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Report On

FCC Testing of the Sharp SHV32 Hex-band LTE (B1 / B3 / B5 / B17 / B26 / B28), Dual-band WCDMA (FDD I / V), Quad-band GSM (850/900/1800/1900) & AXGP (TDD41) multi mode Smart phone with Bluetooth, WLAN, SRD (NFC,FeliCa) and GPS
In accordance with FCC 47 CFR Part 90 and FCC 47 CFR Part 2 (LTE)

COMMERCIAL-IN-CONFIDENCE

FCC ID: APYHRO00218

Document 75929719 Report 22 Issue 3 June 2015

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REPORT ON

FCC Testing of the Sharp SHV32 Hex-band LTE (B1 / B3 / B5 / B17 / B26 / B28), Dual-band WCDMA (FDD I / V), Quad-band GSM (850/900/1800/1900) & AXGP (TDD41) multi mode Smart phone with Bluetooth, WLAN, SRD (NFC,FeliCa) and GPS
In accordance with FCC 47 CFR Part 90 and FCC 47 CFR Part 2 (LTE)

Document 75929719 Report 22 Issue 3

June 2015

PREPARED FOR

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PREPARED BY

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APPROVED BY

Simon Bennett
Authorised Signatory

DATED 25 June 2015

This report has been up-issued to Issue 3 to amend the antenna gain.

ENGINEERING STATEMENT

The measurements shown in this report were made in accordance with the procedures described on test pages. All reported testing was carried out on a sample equipment to demonstrate limited compliance with FCC 47 CFR Part 90 and FCC 47 CFR Part 2. The sample tested was found to comply with the requirements defined in the applied rules.

Test Engineer(s);

N Rousell T Guy M Russell

Product Service

CONTENTS

Product Service

SECTION 1

REPORT SUMMARY

FCC Testing of the
Sharp SHV32 Hex-band LTE (B1 / B3 / B5 / B17 / B26 / B28), Dual-band WCDMA (FDD I / V), Quad-band GSM (850/900/1800/1900) & AXGP (TDD41) multi mode Smart phone with Bluetooth, WLAN, SRD (NFC,FeliCa) and GPS
In accordance with FCC 47 CFR Part 90 and FCC 47 CFR Part 2 (LTE)

1.1 INTRODUCTION

The information contained in this report is intended to show the verification of FCC Testing of the Sharp SHV32 Hex-band LTE (B1 / B3 / B5 / B17 / B26 / B28), Dual-band WCDMA (FDD I / V), Quad-band GSM (850/900/1800/1900) & AXGP (TDD41) multi mode Smart phone with Bluetooth, WLAN, SRD (NFC,FeliCa) and GPS to the requirements of FCC 47 CFR Part 90 and FCC 47 CFR Part 2.

Objective	To perform FCC Testing to determine the Equipment Under Test's (EUT's) compliance with the Test Specification, for the series of tests carried out.
Manufacturer	Sharp Corporation
Model Number(s)	SHV32
Serial Number(s)	IMEI 004401115406494 IMEI 004401115406767
Number of Samples Tested	2
Test Specification/Issue/Date	FCC 47 CFR Part 90 (2014) FCC 47 CFR Part 2 (2014)
Disposal Reference Number Date	Held Pending Disposal Not Applicable Not Applicable
Order Number Date	10477 02 March 2015
Start of Test	27 April 2015
Finish of Test	11 May 2015
Name of Engineer(s)	N Rousell T Guy M Russell
Related Document(s)	ANSI C63.4: 2009

Product Service

1.2 BRIEF SUMMARY OF RESULTS

A brief summary of the tests carried out in accordance with FCC 47 CFR Part 90 and FCC 47 CFR Part 2 is shown below.

Section	Specification Clause		Test Description	Result	Comments/Base Standard
	Part 90	Part 2			
LTE FDD 26					
2.1	-	2.1049	Occupied Bandwidth	Pass	
2.2	90.213	2.1055	Frequency Stability	Pass	
2.3	90.635	2.1046	Maximum Conducted Output Power	Pass	
2.4	-	2.1047 (d)	Modulation Characteristics	Pass	
2.5	90.691	2.1049	Spurious Emissions at Antenna Terminals	Pass	

1.3 PRODUCT TECHNICAL DESCRIPTION

Please refer to the SHV32 Model Description Form.

1.4 PRODUCT INFORMATION

1.4.1 Technical Description

The Equipment Under Test (EUT) was a Sharp SHV32 Hex-band LTE (B1 / B3 / B5 / B17 / B26 / B28), Dual-band WCDMA (FDD I / V), Quad-band GSM (850/900/1800/1900) & AXGP (TDD41) multi mode Smart phone with Bluetooth, WLAN, SRD (NFC,FeliCa) and GPS. A full technical description can be found in the manufacturer's documentation.

1.5 TEST CONDITIONS

For all tests the EUT was set up in accordance with the relevant test standard and to represent typical operating conditions. Tests were applied with the EUT situated in a shielded enclosure.

The EUT was powered from a 4.0 V DC supply.

FCC Measurement Facility Registration Number
90987 Octagon House, Fareham Test Laboratory

1.6 DEVIATIONS FROM THE STANDARD

No deviations from the applicable test standard were made during testing.

1.7 MODIFICATION RECORD

Modification 0 - No modifications were made to the test sample during testing.

Product Service

SECTION 2

TEST DETAILS

FCC Testing of the
Sharp SHV32 Hex-band LTE (B1 / B3 / B5 / B17 / B26 / B28), Dual-band WCDMA (FDD I / V),
Quad-band GSM (850/900/1800/1900) & AXGP (TDD41) multi mode Smart phone with
Bluetooth, WLAN, SRD (NFC,FeliCa) and GPS
In accordance with FCC 47 CFR Part 90 and FCC 47 CFR Part 2 (LTE)

2.1 OCCUPIED BANDWIDTH

2.1.1 Specification Reference

FCC 47 CFR Part 2, Clause 2.1049

2.1.2 Equipment Under Test and Modification State

SHV32 S/N: IMEI 004401115406494 - Modification State 0

2.1.3 Date of Test

11 May 2015

2.1.4 Test Equipment Used

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

2.1.5 Test Procedure

The test was performed in accordance with KDB 971168 D01 v02r02, clause 4.2.

2.1.6 Environmental Conditions

Ambient Temperature	24.5°C
Relative Humidity	44.0%

Product Service

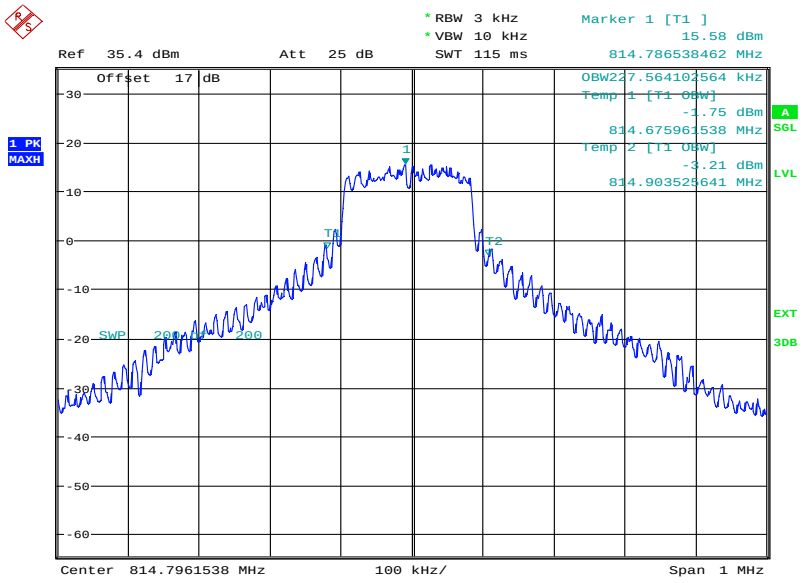
2.1.7 Test Results

4.0 V DC Supply

LTE FDD 26, 1.4 MHz Bandwidth, QPSK, Occupied Bandwidth Results

Occupied Bandwidth (kHz)					
814.7 MHz		819.0 MHz		823.3 MHz	
1 Resource Block	All Resource Blocks	1 Resource Block	All Resource Blocks	1 Resource Block	All Resource Blocks
Mid		Mid		Mid	
227.6	1089.7	227.6	1089.7	224.4	1089.7

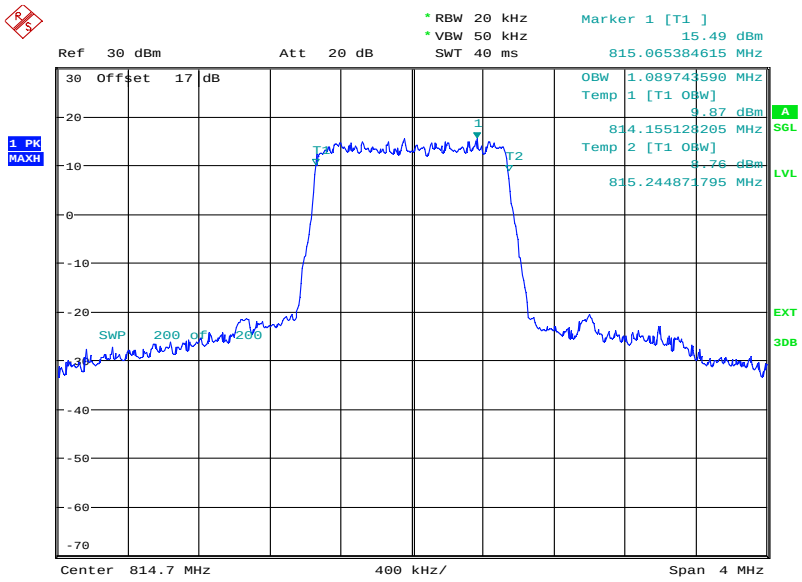
LTE FDD 26, 814.7 MHz, 1 Resource Block - Middle, 1.4 MHz Bandwidth, QPSK, Occupied Bandwidth Results



Date: 28.APR.2015 11:18:00

Product Service

LTE FDD 26, 814.7 MHz, All Resource Blocks, 1.4 MHz Bandwidth, QPSK, Occupied Bandwidth Results



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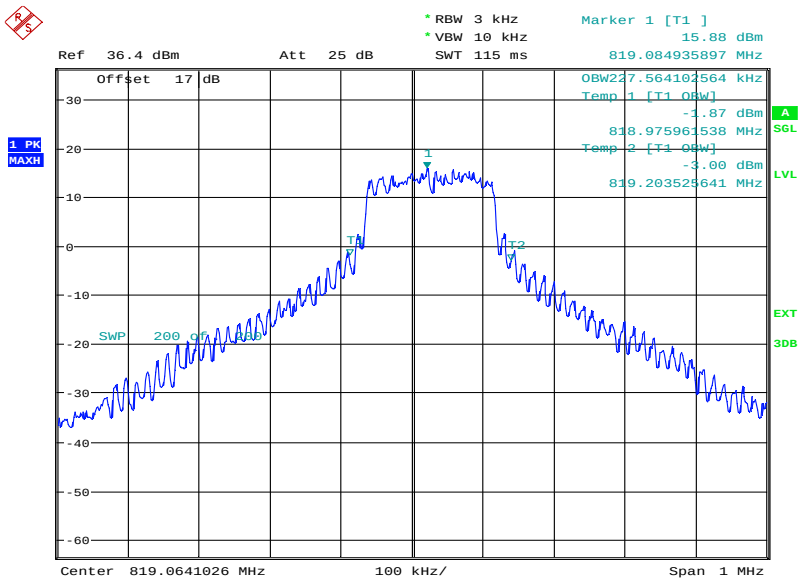
LTE FDD 26, 819 MHz, 1 Resource Block - Middle, 1.4 MHz Bandwidth, QPSK, Occupied Bandwidth Results



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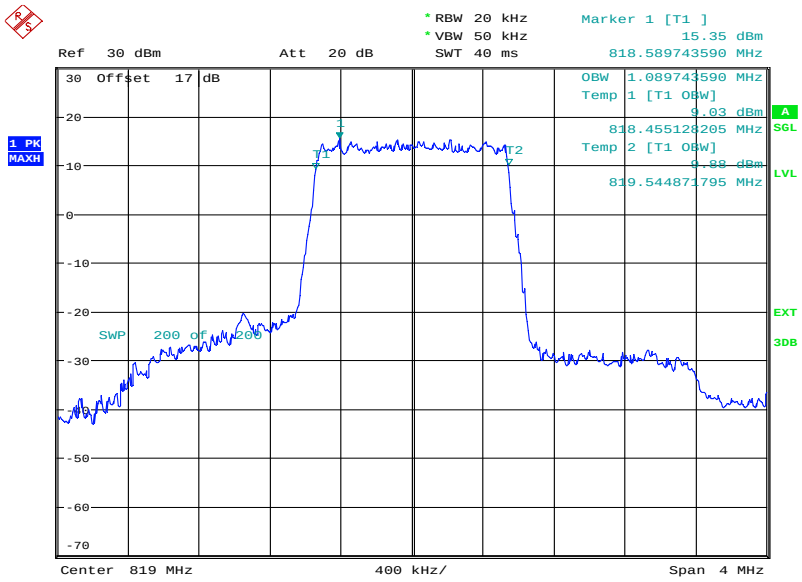
Product Service

LTE FDD 26, 819 MHz, All Resource Blocks, 1.4 MHz Bandwidth, QPSK, Occupied Bandwidth Results



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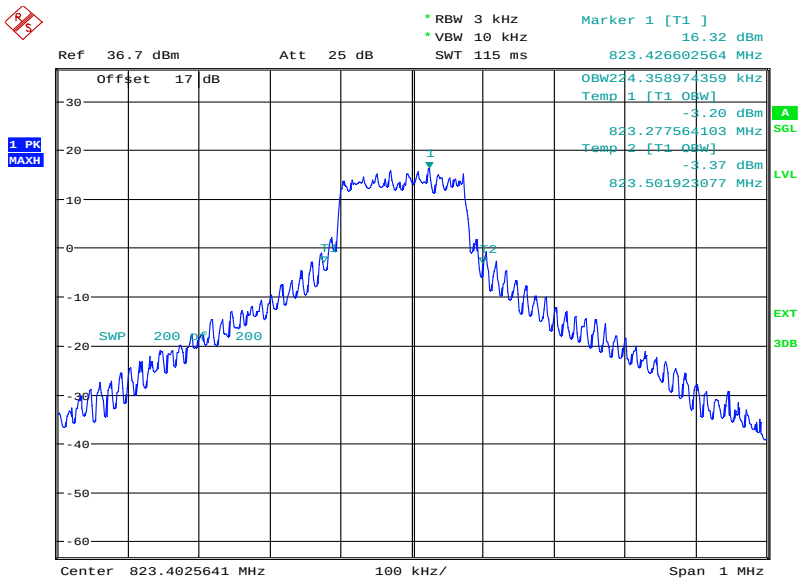
LTE FDD 26, 823.3 MHz, 1 Resource Block - Middle, 1.4 MHz Bandwidth, QPSK, Occupied Bandwidth Results



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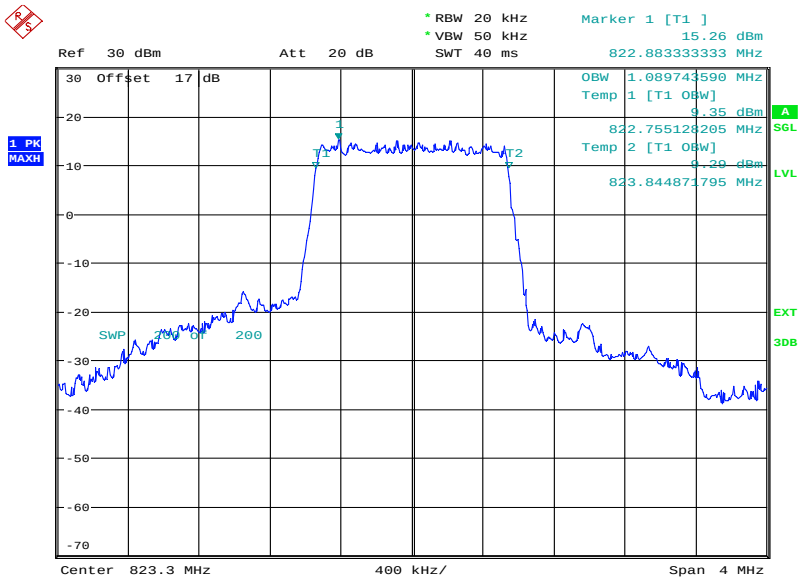
LTE FDD 26, 823.3 MHz, All Resource Blocks, 1.4 MHz Bandwidth, QPSK, Occupied Bandwidth Results



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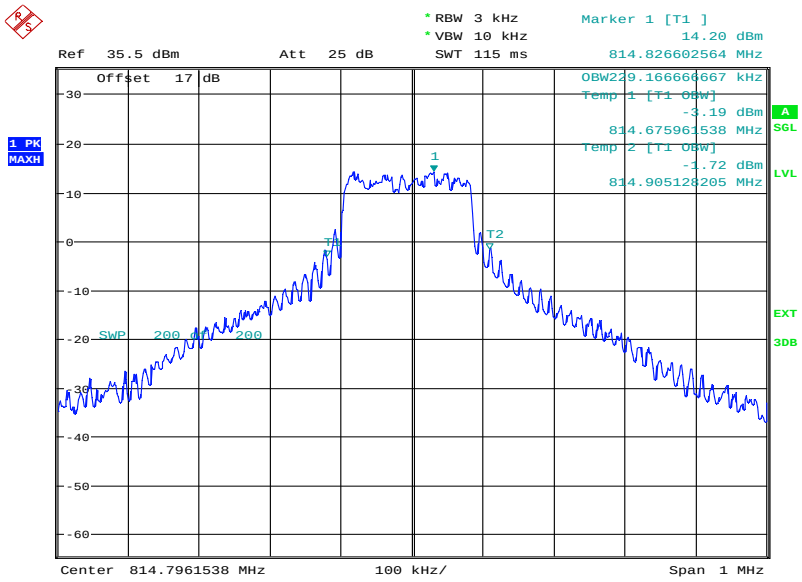
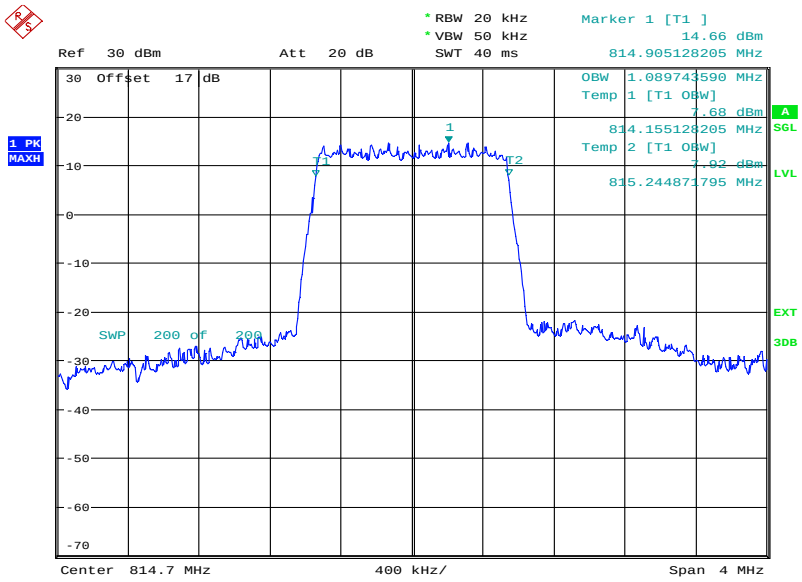
LTE FDD 26, 1.4 MHz Bandwidth, 16-QAM, Occupied Bandwidth Results

Occupied Bandwidth (kHz)					
814.7 MHz		819.0 MHz		823.3 MHz	
1 Resource Block Mid	All Resource Blocks	1 Resource Block Mid	All Resource Blocks	1 Resource Block Mid	All Resource Blocks
229.2	1089.7	229.2	1089.7	229.2	1089.7

LTE FDD 26, 814.7 MHz, 1 Resource Block - Middle, 1.4 MHz Bandwidth, 16-QAM, Occupied Bandwidth Results



LTE FDD 26, 814.7 MHz, All Resource Blocks, 1.4 MHz Bandwidth, 16-QAM, Occupied Bandwidth Results



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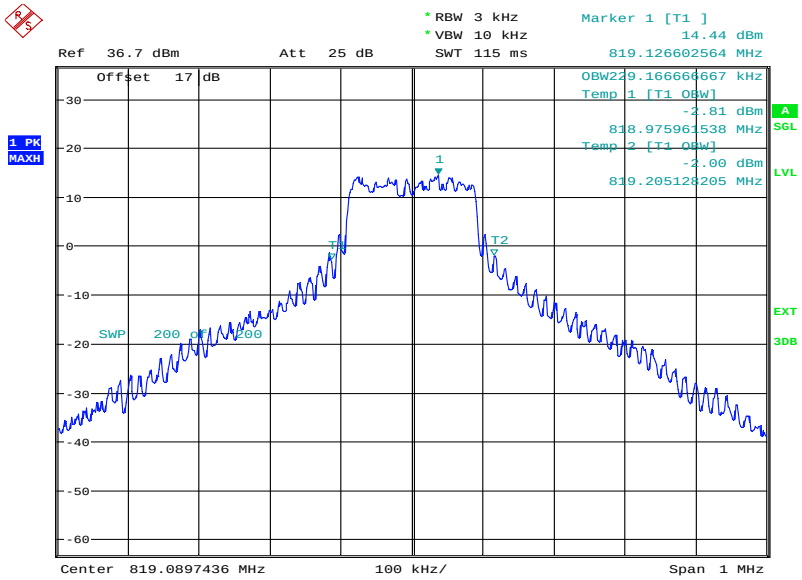
819 MHz, 1 Resource Block - Middle, 1.4 MHz Bandwidth, 16-QAM, Occupied Bandwidth Results



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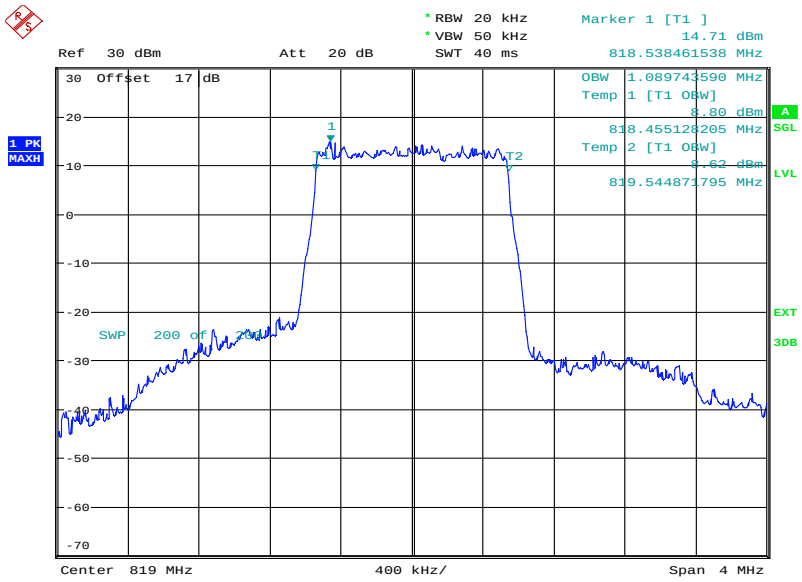
Product Service

LTE FDD 26, 819 MHz, All Resource Blocks, 1.4 MHz Bandwidth, 16-QAM, Occupied Bandwidth Results



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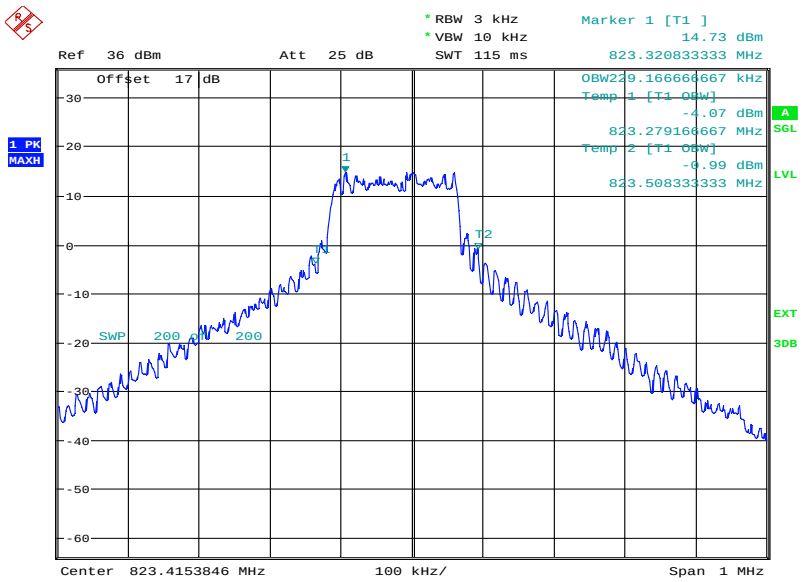
LTE FDD 26, 823.3 MHz, 1 Resource Block - Middle, 1.4 MHz Bandwidth, 16-QAM, Occupied Bandwidth Results



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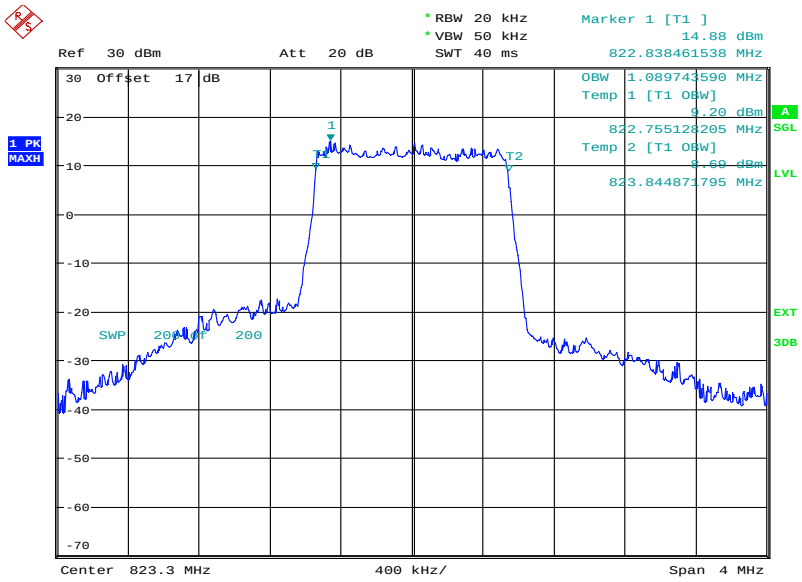
LTE FDD 26, 823.3 MHz, All Resource Blocks, 1.4 MHz Bandwidth, 16-QAM, Occupied Bandwidth Results

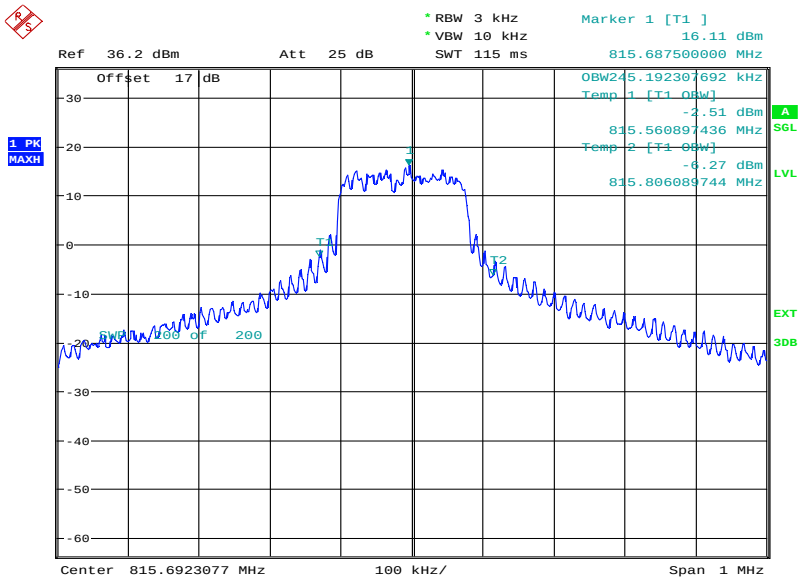


Date: 11.MAY.2015 15:30:26

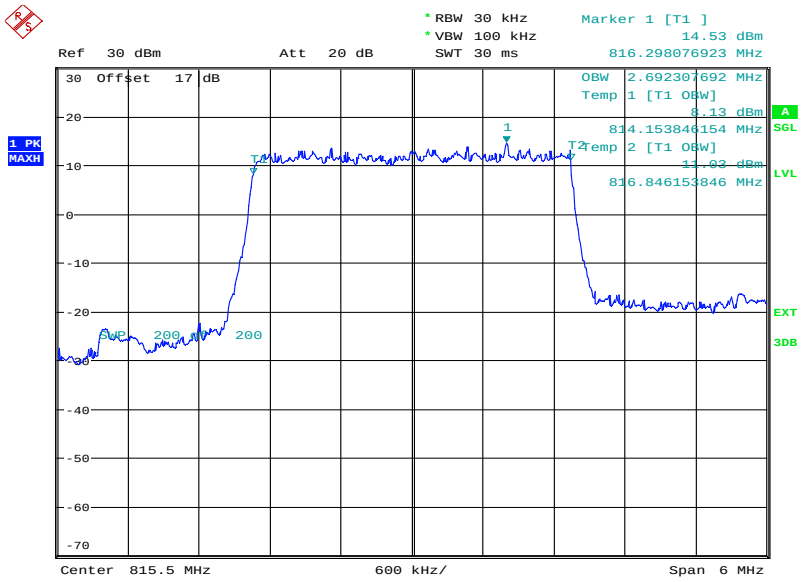
LTE FDD 26, 3.0 MHz Bandwidth, QPSK, Occupied Bandwidth Results

Occupied Bandwidth (kHz)					
815.5 MHz		819.0 MHz		822.5 MHz	
1 Resource Block Mid	All Resource Blocks	1 Resource Block Mid	All Resource Blocks	1 Resource Block Mid	All Resource Blocks
245.2	2692.3	248.4	2692.3	246.8	2692.3

LTE FDD 26, 815.5 MHz, 1 Resource Block - Middle, 3.0 MHz Bandwidth, QPSK, Occupied Bandwidth Results



LTE FDD 26, 815.5 MHz, All Resource Blocks, 3.0 MHz Bandwidth, QPSK, Occupied Bandwidth Results



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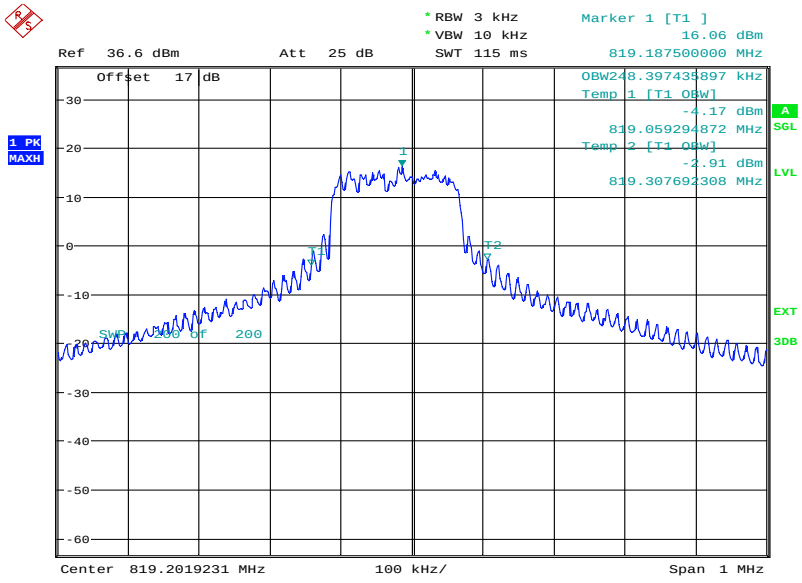
LTE FDD 26, 819 MHz, 1 Resource Block - Middle, 3.0 MHz Bandwidth, QPSK, Occupied Bandwidth Results



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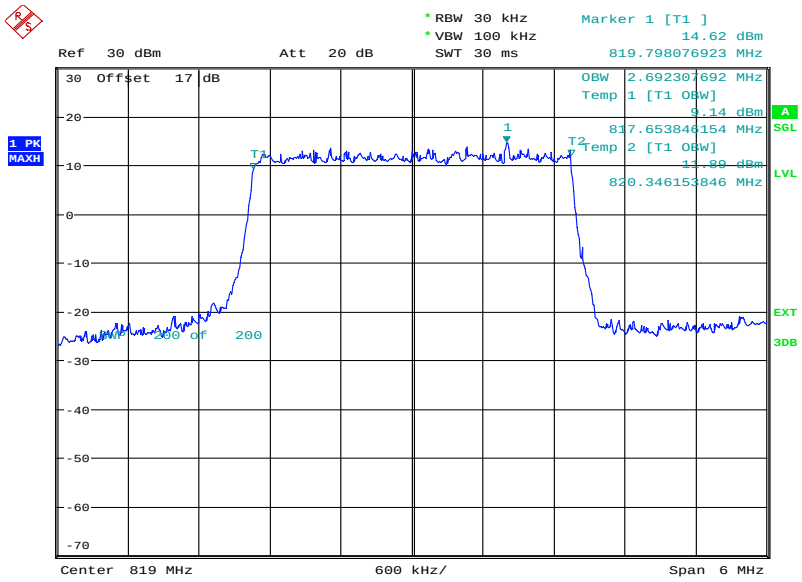
LTE FDD 26, 819 MHz, All Resource Blocks, 3.0 MHz Bandwidth, QPSK, Occupied Bandwidth Results



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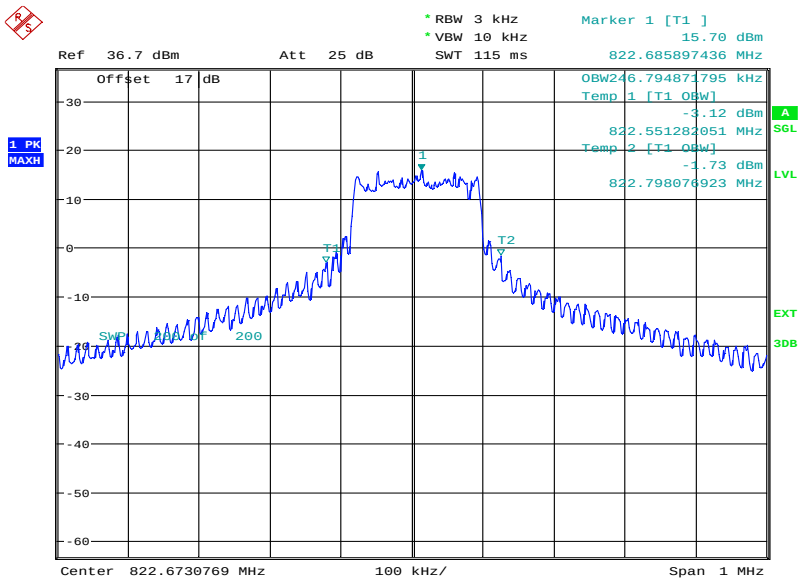
LTE FDD 26, 822.5 MHz, 1 Resource Block - Middle, 3.0 MHz Bandwidth, QPSK, Occupied Bandwidth Results



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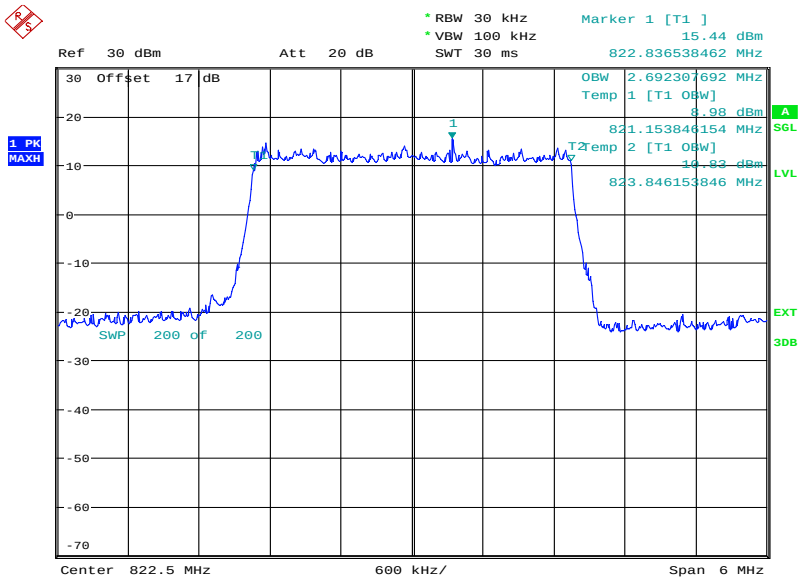
LTE FDD 26, 822.5 MHz, All Resource Blocks, 3.0 MHz Bandwidth, QPSK, Occupied Bandwidth Results



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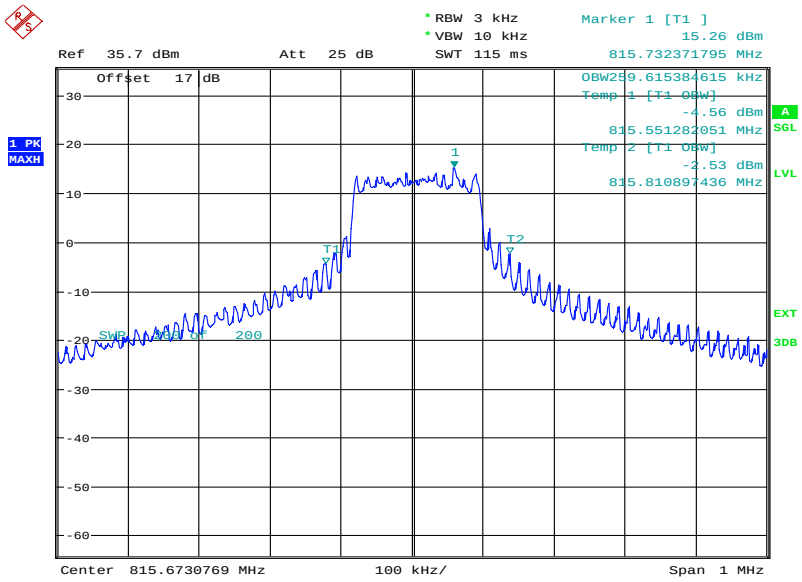
LTE FDD 26, 3.0 MHz Bandwidth, 16-QAM, Occupied Bandwidth Results

Occupied Bandwidth (kHz)					
815.5 MHz		819.0 MHz		822.5 MHz	
1 Resource Block Mid	All Resource Blocks	1 Resource Block Mid	All Resource Blocks	1 Resource Block Mid	All Resource Blocks
259.6	2692.3	259.6	2692.3	266.0	2701.9

LTE FDD 26, 815.5 MHz, 1 Resource Block - Middle, 16-QAM, 3.0 MHz Bandwidth, 16-QAM, Occupied Bandwidth Results



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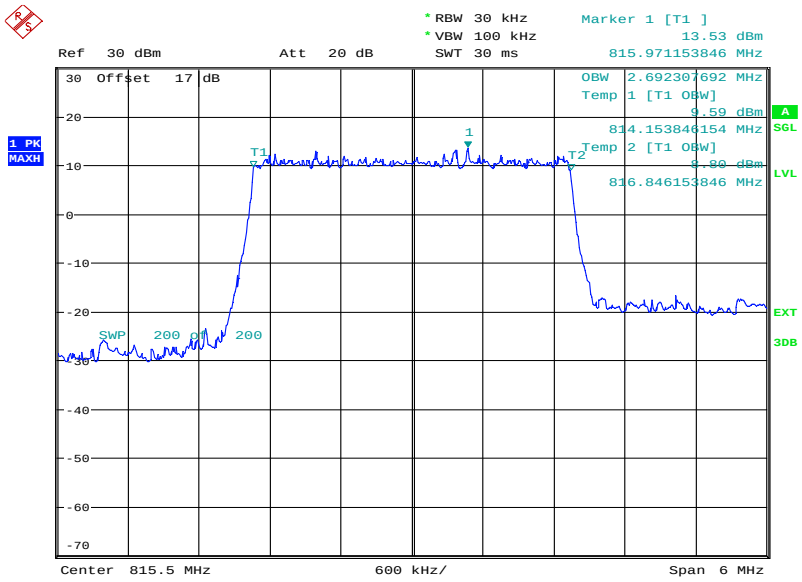
Product Service

LTE FDD 26, 815.5 MHz, All Resource Blocks, 16-QAM, 3.0 MHz Bandwidth, 16-QAM, Occupied Bandwidth Results



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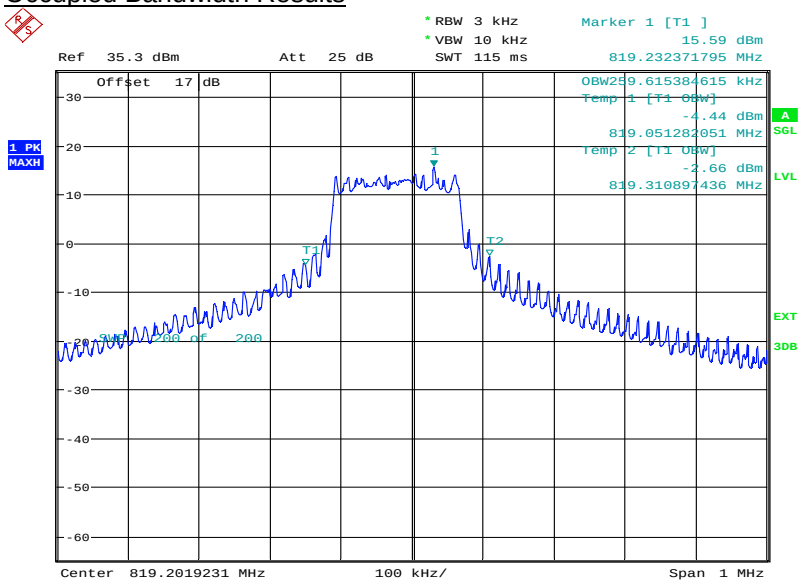
LTE FDD 26, 819 MHz, 1 Resource Block - Middle, 16-QAM, 3.0 MHz Bandwidth, 16-QAM, Occupied Bandwidth Results



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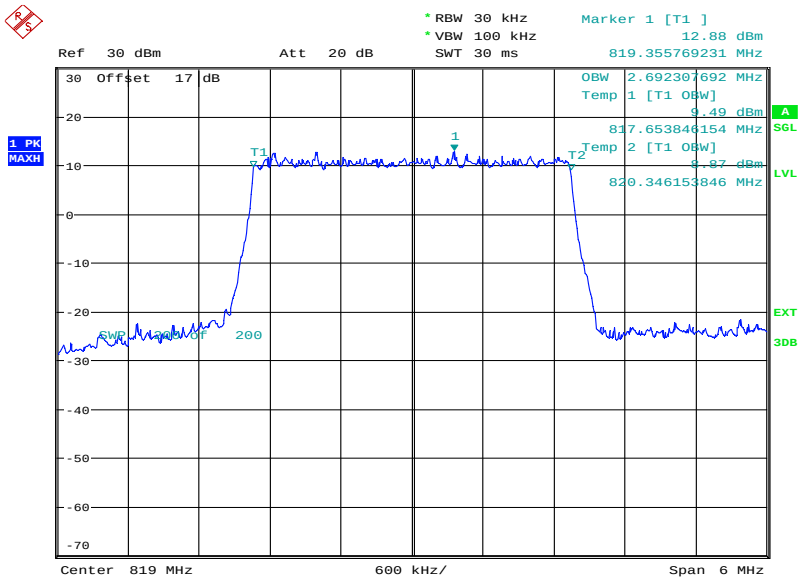
Product Service

LTE FDD 26, 819 MHz, All Resource Blocks, 16-QAM, 3.0 MHz Bandwidth, 16-QAM, Occupied Bandwidth Results



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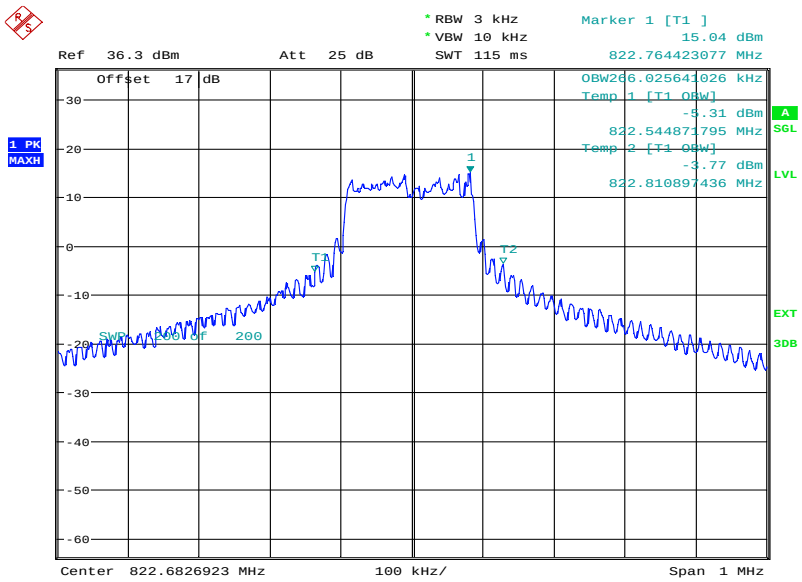
LTE FDD 26, 822.5 MHz, 1 Resource Block - Middle, 16-QAM, 3.0 MHz Bandwidth, 16-QAM, Occupied Bandwidth Results



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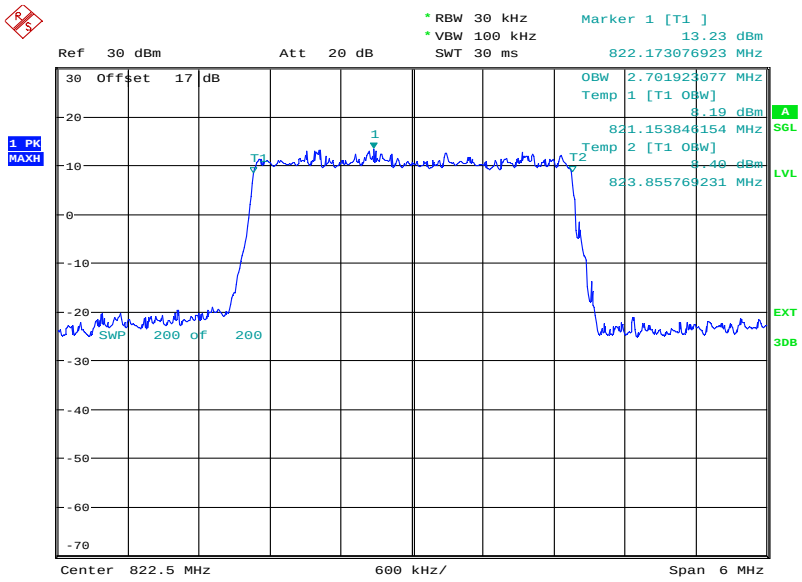
Product Service

LTE FDD 26, 822.5 MHz, All Resource Blocks, 16-QAM, 3.0 MHz Bandwidth, 16-QAM, Occupied Bandwidth Results

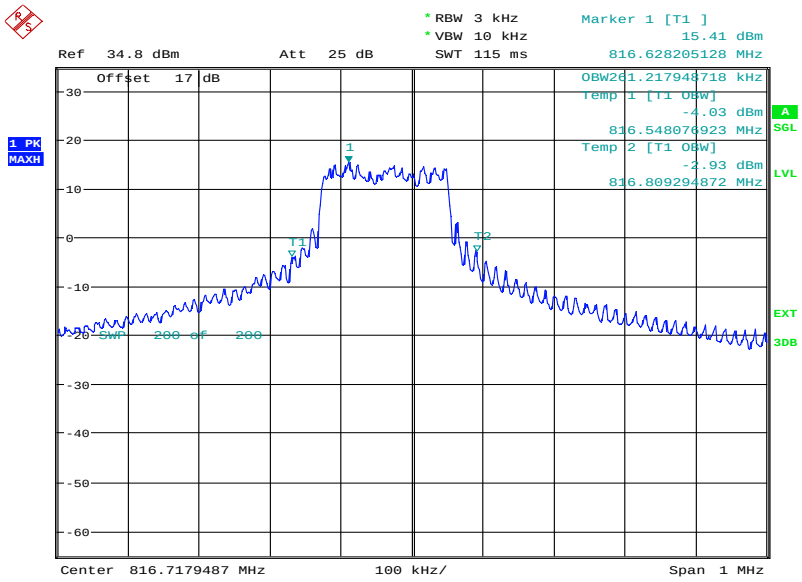


Date: 11.MAY.2015 15:34:28

LTE FDD 26, 5.0 MHz Bandwidth, QPSK, Occupied Bandwidth Results

Occupied Bandwidth (kHz)					
816.5 MHz		819.0 MHz		821.5 MHz	
1 Resource Block Mid	All Resource Blocks	1 Resource Block Mid	All Resource Blocks	1 Resource Block Mid	All Resource Blocks
261.2	4474.4	238.8	4474.4	267.6	4474.4

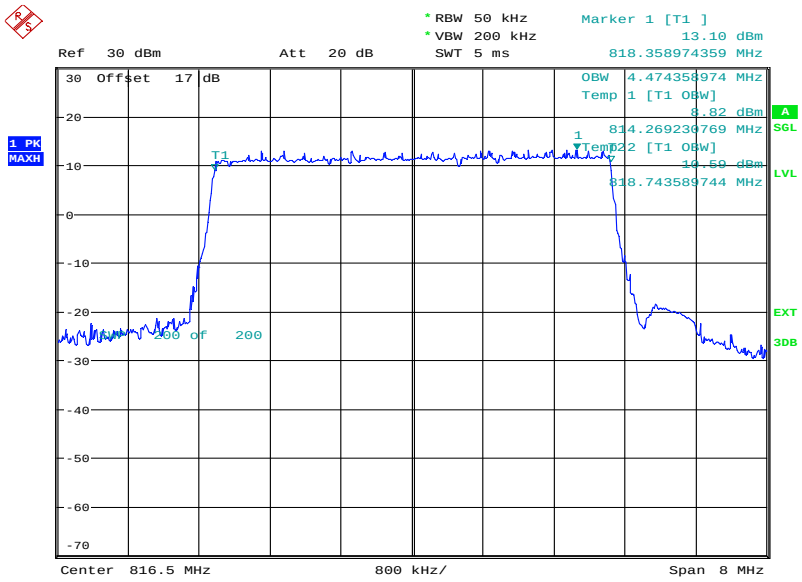
LTE FDD 26, 816.5 MHz, 1 Resource Block - Middle, 5.0 MHz Bandwidth, QPSK, Occupied Bandwidth Results



Date: 27.APR.2015 16:30:53

Product Service

LTE FDD 26, 816.5 MHz, All Resource Blocks, 5.0 MHz Bandwidth, QPSK, Occupied Bandwidth Results



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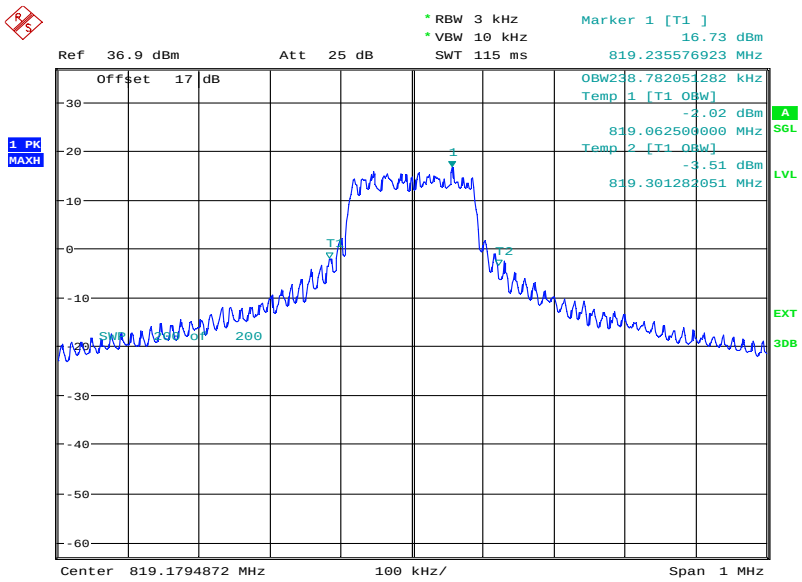
LTE FDD 26, 819 MHz, 1 Resource Block - Middle, 5.0 MHz Bandwidth, QPSK, Occupied Bandwidth Results



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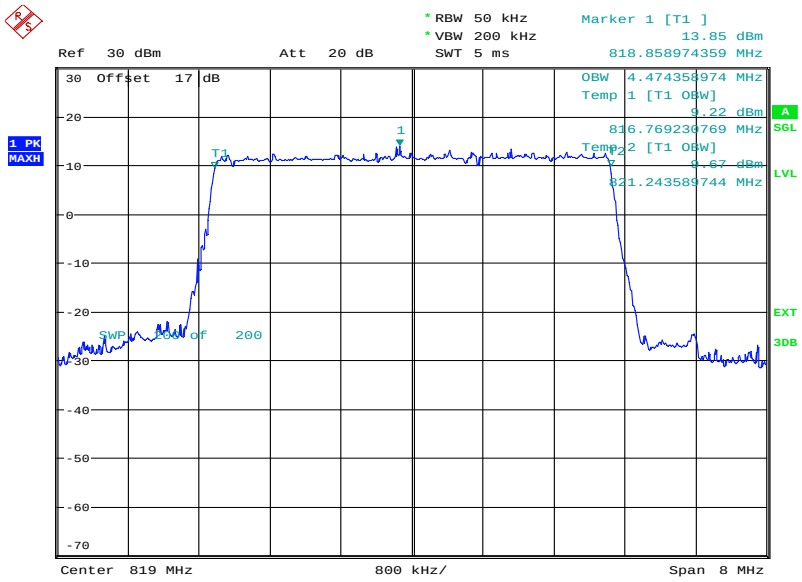
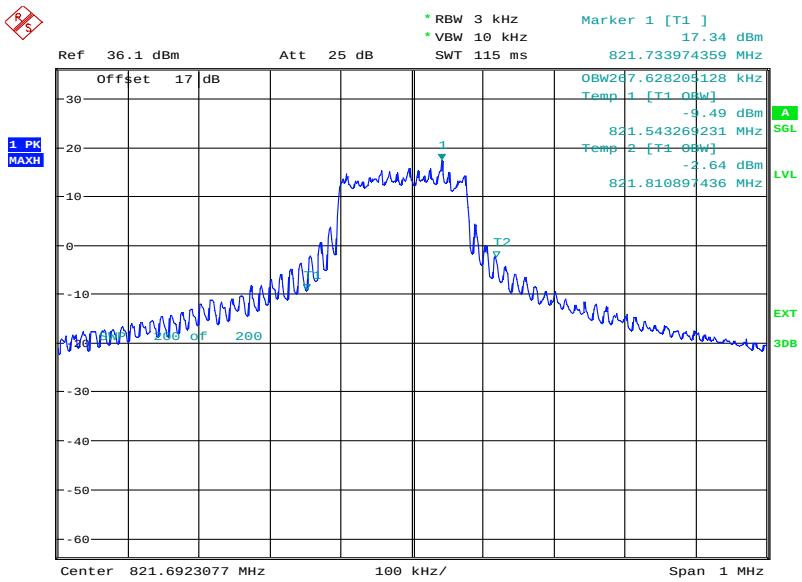
Product Service

LTE FDD 26, 819 MHz, All Resource Blocks, 5.0 MHz Bandwidth, QPSK, Occupied Bandwidth Results



Date: 11.MAY.2015 16:07:13

LTE FDD 26, 821.5 MHz, 1 Resource Block - Middle, 5.0 MHz Bandwidth, QPSK, Occupied Bandwidth Results



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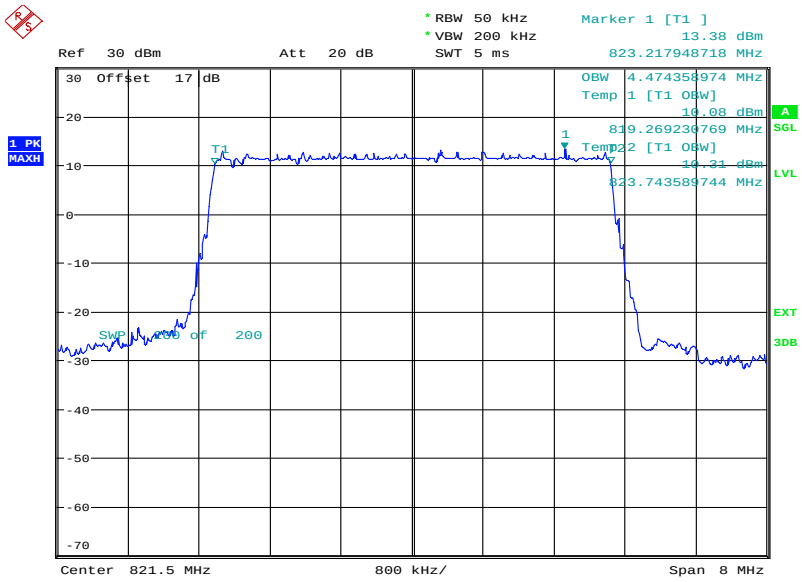
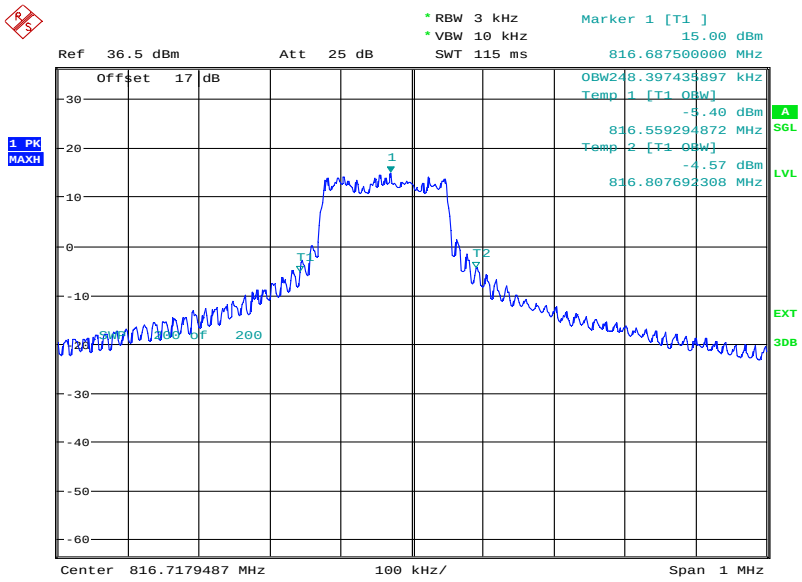
LTE FDD 26, 821.5 MHz, All Resource Blocks, 5.0 MHz Bandwidth, QPSK, Occupied Bandwidth Results



LTE FDD 26, 5.0 MHz Bandwidth, 16-QAM, Occupied Bandwidth Results

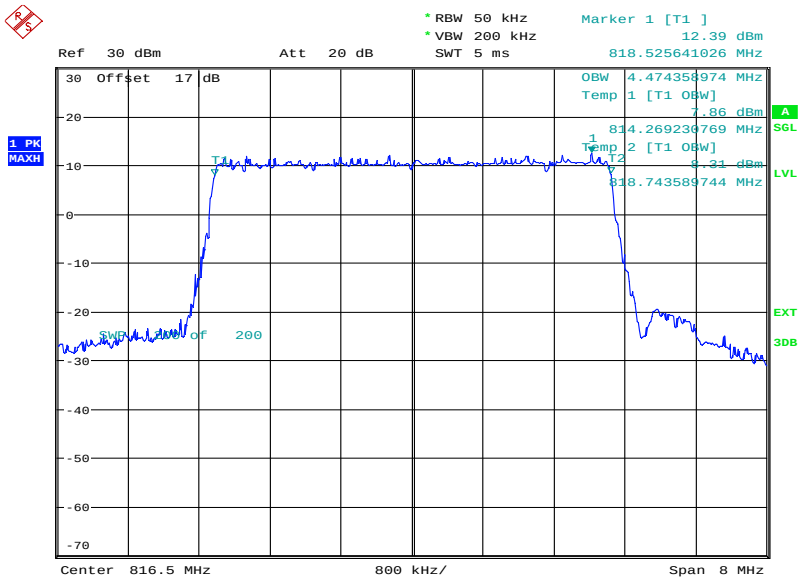
Occupied Bandwidth (kHz)					
816.5 MHz		819.0 MHz		821.5 MHz	
1 Resource Block	All Resource Blocks	1 Resource Block	All Resource Blocks	1 Resource Block	All Resource Blocks
Mid		Mid		Mid	
248.4	4474.4	266.0	4474.4	286.9	4474.4

LTE FDD 26, 816.5 MHz, 1 Resource Block - Middle, 5.0 MHz Bandwidth, 16-QAM, Occupied Bandwidth Results



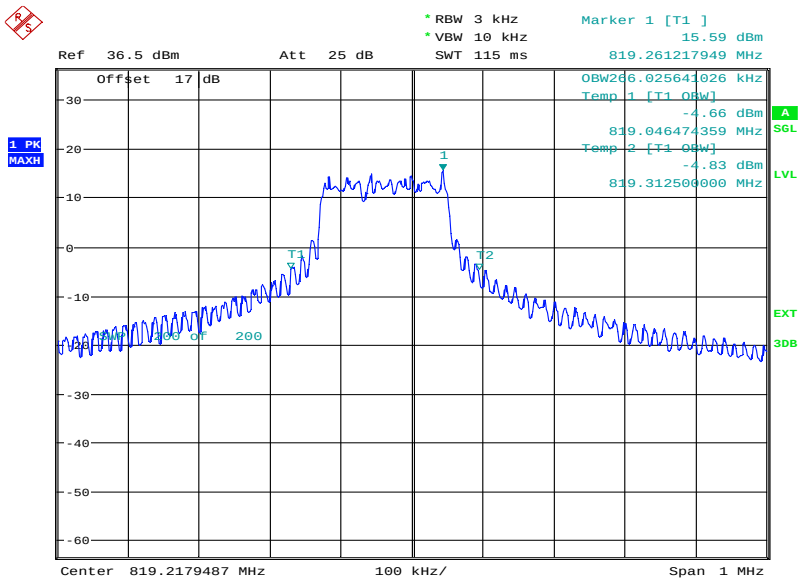
Date: 27.APR.2015 16:33:18

LTE FDD 26, 816.5 MHz, All Resource Blocks, 5.0 MHz Bandwidth, 16-QAM, Occupied Bandwidth Results



Date: 27.APR.2015 16:19:52

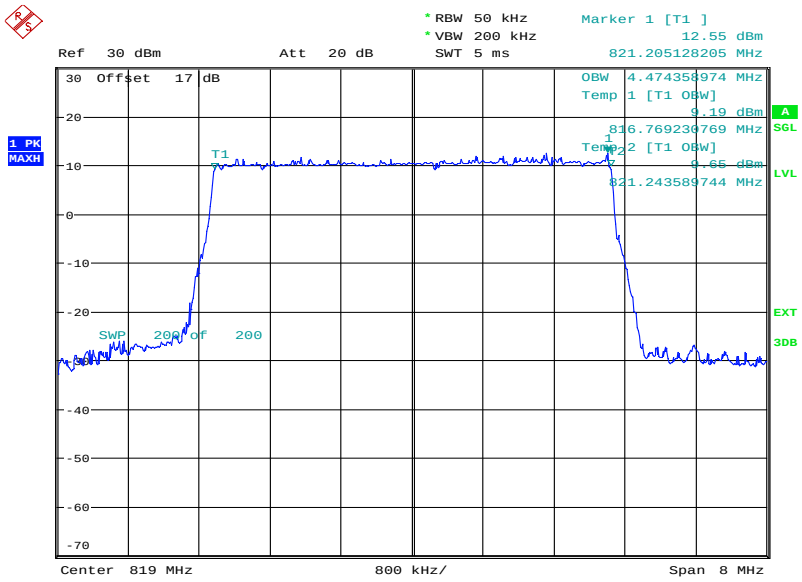
LTE FDD 26, 819 MHz, 1 Resource Block - Middle, 5.0 MHz Bandwidth, 16-QAM, Occupied Bandwidth Results



Date: 11.MAY.2015 16:04:44

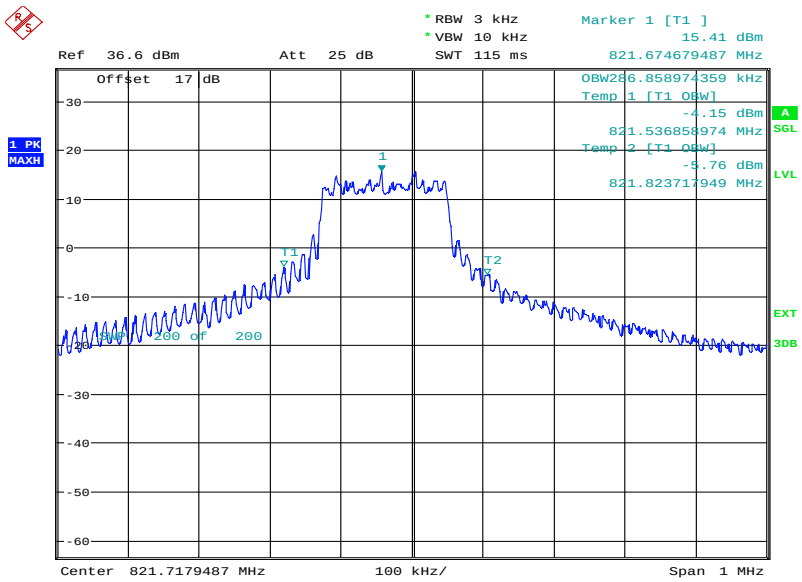
Product Service

LTE FDD 26, 819 MHz, All Resource Blocks, 5.0 MHz Bandwidth, 16-QAM, Occupied Bandwidth Results



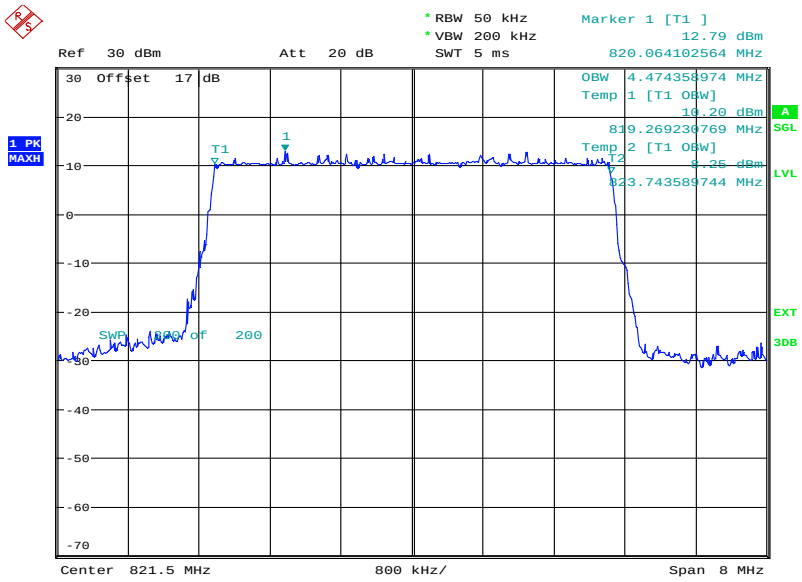
Date: 11.MAY.2015 16:08:24

LTE FDD 26, 821.5 MHz, 1 Resource Block - Middle, 5.0 MHz Bandwidth, 16-QAM, Occupied Bandwidth Results



Date: 11.MAY.2015 16:14:45

LTE FDD 26, 821.5 MHz, All Resource Blocks, 5.0 MHz Bandwidth, 16-QAM, Occupied Bandwidth Results

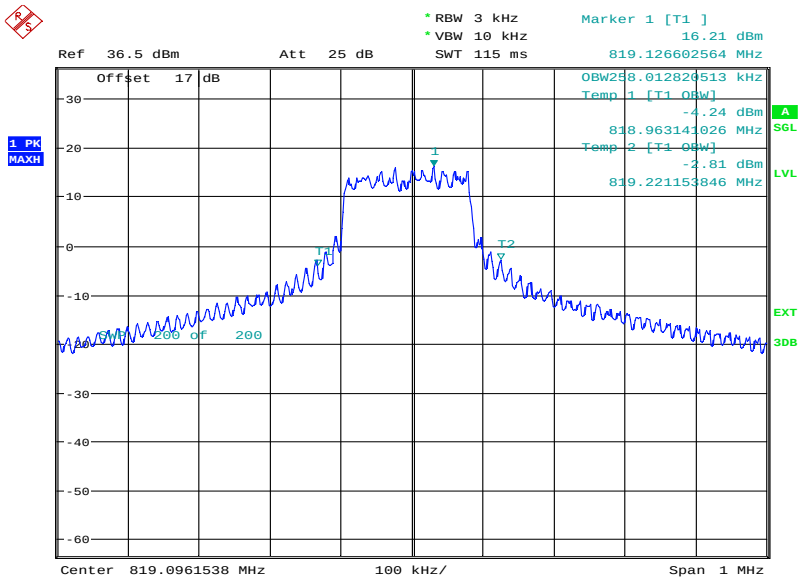


Date: 11.MAY.2015 16:10:08

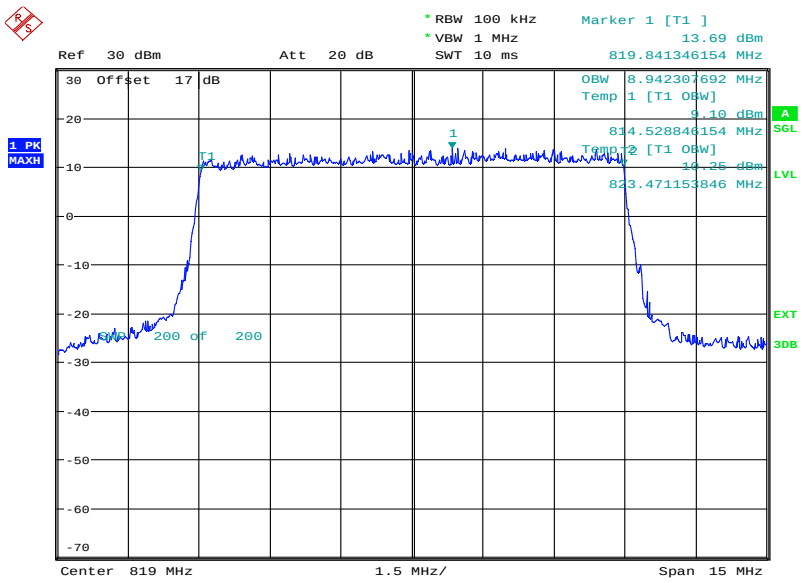
LTE FDD 26, 10.0 MHz Bandwidth, QPSK, Occupied Bandwidth Results

Occupied Bandwidth (kHz)	
819.0 MHz	
1 Resource Block	All Resource Blocks
Mid	
258.0	8942.3

LTE FDD 26, 819 MHz, 1 Resource Block - Middle, 10.0 MHz Bandwidth, QPSK, Occupied Bandwidth Results



LTE FDD 26, 819 MHz, All Resource Blocks, 10.0 MHz Bandwidth, QPSK, Occupied Bandwidth Results

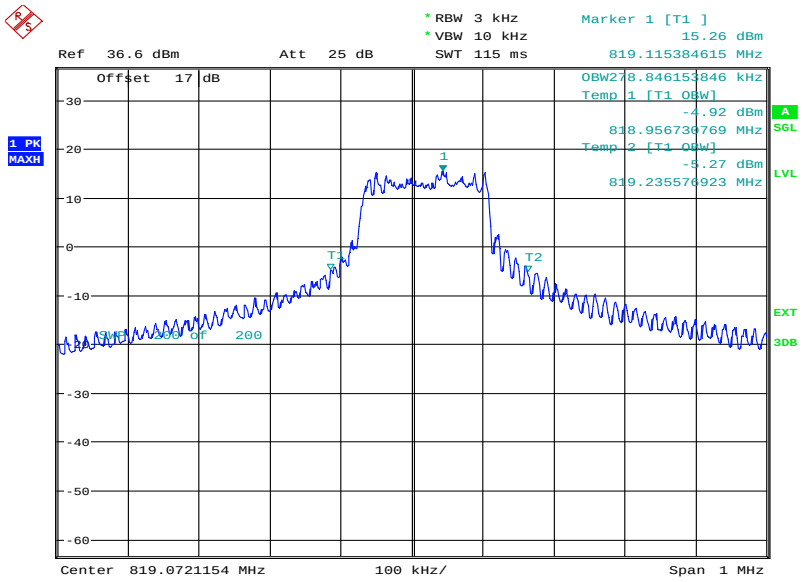


Date: 27.APR.2015 15:08:19

LTE FDD 26, 10.0 MHz Bandwidth, 16-QAM, Occupied Bandwidth Results

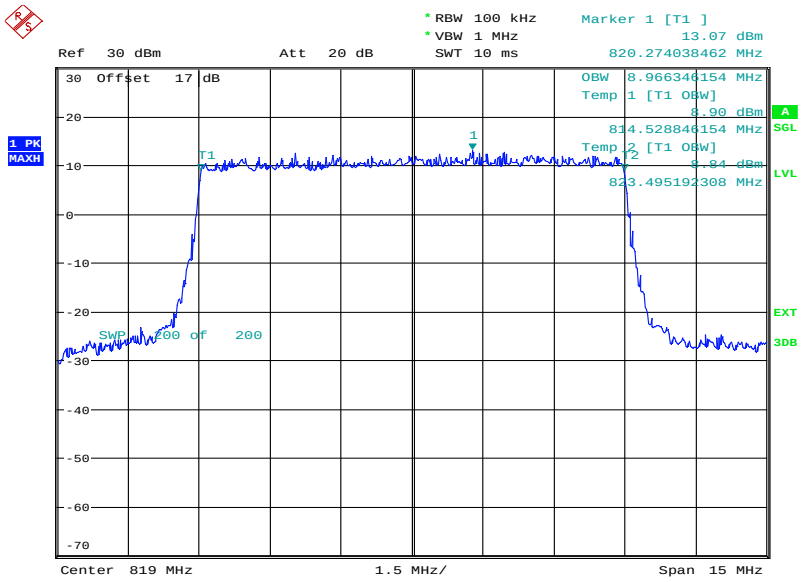
Occupied Bandwidth (kHz)	
819.0 MHz	
1 Resource Block	All Resource Blocks
Mid	
278.8	8966.3

LTE FDD 26, 819 MHz, 1 Resource Block - Middle, 10.0 MHz Bandwidth, 16-QAM, Occupied Bandwidth Results



Date: 27.APR.2015 15:17:29

LTE FDD 26, 819 MHz, All Resource Blocks, 10.0 MHz Bandwidth, 16-QAM, Occupied Bandwidth Results

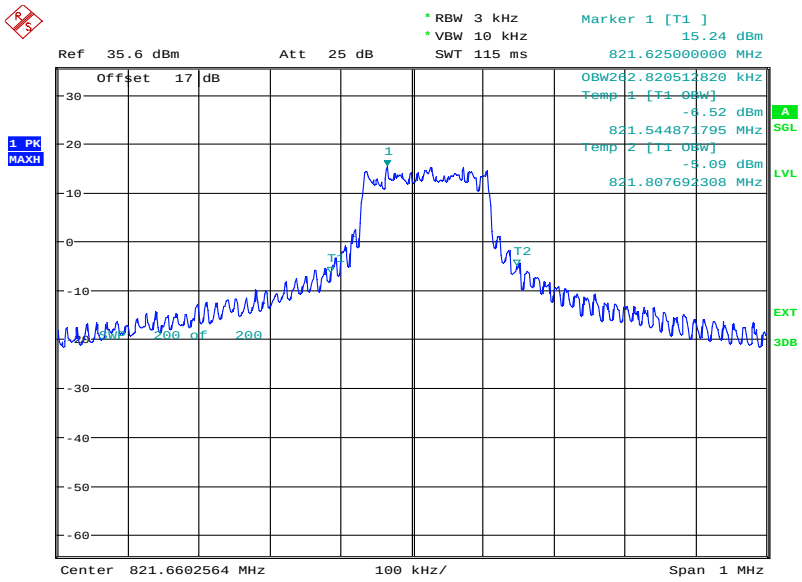


Date: 27.APR.2015 15:05:49

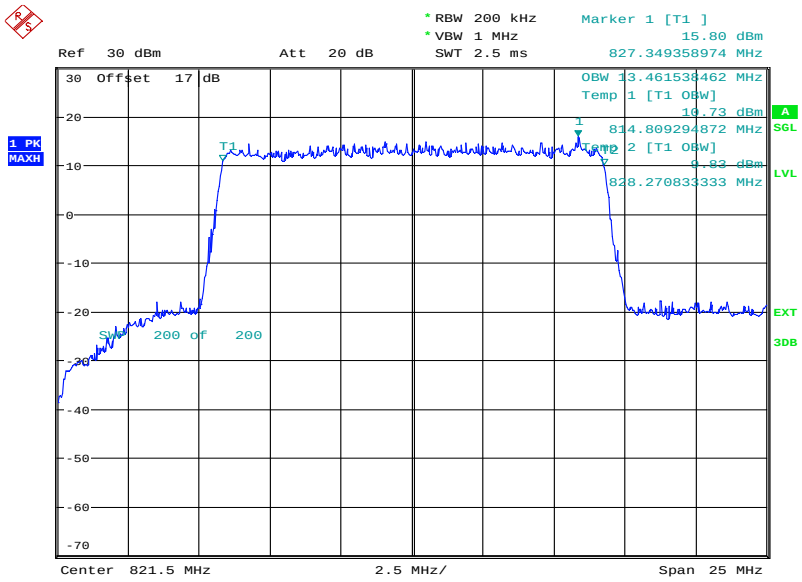
LTE FDD 26, 15.0 MHz Bandwidth, QPSK, Occupied Bandwidth Results

Occupied Bandwidth (kHz)	
821.5 MHz	
1 Resource Block	All Resource Blocks
Mid	
262.8	13461.5

LTE FDD 26, 821.5 MHz, 1 Resource Block - Middle, 15.0 MHz Bandwidth, QPSK, Occupied Bandwidth Results



LTE FDD 26, 821.5 MHz, All Resource Blocks, 15.0 MHz Bandwidth, QPSK, Occupied Bandwidth Results

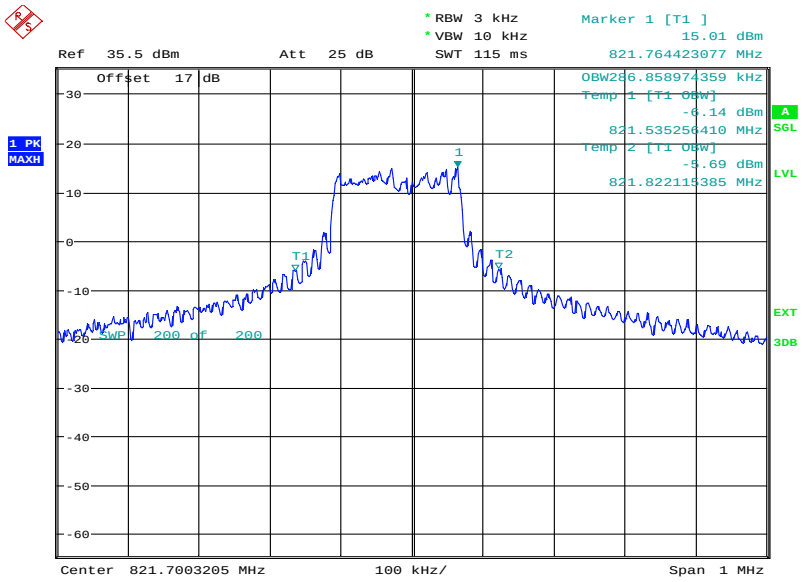


Date: 24.APR.2015 14:16:48

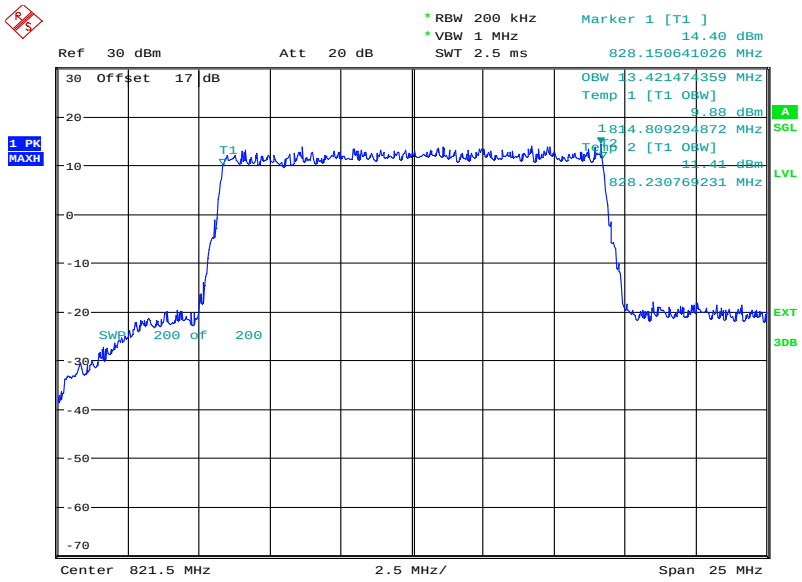
LTE FDD 26, 15.0 MHz Bandwidth, 16-QAM, Occupied Bandwidth Results

Occupied Bandwidth (kHz)	
821.5 MHz	
1 Resource Block	All Resource Blocks
Mid	
286.9	13421.5

LTE FDD 26, 821.5 MHz, 1 Resource Block - Middle, 15.0 MHz Bandwidth, 16-QAM, Occupied Bandwidth Results



LTE FDD 26, 821.5 MHz, All Resource Blocks, 15.0 MHz Bandwidth, 16-QAM, Occupied Bandwidth Results



Date: 24.APR.2015 14:21:20

FCC 47 CFR Part 2, Limit Clause

None Specified.

2.2 FREQUENCY STABILITY

2.2.1 Specification Reference

FCC 47 CFR Part 90, Clause 90.213
FCC 47 CFR Part 2, Clause 2.1055

2.2.2 Equipment Under Test and Modification State

SHV32 S/N: IMEI 004401115406494 - Modification State 0

2.2.3 Date of Test

7 May 2015

2.2.4 Test Equipment Used

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

2.2.5 Test Procedure

The test was performed in accordance with KDB 971168 D01 v02r02, Clause 9.

2.2.6 Environmental Conditions

Ambient Temperature	22.5°C
Relative Humidity	39.1%

Product Service

2.2.7 Test Results

LTE FDD 26, 819.0 MHz, 10 MHz Bandwidth, QPSK, Frequency Tolerance Under Temperature Variations Results

Temperature	Voltage	Fundamental Frequency Error
		All Resource Blocks (ppm)
+20 ºC	3.7 V DC	0.0331
-30 ºC	4.0 V DC	0.0349
-20 ºC	4.0 V DC	0.0318
-10 ºC	4.0 V DC	0.0369
0 ºC	4.0 V DC	0.0333
+10 ºC	4.0 V DC	0.0351
+20 ºC	4.0 V DC	0.0345
+30 ºC	4.0 V DC	0.0408
+40 ºC	4.0 V DC	0.0343
+50 ºC	4.0 V DC	0.0334

LTE FDD 26, 819.0 MHz, 10 MHz Bandwidth, 16-QAM, Frequency Tolerance Under Temperature Variations Results

Temperature	Voltage	Fundamental Frequency Error
		All Resource Blocks (ppm)
+20 ºC	3.7 V DC	0.0339
-30 ºC	4.0 V DC	0.0317
-20 ºC	4.0 V DC	0.0325
-10 ºC	4.0 V DC	0.0385
0 ºC	4.0 V DC	0.0385
+10 ºC	4.0 V DC	0.0371
+20 ºC	4.0 V DC	0.0314
+30 ºC	4.0 V DC	0.0335
+40 ºC	4.0 V DC	0.0327
+50 ºC	4.0 V DC	0.0298

FCC 47 CFR Part 90, Limit Clause 90.213

The frequency error shall not exceed 2.5 ppm

2.3 MAXIMUM CONDUCTED OUTPUT POWER

2.3.1 Specification Reference

FCC 47 CFR Part 90, Clause 90.635
FCC 47 CFR Part 2, Clause 2.1046

2.3.2 Equipment Under Test and Modification State

SHV32 S/N: IMEI 004401115406494 - Modification State 0

2.3.3 Date of Test

29 April 2015

2.3.4 Test Equipment Used

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

2.3.5 Test Procedure

Carrier power measurements were performed in accordance with KDB 971168 D01 v02r02, Clause 5.2.3.

2.3.6 Environmental Conditions

Ambient Temperature	24.1°C
Relative Humidity	34.8%

2.3.7 Test Results

4.0 V DC Supply

LTE FDD 26, 1.4 MHz Bandwidth, QPSK, Maximum Conducted Output Power Results

Carrier Power ERP (dBm)											
814.7 MHz				819.0 MHz				823.3 MHz			
1 Resource Block			All Resource Blocks	1 Resource Block			All Resource Blocks	1 Resource Block			All Resource Blocks
Low	Mid	High		Low	Mid	High		Low	Mid	High	
21.7	23.67	23.6	22.46	23.3	23.49	23.39	22.31	23.66	23.57	23.71	22.24

LTE FDD 26, 1.4 MHz Bandwidth, 16-QAM, Maximum Conducted Output Power Results

Carrier Power ERP (dBm)											
814.7 MHz				819.0 MHz				823.3 MHz			
1 Resource Block			All Resource Blocks	1 Resource Block			All Resource Blocks	1 Resource Block			All Resource Blocks
Low	Mid	High		Low	Mid	High		Low	Mid	High	
20.9	23.06	22.9	21.55	22.64	22.8	22.6	22.06	22.58	22.77	22.69	21.31

LTE FDD 26, 3.0 MHz Bandwidth, QPSK, Maximum Conducted Output Power Results

Carrier Power ERP (dBm)											
815.5 MHz				819.0 MHz				822.5 MHz			
1 Resource Block			All Resource Blocks	1 Resource Block			All Resource Blocks	1 Resource Block			All Resource Blocks
Low	Mid	High		Low	Mid	High		Low	Mid	High	
21.72	24.03	23.64	22.56	23.44	23.37	23.48	22.35	23.56	23.45	23.5	22.28

LTE FDD 26, 3.0 MHz Bandwidth, 16-QAM, Maximum Conducted Output Power Results

Carrier Power ERP (dBm)											
815.5 MHz				819.0 MHz				822.5 MHz			
1 Resource Block			All Resource Blocks	1 Resource Block			All Resource Blocks	1 Resource Block			All Resource Blocks
Low	Mid	High		Low	Mid	High		Low	Mid	High	
21.07	22.92	22.95	21.46	22.66	22.73	22.76	21.29	22.74	22.59	22.73	21.31

LTE FDD 26, 5.0 MHz Bandwidth, QPSK, Maximum Conducted Output Power Results

Carrier Power ERP (dBm)											
816.5 MHz				819.0 MHz				821.5 MHz			
1 Resource Block			All Resource Blocks	1 Resource Block			All Resource Blocks	1 Resource Block			All Resource Blocks
Low	Mid	High		Low	Mid	High		Low	Mid	High	
21.65	23.43	23.53	22.53	23.54	23.35	23.61	22.31	23.4	23.27	23.44	22.37

LTE FDD 26, 5.0 MHz Bandwidth, 16-QAM, Maximum Conducted Output Power Results

Carrier Power ERP (dBm)											
816.5 MHz				819.0 MHz				821.5 MHz			
1 Resource Block			All Resource Blocks	1 Resource Block			All Resource Blocks	1 Resource Block			All Resource Blocks
Low	Mid	High		Low	Mid	High		Low	Mid	High	
21.12	22.9	22.81	21.5	22.79	22.78	22.75	21.33	22.84	22.83	22.8	21.47

LTE FDD 26, 10.0 MHz Bandwidth, QPSK, Maximum Conducted Output Power Results

Carrier Power ERP (dBm)			
819.0 MHz			
1 Resource Block			All Resource Blocks
Low	Mid	High	
21.92	23.71	23.65	22.46

LTE FDD 26, 10.0 MHz Bandwidth, 16-QAM, Maximum Conducted Output Power Results

Carrier Power ERP (dBm)			
819.0 MHz			
1 Resource Block			All Resource Blocks
Low	Mid	High	
20.87	22.86	22.67	21.52

LTE FDD 26, 15.0 MHz Bandwidth, QPSK, Maximum Conducted Output Power Results

Carrier Power ERP (dBm)			
821.5 MHz			
1 Resource Block			All Resource Blocks
Low	Mid	High	
19.77	21.52	21.51	20.38

LTE FDD 26, 15.0 MHz Bandwidth, 16-QAM, Maximum Conducted Output Power Results

Carrier Power ERP (dBm)			
821.5 MHz			
1 Resource Block			All Resource Blocks
Low	Mid	High	
21.92	23.67	23.66	22.53

FCC 47 CFR Part 90, Limit Clause 90.635

Base Stations in the 851 to 869 MHz and 935 to 940 MHz Band which have a requirement for a 32 km (20 MI) service area radius	
Antenna Height (ATT) meters (feet)	Effective Radiated Power (W)
> 1372 (4500)	65
> 1220 (4000) to 1372 (4500)	70
> 1067 (3500) to 1220 (4000)	75
> 915 (3000) to 1067 (3500)	100
> 763 (2500) to 915 (3000)	140
> 610 (2000) to 763 (2500)	200
> 458 (1500) to 610 (2000)	350
> 305 (1000) to 458 (1500)	600
Up to 305 (1000)	1000

The maximum output power of the transmitter for mobile stations is 100 W (20 dBW).

Product Service

2.4 MODULATION CHARACTERISTICS

2.4.1 Specification Reference

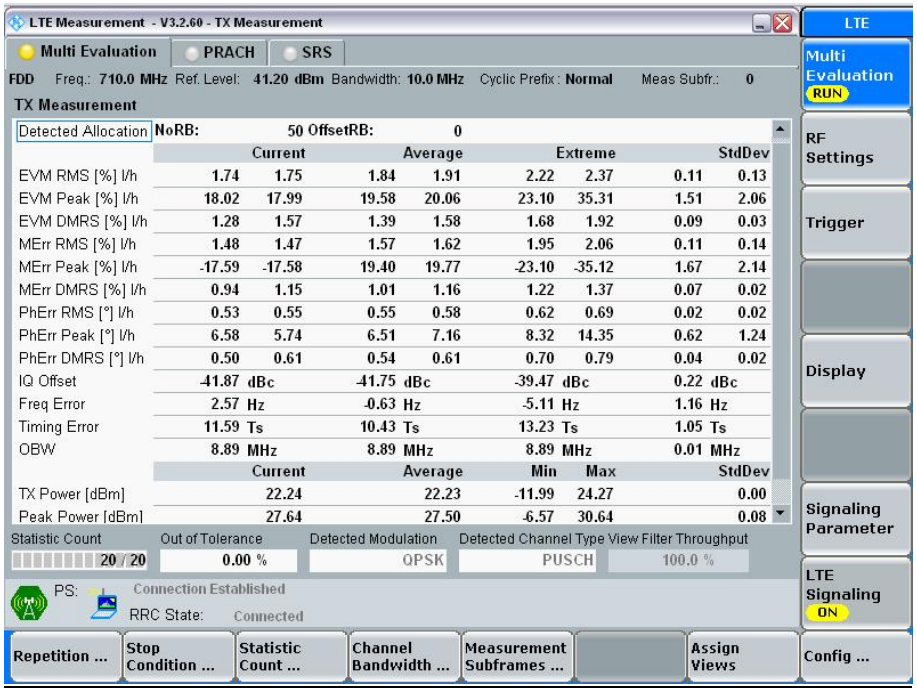
FCC 47 CFR Part 2, Clause 2.1047 (d)

2.4.2 Equipment Under Test

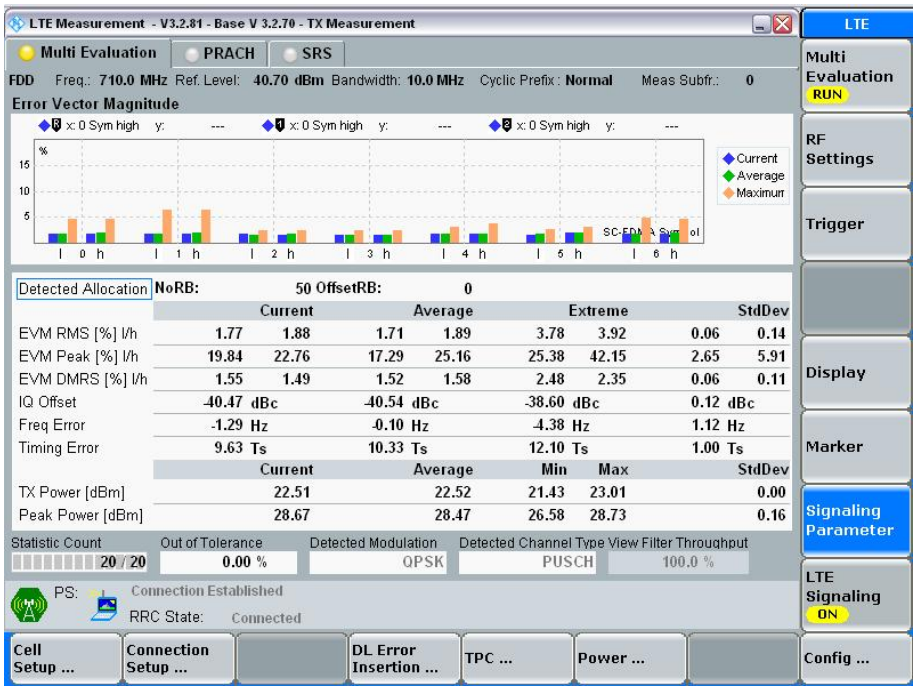
SHV32

2.4.3 Test Results

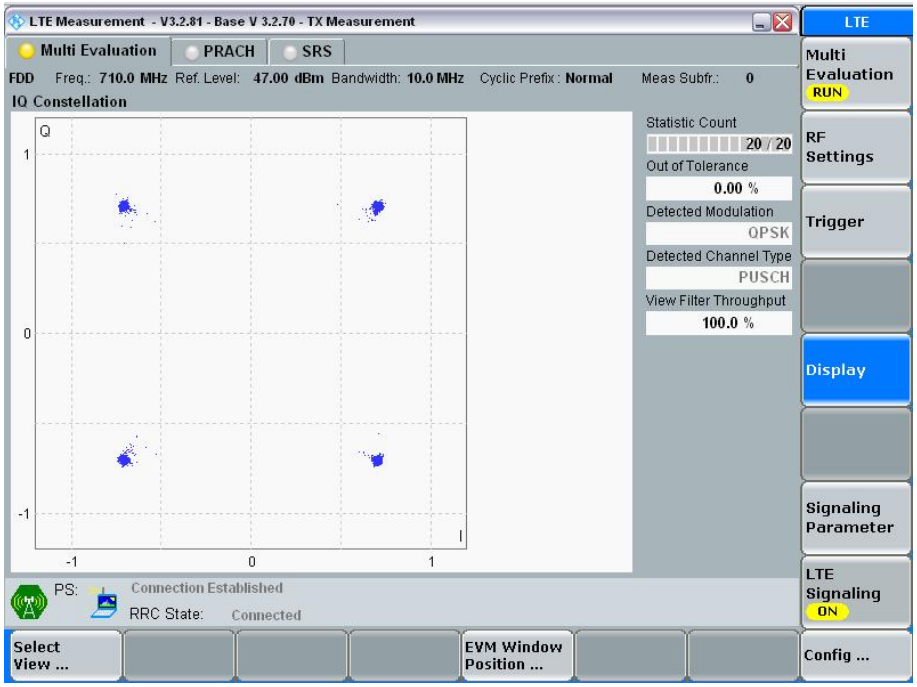
LTE FDD 26, 10.0 MHz Bandwidth – QPSK, Transmitter Summary, Modulation Characteristics, Plot



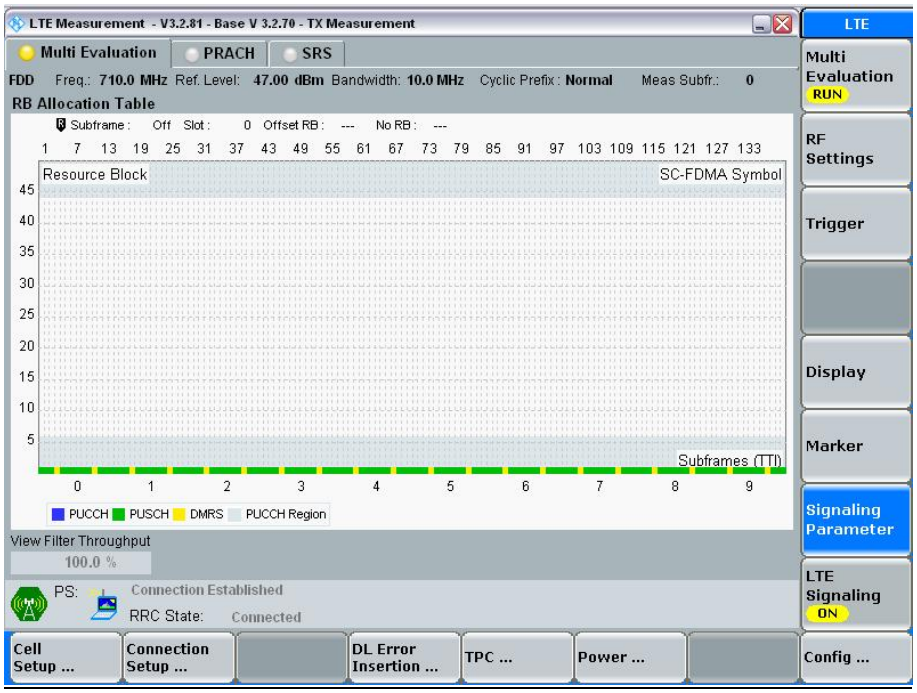
LTE FDD 26, 10.0 MHz Bandwidth – QPSK, EVM, Modulation Characteristics Plot



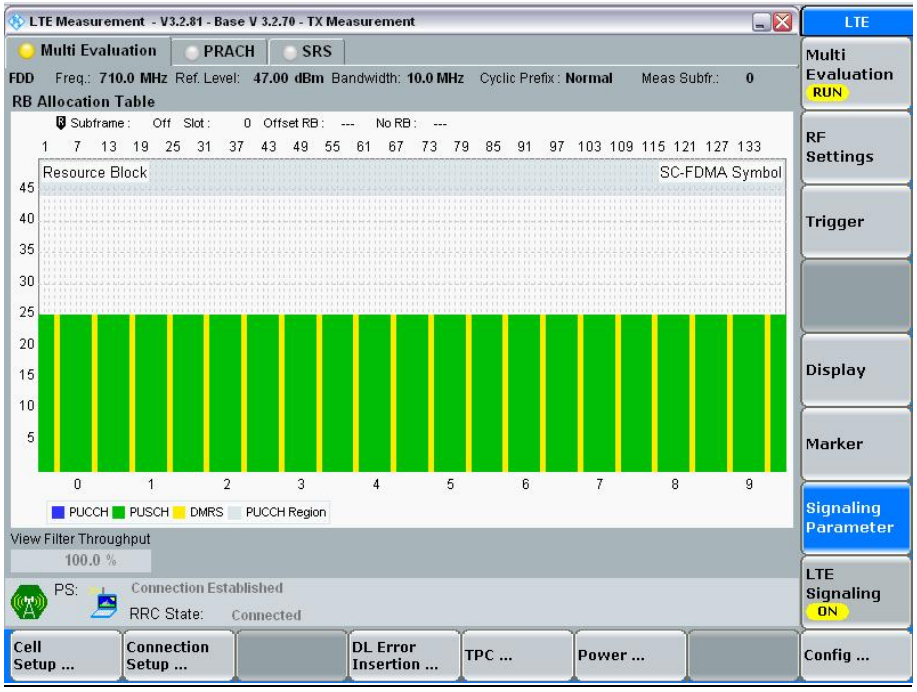
LTE FDD 26, 10.0 MHz Bandwidth – QPSK, IQ Constellation, Modulation Characteristics Plot



LTE FDD 26, 10.0 MHz Bandwidth – QPSK, 1 Resource Block Allocation, Modulation Characteristics Plot

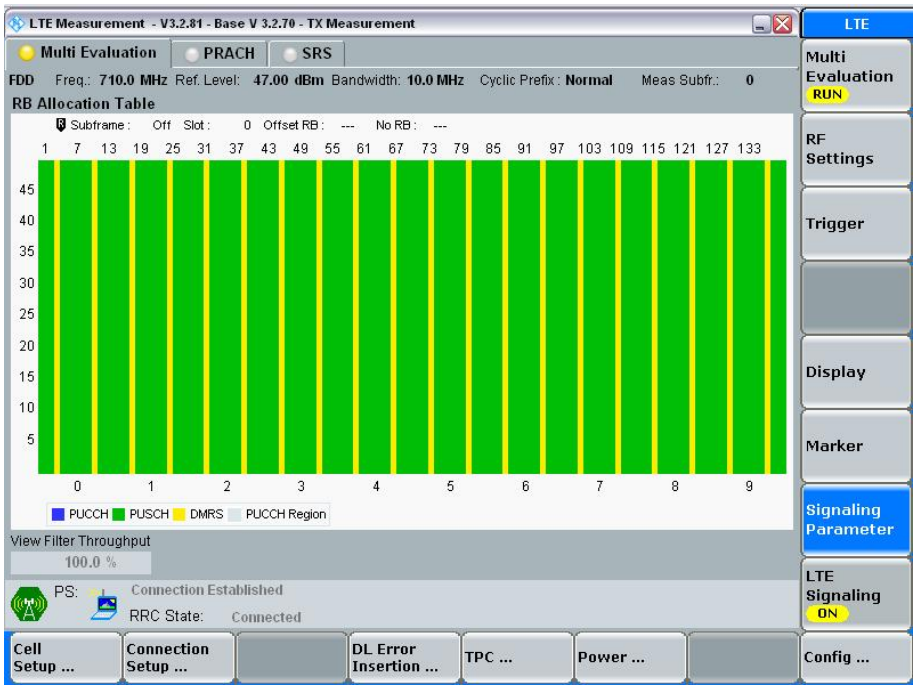


LTE FDD 26, 10.0 MHz Bandwidth – QPSK, 25 Resource Block Allocation, Modulation Characteristics Plot



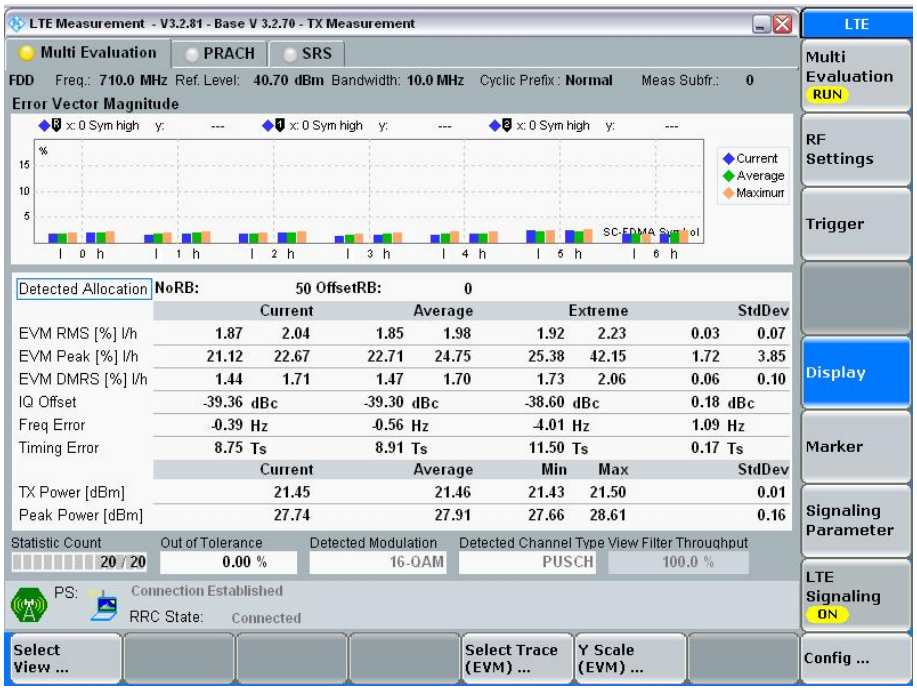
Product Service

LTE FDD 26, 10.0 MHz Bandwidth – QPSK, 50 Resource Block Allocation, Modulation Characteristics Plot

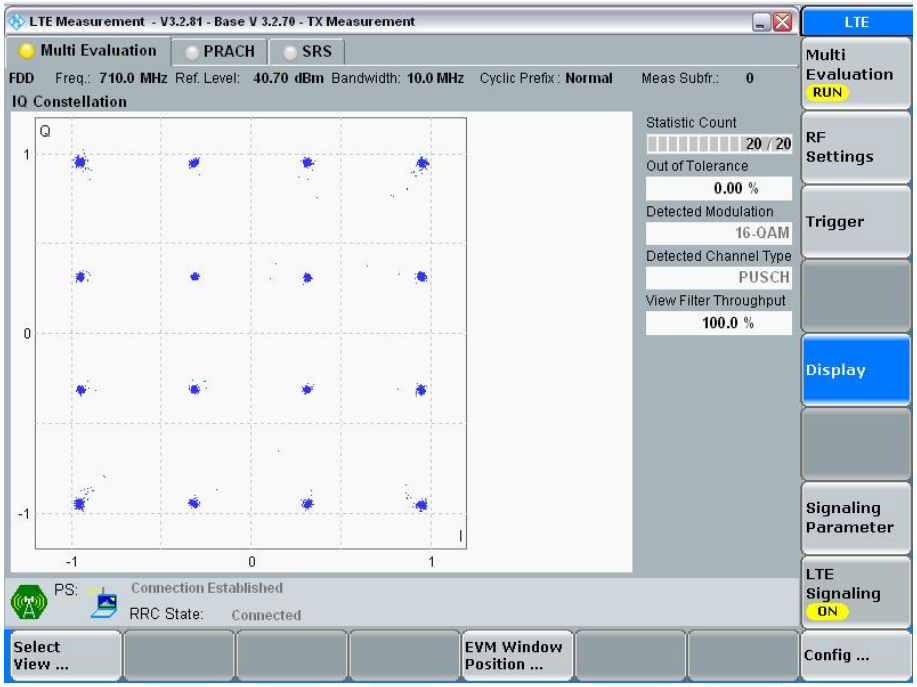


LTE FDD 26, 10.0 MHz Bandwidth - 16-QAM, Transmitter Summary, Modulation Characteristics Plot

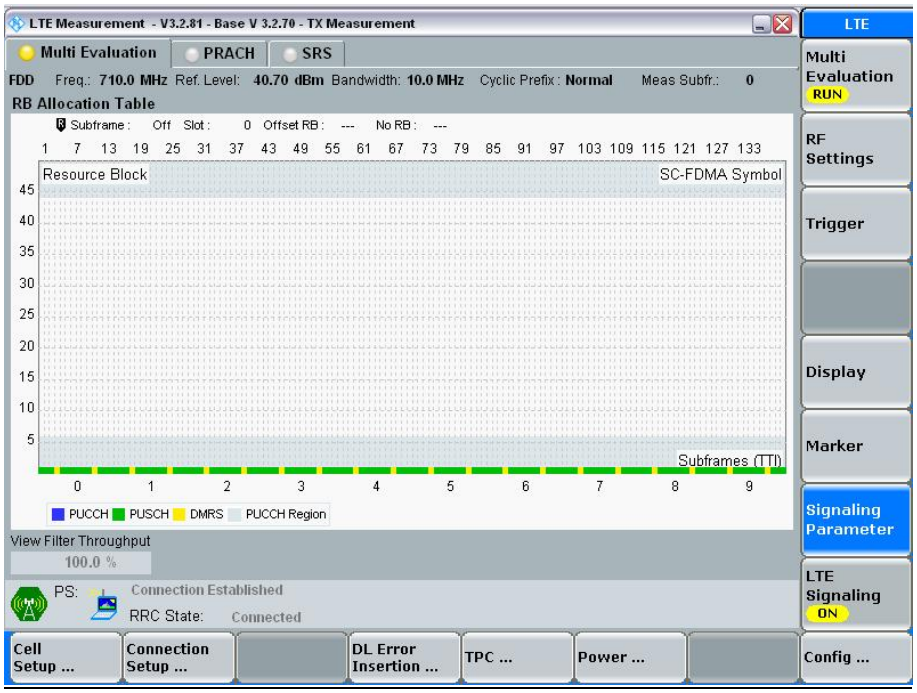
LTE FDD 26, 10.0 MHz Bandwidth - 16-QAM, EVM, Modulation Characteristics Plot



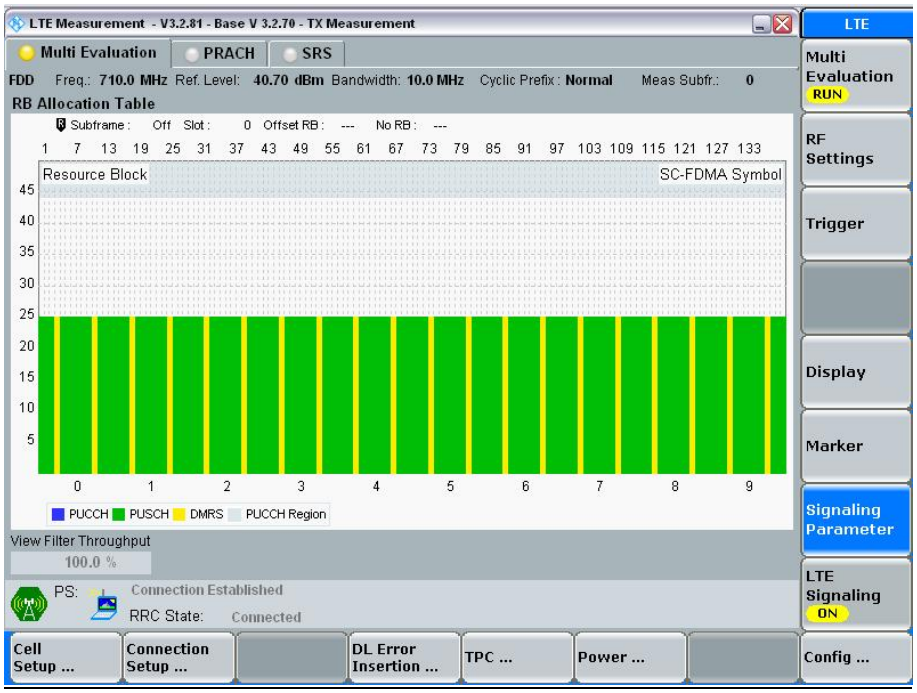
LTE FDD 26, 10.0 MHz Bandwidth - 16-QAM, IQ Constellation, Modulation Characteristics Plot



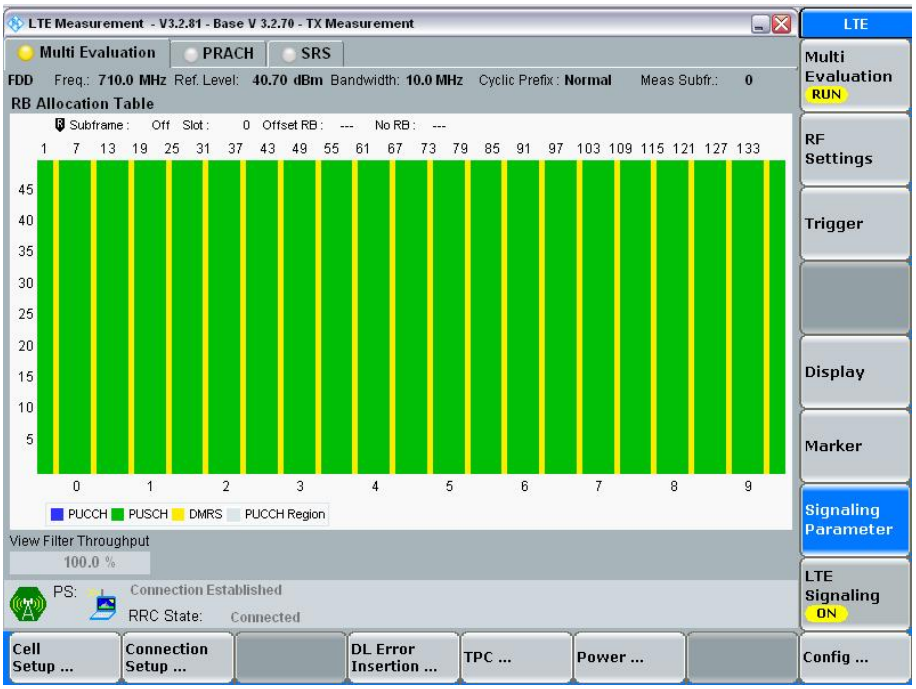
LTE FDD 26, 10.0 MHz Bandwidth - 16-QAM, 1 Resource Block Allocation, Modulation Characteristics Plot



LTE FDD 26, 10.0 MHz Bandwidth - 16-QAM, 25 Resource Block Allocation, Modulation Characteristics Plot



LTE FDD 26, 10.0 MHz Bandwidth - 16-QAM, 50 Resource Block Allocation, Modulation Characteristics Plot



FCC 47 CFR Part 2, Limit Clause 2.1047 (d)

A curve or equivalent data which shows that the equipment will meet the modulation requirements of the rules under which the equipment is to be licensed.

2.5 SPURIOUS EMISSIONS AT ANTENNA TERMINALS

2.5.1 Specification Reference

FCC 47 CFR Part 90, Clause 90.691
FCC 47 CFR Part 2, Clause 2.1049

2.5.2 Equipment Under Test and Modification State

SHV32 S/N: IMEI 004401115406767 - Modification State 0

2.5.3 Date of Test

11 May 2015

2.5.4 Test Equipment Used

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

2.5.5 Test Procedure

The test was performed in accordance with KDB 971168 D01 v02r02, clause 6.

2.5.6 Environmental Conditions

Ambient Temperature	20.4°C
Relative Humidity	30.5%