



F	CC REPORT	
Report Reference No:	<b>TRE1705015007</b> R.	/C <b>75990</b>
FCC ID:	YAMPTC760FXB1	
Applicant's name:	Hytera Communications Corpora	ation Limited
Address	Hytera Tower, Hi-Tech Industrial P Road, Nanshan District, Shenzhen	
Manufacturer	Hytera Communications Corporation	on Limited
Address	Hytera Tower, Hi-Tech Industrial P Road, Nanshan District, Shenzhen	
Test item description:	Multi-mode Advanced Radio	
Trade Mark:	Hytera	
Model/Type reference:	PTC760 FxB1	
Listed Model(s)	-	
Standard:	FCC Part 22: PUBLIC MOBILE SE FCC Part 24:PERSONAL COMMU	
	FCC Part 27: MISCELLANEOUS COMMUNICATIONS SERVICES	WIRELESS
Date of receipt of test sample:	May 17, 2017	
Date of testing	May 18, 2017 - Jul. 03, 2017	
Date of issue	Jul. 04, 2017	
Result	Pass	
Compiled by (position+printedname+signature):	File administrators Becky Liang	Beepy Liong
Supervised by (position+printedname+signature):	Project Engineer Lion Cai	Cary Luo
Approved by	Manager Hans Hu	Hours rue
(position+printedname+signature):	manager nane na	
(position+printedname+signature): Testing Laboratory Name:	Shenzhen Huatongwei Internatio	onal Inspection Co., Ltd.

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The test report merely corresponds to the test sample. It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

# Contents

<u>1.</u>	TEST STANDARDS AND REPORT VERSION	3
1.1.	Test standards	3
1.2.	Report version	3
<u>2.</u>	TEST DESCRIPTION	4
<u>3.</u>	SUMMARY	5
3.1.	Client Information	5
3.2.	Product Description	5
3.3.	Operation state	7
3.4.	EUT operation mode	9
3.5.	EUT configuration	10
3.6.	Modifications	10
<u>4.</u>	TEST ENVIRONMENT	11
4.1.	Address of the test laboratory	11
4.2.	Test Facility	11
4.3.	Equipments Used during the Test	12
4.4.	Environmental conditions	13
4.5.	Statement of the measurement uncertainty	13
<u>5.</u>	TEST CONDITIONS AND RESULTS	14
5.1.	Conducted Output Power	14
5.2.	99% & -26 dB Occupied Bandwidth	15
5.3.	Conducted Spurious Emissions	66
5.4.	Band Edge	123
5.5.	ERP AND EIRP	212
5.6.	Radiated Spurious Emssion	222
5.7.	Frequency stability V.S. Temperature measurement	236
5.8.	Frequency stability V.S. Voltagemeasurement	239
5.9.	Peak-Average Ratio	241
<u>6.</u>	TEST SETUP PHOTOS OF THE EUT	243
<u>7.</u>	EXTERNAL AND INTERNAL PHOTOS OF THE EUT	243

# 1. Test standards and Report version

#### 1.1. Test standards

The tests were performed according to following standards:

FCC Part 22: PRIVATE LAND MOBILE RADIO SERVICES.

FCC Part 24: PUBLIC MOBILE SERVICES

FCC Part 27: MISCELLANEOUS WIRELESS COMMUNICATIONS SERVICES

TIA/EIA 603 D June 2010: Land Mobile FM or PM Communications Equipment Measurement and Performance Standards.

FCC Part 2: FREQUENCY ALLOCA-TIONS AND RADIO TREATY MAT-TERS; GENERAL RULES AND REG-ULATIONS

<u>971168 D01 Power Meas License Digital Systems v02r02</u>: provides a methodology for fully characterizing the fundamental power of wideband (> 1 MHz) digitally modulated RF signals acceptable to the FCC for demonstrating compliance for licensed transmitters.

#### 1.2. Report version

Version No.	Date of issue	Description
00	Jul. 04, 2017	Original

# 2. Test Description

Test Item	Section in CFR 47	Result
RF Output Power	Part 2.1046 Part 22.913(a) Part 24.232(c) Part 27.50	Pass
99% & -26 dB Occupied Bandwidth	Part 2.1049 Part 22.917(b) Part 24.238(b)	Pass
Conducted Spurious Emissions	Part 2.1051 Part 22.917 Part 24.238 Part 27.53	Pass
Band Edge	Part 2.1051 Part 22.917 Part 24.238 Part 27.53	Pass
ERP and EIRP	Part 22.913(a) Part 24.232(b)	Pass
Radiated Spurious Emissions	Part 2.1053 Part 22.917 Part 24.238 Part 27.53	Pass
Frequency stability vs. temperature	Part 2.1055(a)(1)(b) Part 22.255 Part 24.235 Part 27.54	Pass
Frequency stability vs. voltage	Part 2.1055(d)(1)(2) Part 22.255 Part 24.235 Part 27.54	Pass
Peak-Average Ratio	Part 24.232 Part 27.50	Pass

Note: The measurement uncertainty is not included in the test result.

# 3. SUMMARY

## 3.1. Client Information

Applicant:	Hytera Communications Corporation Limited
Address:	Hytera Tower, Hi-Tech Industrial Park North, 9108# Beihuan Road, Nanshan District, Shenzhen, People's Republic of China
Manufacturer:	Hytera Communications Corporation Limited
Address:	Hytera Tower, Hi-Tech Industrial Park North, 9108# Beihuan Road, Nanshan District, Shenzhen, People's Republic of China

# **3.2. Product Description**

Name of EUT:	Multi-mode Advanced Radio
Trade Mark:	Hytera
Model/Type reference:	PTC760 FxB1
Listed Model(s):	-
Power supply:	DC 7.6V
Adapter information:	Model: S024WM1200200 Input: 100-240Va.c., 50/60Hz, 600mA Output: 12.0Vd.c., 2000mA
Battery information:	Model: BP2901 Output: 7.6Vd.c., 2900mAh
Charger information:	Model: CH20L08 Input: 12Vd.c., 2000mA Output: 12Vd.c., 2000mA
Hardware version:	V1.0
Software version:	R1.0
<b>RF</b> Technical Description	1
⊠FDD Band 2	
Operation Frequency:	Uplink:1850.7 MHz – 1909.3 MHz Downlink: 1930.7 MHz – 1989.3 MHz
Channel bandwidth:	□ 🛛 1.4MHz 🖂 3MHz 🖾 5MHz 🖂 10MHz 🖂 15MHz
FDD Band 4	
Operation Frequency:	Uplink:1710.7 MHz – 1754.3 MHz Downlink: 2110.7 MHz – 2154.3 MHz
Channel bandwidth:	⊠1.4MHz ⊠ 3MHz ⊠ 5MHz ⊠ 10MHz ⊠15MHz ⊠20MHz
FDD Band 5	
Operation Frequency:	Uplink:824.7 MHz – 848.3 MHz Downlink: 869.7 MHz – 893.3 MHz
Channel bandwidth:	⊠1.4MHz ⊠ 3MHz ⊠ 5MHz ⊠ 10MHz □15MHz □20MHz
FDD Band 7	·
Operation Frequency:	Uplink:2502.5 MHz – 2567.5 MHz Downlink: 2622.5 MHz – 2687.5 MHz

Report Template Version: H00 (2016-08)

Page: 6 of 243

Issued: 2017-07-04

Channel handwidth					X15MHz	
Channel bandwidth:	1.4MHz	3MHz	🛛 5MHz	🛛 10MHz		20MHz
⊠FDD Band 26						
Operation Frequency:	Uplink:814	MHz – 849 M	lHz			
	Downlink: 8	59 MHz – 89	4 MHz			
Channel bandwidth:	⊠1.4MHz	🛛 3MHz	🛛 5MHz	🛛 10MHz	⊠15MHz	20MHz
Channel bandwidth:	1.4MHz	🗌 3MHz	🛛 5MHz	🛛 10MHz	⊠15MHz	⊠20MHz
TDD Band 41						
Operation Frequency:	Uplink:2496	6 MHz – 2690	MHz			
	Downlink: 2	496 MHz – 2	690 MHz			
Channel bandwidth:	1.4MHz	3MHz	🛛 5MHz	🛛 10MHz	⊠15MHz	⊠20MHz
Power Class:	Class 1		lass 2	🛛 Class 3	□ C	lass 4
Modulation type:		⊠16	6QAM	64QAM		
Antennna type:	IntegralAnte	ennna				
Antenna gain:	0 dBi					

# 3.3. Operation state

# Test frequency list

ID         [MHz]         Uplink [MHz]         Downlink [MHz]           Low Range         1.4         18607         1850.7         607         1930.7           Low Range         5         18625         1852.5         625         1932.5           Low Range         10         18650         1855         650         1935.           10         18650         1857.5         675         1937.5           20.11         18700         1860         700         1940           Mid Range         1.4/19193         1909.3         1193         1989.3           3         19185         1908.5         1185         1988.5           3         19185         1908.5         1185         1988.5           15         19175         1907.5         1175         1982.5           20.11         19100         1900         100         1980           NOTE 1: Bandwidth for which a relaxation of the specified UE receiver sensitivity requirement (TS 36.101 [27] Clause 7.3) is allowed.           14         1.4         19957         1710.7         1957         2110.7           Mid Range         1.4         19957         1711.5         1965         2111.5           19975			<b>D</b> 1 1 1 1	N			<b>_ _ _ _</b>				
Image         1.4         18607         1850.7         607         1930.7           Low Range         5         18615         1851.5         615         1932.5           10         18650         1852.5         625         1932.5           10         18650         1857.5         675         1937.5           20 <sup>111</sup> 1877.5         675         1937.5           20 <sup>111</sup> 1870.0         1860         700         1940           Mid Range         1.4(3)6/10         1890.0         1880         900         1960           1.4         1913.1         1903.5         1185         1988.5         1987.5         1977.5         1175         1987.5           10         19150         1902.5         1125         1982.5         110	10		Bandwidth [MHz]	Nul	Frequency of Uplink [MHz]	Ndl	Downlink				
Low Range         5         18625         1852.5         625         1932.5           10         18650         1857.5         675         1937.5           20 <sup>111</sup> 1877.5         675         1937.5           20 <sup>111</sup> 18700         1860         700         1940           Mid Range         1.4.(3)/(3)/(10)         1800         1880         900         1960           1.4         19193         1909.3         1193         1988.5         1987.5           10         19150         1907.5         1175         1987.5         1987.5           10         19150         1900.5         1150         1986.5         1987.5           10         19150         1900.5         1125         1982.5         2011           10         19150         1900.5         1125         1982.5         2011         1980.5           15         19175         1912.5         1902.5         1125         1982.5         2011         1980.5           NOTE 1: Bandwidth for which a relaxation of the specified UE receiver sensitivity requirement (TS 36.101 [27] Clause 7.3) is allowed.         144         144         19957         1711.5         1955         2111.5           Low Range			1.4	18607	1850.7	607					
Low Range         5         18625         1852.5         625         1932.5           10         18650         1857.5         675         1937.5           20 <sup>11</sup> 18670         1857.5         675         1937.5           20 <sup>11</sup> 18700         1860         700         1940           Mid Range         1.4.735710         18900         1880         900         1960           1.4         19193         1908.5         1185         1988.5         1987.5           10         19150         1907.5         1175         1987.5         1987.5           10         19150         1902.5         1125         1982.5         1982.5           10         19150         1900.5         1160         1980         1980.5           NOTE 1: Bandwidth for which a relaxation of the specified UE receiver sensitivity requirement (TS 36.101 [27] Clause 7.3) is allowed.         100         1100         1980           Low Range         1.4         19957         1710.7         1957         2110.7           14         19957         1711.5         1975         2112.5         100         2030         1715.5         2012.5         1125         120.5         110.7         115		ľ		18615	1851.5	615	1931.5				
Low Range         10         18650         1855         650         1935           15         10         18670         1867.5         675         1937.5           20         10         18700         1860         700         1940           Mid Range         1.4(3)5/10         18900         1880         900         1960           1.4         19193         1909.3         1193         1989.3           3         19185         1907.5         1175         1987.5           10         19150         1905.5         1150         1987.5           10         19150         1902.5         1125         1982.5           10         19100         1900         1100         1980.5           NOTE 1: Bandwidth for which a relaxation of the specified UE receiver sensitivity requirement (TS 36.101 [27] Clause 7.3) is allowed.         144           Low Range         1.4         19957         1710.7         1957         2110.7           14         1.4         19957         1712.5         1975         2112.5           10         20000         1715         2025         2117.5         212.5           115         20025         1717.5         2025         2117		1		18625							
Image: Test Frequency ID         Bandwidth for which a relaxation of the specified UE receiver sensitivity requirement (TS 36.101 [27] Clause 7.3) is allowed.           Ital         Test Frequency ID         Bandwidth for Which a relaxation of the specified UE receiver sensitivity requirement (TS 36.101 [27] Clause 7.3) is allowed.           Ital         19975         1710.7         1957         2017.7           Ital         1993.3         1993.3         1993.3         1983.3           High Range         10         1915.0         1905.5         1115.0         1985.3           NOTE 1: Bandwidth for which a relaxation of the specified UE receiver sensitivity requirement (TS 36.101 [27] Clause 7.3) is allowed.         Frequency of UP 100         Not.         Frequency of Downlink [MHz]           Low Range         1.4         1995.5         1712.5         2017.5         2112.5           Ibit No.         Event ND 2002.5         1712.5         1975         2112.5           Mid Range         1.4         1995.5         1717.5         1975         2117.5           Low Range         5         1997.5         1710.7         1957         2110.7           15         2002.5         1717.5         2002.5         2117.5           16         2002.5         1717.5         2002.5         2117.5		Low Range									
Image         20 <sup>11</sup> / <sub>1</sub> 18700         1860         700         1940           Mid Range         1.4(3)5/10         18900         1880         900         1960           1.4         19193         1909.3         1193         1989.3         3         1985         1985.5         1175         1987.5         1175         1987.5         1175         1987.5         1171.5         1987.5         2111.5         100         19900         1100.7         1957         2111.5         107.7         1957         2111.5         1115         10.2000         1115         10.2000         1115         10.2000         1115         10.2000         1115         10.2000         1115         10.200         1115         10.200         1115         10.200		ŀ	15 [1]								
Mid Range         1.4/3/5/10 16/l/20 PI         1890 1890         1880 1990         900 1980         1990 1980.3           High Range         1.4         19193         1909.3         1193         1998.3           High Range         10         19150         1905.5         1175         1987.5           10         19150         1902.5         1125         1982.5         1982.5           10         19150         1902.5         1125         1982.5         1980.7           20 11         19100         1900         1100         1980         1980           NOTE 1: Bandwidth for which a relaxation of the specified UE receiver sensitivity requirement (TS 36.101 [27] Clause 7.3) is allowed.         14           14         Test Frequency ID         Bandwidth [MHz]         NuL         Frequency of Uplink [MHz]         NuL         Frequency of Downlink [MHz]           1.4         19957         1710.7         1957         2110.7           2.0         200000         1715         20025         2117.5           2.0         200000         1715         20025         2171.5           2.0         200205         1771.5         2025         2112.5           10         20385         1753.5		ŀ	20 11								
Image: High Range         1.4         19193         1909.3         1193         1988.3           High Range         3         19185         1908.5         1185         1988.5           10         19175         1907.5         1175         1987.5           10         19150         1900.5         1150         1982.5           2011         19125         1902.5         1125         1982.5           2011         19100         1900         1100         1980           NOTE 1: Bandwidth for which a relaxation of the specified UE receiver sensitivity requirement (TS 36.101 [27] Clause 7.3) is allowed.         Image: Second Se		Mid Range			1						
High Range         3         19185         1908.5         1185         1988.5           High Range         5         19175         1907.5         1175         1987.5           10         19150         1902.5         1125         1982.5           20 <sup>11</sup> 19100         1900         1100         1980           NOTE 1: Bandwidth for which a relaxation of the specified UE receiver sensitivity requirement (TS 36.101 [27] Clause 7.3) is allowed.         Frequency of Uplink [MHz]         Not.         Frequency of Downlink [MHz]           1.4         19957         1711.5         1965         2111.5           1.4         19957         1711.5         1965         2111.5           1.6         20000         1715         1965         2111.5           1.6         20000         1715         2000         2115           1.5         20025         1717.5         2025         2117.5           20         20050         1720         2050         2120.5           14         20393         1754.3         2393         2154.3           3         20355         1775.5         2325         2147.5           20         20300         1750.5         2350         2150.5 <td></td> <td></td> <td></td> <td>19193</td> <td>1909.3</td> <td>1193</td> <td>1989.3</td>				19193	1909.3	1193	1989.3				
High Range         5         19175         1907.5         1175         1987.5           10         19150         1902.5         1125         1982.5           20 <sup>11</sup> 19125         1902.5         1125         1982.5           20 <sup>11</sup> 19120         1900         1100         1980           NOTE 1: Bandwidth for which a relaxation of the specified UE receiver sensitivity requirement (TS 36.101 [27] Clause 7.3) is allowed.         Not.         Frequency of Uplink [MHz]         Not.         Frequency of Downlink [MHz]           14         14         19957         1710.7         1957         2110.7           10         20000         1711.5         1965         2111.5           10         20000         1715         2000         2115           10         20000         1715         2000         2115           115         20025         1717.5         2025         2117.5           20         20050         1720         2060         2120           Mid Range         1.4/3/5/10/15/20         20175         173.5         2375         215.3           15         20325         1747.5         2332         2143.3           16         20330         1750.5		ŀ									
High Range         10         19150         1905         1150         1985           15 <sup>101</sup> 19125         1902.5         1125         1982.5           20 <sup>101</sup> 19100         1900         1100         1980           NOTE 1: Bandwidth for which a relaxation of the specified UE receiver sensitivity requirement (TS 36.101 [27] Clause 7.3) is allowed.         Not.         Frequency of Downlink [MHz]           14         Test Frequency ID         Bandwidth [MHz]         NuL         Frequency of Downlink [MHz]         Not.           1.4         19957         1710.7         1957         2110.7           3         19965         1711.5         1965         2111.5           Low Range         5         19975         1712.5         1975         2110.7           15         20025         1717.5         2005         2115.5           15         20025         1717.5         2005         2120           Mid Range         1.43/5/10/15/20         20175         173.5         2132.5           14         20393         1754.3         2393         2154.3           3         20385         1753.5         2385         2155.5           High Range         5         20375 <td< td=""><td></td><td>-</td><td></td><td></td><td></td><td></td><td></td></td<>		-									
Initian         Initian <t< td=""><td></td><td>High Range</td><td></td><td></td><td></td><td></td><td></td></t<>		High Range									
20 <sup>III</sup> 19100         1900         1100         1980           NOTE 1: Bandwidth for which a relaxation of the specified UE receiver sensitivity requirement (TS 36.101 [27] Clause 7.3) is allowed.           14           Test Frequency ID Low Range         Bandwidth [MHz]         NuL Vplink [MHz]         Frequency of Downlink [MHz]           1.4         19957         7110.7         1957         2110.7           1.4         19957         711.5         1965         2110.7           1.4         19957         711.5         1965         2110.7           Low Range         1.4         19957         2110.7           15         2000         2115           10         20000         2115.5           1.4         20393         175.5         2175         2130           High Range         1.4         20325         1775         2130           Test Frequency ID <td 8"8"8"8"8<="" colspan="4" td=""><td></td><td></td><td>15 [1]</td><td></td><td></td><td></td><td></td></td>	<td></td> <td></td> <td>15 [1]</td> <td></td> <td></td> <td></td> <td></td>						15 [1]				
NOTE 1: Bandwidth for which a relaxation of the specified UE receiver sensitivity requirement (TS 36:101 [27] Clause 7.3) is allowed.           14           Test Frequency ID         Bandwidth [MHz]         NuL         Frequency of Uplink [MHz]           Low Range         Frequency of 14.4         1995         1710.7         1965         1711.5         1965         1711.5         1965         2111.5           Low Range         5         19975         1712.5         1975         2112.5           Low Range         1.4         2002000         1717.5         2025         2117.5           14         2002000         1717.5         2025         2117.5           1.4         200393         1753.5         2135           1.4         20335         1747.5         2325         2147.5           1.4         20325         1747.5         2325         2147.5 <th colsp<="" td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td></th>	<td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>										
36.101 [27] Clause 7.3) is allowed.           14           Test Frequency ID         Bandwidth [MHz]         NuL         Frequency of Uplink [MHz]         NoL         Frequency of Downlink           1.4         19957         1710.7         1957         2110.7           3         19965         1711.5         1965         2111.5           Low Range         5         19975         1712.5         1975         2112.5           10         20000         1715         2000         2115           15         20025         1717.5         2025         2117.5           20         20050         1720         2050         2120           Mid Range         1.4/3/5/10/15/20         20175         1732.5         2175         2132.5           1.4         20393         1754.3         2393         2154.3         3           3         20325         1747.5         2350         2150           15         20325         1747.5         2325         2147.5           20         20300         1745         2300         2145           5         20325         1747.5         2325         2147.5           20         20											
Image         Image <th< th=""><th>4</th><th>30.101 [2</th><th>J Glause 7.5) is and</th><th>weu.</th><th></th><th></th><th></th></th<>	4	30.101 [2	J Glause 7.5) is and	weu.							
Image         3         19965         1711.5         1965         2111.5           Low Range         5         19975         1712.5         1975         2112.5           10         20000         1715         2000         2115           15         20025         1717.5         2025         2117.5           20         20050         1720         2050         2120           Mid Range         1.4/3/5/10/15/20         20175         1732.5         2175         2132.5           1.4         20393         1754.3         2393         2154.3         3         20385         1753.5         2385         2153.5           10         20350         1750         2350         2150         2150         2150         2150         2150         2150         2145           15         20325         1747.5         2325         2147.5         2325         2147.5         2300         2145           15         20320         1745         2300         2145         20         2000         20300         1745         2300         2145           15         20120         20300         1745         2300         2145         206.5         2415	Te	st Frequency ID				NDL	Downlink				
Low Range         5         19975         1712.5         1975         2112.5           10         20000         1715         2000         2115           15         20025         1717.5         2025         2117.5           20         20050         1720         2050         2120           Mid Range         1.4/3/5/10/15/20         20175         1732.5         2175         2132.5           High Range         1.4         20393         1754.3         2393         2154.3           3         20385         1753.5         2385         2153.5           10         20350         1750         2350         2150           15         20325         1747.5         2325         2147.5           20         20300         1745         2300         2145           15         20325         1747.5         2325         2147.5           20         20300         1745         2300         2145           15         20325         1747.5         2325         2147.5           20         20300         1745         2300         2145           15         20425         826.5         2415         870.5     <			1.4		1710.7		2110.7				
Low Range         10         20000         1715         2000         2115           15         20025         1717.5         2025         2117.5           20         20050         1720         2050         2120           Mid Range         1.4/3/5/10/15/20         20175         1732.5         2175         2132.5           Might Range         1.4/3/5/10/15/20         20175         1753.5         2385         2153.5           1.4         20393         1754.3         2393         2154.3         3         20385         1753.5         2385         2152.5           10         20350         1750         2350         2160         2147.5         2300         2145         2147.5         200         20300         1745         2300         2145         315         315         320415         824.7         2407         869.7         320415			3	19965	1711.5	1965	2111.5				
Ind         20000         Inits         2000         2115           15         20025         1717.5         2025         2117.5           20         20050         1720         2050         2120           Mid Range         1.4/3/5/10/15/20         20175         1732.5         2175         2132.5           1.4         20393         1754.3         2393         2154.3           3         20385         1753.5         2385         2153.5           10         20350         1750         2350         2150           15         20325         1747.5         2325         2147.5           20         20300         1745         2300         2145           15         20325         1747.5         2325         2147.5           20         20300         1745         2300         2145           15         20325         1747.5         2300         2145           15         20300         1745         2300         2145           15         20425         826.5         2415         870.5           16         Image         1.4         20407         824.7         2407         869.7 <tr< td=""><td></td><td>Law Damas</td><td>5</td><td>19975</td><td>1712.5</td><td>1975</td><td>2112.5</td></tr<>		Law Damas	5	19975	1712.5	1975	2112.5				
Image         20         20050         1720         2050         2120           Mid Range         1.4/3/5/10/15/20         20175         1732.5         2175         2132.5           High Range         1.4         20393         1754.3         2393         2154.3           3         20385         1753.5         2385         2153.5           5         20375         1752.5         2375         2150           10         20350         1750         2350         2150           15         20325         1747.5         2325         2147.5           20         20300         1745         2300         2145           15         20325         1747.5         2300         2145           15         200         20300         1745         2300         2145           15         20         20300         1745         2300         2145           15         20         20300         1745         2300         2145           16         IMHz]         NuL         Frequency of Uplink [MHz]         NuL         IMHz]         Immonstrate           16         1.4         20407         824.7         2407         869.7 </td <td></td> <td>Low Range</td> <td>10</td> <td>20000</td> <td>1715</td> <td>2000</td> <td>2115</td>		Low Range	10	20000	1715	2000	2115				
Mid Range         1.4/3/5/10/15/20         20175         1732.5         2175         2132.5           High Range         1.4         20393         1754.3         2393         2154.3           3         20385         1753.5         2385         2153.5           5         20375         1752.5         2375         2152.5           10         20350         1750         2350         2150           15         20325         1747.5         2325         2147.5           20         20300         1745         2300         2145           15         20325         1747.5         2325         2147.5           20         20300         1745         2300         2145           15         20         20300         1745         2300         2145           15         20         20300         1745         2300         2145           15         1.4         20407         824.7         2407         869.7           20         20415         825.5         2415         870.5         15           10 <sup>111</sup> 20450         829         2450         874           Mid Range         1.4/3/5 <td< td=""><td></td><td></td><td>15</td><td>20025</td><td>1717.5</td><td>2025</td><td>2117.5</td></td<>			15	20025	1717.5	2025	2117.5				
Mid Range         1.4/3/5/10/15/20         20175         1732.5         2175         2132.5           High Range         1.4         20393         1754.3         2393         2154.3           High Range         5         20375         1752.5         2375         2152.5           10         20350         1750         2350         2150           15         20325         1747.5         2325         2147.5           20         20300         1745         2300         2145           15         20325         1747.5         2325         2147.5           20         20300         1745         2300         2145           15         20320         1745         2300         2145           15         200         20300         1745         2300         2145           15         202         20300         1745         2300         2145           15         10         NuL         Frequency of Uplink [MHz]         NuL [MHz]         Frequency of Downlink [MHz]           Low Range         1.4         20407         824.7         2407         869.7           3         20415         825.5         2415         870.5			20	20050	1720	2050	2120				
High Range         1.4         20393         1754.3         2393         2154.3           High Range         3         20385         1753.5         2385         2153.5           5         20375         1752.5         2375         2152.5           10         20350         1750         2350         2150           15         20325         1747.5         2325         2147.5           20         20300         1745         2300         2145           Image: Second Sec		Mid Range	1.4/3/5/10/15/20	20175	1732.5	2175					
High Range         3         20385         1753.5         2385         2153.5           10         20350         1750         2350         2150           15         20325         1747.5         2325         2147.5           20         20300         1745         2300         2145           15         20325         1747.5         2325         2147.5           20         20300         1745         2300         2145           15         20300         1745         2300         2145           15         20         20300         1745         2300         2145           15         200         20300         1745         2300         2145           15         200         20300         1745         2300         2145           15         200         20407         824.7         2407         869.7           10         14         20407         824.7         2407         869.7           10         11         20450         829         2450         871.5           10         111         20450         829         2450         874           Mid Range         1.4 <t< td=""><td></td><td>J</td><td></td><td></td><td></td><td></td><td></td></t<>		J									
High Range         5         20375         1752.5         2375         2152.5           10         20350         1750         2350         2150           15         20325         1747.5         2325         2147.5           20         20300         1745         2300         2145           15         200         20300         1745         2300         2145           15         20         20300         1745         2300         2145           15         20         20300         1745         2300         2145           15         20         20300         1745         2300         2145           15         20         20300         1745         2300         2145           15         20         20300         1745         2300         2145           15         10         10         Prequency of Uplink [MHz]         NoL         Frequency of Downlink [MHz]           1.0         1.4         20407         824.7         2407         869.7           10         11         20450         829         2450         871.5           10         11         20450         829         2450											
High Range         10         20350         1750         2350         2150           15         20325         1747.5         2325         2147.5           20         20300         1745         2300         2145           15         20         20300         1745         2300         2145           15         20         20300         1745         2300         2145           15         20         20300         1745         2300         2145           15         20         20300         1745         2300         2145           15         10         NuL         Frequency of Uplink [MHz]         NuL         Frequency of Downlink [MHz]           Low Range         1.4         20407         824.7         2407         869.7           10         11         20450         825.5         2415         870.5           10         11         20450         829         2450         874           Mid Range         1.4         20643         848.3         2643         893.3           14         20635         847.5         2635         892.5         891.5           High Range         3         20625											
15         20325         1747.5         2325         2147.5           20         20300         1745         2300         2145           15         200         20300         1745         2300         2145           15         Test Frequency ID         Bandwidth [MHz]         NuL         Frequency of Uplink [MHz]         NuL         Frequency of Downlink [MHz]           Low Range         1.4         20407         824.7         2407         869.7           3         20415         825.5         2415         870.5           5         20425         826.5         2425         871.5           10 <sup>111</sup> 20450         829         2450         874           Mid Range         1.4         20643         848.3         2643         893.3           High Range         3         20635         847.5         2635         892.5           5         20625         846.5         2625         891.5											
20         20300         1745         2300         2145 <b>1 5</b> Test Frequency ID         Bandwidth [MHz]         NuL         Frequency of Uplink [MHz]         N <sub>DL</sub> Frequency of Downlink [MHz]           Low Range         1.4         20407         824.7         2407         869.7           5         20415         825.5         2415         870.5           5         20425         826.5         2425         871.5           10 <sup>[11]</sup> 20450         829         2450         874           Mid Range         1.4/3/5 10 <sup>[11]</sup> 20525         836.5         2525         881.5           High Range         1.4         20635         847.5         2635         892.5           5         20625         846.5         2625         891.5		High Range	10								
Test Frequency ID         Bandwidth [MHz]         NuL         Frequency of Uplink [MHz]         N <sub>DL</sub> Frequency of Downlink [MHz]           Low Range         1.4         20407         824.7         2407         869.7           Low Range         3         20415         825.5         2415         870.5           5         20425         826.5         2425         871.5           10 <sup>[11]</sup> 20450         829         2450         874           Mid Range         1.4/3/5 10 <sup>[11]</sup> 20525         836.5         2525         881.5           High Range         1.4         20635         847.5         2635         892.5           5         20625         846.5         2625         891.5		High Range									
[MHz]         Uplink [MHz]         Downlink [MHz]           Low Range         1.4         20407         824.7         2407         869.7           3         20415         825.5         2415         870.5           5         20425         826.5         2425         871.5           10 <sup>111</sup> 20450         829         2450         874           Mid Range         1.4/3/5         20525         836.5         2525         881.5           High Range         1.4         20635         847.5         2635         892.5           5         20625         846.5         2655         891.5		High Range	15	20325	1747.5	2325	2147.5				
[MHz]         Uplink [MHz]         Downlink [MHz]           Low Range         1.4         20407         824.7         2407         869.7           3         20415         825.5         2415         870.5           5         20425         826.5         2425         871.5           10 <sup>111</sup> 20450         829         2450         874           Mid Range         1.4/3/5 10 <sup>111</sup> 20525         836.5         2525         881.5           High Range         1.4         20635         847.5         2635         892.5           5         20625         846.5         2655         891.5	5	High Range	15	20325	1747.5	2325	2147.5				
$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$	5	High Range	15	20325	1747.5	2325	2147.5				
Low Range         5         20425         826.5         2425         871.5           10         11         20450         829         2450         874           Mid Range         1.4/3/5 10         20525         836.5         2525         881.5           High Range         1.4         20643         848.3         2643         893.3           5         20625         846.5         2625         891.5	-		15 20 Bandwidth	20325 20300 Nul	1747.5 1745	2325 2300	2147.5 2145 Frequency of Downlink				
S         20425         826.5         2425         871.5           10         10         20450         829         2450         874           Mid Range         1.4/3/5 10 <sup>[11]</sup> 20525         836.5         2525         881.5           High Range         1.4         20643         848.3         2643         893.3           5         20625         846.5         2625         891.5	-		15 20 Bandwidth [MHz] 1.4	20325 20300 NuL 20407	1747.5 1745 Frequency of Uplink [MHz] 824.7	2325 2300 N <sub>DL</sub> 2407	2147.5 2145 Frequency of Downlink [MHz] 869.7				
10         11         20450         829         2450         874           Mid Range         1.4/3/5 10 <sup>[1]</sup> 20525         836.5         2525         881.5           High Range         1.4         20643         848.3         2643         893.3           3         20635         847.5         2635         892.5           5         20625         846.5         2625         891.5	-	est Frequency ID	15 20 Bandwidth [MHz] 1.4	20325 20300 NuL 20407	1747.5 1745 Frequency of Uplink [MHz] 824.7	2325 2300 N <sub>DL</sub> 2407	2147.5 2145 Frequency of Downlink [MHz] 869.7				
Mid Range         1.4/3/5 10 <sup>[1]</sup> 20525         836.5         2525         881.5           High Range         1.4         20643         848.3         2643         893.3           5         20625         846.5         2625         891.5	-	est Frequency ID	15 20 Bandwidth [MHz] 1.4 3 5	20325 20300 NuL 20407 20415	1747.5 1745 Frequency of Uplink [MHz] 824.7 825.5	2325 2300 N <sub>DL</sub> 2407 2415	2147.5 2145 Frequency of Downlink [MHz] 869.7 870.5				
3         20635         847.5         2635         892.5           5         20625         846.5         2625         891.5	-	est Frequency ID	15 20 Bandwidth [MHz] 1.4 3 5	20325 20300 NuL 20407 20415 20425	1747.5 1745 Frequency of Uplink [MHz] 824.7 825.5 826.5	2325 2300 N <sub>DL</sub> 2407 2415 2425	2147.5 2145 Frequency of Downlink [MHz] 869.7 870.5 871.5				
3         20635         847.5         2635         892.5           5         20625         846.5         2625         891.5	-	est Frequency ID	15 20 Bandwidth [MHz] 1.4 3 5 10 <sup>[1]</sup>	20325 20300 NuL 20407 20415 20425 20450	1747.5 1745 Frequency of Uplink [MHz] 824.7 825.5 826.5 829	2325 2300 N <sub>DL</sub> 2407 2415 2425 2450	2147.5 2145 Frequency of Downlink [MHz] 869.7 870.5 871.5 874				
High Range 5 20625 846.5 2625 891.5	-	est Frequency ID	15 20 Bandwidth [MHz] 1.4 3 5 10 <sup>[1]</sup> 1.4/3/5 10 <sup>[1]</sup>	20325 20300 NuL 20407 20415 20425 20425 20450 20525	1747.5 1745 Frequency of Uplink [MHz] 824.7 825.5 826.5 829 836.5	2325 2300 NDL 2407 2415 2425 2450 2525	2147.5 2145 Frequency of Downlink [MHz] 869.7 870.5 871.5 874 881.5				
	-	est Frequency ID Low Range Mid Range	15 20 Bandwidth [MHz] 1.4 3 5 10 <sup>[1]</sup> 1.4/3/5 10 <sup>[1]</sup> 1.4/3/5	20325 20300 NuL 20407 20415 20425 20425 20450 20525 20643	1747.5 1745 Frequency of Uplink [MHz] 824.7 825.5 826.5 829 836.5 848.3	2325 2300 NDL 2407 2415 2425 2450 2525 2643	2147.5 2145 Frequency of Downlink [MHz] 869.7 870.5 871.5 874 881.5 881.5 893.3				
	-	est Frequency ID Low Range Mid Range	15 20 Bandwidth [MHz] 1.4 3 5 10 <sup>[11]</sup> 1.4/3/5 10 <sup>[11]</sup> 1.4 3 5	20325 20300 NuL 20407 20415 20425 20450 20525 20525 20643 20635	1747.5 1745 Frequency of Uplink [MHz] 824.7 825.5 826.5 829 836.5 829 836.5 848.3 847.5	2325 2300 NDL 2407 2415 2425 2450 2525 2643 2635	2147.5 2145 Frequency of Downlink [MHz] 869.7 870.5 871.5 874 881.5 881.5 893.3 892.5				

FDD Band 7

FDD Band 7									
	Test Frequency ID	[MHz]	th	N <sub>UL</sub>	Frequency of Uplink [MHz]		D	quency of ownlink [MHz]	
		5		20775	2502.5	2775		2622.5	
	Low Range	10		20800	2505	2800		2625	
	g_	15 20 <sup>[1]</sup>		20825	2507.5	2825		2627.5	
				20850	2510	2850		2630	
	Mid Range	5/10/15 20 <sup>[1]</sup>		21100	2535	3100		2655	
		5		21425	2567.5	3425		2687.5	
	High Range 10			21400	2565	3400		2685	
		20 <sup>[1]</sup>		21375 21350	2562.5 2560	3375 3350		2682.5 2680	
D Band 26	NOTE 1: Bandwidth 36.101 [2	for which a rela 7] Clause 7.3) i			fied UE receiver	sensitivity req	uirement	(TS	
	est Frequency ID	Bandwidth [MHz]		NuL	Frequency o Uplink [MHz			equency of Downlink [MHz]	
		1.4		26697	814.7	8697		859.7	
		3		26705	815.5	8705		860.5	
	Low Range	5		26715	816.5	8715		861.5	
		10[1]		26740	819	8740		864	
		15 🖽		26765	821.5	8765		866.5	
	Mid Range	1.4/3/5/10 <sup>[1]</sup> 15 <sup>[1]</sup>		26865	831.5	8865		876.5	
		1.4		27033	848.3	9033		893.3	
	High Range	3		27025	847.5	9025		892.5	
	[	5	27015		846.5	9015		891.5	
	Ī	10[1]		26990	844	8990		889	
	Ī	15 [1]		26965	841.5	8965		886.5	
D Band 41	OTE 1: Bandwidth (TS 36.10	for which a re 1 [27] Clause 7			ecified UE rece	iver sensitiv	ity requir	rement	
	Test Frequer	cy ID		dwidth //Hz]	EARFCN	Frequer	ncy (UL [MHz]	and DL)	
F	Low Rang	le		5	39675		2498.5		
	Low Range			10	39700		2501	, 	
								-	
				15	39725		2503.5		
				20	39750		2506		
Γ	Mid Rang	e	5/10	)/15/20	40620		2593		
F	High Rang			5	41565		2687.5	5	
				10	41540		2685		
				15	41515		2682.5		
								)	
				20	41490		2680		

## 3.4. EUT operation mode

#### For RF test items

The EUT has been tested under typical operating condition. The Applicant providessoftware to control the EUT for staying in continoustransmitting and receiving mode for testing.

	<b>.</b> .			Bandv	vidth (M	Hz)		Modu	ulation	RB #			Test Channel		
Test Items	Band	1.4	3	5	10	15	20	QPSK	16QAM	1	Half	Full	L	М	н
	2	v	v	v	v	v	v	v	v	v	v	v	v	v	v
	4	v	v	v	v	v	v	v	v	v	v	v	v	v	v
Max OutputPower	5	v	v	v	v	-	-	v	v	v	v	v	v	v	v
oupui onei	7	-	-	v	v	v	v	v	v	v	v	v	v	v	v
	41	-	-	v	v	v	v	v	v	v	v	v	v	v	v
	2	v	v	v	v	v	v	v	v	-	-	v	v	v	v
26dB and	4	v	v	v	v	v	v	v	v	-	-	v	v	v	v
99%	5	v	v	v	v	-	-	v	v	-	-	v	v	v	v
Bandwidth	7	-	-	v	v	v	v	v	v	-	-	v	v	v	v
	41	-	-	v	v	v	v	v	v	-	-	v	v	v	v
	2	v	v	v	v	v	v	v	v	v	-	v	v		v
	4	v	v	v	v	v	v	v	v	v	-	v	v		v
Conducted Band Edge	5	v	v	v	v	-	-	v	v	v	-	v	v		v
U	7	-	-	v	v	v	v	v	v	v	-	v	v		v
	41	-	-	v	v	v	v	v	v	-	-	v	v	v	v
	2	v	v	v	v	v	v	v	v	v	-	-	v	v	v
Conducted	4	v	v	v	v	v	v	v	v	v	-	-	v	v	v
Spurious	5	v	v	v	v	-	-	v	v	v	-	-	v	v	v
Emission	7	-	-	v	v	v	v	v	v	v	-	-	v	v	v
	41	-	-	v	v	v	v	v	v	v	-	-	v	v	v
	2	v	v	v	v	v	v	v	v	v	-	-	v	v	v
/	4	v	v	v	v	v	v	v	v	v	-	-	v	v	v
E.R.P./ E.I.R.P.	5	v	v	v	v	-	-	v	v	v	-	-	v	v	v
	7	-	-	v	v	v	v	v	v	v	-	-	v	v	v
	41	-	-	v	v	v	v	v	v	v	-	-	v	v	v
	2	v	v	v	v	v	v	v	-	v	-	-	v	v	v
Radiated	4	v	v	v	v	v	v	v	-	v	-	-	v	v	v
Spurious Emission	5	v	v	v	v	-	-	v	-	v	-	-	v	v	v
Emission	7	-	-	v	v	v	v	v	-	v	-	-	v	v	v
	41	-	-	v	v	v	v	v	v	v	-	-	v	v	v
	2	-	-	-	-	-	v	v	v	-	-	v	-	v	
<b>F</b> ac	4	-	-	-	-	-	v	v	v	-	-	v	-	v	
Frequency Stability	5	-	-	-	v	-		v	v	-	-	v	-	v	
	7	-	-	-	-	-	v	v	v	-	-	v	-	v	
	41	-	-	v	v	v	v	v	v	-	-	v	v	v	v
	2	-	-	-	-	-	v	v	v	v	-	v	v	v	v
Dool: to	4	-	-	-	-	-	v	v	v	v	-	v	v	v	v
Peak-to- AverageRatio	5	-	-	-	v	-	-	v	v	v	-	v	v	v	v
	7	-	-	-	-	-	v	v	v	v	-	v	v	v	v
	41	-	-	v	v	v	v	v	v	v	-	v	v	v	v

Remark	<ol> <li>The mark "v"means that this configuration is chosenfor testing</li> <li>The mark "-"means that this bandwidth is not supported.</li> <li>The device is investigatedfrom 30MHz to10 times offundamental signal for radiated spurious emission test under different RB size/offset and modulations in exploratory test. Subsequently, only the worst case emissions are reported.</li> </ol>
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## 3.5. EUT configuration

The following peripheral devices and interface cables were connected during the measurement:

- supplied by the manufacturer
- $\bigcirc$  supplied by the lab

	Manufacturer :	
	Model No. :	
	Manufacturer :	
	Model No. :	
	Manufacturer :	
	Model No. :	

### 3.6. Modifications

No modifications were implemented to meet testing criteria.

# 4. TEST ENVIRONMENT

#### 4.1. Address of the test laboratory

Laboratory:Shenzhen Huatongwei International Inspection Co., Ltd. Address: 1/F, Bldg 3, Hongfa Hi-tech Industrial Park, Genyu Road, Tianliao, Gongming, Shenzhen, China Phone: 86-755-26748019 Fax: 86-755-26748089

### 4.2. Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

#### CNAS-Lab Code: L1225

Shenzhen Huatongwei International Inspection Co., Ltd. has been assessed and proved to be in compliance with CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC17025: 2005 General Requirements) for the Competence of Testing and Calibration Laboratories.

#### A2LA-Lab Cert. No.: 3902.01

Shenzhen Huatongwei International Inspection Co., Ltd. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

#### FCC-Registration No.: 317478

Shenzhen Huatongwei International Inspection Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files. Registration 317478.

#### IC-Registration No.: 5377B

Two 3m Alternate Test Site of Shenzhen Huatongwei International Inspection Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 5377B.

#### ACA

Shenzhen Huatongwei International Inspection Co., Ltd. EMC Laboratory can also perform testing for the Australian C-Tick mark as a result of our A2LA accreditation.

# 4.3. Equipments Used during the Test

Output Power(Conducted) &Occupied Bandwidth&EmissionBandwidth&Band Edge Compliance&Conducted Spurious Emission								
No.	No. Equipment Manufacturer Model No. SerialNo. Last Cal.							
1	UNIVERSAL RADIO COMMUNICATION	Rohde&Schwarz	CMU200	112012	2016/11/13			
2	WIDEB.RADIO COMM.TESRER	Rohde&Schwarz	CMW500	1201.0002K50	2016/11/13			
3	Spectrum Analyzer Rohde&Schwarz FSU26 201141 2016/11/13							
4	Splitter	Mini-Circuit	ZAPD-4	400059	2016/11/13			

Freque	Frequency Stability							
No.	Equipment Manufacturer		Model No.	SerialNo.	Last Cal.			
1	UNIVERSAL RADIO COMMUNICATION	Rohde&Schwarz	CMU200	112012	2016/11/13			
2	WIDEB.RADIO COMM.TESRER	Rohde&Schwarz	CMW500	1201.0002K50	2016/11/13			
3	Spectrum Analyzer	Rohde&Schwarz	FSU26	201141	2016/11/13			
4	Climate Chamber	ESPEC	EL-10KA	05107008	2016/11/13			
5	Splitter	Mini-Circuit	ZAPD-4	400059	2016/11/13			

Output	Power (Radiated) & Radiated	Spurious Emission			
No.	Equipment	Manufacturer	Model No.	SerialNo.	Last Cal.
1	UNIVERSAL RADIO COMMUNICATION	Rohde&Schwarz	CMU200	112012	2016/11/13
2	Spectrum Analyzer	Rohde&Schwarz	FSU26	201141	2016/11/13
3	HORNANTENNA	ShwarzBeck	9120D	1012	2016/11/13
4	HORNANTENNA	ShwarzBeck	9120D	1011	2016/11/13
5	Ultra-Broadband Antenna	ShwarzBeck	VULB9163	538	2016/11/13
6	Ultra-Broadband Antenna	ShwarzBeck	VULB9163	539	2016/11/13
7	TURNTABLE	MATURO	TT2.0		2016/11/13
8	ANTENNA MAST	MATURO	TAM-4.0-P		N/A
9	EMI Test Software	Audix	E3	N/A	N/A
10	EMI Test Receiver	Rohde&Schwarz	ESIB 26	100009	2016/11/13
11	RF Test Panel	Rohde&Schwarz	TS / RSP	335015/0017	2016/11/13
12	High pass filter	Compliance Direction systems	BSU-6	34202	2016/11/13
13	Splitter	Mini-Circuit	ZAPD-4	400059	2016/11/13
14	Horn Antenna	SCHWARZBECK	BBHA9170	25841	2016/11/13
15	Horn Antenna	SCHWARZBECK	BBHA9170	25842	2016/11/13
16	Preamplifier	ShwarzBeck	BBV 9718	BBV 9718	2016/11/13
17	Broadband Preamplifier	ShwarzBeck	BBV743	9743-0079	2016/11/13
18	Signal Generator	Rohde&Schwarz	SMF100A	101932	2016/11/13
19	Amplifer	Compliance Direction systems	PAP1-4060	120	2016/11/13
20	TURNTABLE	ETS	2088	2149	2016/11/13
21	ANTENNA MAST	ETS	2075	2346	2016/11/13
22	HORNANTENNA	Rohde&Schwarz	HF906	100068	2016/11/13
23	HORNANTENNA	Rohde&Schwarz	HF906	100039	2016/11/13
24	WIDEB.RADIO COMM.TESRER	R&S	CMW500	1201.0002K50	2016/11/13

The calibration interval was one year.

#### 4.4. Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Normal Temperature/Tnor:	15~35°C
lative Humidity	30~60 %
Air Pressure	950-1050 hPa

#### 4.5. Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to TR-100028-01"Electromagnetic compatibilityand Radio spectrum Matters (ERM);Uncertainties in the measurementof mobile radio equipment characteristics;Part 1"and TR-100028-02 "Electromagnetic compatibilityand Radio spectrum Matters (ERM);Uncertainties in the measurement characteristics;Part 2 " and is documented in the Shenzhen Huatongwei International Inspection Co., Ltd quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for Shenzhen Huatongweilaboratory is reported:

Test Items	MeasurementUncertainty	Notes
Frequency stability	25 Hz	(1)
Transmitter power conducted	0.57 dB	(1)
Transmitter power Radiated	2.20 dB	(1)
Conducted spurious emission 9KHz-12.75 GHz	1.60 dB	(1)
Conducted Emission 9KHz-30MHz	3.39 dB	(1)
Radiated Emission 30~1000MHz	4.24 dB	(1)
Radiated Emissio 1~18GHz	5.16 dB	(1)
Radiated Emissio 18-40GHz	5.54 dB	(1)
Occupied Bandwidth		(1)
Emission Mask		(1)
Modulation Characteristic		(1)
Transmitter Frequency Behavior		(1)

 This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=1.96.

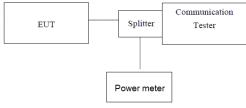
# 5. TEST CONDITIONS AND RESULTS

### 5.1. Conducted Output Power

### LIMIT

N/A

#### **TEST CONFIGURATION**



Note: Measurement setup for testing on Antenna connector

#### TEST PROCEDURE

- 1. The transmitter output port was connected to base station.
- 2. The RF output of EUT was connected to the power meter by RF cable and attenuator, the path loss was compensated to the results for each measurement.
- 3. Set EUT at maximum power through base station.
- 4. Select lowest, middle, and highest channels for each band and different modulation.
- 5. Measure the maximum burst average power.

#### TEST MODE:

Please refer to the clause 3.3

#### **TEST RESULTS**

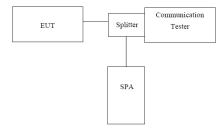
#### ☐ Passed ☐ Not Applicable

EUT Mode	Frequency (MHz)	Max Avg.Power QPSK (dBm)	Max Avg.Power 16QAM (dBm)
LTE Band 2	1850.7-1909.3	21.80	20.83
LTE Band 4	1710.7 - 1754.3	22.38	21.06
LTE Band 5	824.7 - 848.3	22.21	23.35
LTE Band 7	2502.5 - 2567.5	21.51	20.39
LTE Band 41	2496 - 2690	21.65	21.16

## 5.2. 99% & -26 dB Occupied Bandwidth

N/A

#### **TEST CONFIGURATION**



Note: Measurement setup for testing on Antenna connector

#### TEST PROCEDURE

- 1. The EUT's output RF connector was connected with a short cable to the spectrum analyzer
- 2. RBW was set to about 1% of emission BW, VBW= 3 times RBW.
- 3. -26dBc display line was placed on the screen (or 99% bandwidth), the occupied bandwidth isthe delta frequency between the two points where the display line intersects the signal trace.

#### TEST MODE:

Please refer to the clause 3.3

#### TEST RESULTS

#### ☑ Passed □ Not Applicable

		LTE Band 2			
Dondwidth	Channel	99% Occupy ba	indwidth (MHz)	-26dB bandwidth (MHz)	
Bandwidth	Channel	QPSK	16QAM	QPSK	16QAM
	Low	1.10	1.10	1.37	1.31
1.4MHz	Mid	1.10	1.10	1.37	1.33
	High	1.11	1.10	1.31	1.32
	Low	2.69	2.68	2.95	2.95
3MHz	Mid	2.69	2.68	2.95	2.96
	High	2.69	2.68	2.95	2.95
	Low	4.51	4.52	5.03	5.04
5MHz	Mid	4.51	4.48	5.02	5.00
	High	4.49	4.51	5.04	5.05
	Low	8.94	8.92	9.74	9.67
10MHz	Mid	8.94	8.92	9.85	9.73
	High	8.94	8.94	9.76	9.72
	Low	13.48	13.43	14.90	14.76
15MHz	Mid	13.43	13.45	14.77	14.83
	High	13.43	13.45	14.83	14.85
	Low	17.87	17.90	19.31	19.32
20MHz	Mid	17.90	17.90	19.18	19.31
	High	17.90	17.86	19.23	19.42

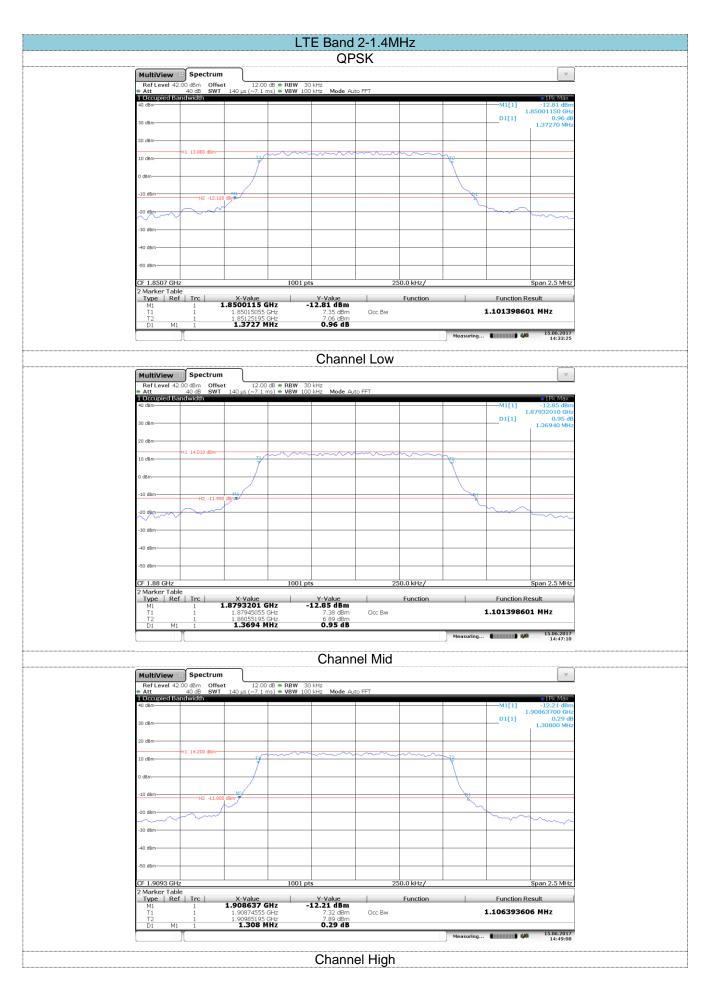
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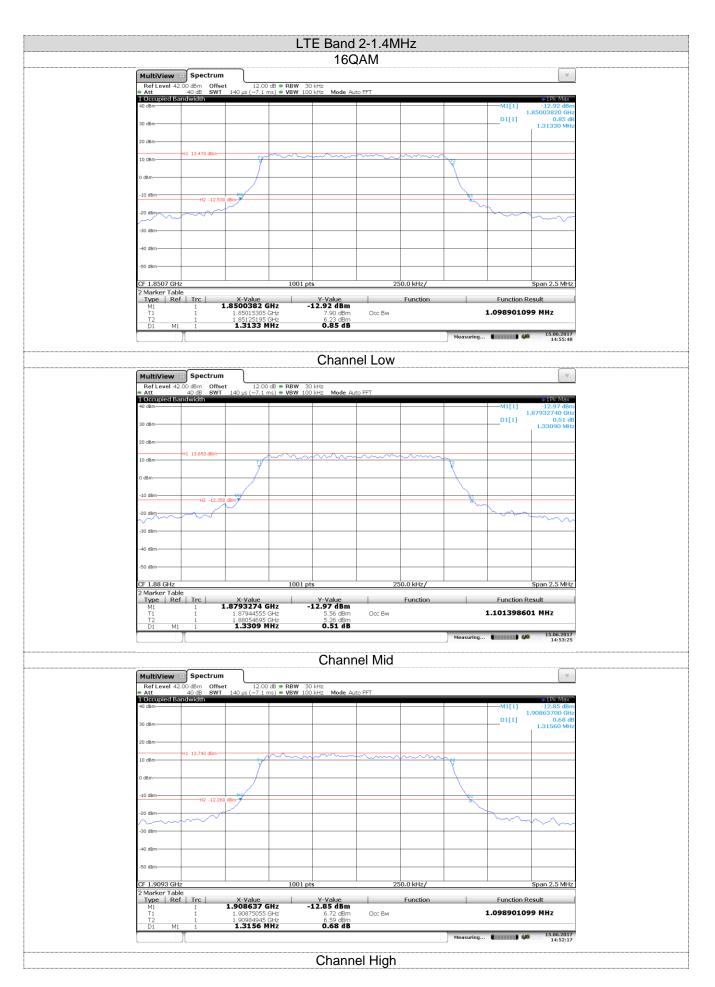
		LTE Band 4			
Dondwidth	Channel	99% Occupy ba	ndwidth (MHz)	-26dB bandwidth (MHz)	
Bandwidth	Channel	QPSK	16QAM	QPSK	16QAM
	Low	1.10	1.10	1.36	1.32
1.4MHz	Mid	1.10	1.10	1.31	1.31
	High	1.11	1.10	1.32	1.33
	Low	2.69	2.68	2.94	2.95
3MHz	Mid	2.69	2.68	2.96	2.96
	High	2.68	2.68	2.95	2.95
	Low	4.51	4.52	5.04	5.04
5MHz	Mid	4.49	4.52	5.02	5.03
	High	4.51	4.49	5.03	5.00
	Low	8.93	8.95	9.73	9.72
10MHz	Mid	8.93	8.93	9.71	9.72
	High	8.95	8.93	8.95	9.63
	Low	13.43	13.45	14.80	14.86
15MHz	Mid	13.43	13.43	14.79	14.74
	High	13.48	13.48	14.88	14.74
	Low	17.87	17.87	19.35	19.42
20MHz	Mid	17.87	17.87	19.55	19.42
	High	17.91	17.91	19.40	19.40

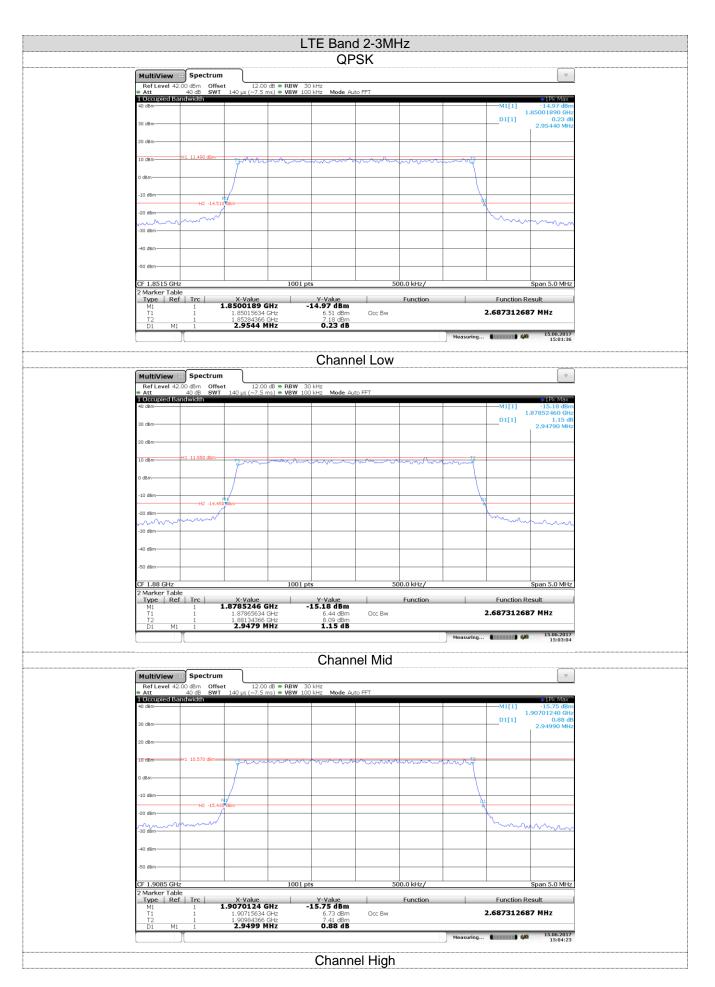
LTE Band 5						
Bandwidth		99% Occupy ba	ndwidth (MHz)	-26dB bandwidth (MHz)		
Danowidin	Channel	QPSK	16QAM	QPSK	16QAM	
	Low	1.10	1.10	1.31	1.29	
1.4MHz	Mid	1.10	1.10	1.29	1.29	
	High	1.10	1.10	1.30	1.31	
	Low	2.69	2.68	2.94	2.93	
3MHz	Mid	2.68	2.68	2.94	2.94	
	High	2.69	2.68	2.94	2.95	
	Low	4.50	4.51	5.05	5.05	
5MHz	Mid	4.48	4.51	4.99	5.02	
	High	4.50	4.48	5.00	5.00	
	Low	8.92	8.94	9.73	9.76	
10MHz	Mid	8.92	8.92	9.74	9.73	
	High	8.94	8.94	9.80	9.67	

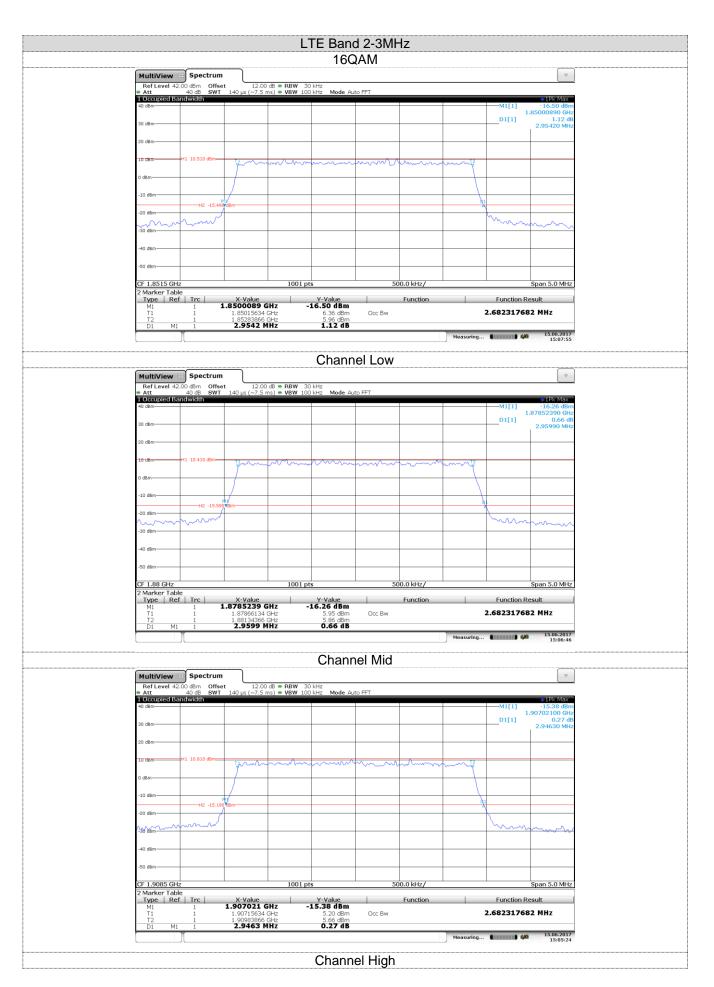
LTE Band 7						
Doodwidth	Channel	99% Occupy ba	ndwidth (MHz)	-26dB bandwidth (MHz)		
Bandwidth	Channel	QPSK	16QAM	QPSK	16QAM	
	Low	4.49	4.51	5.00	5.05	
5MHz	Mid	4.49	4.96	5.03	5.04	
	High	4.51	4.48	5.02	4.98	
	Low	8.92	8.92	9.75	9.67	
10MHz	Mid	8.94	8.92	9.77	9.77	
	High	8.94	8.92	9.81	9.67	
	Low	13.41	13.43	14.79	14.78	
15MHz	Mid	13.43	13.46	14.79	14.77	
	High	13.46	13.46	14.86	14.79	
	Low	17.87	17.87	19.31	19.39	
20MHz	Mid	17.91	17.87	19.61	19.42	
	High	17.87	17.95	19.32	19.51	

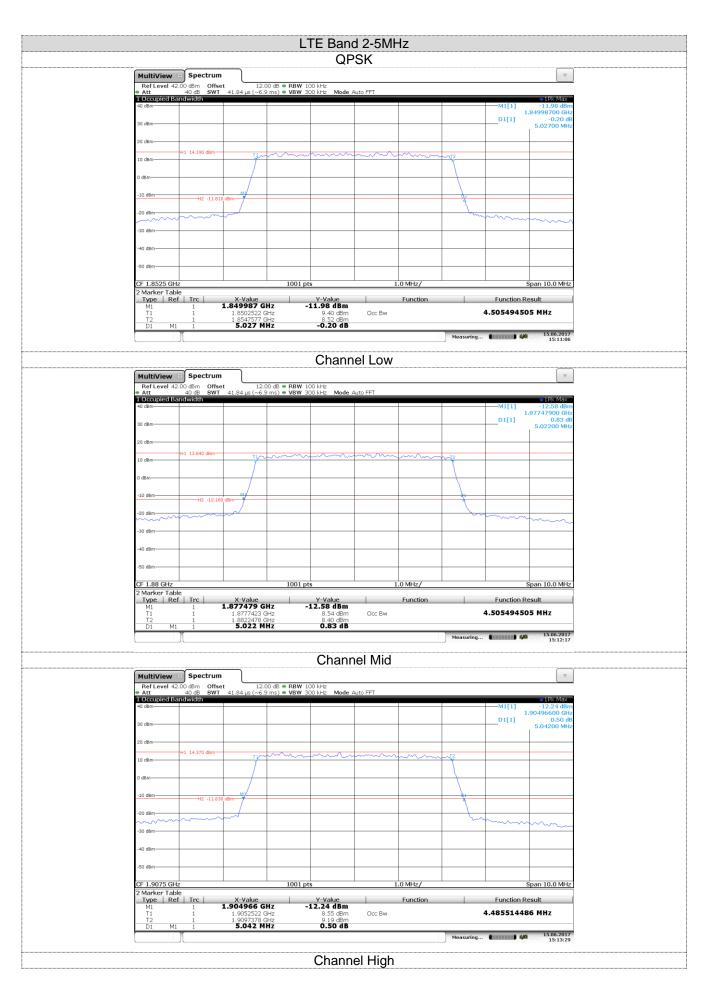
LTE Band 41						
Bandwidth		99% Occupy ba	ndwidth (MHz)	-26dB bandwidth (MHz)		
Danowidin	Channel	QPSK	16QAM	QPSK	16QAM	
	Low	4.50	4.48	4.98	4.97	
5MHz	Mid	4.50	4.49	4.96	5.17	
	High	4.49	4.50	5.04	5.02	
	Low	8.95	8.91	10.38	9.58	
10MHz	Mid	8.93	8.93	10.00	9.58	
	High	8.93	8.93	9.66	9.81	
	Low	13.43	13.48	15.04	15.22	
15MHz	Mid	13.45	13.48	16.22	15.07	
	High	13.48	13.45	15.93	16.00	
	Low	17.87	17.84	19.52	19.36	
20MHz	Mid	17.87	17.91	19.54	20.28	
	High	17.91	17.87	19.32	19.55	

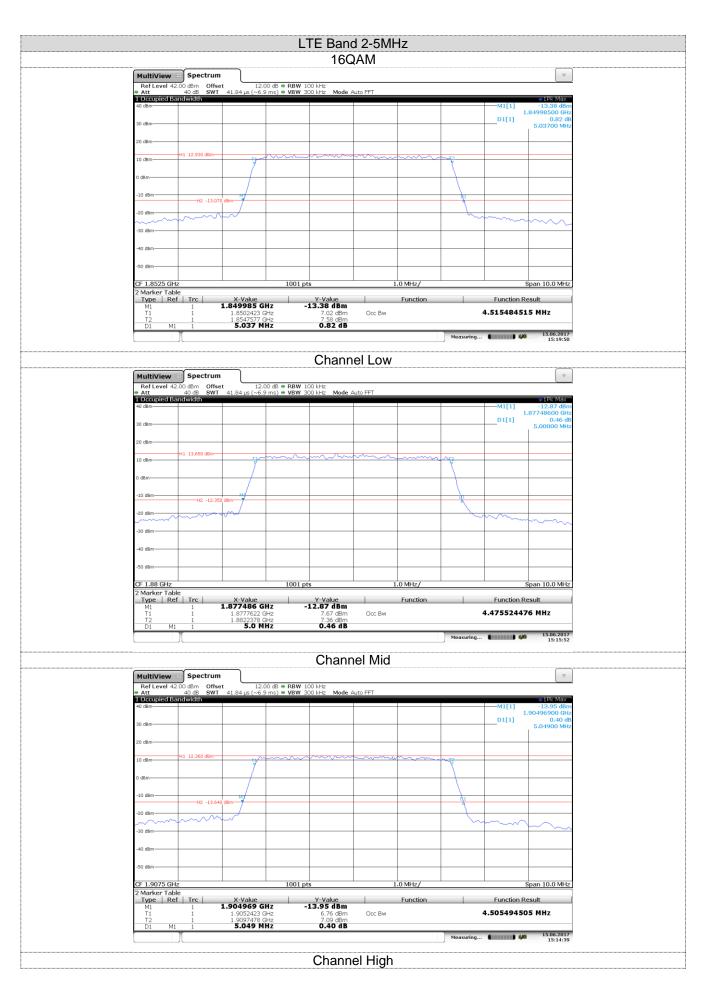


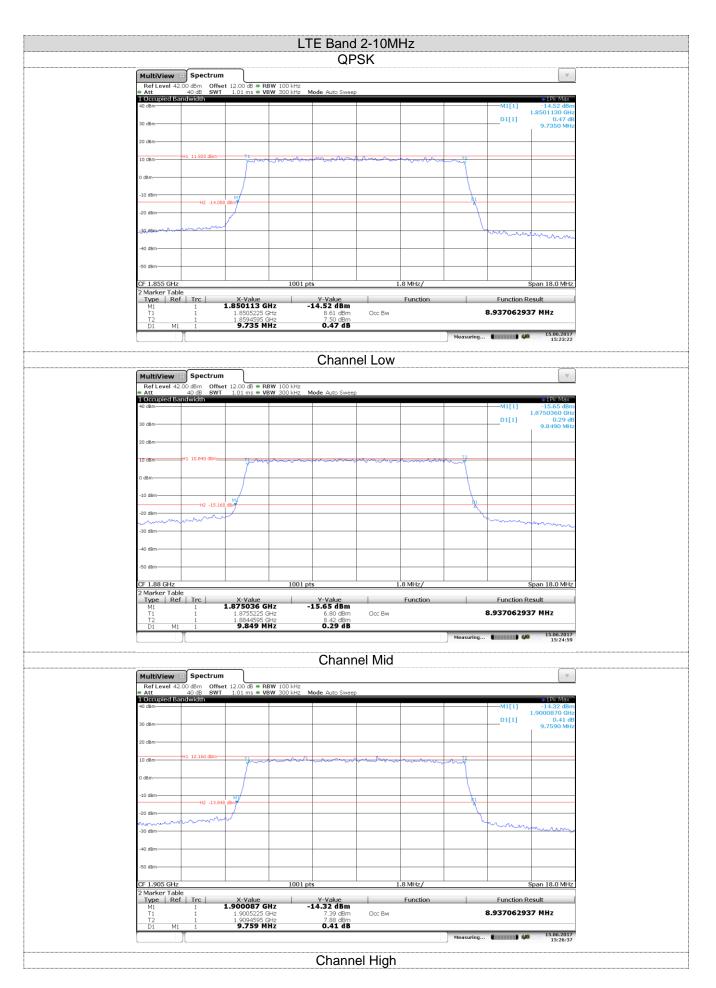


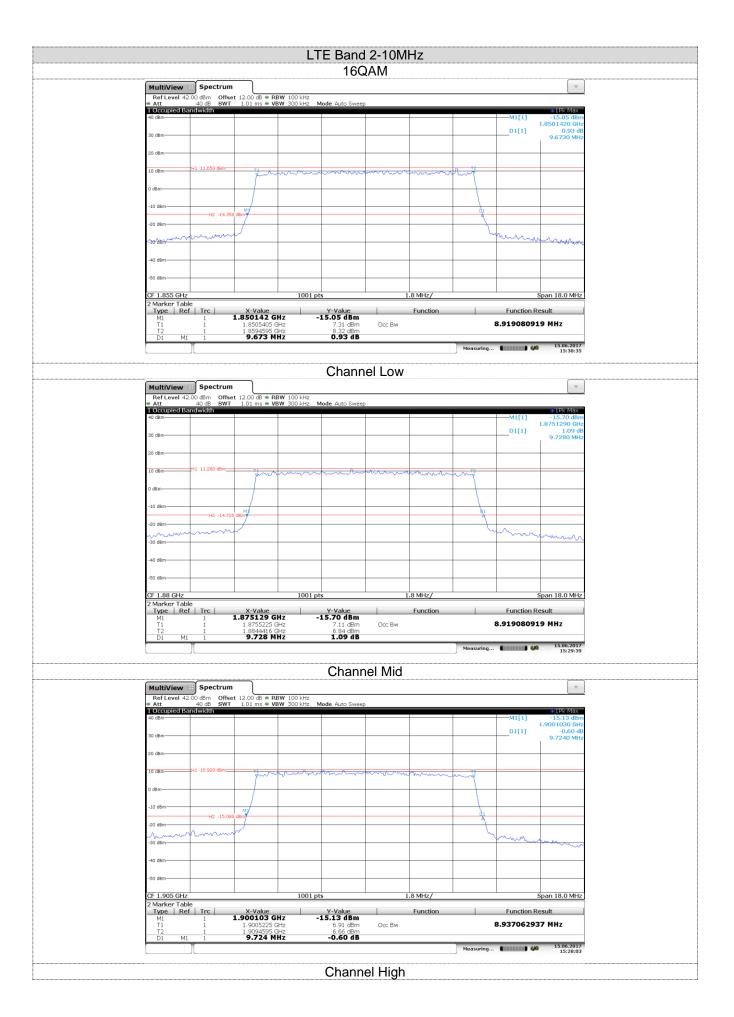


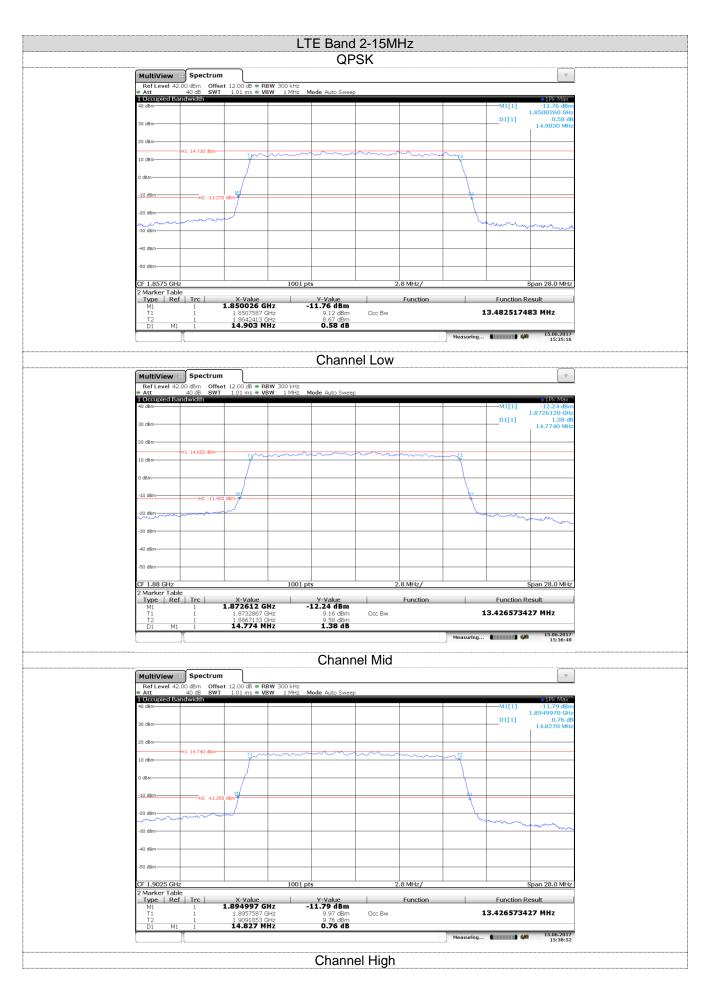


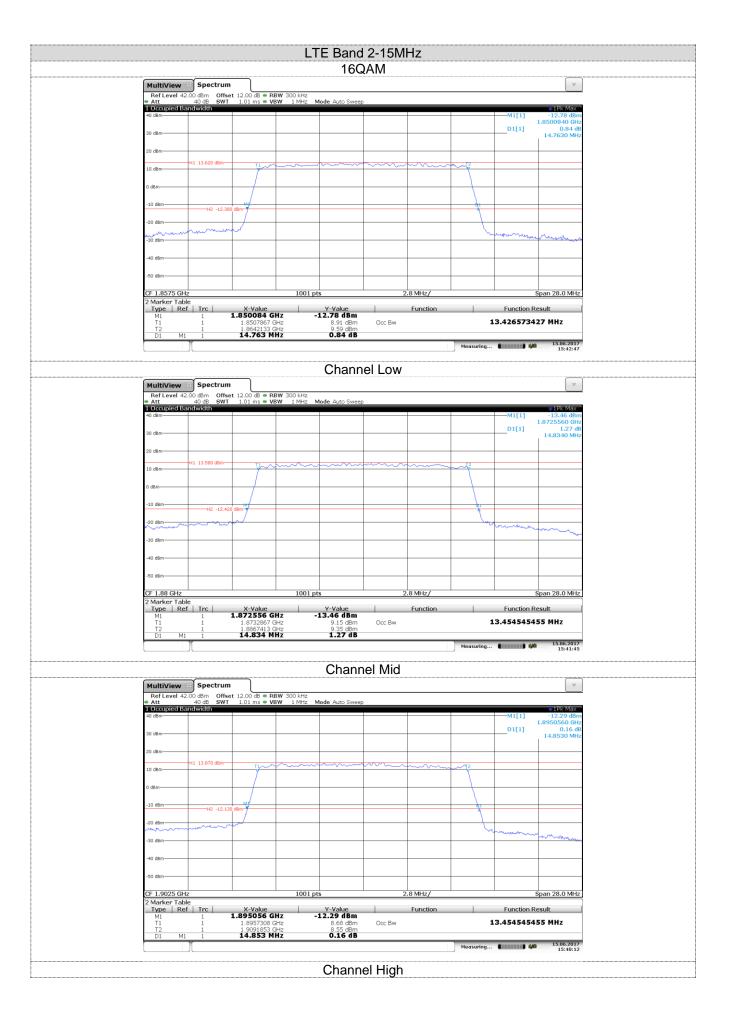


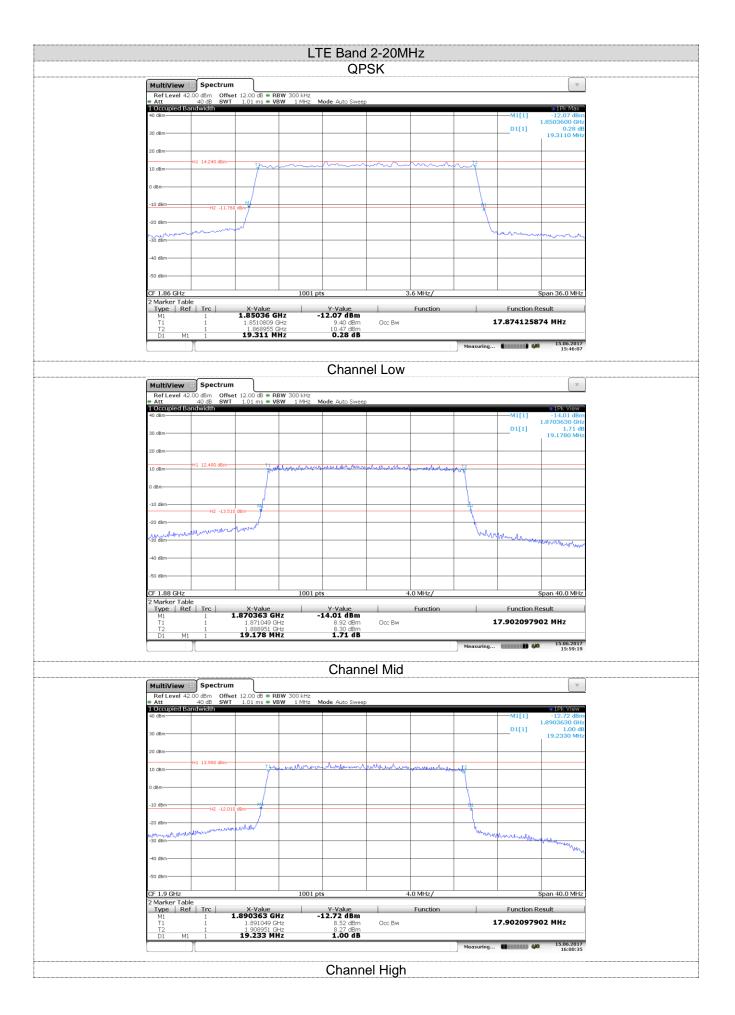


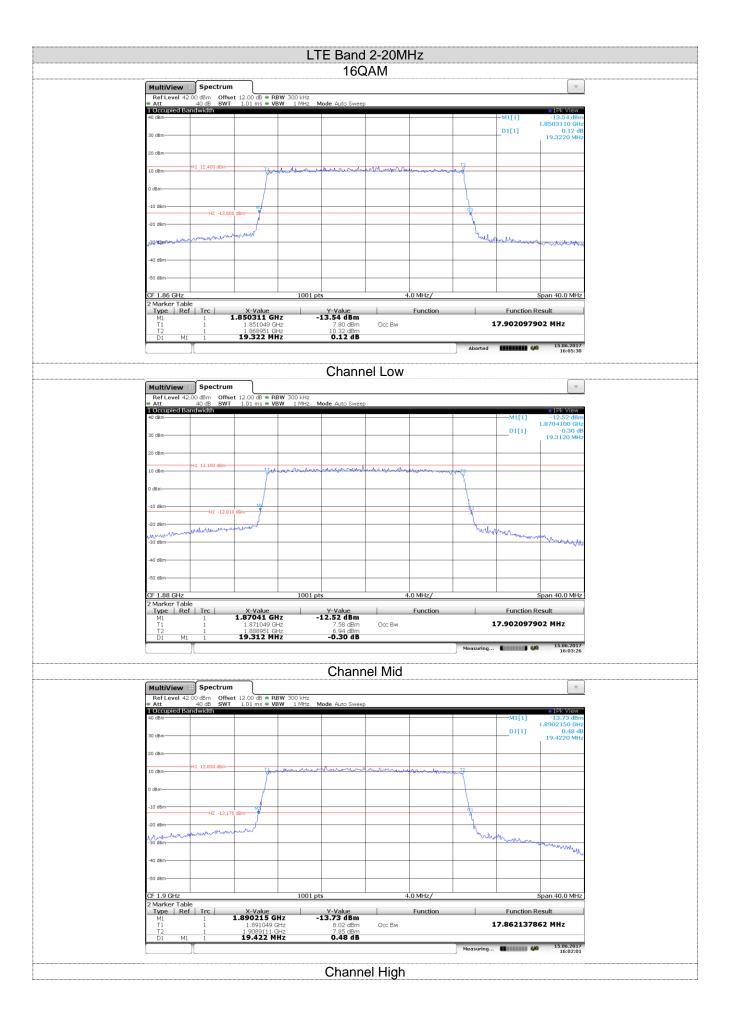


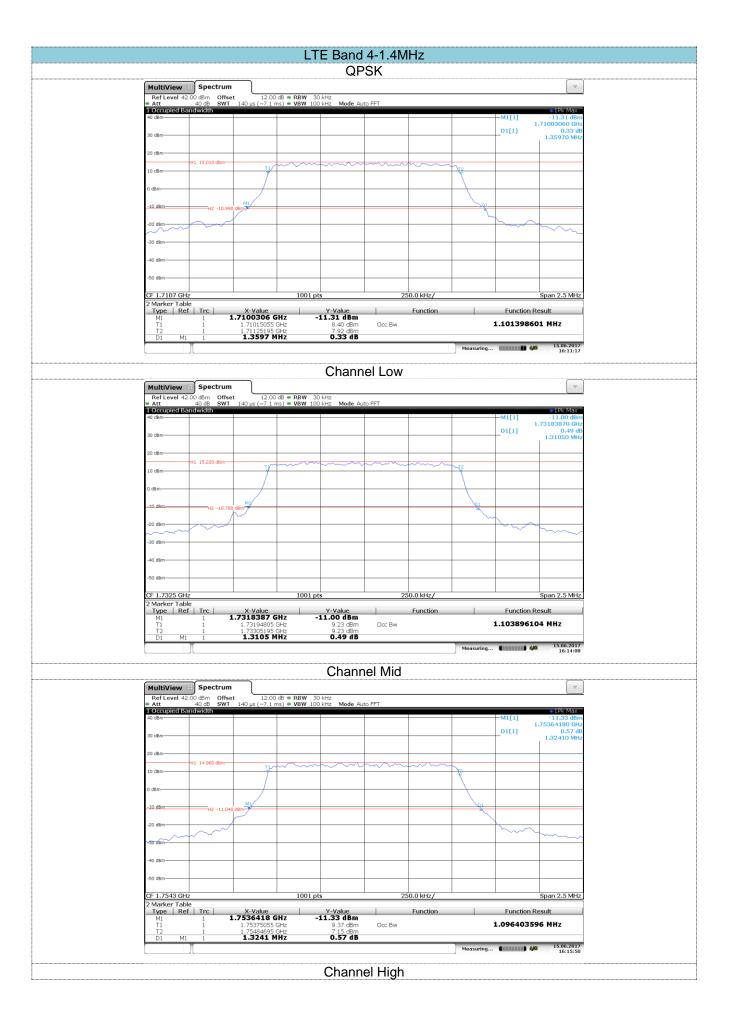


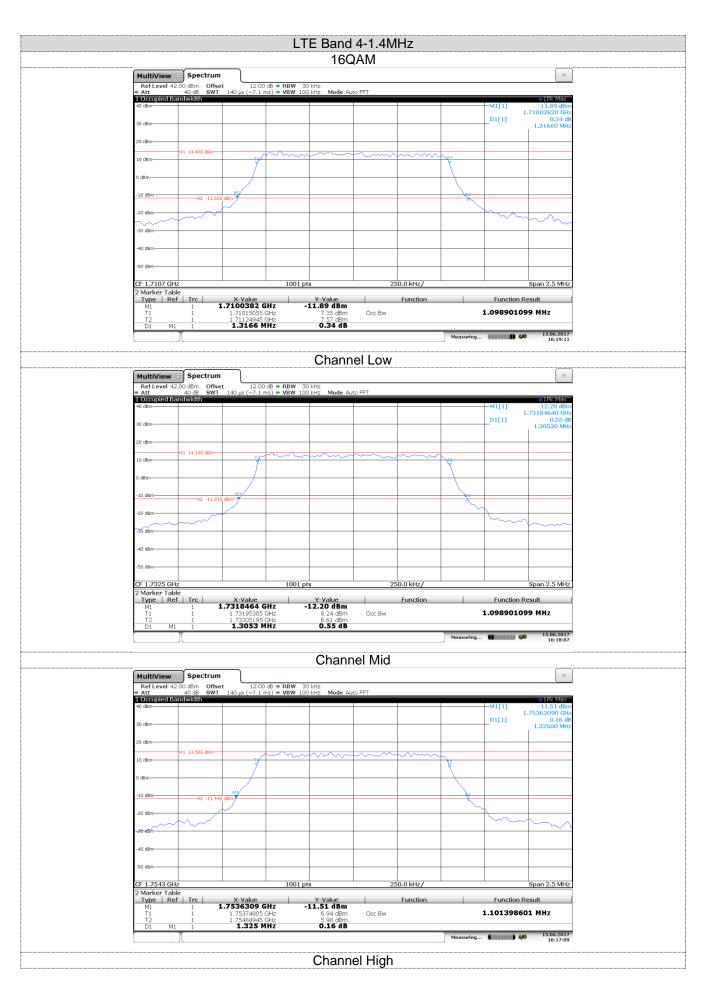


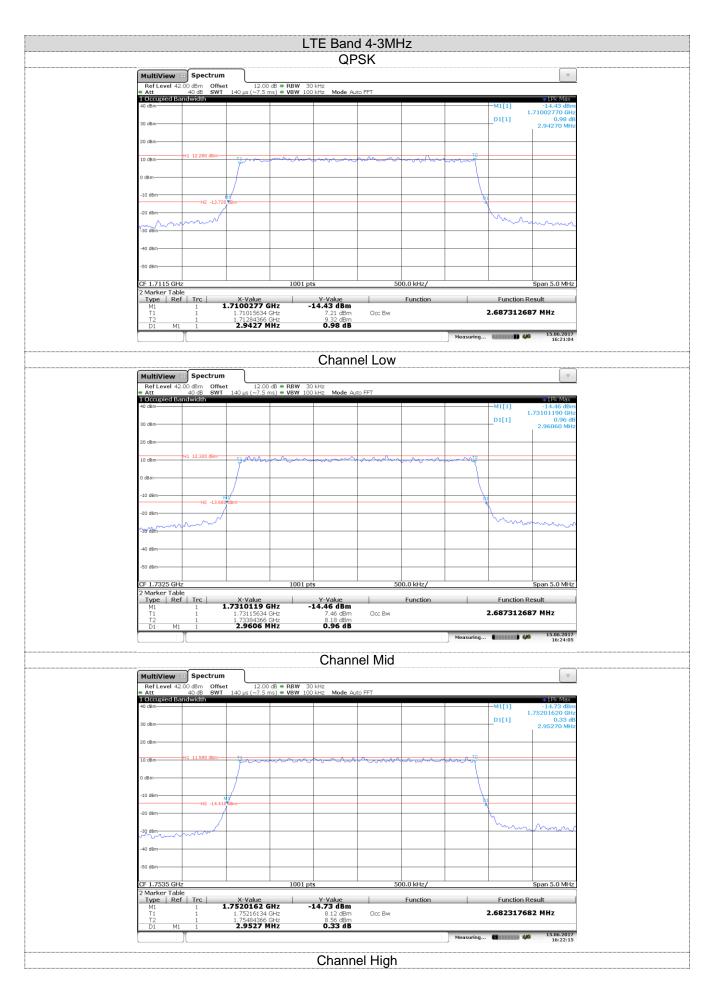


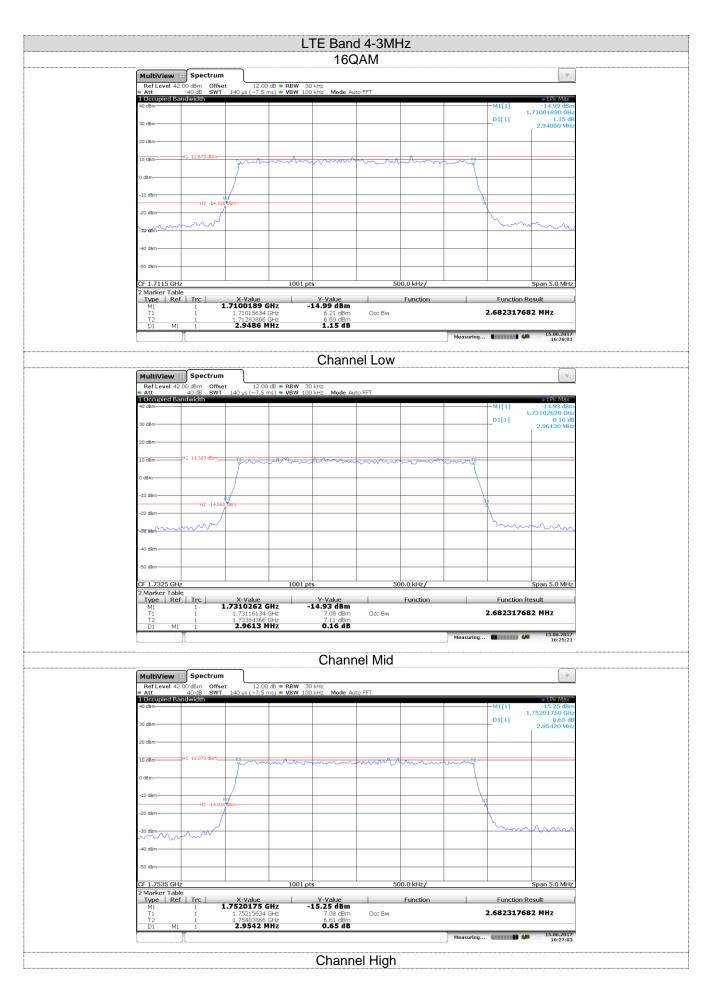


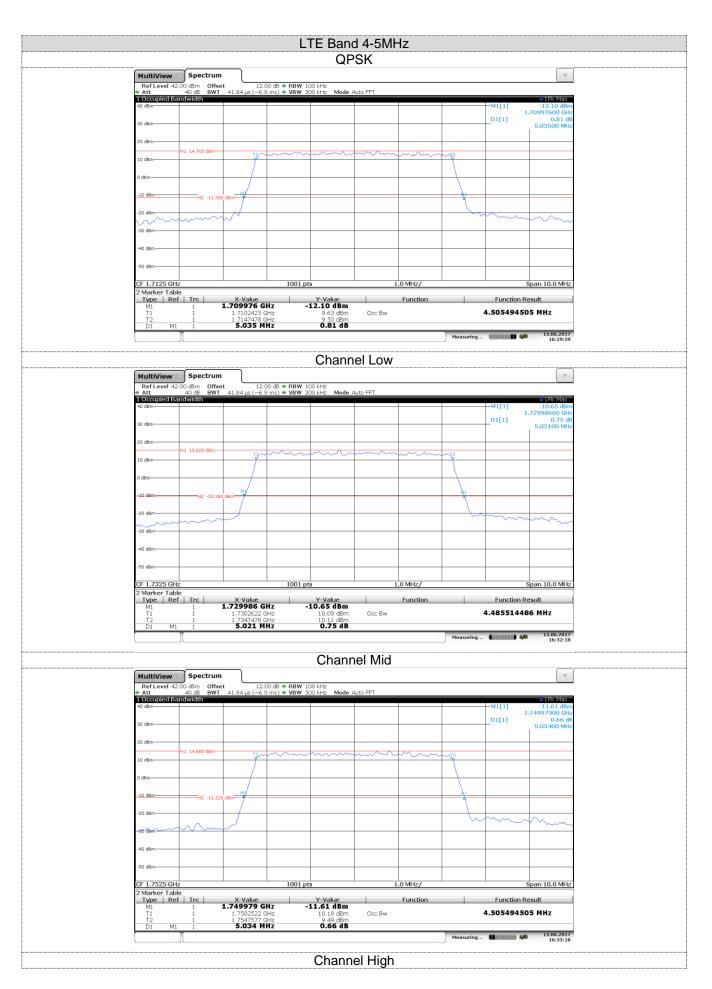


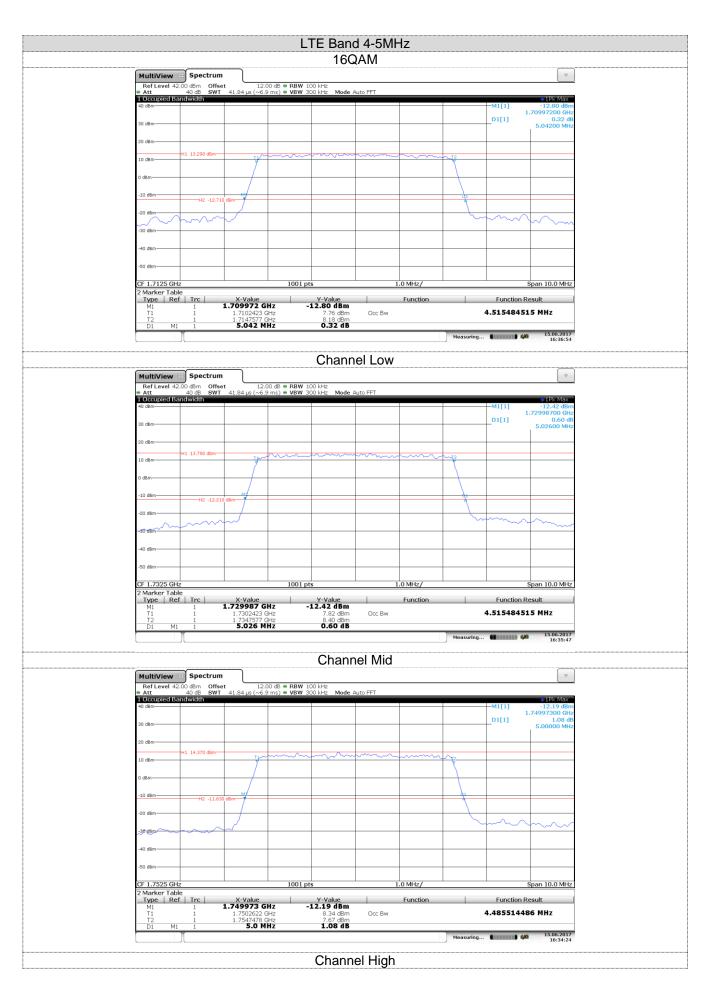


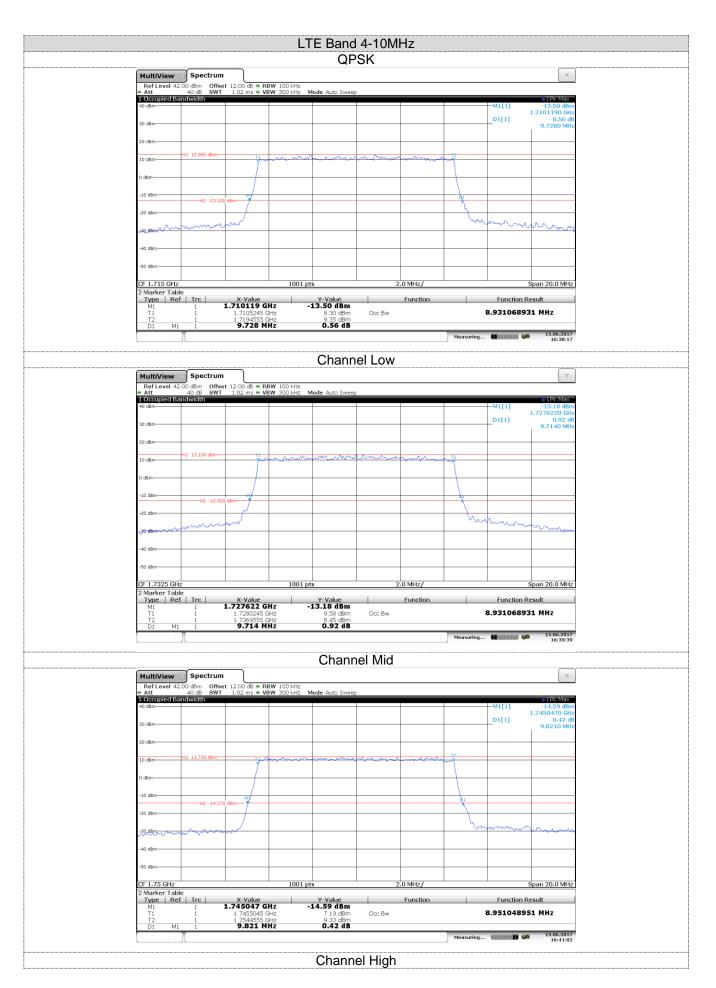


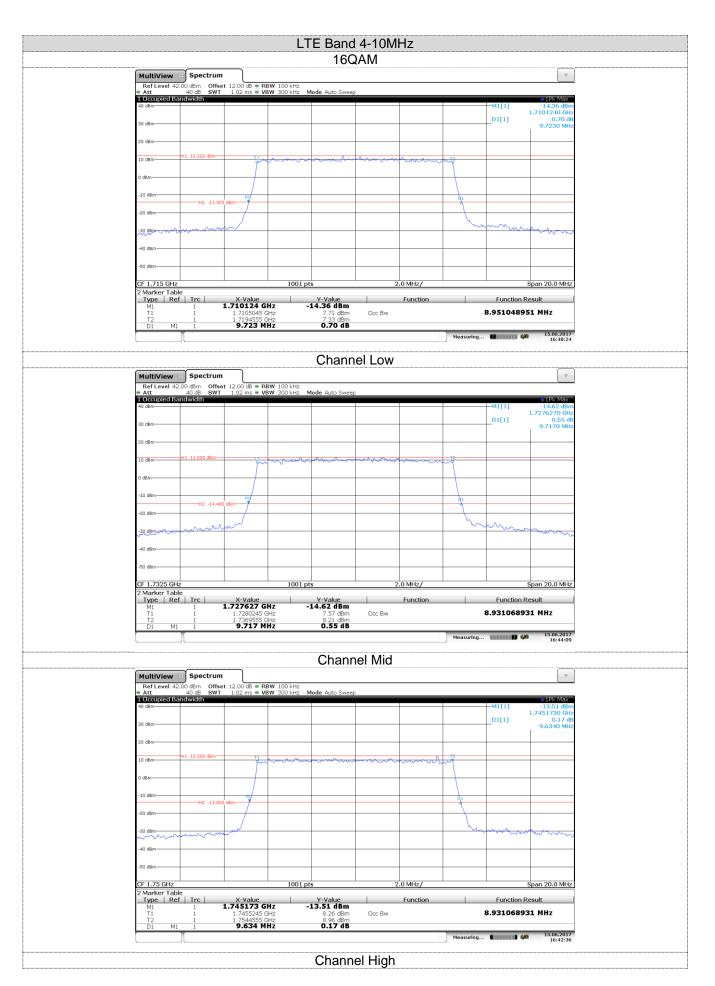


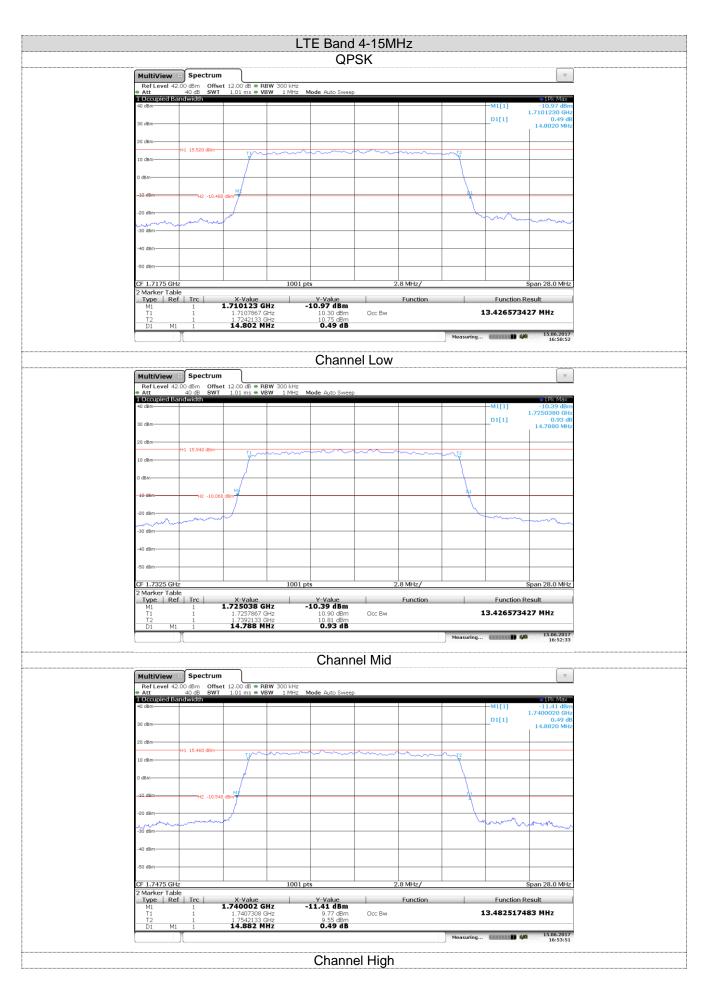


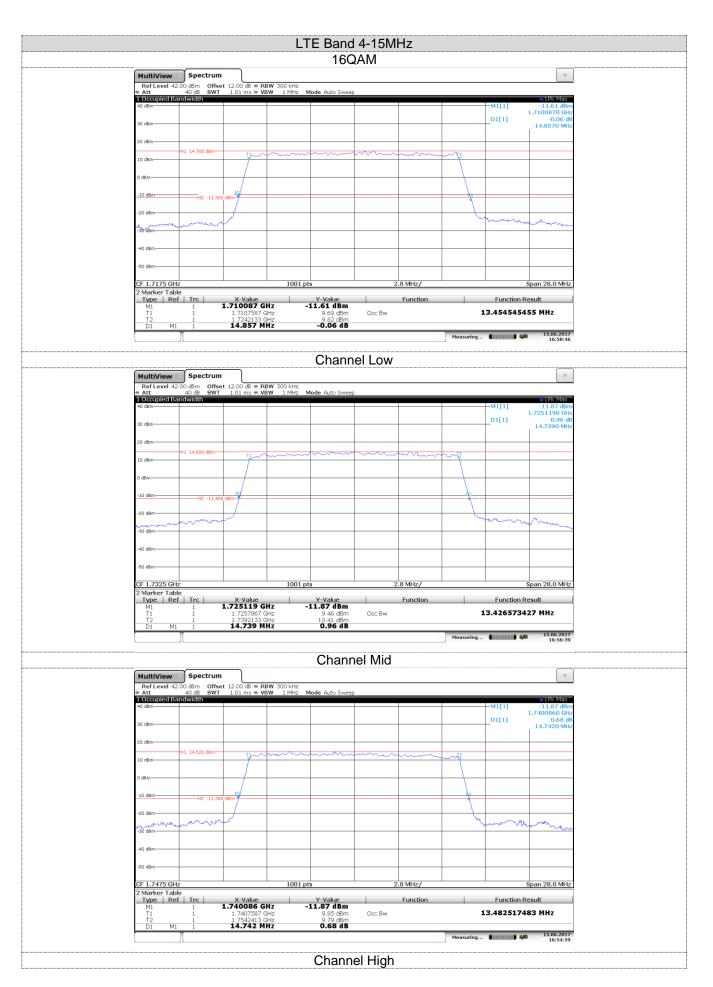


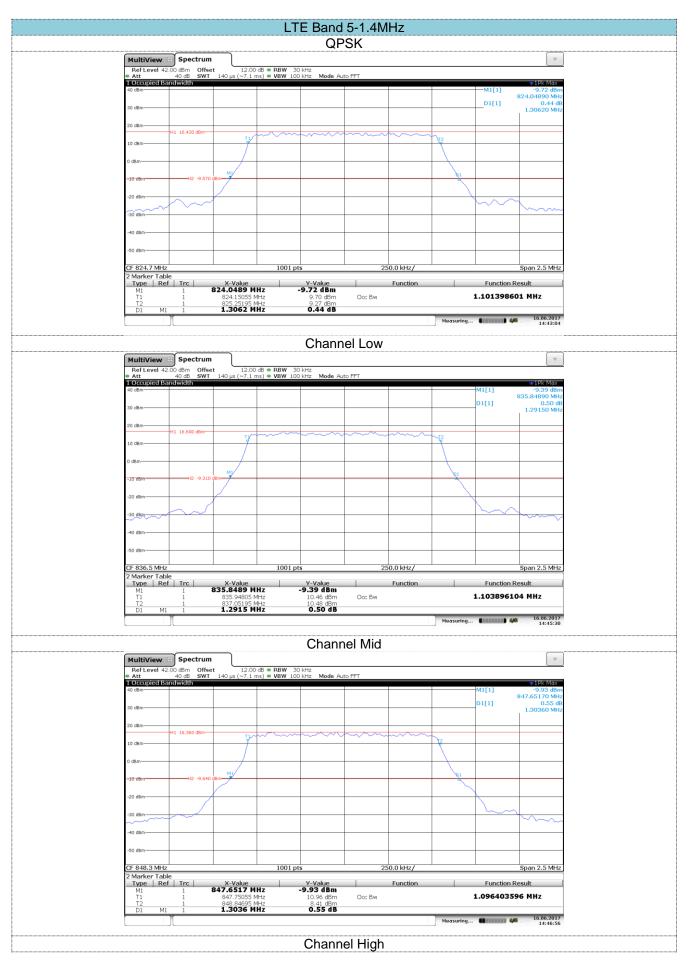


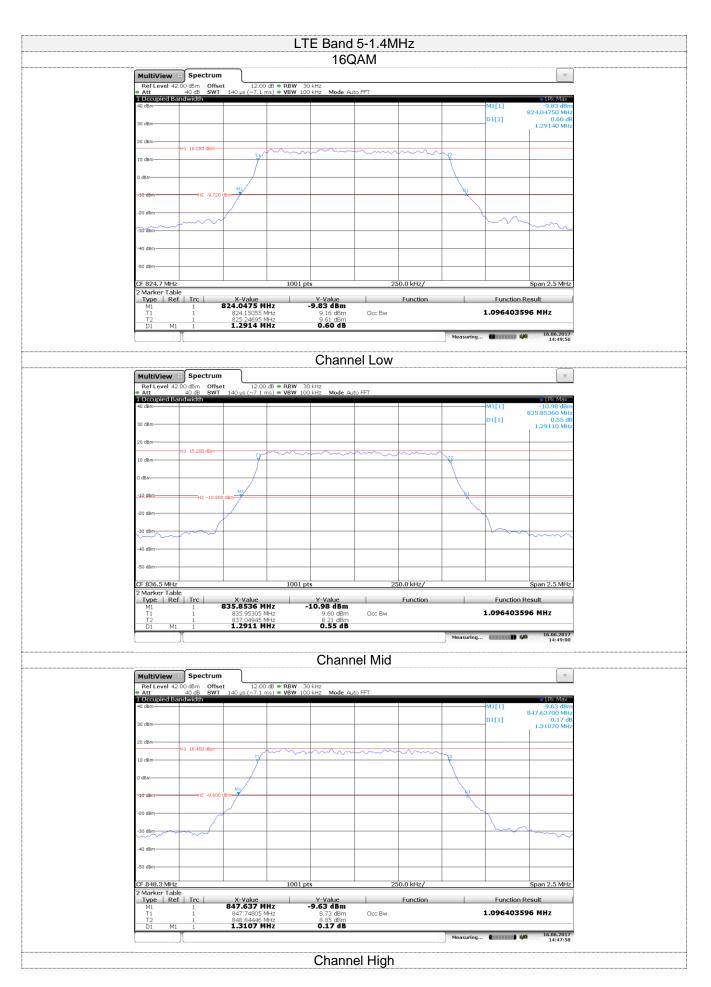












				1.	TE Ban	d 5-3M	47			
				L		SK	1			
G					QF	SN				<b>—</b>
	AultiView Ref Level 42	Spectrun 2.00 dBm Offs	et 12.00 140 µs (~7.5	) dB = RBW 30	) kHz					
1	Occupied Ba	40 dB SWT andwidth	140 μs (~7.5	ms) = VBW 100	) kHz Mode Au	ito FFT				• 1Pk Max
4(	0 dBm								M1[1]	-12.42 dBn 324.02480 MH 0.70 dl
30	0 dBm								D1[1]	2.93630 MH
20	0 dBm									
10	0 dBm	H1 14.120 dBm	T1 mm	mann	mm	mm	mm	mm		
	dBm									
-1	10 dBm	H2 -11.88	80 dBm					1		
-2	20 dBm		4							
-3	10 dBm	hun							- www.	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
-4	10 dBm									
.5	50 dBm									
				1001			00.0 kHz/			
2	F 825.5 MHz Marker Tab	ole		1001 p				1		Span 5.0 MHz
	Type   Re M1 T1	ef   Trc   1 1	X-Value 824.0248 M 824.15634	IHz -	Y-Value 12.42 dBm 8.73 dBm	Occ Bw	Function		Function Re 2.68731268	
_	T2 D1 M1	1 1	826.84366 2.9363 N	MHz	10.95 dBm 0.70 dB	Star DW				
		)[						Measuring	4,0	16.06.2017 14:51:46
					Chan	el Low				
G					Chann					
	MultiView Ref Level 42	EB Spectrun 2.00 dBm Offs		0 dB = RBW 30	) kHz					$\bigtriangledown$
1	Att Occupied Ba	40 dB SWT andwidth	Γ 140 μs (~7.5	ms) = VBW 100	) kHz Mode Au	ito FFT				• 1Pk Max
4	0 dBm								M1[1] D1[1]	-13.29 dBn 335.02190 MH 0.16 dl
30	0 dBm								01[1]	2.94470 MH
20	0 dBm									
10	0 dBm	H1 13.020 dBm	12m	mm	m	mm	mm	mr		
0	dBm									
	10 dBm									
		H2 -12.98	80 dBm					à: X		
-2	20 dBm		/						$\backslash$	
-3	10 dBm	mm							home	mm
-4	+0 dBm									
-5	50 dBm									
C	F 836.5 MHz	z		1001 pt	is in the second	5	00.0 kHz/			Span 5.0 MHz
2	Marker Tab Type   Re	ole	X-Value		Y-Value	-	Function		Function Re	
	M1 T1	1 1	X-Value 835.0219 M 835.16134	MHz	9.83 dBm	Occ Bw			2.68231768	
_	T2 D1 M1	1 1	837.84366 2.9447 M	MHz IHZ	9.94 dBm 0.16 dB					
		Л						Measuring	40	16.06.2017 14:52:46
					Chanr	nel Mid				
	AultiView	🖽 Spectrun								~
-	Ref Level 42 Att	2.00 dBm Offs 40 dB SWT	et 12.00 140 µs (~7.5	0 dB = RBW 30 ms) = VBW 100	) kHz ) kHz <b>Mode</b> Au	ito FFT				
Т	Occupied Ba 0 dBm	andwidth							M1[1]	<ul> <li>1Pk Max</li> <li>-12.56 dBn</li> </ul>
30	0 dBm								D1[1]	46.02820 MH 0.79 df 2.93650 MH
	0 dBm									
_		H1 13.530 dBm-	ThM	mm	a	. n. A		- A4T2		
	0 dBm		- yr vun	Two-	mm	mm	man			
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o	dBm	H2 -12 4	70 dBm			1	1		N I I I I I I I I I I I I I I I I I I I	
0		H2 -12.4	70 dBm						A	
0 -1 -2	10 dBm	H2 -12.4	70 BBm							
0 -1 -2 -2	10 dBm	H2 -12.43	70 BBm						L	
0 -1 -2 -2	10 dBm	H2 -12.4	20 dBm							
0 -1 -2 -2 -2 -4	10 dBm	H2 -12.43	20 UBm							m
0  -2 -2 -4 -5 -5 -5	10 dBm	z		1001 pt	s	5	00.0 kHz/			Span 5.0 MHz
0       	10 dBm	z			Y-Value	5	00.0 kHz/ Function		Function Re	Span 5.0 MHz
0 -1 -2 -2 -4 -5 -5 -1 -1 -1 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2	10 dBm 20 dBm 10 dBm 40 dBm 50 dBm F 847.5 MHz Marker Tab Type   Re M1 T1	z z ef   Trc   1 1	X-Value 846.0282 M 846.15634 848.84396	IHz - MHz MHz	Y-Value	5 Occ Bw				Span 5.0 MHz
0 -1 -2 -2 -4 -5 - []]2	10 dBm 20 dBm 20 dBm 40 dBm 50 dBm 50 dBm F 847.5 MHz Marker Tab Type   Re M1	z z ef   Trc   1 1	X-Value 846.0282 M	IHz - MHz MHz					Function Re	Span 5.0 MHz sult 7 MHz 16.06.2017
0 -1 -2 -2 -2 -4 -5 <u> </u> [2]	10 dBm 20 dBm 10 dBm 40 dBm 50 dBm F 847.5 MHz Marker Tab Type   Re M1 T1	z z ef   Trc   1 1	X-Value 846.0282 M 846.15634 848.84396	IHz - MHz MHz	Y-Value 12.56 dBm 8.65 dBm 9.08 dBm 0.79 dB	Occ Bw	Function		Function Re	Span 5.0 MHz sult 7 MHz
0 -1 -2 -1 -2 -1 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2	10 dBm 20 dBm 10 dBm 40 dBm 50 dBm F 847.5 MHz Marker Tab Type   Re M1 T1	z z ef   Trc   1 1	X-Value 846.0282 M 846.15634 848.84396	IHz - MHz MHz	Y-Value 12.56 dBm 8.65 dBm 9.08 dBm 0.79 dB		Function		Function Re	Span 5.0 MHz sult 7 MHz 16.06.2017

