Report On

Application for Grant of Equipment Authorization of the
Motorola Solutions Sdn Bhd
APX 900 UHFR2 Two Way Portable Radio

FCC Part 15 Subpart C §15.247 (DTS)
ISED RSS-247

Report No. JG72129039-0717A Rev.02 **August 2017**

REPORT ON	Radio Testing of the Motorola Solutions Sdn Bhd Two Way Portable Radio
TEST REPORT NUMBER	JG72129039-0717A Rev.02
PREPARED FOR	Motorola Solutions Sdn Bhd Plot 2 Bayan Lepas Innoplex, Industrial Park Mukim 12 SWD 11900 Bayan Lepas, Penang Malaysia
CONTACT PERSON	Arine Lee +606048503130 arinelee@motorolasolutions.com
PREPARED BY	Ivan Retana **Name** Authorized Signatory Title: EMC/Wireless Test Engineer
APPROVED BY	Ferdinand S. Custodio Name Authorized Signatory Title: EMC/Senior Wireless Test Engineer
DATED	August 22, 2017

TÜV SÜD AMERICA INC 10040 Mesa Rim Road San Diego, CA 92121-2912 Phone: 858 678 1400 FAX: 858 546 0364

Revision History

JG72129039-0717A Rev.02 Motorola Solutions Sdn Bhd APX 900 UHFR2 Two Way Portable Radio					
DATE	OLD REVISION	NEW REVISION	REASON	PAGES AFFECTED	APPROVED BY
08/01/2017		Initial Release			Ferdinand S. Custodio
08/21/2017	Initial Release	Rev.01	Removed maximum conducted output power measurement in section 1.4.4. Correction of FCC registration number in section 1.9 and updated measurement uncertainty in section 3.2 and added a Test setup diagram below 30MHz	9, 10, 54 and 57	Ferdinand S. Custodio
08/22/2017	Rev.01	Rev.02	Removal of incorrect reference standards and test clauses	Cover page, 6 and 7	Ferdinand S. Custodio

TÜV SÜD AMERICA INC 10040 Mesa Rim Road San Diego, CA 92121-2912 Phone: 858 678 1400 FAX: 858 546 0364

CONTENTS

TÜV SÜD AMERICA INC 10040 Mesa Rim Road San Diego, CA 92121-2912 Phone: 858 678 1400 FAX: 858 546 0364

SECTION 1

REPORT SUMMARY

Radio Testing of the
Motorola Solutions Sdn Bhd
APX 900 UHFR2 Two Way Portable Radio

TÜV SÜD AMERICA INC 10040 Mesa Rim Road San Diego, CA 92121-2912 Phone: 858 678 1400 FAX: 858 546 0364

1.1 INTRODUCTION

The information contained in this report is intended to show verification of the Motorola Solutions Sdn Bhd APX 900 UHFR2 Two Way Portable Radio to the following requirements:

- FCC Part 15 Subpart C §15.247 (DTS)
- ISED RSS-247

Objective	To perform Radio Testing to determine the Equipment Under Test's (EUT's) compliance with the Test Specification, for the series of tests carried out.
Manufacturer	Motorola Solutions Sdn Bhd
Model Number(s)	H92SDH9PW7AN
FCC ID Number	AZ489FT7099
IC Number	109U-89FT7099
Serial Number(s)	837TTH0026 and 837TTH0042
Number of Samples Tested	2
Test Specification/Issue/Date	• FCC Part 15 Subpart C §15.247 (October 1, 2016). • RSS-247 Issue 2 February 2017 - Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and Licence-Exempt Local Area Network (LE-LAN) Devices. • RSS-Gen - General Requirements for Compliance of Radio Apparatus (Issue 4, November 2014). • ANSI C63.10-2013. American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices
Start of Test	July 11, 2017
Finish of Test	July 18, 2017
Name of Engineer(s)	Ivan Retana Alex Chang Xiaoying Zhang
Related Document(s)	Supporting documents for EUT certification are separate exhibits.

TÜV SÜD AMERICA INC 10040 Mesa Rim Road San Diego, CA 92121-2912 Phone: 858 678 1400 FAX: 858 546 0364

1.2 BRIEF SUMMARY OF RESULTS

A brief summary of the tests carried out in accordance with FCC Part 15 Subpart C §15.247 with cross-reference to the corresponding IC RSS standard is shown below.

Section	§15.247 Spec Clause	RSS	Test Description	Result	Comments/ Base Standard
-	§15.247(b)(3)	RSS-247 5.4(4)	Peak Output Power	**Not Performed***	
-	§15.207(a)	RSS-Gen 8.8	Conducted Emissions	**Not Performed***	
-		RSS-Gen 6.6	99% Emission Bandwidth	**Not Performed***	
-	§15.247(a)(2)	RSS-247 5.2(1)	Minimum 6 dB RF Bandwidth	**Not Performed***	
2.1	§15.247(d)	RSS-247 5.5	Out-of-Band Emissions - Radiated	**Compliant**	
2.2	§15.247(d)	RSS-247 5.5	Band-edge Compliance and Immediate Restricted Band - Radiated	**Compliant**	
-	§15.247(e)	RSS-247 5.2(2)	Power Spectral Density for Digitally Modulated Device	**Not Performed***	

Not Performed* *Test not performed per customer EMC Test Plan.*

TÜV SÜD AMERICA INC 10040 Mesa Rim Road San Diego, CA 92121-2912 Phone: 858 678 1400 FAX: 858 546 0364

1.3 PRODUCT INFORMATION

1.3.1 Technical Description

The Equipment Under Test (EUT) was a Motorola Solutions Sdn Bhd APX 900 UHFR2 Two Way Portable Radio. The EUT supports Bluetooth 2.0+EDR, Bluetooth Low Energy (BLE), WLAN 802.11 b/g/n and GPS features.

1.3.2 EUT General Description

EUT Description	Two Way Portable Radio
Model Name	APX 900 UHFR2
Model Number(s)	H92SDH9PW7AN
Rated Voltage	7.4VDC trough a rechargeable Li-ion Battery 2900mAh 21.5Wh (PN PMNN4489A)
Mode Verified	BLE and WLAN 802.11 b/g/n
Capability	Bluetooth 2.0+EDR, Bluetooth Low Energy (BLE), WLAN 802.11 b/g/n and GPS features.
Primary Unit (EUT)	☒ Production
	☐ Pre-Production
Antenna Type	ANTENNA, CHIP,GLONASS BT/GPS ANTENNA MODULE
Antenna Manufacturer	Amphenol Interconnect Products
Antenna Model Number	AN000151A01
Antenna Gain	-4.0 dBi

1.3.3 Maximum Conducted Output Power

Not Performed. No conducted power measurements were performed per customer EMC test Plan.

TÜV SÜD AMERICA INC 10040 Mesa Rim Road San Diego, CA 92121-2912 Phone: 858 678 1400 FAX: 858 546 0364

1.4 EUT TEST CONFIGURATION

1.4.1 Test Configuration Description

Test Configuration	Description
Default	Radiated Test Setup. The EUT programmed to transmit continuously at the desired wireless technology configuration, BLE or WLAN (b/g/n). Radiated Measurements were performed per customer test plan.

1.4.2 EUT Exercise Software

The EUT is programmed trough a support laptop via a telnet connection entering RCMP commands to obtain the desired test mode.

1.4.3 Support Equipment and I/O cables

Manufacturer	Equipment/Cable	Description
Sony	Support Laptop	Model: PCG-31311L
Motorola	USB Adapter	P/N PMKN4013C

1.4.4 Worst Case Configuration

The EUT is a portable device. For radiated measurements, X=flat, Y=Standing and Z=side orientations were verified during initial prescans to verify the worst axis. Verifications performed using “X = Flat” and “Z=Side” configurations.

1.4.5 Duty Cycle and Transmission Duration Used (Worst Case Configuration)

N/A. Per Customer EMC test plan radiated measurement were performed.

1.4.6 Simplified Test Configuration Diagram

None. The EUT was tested in a stand alone configuration.

1.5 DEVIATIONS FROM THE STANDARD

No deviations from the applicable test standards or test plan were made during testing.

1.6 MODIFICATION RECORD

Description of Modification	Modification Fitted By	Date Modification Fitted
Serial Number: 837TTH0026 and 837TTH0042		
None	—	—

The table above details modifications made to the EUT during the test programme. The modifications incorporated during each test (if relevant) are recorded on the appropriate test pages.

1.7 TEST METHODOLOGY

All measurements contained in this report were conducted with ANSI C63.10-2013. American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.

For conducted and radiated emissions the equipment under test (EUT) was configured to measure its highest possible emission level. This level was based on the maximized cable configuration from exploratory testing per ANSI C63.4-2014. The test modes were adapted according to the Operating Instructions provided by the manufacturer/client.

1.8 TEST FACILITY LOCATION

1.8.1 TÜV SÜD America Inc. (Mira Mesa)

10040 Mesa Rim Road, San Diego, CA 92121-2912 (32.901268,-117.177681). Phone: 858 678 1400 Fax: 858-546 0364

1.8.2 TÜV SÜD America Inc. (Rancho Bernardo)

16936 Via Del Campo, San Diego, CA 92127-1708 (33.018644,-117.092409). Phone: 858 942 5542 Fax: 858 546 0364.

1.9 TEST FACILITY REGISTRATION

1.9.1 FCC – Registration No.: 599333

TUV SUD America Inc. (San Diego), is an accredited test facility with the site description report on file and has met all the requirements specified in §2.948 of the FCC rules. The acceptance letter from the FCC is maintained in our files and the Registration is 599333.

1.9.2 Innovation, Science and Economic Development Canada Registration No.: 3067A

The 10m Semi-anechoic chamber of TUV SUD America Inc. (San Diego) has been registered by Certification and Engineering Bureau of Innovation, Science and Economic Development Canada for radio equipment testing with Registration No. 3067A.

TÜV SÜD AMERICA INC 10040 Mesa Rim Road San Diego, CA 92121-2912 Phone: 858 678 1400 FAX: 858 546 0364

SECTION 2

TEST DETAILS

Radio Testing of the
Motorola Solutions Sdn Bhd
APX 900 UHFR2 Two Way Portable Radio

TÜV SÜD AMERICA INC 10040 Mesa Rim Road San Diego, CA 92121-2912 Phone: 858 678 1400 FAX: 858 546 0364

2.1 OUT-OF-BAND EMISSIONS - RADIATED

2.1.1 Specification Reference

Part 15 Subpart C §15.247(d) and RSS-247 5.5

2.1.2 Standard Applicable

(d) In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

2.1.3 Equipment Under Test and Modification State

Serial No: 837TTH0026, 837TTH0042 / Default Test Configuration

2.1.4 Date of Test/Initial of test personnel who performed the test

July 11 to July 18, 2017 / AC, IR and XYZ

2.1.5 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

2.1.6 Environmental Conditions/ Test Location

Test performed at TÜV SÜD America Inc. Rancho Bernardo facility

Ambient Temperature	26.5 – 26.1 °C
Relative Humidity	51.4 – 47.8 %
ATM Pressure	98.8 – 99.1 kPa

2.1.7 Additional Observations

- This is a Radiated test.
- Data presented is per §15.209(a) and §15.205(c)
- Spectrum was searched from 9 kHz up to 26.5GHz.
- A 2.4 to 2.5 GHz notch filter was used for 1 to 18GHz measurements.
- Measurement was done using EMC32 automated software. Reported level is the actual level with all the correction factors factored in. Correction Factor column is for informational purposes only. See Section 2.1.8 for sample computation.

TÜV SÜD AMERICA INC 10040 Mesa Rim Road San Diego, CA 92121-2912 Phone: 858 678 1400 FAX: 858 546 0364

2.1.8 Sample Computation (Radiated Emission)

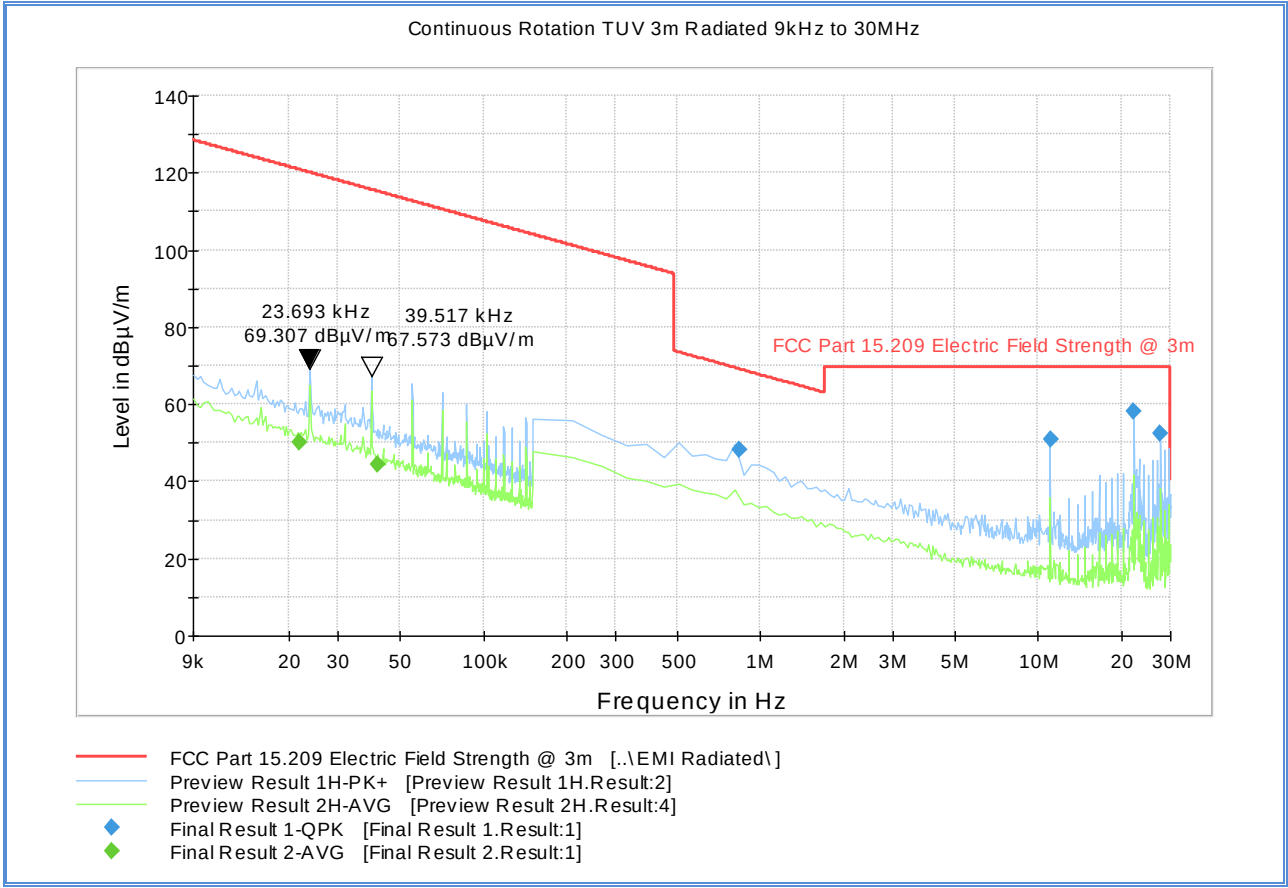
Measuring equipment raw measurement (dbµV) @ 2400 MHz			53.9
Correction Factor (dB)	Asset# 1153 (cable)	3.4	-0.4
	Asset# 8628(preamplifier)	-36.5	
	Asset#7575 (antenna)	32.7	
Reported Max Peak Final Measurement (dbµV/m) @ 2400 MHz			**53.5**

2.1.9 Test Results Plots

See attached plots and tables.

TÜV SÜD AMERICA INC 10040 Mesa Rim Road San Diego, CA 92121-2912 Phone: 858 678 1400 FAX: 858 546 0364

2.1.9.1 Test Results Below 1 GHz (BLE Overall Worst Case Low Channel – 9KHz to 30 MHz)



QuasiPeak Data

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
0.834016	45.5	1500.0	9.000	100.0	H	-9.0	14.8	23.7	69.2
11.059174	50.9	1500.0	9.000	100.0	H	-9.0	16.3	18.6	69.5
22.121627	58.2	1500.0	9.000	100.0	H	0.0	16.1	11.4	69.5
27.649034	52.2	1500.0	9.000	100.0	H	15.0	15.2	17.3	69.5

Peak Data

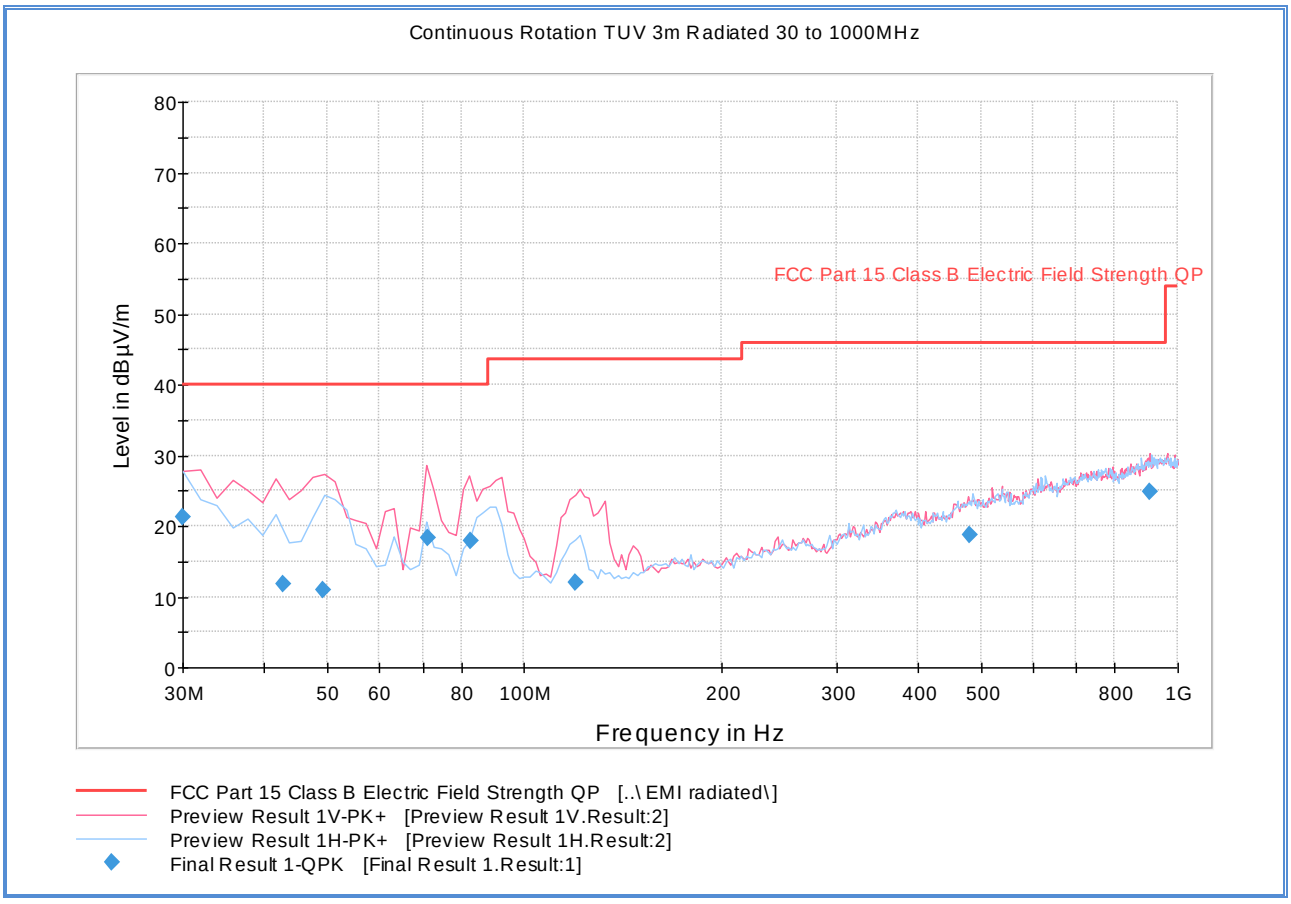
Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
0.023693	69.3	1000.0	0.200	100.0	H	345.0	15.2	4.6	73.9
0.039517	67.6	1000.0	0.200	100.0	H	345.0	15.2	6.3	73.9

Average Data

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
0.021693	50.2	1000.0	0.200	100.0	H	357.0	15.0	70.6	120.9
0.041517	44.3	1000.0	0.200	100.0	H	358.0	15.1	71.0	115.2

Test Notes:
EUT SN: 837TTH0042
EUT Orientation: Side
Test Channel: 2402 MHz, Noise observed from 10MHz and 30MHz is derived from the antenna preamp.

2.1.9.2 Test Results Below 1 GHz (BT Overall Worst Case BLE Low Channel –30 MHz to 1 GHz)

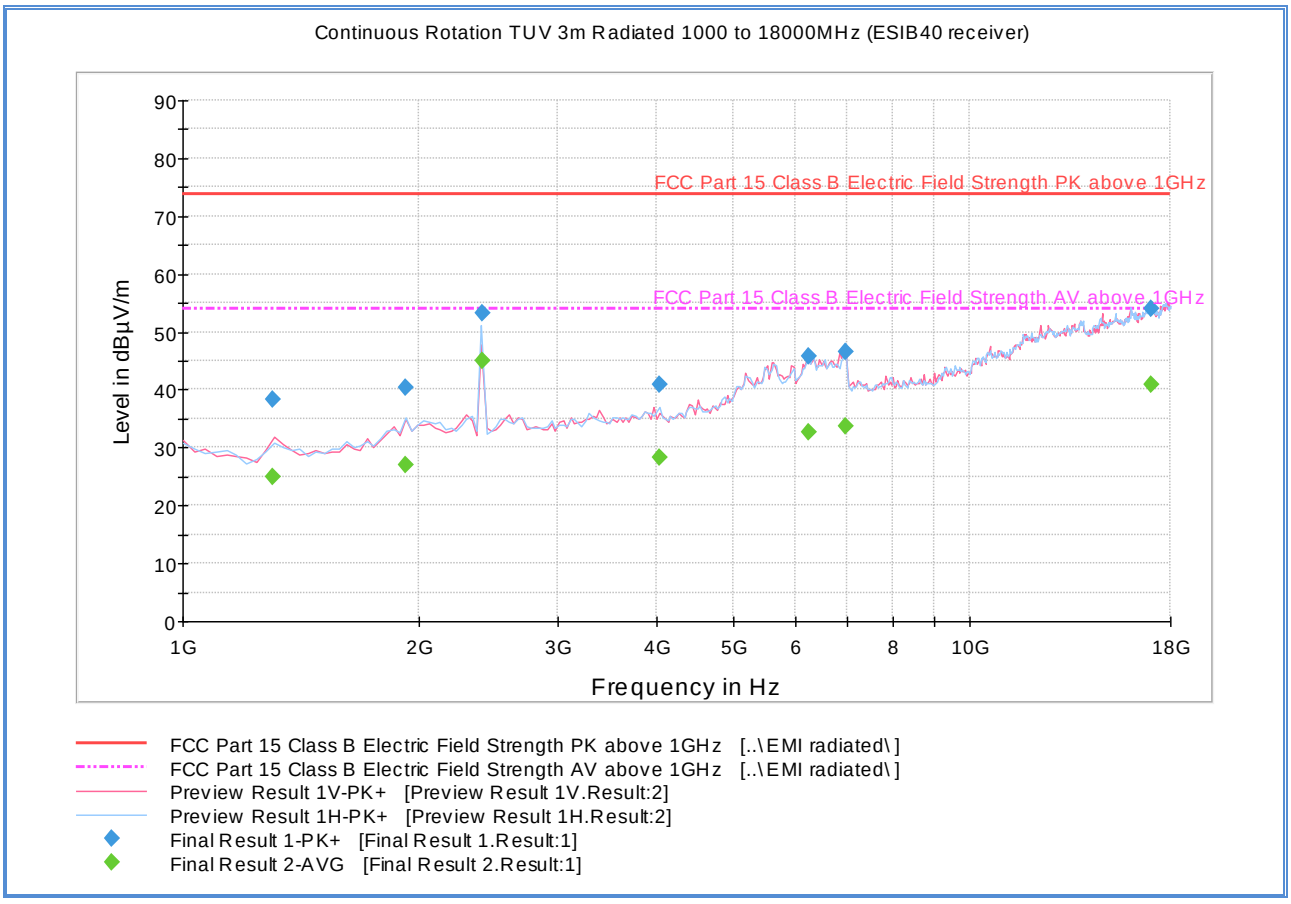


QuasiPeak Data

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
30.000000	21.2	1000.0	120.000	109.0	V	48.0	-5.9	18.8	40.0
42.663327	11.8	1000.0	120.000	121.0	V	95.0	-13.1	28.2	40.0
49.142766	11.0	1000.0	120.000	100.0	V	113.0	-14.2	29.0	40.0
71.301643	18.2	1000.0	120.000	200.0	V	164.0	-16.9	21.8	40.0
82.604970	17.8	1000.0	120.000	100.0	V	118.0	-17.0	22.2	40.0
119.882725	11.9	1000.0	120.000	100.0	V	16.0	-15.8	31.6	43.5
479.774188	18.8	1000.0	120.000	250.0	V	306.0	-1.5	27.2	46.0
906.213387	24.8	1000.0	120.000	250.0	V	95.0	5.9	21.2	46.0

Test Notes:
EUT SN: 837TTH0026
EUT Orientation: Side
Test Channel: 2402 MHz

2.1.9.3 Test Results Above 1 GHz (BLE Low Channel – 1GHz to 18GHz)



Peak Data

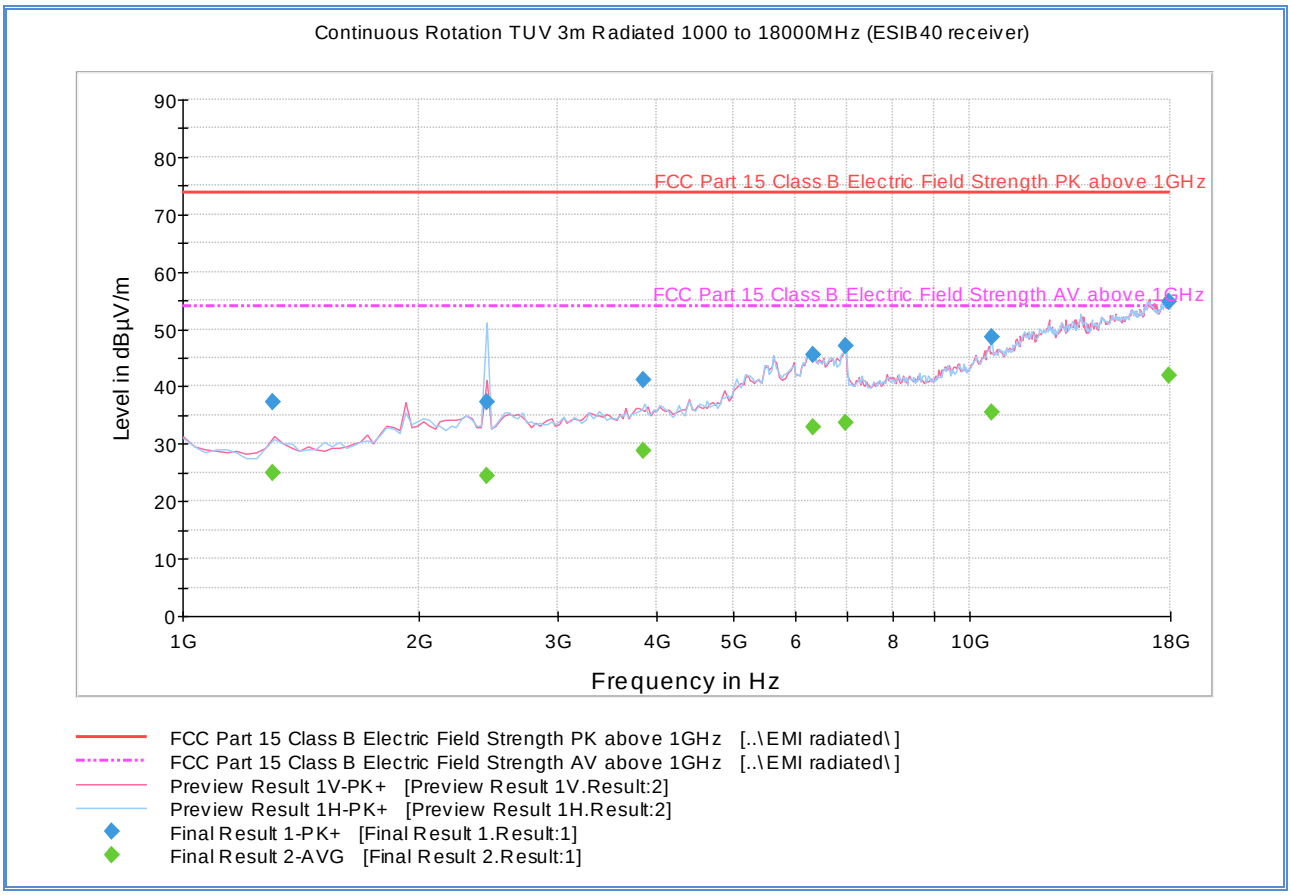
Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
1303.113226	38.2	1000.0	1000.000	352.1	V	20.0	-4.4	35.7	73.9
1923.139679	40.3	1000.0	1000.000	350.6	H	280.0	-2.1	33.6	73.9
2401.693587	53.3	Fundamental, not part of Radiated Emissions test							
4029.364128	41.0	1000.0	1000.000	410.7	H	219.0	3.3	32.9	73.9
6244.592986	45.7	1000.0	1000.000	125.7	V	80.0	6.6	28.2	73.9
6962.023848	46.7	1000.0	1000.000	103.7	H	325.0	7.8	27.2	73.9
17040.99218	54.0	1000.0	1000.000	151.6	H	339.0	22.7	19.9	73.9

Average Data

Frequency (MHz)	Average (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
1303.113226	24.9	1000.0	1000.000	352.1	V	20.0	-4.4	29.0	53.9
1923.139679	27.1	1000.0	1000.000	350.6	H	280.0	-2.1	26.8	53.9
2401.693587	45.0	Fundamental, not part of Radiated Emissions test							
4029.364128	28.4	1000.0	1000.000	410.7	H	219.0	3.3	25.5	53.9
6244.592986	32.8	1000.0	1000.000	125.7	V	80.0	6.6	21.1	53.9
6962.023848	33.7	1000.0	1000.000	103.7	H	325.0	7.8	20.2	53.9
17040.992184	41.0	1000.0	1000.000	151.6	H	339.0	22.7	12.9	53.9

Test Notes:
EUT SN: 837TTH0042
EUT Orientation: Side
Test Channel: 2402 MHz

2.1.9.4 Test Results Above 1 GHz (BLE Mid Channel – 1GHz to 18GHz)



Peak Data

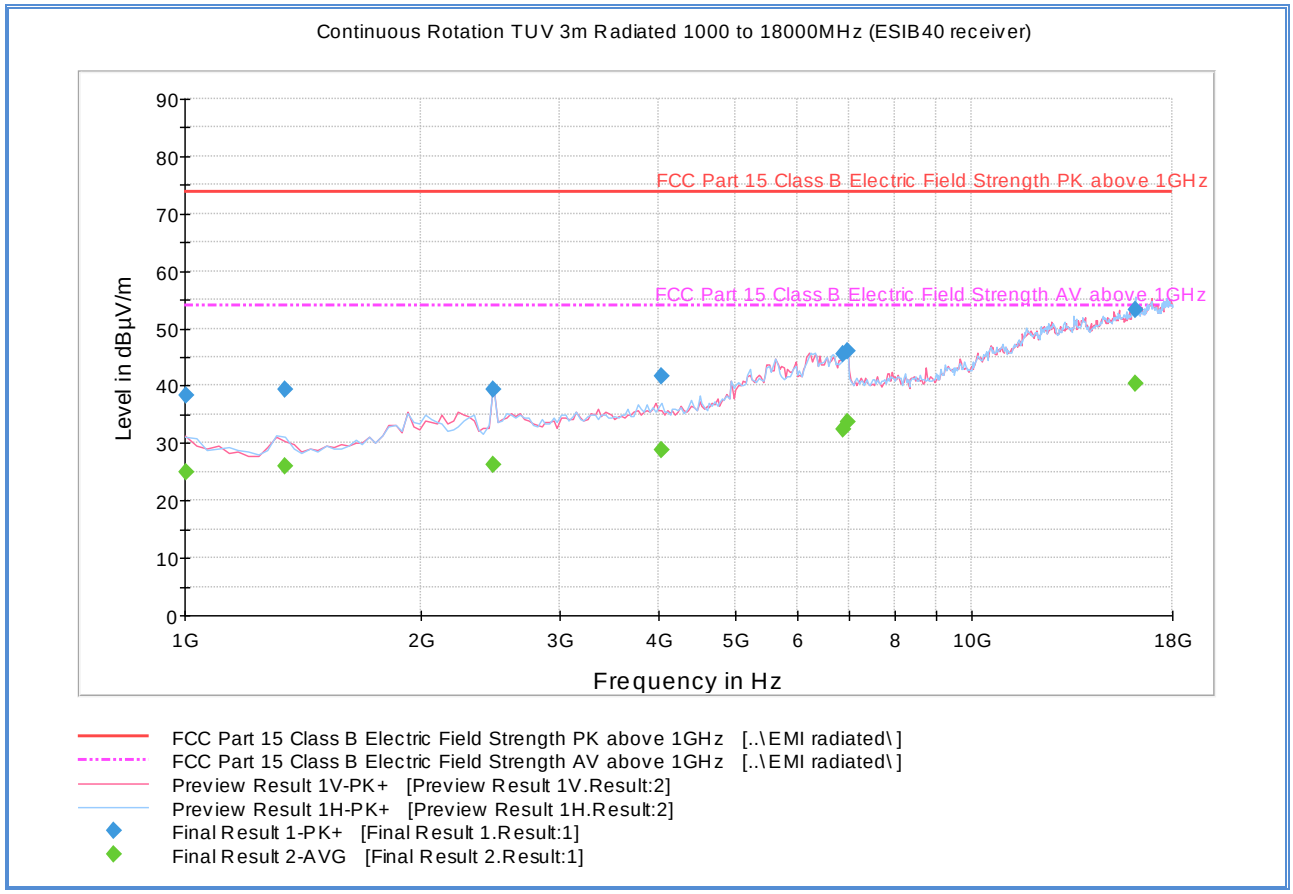
Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
1301.913226	37.2	1000.0	1000.000	211.4	V	4.0	-4.5	36.7	73.9
2437.961723	37.4	1000.0	1000.000	131.7	H	20.0	-0.5	36.5	73.9
3855.423447	41.2	Fundamental, not part of Radiated Emissions test							
6314.729259	45.4	1000.0	1000.000	152.2	H	240.0	6.8	28.5	73.9
6958.823848	47.0	1000.0	1000.000	183.5	V	102.0	7.8	26.9	73.9
10674.65070	48.6	1000.0	1000.000	251.3	H	280.0	14.0	25.3	73.9
17896.69559	54.8	1000.0	1000.000	410.7	H	70.0	23.2	19.1	73.9

Average Data

Frequency (MHz)	Average (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
1301.913226	24.9	1000.0	1000.000	211.4	V	4.0	-4.5	29.0	53.9
2437.961723	24.5	1000.0	1000.000	131.7	H	20.0	-0.5	29.4	53.9
3855.423447	28.8	Fundamental, not part of Radiated Emissions test							
6314.729259	33.0	1000.0	1000.000	152.2	H	240.0	6.8	20.9	53.9
6958.823848	33.7	1000.0	1000.000	183.5	V	102.0	7.8	20.2	53.9
10674.650701	35.6	1000.0	1000.000	251.3	H	280.0	14.0	18.3	53.9
17896.695591	42.0	1000.0	1000.000	410.7	H	70.0	23.2	11.9	53.9

Test Notes:
EUT SN: 837TTH0026
EUT Orientation: Side
Test Channel: 2440 MHz

2.1.9.5 Test Results Above 1 GHz (BLE High Channel – 1GHz to 18GHz)



Peak Data

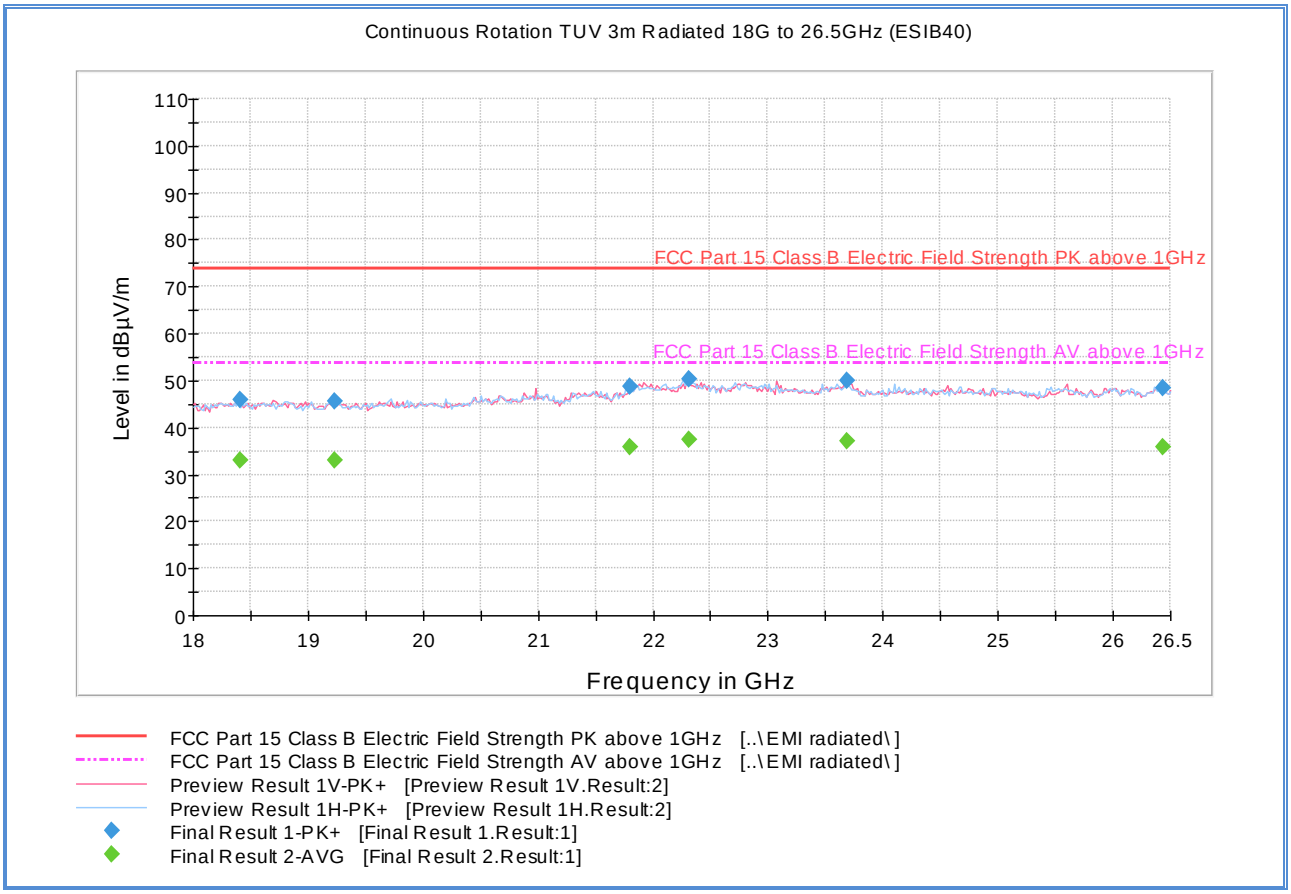
Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
1002.400000	38.4	1000.0	1000.000	406.7	V	66.0	-7.3	35.5	73.9
1340.781363	39.3	1000.0	1000.000	250.5	H	-9.0	-5.1	34.6	73.9
2466.629860	39.3	1000.0	1000.000	352.1	V	-19.0	-0.1	34.6	73.9
4035.364128	41.7	1000.0	1000.000	184.5	H	211.0	3.2	32.2	73.9
6863.419439	45.4	1000.0	1000.000	103.7	V	298.0	7.2	28.5	73.9
6962.823848	46.1	1000.0	1000.000	251.3	H	220.0	7.8	27.8	73.9
16131.55250	53.3	1000.0	1000.000	124.7	H	20.0	21.3	20.6	73.9

Average Data

Frequency (MHz)	Average (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
1002.400000	25.0	1000.0	1000.000	406.7	V	66.0	-7.3	28.9	53.9
1340.781363	26.0	1000.0	1000.000	250.5	H	-9.0	-5.1	27.9	53.9
2466.629860	26.2	1000.0	1000.000	352.1	V	-19.0	-0.1	27.7	53.9
4035.364128	28.7	1000.0	1000.000	184.5	H	211.0	3.2	25.2	53.9
6863.419439	32.3	1000.0	1000.000	103.7	V	298.0	7.2	21.6	53.9
6962.823848	33.6	1000.0	1000.000	251.3	H	220.0	7.8	20.3	53.9
16131.552505	40.5	1000.0	1000.000	124.7	H	20.0	21.3	13.4	53.9

Test Notes:
EUT SN: 837TTH0042
EUT Orientation: Side, Test Channel: 2480 MHz

2.1.9.6 Test Results Above 1 GHz (BLE Low Channel – 18GHz to 26.5GHz)



Peak Data

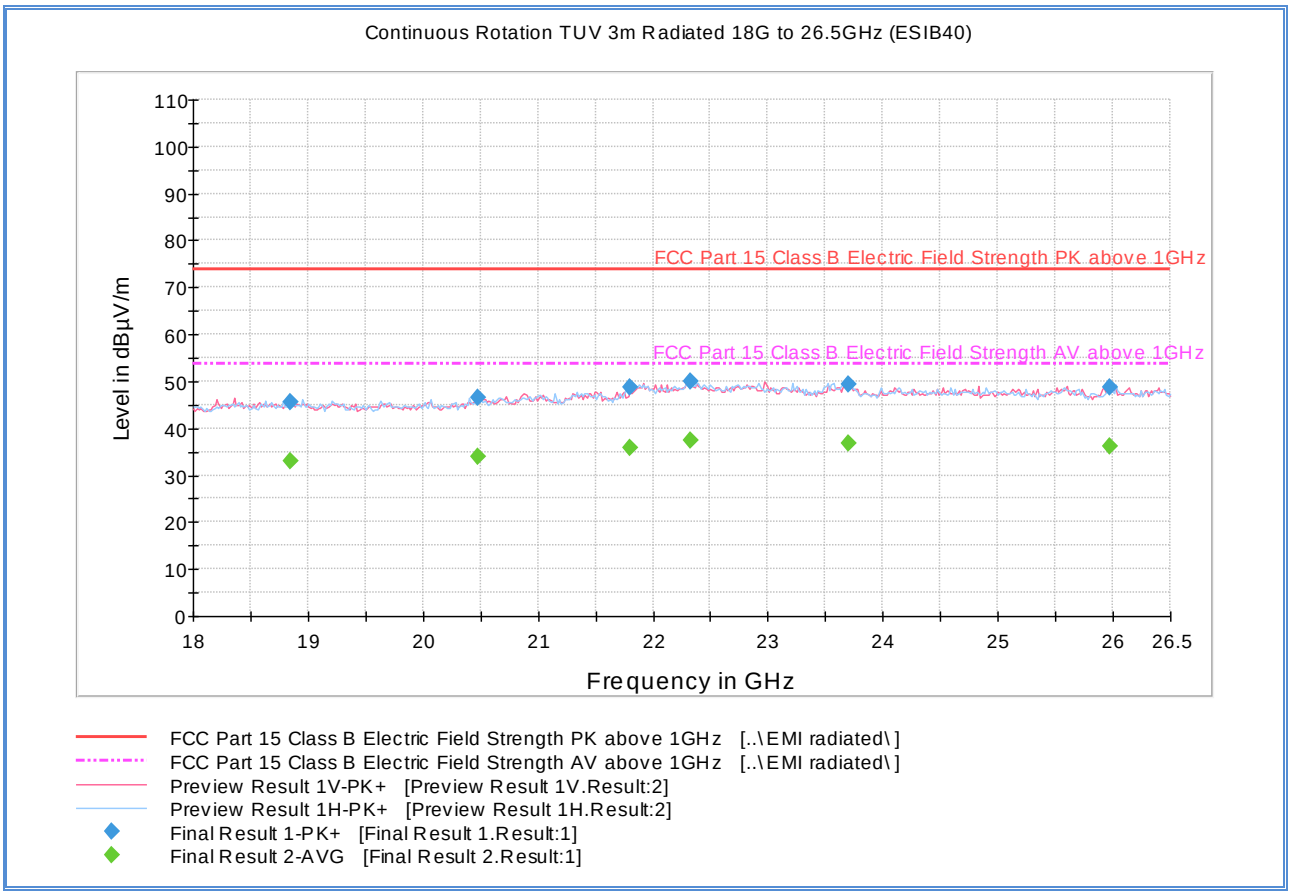
Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
18405.31763	45.9	1000.0	1000.000	175.2	V	102.0	6.0	28.0	73.9
19229.35290	45.7	1000.0	1000.000	156.7	H	267.0	5.6	28.2	73.9
21796.29719	48.7	1000.0	1000.000	148.7	H	4.0	6.0	25.2	73.9
22308.51923	50.4	1000.0	1000.000	175.2	H	-1.0	6.3	23.5	73.9
23685.87875	50.0	1000.0	1000.000	157.6	V	56.0	6.1	23.9	73.9
26434.36372	48.5	1000.0	1000.000	175.2	V	13.0	6.5	25.4	73.9

Average Data

Frequency (MHz)	Average (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
18405.317635	32.9	1000.0	1000.000	175.2	V	102.0	6.0	21.0	53.9
19229.352906	33.0	1000.0	1000.000	156.7	H	267.0	5.6	20.9	53.9
21796.297194	35.9	1000.0	1000.000	148.7	H	4.0	6.0	18.0	53.9
22308.519238	37.4	1000.0	1000.000	175.2	H	-1.0	6.3	16.5	53.9
23685.878758	37.0	1000.0	1000.000	157.6	V	56.0	6.1	16.9	53.9
26434.363727	35.8	1000.0	1000.000	175.2	V	13.0	6.5	18.1	53.9

Test Notes:
EUT SN: 837TTH0026
EUT Orientation: Flat
Test Channel: 2402 MHz

2.1.9.7 Test Results Above 1 GHz (BLE Mid Channel – 18GHz to 26.5GHz)



Peak Data

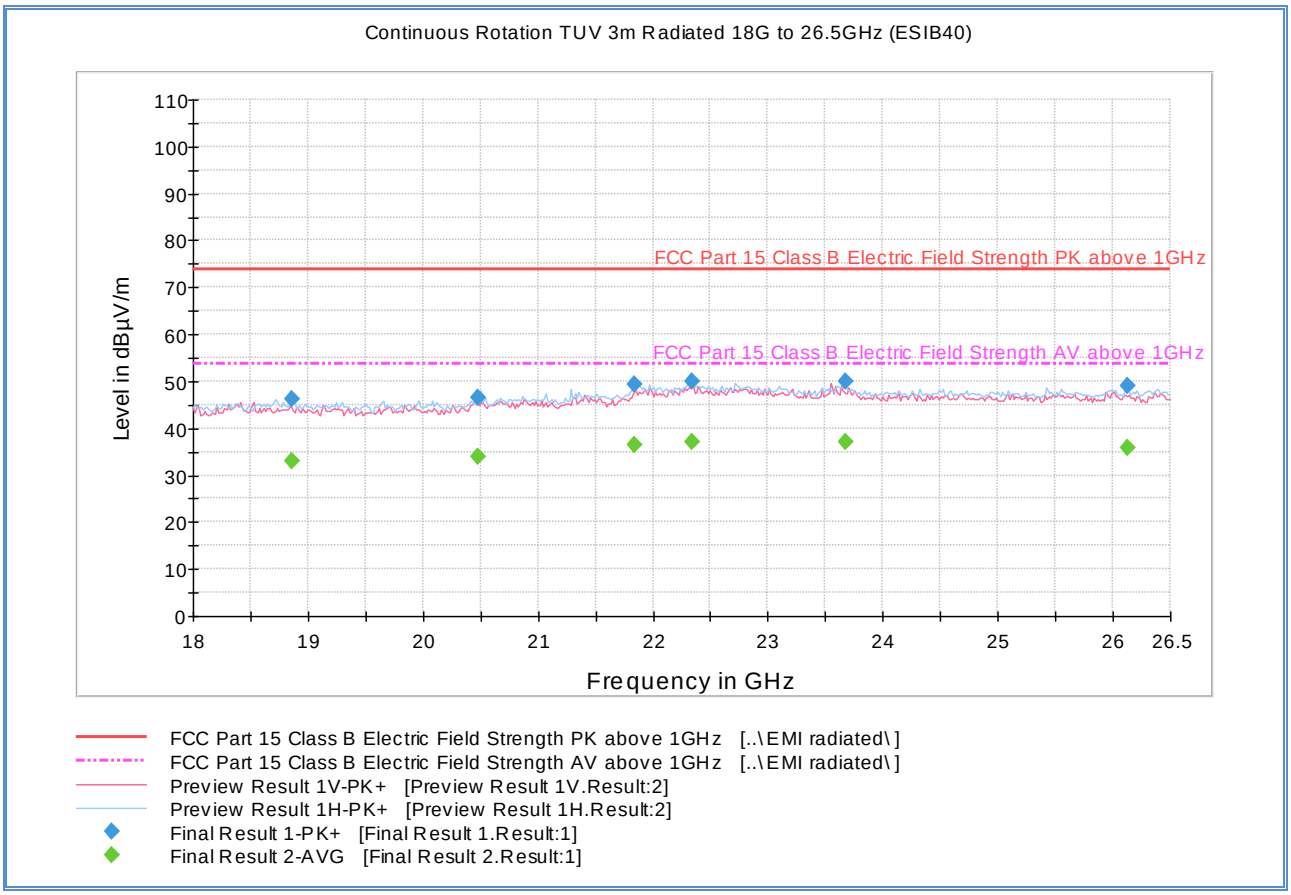
Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
18841.76933	45.5	1000.0	1000.000	166.6	V	73.0	5.8	28.4	73.9
20472.83988	46.5	1000.0	1000.000	175.2	V	-4.0	5.6	27.4	73.9
21797.89719	48.8	1000.0	1000.000	151.7	V	335.0	6.0	25.1	73.9
22330.35330	49.9	1000.0	1000.000	175.2	V	70.0	6.3	24.0	73.9
23702.11282	49.4	1000.0	1000.000	165.6	H	191.0	6.1	24.5	73.9
25975.64388	48.8	1000.0	1000.000	149.7	H	41.0	6.3	25.1	73.9

Average Data

Frequency (MHz)	Average (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
18841.769339	33.0	1000.0	1000.000	166.6	V	73.0	5.8	20.9	53.9
20472.839880	34.0	1000.0	1000.000	175.2	V	-4.0	5.6	19.9	53.9
21797.897194	35.9	1000.0	1000.000	151.7	V	335.0	6.0	18.0	53.9
22330.353307	37.3	1000.0	1000.000	175.2	V	70.0	6.3	16.6	53.9
23702.112826	36.8	1000.0	1000.000	165.6	H	191.0	6.1	17.1	53.9
25975.643888	36.1	1000.0	1000.000	149.7	H	41.0	6.3	17.8	53.9

Test Notes:
EUT SN: 837TTH0042
EUT Orientation: Flat
Test Channel: 2440 MHz

2.1.9.8 Test Results Above 1 GHz (BLE High Channel – 18GHz to 26.5GHz)



Peak Data

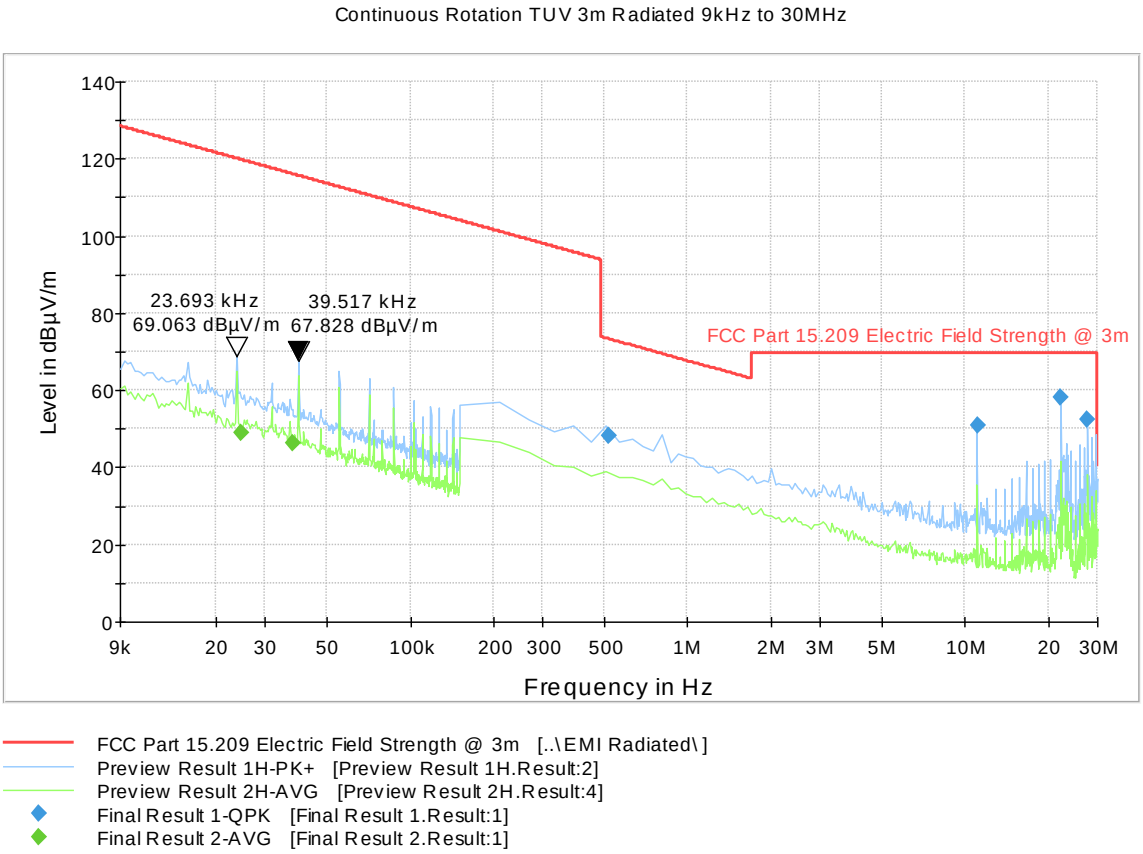
Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
18865.23747	46.2	1000.0	1000.000	157.6	H	266.0	5.8	27.7	73.9
20476.03988	46.7	1000.0	1000.000	126.7	H	104.0	5.6	27.2	73.9
21834.76533	49.2	1000.0	1000.000	148.7	H	102.0	6.1	24.7	73.9
22339.38737	50.0	1000.0	1000.000	156.7	V	10.0	6.3	23.9	73.9
23670.04468	50.1	1000.0	1000.000	148.7	H	81.0	6.1	23.8	73.9
26125.15050	49.0	1000.0	1000.000	156.7	H	291.0	6.3	24.9	73.9

Average Data

Frequency (MHz)	Average (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
18865.237475	33.0	1000.0	1000.000	157.6	H	266.0	5.8	20.9	53.9
20476.039880	34.0	1000.0	1000.000	126.7	H	104.0	5.6	19.9	53.9
21834.765331	36.3	1000.0	1000.000	148.7	H	102.0	6.1	17.6	53.9
22339.387375	37.2	1000.0	1000.000	156.7	V	10.0	6.3	16.7	53.9
23670.044689	37.1	1000.0	1000.000	148.7	H	81.0	6.1	16.8	53.9
26125.150501	36.0	1000.0	1000.000	156.7	H	291.0	6.3	17.9	53.9

Test Notes:
EUT SN: 837TTH0026
EUT Orientation: Flat
Test Channel: 2480 MHz

2.1.9.9 Test Results Below 1 GHz (WLAN Overall Worst Case 802.11n Low Channel – 9KHz to 30 MHz)



QuasiPeak Data

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
0.518918	48.4	1500.0	9.000	100.0	H	15.0	14.7	24.9	73.3
11.059174	50.9	1500.0	9.000	100.0	H	-9.0	16.3	18.6	69.5
22.121627	58.2	1500.0	9.000	100.0	H	-9.0	16.1	11.4	69.5
27.649034	52.2	1500.0	9.000	100.0	H	-9.0	15.2	17.3	69.5

Peak Data

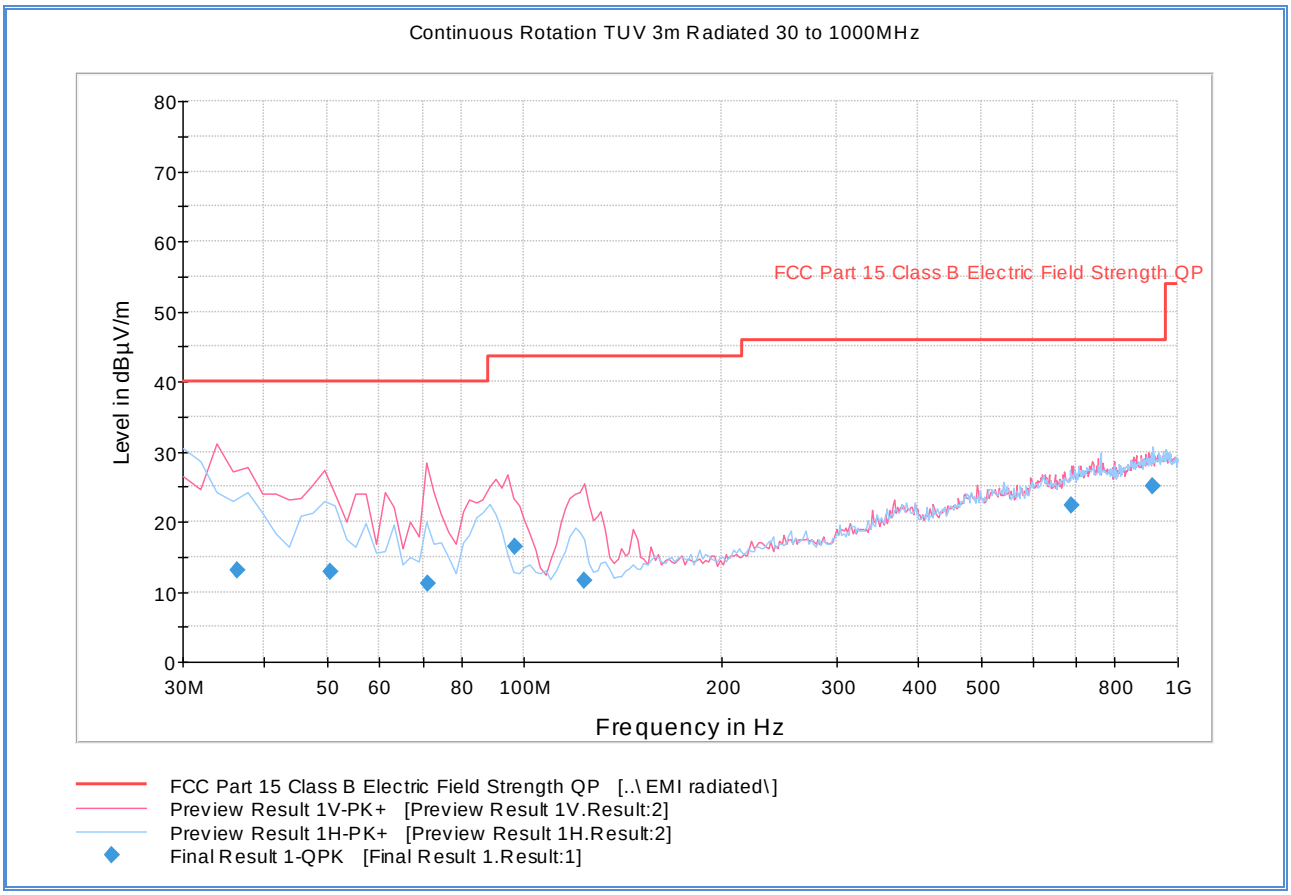
Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
0.023693	69.1	1000.0	0.200	100.0	H	345.0	15.2	4.8	73.9
0.039517	67.8	1000.0	0.200	100.0	H	345.0	15.2	6.1	73.9

Average Data

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
0.024693	48.9	1000.0	0.200	100.0	H	0.0	15.3	70.8	119.7
0.037517	46.1	1000.0	0.200	100.0	H	336.0	15.3	70.0	116.1

Test Notes:
EUT SN: 837TTH0042
EUT Orientation: Side
Test Channel: 2412 MHz, Data Rate: 6.5 Mbps
Noise observed from 10MHz and 30MHz is derived from the antenna preamp.

2.1.9.10 Test Results Below 1 GHz (WLAN Overall Worst Case 802.11n Low Channel –30 MHz to 1 GHz)

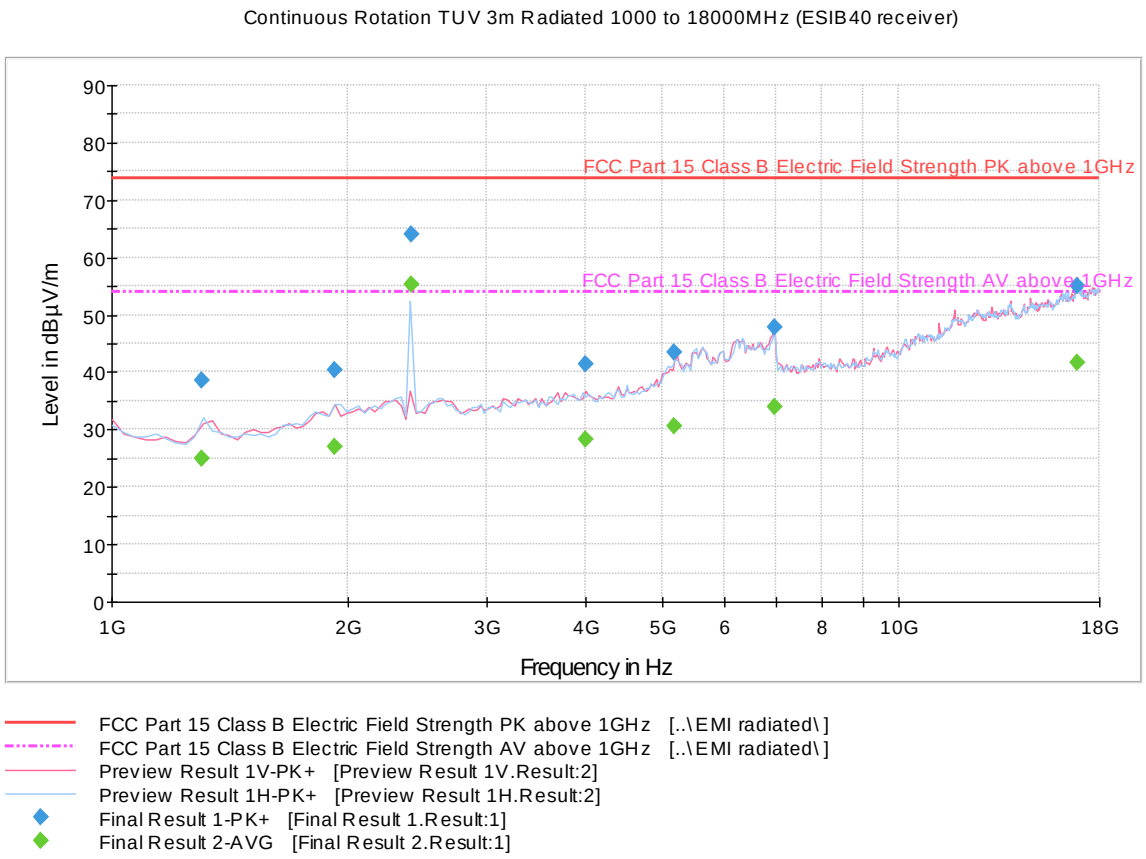


QuasiPeak Data

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
36.447776	13.1	1000.0	120.000	100.0	V	290.0	-10.5	26.9	40.0
50.558878	12.9	1000.0	120.000	100.0	V	230.0	-14.5	27.1	40.0
71.181643	11.1	1000.0	120.000	100.0	V	164.0	-16.9	28.9	40.0
96.908297	16.4	1000.0	120.000	116.0	V	1.0	-14.8	27.1	43.5
123.626613	11.7	1000.0	120.000	106.0	V	265.0	-16.0	31.8	43.5
687.314068	22.2	1000.0	120.000	321.0	V	124.0	2.6	23.8	46.0
915.572826	25.0	1000.0	120.000	159.0	H	247.0	6.0	21.0	46.0

Test Notes:
EUT SN: 837TTH0042
EUT Orientation: Side
Test Channel: 2412 MHz, Data Rate: 6.5 Mbps

2.1.9.11 Test Results Above 1 GHz (WLAN 802.11n Low Channel – 1GHz to 18GHz)



Peak Data

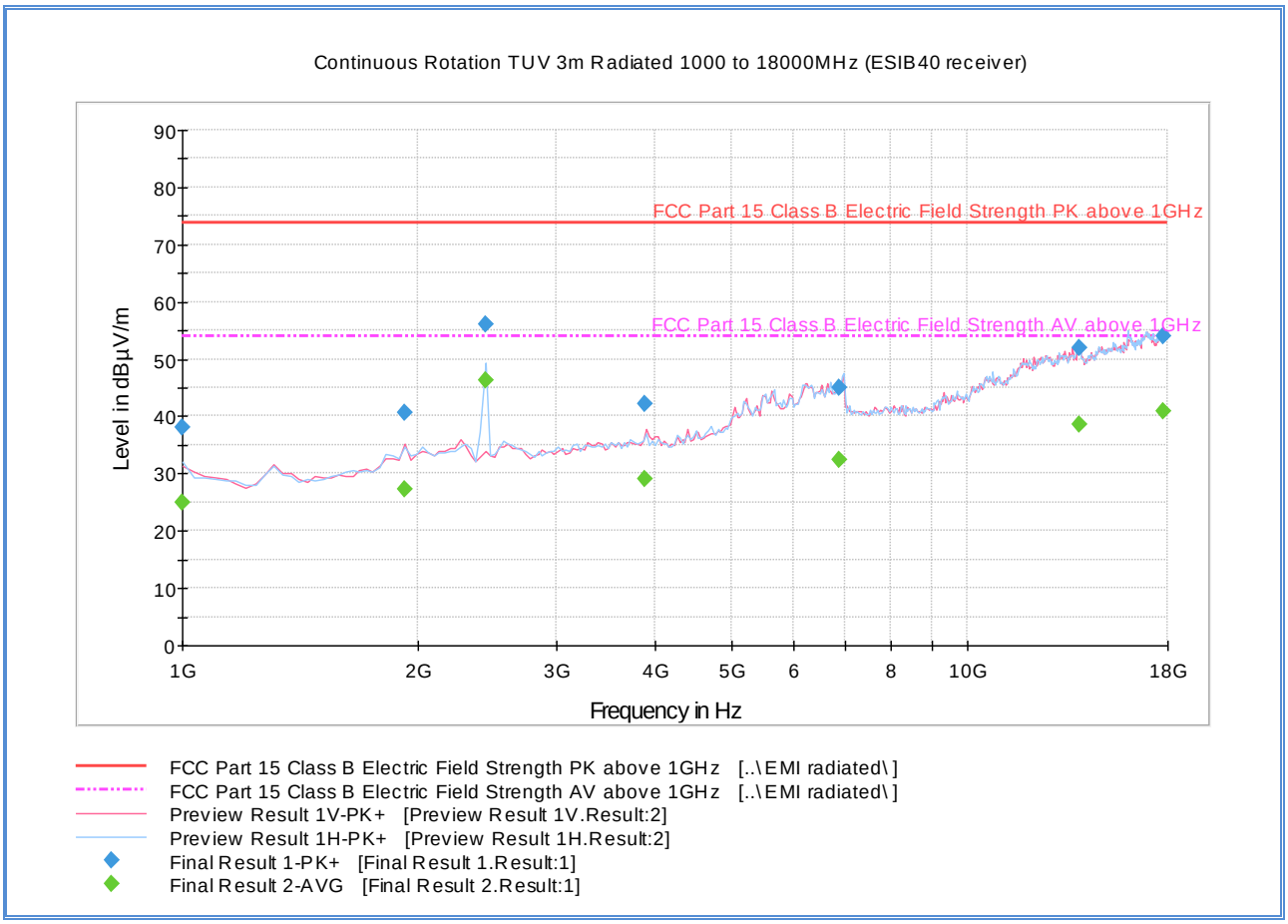
Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
1303.113226	38.5	1000.0	1000.000	396.1	H	138.0	-4.4	35.4	73.9
1917.139679	40.3	1000.0	1000.000	373.1	H	64.0	-1.7	33.6	73.9
2404.093587	64.1	Fundamental, not part of Radiated Emissions test							
3998.095992	41.3	1000.0	1000.000	151.6	V	206.0	2.8	32.6	73.9
5196.080762	43.4	1000.0	1000.000	103.7	V	60.0	4.0	30.5	73.9
6962.423848	47.8	1000.0	1000.000	137.7	V	91.0	7.8	26.1	73.9
16882.65150	55.1	1000.0	1000.000	184.5	V	286.0	23.2	18.8	73.9

Average Data

Frequency (MHz)	Average (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
1303.113226	24.9	1000.0	1000.000	396.1	H	138.0	-4.4	29.0	53.9
1917.139679	26.9	1000.0	1000.000	373.1	H	64.0	-1.7	27.0	53.9
2404.093587	55.4	Fundamental, not part of Radiated Emissions test							
3998.095992	28.2	1000.0	1000.000	151.6	V	206.0	2.8	25.7	53.9
5196.080762	30.6	1000.0	1000.000	103.7	V	60.0	4.0	23.3	53.9
6962.423848	33.9	1000.0	1000.000	137.7	V	91.0	7.8	20.0	53.9
16882.651503	41.5	1000.0	1000.000	184.5	V	286.0	23.2	12.4	53.9

Test Notes:
EUT SN: 837TTH0042
EUT Orientation: Side
Test Channel: 2412 MHz, Data Rate: 6.5 Mbps

2.1.9.12 Test Results Above 1 GHz (WLAN 802.11n Mid Channel – 1GHz to 18GHz)



Peak Data

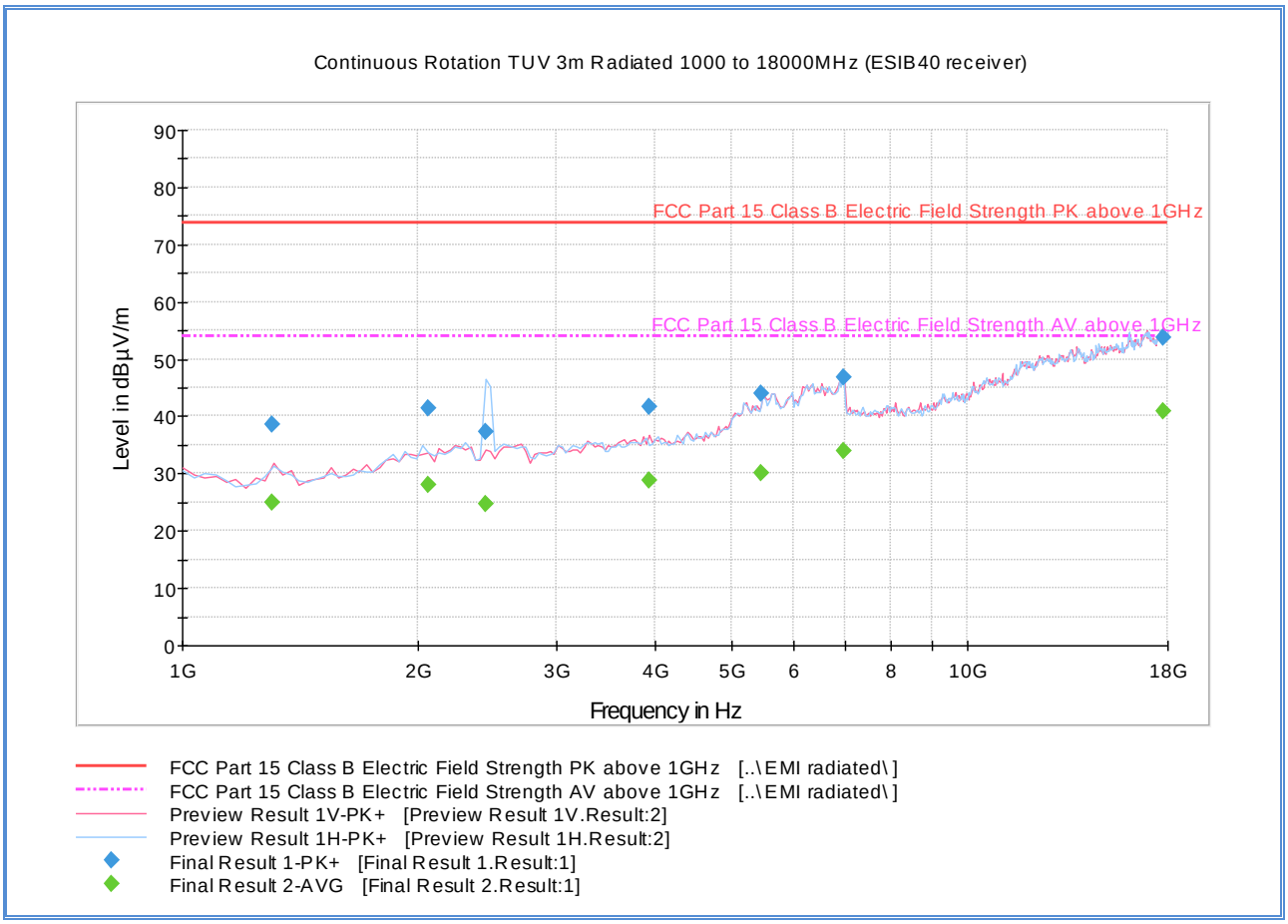
Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
1000.000000	38.2	1000.0	1000.000	124.7	H	-20.0	-7.2	35.7	73.9
1921.939679	40.6	1000.0	1000.000	403.0	H	342.0	-2.0	33.3	73.9
2434.161723	56.2	Fundamental, not part of Radiated Emissions test							
3890.691583	42.2	1000.0	1000.000	271.3	V	10.0	2.2	31.7	73.9
6865.819439	45.1	1000.0	1000.000	202.5	H	77.0	7.2	28.8	73.9
13873.45551	51.8	1000.0	1000.000	200.5	H	5.0	18.0	22.1	73.9
17801.69118	53.9	1000.0	1000.000	125.7	V	239.0	23.0	20.0	73.9

Average Data

Frequency (MHz)	Average (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
1000.000000	25.0	1000.0	1000.000	124.7	H	-20.0	-7.2	28.9	53.9
1921.939679	27.2	1000.0	1000.000	403.0	H	342.0	-2.0	26.7	53.9
2434.161723	46.3	Fundamental, not part of Radiated Emissions test							
3890.691583	28.9	1000.0	1000.000	271.3	V	10.0	2.2	25.0	53.9
6865.819439	32.3	1000.0	1000.000	202.5	H	77.0	7.2	21.6	53.9
13873.455511	38.5	1000.0	1000.000	200.5	H	5.0	18.0	15.4	53.9
17801.691182	40.9	1000.0	1000.000	125.7	V	239.0	23.0	13.0	53.9

Test Notes:
EUT SN: 837TTH0026
EUT Orientation: Side
Test Channel: 2437 MHz, Data Rate: 6.5 Mbps

2.1.9.13 Test Results Above 1 GHz (WLAN 802.11n High Channel – 1GHz to 18GHz)



Peak Data

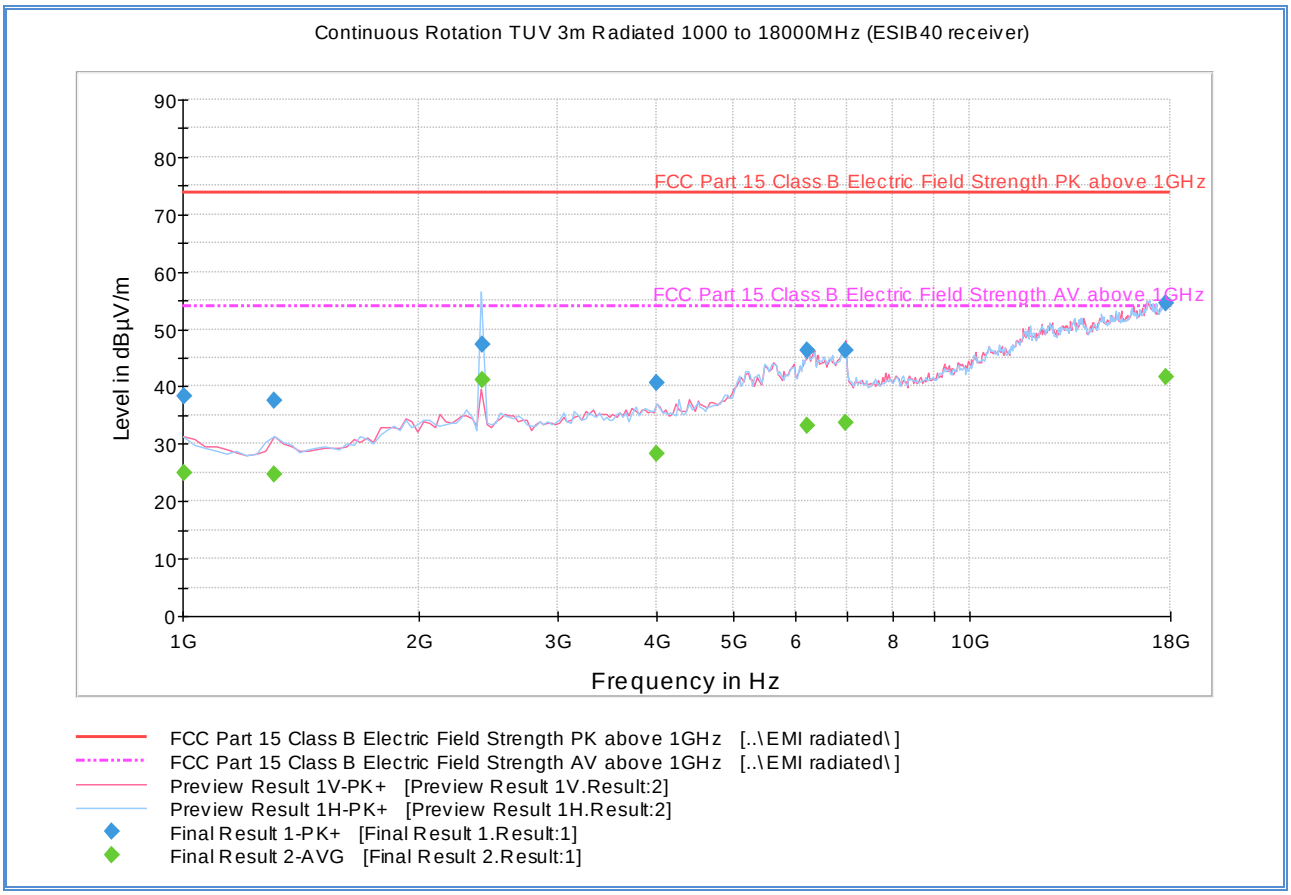
Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
1301.113226	38.6	1000.0	1000.000	103.7	V	-9.0	-4.6	35.3	73.9
2058.012224	41.4	1000.0	1000.000	99.7	V	-15.0	-1.8	32.5	73.9
2432.961723	37.2	Fundamental, not part of Radiated Emissions test							
3932.359719	41.7	1000.0	1000.000	125.7	V	23.0	2.4	32.2	73.9
5467.025852	43.9	1000.0	1000.000	352.1	V	0.0	5.2	30.0	73.9
6964.023848	46.9	1000.0	1000.000	336.1	V	289.0	7.8	27.0	73.9
17798.09118	53.8	1000.0	1000.000	151.6	V	185.0	23.0	20.1	73.9

Average Data

Frequency (MHz)	Average (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
1301.113226	24.8	1000.0	1000.000	103.7	V	-9.0	-4.6	29.1	53.9
2058.012224	28.0	1000.0	1000.000	99.7	V	-15.0	-1.8	25.9	53.9
2432.961723	24.6	Fundamental, not part of Radiated Emissions test							
3932.359719	28.8	1000.0	1000.000	125.7	V	23.0	2.4	25.1	53.9
5467.025852	30.1	1000.0	1000.000	352.1	V	0.0	5.2	23.8	53.9
6964.023848	33.9	1000.0	1000.000	336.1	V	289.0	7.8	20.0	53.9
17798.091182	40.9	1000.0	1000.000	151.6	V	185.0	23.0	13.0	53.9

Test Notes:
EUT SN: 837TTH0042
EUT Orientation: Side
Test Channel: 2462 MHz, Data Rate: 6.5 Mbps

2.1.9.14 Test Results Above 1 GHz (WLAN 802.11b Low Channel – 1GHz to 18GHz)



Peak Data

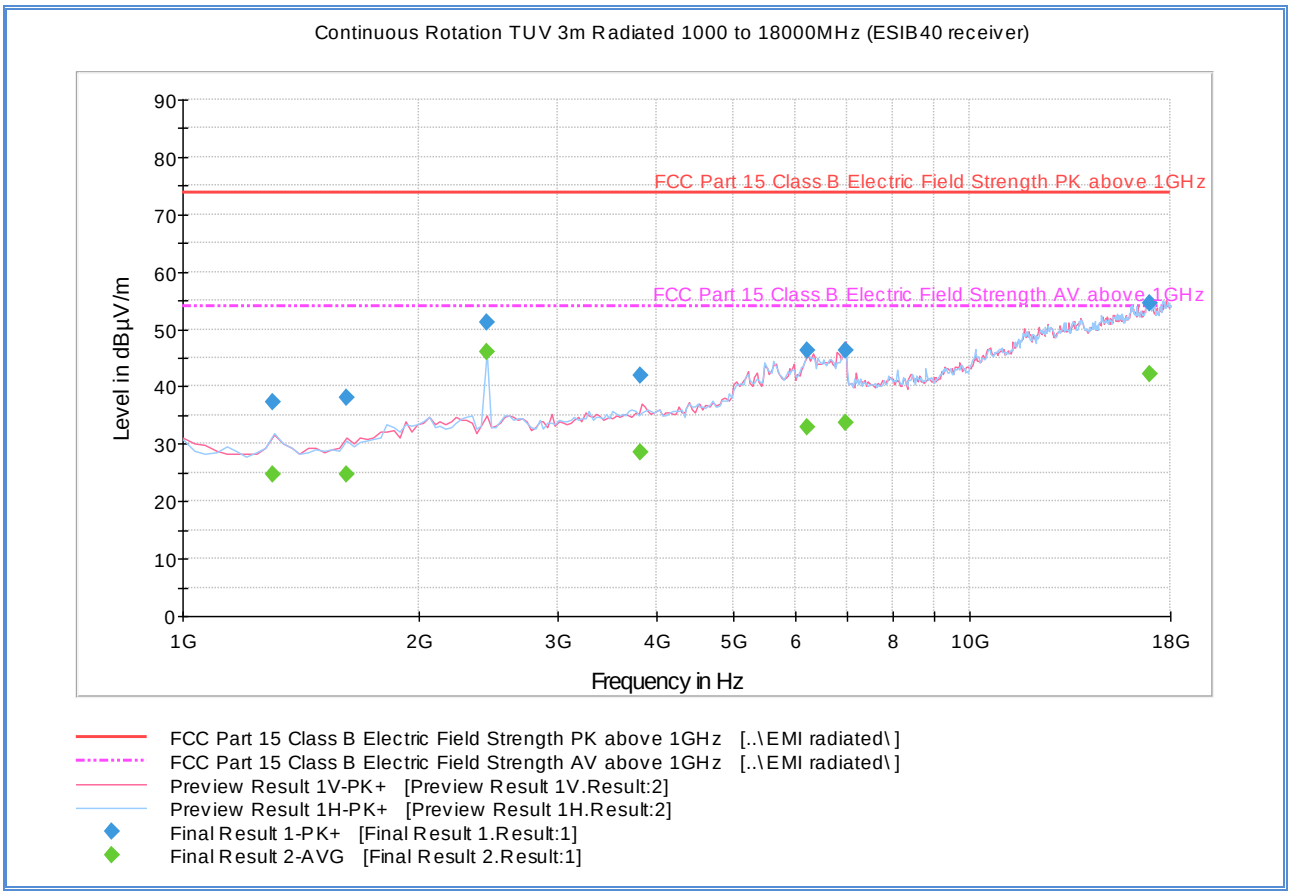
Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
1005.900000	38.4	1000.0	1000.000	125.7	V	320.0	-7.3	35.5	73.9
1306.713226	37.5	1000.0	1000.000	384.0	V	351.0	-4.0	36.4	73.9
2404.293587	47.3	Fundamental, not part of Radiated Emissions test							
3996.895992	40.7	1000.0	1000.000	103.7	H	304.0	2.8	33.2	73.9
6219.724850	46.2	1000.0	1000.000	128.7	H	324.0	6.8	27.7	73.9
6961.223848	46.3	1000.0	1000.000	125.7	V	331.0	7.9	27.6	73.9
17788.89118	54.4	1000.0	1000.000	351.6	H	20.0	23.0	19.5	73.9

Average Data

Frequency (MHz)	Average (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
1005.900000	25.0	1000.0	1000.000	125.7	V	320.0	-7.3	28.9	53.9
1306.713226	24.7	1000.0	1000.000	384.0	V	351.0	-4.0	29.2	53.9
2404.293587	41.2	Fundamental, not part of Radiated Emissions test							
3996.895992	28.3	1000.0	1000.000	103.7	H	304.0	2.8	25.6	53.9
6219.724850	33.1	1000.0	1000.000	128.7	H	324.0	6.8	20.8	53.9
6961.223848	33.7	1000.0	1000.000	125.7	V	331.0	7.9	20.2	53.9
17788.891182	41.6	1000.0	1000.000	351.6	H	20.0	23.0	12.3	53.9

Test Notes:
EUT SN: 837TTH0026
EUT Orientation: Side
Test Channel: 2412 MHz, Data Rate: 2 Mbps

2.1.9.15 Test Results Above 1 GHz (WLAN 802.11b Mid Channel – 1GHz to 18GHz)



Peak Data

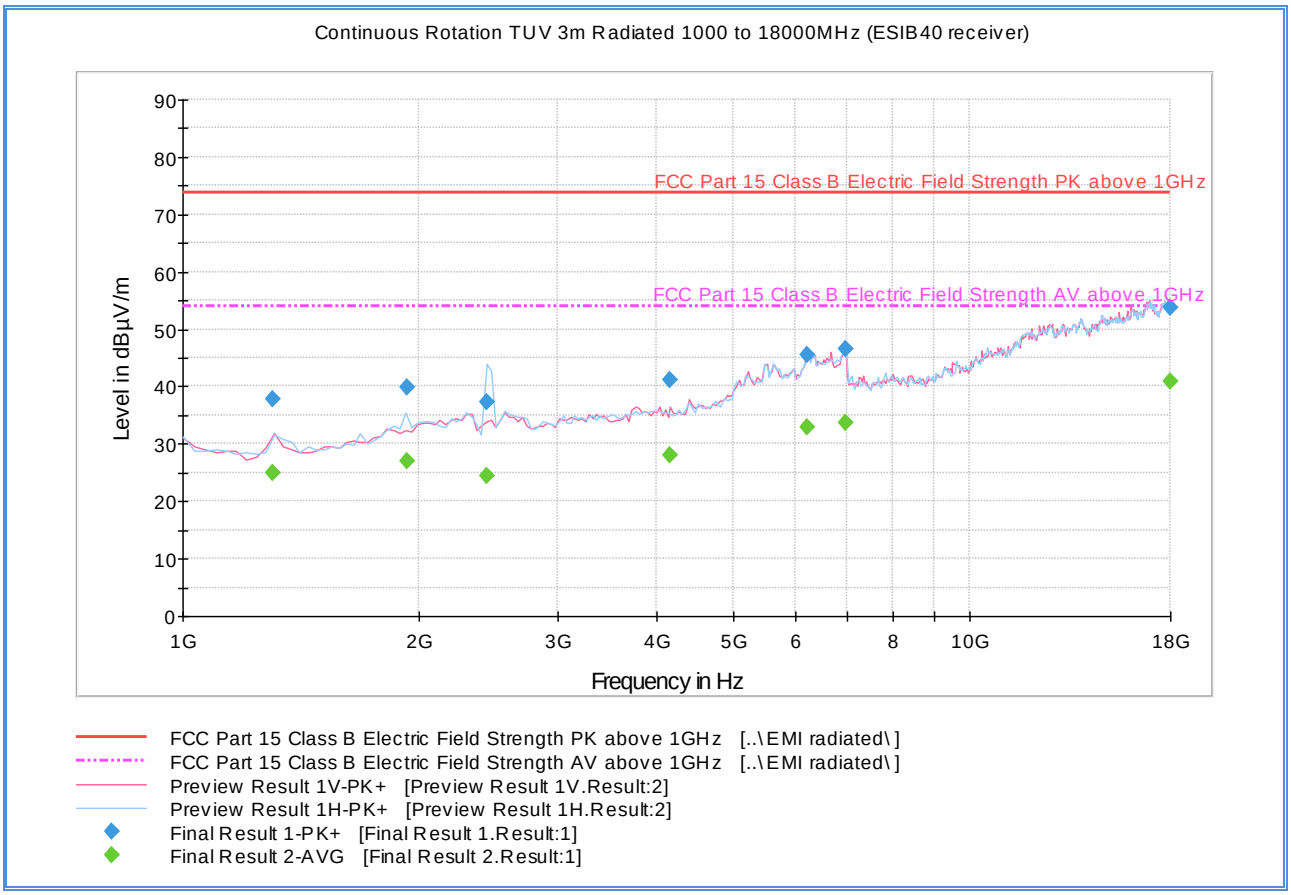
Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
1302.313226	37.4	1000.0	1000.000	140.7	H	241.0	-4.5	36.5	73.9
1612.926453	38.1	1000.0	1000.000	166.6	V	202.0	-5.8	35.8	73.9
2434.961723	51.3	Fundamental, not part of Radiated Emissions test							
3821.755311	41.8	1000.0	1000.000	116.7	V	84.0	2.1	32.1	73.9
6209.324850	46.2	1000.0	1000.000	352.7	H	338.0	6.9	27.7	73.9
6969.023848	46.3	1000.0	1000.000	250.5	V	200.0	7.8	27.6	73.9
16972.45591	54.6	1000.0	1000.000	336.1	H	338.0	22.9	19.3	73.9

Average Data

Frequency (MHz)	Average (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
1302.313226	24.8	1000.0	1000.000	140.7	H	241.0	-4.5	29.1	53.9
1612.926453	24.7	1000.0	1000.000	166.6	V	202.0	-5.8	29.2	53.9
2434.961723	46.0	Fundamental, not part of Radiated Emissions test							
3821.755311	28.5	1000.0	1000.000	116.7	V	84.0	2.1	25.4	53.9
6209.324850	33.0	1000.0	1000.000	352.7	H	338.0	6.9	20.9	53.9
6969.023848	33.7	1000.0	1000.000	250.5	V	200.0	7.8	20.2	53.9
16972.455912	42.1	1000.0	1000.000	336.1	H	338.0	22.9	11.8	53.9

Test Notes:
EUT SN: 837TTH0026
EUT Orientation: Side
Test Channel: 2437 MHz, Data Rate: 2 Mbps

2.1.9.16 Test Results Above 1 GHz (WLAN 802.11b High Channel – 1GHz to 18GHz)



Peak Data

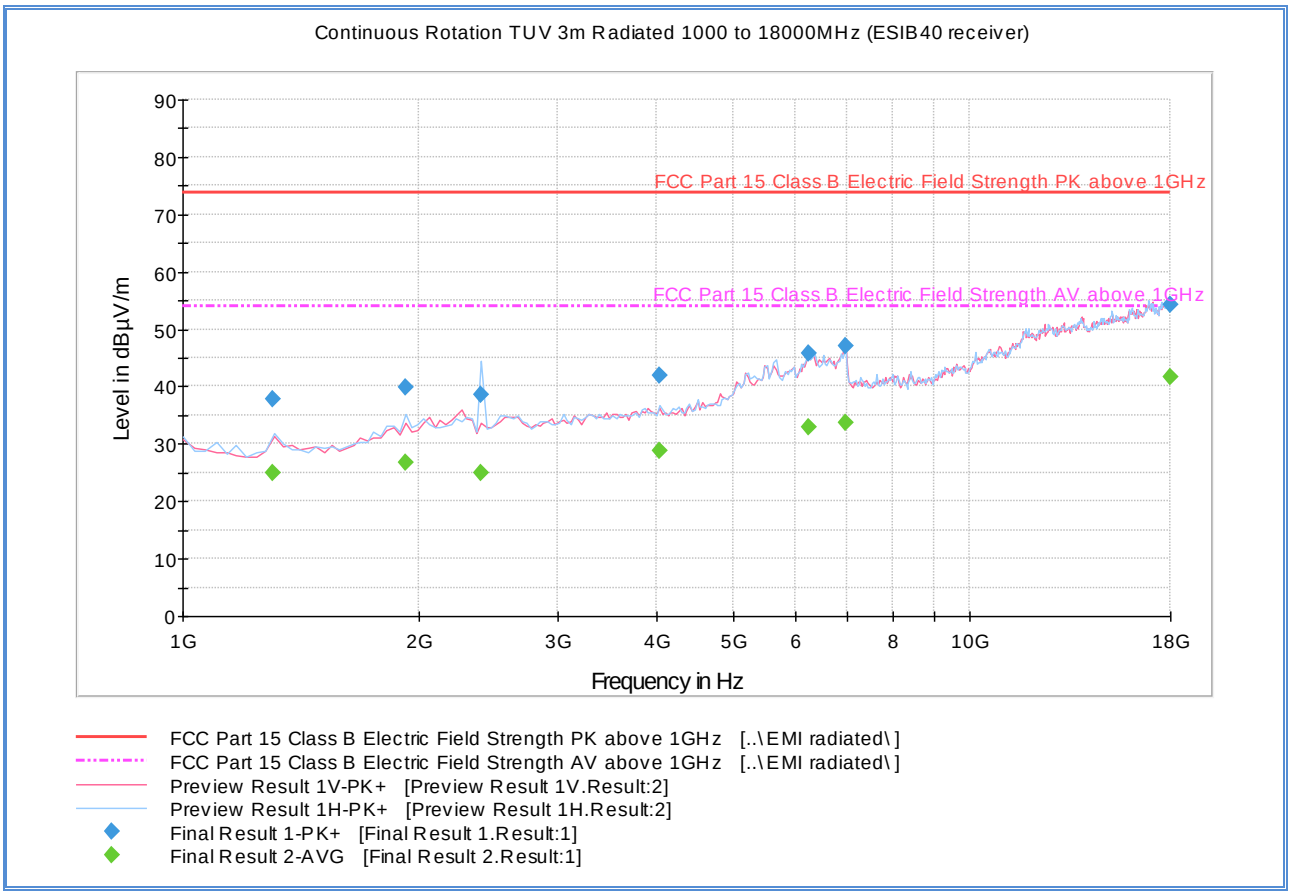
Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
1300.713226	37.7	1000.0	1000.000	152.2	V	39.0	-4.7	36.2	73.9
1924.739679	39.9	1000.0	1000.000	140.7	H	286.0	-2.2	34.0	73.9
2435.361723	37.3	Fundamental, not part of Radiated Emissions test							
4165.636673	41.2	1000.0	1000.000	152.2	V	244.0	2.7	32.7	73.9
6210.924850	45.6	1000.0	1000.000	183.5	V	11.0	6.9	28.3	73.9
6961.223848	46.7	1000.0	1000.000	125.7	V	183.0	7.9	27.2	73.9
17962.03186	53.7	1000.0	1000.000	200.5	V	93.0	23.3	20.2	73.9

Average Data

Frequency (MHz)	Average (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
1300.713226	24.9	1000.0	1000.000	152.2	V	39.0	-4.7	29.0	53.9
1924.739679	27.1	1000.0	1000.000	140.7	H	286.0	-2.2	26.8	53.9
2435.361723	24.4	Fundamental, not part of Radiated Emissions test							
4165.636673	28.1	1000.0	1000.000	152.2	V	244.0	2.7	25.8	53.9
6210.924850	32.9	1000.0	1000.000	183.5	V	11.0	6.9	21.0	53.9
6961.223848	33.7	1000.0	1000.000	125.7	V	183.0	7.9	20.2	53.9
17962.031864	40.9	1000.0	1000.000	200.5	V	93.0	23.3	13.0	53.9

Test Notes:
EUT SN: 837TTH0042
EUT Orientation: Side
Test Channel: 2462 MHz, Data Rate: 2 Mbps

2.1.9.17 Test Results Above 1 GHz (WLAN 802.11g Low Channel – 1GHz to 18GHz)



Peak Data

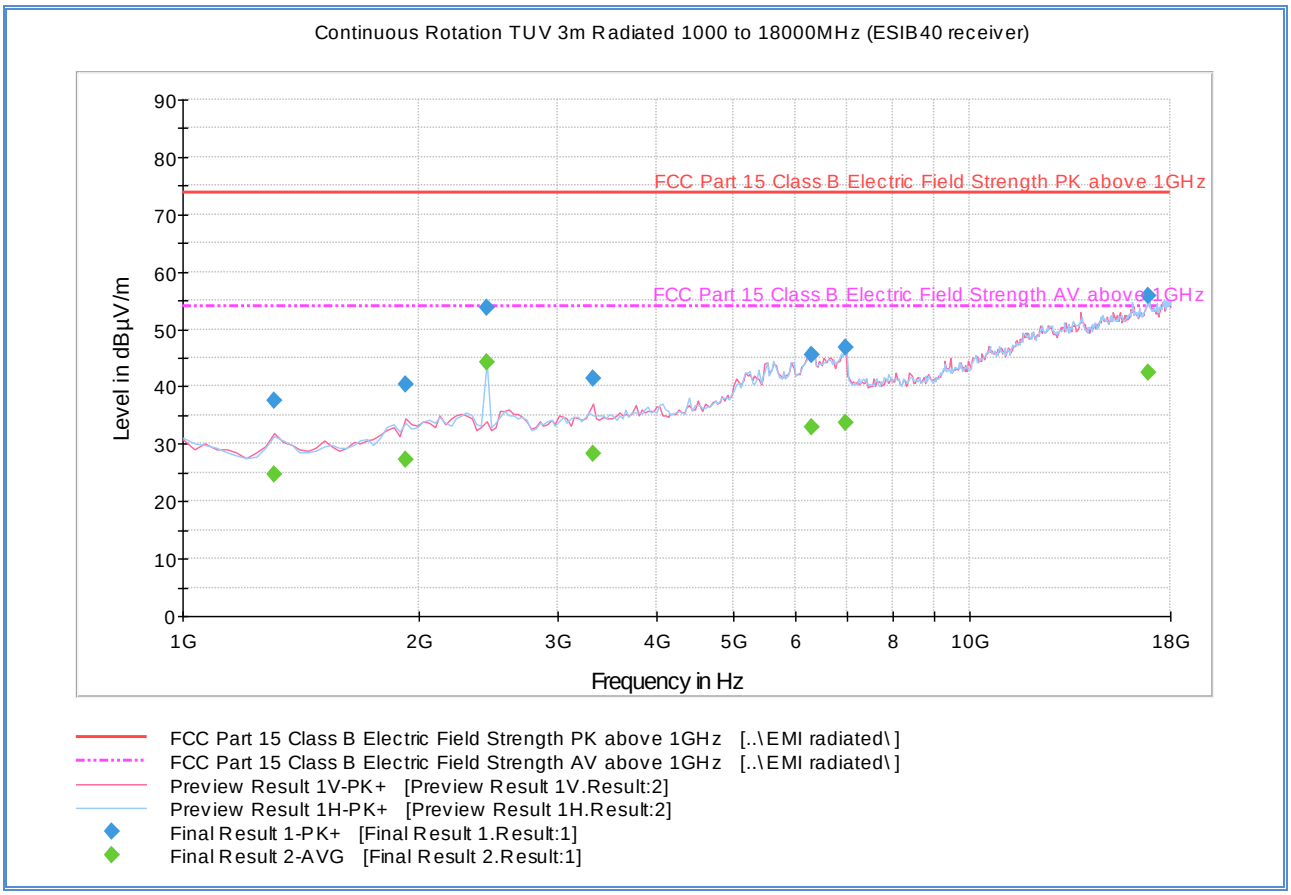
Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
1300.713226	37.8	1000.0	1000.000	102.7	H	20.0	-4.7	36.1	73.9
1921.539679	39.9	1000.0	1000.000	200.5	H	298.0	-2.0	34.0	73.9
2393.293587	38.6	Fundamental, not part of Radiated Emissions test							
4038.164128	41.9	1000.0	1000.000	192.5	H	0.0	3.2	32.0	73.9
6242.192986	45.9	1000.0	1000.000	352.7	H	7.0	6.5	28.1	73.9
6964.823848	47.0	1000.0	1000.000	303.2	V	-20.0	7.8	26.9	73.9
17965.23186	54.2	1000.0	1000.000	352.7	V	30.0	23.3	19.7	73.9

Average Data

Frequency (MHz)	Average (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
1300.713226	24.9	1000.0	1000.000	102.7	H	20.0	-4.7	29.0	53.9
1921.539679	26.9	1000.0	1000.000	200.5	H	298.0	-2.0	27.0	53.9
2393.293587	24.9	Fundamental, not part of Radiated Emissions test							
4038.164128	28.9	1000.0	1000.000	192.5	H	0.0	3.2	25.0	53.9
6242.192986	33.0	1000.0	1000.000	352.7	H	7.0	6.5	20.9	53.9
6964.823848	33.8	1000.0	1000.000	303.2	V	-20.0	7.8	20.1	53.9
17965.231864	41.7	1000.0	1000.000	352.7	V	30.0	23.3	12.2	53.9

Test Notes:
EUT SN: 837TTH0026
EUT Orientation: Side
Test Channel: 2412 MHz, Data Rate: 6 Mbps

2.1.9.18 Test Results Above 1 GHz (WLAN 802.11g Mid Channel – 1GHz to 18GHz)



Peak Data

Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
1307.313226	37.5	1000.0	1000.000	251.3	V	323.0	-3.9	36.4	73.9
1921.939679	40.3	1000.0	1000.000	396.1	V	266.0	-2.0	33.6	73.9
2430.561723	53.9	Fundamental, not part of Radiated Emissions test							
3321.533267	41.4	1000.0	1000.000	397.1	V	122.0	1.2	32.5	73.9
6311.929259	45.6	1000.0	1000.000	133.7	H	120.0	6.8	28.3	73.9
6967.623848	46.9	1000.0	1000.000	151.6	H	150.0	7.8	27.0	73.9
16879.85150	55.8	1000.0	1000.000	396.1	H	20.0	23.2	18.1	73.9

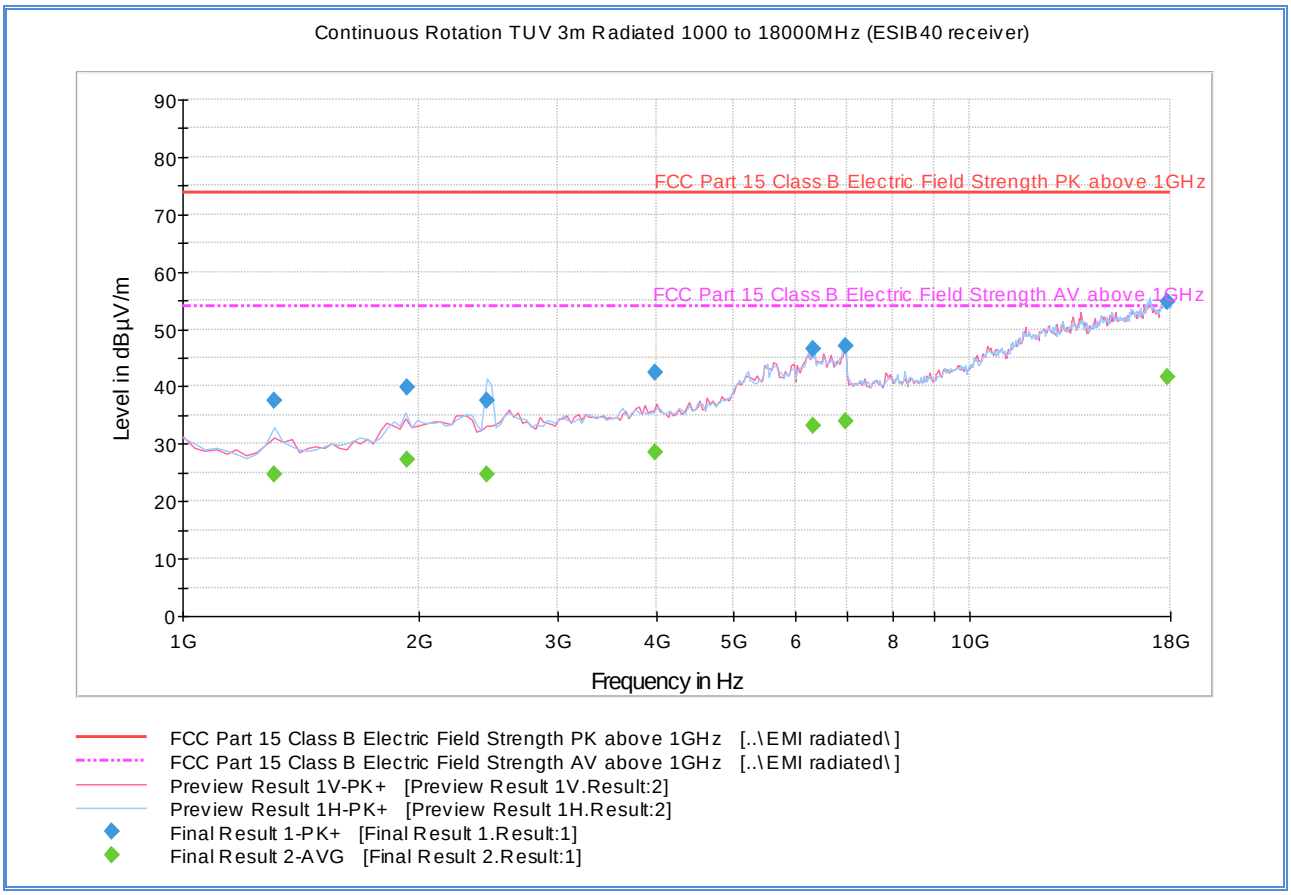
Average Data

Frequency (MHz)	Average (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
1307.313226	24.6	1000.0	1000.000	251.3	V	323.0	-3.9	29.3	53.9
1921.939679	27.2	1000.0	1000.000	396.1	V	266.0	-2.0	26.7	53.9
2430.561723	44.2	Fundamental, not part of Radiated Emissions test							
3321.533267	28.2	1000.0	1000.000	397.1	V	122.0	1.2	25.7	53.9
6311.929259	32.8	1000.0	1000.000	133.7	H	120.0	6.8	21.1	53.9
6967.623848	33.7	1000.0	1000.000	151.6	H	150.0	7.8	20.2	53.9
16879.851503	42.5	1000.0	1000.000	396.1	H	20.0	23.2	11.4	53.9

Test Notes:
EUT SN: 837TTH0042
EUT Orientation: Side
Test Channel: 2437 MHz, Data Rate: 6 Mbps

TÜV SÜD AMERICA INC 10040 Mesa Rim Road San Diego, CA 92121-2912 Phone: 858 678 1400 FAX: 858 546 0364

2.1.9.19 Test Results Above 1 GHz (WLAN 802.11g High Channel – 1GHz to 18GHz)



Peak Data

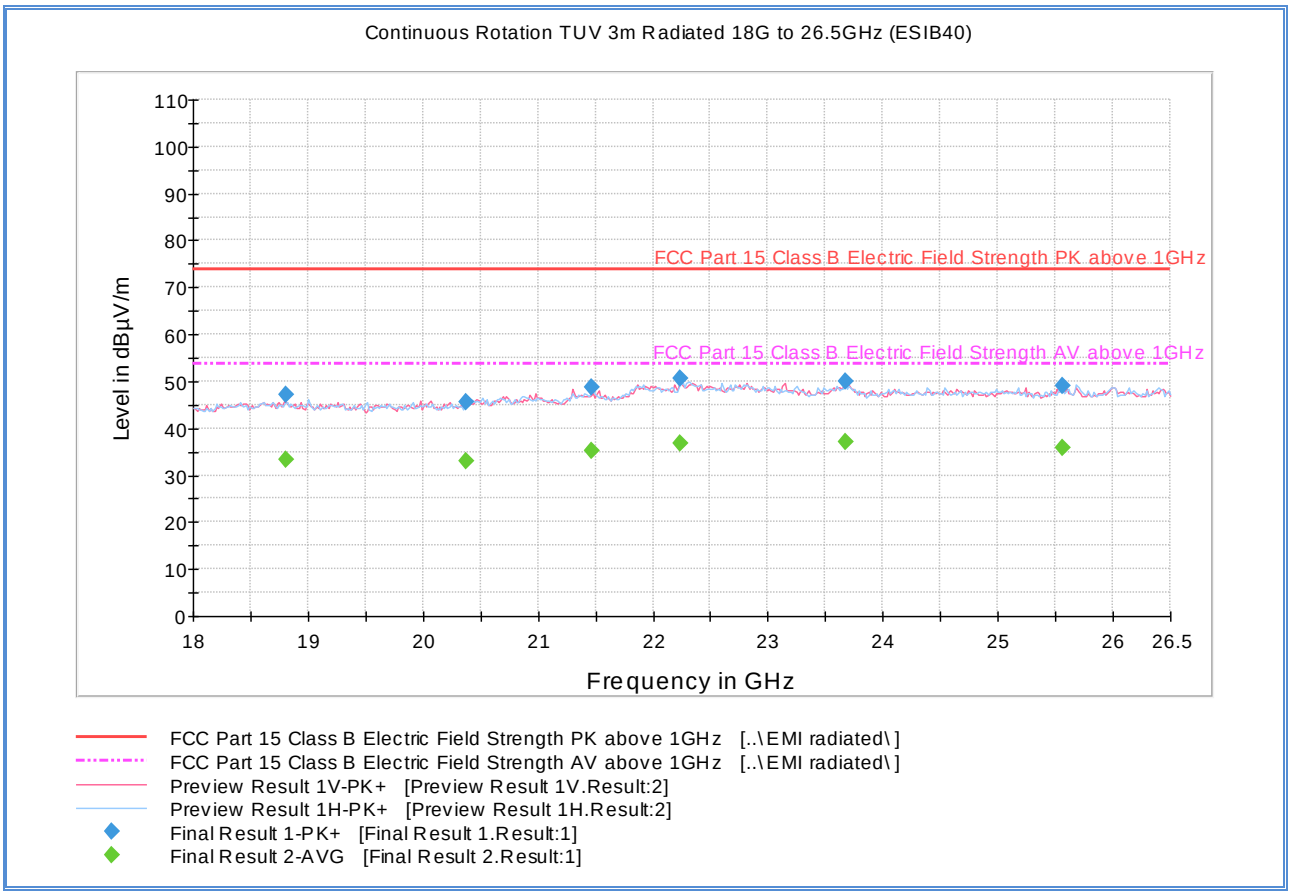
Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
1305.913226	37.5	1000.0	1000.000	183.5	H	59.0	-4.1	36.4	73.9
1924.339679	39.9	1000.0	1000.000	406.7	V	134.0	-2.2	34.0	73.9
2431.361723	37.4	Fundamental, not part of Radiated Emissions test							
3991.695992	42.5	1000.0	1000.000	183.5	V	271.0	2.7	31.4	73.9
6315.929259	46.5	1000.0	1000.000	166.6	V	1.0	6.8	27.4	73.9
6960.823848	47.2	1000.0	1000.000	133.7	H	30.0	7.9	26.7	73.9
17825.75931	54.7	1000.0	1000.000	336.1	H	221.0	23.1	19.2	73.9

Average Data

Frequency (MHz)	Average (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
1305.913226	24.6	1000.0	1000.000	183.5	H	59.0	-4.1	29.3	53.9
1924.339679	27.2	1000.0	1000.000	406.7	V	134.0	-2.2	26.7	53.9
2431.361723	24.6	Fundamental, not part of Radiated Emissions test							
3991.695992	28.4	1000.0	1000.000	183.5	V	271.0	2.7	25.5	53.9
6315.929259	33.1	1000.0	1000.000	166.6	V	1.0	6.8	20.8	53.9
6960.823848	33.9	1000.0	1000.000	133.7	H	30.0	7.9	20.0	53.9
17825.759319	41.7	1000.0	1000.000	336.1	H	221.0	23.1	12.2	53.9

Test Notes:
EUT SN: 837TTH0026
EUT Orientation: Side
Test Channel: 2462 MHz, Data Rate: 6 Mbps

2.1.9.20 Test Results Above 1 GHz (WLAN 802.11n Low Channel – 18GHz to 26.5GHz)



Peak Data

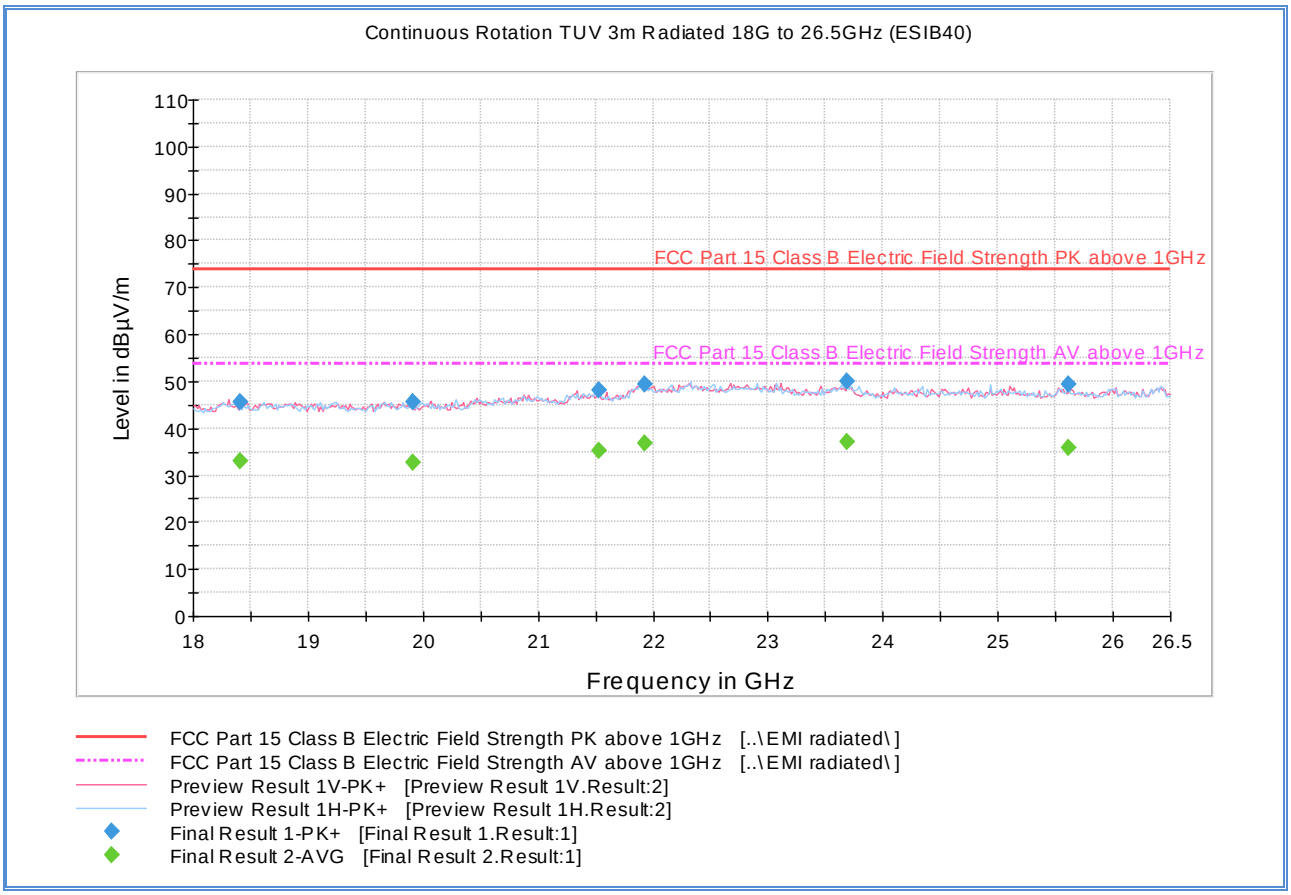
Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
18806.30120	47.2	1000.0	1000.000	165.6	V	331.0	5.9	26.7	73.9
20379.66953	45.5	1000.0	1000.000	156.7	V	98.0	5.6	28.4	73.9
21471.04990	48.7	1000.0	1000.000	175.2	H	49.0	5.7	25.2	73.9
22236.78296	50.6	1000.0	1000.000	166.6	V	189.0	6.3	23.3	73.9
23674.04468	50.1	1000.0	1000.000	126.7	V	173.0	6.1	23.8	73.9
25566.02625	49.0	1000.0	1000.000	175.2	H	161.0	6.3	24.9	73.9

Average Data

Frequency (MHz)	Average (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
18806.301202	33.3	1000.0	1000.000	165.6	V	331.0	5.9	20.6	53.9
20379.669539	32.9	1000.0	1000.000	156.7	V	98.0	5.6	21.0	53.9
21471.049900	35.2	1000.0	1000.000	175.2	H	49.0	5.7	18.7	53.9
22236.782966	36.7	1000.0	1000.000	166.6	V	189.0	6.3	17.2	53.9
23674.044689	37.2	1000.0	1000.000	126.7	V	173.0	6.1	16.7	53.9
25566.026253	36.0	1000.0	1000.000	175.2	H	161.0	6.3	17.9	53.9

Test Notes:
EUT SN: 837TTH0042
EUT Orientation: Side
Test Channel: 2412 MHz, Data Rate: 6.5 Mbps

2.1.9.21 Test Results Above 1 GHz (WLAN 802.11n Mid Channel – 18GHz to 26.5GHz)



Peak Data

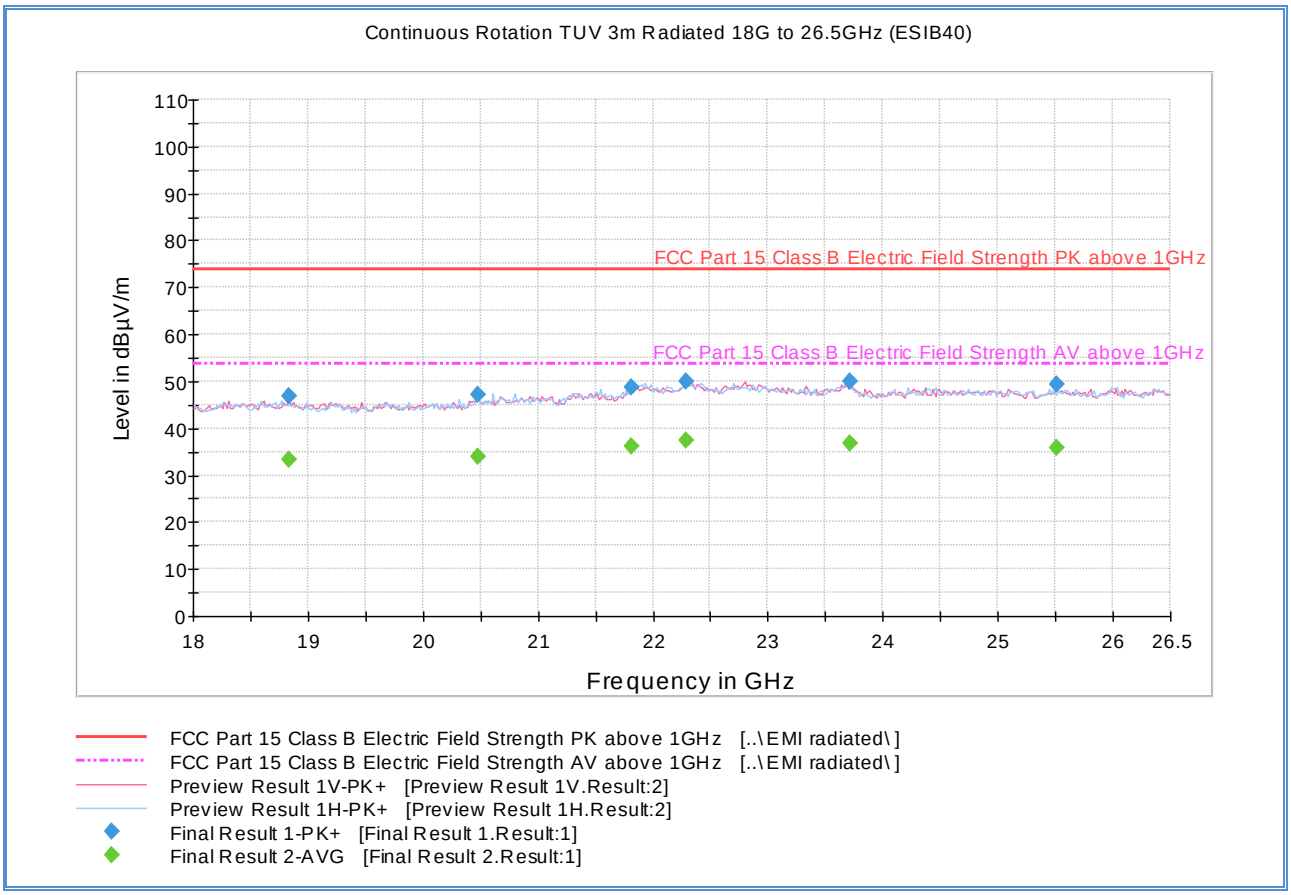
Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
18407.31763	45.7	1000.0	1000.000	175.2	H	184.0	6.0	28.2	73.9
19909.91563	45.5	1000.0	1000.000	151.7	H	63.0	5.6	28.4	73.9
21526.55210	48.2	1000.0	1000.000	140.7	V	141.0	5.8	25.7	73.9
21932.56973	49.3	1000.0	1000.000	156.7	H	10.0	6.2	24.6	73.9
23685.07875	49.8	1000.0	1000.000	175.2	V	290.0	6.1	24.1	73.9
25610.72845	49.2	1000.0	1000.000	148.7	H	124.0	6.3	24.7	73.9

Average Data

Frequency (MHz)	Average (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
18407.317635	33.0	1000.0	1000.000	175.2	H	184.0	6.0	20.9	53.9
19909.915631	32.6	1000.0	1000.000	151.7	H	63.0	5.6	21.3	53.9
21526.552104	35.1	1000.0	1000.000	140.7	V	141.0	5.8	18.8	53.9
21932.569739	36.8	1000.0	1000.000	156.7	H	10.0	6.2	17.1	53.9
23685.078758	37.1	1000.0	1000.000	175.2	V	290.0	6.1	16.8	53.9
25610.728457	35.8	1000.0	1000.000	148.7	H	124.0	6.3	18.1	53.9

Test Notes:
EUT SN: 837TTH0026
EUT Orientation: Side
Test Channel: 2437 MHz, Data Rate: 6.5 Mbps

2.1.9.22 Test Results Above 1 GHz (WLAN 802.11n High Channel – 18GHz to 26.5GHz)



Peak Data

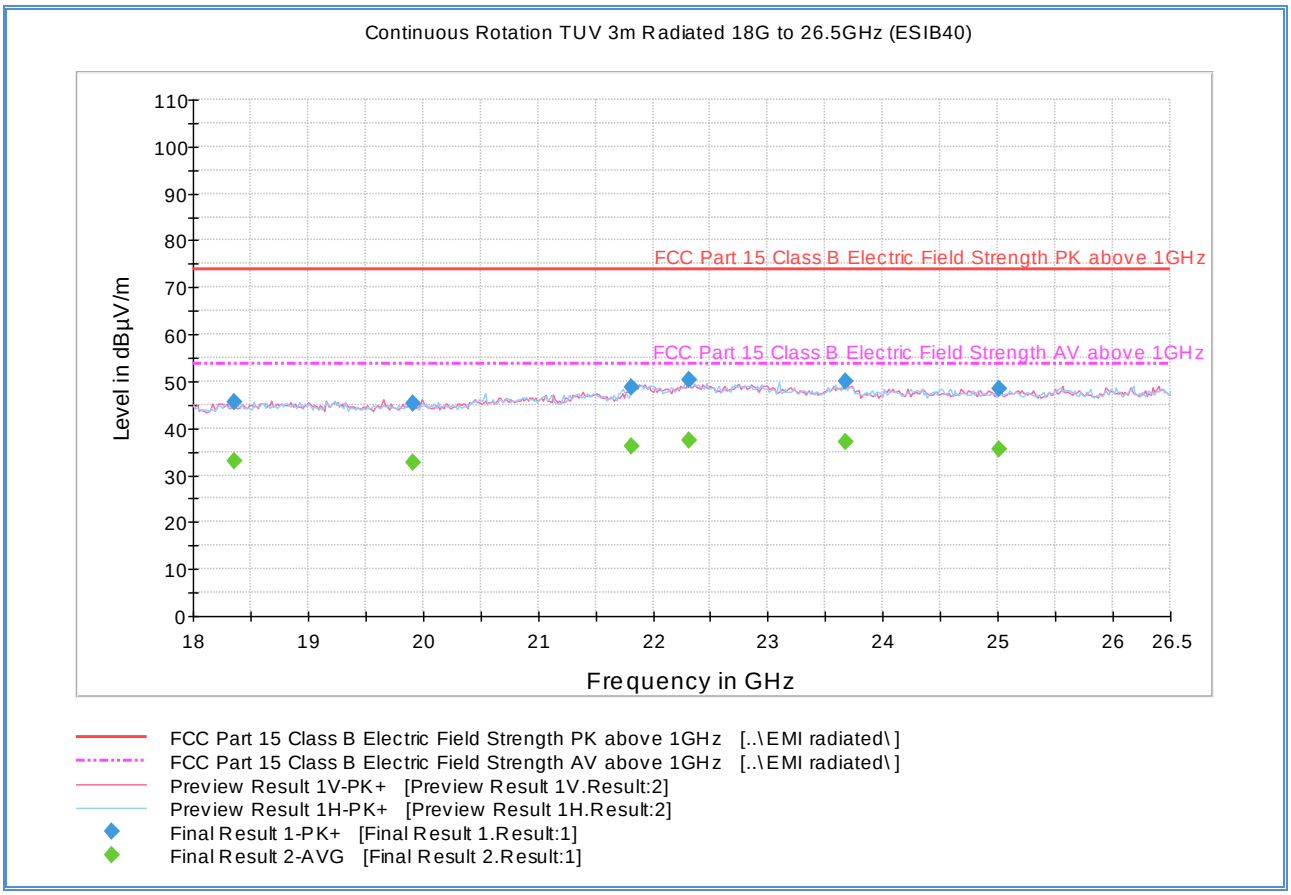
Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
18831.16933	46.8	1000.0	1000.000	126.7	V	177.0	5.9	27.1	73.9
20475.63988	47.0	1000.0	1000.000	175.2	V	257.0	5.6	26.9	73.9
21818.13126	48.8	1000.0	1000.000	148.7	V	274.0	6.0	25.1	73.9
22290.68517	50.0	1000.0	1000.000	126.7	H	10.0	6.3	23.9	73.9
23708.91282	50.0	1000.0	1000.000	126.7	H	223.0	6.1	23.9	73.9
25506.52404	49.4	1000.0	1000.000	175.2	V	149.0	6.3	24.5	73.9

Average Data

Frequency (MHz)	Average (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
18831.169339	33.2	1000.0	1000.000	126.7	V	177.0	5.9	20.7	53.9
20475.639880	34.0	1000.0	1000.000	175.2	V	257.0	5.6	19.9	53.9
21818.131263	36.1	1000.0	1000.000	148.7	V	274.0	6.0	17.8	53.9
22290.685170	37.3	1000.0	1000.000	126.7	H	10.0	6.3	16.6	53.9
23708.912826	36.8	1000.0	1000.000	126.7	H	223.0	6.1	17.1	53.9
25506.524048	35.7	1000.0	1000.000	175.2	V	149.0	6.3	18.2	53.9

Test Notes:
EUT SN: 837TTH0042
EUT Orientation: Side
Test Channel: 2462 MHz, Data Rate: 6.5 Mbps

2.1.9.23 Test Results Above 1 GHz (WLAN 802.11b Low Channel – 18GHz to 26.5GHz)



Peak Data

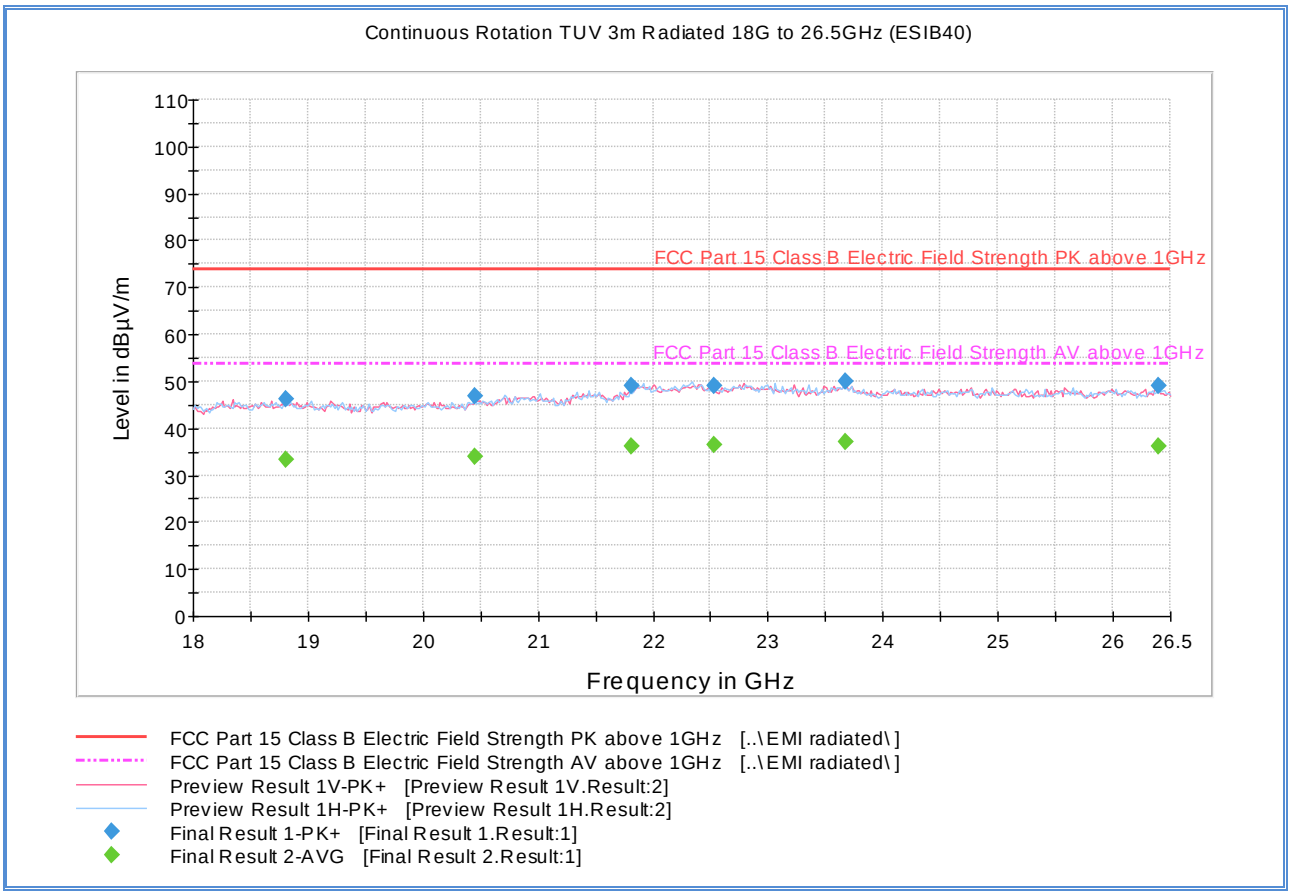
Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
18354.21543	45.7	1000.0	1000.000	126.7	V	195.0	6.0	28.2	73.9
19909.91563	45.4	1000.0	1000.000	156.7	H	94.0	5.6	28.5	73.9
21815.73126	48.8	1000.0	1000.000	165.6	V	23.0	6.0	25.1	73.9
22310.91923	50.2	1000.0	1000.000	175.2	V	328.0	6.3	23.7	73.9
23669.24468	50.1	1000.0	1000.000	165.6	V	301.0	6.1	23.8	73.9
25011.73607	48.3	1000.0	1000.000	175.2	V	260.0	6.6	25.6	73.9

Average Data

Frequency (MHz)	Average (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
18354.215431	33.0	1000.0	1000.000	126.7	V	195.0	6.0	20.9	53.9
19909.915631	32.6	1000.0	1000.000	156.7	H	94.0	5.6	21.3	53.9
21815.731263	36.0	1000.0	1000.000	165.6	V	23.0	6.0	17.9	53.9
22310.919238	37.4	1000.0	1000.000	175.2	V	328.0	6.3	16.5	53.9
23669.244689	37.1	1000.0	1000.000	165.6	V	301.0	6.1	16.8	53.9
25011.736072	35.6	1000.0	1000.000	175.2	V	260.0	6.6	18.3	53.9

Test Notes:
EUT SN: 837TTH0026
EUT Orientation: Side
Test Channel: 2412 MHz, Data Rate: 2 Mbps

2.1.9.24 Test Results Above 1 GHz (WLAN 802.11b Mid Channel – 18GHz to 26.5GHz)



Peak Data

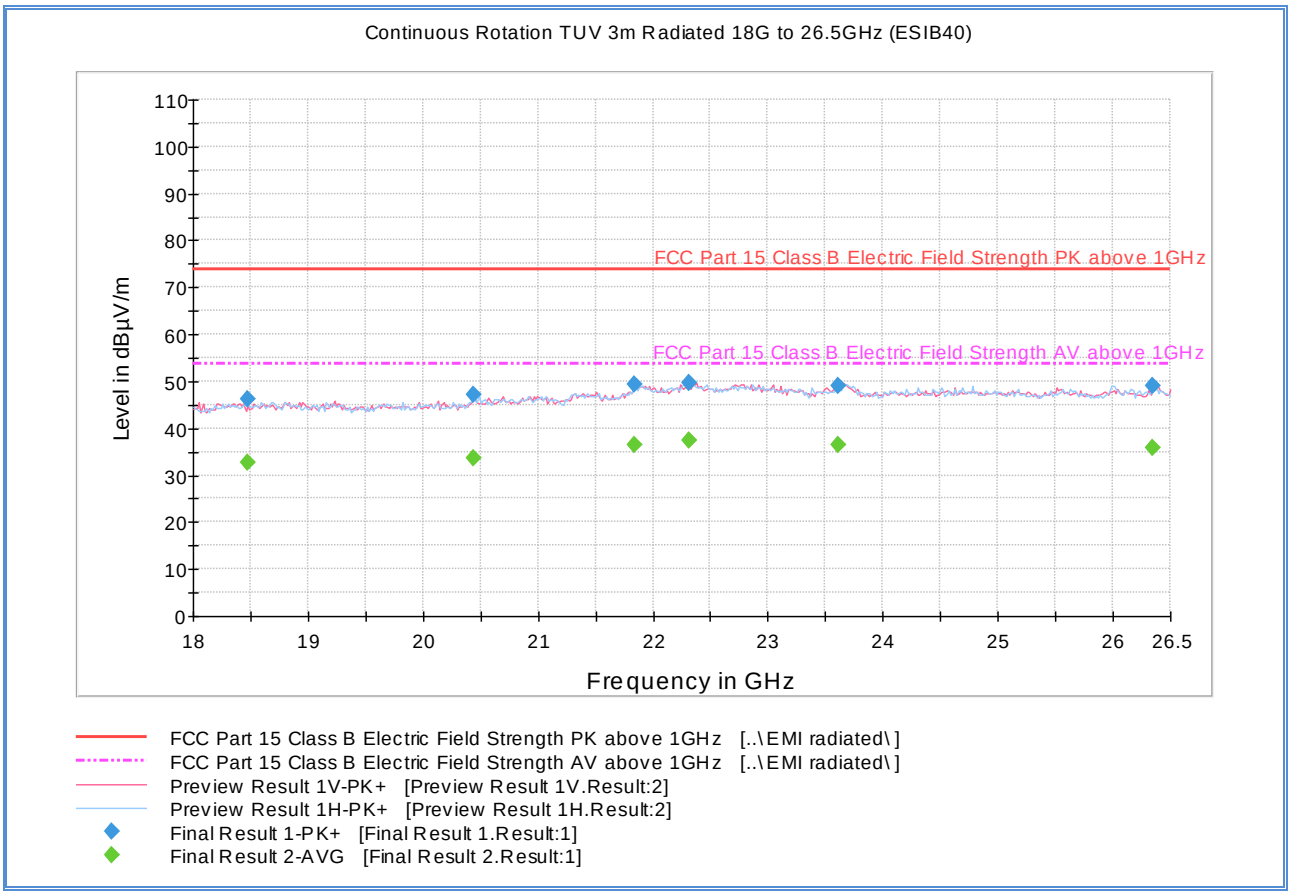
Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
18814.93527	46.3	1000.0	1000.000	140.7	V	216.0	5.9	27.6	73.9
20456.60581	46.9	1000.0	1000.000	151.7	H	336.0	5.6	27.0	73.9
21816.13126	49.2	1000.0	1000.000	165.6	V	250.0	6.0	24.7	73.9
22527.16212	49.1	1000.0	1000.000	156.7	H	249.0	6.2	24.8	73.9
23671.24468	50.1	1000.0	1000.000	165.6	V	300.0	6.1	23.8	73.9
26401.09559	49.2	1000.0	1000.000	126.7	V	74.0	6.5	24.8	73.9

Average Data

Frequency (MHz)	Average (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
18814.935271	33.2	1000.0	1000.000	140.7	V	216.0	5.9	20.7	53.9
20456.605812	34.0	1000.0	1000.000	151.7	H	336.0	5.6	19.9	53.9
21816.131263	36.0	1000.0	1000.000	165.6	V	250.0	6.0	17.9	53.9
22527.162124	36.6	1000.0	1000.000	156.7	H	249.0	6.2	17.3	53.9
23671.244689	37.1	1000.0	1000.000	165.6	V	300.0	6.1	16.8	53.9
26401.095591	36.1	1000.0	1000.000	126.7	V	74.0	6.5	17.8	53.9

Test Notes:
EUT SN: 837TTH0026
EUT Orientation: Side
Test Channel: 2437 MHz, Data Rate: 2 Mbps

2.1.9.25 Test Results Above 1 GHz (WLAN 802.11b High Channel – 18GHz to 26.5GHz)



Peak Data

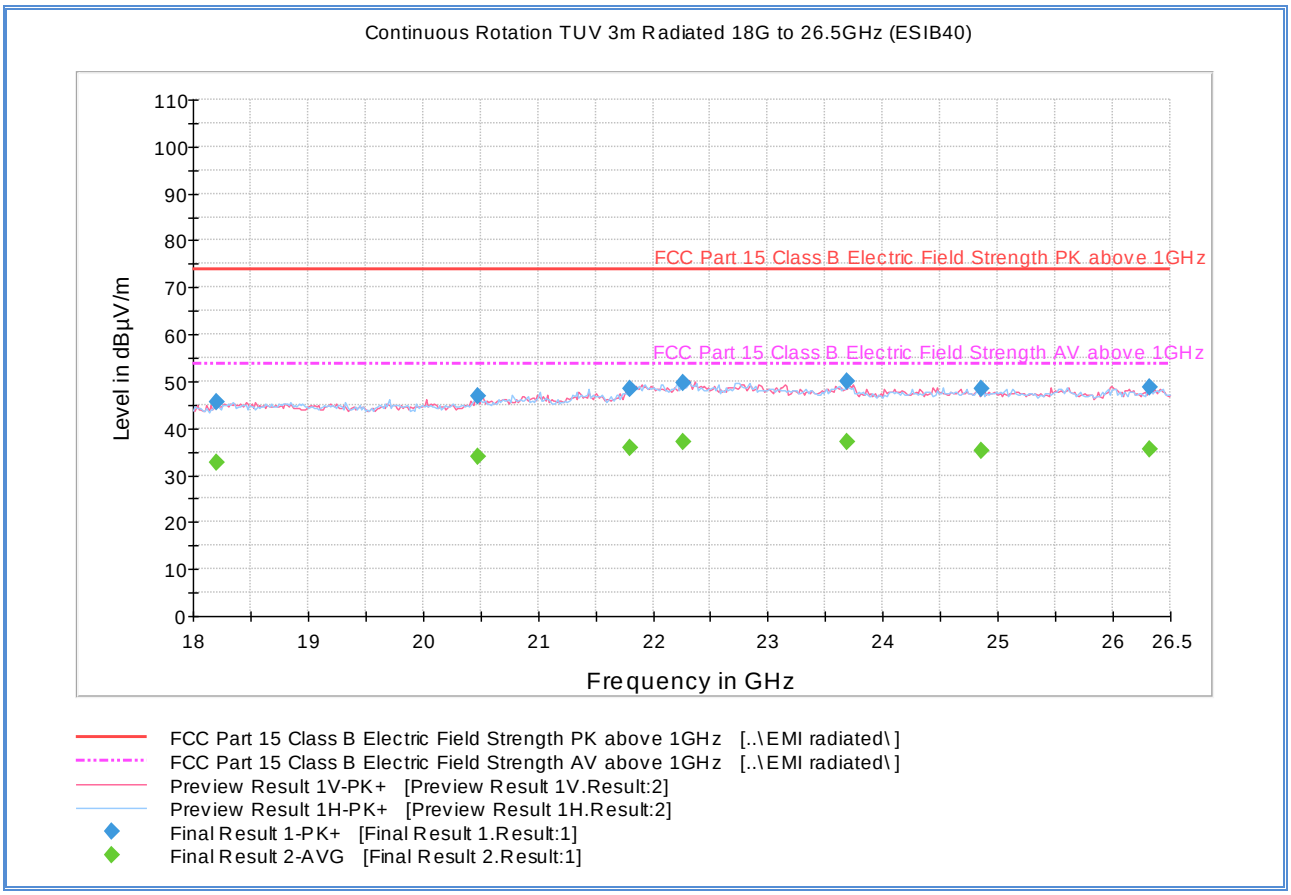
Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
18473.85390	46.1	1000.0	1000.000	151.7	H	102.0	6.1	27.8	73.9
20434.77174	47.0	1000.0	1000.000	157.6	H	112.0	5.6	26.9	73.9
21839.96533	49.3	1000.0	1000.000	157.6	H	78.0	6.1	24.6	73.9
22312.51923	49.8	1000.0	1000.000	126.7	V	10.0	6.3	24.1	73.9
23605.90841	49.2	1000.0	1000.000	175.2	V	127.0	6.1	24.7	73.9
26349.59338	49.0	1000.0	1000.000	151.6	V	135.0	6.5	24.9	73.9

Average Data

Frequency (MHz)	Average (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
18473.853908	32.7	1000.0	1000.000	151.7	H	102.0	6.1	21.2	53.9
20434.771743	33.6	1000.0	1000.000	157.6	H	112.0	5.6	20.3	53.9
21839.965331	36.5	1000.0	1000.000	157.6	H	78.0	6.1	17.4	53.9
22312.519238	37.4	1000.0	1000.000	126.7	V	10.0	6.3	16.5	53.9
23605.908417	36.6	1000.0	1000.000	175.2	V	127.0	6.1	17.3	53.9
26349.593387	35.9	1000.0	1000.000	151.6	V	135.0	6.5	18.0	53.9

Test Notes:
EUT SN: 837TTH0042
EUT Orientation: Side
Test Channel: 2462 MHz, Data Rate: 2 Mbps

2.1.9.26 Test Results Above 1 GHz (WLAN 802.11g Low Channel – 18GHz to 26.5GHz)



Peak Data

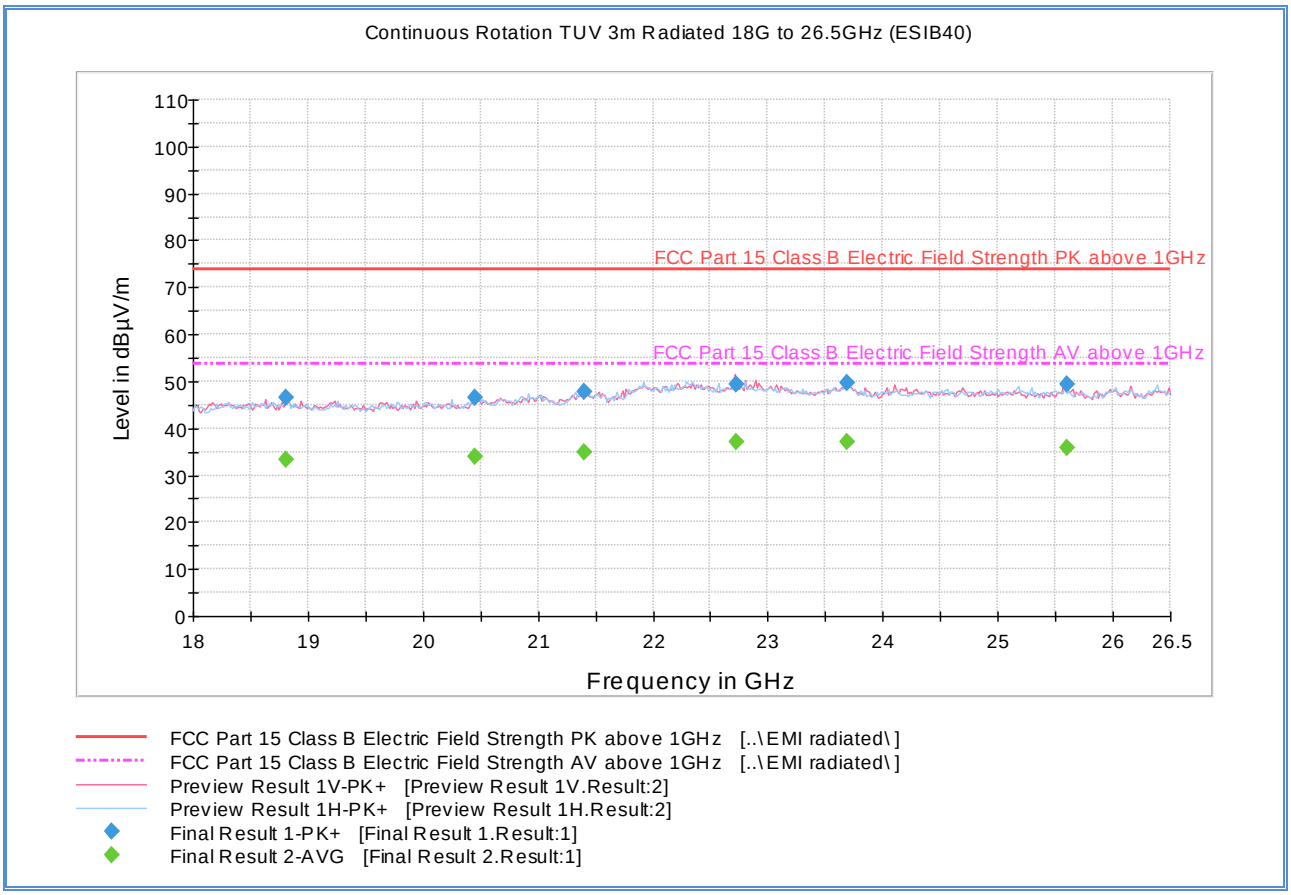
Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
18202.30881	45.6	1000.0	1000.000	126.7	H	167.0	5.9	28.3	73.9
20474.03988	46.8	1000.0	1000.000	175.2	V	26.0	5.6	27.1	73.9
21797.49719	48.4	1000.0	1000.000	140.7	V	39.0	6.0	25.5	73.9
22256.61703	49.8	1000.0	1000.000	175.2	H	67.0	6.3	24.1	73.9
23689.87875	49.8	1000.0	1000.000	148.7	H	282.0	6.1	24.1	73.9
24852.59539	48.3	1000.0	1000.000	140.7	H	167.0	6.6	25.6	73.9
26317.12525	48.8	1000.0	1000.000	148.7	V	191.0	6.5	25.1	73.9

Average Data

Frequency (MHz)	Average (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
18202.308818	32.7	1000.0	1000.000	126.7	H	167.0	5.9	21.2	53.9
20474.039880	34.0	1000.0	1000.000	175.2	V	26.0	5.6	19.9	53.9
21797.497194	35.9	1000.0	1000.000	140.7	V	39.0	6.0	18.0	53.9
22256.617034	37.1	1000.0	1000.000	175.2	H	67.0	6.3	16.8	53.9
23689.878758	37.0	1000.0	1000.000	148.7	H	282.0	6.1	16.9	53.9
24852.595391	35.3	1000.0	1000.000	140.7	H	167.0	6.6	18.6	53.9
26317.125251	35.5	1000.0	1000.000	148.7	V	191.0	6.5	18.4	53.9

Test Notes:
EUT SN: 837TTH0026
EUT Orientation: Side
Test Channel: 2412 MHz, Data Rate: 6 Mbps

2.1.9.27 Test Results Above 1 GHz (WLAN 802.11g Mid Channel – 18GHz to 26.5GHz)



Peak Data

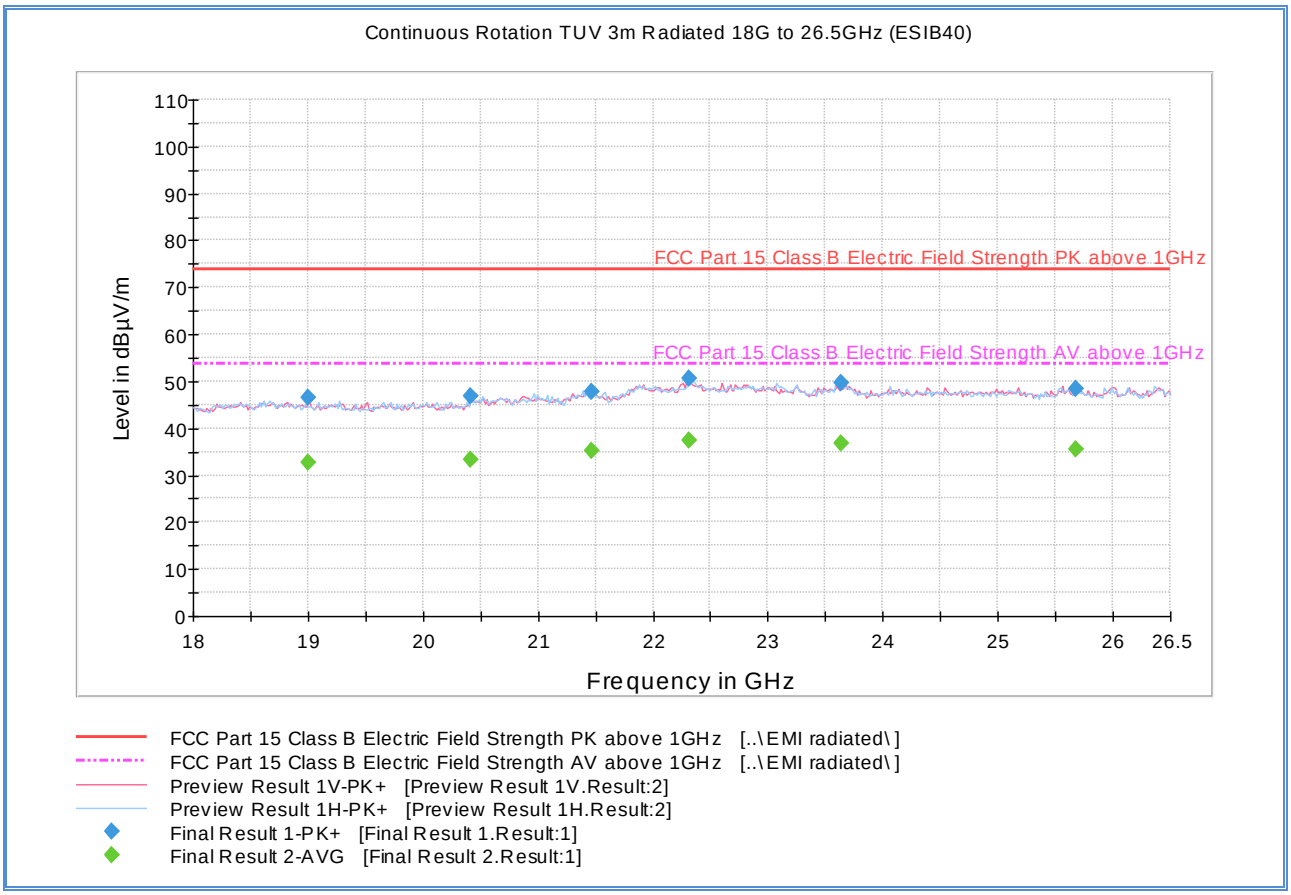
Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
18805.10120	46.6	1000.0	1000.000	175.2	H	104.0	5.9	27.4	73.9
20455.20581	46.5	1000.0	1000.000	148.7	V	222.0	5.6	27.4	73.9
21407.31362	47.7	1000.0	1000.000	126.7	V	110.0	5.7	26.2	73.9
22719.73687	49.4	1000.0	1000.000	157.6	V	298.0	6.2	24.5	73.9
23683.87875	49.7	1000.0	1000.000	126.7	H	132.0	6.1	24.2	73.9
25598.49438	49.3	1000.0	1000.000	165.6	V	298.0	6.3	24.6	73.9

Average Data

Frequency (MHz)	Average (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
18805.101202	33.3	1000.0	1000.000	175.2	H	104.0	5.9	20.6	53.9
20455.205812	34.0	1000.0	1000.000	148.7	V	222.0	5.6	19.9	53.9
21407.313627	34.9	1000.0	1000.000	126.7	V	110.0	5.7	19.0	53.9
22719.736874	36.9	1000.0	1000.000	157.6	V	298.0	6.2	17.0	53.9
23683.878758	37.1	1000.0	1000.000	126.7	H	132.0	6.1	16.8	53.9
25598.494389	35.8	1000.0	1000.000	165.6	V	298.0	6.3	18.1	53.9

Test Notes:
EUT SN: 837TTH0042
EUT Orientation: Side
Test Channel: 2437 MHz, Data Rate: 6 Mbps

2.1.9.28 Test Results Above 1 GHz (WLAN 802.11g High Channel – 18GHz to 26.5GHz)



Peak Data

Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
18998.31002	46.5	1000.0	1000.000	148.7	V	142.0	5.7	27.4	73.9
20415.73767	46.8	1000.0	1000.000	126.7	V	286.0	5.6	27.1	73.9
21462.81583	47.9	1000.0	1000.000	140.7	H	10.0	5.7	26.0	73.9
22308.31923	50.6	1000.0	1000.000	175.2	H	256.0	6.3	23.3	73.9
23642.77655	49.7	1000.0	1000.000	148.7	H	210.0	6.1	24.2	73.9
25677.66472	48.3	1000.0	1000.000	175.2	V	331.0	6.3	25.6	73.9

Average Data

Frequency (MHz)	Average (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
18998.310020	32.7	1000.0	1000.000	148.7	V	142.0	5.7	21.2	53.9
20415.737675	33.4	1000.0	1000.000	126.7	V	286.0	5.6	20.5	53.9
21462.815832	35.2	1000.0	1000.000	140.7	H	10.0	5.7	18.7	53.9
22308.319238	37.4	1000.0	1000.000	175.2	H	256.0	6.3	16.5	53.9
23642.776553	36.7	1000.0	1000.000	148.7	H	210.0	6.1	17.2	53.9
25677.664729	35.6	1000.0	1000.000	175.2	V	331.0	6.3	18.3	53.9

Test Notes:
EUT SN: 837TTH0042
EUT Orientation: Side
Test Channel: 2462 MHz, Data Rate: 6 Mbps

2.2 BAND-EDGE COMPLIANCE AND IMMEDIATE RESTRICTED BAND - RADIATED

2.2.1 Specification Reference

Part 15 Subpart C §15.247(d) and RSS-247 5.5

2.2.2 Standard Applicable

See previous test.

2.2.3 Equipment Under Test and Modification State

Serial No: 837TTH0026 / Default Test Configuration

2.2.4 Date of Test/Initial of test personnel who performed the test

July 11 to July 18, 2017 / AC and IR

2.2.5 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

2.2.6 Environmental Conditions/ Test Location

Test performed at TÜV SÜD America Inc. Rancho Bernardo facility

Ambient Temperature	26.5 – 26.1 °C
Relative Humidity	51.4 – 47.8 %
ATM Pressure	98.8 – 99.1 kPa

2.2.7 Additional Observations

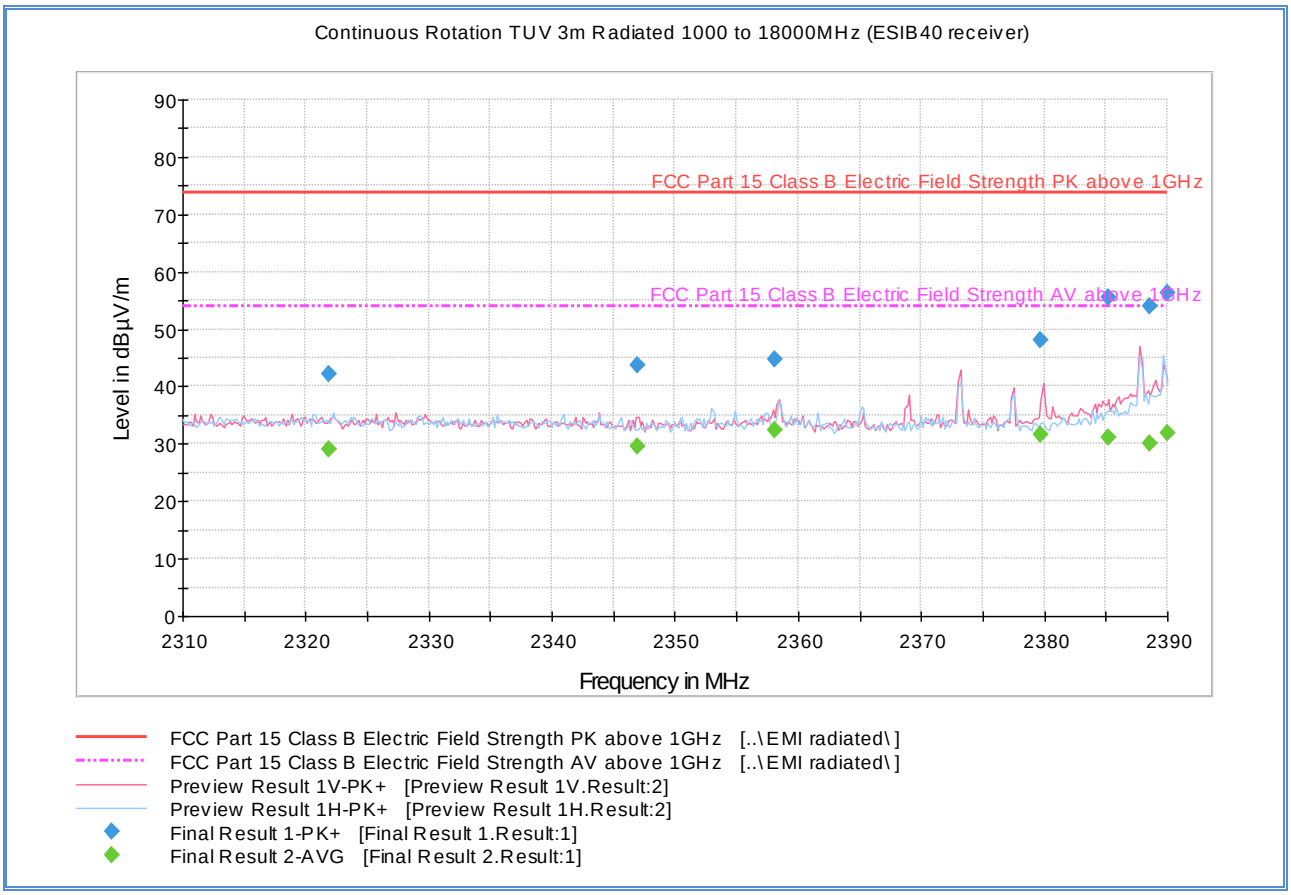
- This is a Radiated test.
- Verification performed to show compliance with immediate restricted band adjacent to 2.4GHz band.
- Lower and Upper band-edges were also verified.
- Lower band-edge, even not in restricted band was verified using §15.205 (c) test methodology.

2.2.8 Test Results

Complies. See attached plots.

TÜV SÜD AMERICA INC 10040 Mesa Rim Road San Diego, CA 92121-2912 Phone: 858 678 1400 FAX: 858 546 0364

2.2.8.1 Test Results Lower Immediate Restricted Band (BLE Low Channel)



Peak Data

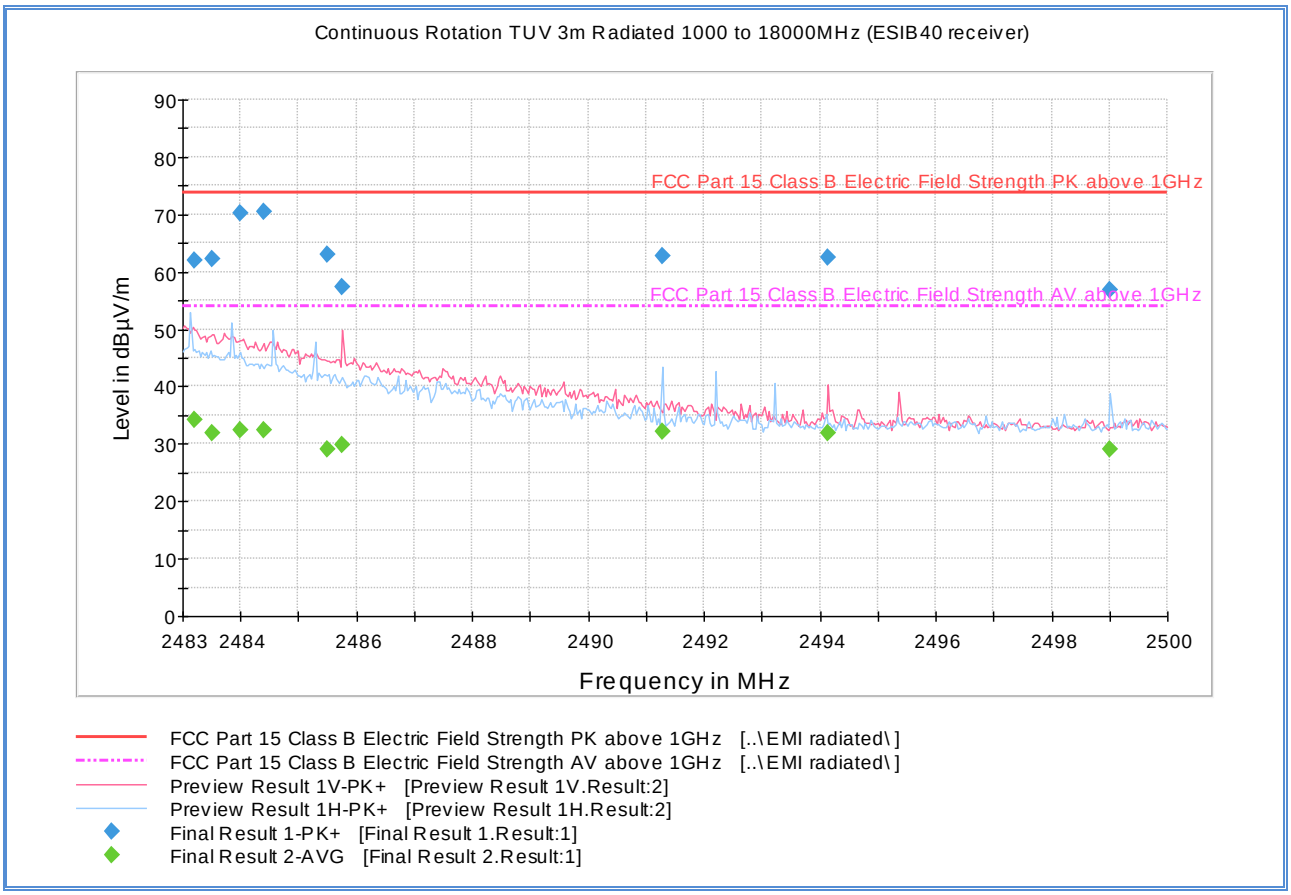
Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
2321.814629	42.3	1000.0	1000.000	271.3	V	20.0	-0.7	31.6	73.9
2346.927655	43.8	1000.0	1000.000	231.4	V	177.0	-0.7	30.1	73.9
2358.116834	44.7	1000.0	1000.000	174.6	V	26.0	-0.8	29.2	73.9
2379.666333	48.2	1000.0	1000.000	202.5	V	189.0	-0.9	25.7	73.9
2385.199800	55.4	1000.0	1000.000	192.5	V	20.0	-1.0	18.5	73.9
2388.579359	53.9	1000.0	1000.000	406.7	V	106.0	-1.0	20.0	73.9
2390.000000	56.4	1000.0	1000.000	103.7	V	59.0	-1.0	17.5	73.9

Average Data

Frequency (MHz)	Average (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
2321.814629	29.0	1000.0	1000.000	271.3	V	20.0	-0.7	24.9	53.9
2346.927655	29.5	1000.0	1000.000	231.4	V	177.0	-0.7	24.4	53.9
2358.116834	32.3	1000.0	1000.000	174.6	V	26.0	-0.8	21.6	53.9
2379.666333	31.6	1000.0	1000.000	202.5	V	189.0	-0.9	22.3	53.9
2385.199800	31.1	1000.0	1000.000	192.5	V	20.0	-1.0	22.8	53.9
2388.579359	30.0	1000.0	1000.000	406.7	V	106.0	-1.0	23.9	53.9
2390.000000	31.8	1000.0	1000.000	103.7	V	59.0	-1.0	22.1	53.9

Test Notes:
EUT SN: 837TTH0042
EUT Orientation: Flat

2.2.8.2 Test Results Upper Immediate Restricted Band (BLE High Channel)



Peak Data

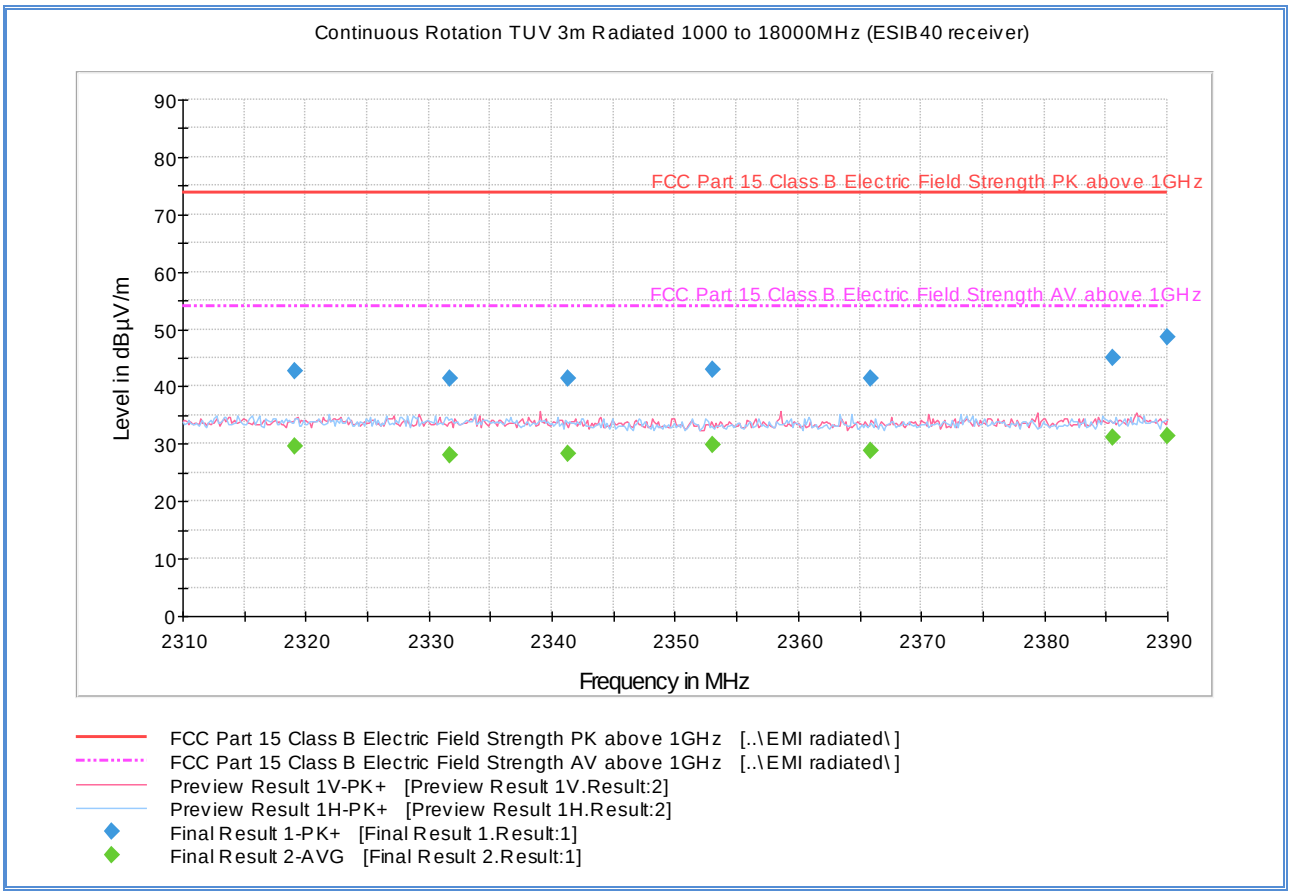
Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
2483.500000	62.2	1000.0	1000.000	252.3	V	30.0	-0.2	11.7	73.9
2484.000000	70.2	1000.0	1000.000	397.1	H	172.0	-0.2	3.7	73.9
2484.400000	70.5	1000.0	1000.000	410.7	H	201.0	-0.2	3.4	73.9
2491.278557	62.7	1000.0	1000.000	221.4	V	299.0	-0.2	11.2	73.9
2485.759557	57.2	1000.0	1000.000	396.1	H	229.0	-0.2	16.7	73.9
2485.498397	62.9	1000.0	1000.000	212.4	H	146.0	-0.2	11.0	73.9
2494.140273	62.4	1000.0	1000.000	406.7	V	102.0	-0.3	11.5	73.9
2499.012024	56.7	1000.0	1000.000	152.2	H	340.0	-0.3	17.2	73.9

Average Data

Frequency (MHz)	Average (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
2483.500000	31.8	1000.0	1000.000	252.3	V	30.0	-0.2	22.1	53.9
2484.000000	32.4	1000.0	1000.000	397.1	H	172.0	-0.2	21.5	53.9
2484.400000	32.3	1000.0	1000.000	410.7	H	201.0	-0.2	21.6	53.9
2491.278557	32.0	1000.0	1000.000	221.4	V	299.0	-0.2	21.9	53.9
2485.759557	29.8	1000.0	1000.000	396.1	H	229.0	-0.2	24.1	53.9
2485.498397	29.1	1000.0	1000.000	212.4	H	146.0	-0.2	24.8	53.9
2494.140273	32.0	1000.0	1000.000	406.7	V	102.0	-0.3	21.9	53.9
2499.012024	29.1	1000.0	1000.000	152.2	H	340.0	-0.3	24.8	53.9

Test Notes:
EUT SN: 837TTH0026
EUT Orientation: Flat

2.2.8.3 Test Results Lower Immediate Restricted Band (WLAN 802.11b Low Channel)



Peak Data

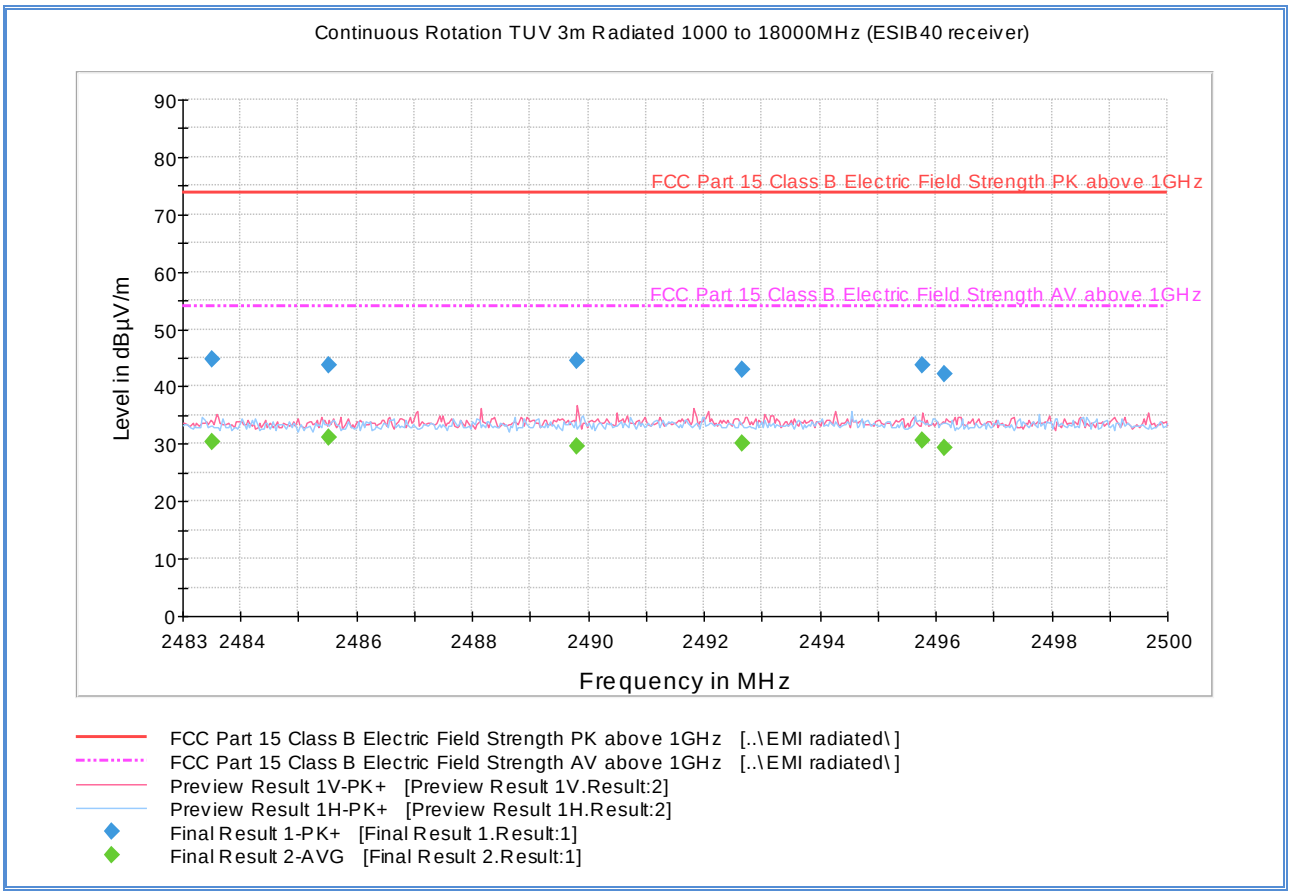
Frequency (MHz)	Average (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
2319.163728	42.6	1000.0	1000.000	302.2	H	134.0	-0.8	31.3	73.9
2331.738477	41.3	1000.0	1000.000	104.7	V	23.0	-0.5	32.6	73.9
2341.318036	41.3	1000.0	1000.000	240.4	V	0.0	-0.6	32.6	73.9
2353.077154	43.0	1000.0	1000.000	103.7	V	47.0	-0.8	30.9	73.9
2365.901202	41.4	1000.0	1000.000	352.1	V	30.0	-0.9	32.5	73.9
2385.518838	45.1	1000.0	1000.000	133.7	V	357.0	-1.0	28.8	73.9
2390.000000	48.6	1000.0	1000.000	200.5	V	159.0	-1.0	25.3	73.9

Average Data

Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
2319.163728	29.6	1000.0	1000.000	302.2	H	134.0	-0.8	24.3	53.9
2331.738477	28.1	1000.0	1000.000	104.7	V	23.0	-0.5	25.8	53.9
2341.318036	28.2	1000.0	1000.000	240.4	V	0.0	-0.6	25.7	53.9
2353.077154	29.8	1000.0	1000.000	103.7	V	47.0	-0.8	24.1	53.9
2365.901202	28.8	1000.0	1000.000	352.1	V	30.0	-0.9	25.1	53.9
2385.518838	31.2	1000.0	1000.000	133.7	V	357.0	-1.0	22.7	53.9
2390.000000	31.3	1000.0	1000.000	200.5	V	159.0	-1.0	22.6	53.9

Test Notes:
EUT SN: 837TTH0026
EUT Orientation: Flat

2.2.8.4 Test Results Upper Immediate Restricted Band (WLAN 802.11b High Channel)



Peak Data

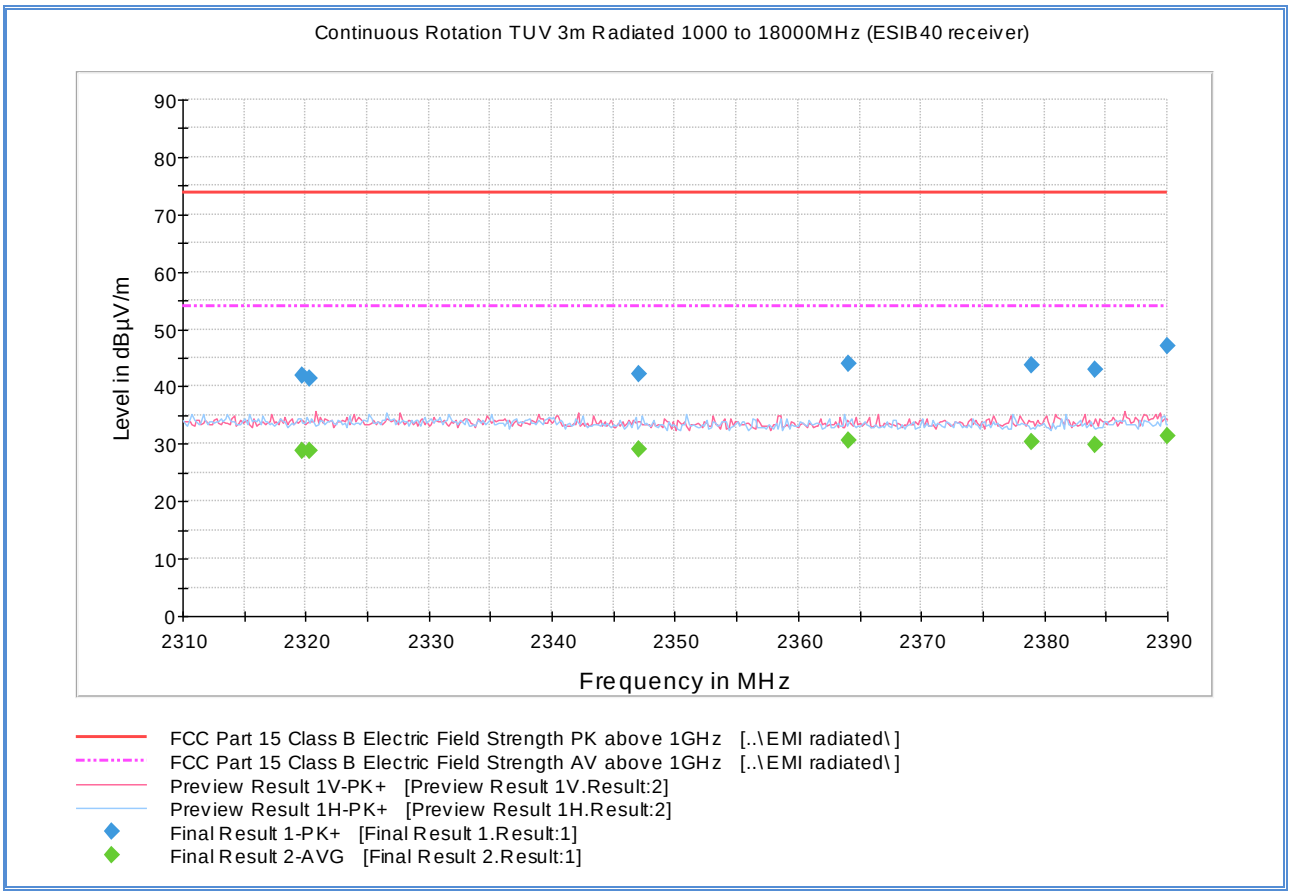
Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
2483.500000	44.8	1000.0	1000.000	183.5	V	4.0	-0.2	29.1	73.9
2485.523647	43.6	1000.0	1000.000	230.4	V	357.0	-0.2	30.3	73.9
2489.813627	44.4	1000.0	1000.000	270.3	V	356.0	-0.2	29.5	73.9
2492.649098	42.9	1000.0	1000.000	351.6	H	203.0	-0.3	31.0	73.9
2495.759319	43.8	1000.0	1000.000	202.5	V	27.0	-0.3	30.1	73.9
2496.159319	42.3	1000.0	1000.000	183.5	V	4.0	-0.3	31.6	73.9

Average Data

Frequency (MHz)	Average (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
2483.500000	30.3	1000.0	1000.000	183.5	V	4.0	-0.2	23.6	53.9
2485.523647	31.0	1000.0	1000.000	230.4	V	357.0	-0.2	22.9	53.9
2489.813627	29.6	1000.0	1000.000	270.3	V	356.0	-0.2	24.3	53.9
2492.649098	30.0	1000.0	1000.000	351.6	H	203.0	-0.3	23.9	53.9
2495.759319	30.5	1000.0	1000.000	202.5	V	27.0	-0.3	23.4	53.9
2496.159319	29.3	1000.0	1000.000	183.5	V	4.0	-0.3	24.6	53.9

Test Notes:
EUT SN: 837TTH0042
EUT Orientation: Flat

2.2.8.5 Test Results Lower Immediate Restricted Band (WLAN 802.11g Low Channel)



Peak Data

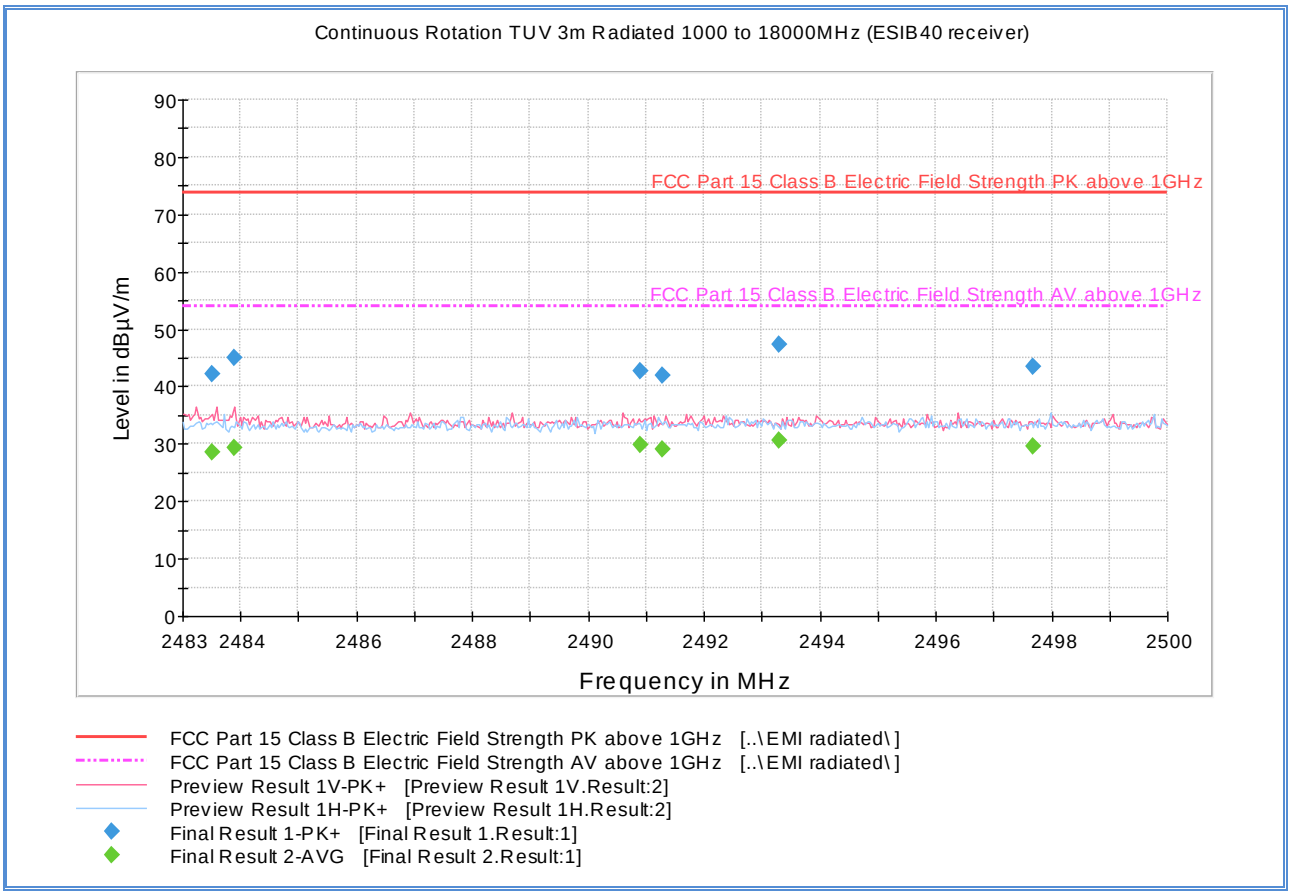
Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
2319.721643	42.0	1000.0	1000.000	184.5	V	303.0	-0.8	31.9	73.9
2320.293186	41.5	1000.0	1000.000	302.2	H	16.0	-0.8	32.4	73.9
2347.004208	42.2	1000.0	1000.000	406.7	V	98.0	-0.7	31.7	73.9
2364.152906	43.9	1000.0	1000.000	152.2	V	38.0	-0.8	30.0	73.9
2378.981764	43.7	1000.0	1000.000	124.7	H	-15.0	-0.9	30.2	73.9
2384.181764	42.9	1000.0	1000.000	292.2	V	-7.0	-1.0	31.0	73.9
2390.000000	47.1	1000.0	1000.000	152.2	V	22.0	-1.0	26.8	73.9

Average Data

Frequency (MHz)	Average (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
2319.721643	28.9	1000.0	1000.000	184.5	V	303.0	-0.8	25.0	53.9
2320.293186	28.8	1000.0	1000.000	302.2	H	16.0	-0.8	25.1	53.9
2347.004208	29.0	1000.0	1000.000	406.7	V	98.0	-0.7	24.9	53.9
2364.152906	30.6	1000.0	1000.000	152.2	V	38.0	-0.8	23.3	53.9
2378.981764	30.3	1000.0	1000.000	124.7	H	-15.0	-0.9	23.6	53.9
2384.181764	29.9	1000.0	1000.000	292.2	V	-7.0	-1.0	24.0	53.9
2390.000000	31.5	1000.0	1000.000	152.2	V	22.0	-1.0	22.4	53.9

Test Notes:
EUT SN: 837TTH0042
EUT Orientation: Flat

2.2.8.6 Test Results Upper Immediate Restricted Band (WLAN 802.11g High Channel)



Peak Data

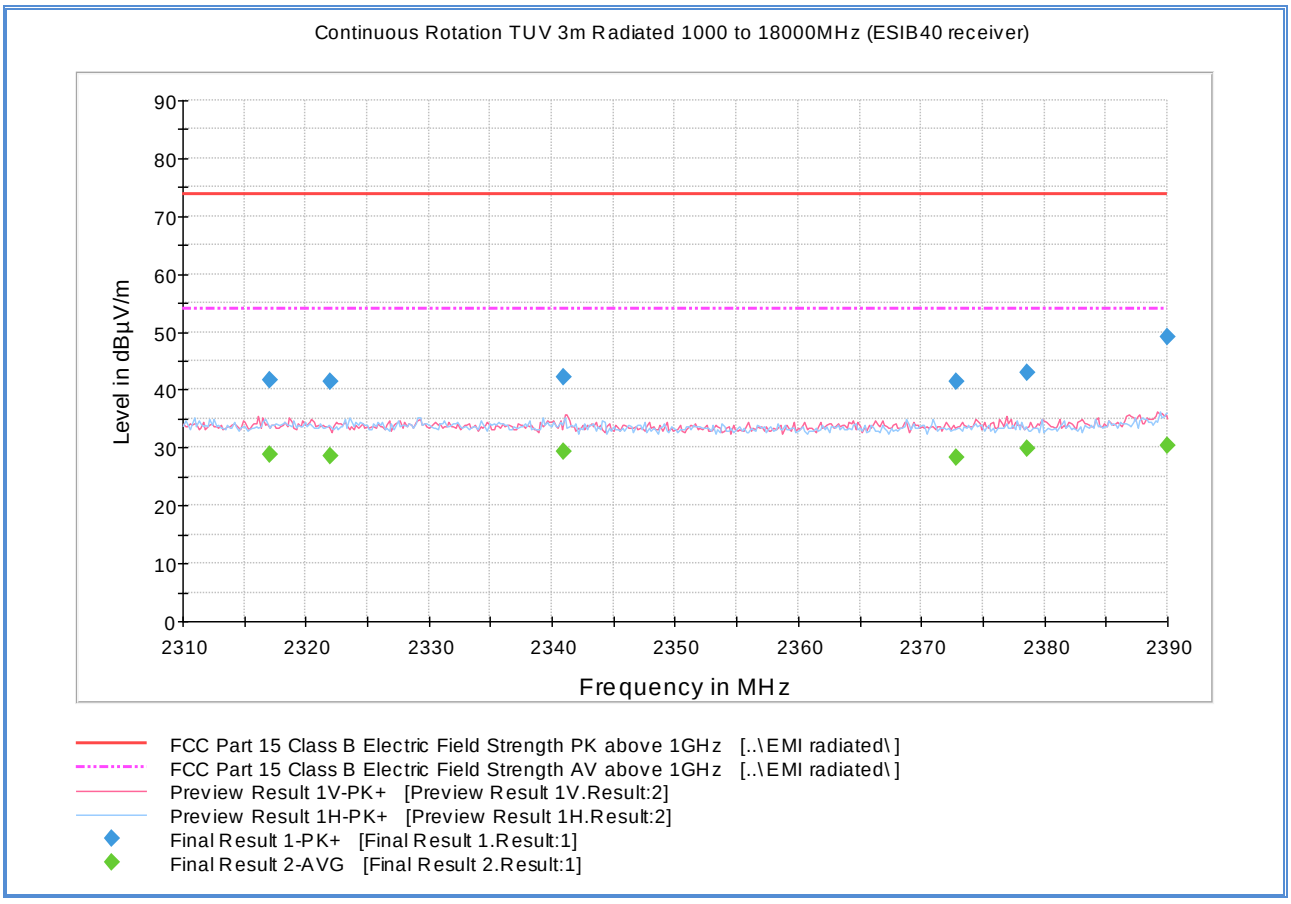
Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
2483.500000	42.3	1000.0	1000.000	211.4	V	0.0	-0.2	31.6	73.9
2483.885772	45.1	1000.0	1000.000	271.3	V	22.0	-0.2	28.8	73.9
2490.900000	42.7	1000.0	1000.000	271.3	V	297.0	-0.3	31.2	73.9
2491.288778	42.0	1000.0	1000.000	166.6	V	3.0	-0.3	31.9	73.9
2493.288778	47.3	1000.0	1000.000	202.5	V	357.0	-0.3	26.6	73.9
2497.689980	43.4	1000.0	1000.000	201.5	H	27.0	-0.3	30.5	73.9

Average Data

Frequency (MHz)	Average (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
2483.500000	28.4	1000.0	1000.000	211.4	V	0.0	-0.2	25.5	53.9
2483.885772	29.4	1000.0	1000.000	271.3	V	22.0	-0.2	24.5	53.9
2490.900000	29.8	1000.0	1000.000	271.3	V	297.0	-0.3	24.1	53.9
2491.288778	29.0	1000.0	1000.000	166.6	V	3.0	-0.3	24.9	53.9
2493.288778	30.6	1000.0	1000.000	202.5	V	357.0	-0.3	23.3	53.9
2497.689980	29.6	1000.0	1000.000	201.5	H	27.0	-0.3	24.3	53.9

Test Notes:
EUT SN: 837TTH0042
EUT Orientation: Flat

2.2.8.7 Test Results Lower Immediate Restricted Band (WLAN 802.11n Low Channel)



Peak Data

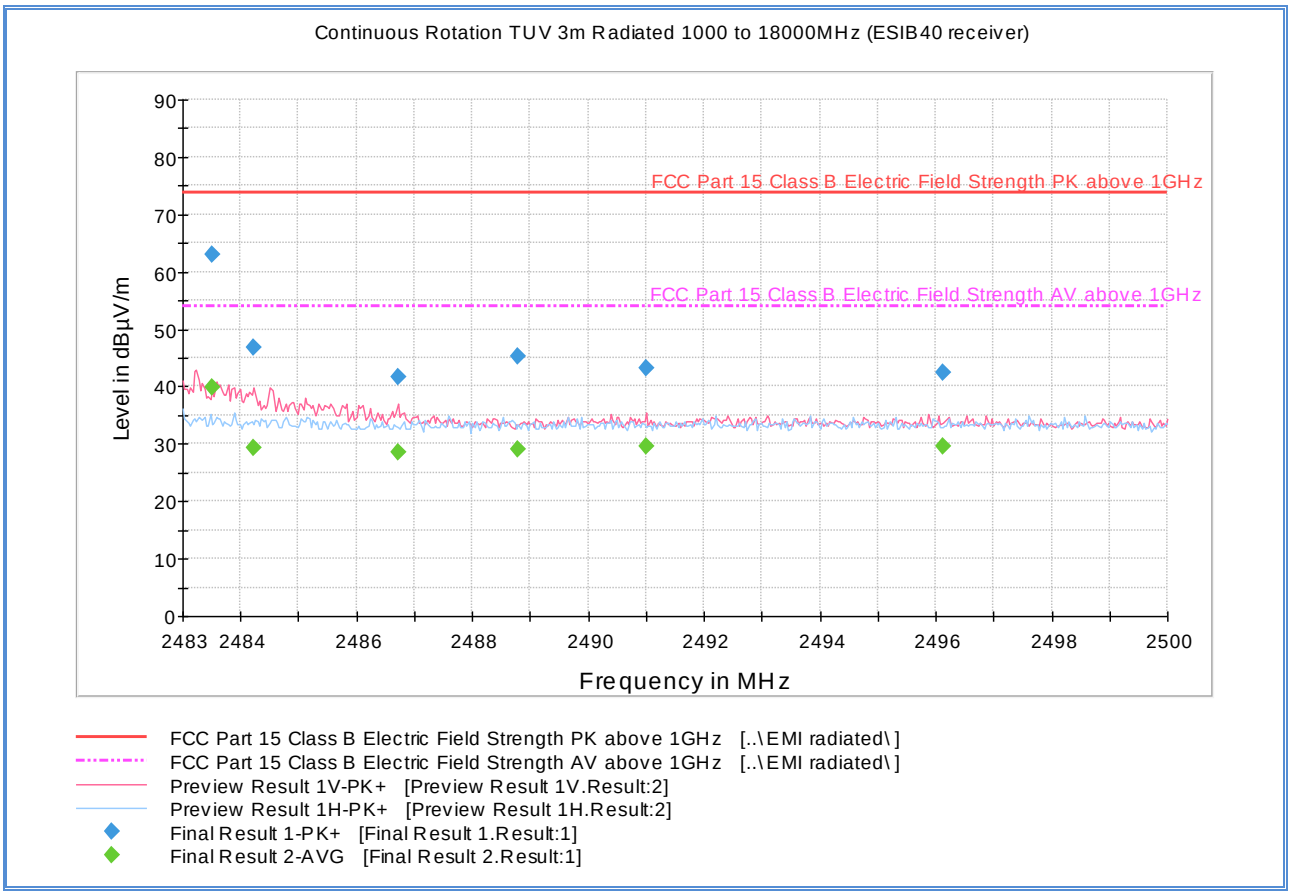
Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
2317.032265	41.8	1000.0	1000.000	124.7	V	-12.0	-0.9	32.1	73.9
2322.018237	41.3	1000.0	1000.000	280.2	H	171.0	-0.7	32.6	73.9
2340.902405	42.1	1000.0	1000.000	203.5	V	2.0	-0.6	31.8	73.9
2372.897595	41.5	1000.0	1000.000	351.6	H	238.0	-0.9	32.4	73.9
2378.613828	42.9	1000.0	1000.000	352.1	V	86.0	-0.9	31.0	73.9
2390.000000	49.2	1000.0	1000.000	200.5	H	179.0	-1.0	24.7	73.9

Average Data

Frequency (MHz)	Average (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
2317.032265	28.7	1000.0	1000.000	124.7	V	-12.0	-0.9	25.2	53.9
2322.018237	28.5	1000.0	1000.000	280.2	H	171.0	-0.7	25.4	53.9
2340.902405	29.3	1000.0	1000.000	203.5	V	2.0	-0.6	24.6	53.9
2372.897595	28.4	1000.0	1000.000	351.6	H	238.0	-0.9	25.5	53.9
2378.613828	29.8	1000.0	1000.000	352.1	V	86.0	-0.9	24.1	53.9
2390.000000	30.4	1000.0	1000.000	200.5	H	179.0	-1.0	23.5	53.9

Test Notes:
EUT SN: 837TTH0026
EUT Orientation: Flat

2.2.8.8 Test Results Upper Immediate Restricted Band (WLAN 802.11n High Channel)



Peak Data

Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
2483.506012	63.0	1000.0	1000.000	184.5	V	13.0	-0.2	10.9	73.9
2484.226453	46.9	1000.0	1000.000	211.4	V	-2.0	-0.2	27.0	73.9
2486.733667	41.6	1000.0	1000.000	166.6	H	159.0	-0.2	32.3	73.9
2488.777756	45.3	1000.0	1000.000	271.3	V	8.0	-0.3	28.6	73.9
2491.006012	43.2	1000.0	1000.000	200.3	V	29.0	-0.3	30.7	73.9
2496.115230	42.5	1000.0	1000.000	410.7	H	193.0	-0.3	31.4	73.9

Average Data

Frequency (MHz)	Average (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
2483.506012	39.8	1000.0	1000.000	184.5	V	13.0	-0.2	14.1	53.9
2484.226453	29.4	1000.0	1000.000	211.4	V	-2.0	-0.2	24.5	53.9
2486.733667	28.5	1000.0	1000.000	166.6	H	159.0	-0.2	25.4	53.9
2488.777756	29.1	1000.0	1000.000	271.3	V	8.0	-0.3	24.8	53.9
2491.006012	29.7	1000.0	1000.000	200.3	V	29.0	-0.3	24.2	53.9
2496.115230	29.6	1000.0	1000.000	410.7	H	193.0	-0.3	24.3	53.9

Test Notes:
EUT SN: 837TTH0042
EUT Orientation: Flat

SECTION 3

TEST EQUIPMENT USED

3.1 TEST EQUIPMENT USED

List of absolute measuring and other principal items of test equipment.

ID Number (SDGE/SDRB)	Test Equipment	Type	Serial Number	Manufacturer	Cal Date	Cal Due Date
Radiated Test Setup						
1002	Bilog Antenna	3142C	00058717	ETS-Lindgren	11/06/15	11/06/17
9001	Horn Antenna (18-26GHz)	H042S	101	Custom Microwave	07/23/16	07/23/17
7575	Double-ridged waveguide horn antenna	3117	00155511	EMCO	06/01/17	06/01/18
8893	Pre-amplifier (18-40 GHz)	SLKKa-30-6	15G27	Spacek Labs	09/04/16	09/04/17
7640	Loop Antenna	AL-130R	121086	Com-Power	11/21/16	11/21/17
1016	Pre-amplifier	PAM-0202	187	PAM	02/09/17	02/09/18
1040	EMI Test Receiver	ESIB40	100292	Rhode & Schwarz	10/07/16	10/07/17
6815	2.4GHz Band Notch Filter	BRM50702	008	Micro-Tronics	Verified by 1003 and 7582	
8628	Pre-amplifier	QLJ 01182835-JO	8986002	QuinStar Technologies Inc.	02/09/17	02/09/18
1153	High-frequency cable	SucoFlex 100 SX	N/A	Suhner	Verified by 1003 and 7582	
8543	High-frequency cable	Micropore 19057793	N/A	United Microwave Products	Verified by 1003 and 7582	
Miscellaneous						
7554	Barometer/Temperature/Humidity Transmitter	iBTHX-W	0400706	Omega	01/17/17	01/17/18
	Test Software	EMC32	V8.53	Rhode & Schwarz	N/A	

3.2 MEASUREMENT UNCERTAINTY

For a 95% confidence level, the measurement uncertainties for defined systems are:

3.2.1 Radiated Measurements (Below 30MHz)

	Contribution	Probability Distribution Type	Probability Distribution x_i	Standard Uncertainty $u(x_i)$	$[u(x_i)]^2$
1	Receiver/Spectrum Analyzer	Rectangular	0.45	0.26	0.07
2	Cables	Rectangular	0.50	0.29	0.08
3	Loop Antenna	Rectangular	0.75	0.44	0.19
4	Site	Triangular	3.52	1.44	2.07
5	EUT Setup	Rectangular	1.00	0.58	0.33
				Combined Uncertainty (u_c):	1.66
				Coverage Factor (k):	2
				Expanded Uncertainty:	3.31

3.2.2 Radiated Measurements (Below 1GHz)

	Contribution	Probability Distribution Type	Probability Distribution x_i	Standard Uncertainty $u(x_i)$	$[u(x_i)]^2$
1	Receiver/Spectrum Analyser	Rectangular	0.45	0.26	0.07
2	Cables	Rectangular	0.50	0.29	0.08
3	Preamp	Rectangular	0.50	0.29	0.08
4	Antenna	Rectangular	0.75	0.43	0.19
5	Site	Triangular	3.52	1.44	2.07
6	EUT Setup	Rectangular	1.00	0.58	0.33
				Combined Uncertainty (u_c):	1.68
				Coverage Factor (k):	2
				Expanded Uncertainty:	3.36

3.2.3 Radiated Emission Measurements (Above 1GHz)

	Contribution	Probability Distribution Type	Probability Distribution x_i	Standard Uncertainty $u(x_i)$	$[u(x_i)]^2$
1	Receiver/Spectrum Analyzer	Rectangular	0.57	0.33	0.11
2	Cables	Rectangular	0.70	0.40	0.16
3	Preamp	Rectangular	0.50	0.29	0.08
4	Antenna	Rectangular	0.37	0.21	0.05
5	Site	Triangular	3.00	1.22	1.50
6	EUT Setup	Rectangular	1.00	0.58	0.33
				Combined Uncertainty (u_c):	1.49
				Coverage Factor (k):	2
				Expanded Uncertainty:	2.99

TÜV SÜD AMERICA INC 10040 Mesa Rim Road San Diego, CA 92121-2912 Phone: 858 678 1400 FAX: 858 546 0364

3.2.4 Radiated Emission Measurements (Above 18GHz)

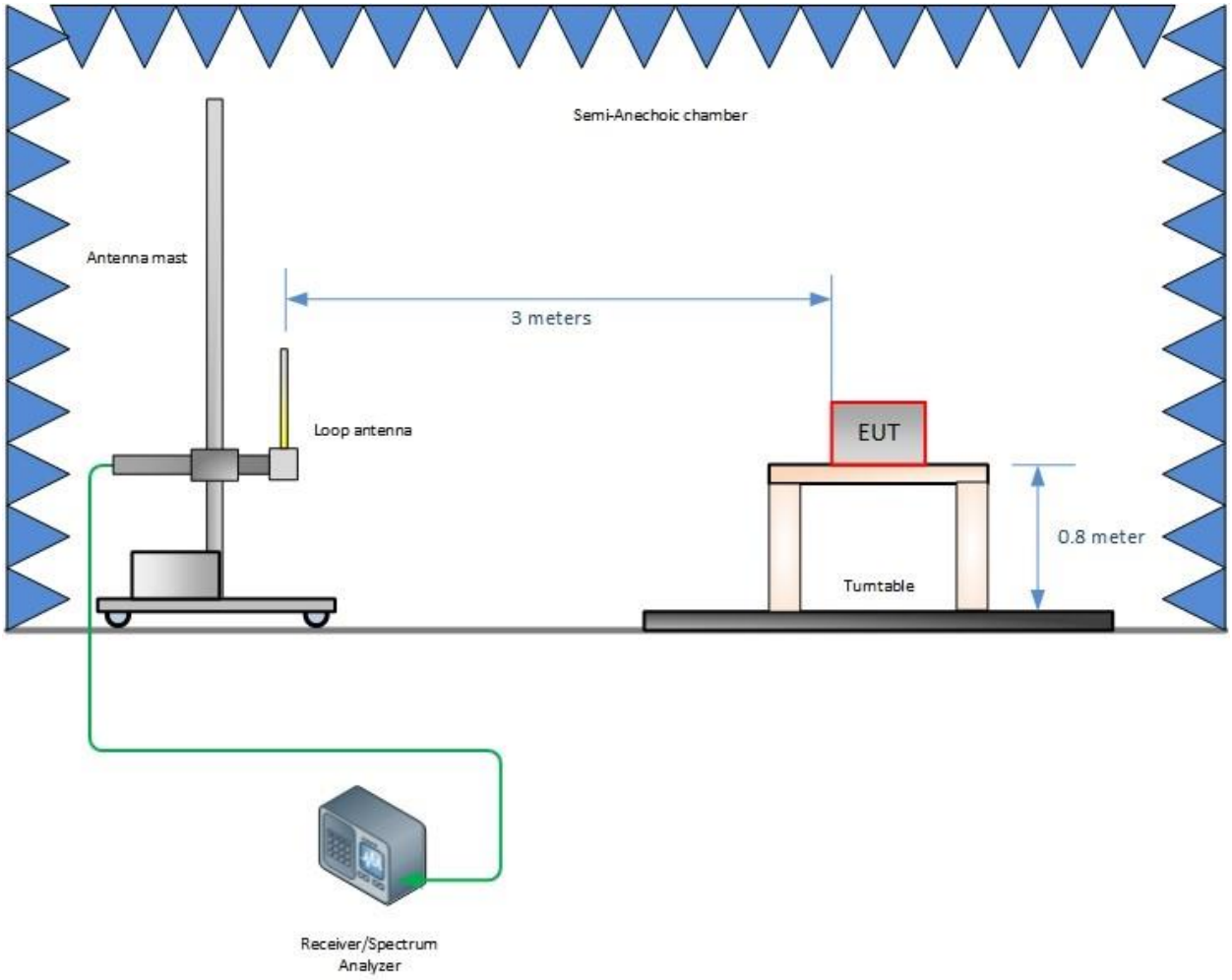
	Contribution	Probability Distribution Type	Probability Distribution x_i	Standard Uncertainty $u(x_i)$	$[u(x_i)]^2$
1	Cables	Rectangular	0.70	0.40	0.16
2	Preamp	Rectangular	0.50	0.29	0.08
3	Spectrum Analyzer/Mixers	Rectangular	3.34	1.93	3.72
4	Antenna	Rectangular	2.70	1.56	2.43
5	EUT Setup	Rectangular	1.50	0.87	0.75
				Combined Uncertainty (u_c):	2.67
				Coverage Factor (k):	2
				Expanded Uncertainty:	5.35

TÜV SÜD AMERICA INC 10040 Mesa Rim Road San Diego, CA 92121-2912 Phone: 858 678 1400 FAX: 858 546 0364

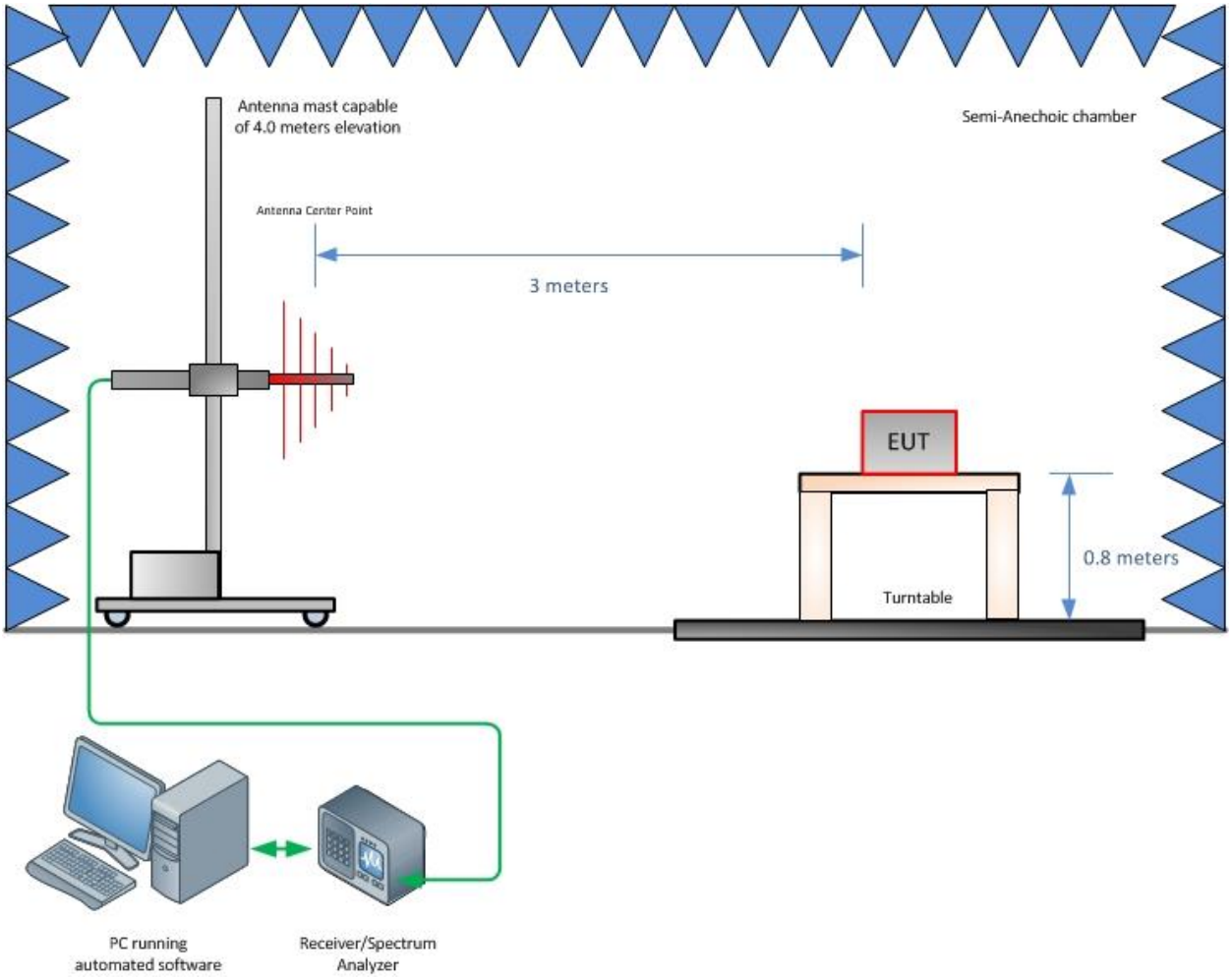
SECTION 4

DIAGRAM OF TEST SETUP

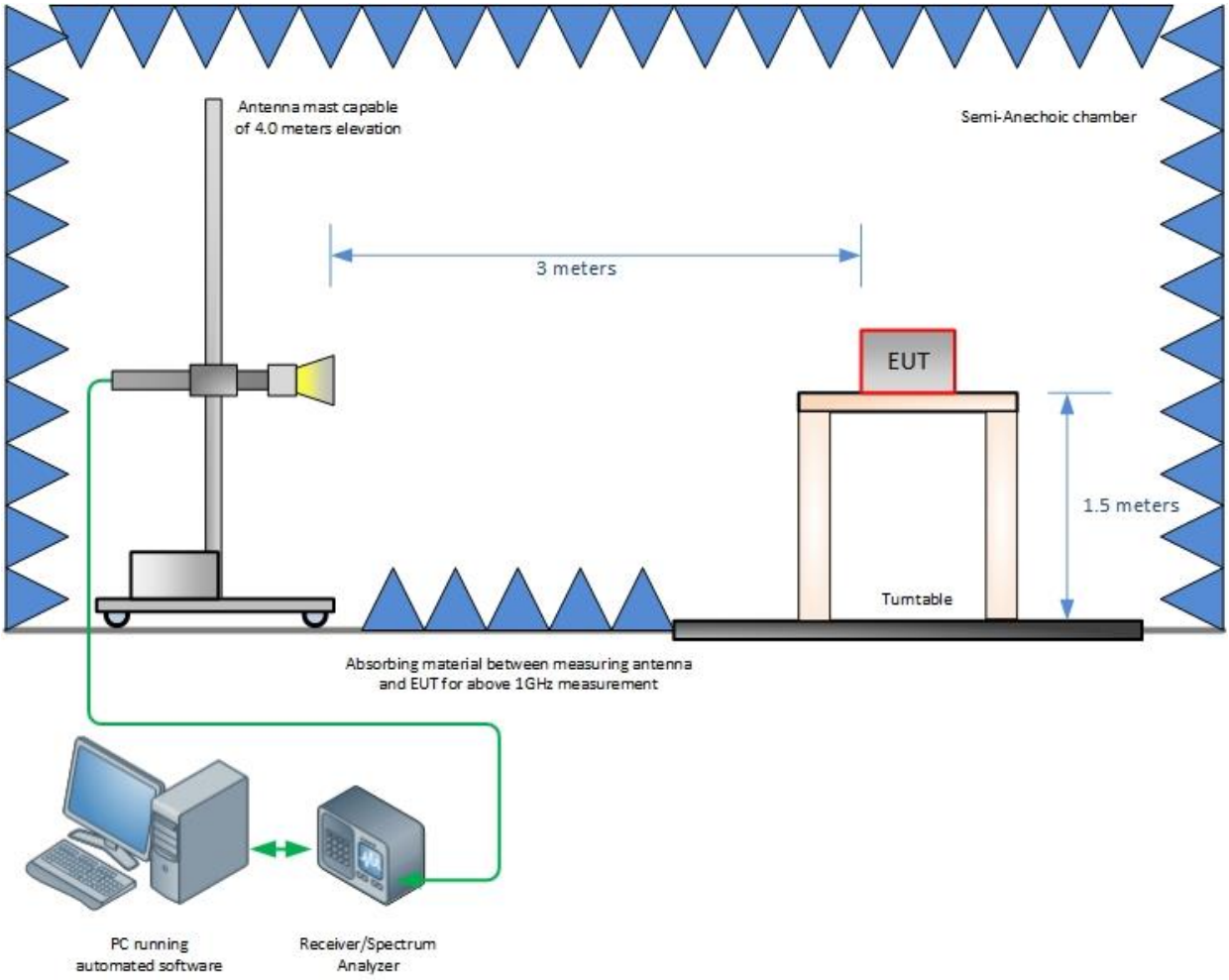
4.1 TEST SETUP DIAGRAM



Radiated Emission Test Setup (Below 30MHz)



Radiated Emission Test Setup (Below 1GHz)



Radiated Emission Test Setup (Above 1GHz)

SECTION 5

ACCREDITATION, DISCLAIMERS AND COPYRIGHT

5.1 ACCREDITATION, DISCLAIMERS AND COPYRIGHT

TÜV SÜD America Inc.'s reports apply only to the specific sample tested under stated test conditions. It is the manufacturer's responsibility to assure the continued compliance of production units of this model. TÜV SÜD America, Inc. shall have no liability for any deductions, inferences or generalizations drawn by the client or others from TÜV SÜD America, Inc.'s issued reports.

This report is the confidential property of the client. As a mutual protection to our clients, the public and TÜV SÜD America, Inc., extracts from the test report shall not be reproduced, except in full without TÜV SÜD America, Inc.'s written approval.

This report must not be used to claim product certification, approval, or endorsement by A2LA, NIST, or any agency of the federal government.

TÜV SÜD America, Inc. and its professional staff hold government
and professional organization certifications for
AAMI, ACIL, AEA, ANSI, IEEE, A2LA, NIST and VCCI.

A2LA Cert. No. 2955.13

TÜV SÜD AMERICA INC 10040 Mesa Rim Road San Diego, CA 92121-2912 Phone: 858 678 1400 FAX: 858 546 0364