

# FCC Test Report

**FCC ID** : 2AD8UFTHC01  
**Equipment** : Dual Band UE Relay  
**Model No.** : FTHC  
**Brand Name** : Nokia  
**Applicant** : Nokia Solutions and Networks,OY  
**Address** : 1455 W Shure Drive Arlington Heights, Illinois  
United States 60004  
**Standard** : 47 CFR FCC Part 27 Subpart M  
**Received Date** : Jan. 07, 2016  
**Tested Date** : Jan. 14 ~ Feb. 02, 2016

We, International Certification Corp., would like to declare that the tested sample has been evaluated and in compliance with the requirement of the above standards. The test results contained in this report refer exclusively to the product. It may be duplicated completely for legal use with the approval of the applicant. It shall not be reproduced except in full without the written approval of our laboratory.

Approved & Reviewed by:

  
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Gary Chang / Manager



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## Release Record

Report No.	Version	Description	Issued Date
FG610705P27-1	Rev. 01	Initial issue	Mar. 17, 2016
FG610705P27-1	Rev. 02	Modified test channel to test frequency of section 2.2	Mar. 21, 2016
FG610705P27-1	Rev. 03	Modified applicant name (Page 1)	Apr. 06, 2016

## Summary of Test Results

FCC Rules	Test Items	Worst Case Measured	Limit	Result
2.1046 / 27.50(h)(2)	Output power	26.35 dBm	2 Watts(33dBm)	Pass
2.1053 / 27.53(m)(2)(v)	Radiated Emissions	-27.89 dBm	-13 dBm	Pass
2.1051 / 27.53(m)(2)(v)	Conducted Emissions	-25.61 dBm	-13 dBm	Pass
2.1051 / 27.53(m)(2)(v)	Channel Edge Measurement	-17.661 dBm	-13 dBm	Pass
27.53(m)(6)	Emission Bandwidth	19.39 MHz	N/A	Pass
2.1055 / 27.54	Frequency Stability	0.017 ppm	Fundamental emission stays within the authorized frequency block.	Pass

# 1 General Description

## 1.1 Information

The device has two different samples which were designed with or without EUDM parts.

Sample 01: with EUDM parts

Sample 02: w/o EUDM parts.

### 1.1.1 Specification of the Equipment under Test (EUT)

<b>Operating Frequency (MHz)</b>	Channel Bandwidth: 5MHz: 2622.5~2687.5 Channel Bandwidth: 10MHz: 2625~2685 Channel Bandwidth: 15MHz: 2627.5~2682.5 Channel Bandwidth: 20MHz: 2630~2680
<b>Modulation Type</b>	Uplink: QPSK, 16QAM, 64QAM Downlink: QPSK, 16QAM, 64QAM, 256QAM
<b>Duplex Mode</b>	TDD
<b>Category</b>	Cat 5 & Cat 6
<b>Release Version</b>	11
<b>H/W Version</b>	V01
<b>S/W Version</b>	01.01.02.089
<b>TX/RX function</b>	1TX / 4RX

### 1.1.2 Maximum Conducted Power and Emission Designator

Mode	Modulation	Maximum Conducted Power (W)	Emission Designator
LTE Band 41, CB: 5MHz	QPSK	0.412	4M47G7D
LTE Band 41, CB: 5MHz	16QAM	0.340	4M47W7D
LTE Band 41, CB: 5MHz	64QAM	0.330	4M47W7D
LTE Band 41, CB: 10MHz	QPSK	0.429	8M93G7D
LTE Band 41, CB: 10MHz	16QAM	0.343	8M92W7D
LTE Band 41, CB: 10MHz	64QAM	0.330	8M93W7D
LTE Band 41, CB: 15MHz	QPSK	0.414	13M4G7D
LTE Band 41, CB: 15MHz	16QAM	0.344	13M4W7D
LTE Band 41, CB: 15MHz	64QAM	0.324	13M4W7D
LTE Band 41, CB: 20MHz	QPSK	0.432	17M9G7D
LTE Band 41, CB: 20MHz	16QAM	0.362	17M9W7D
LTE Band 41, CB: 20MHz	64QAM	0.349	17M8W7D

### 1.1.3 Antenna Details

Ant. No.	Type	Gain (dBi)	Connector	Remark
1	Patch	11	i-Pex	---

### 1.1.4 EUT Operational Condition

<b>Power Supply Type</b>	56Vdc from POE (support unit only.) Brand Name: PHIHONG Model Name: POE16R-1AFG Power Rating: I/P: 100-240Vac, 0.8A, 50-60Hz, 32-44VA O/P: 56Vdc, 0.275A		
<b>Operational Climatic</b>	<input checked="" type="checkbox"/> Tnom (20°C)	<input checked="" type="checkbox"/> Tmax (60°C)	<input checked="" type="checkbox"/> Tmin (-40°C)

### 1.1.5 Accessories

N/A

### 1.1.6 Operating Channel List

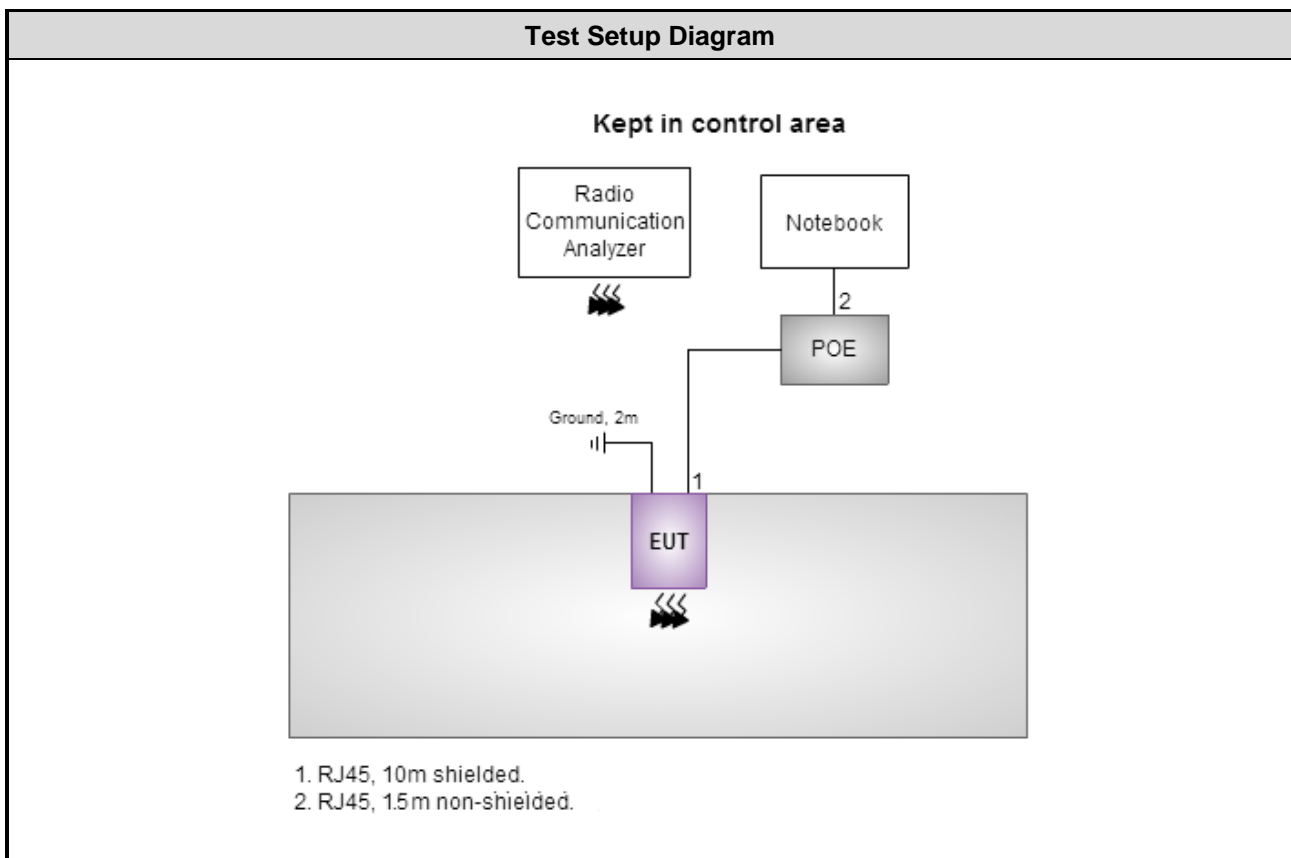
LTE Band 41		
Channel Bandwidth (MHz)	Channel	Frequency (MHz)
5	40915	2622.5
5	41240	2655.0
5	41565	2687.5
10	40940	2625.0
10	41240	2655.0
10	41540	2685.0
15	40965	2627.5
15	41240	2655.0
15	41515	2682.5
20	40990	2630.0
20	41240	2655.0
20	41490	2680.0

## 1.2 Local Support Equipment List

Support Equipment List					
No.	Equipment	Brand	Model	S/N	Signal cable / Length (m)
1	Notebook	DELL	Latitude E6440	2PXMD12	RJ45, 1.5m non-shielded w/o core.
2	Radio Communication Analyzer	Anritsu	MT8820C	6201240341	---
3	POE	PHIHONG	POE16R-1AFG	---	RJ45, 10m shielded w/o core.

Note: No.3 was supplied by applicant.

## 1.3 Test Setup Chart



## 1.4 The Equipment List

Test Item	Radiated Emission				
Test Site	966 chamber1 / (03CH01-WS)				
Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Until
Spectrum Analyzer	R&S	FSV40	101498	Dec. 13, 2015	Dec. 12, 2016
Receiver	R&S	ESR3	101658	Nov. 04, 2015	Nov. 03, 2016
Bilog Antenna	SCHWARZBECK	VULB9168	VULB9168-522	Aug. 20, 2015	Aug. 19, 2016
Horn Antenna 1G-18G	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1096	Dec. 16, 2015	Dec. 15, 2016
Horn Antenna 18G-40G	SCHWARZBECK	BBHA 9170	BBHA 9170517	Nov. 04, 2015	Nov. 03, 2016
Loop Antenna	R&S	HFH2-Z2	11900	Nov. 16, 2015	Nov. 15, 2016
Loop Antenna Cable	KOAX KABEL	101354-BW	101354-BW	Dec. 10, 2015	Dec. 09, 2016
Preamplifier	Burgeon	BPA-530	SN:100219	Sep. 10, 2015	Sep. 09, 2016
Preamplifier	Agilent	83017A	MY39501308	Oct. 02, 2015	Oct. 01, 2016
Preamplifier	EMC	EMC184045B	980192	Sep. 01, 2015	Aug. 31, 2016
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16014/4	Dec. 10, 2015	Dec. 09, 2016
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16019/4	Dec. 10, 2015	Dec. 09, 2016
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16139/4	Dec. 10, 2015	Dec. 09, 2016
LF cable 3M	Woken	CFD400NL-LW	CFD400NL-001	Dec. 10, 2015	Dec. 09, 2016
LF cable 10M	Woken	CFD400NL-LW	CFD400NL-002	Dec. 10, 2015	Dec. 09, 2016
Measurement Software	AUDIX	e3	6.120210g	NA	NA

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

Test Item	RF Conducted				
Test Site	(TH01-WS)				
Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Until
Spectrum Analyzer	R&S	FSV40	101063	Feb. 03, 2015	Feb. 02, 2016
Spectrum Analyzer	Agilent	N9010A	MY53400091	Sep. 14, 2015	Sep. 13, 2016
TEMP&HUMIDITY CHAMBER	GIANT FORCE	GCT-225-40-SP-SD	MAF1212-002	Nov. 27, 2015	Nov. 26, 2016
Power Meter	Anritsu	ML2495A	1241002	Sep. 21, 2015	Sep. 20, 2016
Power Sensor	Anritsu	MA2411B	1207366	Sep. 21, 2015	Sep. 20, 2016
Radio Communication Analyzer	Anritsu	MT8820C	6201240341	Mar. 19, 2015	Mar. 18, 2016
Measurement Software	Sporton	Sporton_1	1.3.30	NA	NA

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



## 1.5 Test Standards

According to the specification of EUT, the EUT must comply with following standards.

47 CFR FCC Part 27 Subpart M

ANSI C63.4-2014

ANSI/TIA-603-D 2010

FCC KDB 971168 D01 Power Meas License Digital Systems v02r02

FCC KDB 971168 D02 Misc OOBE License Digital Systems v01

FCC KDB 412172 D01 Determining ERP and EIRP v01r01

## 1.6 Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor  $(k=2)$ )

Measurement Uncertainty	
Parameters	Uncertainty
Bandwidth	$\pm 34.134$ Hz
Conducted power	$\pm 0.808$ dB
Frequency error	$\pm 34.134$ Hz
Conducted emission	$\pm 2.670$ dB
Radiated emission $\leq 1$ GHz	$\pm 3.66$ dB
Radiated emission $> 1$ GHz	$\pm 5.63$ dB
Temperature	$\pm 0.6$ °C

## 2 Test Configuration

### 2.1 Testing Condition and Location Information

Test Item	Test Site	Ambient Condition	Tested By
RF conducted	TH01-WS	20°C / 62%	Felix Sung
Radiated Emissions	03CH01-WS	22°C / 63%	Aska Huang

➤ FCC site registration No.: 657002

➤ IC site registration No.: 10807A-1

### 2.2 The Worst Test Modes and Channel Details

Test item	Channel Bandwidth	Modulation	Test Frequency (MHz)
Output Power	5 MHz	QPSK / 16QAM / 64QAM	2622.5 / 2655.0 / 2687.5
Conducted Emissions	10 MHz	QPSK / 16QAM / 64QAM	2625.0 / 2655.0 / 2685.0
Occupied Bandwidth	15 MHz	QPSK / 16QAM / 64QAM	2627.5 / 2655.0 / 2682.5
	20 MHz	QPSK / 16QAM / 64QAM	2630.0 / 2655.0 / 2680.0
Radiated Emission ≤ 1GHz	5 MHz	QPSK	2622.5
	10 MHz	QPSK	2625.0
	15 MHz	QPSK	2627.5
	20 MHz	QPSK	2630.0
Radiated Emission > 1GHz	5 MHz	QPSK	2622.5 / 2655.0 / 2687.5
	10 MHz	QPSK	2625.0 / 2655.0 / 2685.0
	15 MHz	QPSK	2627.5 / 2655.0 / 2682.5
	20 MHz	QPSK	2630.0 / 2655.0 / 2680.0
Band Edge	5 MHz	QPSK / 16QAM / 64QAM	2622.5 / 2687.5
	10 MHz	QPSK / 16QAM / 64QAM	2625.0 / 2685.0
	15 MHz	QPSK / 16QAM / 64QAM	2627.5 / 2682.5
	20 MHz	QPSK / 16QAM / 64QAM	2630.0 / 2680.0
Frequency Stability	5 MHz	QPSK	2655.0
	10 MHz	QPSK	2655.0
	15 MHz	QPSK	2655.0
	20 MHz	QPSK	2655.0

Note: Sample 01 (with EUDM) & Sample 02 (w/o EUDM) had been covered during the pretest and found that **Sample 01 (with EUDM)** was the worst case and was selected for final test.

## 3 Test Results

### 3.1 Output Power

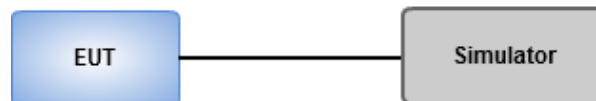
#### 3.1.1 Limit of Output Power

All user stations are limited to 2.0 watts transmitter output power

#### 3.1.2 Test Procedures

1. The EUT links up with simulator and is set to maximum output power level at low / middle / high channel.
2. Measure the output power of low / middle / high channel of the EUT

#### 3.1.3 Test Setup



### 3.1.4 Test Result of Conducted power (dBm)

Band / Channel Bandwidth			LTE Band 41 / CB: 5MHz		
Channel			40915	41240	41565
Frequency (MHz)			2622.5	2655.0	2687.5
Mode	RB	RB Offset	Maximum AV Power (dBm)		
QPSK	1	0	26.15	26.03	25.89
	1	12	26.05	25.87	25.43
	1	24	25.80	25.65	25.04
	12	0	25.23	24.89	24.72
	12	6	25.25	24.96	24.68
	12	11	25.17	24.93	24.56
	25	0	25.17	24.81	24.58
16QAM	1	0	25.32	25.22	24.83
	1	12	25.28	25.12	24.67
	1	24	25.04	24.90	24.31
	12	0	24.23	23.93	23.75
	12	6	24.26	23.98	23.71
	12	11	24.19	23.95	23.60
	25	0	24.21	23.86	23.64
64QAM	1	0	25.19	25.11	24.73
	1	12	25.11	25.03	24.55
	1	24	24.86	24.86	24.26
	12	0	24.11	23.78	23.59
	12	6	24.13	23.72	23.55
	12	11	24.06	23.65	23.43
	25	0	24.18	23.60	23.39

Band / Channel Bandwidth			LTE Band 41 / CB: 10MHz		
Channel			40940	41240	41540
Frequency (MHz)			2625.0	2655.0	2685.0
Mode	RB	RB Offset	Maximum AV Power (dBm)		
QPSK	1	0	26.32	25.93	25.52
	1	24	26.14	25.83	25.44
	1	49	25.66	25.59	25.26
	25	0	25.23	25.05	24.76
	25	12	25.23	24.96	24.75
	25	24	25.07	24.91	24.61
	50	0	25.20	24.94	24.70
16QAM	1	0	25.35	25.22	24.77
	1	24	25.11	24.92	24.68
	1	49	24.86	24.81	24.21
	25	0	24.24	24.07	23.80
	25	12	24.26	23.98	23.79
	25	24	24.10	23.93	23.65
	50	0	24.22	23.96	23.73
64QAM	1	0	25.11	25.18	24.56
	1	24	25.03	24.91	24.43
	1	49	24.65	24.76	24.15
	25	0	24.03	23.85	23.69
	25	12	23.99	23.76	23.52
	25	24	23.86	23.66	23.43
	50	0	23.89	23.53	23.44

Band / Channel Bandwidth			LTE Band 41 / CB: 15MHz		
Channel			40965	41240	41515
Frequency (MHz)			2627.5	2655.0	2682.5
Mode	RB	RB Offset	Maximum AV Power (dBm)		
QPSK	1	0	26.17	25.78	25.75
	1	37	25.76	25.64	25.26
	1	74	25.71	25.67	25.07
	36	0	25.00	24.75	24.62
	36	18	24.90	24.68	24.48
	36	37	24.73	24.65	24.38
	75	0	24.83	24.66	24.42
16QAM	1	0	25.36	24.99	24.92
	1	37	24.96	24.83	24.44
	1	74	24.91	24.87	24.30
	36	0	23.99	23.75	23.63
	36	18	23.90	23.68	23.49
	36	37	23.73	23.64	23.40
	75	0	23.86	23.70	23.48
64QAM	1	0	25.11	24.88	24.73
	1	37	24.73	24.65	24.22
	1	74	24.72	24.59	24.13
	36	0	23.85	23.65	23.51
	36	18	23.77	23.48	23.28
	36	37	23.53	23.43	23.22
	75	0	23.65	23.55	23.16

Band / Channel Bandwidth			LTE Band 41 / CB: 20MHz		
Channel			40990	41240	41490
Frequency (MHz)			2630.0	2655.0	2680.0
Mode	RB	RB Offset	Maximum AV Power (dBm)		
QPSK	1	0	26.35	26.07	26.16
	1	49	25.92	25.87	25.51
	1	99	25.88	25.91	25.32
	50	0	25.24	25.15	24.97
	50	24	24.99	24.95	24.80
	50	49	25.13	25.09	24.66
	100	0	25.13	25.10	24.79
16QAM	1	0	25.59	25.32	25.38
	1	49	25.17	25.10	24.75
	1	99	25.48	25.14	24.58
	50	0	24.25	24.19	24.01
	50	24	24.02	23.99	23.83
	50	49	24.15	24.10	23.69
	100	0	24.15	24.11	23.83
64QAM	1	0	25.43	25.29	25.16
	1	49	25.22	25.15	24.50
	1	99	25.35	25.11	24.32
	50	0	24.22	24.32	23.86
	50	24	24.16	24.15	23.83
	50	49	24.19	23.99	23.56
	100	0	24.13	23.86	23.62

## 3.2 Radiated Emissions

### 3.2.1 Limit of Radiated Emissions

For all fixed digital user stations, the attenuation factor shall be not less than  $43 + 10 \log (P)$  dB at the channel edge

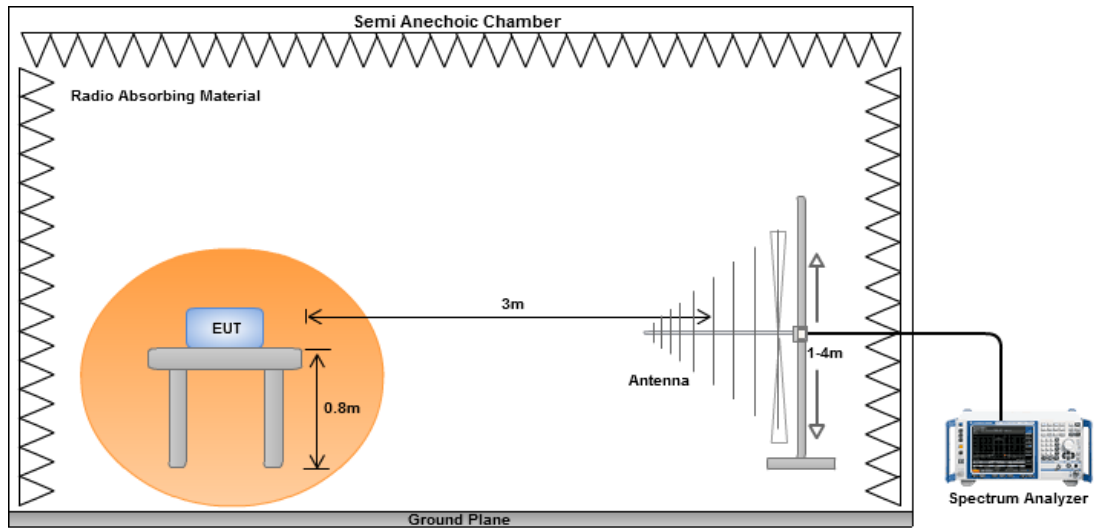
### 3.2.2 Test Procedures

1. Measurement is made at a semi-anechoic chamber that incorporates a turntable allowing a EUT rotation of  $360^\circ$ . A continuously-rotating, remotely-controlled turntable is installed at the test site to support the EUT and facilitate determination of the direction of maximum radiation for each EUT emission frequency. The EUT is placed at a height of 0.8 m test table above the ground plane.
2. Measurement is made with the antenna positioned in both the horizontal and vertical planes of polarization. The measurement antenna is varied in height (1m ~ 4m) above the reference ground plane to obtain the maximum signal strength. Distance between EUT and antenna is 3 m.
3. This investigation is performed with the EUT rotated  $360^\circ$ , the antenna height scanned between 1 m and 4 m, and the antenna rotated to repeat the measurements for both the horizontal and vertical antenna polarizations.
4. After finding the max radiated emission, substitution method will be used for getting effective radiated power. EUT will be removed and substitution antenna will be placed at same position. Signal generator will output CW signal to substitution antenna through a RF cable. Rotate turntable and move antenna to find maximum radiated emission. Adjust output power of signal generator to let the maximum radiated emission is same as step 3. Record the output power level.
5. E.I.R.P = output power of step 4 + gain of substitution antenna – cable loss of RF cable.

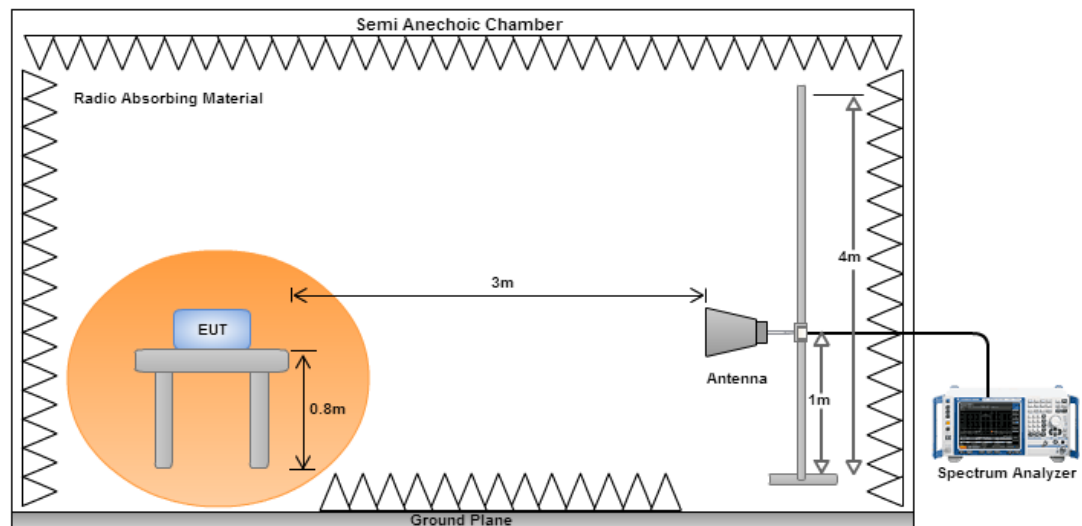


### 3.2.3 Test Setup

#### Radiated Emissions below 1 GHz



#### Radiated Emissions above 1 GHz



### 3.2.4 Test Result of Radiated Emissions below 1GHz

Mode		LTE Band 41, CB: 5MHz, 1RB, Offset 0, Channel: 40915					
Frequency (MHz)	Antenna Polarity	E.I.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Vaule (dBm)	Correction Factor (dB)
32.91	H	-41.81	-13.00	-28.81	-40.42	-28.16	-13.65
52.31	H	-51.69	-13.00	-38.69	-46.78	-41.53	-10.16
83.35	H	-50.18	-13.00	-37.18	-38.45	-48.87	-1.31
99.84	H	-51.63	-13.00	-38.63	-41.19	-51.97	0.34
129.91	H	-59.58	-13.00	-46.58	-49.71	-58.35	-1.23
159.01	H	-60.25	-13.00	-47.25	-50.98	-59.70	-0.55
32.91	V	-33.60	-13.00	-20.60	-21.61	-19.95	-13.65
52.31	V	-50.21	-13.00	-37.21	-39.74	-40.05	-10.16
77.53	V	-57.34	-13.00	-44.34	-46.93	-54.34	-3.00
93.05	V	-54.33	-13.00	-41.33	-43.50	-54.89	0.56
105.66	V	-52.97	-13.00	-39.97	-43.31	-52.96	-0.01
138.64	V	-58.81	-13.00	-45.81	-51.65	-57.27	-1.54

Note: EIRP = S.G Power value + Correction factor.

Mode		LTE Band 41, CB: 10MHz, 1RB, Offset 0, Channel: 40940					
Frequency (MHz)	Antenna Polarity	E.I.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Vaule (dBm)	Correction Factor (dB)
32.91	H	-41.60	-13.00	-28.60	-40.21	-27.95	-13.65
52.31	H	-51.74	-13.00	-38.74	-46.83	-41.58	-10.16
80.44	H	-51.80	-13.00	-38.80	-40.52	-49.62	-2.18
99.84	H	-50.44	-13.00	-37.44	-40.00	-50.78	0.34
140.58	H	-59.74	-13.00	-46.74	-51.01	-58.18	-1.56
158.04	H	-61.14	-13.00	-48.14	-51.90	-60.53	-0.61
32.91	V	-33.89	-13.00	-20.89	-21.90	-20.24	-13.65
46.49	V	-49.29	-13.00	-36.29	-38.75	-37.85	-11.44
52.31	V	-50.96	-13.00	-37.96	-40.49	-40.80	-10.16
82.38	V	-57.11	-13.00	-44.11	-46.54	-55.51	-1.60
105.66	V	-55.66	-13.00	-42.66	-46.00	-55.65	-0.01
130.88	V	-60.77	-13.00	-47.77	-53.43	-59.51	-1.26

Note: EIRP = S.G Power value + Correction factor.

Mode		LTE Band 41, CB: 15MHz, 1RB, Offset 0, Channel: 40965					
Frequency (MHz)	Antenna Polarity	E.I.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Vaule (dBm)	Correction Factor (dB)
30.00	H	-39.06	-13.00	-26.06	-37.34	-24.85	-14.21
52.31	H	-51.81	-13.00	-38.81	-46.90	-41.65	-10.16
89.17	H	-51.53	-13.00	-38.53	-40.59	-51.95	0.42
99.84	H	-50.66	-13.00	-37.66	-40.22	-51.00	0.34
142.52	H	-58.52	-13.00	-45.52	-49.73	-57.07	-1.45
158.04	H	-59.22	-13.00	-46.22	-49.98	-58.61	-0.61
32.91	V	-33.72	-13.00	-20.72	-21.73	-20.07	-13.65
45.52	V	-50.31	-13.00	-37.31	-39.55	-38.67	-11.64
52.31	V	-50.27	-13.00	-37.27	-39.80	-40.11	-10.16
80.44	V	-57.41	-13.00	-44.41	-47.07	-55.23	-2.18
105.66	V	-53.86	-13.00	-40.86	-44.20	-53.85	-0.01
129.91	V	-58.52	-13.00	-45.52	-51.15	-57.29	-1.23

Note: EIRP = S.G Power value + Correction factor.

Mode		LTE Band 41, CB: 20MHz, 1RB, Offset 0, Channel: 40990					
Frequency (MHz)	Antenna Polarity	E.I.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Vaule (dBm)	Correction Factor (dB)
32.91	H	-41.69	-13.00	-28.69	-40.30	-28.04	-13.65
52.31	H	-51.86	-13.00	-38.86	-46.95	-41.70	-10.16
83.35	H	-52.23	-13.00	-39.23	-40.50	-50.92	-1.31
99.84	H	-50.40	-13.00	-37.40	-39.96	-50.74	0.34
139.61	H	-57.63	-13.00	-44.63	-48.88	-56.05	-1.58
159.01	H	-60.71	-13.00	-47.71	-51.44	-60.16	-0.55
32.91	V	-34.15	-13.00	-21.15	-22.16	-20.50	-13.65
52.31	V	-49.65	-13.00	-36.65	-39.18	-39.49	-10.16
92.08	V	-57.14	-13.00	-44.14	-46.29	-57.73	0.59
105.66	V	-54.99	-13.00	-41.99	-45.33	-54.98	-0.01
127.97	V	-57.82	-13.00	-44.82	-50.41	-56.66	-1.16
230.79	V	-57.26	-13.00	-44.26	-50.62	-61.72	4.46

Note: EIRP = S.G Power value + Correction factor.

### 3.2.5 Test Result of Radiated Emissions above 1GHz

Mode							
LTE Band 41, CB: 5MHz, 1RB, Offset 0, Channel: 40915							
Frequency (MHz)	Antenna Polarity	E.I.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Vaule (dBm)	Correction Factor (dB)
5240.66	H	-28.34	-13.00	-28.69	-46.21	-34.78	6.44
7861.00	H	-44.35	-13.00	-38.86	-65.43	-47.50	3.15
10481.30	H	-32.34	-13.00	-39.23	-56.49	-33.75	1.41
5240.66	V	-32.25	-13.00	-37.40	-49.12	-38.69	6.44
7861.00	V	-38.22	-13.00	-44.63	-58.65	-41.37	3.15
10481.30	V	-40.75	-13.00	-47.71	-63.33	-42.16	1.41

Mode							
LTE Band 41, CB: 5MHz, 1RB, Offset 0, Channel: 41240							
Frequency (MHz)	Antenna Polarity	E.I.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Vaule (dBm)	Correction Factor (dB)
5305.48	H	-31.93	-13.00	-18.93	-49.36	-38.46	6.53
7958.22	H	-35.90	-13.00	-22.90	-57.48	-39.01	3.11
10610.96	H	-41.15	-13.00	-28.15	-65.32	-42.45	1.30
5305.48	V	-40.84	-13.00	-27.84	-57.55	-47.37	6.53
7958.22	V	-45.48	-13.00	-32.48	-66.65	-48.51	3.03
10610.96	V	-42.45	-13.00	-29.45	-65.32	-43.75	1.30

Mode							
LTE Band 41, CB: 5MHz, 1RB, Offset 0, Channel: 41565							
Frequency (MHz)	Antenna Polarity	E.I.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Vaule (dBm)	Correction Factor (dB)
5370.68	H	-32.70	-13.00	-19.70	-49.67	-39.32	6.62
8056.02	H	-36.72	-13.00	-23.72	-58.44	-39.89	3.17
10741.36	H	-41.66	-13.00	-28.66	-65.87	-42.88	1.22
5370.68	V	-41.71	-13.00	-28.71	-58.24	-48.33	6.62
8056.02	V	-44.03	-13.00	-31.03	-65.41	-47.20	3.17
10741.36	V	-43.22	-13.00	-30.22	-66.39	-44.44	1.22

Note: EIRP = S.G Power value + Correction factor.

Mode							
LTE Band 41, CB: 10MHz, 1RB, Offset 0, Channel: 40940							
Frequency (MHz)	Antenna Polarity	E.I.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Vaule (dBm)	Correction Factor (dB)
5241.18	H	-28.49	-13.00	-15.49	-46.35	-34.94	6.45
7861.77	H	-44.24	-13.00	-31.24	-65.33	-47.39	3.15
10482.36	H	-32.13	-13.00	-19.13	-56.27	-33.54	1.41
5241.18	V	-32.57	-13.00	-19.57	-49.44	-39.02	6.45
7861.77	V	-38.82	-13.00	-25.82	-59.26	-41.97	3.15
10482.36	V	-40.74	-13.00	-27.74	-63.31	-42.15	1.41

Mode							
LTE Band 41, CB: 10MHz, 1RB, Offset 0, Channel: 41240							
Frequency (MHz)	Antenna Polarity	E.I.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Vaule (dBm)	Correction Factor (dB)
5301.18	H	-32.20	-13.00	-19.20	-49.66	-38.73	6.53
7951.77	H	-35.90	-13.00	-22.90	-57.44	-39.01	3.11
10602.36	H	-41.21	-13.00	-28.21	-65.37	-42.52	1.31
5301.18	V	-40.70	-13.00	-27.70	-57.42	-47.23	6.53
7951.77	V	-46.13	-13.00	-33.13	-67.25	-49.15	3.02
10602.36	V	-42.87	-13.00	-29.87	-65.72	-44.18	1.31

Mode							
LTE Band 41, CB: 10MHz, 1RB, Offset 0, Channel: 41540							
Frequency (MHz)	Antenna Polarity	E.I.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Vaule (dBm)	Correction Factor (dB)
5361.18	H	-32.20	-13.00	-19.20	-49.24	-38.81	6.61
8041.77	H	-36.80	-13.00	-23.80	-58.53	-39.95	3.15
10722.36	H	-40.14	-13.00	-27.14	-64.35	-41.37	1.23
5361.18	V	-41.88	-13.00	-28.88	-58.43	-48.49	6.61
8041.77	V	-43.90	-13.00	-30.90	-65.30	-47.05	3.15
10722.36	V	-43.36	-13.00	-30.36	-66.48	-44.59	1.23

Note: EIRP = S.G Power value + Correction factor.

Mode							
LTE Band 41, CB: 15MHz, 1RB, Offset 0, Channel: 40965							
Frequency (MHz)	Antenna Polarity	E.I.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Vaule (dBm)	Correction Factor (dB)
5241.68	H	-28.70	-13.00	-15.70	-46.56	-35.15	6.45
7862.52	H	-41.26	-13.00	-28.26	-62.35	-44.40	3.14
10483.36	H	-34.07	-13.00	-21.07	-58.21	-35.47	1.40
5241.68	V	-32.58	-13.00	-19.58	-49.45	-39.03	6.45
7862.52	V	-39.22	-13.00	-26.22	-59.66	-42.36	3.14
10483.36	V	-40.80	-13.00	-27.80	-63.38	-42.20	1.40

Mode							
LTE Band 41, CB: 15MHz, 1RB, Offset 0, Channel: 41240							
Frequency (MHz)	Antenna Polarity	E.I.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Vaule (dBm)	Correction Factor (dB)
5296.68	H	-32.06	-13.00	-19.06	-49.55	-38.58	6.52
7945.02	H	-37.05	-13.00	-24.05	-58.56	-40.16	3.11
10593.36	H	-41.14	-13.00	-28.14	-65.30	-42.46	1.32
5296.68	V	-41.11	-13.00	-28.11	-57.84	-47.63	6.52
7945.02	V	-44.47	-13.00	-31.47	-65.54	-47.49	3.02
10593.36	V	-42.58	-13.00	-29.58	-65.40	-43.90	1.32

Mode							
LTE Band 41, CB: 15MHz, 1RB, Offset 0, Channel: 41515							
Frequency (MHz)	Antenna Polarity	E.I.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Vaule (dBm)	Correction Factor (dB)
5351.68	H	-32.42	-13.00	-19.42	-49.53	-39.01	6.59
8027.52	H	-36.88	-13.00	-23.88	-58.64	-40.01	3.13
10703.36	H	-40.58	-13.00	-27.58	-64.78	-41.82	1.24
5351.68	V	-40.97	-13.00	-27.97	-57.55	-47.56	6.59
8027.52	V	-42.11	-13.00	-29.11	-63.55	-45.24	3.13
10703.36	V	-42.41	-13.00	-29.41	-65.48	-43.65	1.24

Note: EIRP = S.G Power value + Correction factor.

Mode							
LTE Band 41, CB: 20MHz, 1RB, Offset 0, Channel: 40990							
Frequency (MHz)	Antenna Polarity	E.I.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Vaule (dBm)	Correction Factor (dB)
5242.20	H	-27.89	-13.00	-14.89	-45.75	-34.34	6.45
7863.30	H	-44.25	-13.00	-31.25	-64.53	-47.39	3.14
10484.40	H	-33.09	-13.00	-20.09	-57.23	-34.49	1.40
5242.20	V	-32.90	-13.00	-19.90	-49.77	-39.35	6.45
7863.30	V	-38.64	-13.00	-25.64	-58.45	-41.78	3.14
10484.40	V	-41.88	-13.00	-28.88	-64.46	-43.28	1.40

Mode							
LTE Band 41, CB:20MHz, 1RB, Offset 0, Channel: 41240							
Frequency (MHz)	Antenna Polarity	E.I.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Vaule (dBm)	Correction Factor (dB)
5292.20	H	-32.09	-13.00	-19.09	-49.61	-38.60	6.51
7938.30	H	-36.29	-13.00	-23.29	-57.76	-39.40	3.11
10584.40	H	-42.51	-13.00	-29.51	-66.67	-43.83	1.32
5292.20	V	-41.98	-13.00	-28.98	-58.72	-48.49	6.51
7938.30	V	-46.42	-13.00	-33.42	-67.44	-49.43	3.01
10584.40	V	-43.83	-13.00	-30.83	-66.63	-45.15	1.32

Mode							
LTE Band 41, CB:20MHz, 1RB, Offset 0, Channel: 41490							
Frequency (MHz)	Antenna Polarity	E.I.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Vaule (dBm)	Correction Factor (dB)
5342.20	H	-32.38	-13.00	-19.38	-49.55	-38.96	6.58
8013.30	H	-37.09	-13.00	-24.09	-58.86	-40.20	3.11
10684.40	H	-41.53	-13.00	-28.53	-65.72	-42.78	1.25
5342.20	V	-41.83	-13.00	-28.83	-58.44	-48.41	6.58
8013.30	V	-44.92	-13.00	-31.92	-66.38	-48.03	3.11
10684.40	V	-44.09	-13.00	-31.09	-67.12	-45.34	1.25

Note: EIRP = S.G Power value + Correction factor.

### 3.3 Conducted Emissions

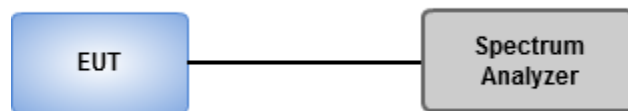
#### 3.3.1 Limit of Conducted Emissions

For all fixed digital user stations, the attenuation factor shall be not less than  $43 + 10 \log (P)$  dB at the channel edge.

#### 3.3.2 Test Procedures

1. Lowest, middle and highest operating channels are tested for this item.
2. Scan frequency range is from 30MHz~27GHz.
3. Set RBW = 1MHz, VBW = 3MHz, detector = average, sweep time = auto.
4. Record the max trace value and capture the test plot of each sub frequency band.

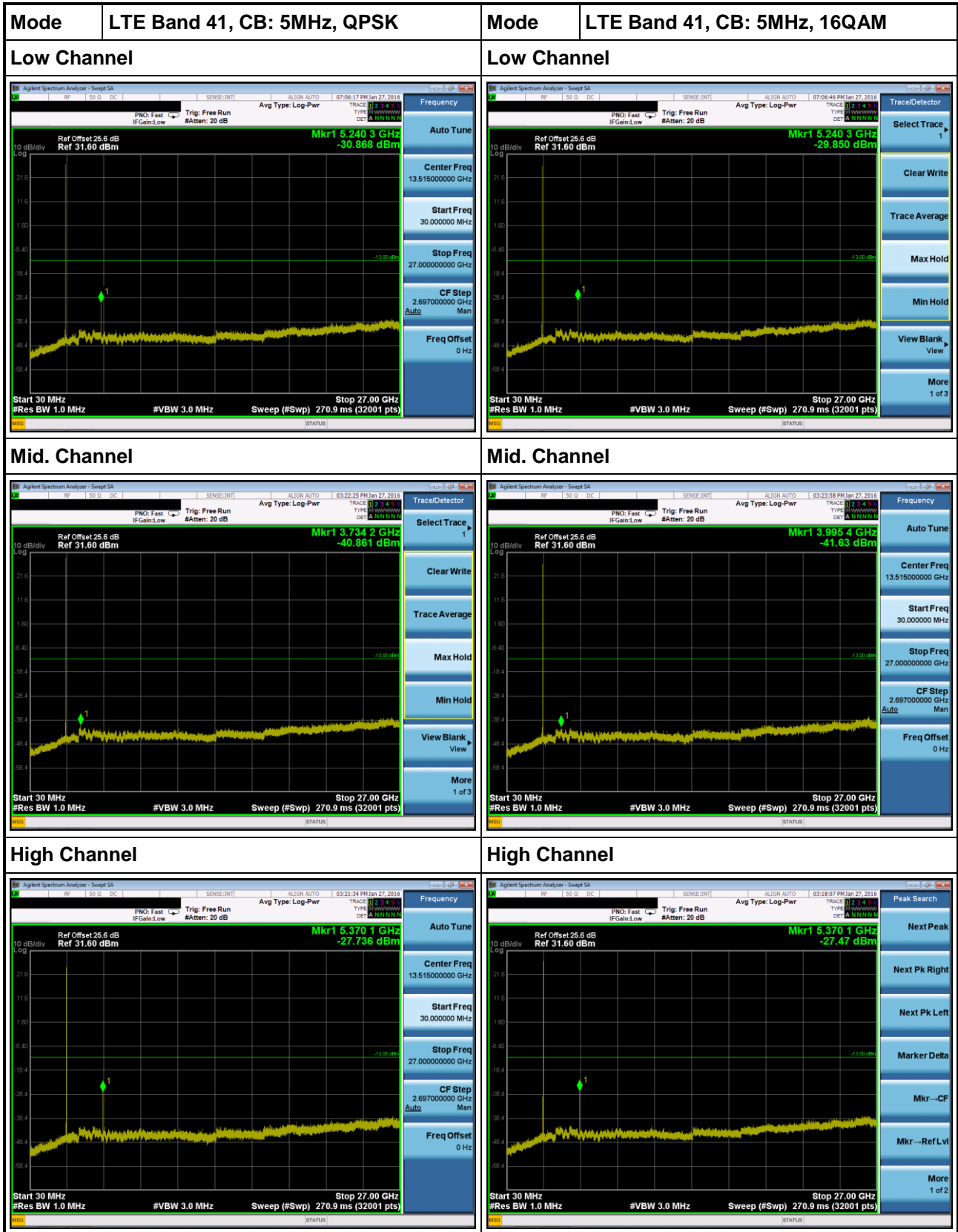
#### 3.3.3 Test Setup

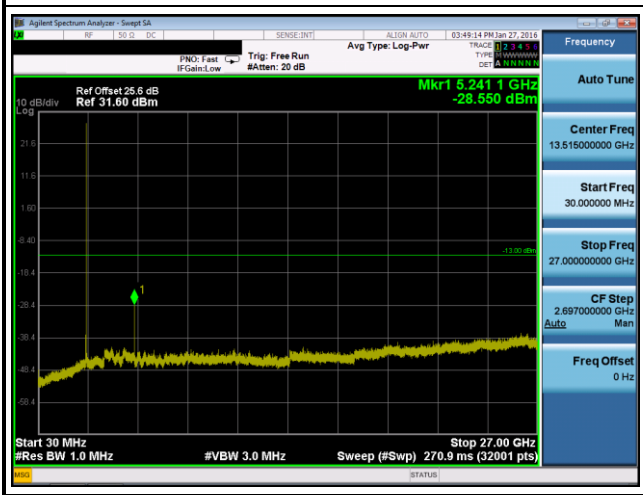
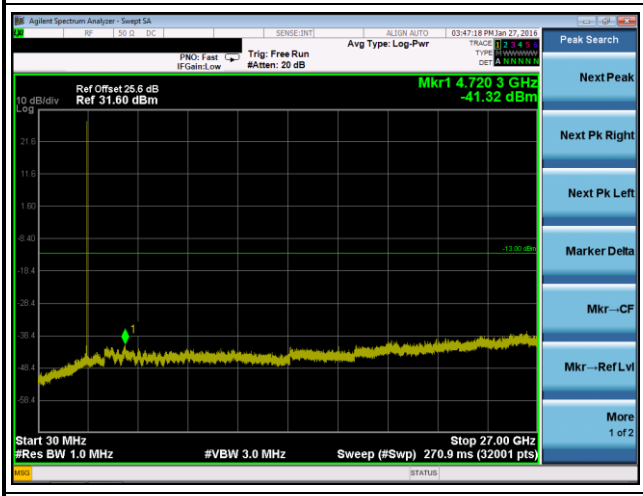
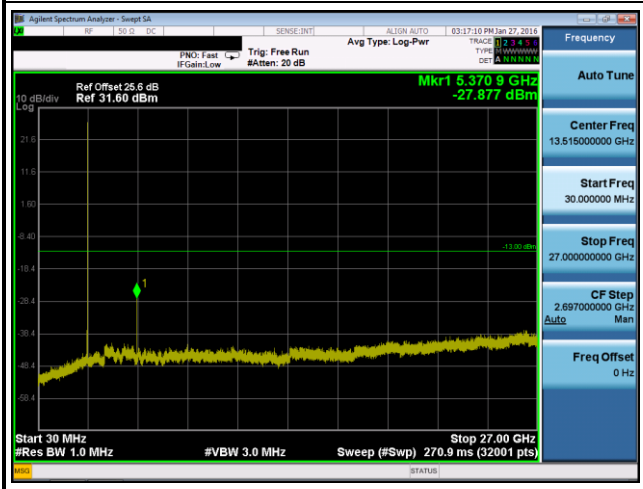




### 3.3.4 Test Result of Conducted Emissions

#### LTE Band 41, CB: 5MHz



<b>Mode</b> <b>LTE Band 41, CB: 5MHz, 64QAM</b>	<b>Mode</b> <b>---</b>
<b>Low Channel</b>	
	<b>Low Channel</b>
<b>Mid. Channel</b>	
	<b>Mid. Channel</b>
<b>High Channel</b>	
	<b>High Channel</b>