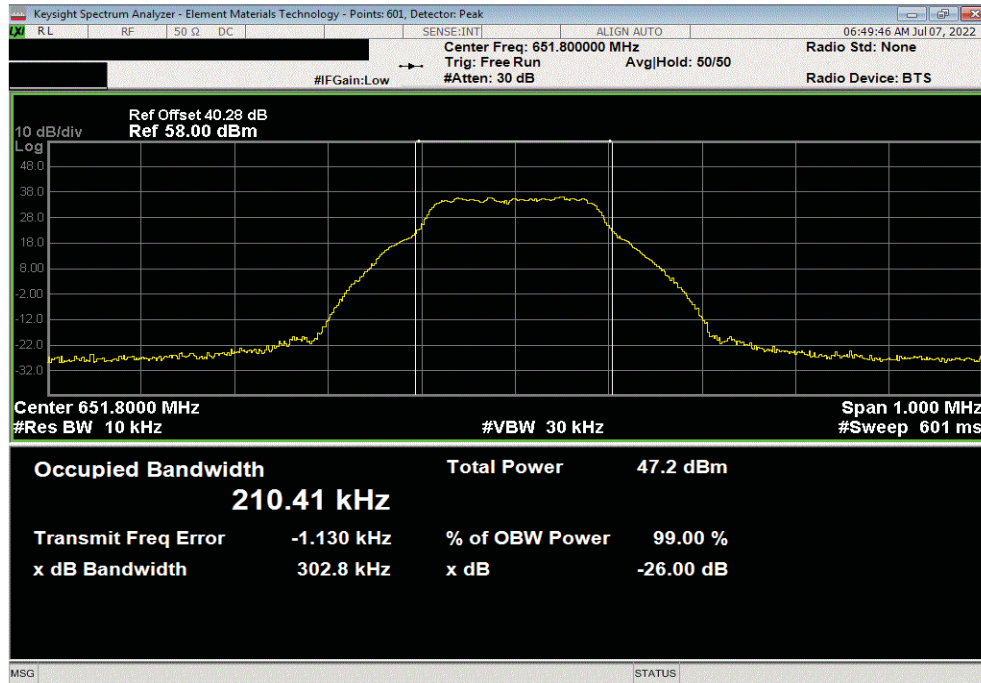


OCCUPIED BANDWIDTH - Band 71 NB IoT SA



TbTx 2022.05.02.0 XMit 2022.02.07.0

Port 2, LTE, Band 71, 617 MHz - 652 MHz, 200 kHz Bandwidth, Standalone NB-IoT Modulation, High Ch. 651.8 MHz						
		Value	Value			
		99% (MHz)	26dB (MHz)	Limit	Result	
		210.407 kHz	302.775 kHz	Outside Band	Pass	



OCCUPIED BANDWIDTH - Band 85 NB IoT SA



XMIT 2022.02.07.0

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Block - DC	Fairview Microwave	SD3239	ANE	2022-03-02	2023-03-02
Generator - Signal	Agilent	N5173B	TIW	2020-07-17	2023-07-17
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFQ	2022-01-17	2023-01-17

TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and the spectrum analyzer. The method in section 5.4 of ANSI C63.26 was used to make this measurement. The spectrum analyzer settings were as follows:

- RBW is 1% - 5% of the occupied bandwidth
- VBW is $\geq 3 \times$ the RBW
- Peak Detector was used
- Trace max hold was used

RF conducted emissions testing was performed only on one port. The testing was performed on the same version of hardware (AHLOB) as the original certification test. The AHLOB antenna ports are essentially electrically identical (the RF power variation between antenna ports is small as shown in this certification testing) and antenna port 2 was selected to perform the testing under this effort as allowed by ANSI C63.26-2015 paragraphs 5.2.5.3, 5.7.2i, and 6.4.

The occupied bandwidth was measured with the EUT configured in the modes called out in the data sheets.

FCC 27.53 defines the 26dB emission bandwidth requirement.

RSS GEN Section 6.7 defines the 99% emission bandwidth requirement.

FCC and ISD Emission Designators for Band 85 (728MHz to 746MHz) Narrow-Band IoT Stand Alone			
Ch BW	Radio Channel	4G-LTE: N-TM	
		FCC	ISED
200kHz	Low	291KG7D	203KG7D
	Mid	291KG7D	204KG7D
	High	290KG7D	204KG7D

Note: FCC emission designators are based on 26dB emission bandwidth. ISD emission designators are based on 99% emission bandwidth.

OCCUPIED BANDWIDTH - Band 85 NB IoT SA



TstTx 2022.05.02.0 XMit 2022.02.07.0

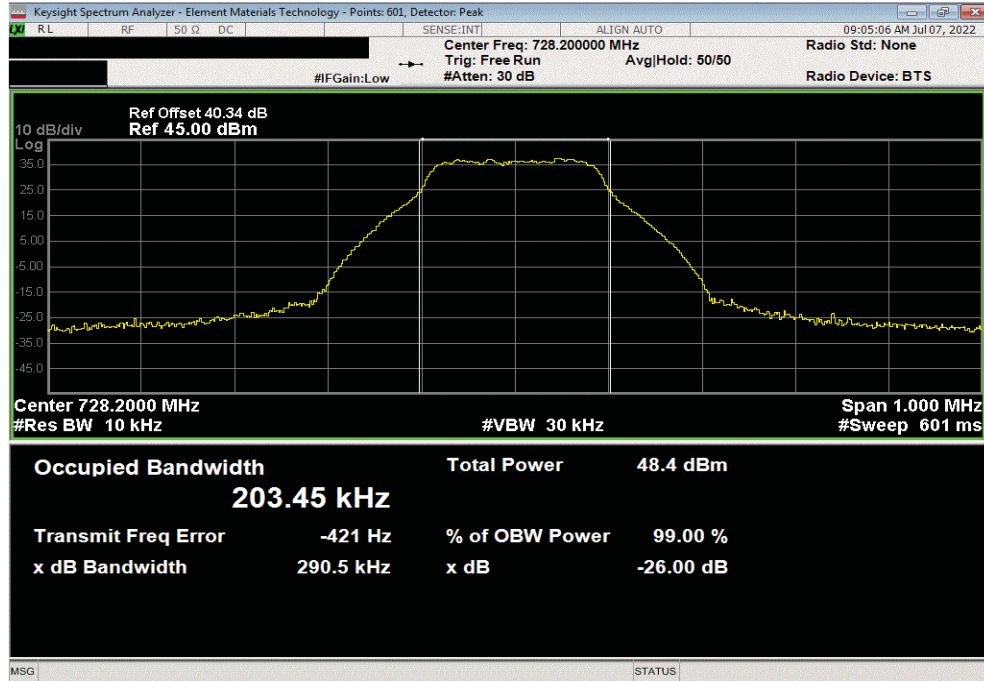
EUT: AHLOB		Work Order: NOKI0043	
Serial Number: YK220900029		Date: 13-Jul-22	
Customer: Nokia Solutions and Networks		Temperature: 20.6 °C	
Attendees: Mitchell Hill, John Rattavong		Humidity: 53.5% RH	
Project: None		Barometric Pres.: 1017 mbar	
Tested by: Marty Martin	Power: 54 VDC	Job Site: TX07	
TEST SPECIFICATIONS			
RSS-130 Issue 2		Test Method	
FCC 27:2022		ANSI C63.26:2015	
COMMENTS		ANSI C63.26:2015	
All losses in the measurement path were accounted for: attenuators, cables, DC block and filter when in use. The carriers were enabled at maximum power.			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	2	Signature <i>Marty Martin</i>	
		Value 99% (MHz)	Value 26dB (MHz)
		Limit	Result
Port 2, LTE, Band 85, 728 MHz - 746 MHz			
200 kHz Bandwidth			
Standalone NB-IoT			
Low Ch. 728.2 MHz		203.449 kHz	290.513 kHz
Mid Ch. 737 MHz		203.509 kHz	290.892 kHz
High Ch. 745.8 MHz		203.806 kHz	289.943 kHz
		Outside Band	Pass
		Outside Band	Pass
		Outside Band	Pass

OCCUPIED BANDWIDTH - Band 85 NB IoT SA

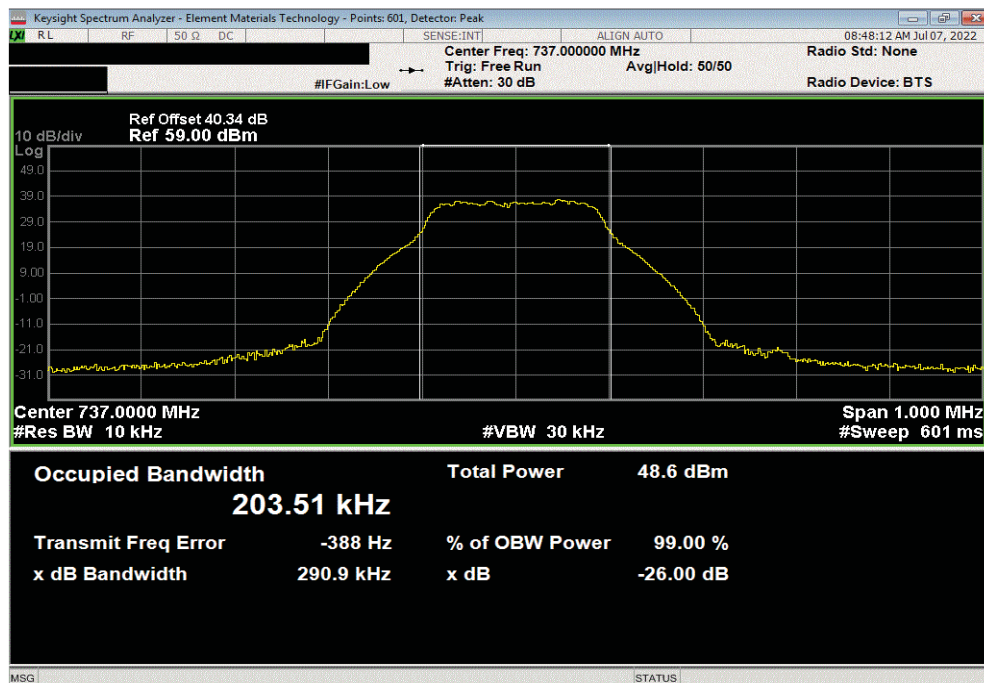


TbTx 2022.05.02.0 XMI 2022.02.07.0

Port 2, LTE, Band 85, 728 MHz - 746 MHz, 200 kHz Bandwidth, Standalone NB-IoT Modulation, Low Ch. 728.2 MHz							
		Value	Value				
		99% (MHz)	26dB (MHz)	Limit		Result	
		203.449 kHz	290.513 kHz	Outside Band		Pass	



Port 2, LTE, Band 85, 728 MHz - 746 MHz, 200 kHz Bandwidth, Standalone NB-IoT Modulation, Mid Ch. 737 MHz							
		Value	Value				
		99% (MHz)	26dB (MHz)	Limit		Result	
		203.509 kHz	290.892 kHz	Outside Band		Pass	

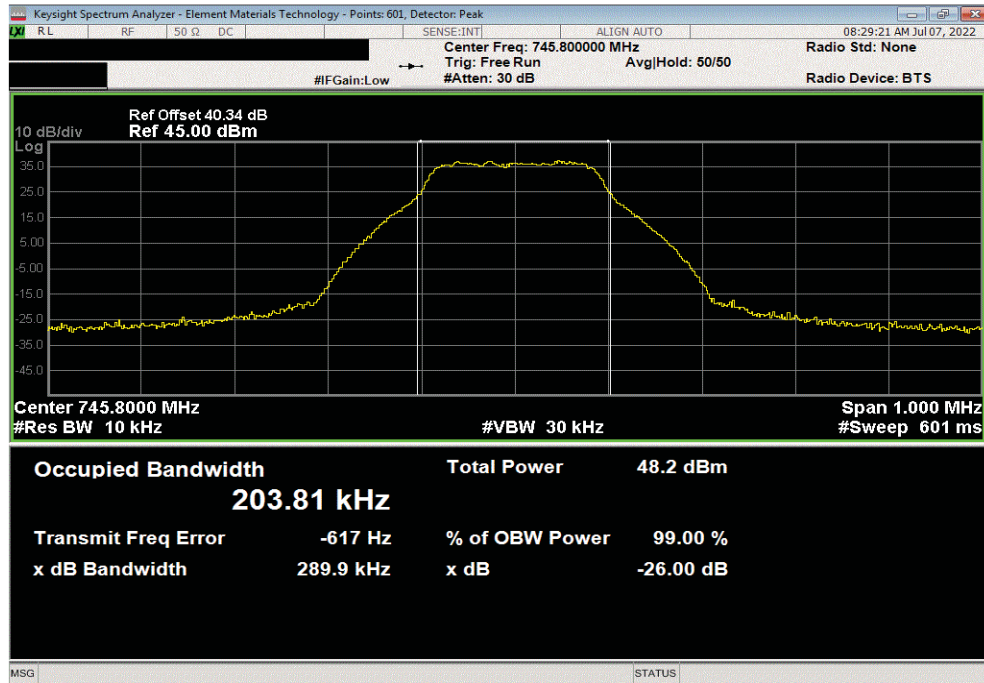


OCCUPIED BANDWIDTH - Band 85 NB IoT SA



TbTx 2022.05.02.0 XMit 2022.02.07.0

Port 2, LTE, Band 85, 728 MHz - 746 MHz, 200 kHz Bandwidth, Standalone NB-IoT Modulation, High Ch. 745.8 MHz						
		Value	Value			
		99% (MHz)	26dB (MHz)	Limit	Result	
		203.806 kHz	289.943 kHz	Outside Band	Pass	



OUTPUT POWER - ALL PORTS Band 71 LTE



XMIT 2022.02.07.0

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Block - DC	Fairview Microwave	SD3239	ANE	2022-03-02	2023-03-02
Generator - Signal	Agilent	N5173B	TIW	2020-07-17	2023-07-17
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFQ	2022-01-17	2023-01-17

TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. The fundamental emission output power (maximum average conducted output power) was measured using the channels and modes as called out on the following data sheets. The transmit power was set to its default maximum.

The method in section 5.2.4.4 of ANSI C63.26 was used to make the measurements. This method uses trace averaging across the ON and OFF times of the EUT transmissions in the spectrum analyzer channel power function using an RMS detector. Following the measurement a duty cycle correction was applied by adding $[10 \log (1/D)]$, where D is the duty cycle in decimal, to the measured power to compute the average power during the actual transmission times.

RF conducted emissions testing was performed on all ports at 15 MHz middle channel in order to prove the AHLOB antenna ports are essentially electrically identical. Antenna port 2 was selected to perform the testing under this effort as allowed by ANSI C63.26-2015 paragraphs 5.2.5.3, 5.7.2i and 6.4.

OUTPUT POWER - ALL PORTS Band 71 LTE



TstTx 2022.06.03.0 XMIT 2022.02.07.0

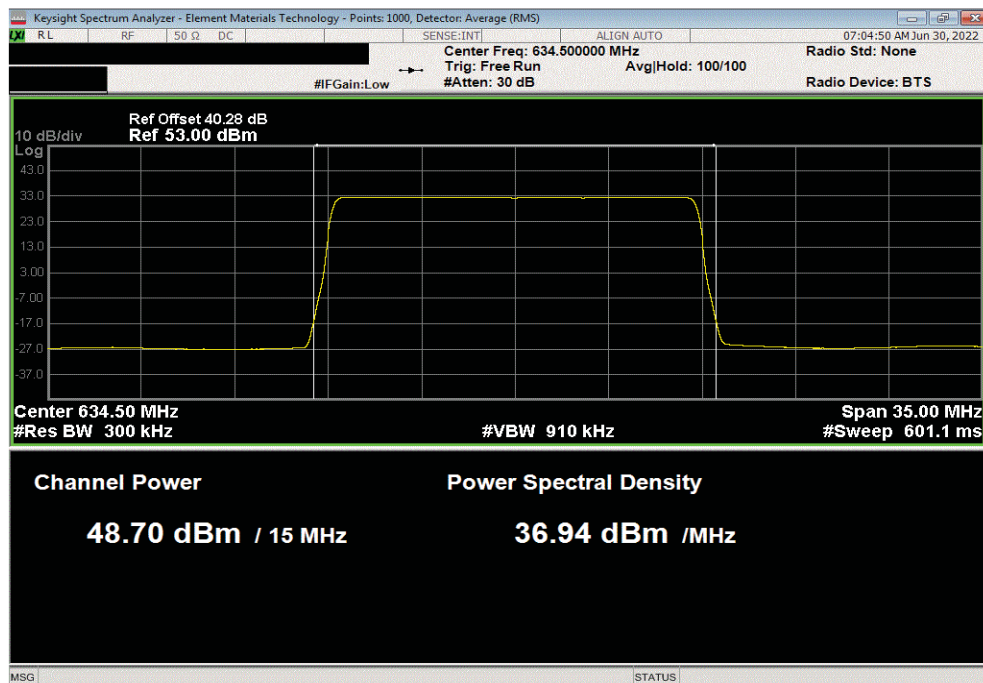
EUT: AHLOB		Work Order: NOKI0043	
Serial Number: YK220900029		Date: 11-Jul-22	
Customer: Nokia Solutions and Networks		Temperature: 20.8 °C	
Attendees: Mitchell Hill, John Rattanaovong		Humidity: 59.1% RH	
Project: None		Barometric Pres.: 1016 mbar	
Tested by: Marty Martin	Power: 54 VDC	Job Site: TX07	
TEST SPECIFICATIONS			
FCC 27:2022		Test Method	
RSS-130 Issue 2:2019		ANSI C63.26:2015	
COMMENTS			
All losses in the measurement path were accounted for: attenuators, cables, DC Block and filter when in use.			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	2	Signature <i>Marty Martin</i>	
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)
		All Ports Value (dBm)	Value (dBm)
		Limit	Results
LTE, Band 71, 617 MHz - 652 MHz			
Port 1			
15 MHz Bandwidth			
256-QAM Modulation			
Mid Ch. 634.5 MHz			
48.697 0 N/A 48.7 Within Tolerance N/A			
Port 2			
15 MHz Bandwidth			
256-QAM Modulation			
Mid Ch. 634.5 MHz			
48.583 0 N/A 48.6 Within Tolerance N/A			
Port 3			
15 MHz Bandwidth			
256-QAM Modulation			
Mid Ch. 634.5 MHz			
48.61 0 N/A 48.6 Within Tolerance N/A			
Port 4			
15 MHz Bandwidth			
256-QAM Modulation			
Mid Ch. 634.5 MHz			
48.758 0 N/A 48.8 Within Tolerance N/A			
Radio Power All Ports			
15 MHz BW			
256QAM			
Mid Ch. 634.5 Mhz			
N/A 0 54.7 N/A N/A N/A			

OUTPUT POWER - ALL PORTS Band 71 LTE

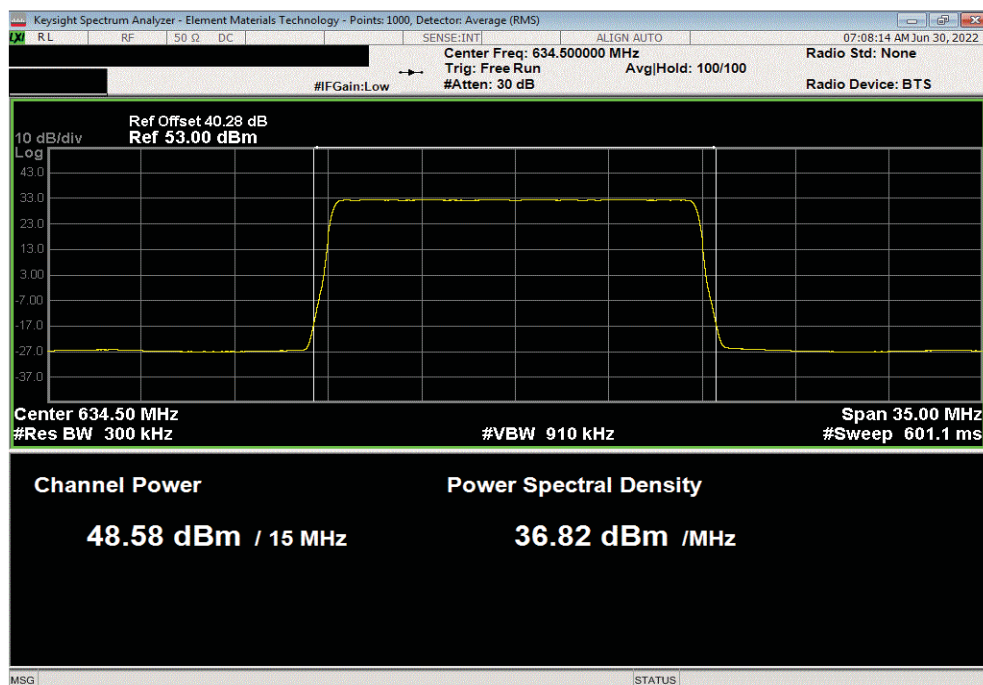


TbTx 2022.06.03.0 XMM 2022.02.07.0

LTE, Band 71, 617 MHz - 652 MHz, Port 1, 15 MHz Bandwidth, 256-QAM Modulation, Mid Ch. 634.5 MHz						
Avg Cond	Duty Cycle	All Ports	Value	Limit	Results	
Pwr (dBm)	Factor (dB)	Value (dBm)	(dBm)			
48.697	0	N/A	48.7	Within Tolerance	N/A	



LTE, Band 71, 617 MHz - 652 MHz, Port 2, 15 MHz Bandwidth, 256-QAM Modulation, Mid Ch. 634.5 MHz						
Avg Cond	Duty Cycle	All Ports	Value	Limit	Results	
Pwr (dBm)	Factor (dB)	Value (dBm)	(dBm)			
48.583	0	N/A	48.6	Within Tolerance	N/A	

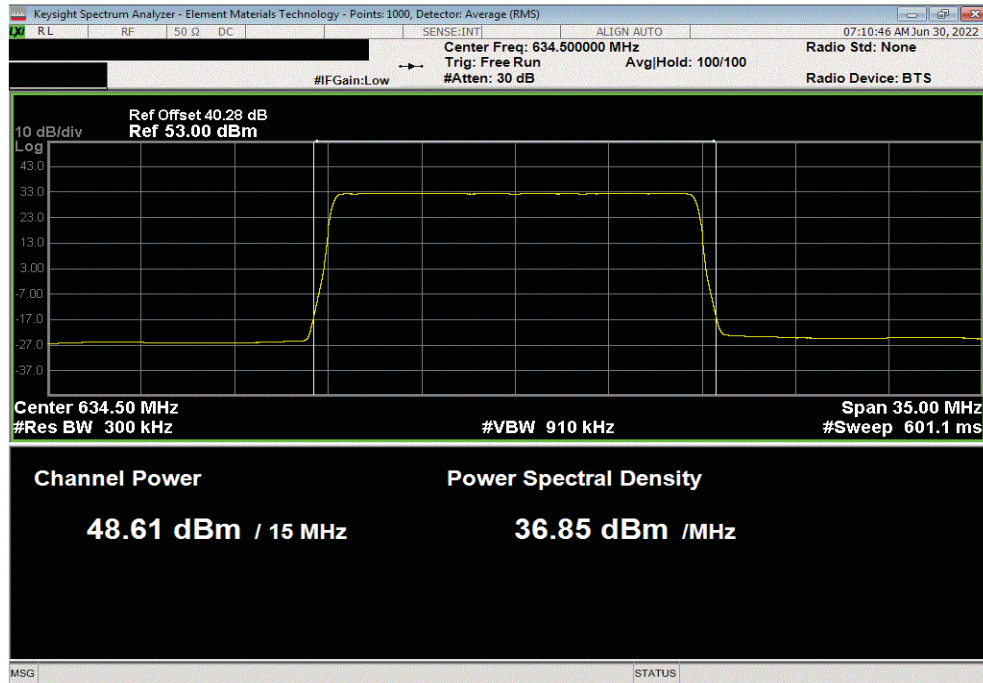


OUTPUT POWER - ALL PORTS Band 71 LTE

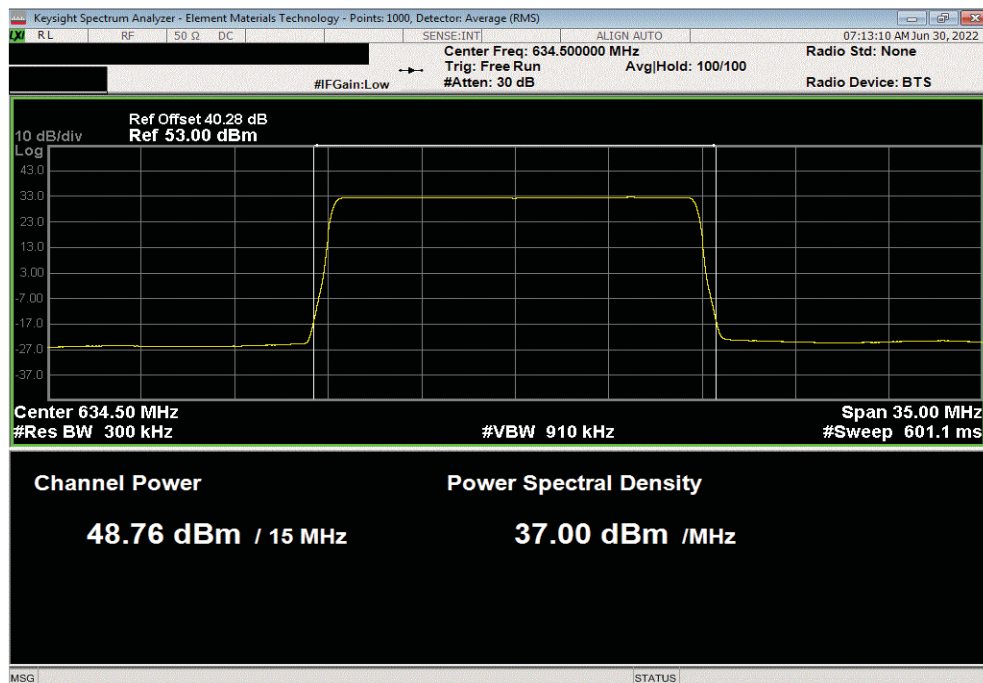


Test 2022.06.03.0 XMIT 2022.02.07.0

LTE, Band 71, 617 MHz - 652 MHz, Port 3, 15 MHz Bandwidth, 256-QAM Modulation, Mid Ch. 634.5 MHz						
Avg Cond	Duty Cycle	All Ports	Value	Limit	Results	
Pwr (dBm)	Factor (dB)	Value (dBm)	(dBm)			
48.61	0	N/A	48.6	Within Tolerance	N/A	



LTE, Band 71, 617 MHz - 652 MHz, Port 4, 15 MHz Bandwidth, 256-QAM Modulation, Mid Ch. 634.5 MHz						
Avg Cond	Duty Cycle	All Ports	Value	Limit	Results	
Pwr (dBm)	Factor (dB)	Value (dBm)	(dBm)			
48.758	0	N/A	48.8	Within Tolerance	N/A	



OUTPUT POWER - ALL PORTS Band 71 LTE



TstTx 2022.06.03.0 XMit 2022.02.07.0

5G NR, Band n71, 617 MHz - 652 MHz, All Ports, 15 MHz Bandwidth, 256-QAM Modulation, Mid Ch. 634.5 MHz						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Value (dBm)	All Ports Value (dBm)	Limit	Results
	N/A	0	N/A	54.7	N/A	N/A

AVERAGE POWER PORT SUMMING					
	PORT 1	PORT 2	PORT 3	PORT 4	SUM TOTAL
INITIAL VALUE (dBm)	48.7	48.6	48.6	48.8	N/A
INITIAL VALUE (Watts)	74.1	72.4	72.4	75.9	294.9
TOTAL VALUE (dBm)	N/A	N/A	N/A	N/A	54.7

OUTPUT POWER - ALL PORTS - Band 85 LTE



XMH 2022.02.07.0

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Block - DC	Fairview Microwave	SD3239	ANE	2022-03-02	2023-03-02
Generator - Signal	Agilent	N5173B	TIW	2020-07-17	2023-07-17
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFQ	2022-01-17	2023-01-17

TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. The fundamental emission output power (maximum average conducted output power) was measured using the channels and modes as called out on the following data sheets. The transmit power was set to the default maximum,

The method in section 5.2.4.4 of ANSI C63.26 was used to make the measurements. This method uses trace averaging across the ON and OFF times of the EUT transmissions in the spectrum analyzer channel power function using RMS detector. Following the measurement a duty cycle correction was applied by adding $[10 \log (1/D)]$, where D is the duty cycle in decimal, to the measurement power to compute the average power during the actual transmission times.

RF conducted emissions testing performed on all ports at 15 MHz middle channel in order to prove the AHLOB antenna ports are essentially electrically identical. Antenna port 2 was selected to perform the testing under this effort as allowed by ANSI C63.26-2015 paragraphs 5.2.5.3, 5.7.2i and 6.4.

OUTPUT POWER - ALL PORTS - Band 85 LTE



TstTx 2022.05.02.0 XMIT 2022.02.07.0

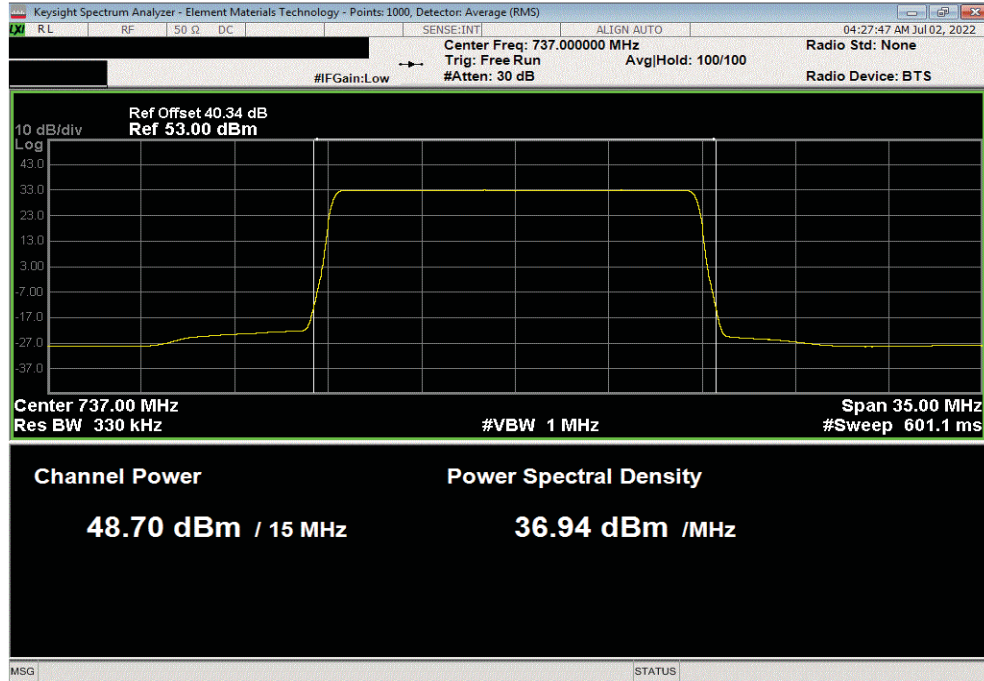
EUT: AHLOB			Work Order: NOKI0043				
Serial Number: YK220900029			Date: 11-Jul-22				
Customer: Nokia Solutions and Networks			Temperature: 21 °C				
Attendees: Mitchell Hill, John Rattanaovong			Humidity: 56.3% RH				
Project: None			Barometric Pres.: 1014 mbar				
Tested by: Marty Martin		Power: 54 VDC	Job Site: TX07				
TEST SPECIFICATIONS			Test Method				
FCC 27:2022		ANSI C63.26:2015					
RSS-130 Issue 2:2019		ANSI C63.26:2015					
COMMENTS							
All losses in the measurment path were accounted for: attenuators, cables, DC block and filter when in use.							
DEVIATIONS FROM TEST STANDARD							
None							
Configuration #	2	Signature 					
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	All Ports Value (dBm)	Value (dBm)	Limit (dBm)	Results
LTE, Band 85, 728 MHz - 746 MHz							
Port 1							
15 MHz Bandwidth							
256-QAM Modulation							
Mid Ch. 737 MHz							
		48.703	0	N/A	48.7	Within Tolerance	N/A
Port 2							
15 MHz Bandwidth							
256-QAM Modulation							
Mid Ch. 737 MHz							
		48.626	0	N/A	48.6	Within Tolerance	N/A
Port 3							
15 MHz Bandwidth							
256-QAM Modulation							
Mid Ch. 737 MHz							
		48.538	0	N/A	48.5	Within Tolerance	N/A
Port 4							
15 MHz Bandwidth							
256-QAM Modulation							
Mid Ch. 737 MHz							
		48.768	0	N/A	48.8	Within Tolerance	N/A
Radio Power All Ports							
15 MHz BW							
256QAM							
Mid Ch. 737 Mhz							
		N/A	0	54.7	N/A	N/A	N/A

OUTPUT POWER - ALL PORTS - Band 85 LTE

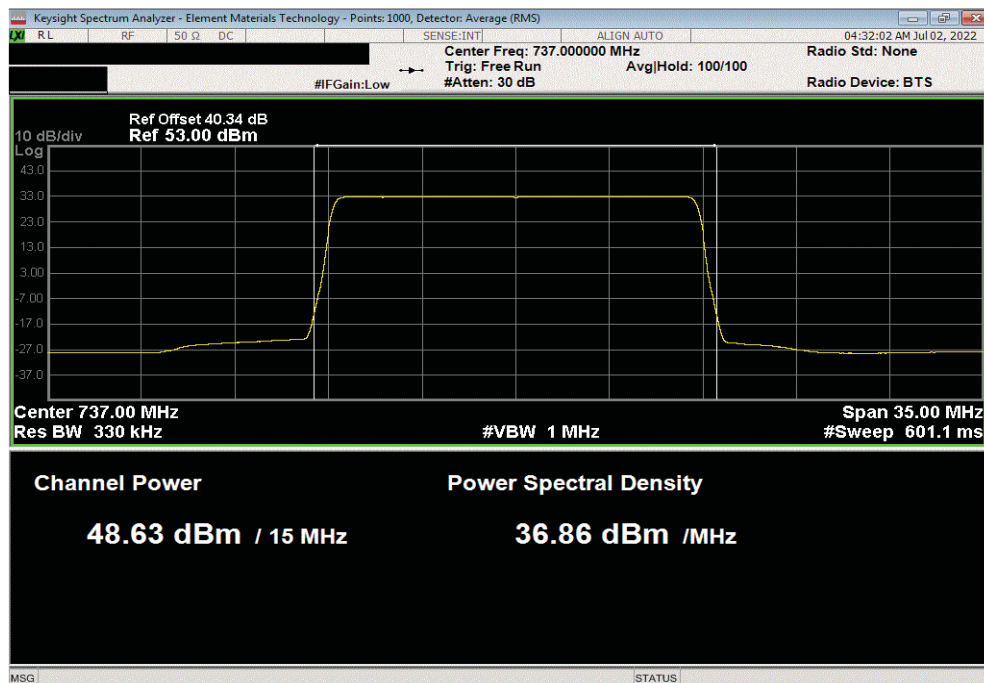


TbTx 2022.05.02.0 XMt 2022.02.07.0

LTE, Band 85, 728 MHz - 746 MHz, Port 1, 15 MHz Bandwidth, 256-QAM Modulation, Mid Ch. 737 MHz						
Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Ports Value (dE	Value (dBm)	Limit (dBm)	Results	
48.703	0		48.7	Within Tolerance	N/A	



LTE, Band 85, 728 MHz - 746 MHz, Port 2, 15 MHz Bandwidth, 256-QAM Modulation, Mid Ch. 737 MHz						
Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Ports Value (dE	Value (dBm)	Limit (dBm)	Results	
48.626	0		48.6	Within Tolerance	N/A	

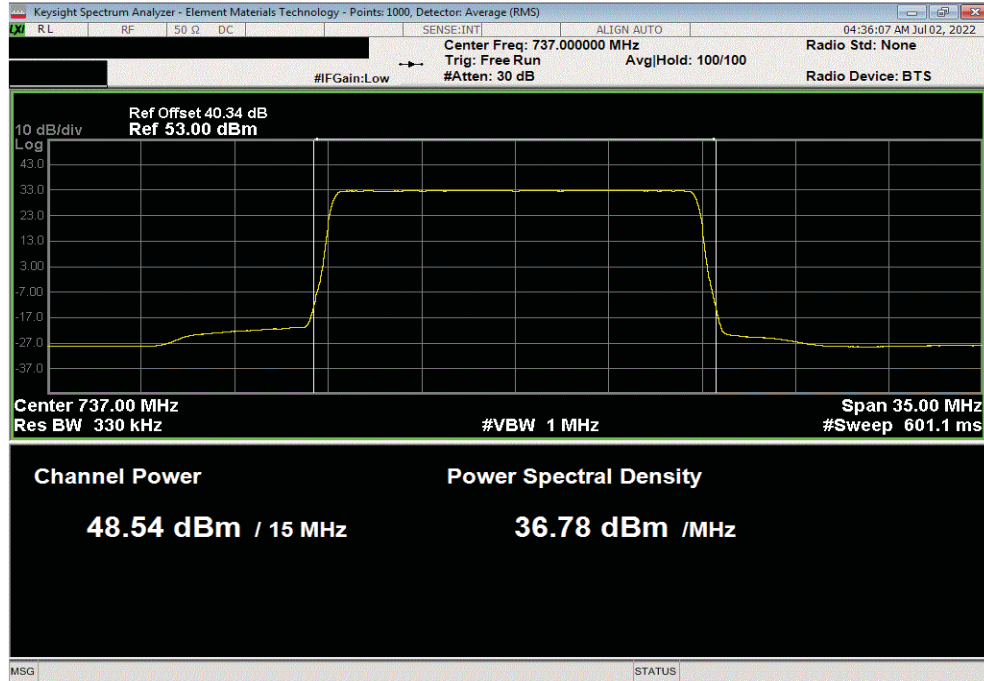


OUTPUT POWER - ALL PORTS - Band 85 LTE

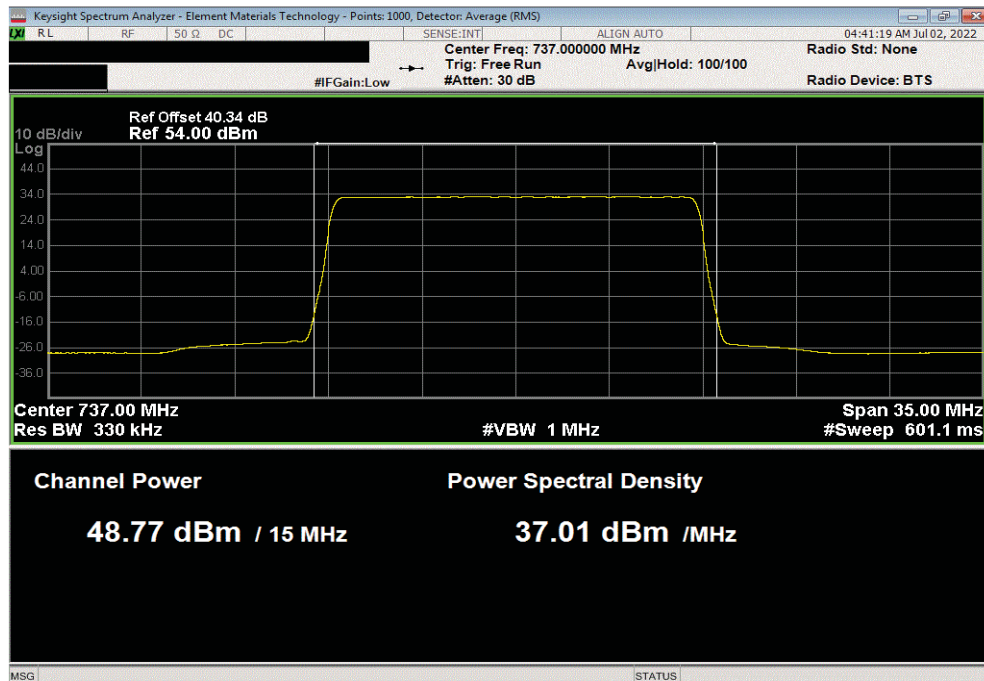


TbTx 2022.05.02.0 XbTx 2022.02.07.0

LTE, Band 85, 728 MHz - 746 MHz, Port 3, 15 MHz Bandwidth, 256-QAM Modulation, Mid Ch. 737 MHz						
Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Ports Value (dE)	Value (dBm)	Limit (dBm)	Results	
48.538	0		48.5	Within Tolerance	N/A	



LTE, Band 85, 728 MHz - 746 MHz, Port 4, 15 MHz Bandwidth, 256-QAM Modulation, Mid Ch. 737 MHz						
Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Ports Value (dE)	Value (dBm)	Limit (dBm)	Results	
48.768	0		48.8	Within Tolerance	N/A	



OUTPUT POWER - ALL PORTS - Band 85 LTE



TstTx 2022.06.03.0 XMit 2022.02.07.0

LTE, Band n85, 728 MHz - 746 MHz, 15 MHz Bandwidth, 256-QAM Modulation, Mid Ch. 737 MHz						
	Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Value (dBm)	All Ports Value (dBm)	Limit	Results
	N/A	0	N/A	54.7	N/A	N/A

AVERAGE POWER PORT SUMMING					
	PORT 1	PORT 2	PORT 3	PORT 4	SUM TOTAL
INITIAL VALUE (dBm)	48.7	48.6	48.5	48.8	N/A
INITIAL VALUE (Watts)	74.1	72.4	70.8	75.9	293.2
TOTAL VALUE (dBm)	N/A	N/A	N/A	N/A	54.7

OUTPUT POWER - Band 71 LTE

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Block - DC	Fairview Microwave	SD3239	ANE	2022-03-02	2023-03-02
Generator - Signal	Agilent	N5173B	TIW	2020-07-17	2023-07-17
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFQ	2022-01-17	2023-01-17

TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. The fundamental emission output power (maximum average conducted output power) was measured using the channels and modes as called out on the following data sheets. The transmit power was set to its default maximum.

The method in section 5.2.4.4 of ANSI C63.26 was used to make the measurements. This method uses trace averaging across the ON and OFF times of the EUT transmissions in the spectrum analyzer channel power function using an RMS detector. Following the measurement a duty cycle correction was applied by adding $[10 \log (1/D)]$, where D is the duty cycle in decimal, to the measured power to compute the average power during the actual transmission times

RF conducted emissions testing was performed only on one port. The testing was performed on the same version of hardware (AHLOB) as the original certification test. The AHLOB antenna ports are essentially electrically identical (the RF power variation between antenna ports is small as shown in this certification testing) and antenna port 2 was selected to perform the testing under this effort as allowed by ANSI C63.26-2015 paragraphs 5.2.5.3, 5.7.2i and 6.4.

The total average transmit power of all antenna ports was determined per ANSI C63.26-2105 paragraph 6.4.3.1

OUTPUT POWER - Band 71 LTE



THxTx 2022.06.03.0 XMM 2022.02.07.0

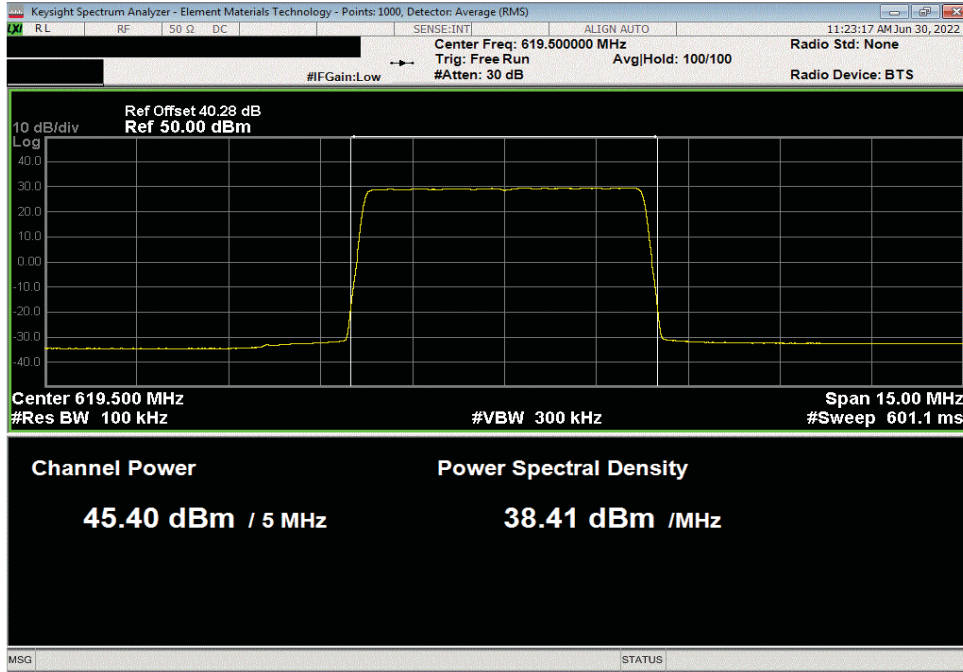
EUT: AHLOB		Work Order: NOKI0043				
Serial Number: YK220900029		Date: 11-Jul-22				
Customer: Nokia Solutions and Networks		Temperature: 21.3 °C				
Attendees: Mitchell Hill, John Rattanavong		Humidity: 58% RH				
Project: None		Barometric Pres.: 1015 mbar				
Tested by: Marty Martin		Job Site: TX07				
Power: 54 VDC						
TEST SPECIFICATIONS		Test Method				
FCC 27:2022		ANSI C63.26:2015				
RSS-130 Issue 2:2019		ANSI C63.26:2015				
COMMENTS						
All measurement path losses were accounted for in the reference level offset including any attenuators, filters and DC blocks. The following is the output power measurements at the radio output ports. The output power was measured for a single carrier over the carrier channel bandwidth on port 2. The total output power for multiport (2x2, 4x4 MIMO) operation was determined based upon ANSI 63.26 clauses 6.4.3.1 and 6.4.3.2.4 [10 log(Nout)]. The total output power for two port operation is single port power + 3dB [i.e. 10log(2)] and the total output power for a four port operation is single port power + 6dB [i.e. 10log(4)].						
DEVIATIONS FROM TEST STANDARD						
None						
Configuration #	2	Signature 				
		Initial Value dBm/MHz	Duty Cycle Factor (dB)	Single Port dBm/Carrier BW	Two Port (2x2 MIMO) dBm/Carrier BW	Four Port (4x4 MIMO) dBm/Carrier BW
Port 2, LTE, Band 71, 617 MHz - 652 MHz						
5 MHz Bandwidth						
256-QAM Modulation						
Low Ch. 619.5 MHz		45.401	0	45.4	48.4	51.4
Mid Ch. 634.5 MHz		45.748	0	45.7	48.7	51.7
High Ch. 649.5 MHz		45.654	0	45.7	48.7	51.7
10 MHz Bandwidth						
256-QAM Modulation						
Low Ch. 622 MHz		47.587	0	47.6	50.6	53.6
Mid Ch. 634.5 MHz		47.32	0	47.3	50.3	53.3
High Ch. 647 MHz		47.531	0	47.5	50.5	53.5
15 MHz Bandwidth						
QPSK Modulation						
Mid Ch. 634.5 MHz		48.313	0	48.3	51.3	54.3
16-QAM Modulation						
Mid Ch. 634.5 MHz		48.387	0	48.4	51.4	54.3
64-QAM Modulation						
Mid Ch. 634.5 MHz		48.382	0	48.4	51.4	54.3
256-QAM Modulation						
Low Ch. 624.5 MHz		48.795	0	48.8	51.8	54.8
Mid Ch. 634.5 MHz		48.399	0	48.4	51.4	54.4
High Ch. 644.5 MHz		48.412	0	48.4	51.4	54.4
20 MHz Bandwidth						
256-QAM Modulation						
Low Ch. 627 MHz		48.52	0	48.5	51.5	54.5
Mid Ch. 634.5 MHz		48.331	0	48.3	51.3	54.3
High Ch. 642 MHz		48.523	0	48.5	51.5	54.5

OUTPUT POWER - Band 71 LTE

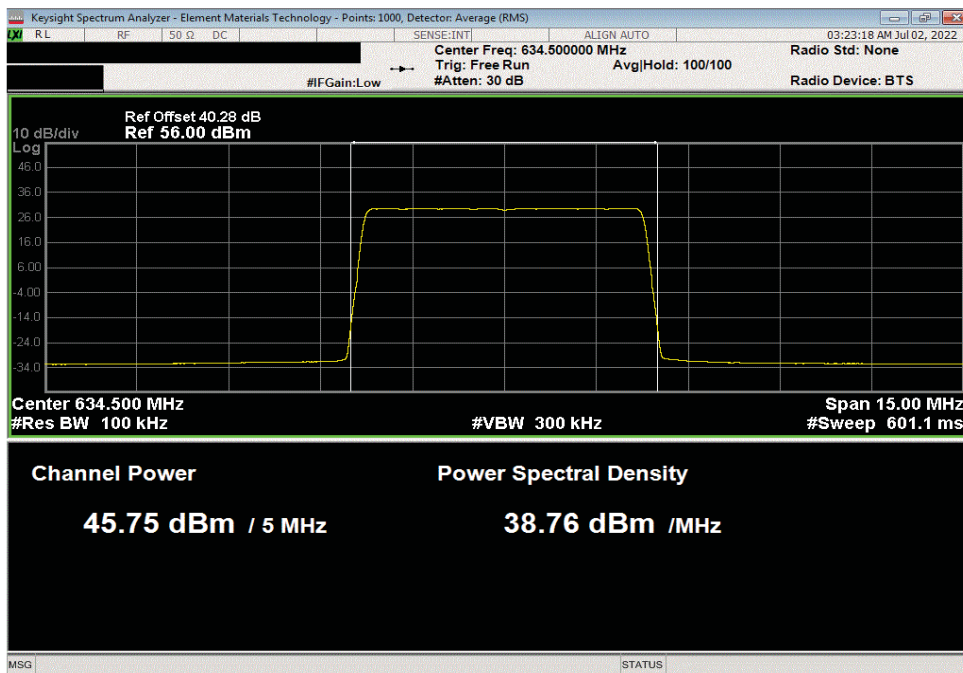


TbTx 2022.06.03.0 XMt 2022.02.07.0

Port 2, LTE, Band n71, 617 MHz - 652 MHz, 5 MHz Bandwidth, 256-QAM Modulation, Low Ch. 619.5 MHz						
Initial Value	Duty Cycle	Single Port	Two Port (2x2 MIMO)	Four Port (4x4 MIMO)		
dBm/MHz	Factor (dB)	dBm/Carrier BW	dBm/Carrier BW	dBm/Carrier BW		
45.401	0	45.4	48.4	51.4		



Port 2, LTE, Band n71, 617 MHz - 652 MHz, 5 MHz Bandwidth, 256-QAM Modulation, Mid Ch. 634.5 MHz						
Initial Value	Duty Cycle	Single Port	Two Port (2x2 MIMO)	Four Port (4x4 MIMO)		
dBm/MHz	Factor (dB)	dBm/Carrier BW	dBm/Carrier BW	dBm/Carrier BW		
45.748	0	45.7	48.7	51.7		

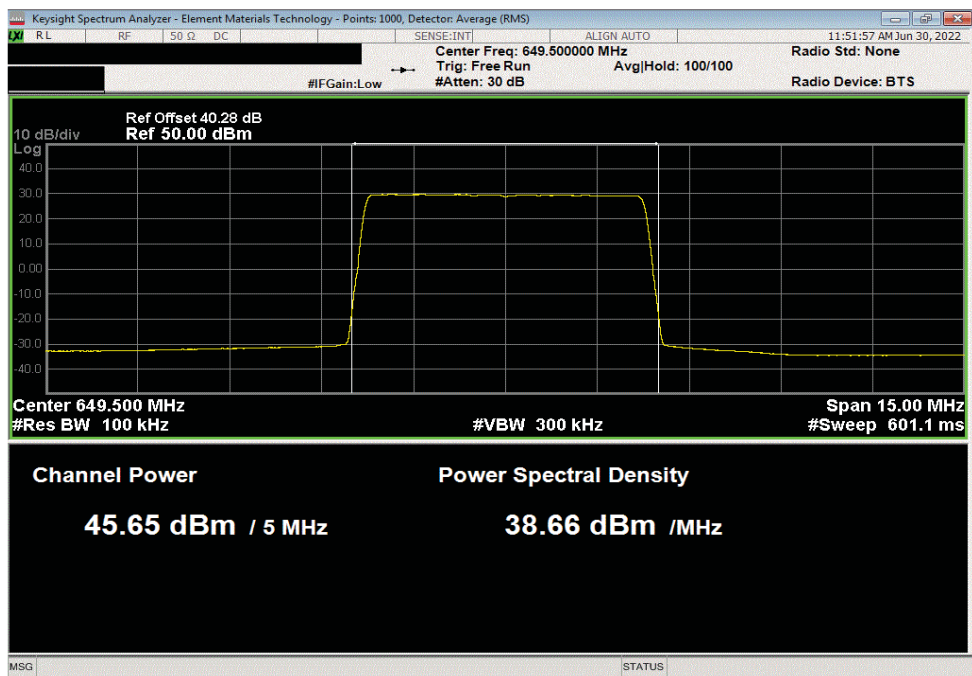


OUTPUT POWER - Band 71 LTE

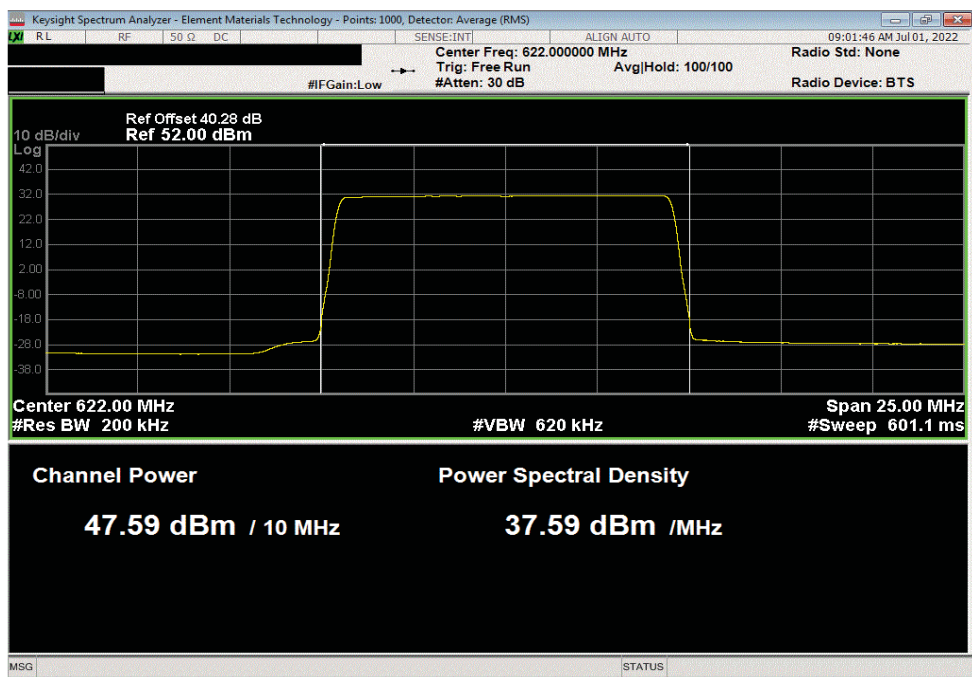


TbTx 2022.06.03.0 XMM 2022.02.07.0

Port 2, LTE, Band n71, 617 MHz - 652 MHz, 5 MHz Bandwidth, 256-QAM Modulation, High Ch. 649.5 MHz						
Initial Value	Duty Cycle	Single Port	Two Port (2x2 MIMO)	Four Port (4x4 MIMO)		
dBm/MHz	Factor (dB)	dBm/Carrier BW	dBm/Carrier BW	dBm/Carrier BW		
45.654	0	45.7	48.7	51.7		



Port 2, LTE, Band n71, 617 MHz - 652 MHz, 10 MHz Bandwidth, 256-QAM Modulation, Low Ch. 622 MHz						
Initial Value	Duty Cycle	Single Port	Two Port (2x2 MIMO)	Four Port (4x4 MIMO)		
dBm/MHz	Factor (dB)	dBm/Carrier BW	dBm/Carrier BW	dBm/Carrier BW		
47.587	0	47.6	50.6	53.6		

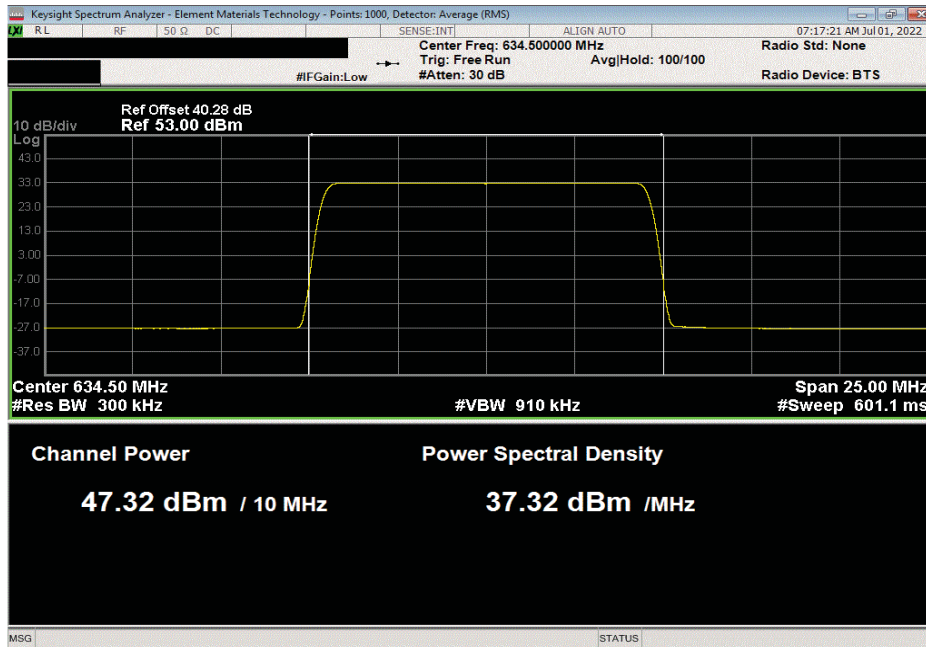


OUTPUT POWER - Band 71 LTE

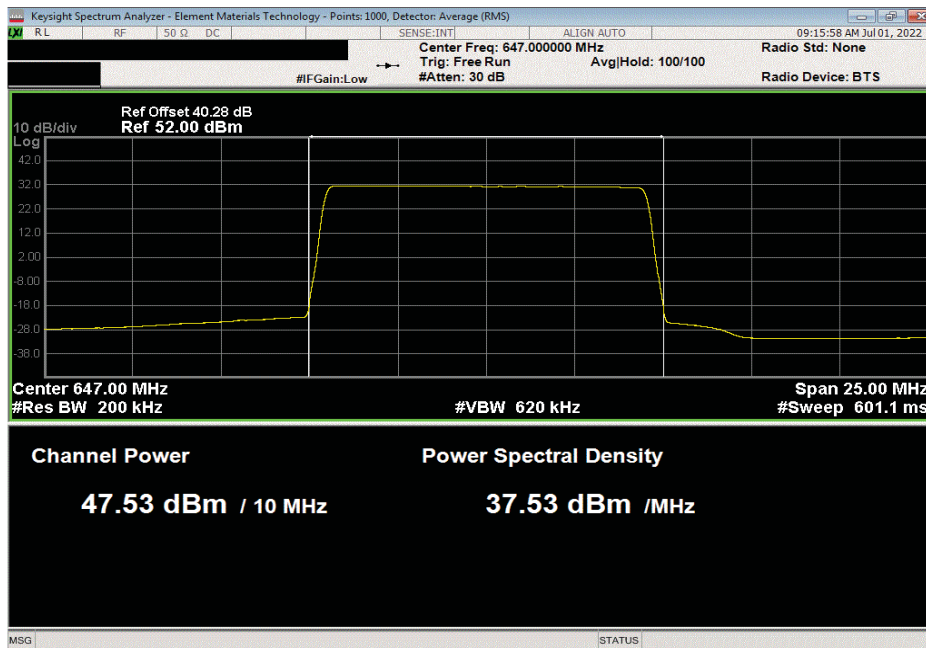


TbTx 2022.06.03.0 XM1 2022.02.07.0

Port 2, LTE, Band n71, 617 MHz - 652 MHz, 10 MHz Bandwidth, 256-QAM Modulation, Mid Ch. 634.5 MHz						
Initial Value	Duty Cycle	Single Port	Two Port (2x2 MIMO)	Four Port (4x4 MIMO)		
dBm/MHz	Factor (dB)	dBm/Carrier BW	dBm/Carrier BW	dBm/Carrier BW		
47.32	0	47.3	50.3	53.3		



Port 2, LTE, Band n71, 617 MHz - 652 MHz, 10 MHz Bandwidth, 256-QAM Modulation, High Ch. 647 MHz						
Initial Value	Duty Cycle	Single Port	Two Port (2x2 MIMO)	Four Port (4x4 MIMO)		
dBm/MHz	Factor (dB)	dBm/Carrier BW	dBm/Carrier BW	dBm/Carrier BW		
47.531	0	47.5	50.5	53.5		

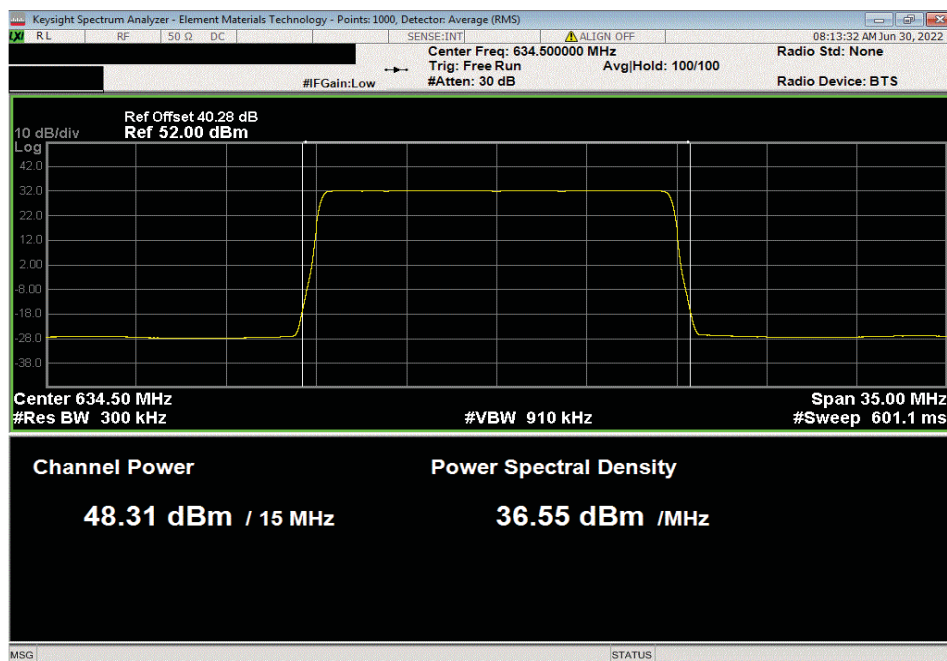


OUTPUT POWER - Band 71 LTE

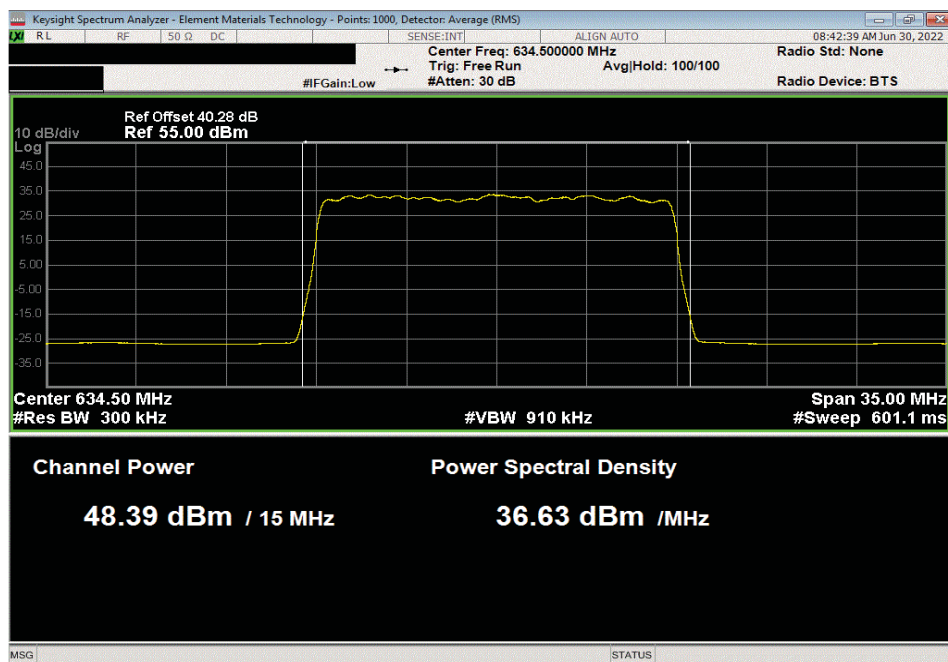


TMTx 2022.06.03.0 XMI 2022.02.07.0

Port 2, LTE, Band n71, 617 MHz - 652 MHz, 15 MHz Bandwidth, QPSK Modulation, Mid Ch. 634.5 MHz						
Initial Value	Duty Cycle	Single Port	Two Port (2x2 MIMO)	Four Port (4x4 MIMO)		
dBm/MHz	Factor (dB)	dBm/Carrier BW	dBm/Carrier BW	dBm/Carrier BW		
48.313	0	48.3	51.3	54.3		



Port 2, LTE, Band n71, 617 MHz - 652 MHz, 15 MHz Bandwidth, 16-QAM Modulation, Mid Ch. 634.5 MHz						
Initial Value	Duty Cycle	Single Port	Two Port (2x2 MIMO)	Four Port (4x4 MIMO)		
dBm/MHz	Factor (dB)	dBm/Carrier BW	dBm/Carrier BW	dBm/Carrier BW		
48.387	0	48.3	51.3	54.3		

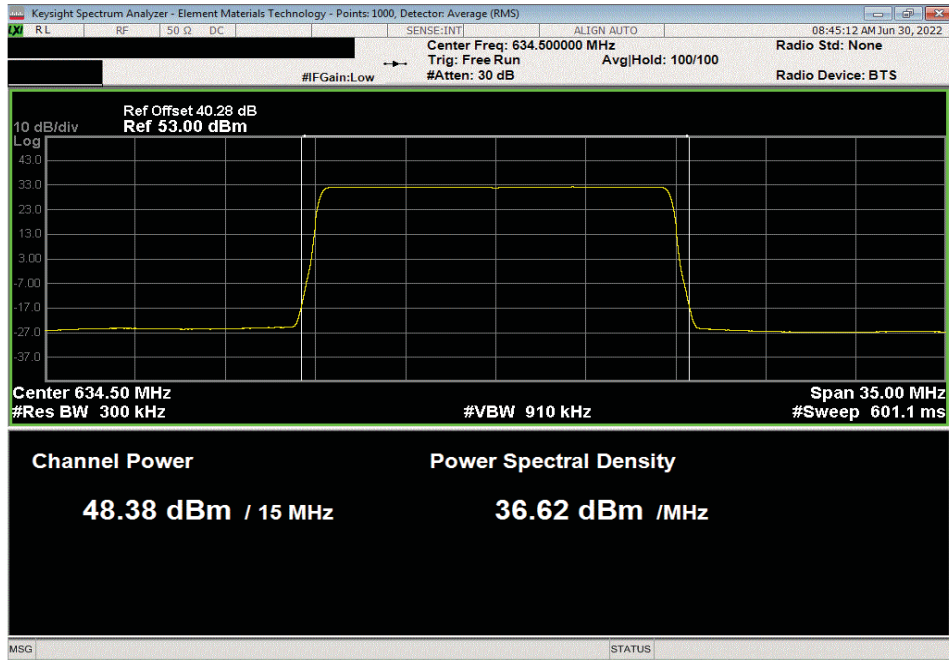


OUTPUT POWER - Band 71 LTE

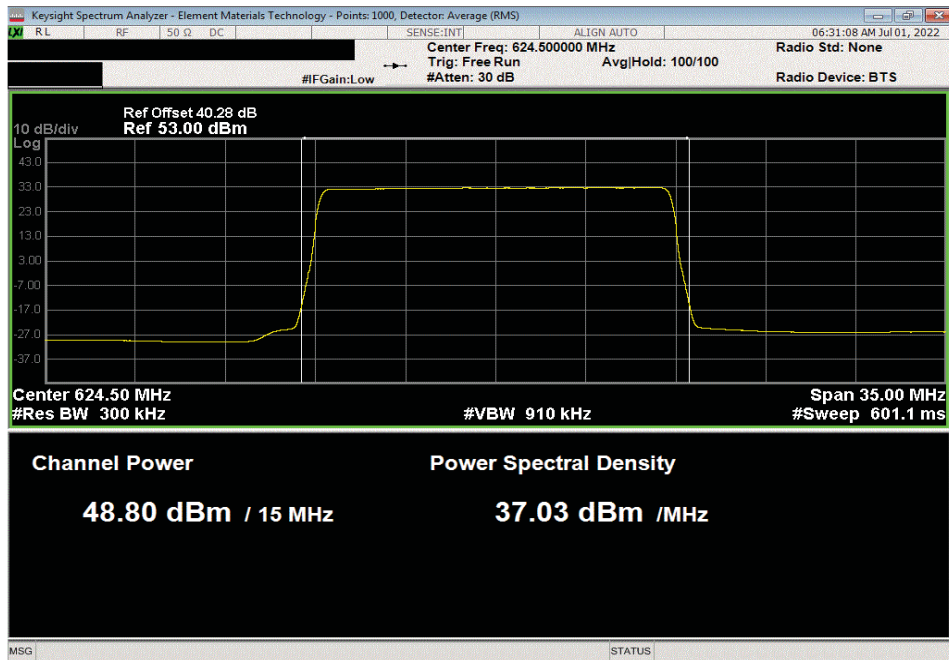


TbTtx 2022.06.03.0 XMI 2022.02.07.0

Port 2, LTE, Band n71, 617 MHz - 652 MHz, 15 MHz Bandwidth, 64-QAM Modulation, Mid Ch. 634.5 MHz						
Initial Value	Duty Cycle	Single Port	Two Port (2x2 MIMO)	Four Port (4x4 MIMO)		
dBm/MHz	Factor (dB)	dBm/Carrier BW	dBm/Carrier BW	dBm/Carrier BW		
48.382	0	48.4	51.4	54.4		



Port 2, LTE, Band n71, 617 MHz - 652 MHz, 15 MHz Bandwidth, 256-QAM Modulation, Low Ch. 624.5 MHz						
Initial Value	Duty Cycle	Single Port	Two Port (2x2 MIMO)	Four Port (4x4 MIMO)		
dBm/MHz	Factor (dB)	dBm/Carrier BW	dBm/Carrier BW	dBm/Carrier BW		
48.795	0	48.8	51.8	54.8		

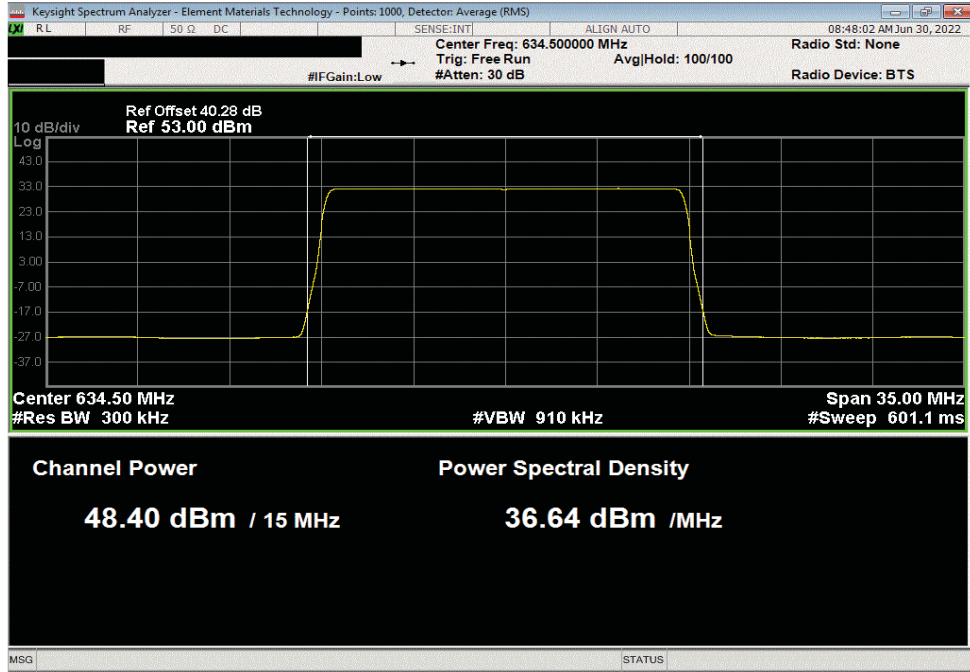


OUTPUT POWER - Band 71 LTE

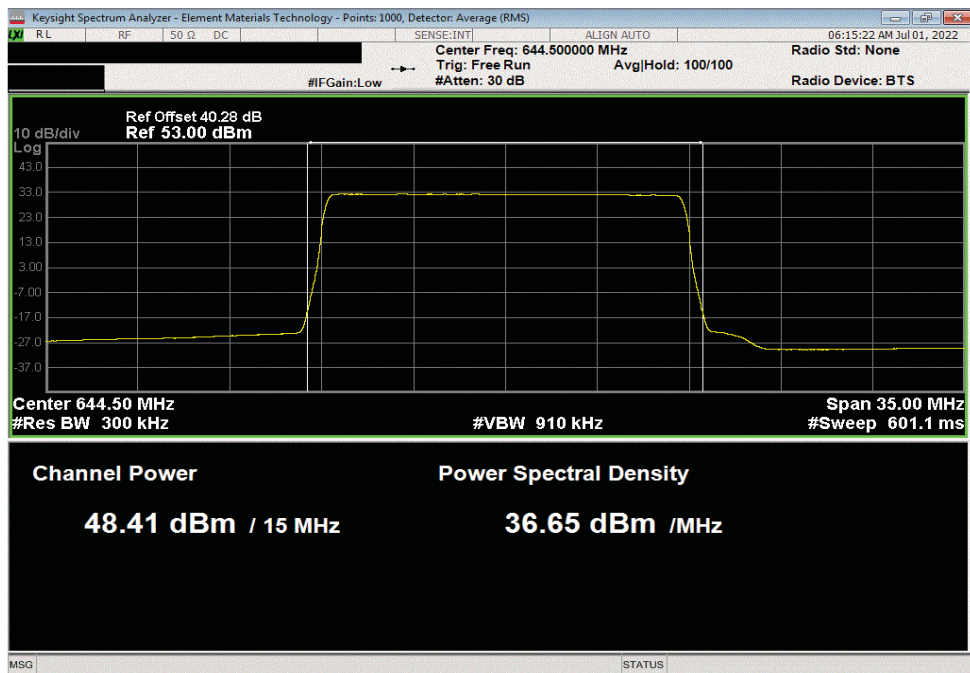


TelTx 2022.06.03.0 XMII 2022.02.07.0

Port 2, LTE, Band n71, 617 MHz - 652 MHz, 15 MHz Bandwidth, 256-QAM Modulation, Mid Ch. 634.5 MHz					
Initial Value	Duty Cycle	Single Port	Two Port (2x2 MIMO)	Four Port (4x4 MIMO)	
dBm/MHz	Factor (dB)	dBm/Carrier BW	dBm/Carrier BW	dBm/Carrier BW	
48.399	0	48.4	51.4	54.4	



Port 2, LTE, Band n71, 617 MHz - 652 MHz, 15 MHz Bandwidth, 256-QAM Modulation, High Ch. 644.5 MHz					
Initial Value	Duty Cycle	Single Port	Two Port (2x2 MIMO)	Four Port (4x4 MIMO)	
dBm/MHz	Factor (dB)	dBm/Carrier BW	dBm/Carrier BW	dBm/Carrier BW	
48.412	0	48.4	51.4	54.4	

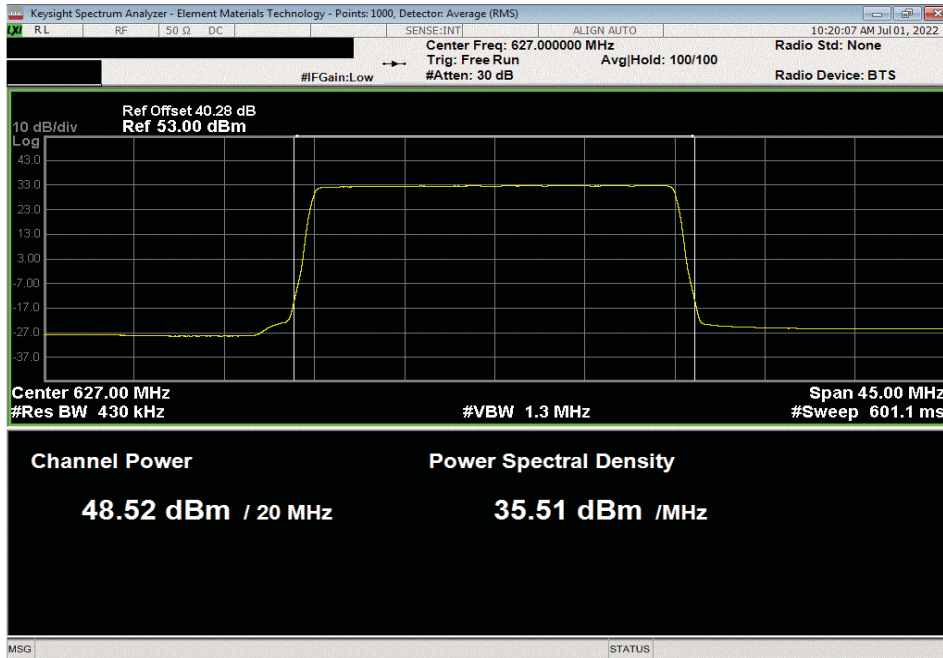


OUTPUT POWER - Band 71 LTE

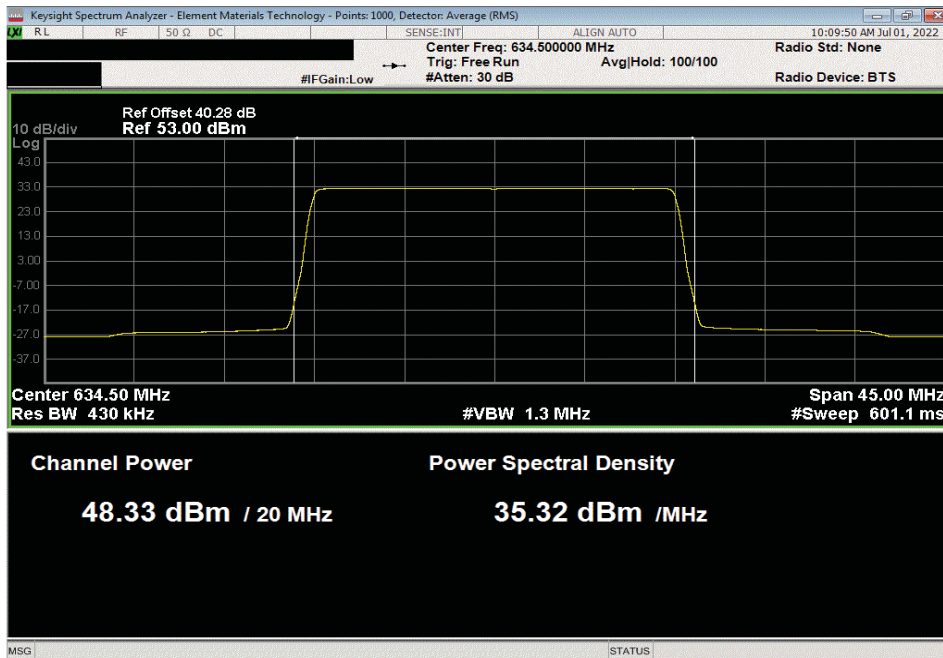


TMTx 2022.06.03.0 XMM 2022.02.07.0

Port 2, LTE, Band n71, 617 MHz - 652 MHz, 20 MHz Bandwidth, 256-QAM Modulation, Low Ch. 627 MHz						
Initial Value	Duty Cycle	Single Port	Two Port (2x2 MIMO)	Four Port (4x4 MIMO)		
dBm/MHz	Factor (dB)	dBm/Carrier BW	dBm/Carrier BW	dBm/Carrier BW		
48.52	0	48.5	51.5	54.5		



Port 2, LTE, Band n71, 617 MHz - 652 MHz, 20 MHz Bandwidth, 256-QAM Modulation, Mid Ch. 634.5 MHz						
Initial Value	Duty Cycle	Single Port	Two Port (2x2 MIMO)	Four Port (4x4 MIMO)		
dBm/MHz	Factor (dB)	dBm/Carrier BW	dBm/Carrier BW	dBm/Carrier BW		
48.331	0	48.3	51.3	54.3		

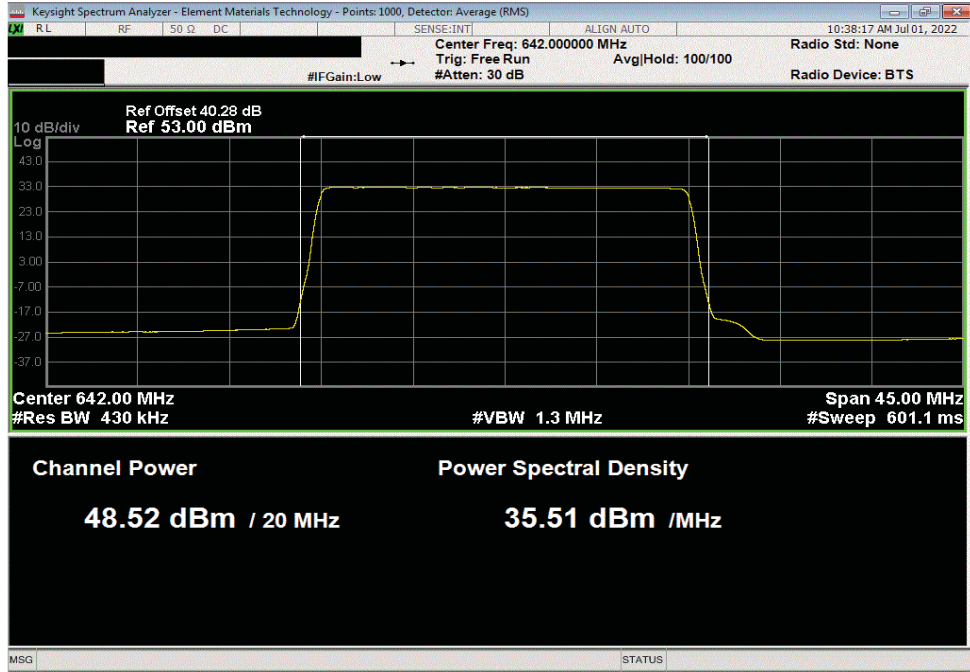


OUTPUT POWER - Band 71 LTE



TelTx 2022.06.03.0 XMII 2022.02.07.0

Port 2, LTE, Band n71, 617 MHz - 652 MHz, 20 MHz Bandwidth, 256-QAM Modulation, High Ch. 642 MHz						
Initial Value	Duty Cycle	Single Port	Two Port (2x2 MIMO)	Four Port (4x4 MIMO)		
dBm/MHz	Factor (dB)	dBm/Carrier BW	dBm/Carrier BW	dBm/Carrier BW		
48.523	0	48.5	51.5	54.5		



OUTPUT POWER - Band 85 LTE



XMit 2022.02.07.0

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Block - DC	Fairview Microwave	SD3239	ANE	2022-03-02	2023-03-02
Generator - Signal	Agilent	N5173B	TIW	2020-07-17	2023-07-17
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFQ	2022-01-17	2023-01-17

TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. The fundamental emission output power (maximum average conducted output power) was measured using the channels and modes as called out on the following data sheets. The transmit power was set to its default maximum.

The method in section 5.2.4.4 of ANSI C63.26 was used to make the measurements. This method uses trace averaging across the ON and OFF times of the EUT transmissions in the spectrum analyzer channel power function using an RMS detector. Following the measurement a duty cycle correction was applied by adding $[10 \log (1/D)]$, where D is the duty cycle in decimal, to the measured power to compute the average power during the actual transmission times.

RF conducted emissions testing was performed only on one port. The AHLOB antenna ports are essentially electrically identical (the RF power variation between antenna ports is small as shown in this certification testing) and antenna port 2 was selected to perform the testing under this effort as allowed by ANSI C63.26-2015 paragraphs 5.2.5.3, 5.7.2i and 6.4. The total average transmit power of all antenna ports was determined per ANSI C63.26-2105 paragraph 6.4.3.1

OUTPUT POWER - Band 85 LTE



TbTtx 2022.05.02.0 XMI 2022.02.07.0

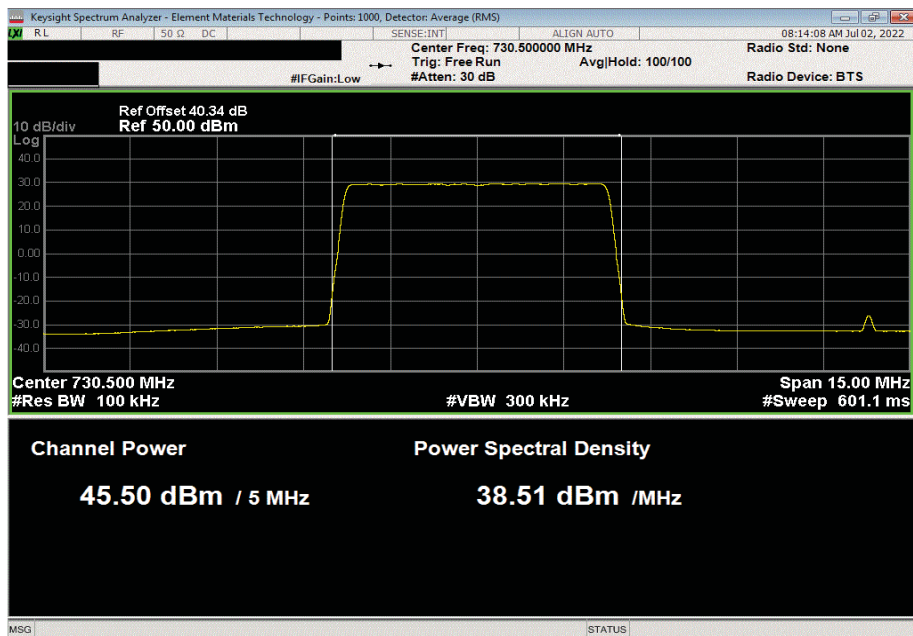
EUT: AHLOB		Work Order: NOKI0043	
Serial Number: YK220900029		Date: 13-Jul-22	
Customer: Nokia Solutions and Networks		Temperature: 21.5 °C	
Attendees: Mitchell Hill, John Rattanavong		Humidity: 53.6% RH	
Project: None		Barometric Pres.: 1018 mbar	
Tested by: Marty Martin		Job Site: TX07	
Power: 54 VDC			
TEST SPECIFICATIONS		Test Method	
FCC 27:2022		ANSI C63.26:2015	
RSS-130 Issue 2:2019		ANSI C63.26:2015	
COMMENTS			
All measurement path losses were accounted for in the reference level offset including any attenuators, filters and DC blocks. The following is the output power measurements at the radio output ports. The output power was measured for a single carrier over the carrier channel bandwidth on port 2. The total output power for multiport (2x2, 4x4 MIMO) operation was determined based upon ANSI 63.26 clauses 6.4.3.1 and 6.4.3.2.4 (10 log Nout). The total output power for two port operation is single port power + 3dB [i.e. 10log(2)] and the total output power for a four port operation is single port power + 6dB [i.e. 10log(4)].			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	2	Signature <i>Marty Martin</i>	
		Initial Value dBm/MHz	Duty Cycle Factor (dB)
		Single Port dBm/Carrier BW	Two Port (2x2 MIMO) dBm/Carrier BW
		Four Port (4x4 MIMO) dBm/Carrier BW	
Port 2, LTE, Band 85, 728 MHz - 746 MHz			
5 MHz Bandwidth			
256-QAM Modulation			
	Low Ch. 730.5 MHz	45.5	0
	Mid Ch. 737.0 MHz	45.653	0
	High Ch. 743.5 MHz	45.47	0
10 MHz Bandwidth			
256-QAM Modulation			
	Low Ch. 733 MHz	47.352	0
	Mid Ch. 737.0 MHz	47.163	0
	High Ch. 741 MHz	47.339	0
15 MHz Bandwidth			
QPSK Modulation			
	Mid Ch. 737.0 MHz	48.296	0
16-QAM Modulation			
	Mid Ch. 737.0 MHz	48.319	0
64-QAM Modulation			
	Mid Ch. 737.0 MHz	48.381	0
256-QAM Modulation			
	Low Ch. 735.5 MHz	48.281	0
	Mid Ch. 737.0 MHz	48.503	0
	High Ch. 738.5 MHz	48.423	0

OUTPUT POWER - Band 85 LTE

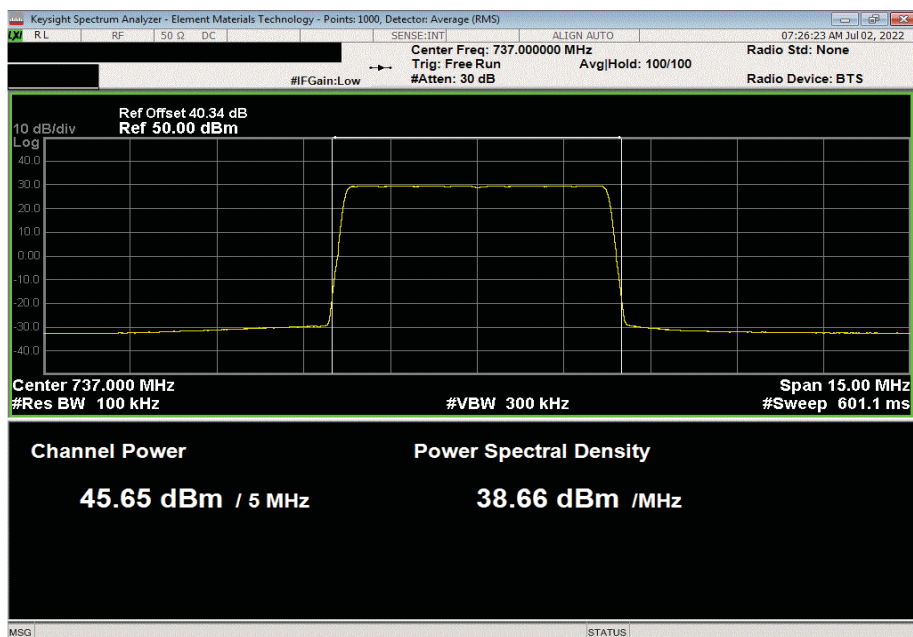


TbTt 2022.05.02.0 XMM 2022.02.07.0

Port 2, LTE, Band n85, 728 MHz - 746 MHz, 5 MHz Bandwidth, 256-QAM Modulation, Low Ch. 730.5 MHz						
Initial Value	Duty Cycle	Single Port	Two Port (2x2 MIMO)	Four Port (4x4 MIMO)		
dBm/MHz	Factor (dB)	dBm/Carrier BW	dBm/Carrier BW	dBm/Carrier BW		
45.5	0	45.5	48.5	51.5		



Port 2, LTE, Band n85, 728 MHz - 746 MHz, 5 MHz Bandwidth, 256-QAM Modulation, Mid Ch. 737.0 MHz						
Initial Value	Duty Cycle	Single Port	Two Port (2x2 MIMO)	Four Port (4x4 MIMO)		
dBm/MHz	Factor (dB)	dBm/Carrier BW	dBm/Carrier BW	dBm/Carrier BW		
45.653	0	45.7	48.7	51.7		

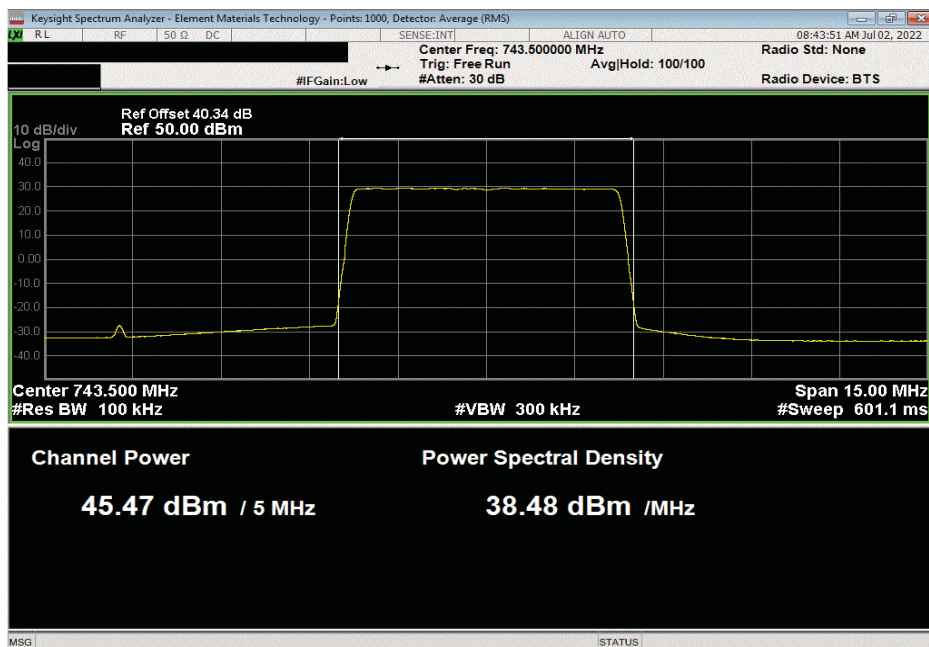


OUTPUT POWER - Band 85 LTE

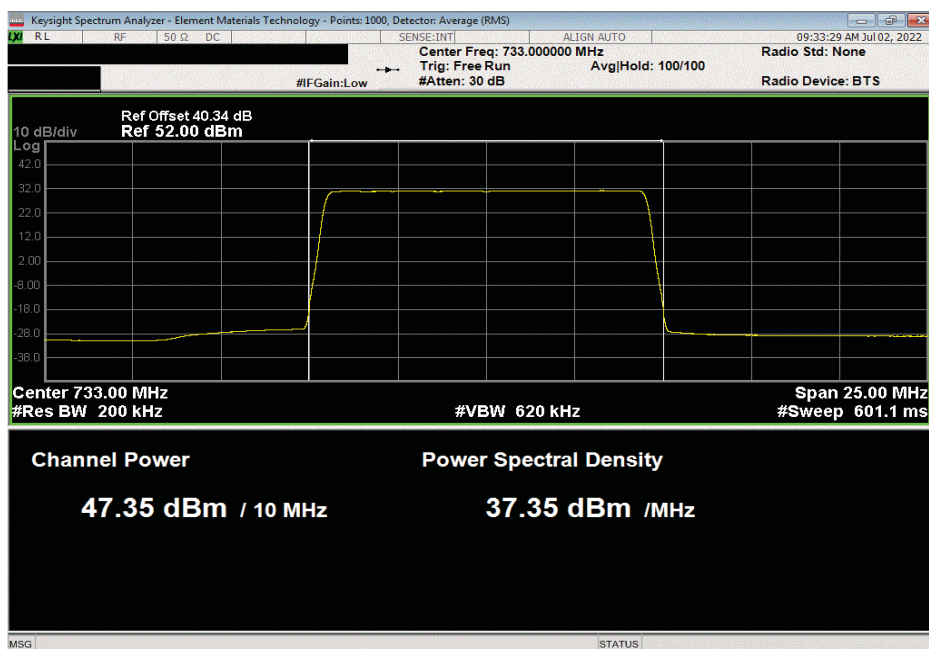


TstTx 2022.05.02.0 XMM 2022.02.07.0

Port 2, LTE, Band n85, 728 MHz - 746 MHz, 5 MHz Bandwidth, 256-QAM Modulation, High Ch. 743.5 MHz						
Initial Value	Duty Cycle	Single Port	Two Port (2x2 MIMO)	Four Port (4x4 MIMO)		
dBm/MHz	Factor (dB)	dBm/Carrier BW	dBm/Carrier BW	dBm/Carrier BW		
45.47	0	45.5	48.5	51.5		



Port 2, LTE, Band n85, 728 MHz - 746 MHz, 10 MHz Bandwidth, 256-QAM Modulation, Low Ch. 733 MHz						
Initial Value	Duty Cycle	Single Port	Two Port (2x2 MIMO)	Four Port (4x4 MIMO)		
dBm/MHz	Factor (dB)	dBm/Carrier BW	dBm/Carrier BW	dBm/Carrier BW		
47.352	0	47.4	50.4	53.4		

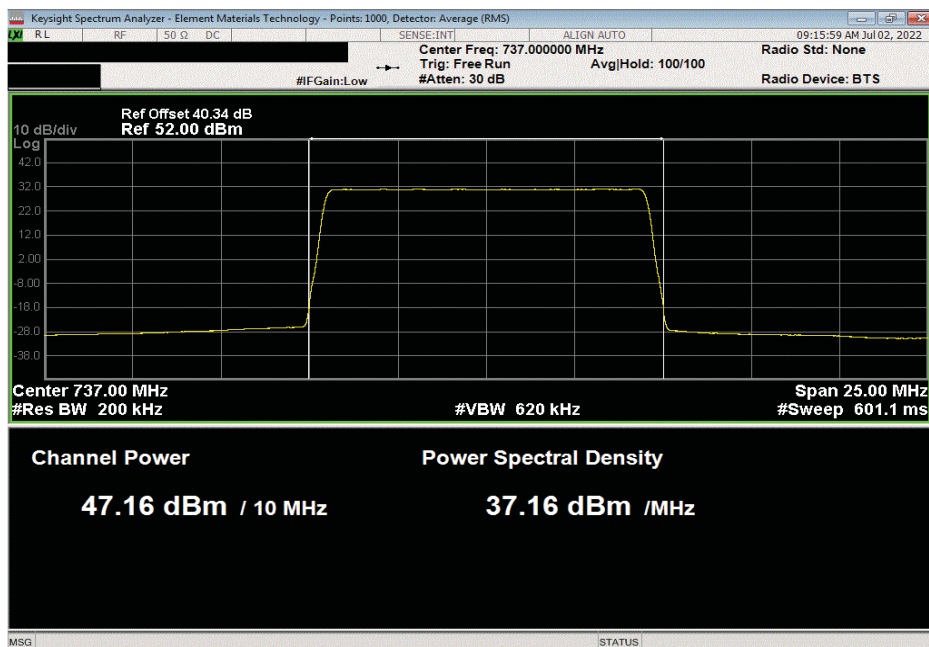


OUTPUT POWER - Band 85 LTE

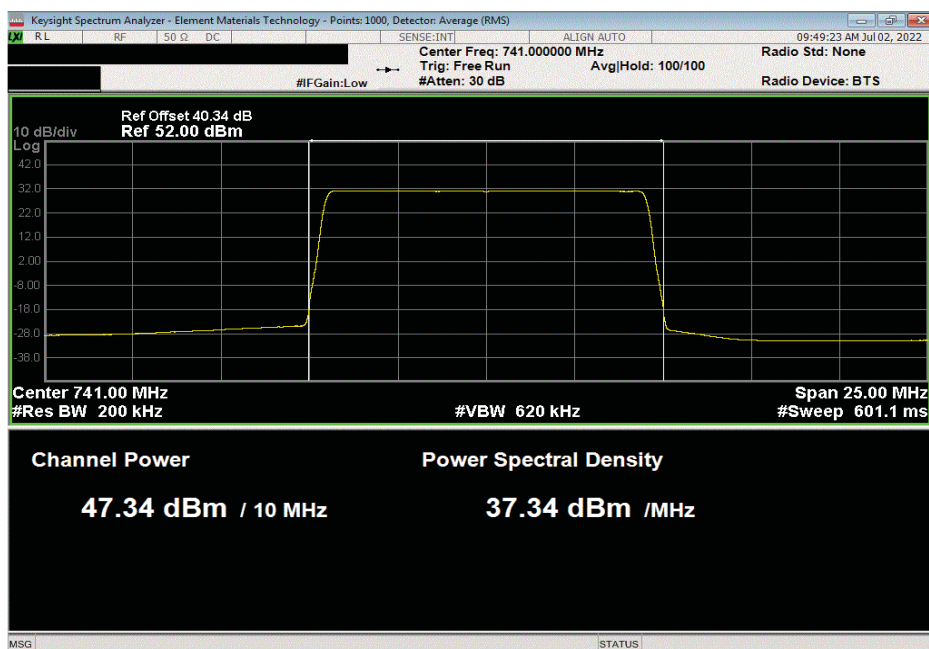


TbTb 2022 05 02 0 XMt 2022 02 07 0

Port 2, LTE, Band n85, 728 MHz - 746 MHz, 10 MHz Bandwidth, 256-QAM Modulation, Mid Ch. 737.0 MHz						
Initial Value	Duty Cycle	Single Port	Two Port (2x2 MIMO)	Four Port (4x4 MIMO)		
dBm/MHz	Factor (dB)	dBm/Carrier BW	dBm/Carrier BW	dBm/Carrier BW		
47.163	0	47.2	50.2	53.2		



Port 2, LTE, Band n85, 728 MHz - 746 MHz, 10 MHz Bandwidth, 256-QAM Modulation, High Ch. 741 MHz						
Initial Value	Duty Cycle	Single Port	Two Port (2x2 MIMO)	Four Port (4x4 MIMO)		
dBm/MHz	Factor (dB)	dBm/Carrier BW	dBm/Carrier BW	dBm/Carrier BW		
47.339	0	47.3	50.3	53.3		

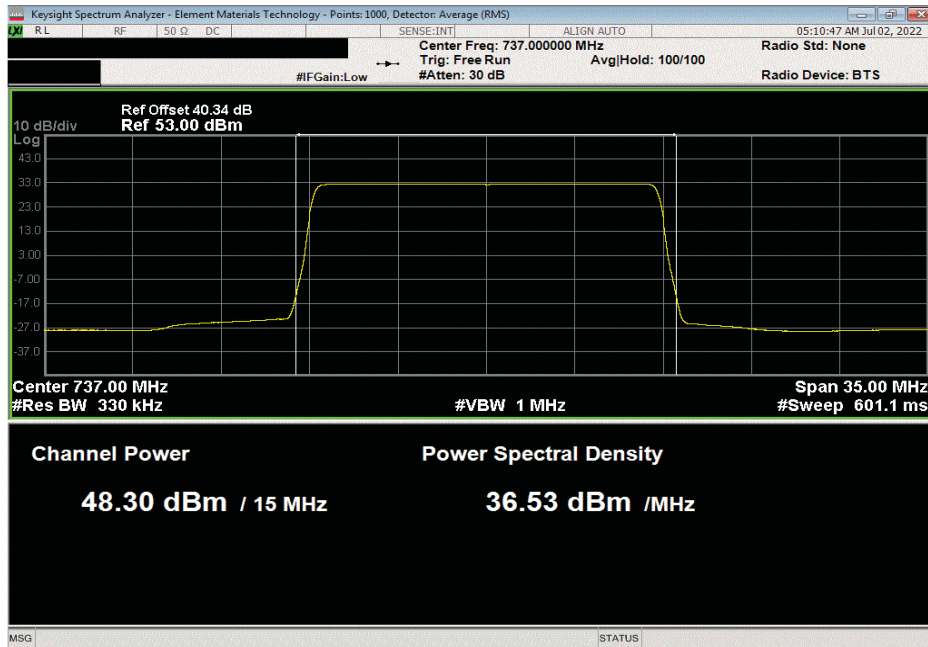


OUTPUT POWER - Band 85 LTE

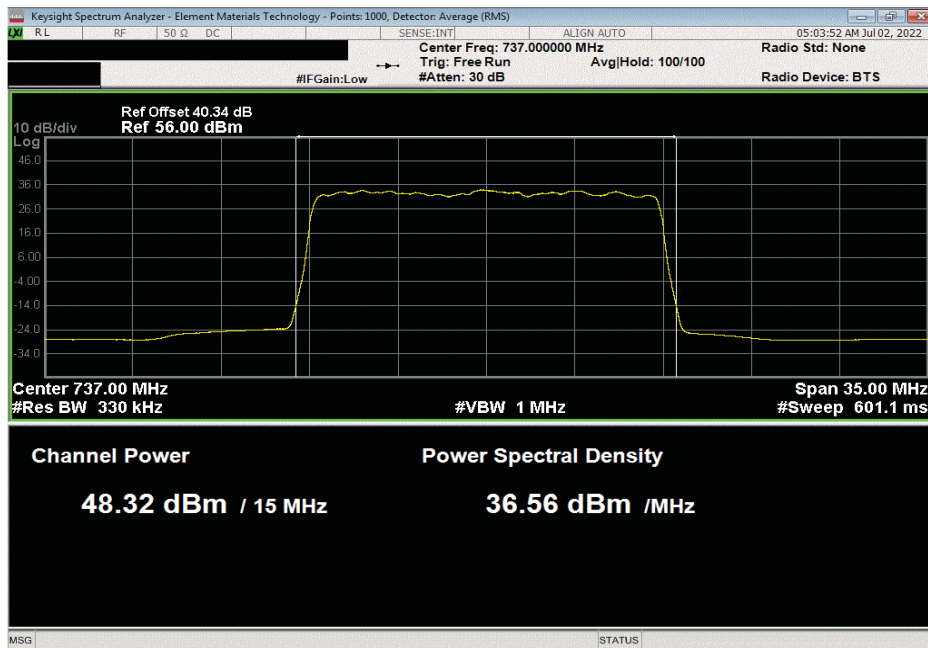


TbTx 2022.05.02.0 XMM 2022.02.07.0

Port 2, LTE, Band n85, 728 MHz - 746 MHz, 15 MHz Bandwidth, QPSK Modulation, Mid Ch. 737.0 MHz						
Initial Value	Duty Cycle	Single Port	Two Port (2x2 MIMO)	Four Port (4x4 MIMO)		
dBm/MHz	Factor (dB)	dBm/Carrier BW	dBm/Carrier BW	dBm/Carrier BW		
48.296	0	48.3	51.3	54.3		



Port 2, LTE, Band n85, 728 MHz - 746 MHz, 15 MHz Bandwidth, 16-QAM Modulation, Mid Ch. 737.0 MHz						
Initial Value	Duty Cycle	Single Port	Two Port (2x2 MIMO)	Four Port (4x4 MIMO)		
dBm/MHz	Factor (dB)	dBm/Carrier BW	dBm/Carrier BW	dBm/Carrier BW		
48.319	0	48.3	51.3	54.3		

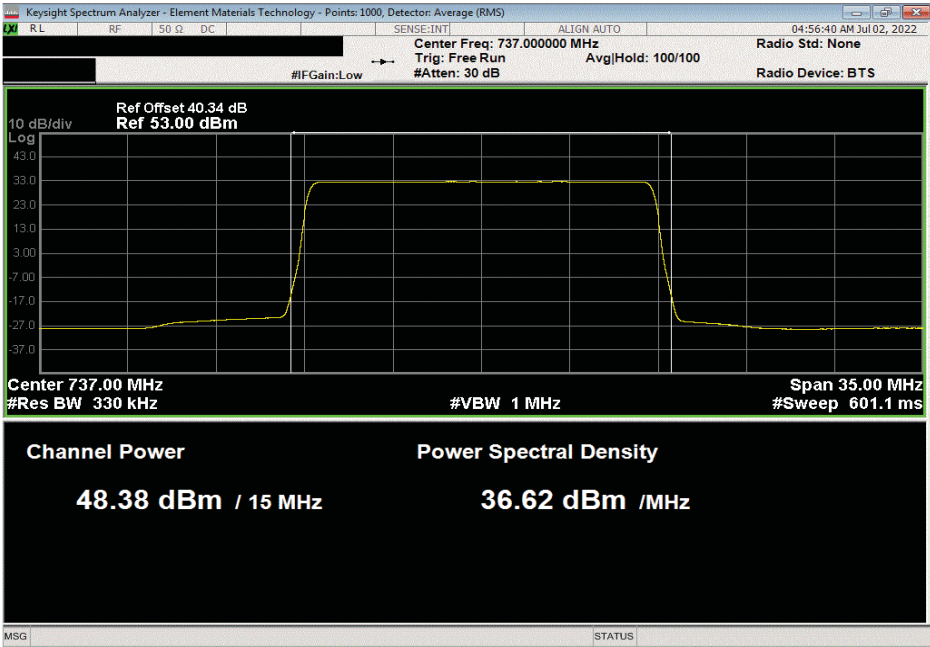


OUTPUT POWER - Band 85 LTE

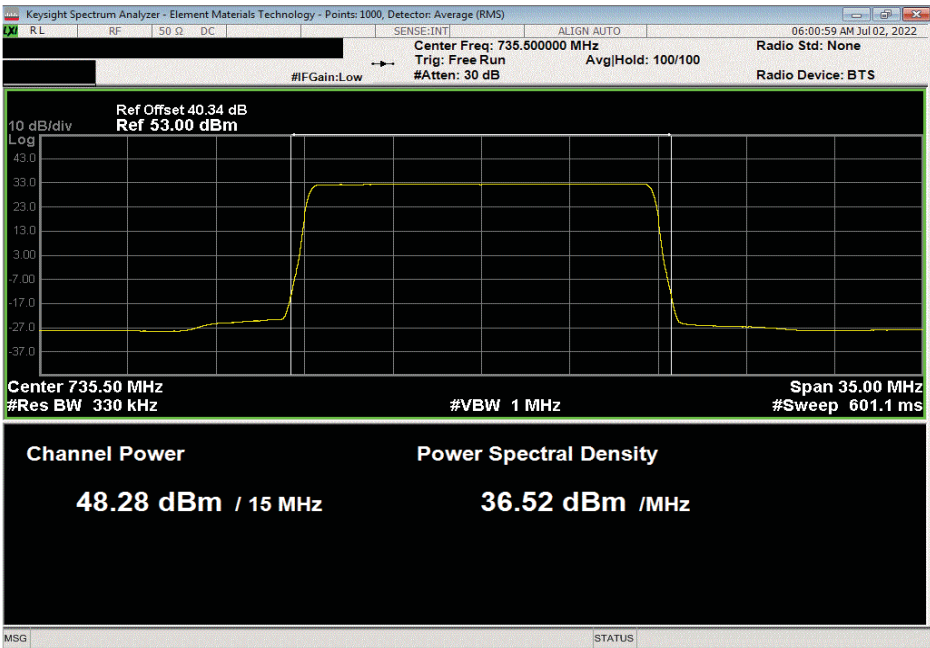


TbTb 2022.05.02.0 XMM 2022.02.07.0

Port 2, LTE, Band n85, 728 MHz - 746 MHz, 15 MHz Bandwidth, 64-QAM Modulation, Mid Ch. 737.0 MHz						
Initial Value	Duty Cycle	Single Port	Two Port (2x2 MIMO)	Four Port (4x4 MIMO)		
dBm/MHz	Factor (dB)	dBm/Carrier BW	dBm/Carrier BW	dBm/Carrier BW		
48.381	0	48.4	51.4	54.4		



Port 2, LTE, Band n85, 728 MHz - 746 MHz, 15 MHz Bandwidth, 256-QAM Modulation, Low Ch. 735.5 MHz						
Initial Value	Duty Cycle	Single Port	Two Port (2x2 MIMO)	Four Port (4x4 MIMO)		
dBm/MHz	Factor (dB)	dBm/Carrier BW	dBm/Carrier BW	dBm/Carrier BW		
48.281	0	48.3	51.3	54.3		

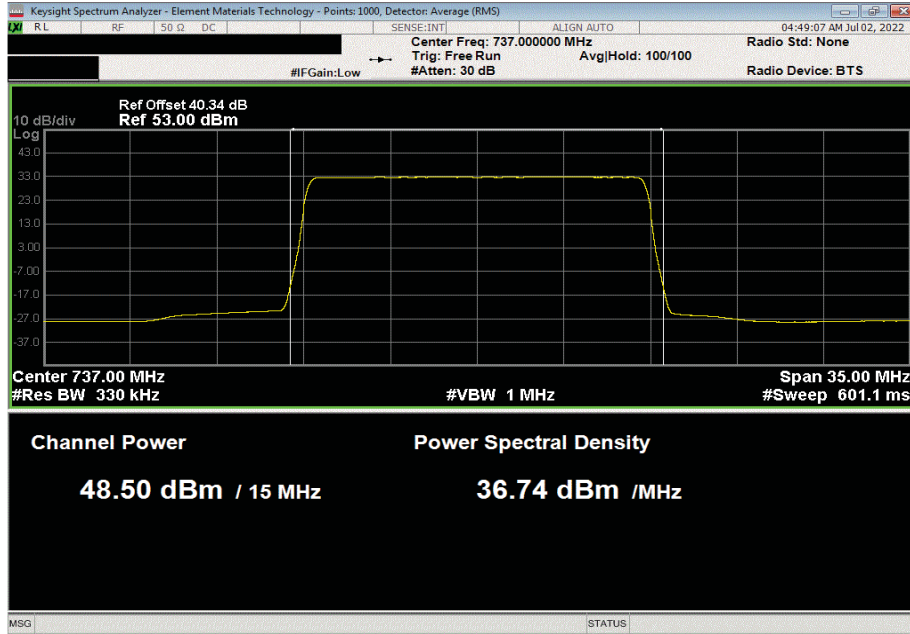


OUTPUT POWER - Band 85 LTE

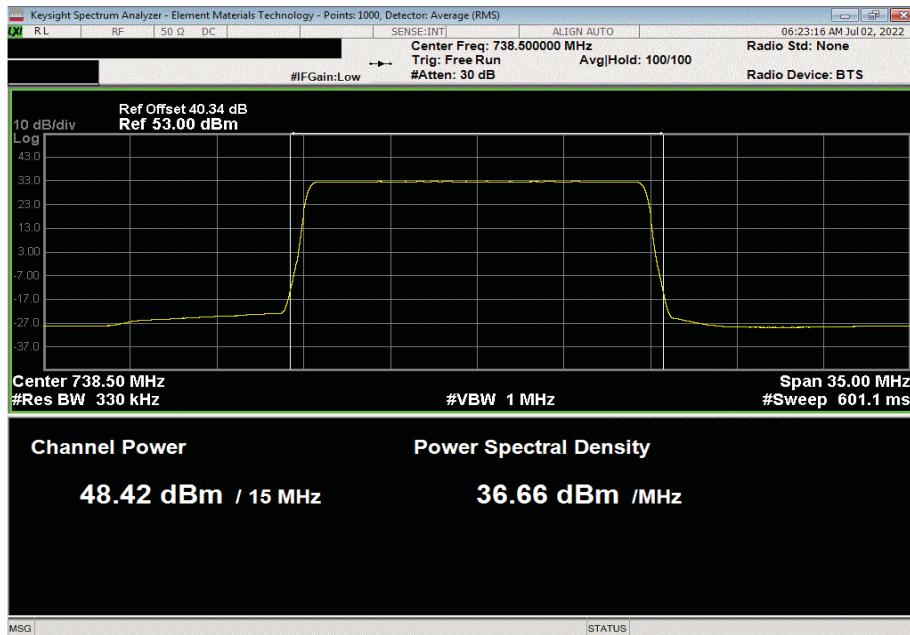


TbTn 2022.05.02.0 XMI 2022.02.07.0

Port 2, LTE, Band n85, 728 MHz - 746 MHz, 15 MHz Bandwidth, 256-QAM Modulation, Mid Ch. 737.0 MHz						
Initial Value	Duty Cycle	Single Port	Two Port (2x2 MIMO)	Four Port (4x4 MIMO)		
dBm/MHz	Factor (dB)	dBm/Carrier BW	dBm/Carrier BW	dBm/Carrier BW		
48.503	0	48.5	51.5	54.5		



Port 2, LTE, Band n85, 728 MHz - 746 MHz, 15 MHz Bandwidth, 256-QAM Modulation, High Ch. 738.5 MHz						
Initial Value	Duty Cycle	Single Port	Two Port (2x2 MIMO)	Four Port (4x4 MIMO)		
dBm/MHz	Factor (dB)	dBm/Carrier BW	dBm/Carrier BW	dBm/Carrier BW		
48.423	0	48.4	51.4	54.4		



OUTPUT POWER - Band 71 NB IoT GB

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Block - DC	Fairview Microwave	SD3239	ANE	2022-03-02	2023-03-02
Generator - Signal	Agilent	N5173B	TIW	2020-07-17	2023-07-17
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFQ	2022-01-17	2023-01-17

TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. The fundamental emission output power (maximum average conducted output power) was measured using the channels and modes as called out on the following data sheets. The transmit power was set to its default maximum.

The method in section 5.2.4.4 of ANSI C63.26 was used to make the measurements. This method uses trace averaging across the ON and OFF times of the EUT transmissions in the spectrum analyzer channel power function using an RMS detector. Following the measurement a duty cycle correction was applied by adding $[10 \log (1/D)]$, where D is the duty cycle in decimal, to the measured power to compute the average power during the actual transmission times

RF conducted emissions testing was performed only on one port. The AHLOB antenna ports are essentially electrically identical (the RF power variation between antenna ports is small as shown in this certification testing) and antenna port 2 was selected to perform the testing under this effort as allowed by ANSI C63.26-2015 paragraphs 5.2.5.3, 5.7.2i and 6.4.

The total average transmit power of all antenna ports was determined per ANSI C63.26-2105 paragraph 6.4.3.1

OUTPUT POWER - Band 71 NB IoT GB



TMx 2022.05.02.0 XMI 2022.02.07.0

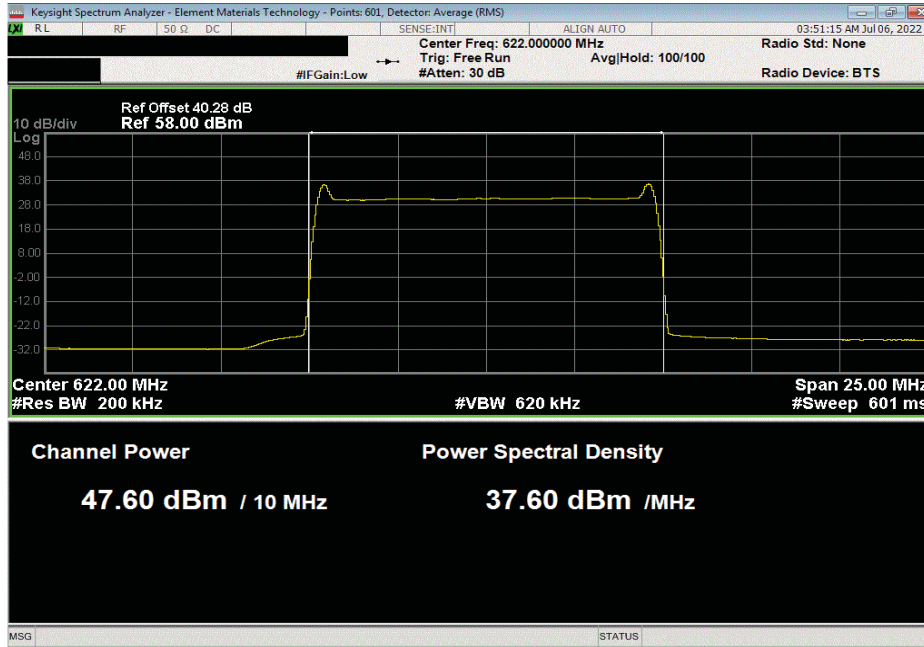
EUT: AHLOB		Work Order: NOKI0043	
Serial Number: YK220900029		Date: 13-Jul-22	
Customer: Nokia Solutions and Networks		Temperature: 21.2 °C	
Attendees: Mitchell Hill, John Rattanavong		Humidity: 53.9% RH	
Project: None		Barometric Pres.: 1018 mbar	
Tested by: Marty Martin		Power: 54 VDC	
Test Method		Job Site: TX07	
FCC 27:2022		ANSI C63.26:2015	
RSS-130 Issue 2:2019		ANSI C63.26:2015	
COMMENTS			
All measurement path losses were accounted for in the reference level offset including any attenuators, filters and DC blocks. The following is the output power measurements at the radio output ports. The output power was measured for a single carrier over the carrier channel bandwidth on port 2. The total output power for multiport (2x2, 4x4 MIMO) operation was determined based upon ANSI 63.26 clauses 6.4.3.1 and 6.4.3.2.4 (10 log Nout). The total output power for two port operation is single port power + 3dB [i.e. 10log(2)] and the total output power for a four port operation is single port power + 6dB [i.e. 10log(4)].			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	2	Signature <i>Marty Martin</i>	
		Initial Value dBm/MHz	Duty Cycle Factor (dB)
		Single Port dBm/Carrier BW	Two Port (2x2 MIMO) dBm/Carrier BW
			Two Port (4x4 MIMO) dBm/Carrier BW
Port 2, LTE, Band 71, 617 MHz - 652 MHz			
10 MHz Bandwidth			
NB IoT GB			
	Low Ch. 622 MHz	47.604	0
	Mid Ch. 634.5 MHz	47.562	0
	High Ch. 647 MHz	47.493	0
15 MHz Bandwidth			
NB IoT GB			
	Low Ch. 624.5 MHz	48.971	0
	Mid Ch. 634.5 MHz	48.849	0
	High Ch. 644.5 MHz	48.921	0
20 MHz Bandwidth			
NB IoT GB			
	Low Ch. 627 MHz	48.691	0
	Mid Ch. 634.5 MHz	48.57	0
	High Ch. 642 MHz	48.677	0

OUTPUT POWER - Band 71 NB IoT GB

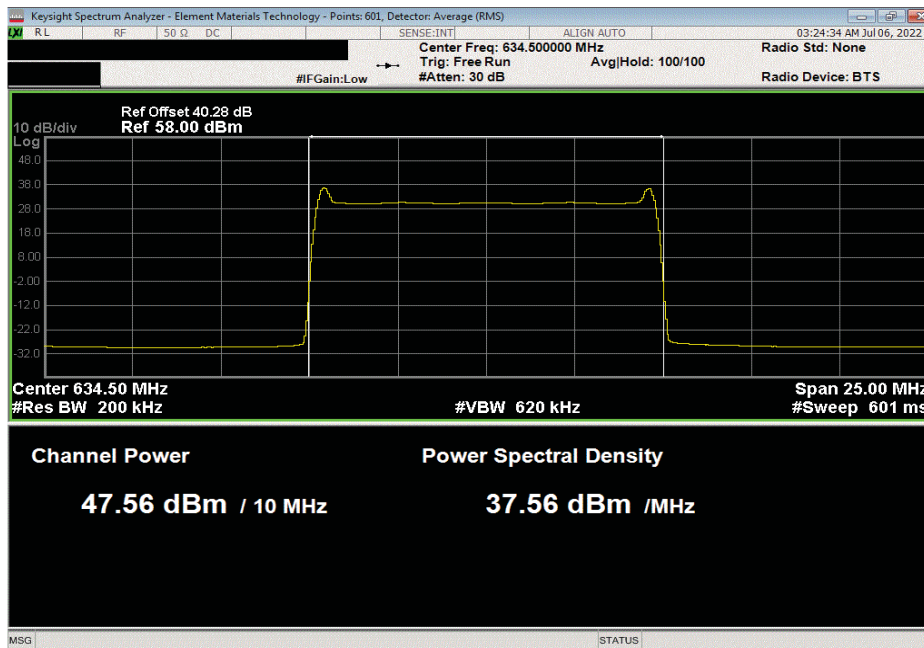


TbTb 2022.05.02.0 XMM 2022.02.07.0

Port 2, LTE, Band 71, 617 MHz - 652 MHz, 10 MHz Bandwidth, NB IoT GB Modulation, Low Ch. 622 MHz						
Initial Value	Duty Cycle	Single Port	Two Port (2x2 MIMO)	Two Port (4x4 MIMO)		
dBm/MHz	Factor (dB)	dBm/Carrier BW	dBm/Carrier BW	dBm/Carrier BW		
47.604	0	47.6	50.6	53.6		



Port 2, LTE, Band 71, 617 MHz - 652 MHz, 10 MHz Bandwidth, NB IoT GB Modulation, Mid Ch. 634.5 MHz						
Initial Value	Duty Cycle	Single Port	Two Port (2x2 MIMO)	Two Port (4x4 MIMO)		
dBm/MHz	Factor (dB)	dBm/Carrier BW	dBm/Carrier BW	dBm/Carrier BW		
47.562	0	47.6	50.6	53.6		

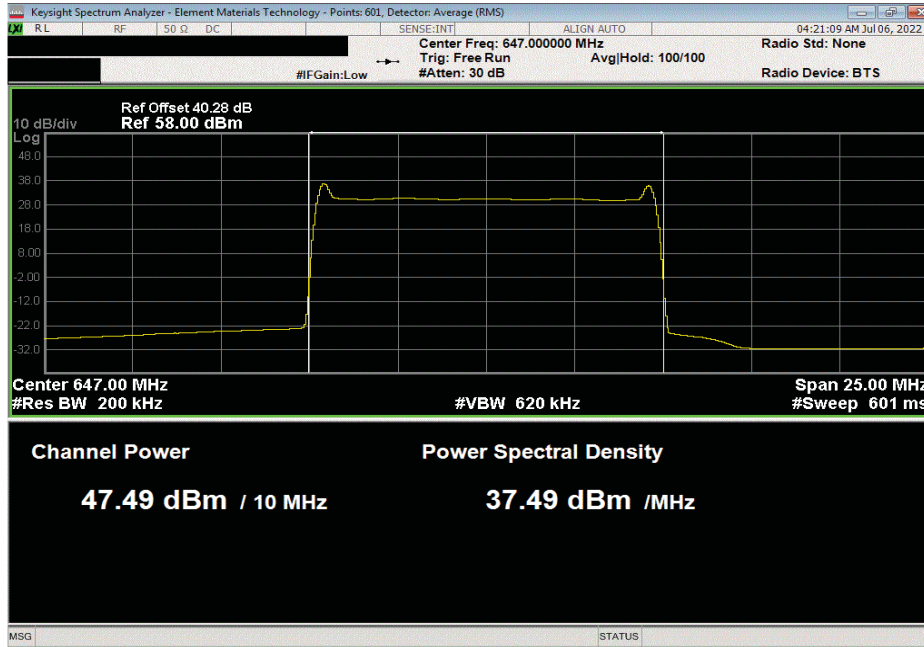


OUTPUT POWER - Band 71 NB IoT GB

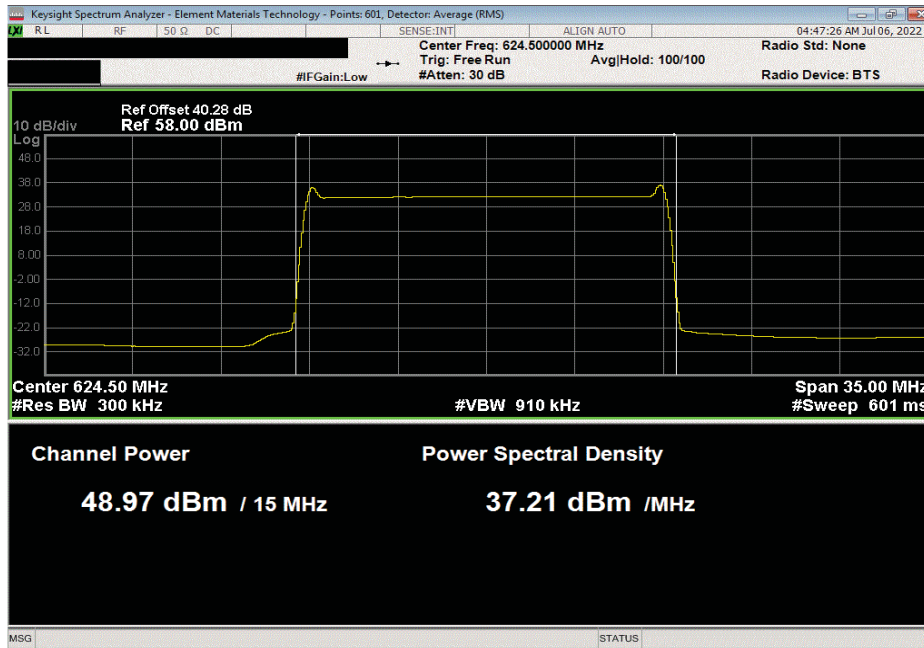


ThyTs 2022.05.02.0 XMM 2022.02.07.0

Port 2, LTE, Band 71, 617 MHz - 652 MHz, 10 MHz Bandwidth, NB IoT GB Modulation, High Ch. 647 MHz						
Initial Value	Duty Cycle	Single Port	Two Port (2x2 MIMO)	Two Port (4x4 MIMO)		
dBm/MHz	Factor (dB)	dBm/Carrier BW	dBm/Carrier BW	dBm/Carrier BW		
47.493	0	47.5	50.5	53.5		



Port 2, LTE, Band 71, 617 MHz - 652 MHz, 15 MHz Bandwidth, NB IoT GB Modulation, Low Ch. 624.5 MHz						
Initial Value	Duty Cycle	Single Port	Two Port (2x2 MIMO)	Two Port (4x4 MIMO)		
dBm/MHz	Factor (dB)	dBm/Carrier BW	dBm/Carrier BW	dBm/Carrier BW		
48.971	0	49	52	55		

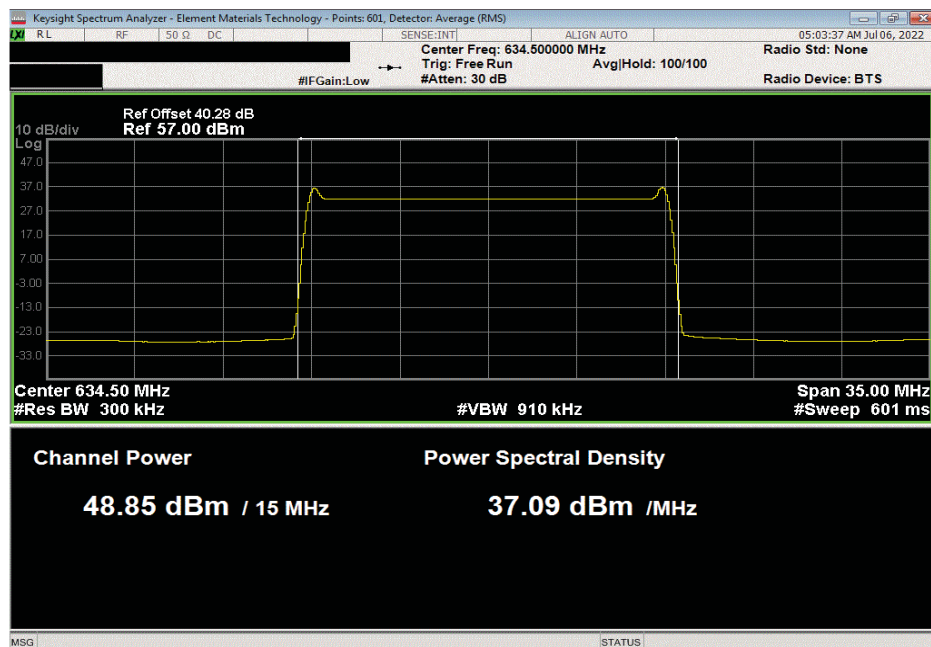


OUTPUT POWER - Band 71 NB IoT GB

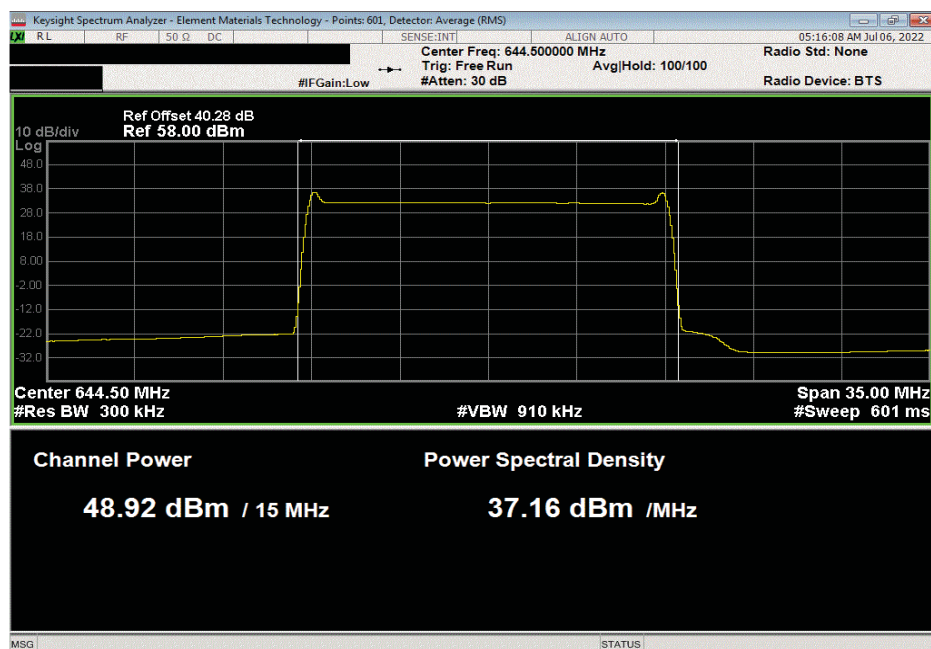


TbTb 2022 05 02 0 XMt 2022 02 07 0

Port 2, LTE, Band 71, 617 MHz - 652 MHz, 15 MHz Bandwidth, NB IoT GB Modulation, Mid Ch. 634.5 MHz						
Initial Value	Duty Cycle	Single Port	Two Port (2x2 MIMO)	Two Port (4x4 MIMO)		
dBm/MHz	Factor (dB)	dBm/Carrier BW	dBm/Carrier BW	dBm/Carrier BW		
48.849	0	48.8	51.8	54.8		



Port 2, LTE, Band 71, 617 MHz - 652 MHz, 15 MHz Bandwidth, NB IoT GB Modulation, High Ch. 644.5 MHz						
Initial Value	Duty Cycle	Single Port	Two Port (2x2 MIMO)	Two Port (4x4 MIMO)		
dBm/MHz	Factor (dB)	dBm/Carrier BW	dBm/Carrier BW	dBm/Carrier BW		
48.921	0	49	52	55		

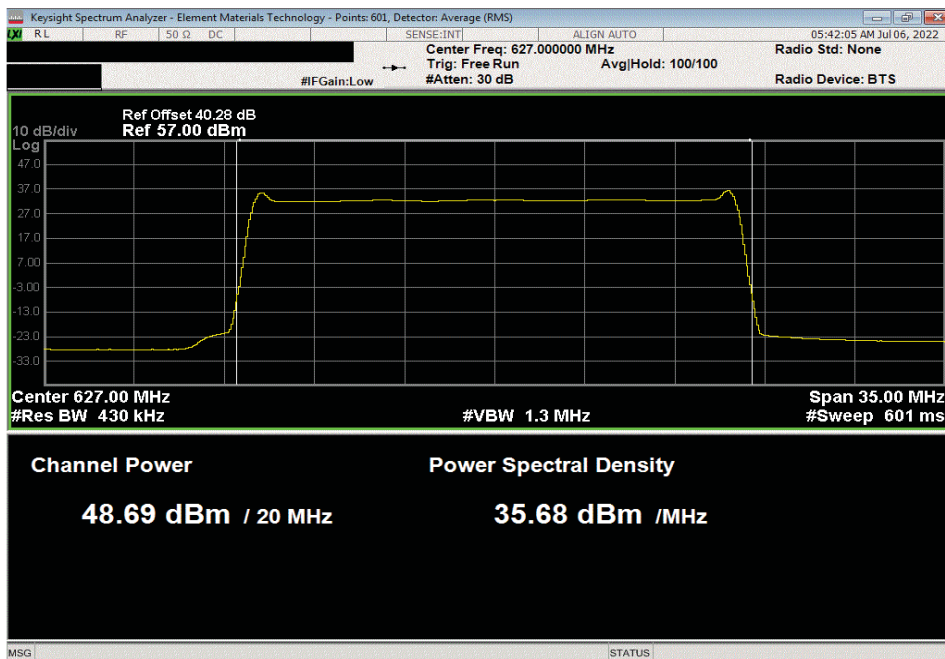


OUTPUT POWER - Band 71 NB IoT GB

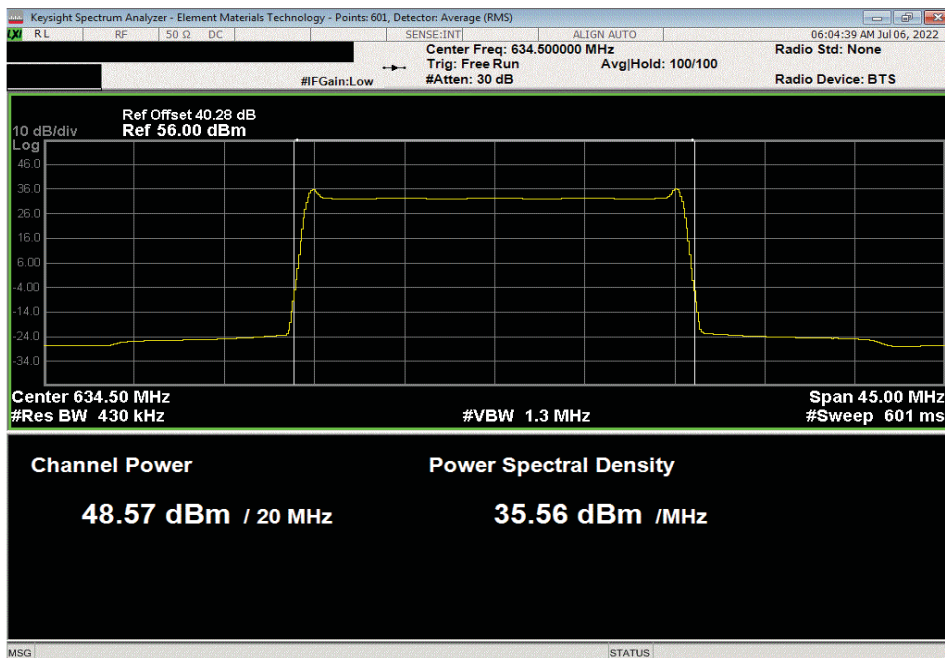


TMTx 2022.05.02.0 XMM 2022.02.07.0

Port 2, LTE, Band 71, 617 MHz - 652 MHz, 20 MHz Bandwidth, NB IoT GB Modulation, Low Ch. 627 MHz						
Initial Value	Duty Cycle	Single Port	Two Port (2x2 MIMO)	Two Port (4x4 MIMO)		
dBm/MHz	Factor (dB)	dBm/Carrier BW	dBm/Carrier BW	dBm/Carrier BW		
48.691	0	48.7	51.7	54.7		



Port 2, LTE, Band 71, 617 MHz - 652 MHz, 20 MHz Bandwidth, NB IoT GB Modulation, Mid Ch. 634.5 MHz						
Initial Value	Duty Cycle	Single Port	Two Port (2x2 MIMO)	Two Port (4x4 MIMO)		
dBm/MHz	Factor (dB)	dBm/Carrier BW	dBm/Carrier BW	dBm/Carrier BW		
48.57	0	48.6	51.6	54.6		

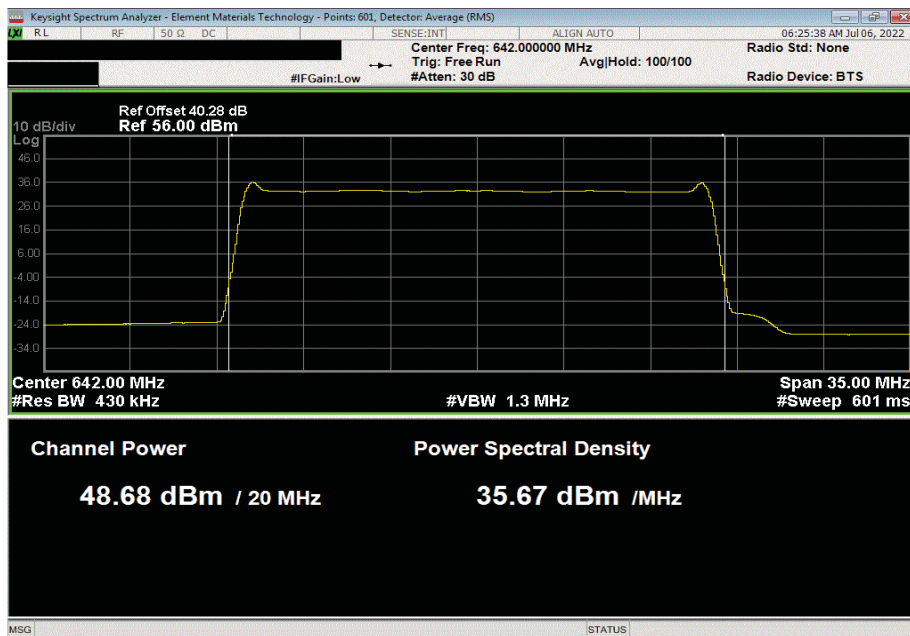


OUTPUT POWER - Band 71 NB IoT GB



ThyTx 2022.05.02.0 XMM 2022.02.07.0

Port 2, LTE, Band 71, 617 MHz - 652 MHz, 20 MHz Bandwidth, NB IoT GB Modulation, High Ch. 642 MHz						
	Initial Value dBm/MHz	Duty Cycle Factor (dB)	Single Port dBm/Carrier BW	Two Port (2x2 MIMO) dBm/Carrier BW	Two Port (4x4 MIMO) dBm/Carrier BW	
	48.677	0	48.7	51.7	54.7	



OUTPUT POWER - Band 85 NB IoT GB

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Block - DC	Fairview Microwave	SD3239	ANE	2022-03-02	2023-03-02
Generator - Signal	Agilent	N5173B	TIW	2020-07-17	2023-07-17
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFQ	2022-01-17	2023-01-17

TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. The fundamental emission output power (maximum average conducted output power) was measured using the channels and modes as called out on the following data sheets. The transmit power was set to its default maximum.

The method in section 5.2.4.4 of ANSI C63.26 was used to make the measurements. This method uses trace averaging across the ON and OFF times of the EUT transmissions in the spectrum analyzer channel power function using an RMS detector. Following the measurement a duty cycle correction was applied by adding $[10 \log (1/D)]$, where D is the duty cycle in decimal, to the measured power to compute the average power during the actual transmission times

RF conducted emissions testing was performed only on one port. The AHLOB antenna ports are essentially electrically identical (the RF power variation between antenna ports is small as shown in this certification testing) and antenna port 2 was selected to perform the testing under this effort as allowed by ANSI C63.26-2015 paragraphs 5.2.5.3, 5.7.2i and 6.4.

The total average transmit power of all antenna ports was determined per ANSI C63.26-2105 paragraph 6.4.3.1

OUTPUT POWER - Band 85 NB IoT GB



TbTm 2022 06 02 0 XMI 2022 02 07 0

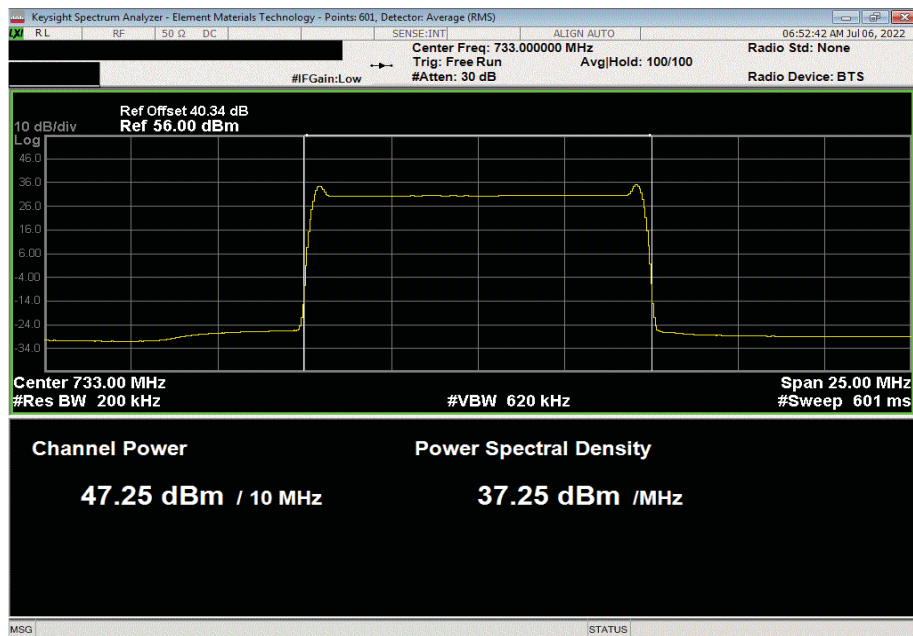
EUT: AHLOB		Work Order: NOKI0043	
Serial Number: YK220900029		Date: 13-Jul-22	
Customer: Nokia Solutions and Networks		Temperature: 20.9 °C	
Attendees: Mitchell Hill, John Rattanavong		Humidity: 54.2% RH	
Project: None		Barometric Pres.: 1018 mbar	
Tested by: Marty Martin	Power: 54 VDC	Job Site: TX07	
TEST SPECIFICATIONS		Test Method	
FCC 27:2022		ANSI C63.26:2015	
RSS-130 Issue 2:2019		ANSI C63.26:2015	
COMMENTS			
All measurement path losses were accounted for in the reference level offset including any attenuators, filters and DC blocks. The following is the output power measurements at the radio output ports. The output power was measured for a single carrier over the carrier channel bandwidth on port 1. The total output power for multiport (2x2, 4x4 MIMO) operation was determined based upon ANSI 63.26 clauses 6.4.3.1 and 6.4.3.2.4 [10 log(Nout)]. The total output power for two port operation is single port power + 3dB [i.e. 10log(2)] and the total output power for a four port operation is single port power + 6dB [i.e. 10log(4)].			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	2	Signature <i>Marty Martin</i>	
		Initial value dBm/MHz	Duty Cycle Factor (dB)
		Single Port dBm/carrier BW	Two Port (2x2 MIMO) dBm/Carrier BW
		Four Port (4x4 MIMO) dBm/Carrier BW	
Port 2, LTE, Band 85, 728 MHz - 746 MHz			
10 MHz Bandwidth			
NB IoT GB			
	Low Ch. 733 MHz	47.249	0
	Mid Ch. 737 MHz	47.628	0
	High Ch. 741 MHz	47.589	0
Port 2, LTE, Band 85, 728 MHz - 746 MHz			
15 MHz Bandwidth			
NB IoT GB			
	Low Ch. 735.5 MHz	48.82	0
	Mid Ch. 737 MHz	48.731	0
	High Ch. 738.5 MHz	48.833	0

OUTPUT POWER - Band 85 NB IoT GB

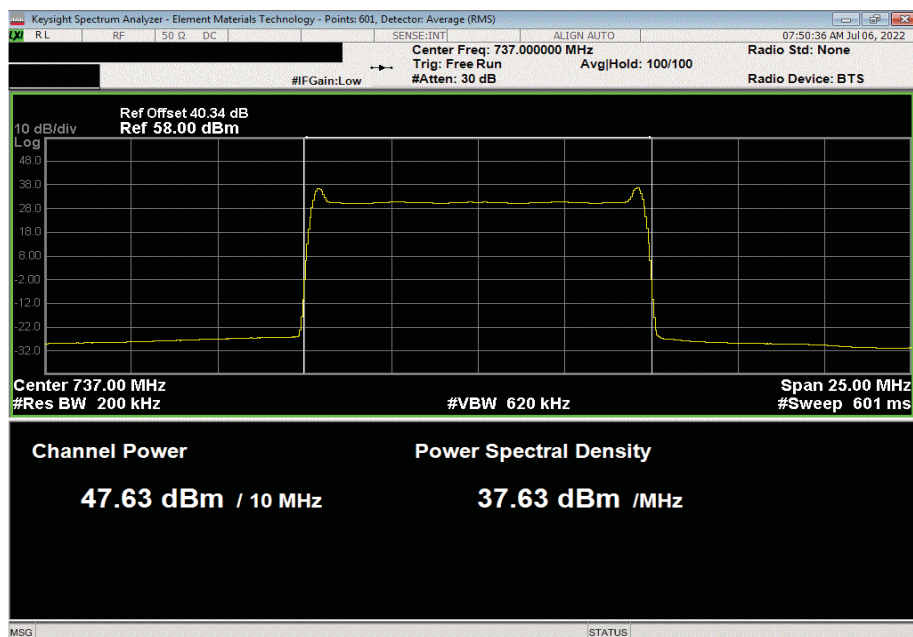


TbTx 2022.05.02.0 XMI 2022.02.07.0

Port 2, LTE, Band 85, 728 MHz - 746 MHz, 10 MHz Bandwidth, NB IoT GB, Low Ch. 733 MHz						
Initial value dBm/MHz	Duty Cycle Factor (dB)	Single Port dBm/carrier BW	Two Port (2x2 MIMO) dBm/Carrier BW	Four Port (4x4 MIMO) dBm/Carrier BW		
47.249	0	47.2	50.2	53.2		



Port 2, LTE, Band 85, 728 MHz - 746 MHz, 10MHz Bandwidth, NB IoT GB, Mid Ch. 737 MHz						
Initial value dBm/MHz	Duty Cycle Factor (dB)	Single Port dBm/carrier BW	Two Port (2x2 MIMO) dBm/Carrier BW	Four Port (4x4 MIMO) dBm/Carrier BW		
47.628	0	47.6	50.6	53.6		

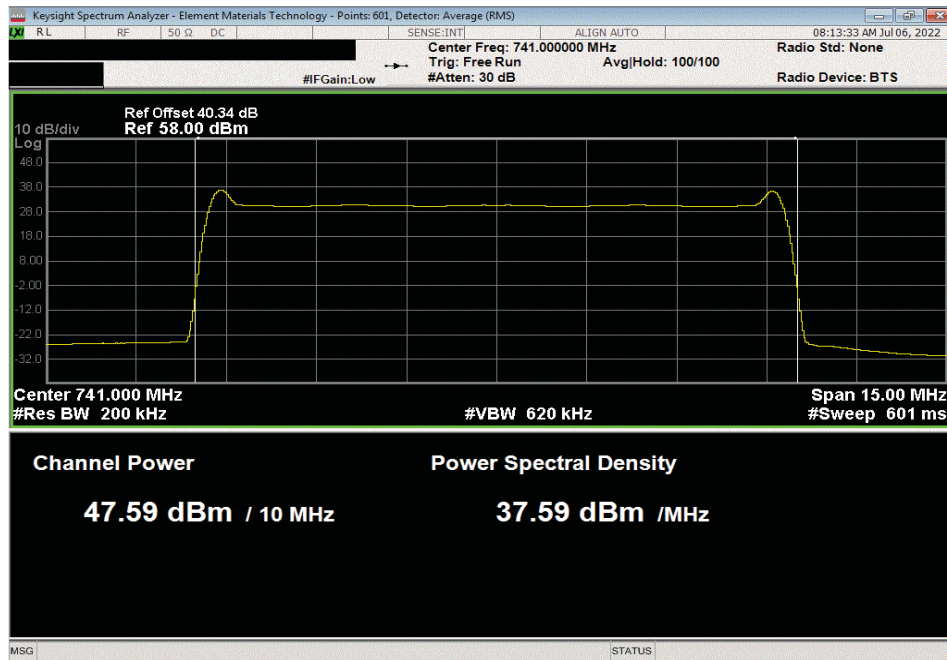


OUTPUT POWER - Band 85 NB IoT GB



TXTA 2022.05.02.0 XMM 2022.02.07.0

Port 2, LTE, Band 85, 728 MHz - 746 MHz, 10MHz Bandwidth, NB IoT GB, High Ch. 741 MHz						
Initial value	Duty Cycle	Single Port	Two Port (2x2 MIMO)	Four Port (4x4 MIMO)		
dBm/MHz	Factor (dB)	dBm/carrier BW	dBm/Carrier BW	dBm/Carrier BW		
47.589	0	47.6	50.6	53.6		

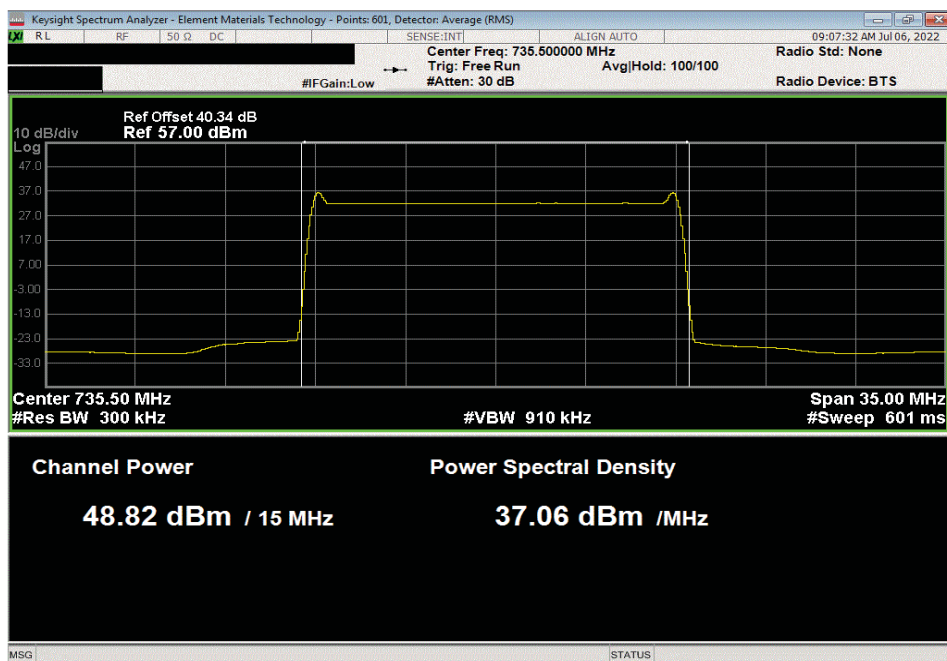


OUTPUT POWER - Band 85 NB IoT GB

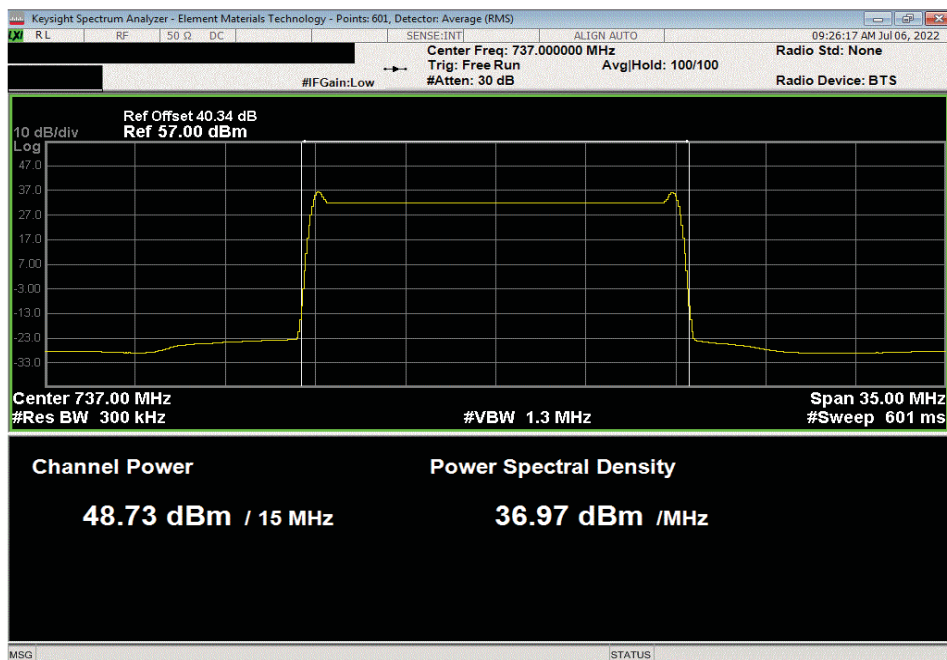


TbTtA 2022.05.02.0 XMM 2022.02.07.0

Port 2, LTE, Band 85, 728 MHz - 746 MHz, 15MHz Bandwidth, NB IoT GB, Low Ch. 735.5 MHz						
Initial value	Duty Cycle	Single Port	Two Port (2x2 MIMO)	Four Port (4x4 MIMO)		
dBm/MHz	Factor (dB)	dBm/carrier BW	dBm/Carrier BW	dBm/Carrier BW		
48.82	0	48.8	51.8	54.8		



Port 2, LTE, Band 85, 728 MHz - 746 MHz, 15MHz Bandwidth, NB IoT GB, Mid Ch. 737 MHz						
Initial value	Duty Cycle	Single Port	Two Port (2x2 MIMO)	Four Port (4x4 MIMO)		
dBm/MHz	Factor (dB)	dBm/carrier BW	dBm/Carrier BW	dBm/Carrier BW		
48.731	0	48.7	51.7	54.7		

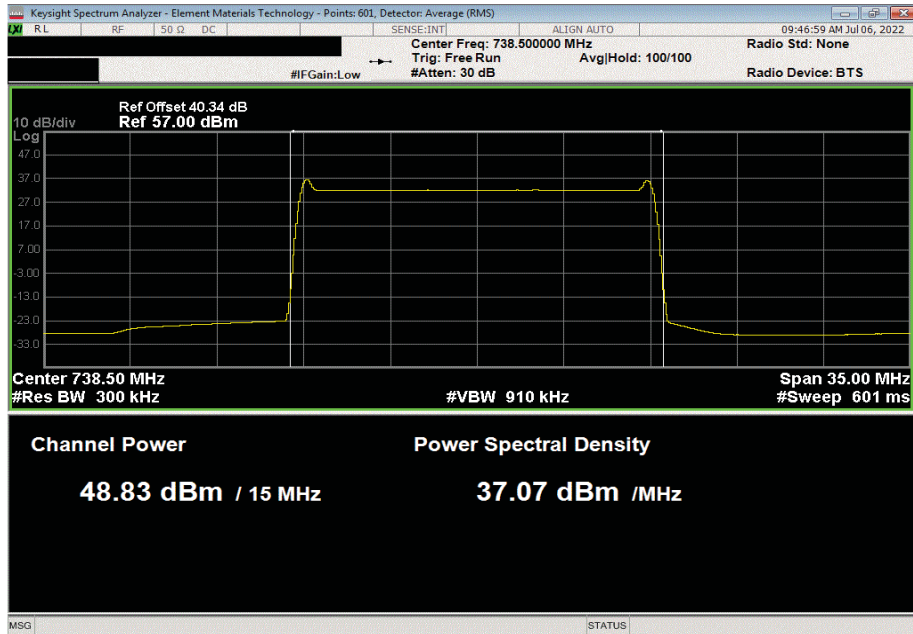


OUTPUT POWER - Band 85 NB IoT GB



ThTtx 2022.05.02.0 XMM 2022.02.07.0

Port 2, LTE, Band 85, 728 MHz - 746 MHz, 15MHz Bandwidth, NB IoT GB, High Ch. 738.5 MHz						
Initial value	Duty Cycle	Single Port	Two Port (2x2 MIMO)	Four Port (4x4 MIMO)		
dBm/MHz	Factor (dB)	dBm/carrier BW	dBm/Carrier BW	dBm/Carrier BW		
48.833	0	48.8	51.8	54.8		



OUTPUT POWER - Band 71 NB IoT SA

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Block - DC	Fairview Microwave	SD3239	ANE	2022-03-02	2023-03-02
Generator - Signal	Agilent	N5173B	TIW	2020-07-17	2023-07-17
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFQ	2022-01-17	2023-01-17

TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. The fundamental emission output power (maximum average conducted output power) was measured using the channels and modes as called out on the following data sheets. The transmit power was set to its default maximum.

The method in section 5.2.4.4 of ANSI C63.26 was used to make the measurements. This method uses trace averaging across the ON and OFF times of the EUT transmissions in the spectrum analyzer channel power function using an RMS detector. Following the measurement a duty cycle correction was applied by adding $[10 \log (1/D)]$, where D is the duty cycle in decimal, to the measured power to compute the average power during the actual transmission times

RF conducted emissions testing was performed only on one port. The AHLOB antenna ports are essentially electrically identical (the RF power variation between antenna ports is small as shown in this certification testing) and antenna port 2 was selected to perform the testing under this effort as allowed by ANSI C63.26-2015 paragraphs 5.2.5.3, 5.7.2i and 6.4.

The total average transmit power of all antenna ports was determined per ANSI C63.26-2105 paragraph 6.4.3.1

OUTPUT POWER - Band 71 NB IoT SA



TMTx 2022.06.02.0 XMI 2022.02.07.0

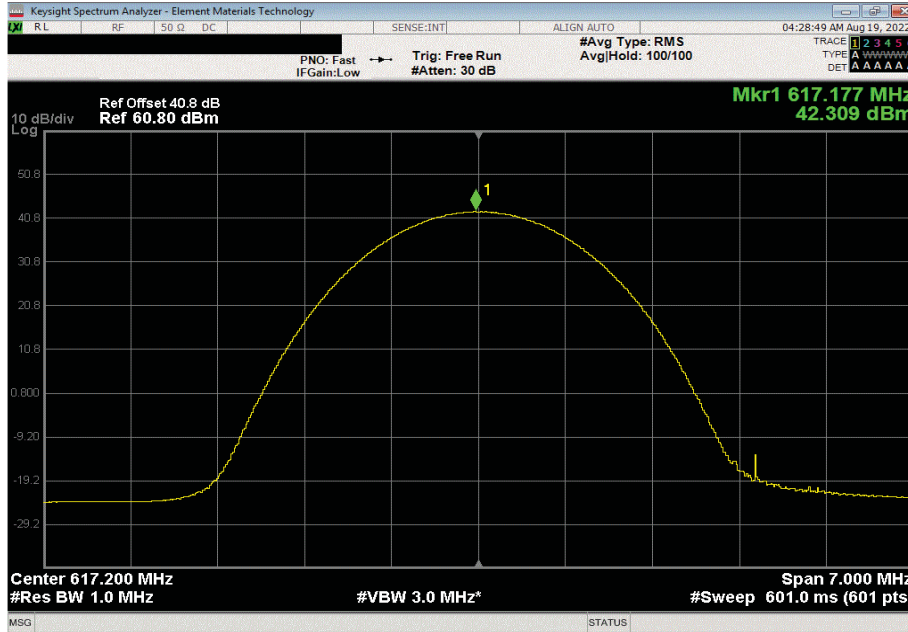
EUT:	AHLOB		Work Order:	NOKI0043		
Serial Number:	YK220900029		Date:	19-Aug-22		
Customer:	Nokia Solutions and Networks		Temperature:	20.9 °C		
Attendees:	Mitchell Hill, John Rattavong		Humidity:	54.5% RH		
Project:	None		Barometric Pres.:	1013 mbar		
Tested by:	Marty Martin	Power:	54 VDC	Job Site:	TX07	
TEST SPECIFICATIONS		Test Method				
FCC 27-2022		ANSI C63.26:2015				
RSS-130 Issue 2:2019		ANSI C63.26:2015				
COMMENTS						
All measurement path losses were accounted for in the reference level offset including any attenuators, filters and DC blocks. The following is the output power measurements at the radio output ports. The output power was measured for a single carrier over the carrier channel bandwidth on port 2. The total output power for multiport (2x2, 4x4 MIMO) operation was determined based upon ANSI 63.26 clauses 6.4.3.1 and 6.4.3.2.4 (10 log Nout). The total output power for two port operation is single port power + 3dB [i.e. 10log(2)] and the total output power for a four port operation is single port power + 6dB [i.e. 10log(4)].						
DEVIATIONS FROM TEST STANDARD						
None						
Configuration #	2	Signature <i>Marty Martin</i>				
		Initial Value dBm/MHz	Duty Cycle Factor (dB)	Single Port dBm/Carrier BW	Two Port (2x2 MIMO) dBm/Carrier BW	Four Port (4x4 MIMO) dBm/Carrier BW
Port 2, LTE, Band 71, 617 MHz - 652 MHz						
200 kHz Bandwidth						
Standalone NB-IoT						
	Low Ch. 617.2 MHz	42.309	0	42.3	45.3	48.3
	Mid Ch. 634.5 MHz	42.882	0	42.9	45.9	48.9
	High Ch. 651.8 MHz	42.312	0	42.3	45.3	48.3

OUTPUT POWER - Band 71 NB IoT SA

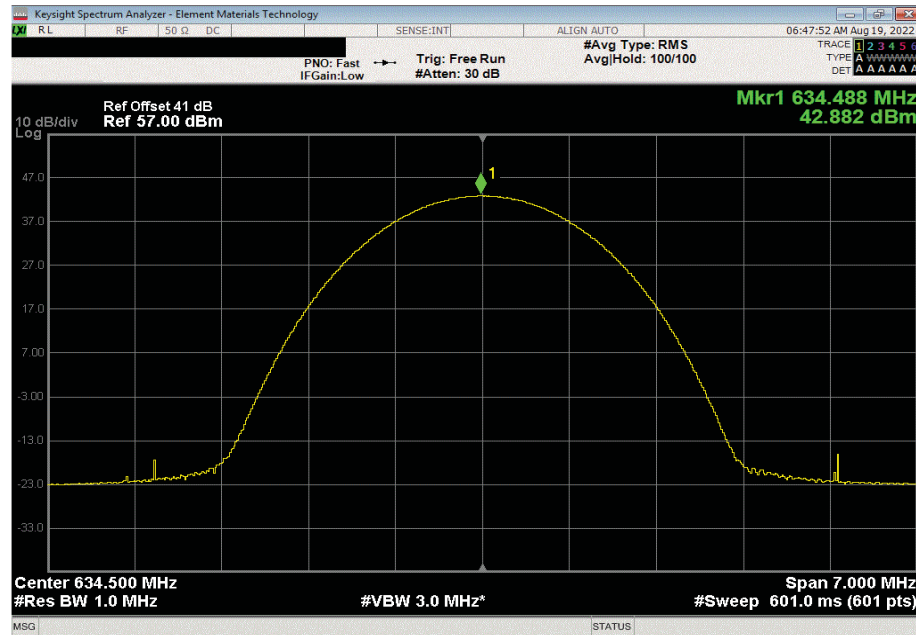


TMTx 2022.05.02.0 XMI 2022.02.07.0

Port 2, LTE, Band 71, 617 MHz - 652 MHz, 200 kHz Bandwidth, Standalone NB-IoT, Low Ch. 617.2 MHz						
Initial Value dBm/MHz	Duty Cycle Factor (dB)		Single Port dBm/Carrier BW	Two Port (2x2 MIMO) dBm/Carrier BW	Four Port (4x4 MIMO) dBm/Carrier BW	
42.309	0		42.3	45.3	48.3	



Port 2, LTE, Band 71, 617 MHz - 652 MHz, 200 kHz Bandwidth, Standalone NB-IoT, Mid Ch. 634.5 MHz						
Initial Value dBm/MHz	Duty Cycle Factor (dB)		Single Port dBm/Carrier BW	Two Port (2x2 MIMO) dBm/Carrier BW	Four Port (4x4 MIMO) dBm/Carrier BW	
42.882	0		42.9	45.9	48.9	

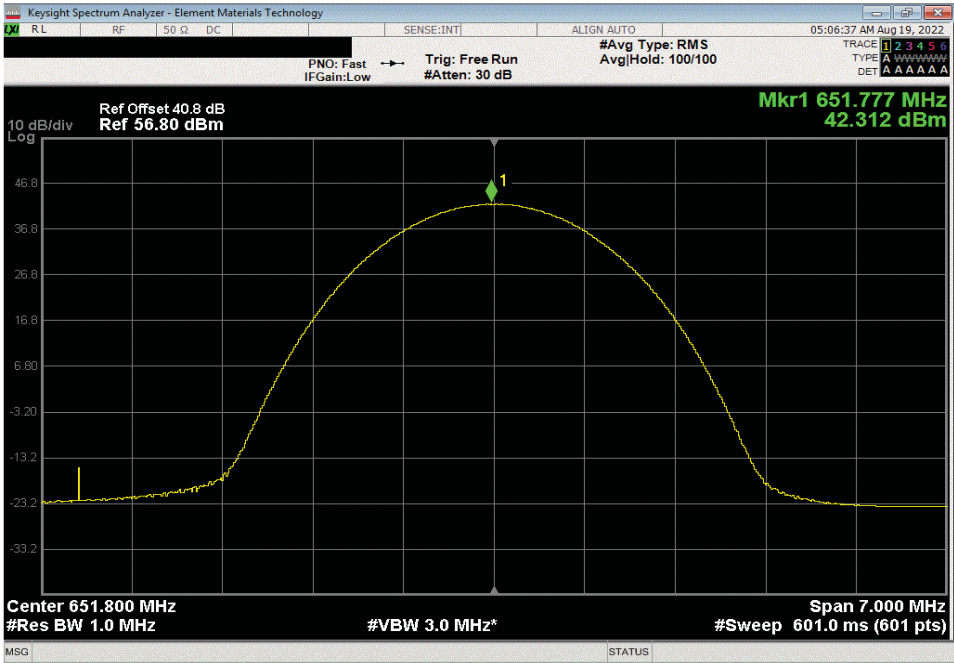


OUTPUT POWER - Band 71 NB IoT SA



TbTb 2022.05.02.0 XMI 2022.02.07.0

Port 2, LTE, Band 71, 617 MHz - 652 MHz, 200 kHz Bandwidth, Standalone NB-IoT, High Ch. 651.8 MHz				
Initial Value	Duty Cycle	Single Port	Two Port (2x2 MIMO)	Four Port (4x4 MIMO)
dBm/MHz	Factor (dB)	dBm/Carrier BW	dBm/Carrier BW	dBm/Carrier BW
42.312	0	42.3	45.3	48.3



OUTPUT POWER - Band 85 NB IoT SA

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Block - DC	Fairview Microwave	SD3239	ANE	2022-03-02	2023-03-02
Generator - Signal	Agilent	N5173B	TIW	2020-07-17	2023-07-17
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFQ	2022-01-17	2023-01-17

TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. The fundamental emission output power (maximum average conducted output power) was measured using the channels and modes as called out on the following data sheets. The transmit power was set to its default maximum.

The method in section 5.2.4.4 of ANSI C63.26 was used to make the measurements. This method uses trace averaging across the ON and OFF times of the EUT transmissions in the spectrum analyzer channel power function using an RMS detector. Following the measurement a duty cycle correction was applied by adding $[10 \log (1/D)]$, where D is the duty cycle in decimal, to the measured power to compute the average power during the actual transmission times

RF conducted emissions testing was performed only on one port. The AHLOB antenna ports are essentially electrically identical (the RF power variation between antenna ports is small as shown in this certification testing) and antenna port 2 was selected to perform the testing under this effort as allowed by ANSI C63.26-2015 paragraphs 5.2.5.3, 5.7.2i and 6.4.

The total average transmit power of all antenna ports was determined per ANSI C63.26-2105 paragraph 6.4.3.1

OUTPUT POWER - Band 85 NB IoT SA



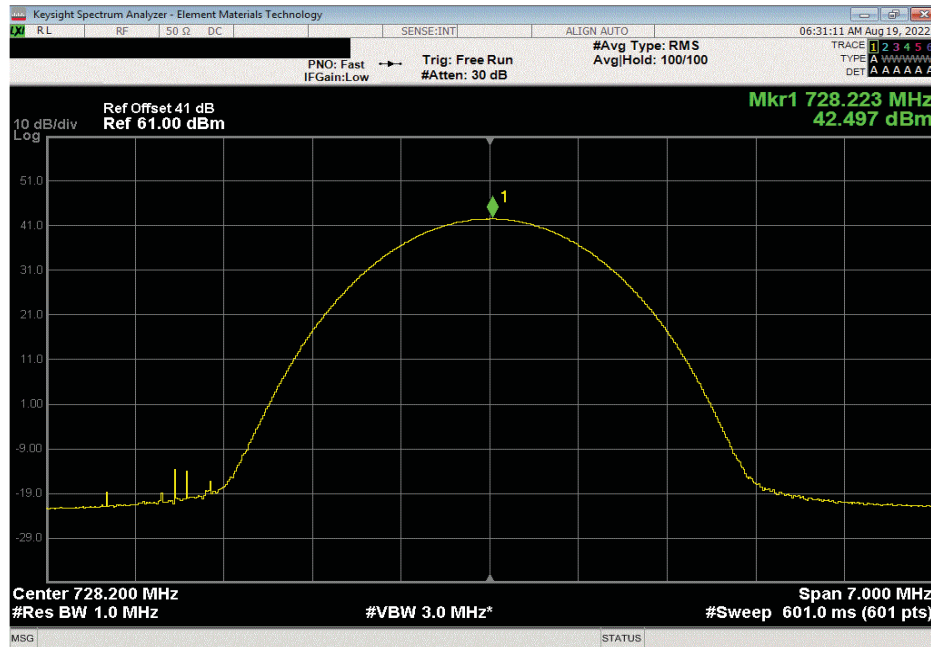
EUT: AHLOB		Work Order: NOKI0043	
Serial Number: YK220900029		Date: 19-Aug-22	
Customer: Nokia Solutions and Networks		Temperature: 20.6 °C	
Attendees: Mitchell Hill, John Rattanavong		Humidity: 53.2% RH	
Project: None		Barometric Pres.: 1016 mbar	
Tested by: Marty Martin		Job Site: TX07	
Power: 54 VDC			
TEST SPECIFICATIONS		Test Method	
FCC 27:2022		ANSI C63.26:2015	
RSS-130 Issue 2:2019		ANSI C63.26:2015	
COMMENTS			
All measurement path losses were accounted for in the reference level offset including any attenuators, filters and DC blocks. The following is the output power measurements at the radio output ports. The output power was measured for a single carrier over the carrier channel bandwidth on port 2. The total output power for multiport (2x2, 4x4 MIMO) operation was determined based upon ANSI 63.26 clauses 6.4.3.1 and 6.4.3.2.4 (10 log Nout). The total output power for two port operation is single port power + 3dB [i.e. 10log(2)] and the total output power for a four port operation is single port power + 6dB [i.e. 10log(4)].			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	2	Signature <i>Marty Martin</i>	
		Initial value dBm/MHz	Duty Cycle Factor (dB)
		Single Port dBm/Carrier BW	Two Port (2x2 MIMO) dBm/Carrier BW
			Four Port (4x4 MIMO) dBm/Carrier BW
Port 2, LTE, Band 85, 728 MHz - 746 MHz			
200 kHz Bandwidth			
Standalone NB-IoT			
	Low Ch. 728.2 MHz	42.497	0
	Mid Ch. 737 MHz	42.437	0
	High Ch. 745.8 MHz	42.231	0
		42.5	45.5
		42.4	45.4
		42.2	45.2
			48.5
			48.4
			48.2

OUTPUT POWER - Band 85 NB IoT SA

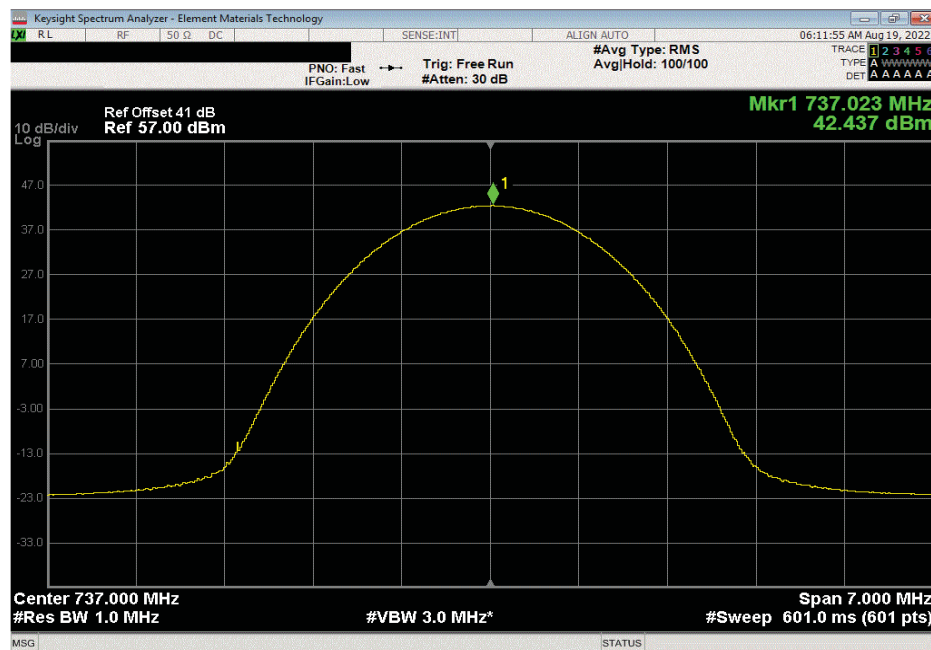


ThyTr 2022.05.02.0 XMM 2022.02.07.0

Port 2, LTE, Band 85, 728 MHz - 746 MHz, 200 kHz Bandwidth, Standalone NB-IoT, Low Ch. 728.2 MHz						
Initial value	Duty Cycle	Single Port	Two Port (2x2 MIMO)	Four Port (4x4 MIMO)		
dBm/MHz	Factor (dB)	dBm/Carrier BW	dBm/Carrier BW	dBm/Carrier BW		
42.497	0	42.5	45.5	48.5		



Port 2, LTE, Band 85, 728 MHz - 746 MHz, 200 kHz Bandwidth, Standalone NB-IoT, Mid Ch. 737 MHz						
Initial value	Duty Cycle	Single Port	Two Port (2x2 MIMO)	Four Port (4x4 MIMO)		
dBm/MHz	Factor (dB)	dBm/Carrier BW	dBm/Carrier BW	dBm/Carrier BW		
42.437	0	42.4	45.4	48.4		

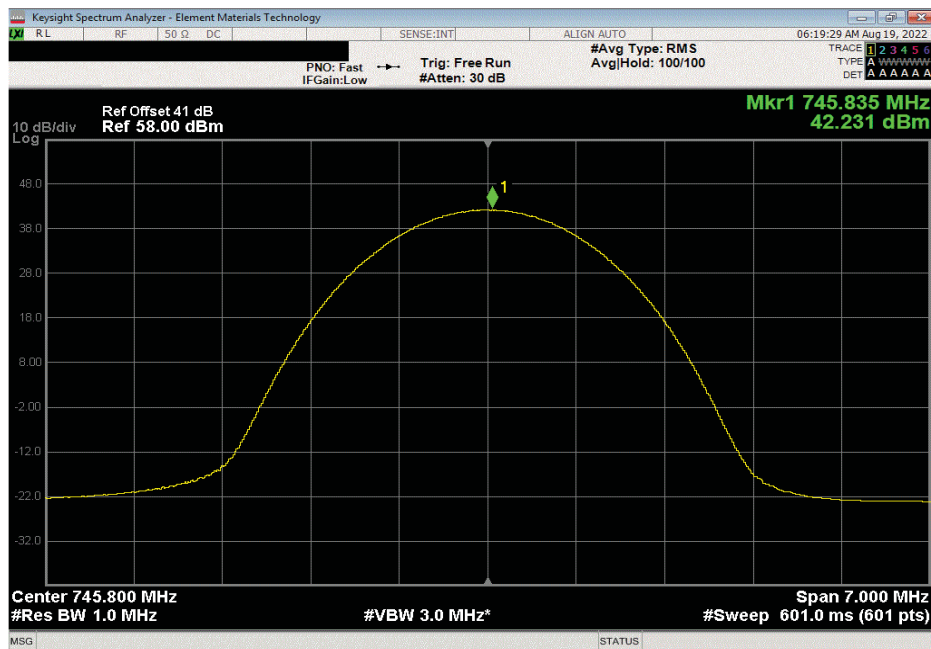


OUTPUT POWER - Band 85 NB IoT SA



ThxTx 2022.05.02.0 XMM 2022.02.07.0

Port 2, LTE, Band 85, 728 MHz - 746 MHz, 200 kHz Bandwidth, Standalone NB-IoT, High Ch. 745.8 MHz						
Initial value	Duty Cycle	Single Port	Two Port (2x2 MIMO)	Four Port (4x4 MIMO)		
dBm/MHz	Factor (dB)	dBm/Carrier BW	dBm/Carrier BW	dBm/Carrier BW		
42.231	0	42.2	45.2	48.2		



OUTPUT POWER - MULTIBAND MULTICARRIER



XMH 2022.02.07.0

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Block - DC	Fairview Microwave	SD3239	ANE	2022-03-02	2023-03-02
Generator - Signal	Agilent	N5173B	TIW	2020-07-17	2023-07-17
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFQ	2022-01-17	2023-01-17

TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. The fundamental emission output power (maximum average conducted output power) was measured using the channels and modes as called out on the following data sheets. The transmit power was set to its default maximum.

The method in section 5.2.4.4 of ANSI C63.26 was used to make the measurements. This method uses trace averaging across the ON and OFF times of the EUT transmissions in the spectrum analyzer channel power function using an RMS detector. Following the measurement a duty cycle correction was applied by adding $[10 \log (1/D)]$, where D is the duty cycle in decimal, to the measured power to compute the average power during the actual transmission times.

RF conducted emissions testing was performed only on one port. The AHLOB antenna ports are essentially electrically identical (the RF power variation between antenna ports is small as shown during 4 port output power testing) and antenna port 2 was selected to perform the testing under this effort as allowed by ANSI C63.26-2015 paragraphs 5.2.5.3, 5.7.2i and 6.4.

Multicarrier test cases have been developed as shown below:

Multi-Carrier Test Case 1: 3GPP Band 71 Multicarriers _Three LTE5 carriers using two carriers (with minimum spacing between carrier frequencies) at the lower band edge (619.5 & 624.5MHz) and a third carrier with maximum spacing between the other two carrier frequencies (649.5MHz) at the upper band edge. The LTE5 channel bandwidth was selected to maximize carrier power spectral density. The carriers are operated at maximum power for a total port power of 80 watts (~26.6W/Band 71 carriers). 3GPP Band 85 carrier is not enabled.

Multi-Carrier Test Case 2: 3GPP Band 71 Multicarriers_ One LTE 20MHz carrier (627.0 MHz) and one LTE 15MHz carrier (644.5MHz) cover all of the Band 71 bandwidth. The largest channel bandwidth is selected to maximize carrier OBW. The carriers are operated at maximum power for a total port power of 80 watts (~40W/Band 71 carriers). 3GPP Band 85 carrier is not enabled.

Multi-Carrier Test Case 3: 3GPP Band 85 Multicarrier_ Two LTE5 carriers using two carriers (with maximum spacing between carrier frequencies) at the lower band edge (730.5MHz) and at the upper band edge (743.5MHz). The LTE5 channel bandwidth was selected to maximize carrier power spectral density. The carriers are operated at maximum power for a total port power of 80 watts (~40W/Band 85 carrier). 3GPP Band 71 carrier is not enabled.

Multi-Carrier Test Case 4: 3GPP Band 71 and Band 85 Multicarrier Multiband: Three LTE 5MHz carriers using two carriers (with minimum spacing between carrier frequencies) at the Band 71 lower band edge (619.5 & 624.5MHz) and a third carrier with maximum spacing between the other two carrier frequencies (743.5MHz) at the Band 85 upper band edge. The smallest channel bandwidth was selected to maximize carrier power spectral density. The carriers were operated at maximum power (~26.6W/ Band 71 carrier and ~26.6W Band 85 carrier) for a total port power of 80 watts.

OUTPUT POWER - MULTIBAND MULTICARRIER



TMTA 2022.05.02.0 XMM 2022.02.07.0

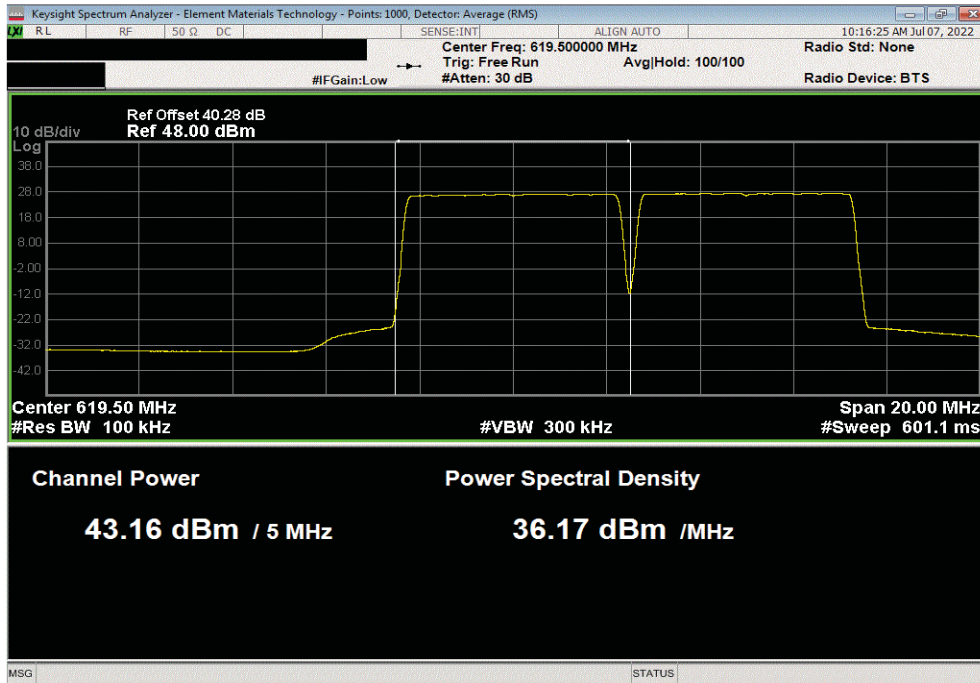
EUT: AHLOB		Work Order: NOKI0043	
Serial Number: YK220900029		Date: 11-Jul-22	
Customer: Nokia Solutions and Networks		Temperature: 20.8 °C	
Attendees: Mitchell Hill, John Rattanavong		Humidity: 63.9% RH	
Project: None		Barometric Pres.: 1013 mbar	
Tested by: Marty Martin		Job Site: TX07	
Power: 54 VDC			
TEST SPECIFICATIONS		Test Method	
FCC 27:2022		ANSI C63.26:2015	
RSS-130 Issue 2:2019		ANSI C63.26:2015	
COMMENTS			
All measurement path losses were accounted for in the reference level offset including any attenuators, filters and DC blocks. Band 71 / Band 85 carriers were operating at maximum power in each applicable test case to achieve a total port power of 80 watts. The following is the output power measurements at a single output port.			
DEVIATIONS FROM TEST STANDARD			
None			
Configuration #	2	Signature <i>Marty Martin</i>	
		Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)
		Avg Cond Carrier Pwr (dBm)	Avg Cond Band Pwr (dBm)
		Limit (dBm)	Results
LTE Multicarrier Multiband			
Port 2			
QPSK Modulation			
	Test Case 1, LTE5 Carrier 1, 619.5 MHz	43.162	0
	Test Case 1, LTE5 Carrier 2, 624.5 MHz	43.574	0
	Test Case 1, LTE5 Carrier 3, 649.5 MHz	43.424	0
	Test Case 2, LTE20 Carrier 1, 627 MHz	45.346	0
	Test Case 2, LTE15 Carrier 2, 644.5 MHz	45.406	0
	Test Case 3, LTE5 Carrier 1, 730.5 MHz	45.492	0
	Test Case 3, LTE5 Carrier 2, 743.5 MHz	45.372	0
	Test Case 4, LTE5 Band 85 Carrier 1, 743.5 MHz	43.663	0
	Test Case 4, LTE5 Band 71 Carrier 1, 619.5 MHz	43.266	0
	Test Case 4, LTE5 Band 71 Carrier 2, 624.5 MHz	43.543	0
		43.2	N/A
		43.6	N/A
		43.4	N/A
		45.3	N/A
		45.4	N/A
		45.5	N/A
		45.4	N/A
		43.7	N/A
		43.3	N/A
		43.5	N/A
		Within Tolerance	Pass
		Within Tolerance	Pass
		Within Tolerance	Pass
		Within Tolerance	Pass
		Within Tolerance	Pass
		Within Tolerance	Pass
		Within Tolerance	Pass
		Within Tolerance	Pass
		Within Tolerance	Pass

OUTPUT POWER - MULTIBAND MULTICARRIER

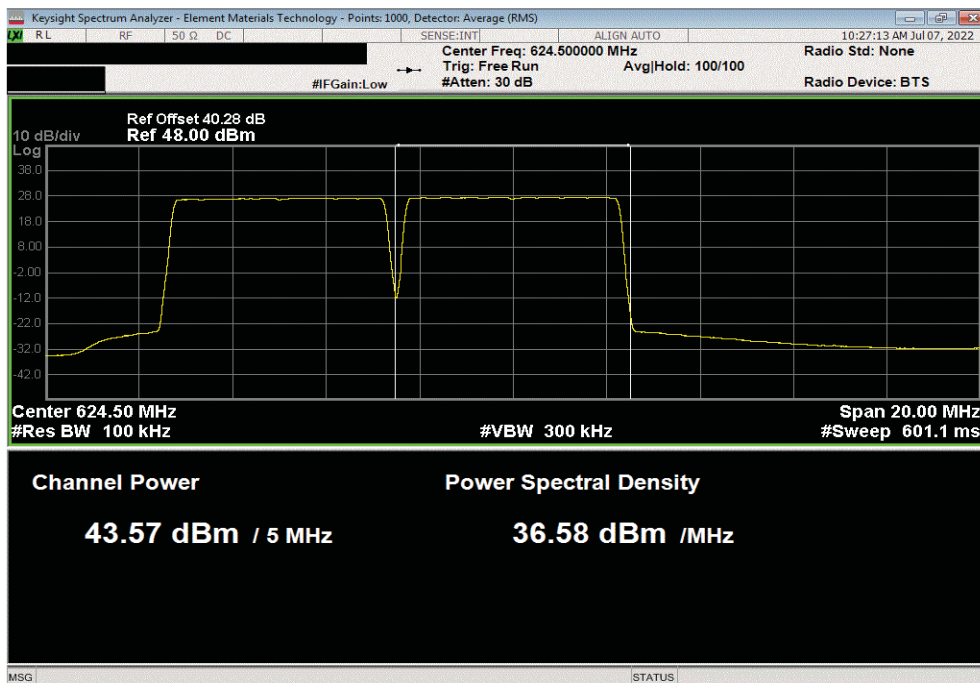


TxFx 2022.05.02.0 XMit 2022.02.07.0

LTE Multicarrier Multiband, Port 2, QPSK Modulation, Test Case 1, LTE5 Carrier 1, 619.5 MHz						
Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Avg Cond Carrier Pwr (dBm)	Avg Cond Band Pwr (dBm)	Limit (dBm)	Results	
43.162	0	43.2	N/A	Within Tolerance	Pass	



LTE Multicarrier Multiband, Port 2, QPSK Modulation, Test Case 1, LTE5 Carrier 2, 624.5 MHz						
Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Avg Cond Carrier Pwr (dBm)	Avg Cond Band Pwr (dBm)	Limit (dBm)	Results	
43.574	0	43.6	N/A	Within Tolerance	Pass	

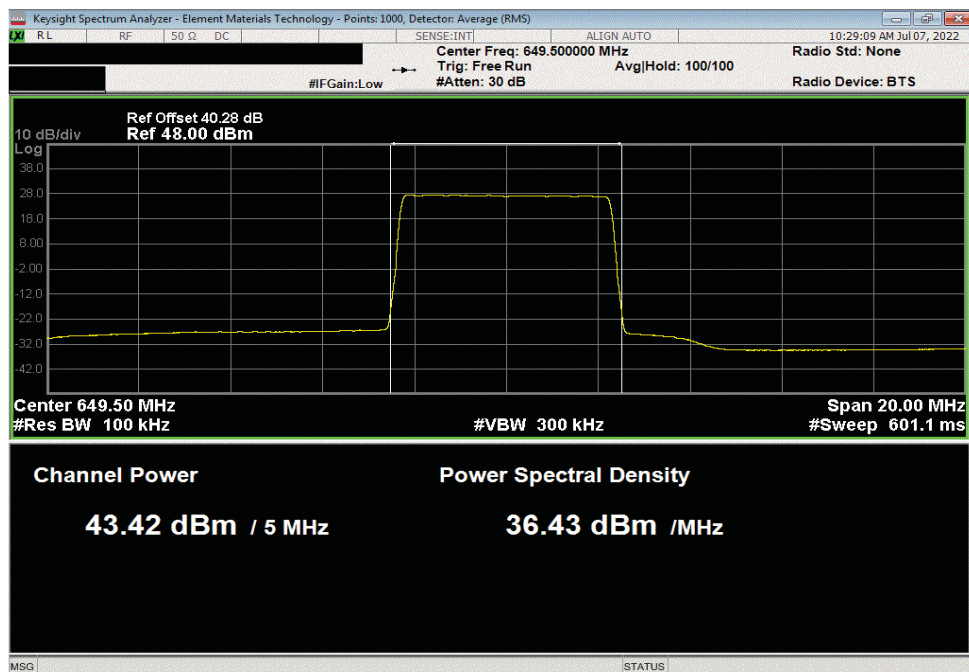


OUTPUT POWER - MULTIBAND MULTICARRIER

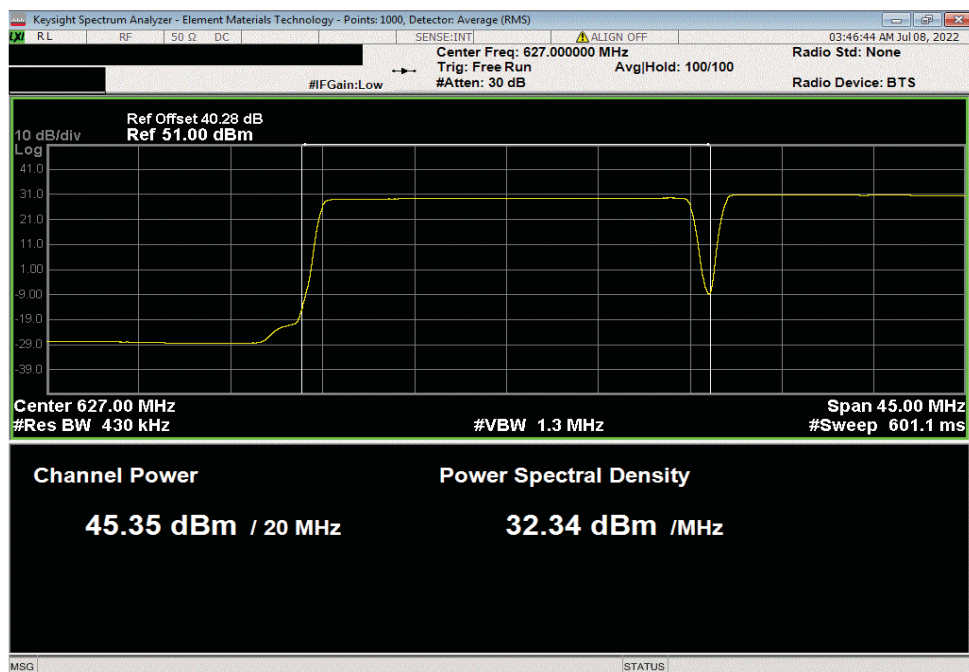


TbTfx 2022.05.02.0 XMt 2022.02.07.0

LTE Multicarrier Multiband, Port 2, QPSK Modulation, Test Case 1, LTE5 Carrier 3, 649.5 MHz						
Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Avg Cond Carrier Pwr (dBm)	Avg Cond Band Pwr (dBm)	Limit (dBm)	Results	
43.424	0	43.4	N/A	Within Tolerance	Pass	



LTE Multicarrier Multiband, Port 2, QPSK Modulation, Test Case 2, LTE20 Carrier 1, 627 MHz						
Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Avg Cond Carrier Pwr (dBm)	Avg Cond Band Pwr (dBm)	Limit (dBm)	Results	
45.346	0	45.3	N/A	Within Tolerance	Pass	

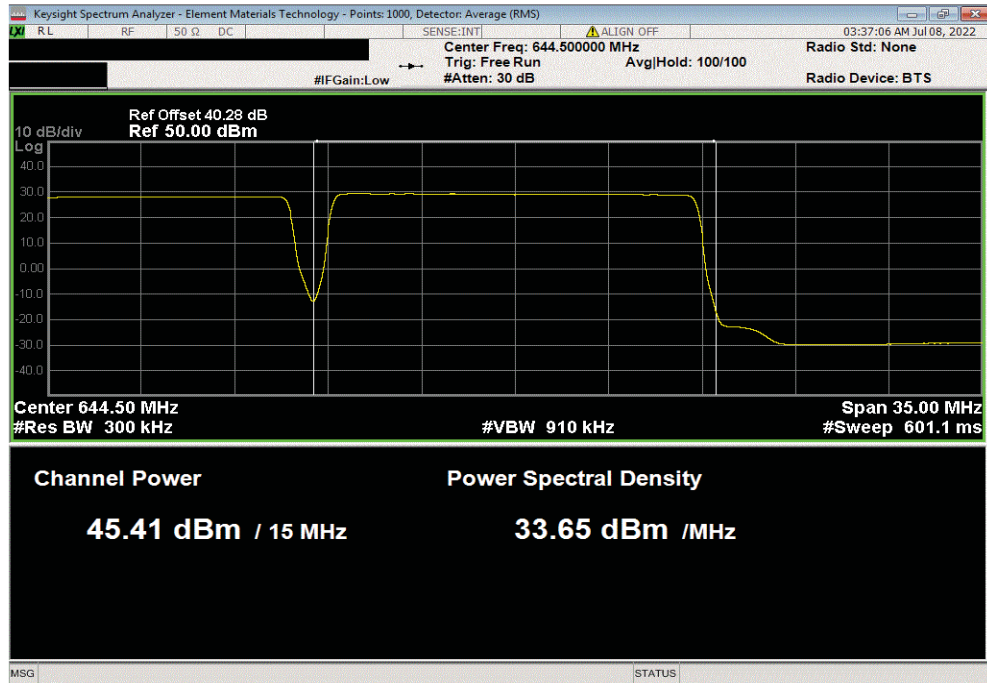


OUTPUT POWER - MULTIBAND MULTICARRIER

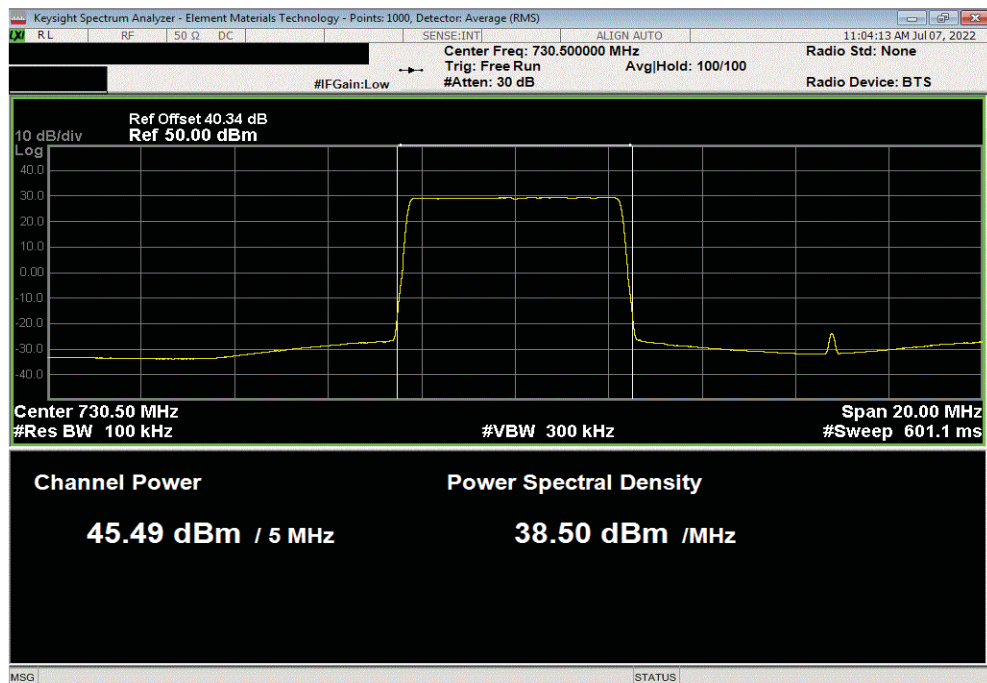


TbTtX 2022.05.02.0 XMt 2022.02.07.0

LTE Multicarrier Multiband, Port 2, QPSK Modulation, Test Case 2, LTE15 Carrier 2, 644.5 MHz						
Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Avg Cond Carrier Pwr (dBm)	Avg Cond Band Pwr (dBm)	Limit (dBm)	Results	
45.406	0	45.4	N/A	Within Tolerance	Pass	



LTE Multicarrier Multiband, Port 2, QPSK Modulation, Test Case 3, LTE5 Carrier 1, 730.5 MHz						
Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Avg Cond Carrier Pwr (dBm)	Avg Cond Band Pwr (dBm)	Limit (dBm)	Results	
45.492	0	45.5	N/A	Within Tolerance	Pass	

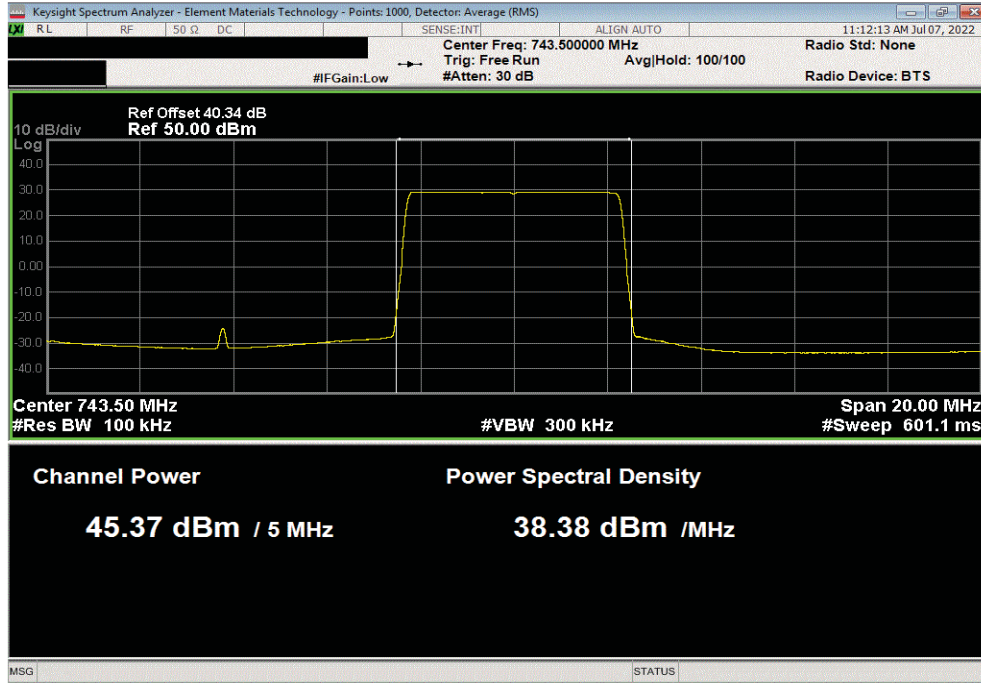


OUTPUT POWER - MULTIBAND MULTICARRIER



TbTx 2022.05.02.0 XMM 2022.02.07.0

LTE Multicarrier Multiband, Port 2, QPSK Modulation, Test Case 3, LTE5 Carrier 2, 743.5 MHz						
Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Avg Cond Carrier Pwr (dBm)	Avg Cond Band Pwr (dBm)	Limit (dBm)	Results	
45.372	0	45.4	N/A	Within Tolerance	Pass	



LTE Multicarrier Multiband, Port 2, QPSK Modulation, Test Case 4, LTE5 n85 Carrier 1, 743.5 MHz						
Avg Cond Pwr (dBm)	Duty Cycle Factor (dB)	Avg Cond Carrier Pwr (dBm)	Avg Cond Band Pwr (dBm)	Limit (dBm)	Results	
43.663	0	43.7	N/A	Within Tolerance	Pass	

