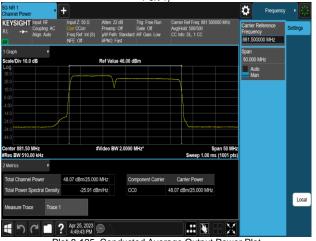




Plot 8-123. Conducted Average Output Power Plot (MSR 2C\_DSS B(n)5\_1C\_10M+NR n5\_1C\_5M\_2T\_QPSK - Low Channel, Port 1)



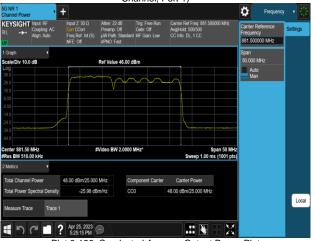
Plot 8-125. Conducted Average Output Power Plot (MSR 2C\_DSS B(n)5\_1C\_10M+NR n5\_1C\_15M\_2T\_QPSK - Middle Channel, Port 1)



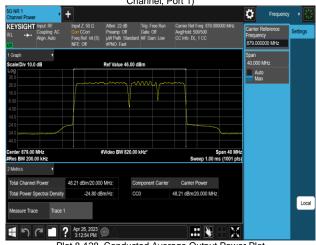
Plot 8-127. Conducted Average Output Power Plot (MSR 3C\_DSS B(n)5\_1C\_10M+NR n5\_1C\_5M+LTE B5\_1C\_5M\_2T\_QPSK - Low Channel, Port 1)



(MSR 2C\_DSS B(n)5\_1C\_10M+NR n5\_1C\_5M\_2T\_16QAM - Low Channel. Port 1)



Plot 8-126. Conducted Average Output Power Plot (MSR 2C\_DSS B(n)5\_1C\_10M+NR n5\_1C\_15M\_2T\_16QAM- Middle Channel, Port 1)



Plot 8-128. Conducted Average Output Power Plot (MSR 3C\_DSS B(n)5\_1C\_10M+NR n5\_1C\_5M+LTE B5\_1C\_5M\_2T\_16QAM - Low Channel, Port 1)

FCC ID: A3LRF4461D-13A	element 🤤	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 108 of 394
8K23040701-00-R1.A3L	04/12/2023 - 05/26/2023	RRU(RF4461d)	Fage 100 01 394
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Iotal Channel Power

Total Power Spectral Density

モア (\* 17, 2023 🗩

46.82 dBm/10.000 MHz

-23.18 dBm/Hz

Component Carrier

Plot 8-133. Conducted Average Output Power Plot

(LTE B5\_1C\_10M\_4T\_QPSK - High Channel, Port 0)

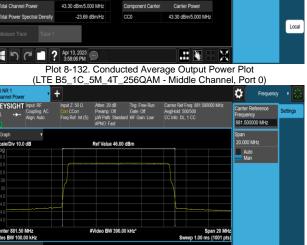
con

Carrier Power

46.82 dBm/10.000 MHz

X





¢ Frequency

881 500000 MHz

50.000 MHz

Local

Auto Man

Span 50 MHz Sweep 1.00 ms (1001 pts)

Carrier Power

48.05 dBm/25.000 MH;

.:: 💦

Carrier Ref Freq: 8 Avg|Hold: 500/500 CC Info: DL 1 CC

Span 10 MHz Sweep 1.40 ms (1001 pts)

X

Ö

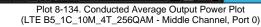
Frequ

881.500000 MHz

pan 10.000 MHz

Auto Man

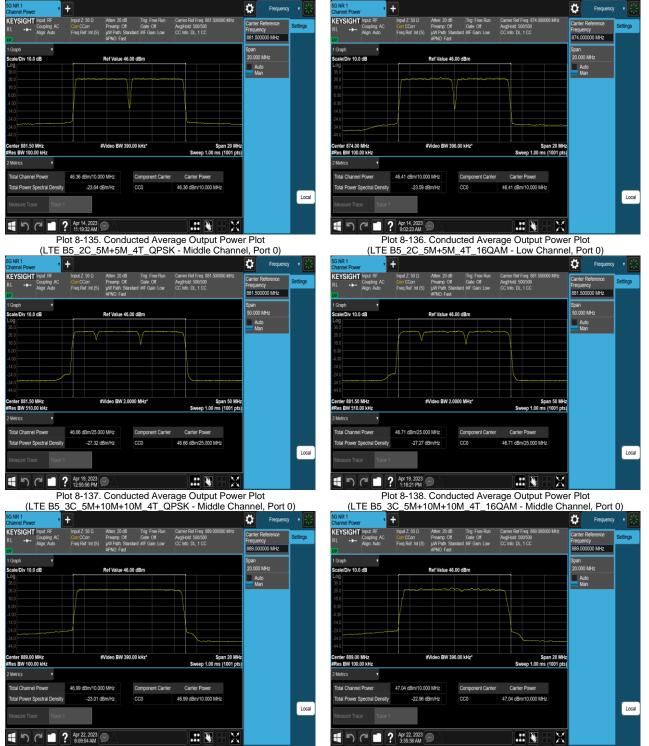




FCC ID: A3LRF4461D-13A	element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 109 of 394
8K23040701-00-R1.A3L	04/12/2023 - 05/26/2023	RRU(RF4461d)	Fage 109 01 394
© 2022 Element		·	ES-QP-16-09 Rev.05

Local

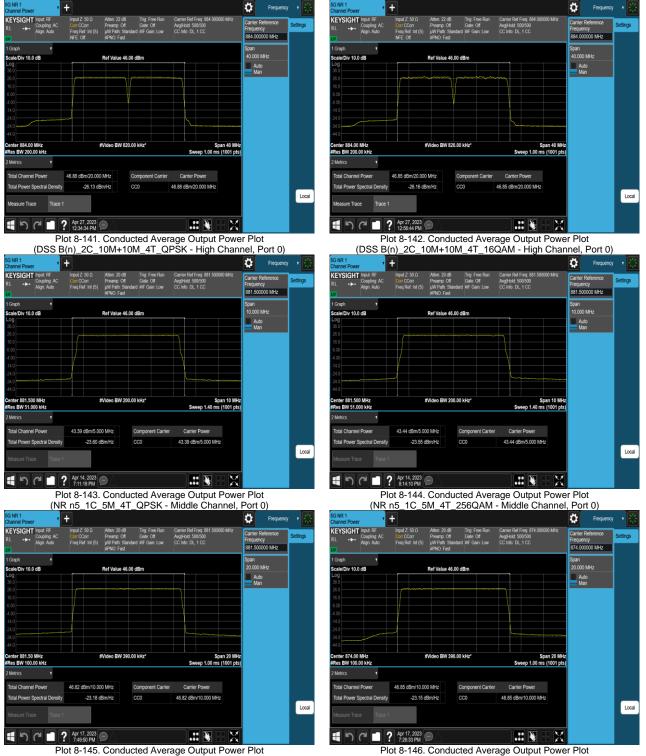




Plot 8-139. Conducted Average Output Power Plot (DSS\_B(n)\_10M(4:6 Ratio)\_1C\_4T\_QPSK - Low Channel, Port 0) Plot 8-140. Conducted Average Output Power Plot (DSS\_B(n)\_10M(9:1 Ratio)\_1C\_4T\_QPSK - High Channel, Port 0)

FCC ID: A3LRF4461D-13A	element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 110 of 394
8K23040701-00-R1.A3L	04/12/2023 - 05/26/2023	RRU(RF4461d)	Fage 110 01 394
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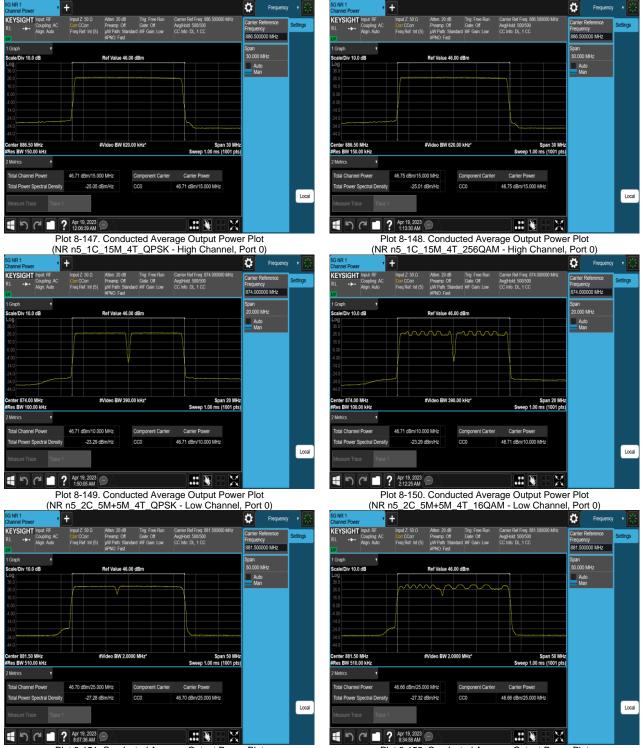


Plot 8-146. Conducted Average Output Power Plot (NR n5\_1C\_10M\_4T\_256QAM - Low Channel, Port 0)

FCC ID: A3LRF4461D-13A	element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 111 of 394
8K23040701-00-R1.A3L	04/12/2023 - 05/26/2023	RRU(RF4461d)	Fage 111 01 594
© 2022 Element			ES OD 16 00 Boy 05

(NR n5\_1C\_10M\_4T\_QPSK - Middle Channel, Port 0)

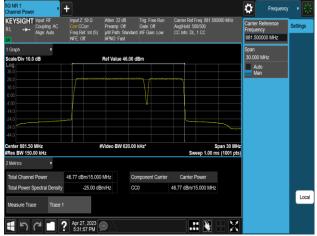




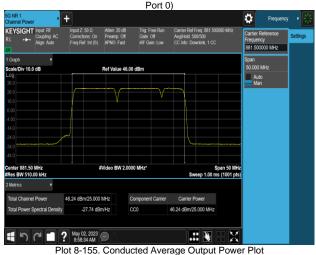
Plot 8-151. Conducted Average Output Power Plot (NR n5\_2C\_10M+15M\_4T\_QPSK - Middle Channel, Port 0) Plot 8-152. Conducted Average Output Power Plot (NR n5\_2C\_10M+15M\_4T\_16QAM - Middle Channel, Port 0)

FCC ID: A3LRF4461D-13A	element	MEASUREMENT REPORT (CERTIFICATION)		<b>ed by:</b> al Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 11	2 of 204
8K23040701-00-R1.A3L	04/12/2023 - 05/26/2023	RRU(RF4461d)	Page 11	2 01 394
© 2022 Element			ES-QP	-16-09 Rev.05

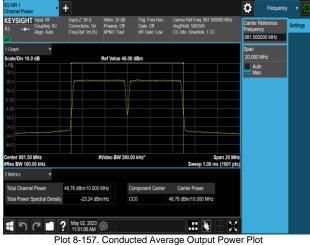




Plot 8-153. Conducted Average Output Power Plot (MSR 2C\_DSS B(n)5\_2C\_10M+LTE B5\_5M\_4T\_QPSK - Middle Channel,



(MSR 3C\_DSS B(n)5\_2C\_10M+10M+12 B5\_1C\_5M\_4T\_QPSK - Middle Channel, Port 0)



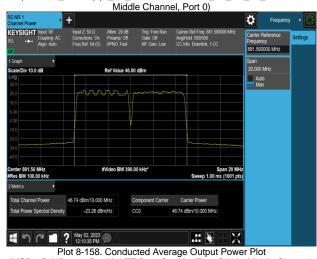
(MSR 2C\_NR n5\_1C\_5M+LTE B5\_1C\_5M\_4T\_QPSK - Middle Channel, Port 0)



Plot 8-154. Conducted Average Output Power Plot (MSR 2C\_DSS B(n)5\_2C\_10M+LTE B5\_5M\_4T\_16QAM - Low Channel,



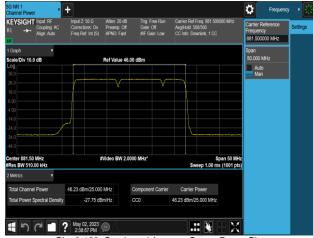
Plot 8-156. Conducted Average Output Power Plot (MSR 3C\_DSS B(n)5\_2C\_10M+10M+LTE B5\_1C\_5M\_4T\_16QAM -



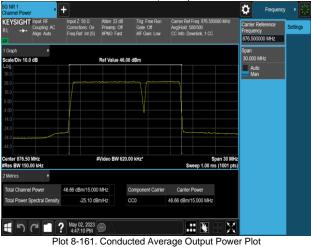
(MSR 2C\_NR n5\_1C\_5M+LTE B5\_1C\_5M\_4T\_16QAM - Middle Channel, Port 0)

FCC ID: A3LRF4461D-13A	element 🤤	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 113 of 394
8K23040701-00-R1.A3L	04/12/2023 - 05/26/2023	RRU(RF4461d)	Fage 113 01 394
© 2022 Element		·	ES-QP-16-09 Rev.05



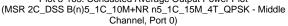


Plot 8-159. Conducted Average Output Power Plot (MSR 3C\_NR n5\_2C\_10M+10M+LTE B5\_1C\_5M\_4T\_QPSK - Middle Channel. Port 0)



(MSR 2C\_DSS B(n)5\_1C\_10M+NR n5\_1C\_5M\_4T\_QPSK - Low Channel, Port 0)



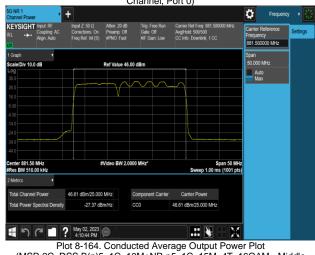




Plot 8-160. Conducted Average Output Power Plot (MSR 3C\_NR n5\_2C\_10M+10M+LTE B5\_1C\_5M\_4T\_16QAM - Middle Channel. Port 0)



Plot 8-162. Conducted Average Output Power Plot (MSR 2C\_DSS B(n)5\_1C\_10M+NR n5\_1C\_5M\_4T\_16QAM - Low Channel, Port 0)



(MSR 2C\_DSS B(n)5\_1C\_10M+NR n5\_1C\_15M\_4T\_16QAM - Middle Channel, Port 0)

FCC ID: A3LRF4461D-13A	element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 114 of 394
8K23040701-00-R1.A3L	04/12/2023 - 05/26/2023	RRU(RF4461d)	Fage 114 01 394
© 2022 Element		·	ES-QP-16-09 Rev.05



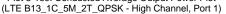


Plot 8-165. Conducted Average Output Power Plot (MSR 3C\_DSS B(n)5\_1C\_10M+MSR 2C\_NR n5\_1C\_5M+LTE B5 1C 5M 4T QPSK - Low Channel, Port 0)



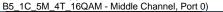
Plot 8-167. Conducted Average Output Power Plot (MSR 3C\_DSS B(n)5\_1C\_10M+NR n5\_1C\_10M+LTE B5\_1C\_5M\_4T\_QPSK - Middle Channel, Port 0)





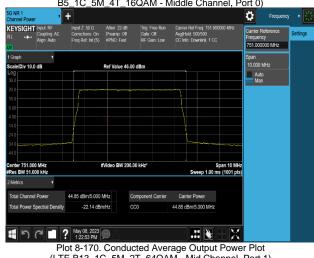


Plot 8-166. Conducted Average Output Power Plot (MSR 3C\_DSS B(n)5\_1C\_10M+NR n5\_1C\_5M+LTE





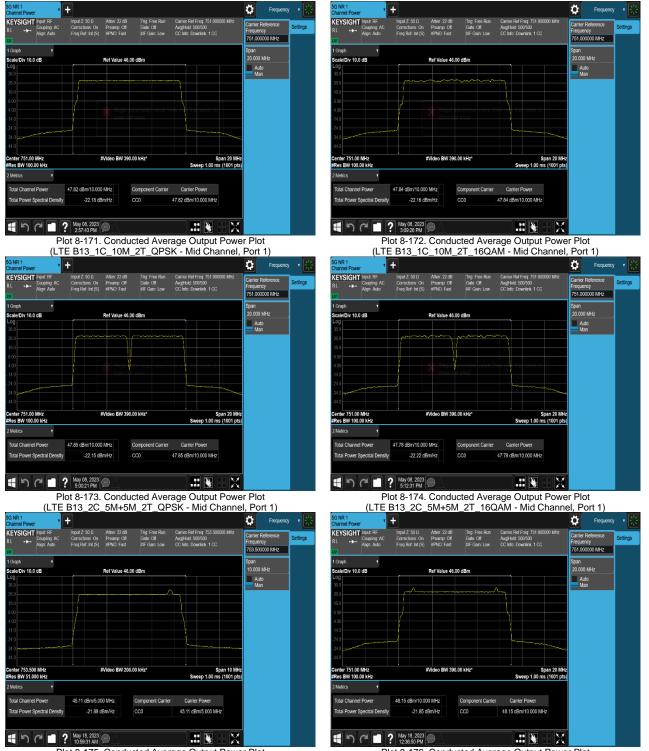
Plot 8-168. Conducted Average Output Power Plot (MSR 3C\_DSS B(n)5\_1C\_10M+NR n5\_1C\_10M+LTE B5\_1C\_5M\_4T\_16QAM - Middle Channel, Port 0)



(LTE B13\_1C\_5M\_2T\_64QAM - Mid Channel, Port 1)

FCC ID: A3LRF4461D-13A	element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 115 of 394
8K23040701-00-R1.A3L	04/12/2023 - 05/26/2023	RRU(RF4461d)	Fage 115 01 394
© 2022 Element		·	ES-QP-16-09 Rev.05



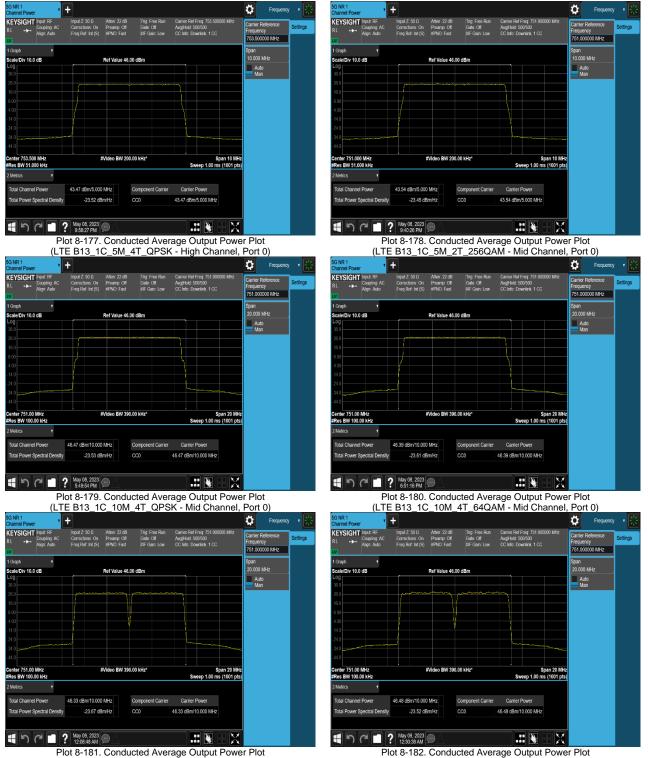


Plot 8-175. Conducted Average Output Power Plot (LTE\_B13\_5M(LTE)\_+NB-IoT(1IB)\_1C\_2T\_QPSK - Mid Channel, Port 1) (LTE\_B13\_

Plot 8-176. Conducted Average Output Power Plot (LTE\_B13\_10M(LTE)+NB-IoT(2IB)\_1C\_2T\_QPSK - Mid Channel, Port 0)

FCC ID: A3LRF4461D-13A	element)	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 116 of 394
8K23040701-00-R1.A3L	04/12/2023 - 05/26/2023	RRU(RF4461d)	Fage 110 01 394
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Plot 8-182. Conducted Average Output Power Plot (LTE B13\_2C\_5M+5M\_4T\_16QAM - Mid Channel, Port 0)

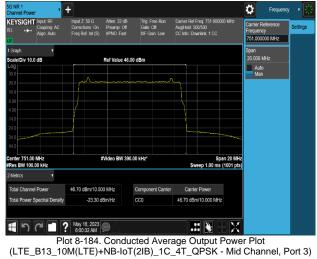
FCC ID: A3LRF4461D-13A	element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 117 of 394
8K23040701-00-R1.A3L	04/12/2023 - 05/26/2023	RRU(RF4461d)	Fage 117 01 594
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(LTE B13\_2C\_5M+5M\_4T\_QPSK - Mid Channel, Port 0)





Plot 8-183. Conducted Average Output Power Plot (LTE\_B13\_5M(LTE)+NB-IoT(1IB)\_1C\_4T\_QPSK - Mid Channel, Port 3)



FCC ID: A3LRF4461D-13A	element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dego 110 of 204
8K23040701-00-R1.A3L	04/12/2023 - 05/26/2023	RRU(RF4461d)	Page 118 of 394
© 2022 Element			ES-QP-16-09 Rev.05



# 8.4 Peak To Average Ratio

## **Test Overview**

The peak to average ratio measurement is performed at the conducted port of the EUT. The spectrum analyzers Complementary Cumulative Distribution Function (CCDF) measurement profile is used to determine the largest deviation between the average and the peak power of the EUT in a given bandwidth. The CCDF curve shows how much time the peak waveform spends at or above a given average power level. The percent of time the signal spends at or above the level defines the probability for that particular power level.

## Test Procedure Used

KDB 971168 D01 v03r01 – Section 5.7 ANSI C63.26-2015 – Section 5.2.3.4

## Test Setting

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. The signal analyzer's CCDF function is enabled.
- 2. Frequency = carrier center frequency
- 3. Measurement BW ≥ OBW or specified reference bandwidth
- 4. The signal analyzer was set to collect one million samples to generate the CCDF curve
- 5. The measurement interval was set depending on the type of signal analyzed. For continuous signals (>98% duty cycle), the measurement interval was set to 1ms.

#### Test Setup

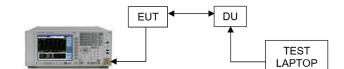


Figure 8-3. Test Instrument & Measurement Setup

#### <u>Limit</u>

The peak-to-average power ratio (PAPR) limit shall not exceed 13 dB for more than 0.1% of the time.

FCC ID: A3LRF4461D-13A	element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 110 of 204
8K23040701-00-R1.A3L	04/12/2023 - 05/26/2023	RRU(RF4461d)		Page 119 of 394
© 2022 Element		•		ES-QP-16-09 Rev.05



Channel Port	Dort	PAPR (dB)				Limit
	Poli	QPSK	16QAM	64QAM	256QAM	(dB)
Low	0	8.42	8.38	8.53	8.35	≤ 13
Low 1	1	8.41	8.41	8.52	8.31	≤ 13
Middle	0	8.39	8.39	8.49	8.34	≤ 13
Middle	1	8.41	8.43	8.51	8.36	≤ 13
High	0	8.40	8.41	8.46	8.40	≤ 13
	1	8.35	8.37	8.48	8.38	≤ 13

Table 8-110. Peak To Average Power Ratio Summary Data (LTE B5\_1C\_5M\_2T)

Channel Port	Dort	PAPR (dB)				Limit
	Poli	QPSK	16QAM	64QAM	256QAM	(dB)
Low	0	7.64	7.61	7.62	7.64	≤ 13
LOW	1	7.64	7.61	7.61	7.65	≤ 13
Middle	0	7.59	7.59	7.59	7.60	≤ 13
Middle	1	7.58	7.59	7.58	7.60	≤ 13
High	0	7.78	7.83	7.79	7.81	≤ 13
High	1	7.78	7.82	7.77	7.80	≤ 13

Table 8-111. Peak To Average Power Ratio Summary Data (LTE B5\_1C\_10M\_2T)

Channel P	Port	PAPF	R (dB)	Limit	
Channel	Poli	QPSK	16QAM	(dB)	
Low	0	7.99	8.00	≤ 13	
Low	1	8.02	7.98	≤ 13	
Middle	0	8.02	7.99	≤ 13	
Middle	1	7.99	8.01	≤ 13	
High	0	7.83	7.83	≤ 13	
High	1	7.82	7.86	≤ 13	

Table 8-112. Peak To Average Power Ratio Summary Data (LTE B5\_2C\_5M+5M\_2T)

Channel Port		PAPF	Limit	
Channel	Poli	QPSK	16QAM	(dB)
Middle	0	8.11	8.05	≤ 13
Middle	Middle 1	8.07	8.08	≤ 13

Table 8-113. Peak To Average Power Ratio Summary Data (LTE B5\_3C\_5M+10M+10M\_2T)

FCC ID: A3LRF4461D-13A	element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 120 of 394
8K23040701-00-R1.A3L	04/12/2023 - 05/26/2023	RRU(RF4461d)	Fage 120 01 394
© 2022 Element			ES-QP-16-09 Rev.05



DSS Ratio	Channel	Port		PAP	R (dB)		Limit
DSS Ralio	Channel	POIL	QPSK	16QAM	64QAM	256QAM	(dB)
	Low	0	8.00	8.01	8.43	8.02	≤ 13
	Low	1	7.98	7.99	8.41	7.99	≤ 13
LTE 9 : NR 1	Middle	0	8.00	8.02	8.28	8.02	≤ 13
LIE 9. NR I	Midule	1	8.00	8.02	8.38	8.02	≤ 13
	High	0	8.13	8.05	8.31	8.04	≤ 13
	riigii	1	8.10	8.04	8.35	8.06	≤ 13
	Low	0	8.01	8.02	8.01	8.03	≤ 13
	LOW	1	7.98	8.03	8.00	8.02	≤ 13
LTE 8 : NR 2	Middle	0	8.01	8.04	8.04	8.04	≤ 13
LIE 0. NR Z	Midule	1	8.03	8.06	8.03	8.05	≤ 13
	High	0	8.14	8.10	8.11	8.11	≤ 13
	riigii	1	8.13	8.08	8.09	8.11	≤ 13
	Low	0	8.00	8.06	8.03	8.07	≤ 13
	LOW	1	8.02	8.04	8.03	8.06	≤ 13
LTE 7 : NR 3	Middle	0	8.04	8.07	8.06	8.07	≤ 13
	Midule	1	8.04	8.05	8.06	8.06	≤ 13
	High	0	8.17	8.15	8.11	8.15	≤ 13
	riigii	1	8.15	8.17	8.13	8.14	≤ 13
	Low	0	8.03	8.07	8.05	8.13	≤ 13
	LOW	1	8.04	8.06	8.04	8.10	≤ 13
LTE 6 : NR 4	Middle	0	8.07	8.09	8.06	8.09	≤ 13
	Iviluale	1	8.06	8.08	8.07	8.09	≤ 13
	High	0	8.03	8.07	8.05	8.13	≤ 13
		1	8.04	8.06	8.04	8.10	≤ 13
	Low	0	8.06	8.08	8.09	8.11	≤ 13
		1	8.08	8.07	8.09	8.09	≤ 13
LTE 5 : NR 5	Middle	0	8.08	8.10	8.07	8.10	≤ 13
	Midule	1	8.07	8.09	8.07	8.09	≤ 13
	High	0	8.21	8.24	8.22	8.22	≤ 13
	riigii	1	8.19	8.23	8.19	8.21	≤ 13
	Low	0	8.10	8.09	8.13	8.16	≤ 13
	LOW	1	8.10	8.11	8.11	8.15	≤ 13
LTE 4 : NR 6	Middle	0	8.09	8.08	8.08	8.10	≤ 13
	Wildale	1	8.09	8.08	8.09	8.10	≤ 13
	High	0	8.29	8.27	8.23	8.29	≤ 13
	riigii	1	8.26	8.23	8.23	8.24	≤ 13
	Low	0	8.09	8.14	8.09	8.17	≤ 13
	2011	1	8.11	8.13	8.14	8.18	≤ 13
LTE 3 : NR 7	Middle	0	8.10	8.10	8.09	8.12	≤ 13
		1	8.11	8.13	8.10	8.10	≤ 13
	High	0	8.29	8.32	8.29	8.30	≤ 13
		1	8.27	8.28	8.25	8.29	≤ 13
	Low	0	8.13	8.14	8.11	8.19	≤ 13
	2011	1	8.13	8.15	8.11	8.18	≤ 13
LTE 2 : NR 8	Middle	0	8.15	8.14	8.10	8.12	≤ 13
	madic	1	8.12	8.13	8.10	8.11	≤ 13
	High	0	8.32	8.33	8.32	8.31	≤ 13
	i ngi i	1	8.32	8.30	8.30	8.30	≤ 13

Table 8-114. Peak To Average Power Ratio Summary Data (DSS B(n)5\_1C\_10M\_2T)

FCC ID: A3LRF4461D-13A	element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dago 121 of 204
8K23040701-00-R1.A3L	04/12/2023 - 05/26/2023	RRU(RF4461d)	Page 121 of 394
© 2022 Element		·	ES-QP-16-09 Rev.05



DSS Ratio Channe	Channel	Port	PAPF	Limit	
	Channel	Poll	QPSK	16QAM	(dB)
	Low	0	8.01	8.04	≤ 13
	Low	1	8.00	8.01	≤ 13
LTE 9 : NR 1	Middle	0	8.00	8.04	≤ 13
LIE 9. NK I		1	8.03	7.99	≤ 13
	Lliαb	0	8.14	8.16	≤ 13
	High	1	8.16	8.14	≤ 13

Table 8-115. Peak To Average Power Ratio Summary Data (DSS B(n)5\_2C\_10M+10M\_2T)

Channel Port	Dort	PAPR (dB)				Limit
	QPSK	16QAM	64QAM	256QAM	(dB)	
Low	0	8.41	8.34	8.37	8.40	≤ 13
Low	1	8.34	8.34	8.36	8.36	≤ 13
Middle	0	8.33	8.31	8.36	8.43	≤ 13
Middle	1	8.40	8.33	8.39	8.39	≤ 13
High	0	8.31	8.36	8.37	8.40	≤ 13
High 1	1	8.32	8.34	8.38	8.39	≤ 13

Table 8-116. Peak To Average Power Ratio Summary Data (NR n5\_1C\_5M\_2T)

Channel Port	Dort		Limit			
	Pon	QPSK	16QAM	64QAM	256QAM	(dB)
Low	0	7.62	7.64	7.63	7.61	≤ 13
Low 1	1	7.60	7.64	7.62	7.62	≤ 13
Middle	0	7.60	7.61	7.60	7.58	≤ 13
Middle	1	7.60	7.61	7.59	7.56	≤ 13
1.2.4	0	7.83	7.81	7.81	7.77	≤ 13
High	1	7.80	7.79	7.77	7.76	≤ 13

Table 8-117. Peak To Average Power Ratio Summary Data (NR n5\_1C\_10M\_2T)

FCC ID: A3LRF4461D-13A	element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dega 100 of 201
8K23040701-00-R1.A3L	04/12/2023 - 05/26/2023	RRU(RF4461d)	Page 122 of 394
© 2022 Element			ES-QP-16-09 Rev.05



Channel Port	Dort	PAPR (dB)				Limit
	Poli	QPSK	16QAM	64QAM	256QAM	(dB)
Low	0	7.67	7.70	7.70	7.66	≤ 13
Low 1	1	7.67	7.71	7.69	7.68	≤ 13
Middle	0	7.59	7.60	7.59	7.60	≤ 13
Middle	1	7.60	7.61	7.58	7.59	≤ 13
High 0	0	7.86	7.93	7.86	7.89	≤ 13
	1	7.86	7.92	7.87	7.89	≤ 13

Table 8-118. Peak To Average Power Ratio Summary Data (NR n5\_1C\_15M\_2T)

Channel	Port	PAPF	Limit	
	Pon	QPSK	16QAM	(dB)
Low	0	7.96	7.96	≤ 13
Low 1	1	8.02	7.95	≤ 13
Middle	0	8.01	8.00	≤ 13
	1	8.01	8.00	≤ 13
High	0	8.04	8.03	≤ 13
	1	8.04	8.03	≤ 13

Table 8-119. Peak To Average Power Ratio Summary Data (NR n5\_2C\_5M+5M\_2T)

Channel P	Dort	PAPR (dB)		Limit
	Port	QPSK	16QAM	(dB)
Middle	0	8.04	8.07	≤ 13
	1	8.03	8.03	≤ 13

Table 8-120. Peak To Average Power Ratio Summary Data (NR n5\_2C\_10M+15M\_2T)

DSS Ratio	Channel	Port	PAPF	R (dB)	Limit
	Channel	FUIL	QPSK	16QAM	(dB)
Lov	Low	0	8.03	7.99	≤ 13
	LOW	1	8.01	8.02	≤ 13
	Malalla	0	8.06	8.02	≤ 13
LTE 9 : NR 1	Middle	1	8.07	8.03	≤ 13
		0	8.20	8.15	≤ 13
	High	1	8.20	8.14	≤ 13

Table 8-121. Peak To Average Power Ratio Summary Data (MSR 2C\_DSS B(n)5\_1C\_10M+LTE B5\_1C\_5M\_2T)

FCC ID: A3LRF4461D-13A	element	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:		Dogo 122 of 204
8K23040701-00-R1.A3L	04/12/2023 - 05/26/2023	RRU(RF4461d)		Page 123 of 394
© 2022 Element				ES-QP-16-09 Rev.05



DSS Ratio Channel	Donnal Dart	PAPR (dB)		Limit	
	Channel	Port	QPSK	16QAM	(dB)
LTE 9 : NR 1 Mide	Middle	0	8.17	8.21	≤ 13
	widdle	1	8.17	8.16	≤ 13

Table 8-122. Peak To Average Power Ratio Summary Data (MSR 3C\_DSS B(n)5\_2C\_10M+10M+LTE B5\_1C\_5M\_2T)

Channel	Port	PAPR (dB)		Limit	
	Poli	QPSK	16QAM	(dB)	
Low	0	7.98	7.99	≤ 13	
Low 1	1	7.97	7.95	≤ 13	
Middle	0	7.99	8.01	≤ 13	
	1	7.99	7.99	≤ 13	
High -	0	8.04	8.02	≤ 13	
	1	8.00	8.01	≤ 13	

Table 8-123. Peak To Average Power Ratio Summary Data (MSR 2C\_NR n5\_1C\_5M+LTE B5\_1C\_5M\_2T)

Channel Port	Dort	PAPR (dB)		Limit
	Pon	QPSK	16QAM	(dB)
Middle 0	0	8.14	8.10	≤ 13
	1	8.14	8.12	≤ 13

Table 8-124. Peak To Average Power Ratio Summary Data (MSR 3C\_NR n5\_2C\_10M+10M+LTE B5\_1C\_5M\_2T)

DSS Ratio	Channel	Port	PAPF	PAPR (dB)	
	Channel		QPSK	16QAM	(dB)
	Low	0	7.99	8.01	≤ 13
	Low	1	8.01	8.03	≤ 13
LTE 9 : NR 1	Middle	0	8.01	8.03	≤ 13
LIE9:NRI		1	8.04	8.04	≤ 13
	High	0	8.15	8.10	≤ 13
		1	8.14	8.17	≤ 13

 Table 8-125. Peak To Average Power Ratio Summary Data (MSR 2C\_DSS B(n)5\_1C\_10M+NR n5\_1C\_5M\_2T)

FCC ID: A3LRF4461D-13A	element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dage 124 of 204
8K23040701-00-R1.A3L	04/12/2023 - 05/26/2023	RRU(RF4461d)	Page 124 of 394
© 2022 Element		•	ES-QP-16-09 Rev.05



DSS Ratio C	Channel Dort	Dort	PAPR (dB)		Limit
	Channel	Port	QPSK	16QAM	(dB)
LTE 9 : NR 1 M	Middle	0	8.04	8.09	≤ 13
	Middle 1	8.06	8.04	≤ 13	

 Table 8-126. Peak To Average Power Ratio Summary Data (MSR 2C\_DSS B(n)5\_1C\_10M+NR n5\_1C\_15M\_2T)

DSS Ratio	Channel	Dort	PAPR (dB)		Limit
	Channel	Port	QPSK	16QAM	(dB)
LTE 9 : NR 1 Middle High	Low	0	7.97	7.98	≤ 13
	LOW	1	7.98	7.99	≤ 13
	Middle	0	8.00	7.99	≤ 13
		1	8.04	8.01	≤ 13
	High	0	8.18	8.14	≤ 13
		1	8.11	8.13	≤ 13

Table 8-127. Peak To Average Power Ratio Summary Data (MSR 3C\_DSS B(n)5\_1C\_10M+NR n5\_1C\_5M+LTE B5\_1C\_5M\_2T)

DSS Ratio Cha	Channel Dort	PAPR (dB)		Limit	
	Channel	nel Port	QPSK	16QAM	(dB)
LTE 9 : NR 1	Middle	0	8.16	8.17	≤ 13
	Middle 1	8.14	8.15	≤ 13	

 Table 8-128. Peak To Average Power Ratio Summary Data (MSR 3C\_DSS B(n)5\_1C\_10M+NR n5\_1C\_10M+LTE B5\_1C\_5M\_2T)

FCC ID: A3LRF4461D-13A	element	MEASUREMENT REPORT (CERTIFICATION)	SUNG	Approved by: Fechnical Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 125 of 394
8K23040701-00-R1.A3L	04/12/2023 - 05/26/2023	RRU(RF4461d)	r	Page 125 01 394
© 2022 Element				ES-QP-16-09 Rev.05



Channel Port			Limit			
Charmer	Poli	QPSK	16QAM	64QAM	256QAM	(dB)
Low	0	8.27	8.41	8.34	8.31	≤ 13
Low	1	8.25	8.41	8.33	8.31	≤ 13
Middle	0	8.28	8.43	8.34	8.30	≤ 13
Middle	1	8.29	8.44	8.34	8.29	≤ 13
High	0	8.27	8.42	8.35	8.29	≤ 13
High	1	8.28	8.43	8.33	8.28	≤ 13

Table 8-129. Peak To Average Power Ratio Summary Data (LTE B13\_1C\_5M\_2T)

QPSK 16QAM 64QAM 256QAM <sup>(dB)</sup>	Channel	Donal Dort	PAPR (dB)				Limit
		annel Port	QPSK	16QAM	64QAM	256QAM	(dB)
	Middle	ddlo 0	7.61	7.60	7.62	7.59	≤ 13
1         7.60         7.59         7.62         7.59         ≤ 13	Middle	1	7.60	7.59	7.62	7.59	≤ 13

Table 8-130. Peak To Average Power Ratio Summary Data (LTE B13\_1C\_10M\_2T)

Channel	Port	PAPF	R (dB)	Limit
Channel	Pon	QPSK	16QAM	(dB)
Middle	0	7.64	7.65	≤ 13
Middle	1	7.63	7.64	≤ 13

Table 8-131. Peak To Average Power Ratio Summary Data (LTE B13\_2C\_5M+5M\_2T)

Channel	Port	PAPR (dB) QPSK	Limit (dB)
1	0	8.48	≤ 13
Low	1	8.47	≤ 13
Middle	0	8.39	≤ 13
Middle	1	8.40	≤ 13
Lligh	0	8.45	≤ 13
High	1	8.44	≤ 13

Table 8-132. Peak To Average Power Ratio Summary Data (LTE B13\_1C\_5M+NB-loT(1IB)\_2T)

			PAPF	R (dB)		
Channel	Port		QF	SK		Limit (dB)
		LTE B13_1C_10M+ NB-IoT(2GB)	LTE B13_1C_10M+ NB-IoT(GB+IB)	LTE B13_1C_10M+ NB-IoT(IB+GB)	LTE B13_1C_10M+ NB-IoT(2IB)	(UD)
Middle	0	7.78	7.86	7.87	7.76	≤ 13
Middle	1	7.78	7.87	7.87	7.76	≤ 13

Table 8-133. Peak To Average Power Ratio Summary Data (LTE B13\_1C\_10M+NB-IoT\_2T)

FCC ID: A3LRF4461D-13A	element 🤤	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dega 126 of 204
8K23040701-00-R1.A3L	04/12/2023 - 05/26/2023	RRU(RF4461d)	Page 126 of 394
© 2022 Element		·	ES-QP-16-09 Rev.05



Channel Port -			Limit			
Channel	Pon	QPSK	16QAM	64QAM	256QAM	(dB)
	0	8.45	8.42	8.32	8.35	≤ 13
Low	1	8.42	8.41	8.25	8.35	≤ 13
LOW	2	8.44	8.37	8.34	8.37	≤ 13
3	8.40	8.37	8.31	8.36	≤ 13	
Middle -	0	8.47	8.40	8.32	8.38	≤ 13
	1	8.46	8.43	8.28	8.35	≤ 13
	2	8.47	8.35	8.34	8.35	≤ 13
	3	8.37	8.35	8.32	8.34	≤ 13
	0	8.38	8.35	8.26	8.34	≤ 13
	1	8.41	8.35	8.27	8.32	≤ 13
High	2	8.42	8.34	8.31	8.30	≤ 13
	3	8.39	8.31	8.33	8.30	≤ 13

Table 8-134. Peak To Average Power Ratio Summary Data (LTE B5\_1C\_5M\_4T)

Channel	Dort		PAPF	R (dB)		Limit
Channel	Port	QPSK	16QAM	64QAM	256QAM	(dB)
	0	8.35	8.37	8.39	8.42	≤ 13
Low	1	8.36	8.36	8.36	8.40	≤ 13
LOW	2	7.63	7.63	7.64	7.65	≤ 13
3	7.63	7.65	7.64	7.66	≤ 13	
Middle -	0	8.38	8.36	8.35	8.44	≤ 13
	1	8.37	8.34	8.33	8.40	≤ 13
	2	7.62	7.62	7.61	7.62	≤ 13
	3	7.61	7.62	7.62	7.62	≤ 13
	0	8.38	8.34	8.36	8.41	≤ 13
	1	8.36	8.37	8.36	8.39	≤ 13
High	2	7.82	7.74	7.80	7.82	≤ 13
	3	7.81	7.77	7.79	7.81	≤ 13

Table 8-135. Peak To Average Power Ratio Summary Data (LTE B5\_1C\_10M\_4T)

Test Report S/N: Test Dates: EUT Type:	FCC ID: A3LRF4461D-13A	D: A3LRF4461D-13A	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Dogo 107 of 20	Test Report S/N:	eport S/N: Test Dates:	EUT Type:	Page 127 of 394
8K23040701-00-R1.A3L 04/12/2023 - 05/26/2023 RRU(RF4461d)	8K23040701-00-R1.A3L	40701-00-R1.A3L 04/12/2023 - 05/26/2023	RRU(RF4461d)	Fage 127 01 394



Channel Port		PAPR (dB)		Limit
Channel	Polit	QPSK	16QAM	(dB)
	0	8.47	8.44	≤ 13
Low	1	8.47	8.44	≤ 13
LOW	2	8.04	8.02	≤ 13
	3	8.03	8.02	≤ 13
	0	8.44	8.43	≤ 13
Middle 1 2 3	1	8.43	8.45	≤ 13
	2	8.07	8.06	≤ 13
	3	8.07	8.06	≤ 13
	0	8.46	8.52	≤ 13
High	1	8.39	8.51	≤ 13
піун	2	8.07	8.12	≤ 13
	3	8.07	8.12	≤ 13

Table 8-136. Peak To Average Power Ratio Summary Data (LTE B5\_2C\_5M+5M\_4T)

Channel	Port	PAPF	Limit	
Channel	FOIL	QPSK	16QAM	(dB)
	0	8.39	8.38	≤ 13
Middle	1	8.36	8.40	≤ 13
widdle	2	7.88	7.91	≤ 13
	3	7.88	7.91	≤ 13

Table 8-137. Peak To Average Power Ratio Summary Data (LTE B5\_3C\_5M+10M+10M\_4T)

FCC ID: A3LRF4461D-13A	element	MEASUREMENT REPORT (CERTIFICATION)	Approved by:     Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 128 of 394
8K23040701-00-R1.A3L	04/12/2023 - 05/26/2023	RRU(RF4461d)	Page 128 01 394
© 2022 Element			ES-QP-16-09 Rev.05



	0	Deat	PAPR (dB)			Limit	
DSS Ratio	atio Channel	Port	QPSK	16QAM	64QAM	256QAM	(dB)
		0	8.51	8.52	8.85	8.54	≤ 13
		1	8.45	8.56	8.82	8.48	≤ 13
	Low	2	8.01	8.02	8.51	8.04	≤ 13
		3	8.00	8.04	8.49	8.05	≤ 13
		0	8.48	8.54	8.80	8.54	≤ 13
	Middle	1	8.49	8.49	8.78	8.53	≤ 13
LTE 9 : NR 1	Middle	2	8.03	8.09	8.38	8.06	≤ 13
		3	8.04	8.07	8.44	8.07	≤ 13
		0	8.50	8.48	8.81	8.54	≤ 13
	Lliash	1	8.50	8.47	8.87	8.51	≤ 13
	High	2	8.05	8.06	8.46	8.08	≤ 13
		3	8.08	8.07	8.47	8.07	≤ 13
		0	8.54	8.66	8.62	8.58	≤ 13
	Law	1	8.57	8.68	8.58	8.56	≤ 13
	Low	2	8.05	8.08	8.06	8.05	≤ 13
		3	8.06	8.06	8.06	8.06	≤ 13
		0	8.56	8.57	8.62	8.62	≤ 13
	Middle	1	8.54	8.58	8.62	8.55	≤ 13
LTE 8 : NR 2		2	8.06	8.07	8.07	8.07	≤ 13
		3	8.05	8.07	8.07	8.07	≤ 13
	High	0	8.59	8.56	8.61	8.50	≤ 13
		1	8.62	8.56	8.56	8.52	≤ 13
		2	8.13	8.07	8.13	8.09	≤ 13
		3	8.14	8.06	8.13	8.08	≤ 13
		0	8.82	8.80	8.90	8.95	≤ 13
	Low	1	8.83	8.82	8.88	9.00	≤ 13
	Low	2	8.11	8.11	8.13	8.14	≤ 13
		3	8.11	8.11	8.13	8.13	≤ 13
		0	8.82	8.84	8.95	9.01	≤ 13
	Middle	1	8.82	8.79	8.91	8.95	≤ 13
LTE 4 : NR 6	Middle	2	8.11	8.10	8.13	8.10	≤ 13
		3	8.12	8.09	8.13	8.10	≤ 13
		0	8.84	8.79	8.88	8.90	≤ 13
	Link	1	8.84	8.76	8.77	8.86	≤ 13
	High	2	8.27	8.20	8.27	8.27	≤ 13
		3	8.25	8.21	8.28	8.27	≤ 13

Table 8-138. Peak To Average Power Ratio Summary Data (DSS B(n)5\_1C\_10M\_4T)

FCC ID: A3LRF4461D-13A	element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 129 of 394
8K23040701-00-R1.A3L	04/12/2023 - 05/26/2023	RRU(RF4461d)	Page 129 01 394



DSS Ratio	Ratio Channel		PAPF	Limit	
DSS Ralio	Channel	Port	QPSK	16QAM	(dB)
		0	8.15	8.57	≤ 13
	Low	1	8.51	8.52	≤ 13
	LOW	2	8.04	8.06	≤ 13
LTE 9 : NR 1		3	8.05	8.04	≤ 13
	Middle	0	8.51	8.52	≤ 13
		1	8.52	8.48	≤ 13
		2	8.04	8.05	≤ 13
		3	8.04	8.05	≤ 13
		0	8.47	8.57	≤ 13
	Lliab	1	8.51	8.50	≤ 13
	High	2	8.16	8.17	≤ 13
		3	8.16	8.19	≤ 13

Table 8-139. Peak To Average Power Ratio Summary Data (DSS B(n)5\_2C\_10M+10M\_4T)

Channel	Dort	PAPR (dB)				Limit
Channel	Port	QPSK	16QAM	64QAM	256QAM	(dB)
	0	8.37	8.28	8.39	8.34	≤ 13
Low	1	8.39	8.30	8.36	8.36	≤ 13
LOW	2	8.39	8.28	8.32	8.31	≤ 13
	3	8.40	8.27	8.36	8.33	≤ 13
Middle -	0	8.35	8.37	8.32	8.35	≤ 13
	1	8.37	8.29	8.32	8.39	≤ 13
	2	8.39	8.30	8.39	8.36	≤ 13
	3	8.39	8.34	8.36	8.39	≤ 13
	0	8.36	8.35	8.35	8.31	≤ 13
	1	8.39	8.32	8.32	8.36	≤ 13
High	2	8.41	8.31	8.36	8.32	≤ 13
	3	8.41	8.32	8.34	8.32	≤ 13

Table 8-140. Peak To Average Power Ratio Summary Data (NR n5\_1C\_5M\_4T)

FCC ID: A3LRF4461D-13A	element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 130 of 394
8K23040701-00-R1.A3L	04/12/2023 - 05/26/2023	RRU(RF4461d)	Fage 130 01 394
© 2022 Element		·	ES-QP-16-09 Rev.05



Channel	Dort		Limit			
Channel	Port	QPSK	16QAM	64QAM	256QAM	(dB)
	0	8.36	8.33	8.43	8.42	≤ 13
Low	1	8.38	8.31	8.40	8.43	≤ 13
LOW	2	7.64	7.62	7.65	7.65	≤ 13
	3	7.63	7.62	7.64	7.65	≤ 13
Middle -	0	8.37	8.31	8.39	8.44	≤ 13
	1	8.38	8.30	8.38	8.45	≤ 13
	2	7.60	7.60	7.61	7.61	≤ 13
	3	7.60	7.61	7.60	7.61	≤ 13
	0	8.40	8.32	8.36	8.43	≤ 13
	1	8.39	8.30	8.37	8.42	≤ 13
High	2	7.80	7.75	7.80	7.80	≤ 13
	3	7.81	7.75	7.81	7.83	≤ 13

Table 8-141. Peak To Average Power Ratio Summary Data (NR n5\_1C\_10M\_4T)

Channel	Dort		Limit			
Channel	Port	QPSK	16QAM	64QAM	256QAM	(dB)
	0	8.36	8.34	8.41	8.32	≤ 13
Low	1	8.36	8.31	8.38	8.30	≤ 13
LOW	2	7.69	7.68	7.67	7.69	≤ 13
	3	7.68	7.68	7.67	7.67	≤ 13
Middle	0	8.37	8.33	8.42	8.33	≤ 13
	1	8.37	8.30	8.43	8.33	≤ 13
	2	7.62	7.61	7.62	7.64	≤ 13
	3	7.62	7.62	7.63	7.64	≤ 13
	0	8.36	8.27	8.36	8.35	≤ 13
	1	8.34	8.27	8.38	8.33	≤ 13
High	2	7.90	7.89	7.90	7.89	≤ 13
	3	7.90	7.90	7.91	7.90	≤ 13

Table 8-142. Peak To Average Power Ratio Summary Data (NR n5\_1C\_15M\_4T)

Test Report S/N: Test Dates: EUT Type:	FCC ID: A3LRF4461D-13A	1D-13A element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Dogo 121 of 204	Test Report S/N:	Test Dates:	EUT Type:	Page 131 of 394
8K23040701-00-R1.A3L 04/12/2023 - 05/26/2023 RRU(RF4461d)	8K23040701-00-R1.A3L	.A3L 04/12/2023 - 05/26/2023	RRU(RF4461d)	Fage 131 01 394



Channel Port		PAPF	Limit	
Channel	Polit	QPSK	16QAM	(dB)
	0	8.43	8.42	≤ 13
Low	1	8.39	8.41	≤ 13
LOW	2	8.00	8.02	≤ 13
	3	8.00	8.01	≤ 13
	0	8.45	8.40	≤ 13
	1	8.41	8.46	≤ 13
Middle	2	8.05	8.03	≤ 13
	3	8.01	8.03	≤ 13
	0	8.41	8.42	≤ 13
l li sh	1	8.44	8.39	≤ 13
High	2	8.08	8.07	≤ 13
	3	8.02	8.06	≤ 13

Table 8-143. Peak To Average Power Ratio Summary Data (NR n5\_2C\_5M+5M\_4T)

Channel	Port	PAPF	Limit	
Channel Folt		QPSK	16QAM	(dB)
	0	8.40	8.36	≤ 13
NA: statta	1	8.43	8.38	≤ 13
Middle	2	8.08	8.09	≤ 13
	3	7.90	7.89	≤ 13

Table 8-144. Peak To Average Power Ratio Summary Data (NR n5\_2C\_10M+15M\_4T)

FCC ID: A3LRF4461D-13A	element)	MEASUREMENT REPORT (CERTIFICATION)	UNG	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 122 of 204
8K23040701-00-R1.A3L	04/12/2023 - 05/26/2023	RRU(RF4461d)		Page 132 of 394
© 2022 Element				ES-QP-16-09 Rev.05



DSS Ratio Channel	Channel	Port	PAPR (dB)		Limit
DSS Ralio	Channel	Poll	QPSK	16QAM	(dB)
		0	8.45	8.38	≤ 13
	Low	1	8.44	8.43	≤ 13
	LOW	2	7.96	8.01	≤ 13
		3	7.99	7.98	≤ 13
	Middle -	0	8.47	8.39	≤ 13
LTE 9 : NR 1		1	8.47	8.41	≤ 13
LIE 9. NK I		2	8.03	8.03	≤ 13
		3	8.06	8.03	≤ 13
-		0	8.48	8.37	≤ 13
	High	1	8.39	8.36	≤ 13
	High	2	8.14	8.15	≤ 13
		3	8.23	8.15	≤ 13

 Table 8-145. Peak To Average Power Ratio Summary Data (MSR 2C\_DSS B(n)5\_1C\_10M+LTE B5\_1C\_5M\_4T)

DSS Ratio	Channel	Port	PAPR (dB)		Limit
DSS Ralio	DSS Ratio Channel		QPSK	16QAM	(dB)
LTE 9 : NR 1 Middle	0	8.45	8.48	≤ 13	
	Middle 1 2 3	1	8.46	8.46	≤ 13
		8.18	8.22	≤ 13	
			8.20	8.20	≤ 13

Table 8-146. Peak To Average Power Ratio Summary Data (MSR 3C\_DSS B(n)5\_2C\_10M+10M+LTE B5\_1C\_5M\_4T)

FCC ID: A3LRF4461D-13A	element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 122 of 204
8K23040701-00-R1.A3L	04/12/2023 - 05/26/2023	RRU(RF4461d)	Page 133 of 394
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Channel Po	Dort	PAPF	Limit	
	Poli	QPSK	16QAM	(dB)
	0	8.36	8.40	≤ 13
Low	1	8.38	8.39	≤ 13
LOW	2	7.98	8.03	≤ 13
	3	8.01	8.03	≤ 13
	0	8.33	8.38	≤ 13
Middle	1	8.40	8.35	≤ 13
	2	8.01	8.03	≤ 13
	3	8.00	8.03	≤ 13
	0	8.39	8.37	≤ 13
High -	1	8.38	8.39	≤ 13
	2	8.07	8.06	≤ 13
	3	8.06	8.04	≤ 13

Table 8-147. Peak To Average Power Ratio Summary Data (MSR 2C\_NR n5\_1C\_5M+LTE B5\_1C\_5M\_4T)

Channel	Dort	PAPF	Limit	
Channel Port	Poli	QPSK	16QAM	(dB)
	0	8.42	8.37	≤ 13
Middlo	1	8.43	8.39	≤ 13
Middle	2	8.17	8.14	≤ 13
	3	8.18	8.18	≤ 13

Table 8-148. Peak To Average Power Ratio Summary Data (MSR 3C\_NR n5\_2C\_10M+10M+LTE B5\_1C\_5M\_4T)

FCC ID: A3LRF4461D-13A	element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dage 124 of 204
8K23040701-00-R1.A3L	04/12/2023 - 05/26/2023	RRU(RF4461d)	Page 134 of 394
© 2022 Element			ES-QP-16-09 Rev.05



Channel	Port	PAPF	Limit	
	Poll	QPSK	16QAM	(dB)
	0	8.59	8.67	≤ 13
Low	1	8.62	8.66	≤ 13
LOW	2	8.24	8.26	≤ 13
	3	8.24	8.29	≤ 13
	0	8.61	8.63	≤ 13
Middle	1	8.68	8.66	≤ 13
Middle	2	8.27	8.31	≤ 13
	3	8.27	8.28	≤ 13
	0	8.63	8.69	≤ 13
l l'ab	1	8.62	8.58	≤ 13
High	2	8.42	8.38	≤ 13
	3	8.40	8.36	≤ 13

 Table 8-149. Peak To Average Power Ratio Summary Data (MSR 2C\_DSS B(n)5\_1C\_10M+NR n5\_1C\_5M\_4T)

Channel	Port	PAPR (dB)		Limit
		QPSK	16QAM	(dB)
	0	8.52	8.51	≤ 13
Mid	1	8.54	8.50	≤ 13
	2	8.22	8.27	≤ 13
	3	8.20	8.20	≤ 13

Table 8-150. Peak To Average Power Ratio Summary Data (MSR 2C\_DSS B(n)5\_1C\_10M+NR n5\_1C\_15M\_4T)

FCC ID: A3LRF4461D-13A	element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dego 125 of 204
8K23040701-00-R1.A3L	04/12/2023 - 05/26/2023	RRU(RF4461d)	Page 135 of 394
© 2022 Element		·	ES-QP-16-09 Rev.05



Channel	Port	PAPF	Limit	
Channel	Pon	QPSK	16QAM	(dB)
	0	8.45	8.54	≤ 13
Low	1	8.48	8.58	≤ 13
LOW	2	8.10	8.11	≤ 13
	3	8.16	8.10	≤ 13
	0	8.56	8.59	≤ 13
Middle	1	8.59	8.46	≤ 13
Middle	2	8.18	8.21	≤ 13
	3	8.21	8.25	≤ 13
	0	8.60	8.54	≤ 13
l l'ab	1	8.54	8.67	≤ 13
High	2	8.26	8.40	≤ 13
	3	8.30	8.24	≤ 13

 Table 8-151. Peak To Average Power Ratio Summary Data (MSR 3C\_DSS B(n)5\_1C\_10M+NR n5\_1C\_5M+LTE B5\_1C\_5M\_4T)

Channel	Port	PAPR (dB)		Limit
		QPSK	16QAM	(dB)
Middle	0	8.50	8.57	≤ 13
	1	8.49	8.55	≤ 13
	2	8.24	8.23	≤ 13
	3	8.30	8.30	≤ 13

Table 8-152. Peak To Average Power Ratio Summary Data (MSR 3C\_DSS B(n)5\_1C\_10M+NR n5\_1C\_10M+LTE B5\_1C\_5M\_4T)

FCC ID: A3LRF4461D-13A	element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dega 126 of 204
8K23040701-00-R1.A3L	04/12/2023 - 05/26/2023	RRU(RF4461d)	Page 136 of 394
© 2022 Element			ES-QP-16-09 Rev.05



Channel	Port	PAPR (dB)				Limit
		QPSK	16QAM	64QAM	256QAM	(dB)
	0	8.42	8.34	8.31	8.36	≤ 13
Low	1	8.42	8.35	8.34	8.34	≤ 13
Low	2	8.42	8.34	8.32	8.36	≤ 13
	3	8.42	8.34	8.31	8.34	≤ 13
	0	8.44	8.33	8.32	8.34	≤ 13
Middle	1	8.43	8.33	8.32	8.36	≤ 13
Middle	2	8.43	8.33	8.33	8.34	≤ 13
	3	8.42	8.34	8.30	8.34	≤ 13
	0	8.42	8.34	8.30	8.35	≤ 13
l li ala	1	8.41	8.36	8.33	8.35	≤ 13
High	2	8.41	8.32	8.34	8.35	≤ 13
	3	8.41	8.33	8.31	8.36	≤ 13

Table 8-153. Peak To Average Power Ratio Summary Data (LTE B13\_1C\_5M\_4T)

Channel	Port	PAPR (dB)				Limit
		QPSK	16QAM	64QAM	256QAM	(dB)
Middle	0	8.37	8.35	8.31	8.41	≤ 13
	1	8.35	8.36	8.35	8.41	≤ 13
	2	7.62	7.63	7.62	7.63	≤ 13
	3	7.61	7.61	7.62	7.62	≤ 13

Table 8-154. Peak To Average Power Ratio Summary Data (LTE B13\_1C\_10M\_4T)

Channel	Port	PAPF	Limit	
		QPSK	16QAM	(dB)
	0	8.40	8.42	≤ 13
Middle	1	8.41	8.39	≤ 13
Middle	2	7.67	7.67	≤ 13
	3	7.66	7.65	≤ 13

Table 8-155. Peak To Average Power Ratio Summary Data (LTE B13\_2C\_5M+5M\_4T)

FCC ID: A3LRF4461D-13A	element	MEASUREMENT REPORT (CERTIFICATION)	N G	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:		Dega 127 of 204
8K23040701-00-R1.A3L	04/12/2023 - 05/26/2023	RRU(RF4461d)		Page 137 of 394
© 2022 Element				ES-QP-16-09 Rev.05



Channel	Port	PAPR (dB)	Limit
Channel		QPSK	(dB)
	0	8.49	≤ 13
Low	1	8.52	≤ 13
LOW	2	8.52	≤ 13
	3	8.50	≤ 13
	0	8.40	≤ 13
Middle	1	8.38	≤ 13
wildule	2	8.40	≤ 13
	3	8.39	≤ 13
	0	8.45	≤ 13
Llink	1	8.46	≤ 13
High	2	8.49	≤ 13
	3	8.48	≤ 13

Table 8-156. Peak To Average Power Ratio Summary Data (LTE B13\_1C\_5M+NB-loT(1IB)\_4T)

Channel	Port	PAPR (dB)				
		QPSK				
		LTE B13_1C_10M+ NB-IoT(2GB)	LTE B13_1C_10M+ NB-IoT(GB+IB)	LTE B13_1C_10M+ NB-IoT(IB+GB)	LTE B13_1C_10M+ NB-IoT(2IB)	(dB)
	0	8.66	8.47	8.50	8.42	≤ 13
Middle	1	8.69	8.46	8.51	8.44	≤ 13
Middle	2	7.76	7.88	7.88	8.46	≤ 13
	3	7.76	7.87	7.88	8.46	≤ 13

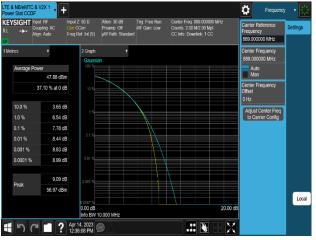
Table 7 103. Peak To Average Power Ratio Summary Data (LTE B13\_1C\_10M+NB-loT\_4T)

FCC ID: A3LRF4461D-13A	element)	MEASUREMENT REPORT (CERTIFICATION)	SUNG	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:		Dega 120 of 204
8K23040701-00-R1.A3L	04/12/2023 - 05/26/2023	RRU(RF4461d)		Page 138 of 394
© 2022 Element				ES-QP-16-09 Rev.05





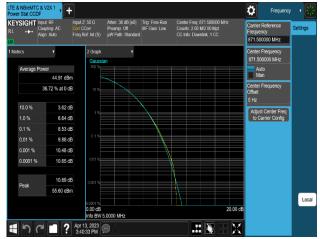
Plot 8-185. Peak To Average Power Ratio Plot (LTE B5\_1C\_5M\_QPSK - Low Channel\_2T, Port 0)



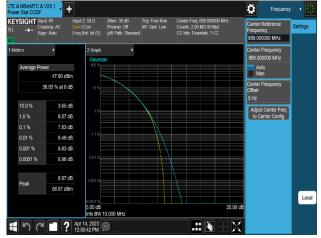
Plot 8-187. Peak To Average Power Ratio Plot (LTE B5\_1C\_10M\_QPSK - High Channel\_2T, Port 0)



Plot 8-189. Peak To Average Power Ratio Plot (LTE B5\_2C\_5M+5M\_QPSK - Low Channel\_2T, Port 1)



Plot 8-186. Peak To Average Power Ratio Plot (LTE B5\_1C\_5M\_64QAM - Low Channel\_2T, Port 0)



Plot 8-188. Peak To Average Power Ratio Plot (LTE B5\_1C\_10M\_16QAM - High Channel\_2T, Port 0)



Plot 8-190. Peak To Average Power Ratio Plot (LTE B5\_2C\_5M+5M\_16QAM - Mid Channel\_2T, Port 1)

FCC ID: A3LRF4461D-13A	element 🤤	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 139 of 394
8K23040701-00-R1.A3L	04/12/2023 - 05/26/2023	RRU(RF4461d)	Fage 139 01 394
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