	-9.69	6.39	-2.08	Inf	-11.13	-10.44
2.4G;HT40;Nss1,(M0);Ntx2;2422	Pass	3k	3k	0.00	7.61	-6.96	6.39	0.65	Inf	-8.90	-8.27
2.4G;HT40;Nss1,(M0);Ntx2;2437	Pass	3k	3k	0.00	7.61	-6.01	6.39	1.60	Inf	-6.66	-9.45
2.4G;HT40;Nss1,(M0);Ntx2;2452	Pass	3k	3k	0.00	7.61	-7.20	6.39	0.41	Inf	-9.03	-9.94

SPORTON INTERNATIONAL INC. : 2 of 3



PSD Result
Appendix D



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

SPORTON INTERNATIONAL INC.

Page No.



CSENdB 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)	
2.4G;HT40;Nss1,(M0);Ntx2;2422	Pass	2.434402G	6.11	-23.89	2.305115G	-59.39	2.3928G	-27.10	2.49822G	-45.96	2.597155G	-51.00	2

SPORTON INTERNATIONAL INC. : 1 of 5



CSENdB Result
Appendix E

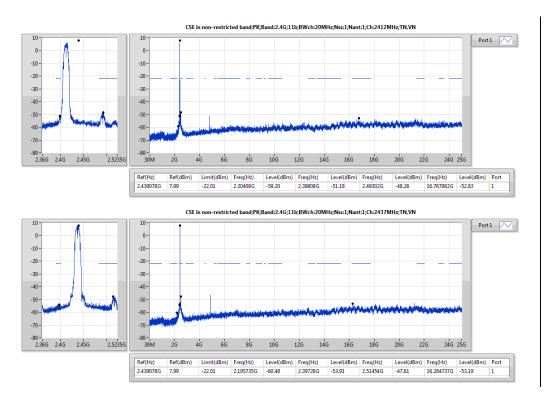
## Result

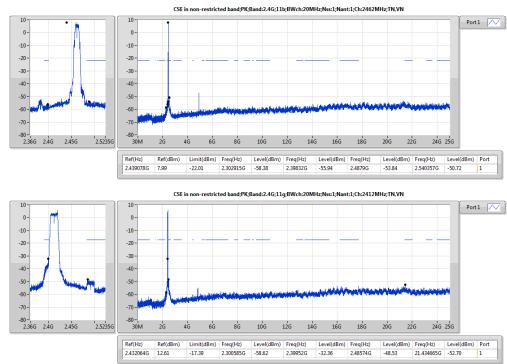
Mode	Result	Ref	Ref	Limit	Freq	Level	Freq	Level	Freq	Level	Freq	Level	Port
		(Hz)	(dBm)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	
2.4G;11b;Nss1;Ntx1;2412	Pass	2.439078G	7.99	-22.01	2.30408G	-59.20	2.39808G	-51.18	2.49302G	-48.26	16.767982G	-52.83	1
2.4G;11b;Nss1;Ntx1;2437	Pass	2.439078G	7.99	-22.01	2.195735G	-60.48	2.39728G	-53.91	2.51454G	-47.61	16.284737G	-53.19	1
2.4G;11b;Nss1;Ntx1;2462	Pass	2.439078G	7.99	-22.01	2.302915G	-58.38	2.39832G	-55.94	2.4879G	-53.84	2.540357G	-50.72	1
2.4G;11g;Nss1;Ntx1;2412	Pass	2.432064G	12.61	-17.39	2.300585G	-58.62	2.39952G	-32.36	2.48574G	-48.53	21.434665G	-52.70	1
2.4G;11g;Nss1;Ntx1;2437	Pass	2.432064G	12.61	-17.39	2.307575G	-56.12	2.39888G	-42.39	2.51078G	-44.64	2.5235G	-50.39	1
2.4G;11g;Nss1;Ntx1;2462	Pass	2.432064G	12.61	-17.39	2.307575G	-59.85	2.39816G	-54.43	2.48422G	-43.40	2.540357G	-50.94	1
2.4G;HT20;Nss1,(M0);Ntx2;2412	Pass	2.432064G	9.38	-20.62	2.30408G	-60.02	2.39992G	-40.59	2.49574G	-50.38	16.377453G	-51.83	1
2.4G;HT20;Nss1,(M0);Ntx2;2412	Pass	2.432064G	9.38	-20.62	2.300585G	-59.64	2.3992G	-37.65	2.4995G	-46.99	2.565643G	-49.17	2
2.4G;HT20;Nss1,(M0);Ntx2;2437	Pass	2.432064G	9.38	-20.62	2.1969G	-60.16	2.39856G	-50.16	2.51806G	-48.79	2.5235G	-52.86	1
2.4G;HT20;Nss1,(M0);Ntx2;2437	Pass	2.432064G	9.38	-20.62	2.309905G	-59.05	2.39856G	-48.45	2.52206G	-41.75	2.58812G	-46.22	2
2.4G;HT20;Nss1,(M0);Ntx2;2462	Pass	2.432064G	9.38	-20.62	2.307575G	-59.68	2.39056G	-56.01	2.48414G	-46.65	21.639763G	-53.92	1
2.4G;HT20;Nss1,(M0);Ntx2;2462	Pass	2.432064G	9.38	-20.62	2.309905G	-51.05	2.39008G	-50.91	2.48358G	-47.78	2.531929G	-50.83	2
2.4G;HT40;Nss1,(M0);Ntx2;2422	Pass	2.434402G	6.11	-23.89	2.307405G	-58.21	2.39824G	-28.75	2.48574G	-41.73	17.626805G	-52.32	1
2.4G;HT40;Nss1,(M0);Ntx2;2422	Pass	2.434402G	6.11	-23.89	2.305115G	-59.39	2.3928G	-27.10	2.49822G	-45.96	2.597155G	-51.00	2
2.4G;HT40;Nss1,(M0);Ntx2;2437	Pass	2.434402G	6.11	-23.89	2.30855G	-59.30	2.39952G	-29.68	2.48414G	-36.30	16.580703G	-53.46	1
2.4G;HT40;Nss1,(M0);Ntx2;2437	Pass	2.434402G	6.11	-23.89	2.30397G	-59.56	2.39952G	-30.87	2.4843G	-40.63	17.632414G	-53.07	2
2.4G;HT40;Nss1,(M0);Ntx2;2452	Pass	2.434402G	6.11	-23.89	2.309695G	-57.60	2.39936G	-41.43	2.48942G	-30.61	16.931274G	-54.12	1
2.4G;HT40;Nss1,(M0);Ntx2;2452	Pass	2.434402G	6.11	-23.89	2.30855G	-47.73	2.39984G	-44.00	2.4843G	-30.35	2.602764G	-51.89	2

SPORTON INTERNATIONAL INC. : 2 of 5



CSENdB Result Appendix E

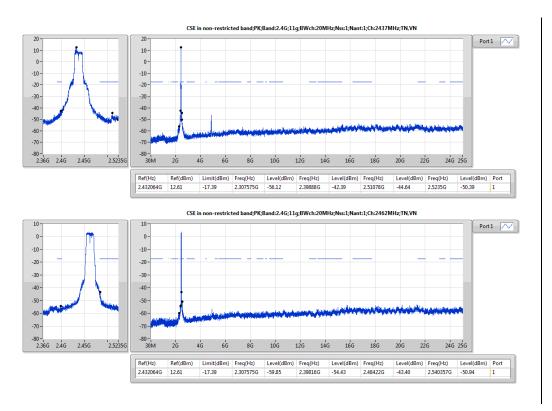


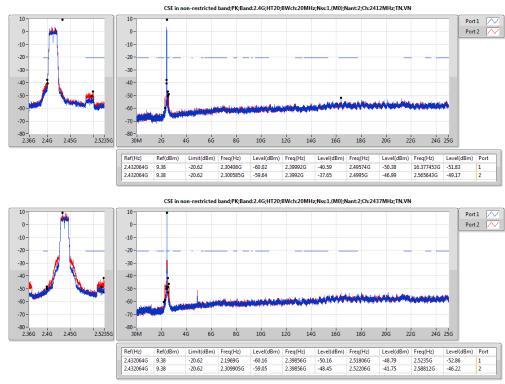


SPORTON INTERNATIONAL INC. : 3 of 5



CSENdB Result
Appendix E

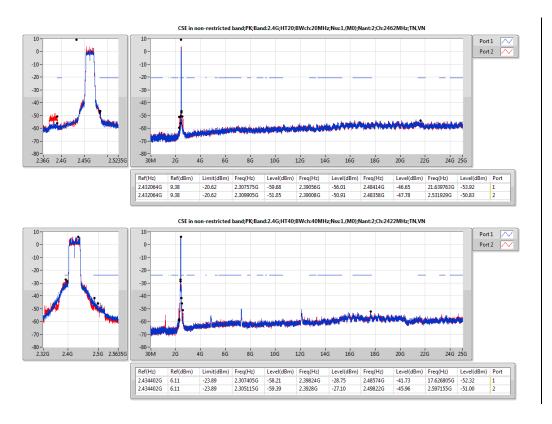


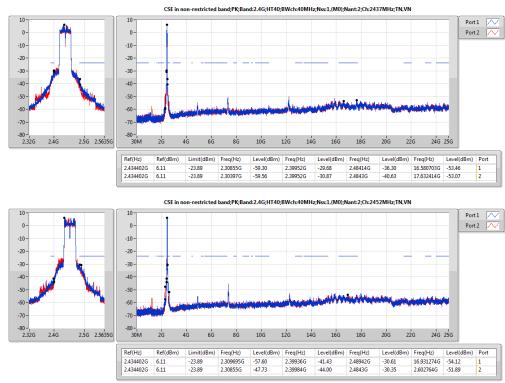


SPORTON INTERNATIONAL INC. : 4 of 5



CSENdB Result Appendix E



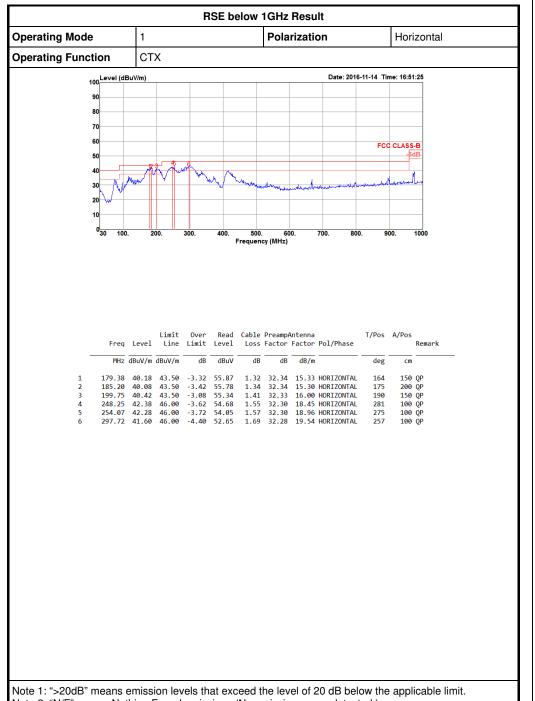


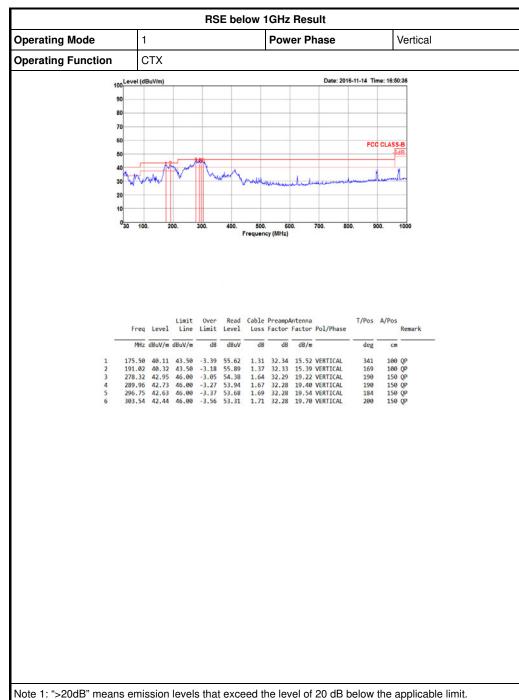
SPORTON INTERNATIONAL INC. : 5 of 5



FAX: 886-3-327-0973

RSE below 1GHz Result Appendix F.1





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

 SPORTON INTERNATIONAL INC.
 Page No.
 : 1 of 1

 TEL: 886-3-327-3456
 Report Version
 : Rev. 01

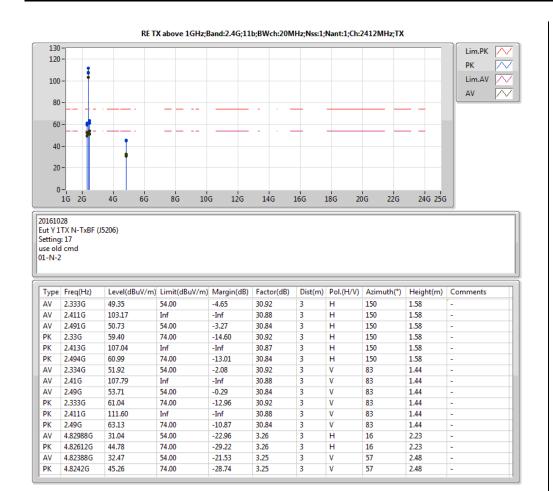


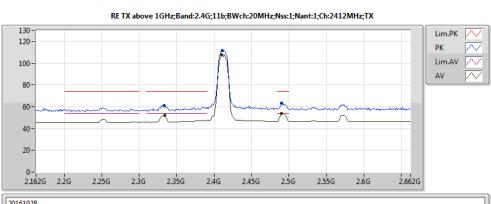
Summary

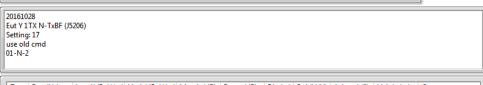
Mode	Result	Туре	Freq	Level	Limit	Margin	Factor	Dist	Pol.	Azimuth	Height	Comments
			(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)	(H/V)	(°)	(m)	
2.4G;HT20;Nss1,(M0);Ntx2;2412;TX	Pass	AV	2.39G	53.89	54.00	-0.11	30.89	3	V	82	1.54	-

SPORTON INTERNATIONAL INC. Page No. : 1 of 11

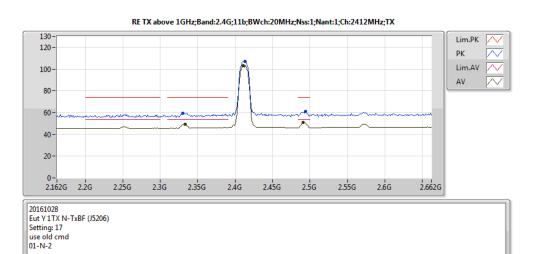




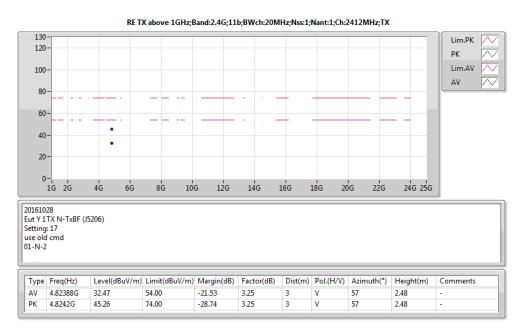


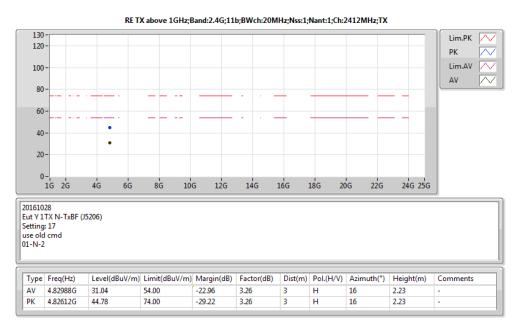


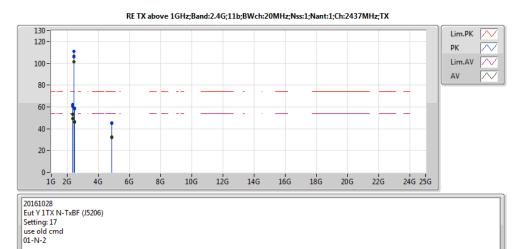
Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
ΑV	2.334G	51.92	54.00	-2.08	30.92	3	V	83	1.44	-
ΑV	2.41G	107.79	Inf	-Inf	30.88	3	٧	83	1.44	-
ΑV	2.49G	53.71	54.00	-0.29	30.84	3	٧	83	1.44	-
PK	2.333G	61.04	74.00	-12.96	30.92	3	٧	83	1.44	-
PK	2.411G	111.60	Inf	-Inf	30.88	3	٧	83	1.44	-
PK	2.49G	63.13	74.00	-10.87	30.84	3	V	83	1.44	-



Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	2.333G	49.35	54.00	-4.65	30.92	3	Н	150	1.58	-
AV	2.411G	103.17	Inf	-Inf	30.88	3	Н	150	1.58	-
AV	2.491G	50.73	54.00	-3.27	30.84	3	Н	150	1.58	-
PK	2.33G	59.40	74.00	-14.60	30.92	3	Н	150	1.58	-
PK	2.413G	107.04	Inf	-Inf	30.87	3	Н	150	1.58	-
PK	2.494G	60.99	74.00	-13.01	30.84	3	Н	150	1.58	-



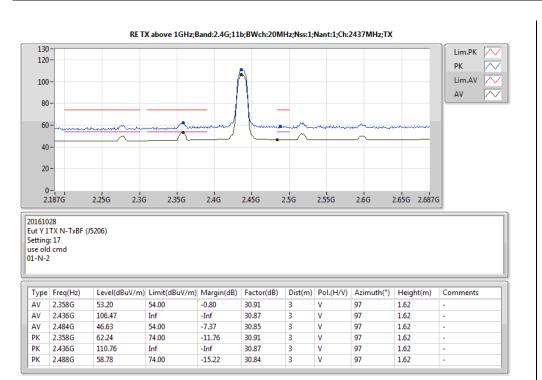


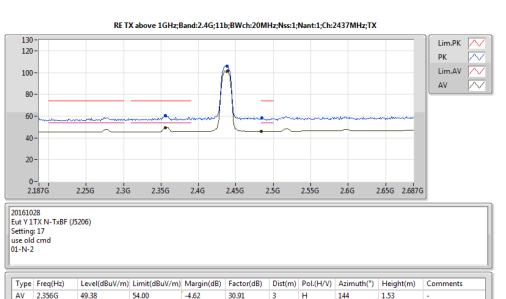


Туре	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
ΑV	2.356G	49.38	54.00	-4.62	30.91	3	Н	144	1.53	<b>7-</b>
ΑV	2.439G	101.51	Inf	-Inf	30.86	3	Н	144	1.53	-
ΑV	2.484G	46.06	54.00	-7.94	30.85	3	H	144	1.53	-
PK	2.356G	60.28	74.00	-13.72	30.91	3	Н	144	1.53	-
PK	2.438G	106.13	Inf	-Inf	30.86	3	Н	144	1.53	-
PK	2.485G	58.15	74.00	-15.85	30.85	3	Н	144	1.53	-
ΑV	2.358G	53.20	54.00	-0.80	30.91	3	V	97	1.62	-
ΑV	2.436G	106.47	Inf	-Inf	30.87	3	V	97	1.62	-
ΑV	2.484G	46.63	54.00	-7.37	30.85	3	V	97	1.62	-
PK	2.358G	62.24	74.00	-11.76	30.91	3	V	97	1.62	-
PK	2.436G	110.76	Inf	-Inf	30.87	3	V	97	1.62	-
PK	2.488G	58.78	74.00	-15.22	30.84	3	V	97	1.62	-
ΑV	4.87404G	31.70	54.00	-22.30	3.34	3	Н	346	1.52	-
PK	4.87248G	45.62	74.00	-28.38	3.34	3	Н	346	1.52	-
ΑV	4.874G	32.39	54.00	-21.61	3.34	3	V	256	1.27	-
PK	4.87052G	44.76	74.00	-29.24	3.34	3	٧	256	1.27	-

SPORTON INTERNATIONAL INC. : 2 of 11







-Inf

-7.94

-13.72

-Inf

30.86

30.85

30.91

30.86

1.53

1.53

1.53

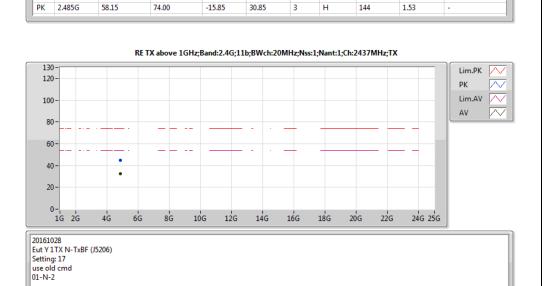
1.53

144

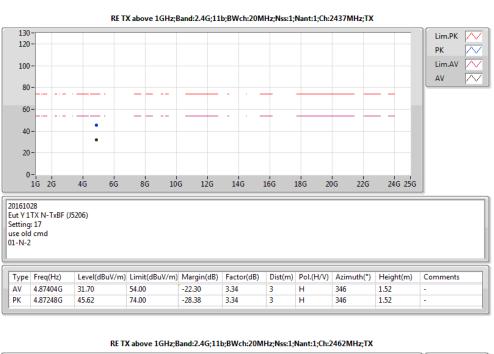
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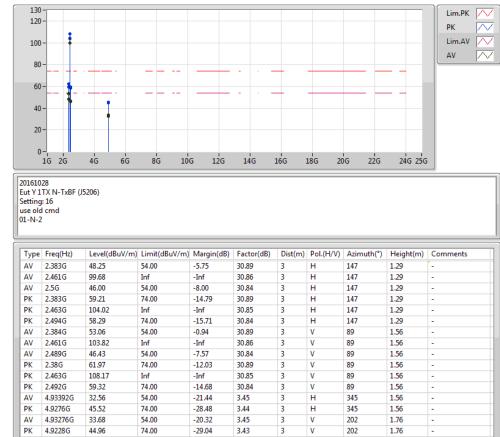
144

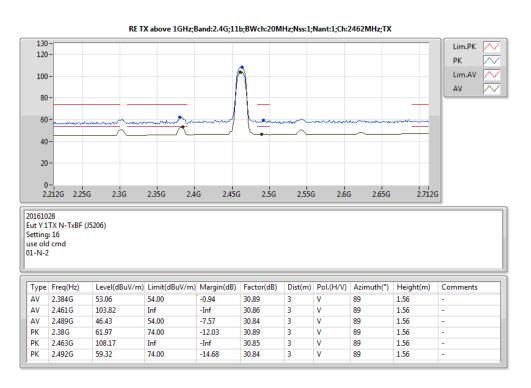
144



Туре	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
ΑV	4.874G	32.39	54.00	-21.61	3.34	3	V	256	1.27	-
PK	4.87052G	44.76	74.00	-29.24	3.34	3	V	256	1.27	-







SPORTON INTERNATIONAL INC. : 3 of 11

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

2.439G

2.438G

AV 2.484G

PK 2,356G

PK

101.51

46.06

60.28

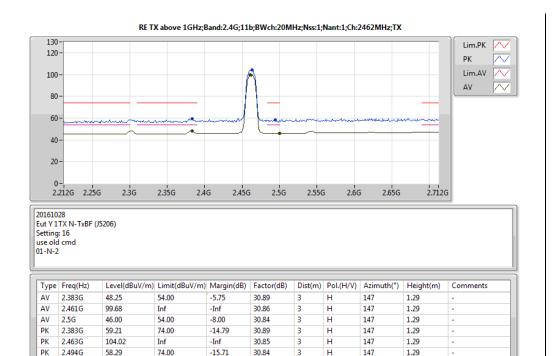
106.13

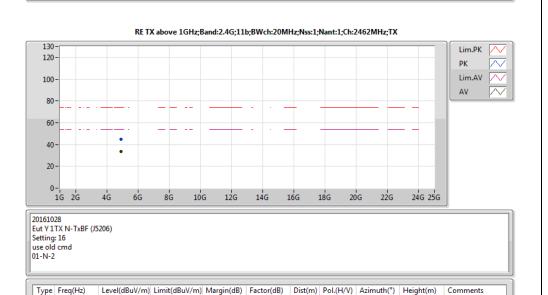
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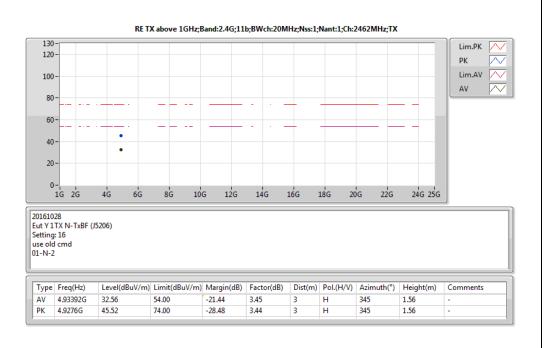
74.00

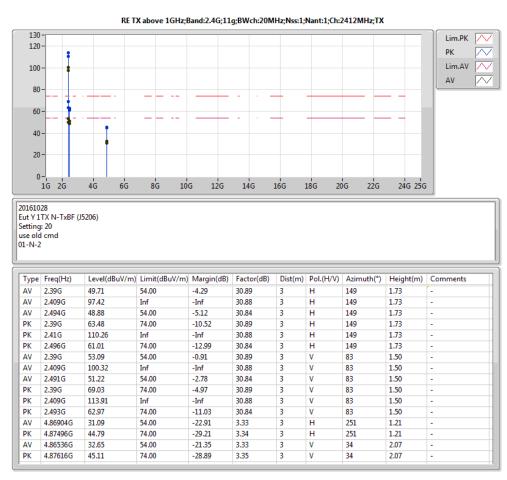
Inf



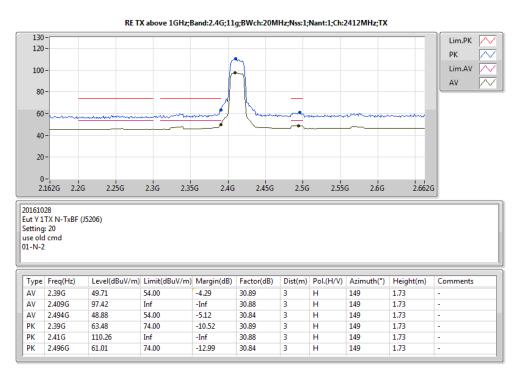












: 4 of 11

SPORTON INTERNATIONAL INC. Page No.

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

AV 4.93276G

4.9228G

33.68

54.00

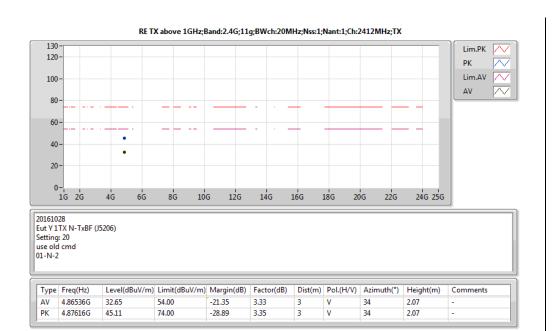
-20.32

3.45

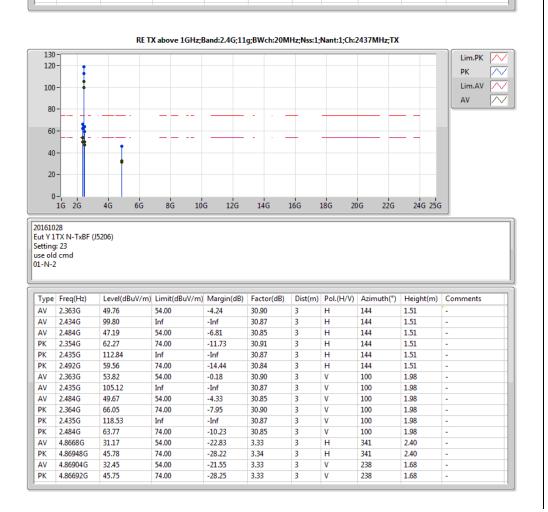
202

1.76

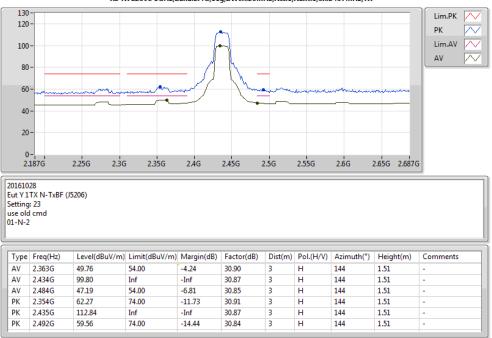


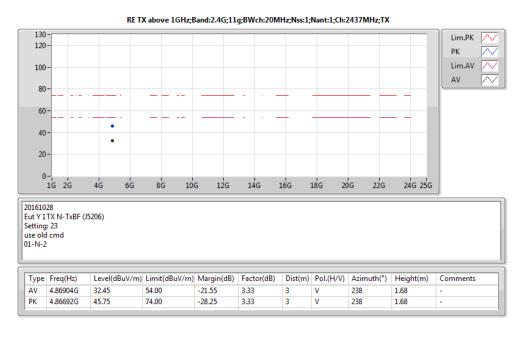








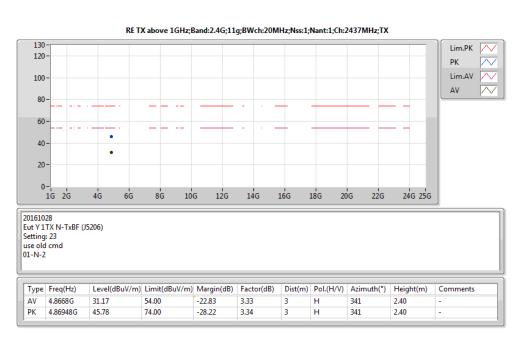


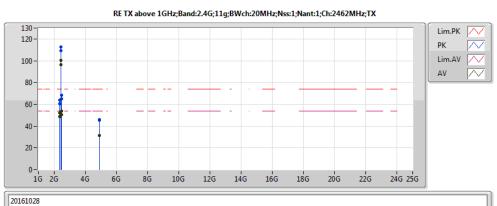


: 5 of 11

SPORTON INTERNATIONAL INC. Page No.

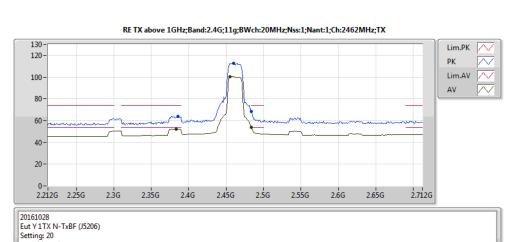




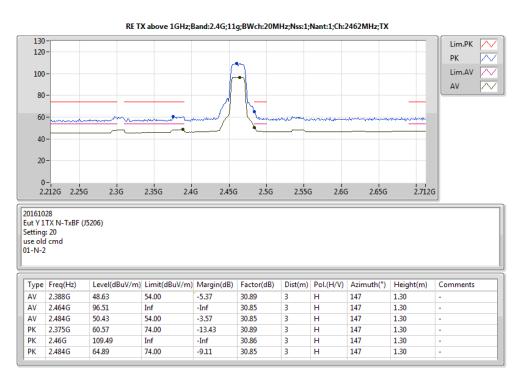


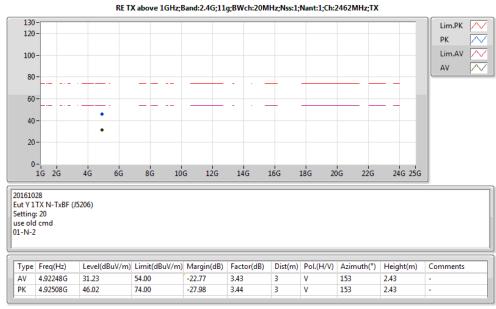


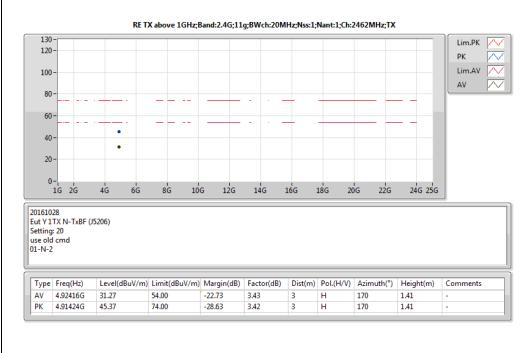
Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
ΑV	2.388G	48.63	54.00	-5.37	30.89	3	Н	147	1.30	-
ΑV	2.464G	96.51	Inf	-Inf	30.85	3	Н	147	1.30	-
ΑV	2.484G	50.43	54.00	-3.57	30.85	3	Н	147	1.30	-
PK	2.375G	60.57	74.00	-13.43	30.89	3	Н	147	1.30	-
PK	2.46G	109.49	Inf	-Inf	30.86	3	Н	147	1.30	-
PK	2.484G	64.89	74.00	-9.11	30.85	3	Н	147	1.30	-
ΑV	2.383G	52.30	54.00	-1.70	30.89	3	V	82	1.54	-
ΑV	2.455G	100.30	Inf	-Inf	30.86	3	V	82	1.54	-
ΑV	2.484G	53.56	54.00	-0.44	30.85	3	V	82	1.54	-
PK	2.386G	63.80	74.00	-10.20	30.89	3	V	82	1.54	-
PK	2.46G	112.84	Inf	-Inf	30.86	3	V	82	1.54	-
PK	2.484G	68.19	74.00	-5.81	30.85	3	V	82	1.54	-
ΑV	4.92416G	31.27	54.00	-22.73	3.43	3	Н	170	1.41	-
PK	4.91424G	45.37	74.00	-28.63	3.42	3	Н	170	1.41	-
ΑV	4.92248G	31.23	54.00	-22.77	3.43	3	V	153	2.43	-
PK	4.92508G	46.02	74.00	-27.98	3.44	3	V	153	2.43	-



Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
ΑV	2.383G	52.30	54.00	-1.70	30.89	3	V	82	1.54	-
ΑV	2.455G	100.30	Inf	-Inf	30.86	3	V	82	1.54	-
ΑV	2.484G	53.56	54.00	-0.44	30.85	3	V	82	1.54	-
PK	2.386G	63.80	74.00	-10.20	30.89	3	V	82	1.54	-
PK	2.46G	112.84	Inf	-Inf	30.86	3	V	82	1.54	-
PK	2.484G	68.19	74.00	-5.81	30.85	3	V	82	1.54	-







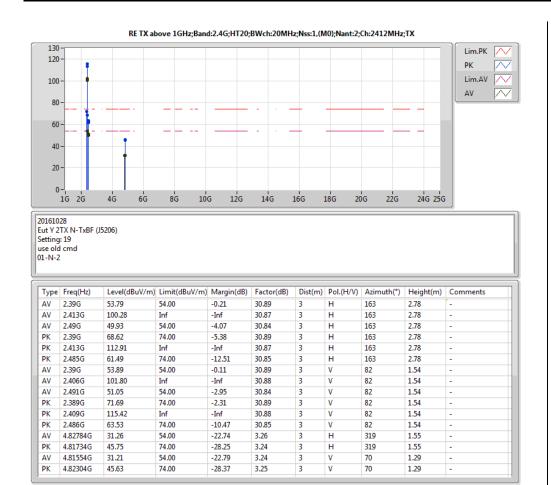
: 6 of 11

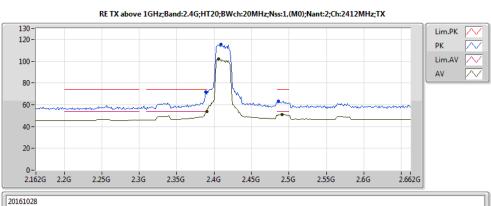
SPORTON INTERNATIONAL INC. Page No.

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

use old cmd

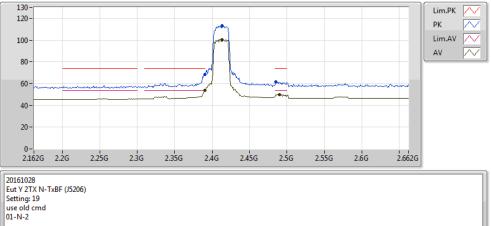




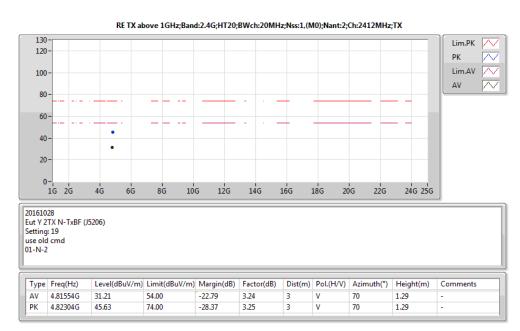




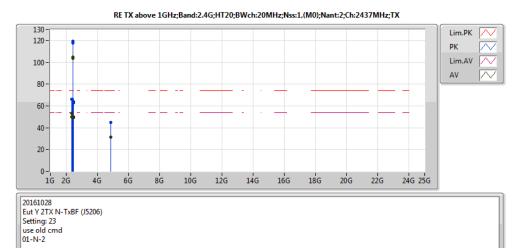
AV 2.406G 101.80 Inf -Inf 30.88 3 V 82 1.54 AV 2.491G 51.05 54.00 -2.95 30.84 3 V 82 1.54 PK 2.389G 71.69 74.00 -2.31 30.89 3 V 82 1.54 PK 2.409G 115.42 Inf -Inf 30.88 3 V 82 1.54 PK 2.486G 63.53 74.00 -10.47 30.85 3 V 82 1.54											
AV 2.491G 51.05 54.00 -2.95 30.84 3 V 82 1.54 OK 2.389G 71.69 74.00 -2.31 30.89 3 V 82 1.54	2.	.486G 63.53	74.00	-10.47	30.85	3	V	82	1.54	-	_
AV 2.491G 51.05 54.00 -2.95 30.84 3 V 82 1.54	2.	.409G 115.42	Inf	-Inf	30.88	3	V	82	1.54	-	
	2.	.389G 71.69	74.00	-2.31	30.89	3	V	82	1.54	-	
AV 2.406G 101.80 Inf -Inf 30.88 3 V 82 1.54	2.	.491G 51.05	54.00	-2.95	30.84	3	V	82	1.54	-	
		.4000 101.00	Inf	-Inf	30.88	3	V	82	1.54	-	



Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
ΑV	2.39G	53.79	54.00	-0.21	30.89	3	Н	163	2.78	-
ΑV	2.413G	100.28	Inf	-Inf	30.87	3	Н	163	2.78	-
ΑV	2.49G	49.93	54.00	-4.07	30.84	3	Н	163	2.78	-
PK	2.39G	68.62	74.00	-5.38	30.89	3	Н	163	2.78	-
PK	2.413G	112.91	Inf	-Inf	30.87	3	Н	163	2.78	-
PK	2.485G	61.49	74.00	-12.51	30.85	3	Н	163	2.78	-

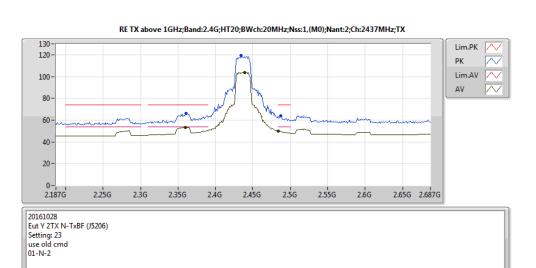




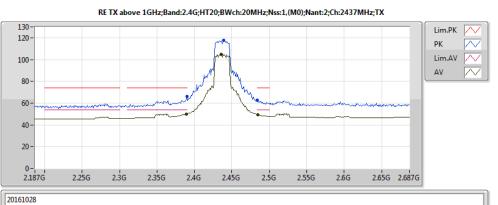


Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
ΑV	2.389G	49.97	54.00	-4.03	30.89	3	Н	169	2.99	-
ΑV	2.436G	104.65	Inf	-Inf	30.87	3	Н	169	2.99	-
ΑV	2.485G	49.18	54.00	-4.82	30.85	3	Н	169	2.99	-
PK	2.39G	65.90	74.00	-8.10	30.89	3	Н	169	2.99	-
PK	2.439G	117.77	Inf	-Inf	30.86	3	Н	169	2.99	-
PK	2.484G	62.96	74.00	-11.04	30.85	3	Н	169	2.99	-
ΑV	2.36G	53.51	54.00	-0.49	30.90	3	V	88	1.52	-
ΑV	2.439G	103.89	Inf	-Inf	30.86	3	V	88	1.52	-
ΑV	2.484G	50.11	54.00	-3.89	30.85	3	V	88	1.52	-
PK	2.361G	65.90	74.00	-8.10	30.90	3	V	88	1.52	-
PK	2.434G	119.47	Inf	-Inf	30.87	3	V	88	1.52	-
PK	2.487G	63.97	74.00	-10.03	30.85	3	V	88	1.52	-
ΑV	4.87088G	31.26	54.00	-22.74	3.34	3	Н	90	2.00	-
PK	4.87236G	44.96	74.00	-29.04	3.34	3	Н	90	2.00	-
ΑV	4.85972G	31.20	54.00	-22.80	3.32	3	V	152	1.58	-
PK	4.85918G	44.92	74.00	-29.08	3.32	3	V	152	1.58	-



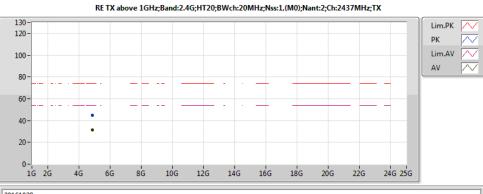


Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
ΑV	2.36G	53.51	54.00	-0.49	30.90	3	V	88	1.52	-
ΑV	2.439G	103.89	Inf	-Inf	30.86	3	V	88	1.52	-
ΑV	2.484G	50.11	54.00	-3.89	30.85	3	V	88	1.52	-
PK	2.361G	65.90	74.00	-8.10	30.90	3	V	88	1.52	-
PK	2.434G	119.47	Inf	-Inf	30.87	3	V	88	1.52	-
PK	2.487G	63.97	74.00	-10.03	30.85	3	V	88	1.52	-



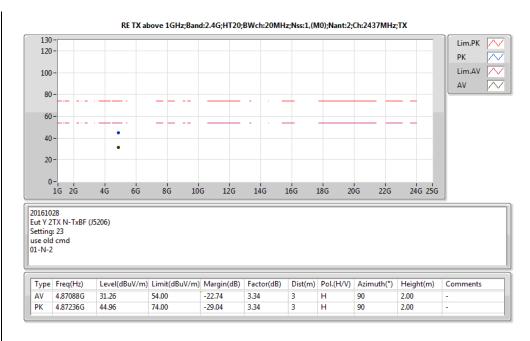
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ı	ENTATION T. DE (1506)	ı
п	EUT Y 21A N-1XBF (J3206)	ı
ı	Setting: 23	L
ı	Eut Y 2TX N-TxBF (J5206) Setting: 23 use old cmd	
ı	01-N-2	
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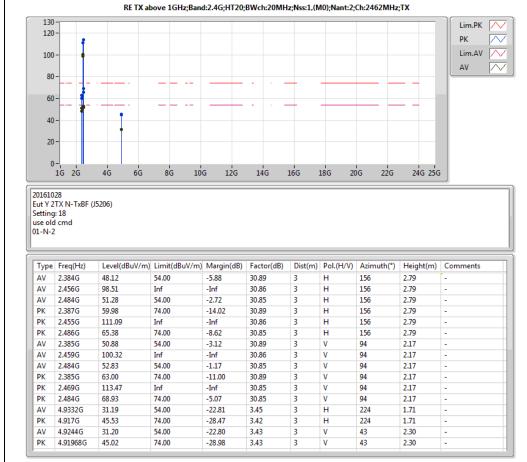
Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	2.389G	49.97	54.00	-4.03	30.89	3	Н	169	2.99	-
AV	2.436G	104.65	Inf	-Inf	30.87	3	Н	169	2.99	-
AV	2.485G	49.18	54.00	-4.82	30.85	3	Н	169	2.99	-
PK	2.39G	65.90	74.00	-8.10	30.89	3	Н	169	2.99	-
PK	2.439G	117.77	Inf	-Inf	30.86	3	Н	169	2.99	-
PK	2.484G	62.96	74.00	-11.04	30.85	3	Н	169	2.99	-

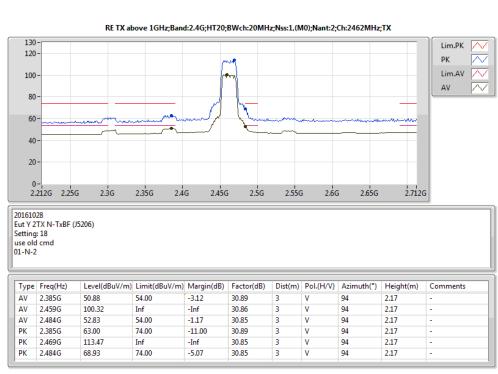


		20	40	00	00	100	120	140	100	100	200	220	240 250
2016102 Eut Y 2T Setting: use old 01-N-2	X N 23	-	i206)										

Тур	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	4.85972G	31.20	54.00	-22.80	3.32	3	V	152	1.58	-
PK	4.85918G	44.92	74.00	-29.08	3.32	3	V	152	1.58	-

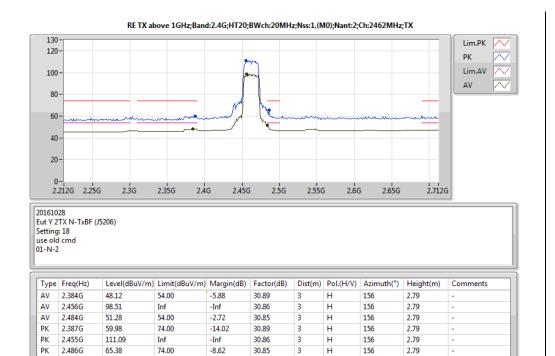


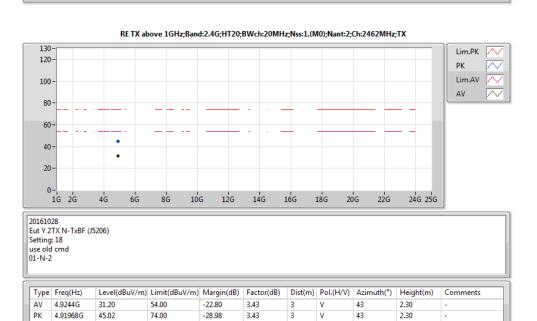


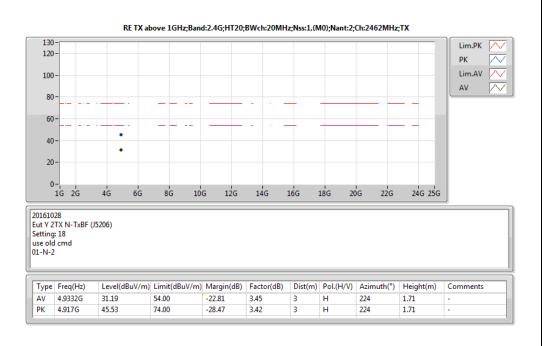


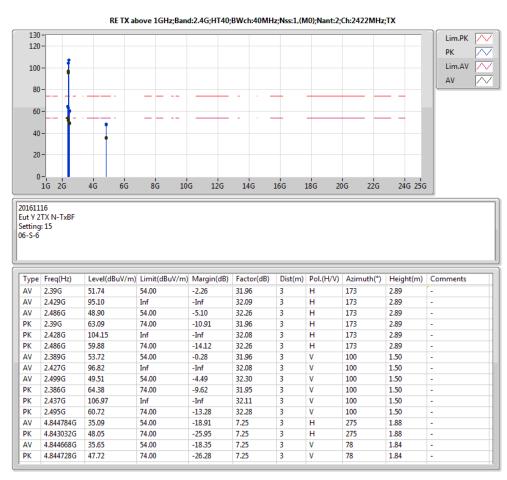
SPORTON INTERNATIONAL INC. : 8 of 11

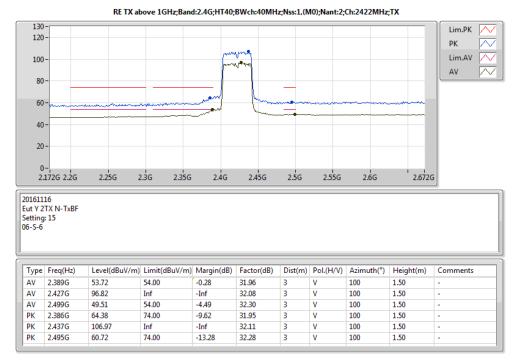


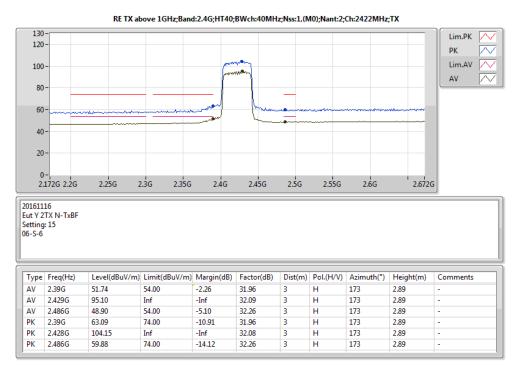






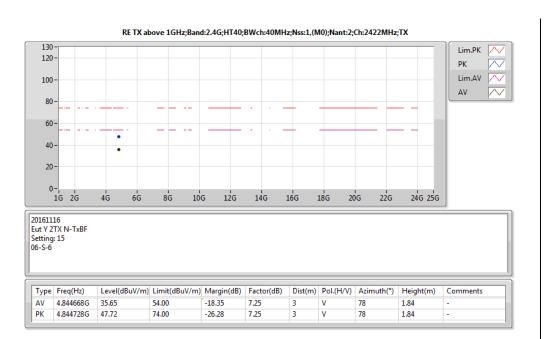


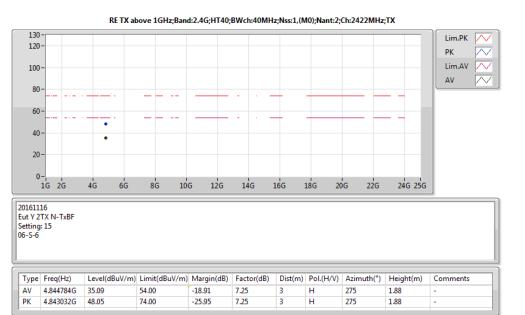


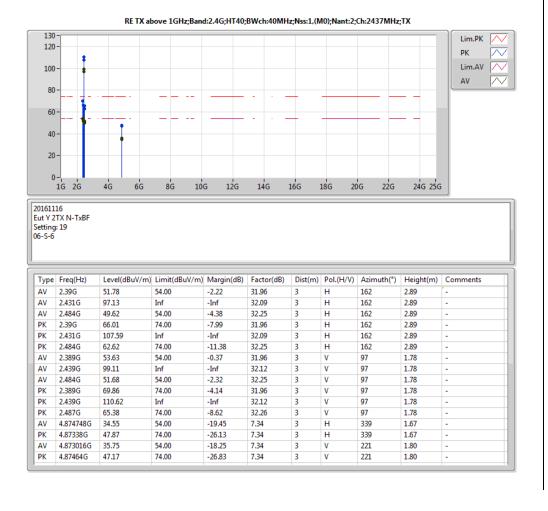


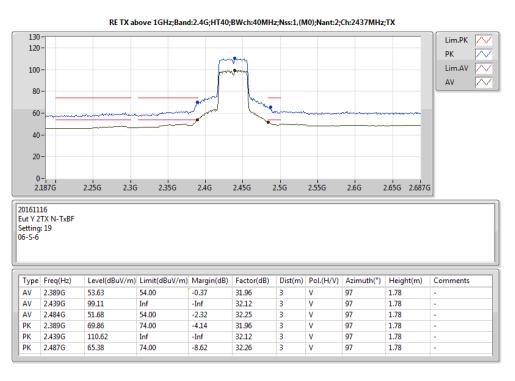
SPORTON INTERNATIONAL INC. : 9 of 11

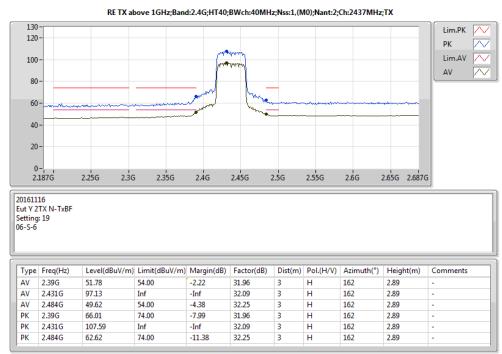


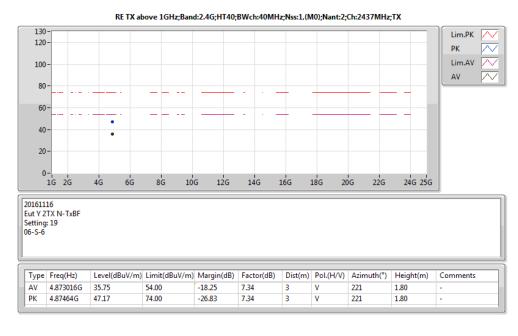




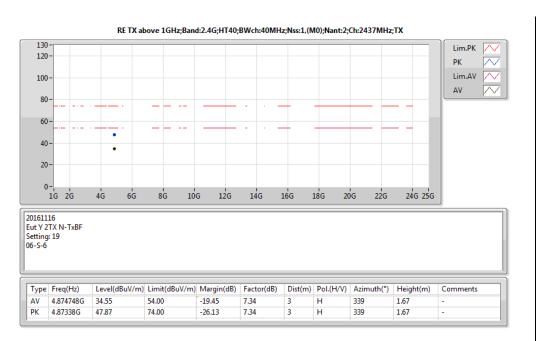


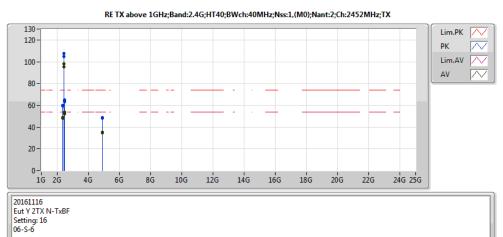


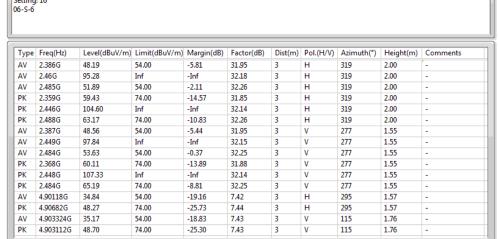


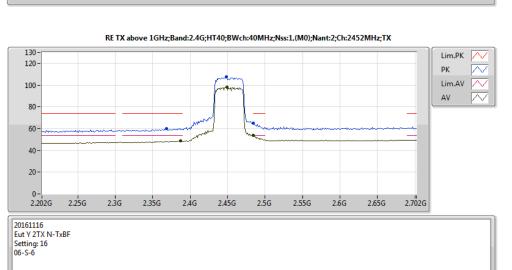




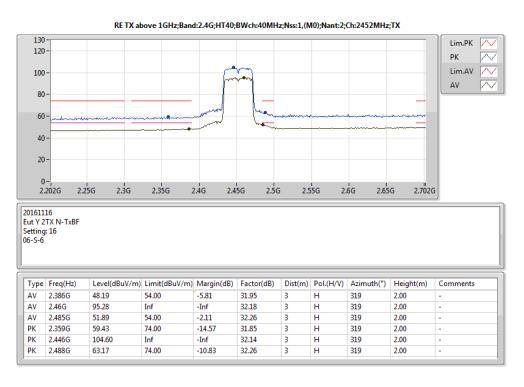


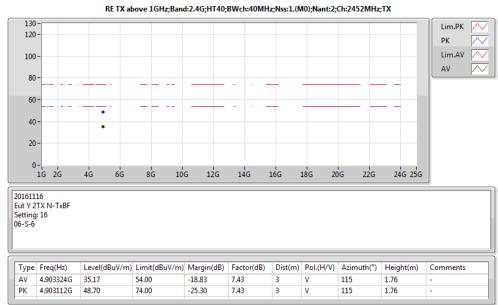


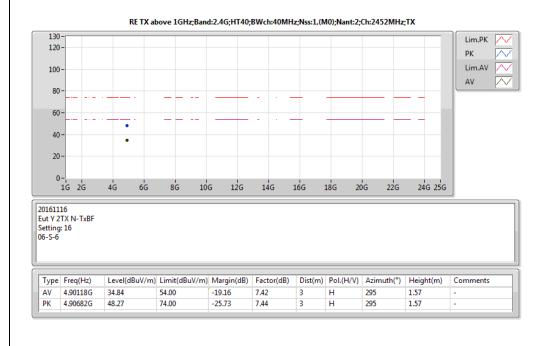




Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
ΑV	2.387G	48.56	54.00	-5.44	31.95	3	V	277	1.55	-
ΑV	2.449G	97.84	Inf	-Inf	32.15	3	V	277	1.55	-
ΑV	2.484G	53.63	54.00	-0.37	32.25	3	V	277	1.55	-
PK	2.368G	60.11	74.00	-13.89	31.88	3	V	277	1.55	-
PK	2.448G	107.33	Inf	-Inf	32.14	3	V	277	1.55	-
PK	2.484G	65.19	74.00	-8.81	32.25	3	V	277	1.55	-







: 11 of 11

SPORTON INTERNATIONAL INC. Page No.