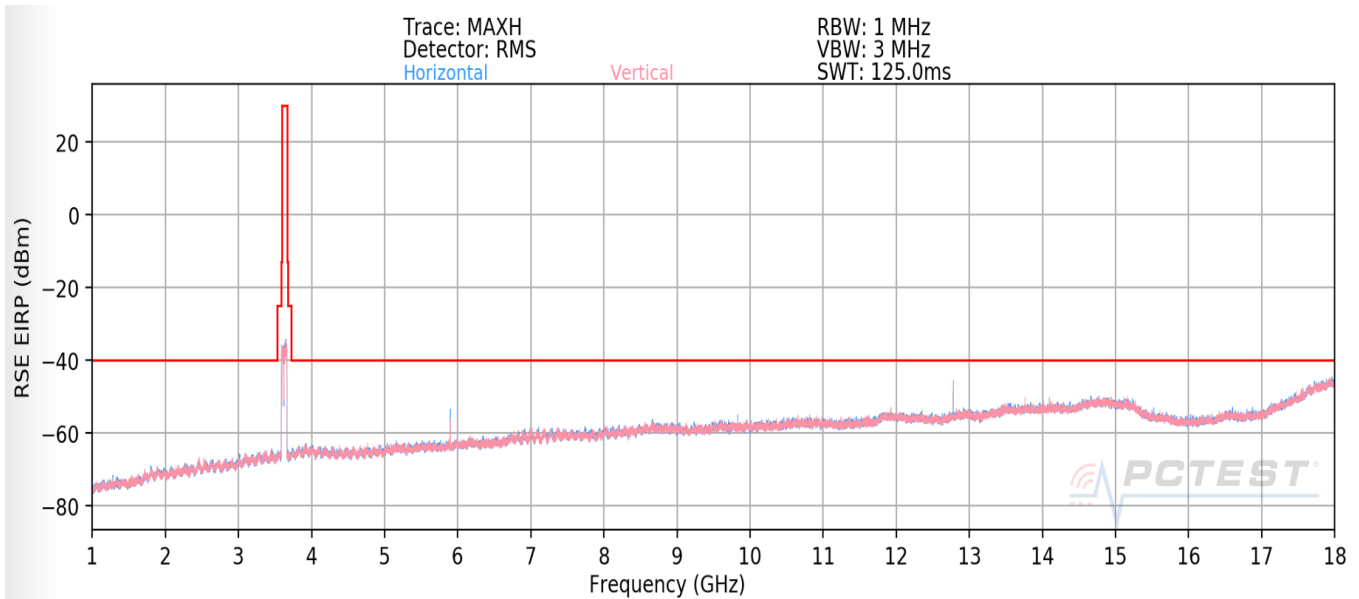
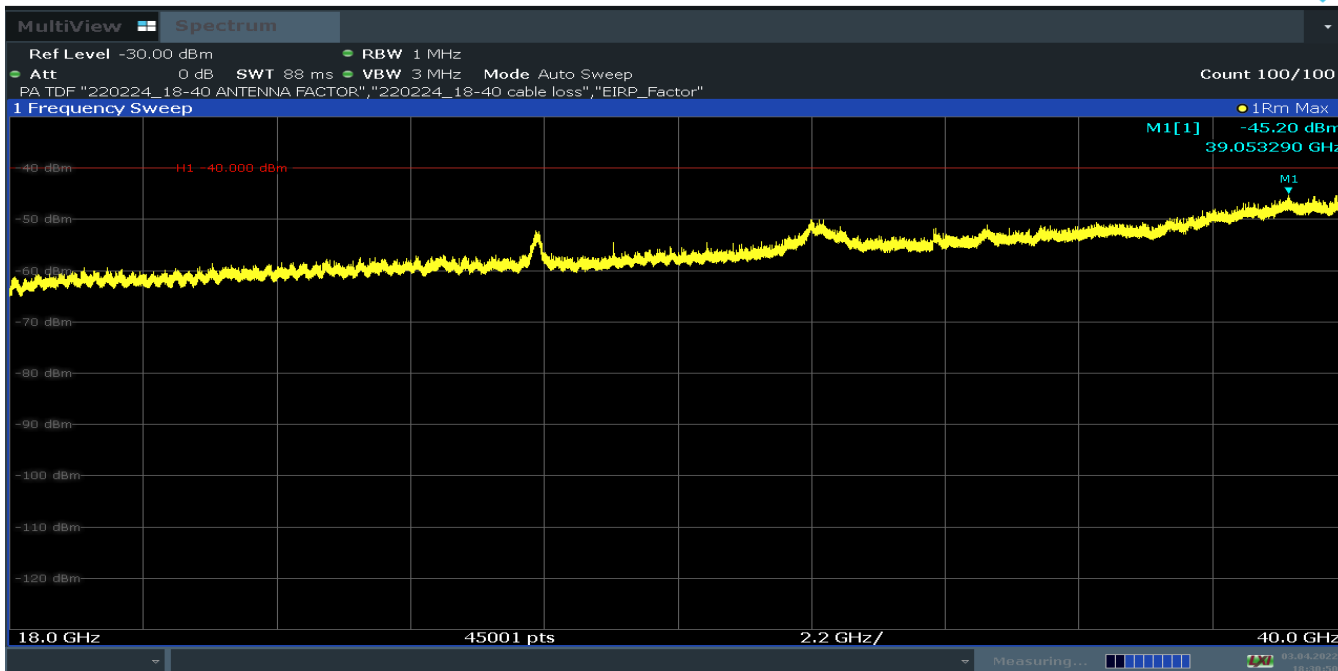


**Plot 8-536. Radiated spurious emission Plot\_30 MHz to 1000 MHz  
(LTE\_2C+NR\_1C\_20M+20M+40M\_QPSK - Mid Channel)**

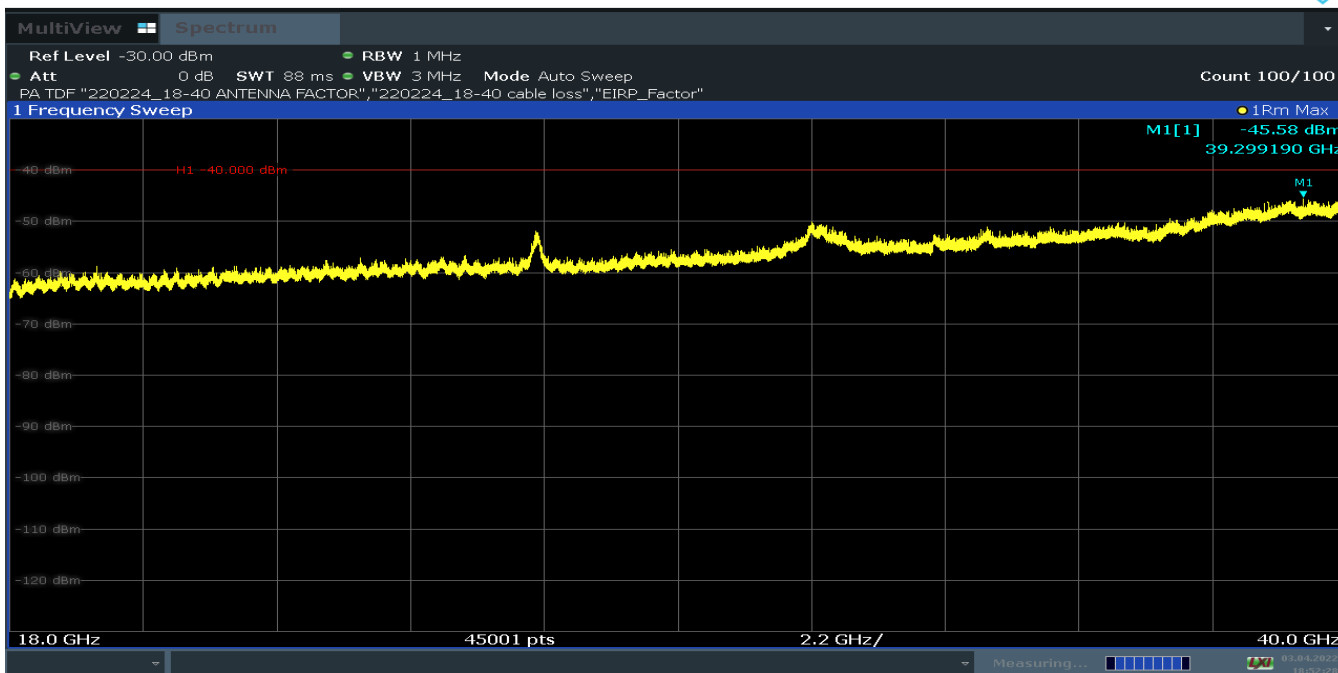


**Plot 8-537. Radiated spurious emission Plot\_1 GHz to 18 GHz  
(LTE\_2C+NR\_1C\_20M+20M+40M\_QPSK - Mid Channel)**

<b>FCC: A3LRT4401-48A1</b>		<b>MEASUREMENT REPORT (CERTIFICATION)</b>	<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 8K21101306-R4.A3L	<b>Test Dates:</b> 10/20/2021 – 04/05/2022	<b>EUT Type:</b> RRU(RT4401)	Page 241 of 286

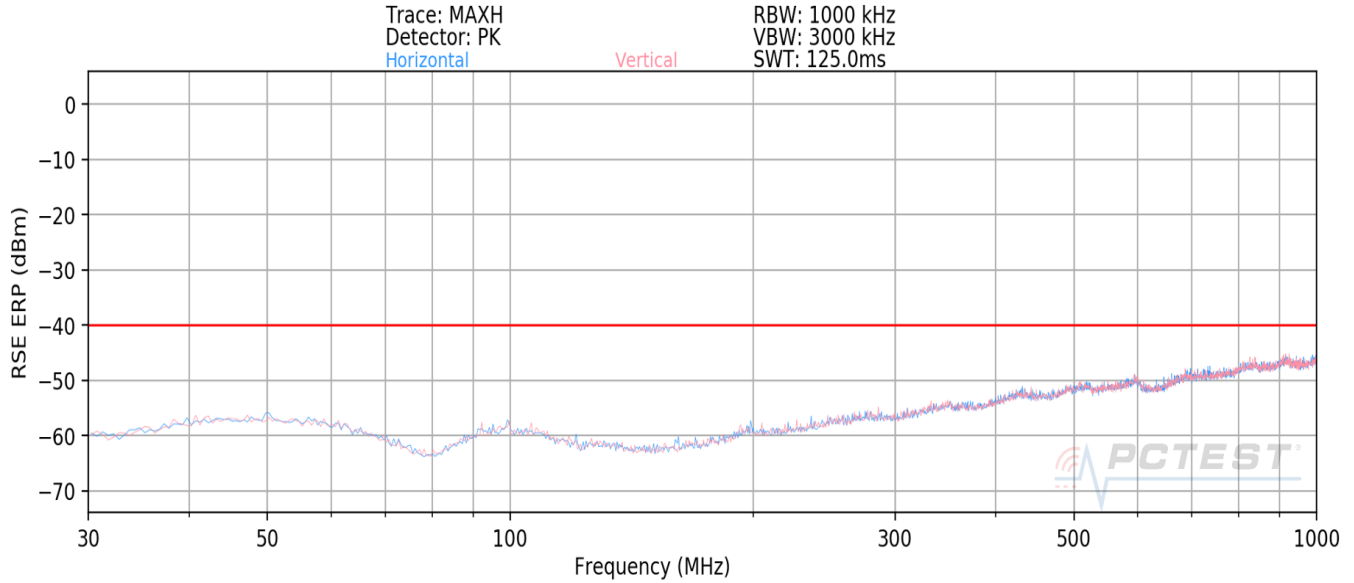


**Plot 8-538. Radiated spurious emission Plot\_Horizontal 18 GHz to 40 GHz  
(LTE\_2C+NR\_1C\_20M+20M+40M\_QPSK - Mid Channel)**

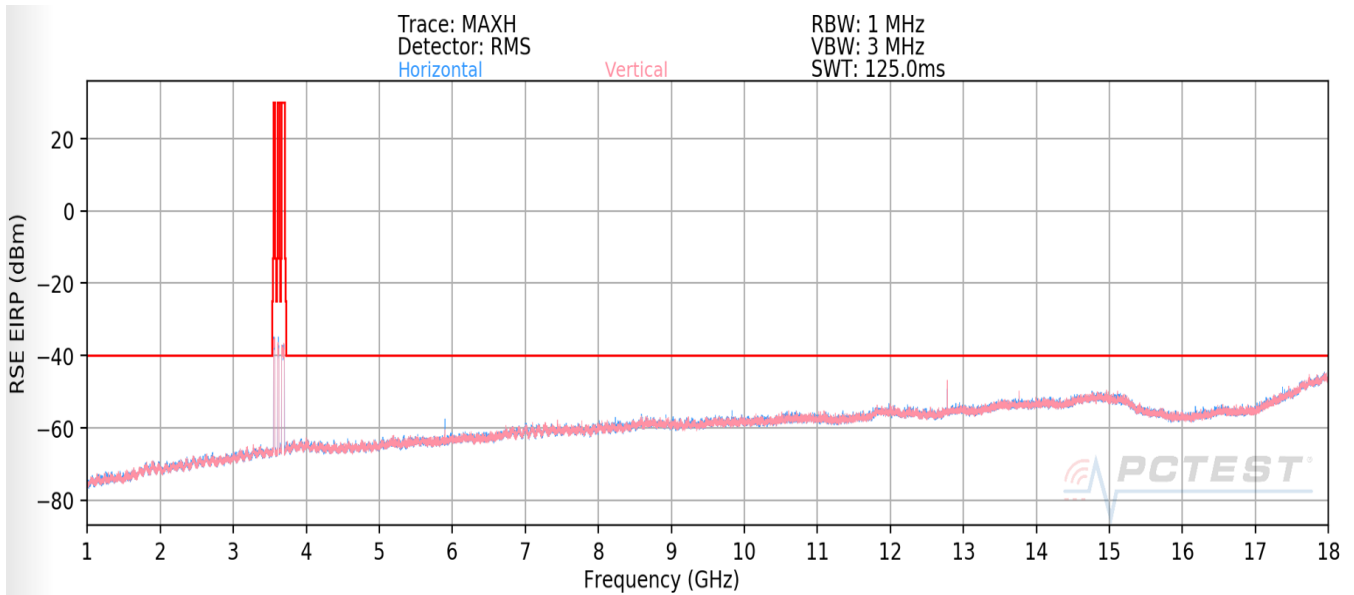


**Plot 8-539. Radiated spurious emission Plot\_Vertical 18 GHz to 40 GHz  
(LTE\_2C+NR\_1C\_20M+20M+40M\_QPSK - Mid Channel)**

FCC: A3LRT4401-48A1		<b>MEASUREMENT REPORT (CERTIFICATION)</b>		<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 8K21101306-R4.A3L	<b>Test Dates:</b> 10/20/2021 – 04/05/2022	<b>EUT Type:</b> RRU(RT4401)	Page 242 of 286	

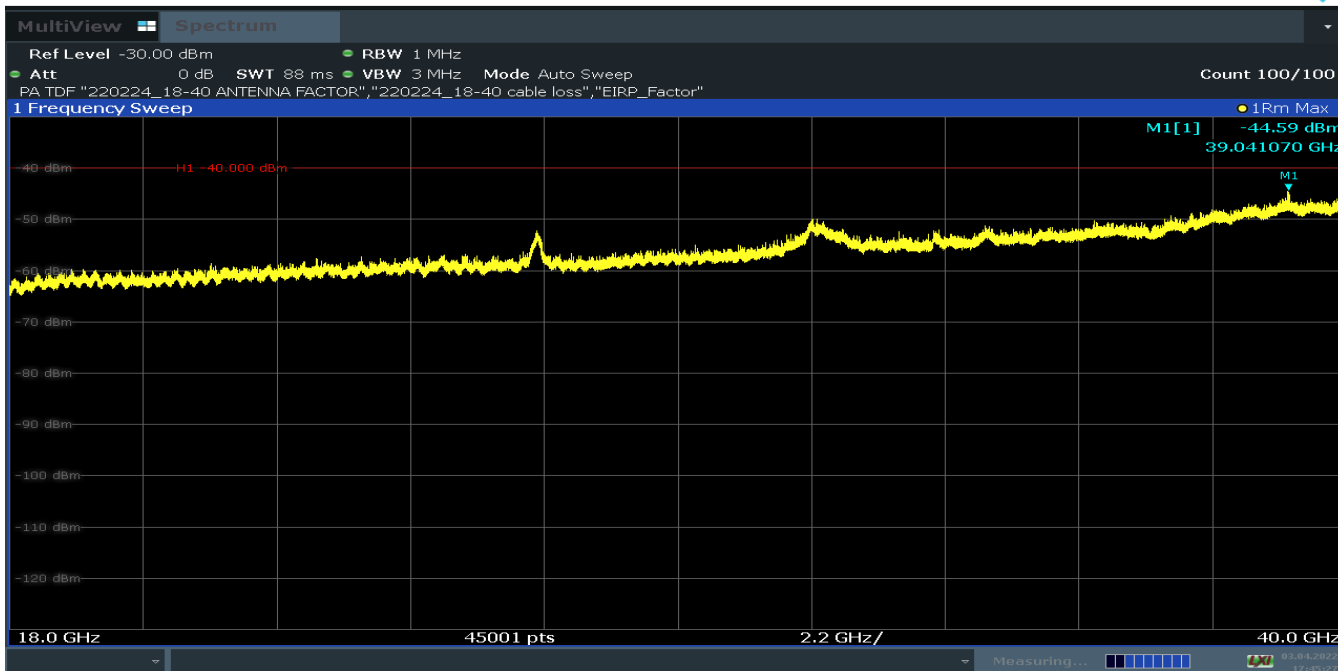


**Plot 8-540. Radiated spurious emission Plot\_30 MHz to 1000 MHz  
(LTE\_2C+NR\_1C\_20M+20M+40M\_Non-Contiguous\_QPSK - Mid Channel)**

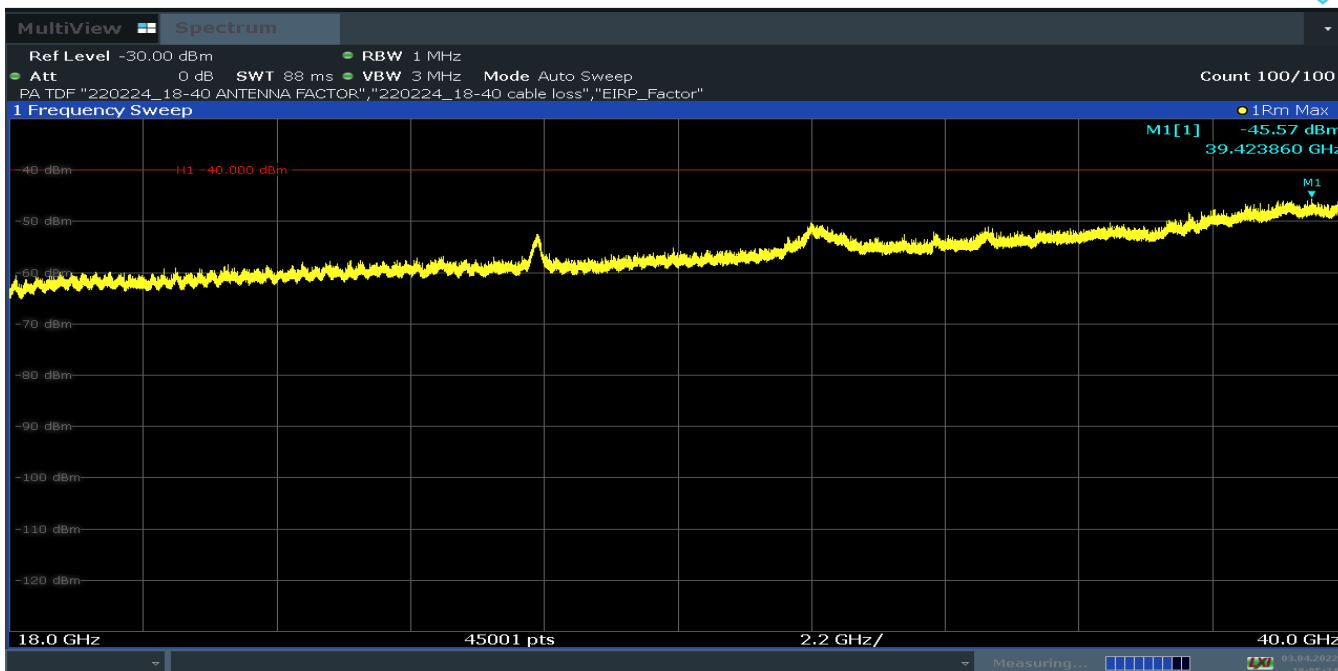


**Plot 8-541. Radiated spurious emission Plot\_1 GHz to 18 GHz  
(LTE\_2C+NR\_1C\_20M+20M+40M\_Non-Contiguous\_QPSK - Mid Channel)**

FCC: A3LRT4401-48A1		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 8K21101306-R4.A3L	Test Dates: 10/20/2021 – 04/05/2022	EUT Type: RRU(RT4401)		Page 243 of 286



**Plot 8-542. Radiated spurious emission Plot\_Horizontal 18 GHz to 40 GHz (LTE\_2C+NR\_1C\_20M+20M+40M\_Non-Contiguous\_QPSK - Mid Channel)**



**Plot 8-543. Radiated spurious emission Plot\_Vertical 18 GHz to 40 GHz (LTE\_2C+NR\_1C\_20M+20M+40M\_Non-Contiguous\_QPSK - Mid Channel)**

FCC: A3LRT4401-48A1		<b>MEASUREMENT REPORT (CERTIFICATION)</b>		<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 8K21101306-R4.A3L	<b>Test Dates:</b> 10/20/2021 – 04/05/2022	<b>EUT Type:</b> RRU(RT4401)	Page 244 of 286	

**- 30 MHz – 40 GHz**

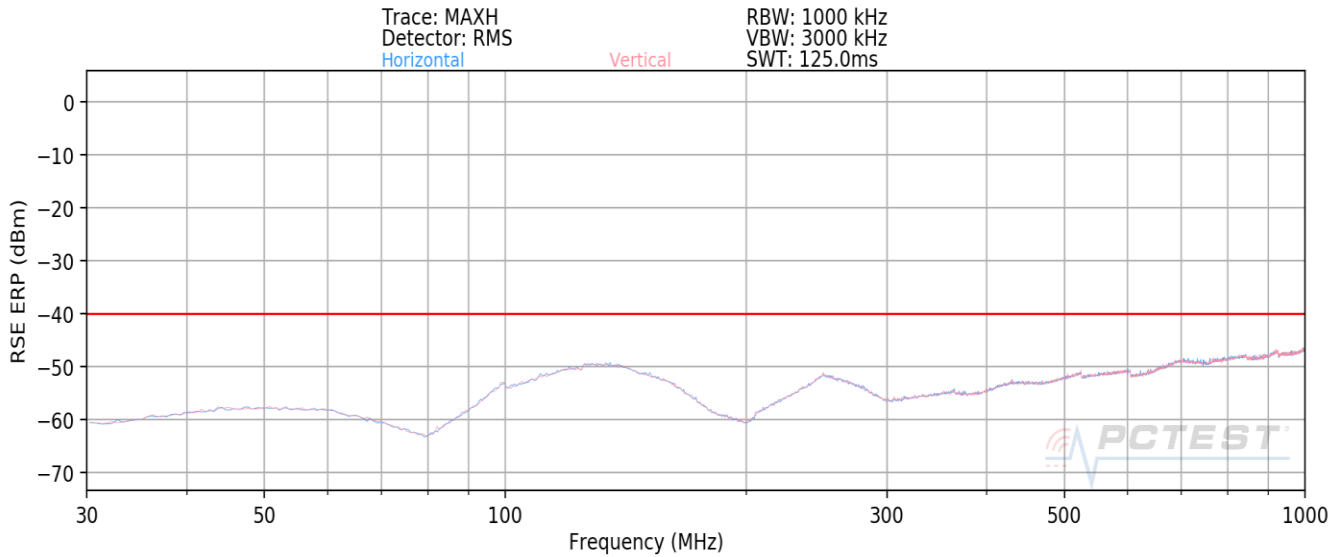
Bandwidth (MHz):	Multi RAT_LTE_2C + NR_1C_20M+20M+40M_Middle Channel
Frequency (MHz):	3625 MHz
Modulation Signal:	QPSK

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Heigh [cm]	Turntable azimuth [degree]	Analyzer Level [dBm/MHz]	AFCL [dBm]	Field Strength [dB $\mu$ V/m]	RSE EIRP [dBm/MHz]	Limit [dBm/MHz]	Margin [dB]
995.27	H	150	50	-85.34	26.06	47.72	-46.74	-40.00	-6.74
995.64	V	150	120	-85.77	26.06	47.29	-47.16	-40.00	-7.16
12778.43	H	130	175	-72.15	13.33	48.18	-46.28	-40.00	-6.28
12779.16	V	135	120	-72.34	13.35	48.01	-46.45	-40.00	-6.45

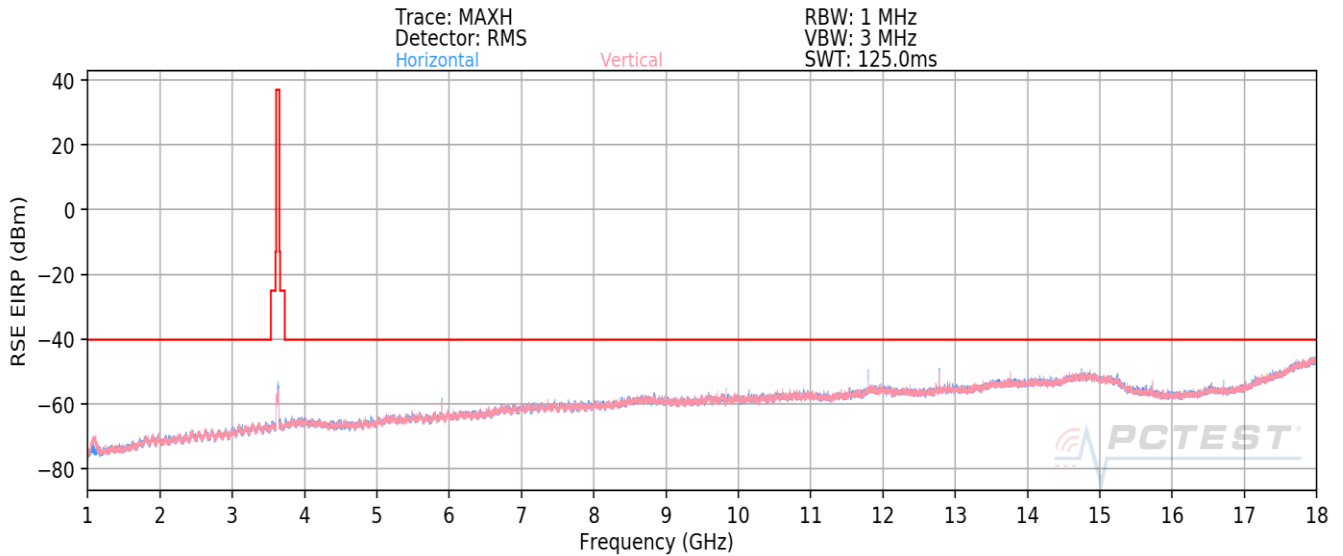
**Table 8-107. Radiated spurious emission Summary Data  
(LTE\_2C+NR\_1C\_20M+20M+40M\_QPSK - Mid Channel)**

<b>FCC: A3LRT4401-48A1</b>	 <small>ENGINEERING LABORATORY, INC.</small>	<b>MEASUREMENT REPORT (CERTIFICATION)</b>		<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 8K21101306-R4.A3L	<b>Test Dates:</b> 10/20/2021 – 04/05/2022	<b>EUT Type:</b> RRU(RT4401)	Page 245 of 286	

✳ Additionally test for AC voltage source

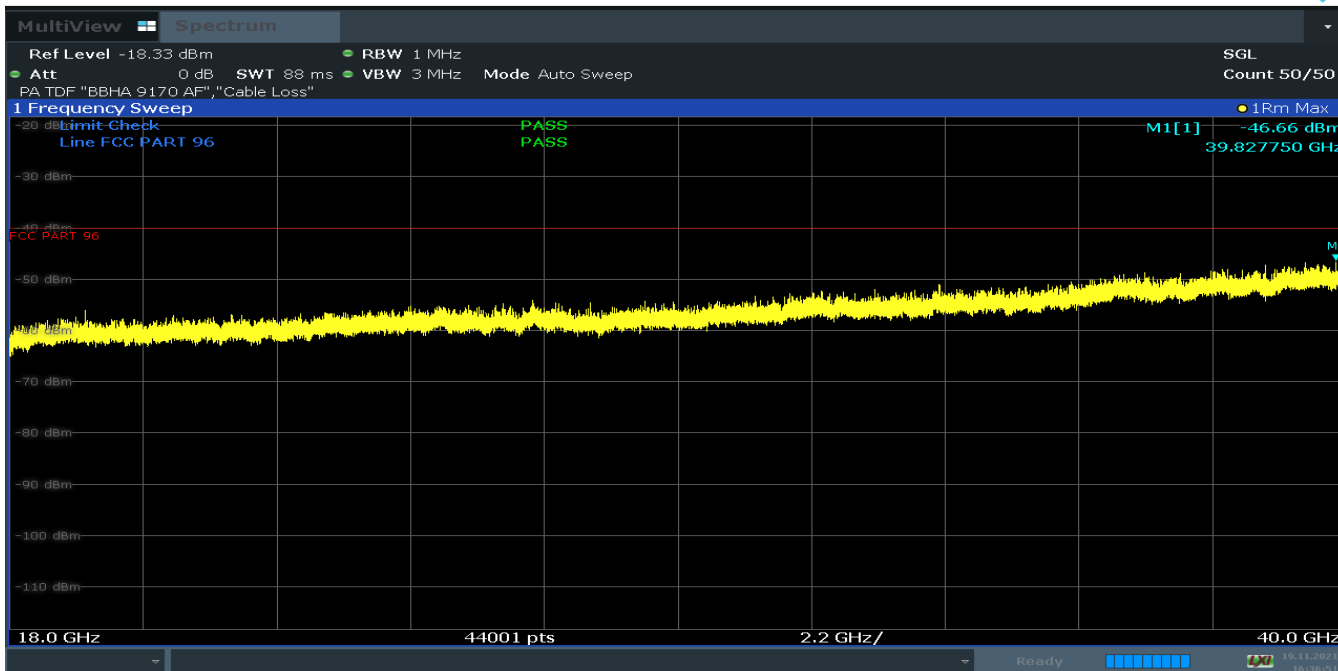


**Plot 8-544. Radiated spurious emission Plot\_30 MHz to 1000 MHz  
(NR\_n48\_1C\_40M\_QPSK - Mid Channel)**

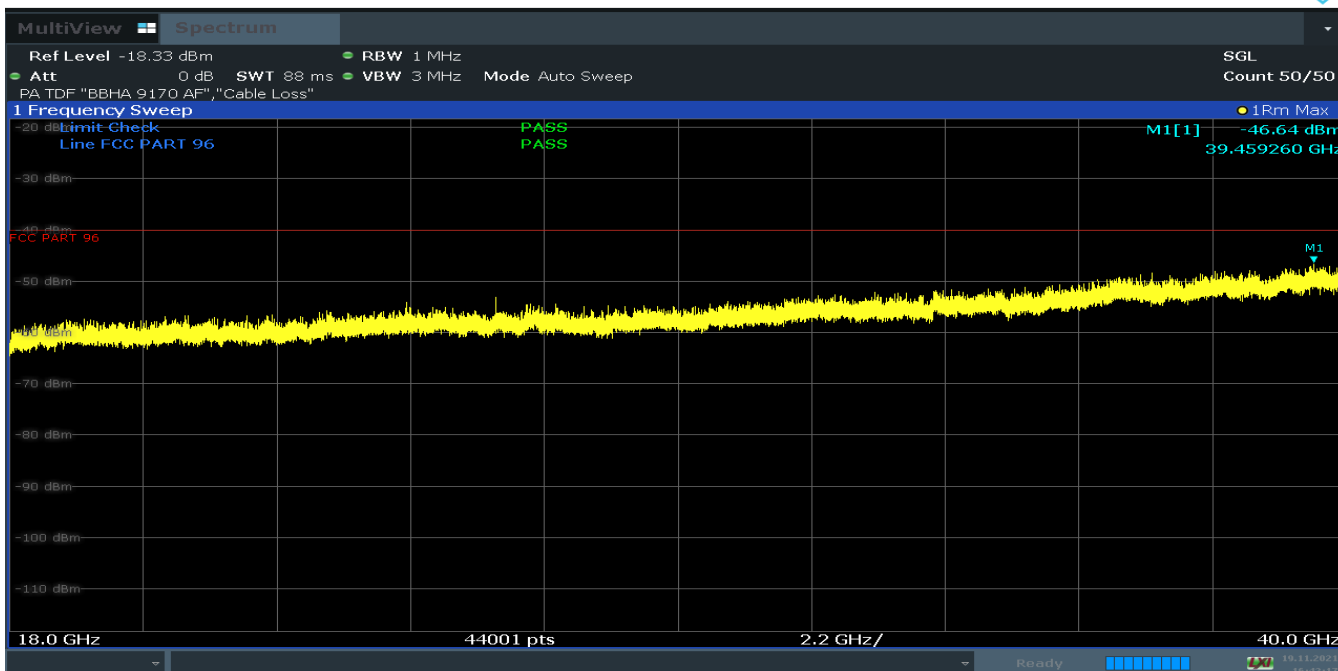


**Plot 8-545. Radiated spurious emission Plot\_1 GHz to 18 GHz  
(NR\_n48\_1C\_40M\_QPSK - Mid Channel)**

<b>FCC: A3LRT4401-48A1</b>		<b>MEASUREMENT REPORT (CERTIFICATION)</b>	 <b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 8K21101306-R4.A3L	<b>Test Dates:</b> 10/20/2021 – 04/05/2022	<b>EUT Type:</b> RRU(RT4401)	Page 246 of 286



**Plot 8-546. Radiated spurious emission Plot\_Horizontal 18 GHz to 40 GHz  
(NR\_n48\_1C\_40M\_QPSK - Mid Channel)**



**Plot 8-547. Radiated spurious emission Plot\_Vertical 18 GHz to 40 GHz  
(NR\_n48\_1C\_40M\_QPSK - Mid Channel)**

<b>FCC: A3LRT4401-48A1</b>		<b>MEASUREMENT REPORT (CERTIFICATION)</b>		<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 8K21101306-R4.A3L	<b>Test Dates:</b> 10/20/2021 – 04/05/2022	<b>EUT Type:</b> RRU(RT4401)	Page 247 of 286	

**- 30 MHz – 40 GHz**

Bandwidth (MHz):	Single Band_NR_n48_1C_40M_Middle Channel
Frequency (MHz):	3625 MHz
Modulation Signal:	QPSK

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Heigh [cm]	Turntable azimuth [degree]	Analyzer Level [dBm/MHz]	AFCL [dBm]	Field Strength [dB $\mu$ V/m]	RSE EIRP [dBm/MHz]	Limit [dBm/MHz]	Margin [dB]
992.41	H	150	50	-85.36	26.03	47.67	-46.79	-40.00	-6.79
990.79	V	100	150	-85.44	26.02	47.58	-46.88	-40.00	-6.88
12779.31	H	163	204	-73.47	13.35	46.88	-47.58	-40.00	-7.58
12779.45	V	150	201	-75.82	13.35	44.53	-49.92	-40.00	-9.92

**Table 8-108. Radiated spurious emission Summary Data  
(NR\_n48\_1C\_40M\_QPSK - Mid Channel)**

FCC: A3LRT4401-48A1		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 8K21101306-R4.A3L	Test Dates: 10/20/2021 – 04/05/2022	EUT Type: RRU(RT4401)		Page 248 of 286



## 8.10 Frequency Stability

### § 2.1055

#### Test Overview and Limit

Frequency stability testing is performed in accordance with the guidelines of KDB 971168 D01 v03r01. The frequency stability of the transmitter is measured by:

- a.) **Temperature:** The temperature is varied from -30°C, +20°C and +50°C using an environmental chamber.
- b.) **Primary Supply Voltage:** The primary supply voltage is varied from 85% to 115% of the nominal value for DC powered equipment.

#### Test Description

1. The carrier frequency of the transmitter is measured at room temperature (20°C to provide a reference).
2. The equipment is turned on in a “standby” condition for fifteen minutes before applying power to the transmitter. Measurement of the carrier frequency of the transmitter is made within one minute after applying power to the transmitter.
3. Frequency measurements are made -30°C, +20°C and +50°C. A period of at least one half-hour is provided to allow stabilization of the equipment at each temperature level.

#### Limit

The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

#### Test Setup

The EUT was connected via an RF cable to a spectrum analyzer with the EUT placed inside an environmental chamber.

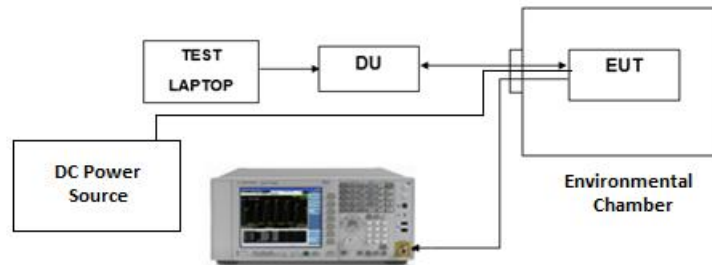


Figure 8-9. Test Instrument & Measurement Setup

#### Test Notes

None.

FCC: A3LRT4401-48A1		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 8K21101306-R4.A3L	Test Dates: 10/20/2021 – 04/05/2022	EUT Type: RRU(RT4401)		Page 249 of 286

OPERATING FREQUENCY: 3,625,005,000 Hz

REFERENCE VOLTAGE: -48.00 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	-48.00	+ 20 (Ref)	3,625,004,942	0	0.0000000
100 %		- 30	3,625,004,997	55	0.0000015
100 %		- 20	3,625,005,002	60	0.0000016
100 %		- 10	3,625,004,946	4	0.0000001
100 %		0	3,625,004,932	-10	-0.0000003
100 %		+ 10	3,625,004,933	-9	-0.0000002
100 %		+ 30	3,625,004,942	0	0.0000000
100 %		+ 40	3,625,004,949	7	0.0000002
100 %		+ 50	3,625,004,946	4	0.0000001
85 %		-40.80	+ 20	3,625,004,939	-3
115 %	-55.20	+ 20	3,625,004,941	-1	0.0000000

Table 8-109. Frequency Stability Summary Data (NR\_n48\_1C\_20M)

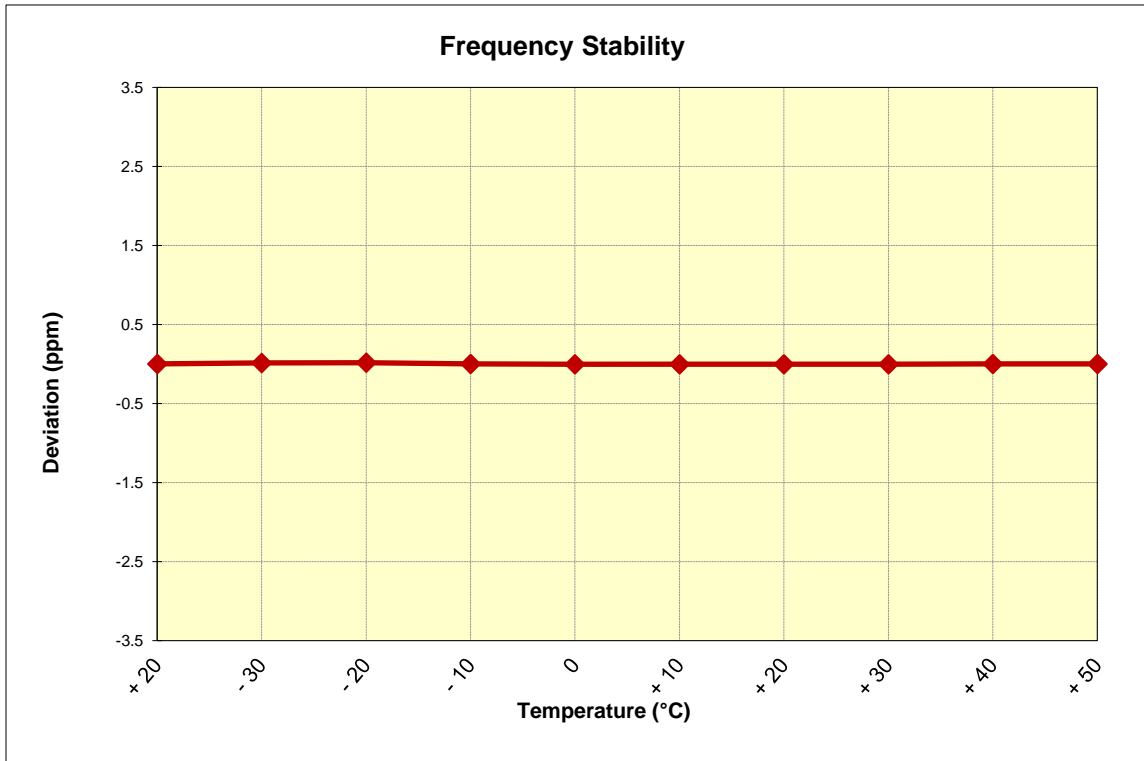


Figure 8-10. Frequency Stability Graph (NR\_n48\_1C\_20M)

FCC: A3LRT4401-48A1		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 8K21101306-R4.A3L	Test Dates: 10/20/2021 – 04/05/2022	EUT Type: RRU(RT4401)	Page 250 of 286	

## 9.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **Samsung Electronics Co., Ltd. CBSD FCC ID: A3L-RT4401-48A1** complies with all of the requirements of Part 96 of the FCC Rules.

<b>FCC: A3LRT4401-48A1</b>		<b>MEASUREMENT REPORT (CERTIFICATION)</b>		<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 8K21101306-R4.A3L	<b>Test Dates:</b> 10/20/2021 – 04/05/2022	<b>EUT Type:</b> RRU(RT4401)	Page 251 of 286	

## 10.0 APPENDIX. A

### 10.1 Conducted Average Output Power

#### Test Overview

A transmitter port of EUT is connected to the input of a signal analyzer. All measurements are performed as RMS average measurements while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies.

#### Test Description

KDB 971168 D01 v03r01 – Section 5  
KDB 662911 D01 v02r01 – Section E)1) In-Band Power Measurements  
ANSI C63.26-2015 – Section 5.2.4.4.1

The measurement was made using a direct connection between the RF output of the EUT and the spectrum analyzer. The spectrum analyzer settings were as follows:

1. Conducted power measurements are performed using the signal analyzer's "channel power" measurement capability for signals with continuous operation.
2. RBW = 1 ~ 5% of the expected OBW
3. VBW  $\geq 3 \times$  RBW
4. Span = 2 ~ 3 x OBW
5. No. of sweep points  $\geq 2 \times$  span / RBW
6. Detector = RMS
7. Trigger Settings is set to "RF Power" for signals with non-continuous operation with the sweep times set to "auto". Refer test note 3 for details.
8. Trace mode = Trace-Averaging (RMS) set to average over 100 sweeps
9. The trace was allowed to stabilize

#### Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.

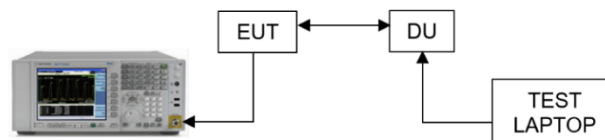


Figure 10-1. Test Instrument & Measurement Setup

#### Limit

N/A

FCC: A3LRT4401-48A1		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 8K21101306-R4.A3L	Test Dates: 10/20/2021 – 04/05/2022	EUT Type: RRU(RT4401)		Page 252 of 286

## Note

1. Conducted Average Output Power test result used to Grant of Authorization power and MPE.
2. Periodic trigger was used with gating ON. Gate sweeptime, Gate delay and gate length were set accordingly to capture ON time of the transmission.
3. MIMO Calculations are done considering output channel power for all ports and respective margins are calculated according to procedures in section 6.4 of ANSI C63.26 and section D of KDB 971168 D01 v03r01.
4. Consider the following factors for MIMO Power:  
Conducted power for each port is measured in dBm.  
Powers are summed up in linear using the measure-and-sum technique defined in KDB 971168 D01 v03r01-Section D.  
Conducted power per port (dBm) is converted to a linear value (mW). A summation of linear powers for all ports gives us the total MIMO conducted power in milliWatts (mW).
5. The EUT have multiple antennas transmitting correlated signals with the equal antenna gains and two outputs driving a cross-polarized antennas with  $N_{ANT}=2$ .  
Directional gain is to be computed as follows;  
\* Directional gain =  $G_{ANT} + 10 \log(N_{ANT})$  dBi
6. Worst e.i.r.p Case Scenario gain antenna was selected to perform all RF testing that can get maximum power setting. And High gain antenna power setting will be reduced according to difference value of antenna gain declared by applicant.
7. Applied antenna gain as below:

Rated Power / Path (dBm/10MHz)	Antenna gain (dBi)	Directional gain (dBi)	External Loss (dB)	Applied Antenna gain (dBi)
36 (2 dB Power Boosting)	7.1	10.1	0.1	10.0
35 (1 dB Power Boosting)	8.1	11.1	0.1	11.0
34 (None Power Boosting)	9.6	12.6	0.6	12.0

Note: Applied Antenna gain = Direction gain - External Loss

8. Sample Calculation:  
Let us assume the following numbers:
  - a) Total MIMO Conducted Power as 4516.82 mW
  - b) Antenna Gain = 10.00 dBi

Factors	Value	Unit
Summed MIMO Conducted Power (linear sum)	4516.82	mW
Summed MIMO Conducted Power (dBm) = $10 * \log(4516.82) =$	36.55	dBm/10MHz
Antenna Gain	10.00	dBi
<b>Total MIMO EIRP</b>	<b>46.55</b>	<b>dBm/10MHz</b>

FCC: A3LRT4401-48A1		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 8K21101306-R4.A3L	Test Dates: 10/20/2021 – 04/05/2022	EUT Type: RRU(RT4401)		Page 253 of 286

Channel	Port	QPSK	16QAM	64QAM	256QAM
Low	0	29.89	30.18	30.13	30.17
	1	29.87	29.98	30.09	30.11
	2	29.95	30.12	30.12	30.27
	3	29.98	29.95	30.22	30.22
	Total Conducted Power (mW)	3929.46	4054.29	4131.30	4181.68
	Total Conducted Power(dBm)	35.94	36.08	36.16	36.21
	Ant. Gain (dBi)	10.00	10.00	10.00	10.00
Mid	e.i.r.p (dBm/MHz)	45.94	46.08	46.16	46.21
	0	29.97	30.21	30.07	<b>30.33</b>
	1	30.17	30.12	30.09	<b>30.52</b>
	2	30.14	30.45	30.09	<b>30.49</b>
	3	30.39	30.44	30.28	<b>30.76</b>
	Total Conducted Power (mW)	4159.75	4293.36	4124.72	<b>4516.82</b>
	Total Conducted Power(dBm)	36.19	36.33	36.15	<b>36.55</b>
High	Ant. Gain (dBi)	10.00	10.00	10.00	<b>10.00</b>
	e.i.r.p (dBm/MHz)	46.19	46.33	46.15	<b>46.55</b>
	0	<b>30.10</b>	30.01	30.16	30.16
	1	<b>30.22</b>	30.07	30.31	30.19
	2	<b>30.30</b>	30.27	30.36	30.33
	3	<b>30.47</b>	30.17	30.52	30.50
	Total Conducted Power (mW)	<b>4261.07</b>	4122.62	4325.14	4283.21
Total Conducted Power(dBm)	<b>36.30</b>	36.15	36.36	36.32	
Ant. Gain (dBi)	<b>10.00</b>	10.00	10.00	10.00	
e.i.r.p (dBm/MHz)	<b>46.30</b>	46.15	46.36	46.32	

**Table 10-1. Conducted Average Output Power Table (LTE\_B48\_1C\_10M)**

Channel	Port	QPSK	16QAM	64QAM	256QAM
Low	0	31.82	31.84	31.70	31.86
	1	31.78	31.65	31.66	31.85
	2	31.90	31.84	31.63	31.99
	3	31.83	31.83	31.60	31.97
	Total Conducted Power (mW)	6100.02	6041.36	5845.56	6220.94
	Total Conducted Power(dBm)	37.85	37.81	37.67	37.94
	Ant. Gain (dBi)	10.00	10.00	10.00	10.00
Mid	e.i.r.p (dBm/MHz)	47.85	47.81	47.67	47.94
	0	<b>32.17</b>	31.96	31.97	<b>32.02</b>
	1	<b>32.24</b>	32.13	32.13	<b>32.26</b>
	2	<b>32.30</b>	32.09	32.11	<b>32.32</b>
	3	<b>32.56</b>	32.39	32.25	<b>32.31</b>
	Total Conducted Power (mW)	<b>6824.37</b>	6555.30	6511.39	<b>6683.12</b>
	Total Conducted Power(dBm)	<b>38.34</b>	38.17	38.14	<b>38.25</b>
High	Ant. Gain (dBi)	<b>10.00</b>	10.00	10.00	<b>10.00</b>
	e.i.r.p (dBm/MHz)	<b>48.34</b>	48.17	48.14	<b>48.25</b>
	0	31.79	32.01	31.68	31.47
	1	31.92	31.96	31.85	31.74
	2	32.10	32.20	31.96	31.92
	3	32.16	32.21	32.06	32.12
	Total Conducted Power (mW)	6332.23	6481.91	6180.70	6080.87
Total Conducted Power(dBm)	38.02	38.12	37.91	37.84	
Ant. Gain (dBi)	10.00	10.00	10.00	10.00	
e.i.r.p (dBm/MHz)	48.02	48.12	47.91	47.84	

**Table 10-2. Conducted Average Output Power Table (LTE\_B48\_1C\_15M)**

FCC: A3LRT4401-48A1		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 8K21101306-R4.A3L	Test Dates: 10/20/2021 – 04/05/2022	EUT Type: RRU(RT4401)		Page 254 of 286

Channel	Port	QPSK	16QAM	64QAM	256QAM
Low	0	32.84	33.11	33.08	32.96
	1	32.72	32.96	32.97	32.79
	2	32.86	33.14	32.96	32.78
	3	33.12	33.12	32.93	32.89
	Total Conducted Power (mW)	7776.90	8135.21	7954.21	7720.11
	Total Conducted Power(dBm)	38.91	39.10	39.01	38.88
	Ant. Gain (dBi)	10.00	10.00	10.00	10.00
	e.i.r.p (dBm/MHz)	48.91	49.10	49.01	48.88
Mid	0	32.95	<b>33.55</b>	33.28	33.04
	1	33.07	<b>33.68</b>	33.40	33.21
	2	33.03	<b>33.65</b>	33.42	33.14
	3	33.27	<b>33.83</b>	33.60	33.35
	Total Conducted Power (mW)	8132.44	<b>9330.96</b>	8804.63	8331.19
	Total Conducted Power(dBm)	39.10	<b>39.70</b>	39.45	39.21
	Ant. Gain (dBi)	10.00	<b>10.00</b>	10.00	10.00
	e.i.r.p (dBm/MHz)	49.10	<b>49.70</b>	49.45	49.21
High	0	<b>33.08</b>	33.34	33.25	33.36
	1	<b>33.12</b>	33.27	33.37	33.47
	2	<b>33.24</b>	33.49	33.47	33.55
	3	<b>33.11</b>	33.20	33.33	33.44
	Total Conducted Power (mW)	<b>8238.59</b>	8603.86	8662.28	8863.66
	Total Conducted Power(dBm)	<b>39.16</b>	39.35	39.38	39.48
	Ant. Gain (dBi)	<b>10.00</b>	10.00	10.00	10.00
	e.i.r.p (dBm/MHz)	<b>49.16</b>	49.35	49.38	49.48

**Table 10-3. Conducted Average Output Power Table (LTE\_B48\_1C\_20M)**

Channel	Port	QPSK	16QAM	64QAM	256QAM
Low	0	32.18	32.18	32.74	31.74
	1	31.98	32.10	32.51	31.70
	2	32.13	32.19	32.61	31.90
	3	32.28	32.34	32.51	32.00
	Total Conducted Power (mW)	6553.07	6643.50	7267.97	6105.61
	Total Conducted Power(dBm)	38.16	38.22	38.61	37.86
	Ant. Gain (dBi)	11.00	11.00	11.00	11.00
	e.i.r.p (dBm/MHz)	49.16	49.22	49.61	48.86
Mid	0	<b>32.31</b>	<b>32.79</b>	32.57	32.26
	1	<b>32.42</b>	<b>32.76</b>	32.68	32.46
	2	<b>32.38</b>	<b>32.84</b>	32.68	32.44
	3	<b>32.62</b>	<b>32.95</b>	32.88	32.65
	Total Conducted Power (mW)	<b>7005.90</b>	<b>7684.58</b>	7455.12	7039.30
	Total Conducted Power(dBm)	<b>38.45</b>	<b>38.86</b>	38.72	38.48
	Ant. Gain (dBi)	<b>11.00</b>	<b>11.00</b>	11.00	11.00
	e.i.r.p (dBm/MHz)	<b>49.45</b>	<b>49.86</b>	49.72	49.48
High	0	32.22	32.11	32.40	32.38
	1	32.32	32.07	32.51	32.49
	2	32.42	32.20	32.52	32.60
	3	32.60	32.19	32.61	32.78
	Total Conducted Power (mW)	6938.85	6551.55	7130.56	7220.41
	Total Conducted Power(dBm)	38.41	38.16	38.53	38.59
	Ant. Gain (dBi)	11.00	11.00	11.00	11.00
	e.i.r.p (dBm/MHz)	49.41	49.16	49.53	49.59

**Table 10-4. Conducted Average Output Power Table (LTE\_B48\_2C\_10M+10M)**

FCC: A3LRT4401-48A1		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 8K21101306-R4.A3L	Test Dates: 10/20/2021 – 04/05/2022	EUT Type: RRU(RT4401)		Page 255 of 286

Channel	Port	QPSK	16QAM	64QAM	256QAM
Low	0	33.13	33.01	33.11	33.12
	1	33.10	33.00	33.12	33.04
	2	33.12	33.03	33.13	33.04
	3	33.16	33.06	33.25	33.13
	Total Conducted Power (mW)	8218.93	8027.24	8266.99	8134.50
	Total Conducted Power(dBm)	39.15	39.05	39.17	39.10
	Ant. Gain (dBi)	11.00	11.00	11.00	11.00
	e.i.r.p (dBm/MHz)	50.15	50.05	50.17	50.10
Mid	0	<b>33.07</b>	33.09	<b>33.20</b>	33.05
	1	<b>33.19</b>	32.92	<b>33.14</b>	32.94
	2	<b>33.27</b>	33.01	<b>33.21</b>	32.99
	3	<b>33.36</b>	32.99	<b>33.27</b>	33.02
	Total Conducted Power (mW)	<b>8403.12</b>	7986.42	<b>8367.28</b>	7981.40
	Total Conducted Power(dBm)	<b>39.24</b>	39.02	<b>39.23</b>	39.02
	Ant. Gain (dBi)	<b>11.00</b>	11.00	<b>11.00</b>	11.00
	e.i.r.p (dBm/MHz)	<b>50.24</b>	50.02	<b>50.23</b>	50.02
High	0	33.16	32.81	33.08	32.98
	1	33.05	32.80	33.03	32.92
	2	33.12	32.91	33.19	33.08
	3	33.17	32.98	33.22	33.00
	Total Conducted Power (mW)	8214.58	7755.75	8224.88	7972.56
	Total Conducted Power(dBm)	39.15	38.90	39.15	39.02
	Ant. Gain (dBi)	11.00	11.00	11.00	11.00
	e.i.r.p (dBm/MHz)	50.15	49.90	50.15	50.02

**Table 10-5. Conducted Average Output Power Table (LTE\_B48\_2C\_10M+15M)**

Channel	Port	QPSK	16QAM	64QAM	256QAM
Low	0	33.75	33.78	33.83	33.80
	1	33.75	33.74	33.87	33.84
	2	33.83	33.82	33.71	33.82
	3	33.71	33.77	33.79	33.81
	Total Conducted Power (mW)	9507.84	9545.96	9596.22	9634.13
	Total Conducted Power(dBm)	39.78	39.80	39.82	39.84
	Ant. Gain (dBi)	11.00	11.00	11.00	11.00
	e.i.r.p (dBm/MHz)	50.78	50.80	50.82	50.84
Mid	0	33.68	33.73	33.64	33.55
	1	33.62	33.71	33.62	33.46
	2	33.69	33.71	33.65	33.54
	3	33.67	33.84	33.70	33.51
	Total Conducted Power (mW)	9301.83	9480.77	9275.13	8986.16
	Total Conducted Power(dBm)	39.69	39.77	39.67	39.54
	Ant. Gain (dBi)	11.00	11.00	11.00	11.00
	e.i.r.p (dBm/MHz)	50.69	50.77	50.67	50.54
High	0	<b>34.05</b>	33.76	<b>33.99</b>	33.98
	1	<b>33.91</b>	33.77	<b>33.99</b>	33.91
	2	<b>34.14</b>	33.89	<b>34.11</b>	34.02
	3	<b>34.14</b>	33.84	<b>34.08</b>	34.03
	Total Conducted Power (mW)	<b>10189.70</b>	9629.25	<b>10147.13</b>	10013.49
	Total Conducted Power(dBm)	<b>40.08</b>	39.84	<b>40.06</b>	40.01
	Ant. Gain (dBi)	<b>11.00</b>	11.00	<b>11.00</b>	11.00
	e.i.r.p (dBm/MHz)	<b>51.08</b>	50.84	<b>51.06</b>	51.01

**Table 10-6. Conducted Average Output Power Table (LTE\_B48\_2C\_15M+15M)**

FCC: A3LRT4401-48A1		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 8K21101306-R4.A3L	Test Dates: 10/20/2021 – 04/05/2022	EUT Type: RRU(RT4401)		Page 256 of 286



Channel	Port	QPSK	16QAM	64QAM	256QAM
Low	0	<b>35.47</b>	35.60	35.54	<b>35.76</b>
	1	<b>35.46</b>	35.53	35.61	<b>35.74</b>
	2	<b>35.60</b>	35.78	35.44	<b>35.85</b>
	3	<b>35.60</b>	35.66	35.46	<b>35.89</b>
	Total Conducted Power (mW)	<b>14300.87</b>	14669.22	14235.17	<b>15244.19</b>
	Total Conducted Power(dBm)	<b>41.55</b>	41.66	41.53	<b>41.83</b>
	Ant. Gain (dBi)	<b>11.00</b>	11.00	11.00	<b>11.00</b>
Mid	e.i.r.p (dBm/MHz)	<b>52.55</b>	52.66	52.53	<b>52.83</b>
	0	35.31	35.33	35.08	35.64
	1	35.40	35.39	35.14	35.75
	2	35.40	35.47	35.25	35.85
	3	35.44	35.53	35.16	35.80
	Total Conducted Power (mW)	13830.44	13967.76	13117.55	15070.56
	Total Conducted Power(dBm)	41.41	41.45	41.18	41.78
High	Ant. Gain (dBi)	11.00	11.00	11.00	11.00
	e.i.r.p (dBm/MHz)	52.41	52.45	52.18	52.78
	0	35.19	35.09	35.35	35.17
	1	35.26	34.95	35.44	35.17
	2	35.41	35.29	35.61	35.33
	3	35.30	35.03	35.50	35.19
	Total Conducted Power (mW)	13524.87	12919.42	14114.41	13292.66
Total Conducted Power(dBm)	41.31	41.11	41.50	41.24	
Ant. Gain (dBi)	11.00	11.00	11.00	11.00	
e.i.r.p (dBm/MHz)	52.31	52.11	52.50	52.24	

**Table 10-7. Conducted Average Output Power Table (LTE\_B48\_2C\_20M+20M)**

Channel	Port	QPSK	16QAM	64QAM	256QAM
Low	0	34.18	34.09	34.23	34.02
	1	34.10	34.08	34.14	34.07
	2	34.36	34.20	34.38	34.13
	3	34.40	34.27	34.14	34.12
	Total Conducted Power (mW)	10671.79	10426.34	10578.43	10246.66
	Total Conducted Power(dBm)	40.28	40.18	40.24	40.11
	Ant. Gain (dBi)	11.00	11.00	11.00	11.00
Mid	e.i.r.p (dBm/MHz)	51.28	51.18	51.24	51.11
	0	<b>34.64</b>	34.47	<b>34.58</b>	34.55
	1	<b>34.55</b>	34.33	<b>34.55</b>	34.42
	2	<b>34.86</b>	34.46	<b>34.63</b>	34.72
	3	<b>34.63</b>	34.48	<b>34.59</b>	34.60
	Total Conducted Power (mW)	<b>11727.72</b>	11107.15	<b>11503.22</b>	11466.82
	Total Conducted Power(dBm)	<b>40.69</b>	40.46	<b>40.61</b>	40.59
High	Ant. Gain (dBi)	11.00	11.00	11.00	11.00
	e.i.r.p (dBm/MHz)	51.69	51.46	51.61	51.59
	0	34.20	34.30	34.19	34.21
	1	34.10	34.14	34.21	34.20
	2	34.25	34.60	34.33	34.40
	3	34.19	34.28	34.32	34.34
	Total Conducted Power (mW)	10485.61	10848.91	10674.70	10737.27
Total Conducted Power(dBm)	40.21	40.35	40.28	40.31	
Ant. Gain (dBi)	11.00	11.00	11.00	11.00	
e.i.r.p (dBm/MHz)	51.21	51.35	51.28	51.31	

**Table 10-8. Conducted Average Output Power Table (LTE\_B48\_3C\_10M+10M+15M)**

FCC: A3LRT4401-48A1		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 8K21101306-R4.A3L	Test Dates: 10/20/2021 – 04/05/2022	EUT Type: RRU(RT4401)		Page 257 of 286

Channel	Port	QPSK	16QAM	64QAM	256QAM
Low	0	35.73	35.66	<b>35.80</b>	35.57
	1	35.65	35.66	<b>35.89</b>	35.73
	2	35.78	35.69	<b>35.66</b>	35.81
	3	35.67	35.77	<b>35.81</b>	35.81
	Total Conducted Power (mW)	14888.13	14845.11	<b>15175.35</b>	14968.21
	Total Conducted Power(dBm)	41.73	41.72	<b>41.81</b>	41.75
	Ant. Gain (dBi)	11.00	11.00	<b>11.00</b>	11.00
Mid	e.i.r.p (dBm/MHz)	52.73	52.72	<b>52.81</b>	52.75
	0	<b>35.82</b>	35.67	35.72	35.66
	1	<b>35.78</b>	35.49	35.72	35.59
	2	<b>35.88</b>	35.66	35.67	35.66
	3	<b>35.87</b>	35.57	35.75	35.70
	Total Conducted Power (mW)	<b>15340.11</b>	14516.83	14913.15	14700.36
	Total Conducted Power(dBm)	<b>41.86</b>	41.62	41.74	41.67
High	Ant. Gain (dBi)	<b>11.00</b>	11.00	11.00	11.00
	e.i.r.p (dBm/MHz)	<b>52.86</b>	52.62	52.74	52.67
	0	35.48	35.31	35.45	35.45
	1	35.43	35.44	35.40	35.36
	2	35.50	35.43	35.51	35.48
	3	35.55	35.51	35.58	35.46
	Total Conducted Power (mW)	14160.59	13943.42	14145.30	13990.53
Total Conducted Power(dBm)	41.51	41.44	41.51	41.46	
Ant. Gain (dBi)	11.00	11.00	11.00	11.00	
e.i.r.p (dBm/MHz)	52.51	52.44	52.51	52.46	

**Table 10-9. Conducted Average Output Power Table (LTE\_B48\_3C\_10M+15M+20M)**

Channel	Port	QPSK	16QAM	64QAM	256QAM
Low	0	36.14	36.21	<b>36.23</b>	36.07
	1	36.03	36.15	<b>36.28</b>	36.08
	2	36.08	36.14	<b>36.28</b>	36.05
	3	36.15	36.24	<b>36.31</b>	36.14
	Total Conducted Power (mW)	16296.22	16618.04	<b>16965.61</b>	16239.51
	Total Conducted Power(dBm)	42.12	42.21	<b>42.30</b>	42.11
	Ant. Gain (dBi)	11.00	11.00	<b>11.00</b>	11.00
Mid	e.i.r.p (dBm/MHz)	53.12	53.21	<b>53.30</b>	53.11
	0	<b>36.21</b>	36.14	36.03	35.99
	1	<b>36.17</b>	36.05	35.93	35.93
	2	<b>36.25</b>	36.17	36.08	36.02
	3	<b>36.27</b>	36.21	36.04	36.02
	Total Conducted Power (mW)	<b>16771.70</b>	16456.97	15999.08	15888.23
	Total Conducted Power(dBm)	<b>42.25</b>	42.16	42.04	42.01
High	Ant. Gain (dBi)	<b>11.00</b>	11.00	11.00	11.00
	e.i.r.p (dBm/MHz)	<b>53.25</b>	53.16	53.04	53.01
	0	35.94	35.98	35.99	36.07
	1	35.84	35.91	35.85	36.03
	2	36.06	36.09	36.10	36.12
	3	36.10	36.07	36.08	36.19
	Total Conducted Power (mW)	15873.78	15972.39	15946.72	16306.14
Total Conducted Power(dBm)	42.01	42.03	42.03	42.12	
Ant. Gain (dBi)	11.00	11.00	11.00	11.00	
e.i.r.p (dBm/MHz)	53.01	53.03	53.03	53.12	

**Table 10-10. Conducted Average Output Power Table (LTE\_B48\_3C\_10M+20M+20M)**

FCC: A3LRT4401-48A1		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 8K21101306-R4.A3L	Test Dates: 10/20/2021 – 04/05/2022	EUT Type: RRU(RT4401)		Page 258 of 286

Channel	Port	QPSK	16QAM	64QAM	256QAM
Low	0	<b>36.46</b>	<b>36.63</b>	36.61	36.39
	1	<b>36.44</b>	<b>36.57</b>	36.55	36.50
	2	<b>36.50</b>	<b>36.67</b>	36.62	36.56
	3	<b>36.52</b>	<b>36.69</b>	36.63	36.45
	Total Conducted Power (mW)	<b>17785.72</b>	<b>18453.73</b>	18294.52	17766.63
	Total Conducted Power(dBm)	<b>42.50</b>	<b>42.66</b>	42.62	42.50
	Ant. Gain (dBi)	<b>11.00</b>	<b>11.00</b>	11.00	11.00
Mid	e.i.r.p (dBm/MHz)	<b>53.50</b>	<b>53.66</b>	53.62	53.50
	0	36.47	36.39	36.48	36.25
	1	36.37	36.34	36.44	36.36
	2	36.41	36.38	36.49	36.38
	3	36.43	36.42	36.53	36.40
	Total Conducted Power (mW)	17541.83	17390.79	17806.22	17252.36
	Total Conducted Power(dBm)	42.44	42.40	42.51	42.37
High	Ant. Gain (dBi)	11.00	11.00	11.00	11.00
	e.i.r.p (dBm/MHz)	53.44	53.40	53.51	53.37
	0	36.36	36.31	36.27	36.28
	1	36.38	36.31	36.23	36.22
	2	36.50	36.49	36.42	36.39
	3	36.56	36.46	36.42	36.46
	Total Conducted Power (mW)	17666.05	17433.70	17204.63	17215.13
Total Conducted Power(dBm)	42.47	42.41	42.36	42.36	
Ant. Gain (dBi)	11.00	11.00	11.00	11.00	
e.i.r.p (dBm/MHz)	53.47	53.41	53.36	53.36	

**Table 10-11. Conducted Average Output Power Table (LTE\_B48\_3C\_15M+20M+20M)**

Channel	Port	QPSK	16QAM	64QAM	256QAM
Low	0	36.70	36.31	36.49	36.65
	1	36.61	36.43	36.47	36.57
	2	36.60	36.46	36.64	36.80
	3	36.80	36.31	36.58	36.75
	Total Conducted Power (mW)	18615.95	17372.56	18055.71	18681.04
	Total Conducted Power(dBm)	42.70	42.40	42.57	42.71
	Ant. Gain (dBi)	11.00	11.00	11.00	11.00
Mid	e.i.r.p (dBm/MHz)	53.70	53.40	53.57	53.71
	0	36.79	36.43	36.65	<b>36.98</b>
	1	36.76	36.42	36.62	<b>36.97</b>
	2	36.75	36.52	36.82	<b>37.12</b>
	3	36.95	36.47	36.72	<b>37.12</b>
	Total Conducted Power (mW)	19203.73	17704.26	18723.12	<b>20270.79</b>
	Total Conducted Power(dBm)	42.83	42.48	42.72	<b>43.07</b>
High	Ant. Gain (dBi)	11.00	11.00	11.00	<b>11.00</b>
	e.i.r.p (dBm/MHz)	53.83	53.48	53.72	<b>54.07</b>
	0	<b>36.88</b>	36.76	36.63	36.95
	1	<b>36.86</b>	36.86	36.62	36.98
	2	<b>36.90</b>	36.86	36.85	36.95
	3	<b>37.07</b>	37.02	36.83	37.04
	Total Conducted Power (mW)	<b>19719.27</b>	19483.20	18855.75	19956.10
Total Conducted Power(dBm)	<b>42.95</b>	42.90	42.75	43.00	
Ant. Gain (dBi)	<b>11.00</b>	11.00	11.00	11.00	
e.i.r.p (dBm/MHz)	<b>53.95</b>	53.90	53.75	54.00	

**Table 10-12. Conducted Average Output Power Table (LTE\_B48\_3C\_20M+20M+20M)**

FCC: A3LRT4401-48A1		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 8K21101306-R4.A3L	Test Dates: 10/20/2021 – 04/05/2022	EUT Type: RRU(RT4401)		Page 259 of 286

Channel	Port	QPSK	16QAM	64QAM	256QAM
Low	0	34.17	34.12	34.14	34.10
	1	34.24	34.10	34.24	34.24
	2	34.17	34.35	34.10	34.01
	3	34.18	34.27	34.19	34.19
	Total Conducted Power (mW)	10497.11	10548.36	10443.40	10366.90
	Total Conducted Power(dBm)	40.21	40.23	40.19	40.16
	Ant. Gain (dBi)	12.00	12.00	12.00	12.00
Mid	e.i.r.p (dBm/MHz)	52.21	52.23	52.19	52.16
	0	34.08	34.20	34.00	34.27
	1	34.32	34.28	34.20	34.34
	2	34.10	34.18	34.03	34.05
	3	34.19	34.27	34.11	34.16
	Total Conducted Power (mW)	10457.16	10600.63	10247.77	10536.57
	Total Conducted Power(dBm)	40.19	40.25	40.11	40.23
High	Ant. Gain (dBi)	12.00	12.00	12.00	12.00
	e.i.r.p (dBm/MHz)	52.19	52.25	52.11	52.23
	0	<b>34.33</b>	<b>34.18</b>	34.38	34.13
	1	<b>34.19</b>	<b>34.37</b>	34.15	34.32
	2	<b>34.09</b>	<b>34.20</b>	34.07	34.16
	3	<b>34.26</b>	<b>34.33</b>	34.26	34.15
	Total Conducted Power (mW)	<b>10565.75</b>	<b>10693.91</b>	10561.29	10498.48
Total Conducted Power(dBm)	<b>40.24</b>	<b>40.29</b>	40.24	40.21	
Ant. Gain (dBi)	<b>12.00</b>	<b>12.00</b>	12.00	12.00	
e.i.r.p (dBm/MHz)	<b>52.24</b>	<b>52.29</b>	52.24	52.21	

**Table 10-13. Conducted Average Output Power Table (LTE\_B48\_4C\_10M+10M+10M+10M)**

Channel	Port	QPSK	16QAM	64QAM	256QAM
Low	0	<b>36.39</b>	36.32	36.25	36.46
	1	<b>36.34</b>	36.17	36.27	36.26
	2	<b>36.42</b>	36.32	36.36	36.39
	3	<b>36.34</b>	36.29	36.25	36.41
	Total Conducted Power (mW)	<b>17350.96</b>	16966.95	16995.50	17382.91
	Total Conducted Power(dBm)	<b>42.39</b>	42.30	42.30	42.40
	Ant. Gain (dBi)	<b>12.00</b>	12.00	12.00	12.00
Mid	e.i.r.p (dBm/MHz)	<b>54.39</b>	54.30	54.30	54.40
	0	36.24	36.21	36.21	36.33
	1	36.30	36.31	36.31	36.38
	2	36.28	36.20	36.16	36.23
	3	36.21	36.15	36.17	36.22
	Total Conducted Power (mW)	16897.56	16743.60	16724.40	17025.99
	Total Conducted Power(dBm)	42.28	42.24	42.23	42.31
High	Ant. Gain (dBi)	12.00	12.00	12.00	12.00
	e.i.r.p (dBm/MHz)	54.28	54.24	54.23	54.31
	0	36.35	<b>36.42</b>	36.22	36.27
	1	36.32	<b>36.43</b>	36.24	36.27
	2	36.27	<b>36.39</b>	36.24	36.26
	3	36.22	<b>36.34</b>	36.21	36.20
	Total Conducted Power (mW)	17025.04	<b>17441.11</b>	16780.77	16868.24
Total Conducted Power(dBm)	42.31	<b>42.42</b>	42.25	42.27	
Ant. Gain (dBi)	12.00	<b>12.00</b>	12.00	12.00	
e.i.r.p (dBm/MHz)	54.31	<b>54.42</b>	54.25	54.27	

**Table 10-14. Conducted Average Output Power Table (LTE\_B48\_4C\_10M+15M+20M+20M)**

FCC: A3LRT4401-48A1		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 8K21101306-R4.A3L	Test Dates: 10/20/2021 – 04/05/2022	EUT Type: RRU(RT4401)		Page 260 of 286

Channel	Port	QPSK	16QAM	64QAM	256QAM
Low	0	36.58	36.51	36.50	36.70
	1	36.64	36.49	36.57	36.78
	2	36.52	36.52	36.56	36.63
	3	36.69	36.61	36.67	36.51
	Total Conducted Power (mW)	18317.10	18002.57	18180.38	18521.36
	Total Conducted Power(dBm)	42.63	42.55	42.60	42.68
	Ant. Gain (dBi)	12.00	12.00	12.00	12.00
	e.i.r.p (dBm/MHz)	54.63	54.55	54.60	54.68
Mid	0	36.58	36.59	36.72	36.70
	1	36.75	36.65	36.48	36.59
	2	36.58	36.51	36.67	36.63
	3	36.81	36.75	36.50	36.67
	Total Conducted Power (mW)	18628.61	18392.83	18257.24	18485.44
	Total Conducted Power(dBm)	42.70	42.65	42.61	42.67
	Ant. Gain (dBi)	12.00	12.00	12.00	12.00
	e.i.r.p (dBm/MHz)	54.70	54.65	54.61	54.67
High	0	<b>36.89</b>	36.64	<b>36.47</b>	36.59
	1	<b>36.54</b>	36.75	<b>36.82</b>	36.49
	2	<b>36.77</b>	36.52	<b>36.60</b>	36.59
	3	<b>36.57</b>	36.76	<b>36.87</b>	36.52
	Total Conducted Power (mW)	<b>18687.46</b>	18574.56	<b>18679.43</b>	18064.75
	Total Conducted Power(dBm)	<b>42.72</b>	42.69	<b>42.71</b>	42.57
	Ant. Gain (dBi)	<b>12.00</b>	12.00	<b>12.00</b>	12.00
	e.i.r.p (dBm/MHz)	<b>54.72</b>	54.69	<b>54.71</b>	54.57

**Table 10-15. Conducted Average Output Power Table (LTE\_B48\_4C\_10M+20M+20M+20M)**

Channel	Port	QPSK	16QAM	64QAM	256QAM
Low	0	36.76	36.80	36.83	36.85
	1	36.88	36.87	36.89	36.78
	2	36.76	36.82	36.86	36.82
	3	36.96	36.97	36.89	36.90
	Total Conducted Power (mW)	19326.05	19436.14	19445.41	19312.22
	Total Conducted Power(dBm)	42.86	42.89	42.89	42.86
	Ant. Gain (dBi)	12.00	12.00	12.00	12.00
	e.i.r.p (dBm/MHz)	54.86	54.89	54.89	54.86
Mid	0	36.92	36.87	<b>36.95</b>	36.97
	1	36.99	36.84	<b>37.03</b>	36.89
	2	36.84	36.82	<b>36.89</b>	36.79
	3	36.98	36.83	<b>36.96</b>	36.84
	Total Conducted Power (mW)	19740.17	19322.53	<b>19853.56</b>	19469.78
	Total Conducted Power(dBm)	42.95	42.86	<b>42.98</b>	42.89
	Ant. Gain (dBi)	12.00	12.00	<b>12.00</b>	12.00
	e.i.r.p (dBm/MHz)	54.95	54.86	<b>54.98</b>	54.89
High	0	<b>36.97</b>	36.79	36.86	36.83
	1	<b>37.08</b>	36.92	36.97	36.90
	2	<b>37.01</b>	36.85	36.84	36.95
	3	<b>37.02</b>	36.82	36.82	37.00
	Total Conducted Power (mW)	<b>20140.85</b>	19345.81	19469.24	19683.64
	Total Conducted Power(dBm)	<b>43.04</b>	42.87	42.89	42.94
	Ant. Gain (dBi)	<b>12.00</b>	12.00	12.00	12.00
	e.i.r.p (dBm/MHz)	<b>55.04</b>	54.87	54.89	54.94

**Table 10-16. Conducted Average Output Power Table (LTE\_B48\_4C\_15M+20M+20M+20M)**

FCC: A3LRT4401-48A1		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 8K21101306-R4.A3L	Test Dates: 10/20/2021 – 04/05/2022	EUT Type: RRU(RT4401)		Page 261 of 286

Channel	Port	QPSK	16QAM	64QAM	256QAM
Low	0	<b>37.15</b>	37.23	37.11	37.10
	1	<b>37.31</b>	37.34	37.16	37.15
	2	<b>37.25</b>	37.25	37.22	37.15
	3	<b>37.37</b>	37.34	37.27	37.23
	Total Conducted Power (mW)	<b>21337.12</b>	21433.31	20946.04	20789.07
	Total Conducted Power(dBm)	<b>43.29</b>	43.31	43.21	43.18
	Ant. Gain (dBi)	<b>12.00</b>	12.00	12.00	12.00
Mid	e.i.r.p (dBm/MHz)	<b>55.29</b>	55.31	55.21	55.18
	0	37.14	37.26	37.27	37.23
	1	37.29	37.33	37.12	37.11
	2	37.19	37.22	37.14	37.13
	3	37.37	37.30	37.26	37.17
	Total Conducted Power (mW)	21227.62	21371.24	20982.79	20801.00
	Total Conducted Power(dBm)	43.27	43.30	43.22	43.18
High	Ant. Gain (dBi)	12.00	12.00	12.00	12.00
	e.i.r.p (dBm/MHz)	55.27	55.30	55.22	55.18
	0	37.16	37.22	<b>37.23</b>	37.21
	1	37.17	37.40	<b>37.36</b>	37.21
	2	37.05	37.19	<b>37.26</b>	37.15
	3	37.19	37.38	<b>37.37</b>	37.14
	Total Conducted Power (mW)	20717.82	21473.87	<b>21508.14</b>	20884.41
Total Conducted Power(dBm)	43.16	43.32	<b>43.33</b>	43.20	
Ant. Gain (dBi)	12.00	12.00	<b>12.00</b>	12.00	
e.i.r.p (dBm/MHz)	55.16	55.32	<b>55.33</b>	55.20	

**Table 10-17. Conducted Average Output Power Table (LTE\_B48\_4C\_20M+20M+20M+20M)**

Channel	Port	QPSK	16QAM	64QAM	256QAM
Low	0	30.11	30.18	<b>30.34</b>	30.16
	1	30.23	30.46	<b>30.37</b>	30.27
	2	30.30	30.27	<b>30.44</b>	30.36
	3	30.24	30.18	<b>30.31</b>	30.17
	Total Conducted Power (mW)	4208.38	4260.51	<b>4350.98</b>	4228.02
	Total Conducted Power(dBm)	36.24	36.29	<b>36.39</b>	36.26
	Ant. Gain (dBi)	10.00	10.00	<b>10.00</b>	10.00
Mid	e.i.r.p (dBm/MHz)	46.24	46.29	<b>46.39</b>	46.26
	0	<b>30.05</b>	30.13	30.03	29.99
	1	<b>30.35</b>	30.33	30.34	30.11
	2	<b>30.32</b>	30.30	30.32	30.06
	3	<b>30.28</b>	30.26	30.30	30.00
	Total Conducted Power (mW)	<b>4238.57</b>	4242.55	4236.35	4037.26
	Total Conducted Power(dBm)	<b>36.27</b>	36.28	36.27	36.06
High	Ant. Gain (dBi)	<b>10.00</b>	10.00	10.00	10.00
	e.i.r.p (dBm/MHz)	<b>46.27</b>	46.28	46.27	46.06
	0	30.16	30.26	30.02	30.05
	1	30.18	30.31	30.18	30.21
	2	30.27	30.49	30.35	30.39
	3	30.16	30.31	30.19	30.29
	Total Conducted Power (mW)	4181.52	4329.11	4175.58	4224.13
Total Conducted Power(dBm)	36.21	36.36	36.21	36.26	
Ant. Gain (dBi)	10.00	10.00	10.00	10.00	
e.i.r.p (dBm/MHz)	46.21	46.36	46.21	46.26	

**Table 10-18. Conducted Average Output Power Table (NR\_n48\_1C\_10M)**

FCC: A3LRT4401-48A1		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 8K21101306-R4.A3L	Test Dates: 10/20/2021 – 04/05/2022	EUT Type: RRU(RT4401)		Page 262 of 286

Channel	Port	QPSK	16QAM	64QAM	256QAM
Low	0	<b>33.14</b>	32.93	33.07	<b>33.22</b>
	1	<b>33.15</b>	32.96	33.13	<b>33.26</b>
	2	<b>33.33</b>	32.94	33.22	<b>33.25</b>
	3	<b>33.36</b>	33.19	33.29	<b>33.16</b>
	Total Conducted Power (mW)	<b>8446.50</b>	7992.71	8315.56	<b>8400.93</b>
	Total Conducted Power(dBm)	<b>39.27</b>	39.03	39.20	<b>39.24</b>
	Ant. Gain (dBi)	<b>10.00</b>	10.00	10.00	<b>10.00</b>
Mid	e.i.r.p (dBm/MHz)	<b>49.27</b>	49.03	49.20	<b>49.24</b>
	0	32.69	33.09	32.88	32.99
	1	32.64	32.65	32.87	33.11
	2	32.67	32.84	32.98	33.27
	3	33.11	32.77	32.84	33.06
	Total Conducted Power (mW)	7590.06	7693.25	7786.49	8183.38
	Total Conducted Power(dBm)	38.80	38.86	38.91	39.13
High	Ant. Gain (dBi)	10.00	10.00	10.00	10.00
	e.i.r.p (dBm/MHz)	48.80	48.86	48.91	49.13
	0	33.00	32.82	32.73	33.12
	1	33.01	32.60	32.42	32.71
	2	33.38	32.71	32.47	32.83
	3	33.31	32.56	32.60	32.52
	Total Conducted Power (mW)	8315.72	7403.35	7206.56	7622.70
Total Conducted Power(dBm)	39.20	38.69	38.58	38.82	
Ant. Gain (dBi)	10.00	10.00	10.00	10.00	
e.i.r.p (dBm/MHz)	49.20	48.69	48.58	48.82	

**Table 10-19. Conducted Average Output Power Table (NR\_n48\_1C\_20M)**

Channel	Port	QPSK	16QAM	64QAM	256QAM
Low	0	<b>34.03</b>	34.06	33.95	<b>34.08</b>
	1	<b>34.14</b>	34.19	34.12	<b>34.19</b>
	2	<b>34.06</b>	34.08	33.99	<b>34.08</b>
	3	<b>33.79</b>	33.83	33.79	<b>33.83</b>
	Total Conducted Power (mW)	<b>10063.62</b>	10145.10	9964.82	<b>10156.85</b>
	Total Conducted Power(dBm)	<b>40.03</b>	40.06	39.98	<b>40.07</b>
	Ant. Gain (dBi)	<b>11.00</b>	11.00	11.00	<b>11.00</b>
Mid	e.i.r.p (dBm/MHz)	<b>51.03</b>	51.06	50.98	<b>51.07</b>
	0	33.80	34.05	33.61	33.71
	1	33.86	34.01	33.68	33.79
	2	33.72	33.94	33.51	33.61
	3	33.64	33.74	33.36	33.55
	Total Conducted Power (mW)	9498.15	9901.99	9041.19	9303.74
	Total Conducted Power(dBm)	39.78	39.96	39.56	39.69
High	Ant. Gain (dBi)	11.00	11.00	11.00	11.00
	e.i.r.p (dBm/MHz)	50.78	50.96	50.56	50.69
	0	33.73	33.68	33.64	33.79
	1	33.73	33.76	33.77	33.89
	2	33.73	33.69	33.73	33.91
	3	33.48	33.55	33.61	33.69
	Total Conducted Power (mW)	9309.87	9313.78	9351.01	9641.58
Total Conducted Power(dBm)	39.69	39.69	39.71	39.84	
Ant. Gain (dBi)	11.00	11.00	11.00	11.00	
e.i.r.p (dBm/MHz)	50.69	50.69	50.71	50.84	

**Table 10-20. Conducted Average Output Power Table (NR\_n48\_1C\_30M)**

FCC: A3LRT4401-48A1		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 8K21101306-R4.A3L	Test Dates: 10/20/2021 – 04/05/2022	EUT Type: RRU(RT4401)		Page 263 of 286

Channel	Port	QPSK	16QAM	64QAM	256QAM
Low	0	<b>35.37</b>	35.35	35.05	35.21
	1	<b>35.40</b>	35.20	34.80	35.07
	2	<b>35.60</b>	35.56	35.22	35.43
	3	<b>35.51</b>	35.44	35.01	35.41
	Total Conducted Power (mW)	<b>14097.96</b>	13835.93	12715.01	13499.37
	Total Conducted Power(dBm)	<b>41.49</b>	41.41	41.04	41.30
	Ant. Gain (dBi)	<b>11.00</b>	11.00	11.00	11.00
Mid	e.i.r.p (dBm/MHz)	<b>52.49</b>	52.41	52.04	52.30
	0	35.06	<b>35.39</b>	35.02	35.15
	1	35.05	<b>35.35</b>	35.01	35.30
	2	35.42	<b>35.85</b>	35.14	35.40
	3	35.26	<b>35.54</b>	35.12	35.38
	Total Conducted Power (mW)	13245.91	<b>14313.95</b>	12863.19	13580.65
	Total Conducted Power(dBm)	41.22	<b>41.56</b>	41.09	41.33
High	Ant. Gain (dBi)	11.00	<b>11.00</b>	11.00	11.00
	e.i.r.p (dBm/MHz)	52.22	<b>52.56</b>	52.09	52.33
	0	34.76	34.72	34.41	34.54
	1	34.77	34.93	34.35	34.61
	2	35.11	35.04	34.73	34.68
	3	35.01	35.00	34.62	34.69
	Total Conducted Power (mW)	12404.39	12430.36	11352.29	11617.21
Total Conducted Power(dBm)	40.94	40.94	40.55	40.65	
Ant. Gain (dBi)	11.00	11.00	11.00	11.00	
e.i.r.p (dBm/MHz)	51.94	51.94	51.55	51.65	

**Table 10-21. Conducted Average Output Power Table (NR\_n48\_1C\_40M)**

Channel	Port	QPSK	16QAM	64QAM	256QAM
Low	0	32.22	31.98	32.12	32.23
	1	32.26	32.05	32.19	32.19
	2	32.22	32.08	32.10	32.21
	3	32.03	31.87	31.99	32.01
	Total Conducted Power (mW)	6613.05	6333.37	6488.12	6578.82
	Total Conducted Power(dBm)	38.20	38.02	38.12	38.18
	Ant. Gain (dBi)	11.00	11.00	11.00	11.00
Mid	e.i.r.p (dBm/MHz)	49.20	49.02	49.12	49.18
	0	32.19	32.17	32.21	<b>32.20</b>
	1	32.13	32.08	32.22	<b>32.19</b>
	2	32.15	32.12	32.17	<b>32.33</b>
	3	32.03	31.99	32.07	<b>32.25</b>
	Total Conducted Power (mW)	6525.29	6473.07	6589.47	<b>6704.18</b>
	Total Conducted Power(dBm)	38.15	38.11	38.19	<b>38.26</b>
High	Ant. Gain (dBi)	11.00	11.00	11.00	<b>11.00</b>
	e.i.r.p (dBm/MHz)	49.15	49.11	49.19	<b>49.26</b>
	0	<b>32.19</b>	31.98	32.11	32.10
	1	<b>32.25</b>	31.93	32.08	32.14
	2	<b>32.24</b>	31.93	32.18	32.15
	3	<b>32.17</b>	31.93	32.03	32.00
	Total Conducted Power (mW)	<b>6657.68</b>	6256.27	6487.75	6484.11
Total Conducted Power(dBm)	<b>38.23</b>	37.96	38.12	38.12	
Ant. Gain (dBi)	<b>11.00</b>	11.00	11.00	11.00	
e.i.r.p (dBm/MHz)	<b>49.23</b>	48.96	49.12	49.12	

**Table 10-22. Conducted Average Output Power Table (NR\_n48\_2C\_10M+10M)**

FCC: A3LRT4401-48A1		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 8K21101306-R4.A3L	Test Dates: 10/20/2021 – 04/05/2022	EUT Type: RRU(RT4401)		Page 264 of 286



Channel	Port	QPSK	16QAM	64QAM	256QAM
Low	0	<b>33.91</b>	<b>33.96</b>	33.66	33.69
	1	<b>34.01</b>	<b>33.92</b>	33.50	33.64
	2	<b>33.98</b>	<b>33.87</b>	33.72	33.77
	3	<b>33.95</b>	<b>33.64</b>	33.41	33.47
	Total Conducted Power (mW)	<b>9961.52</b>	<b>9704.77</b>	9109.31	9256.53
	Total Conducted Power(dBm)	<b>39.98</b>	<b>39.87</b>	39.59	39.66
	Ant. Gain (dBi)	<b>11.00</b>	<b>11.00</b>	11.00	11.00
Mid	e.i.r.p (dBm/MHz)	<b>50.98</b>	<b>50.87</b>	50.59	50.66
	0	33.85	33.70	33.80	33.75
	1	33.98	33.85	33.89	33.87
	2	34.00	33.75	33.78	33.77
	3	33.87	33.54	33.63	33.65
	Total Conducted Power (mW)	9876.65	9401.65	9542.45	9508.90
	Total Conducted Power(dBm)	39.95	39.73	39.80	39.78
High	Ant. Gain (dBi)	11.00	11.00	11.00	11.00
	e.i.r.p (dBm/MHz)	50.95	50.73	50.80	50.78
	0	33.77	33.76	33.75	33.58
	1	33.71	33.84	33.55	33.51
	2	33.81	33.81	33.64	33.60
	3	33.94	33.65	33.53	33.42
	Total Conducted Power (mW)	9613.74	9519.63	9202.32	9012.95
Total Conducted Power(dBm)	39.83	39.79	39.64	39.55	
Ant. Gain (dBi)	11.00	11.00	11.00	11.00	
e.i.r.p (dBm/MHz)	50.83	50.79	50.64	50.55	

**Table 10-23. Conducted Average Output Power Table (NR\_n48\_2C\_10M+20M)**

Channel	Port	QPSK	16QAM	64QAM	256QAM
Low	0	34.09	34.06	34.10	<b>34.14</b>
	1	34.19	34.30	34.25	<b>34.37</b>
	2	34.07	34.29	34.23	<b>34.32</b>
	3	33.85	34.01	34.04	<b>34.05</b>
	Total Conducted Power (mW)	10168.01	10441.39	10414.75	<b>10574.38</b>
	Total Conducted Power(dBm)	40.07	40.19	40.18	<b>40.24</b>
	Ant. Gain (dBi)	12.00	12.00	12.00	<b>12.00</b>
Mid	e.i.r.p (dBm/MHz)	52.07	52.19	52.18	<b>52.24</b>
	0	<b>34.15</b>	34.05	34.12	33.99
	1	<b>34.31</b>	34.10	34.24	34.14
	2	<b>34.18</b>	33.97	34.18	34.04
	3	<b>33.90</b>	33.80	33.96	33.87
	Total Conducted Power (mW)	<b>10370.79</b>	10004.80	10343.91	10073.23
	Total Conducted Power(dBm)	<b>40.16</b>	40.00	40.15	40.03
High	Ant. Gain (dBi)	<b>12.00</b>	12.00	12.00	12.00
	e.i.r.p (dBm/MHz)	<b>52.16</b>	52.00	52.15	52.03
	0	33.81	33.86	33.91	33.88
	1	33.88	33.88	33.97	33.89
	2	33.75	33.78	33.82	33.73
	3	33.61	33.68	33.73	33.67
	Total Conducted Power (mW)	9515.32	9596.90	9725.35	9581.06
Total Conducted Power(dBm)	39.78	39.82	39.88	39.81	
Ant. Gain (dBi)	12.00	12.00	12.00	12.00	
e.i.r.p (dBm/MHz)	51.78	51.82	51.88	51.81	

**Table 10-24. Conducted Average Output Power Table (NR\_n48\_2C\_10M+30M)**

FCC: A3LRT4401-48A1		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 8K21101306-R4.A3L	Test Dates: 10/20/2021 – 04/05/2022	EUT Type: RRU(RT4401)		Page 265 of 286

Channel	Port	QPSK	16QAM	64QAM	256QAM
Low	0	34.97	34.98	35.00	34.99
	1	35.10	35.14	34.95	35.02
	2	35.08	34.97	34.63	35.07
	3	34.91	34.86	34.85	34.82
	Total Conducted Power (mW)	12694.93	12616.10	12247.30	12579.43
	Total Conducted Power(dBm)	41.04	41.01	40.88	41.00
	Ant. Gain (dBi)	12.00	12.00	12.00	12.00
Mid	e.i.r.p (dBm/MHz)	53.04	53.01	52.88	53.00
	0	<b>35.10</b>	35.09	35.04	<b>35.08</b>
	1	<b>35.06</b>	35.15	35.08	<b>35.25</b>
	2	<b>35.24</b>	34.95	34.88	<b>35.03</b>
	3	<b>35.05</b>	34.59	34.52	<b>34.79</b>
	Total Conducted Power (mW)	<b>12983.05</b>	12505.38	12320.10	<b>12767.93</b>
	Total Conducted Power(dBm)	<b>41.13</b>	40.97	40.91	<b>41.06</b>
High	Ant. Gain (dBi)	<b>12.00</b>	12.00	12.00	<b>12.00</b>
	e.i.r.p (dBm/MHz)	<b>53.13</b>	52.97	52.91	<b>53.06</b>
	0	35.13	34.75	34.80	34.66
	1	34.86	34.76	34.81	34.69
	2	35.15	34.62	34.71	34.57
	3	35.03	34.52	34.46	34.60
	Total Conducted Power (mW)	12777.93	11706.38	11797.42	11616.78
Total Conducted Power(dBm)	41.06	40.68	40.72	40.65	
Ant. Gain (dBi)	12.00	12.00	12.00	12.00	
e.i.r.p (dBm/MHz)	53.06	52.68	52.72	52.65	

**Table 10-25. Conducted Average Output Power Table (NR\_n48\_2C\_10M+40M)**

Channel	Port	QPSK	16QAM	64QAM	256QAM
Low	0	<b>36.11</b>	35.95	<b>36.15</b>	36.19
	1	<b>36.24</b>	35.91	<b>36.32</b>	36.19
	2	<b>36.08</b>	35.82	<b>36.07</b>	36.16
	3	<b>35.80</b>	35.56	<b>35.86</b>	35.69
	Total Conducted Power (mW)	<b>16147.44</b>	15251.86	<b>16307.00</b>	16155.49
	Total Conducted Power(dBm)	<b>42.08</b>	41.83	<b>42.12</b>	42.08
	Ant. Gain (dBi)	<b>12.00</b>	12.00	<b>12.00</b>	12.00
Mid	e.i.r.p (dBm/MHz)	<b>54.08</b>	53.83	<b>54.12</b>	54.08
	0	35.78	35.77	35.73	35.72
	1	35.92	35.84	35.74	35.79
	2	35.80	35.79	35.77	35.89
	3	35.45	35.58	35.45	35.61
	Total Conducted Power (mW)	15002.25	15020.04	14774.08	15046.31
	Total Conducted Power(dBm)	41.76	41.77	41.70	41.77
High	Ant. Gain (dBi)	12.00	12.00	12.00	12.00
	e.i.r.p (dBm/MHz)	53.76	53.77	53.70	53.77
	0	35.63	36.04	35.87	35.81
	1	35.67	36.03	35.77	35.86
	2	35.71	36.05	35.91	35.89
	3	35.58	35.90	35.75	35.74
	Total Conducted Power (mW)	14683.74	15944.20	15297.19	15296.68
Total Conducted Power(dBm)	41.67	42.03	41.85	41.85	
Ant. Gain (dBi)	12.00	12.00	12.00	12.00	
e.i.r.p (dBm/MHz)	53.67	54.03	53.85	53.85	

**Table 10-26. Conducted Average Output Power Table (NR\_n48\_2C\_20M+40M)**

FCC: A3LRT4401-48A1		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 8K21101306-R4.A3L	Test Dates: 10/20/2021 – 04/05/2022	EUT Type: RRU(RT4401)		Page 266 of 286

Channel	Port	QPSK	16QAM	64QAM	256QAM
Low	0	36.68	36.59	36.62	<b>36.62</b>
	1	36.61	36.66	36.79	<b>36.72</b>
	2	36.73	36.55	36.66	<b>36.71</b>
	3	36.37	36.30	36.42	<b>36.50</b>
	Total Conducted Power (mW)	18282.16	17979.19	18387.05	<b>18445.89</b>
	Total Conducted Power(dBm)	42.62	42.55	42.65	<b>42.66</b>
	Ant. Gain (dBi)	12.00	12.00	12.00	<b>12.00</b>
Mid	e.i.r.p (dBm/MHz)	54.62	54.55	54.65	<b>54.66</b>
	0	<b>36.80</b>	36.65	36.44	36.29
	1	<b>36.70</b>	36.67	36.51	36.31
	2	<b>36.62</b>	36.50	36.54	36.42
	3	<b>36.51</b>	36.28	36.32	36.25
	Total Conducted Power (mW)	<b>18532.77</b>	17981.99	17676.33	17133.89
	Total Conducted Power(dBm)	<b>42.68</b>	42.55	42.47	42.34
High	Ant. Gain (dBi)	<b>12.00</b>	12.00	12.00	12.00
	e.i.r.p (dBm/MHz)	<b>54.68</b>	54.55	54.47	54.34
	0	36.25	36.44	36.24	36.35
	1	36.12	36.25	36.12	36.21
	2	36.23	36.27	36.18	36.18
	3	36.17	36.17	36.11	36.21
	Total Conducted Power (mW)	16647.16	16998.94	16532.61	16821.34
Total Conducted Power(dBm)	42.21	42.30	42.18	42.26	
Ant. Gain (dBi)	12.00	12.00	12.00	12.00	
e.i.r.p (dBm/MHz)	54.21	54.30	54.18	54.26	

**Table 10-27. Conducted Average Output Power Table (NR\_n48\_2C\_30M+40M)**

Channel	Port	QPSK	16QAM	64QAM	256QAM
Low	0	<b>37.07</b>	37.08	<b>37.19</b>	37.07
	1	<b>37.03</b>	37.16	<b>37.18</b>	37.07
	2	<b>37.32</b>	37.35	<b>37.32</b>	37.17
	3	<b>37.28</b>	37.33	<b>37.29</b>	37.23
	Total Conducted Power (mW)	<b>20880.67</b>	21145.06	<b>21213.04</b>	20683.02
	Total Conducted Power(dBm)	<b>43.20</b>	43.25	<b>43.27</b>	43.16
	Ant. Gain (dBi)	<b>12.00</b>	12.00	<b>12.00</b>	12.00
Mid	e.i.r.p (dBm/MHz)	<b>55.20</b>	55.25	<b>55.27</b>	55.16
	0	36.91	37.01	36.94	37.01
	1	37.02	36.97	37.14	36.99
	2	37.29	37.27	37.33	37.26
	3	37.24	37.35	37.22	37.19
	Total Conducted Power (mW)	20598.69	20766.65	20799.02	20580.86
	Total Conducted Power(dBm)	43.14	43.17	43.18	43.13
High	Ant. Gain (dBi)	12.00	12.00	12.00	12.00
	e.i.r.p (dBm/MHz)	55.14	55.17	55.18	55.13
	0	36.97	37.03	37.06	36.97
	1	36.98	37.07	37.09	37.00
	2	37.23	37.38	37.26	37.28
	3	37.24	37.32	37.29	37.31
	Total Conducted Power (mW)	20547.30	21005.19	20877.46	20717.58
Total Conducted Power(dBm)	43.13	43.22	43.20	43.16	
Ant. Gain (dBi)	12.00	12.00	12.00	12.00	
e.i.r.p (dBm/MHz)	55.13	55.22	55.20	55.16	

**Table 10-28. Conducted Average Output Power Table (NR\_n48\_2C\_40M+40M)**

FCC: A3LRT4401-48A1		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 8K21101306-R4.A3L	Test Dates: 10/20/2021 – 04/05/2022	EUT Type: RRU(RT4401)		Page 267 of 286

Channel	Port	QPSK	16QAM	64QAM	256QAM
Low	0	32.06	32.29	32.00	32.19
	1	32.04	32.41	31.88	32.14
	2	32.46	32.81	32.23	32.55
	3	32.39	32.77	32.12	32.48
	Total Conducted Power (mW)	6702.28	7238.34	6426.98	6861.57
	Total Conducted Power(dBm)	38.26	38.60	38.08	38.36
	Ant. Gain (dBi)	11.00	11.00	11.00	11.00
	e.i.r.p (dBm/MHz)	49.26	49.60	49.08	49.36
Mid	0	<b>32.07</b>	32.15	<b>32.27</b>	32.00
	1	<b>32.12</b>	32.18	<b>32.34</b>	32.11
	2	<b>32.66</b>	32.32	<b>32.87</b>	32.62
	3	<b>32.59</b>	32.17	<b>32.87</b>	32.64
	Total Conducted Power (mW)	<b>6900.47</b>	6646.80	<b>7273.35</b>	6875.08
	Total Conducted Power(dBm)	<b>38.39</b>	38.23	<b>38.62</b>	38.37
	Ant. Gain (dBi)	<b>11.00</b>	11.00	<b>11.00</b>	11.00
	e.i.r.p (dBm/MHz)	<b>49.39</b>	49.23	<b>49.62</b>	49.37
High	0	32.30	32.21	32.05	32.08
	1	32.36	32.06	32.10	32.15
	2	32.20	32.68	32.75	32.80
	3	32.21	32.92	32.80	32.87
	Total Conducted Power (mW)	6743.11	7082.73	7014.17	7096.83
	Total Conducted Power(dBm)	38.29	38.50	38.46	38.51
	Ant. Gain (dBi)	11.00	11.00	11.00	11.00
	e.i.r.p (dBm/MHz)	49.29	49.50	49.46	49.51

**Table 10-29. Conducted Average Output Power Table (LTE\_B48\_1C + NR\_n48\_1C\_10M+10M)**

Channel	Port	QPSK	16QAM	64QAM	256QAM
Low	0	35.92	35.63	35.41	<b>35.78</b>
	1	35.61	35.69	35.56	<b>35.90</b>
	2	36.14	35.99	36.12	<b>36.36</b>
	3	36.04	35.91	35.98	<b>36.29</b>
	Total Conducted Power (mW)	15676.96	15234.09	15128.24	<b>16256.00</b>
	Total Conducted Power(dBm)	41.95	41.83	41.80	<b>42.11</b>
	Ant. Gain (dBi)	12.00	12.00	12.00	<b>12.00</b>
	e.i.r.p (dBm/MHz)	53.95	53.83	53.80	<b>54.11</b>
Mid	0	<b>35.91</b>	35.58	35.61	35.76
	1	<b>35.93</b>	35.86	35.65	35.81
	2	<b>36.47</b>	36.19	36.17	36.34
	3	<b>36.41</b>	36.03	36.10	36.18
	Total Conducted Power (mW)	<b>16628.15</b>	15636.66	15525.77	16032.50
	Total Conducted Power(dBm)	<b>42.21</b>	41.94	41.91	42.05
	Ant. Gain (dBi)	<b>12.00</b>	12.00	12.00	12.00
	e.i.r.p (dBm/MHz)	<b>54.21</b>	53.94	53.91	54.05
High	0	35.25	35.38	35.46	35.51
	1	35.34	35.46	35.52	35.57
	2	35.96	35.99	35.94	36.20
	3	36.08	35.88	36.06	36.02
	Total Conducted Power (mW)	14769.11	14811.53	15043.02	15330.24
	Total Conducted Power(dBm)	41.69	41.71	41.77	41.86
	Ant. Gain (dBi)	12.00	12.00	12.00	12.00
	e.i.r.p (dBm/MHz)	53.69	53.71	53.77	53.86

**Table 10-30. Conducted Average Output Power Table (LTE\_B48\_1C + NR\_n48\_1C\_20M+40M)**

FCC: A3LRT4401-48A1		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 8K21101306-R4.A3L	Test Dates: 10/20/2021 – 04/05/2022	EUT Type: RRU(RT4401)		Page 268 of 286

Channel	Port	QPSK	16QAM	64QAM	256QAM
Low	0	<b>34.11</b>	33.84	33.79	33.83
	1	<b>34.04</b>	33.82	33.80	33.75
	2	<b>34.33</b>	33.89	34.28	34.15
	3	<b>34.39</b>	34.09	34.20	34.17
	Total Conducted Power (mW)	<b>10569.54</b>	9844.48	10101.58	9999.16
	Total Conducted Power(dBm)	<b>40.24</b>	39.93	40.04	40.00
	Ant. Gain (dBi)	<b>11.00</b>	11.00	11.00	11.00
Mid	e.i.r.p (dBm/MHz)	<b>51.24</b>	50.93	51.04	51.00
	0	33.72	33.81	33.80	<b>33.89</b>
	1	33.80	33.68	33.88	<b>33.95</b>
	2	34.35	34.01	34.45	<b>34.43</b>
	3	34.39	34.04	34.42	<b>34.40</b>
	Total Conducted Power (mW)	10224.48	9790.63	10395.33	<b>10459.75</b>
	Total Conducted Power(dBm)	40.10	39.91	40.17	<b>40.20</b>
High	Ant. Gain (dBi)	11.00	11.00	11.00	<b>11.00</b>
	e.i.r.p (dBm/MHz)	51.10	50.91	51.17	<b>51.20</b>
	0	33.61	33.81	33.65	33.80
	1	33.64	33.68	33.67	33.82
	2	34.19	33.83	34.16	34.31
	3	34.30	34.15	34.27	34.53
	Total Conducted Power (mW)	9923.97	9753.44	9924.65	10344.40
Total Conducted Power(dBm)	39.97	39.89	39.97	40.15	
Ant. Gain (dBi)	11.00	11.00	11.00	11.00	
e.i.r.p (dBm/MHz)	50.97	50.89	50.97	51.15	

**Table 10-31. Conducted Average Output Power Table (LTE\_B48\_2C + NR\_n48\_1C\_10M+10M+10M)**

Channel	Port	QPSK	16QAM	64QAM	256QAM
Low	0	36.66	36.95	36.73	36.32
	1	36.71	36.91	36.79	36.38
	2	37.15	37.38	37.32	36.92
	3	37.16	37.33	37.25	36.84
	Total Conducted Power (mW)	19710.56	20741.28	20189.02	18381.57
	Total Conducted Power(dBm)	42.95	43.17	43.05	42.64
	Ant. Gain (dBi)	12.00	12.00	12.00	12.00
Mid	e.i.r.p (dBm/MHz)	54.95	55.17	55.05	54.64
	0	36.61	<b>37.10</b>	36.80	36.95
	1	36.66	<b>37.01</b>	36.85	37.01
	2	37.23	<b>37.36</b>	37.22	37.06
	3	37.13	<b>37.37</b>	37.22	36.98
	Total Conducted Power (mW)	19664.50	<b>21054.64</b>	20172.62	20048.37
	Total Conducted Power(dBm)	42.94	<b>43.23</b>	43.05	43.02
High	Ant. Gain (dBi)	12.00	<b>12.00</b>	12.00	12.00
	e.i.r.p (dBm/MHz)	54.94	<b>55.23</b>	55.05	55.02
	0	<b>36.73</b>	36.71	36.67	36.50
	1	<b>36.81</b>	36.81	36.65	36.56
	2	<b>37.33</b>	37.14	37.24	37.07
	3	<b>37.34</b>	37.09	37.29	37.04
	Total Conducted Power (mW)	<b>20334.66</b>	19778.35	19923.56	19147.37
Total Conducted Power(dBm)	<b>43.08</b>	42.96	42.99	42.82	
Ant. Gain (dBi)	<b>12.00</b>	12.00	12.00	12.00	
e.i.r.p (dBm/MHz)	<b>55.08</b>	54.96	54.99	54.82	

**Table 10-32. Conducted Average Output Power Table (LTE\_B48\_2C + NR\_n48\_1C\_20M+20M+40M)**

FCC: A3LRT4401-48A1		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 8K21101306-R4.A3L	Test Dates: 10/20/2021 – 04/05/2022	EUT Type: RRU(RT4401)		Page 269 of 286

## 11.0 APPENDIX. B

### 11.1 Spot Check Measurement Results For Data Referencing

#### Introduction

Per KDB 484596 D01 v01, the new original certification application of FCC ID: A3LRT4401-48A1 is re-uses data collected on FCC ID: A3LRT4401-48A. The applicant Samsung Electronics Co., Ltd. takes full responsibility that the test data as referenced represents compliance for the new FCC ID: A3LRT4401-48A1. All referenced test data can be found under FCC ID: A3LRT4401-48A's test report exhibit with the file name "Part 96 Test Report " (Test Report number is 8K21101307-R4.A3L).

For details re-uses data lists, Please refer to the below section.

Single RAT: 5G NR Configuration	No. of Carriers	Carrier Bandwidth (MHz)	Carrier Frequency Configuration (MHz)			Rated Power (dBm/path)
			Lowest	Middle	Highest	
n48_2C_10M+30M	2	10+30	3555	3610	3665	34
			3575	3630	3685	
n48_2C_10M+30M_Non-Contiguous	2	10+30	3555 + 3685			35
n48_2C_10M+40M	2	10+40	3555	3605	3655	
			3580	3630	3680	
n48_2C_10M+40M_Non-Contiguous	2	10+40	3555 + 3680			35.8
n48_2C_20M+40M	2	20+40	3560	3605	3650	
			3590	3635	3680	
n48_2C_20M+40M_Non-Contiguous	2	20+40	3560 + 3680			36.5
n48_2C_30M+40M	2	30+40	3565	3605	3645	
			3600	3640	3680	
n48_2C_30M+40M_Non-Contiguous	2	30+40	3565 + 3680			37
n48_2C_40M+40M	2	40+40	3570	3605	3640	
			3610	3645	3680	
n48_2C_40M+40M_Non-Contiguous	2	40+40	3570 + 3680			

Multi-RAT: LTE + 5G NR Configuration	No. of Carriers	Carrier Bandwidth (MHz)	Carrier Frequency Configuration (MHz)			Rated Power (dBm/path)
			Lowest	Middle	Highest	
B48_1C + n48_1C 20M+40M	2	20+40	3560	3605	3650	35.8
			3590	3635	3680	
B48_1C + n48_1C 20M+40M Non-Contiguous	2	20+40	3560 + 3680			37
B48_2C + n48_1C 20M+20M+40M	3	20+20+40	3560	3595	3630	
			3580	3615	3650	
			3610	3645	3680	
B48_2C + n48_1C 20M+20M+40M Non-Contiguous	3	20+20+40	3560 + 3615 + 3680			

FCC: A3LRT4401-48A1		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 8K21101306-R4.A3L	Test Dates: 10/20/2021 – 04/05/2022	EUT Type: RRU(RT4401)		Page 270 of 286

## Description of Component Differences

The only difference between FCC ID: A3LRT4401-48A and FCC ID: A3LRT4401-48A1 is varies antenna gain with 1dB and 2dB power boosting. All other hardware, software, and RF parameters are exactly the same between the 2 FCC ID's.

FCC: A3LRT4401-48A1		<b>MEASUREMENT REPORT (CERTIFICATION)</b>		<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 8K21101306-R4.A3L	<b>Test Dates:</b> 10/20/2021 – 04/05/2022	<b>EUT Type:</b> RRU(RT4401)	Page 271 of 286	

## Spotcheck Verification Data

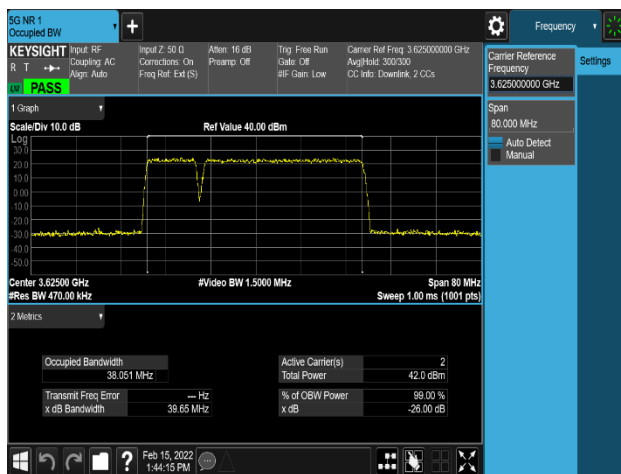
### Occupied Bandwidth

Channel	Configuration	OBW (MHz)	
		QPSK	16QAM
Middle	NR_2C_10M+30M	38.05	38.06

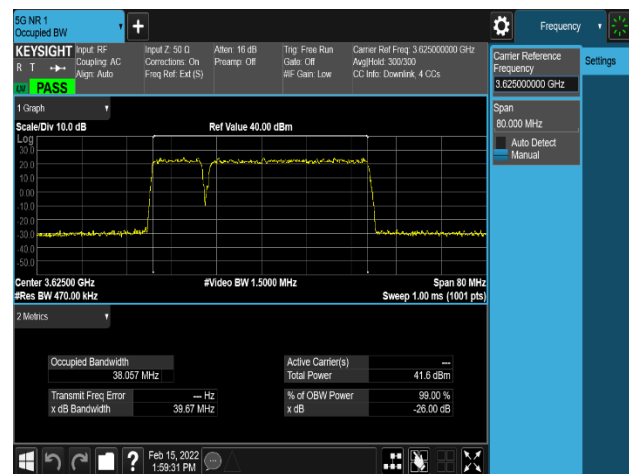
Table 11-1. Occupied Bandwidth Summary Data (NR\_n48\_Multi Carrier)

Channel	Configuration	OBW (MHz)	
		QPSK	16QAM
Middle	LTE_2C_20M+20M + NR_1C_40M	77.43	77.42

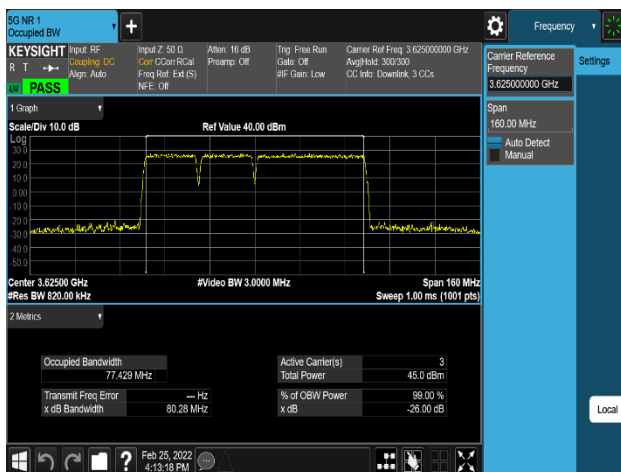
Table 11-2. Occupied Bandwidth Summary Data (LTE\_B48 + NR\_n48\_Multi-RAT)



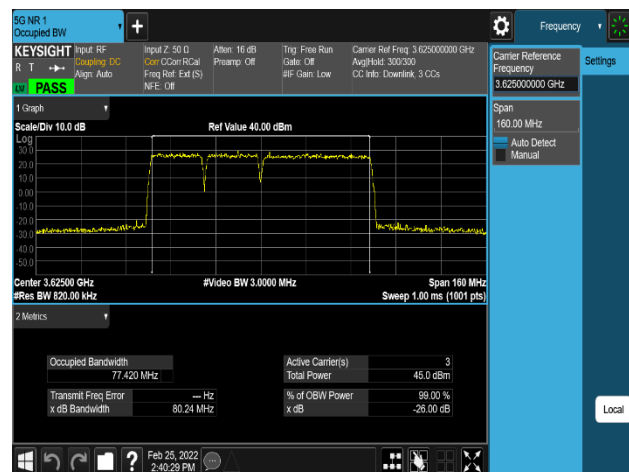
Plot 11-1. Occupied Bandwidth Plot (NR\_n48\_2C\_10M+30M\_QPSK - Mid Channel, Port 0)



Plot 11-2. Occupied Bandwidth Plot (NR\_n48\_2C\_10M+30M\_16QAM - Mid Channel, Port 0)



Plot 11-3. Occupied Bandwidth Plot (LTE\_B48\_1C\_15M\_QPSK - Mid Channel, Port 1)



Plot 11-4. Occupied Bandwidth Plot (LTE\_B48\_1C\_15M\_16QAM - Mid Channel, Port 3)

FCC: A3LRT4401-48A1		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 8K21101306-R4.A3L	Test Dates: 10/20/2021 - 04/05/2022	EUT Type: RRU(RT4401)		Page 272 of 286



## Power Spectral Density

Low Channel	Port	QPSK	16QAM	64QAM	256QAM
Conducted Power (dBm/MHz)	0	18.69	18.62	18.79	18.73
	1	18.65	18.65	18.66	18.61
	2	18.61	18.60	18.74	18.66
	3	18.68	18.65	18.73	18.77
Total MIMO Power Spectral Density (mW/MHz)		293.74	291.85	298.61	296.04
Total MIMO Power Spectral Density (dBm/MHz)		24.68	24.65	24.75	24.71
Ant. Gain (dBi)		12.00	12.00	12.00	12.00
e.i.r.p PSD (dBm/MHz)		36.68	36.65	36.75	36.71
e.i.r.p PSD Limit (dBm/MHz)		37.00	37.00	37.00	37.00
Margin (dB)		-0.32	-0.35	-0.25	-0.29
Mid Channel	Port	QPSK	16QAM	64QAM	256QAM
Conducted Power (dBm/MHz)	0	18.62	18.68	<b>18.78</b>	18.60
	1	18.67	18.74	<b>18.77</b>	18.65
	2	18.79	18.72	<b>18.66</b>	18.73
	3	18.78	18.71	<b>18.80</b>	18.77
Total MIMO Power Spectral Density (mW/MHz)		297.59	297.47	<b>300.24</b>	295.71
Total MIMO Power Spectral Density (dBm/MHz)		24.74	24.73	<b>24.77</b>	24.71
Ant. Gain (dBi)		12.00	12.00	<b>12.00</b>	12.00
e.i.r.p PSD (dBm/MHz)		36.74	36.73	<b>36.77</b>	36.71
e.i.r.p PSD Limit (dBm/MHz)		37.00	37.00	<b>37.00</b>	37.00
Margin (dB)		-0.26	-0.27	<b>-0.23</b>	-0.29
High Channel	Port	QPSK	16QAM	64QAM	256QAM
Conducted Power (dBm/MHz)	0	18.55	18.55	18.71	18.57
	1	18.61	18.65	18.64	18.62
	2	18.68	18.57	18.67	18.73
	3	18.65	18.64	18.63	18.66
Total MIMO Power Spectral Density (mW/MHz)		291.25	289.87	293.96	292.79
Total MIMO Power Spectral Density (dBm/MHz)		24.64	24.62	24.68	24.67
Ant. Gain (dBi)		12.00	12.00	12.00	12.00
e.i.r.p PSD (dBm/MHz)		36.64	36.62	36.68	36.67
e.i.r.p PSD Limit (dBm/MHz)		37.00	37.00	37.00	37.00
Margin (dB)		-0.36	-0.38	-0.32	-0.33

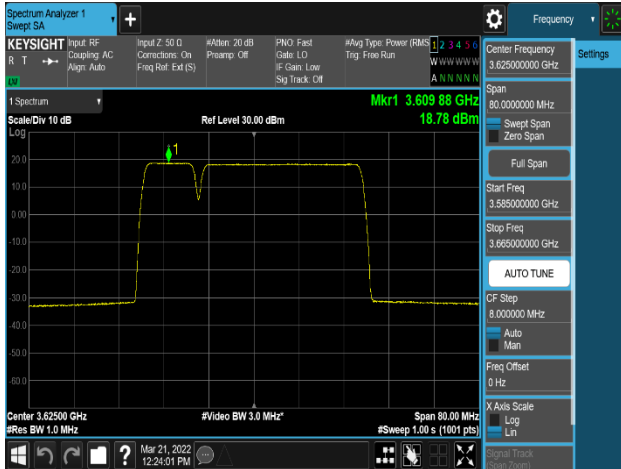
Table 11-3. Power Spectral Density Table (NR\_n48\_2C\_10M+30M)

FCC: A3LRT4401-48A1		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 8K21101306-R4.A3L	Test Dates: 10/20/2021 – 04/05/2022	EUT Type: RRU(RT4401)		Page 273 of 286

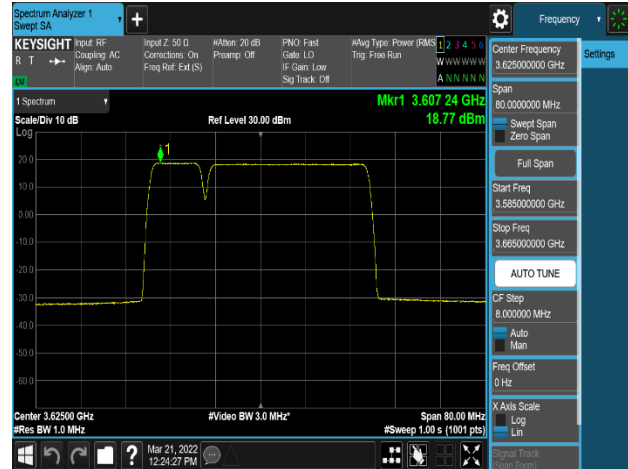
Low Channel	Port	QPSK	16QAM	64QAM	256QAM
Conducted Power (dBm/MHz)	0	18.64	18.71	18.74	18.74
	1	18.77	18.98	18.76	18.75
	2	18.74	18.95	18.89	18.77
	3	18.87	18.89	18.79	18.71
Total MIMO Power Spectral Density (mW/MHz)		300.22	309.32	303.04	299.62
Total MIMO Power Spectral Density (dBm/MHz)		24.77	24.90	24.81	24.77
Ant. Gain (dBi)		12.00	12.00	12.00	12.00
e.i.r.p PSD (dBm/MHz)		36.77	36.90	36.81	36.77
e.i.r.p PSD Limit (dBm/MHz)		37.00	37.00	37.00	37.00
Margin (dB)		-0.23	-0.10	-0.19	-0.23
Mid Channel	Port	QPSK	16QAM	64QAM	256QAM
Conducted Power (dBm/MHz)	0	18.67	18.80	18.70	18.72
	1	18.79	18.83	18.79	18.84
	2	18.91	18.87	18.84	19.01
	3	18.91	18.89	18.83	18.98
Total MIMO Power Spectral Density (mW/MHz)		304.77	306.67	302.84	309.68
Total MIMO Power Spectral Density (dBm/MHz)		24.84	24.87	24.81	24.91
Ant. Gain (dBi)		12.00	12.00	12.00	12.00
e.i.r.p PSD (dBm/MHz)		36.84	36.87	36.81	36.91
e.i.r.p PSD Limit (dBm/MHz)		37.00	37.00	37.00	37.00
Margin (dB)		-0.16	-0.13	-0.19	-0.09
High Channel	Port	QPSK	16QAM	64QAM	256QAM
Conducted Power (dBm/MHz)	0	18.48	18.81	18.54	18.51
	1	18.53	18.71	18.55	18.51
	2	18.76	18.83	18.76	18.74
	3	18.68	18.78	18.69	18.66
Total MIMO Power Spectral Density (mW/MHz)		290.68	302.14	292.07	290.22
Total MIMO Power Spectral Density (dBm/MHz)		24.63	24.80	24.65	24.63
Ant. Gain (dBi)		12.00	12.00	12.00	12.00
e.i.r.p PSD (dBm/MHz)		36.63	36.80	36.65	36.63
e.i.r.p PSD Limit (dBm/MHz)		37.00	37.00	37.00	37.00
Margin (dB)		-0.37	-0.20	-0.35	-0.37

Table 11-4. Power Spectral Density Table (LTE\_B48\_2C + NR\_n48\_1C\_20M+20M+40M)

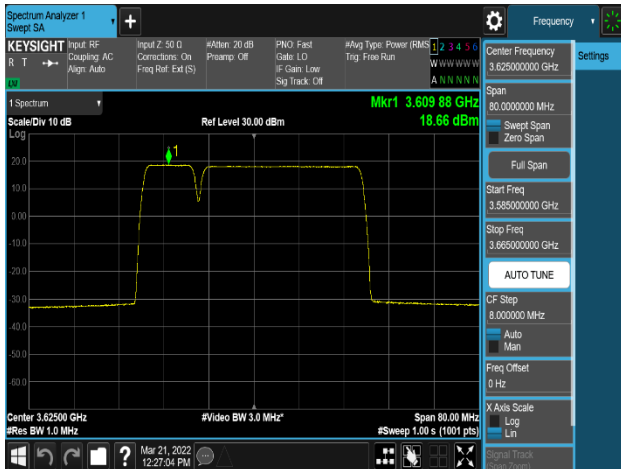
FCC: A3LRT4401-48A1		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 8K21101306-R4.A3L	Test Dates: 10/20/2021 – 04/05/2022	EUT Type: RRU(RT4401)	Page 274 of 286	



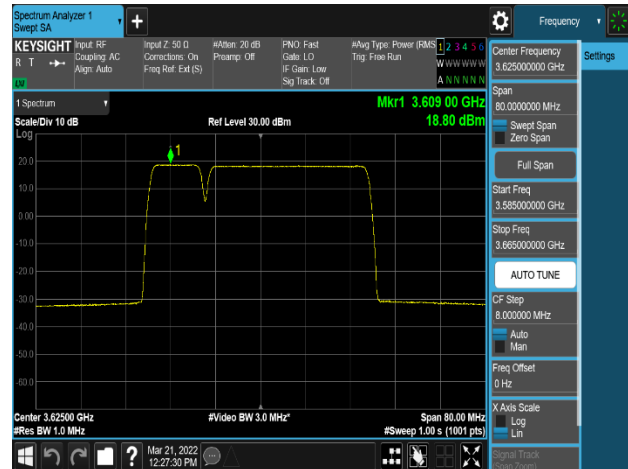
Plot 11-5. Power Spectral Density Plot  
(NR\_nr48\_2C\_10M+30M\_64QAM - Mid Channel, Port 0)



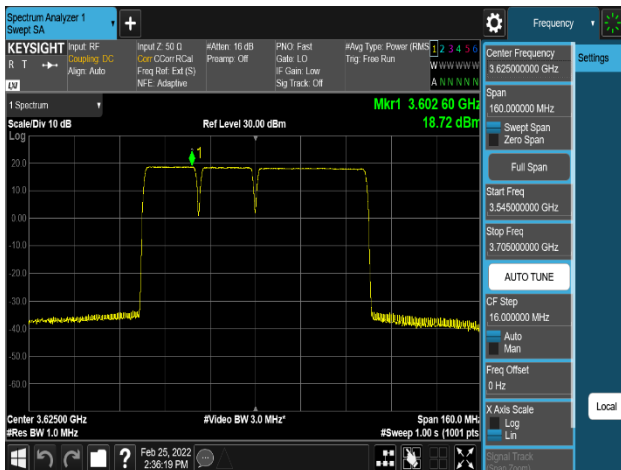
Plot 11-6. Power Spectral Density Plot  
(NR\_nr48\_2C\_10M+30M\_64QAM - Mid Channel, Port 1)



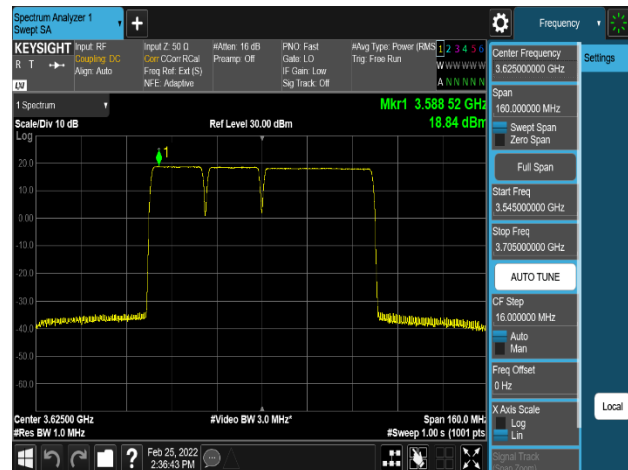
Plot 11-7. Power Spectral Density Plot  
(NR\_nr48\_2C\_10M+30M\_64QAM - Mid Channel, Port 2)



Plot 11-8. Power Spectral Density Plot  
(NR\_nr48\_2C\_10M+30M\_64QAM - Mid Channel, Port 3)

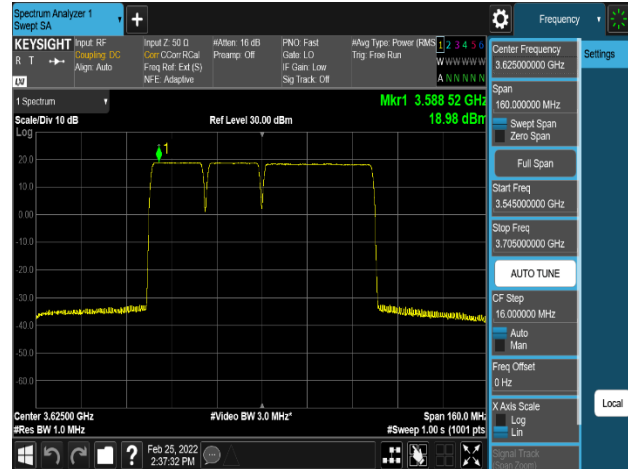
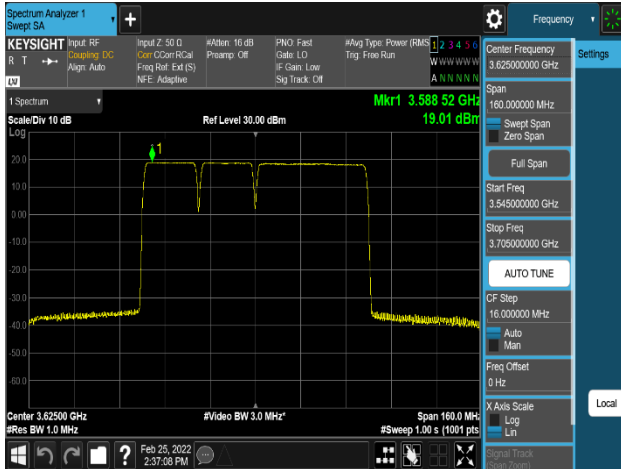


Plot 11-9. Power Spectral Density Plot  
(LTE\_2C+NR\_1C\_20M+20M+40M\_256QAM - Mid Channel, Port 0)



Plot 11-10. Power Spectral Density Plot  
(LTE\_2C+NR\_1C\_20M+20M+40M\_256QAM - Mid Channel, Port 1)

<b>FCC: A3LRT4401-48A1</b>		<b>MEASUREMENT REPORT (CERTIFICATION)</b>	 <b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 8K21101306-R4.A3L	<b>Test Dates:</b> 10/20/2021 - 04/05/2022	<b>EUT Type:</b> RRU(RT4401)	Page 275 of 286



<b>FCC: A3LRT4401-48A1</b>		<b>MEASUREMENT REPORT (CERTIFICATION)</b>		<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 8K21101306-R4.A3L	<b>Test Dates:</b> 10/20/2021 – 04/05/2022	<b>EUT Type:</b> RRU(RT4401)	Page 276 of 286	

## Equivalent Isotropic Radiated Power (EIRP)

Low Channel	Port	QPSK	16QAM	64QAM	256QAM
Conducted Power (dBm/10MHz)	0	28.43	28.24	27.97	28.53
	1	28.44	28.29	28.09	28.55
	2	28.37	28.11	27.91	28.46
	3	28.16	28.00	27.71	28.26
Total MIMO Conducted Power (mW/10MHz)		2736.56	2619.43	2479.00	2800.34
Total MIMO Conducted Power (dBm/10MHz)		34.37	34.18	33.94	34.47
Ant. Gain (dBi)		12.00	12.00	12.00	12.00
e.i.r.p (dBm/10MHz)		46.37	46.18	45.94	46.47
e.i.r.p Limit (dBm/10MHz)		47.00	47.00	47.00	47.00
Margin (dB)		-0.63	-0.82	-1.06	-0.53
Mid Channel	Port	QPSK	16QAM	64QAM	256QAM
Conducted Power (dBm/10MHz)	0	28.60	27.98	28.12	28.57
	1	28.70	28.10	28.25	28.64
	2	28.66	28.04	28.22	28.48
	3	28.45	27.82	27.99	28.47
Total MIMO Conducted Power (mW/10MHz)		2900.10	2515.85	2610.23	2858.35
Total MIMO Conducted Power (dBm/10MHz)		34.62	34.01	34.17	34.56
Ant. Gain (dBi)		12.00	12.00	12.00	12.00
e.i.r.p (dBm/10MHz)		46.62	46.01	46.17	46.56
e.i.r.p Limit (dBm/10MHz)		47.00	47.00	47.00	47.00
Margin (dB)		-0.38	-0.99	-0.83	-0.44
High Channel	Port	QPSK	16QAM	64QAM	256QAM
Conducted Power (dBm/10MHz)	0	<b>28.80</b>	28.03	28.28	28.58
	1	<b>28.89</b>	27.89	28.30	28.59
	2	<b>28.96</b>	27.73	28.25	28.59
	3	<b>28.83</b>	27.63	28.13	28.49
Total MIMO Conducted Power (mW/10MHz)		<b>3083.92</b>	2422.86	2667.53	2872.96
Total MIMO Conducted Power (dBm/10MHz)		<b>34.89</b>	33.84	34.26	34.58
Ant. Gain (dBi)		<b>12.00</b>	12.00	12.00	12.00
e.i.r.p (dBm/10MHz)		<b>46.89</b>	45.84	46.26	46.58
e.i.r.p Limit (dBm/10MHz)		<b>47.00</b>	47.00	47.00	47.00
Margin (dB)		<b>-0.11</b>	-1.16	-0.74	-0.42

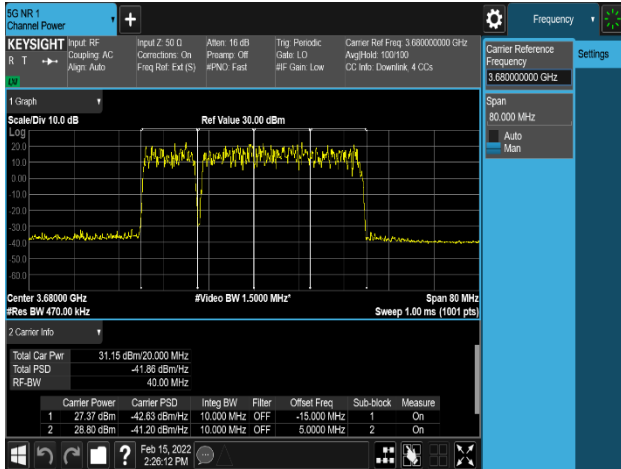
**Table 11-5. Equivalent Isotropic Radiated Power Table (NR\_n48\_2C\_10M+30M)**

FCC: A3LRT4401-48A1		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 8K21101306-R4.A3L	Test Dates: 10/20/2021 – 04/05/2022	EUT Type: RRU(RT4401)		Page 277 of 286

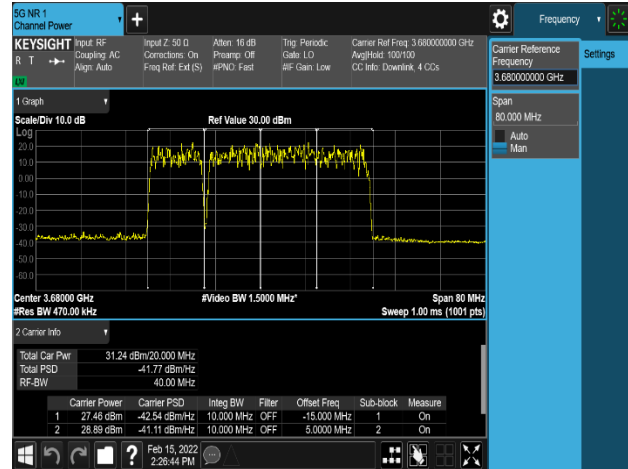
Low Channel	Port	QPSK	16QAM	64QAM	256QAM
Conducted Power (dBm/10MHz)	0	27.89	28.77	28.39	28.08
	1	27.91	28.53	28.49	28.42
	2	28.10	28.62	28.66	28.53
	3	28.08	28.50	28.57	28.50
Total MIMO Conducted Power (mW/10MHz)		2521.54	2901.93	2850.52	2758.51
Total MIMO Conducted Power (dBm/10MHz)		34.02	34.63	34.55	34.41
Ant. Gain (dBi)		12.00	12.00	12.00	12.00
e.i.r.p (dBm/10MHz)		46.02	46.63	46.55	46.41
e.i.r.p Limit (dBm/10MHz)		47.00	47.00	47.00	47.00
Margin (dB)		-0.98	-0.37	-0.45	-0.59
Mid Channel	Port	QPSK	16QAM	64QAM	256QAM
Conducted Power (dBm/10MHz)	0	28.18	28.54	28.35	28.15
	1	28.26	28.73	28.41	28.18
	2	28.41	28.89	28.72	28.42
	3	28.36	28.53	28.54	28.35
Total MIMO Conducted Power (mW/10MHz)		2706.46	2948.26	2836.57	2689.72
Total MIMO Conducted Power (dBm/10MHz)		34.32	34.70	34.53	34.30
Ant. Gain (dBi)		12.00	12.00	12.00	12.00
e.i.r.p (dBm/10MHz)		46.32	46.70	46.53	46.30
e.i.r.p Limit (dBm/10MHz)		47.00	47.00	47.00	47.00
Margin (dB)		-0.68	-0.30	-0.47	-0.70
High Channel	Port	QPSK	16QAM	64QAM	256QAM
Conducted Power (dBm/10MHz)	0	28.39	28.57	28.01	<b>28.66</b>
	1	28.39	28.48	28.05	<b>28.57</b>
	2	28.61	28.31	28.26	<b>28.87</b>
	3	28.56	28.14	28.19	<b>28.78</b>
Total MIMO Conducted Power (mW/10MHz)		2824.38	2753.41	2599.73	<b>2979.96</b>
Total MIMO Conducted Power (dBm/10MHz)		34.51	34.40	34.15	<b>34.74</b>
Ant. Gain (dBi)		12.00	12.00	12.00	<b>12.00</b>
e.i.r.p (dBm/10MHz)		46.51	46.40	46.15	<b>46.74</b>
e.i.r.p Limit (dBm/10MHz)		47.00	47.00	47.00	<b>47.00</b>
Margin (dB)		-0.49	-0.60	-0.85	<b>-0.26</b>

**Table 11-6. Equivalent Isotropic Radiated Power Table (LTE\_B48\_2C + NR\_n48\_1C\_20M+20M+40M)**

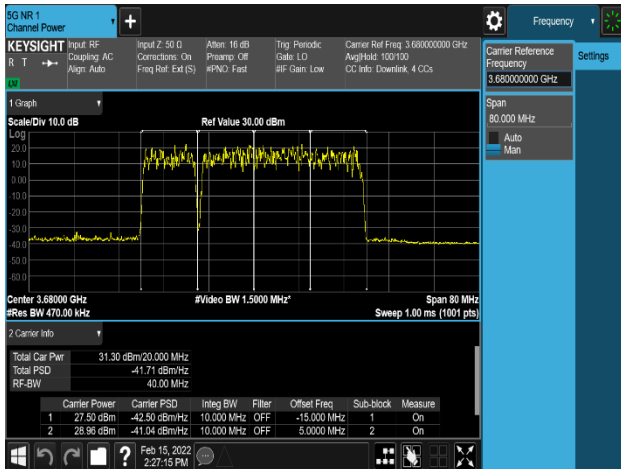
FCC: A3LRT4401-48A1		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 8K21101306-R4.A3L	Test Dates: 10/20/2021 – 04/05/2022	EUT Type: RRU(RT4401)		Page 278 of 286



Plot 11-13. Equivalent Isotropic Radiated Power Plot (NR\_n48\_2C\_10M+30M\_QPSK - High Channel, Port 0)



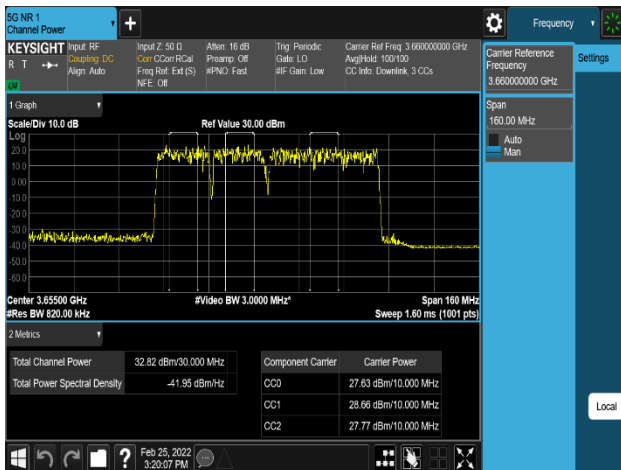
Plot 11-11. Equivalent Isotropic Radiated Power Plot (NR\_n48\_2C\_10M+30M\_QPSK - High Channel, Port 1)



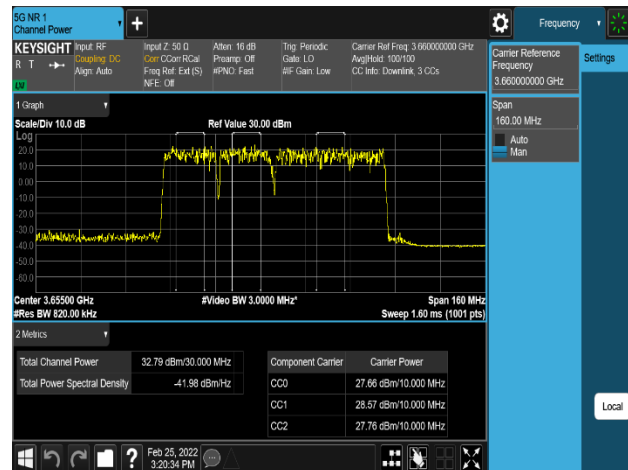
Plot 11-12. Equivalent Isotropic Radiated Power Plot (NR\_n48\_2C\_10M+30M\_QPSK - High Channel, Port 2)



Plot 11-13. Equivalent Isotropic Radiated Power Plot (NR\_n48\_2C\_10M+30M\_QPSK - High Channel, Port 3)



Plot 11-14. Equivalent Isotropic Radiated Power Plot (LTE\_2C+NR\_1C\_20M+20M+40M\_256QAM-High Channel, Port 0)



Plot 11-15. Equivalent Isotropic Radiated Power Plot (LTE\_2C+NR\_1C\_20M+20M+40M\_256QAM-High Channel, Port 1)

<b>FCC: A3LRT4401-48A1</b>		<b>MEASUREMENT REPORT (CERTIFICATION)</b>		<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 8K21101306-R4.A3L	<b>Test Dates:</b> 10/20/2021 – 04/05/2022	<b>EUT Type:</b> RRU(RT4401)	Page 279 of 286	



Plot 11-16. Equivalent Isotropic Radiated Power Plot (LTE\_2C+NR\_1C\_20M+20M+40M\_256QAM-High Channel, Port2)



Plot 11-20. Equivalent Isotropic Radiated Power Plot (LTE\_2C+NR\_1C\_20M+20M+40M\_256QAM-High Channel, Port3)

<b>FCC: A3LRT4401-48A1</b>		<b>MEASUREMENT REPORT (CERTIFICATION)</b>	 <b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 8K21101306-R4.A3L	<b>Test Dates:</b> 10/20/2021 – 04/05/2022	<b>EUT Type:</b> RRU(RT4401)	Page 280 of 286



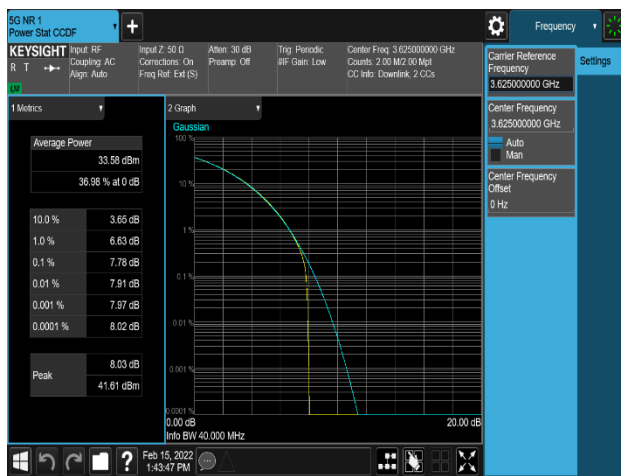
## Peak To Average Power Ratio (PAPR)

Channel	Configuration	PAPR (dB)		Limit (dB)
		QPSK	256QAM	
Middle	NR_2C_10M+30M	7.78	7.77	≤ 13

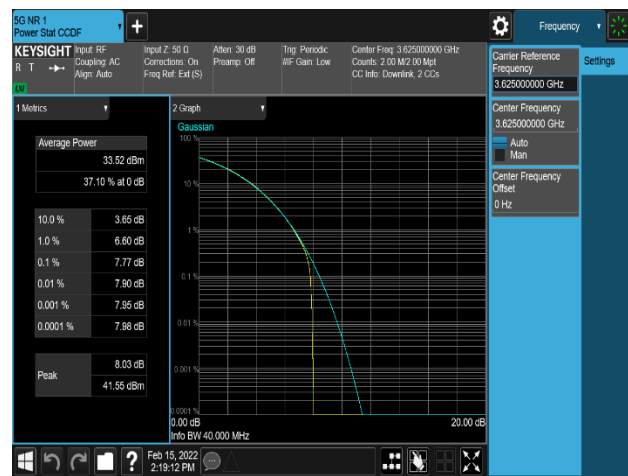
Table 11-7. Peak To Average Power Ratio Summary Data (NR\_n48\_Multi Carrier)

Channel	Configuration	PAPR (dB)		Limit (dB)
		QPSK	256QAM	
Middle	LTE_2C_20M+20M + NR_1C_40M	7.84	7.88	≤ 13

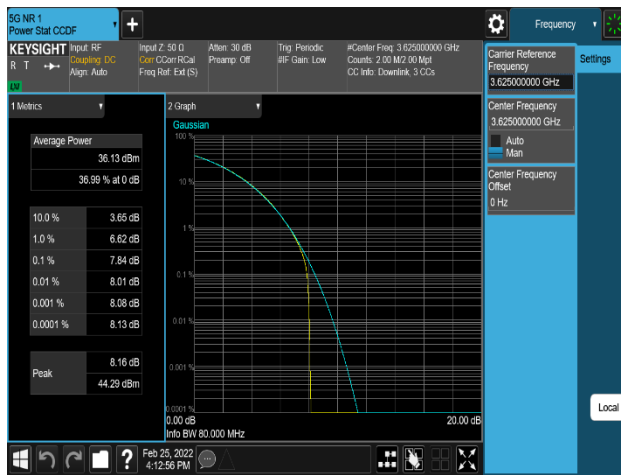
Table 11-8. Peak To Average Power Ratio Summary Data (LTE\_B48 + NR\_n48\_Multi RAT)



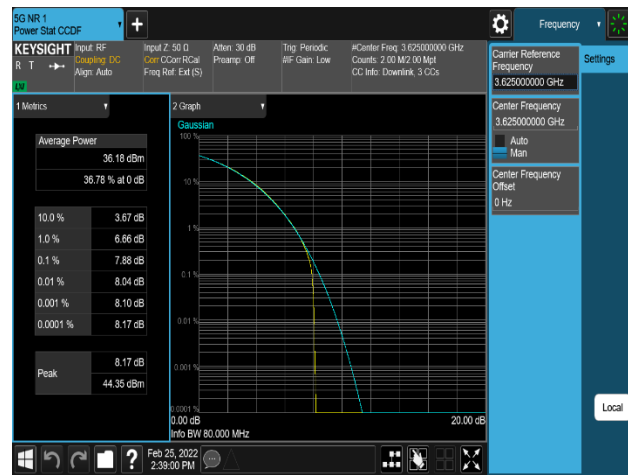
Plot 11-21. Peak To Average Power Ratio Plot (NR\_n48\_2C\_10M+30M\_256QAM - Mid Channel, Port 0)



Plot 11-22. Peak To Average Power Ratio Plot (NR\_n48\_2C\_10M+30M\_256QAM - Mid Channel, Port 0)



Plot 11-23. Peak To Average Power Ratio Plot (LTE\_2C+NR\_1C\_20M+20M+40M\_QPSK - Mid Channel, Port 0)



Plot 11-24. Peak To Average Power Ratio Plot (LTE\_2C+NR\_1C\_20M+20M+40M\_256QAM - Mid Channel, Port 0)

FCC: A3LRT4401-48A1		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 8K21101306-R4.A3L	Test Dates: 10/20/2021 - 04/05/2022	EUT Type: RRU(RT4401)		Page 281 of 286

## Channel Edge Emissions at Antenna Terminal

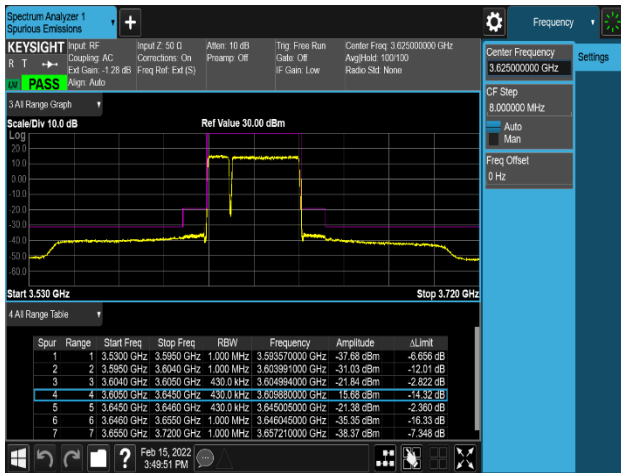
Configuration	Max. Value (dBm)						Limit (dBm)	Worst Margin (dB)
	Measured Range (GHz)	Low	Measured Range (GHz)	Middle	Measured Range (GHz)	High		
NR_2C 10M+30M	3.530 to 3.540	-39.98	3.530 to 3.595	<b>-37.68</b>	3.530 to 3.650	-38.17	-31.02	-6.66
	3.540 to 3.549	-30.58	3.595 to 3.604	<b>-31.03</b>	3.650 to 3.659	-30.54	-19.02	-11.52
	3.549 to 3.550	-22.97	3.604 to 3.605	<b>-21.84</b>	3.659 to 3.660	-21.65	-19.02	-2.63
	3.590 to 3.591	-22.35	3.645 to 3.646	<b>-21.38</b>	3.700 to 3.701	-23.56	-19.02	<b>-2.36</b>
	3.591 to 3.600	-33.28	3.646 to 3.655	<b>-35.35</b>	3.701 to 3.710	-36.65	-19.02	-14.26
	3.600 to 3.720	-38.44	3.655 to 3.720	<b>-38.37</b>	3.710 to 3.720	-41.14	-31.02	-7.35

**Table 11-9. Channel Edge Emission Summary Data (NR\_n48\_Multi Carrier)**

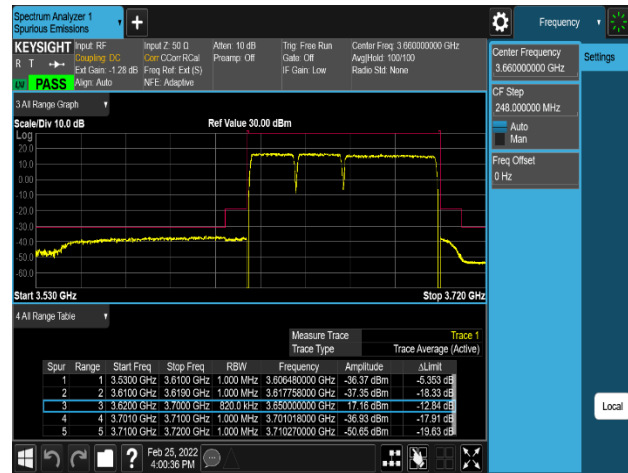
Configuration	Max. Value (dBm)						Limit (dBm)	Worst Margin (dB)
	Measured Range (GHz)	Low	Measured Range (GHz)	Middle	Measured Range (GHz)	High		
LTE_2C_ 20M+20M+ NR_1C_40M	3.530 to 3.540	-46.56	3.530 to 3.575	-36.56	3.530 to 3.610	<b>-36.37</b>	-31.02	<b>-5.35</b>
	3.540 to 3.549	-35.87	3.575 to 3.584	-37.01	3.610 to 3.619	<b>-37.35</b>	-19.02	-16.85
	3.549 to 3.550	-36.36	3.584 to 3.585	-36.10	3.619 to 3.620	<b>-36.95</b>	-19.02	-17.08
	3.630 to 3.631	-34.51	3.665 to 3.666	-35.85	3.700 to 3.701	<b>-36.55</b>	-19.02	-15.49
	3.631 to 3.640	-35.46	3.666 to 3.675	-36.81	3.701 to 3.710	<b>-36.93</b>	-19.02	-16.44
	3.640 to 3.720	-37.27	3.675 to 3.720	-37.62	3.710 to 3.720	<b>-50.65</b>	-31.02	-6.25

**Table 11-10. Channel Edge Emission Summary Data (LTE\_B48 + NR\_n48\_Multi-RAT)**

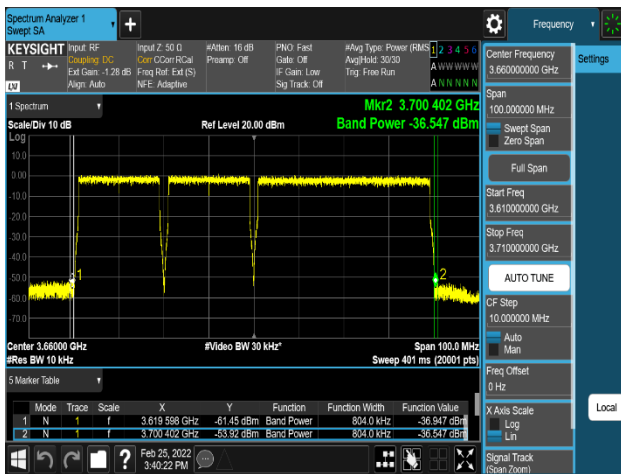
FCC: A3LRT4401-48A1		MEASUREMENT REPORT (CERTIFICATION)			Approved by: Technical Manager
Test Report S/N: 8K21101306-R4.A3L	Test Dates: 10/20/2021 – 04/05/2022	EUT Type: RRU(RT4401)		Page 282 of 286	



Plot 11-25. Channel Edge Emission Plot (NR\_n48\_2C\_10M+30M\_QPSK – Mid Channel, Port 0)



Plot 11-26. Channel Edge Emission Plot (LTE\_2C+NR\_1C\_20M+20M+40M\_QPSK - High Channel, Port 0)



Plot 11-27. Channel Edge Emission Band Power integration method Plot (LTE\_2C+NR\_1C\_20M+20M+40M\_QPSK - High Channel, Port 0)

FCC: A3LRT4401-48A1		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 8K21101306-R4.A3L	Test Dates: 10/20/2021 – 04/05/2022	EUT Type: RRU(RT4401)		Page 283 of 286

## Spurious and Harmonic Emissions at Antenna Terminal

Channel	Port	Measurement Range	Level (dBm)	Limit (dBm)	Worst Margin (dB)
Low	0	30 MHz to 2.7 GHz	-51.86	-46.02	-5.8
		2.7 GHz to 3 GHz	-48.27	-46.02	-2.3
		3 GHz to 3.5GHz	-49.20	-46.02	-3.2
		3.5 GHz to 3.53 GHz	-51.07	-46.02	-5.1
		3.72 GHz to 3.75 GHz	-52.13	-46.02	-6.1
		3.75 GHz to 6.2 GHz	-49.92	-46.02	-3.9
		6.2 GHz to 18GHz	-51.75	-46.02	-5.7
		18 GHz to 40 GHz	-53.12	-46.02	-7.1
Middle	0	30 MHz to 2.7 GHz	-52.05	-46.02	-6.0
		2.7 GHz to 3 GHz	-48.41	-46.02	-2.4
		3 GHz to 3.5GHz	-50.21	-46.02	-4.2
		3.5 GHz to 3.53 GHz	-51.49	-46.02	-5.5
		3.72 GHz to 3.75 GHz	-51.92	-46.02	-5.9
		3.75 GHz to 6.2 GHz	-50.16	-46.02	-4.1
		6.2 GHz to 18GHz	-52.28	-46.02	-6.3
		18 GHz to 40 GHz	-49.35	-46.02	-3.3
High	0	30 MHz to 2.7 GHz	-52.06	-46.02	-6.0
		2.7 GHz to 3 GHz	-48.48	-46.02	-2.5
		3 GHz to 3.5GHz	-50.30	-46.02	-4.3
		3.5 GHz to 3.53 GHz	-51.56	-46.02	-5.5
		3.72 GHz to 3.75 GHz	-52.06	-46.02	-6.0
		3.75 GHz to 6.2 GHz	-49.74	-46.02	-3.7
		6.2 GHz to 18GHz	-51.82	-46.02	-5.8
		18 GHz to 40 GHz	-51.03	-46.02	-5.0

**Table 11-11. Conducted Spurious Emission Summary Data (NR\_n48\_2C\_10M+30M)**

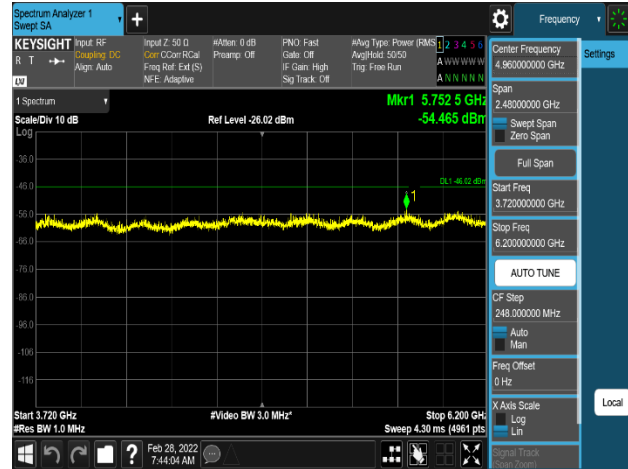
Channel	Port	Measurement Range	Level (dBm)	Limit (dBm)	Worst Margin (dB)
Low	0	30 MHz to 3.53 GHz	<b>-48.80</b>	-46.02	<b>-2.8</b>
		3.72 GHz to 6.2 GHz	<b>-54.47</b>	-46.02	-8.4
		6.2 GHz to 18 GHz	<b>-51.78</b>	-46.02	-5.8
		18 GHz to 40 GHz	<b>-52.08</b>	-46.02	-6.1
Middle	0	30 MHz to 3.53 GHz	-56.58	-46.02	-10.6
		3.72 GHz to 6.2 GHz	-53.73	-46.02	-7.7
		6.2 GHz to 18 GHz	-53.08	-46.02	-7.1
		18 GHz to 40 GHz	-51.31	-46.02	-5.3
High	0	30 MHz to 3.53 GHz	-56.41	-46.02	-10.4
		3.72 GHz to 6.2 GHz	-53.60	-46.02	-7.6
		6.2 GHz to 18 GHz	-52.94	-46.02	-6.9
		18 GHz to 40 GHz	-50.89	-46.02	-4.9

**Table 11-12. Conducted Spurious Emission Summary Data (LTE\_B48\_2C + NR\_n48\_1C\_20M+20M+40M)**

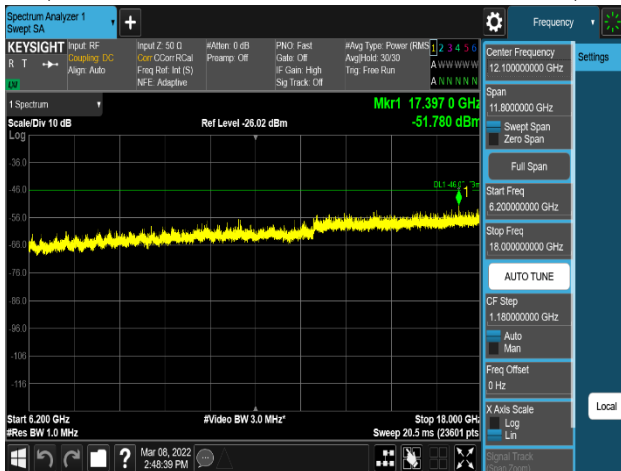
FCC: A3LRT4401-48A1		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 8K21101306-R4.A3L	Test Dates: 10/20/2021 – 04/05/2022	EUT Type: RRU(RT4401)		Page 284 of 286



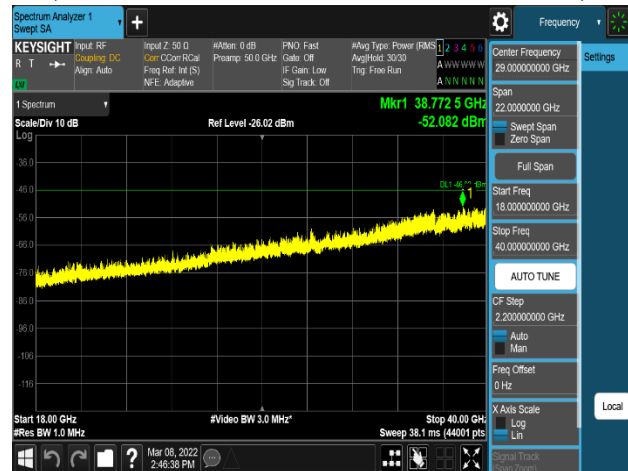
Plot 11-28. Conducted Spurious Emission Plot  
30 MHz to 3.53 GHz  
(LTE\_2C+NR\_1C\_20M+20M+40M\_QPSK - low Channel, Port 0)



Plot 11-29. Conducted Spurious Emission Plot  
3.72 GHz to 6.2 GHz  
(LTE\_2C+NR\_1C\_20M+20M+40M\_QPSK - low Channel, Port 0)



Plot 11-30. Conducted Spurious Emission Plot  
6.2 GHz to 18 GHz  
(LTE\_2C+NR\_1C\_20M+20M+40M\_QPSK - low Channel, Port 0)



Plot 11-31. Conducted Spurious Emission Plot  
18 GHz to 40 GHz  
(LTE\_2C+NR\_1C\_20M+20M+40M\_QPSK - low Channel, Port 0)

<b>FCC: A3LRT4401-48A1</b>		<b>MEASUREMENT REPORT (CERTIFICATION)</b>	 <b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 8K21101306-R4.A3L	<b>Test Dates:</b> 10/20/2021 – 04/05/2022	<b>EUT Type:</b> RRU(RT4401)	Page 285 of 286

## Conducted Average Output Power

Channel	Port	QPSK	16QAM	64QAM	256QAM
Low	0	<b>34.18</b>	34.02	34.14	34.11
	1	<b>34.23</b>	34.02	34.11	34.08
	2	<b>34.12</b>	34.19	34.11	34.06
	3	<b>33.91</b>	34.13	33.92	33.82
	Total Conducted Power (mW)	<b>10309.31</b>	10259.39	10212.86	10091.64
	Total Conducted Power(dBm)	<b>40.13</b>	40.11	40.09	40.04
	Ant. Gain (dBi)	<b>12.00</b>	12.00	12.00	12.00
e.i.r.p (dBm/MHz)	<b>52.13</b>	52.11	52.09	52.04	
Mid	0	34.11	34.12	34.01	<b>34.22</b>
	1	34.05	34.20	34.08	<b>34.30</b>
	2	34.05	34.11	33.99	<b>34.20</b>
	3	33.90	33.94	33.83	<b>34.05</b>
	Total Conducted Power (mW)	10112.98	10266.27	9997.83	<b>10505.18</b>
	Total Conducted Power(dBm)	40.05	40.11	40.00	<b>40.21</b>
	Ant. Gain (dBi)	12.00	12.00	12.00	<b>12.00</b>
e.i.r.p (dBm/MHz)	52.05	52.11	52.00	<b>52.21</b>	
High	0	33.93	34.15	33.99	33.67
	1	34.01	34.02	33.98	33.67
	2	33.95	34.09	33.98	33.73
	3	33.84	33.96	33.84	33.63
	Total Conducted Power (mW)	9893.56	10176.98	9927.83	9323.41
	Total Conducted Power(dBm)	39.95	40.08	39.97	39.70
	Ant. Gain (dBi)	12.00	12.00	12.00	12.00
e.i.r.p (dBm/MHz)	51.95	52.08	51.97	51.70	

**Table 11-13. Conducted Average Output Power Table (NR\_n48\_2C\_10M+30M)**

Channel	Port	QPSK	16QAM	64QAM	256QAM
Low	0	36.99	<b>37.06</b>	36.92	36.93
	1	37.04	<b>37.12</b>	37.05	37.15
	2	37.12	<b>37.25</b>	37.09	37.19
	3	36.97	<b>37.17</b>	37.01	36.99
	Total Conducted Power (mW)	20188.25	<b>20754.67</b>	20130.55	20356.09
	Total Conducted Power(dBm)	43.05	<b>43.17</b>	43.04	43.09
	Ant. Gain (dBi)	12.00	<b>12.00</b>	12.00	12.00
e.i.r.p (dBm/MHz)	55.05	<b>55.17</b>	55.04	55.09	
Mid	0	37.04	36.93	37.09	37.03
	1	36.98	37.02	37.03	37.09
	2	37.03	37.01	37.10	37.17
	3	37.09	36.91	37.16	37.12
	Total Conducted Power (mW)	20210.52	19899.25	20492.01	20527.66
	Total Conducted Power(dBm)	43.06	42.99	43.12	43.12
	Ant. Gain (dBi)	12.00	12.00	12.00	12.00
e.i.r.p (dBm/MHz)	55.06	54.99	55.12	55.12	
High	0	<b>37.04</b>	37.05	37.19	37.08
	1	<b>37.10</b>	37.14	37.15	37.06
	2	<b>37.05</b>	37.03	37.09	37.08
	3	<b>37.07</b>	37.08	37.14	37.05
	Total Conducted Power (mW)	<b>20350.08</b>	20397.64	20716.89	20361.60
	Total Conducted Power(dBm)	<b>43.09</b>	43.10	43.16	43.09
	Ant. Gain (dBi)	<b>12.00</b>	12.00	12.00	12.00
e.i.r.p (dBm/MHz)	<b>55.09</b>	55.10	55.16	55.09	

**Table 11-14. Conducted Average Output Power Table (LTE\_B48\_2C + NR\_n48\_1C\_20M+20M+40M)**

FCC: A3LRT4401-48A1		MEASUREMENT REPORT (CERTIFICATION)		Approved by: Technical Manager
Test Report S/N: 8K21101306-R4.A3L	Test Dates: 10/20/2021 – 04/05/2022	EUT Type: RRU(RT4401)		Page 286 of 286