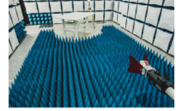




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## RF EXPOSURE EVALUATION Maximal Permissible Exposure [MPE]

**Applicant Name:**  
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Gyeonggi-do, 16677, Korea

**Date of Testing:**  
10/20/2021 – 04/05/2022  
**Test Site/Location:**  
PCTEST KOREA Lab. Yongin-si,  
Gyeonggi-do, Korea  
**Test Report Serial No.:**  
8K21101306-01-R2.A3L

<b>FCC ID:</b>	<b>A3LRT4401-48A1</b>
<b>APPLICANT:</b>	<b>Samsung Electronics Co., Ltd.</b>

**Application Type:** Certification  
**Model:** RT4401-48A1  
**EUT Type:** RRU (RT4401)  
**FCC Classification:** Citizens Band Category B Devices (CBD)  
**FCC Rule Part(s):** FCC Part 1 (§1.1310) and Part 2 (§2.1091)  
**Test Procedure(s):** KDB 447498 D04

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in §2.947. Test results reported herein relate only to the item(s) tested.

I attest to the accuracy of data. All measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

Prepared by Ian Kim  
Test Engineer

Reviewed by Charles Shin  
Technical Manager

<b>FCC:</b> A3LRT4401-48A1		<b>MAXIMUM PERMISSIBLE EXPOSURE REPORT</b>		<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 8K21101306-01-R2.A3L	<b>Test Dates:</b> 10/20/2021 – 04/05/2021	<b>EUT Type:</b> RRU(RT4401)		Page 1 of 25

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## TABLE OF CONTENTS



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1.0	REVISION RECORD .....	3
2.0	RF EXPOSURE EVALUATION – MAXIMUM PERMISSIBLE EXPOSURE (MPE) .....	4
2.1	Introduction .....	4
2.2	EUT Description .....	5
2.3	MPE Requirements Overview .....	6
2.4	Procedure .....	7
2.5	Results of Entire bandwidth Equivalent Isotropic Radiated Power .....	8
2.6	Results of RF exposure evaluation .....	24
3.0	CONCLUSION .....	25

<b>FCC:</b> A3LRT4401-48A1	 <small>Proud to be part of element</small>	<b>MAXIMUM PERMISSIBLE EXPOSURE REPORT</b>		<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 8K21101306-01-R2.A3L	<b>Test Dates:</b> 10/20/2021 – 04/05/2021	<b>EUT Type:</b> RRU(RT4401)	Page 2 of 25	

## 1.0 REVISION RECORD

Issue Number	Issued Date	Revision History
8K21101306-01.A3L	12/09/2021	Initial Issue
8K21101306-01-R1.A3L	04/05/2021	Revision due to added test mode
8K21101306-01-R2.A3L	04/07/2021	Revision due to updated power table.

FCC: A3LRT4401-48A1		MAXIMUM PERMISSIBLE EXPOSURE REPORT		Approved by: Technical Manager
Test Report S/N: 8K21101306-01-R2.A3L	Test Dates: 10/20/2021 – 04/05/2021	EUT Type: RRU(RT4401)	Page 3 of 25	

## 2.0 RF EXPOSURE EVALUATION – MAXIMUM PERMISSIBLE EXPOSURE (MPE)



### 2.1 Introduction

This document is prepared to show compliance with the RF Exposure requirements as required in §1.1310 of the FCC Rules and Regulations.

The limit for Maximum Permissible Exposure (MPE), specified in FCC §1.1310, is listed in Table 1-1. According to FCC §1.1310: the criteria listed in the following table shall be used to evaluate the environmental impact of human exposure to radio-frequency (RF) radiation as specified in §1.1307(b).

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm <sup>2</sup> )	Average Time (Minutes)
(A) Limits For Occupational / Control Exposures (f = frequency)				
30-300	61.4	0.163	1.0	6
300-1500	...	...	f/300	6
1500-100,000	...	...	5.0	6
(B) Limits For General Population / Uncontrolled Exposure (f = frequency)				
30-300	27.5	0.073	0.2	30
300-1500	...	...	f/1500	30
1500-100,000	...	...	1.0	30

**Table 2-1. Limits for Maximum Permissible Exposure (MPE)**



FCC: A3LRT4401-48A1		MAXIMUM PERMISSIBLE EXPOSURE REPORT		Approved by: Technical Manager
Test Report S/N: 8K21101306-01-R2.A3L	Test Dates: 10/20/2021 – 04/05/2021	EUT Type: RRU(RT4401)		Page 4 of 25

## 2.2 EUT Description

The Equipment Under Test (EUT) is the **Samsung Electronics Co., Ltd. RRU(RT4401)**  
**FCC ID: A3LRT4401-48A1**. The test data contained in this report pertains to the emissions due to the EUT's LTE B48 and 5GNR n48 operation in the CBRS band. Per FCC Part 96, this device is evaluated under Citizens Band Category B Devices (CBD).

This device supports the following conditional features:

EUT Type:	RRU(RT4401)		
Model Name:	RT4401-48A1		
Test Device Serial No.:	S614C24805		
Device Capabilities:	LTE, 5G NR		
Operating Band:	Band	Tx (Downlink)	Rx (Uplink)
	5G NR n48:	3550 MHz to 3700 MHz	3550 MHz to 3700 MHz
	LTE B48:	3550 MHz to 3700 MHz	3550 MHz to 3700 MHz
Supported Number of Carriers:	Max. 4 carrier		
Supported Modulation:	QPSK, 16QAM, 64QAM, 256QAM		
Supported Number of Carriers and Channel Bandwidth:	# LTE: 10, 15 and 20MHz bandwidth modes for TDD LTE Band 48 with up to 4CC aggregated BWs of 20/25/30/35/40/45/50/55/60/65/70/75/80MHz. # NR: 10, 20, 30 and 40MHz bandwidth modes for 5G NR Band n48 with up to 2CC aggregated BWs of 20/30/40/50/60/70/80MHz # Multi-RAT: 2CC (1xLTE + 1x5G NR) and 3CC (2xLTE + 1x5G NR) LTE 10, 15, 20MHz bandwidth modes and 5G NR 10, 20, 30, 40MHz bandwidth modes		
Maximum Output Power	Max 37 dBm/Path		
Number of Antenna ports	4		
Supported Configurations:	Single carrier, Multi carrier, Multi-RAT		
Input Voltage:	-48 VDC (-38 to -57 VDC), 90 – 260 VAC 50/60 Hz (clip-on AC-DC converter)		
Antenna Gain:	Min. 5 dBi ~ Max. 17.7 dBi		

FCC: A3LRT4401-48A1		MAXIMUM PERMISSIBLE EXPOSURE REPORT		Approved by: Technical Manager
Test Report S/N: 8K21101306-01-R2.A3L	Test Dates: 10/20/2021 – 04/05/2021	EUT Type: RRU(RT4401)		Page 5 of 25

## 2.3 MPE Requirements Overview



Three different categories of transmitters are defined by the FCC KDB 447498 D04. These categories are fixed installation, mobile and portable and are defined as follows:

- **Fixed Installations:** fixed location means that the device, including its antenna, is physically secured at a permanent location and is not able to be easily moved to another location. Additionally, distance to humans from the antenna is maintained to at least 2 meters.
- **Mobile Devices:** a mobile device is defined as a transmitting designed to be used in other than fixed locations and to be generally used in such a way that a separation distance of at least 20 centimeters is normally maintained between the transmitter's radiating structures and the body of the user or nearby persons. Transmitters designed to be used by consumers or workers that can be easily re-located, such as a wireless modem operating in a laptop computer, are considered mobile devices if they meet the 20 centimeter separation requirement. The FCC rules for evaluating mobile devices for RF compliance are found in 46 CFR §2.1091.
- **Portable Devices:** a portable device is defined as a transmitting device designed to be used so that the radiating structure(s) of the device is/are within 20 centimeters of the body of the user. Portable device requirements are found in Section 2.1093 of the FCC's Rules (47 CFR §2.1093).

The FCC also categorizes the use of the device as based upon the user's awareness and ability to exercise control over his or her exposure. The two categories defined are Occupational/ Controlled Exposure and General Population/Uncontrolled Exposure. These two categories are defined as follows:

- **Occupational/Controlled Exposure:** In general, occupational/controlled exposure limits are applicable to situations in which persons are exposed as a consequence of their employment, who have been made fully aware of the potential for exposure and can exercise control over their exposure. This exposure category is also applicable when the exposure is of a transient nature due to incidental passage through a location where the exposure levels may be higher than the general population/uncontrolled limits, but the exposed person is fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means. Awareness of the potential for RF exposure in a workplace or similar environment can be provided through specific training as part of a RF safety program. If appropriate, warning signs and labels can also be used to establish such awareness by providing prominent information on the risk of potential exposure and instructions on methods to minimize such exposure risks.
- **General Population/Uncontrolled Exposure:** The general population / uncontrolled exposure limits are applicable to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Members of the general public would come under this category when exposure is not employment-related; for example, in the case of a wireless transmitter that exposes persons in its vicinity. Warning labels placed on low-power consumer devices such as cellular telephones are not considered sufficient to allow the device to be considered under the occupational/controlled category, and the general population/uncontrolled exposure limits apply to these devices.

The **Samsung Electronics Co., Ltd. FCC ID: A3LRT4401-48A1** is professionally installed on poles or walls in fixed locations. The device is a fixed mounted base station and MPE is evaluated to the Occupational/Controlled Exposure limits per 1.1310.

FCC: A3LRT4401-48A1	 PCTEST® Proud to be part of element	MAXIMUM PERMISSIBLE EXPOSURE REPORT		Approved by: Technical Manager
Test Report S/N: 8K21101306-01-R2.A3L	Test Dates: 10/20/2021 – 04/05/2021	EUT Type: RRU(RT4401)		Page 6 of 25

## 2.4 Procedure

The procedure used to determine the RF power density was based upon a calculation for determining compliance with the MPE requirements.

The power generated by each operating mode used in this product was initially measured with a spectrum analyzer and powers were recored. Through use of the Friis transmission formula and knowledge of the maximum antenna gain to be used, the power density level is calculated for the safe distance which must be maintained during installation based on maximum power and antenna gain.

### Friis Transmission Formula

Friis transmission formula:  $P_d = (P_{out} * G) / (4\pi r^2)$

Where,

$P_d$  = Power Density (mW/cm<sup>2</sup>)

$\pi$  = 3.1416

$P_{out}$  = output power to antenna (mW)

$r$  = distance between observation point and center of the radiator (cm)

$G$  = gain of antenna in linear scale

### Calculated MPE



The power density limit for General Population/Uncontrolled Exposure at each frequency is determined based on the information in Table 2-1.

For co-location MPE data for simultaneous trasnmission, the formula of calculated the exposure is:

$(CPD/LPD1) + (CPD2/LPD2) + \dots$  etc. < 1

CPD = Calculation Power Density

LPD = Limit of Power Density

FCC: A3LRT4401-48A1	 PCTEST® Proud to be part of element	MAXIMUM PERMISSIBLE EXPOSURE REPORT		Approved by: Technical Manager
Test Report S/N: 8K21101306-01-R2.A3L	Test Dates: 10/20/2021 – 04/05/2021	EUT Type: RRU(RT4401)		Page 7 of 25



## 2.5 Results of Entire bandwidth Equivalent Isotropic Radiated Power

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
e.i.r.p (dBm/MHz)	45.94	46.08	46.16	46.21	
Mid	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>
	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>	
High	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 2-2. 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
e.i.r.p (dBm/MHz)	47.85	47.81	47.67	47.94	
Mid	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>
	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>	
High	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 2-3. Conducted Average Output Power Table (LTE\_B48\_1C\_15M)**

FCC: A3LRT4401-48A1		MAXIMUM PERMISSIBLE EXPOSURE REPORT		Approved by: Technical Manager
Test Report S/N: 8K21101306-01-R2.A3L	Test Dates: 10/20/2021 – 04/05/2021	EUT Type: RRU(RT4401)	Page 8 of 25	





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 2-4. 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 2-5. Conducted Average Output Power Table (LTE\_B48\_2C\_10M+10M)**



FCC: A3LRT4401-48A1		MAXIMUM PERMISSIBLE EXPOSURE REPORT		Approved by: Technical Manager
Test Report S/N: 8K21101306-01-R2.A3L	Test Dates: 10/20/2021 – 04/05/2021	EUT Type: RRU(RT4401)	Page 9 of 25	

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
Mid	e.i.r.p (dBm/MHz)	50.15	50.05	50.17	50.10
	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
High	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
	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 2-6. 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
Mid	e.i.r.p (dBm/MHz)	50.78	50.80	50.82	50.84
	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
High	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
	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 2-7. Conducted Average Output Power Table (LTE\_B48\_2C\_15M+15M)**



FCC: A3LRT4401-48A1		MAXIMUM PERMISSIBLE EXPOSURE REPORT		Approved by: Technical Manager
Test Report S/N: 8K21101306-01-R2.A3L	Test Dates: 10/20/2021 – 04/05/2021	EUT Type: RRU(RT4401)	Page 10 of 25	

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>
e.i.r.p (dBm/MHz)	<b>52.55</b>	52.66	52.53	<b>52.83</b>	
Mid	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
	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	
High	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 2-8. 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
e.i.r.p (dBm/MHz)	51.28	51.18	51.24	51.11	
Mid	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
	Ant. Gain (dBi)	<b>11.00</b>	11.00	<b>11.00</b>	11.00
e.i.r.p (dBm/MHz)	<b>51.69</b>	51.46	<b>51.61</b>	51.59	
High	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 2-9. Conducted Average Output Power Table (LTE\_B48\_3C\_10M+10M+15M)**



FCC: A3LRT4401-48A1		MAXIMUM PERMISSIBLE EXPOSURE REPORT		Approved by: Technical Manager
Test Report S/N: 8K21101306-01-R2.A3L	Test Dates: 10/20/2021 – 04/05/2021	EUT Type: RRU(RT4401)		Page 11 of 25

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 2-10. 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 2-11. Conducted Average Output Power Table (LTE\_B48\_3C\_10M+20M+20M)**



FCC: A3LRT4401-48A1		MAXIMUM PERMISSIBLE EXPOSURE REPORT		Approved by: Technical Manager
Test Report S/N: 8K21101306-01-R2.A3L	Test Dates: 10/20/2021 – 04/05/2021	EUT Type: RRU(RT4401)		Page 12 of 25

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
e.i.r.p (dBm/MHz)	<b>53.50</b>	<b>53.66</b>	53.62	53.50	
Mid	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
	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	
High	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 2-12. 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
e.i.r.p (dBm/MHz)	53.70	53.40	53.57	53.71	
Mid	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>
	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>	
High	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 2-13. Conducted Average Output Power Table (LTE\_B48\_3C\_20M+20M+20M)**



FCC: A3LRT4401-48A1		MAXIMUM PERMISSIBLE EXPOSURE REPORT		Approved by: Technical Manager
Test Report S/N: 8K21101306-01-R2.A3L	Test Dates: 10/20/2021 – 04/05/2021	EUT Type: RRU(RT4401)	Page 13 of 25	

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
	e.i.r.p (dBm/MHz)	52.21	52.23	52.19	52.16
Mid	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
	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
High	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 2-14. 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
	e.i.r.p (dBm/MHz)	<b>54.39</b>	54.30	54.30	54.40
Mid	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
	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
High	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 2-15. Conducted Average Output Power Table (LTE\_B48\_4C\_10M+15M+20M+20M)**



FCC: A3LRT4401-48A1		MAXIMUM PERMISSIBLE EXPOSURE REPORT		Approved by: Technical Manager
Test Report S/N: 8K21101306-01-R2.A3L	Test Dates: 10/20/2021 – 04/05/2021	EUT Type: RRU(RT4401)	Page 14 of 25	

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
Mid	e.i.r.p (dBm/MHz)	54.63	54.55	54.60	54.68
	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
High	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
	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 2-16. 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
Mid	e.i.r.p (dBm/MHz)	54.86	54.89	54.89	54.86
	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
High	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
	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 2-17. Conducted Average Output Power Table (LTE\_B48\_4C\_15M+20M+20M+20M)**



FCC: A3LRT4401-48A1		MAXIMUM PERMISSIBLE EXPOSURE REPORT		Approved by: Technical Manager
Test Report S/N: 8K21101306-01-R2.A3L	Test Dates: 10/20/2021 – 04/05/2021	EUT Type: RRU(RT4401)	Page 15 of 25	

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
e.i.r.p (dBm/MHz)	<b>55.29</b>	55.31	55.21	55.18	
Mid	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
	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	
High	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 2-18. 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
e.i.r.p (dBm/MHz)	46.24	46.29	<b>46.39</b>	46.26	
Mid	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
	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	
High	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 2-19. Conducted Average Output Power Table (NR\_n48\_1C\_10M)**

FCC: A3LRT4401-48A1		MAXIMUM PERMISSIBLE EXPOSURE REPORT		Approved by: Technical Manager
Test Report S/N: 8K21101306-01-R2.A3L	Test Dates: 10/20/2021 – 04/05/2021	EUT Type: RRU(RT4401)	Page 16 of 25	





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>
e.i.r.p (dBm/MHz)	<b>49.27</b>	49.03	49.20	<b>49.24</b>	
Mid	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
	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	
High	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 2-20. 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>
e.i.r.p (dBm/MHz)	<b>51.03</b>	51.06	50.98	<b>51.07</b>	
Mid	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
	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	
High	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 2-21. Conducted Average Output Power Table (NR\_n48\_1C\_30M)**



FCC: A3LRT4401-48A1		MAXIMUM PERMISSIBLE EXPOSURE REPORT		Approved by: Technical Manager
Test Report S/N: 8K21101306-01-R2.A3L	Test Dates: 10/20/2021 – 04/05/2021	EUT Type: RRU(RT4401)	Page 17 of 25	

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 2-22. 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 2-23. Conducted Average Output Power Table (NR\_n48\_2C\_10M+10M)**



FCC: A3LRT4401-48A1		MAXIMUM PERMISSIBLE EXPOSURE REPORT		Approved by: Technical Manager
Test Report S/N: 8K21101306-01-R2.A3L	Test Dates: 10/20/2021 – 04/05/2021	EUT Type: RRU(RT4401)	Page 18 of 25	

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
	e.i.r.p (dBm/MHz)	<b>50.98</b>	<b>50.87</b>	50.59	50.66
Mid	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
	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
High	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 2-24. 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>
	e.i.r.p (dBm/MHz)	52.07	52.19	52.18	<b>52.24</b>
Mid	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
	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
High	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 2-25. Conducted Average Output Power Table (NR\_n48\_2C\_10M+30M)**



FCC: A3LRT4401-48A1		MAXIMUM PERMISSIBLE EXPOSURE REPORT		Approved by: Technical Manager
Test Report S/N: 8K21101306-01-R2.A3L	Test Dates: 10/20/2021 – 04/05/2021	EUT Type: RRU(RT4401)	Page 19 of 25	

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
e.i.r.p (dBm/MHz)	53.04	53.01	52.88	53.00	
Mid	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>
	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>	
High	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 2-26. 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
e.i.r.p (dBm/MHz)	<b>54.08</b>	53.83	<b>54.12</b>	54.08	
Mid	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
	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	
High	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 2-27. Conducted Average Output Power Table (NR\_n48\_2C\_20M+40M)**



FCC: A3LRT4401-48A1		MAXIMUM PERMISSIBLE EXPOSURE REPORT		Approved by: Technical Manager
Test Report S/N: 8K21101306-01-R2.A3L	Test Dates: 10/20/2021 – 04/05/2021	EUT Type: RRU(RT4401)	Page 20 of 25	

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>
e.i.r.p (dBm/MHz)	54.62	54.55	54.65	<b>54.66</b>	
Mid	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
	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	
High	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 2-28. 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
e.i.r.p (dBm/MHz)	<b>55.20</b>	55.25	<b>55.27</b>	55.16	
Mid	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
	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	
High	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 2-29. Conducted Average Output Power Table (NR\_n48\_2C\_40M+40M)**



FCC: A3LRT4401-48A1		MAXIMUM PERMISSIBLE EXPOSURE REPORT		Approved by: Technical Manager
Test Report S/N: 8K21101306-01-R2.A3L	Test Dates: 10/20/2021 – 04/05/2021	EUT Type: RRU(RT4401)	Page 21 of 25	

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 2-30. 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 2-31. Conducted Average Output Power Table (LTE\_B48\_1C + NR\_n48\_1C\_20M+40M)**



FCC: A3LRT4401-48A1		MAXIMUM PERMISSIBLE EXPOSURE REPORT		Approved by: Technical Manager
Test Report S/N: 8K21101306-01-R2.A3L	Test Dates: 10/20/2021 – 04/05/2021	EUT Type: RRU(RT4401)	Page 22 of 25	

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 2-32. 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	37.10	36.80	36.95
	1	36.66	37.01	36.85	37.01
	2	37.23	37.36	37.22	37.06
	3	37.13	37.37	37.22	36.98
	Total Conducted Power (mW)	19664.50	21054.64	20172.62	20048.37
	Total Conducted Power(dBm)	42.94	43.23	43.05	43.02
High	Ant. Gain (dBi)	12.00	12.00	12.00	12.00
	e.i.r.p (dBm/MHz)	54.94	55.23	55.05	55.02
	0	36.73	36.71	36.67	36.50
	1	36.81	36.81	36.65	36.56
	2	37.33	37.14	37.24	37.07
	3	37.34	37.09	37.29	37.04
	Total Conducted Power (mW)	20334.66	19778.35	19923.56	19147.37
Total Conducted Power(dBm)	43.08	42.96	42.99	42.82	
Ant. Gain (dBi)	12.00	12.00	12.00	12.00	
e.i.r.p (dBm/MHz)	55.08	54.96	54.99	54.82	



**Table 2-33. Conducted Average Output Power Table (LTE\_B48\_2C + NR\_n48\_1C\_20M+20M+40M)**

FCC: A3LRT4401-48A1		MAXIMUM PERMISSIBLE EXPOSURE REPORT		Approved by: Technical Manager
Test Report S/N: 8K21101306-01-R2.A3L	Test Dates: 10/20/2021 – 04/05/2021	EUT Type: RRU(RT4401)	Page 23 of 25	

## 2.6 Results of Worst RF exposure evaluation

Band 48_20+20+20+20M MHz			Result
Frequency (MHz)	3550 - 3700	MHz	Pass
Occupational/Controlled MPE Limit (W/m <sup>2</sup> )	5.00	mW/m <sup>2</sup>	
Distance (R)	80.00	cm	
Total MIMO Max measured Output power	43.33	dBm	
Total MIMO Max Output Power (P) (Declared Output Power scaled to maximum tune-up tolerance)	44.00	dBm	
Antenna Gain (G) Typical	12.00	dBi	
Power density (S)	<b>4.95</b>	mW/m <sup>2</sup>	



Table 2-34. Calculated Worst MPE Data (LTE\_B48\_4C\_20M+20M+20M+20M)

FCC: A3LRT4401-48A1		MAXIMUM PERMISSIBLE EXPOSURE REPORT		Approved by: Technical Manager
Test Report S/N: 8K21101306-01-R2.A3L	Test Dates: 10/20/2021 – 04/05/2021	EUT Type: RRU(RT4401)	Page 24 of 25	



### 3.0 CONCLUSION

The device meets the MPE Compliance requirements as specified in §2.1091 of the FCC Rules and Regulations with minimum safe distance of 80 cm for operation. An appropriate RF exposure compliance statement placed in the user's manual.

FCC: A3LRT4401-48A1		<b>MAXIMUM PERMISSIBLE EXPOSURE REPORT</b>		<b>Approved by:</b> Technical Manager
<b>Test Report S/N:</b> 8K21101306-01-R2.A3L	<b>Test Dates:</b> 10/20/2021 – 04/05/2021	<b>EUT Type:</b> RRU(RT4401)	Page 25 of 25	