Radio Testing of the

Nextivity Inc.
Industrial Signal Booster
Model: Quatra RED
F42-67ENU (NU)
F41-8XCU (CU)
In accordance with

FCC CFR 47 Part 90
RSS-140 issue 1 (April 2018)
RSS-119 Issue 12 (May 2015)
RSS-131 issue 3 (May 2017)

Product Service

Choose certainty.
Add value.

Nextivity Inc.
16550 West Bernardo Drive, Bldg 5, Suite 550,
San Diego, CA 92127, USA
Date: June 2020
Document Number: 72153689B Issue 01 | Version Number: 01

RESPONSIBLE FOR	NAME	DATE	SIGNATURE
Authorized Signatory	Ferdinand S. Custodio	June 11, 2020	

Signatures in this approval box have checked this document in line with the requirements of TÜV SÜD Product Service document control rules.

EXECUTIVE SUMMARY
Test reports and supporting documents of this product was reviewed and the EUT in general was confirmed to be in compliance with FCC CFR 47 Part 90, RSS-140 issue 1 (April 2018), RSS-119 Issue 12 (May 2015) and RSS-131 issue 3 (May 2017).

A2LA Cert. No. 2955.13

ACCREDITATION
Our A2LA Accreditation does not cover opinions and interpretations and any expressed are outside the scope of our A2LA Accreditation.

TÜV SÜD America, Inc.
10040 Mesa Rim Road
San Diego, CA 92121-2912

TÜV SÜD America, Inc.
Rancho Bernardo Facility
16936 Via Del Campo
San Diego, CA 92127

Phone: 858 678 1400
www.tuv-sud-america.com

TÜV SÜD America Inc., 10040 Mesa Rim Road, San Diego, CA 92121
Tel: (858) 678-1400. Website: www.TUVamerica.com

REPORT ON	Radio Testing of the Nextivity Inc. Quatra RED Industrial Signal Booster
TEST REPORT NUMBER	72153689B
REPORT DATE	June 2020
PREPARED FOR	Nextivity Inc. 16550 West Bernardo Drive, Bldg 5, Suite 550, San Diego, CA 92127, USA
CONTACT PERSON	CK Li Sr. Principal Engineer, Regulatory (858) 485-9422 CLi@NextivityInc.com
PREPARED BY	Xiaoying Zhang **Name** Authorized Signatory Title: EMC/Wireless Test Engineer

TÜV SÜD America Inc., 10040 Mesa Rim Road, San Diego, CA 92121
Tel: (858) 678-1400. Website: www.TUVamerica.com

Revision History

72153689B
Nextivity Inc.
Quatra RED Industrial Signal Booster

DATE	OLD REVISION	NEW REVISION	REASON	PAGES AFFECTED	APPROVED BY
06/11/2020	—	Initial Release			Ferdinand S. Custodio

CONTENTS

Section **Page No**

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
Nextivity Inc.
Quatra RED Industrial Signal Booster

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 Nextivity Inc. Quatra RED to the requirements of FCC CFR 47 Part 90, RSS-140 issue 1 (April 2018), RSS-119 Issue 12 (May 2015) and RSS-131 issue 3 (May 2017).

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	Nextivity Inc.
Model Name	Quatra RED
Model Number(s)	F42-67ENU (NU) F41-8XCU (CU)
EUT	Industrial Signal Booster
FCC ID	NU: YETF42-67ENU CU: YETF41-8XCU
IC ID	NU: 9298A-F4267ENU CU: 9298A-F418XCU
Serial Number(s)	444002000024 (NU) and 247002000034 (CU)
Number of Samples Tested	2
Date sample(s) received	January 31, 2020
Test Specification/Issue/Date	• FCC CFR 47 Part 90 (October 1, 2019) • RSS-140 - Equipment Operating in the Public Safety Broadband Frequency Bands 758-768 MHz and 788-798 MHz (issue 1, April 2018) • RSS-119 – Land Mobile and Fixed Equipment Operating in the Frequency Range 27.41-960 MHz (issue 12, May 2015) • RSS-131 – Zone Enhancers (issue 3, Updated May 2017) • SRSP-540 - Technical Requirements for Public Safety Broadband Systems in the Bands 758-768 MHz and 788-798 MHz (issue 1, April 2018) • SRSP-511 - Technical Requirements for Land Mobile Radio Services Operating in the Bands 768-776 MHz and 798-806 MHz (issue 2, December 2017) • RSS-Gen - General Requirements for Compliance of Radio Apparatus (Issue 5, November 2019 Amendment 1) • ANSI C63.26-2015: American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services

Start of Test	February 03, 2020
Finish of Test	May 11, 2020
Name of Engineer(s)	Xiaoying Zhang
Related Document(s)	• KDB971168 D01 Power Meas License Digital Systems v03r01 (Measurement Guidance for Certification of Licensed Digital Transmitters) • KDB412172 D01 Determining ERP and EIRP v01r01 (Guidelines for Determining the Effective Radiated Power (ERP) and Equivalent Isotropically Radiated Power (EIRP) of a RF Transmitting System) • Supporting documents for EUT certification are separate exhibits.

1.2 BRIEF SUMMARY OF RESULTS

A brief summary of the tests carried out in accordance with FCC CFR 47 Part 90 is shown below:

Section	Part 2	Part 90	RSS-140	RSS-119	KDB 935210 D05/ RSS-131	Test Description	Result
2.1	2.1046	-	-	-	-	Transmitter Conducted Output Power	Compliant
2.2	2.1046	90.219(e)(1) 90.542(a)(3) 90.541(a)(1) 90.635(a)	4.3	5.4	-	Effective Radiated Power	Compliant
2.3	2.1049	90.219(e)(4)(ii)	RSS-Gen 6.7	5.5	-	Occupied Bandwidth	Compliant
2.4	-	-	4.3	-	-	Peak-Average Ratio	Compliant
2.5	-	90.543(e)(1)(3)	4.4	-	-	Band Edge	Compliant
2.7	2.1051	90.219(e)(3) 90.543(e)(1)(3)(f) 90.543(c)	4.4	5.8.9.2	4.7.3	Conducted Spurious Emissions	Compliant
2.7	2.1053	90.219(e)(3) 90.543(e)(3) 90.543(c)	4.4	5.8.9.2	4.9	Field Strength of Spurious Radiation	Compliant
2.8	2.1055	90.213 90.539(b)	4.2	5.9	4.8/ 5.2.4	Frequency Stability	Compliant
-	-	-	RSS-Gen 7.1		-	Receiver Spurious Emissions	N/A
2.9	-	-	-	-	4.2	ACG Threshold Level	Compliant
2.10	-	-	-	-	4.3/ 5.2.1	Out of Band Rejection	Compliant
2.11	-	90.219(e)(4)(ii)	-	-	4.4/ 5.2.2	Input-versus-output signal comparison	Compliant
2.12	-	90.219 (e)(4)(iii) 90.210 90.543(a)	-	5.8.9	4.4	Emission Mask and Adjacent Channel Power	Compliant
2.13	-	90.219(e)(1)	-	-	4.5/ 5.2.3	Input / Output Power and Amplifier / Booster Gain	Compliant
2.14	-	90.219(e)(2)	-	-	4.6	Noise Figure	Compliant
2.15	2.1051	90.219(e)(3) 90.543(c)	4.4	5.8.9.2	4.7	Out-of-band/out-of-block (Intermodulation) and Spurious Emissions	Compliant

N/A Not required as per RSS-GEN 5.3. EUT is not a Stand-alone receiver.

1.3 PRODUCT INFORMATION

1.3.1 Technical Description

The Equipment Under Test (EUT) was a Nextivity Inc. Quatra RED Industrial Signal Booster. The EUT is designed to enhance in-building LTE/Public Safety coverage for public safety use. Quatra RED contains a high gain, high power band-selective Bi-Directional Amplifier that has been specifically designed for UL2524 In-building 2-Way Emergency Radio Communication Enhancement Systems Standard.

The System consists of RF amplifier (NU/CU), monitor and Battery Backup Unit (MBU), EPO Switch and Remote Annunciator.

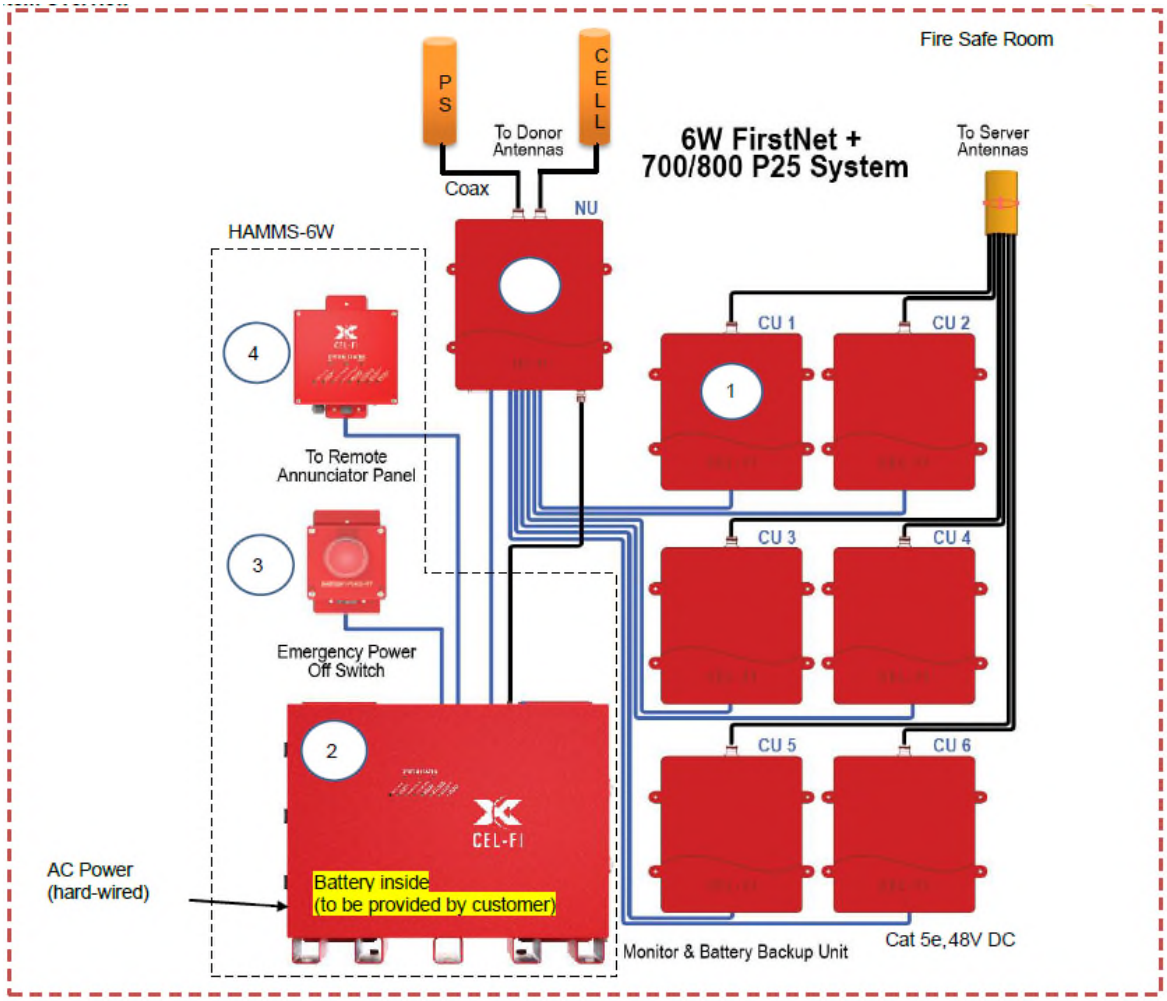


Figure 1: System Overview

1.3.2 EUT General Description

EUT Description	Industrial Signal Booster
Trade Name	Cel-Fi™
Model Name	Quatra RED
Model Number(s)	F42-67ENU (NU) F41-8XCU (CU)
Rated Voltage	NU: 48V DC from monitor and Battery Backup Unit (MBU) CU: 48V DC, powered from NU via Ethernet cable
Mode Verified	LTE Band 14 700 MHz Narrowband Public Safety 800 MHz NPSPAC Public Safety
Frequency Bands	LTE Band 14: Uplink: 788 - 798 MHz Downlink: 758 - 768 MHz 700 MHz Narrowband Public Safety: Uplink: 799 - 805 MHz Downlink: 769 - 775 MHz 800 MHz NPSPAC Public Safety: Uplink: 806 - 816 MHz Downlink: 851 - 861 MHz

Product Specifications

Signal Bandwidth (kHz)	LTE Band 14		700 MHz Narrowband Public Safety & 800 MHz NPSPAC Public Safety	
	DL (dBm)	UL (dBm)	DL (dBm)	UL (dBm)
10000	Max. 24	Max. 21	-	-
12.5	-	-	Max. 26	Max. 26

Power Tolerance (dBm)	± 2
Capability	LTE (Band 2, 4, 12, 14, 700MHz Narrowband Public Safety and 800MHz/NPSPAC Public Safety)
Primary Unit (EUT)	☐ Production ☒ Pre-Production ☐ Engineering
Environment	Fixed, Indoor
Manufacturer Declared Temperature Range	-20°C to 50°C
Antenna Type	External Antenna
Antenna Model	Refer to the Antenna information supplied by the manufacture
Antenna gain	Refer to the Antenna information supplied by the manufacture

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

Maximum Antenna System (Antenna + Cable) Gain

Radio	Uplink (Donor)	Downlink (Server)
LTE Band 14	10.94 dBi	3.3 dBi
700 MHz Narrowband Public Safety	10.93 dBi	3.3 dBi
800 MHz NPSPAC Public Safety	10.93 dBi	3.3 dBi

1.3.3 Transmit Frequency Table

Mode	Channel Bandwidth	Tx Frequency (MHz)	Emission Designator	ERP	
				Max. Power Avg (dBm)	Max. Power Avg (W)
LTE Band 14 Downlink	10 MHz	758 - 768	8M86F9W	22.38	0.17
LTE Band 14 Uplink	10 MHz	788 - 798	8M85F9W	30.97	1.25
700 MHz Narrowband Public Safety Downlink	12.5 kHz	768 - 775	9K76F9W	31.17	1.31
700 MHz Narrowband Public Safety Uplink	12.5 kHz	798 - 805	8K09F9W	36.29	4.26
800 MHz NPSPAC Public Safety Downlink	12.5 kHz	851 - 861	9K69F9W	34.12	2.58
800 MHz NPSPAC Public Safety Uplink	12.5 kHz	806 - 816	9K68F9W	36.64	4.61

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
A	Downlink. Input signal is applied to the antenna port of Donor (NU). Output is monitored from the antenna port of Server (CU).
B	Uplink. Input signal is applied to the antenna port of Server (CU). Output is monitored from the antenna port of Donor (NU).
C	Radiated test setup. Downlink. Input signal is applied to the antenna port of Donor (NU). The antenna port of Server (CU) is terminated with a 50Ω load or Signal Generator.
D	Radiated test setup. Uplink. Input signal is applied to the antenna port of Server (CU). The antenna port of Donor (NU) is terminated with a 50Ω load or Signal Generator.

1.4.2 EUT Exercise Software

Manufacturer provided Nextivity Chart Interface v1.60 running from a support laptop where both NU and CU are connected via USB.

1.4.3 Support Equipment and I/O cables

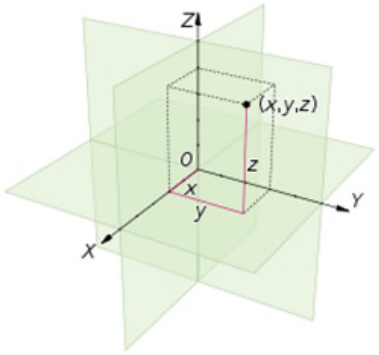
Manufacturer	Equipment/Cable	Description
Dell	Support Laptop	M/N: Latitude D630 PP18L, S/N 5SBJBG1
Dell	Support Laptop AC Adapter	M/N: PA-1900-02D S/N 5SBJBG1
Nextivity	Support USB cable x 2	Custom 1.0 meter shielded USB Type A to Micro B cable
Nextivity	Support USB cable x 1	Custom 1.0 meter shielded USB Type A to Micro A cable
Nextivity	Support Ethernet cable x 1	Custom 2.0 meter unshielded CAT 5e Ethernent Cables
Nextivity	Cel-Fi QUATRA RED Battery Backup and Monitor Unit (MBBU) - small	M/N: F42-10S-100
Agilent	ESG Vector Signal Generator	M/N: E4438C, S/N MY49071335
Agilent	ESG Vector Signal Generator	M/N: E4438C, S/N MY47271206
Ramsey	Support Shielded Test Enclosure	With custom USB cable

1.4.4 Worst Case Configuration

Worst-case configuration used in this test report per Transmitter Conducted Output Power (Section 2.1 of this test report). This is for single channel verification. Otherwise all three channels (Low, Middle and High) are verified:

Mode	Bandwidth	Channel No.	Frequency
LTE Band 14 Downlink	10 MHz	Middle Channel 5330	763 MHz
LTE Band 14 Uplink	10 MHz	Middle Channel 23330	793 MHz
700 MHz Narrowband Public Safety Downlink	12.5 kHz	Middle Channel C4FM	771.875 MHz
700 MHz Narrowband Public Safety Uplink	12.5 kHz	High Channel H-CPM	804.99375 MHz
800 MHz NPSPAC Public Safety Downlink	12.5 kHz	Middle Channel H-DQPSK	855 884375 MHz
800 MHz NPSPAC Public Safety Downlink	12.5 kHz	Middle Channel H-DQPSK	810.884375 MHz

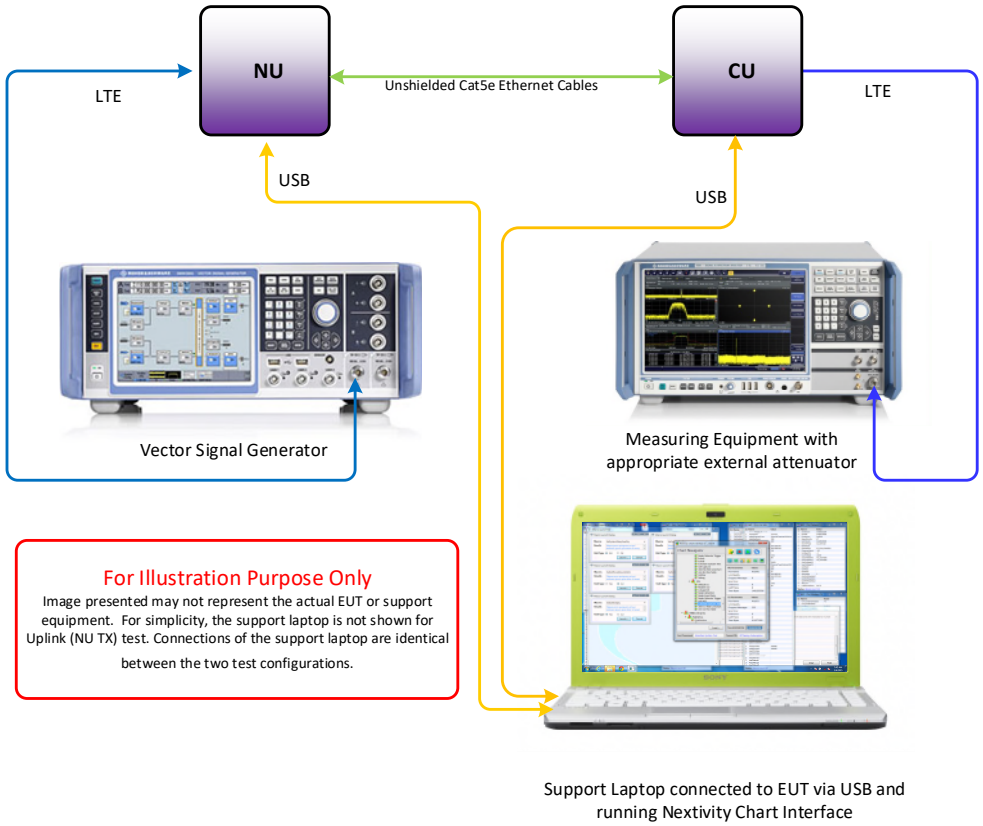
Final installation position is unknown at the time of verification. For radiated measurements X and Z orientations were verified since the EUT won't work on Y orientation. No major variation in emissions observed between the three (3) orientations. Verifications performed using "X" configuration.



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

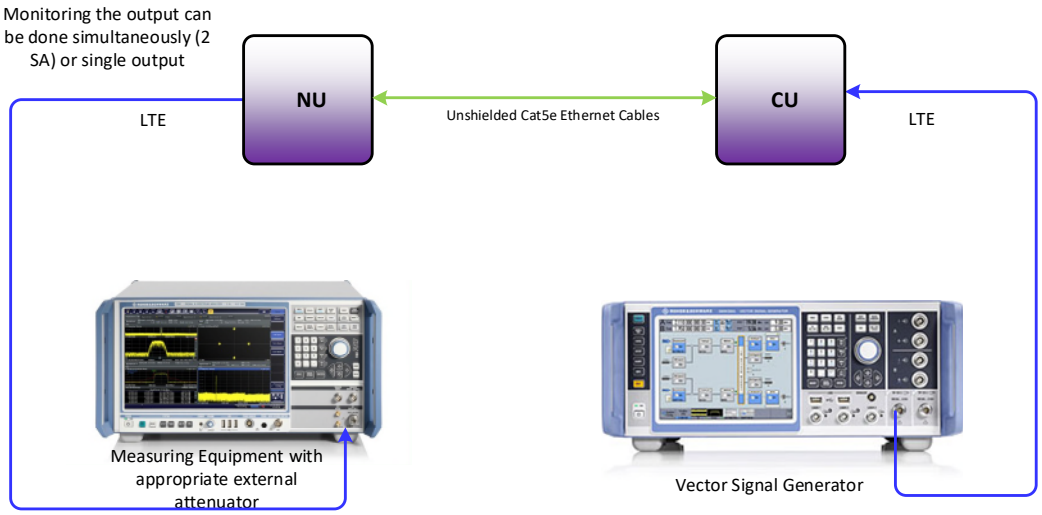
1.4.5 Simplified Test Configuration Diagram

Downlink (CU Tx) Conducted Test



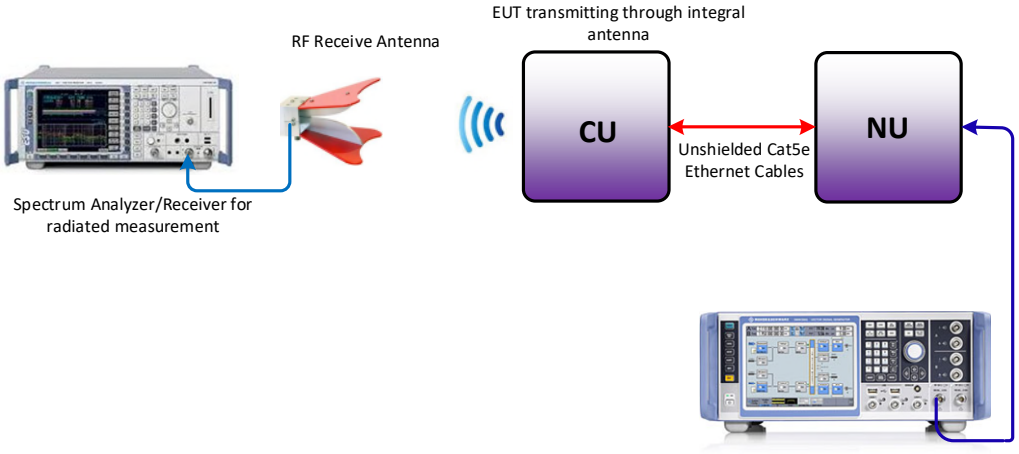
Support Laptop connected to EUT via USB and running Nextivity Chart Interface

Uplink (NU Tx) Conducted Test

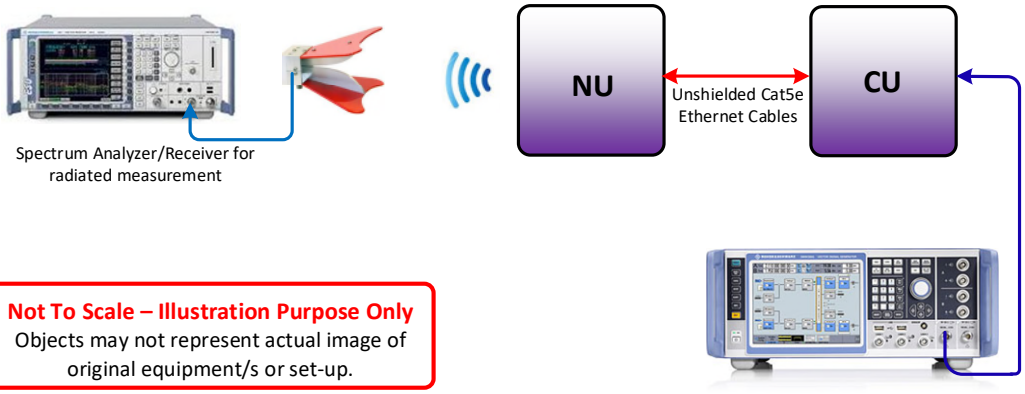


TÜV SÜD AMERICA INC 10040 Mesa Rim Road San Diego, CA 92121-2912 Phone: 858 678 1400 FAX: 858 546 0364

Radiated Testing (Downlink)



Radiated Testing (Uplink)



Not To Scale – Illustration Purpose Only
Objects may not represent actual image of original equipment/s or set-up.

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: 444002000024 (NU) and 247002000034 (CU)		
None	-	-

The table above details modifications made to the EUT during the test program. 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 C63.26 2015, American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services

For conducted (if applicable) 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 C63.26-2015. 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) 678 1400 Fax: (858) 546 0364.

1.9 TEST FACILITY REGISTRATION

1.9.1 FCC – Designation No.: US1146

TÜV SÜD 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 Designation is US1146.

1.9.2 Innovation, Science and Economic Development Canada (IC) Registration No.: 3067A-1 & 22806-1

The 10m Semi-anechoic chamber of TUV SUD America Inc. (San Diego Rancho Bernardo) has been registered by Certification and Engineering Bureau of Innovation, Science and Economic Development Canada for radio equipment testing with Registration No. 3067A-1.

The 3m Semi-anechoic chamber of TUV SUD America Inc. (San Diego Mira Mesa) has been registered by Certification and Engineering Bureau of Innovation, Science and Economic Development Canada for radio equipment testing with Registration No. 22806-1.

1.9.3 BSMI – Laboratory Code: SL2-IN-E-028R (US0102)

TUV Product Service Inc. (San Diego) is a recognized EMC testing laboratory by the BSMI under the MRA (Mutual Recognition Arrangement) with the United States. Accreditation includes CNS 13438 up to 6GHz.

1.9.4 NCC (National Communications Commission - US0102)

TUV SUD America Inc. (San Diego) is listed as a Foreign Recognized Telecommunication Equipment Testing Laboratory and is accredited to ISO/IEC 17025 (A2LA Certificate No.2955.13) which under APEC TEL MRA Phase 1 was designated as a Conformity Assessment Body competent to perform testing of equipment subject to the Technical Regulations covered under its scope of accreditation including RTTE01, PLMN01 and PLMN08 for TTE type of testing and LP002 for Low-Power RF Device type of testing.

1.9.5 VCCI – Registration No. A-0280 and A-0281

TUV SUD America Inc. (San Diego) is a VCCI registered measurement facility which includes radiated field strength measurement, radiated field strength measurement above 1GHz, mains port interference measurement and telecommunication port interference measurement.

1.9.6 RRA – Identification No. US0102

TUV SUD America Inc. (San Diego) is National Radio Research Agency (RRA) recognized laboratory under Phase I of the APEC Tel MRA.

1.9.7 OFCA – U.S. Identification No. US0102

TUV SUD America Inc. (San Diego) is recognized by Office of the Communications Authority (OFCA) under Appendix B, Phase I of the APEC Tel MRA.

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 Test of the
Nextivity Inc.
Quatra RED Industrial Signal Booster

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

2.1 TRANSMITTER CONDUCTED OUTPUT POWER

2.1.1 Specification Reference

FCC 47 CFR Part 2, Clause 2.1046

2.1.2 Standard Applicable

The conducted power mesurements were made in accordance to FCC Part 2 Clasue 2.1046:
(a) For transmitters other than single sideband, independent sideband and controlled carrier radiotelephone, power output shall be measured at the RF output terminals when the transmitter is adjusted in accordance with the tune-up procedure to give the values of current and voltage on the circuit elements specified in §2.1033(c)(8). The electrical characteristics of the radio frequency load attached to the output terminals when this test is made shall be stated.
(c) For measurements conducted pursuant to paragraphs (a) and (b) of this section, all calculations and methods used by the applicant for determining carrier power or peak envelope power, as appropriate, on the basis of measured power in the radio frequency load attached to the transmitter output terminals shall be shown. Under the test conditions specified, no components of the emission spectrum shall exceed the limits specified in the applicable rule parts as necessary for meeting occupied bandwidth or emission limitations.

2.1.3 Equipment Under Test and Modification State

Serial No: 444002000024 (NU) and 247002000034 (CU) / Test Configuration A and B

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

Febraury 03 to 05, April 22 to May 11, 2020 / 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	20.9 – 26.3°C
Relative Humidity	23.2 – 48.6%
ATM Pressure	98.6 – 99.7kPa

2.1.7 Additional Observations

- This is a conducted test using power meter.
- The path loss was measured and entered as a level offset.
- Both Peak and Average measurements presented.
- LTE Band 14 only supports 10 MHz bandwidth. 700MHz Narrowband Public Safety and 800 MHz NPSPAC Public Safety supports support 12.5kHz bandwidths.
- Low, Middle and High channels for supporting bandwidths were verified and reported.

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

2.1.8 Test Results

LTE Band 14 Downlink				
Bandwidth (MHz)	**Channel**	**Frequency (MHz)**	**Average Power (dBm)**	**PK Power (dBm)**
10	-	-	-	-
	5330	**763.0**	**23.24**	**34.76**
	-	-	-	-

LTE Band 14 Uplink				
Bandwidth (MHz)	**Channel**	**Frequency (MHz)**	**Average Power (dBm)**	**PK Power (dBm)**
10	-	-	-	-
	23330	**793.0**	**22.18**	**32.82**
	-	-	-	-

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

700MHz Narrowband Public Safety Downlink					
Bandwidth (kHz)	**Modulation**	**Channels**	**Frequency (MHz)**	**Average Power (dBm)**	**Peak Power (dBm)**
12.5	C4FM	Low	769.00625	27.98	31.02
		Middle	**771.875**	**30.02**	30.90
		High	774.99375	26.16	26.91
	CQPSK	Low	769.00625	28.09	31.32
		Middle	771.875	29.93	31.16
		High	774.99375	26.28	30.65
	H-DPSK	Low	769.00625	28.68	32.93
		Middle	771.875	29.93	33.51
		High	774.99375	27.90	32.14

700MHz Narrowband Public Safety Uplink					
Bandwidth (kHz)	**Modulation**	**Channels**	**Frequency (MHz)**	**Average Power (dBm)**	**Peak Power (dBm)**
12.5	C4FM	Low	799.00625	25.40	25.69
		Middle	801.875	26.78	27.16
		High	804.99375	25.75	26.14
	CQPSK	Low	799.00625	25.45	30.71
		Middle	801.875	26.99	33.33
		High	804.99375	25.89	31.84
	H-CPM	Low	799.00625	26.23	26.46
		Middle	801.875	26.49	26.80
		High	**804.99375**	**27.51**	31.44

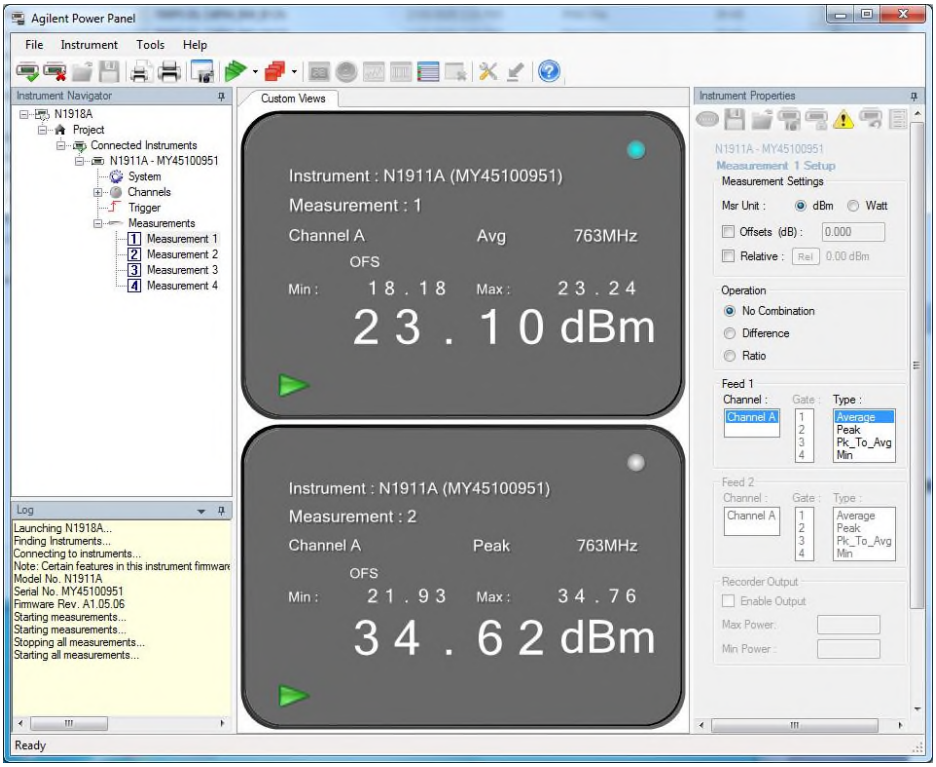
TÜV SÜD AMERICA INC 10040 Mesa Rim Road San Diego, CA 92121-2912 Phone: 858 678 1400 FAX: 858 546 0364

800 MHz NPSPAC Public Safety Downlink					
Bandwidth (kHz)	**Modulation**	**Channels**	**Frequency (MHz)**	**Average Power (dBm)**	**Peak Power (dBm)**
12.5	C4FM	Low	851.025	28.45	28.94
		Middle	855.884375	30.78	31.07
		High	860.99375	29.98	30.22
	CQPSK	Low	851.025	28.92	36.35
		Middle	855.884375	30.62	37.19
		High	860.99375	29.66	35.79
	H-DQPSK	Low	851.025	29.05	32.81
		Middle	**855.884375**	**30.82**	34.72
		High	860.99375	29.81	33.54

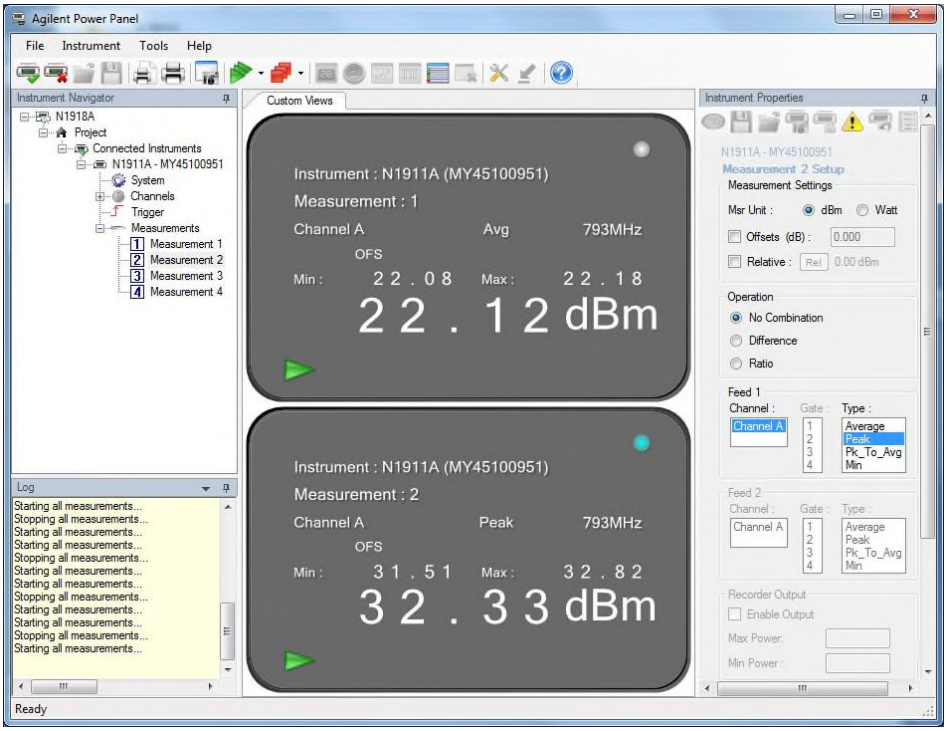
800 MHz NPSPAC Public Safety Uplink					
Bandwidth (kHz)	**Modulation**	**Channels**	**Frequency (MHz)**	**Average Power (dBm)**	**Peak Power (dBm)**
12.5	C4FM	Low	806.025	26.30	26.59
		Middle	810.884375	25.97	26.22
		High	815.99375	24.92	25.31
	CQPSK	Low	806.025	26.58	32.39
		Middle	810.884375	26.12	32.67
		High	815.99375	25.41	31.18
	H-CPM	Low	806.025	26.50	26.72
		Middle	**810.884375**	**27.86**	32.04
		High	815.99375	24.91	25.24

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

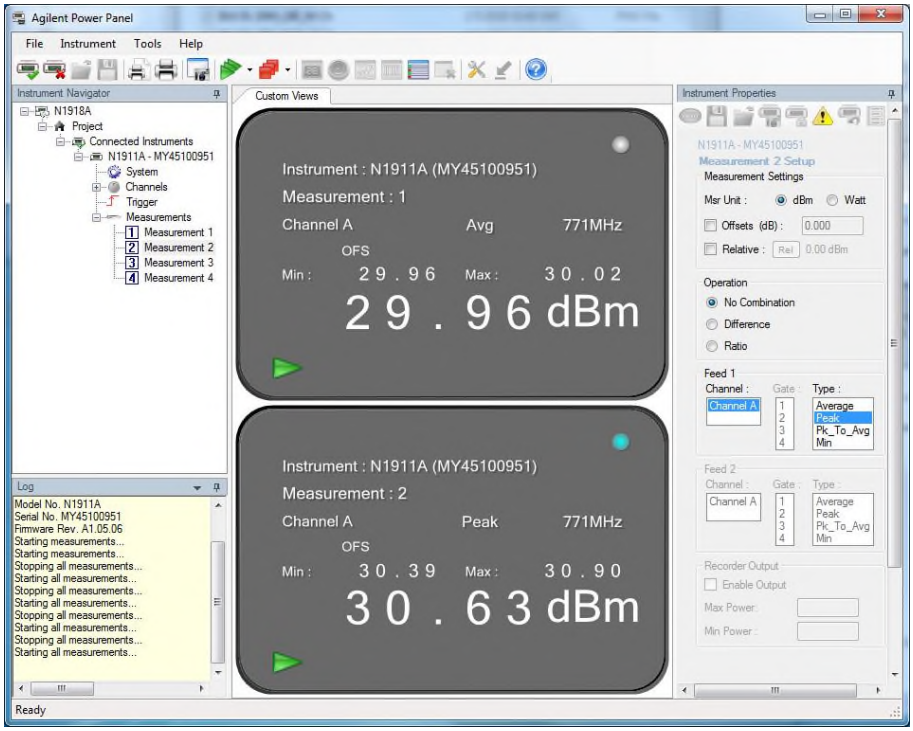
2.1.9 Sample Test Plot



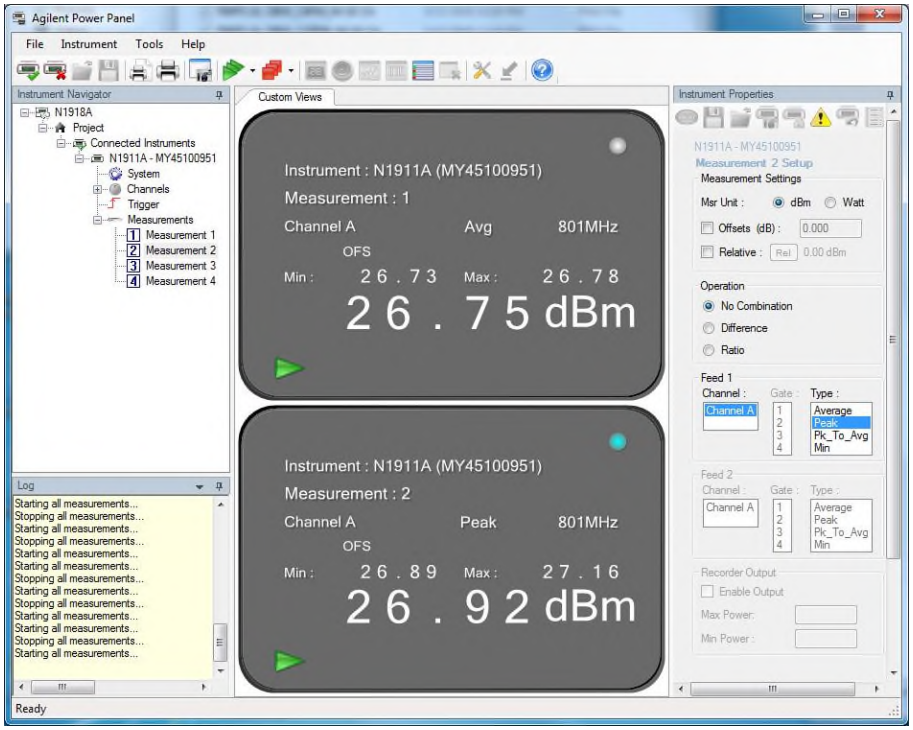
LTE Band 14 DL 10 MHz Bandwidth Middle Channel



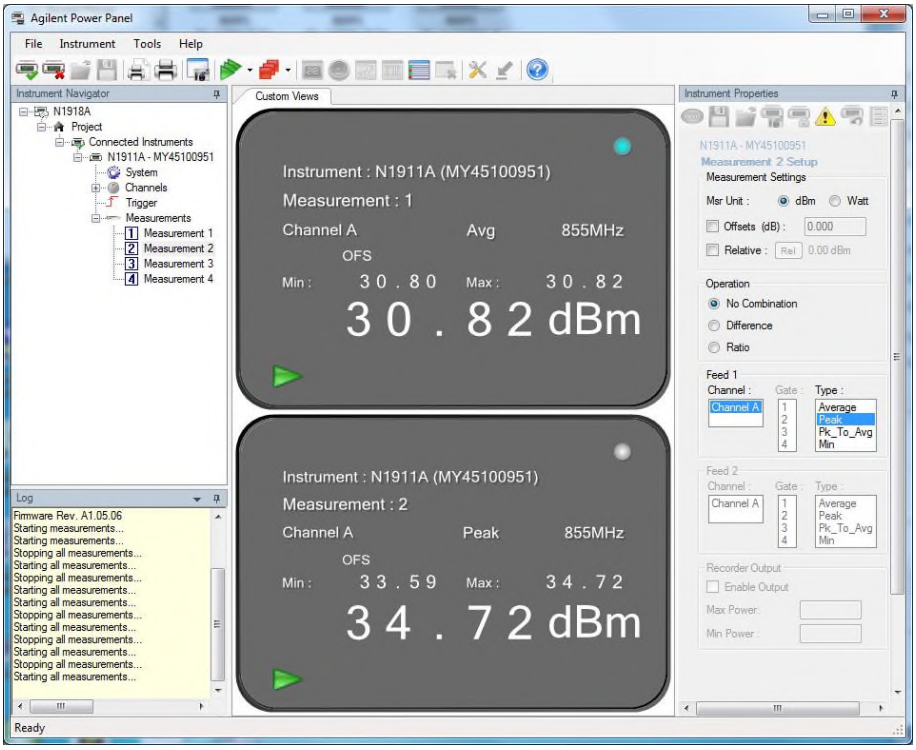
LTE Band 14 UL 10 MHz Bandwidth Middle Channel



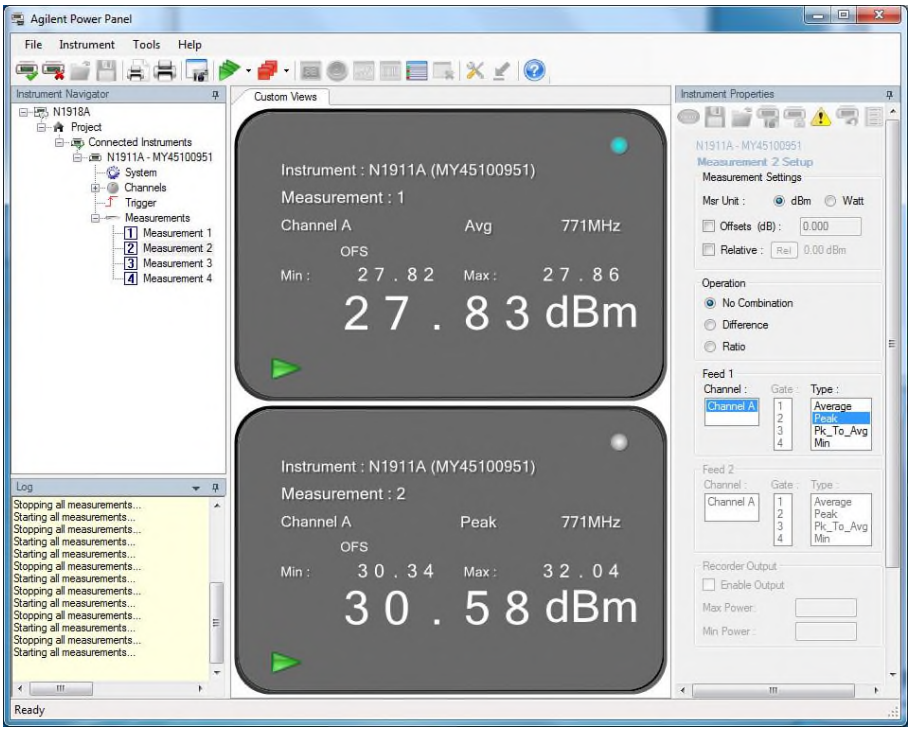
700MHz Narrowband Public Safety DL C4FM 12.5 kHz Bandwidth Middle Channel



700MHz Narrowband Public Safety UL C4FM 12.5 kHz Bandwidth Middle Channel



800 MHz NPSPAC Public Safety DL H-DQPSK 12.5 kHz Bandwidth Middle Channel



800 MHz NPSPAC Public Safety UL H-CPM 12.5 kHz Bandwidth Middle Channel

2.2 EFFECTIVE RADIATED POWER

2.2.1 Specification Reference

FCC 47 CFR Part 90, Clause 90.219(e)(1),
FCC 47 CFR Part 90, Clause 90.542(a)(3),
FCC 47 CFR Part 90, Clause 90.541(a),
FCC 47 CFR Part 90, Clause 90.635(a)
RSS-119 Issue 12, Clause 5.1

2.2.2 Standard Applicable

FCC 47 CFR Part 90, Clause 90.219(e):
1) The output power capability of a signal booster must be designed for deployments providing a radiated power not exceeding 5 Watts ERP for each retransmitted channel.

FCC 47 CFR Part 90, Clause 90.542:
(a) The following power limits apply to the 758–768/788–798 MHz band:
(3) Fixed and base stations transmitting a signal in the 758–768 MHz band with an emission bandwidth greater than 1 MHz must not exceed an ERP of 1000 watts/MHz and an antenna height of 305 m HAAT, except that antenna heights greater than 305 m HAAT are permitted if power levels are reduced below 1000 watts/MHz ERP accordance with Table 3 of this section.

FCC 47 CFR Part 90, Clause 90.541:
The transmitting power and antenna height of base, mobile, portable and control stations operating in the 769–775 MHz and 799–805 MHz frequency bands must not exceed the maximum limits in this section. Power limits are listed in effective radiated power (ERP).
(a) The transmitting power and antenna height of base stations must not exceed the limits given in paragraph (a) of § 90.635.

FCC 47 CFR Part 90, Clause 90.635(a):
(a) The effective radiated power and antenna height for base stations may not exceed 1 kilowatt (30 dBw) and 304 m. (1,000 ft.) above average terrain (AAT), respectively, or the equivalent thereof as determined from the Table.

TABLE—EQUIVALENT POWER AND ANTENNA HEIGHTS FOR BASE STATIONS IN THE 851–869 MHZ AND 935–940 MHZ BANDS WHICH HAVE A REQUIREMENT FOR A 32 KM (20 MI) SERVICE AREA RADIUS

Antenna height (ATT) meters (feet)	Effective radiated power (watts) [1 2 4]
Above 1,372 (4,500)	65
Above 1,220 (4,000) to 1,372 (4,500)	70
Above 1,067 (3,500) to 1,220 (4,000)	75
Above 915 (3,000) to 1,067 (3,500)	100
Above 763 (2,500) to 915 (3,000)	140
Above 610 (2,000) to 763 (2,500)	200
Above 458 (1,500) to 610 (2,000)	350
Above 305 (1,000) to 458 (1,500)	600
Up to 305 (1,000)	[3] 1,000

[1] Power is given in terms of effective radiated power (ERP).
[2] Applicants in the Los Angeles, CA, area who demonstrate a need to serve both the downtown and fringe areas will be permitted to utilize an ERP of 1 kw at the following mountaintop sites: Santiago Park, Sierra Peak, Mount Lukens, and Mount Wilson.
[3] Stations with antennas below 305 m (1,000 ft) (AAT) will be restricted to a maximum power of 1 kw (ERP).
[4] Licensees in San Diego, CA, will be permitted to utilize an ERP of 500 watts at the following mountaintop sites: Palomar, Otay, Woodson and Miguel.

RSS-140 Clause 4.3 Transmitter Output Power:
The The equivalent radiated power (e.r.p.) for control and mobile equipment shall not exceed 30 W. The e.r.p. for portable equipment including handheld devices shall not exceed 3 W.

Fixed and base station equipment shall comply with the e.r.p. limits in SRSP-540.

RSS-119 Clause 5.4 Transmitter Output Power:
The output power shall be within ±1 dB of the manufacturer's rated power listed in the equipment specifications.

The transmitter output power limits set forth in Table 2 will come into force upon the publication of Issue 12 of this standard and will apply to newly certified equipment.

Table 2 – Transmitter Output Power

Frequency Bands (MHz)	Transmitter Output Power (W)	
	Base/Fixed Equipment	Mobile Equipment
27.41-28 and 29.7-50	300	30
72-76	No limit	1
138-174	110	60
217-218 and 219-220	110	30*
220-222	See SRSP-512 for ERP limit	50
406.1-430 and 450-470	110	60
768-776 and 798-806	See SRSP-511 for ERP limit	30 3 W ERP for portable equipment
806-821/851-866 and 821-824/866-869	110	30
896-901/935-940	110	60
929-930/931-932	110	30
928-929/952-953 and 932-932.5/941-941.5	110	30
932.5-935/941.5-944	110	30

*Equipment is generally authorized for effective radiated power (ERP) of less than 5 W.

2.2.3 Equipment Under Test and Modification State

Serial No: 444002000024 (NU) and 247002000034 (CU) (Calculation only)

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

Febraury 03 to 05, April 22 to May 11, 2020 / XYZ

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	20.9 – 26.3°C
Relative Humidity	23.2 – 48.6%
ATM Pressure	98.6 – 99.7kPa

2.2.7 Additional Observations

- ERP and EIRP were calculated as per Section 1.2 and 1.3 of KDB412172 D01 (Determining ERP and EIRP v01).
- Calculation formula in logarithmic terms:

$$\mathbf{ERP\ or\ EIRP = P_T + G_T - L_C}$$

Where:

$\mathbf{P_T}$ = transmitter output power, expressed in dBm (Section 2.1 of this test report)
$\mathbf{G_T}$ = gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP);
$\mathbf{G_T(dBd) = G_T(dBi) – 2.15\ dB}$
$\mathbf{L_C}$ = signal attenuation in the connecting cable between the transmitter and antenna, in dB.

2.2.8 Sample Computation

ERP = $P_T + G_T - L_C$ - 2.15dB
= 29.87 (Peak) + 0.13 (max. gain) – 3.84 (cable loss) -2.15
= 24.01 dBm

2.2.9 Test Results

LTE Band 14 Downlink					
Bandwidth (MHz)	**Frequency (MHz)**	**Max Power Average (dBm)**	**Antenna System Gain (dBi)**	**ERP (dBm)**	**Limit (dBm)**
10	-	-	-	-	-
	763.0	**23.24**	**3.3**	**24.39**	**36.99**
	-	-	-	-	**-**

LTE Band 14 Uplink					
Bandwidth (MHz)	**Frequency (MHz)**	**Max Power Average (dBm)**	**Antenna System Gain (dBi)**	**ERP (dBm)**	**Limit (dBm)**
10	-	-	-	-	-
	793.0	**22.18**	**10. 94**	**30.97**	**36.99**
	-	-	**-**	-	**-**

700MHz Narrowband Public Safety Downlink (12.5 kHz Bandwidth)					
Modulation	**Frequency (MHz)**	**Max Power Average (dBm)**	**Antenna System Gain (dBi)**	**ERP (dBm)**	**Limit (dBm)**
C4FM	769.00625	27.98	3.3	29.13	36.99
	771.875	**30.02**	**3.3**	**31.17**	**36.99**
	774.99375	26.16	3.3	27.31	36.99
CQPSK	769.00625	28.09	3.3	29.24	36.99
	771.875	29.93	3.3	31.08	36.99
	774.99375	26.28	3.3	27.43	36.99
H-CPM	769.00625	28.68	3.3	29.83	36.99
	771.875	29.93	3.3	31.08	36.99
	774.99375	27.90	3.3	29.05	36.99

700MHz Narrowband Public Safety Uplink (12.5 kHz Bandwidth)					
Modulation	**Frequency (MHz)**	**Max Power Average (dBm)**	**Antenna System Gain (dBi)**	**ERP (dBm)**	**Limit (dBm)**
C4FM	799.00625	25.40	10.93	34.18	36.99
	801.875	26.78	10.93	35.56	36.99
	804.99375	25.75	10.93	34.53	36.99
CQPSK	799.00625	25.45	10.93	34.23	36.99
	801.875	26.99	10.93	35.77	36.99
	804.99375	25.89	10.93	34.67	36.99
H-DQPSK	799.00625	26.23	10.93	35.01	36.99
	801.875	26.49	10.93	35.27	36.99
	804.99375	**27.51**	**10.93**	**36.29**	**36.99**

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

800 MHz NPSPAC Public Safety Downlink (12.5 kHz Bandwidth)					
Modulation	**Frequency (MHz)**	**Max Power Average (dBm)**	**Antenna System Gain (dBi)**	**ERP (dBm)**	**Limit (dBm)**
C4FM	851.025	28.45	3.3	31.75	36.99
	855.884375	30.78	3.3	34.08	36.99
	860.99375	29.98	3.3	33.28	36.99
CQPSK	851.025	28.92	3.3	32.22	36.99
	855.884375	30.62	3.3	33.92	36.99
	860.99375	29.66	3.3	32.96	36.99
H-CPM	851.025	29.05	3.3	32.35	36.99
	855.884375	**30.82**	**3.3**	**34.12**	**36.99**
	860.99375	29.81	3.3	33.11	36.99

800 MHz NPSPAC Public Safety Uplink (12.5 kHz Bandwidth)					
Modulation	**Frequency (MHz)**	**Max Power Average (dBm)**	**Antenna System Gain (dBi)**	**ERP (dBm)**	**Limit (dBm)**
C4FM	806.025	26.30	10.93	35.08	36.99
	810.884375	25.97	10.93	34.75	36.99
	815.99375	24.92	10.93	33.70	36.99
CQPSK	806.025	26.58	10.93	35.36	36.99
	810.884375	26.12	10.93	34.9	36.99
	815.99375	25.41	10.93	34.19	36.99
H-DQPSK	806.025	26.50	10.93	35.28	36.99
	810.884375	**27.86**	**10.93**	**36.64**	**36.99**
	815.99375	24.91	10.93	33.69	36.99

2.3 OCCUPIED BANDWIDTH

2.3.1 Specification Reference

FCC 47 CFR Part 2, Clause 2.1049
FCC 47 CFR Part 90, Clause 90.219(e)(4)
RSS-119 Issue 12, Clause 5.5
RSS-GEN Issue 5, Clause 6.7

2.3.2 Standard Applicable

The transmitted signal bandwidth shall be reported as the 99% emission bandwidth, that is the frequency bandwidth suuch that, below its lower and above its upper frequency limits, the mean powers radiated are eqch equal to 0.5 percent of the total mean power radiated by a give emission.

Using the occupied bandwidth meansurement function in the spectrum analyzer, the 99% occupied bandwith was measured.

2.3.3 Equipment Under Test and Modification State

Serial No: 444002000024 (NU) and 247002000034 (CU) / Test Configuration A and B

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

February 05, March 17, April 22 and 24, 2020 / XYZ

2.3.5 Test Equipment Used

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

2.3.6 Environmental Conditions/ Test Location

Test performed at TÜV SÜD America Inc. Rancho Bernardo facility

Ambient Temperature	21.0 – 24.8°C
Relative Humidity	30.9 – 51.8%
ATM Pressure	98.6 – 99.3kPa

2.3.7 Additional Observations

- This is a conducted test.
- Using the occupied bandwidth meansurement function in the spectrum analyzer, the 99% occupied bandwith was measured.
- The transmitter shall be operated at its maximum carrier power measured under normal test conditions.
- The span of the analyzer shall be set to capture all products of the modulation process, including the emission skirts.
- The RBW is set to 1% of the OBW while the VBW is ≥3X RBW.
- The detector is peak and the trace mode is max hold.
- All low, middle and high channels were verified. Only test plots for middle channel presented in this test report as the representative configuration.

2.3.8 Test Results and Sample Test Plot

LTE Band 14 Downlink				
Bandwidth (MHz)	**Channel**	**Frequency (MHz)**	**OBW (MHz)**	**-26dB BW (MHz)**
10	-	-	-	-
	5330	763.0	8.86	9.46
	-	-	-	-

LTE Band 14 Uplink				
Bandwidth (MHz)	**Channel**	**Frequency (MHz)**	**OBW (MHz)**	**-26dB BW (MHz)**
10	-	-	-	-
	23330	793.0	8.85	9.46
	-	-	-	-

700MHz Narrowband Public Safety Downlink					
Bandwidth (kHz)	**Modulation**	**Channel**	**Frequency (MHz)**	**OBW (kHz)**	**26dB BW (kHz)**
12.5	C4FM	Low	769.00625	9.76	11.82
		Middle	771.875	9.73	11.36
		High	774.99375	9.75	11.84
	CQPSK	Low	769.00625	5.29	5.43
		Middle	771.875	5.34	5.46
		High	774.99375	5.23	5.43
	H-DQPSK	Low	769.00625	9.74	11.97
		Middle	771.875	9.73	11.97
		High	774.99375	9.74	11.74

700MHz Narrowband Public Safety Uplink					
Bandwidth (kHz)	**Modulation**	**Channel**	**Frequency (MHz)**	**OBW (kHz)**	**26dB BW (kHz)**
12.5	C4FM	Low	799.00625	9.73	11.82
		Middle	801.875	9.74	12.13
		High	804.99375	9.67	12.11
	CQPSK	Low	799.00625	4.94	5.50
		Middle	801.875	4.94	5.46
		High	804.99375	4.94	5.45
	H-CPM	Low	799.00625	8.08	10.76
		Middle	801.875	8.09	10.76
		High	804.99375	9.71	11.94

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

800 MHz NPSPAC Public Safety Downlink					
Bandwidth (kHz)	**Modulation**	**Channel**	**Frequency (MHz)**	**OBW (kHz)**	**26dB BW (kHz)**
12.5	C4FM	Low	851.025	9.68	11.65
		Middle	855.884375	9.69	11.65
		High	860.99375	9.68	11.67
	CQPSK	Low	851.025	4.95	5.47
		Middle	855.884375	4.94	5.47
		High	860.99375	4.96	5.47
	H-DQPSK	Low	851.025	9.62	11.94
		Middle	855.884375	9.67	11.71
		High	860.99375	9.68	11.71

800 MHz NPSPAC Public Safety Uplink					
Bandwidth (kHz)	**Modulation**	**Channel**	**Frequency (MHz)**	**OBW (kHz)**	**26dB BW (kHz)**
12.5	C4FM	Low	806.025	9.68	11.65
		Middle	810.884375	9.68	11.67
		High	815.99375	9.68	11.67
	CQPSK	Low	806.025	4.96	5.50
		Middle	810.884375	4.96	5.52
		High	815.99375	4.96	5.47
	H-CPM	Low	806.025	8.01	10.62
		Middle	810.884375	8.08	10.28
		High	815.99375	8.11	10.63

LTE Band 14 Downlink (10 MHz BW) / Middle Channel 763 MHz / 99%OBW

10:35:36 05.02.2020

LTE Band 14 Downlink (10 MHz BW) / Middle Channel 763 MHz / 26dB BW

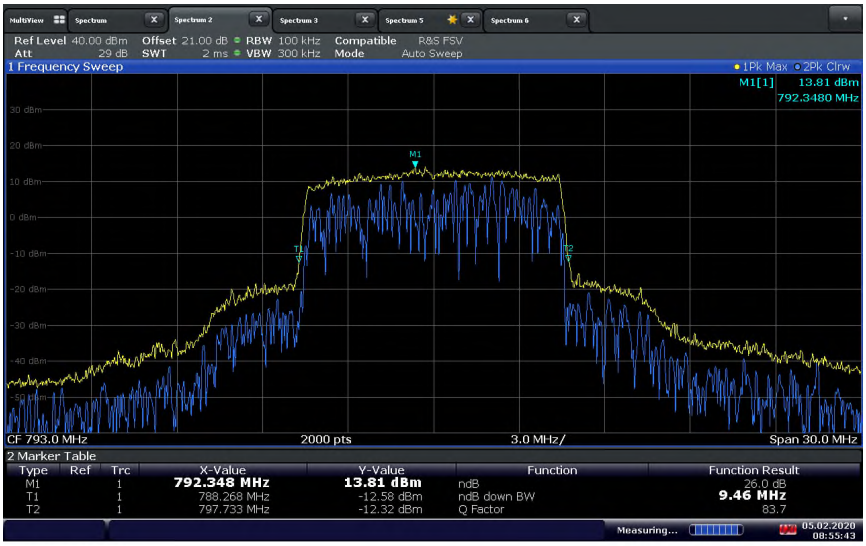
10:36:22 05.02.2020

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

LTE Band 14 Uplink (10 MHz BW) / Middle Channel 793 MHz / 99%OBW

08:51:52 05.02.2020

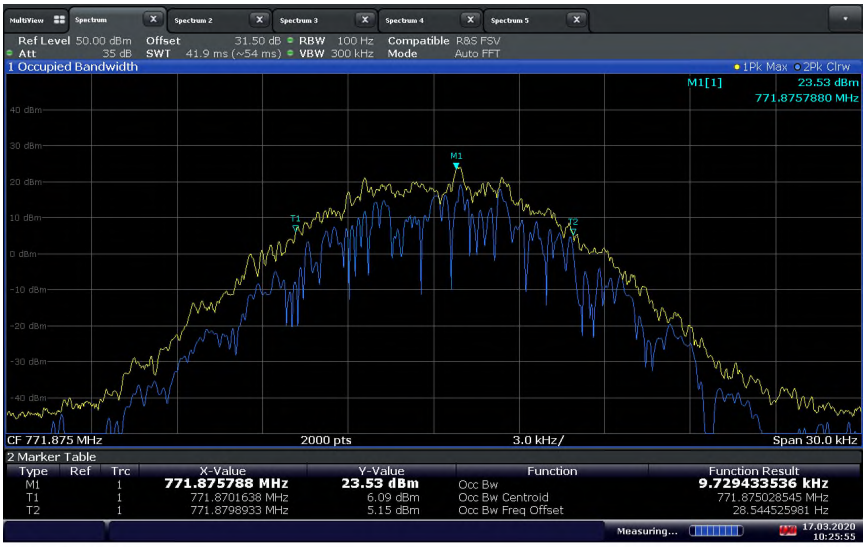
LTE Band 14 Uplink (10 MHz BW) / Middle Channel 793 MHz / 26dB BW



08:55:44 05.02.2020

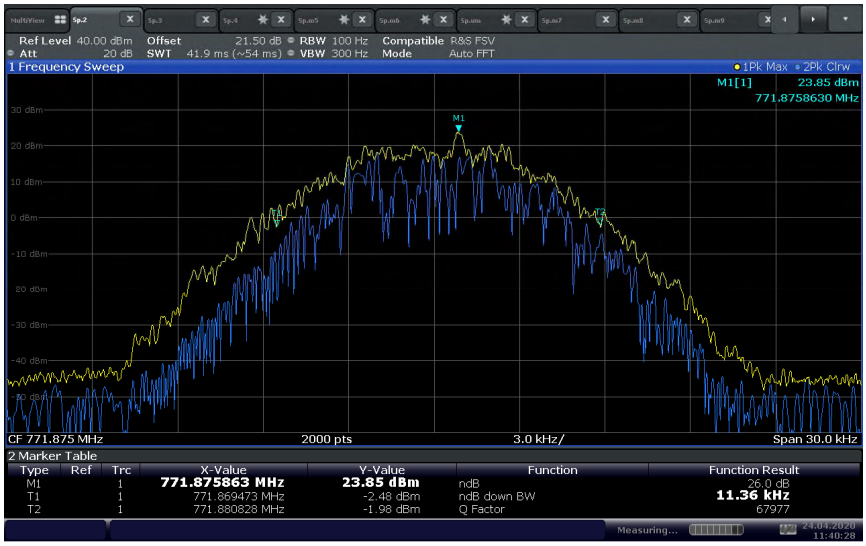
TÜV SÜD AMERICA INC 10040 Mesa Rim Road San Diego, CA 92121-2912 Phone: 858 678 1400 FAX: 858 546 0364

700MHz Narrowband Public Downlink (CF4M 12.5 kHz BW) / Middle Channel 771.875 MHz / 99%OBW



10:25:55 17.03.2020

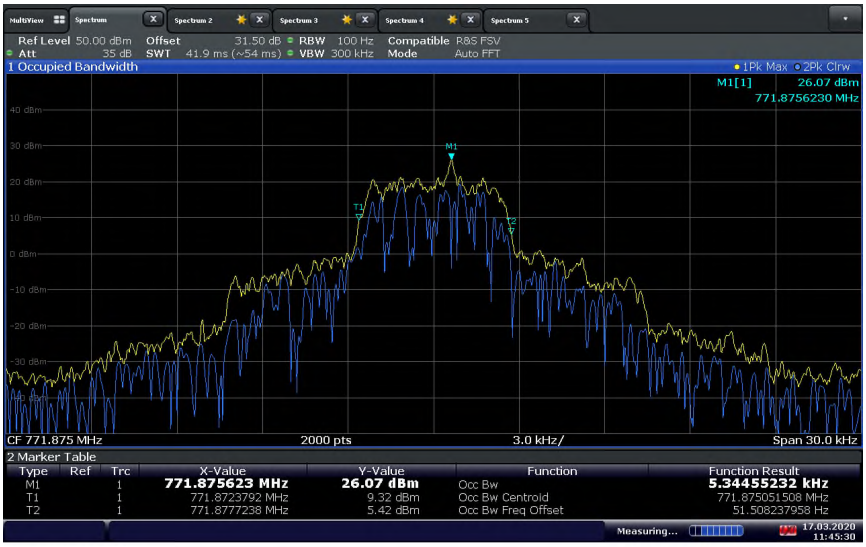
700MHz Narrowband Public Downlink (CF4M 12.5 kHz BW) / Middle Channel 771.875 MHz / 26dB BW



11:40:29 24.04.2020

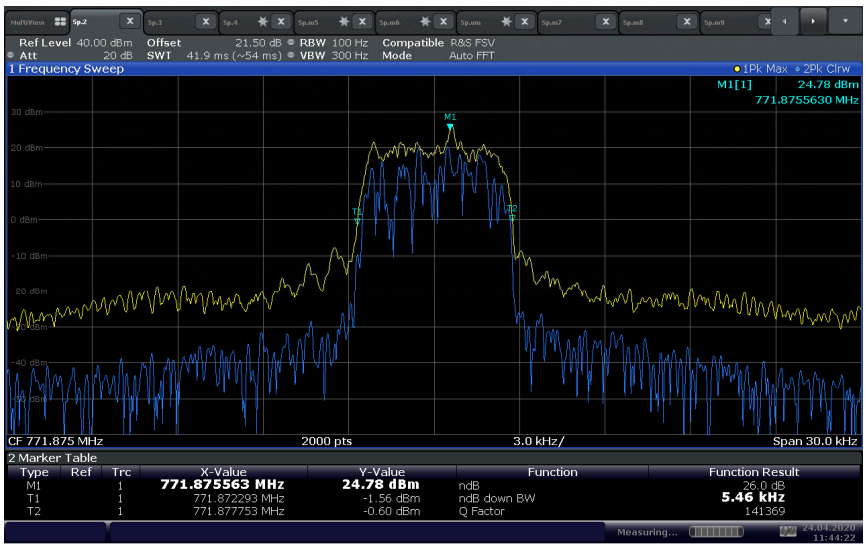
TÜV SÜD AMERICA INC 10040 Mesa Rim Road San Diego, CA 92121-2912 Phone: 858 678 1400 FAX: 858 546 0364

700MHz Narrowband Public Downlink (CQPSK 12.5 kHz BW) / Middle Channel 771.875 MHz / 99%OBW



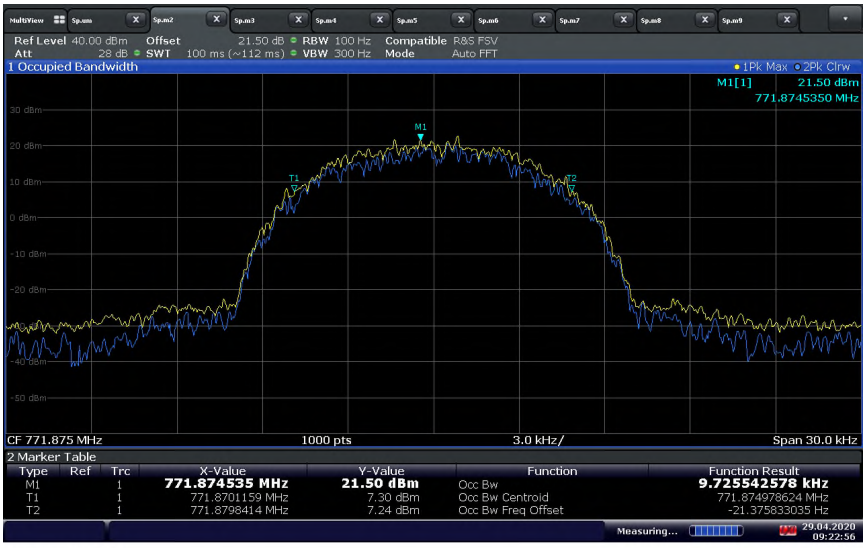
11:45:31 17.03.2020

700MHz Narrowband Public Downlink (CQPSK 12.5 kHz BW) / Middle Channel 771.875 MHz / 26dB BW



11:44:23 24.04.2020

700MHz Narrowband Public Downlink (H-DQPSK 12.5 kHz BW) / Middle Channel 771.875 MHz / 99%OBW



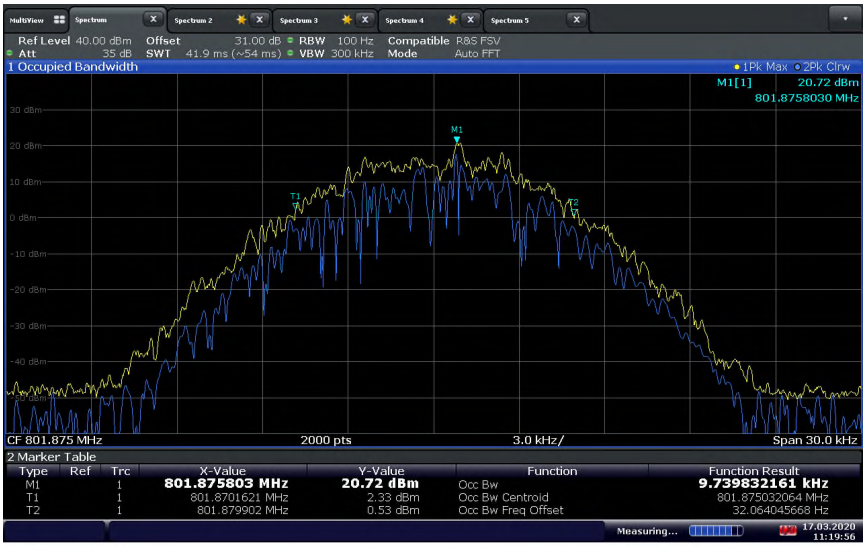
09:22:56 29.04.2020

700MHz Narrowband Public Downlink (H-DQPSK 12.5 kHz BW) / Middle Channel 771.875 MHz / 26dB BW

09:24:26 29.04.2020

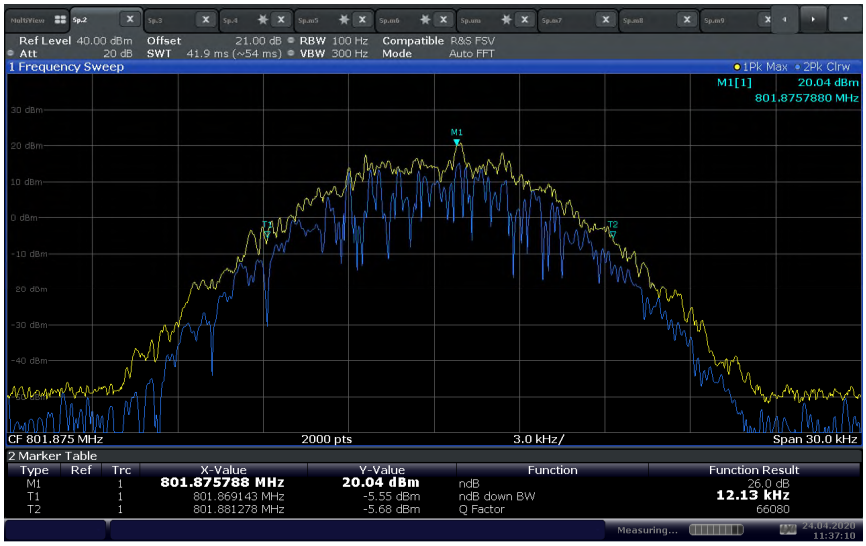
TÜV SÜD AMERICA INC 10040 Mesa Rim Road San Diego, CA 92121-2912 Phone: 858 678 1400 FAX: 858 546 0364

700MHz Narrowband Public Uplink (CF4M 12.5 kHz BW) / Middle Channel 801.875 MHz / 99%OBW



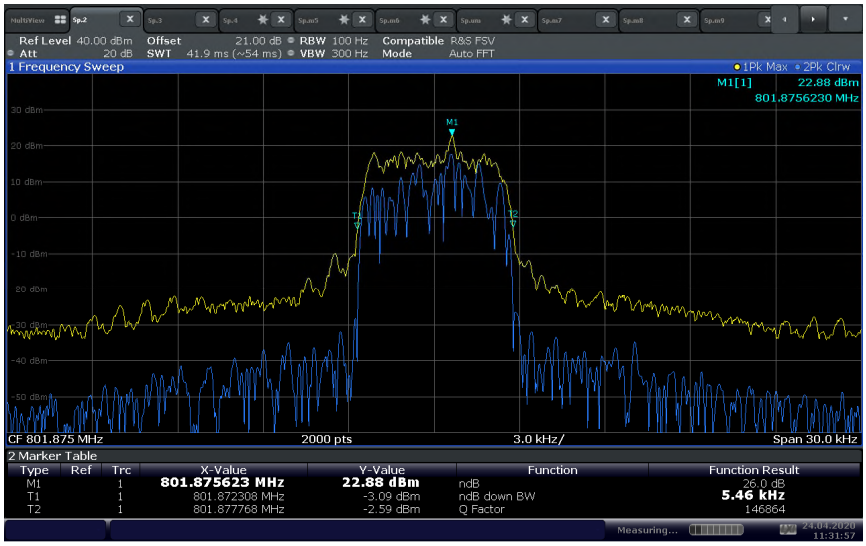
11:19:56 17.03.2020

700MHz Narrowband Public Uplink (CF4M 12.5 kHz BW) / Middle Channel 801.875 MHz / 26dB BW



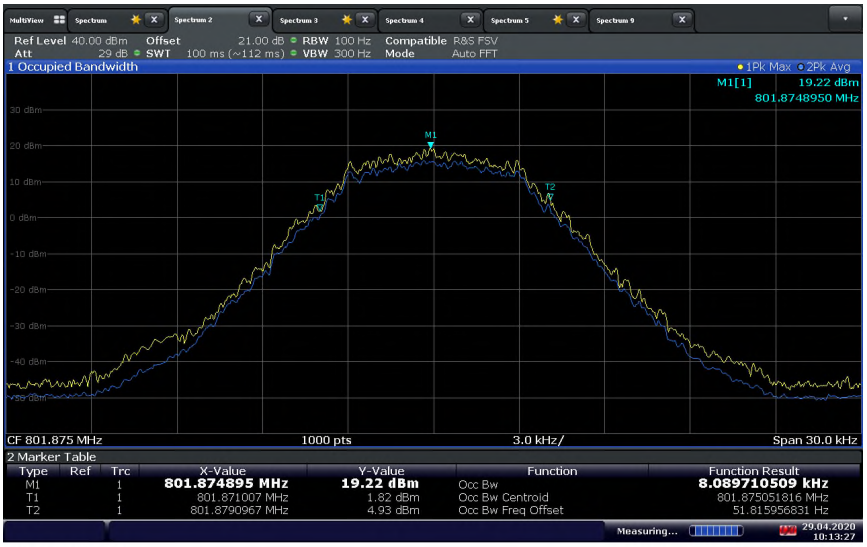
11:37:11 24.04.2020

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

700MHz Narrowband Public Uplink (CQPSK 12.5 kHz BW) / Middle Channel 801.875 MHz / 99%OBW
   11:19:05 17.03.2020
700MHz Narrowband Public Uplink (CQPSK 12.5 kHz BW) / Middle Channel 801.875 MHz 26dB BW
   11:31:58 24.04.2020

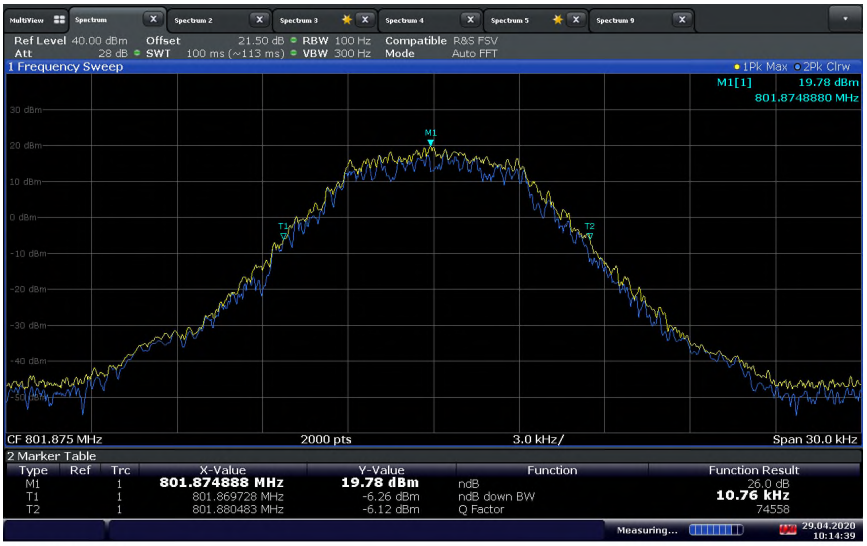
TÜV SÜD AMERICA INC 10040 Mesa Rim Road San Diego, CA 92121-2912 Phone: 858 678 1400 FAX: 858 546 0364

700MHz Narrowband Public Uplink (H-CPM 12.5 kHz BW) / Middle Channel 801.875 MHz / 99%OBW



10:13:28 29.04.2020

700MHz Narrowband Public Uplink (H-CPM 12.5 kHz BW) / Middle Channel 801.875 MHz 26dB BW

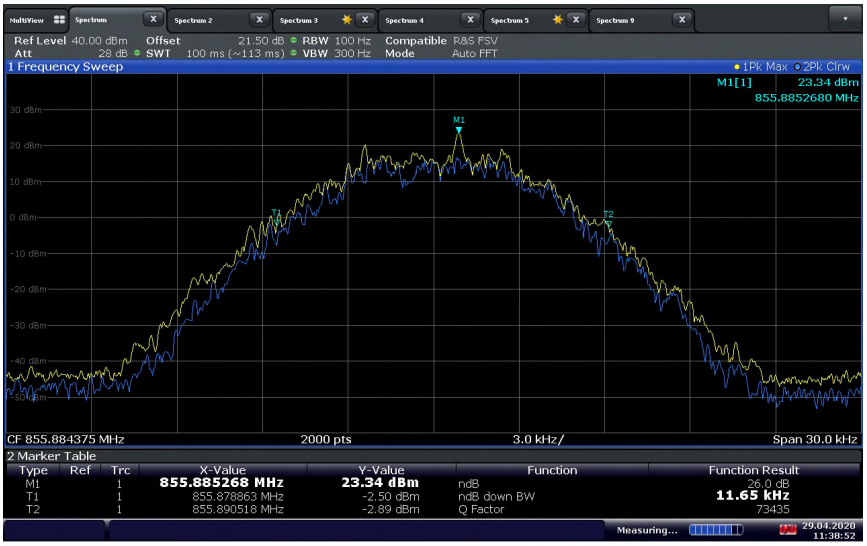


10:14:39 29.04.2020

800 MHz NPSPAC Public Safety Downlink (C4FM 12.5 kHz BW) / Middle Channel 855.884375 MHz / 99%OBW

11:40:54 29.04.2020

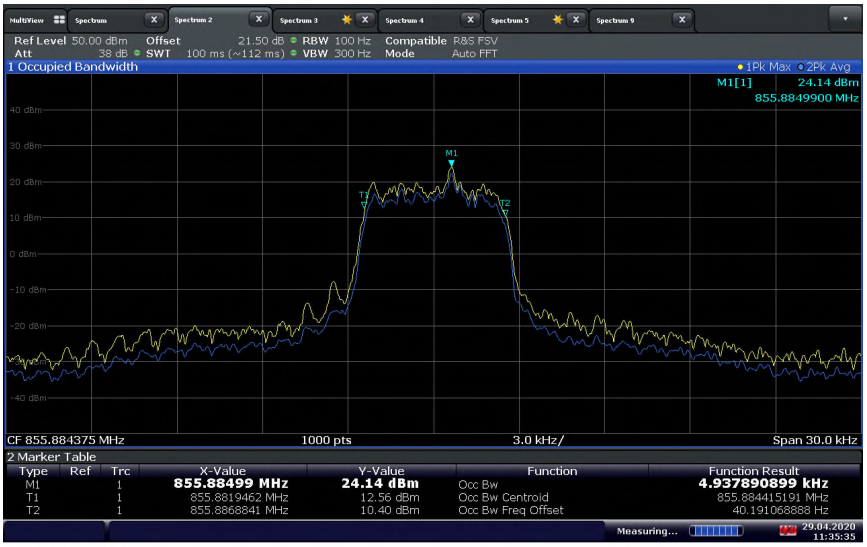
800 MHz NPSPAC Public Safety Downlink (C4FM 12.5 kHz BW) / Middle Channel 855.884375 MHz / 26dB BW



11:38:52 29.04.2020

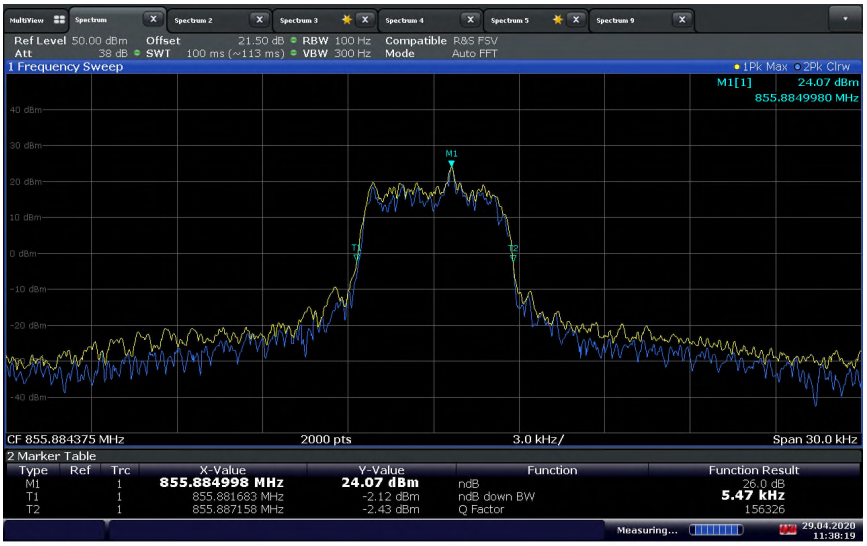
TÜV SÜD AMERICA INC 10040 Mesa Rim Road San Diego, CA 92121-2912 Phone: 858 678 1400 FAX: 858 546 0364

800 MHz NPSPAC Public Safety Downlink (CQPSK 12.5 kHz BW) / Middle Channel 855.884375 MHz / 99%OBW



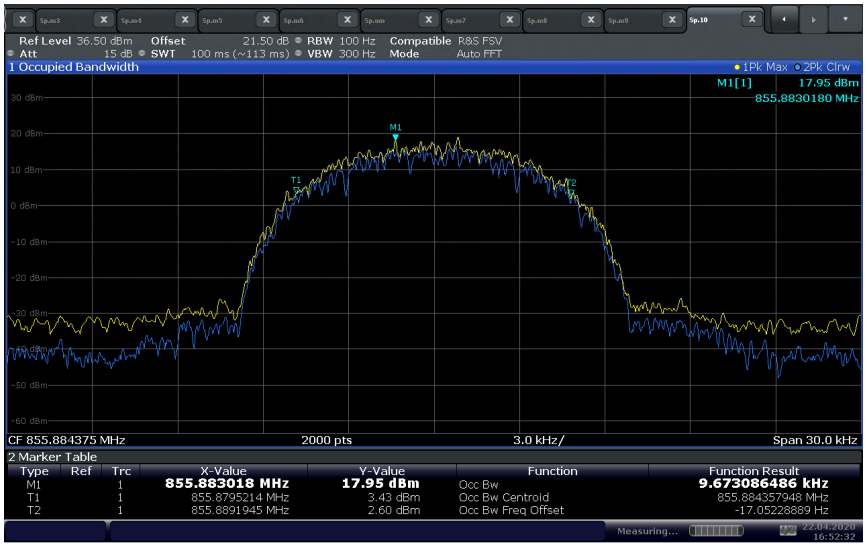
11:35:35 29.04.2020

800 MHz NPSPAC Public Safety Downlink (CQPSK 12.5 kHz BW) / Middle Channel 855.884375 MHz / 26dB BW



11:38:20 29.04.2020

800 MHz NPSPAC Public Safety Downlink (H-DQPSK 12.5 kHz BW) / Middle Channel 855.884375 MHz / 99%OBW



16:52:32 22.04.2020

800 MHz NPSPAC Public Safety Downlink (H-DQPSK 12.5 kHz BW) / Middle Channel 855.884375 MHz / 26dB BW

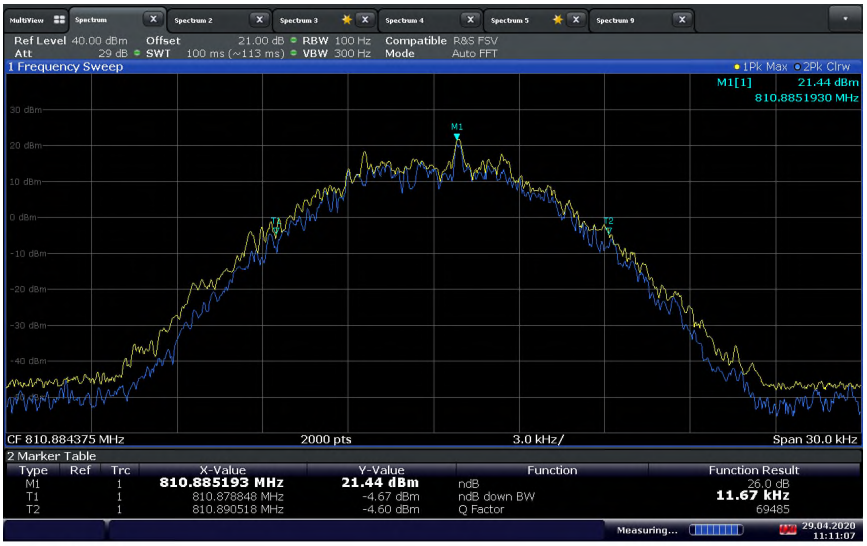
15:41:23 22.04.2020

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

800 MHz NPSPAC Public Safety Uplink (C4FM 12.5 kHz BW) / Middle Channel 810.884375 MHz / 99%OBW

11:13:21 29.04.2020

800 MHz NPSPAC Public Safety Uplink (C4FM 12.5 kHz BW) / Middle Channel 810.884375 MHz / 26dB BW



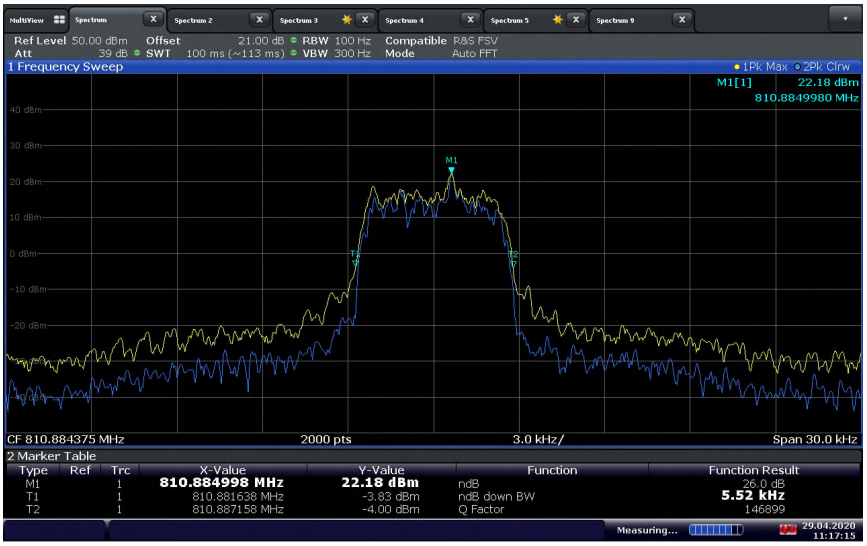
11:11:07 29.04.2020

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

800 MHz NPSPAC Public Safety Uplink (CQPSK 12.5 kHz BW) / Middle Channel 810.884375 MHz / 99%OBW

11:14:30 29.04.2020

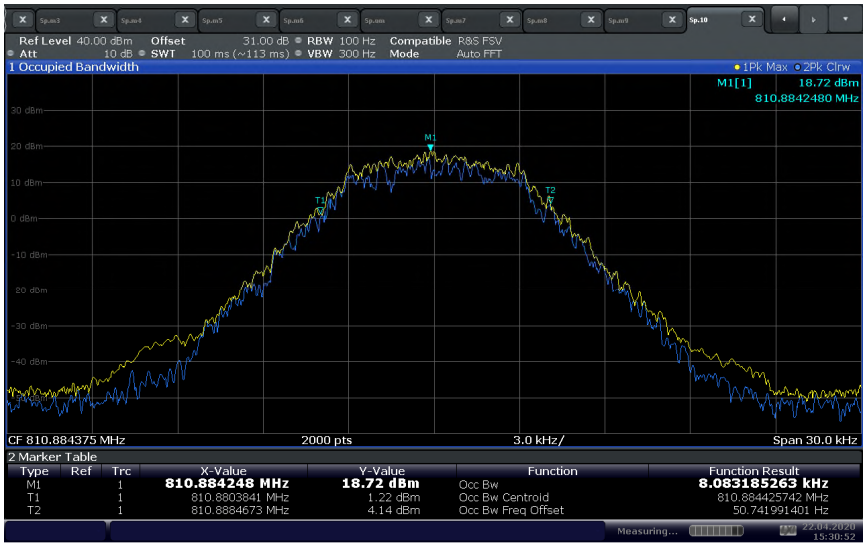
800 MHz NPSPAC Public Safety Uplink (CQPSK 12.5 kHz BW) / Middle Channel 810.884375 MHz / 26dB BW



11:17:16 29.04.2020

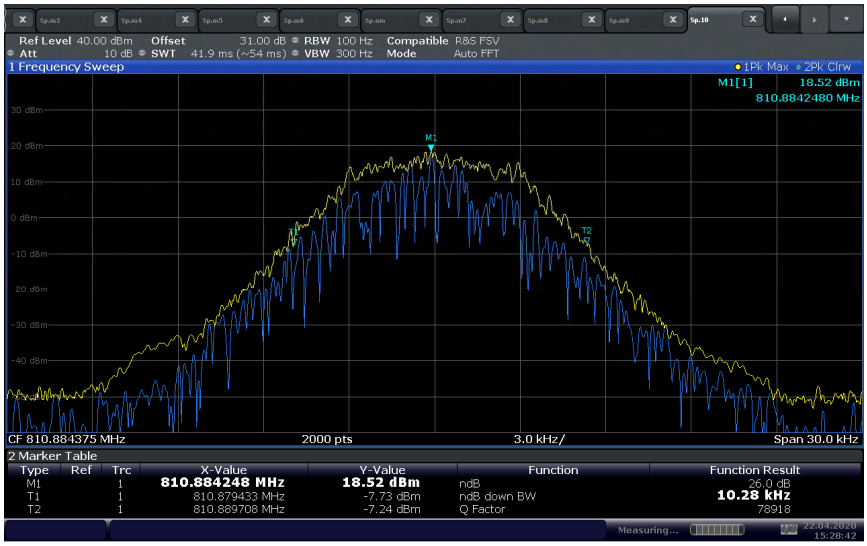
TÜV SÜD AMERICA INC 10040 Mesa Rim Road San Diego, CA 92121-2912 Phone: 858 678 1400 FAX: 858 546 0364

800 MHz NPSPAC Public Safety Uplink (H-CPM 12.5 kHz BW) / Middle Channel 810.884375 MHz / 99%OBW



15:30:53 22.04.2020

800 MHz NPSPAC Public Safety Uplink (H-CPM 12.5 kHz BW) / Middle Channel 810.884375 MHz / 26dB BW



15:28:43 22.04.2020

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

2.4 PEAK-AVERAGE RATIO

2.4.1 Specification Reference

RSS-140 Issue 1, Clause 4.3

2.4.2 Standard Applicable

The peak-to-average power ratio (PAPR) of the transmitter shall not exceed 13 dB for more than 0.1% of the time and shall use a signal corresponding to the highest PAPR during periods of continuous transmission.

2.4.3 Equipment Under Test and Modification State

Serial No: 444002000024 (NU) and 247002000034 (CU) / Test Configuration A and B

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

February 05, 2020 / XYZ

2.4.5 Test Equipment Used

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

2.4.6 Environmental Conditions/ Test Location

Test performed at TÜV SÜD America Inc. Rancho Bernardo facility

Ambient Temperature	20.9°C
Relative Humidity	23.2%
ATM Pressure	98.6kPa

2.4.7 Additional Observations

- This is a conducted test.
- Measurement was done using the Spectrum Analyzer's Complementary Cumulative Distribution Function (CCDF) measurement profile. The built-in function is used to determine the largest deviation between the average and the peak power of the EUT in a given bandwidth (crest factor or peak-to-average ratio) A CCDF curve depicts the probability of the peak signal amplitude exceeding the average power level. Most contemporary measurement instrumentation include the capability to produce CCDF curves for an input signal provided that the instrument's resolution bandwidth can be set wide enough to accommodate the entire input signal bandwidth.
- RBW was set to maximum the SA can support.
- There are no measured PAR levels greater than 13dB.

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

2.4.8 Test Results

LTE Band 14 Downlink			
Bandwidth (MHz)	**Channels**	**Frequency (MHz)**	**PAR (dB)**
5 MHz	5305	760.5	-
	5330	763.0	-
	5355	765.5	-
10 MHz	-	-	-
	5330	763.0	10.33
	-	-	-

LTE Band 14 Uplink			
Bandwidth (MHz)	**Channels**	**Frequency (MHz)**	**PAR (dB)**
5 MHz	23305	790.5	-
	23330	793.0	-
	23355	795.5	-
10 MHz	-	-	-
	23330	793.0	10.21
	-	-	-

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

2.4.9 Sample Test Plot

LTE Band 14 Downlink (10 MHz BW) / Middle Channel 763 MHz

10:38:20 05.02.2020

LTE Band 14 Uplink (10 MHz BW) / Middle Channel 793 MHz

09:01:24 05.02.2020

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

2.5 BAND EDGE

2.5.1 Specification Reference

FCC 47 CFR Part 2, Clause 2.1051
RSS-140, Clause 4.4

2.5.2 Standard Applicable

FCC 47 CFR Part 90, Clause 90.543:
(e) For operations in the 758–768 MHz and the 788–798 MHz bands, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following:
(1) On all frequencies between 769–775 MHz and 799–805 MHz, by a factor not less than 76 + 10 log (P) dB in a 6.25 kHz band segment, for base and fixed stations.
(3) On any frequency between 775–788 MHz, above 805 MHz, and below 758 MHz, by at least 43 + 10 log (P) dB.

RSS-140:
4.4 Transmitter unwanted emissions limits
The power of any unwanted emission outside the bands 758-768 MHz and 788-798 MHz shall be attenuated below the transmitter output power P in dBW as follows, where p is the transmitter output power in watts:
a. For any frequency between 769-775 MHz and 799-806 MHz:
i 76 + 10 log (p), dB in a 6.25 kHz band for fixed and base station equipment
ii 65 + 10 log (p), dB in a 6.25 kHz band for mobile and portable/hand-held equipment

b For any frequency between 775-788 MHz, above 806 MHz, and below 758 MHz: 43 + 10 log (p), dB in a bandwidth of 100 kHz or greater. However, in the 100 kHz bands immediately outside and adjacent to the frequency bands 758-768 MHz and 788-798 MHz, a resolution bandwidth of 30 kHz may be employed.

2.5.3 Equipment Under Test and Modification State

Serial No: 444002000024 (NU) and 247002000034 (CU) / Test Configuration A and B

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

Febraury 05, 2020 / XYZ

2.5.5 Test Equipment Used

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

2.5.6 Environmental Conditions/ Test Location

Test performed at TÜV SÜD America Inc. Rancho Bernardo facility

Ambient Temperature	20.9°C
Relative Humidity	25.2%
ATM Pressure	99.7kPa

2.5.7 Additional Observations

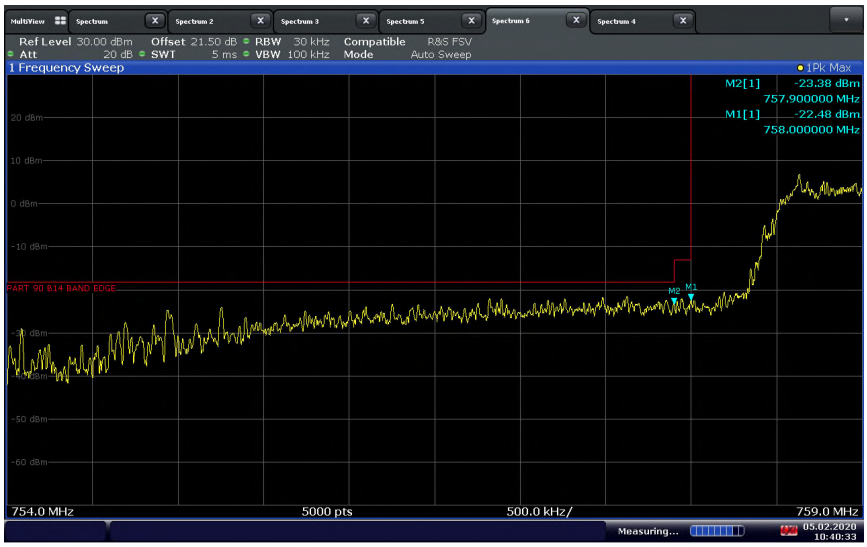
- This is a conducted test. Test guidance is per Section 6.1 of KDB971168 (D01 Power Meas License Digital Systems v03r01).
- The path loss was measured and entered as a level offset.
- For LTE Band 14, RBW was set to 30 kHz and the limit for emissions 100 kHz outside of the low frequency edge and the high frequency edge of each frequency block range(s) was set to:

  Limit = -13dBm + 10lg(30/100) = -18.23 dBm

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

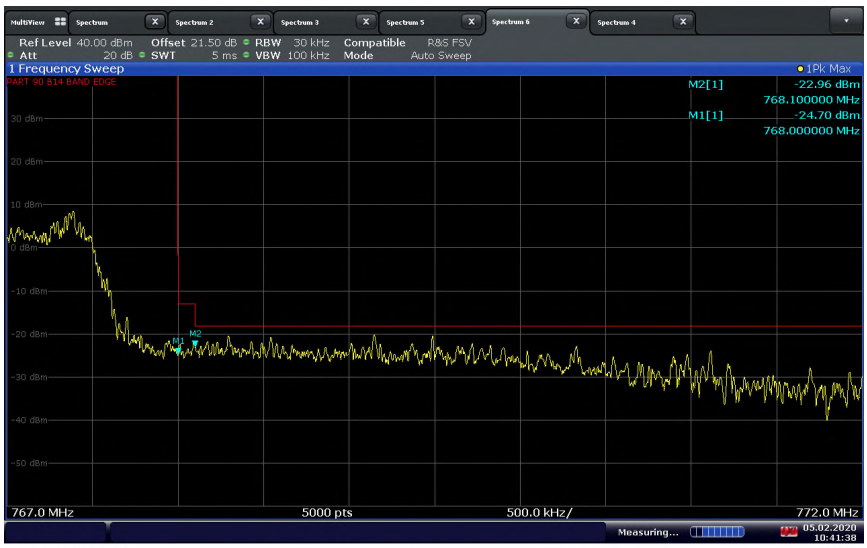
2.5.8 Test Results

LTE Band 14 Downlink 10MHz Bandwidth Middle Channel Low Band Edge



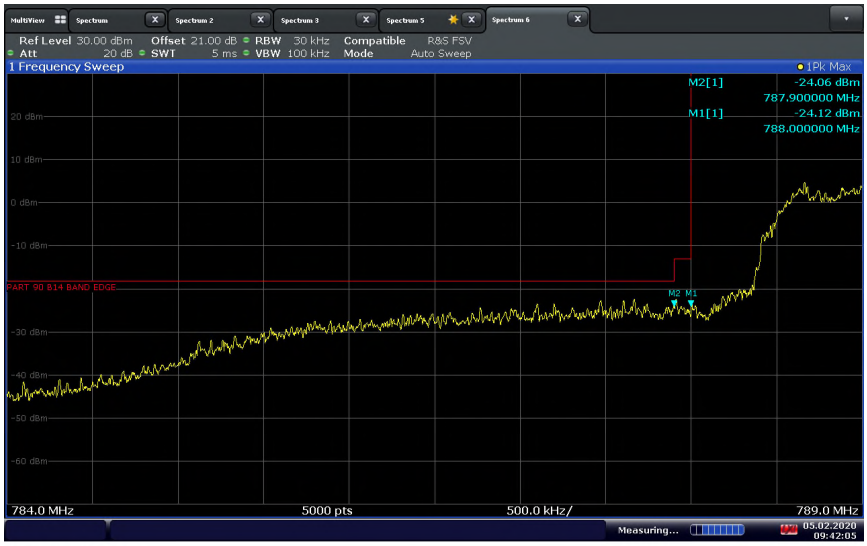
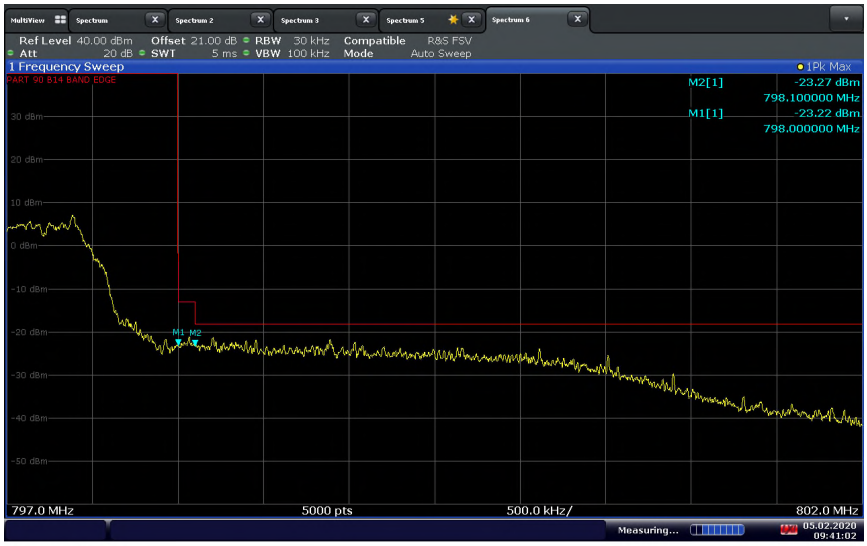
10:40:33 05.02.2020

LTE Band 14 Downlink 10MHz Bandwidth Middle Channel High Band Edge



10:41:39 05.02.2020

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

LTE Band 14 Uplink 10MHz Bandwidth Middle Channel Low Band Edge
 09:42:05 05.02.2020
LTE Band 14 Uplink 10MHz Bandwidth Middle Channel High Band Edge
 09:41:02 05.02.2020

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

2.6 CONDUCTED SPURIOUS EMISSIONS

2.6.1 Specification Reference

FCC 47 CFR Part 2, Clause 2.1051
FCC 47 CFR Part 90, Clause 90.219(e)(3)
FCC 47 CFR Part 90, Clause 90.543(e)(1)(3)(f)
FCC 47 CFR Part 90, Clause 90.543(c)
RSS-140, Clause 4.4
RSS-119, Clause 5.8.9.2
KDB935210 D05, Clause 4.73

2.6.2 Standard Applicable

FCC 47 CFR Part 90, Clause 90.219(e):
(3) Spurious emissions from a signal booter must not exceed -13 dBm within any 100 kHz measurement bandwidth.

FCC 47 CFR Part 90, Clause 90.543:
(e) For operations in the 758–768 MHz and the 788–798 MHz bands, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following:
(1) On all frequencies between 769–775 MHz and 799–805 MHz, by a factor not less than 76 + 10 log (P) dB in a 6.25 kHz band segment, for base and fixed stations.

(3) On any frequency between 775–788 MHz, above 805 MHz, and below 758 MHz, by at least 43 + 10 log (P) dB.

(f) For operations in the 758–775 MHz and 788–805 MHz bands, all emissions including harmonics in the band 1559–1610 MHz shall be limited to -70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.

FCC 47 CFR Part 90, Clause 90.543:
(c) *Out-of-band emission limit*. On any frequency outside of the frequency ranges covered by the ACP tables in this secion, the power of any emission must bereduced below the mean output power (P) by at least 43 + 10 log10(p) dB measured in a 100 kHz bandwidth for frequencies less than 1 GHz, and in a 1 MHz bandwidth for frequencies greater than 1 GHz.

RSS-140:
4.4 Transmitter unwanted emissions limits
The power of any unwanted emission outside the bands 758-768 MHz and 788-798 MHz shall be attenuated below the transmitter output power P in dBW as follows, where p is the transmitter output power in watts:
a. For any frequency between 769-775 MHz and 799-806 MHz:
i 76 + 10 log (p), dB in a 6.25 kHz band for fixed and base station equipment
ii 65 + 10 log (p), dB in a 6.25 kHz band for mobile and portable/hand-held equipment

b For any frequency between 775-788 MHz, above 806 MHz, and below 758 MHz: 43 + 10 log (p), dB in a bandwidth of 100 kHz or greater. However, in the 100 kHz bands immediately outside and adjacent to the frequency bands 758-768 MHz and 788-798 MHz, a resolution bandwidth of 30 kHz may be employed.

In addition, the equivalent isotropically radiated power (e.i.r.p.) of all emissions, including harmonics in the band 1559-1610 MHz, shall not exceed −70 dBW/MHz for wideband emissions, and −80 dBW/kHz for discrete emissions of less than 700 Hz bandwidth.

RSS-119, Clause 5.8.9.2:
On any frequency outside of the ranges specified in the ACP tables 13 to 16, the power of any emission shall be attenuated below the mean output power P (dBW) by at least
43 + 10 log10(p), measured in a 100 kHz bandwidth for frequencies less than or equal to
1 GHz, and in a 1 MHz bandwidth for frequencies greater than 1 GHz.

In addition, for operations in the bands 768-776 MHz and 798-806 MHz, all emissions (including harmonics in the band 1559-1610 MHz), shall not exceed:

- −70 dBW/MHz equivalent isotropically radiated power (e.i.r.p.) for wideband emissions, and
- −80 dBW/kHz e.i.r.p. for discrete emissions of less than 700 Hz bandwidth.

2.6.3 Equipment Under Test and Modification State

Serial No: 444002000024 (NU) and 247002000034 (CU) / Test Configuration A and B

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

Febraury 03 to 05 and April 22 to 29, 2019 / XYZ

2.6.5 Test Equipment Used

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

2.6.6 Environmental Conditions/ Test Location

Test performed at TÜV SÜD America Inc. Rancho Bernardo facility

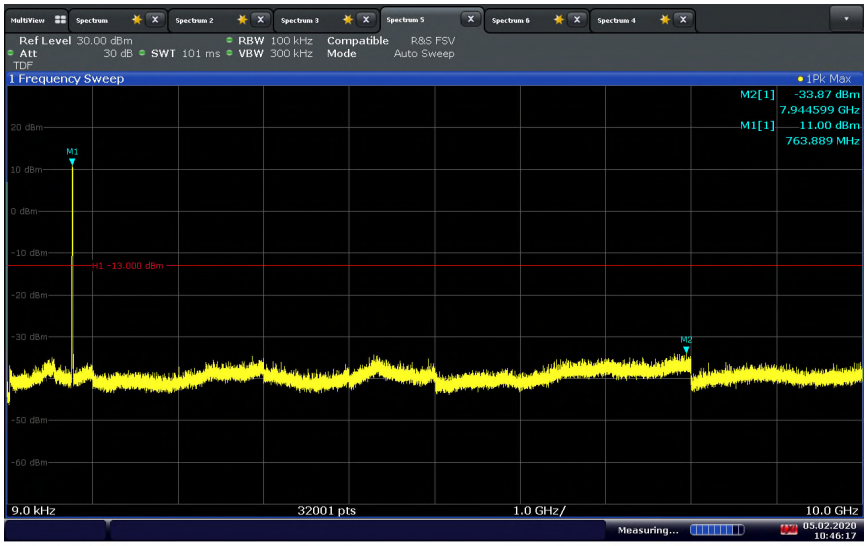
Ambient Temperature	20.9 – 24.9°C
Relative Humidity	23.2 – 50.2%
ATM Pressure	98.6 – 99.7kPa

2.6.7 Additional Observations

- This is a conducted test. Test guidance is per Section 6.1 of KDB971168 (D01 Power Meas License Digital Systems v03r01).
- The transducer factor (TDF) used is from the external attenuators and cables used.
- Detector is peak and trace is set to max hold as the worst case setting.
- The spectrum was searched from 9 kHz to up to the 10th harmonic
- All low, middle and high channels for all supporting bandwidths were verified and only middle channel presented in this test report as representative configuration.

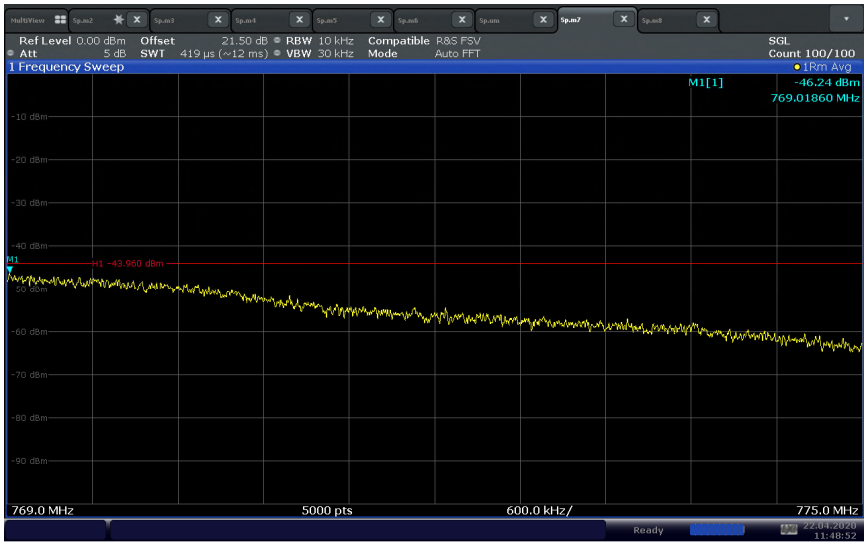
2.6.8 Test Results

LTE Band 14 Downlink 10MHz Bandwidth Middle Channel Conducted Spurious Emissions



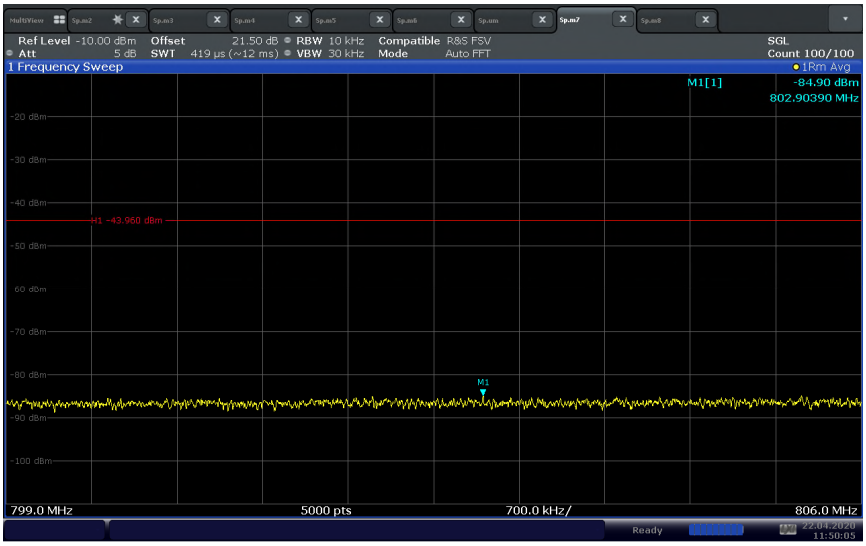
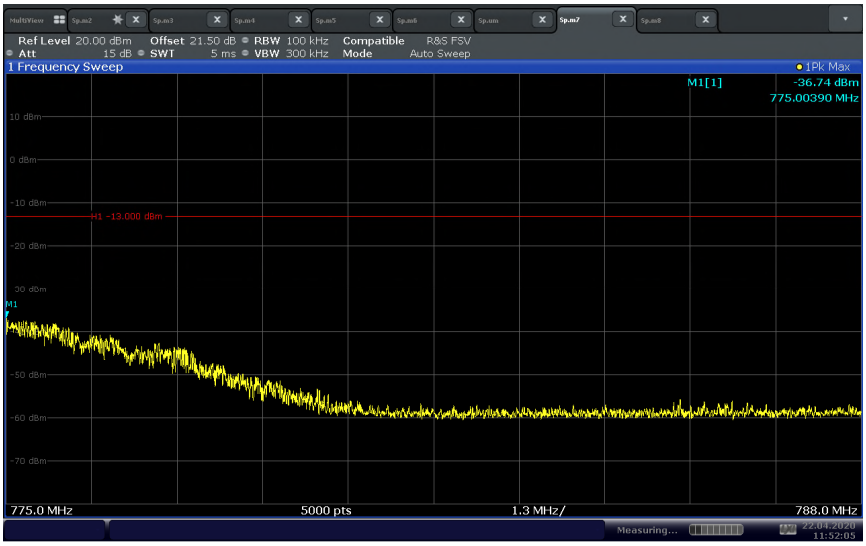
10:46:18 05.02.2020

LTE Band 14 Downlink 10MHz Bandwidth Middle Channel Conducted Spurious Emissions 769 – 775 MHz

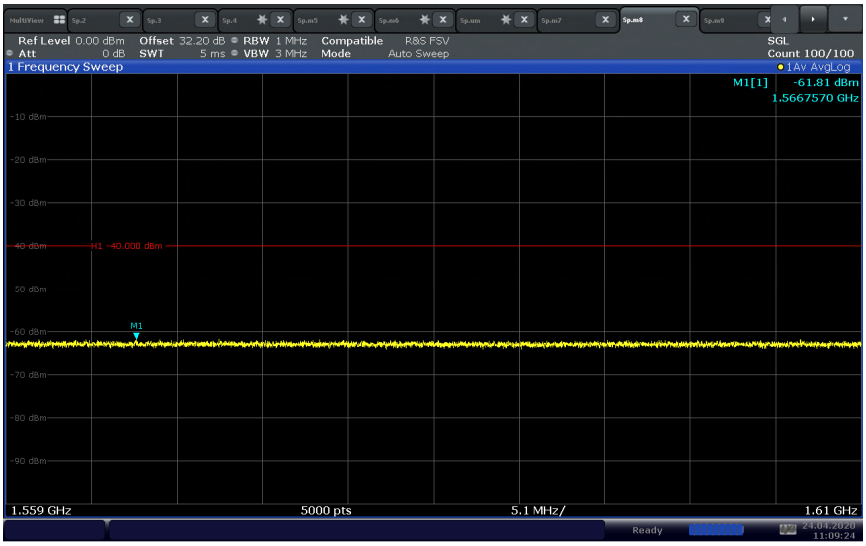
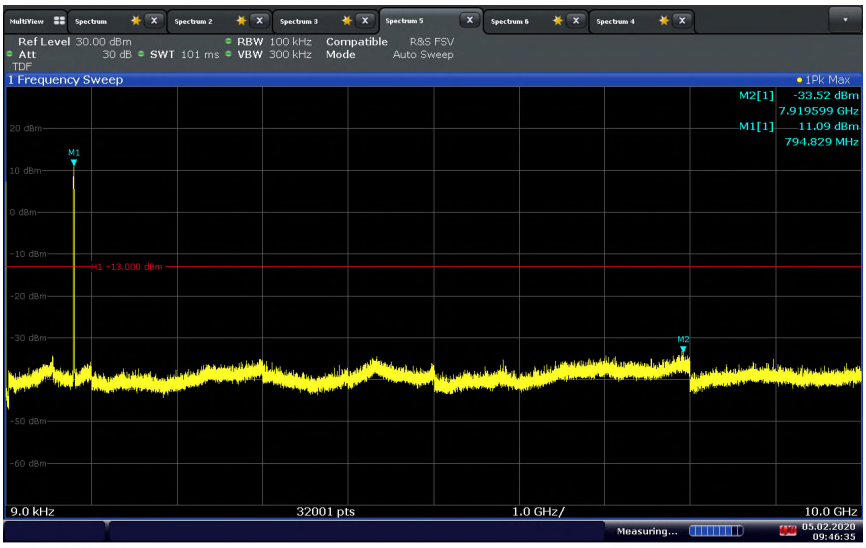


11:48:53 22.04.2020

Limit = -46 + 10lg (10/6.25) = -43.96 dBm

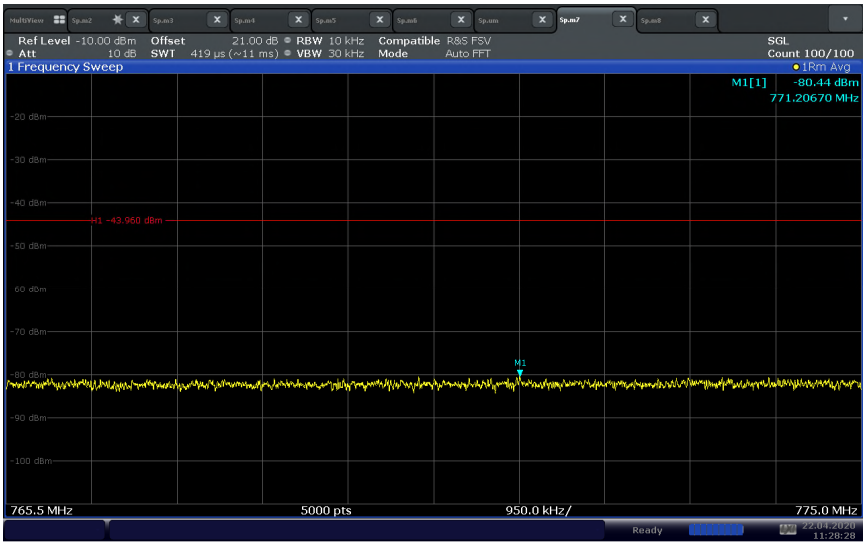
LTE Band 14 Downlink 10MHz Bandwidth Middle Channel Conducted Spurious Emissions 799 – 806 MHz
 11:50:06 22.04.2020 Limit = -46 + 10lg (10/6.25) = -43.96 dBm
LTE Band 14 Downlink 10MHz Bandwidth Middle Channel Conducted Spurious Emissions 775 – 788 MHz
 11:52:05 22.04.2020

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

LTE Band 14 Downlink 10MHz Bandwidth Middle Channel Conducted Spurious Emissions 1559 – 1610 MHz (EIRP)
 11:09:25 24.04.2020
LTE Band 14 Uplink 10MHz Bandwidth Middle Channel Conducted Spurious Emissions
 09:46:36 05.02.2020

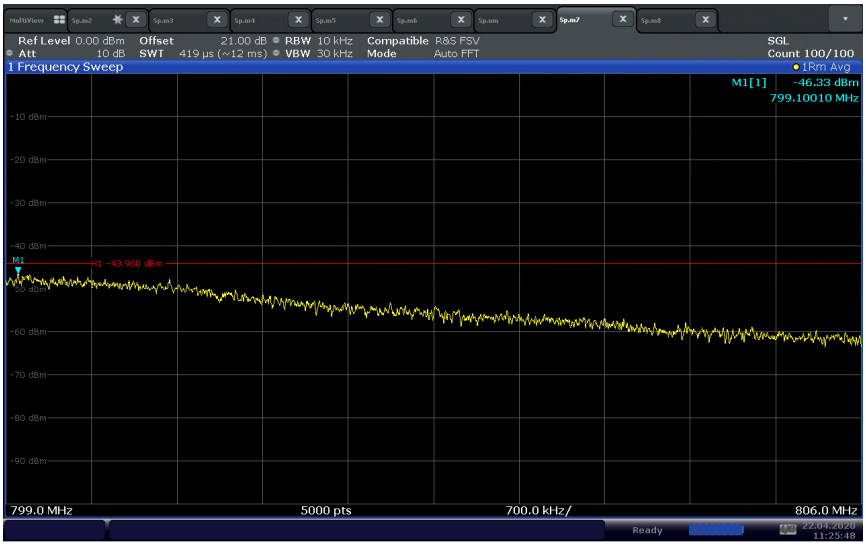
TÜV SÜD AMERICA INC 10040 Mesa Rim Road San Diego, CA 92121-2912 Phone: 858 678 1400 FAX: 858 546 0364

LTE Band 14 Uplink 10MHz Bandwidth Middle Channel Conducted Spurious Emissions
769 – 775 MHz



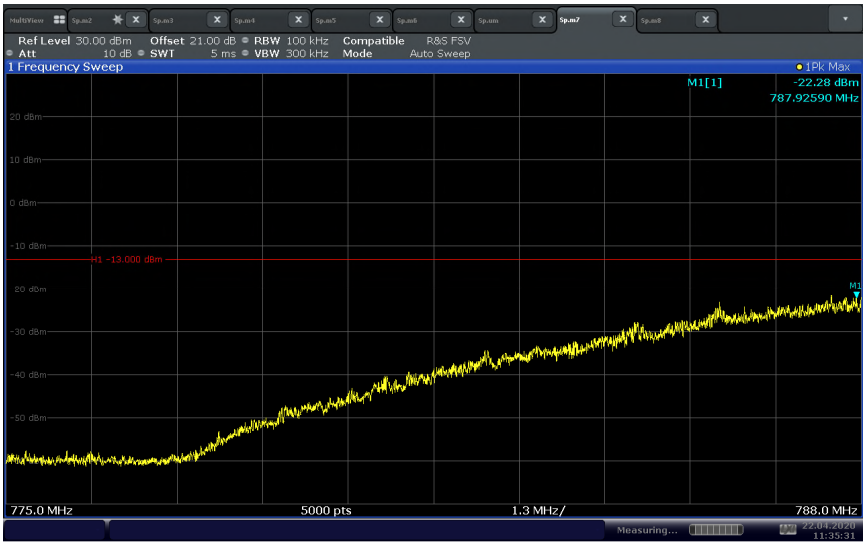
Limit = -46 + 10lg (10/6.25) = -43.96 dBm

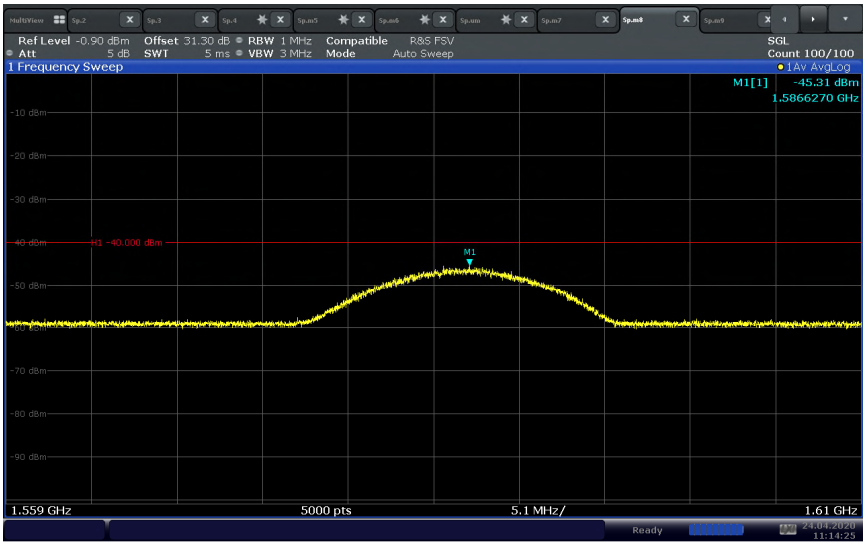
LTE Band 14 Uplink 10MHz Bandwidth Middle Channel Conducted Spurious Emissions
799 – 806 MHz



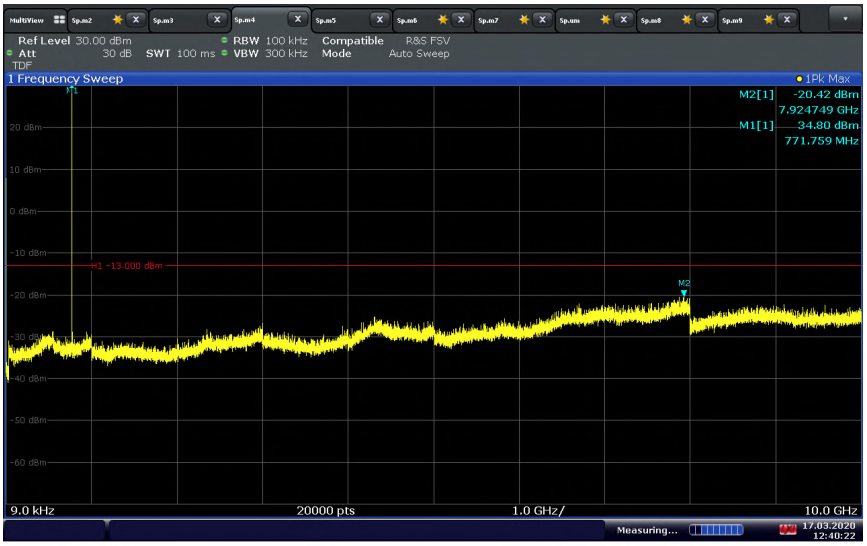
Limit = -46 + 10lg (10/6.25) = -43.96 dBm

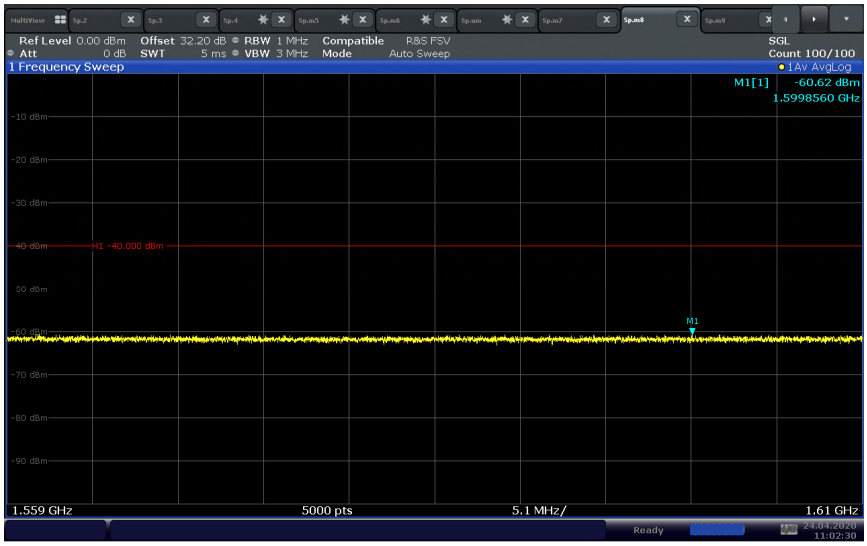
TÜV SÜD AMERICA INC 10040 Mesa Rim Road San Diego, CA 92121-2912 Phone: 858 678 1400 FAX: 858 546 0364

LTE Band 14 Uplink 10MHz Bandwidth Middle Channel Conducted Spurious Emissions 775 – 788 MHz
   11:35:32 22.04.2020

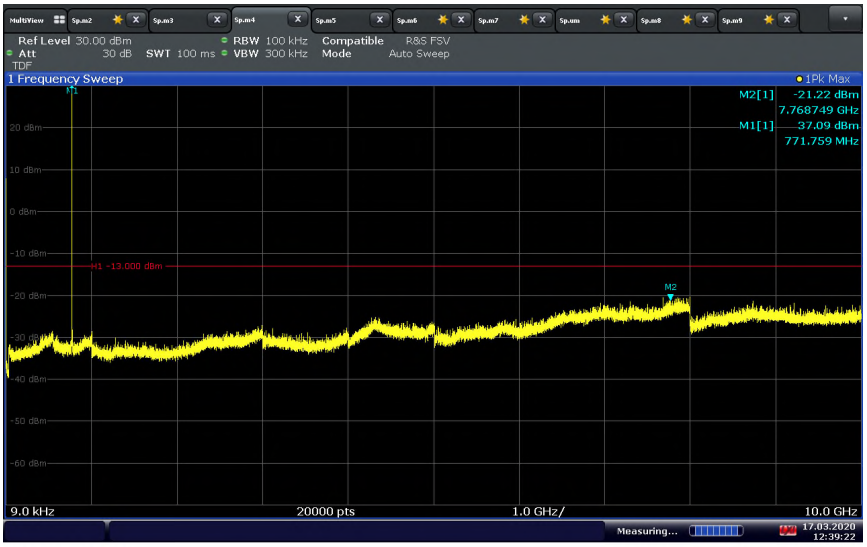
LTE Band 14 Uplink 10MHz Bandwidth Middle Channel Conducted Spurious Emissions 1559 – 1610 MHz (EIRP)
   11:14:26 24.04.2020

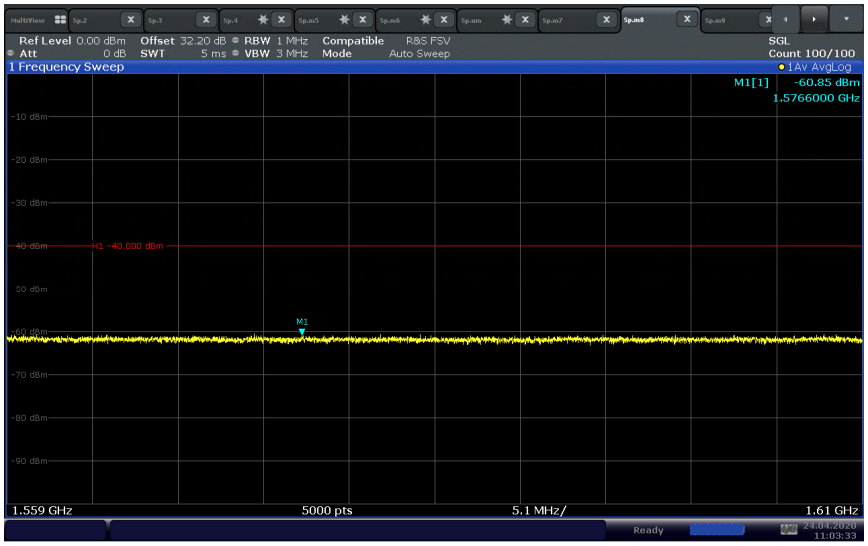
TÜV SÜD AMERICA INC 10040 Mesa Rim Road San Diego, CA 92121-2912 Phone: 858 678 1400 FAX: 858 546 0364

700MHz Narrowband Public Safety Downlink C4FM 12.5 kHz Bandwidth Middle Channel Spurious Emissions
 12:40:23 17.03.2020

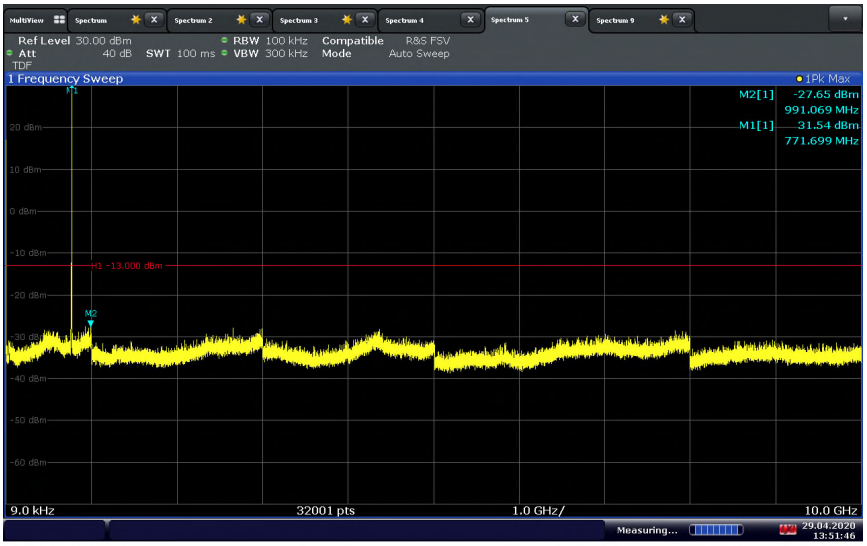
700MHz Narrowband Public Safety Downlink C4FM 12.5 kHz Bandwidth Middle Channel Spurious Emissions 1559 – 1610 MHz (EIRP)
 11:02:30 24.04.2020

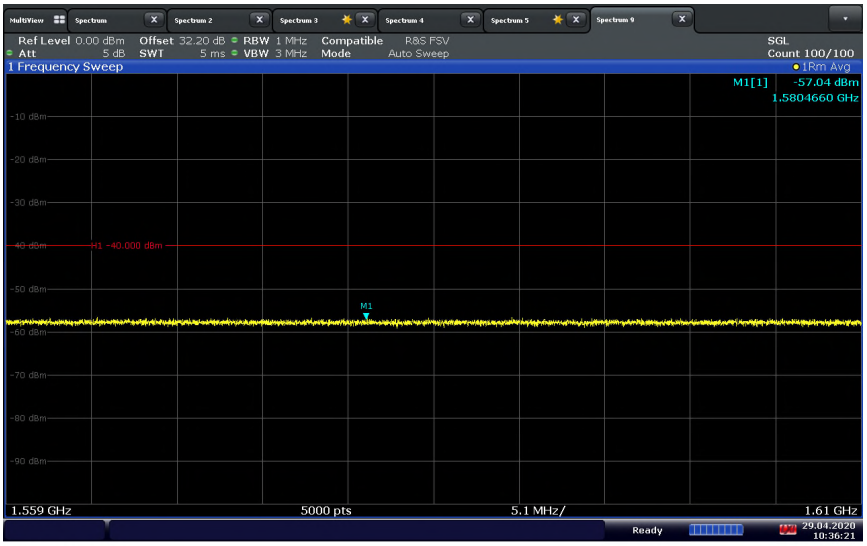
TÜV SÜD AMERICA INC 10040 Mesa Rim Road San Diego, CA 92121-2912 Phone: 858 678 1400 FAX: 858 546 0364

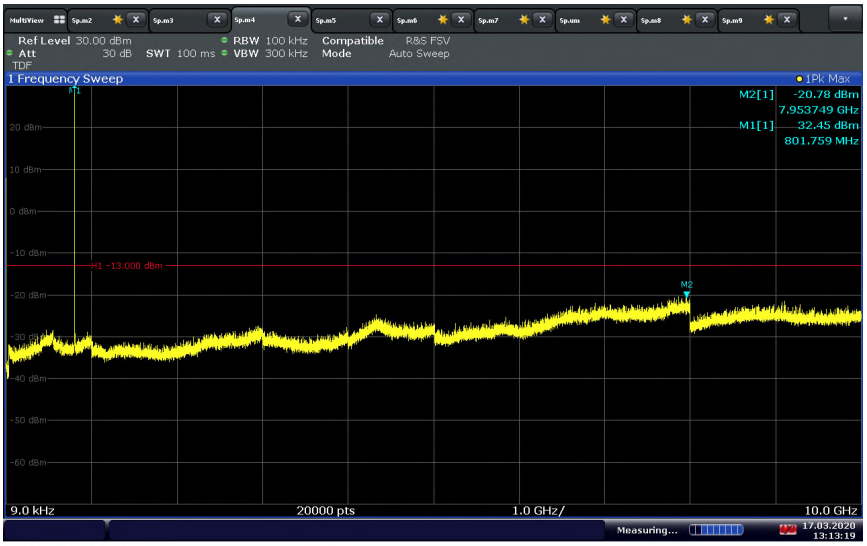
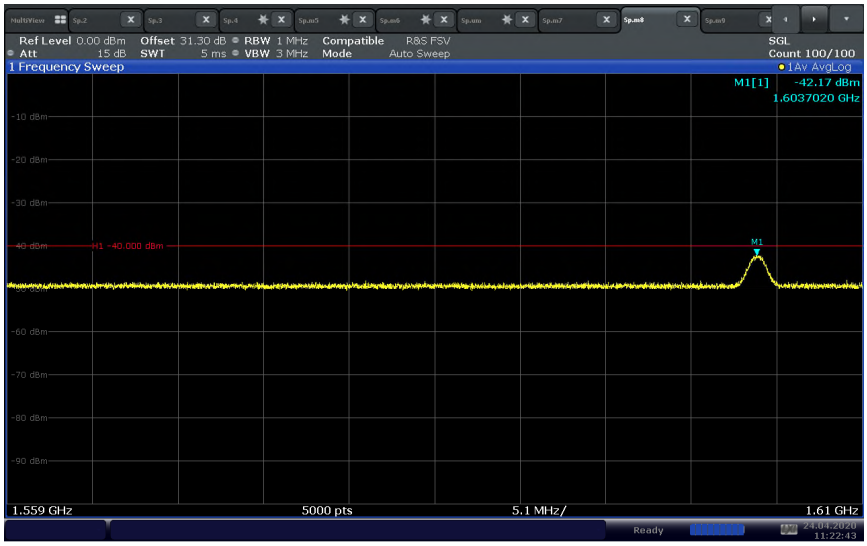
700MHz Narrowband Public Safety Downlink CQPSK 12.5 kHz Bandwidth Middle Channel Spurious Emissions
 12:39:22 17.03.2020

700MHz Narrowband Public Safety Downlink CQPSK 12.5 kHz Middle Channel Spurious Emissions 1559 – 1610 MHz (EIRP)
 11:03:34 24.04.2020

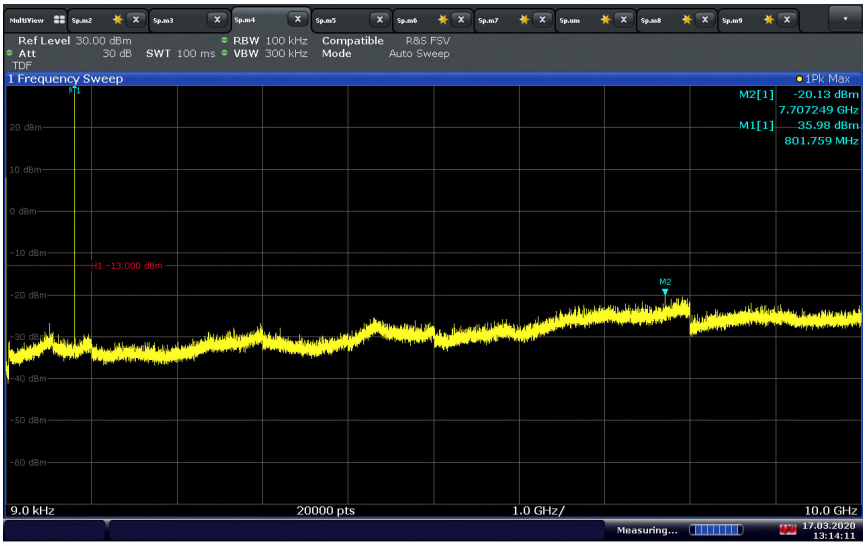
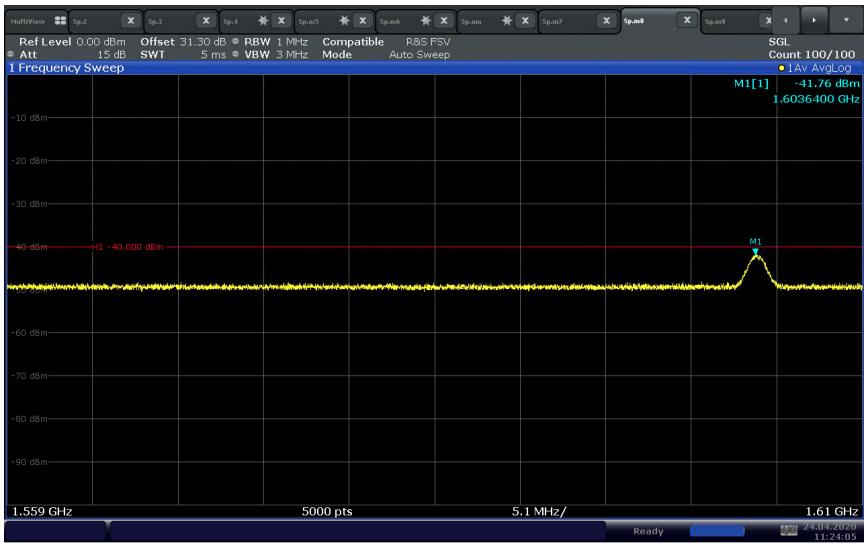
TÜV SÜD AMERICA INC 10040 Mesa Rim Road San Diego, CA 92121-2912 Phone: 858 678 1400 FAX: 858 546 0364

700MHz Narrowband Public Safety Downlink H-DQPSK 12.5 kHz Bandwidth Middle Channel Spurious Emissions
 13:51:46 29.04.2020

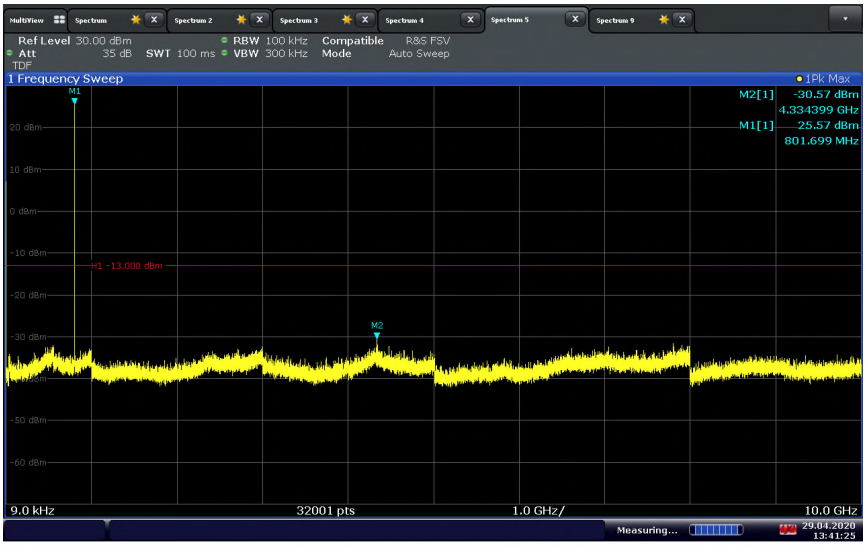
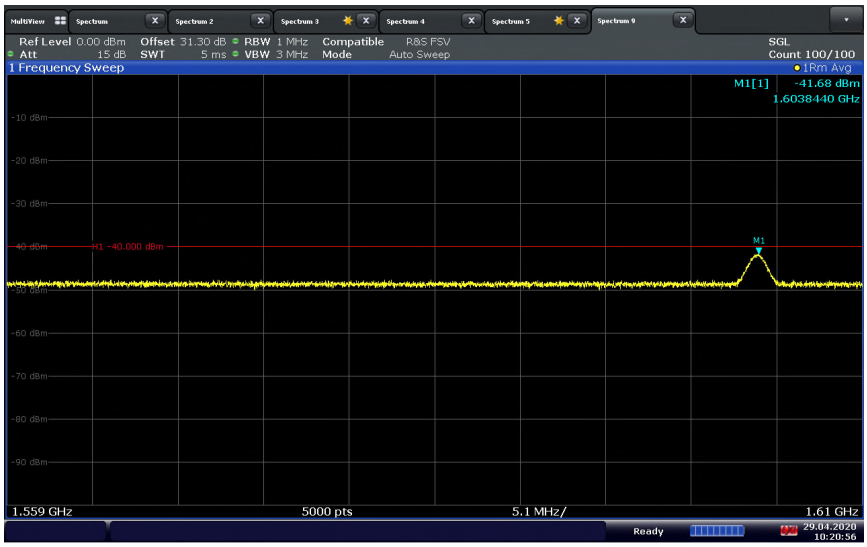
700MHz Narrowband Public Safety Downlink H-DQPSK 12.5 kHz Bandwidth Middle Channel Spurious Emissions 1559 – 1610 MHz (EIRP)
 10:36:21 29.04.2020

700MHz Narrowband Public Safety Uplink C4FM 12.5 kHz Middle Channel Spurious Emissions
   13:13:19 17.03.2020
700MHz Narrowband Public Safety Uplink C4FM 12.5 kHz Middle Channel Spurious Emissions 1559 – 1610 MHz (EIRP)
   11:22:44 24.04.2020

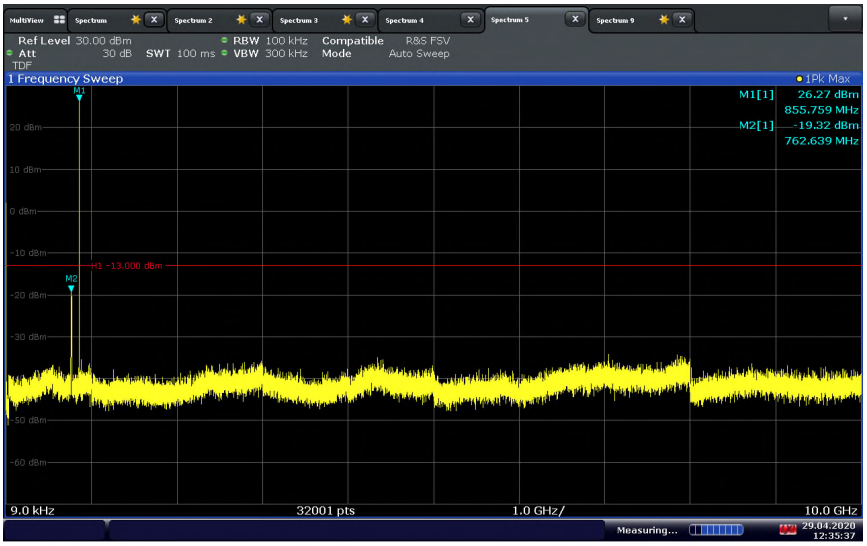
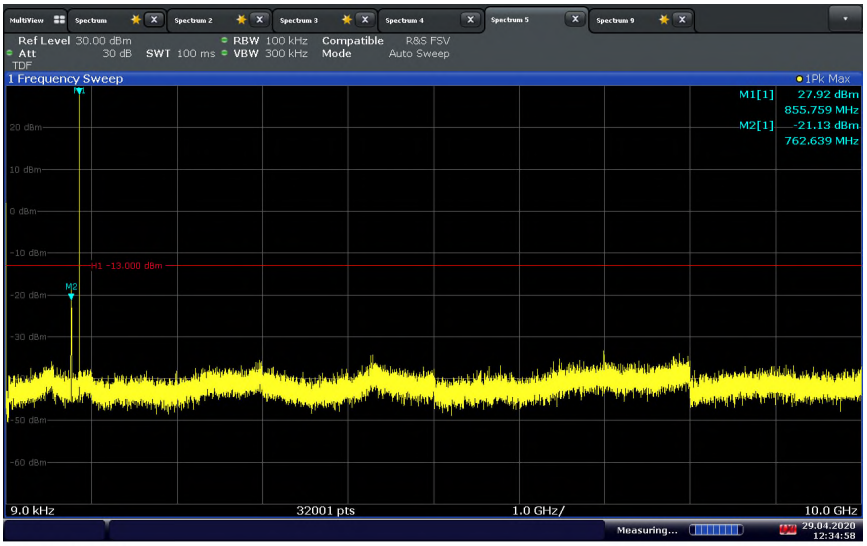
TÜV SÜD AMERICA INC 10040 Mesa Rim Road San Diego, CA 92121-2912 Phone: 858 678 1400 FAX: 858 546 0364

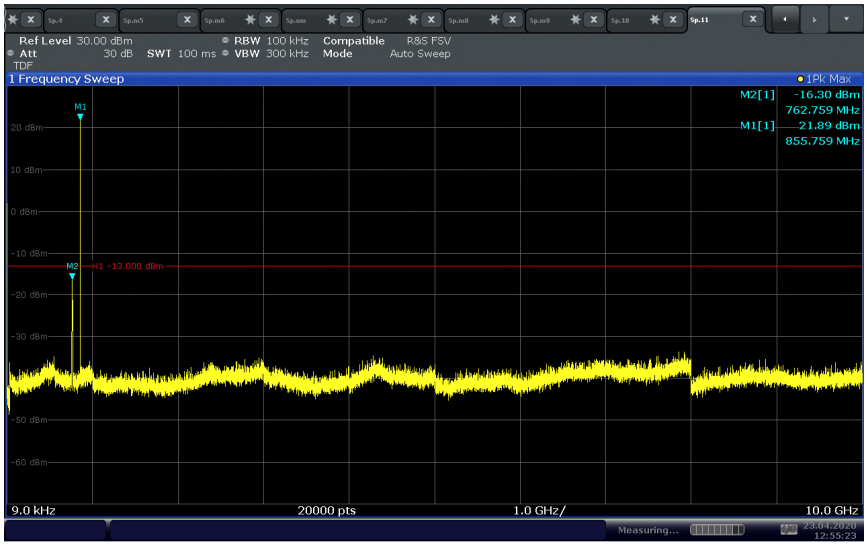
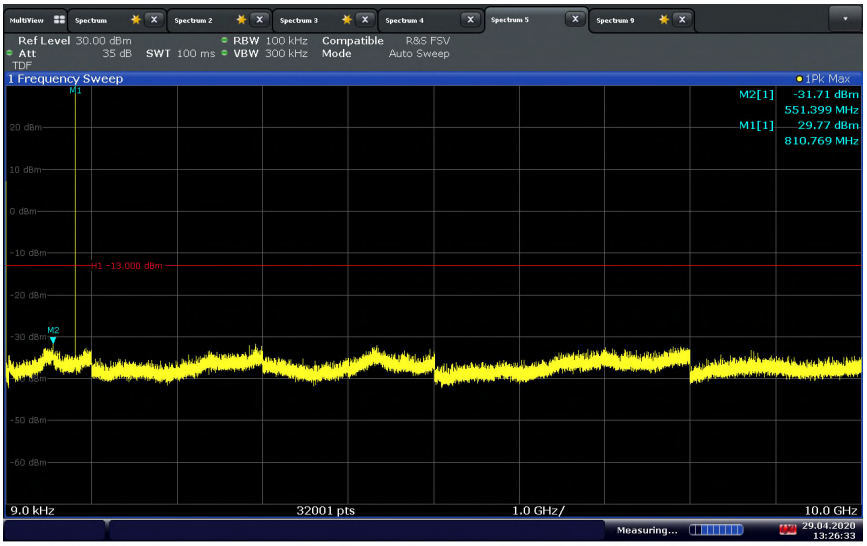
700MHz Narrowband Public Safety Uplink CQPSK 12.5 kHz Middle Channel Spurious Emissions
   13:14:12 17.03.2020
700MHz Narrowband Public Safety Uplink CQPSK 12.5 kHz Middle Channel Spurious Emissions 1559 – 1610 MHz (EIRP)
   11:24:06 24.04.2020

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

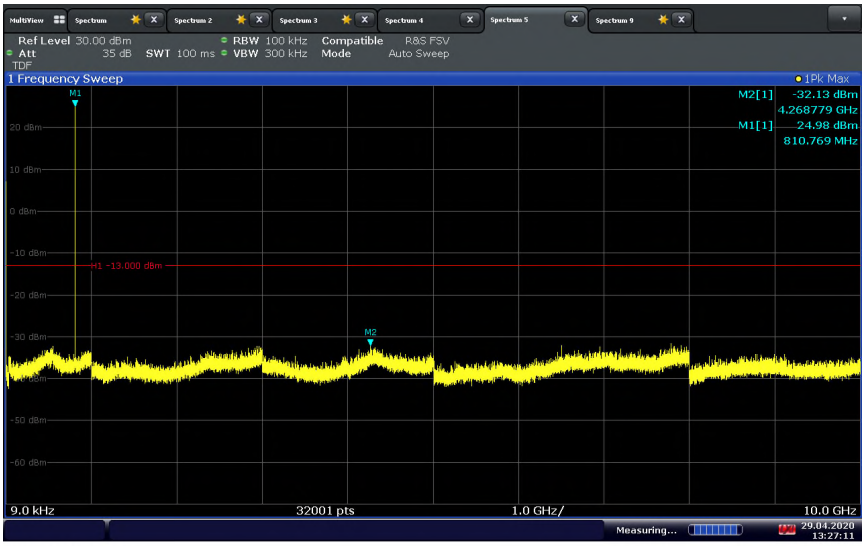
700MHz Narrowband Public Safety Uplink H-CPM 12.5 kHz Middle Channel Spurious Emissions
   13:41:26 29.04.2020
700MHz Narrowband Public Safety Uplink H-CPM 12.5 kHz Middle Channel Spurious Emissions 1559 – 1610 MHz (EIRP)
   10:20:57 29.04.2020

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

800 MHz NPSPAC Public Safety Downlink C4FM 12.5 kHz Middle Channel Spurious Emissions
 12:35:37 29.04.2020
800 MHz NPSPAC Public Safety Downlink CQPSK 12.5 kHz Middle Channel Spurious Emissions
 12:34:58 29.04.2020

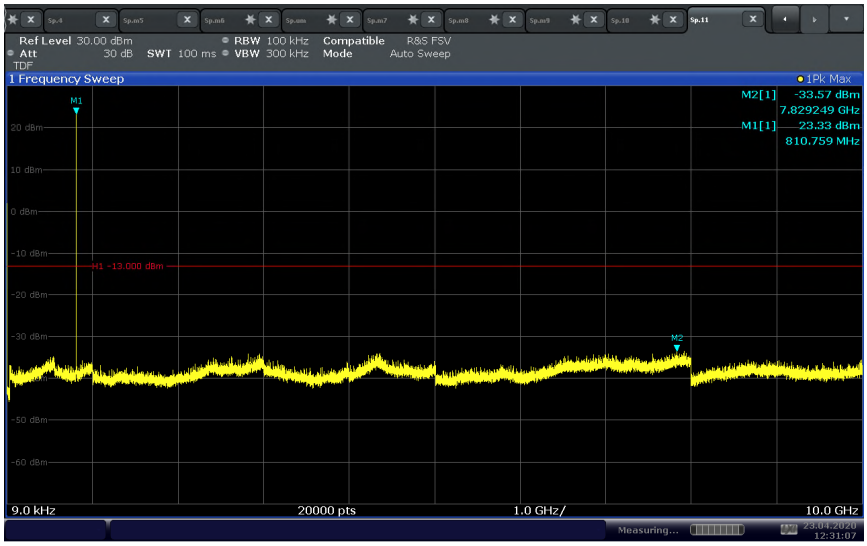
800 MHz NPSPAC Public Safety Downlink H-DQPSK 12.5 kHz Middle Channel Spurious Emissions
 12:55:23 23.04.2020
800 MHz NPSPAC Public Safety Uplink C4FM 12.5 kHz Middle Channel Spurious Emissions
 13:26:33 29.04.2020

800 MHz NPSPAC Public Safety Uplink CQPSK 12.5 kHz Middle Channel Spurious Emissions



13:27:12 29.04.2020

800 MHz NPSPAC Public Safety Uplink H-CPM 12.5 kHz Middle Channel Spurious Emissions



12:31:07 23.04.2020

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

2.7 FIELD STRENGTH OF SPURIOUS RADIATION

2.7.1 Specification Reference

FCC 47 CFR Part 2, Clause 2.1053
FCC 47 CFR Part 90, Clause 90.543(e)(1)(3)(f)
RSS-140, Clause 4.4
RSS-119, Clause 5.8.9.2
KDB935210 D05, Clause 4.9

2.7.2 Standard Applicable

FCC 47 CFR Part 90, Clause 90.219(e):
(3) Spurious emissions from a signal booter must not exceed -13 dBm within any 100 kHz measurement bandwidth.

FCC 47 CFR Part 90, Clause 90.543:
(e) For operations in the 758–768 MHz and the 788–798 MHz bands, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following:
(1) On all frequencies between 769–775 MHz and 799–805 MHz, by a factor not less than 76 + 10 log (P) dB in a 6.25 kHz band segment, for base and fixed stations.

(3) On any frequency between 775–788 MHz, above 805 MHz, and below 758 MHz, by at least 43 + 10 log (P) dB.

(f) For operations in the 758–775 MHz and 788–805 MHz bands, all emissions including harmonics in the band 1559–1610 MHz shall be limited to -70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.

FCC 47 CFR Part 90, Clause 90.543:
(c) *Out-of-band emission limit*. On any frequency outside of the frequency ranges covered by the ACP tables in this secion, the power of any emission must bereduced below the mean output power (P) by at least 43 + 10 log10(p) dB measured in a 100 kHz bandwidth for frequencies less than 1 GHz, and in a 1 MHz bandwidth for frequencies greater than 1 GHz.

RSS-140:
4.4 Transmitter unwanted emissions limits
The power of any unwanted emission outside the bands 758-768 MHz and 788-798 MHz shall be attenuated below the transmitter output power P in dBW as follows, where p is the transmitter output power in watts:
a. For any frequency between 769-775 MHz and 799-806 MHz:
- i 76 + 10 log (p), dB in a 6.25 kHz band for fixed and base station equipment
- ii 65 + 10 log (p), dB in a 6.25 kHz band for mobile and portable/hand-held equipment

b For any frequency between 775-788 MHz, above 806 MHz, and below 758 MHz: 43 + 10 log (p), dB in a bandwidth of 100 kHz or greater. However, in the 100 kHz bands immediately outside and adjacent to the frequency bands 758-768 MHz and 788-798 MHz, a resolution bandwidth of 30 kHz may be employed.

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

In addition, the equivalent isotropically radiated power (e.i.r.p.) of all emissions, including harmonics in the band 1559-1610 MHz, shall not exceed −70 dBW/MHz for wideband emissions, and −80 dBW/kHz for discrete emissions of less than 700 Hz bandwidth.
RSS-119, Clause 5.8.9.2:
On any frequency outside of the ranges specified in the ACP tables 13 to 16, the power of any emission shall be attenuated below the mean output power P (dBW) by at least
43 + 10 log10(p), measured in a 100 kHz bandwidth for frequencies less than or equal to
1 GHz, and in a 1 MHz bandwidth for frequencies greater than 1 GHz.

In addition, for operations in the bands 768-776 MHz and 798-806 MHz, all emissions (including harmonics in the band 1559-1610 MHz), shall not exceed:

- −70 dBW/MHz equivalent isotropically radiated power (e.i.r.p.) for wideband emissions, and
- −80 dBW/kHz e.i.r.p. for discrete emissions of less than 700 Hz bandwidth.

2.7.3 Equipment Under Test and Modification State

Serial No: 444002000024 (NU) and 247002000034 (CU) / Test Configuration A and B

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

May 03 and 04, 2020 / XYZ

2.7.5 Test Equipment Used

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

2.7.6 Environmental Conditions/ Test Location

Test performed at TÜV SÜD America Inc. Rancho Bernardo facility

Ambient Temperature	23.4 - 26.0°C
Relative Humidity	30.9 - 52.3%
ATM Pressure	98.6 - 98.9kPa

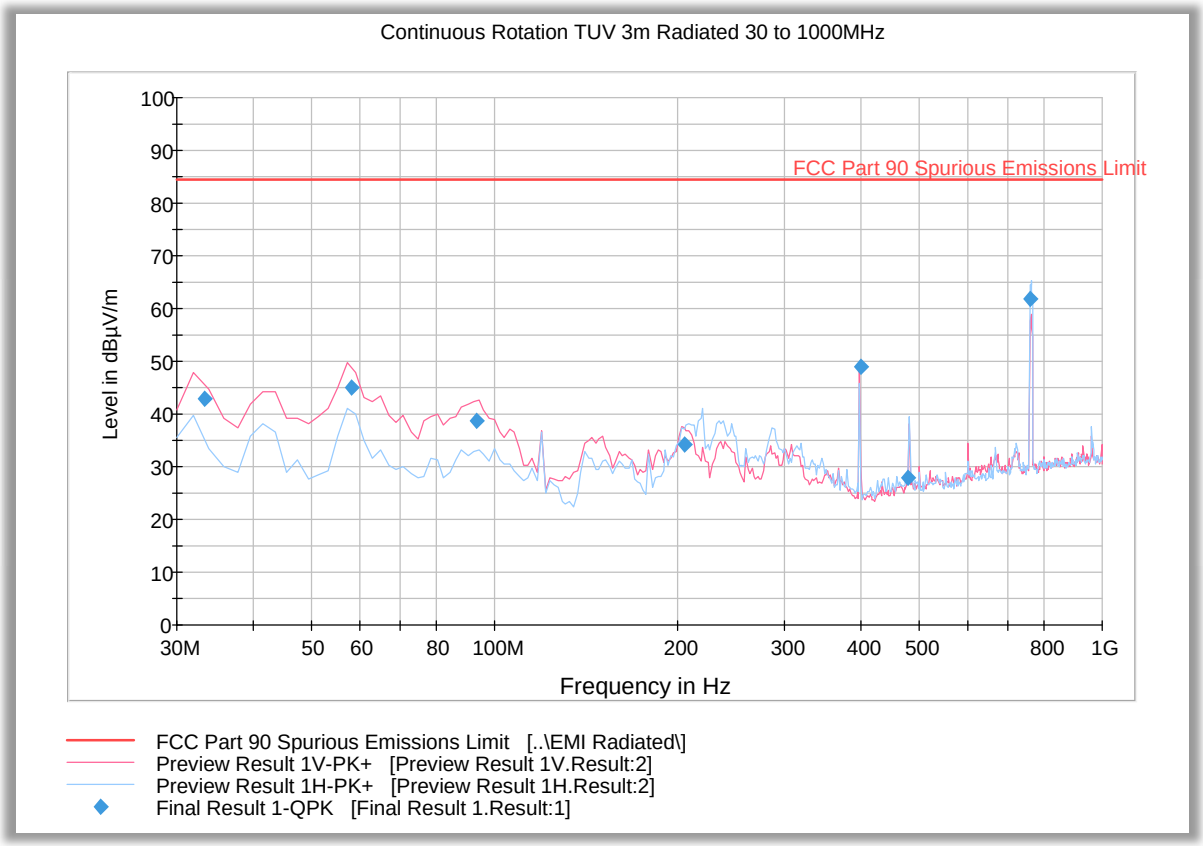
2.7.7 Additional Observations

- This is a radiated test using the Direct Radiated Field Strength method of C63.26 2015.
- This is cabinet spurious emissions testing. Main antenna port was terminated during the test. Fundamental frequency measurement will be ignored for this test.
- Only the worst case configuration presented in this test report.
- 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.

2.7.8 Test Results

Compliant. See attached plots.

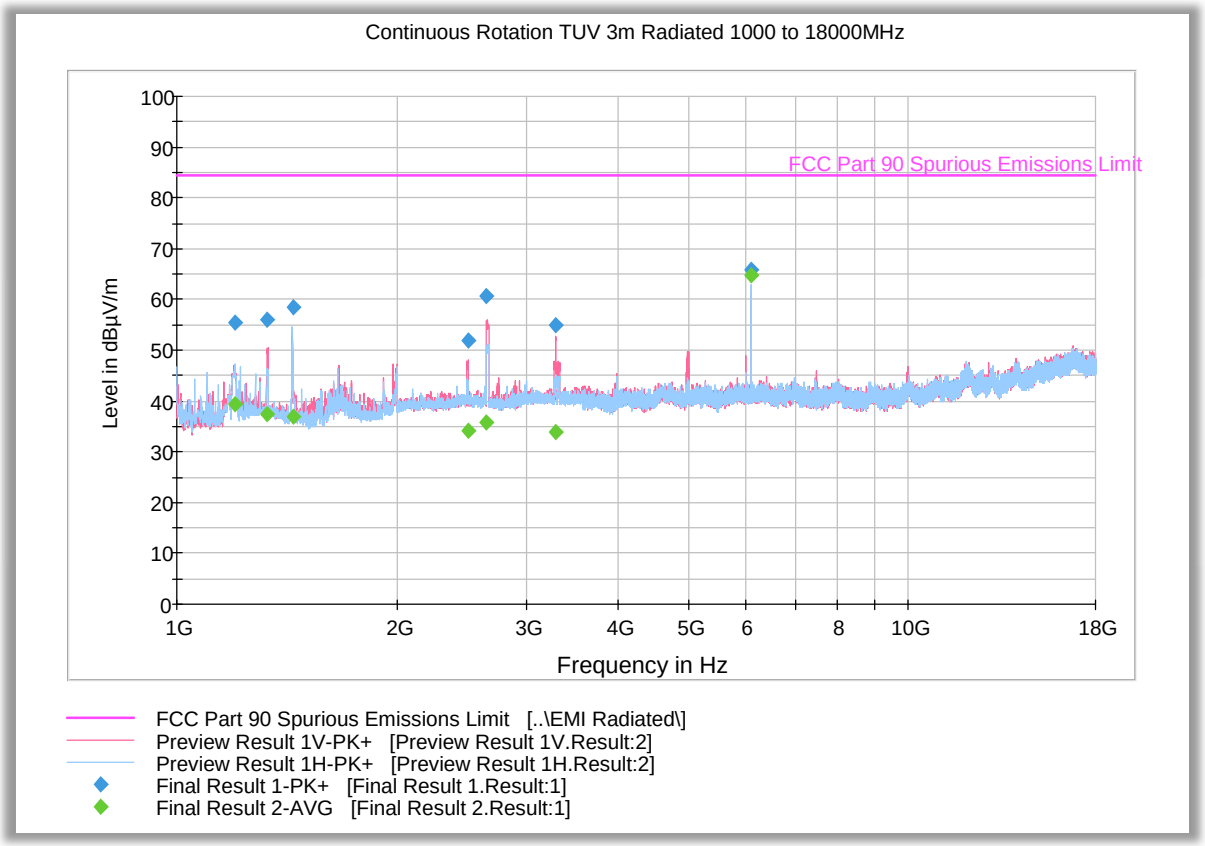
2.7.9 Test Results Below 1GHz (LTE Band 14 Downlink Worst Case Configuration) - 10MHz Bandwidth Middle Channel



Quasi Peak Data

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
33.280000	43.0	1000.0	120.000	100.0	V	310.0	-9.9	41.4	84.4
58.134429	45.0	1000.0	120.000	100.0	V	8.0	-15.6	39.4	84.4
93.188297	38.6	1000.0	120.000	105.0	V	140.0	-13.6	45.8	84.4
205.773788	34.2	1000.0	120.000	207.0	H	229.0	-10.7	50.2	84.4
400.018677	48.9	1000.0	120.000	122.0	V	129.0	-4.6	35.5	84.4
480.021964	27.9	1000.0	120.000	226.0	H	208.0	-2.0	56.5	84.4
762.709579	61.9	1000.0	120.000	100.0	H	218.0	2.9	Fundamental Carrier	

2.7.10 Test Results Above 1GHz (LTE Band 14 Downlink Worst Case Configuration) - 10MHz Bandwidth Middle Channel



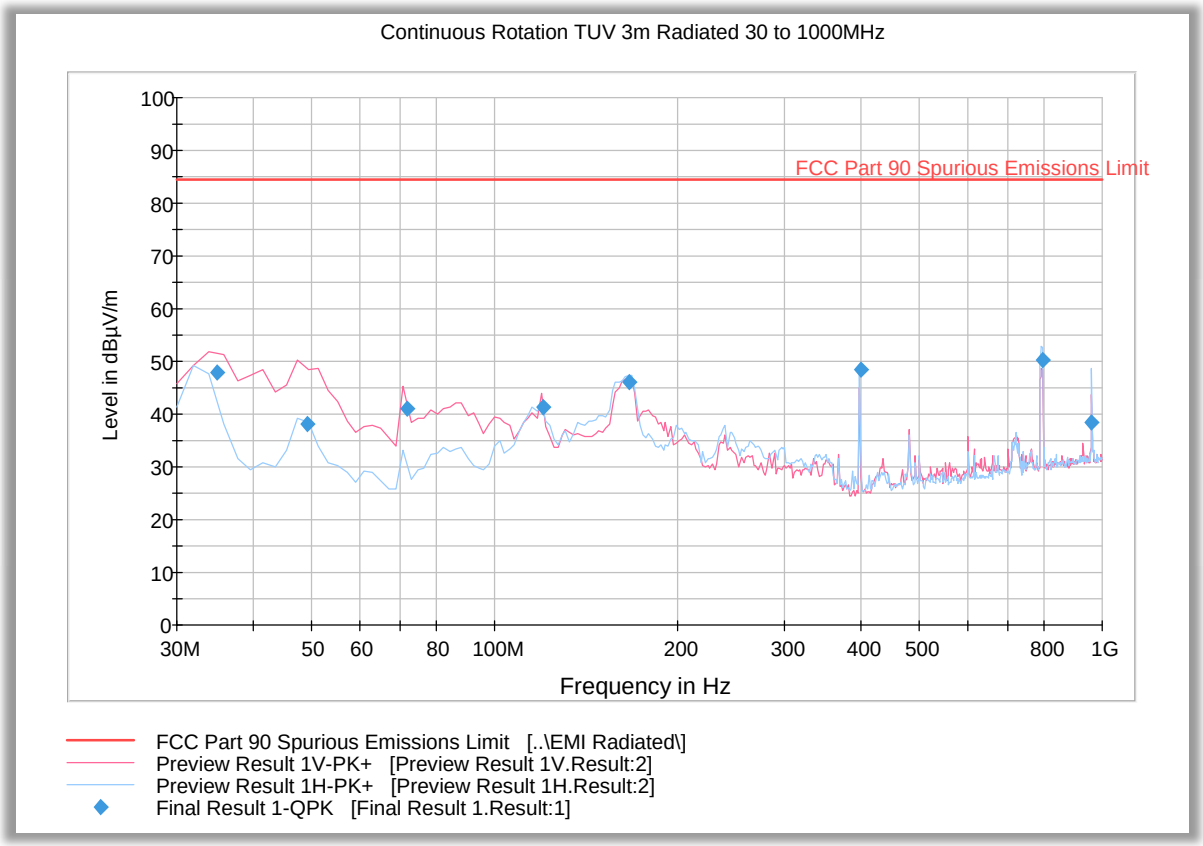
Peak Data

Frequency (MHz)	MaxPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
1199.700000	55.4	1000.0	1000.000	186.5	V	150.0	-6.7	29.0	84.4
1326.933333	56.0	1000.0	1000.000	152.2	V	150.0	-5.5	28.4	84.4
1439.933333	58.5	1000.0	1000.000	152.2	H	314.0	-6.0	25.9	84.4
2497.666667	51.9	1000.0	1000.000	131.7	V	149.0	0.2	32.5	84.4
2652.933333	60.6	1000.0	1000.000	103.7	V	165.0	0.5	23.8	84.4
3298.033333	55.0	1000.0	1000.000	195.5	V	143.0	1.9	29.4	84.4
6104.166667	65.9	1000.0	1000.000	194.5	H	181.0	6.6	18.5	84.4

Average Data

Frequency (MHz)	Average (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
1199.700000	39.3	1000.0	1000.000	186.5	V	150.0	-6.7	45.1	84.4
1326.933333	37.5	1000.0	1000.000	152.2	V	150.0	-5.5	46.9	84.4
1439.933333	37.0	1000.0	1000.000	152.2	H	314.0	-6.0	47.4	84.4
2497.666667	34.2	1000.0	1000.000	131.7	V	149.0	0.2	50.2	84.4
2652.933333	35.8	1000.0	1000.000	103.7	V	165.0	0.5	48.6	84.4
3298.033333	33.8	1000.0	1000.000	195.5	V	143.0	1.9	50.6	84.4
6104.166667	64.7	1000.0	1000.000	194.5	H	181.0	6.6	19.7	84.4

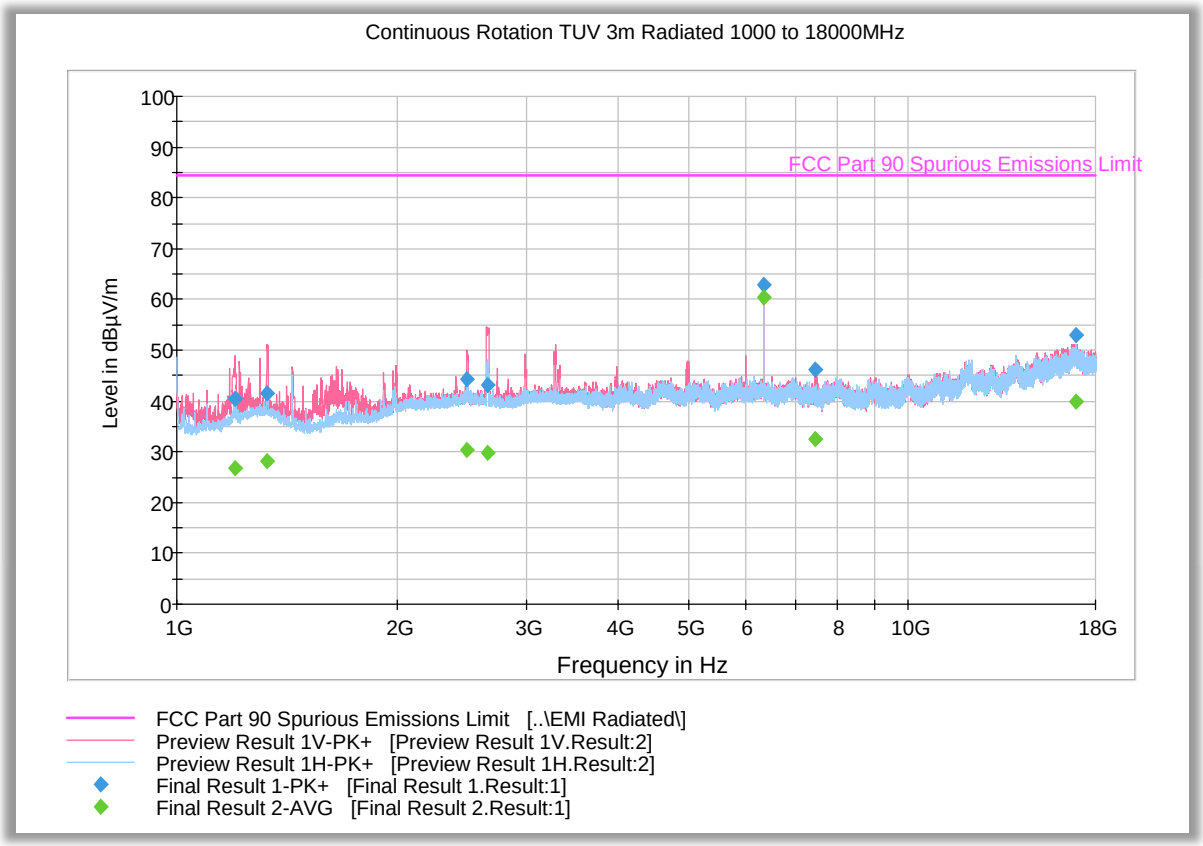
2.7.11 Test Results Below 1GHz (LTE Band 14 Uplink Worst Case Configuration) - 10MHz Bandwidth Middle Channel



Quasi Peak Data

Frequency (MHz)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
34.927776	47.8	1000.0	120.000	100.0	V	326.0	-11.0	36.6	84.4
49.094990	38.1	1000.0	120.000	115.0	V	82.0	-14.2	46.3	84.4
71.981643	40.9	1000.0	120.000	110.0	V	154.0	-16.8	43.5	84.4
120.018838	41.3	1000.0	120.000	100.0	V	251.0	-14.5	43.1	84.4
166.776032	46.0	1000.0	120.000	191.0	H	38.0	-11.5	38.4	84.4
400.018677	48.3	1000.0	120.000	100.0	H	26.0	-4.6	36.1	84.4
795.947896	50.2	1000.0	120.000	100.0	H	239.0	3.7	Fundamental Carrier	
960.002244	38.4	1000.0	120.000	100.0	H	-8.0	5.7	46.0	84.4

2.7.12 Test Results Above 1GHz (LTE Band 14 Uplink Worst Case Configuration) - 10MHz Bandwidth Middle 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)
1198.866667	40.5	1000.0	1000.000	152.1	V	352.0	-6.7	43.9	84.4
1328.233333	41.4	1000.0	1000.000	278.3	V	143.0	-5.5	43.0	84.4
2494.533333	44.1	1000.0	1000.000	103.7	V	149.0	0.2	40.3	84.4
2653.566667	43.2	1000.0	1000.000	138.7	V	198.0	0.5	41.2	84.4
6343.866667	62.9	1000.0	1000.000	152.7	H	208.0	6.8	21.5	84.4
7463.766667	46.1	1000.0	1000.000	119.8	V	149.0	7.6	38.3	84.4
16939.00000	53.0	1000.0	1000.000	161.6	V	315.0	18.4	31.4	84.4

Average Data

Frequency (MHz)	Average (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
1198.866667	26.8	1000.0	1000.000	152.1	V	352.0	-6.7	57.6	84.4
1328.233333	28.0	1000.0	1000.000	278.3	V	143.0	-5.5	56.4	84.4
2494.533333	30.5	1000.0	1000.000	103.7	V	149.0	0.2	53.9	84.4
2653.566667	29.9	1000.0	1000.000	138.7	V	198.0	0.5	54.5	84.4
6343.866667	60.3	1000.0	1000.000	152.7	H	208.0	6.8	24.1	84.4
7463.766667	32.6	1000.0	1000.000	119.8	V	149.0	7.6	51.8	84.4
16939.00000	40.0	1000.0	1000.000	161.6	V	315.0	18.4	44.4	84.4