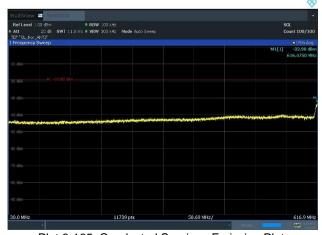




Plot 8-163. Conducted Spurious Emission Plot 9 kHz to 150 kHz

(NR\_n71\_1C\_20M\_256QAM - High Channel, Port 3)



Plot 8-165. Conducted Spurious Emission Plot 30 MHz to 616.9 MHz (NR\_n71\_1C\_20M\_256QAM - High Channel, Port 3)



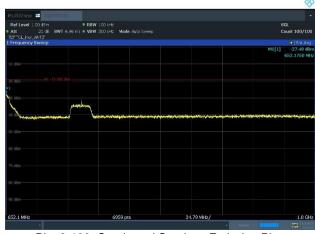
Plot 8-167. Conducted Spurious Emission Plot 1 GHz to 3 GHz

(NR\_n71\_1C\_20M\_256QAM - High Channel, Port 3)



Plot 8-164. Conducted Spurious Emission Plot 150 kHz to 30 MHz

(NR\_n71\_1C\_20M\_256QAM - High Channel, Port 3)



Plot 8-166. Conducted Spurious Emission Plot 652.1 MHz to 1 GHz (NR\_n71\_1C\_20M\_256QAM - High Channel, Port 3)

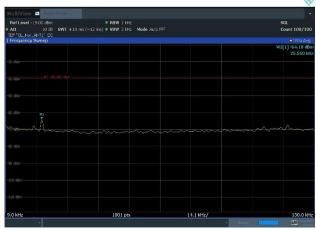


Plot 8-168. Conducted Spurious Emission Plot 3 GHz to 8 GHz

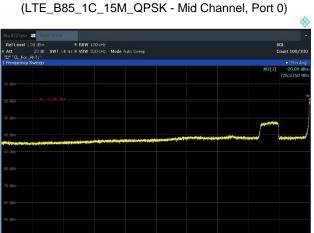
(NR\_n71\_1C\_20M\_256QAM - High Channel, Port 3)

FCC ID: A3LRF4435D-71A	element	MEASUREMENT REPORT (Class II Permissive Change)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 00 of 126
8K22092802-00-R1.A3L	09/29/2022 - 10/26/2022	RRU(RF4435d)	Page 90 of 126

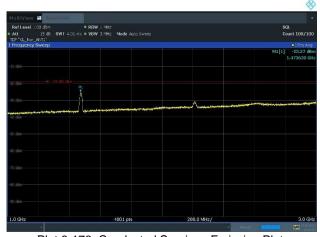




Plot 8-169. Conducted Spurious Emission Plot 9 kHz to 150 kHz



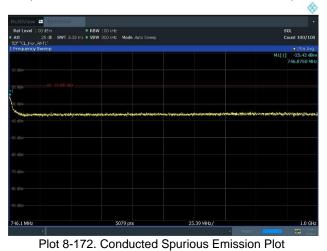
Plot 8-171. Conducted Spurious Emission Plot 30 MHz to 727.9 MHz (LTE\_B85\_1C\_15M\_QPSK - Mid Channel, Port 0)



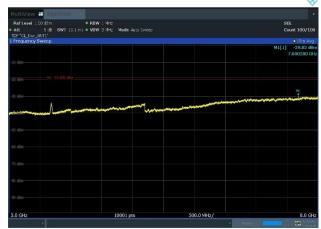
Plot 8-173. Conducted Spurious Emission Plot 1 GHz to 3 GHz (LTE\_B85\_1C\_15M\_QPSK - Mid Channel, Port 0)



Plot 8-170. Conducted Spurious Emission Plot 150 kHz to 30 MHz (LTE\_B85\_1C\_15M\_QPSK - Mid Channel, Port 0)



746.1 MHz to 1 GHz (LTE\_B85\_1C\_15M\_QPSK - Mid Channel, Port 0)



Plot 8-174. Conducted Spurious Emission Plot 3 GHz to 8 GHz (LTE\_B85\_1C\_15M\_QPSK - Mid Channel, Port 0)

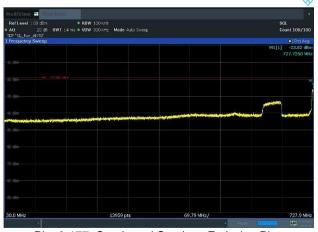
FCC ID: A3LRF4435D-71A	element	MEASUREMENT REPORT (Class II Permissive Change)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 01 of 126
8K22092802-00-R1.A3L	09/29/2022 - 10/26/2022	RRU(RF4435d)	Page 91 of 126



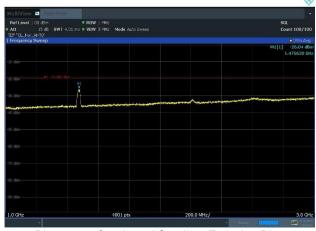


Plot 8-175. Conducted Spurious Emission Plot 9 kHz to 150 kHz

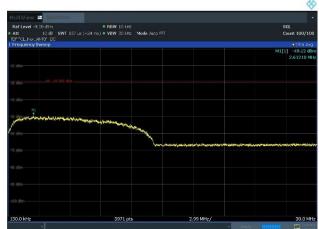
(LTE\_B85\_2C\_5M+10M\_QPSK - Mid Channel, Port 0)



Plot 8-177. Conducted Spurious Emission Plot 30 MHz to 727.9 MHz (LTE\_B85\_2C\_5M+10M\_QPSK - Mid Channel, Port 0)

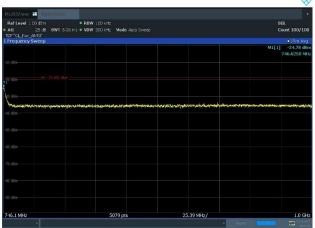


Plot 8-179. Conducted Spurious Emission Plot 1 GHz to 3 GHz (LTE\_B85\_2C\_5M+10M\_QPSK - Mid Channel, Port 0)



Plot 8-176. Conducted Spurious Emission Plot 150 kHz to 30 MHz

(LTE\_B85\_2C\_5M+10M\_QPSK - Mid Channel, Port 0)



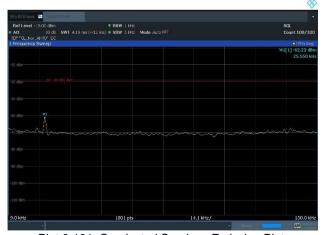
Plot 8-178. Conducted Spurious Emission Plot 746.1 MHz to 1 GHz (LTE\_B85\_2C\_5M+10M\_QPSK - Mid Channel, Port 0)



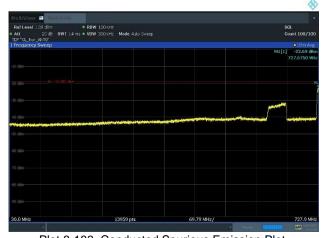
Plot 8-180. Conducted Spurious Emission Plot 3 GHz to 8 GHz (LTE\_B85\_2C\_5M+10M\_QPSK - Mid Channel, Port 0)

FCC ID: A3LRF4435D-71A	element	MEASUREMENT REPORT (Class II Permissive Change)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 02 of 126
8K22092802-00-R1.A3L	09/29/2022 - 10/26/2022	RRU(RF4435d)	Page 92 of 126

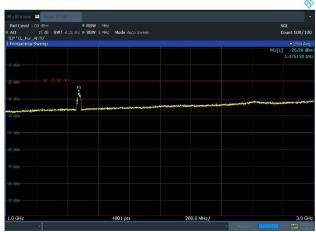




Plot 8-181. Conducted Spurious Emission Plot 9 kHz to 150 kHz (NR\_n85\_2C\_5M+10M\_NC\_QPSK - Mid Channel, Port 0)



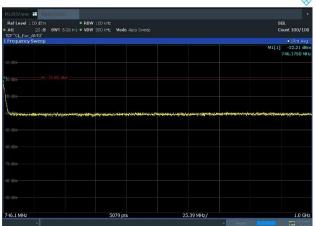
Plot 8-183. Conducted Spurious Emission Plot 30 MHz to 727.9 MHz (NR\_n85\_2C\_5M+10M\_NC\_QPSK - Mid Channel, Port 0)



Plot 8-185. Conducted Spurious Emission Plot 1 GHz to 3 GHz (NR\_n85\_2C\_5M+10M\_NC\_QPSK - Mid Channel, Port 0)



Plot 8-182. Conducted Spurious Emission Plot 150 kHz to 30 MHz (NR\_n85\_2C\_5M+10M\_NC\_QPSK - Mid Channel, Port 0)



Plot 8-184. Conducted Spurious Emission Plot 746.1 MHz to 1 GHz (NR\_n85\_2C\_5M+10M\_NC\_QPSK - Mid Channel, Port 0)



Plot 8-186. Conducted Spurious Emission Plot 3 GHz to 8 GHz (NR\_n85\_2C\_5M+10M\_NC\_QPSK - Mid Channel, Port 0)

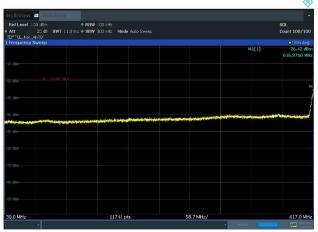
FCC ID: A3LRF4435D-71A	element	MEASUREMENT REPORT (Class II Permissive Change)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 02 of 126
8K22092802-00-R1.A3L	09/29/2022 - 10/26/2022	RRU(RF4435d)	Page 93 of 126





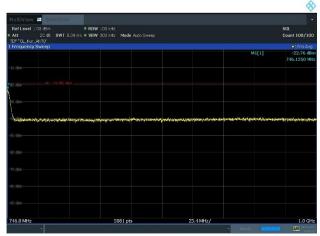
Plot 8-187. Conducted Spurious Emission Plot 9 kHz to 150 kHz

(n71\_2C\_15M+20M+n85\_2C\_5M+10M\_Dual-band - Mid Channel, Port 0)



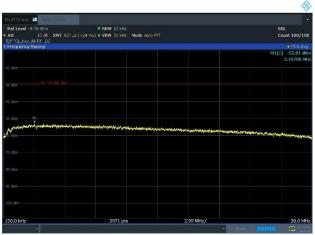
Plot 8-189. Conducted Spurious Emission Plot 30 MHz to 617 MHz

(n71\_2C\_15M+20M+n85\_2C\_5M+10M\_Dual-band - Mid Channel, Port 0



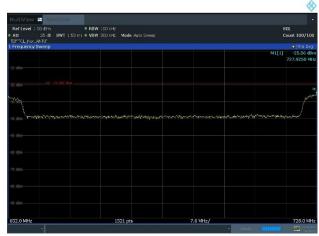
Plot 8-191. Conducted Spurious Emission Plot 746 MHz to 1 GHz

(n71\_2C\_15M+20M+n85\_2C\_5M+10M\_Dual-band - Mid Channel, Port 0  $\,$ 



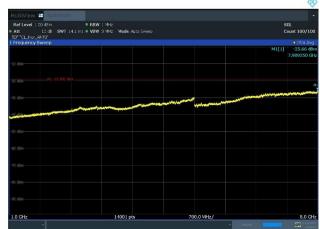
Plot 8-188. Conducted Spurious Emission Plot 150 kHz to 30 MHz

(n71\_2C\_15M+20M+n85\_2C\_5M+10M\_Dual-band - Mid Channel, Port 0



Plot 8-190. Conducted Spurious Emission Plot 652 MHz to 728 MHz

(n71\_2C\_15M+20M+n85\_2C\_5M+10M\_Dual-band - Mid Channel, Port 0



Plot 8-192. Conducted Spurious Emission Plot 1 GHz to 8 GHz

(n71\_2C\_15M+20M+n85\_2C\_5M+10M\_Dual-band - Mid Channel, Port 0  $\,$ 

FCC ID: A3LRF4435D-71A	element	MEASUREMENT REPORT (Class II Permissive Change)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 04 of 126
8K22092802-00-R1.A3L	09/29/2022 - 10/26/2022	RRU(RF4435d)	Page 94 of 126



# 8.7 Radiated spurious emission

### **Test Overview**

Radiated spurious emissions measurements are performed using the field strength method described in ANSI C63.26-2015 with the EUT transmitting into an integral antenna. Measurements on signals operating below 1GHz are performed using vertically and horizontally polarized broadband tri-log antennas. Measurements on signals operating above 1GHz are performed using vertically and horizontally polarized broadband horn antennas.

### **Test Procedure Used**

ANSI C63.26 - Section 5.5.3.2

## **Test Setting**

- 1. Start frequency was set to 30 MHz and stop frequency was set to at least 10 \* the fundamental frequency
- 2. RBW = 100 kHz for emissions below 1 GHz and 1 MHz for emissions above 1GHz
- 3. VBW ≥ 3 x RBW
- 4. No. of sweep points ≥ 2 x span / RBW
- 5. Detector = Peak for the pre-scan, (In cases where the level is within 2 dB of the limit, the final measurement is taken using RMS detector.)
- 6. Trace mode = Max Hold (In cases where the level is within 2 dB of the limit, the final measurement is taken using triggering/gating and trace averaging.)
- 7. The trace was allowed to stabilize.

FCC ID: A3LRF4435D-71A	element	MEASUREMENT REPORT (Class II Permissive Change)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 95 of 126
8K22092802-00-R1.A3L	09/29/2022 - 10/26/2022	RRU(RF4435d)	Page 95 01 120



## **Test Setup**

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

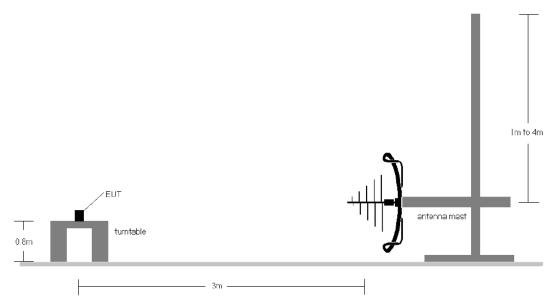


Figure 8-6. Test Instrument & Measurement Setup < 1 GHz

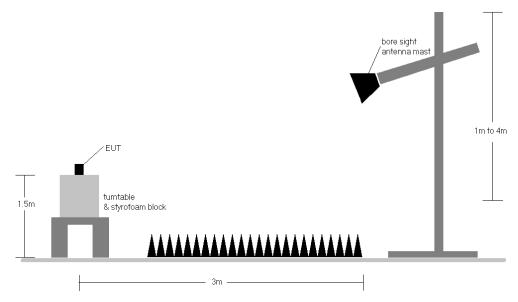


Figure 8-7. Test Instrument & Measurement Setup > 1 GHz

## **Limit**

The power of any emission outside of the authorized operating frequency range cannot exceed -13 dBm.

FCC ID: A3LRF4435D-71A	element	MEASUREMENT REPORT (Class II Permissive Change)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 96 of 126
8K22092802-00-R1.A3L	09/29/2022 - 10/26/2022	RRU(RF4435d)	Page 90 01 120



### **Test Notes**

1. The average EIRP reported below is calculated per 5.2.7 of ANSI C63.26-2015 which states:

The measured e.i.r.p is converted to E-field in V/m. Then the distance correction is applied before converted back to calculated e.i.r.p.as explained in KDB 971168 D01 D01 v03r01.

# **Effective Isotropic Radiated Power Sample Calculation**

Field Strength [dB $\mu$ V/m] = Measured Value [dBm] + 107 + AFCL [dB/m]

 $= -62.88 \text{ [dBm]} + 107 + 7.54 \text{ [dB/m]} = 51.66 \text{ dB}\mu\text{V/m}$ 

**e.i.r.p.** [dBm] = E[dB  $\mu$ V/m] + 20 log<sub>10</sub>(d[m]) - 104.8

= 51.66 dB[ $\mu$ V/m] + (20\*log (3)) - 104.8

= -43.59 dBm

\*AFCL (dB/m) contains measurement antenna factor(dB/m) and cable loss(dB) as below:

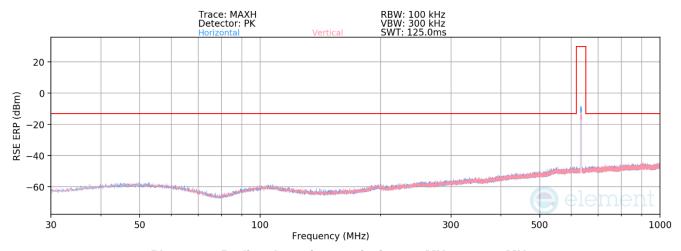
Frequency [MHz]	Antenna Factor (dB/m)	Chamber measurement cable loss + amplifier [dB]	AFCL (dB/m)
987.36	23.30	2.69	25.99
7981.52	37.00	-29.70	7.54

Table 8-56. Adopted AFCL value in the calculation

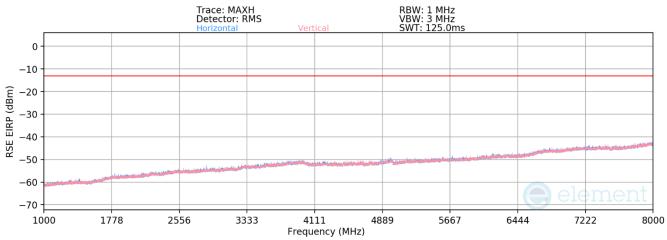
- 2. The EUT was tested in both horizontal and vertical antenna polarizations and in all possible test configurations and positioning. The worst case emissions are reported with the EUT positioning, modulations, channel bandwidth configurations shown in the tables below.
- 3. The spectrum is measured from 30 MHz to the 10th harmonic of the fundamental frequency of the transmitter. The worst-case emissions are reported.
- 4. All emissions were measured at a 3-meter test distance.
- 5. Spurious emissions were measured with all EUT antennas transmitting simultaneously and all antenna ports terminated.
- 6. The "-" shown in the following RSE tables are used to denote a noise floor measurement.
- 7. All modes of operation were investigated and the worst case configuration results are reported in this section.

FCC ID: A3LRF4435D-71A	element	MEASUREMENT REPORT (Class II Permissive Change)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 97 of 126
8K22092802-00-R1.A3L	09/29/2022 - 10/26/2022	RRU(RF4435d)	Fage 97 01 126





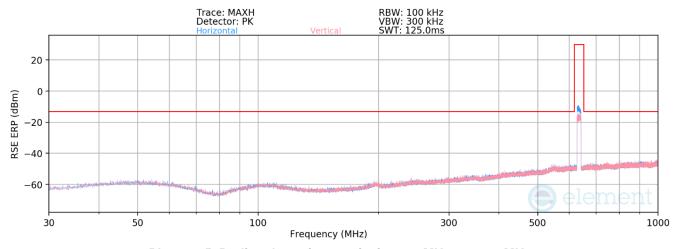
Plot 8-193. Radiated spurious emission\_30 MHz to 1000 MHz (LTE\_B71\_1C\_5M\_Mid Channel)



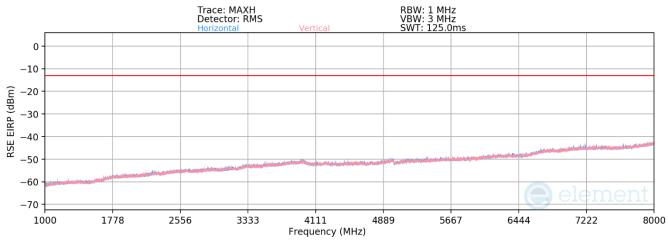
Plot 8-194. Radiated spurious emission\_1 GHz to 8 GHz (LTE\_B71\_1C\_5M\_Mid Channel)

FCC ID: A3LRF4435D-71A	element	MEASUREMENT REPORT (Class II Permissive Change)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 09 of 126
8K22092802-00-R1.A3L	09/29/2022 - 10/26/2022	RRU(RF4435d)	Page 98 of 126





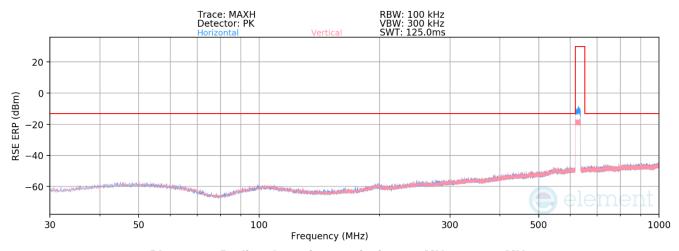
Plot 8-195. Radiated spurious emission\_30 MHz to 1000 MHz (NR\_n71\_1C\_15M\_Mid Channel)



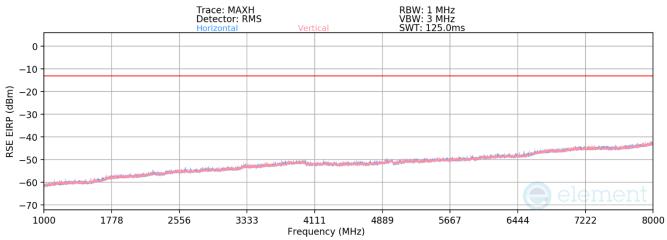
Plot 8-196. Radiated spurious emission\_1 GHz to 8 GHz (NR\_n71\_1C\_15M\_Mid Channel)

FCC ID: A3LRF4435D-71A	element	MEASUREMENT REPORT (Class II Permissive Change)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 00 of 126
8K22092802-00-R1.A3L	09/29/2022 - 10/26/2022	RRU(RF4435d)	Page 99 of 126





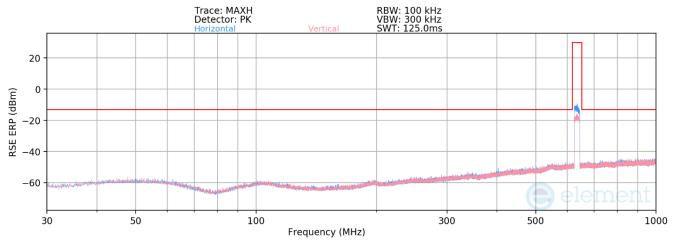
Plot 8-197. Radiated spurious emission\_30 MHz to 1000 MHz (NR\_n71\_1C\_20M\_Low Channel)



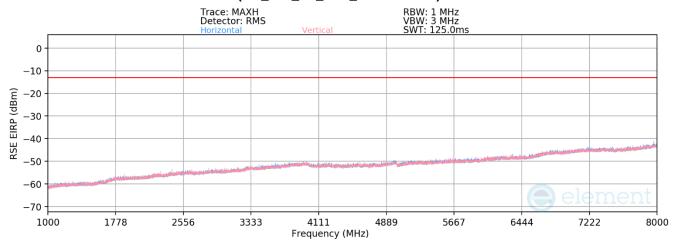
Plot 8-198. Radiated spurious emission\_1 GHz to 8 GHz (NR\_n71\_1C\_20M\_Low Channel)

FCC ID: A3LRF4435D-71A	element	MEASUREMENT REPORT (Class II Permissive Change)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dags 100 of 126
8K22092802-00-R1.A3L	09/29/2022 - 10/26/2022	RRU(RF4435d)	Page 100 of 126





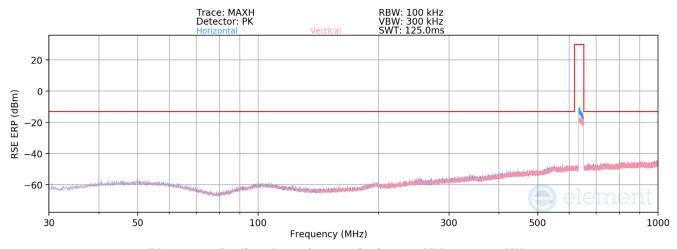
Plot 8-199. Radiated spurious emission\_30 MHz to 1000 MHz (NR\_n71\_1C\_20M\_Mid Channel)



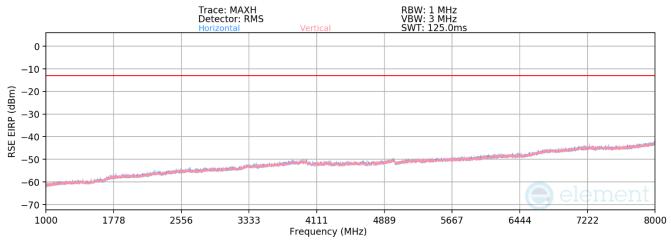
Plot 8-200. Radiated spurious emission\_1 GHz to 8 GHz (NR\_n71\_1C\_20M\_Mid Channel)

FCC ID: A3LRF4435D-71A	element	MEASUREMENT REPORT (Class II Permissive Change)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 101 of 126
8K22092802-00-R1.A3L	09/29/2022 - 10/26/2022	RRU(RF4435d)	Page 101 of 126





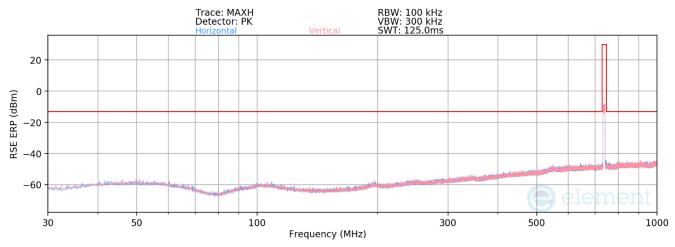
Plot 8-201. Radiated spurious emission\_30 MHz to 1000 MHz (NR\_n71\_1C\_20M\_High Channel)



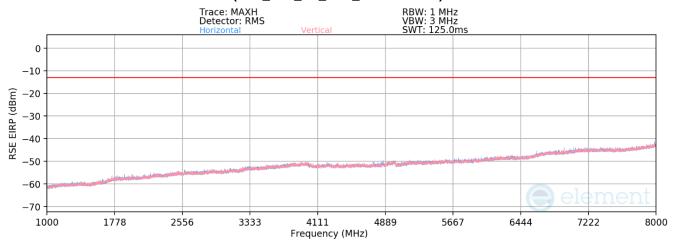
Plot 8-202. Radiated spurious emission\_1 GHz to 8 GHz (NR\_n71\_1C\_20M\_High Channel)

FCC ID: A3LRF4435D-71A	element	MEASUREMENT REPORT (Class II Permissive Change)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 102 of 126
8K22092802-00-R1.A3L	09/29/2022 - 10/26/2022	RRU(RF4435d)	Page 102 of 126





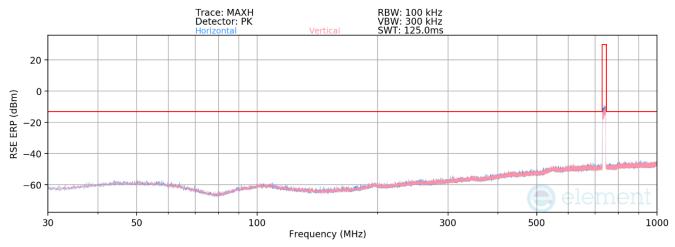
Plot 8-203. Radiated spurious emission\_30 MHz to 1000 MHz (LTE\_B85\_1C\_10M\_Mid Channel)



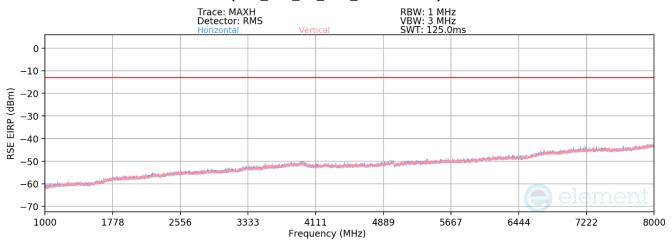
Plot 8-204. Radiated spurious emission Plot\_1 GHz to 8 GHz (LTE\_B85\_1C\_10M\_Mid Channel)

FCC ID: A3LRF4435D-71A	element	MEASUREMENT REPORT (Class II Permissive Change)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 102 of 126
8K22092802-00-R1.A3L	09/29/2022 - 10/26/2022	RRU(RF4435d)	Page 103 of 126





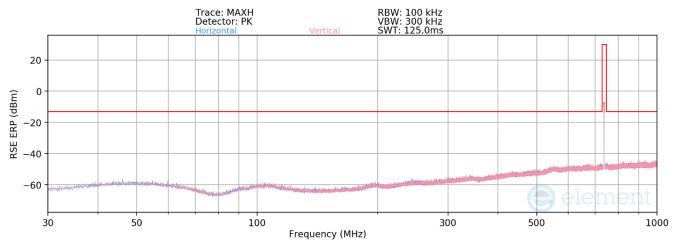
Plot 8-205. Radiated spurious emission\_30 MHz to 1000 MHz (LTE\_B85\_1C\_15M\_Mid Channel)



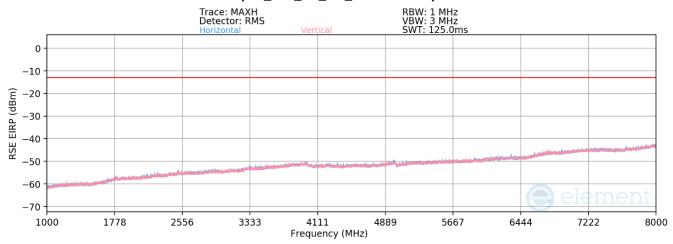
Plot 8-206. Radiated spurious emission Plot\_1 GHz to 8 GHz (LTE\_B85\_1C\_15M\_Mid Channel)

FCC ID: A3LRF4435D-71A	element	MEASUREMENT REPORT (Class II Permissive Change)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 104 of 126
8K22092802-00-R1.A3L	09/29/2022 - 10/26/2022	RRU(RF4435d)	Page 104 01 120





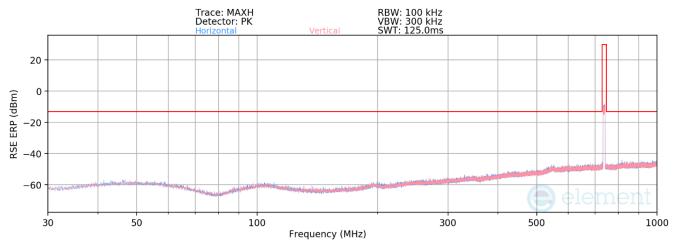
Plot 8-207. Radiated spurious emission\_30 MHz to 1000 MHz (NR\_n85\_1C\_5M\_Mid Channel)



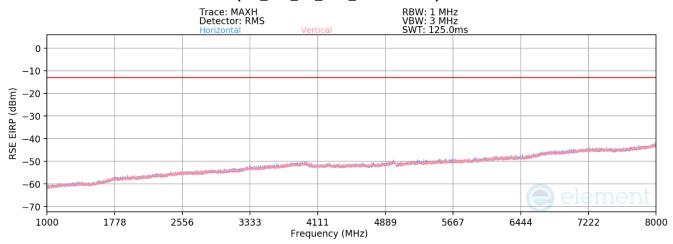
Plot 8-208. Radiated spurious emission Plot\_1 GHz to 8 GHz (NR\_n85\_1C\_5M\_Mid Channel)

FCC ID: A3LRF4435D-71A	element	MEASUREMENT REPORT (Class II Permissive Change)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 105 of 126
8K22092802-00-R1.A3L	09/29/2022 - 10/26/2022	RRU(RF4435d)	Page 105 of 126





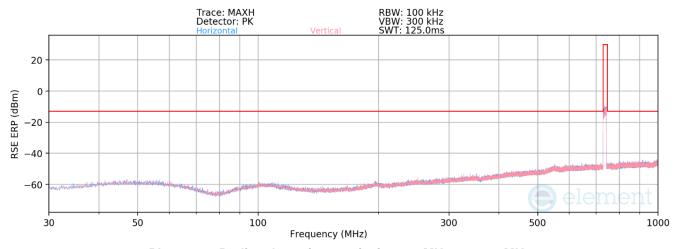
Plot 8-209. Radiated spurious emission\_30 MHz to 1000 MHz (NR\_n85\_1C\_10M\_Mid Channel)



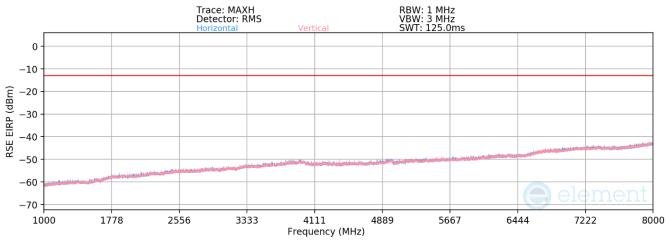
Plot 8-210. Radiated spurious emission Plot\_1 GHz to 8 GHz (NR\_n85\_1C\_10M\_Mid Channel)

FCC ID: A3LRF4435D-71A	element	MEASUREMENT REPORT (Class II Permissive Change)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 106 of 126
8K22092802-00-R1.A3L	09/29/2022 - 10/26/2022	RRU(RF4435d)	Page 106 of 126





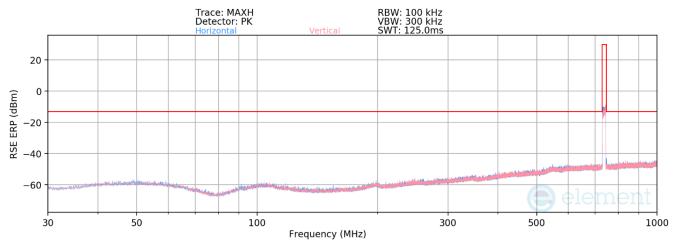
Plot 8-211. Radiated spurious emission\_30 MHz to 1000 MHz (NR\_n85\_1C\_15M\_Low Channel)



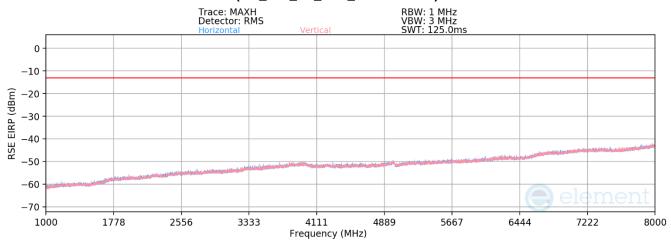
Plot 8-212. Radiated spurious emission Plot\_1 GHz to 8 GHz (NR\_n85\_1C\_15M\_Low Channel)

FCC ID: A3LRF4435D-71A	element	MEASUREMENT REPORT (Class II Permissive Change)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 107 of 126
8K22092802-00-R1.A3L	09/29/2022 - 10/26/2022	RRU(RF4435d)	Page 107 of 126





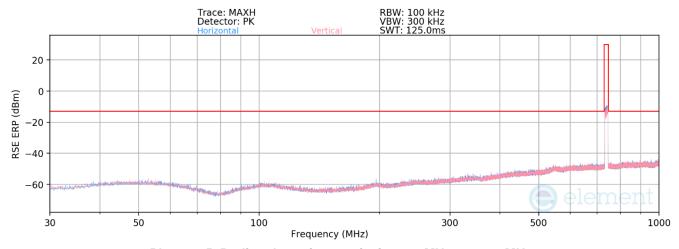
Plot 8-213. Radiated spurious emission\_30 MHz to 1000 MHz (NR\_n85\_1C\_15M\_Mid Channel)



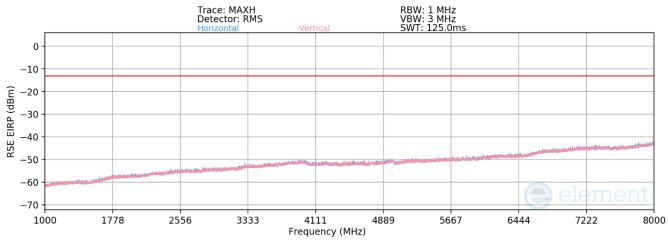
Plot 8-214. Radiated spurious emission Plot\_1 GHz to 8 GHz (NR\_n85\_1C\_15M\_Mid Channel)

FCC ID: A3LRF4435D-71A	element	MEASUREMENT REPORT (Class II Permissive Change)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 108 of 126
8K22092802-00-R1.A3L	09/29/2022 - 10/26/2022	RRU(RF4435d)	Page 106 01 126





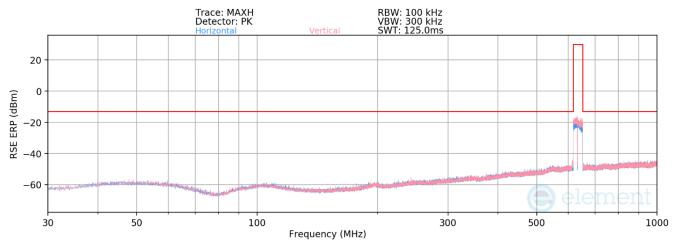
Plot 8-215. Radiated spurious emission\_30 MHz to 1000 MHz (NR\_n85\_1C\_15M\_High Channel)



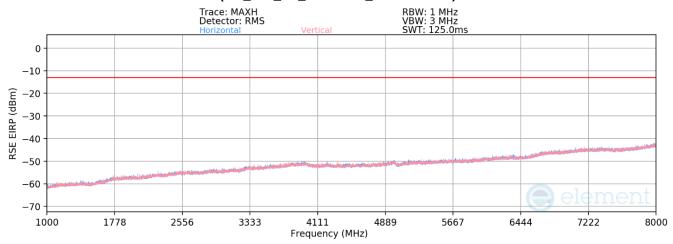
Plot 8-216. Radiated spurious emission Plot\_1 GHz to 8 GHz (NR\_n85\_1C\_15M\_High Channel)

FCC ID: A3LRF4435D-71A	element	MEASUREMENT REPORT (Class II Permissive Change)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 109 of 126
8K22092802-00-R1.A3L	09/29/2022 - 10/26/2022	RRU(RF4435d)	Page 109 01 126





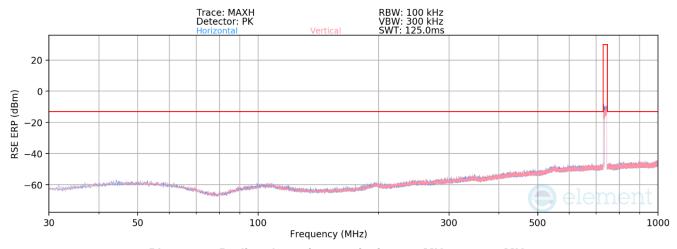
Plot 8-217. Radiated spurious emission\_30 MHz to 1000 MHz (NR\_n71\_2C\_15M+20M\_Mid Channel)



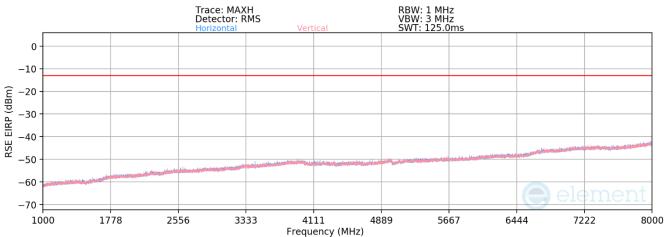
Plot 8-218. Radiated spurious emission Plot\_1 GHz to 8 GHz (NR\_n71\_2C\_15M+20M\_Mid Channel)

FCC ID: A3LRF4435D-71A	element	MEASUREMENT REPORT (Class II Permissive Change)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 110 of 126
8K22092802-00-R1.A3L	09/29/2022 - 10/26/2022	RRU(RF4435d)	Page 110 of 126





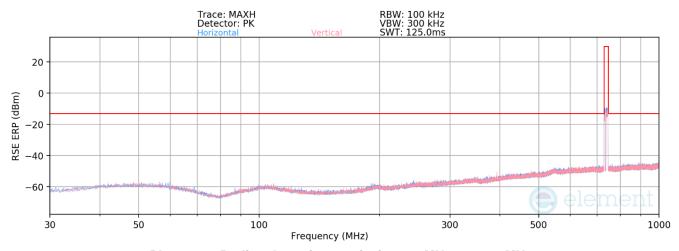
Plot 8-219. Radiated spurious emission\_30 MHz to 1000 MHz (NR\_n85\_2C\_5M+10M\_Mid Channel)



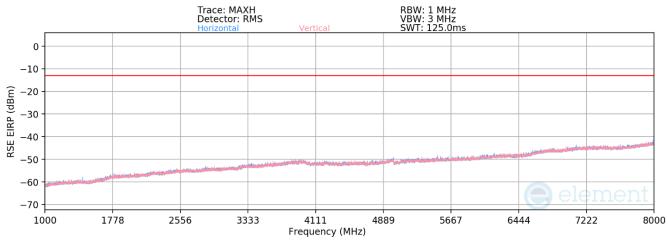
Plot 8-220. Radiated spurious emission Plot\_1 GHz to 8 GHz (NR\_n85\_2C\_5M+10M\_Mid Channel)

FCC ID: A3LRF4435D-71A	element	MEASUREMENT REPORT (Class II Permissive Change)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 111 of 126
8K22092802-00-R1.A3L	09/29/2022 - 10/26/2022	RRU(RF4435d)	Page 111 of 126





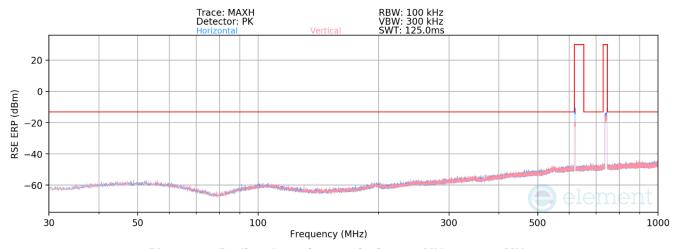
Plot 8-221. Radiated spurious emission\_30 MHz to 1000 MHz (NR\_n85\_2NC\_5M+10M\_Mid Channel)



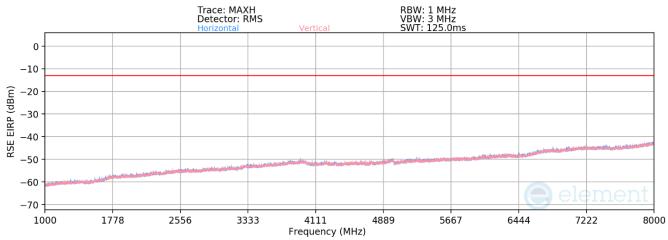
Plot 8-222. Radiated spurious emission Plot\_1 GHz to 8 GHz (NR\_n85\_2NC\_5M+10M\_Mid Channel)

FCC ID: A3LRF4435D-71A	element	MEASUREMENT REPORT (Class II Permissive Change)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 112 of 126
8K22092802-00-R1.A3L	09/29/2022 - 10/26/2022	RRU(RF4435d)	Page 112 of 126





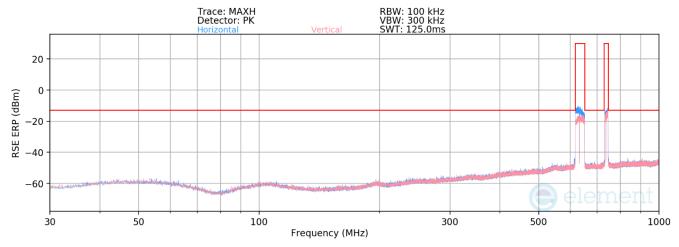
Plot 8-223. Radiated spurious emission\_30 MHz to 1000 MHz (n71\_1C\_5M+n85\_1C\_5M\_Dual-Band Operation)



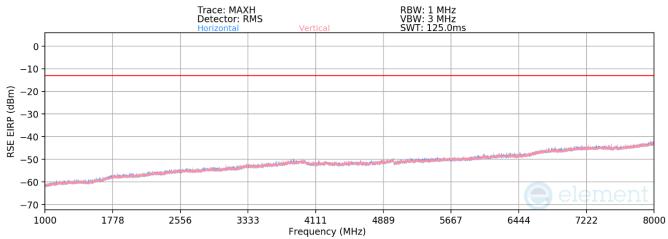
Plot 8-224. Radiated spurious emission Plot\_1 GHz to 8 GHz (n71\_1C\_5M+n85\_1C\_5M\_Dual-Band Operation)

FCC ID: A3LRF4435D-71A	element	MEASUREMENT REPORT (Class II Permissive Change)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 112 of 126
8K22092802-00-R1.A3L	09/29/2022 - 10/26/2022	RRU(RF4435d)	Page 113 of 126





Plot 8-225. Radiated spurious emission\_30 MHz to 1000 MHz (n71\_2C\_15M+20M+n85\_2C\_5M+10M\_Dual-Band Operation)



Plot 8-226. Radiated spurious emission Plot\_1 GHz to 8 GHz (n71\_2C\_15M+20M+n85\_2C\_5M+10M\_Dual-Band Operation)

FCC ID: A3LRF4435D-71A	element	MEASUREMENT REPORT (Class II Permissive Change)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 114 of 126
8K22092802-00-R1.A3L	09/29/2022 - 10/26/2022	RRU(RF4435d)	Page 114 of 126



Bandwidth (MHz):	n71_2C_15M+20M+n85_2C_5M+10M		
Center Frequency (MHz):	624.0 + 642.0 + 733.5+741.0		
Modulation Signal:	QPSK		

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Heigh [cm]	Turntable azimuth [degree]	Analyzer Level [dBm/MHz]	AFCL [dBm]	Field Strength [dB#//m]	RSE EIRP [dBm/MHz]	Limit [dBm/MHz]	Margin [dB]
987.36	Н	100	60	-84.35	25.99	48.64	-46.62	-13	-33.61
991.25	V	100	180	-85.27	26.02	47.75	-47.51	-13	-34.51
7981.52	Н	200	60	-61.97	7.29	52.32	-42.94	-13	-29.94
7936.31	V	100	100	-62.88	7.54	51.66	-43.59	-13	-30.59

Table 8-57. Radiated spurious emission Worst case Summary Data (n71\_2C\_15M+20M + n85\_2C\_5M+10M\_Dual-Band Operation)

FCC ID: A3LRF4435D-71A	element	MEASUREMENT REPORT (Class II Permissive Change)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 115 of 126
8K22092802-00-R1.A3L	09/29/2022 - 10/26/2022	RRU(RF4435d)	Page 115 01 126



# 9.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **Samsung RRU(RF4435d) FCC ID: A3LRF4435D-71A** complies with all of the requirements of Part 27 FCC Rules.

FCC ID: A3LRF4435D-71A	element	MEASUREMENT REPORT (Class II Permissive Change)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 116 of 126
8K22092802-00-R1.A3L	09/29/2022 - 10/26/2022	RRU(RF4435d)	Fage 110 01 120



## 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 =  $1 \sim 5\%$  of the expected OBW
- 3. VBW  $\geq$  3 x RBW
- 4. Span =  $2 \sim 3 \times OBW$
- 5. No. of sweep points  $\geq 2 \times \text{span} / \text{RBW}$
- 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.

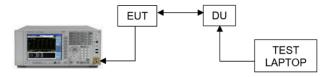


Figure 10-1. Test Instrument & Measurement Setup

### <u>Limit</u>

N/A

FCC ID: A3LRF4435D-71A	element	MEASUREMENT REPORT (Class II Permissive Change)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 117 of 126
8K22092802-00-R1.A3L	09/29/2022 - 10/26/2022	RRU(RF4435d)	Faye 117 01 120



### Note

- 1. Result for reference maximum output power of Grant of Authorization is under section 10.1.
- 2. 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.
- 3. 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).

4. Sample Calculation:

Let us assume the following numbers:

a) Total MIMO Conducted Power as 81642.96 mW

b)

Factors		Value	Unit
Summed MIMO Conducted Power (linear sum)		81642.96	mW
Summed MIMO Conducted Power (dBm)	= 10 * log (81642.96) =	49.12	dBm

FCC ID: A3LRF4435D-71A	element	MEASUREMENT REPORT (Class II Permissive Change)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 119 of 126
8K22092802-00-R1.A3L	09/29/2022 - 10/26/2022	RRU(RF4435d)	Page 118 of 126



Channel	Port	QPSK	16QAM	64QAM	256QAM
	0	42.56	42.71	42.71	42.62
	1	42.57	42.64	42.74	42.46
Low	2	43.45	43.44	43.51	43.41
LOW	3	43.21	43.30	43.45	43.21
	Total Conducted Power (mW)	79173.99	80488.85	82026.73	78769.94
	Total Conducted Power(dBm)	48.99	49.06	49.14	48.96
	0	42.72	42.61	42.78	42.72
	1	42.78	42.89	42.89	42.78
Mid	2	43.40	43.38	43.46	43.32
Mid	3	43.32	43.32	43.35	43.34
	Total Conducted Power (mW)	81029.80	80947.96	82229.81	80729.63
	Total Conducted Power(dBm)	49.09	49.08	49.15	49.07
	0	42.82	42.87	42.96	42.80
	1	42.74	42.88	42.96	42.80
High	2	43.44	43.43	43.56	43.37
	3	43.35	43.31	43.40	43.31
	Total Conducted Power (mW)	81642.96	82231.25	84115.66	81265.13
	Total Conducted Power(dBm)	49.12	49.15	49.25	49.10

Table 10-1. Conducted Average Output Power Table (LTE\_B71\_1C\_5M)

Channel	Port	QPSK	16QAM	64QAM	256QAM
	0	47.26	47.42	47.37	47.27
	1	47.40	47.31	47.41	47.21
Low	2	47.74	47.76	47.80	47.75
LOW	3	47.88	47.95	48.13	48.14
	Total Conducted Power (mW)	228970.33	231111.73	234925.48	230664.27
	Total Conducted Power(dBm)	53.60	53.64	53.71	53.63
	0	47.40	47.41	47.45	47.39
	1	47.31	47.41	47.40	47.38
Mid	2	47.85	47.70	47.78	47.74
IVIIU	3	48.22	48.24	48.33	48.28
	Total Conducted Power (mW)	236109.06	235726.58	238600.56	236256.17
	Total Conducted Power(dBm)	53.73	53.72	53.78	53.73
	0	47.53	47.67	47.51	47.51
	1	47.49	47.41	47.46	47.45
Lliah	2	47.76	47.72	47.82	47.81
High	3	48.29	48.24	48.29	48.40
	Total Conducted Power (mW)	239885.06	239396.62	240069.23	241532.15
	Total Conducted Power(dBm)	53.80	53.79	53.80	53.83

Table 10-2. Conducted Average Output Power Table (NR\_n71\_1C\_15M)

FCC ID: A3LRF4435D-71A	element	MEASUREMENT REPORT (Class II Permissive Change)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 119 of 126
8K22092802-00-R1.A3L	09/29/2022 - 10/26/2022	RRU(RF4435d)	Faye 113 01 120



Channel	Port	QPSK	16QAM	64QAM	256QAM
	0	48.29	48.13	48.23	48.23
	1	48.18	48.26	48.23	48.49
Low	2	48.89	48.75	48.70	48.70
LOW	3	48.84	48.81	48.79	48.98
	Total Conducted Power (mW)	287224.43	283023.48	282868.94	290357.96
	Total Conducted Power(dBm)	54.58	54.52	54.52	54.63
	0	48.26	48.29	48.49	48.32
	1	48.55	48.42	48.34	48.43
Mid	2	48.80	48.79	48.84	48.80
IVIIG	3	49.05	49.13	49.22	49.21
	Total Conducted Power (mW)	294813.17	294485.00	298985.59	296808.89
	Total Conducted Power(dBm)	54.70	54.69	54.76	54.72
	0	48.41	48.51	48.63	48.60
	1	48.44	48.55	48.50	48.48
∐iah	2	48.87	48.92	48.91	48.94
High	3	49.18	49.05	49.12	49.33
	Total Conducted Power (mW)	299050.38	300907.74	303202.22	306959.65
	Total Conducted Power(dBm)	54.76	54.78	54.82	54.87

Table 10-3. Conducted Average Output Power Table (NR\_n71\_1C\_20M)

Channel	Port	QPSK	16QAM	64QAM	256QAM
	0	45.48	45.71	45.68	45.61
	1	45.59	45.81	45.64	45.52
Low	2	46.12	46.06	46.24	46.17
LOW	3	46.17	46.19	46.28	46.25
	Total Conducted Power (mW)	153868.65	157301.35	158161.19	155606.23
	Total Conducted Power(dBm)	51.87	51.97	51.99	51.92
	0	45.78	45.74	45.73	45.78
	1	45.68	45.57	45.53	45.61
Mid	2	46.23	46.20	46.26	46.30
IVIIG	3	46.40	46.49	46.54	46.60
	Total Conducted Power (mW)	160454.56	159807.73	160486.87	162602.53
	Total Conducted Power(dBm)	52.05	52.04	52.05	52.11
	0	45.96	45.91	45.96	45.80
	1	45.56	45.55	45.56	45.50
∐iah	2	46.35	46.30	46.34	46.40
High	3	46.57	46.62	46.70	46.67
	Total Conducted Power (mW)	163966.73	163464.15	165246.84	163603.39
	Total Conducted Power(dBm)	52.15	52.13	52.18	52.14

Table 10-4. Conducted Average Output Power Table (LTE\_B71\_2C\_5M+5M)

FCC ID: A3LRF4435D-71A	element	MEASUREMENT REPORT (Class II Permissive Change)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 120 of 126
8K22092802-00-R1.A3L	09/29/2022 - 10/26/2022	RRU(RF4435d)	raye 120 01 120



Channel	Port	QPSK	16QAM	64QAM	256QAM
	0	45.78	45.63	45.74	45.78
	1	45.82	45.69	45.58	45.79
Low	2	46.22	46.34	46.43	46.37
LOW	3	46.55	46.20	46.44	46.47
	Total Conducted Power (mW)	163103.64	158367.15	161647.93	163487.71
	Total Conducted Power(dBm)	52.12	52.00	52.09	52.13
	0	45.78	45.87	45.84	45.84
	1	45.74	45.98	45.87	45.70
Mid	2	46.33	46.42	46.60	46.61
Mid	3	46.26	46.44	46.48	46.53
	Total Conducted Power (mW)	160562.06	166173.06	167179.37	166316.42
	Total Conducted Power(dBm)	52.06	52.21	52.23	52.21
	0	45.87	45.89	45.98	46.02
	1	45.71	45.64	45.67	45.62
Lliah	2	46.47	46.44	46.40	46.41
High	3	46.54	46.63	46.61	46.66
	Total Conducted Power (mW)	165318.40	165539.94	165991.34	166566.77
	Total Conducted Power(dBm)	52.18	52.19	52.20	52.22

Table 10-5. Conducted Average Output Power Table (NR\_n71\_2C\_5M+5M)

Channel	Port	QPSK	16QAM	64QAM	256QAM
	0	48.32	48.64	48.70	48.72
	1	48.44	48.63	48.92	48.58
Mid	2	49.03	49.12	49.10	49.01
Mid	3	48.99	49.18	49.31	49.30
	Total Conducted Power (mW)	296977.16	310512.11	318707.10	311313.68
	Total Conducted Power(dBm)	54.73	54.92	55.03	54.93

Table 10-6. Conducted Average Output Power Table (NR\_n71\_2C\_15M+20M)

FCC ID: A3LRF4435D-71A	element	MEASUREMENT REPORT (Class II Permissive Change)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 121 of 126
8K22092802-00-R1.A3L	-00-R1.A3L 09/29/2022 - 10/26/2022 RRU(RF4435d)		raye 121 01 120



Channel	Port	QPSK	16QAM	64QAM	256QAM
	0	47.14	47.19	47.29	47.34
	1	47.12	46.96	47.06	47.15
Low	2	47.28	47.35	47.25	47.34
LOW	3	47.54	47.49	47.62	47.63
	Total Conducted Power (mW)	213494.44	212449.11	215293.66	218223.05
	Total Conducted Power(dBm)	53.29	53.27	53.33	53.39
	0	47.48	47.29	47.43	47.48
	1	47.17	47.11	47.14	47.20
Mid	2	47.41	47.35	47.34	47.33
Mid	3	47.55	47.73	47.78	47.79
	Total Conducted Power (mW)	220061.29	218601.60	221274.89	222649.31
	Total Conducted Power(dBm)	53.43	53.40	53.45	53.48
	0	47.39	47.32	47.40	47.33
	1	47.02	46.95	46.99	46.97
Lliab	2	47.40	47.39	47.38	47.34
High	3	47.72	47.78	47.78	47.79
	Total Conducted Power (mW)	219288.01	218302.89	219638.24	218166.60
	Total Conducted Power(dBm)	53.41	53.39	53.42	53.39

Table 10-7. Conducted Average Output Power Table (LTE\_B85\_1C\_10M)

Channel	Port	QPSK	16QAM	64QAM	256QAM
	0	48.62	48.72	48.68	48.65
	1	48.80	48.64	48.72	48.76
Low	2	48.81	48.79	48.72	48.75
Low	3	48.77	48.77	48.75	48.83
	Total Conducted Power (mW)	300003.92	298605.95	297726.24	299817.74
	Total Conducted Power(dBm)	54.77	54.75	54.74	54.77
	0	48.64	48.60	48.72	48.63
	1	48.63	48.56	48.75	48.62
Mid	2	48.76	48.72	48.76	48.77
IVIIQ	3	48.77	48.90	48.93	48.96
	Total Conducted Power (mW)	296557.51	296320.93	302787.69	299763.87
	Total Conducted Power(dBm)	54.72	54.72	54.81	54.77
	0	48.75	48.68	48.72	48.67
	1	48.59	48.77	48.59	48.66
Lliab	2	48.80	48.78	48.69	48.72
High	3	48.89	48.89	48.85	48.89
	Total Conducted Power (mW)	300570.34	302081.38	297446.85	298991.47
	Total Conducted Power(dBm)	54.78	54.80	54.73	54.76

Table 10-8. Conducted Average Output Power Table (LTE\_n85\_1C\_15M)

FCC ID: A3LRF4435D-71A	element	MEASUREMENT REPORT (Class II Permissive Change)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 122 of 126
8K22092802-00-R1.A3L 09/29/2022 - 10/26/2022		RRU(RF4435d)	Faye 122 01 120



Channel	Port	QPSK	16QAM	64QAM	256QAM
	0	43.96	44.30	44.15	44.43
	1	43.78	44.31	44.40	44.55
Low	2	44.05	44.55	44.43	44.53
LOW	3	44.10	44.61	44.56	44.76
	Total Conducted Power (mW)	99880.37	111309.72	109852.99	114545.22
	Total Conducted Power(dBm)	49.99	50.47	50.41	50.59
	0	44.47	44.40	44.38	44.66
	1	44.52	44.44	44.35	44.41
Mid	2	44.64	44.68	44.60	44.63
Mid	3	44.51	44.74	44.68	44.74
	Total Conducted Power (mW)	113659.70	114501.08	112859.57	115672.69
	Total Conducted Power(dBm)	50.56	50.59	50.53	50.63
	0	44.59	44.47	44.60	44.41
	1	44.31	44.32	44.23	44.12
Lligh	2	44.60	44.67	44.56	44.64
High	3	44.53	44.65	44.63	44.56
	Total Conducted Power (mW)	112970.88	113512.60	112941.45	111111.46
	Total Conducted Power(dBm)	50.53	50.55	50.53	50.46

Table 10-9. Conducted Average Output Power Table (NR\_n85\_1C\_5M)

Channel	Port	QPSK	16QAM	64QAM	256QAM
	0	47.28	47.48	47.43	47.39
	1	46.96	47.21	47.15	47.01
Low	2	47.53	47.59	47.51	47.43
LOW	3	47.54	47.60	47.54	47.68
	Total Conducted Power (mW)	216494.06	223533.13	220333.24	219010.78
	Total Conducted Power(dBm)	53.35	53.49	53.43	53.40
	0	47.27	47.40	47.35	47.35
	1	47.13	47.07	47.15	47.10
Mid	2	47.61	47.47	47.54	47.45
IVIIG	3	47.75	47.71	47.67	47.66
	Total Conducted Power (mW)	222217.99	220754.30	221438.51	219546.11
	Total Conducted Power(dBm)	53.47	53.44	53.45	53.42
	0	47.32	47.29	47.31	47.31
	1	46.98	46.91	47.00	47.01
∐iah	2	47.57	47.49	47.54	47.51
High	3	47.65	47.73	47.69	47.62
	Total Conducted Power (mW)	219197.70	218067.78	219449.10	218234.61
	Total Conducted Power(dBm)	53.41	53.39	53.41	53.39

Table 10-10. Conducted Average Output Power Table (NR\_n85\_1C\_10M)

FCC ID: A3LRF4435D-71A	element	MEASUREMENT REPORT (Class II Permissive Change)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 123 of 126
8K22092802-00-R1.A3L 09/29/2022 - 10/26/2022		RRU(RF4435d)	Page 123 01 126



Channel	Port	QPSK	16QAM	64QAM	256QAM
	0	48.69	48.84	48.89	48.83
	1	48.76	48.76	48.90	48.73
Low	2	48.81	48.92	48.97	48.96
LOW	3	48.82	48.99	49.03	48.84
	Total Conducted Power (mW)	301363.35	308955.09	313940.33	306292.69
	Total Conducted Power(dBm)	54.79	54.90	54.97	54.86
	0	48.94	48.88	49.00	48.87
	1	48.92	48.81	48.80	48.64
Mid	2	48.89	48.98	49.02	48.99
IVIIU	3	49.16	49.15	49.22	49.25
	Total Conducted Power (mW)	316185.97	314592.81	318650.35	313593.90
	Total Conducted Power(dBm)	55.00	54.98	55.03	54.96
	0	48.78	48.98	48.93	48.98
	1	48.49	48.66	48.79	48.68
High	2	48.90	48.95	49.01	48.98
	3	49.06	49.23	49.27	49.27
	Total Conducted Power (mW)	304303.53	314795.74	317989.89	316454.03
	Total Conducted Power(dBm)	54.83	54.98	55.02	55.00

Table 10-11. Conducted Average Output Power Table (NR\_n85\_1C\_15M)

Channel	Port	QPSK	16QAM	64QAM	256QAM
	0	47.07	47.21	47.35	47.14
	1	46.84	47.15	47.19	47.19
Low	2	47.30	47.37	47.41	47.43
LOW	3	47.16	47.37	47.38	47.41
	Total Conducted Power (mW)	204941.75	213633.30	216467.44	214536.51
	Total Conducted Power(dBm)	53.12	53.30	53.35	53.32
	0	47.33	47.32	47.36	47.31
	1	46.98	47.05	47.12	47.07
Mid	2	47.46	47.41	47.40	47.42
IVIIG	3	47.58	47.50	47.63	47.71
	Total Conducted Power (mW)	216962.06	215965.04	218870.09	218987.92
	Total Conducted Power(dBm)	53.36	53.34	53.40	53.40
	0	47.30	47.37	47.37	47.37
	1	47.00	47.04	46.96	47.00
High	2	47.42	47.37	47.48	47.54
	3	47.57	47.70	47.78	47.72
	Total Conducted Power (mW)	216177.51	218618.40	220189.89	220605.13
	Total Conducted Power(dBm)	53.35	53.40	53.43	53.44

Table 10-12. Conducted Average Output Power Table (LTE\_B85\_2C\_5M+5M)

FCC ID: A3LRF4435D-71A element		MEASUREMENT REPORT (Class II Permissive Change)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 124 of 126
8K22092802-00-R1.A3L	09/29/2022 - 10/26/2022	RRU(RF4435d)	Page 124 01 120



Channel	Port	QPSK	16QAM	64QAM	256QAM
	0	48.95	48.91	48.88	48.82
	1	48.74	48.68	48.75	48.75
Low	2	48.94	48.87	48.83	48.78
Low	3	48.90	49.19	49.14	49.18
	Total Conducted Power (mW)	309308.19	311669.50	310676.21	309500.76
	Total Conducted Power(dBm)	54.90	54.94	54.92	54.91
	0	48.87	48.82	49.06	48.98
	1	48.76	48.78	48.72	48.68
Mid	2	48.84	48.87	48.79	48.83
Mid	3	49.09	49.25	49.36	49.20
	Total Conducted Power (mW)	309908.40	312946.98	316992.19	312418.24
	Total Conducted Power(dBm)	54.91	54.95	55.01	54.95
	0	48.92	48.90	48.98	49.02
	1	48.78	48.58	48.74	48.72
High	2	48.83	48.82	48.76	48.85
	3	49.25	49.19	49.14	49.31
	Total Conducted Power (mW)	314015.33	308928.44	311082.26	316318.83
	Total Conducted Power(dBm)	54.97	54.90	54.93	55.00

Table 10-13. Conducted Average Output Power Table (LTE\_B85\_2C\_5M+10M)

Channel	Port	QPSK	16QAM	64QAM	256QAM
Low	0	47.32	47.42	47.39	47.48
	1	47.10	47.10	47.24	47.27
	2	47.36	47.44	47.44	47.51
	3	47.39	47.51	47.68	47.58
	Total Conducted Power (mW)	214515.16	218320.22	221870.43	222952.62
	Total Conducted Power(dBm)	53.31	53.39	53.46	53.48
	0	47.34	47.50	47.52	47.44
	1	47.24	47.25	47.19	47.10
Mid	2	47.54	47.55	47.55	47.55
IVIIQ	3	47.68	47.73	47.79	47.69
	Total Conducted Power (mW)	222534.71	225500.40	225856.41	222382.94
	Total Conducted Power(dBm)	53.47	53.53	53.54	53.47
	0	47.38	47.47	47.45	47.32
	1	47.09	47.15	47.01	46.99
High	2	47.63	47.65	47.64	47.66
	3	47.68	47.85	47.62	47.71
	Total Conducted Power (mW)	222426.47	226891.03	221710.73	221319.13
	Total Conducted Power(dBm)	53.47	53.56	53.46	53.45

Table 10-14. Conducted Average Output Power Table (NR\_n85\_2C\_5M+5M)

FCC ID: A3LRF4435D-71A	element	MEASUREMENT REPORT (Class II Permissive Change)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 125 of 126
8K22092802-00-R1.A3L	09/29/2022 - 10/26/2022	RRU(RF4435d)	Fage 125 01 120



Channel	Port	QPSK	16QAM	64QAM	256QAM
	0	48.97	48.92	48.64	48.56
	1	48.76	48.64	48.29	48.51
Low	2	49.07	48.99	48.66	48.56
LOW	3	49.41	49.06	48.94	48.94
	Total Conducted Power (mW)	322068.94	310884.90	292361.06	292859.60
	Total Conducted Power(dBm)	55.08	54.93	54.66	54.67
	0	48.92	48.93	48.76	48.63
	1	48.65	48.74	48.15	48.23
Mid	2	48.86	49.06	48.83	48.71
IVIIU	3	48.92	49.24	48.87	48.96
	Total Conducted Power (mW)	306161.52	317463.57	293949.27	292479.56
	Total Conducted Power(dBm)	54.86	55.02	54.68	54.66
	0	48.81	48.99	48.73	48.48
	1	48.52	48.57	48.23	48.36
High	2	48.94	49.03	48.80	48.60
	3	49.15	48.92	48.99	48.73
	Total Conducted Power (mW)	307721.21	309161.47	296280.08	286106.60
	Total Conducted Power(dBm)	54.88	54.90	54.72	54.57

Table 10-15. Conducted Average Output Power Table (NR\_n85\_2C\_5M+10M)

FCC ID: A3LRF4435D-71A	element	MEASUREMENT REPORT (Class II Permissive Change)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 126 of 126
8K22092802-00-R1.A3L	09/29/2022 - 10/26/2022	RRU(RF4435d)	Faye 120 01 120