

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 power spectral density was measured using the channels and modes as called out on the following data sheets.

The method of ANSI C63.26-2015 section 5.2.4.5 was used to make this measurement.

The total PSD for all antenna ports (at the radio output) were determined per ANSI C63.26-2015 paragraph 6.4.3.2.4. The EIRP calculations are based upon ANSI C63.26-2015 paragraphs 6.4 for a four port MIMO base station.

AHLBBA antenna ports 1&4 are essentially electrically identical (the RF power variation between antenna ports is small as shown in this certification testing) and antenna port 1 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.

AHLBBA antenna ports 2&3 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.

FCC Requirements::

FCC 27.50(c) (3) Fixed and base stations transmitting a signal with an emission bandwidth greater than 1 MHz must not exceed an ERP of 1000 watts/MHz and an antenna height of 305 m HAAT, except that antenna heights greater than 305 m HAAT are permitted if power levels are reduced below 1000 watts/MHz ERP in accordance with Table 3 of this section; FCC 27.50(c) (4) Fixed and base stations located in a county with population density of 100 or fewer persons per square mile, based upon the most recently available population statistics from the Bureau of the Census, and transmitting a signal with an emission bandwidth greater than 1 MHz must not exceed an ERP of 2000 watts/MHz and an antenna height of 305 m HAAT, except that antenna heights greater than 305 m HAAT are permitted if power levels are reduced below 2000 watts/MHz ERP in accordance with Table 4 of this section;

Note: EIRP = ERP + 2.15dB 1000 watts = 60.00 dBm, EIRP = (60 dBm + 2.15dB) /MHz = 62.15dBm/MHz or 1640W/MHz 2000 watts = 63.01 dBm, EIRP = (63 dBm + 2.15dB) /MHz = 65.16dBm/MHz or 3280W/MHz

ISED Requirements RSS-130 Section 4.6/SRSP-518 section 5.1:

SRSP-518 section 5.1 Radiated power and antenna height limits for fixed and base stations

21. For fixed and base stations transmitting in accordance with section 4, the maximum permissible equivalent isotropically radiated power (e.i.r.p.) is 1640 watts and 1640 watts/MHz for a channel bandwidth less than or equal to 1 MHz and greater than 1 MHz, respectively. These e.i.r.p. limits apply for stations with an antenna height above average terrain (HAAT) up to 305 meters.

22. Fixed and base stations located in geographical areas at a distance greater than 26 km from large or medium population centers and transmitting in accordance with section 4, may increase their e.i.r.p. up to a maximum of 3280 watts/MHz (i.e. no more than 3280 watts e.i.r.p. in any 1 MHz band segment), with an antenna HAAT up to 305 meters.



							TbtTx 2022.06.03.0	XMit 2022.02.07.0
EUT:	AHLBBA (C2PC/C3PC	FCC/ISED)				Work Order:	NOKI0047	
Serial Number:	K9193514835					Date:	30-Jul-22	
Customer:	Nokia Solutions and N	letworks			Temperature: 21 °C			
Attendees:	Mitchell Hill				Humidity: 56.9% RH			
Project:	None Marte Martin		Damas	54/00		Barometric Pres.	1021 mbar	
TEST SPECIFICAT	Interty Martin		Power	Test Mothed		JOD SILE:	1407	
DCC 420 leave 2: 2	10113							
ECC 27:2022	.019			ANEL C62 26:2015				
FGG 27.2022				ANSI C03.20.2015				
COMMENTS								
All measurement p	ath losses were accou	nted for in the reference level offset including att	enuators	s, cables, DC block and filter w	hen in use. The carr	iers were enabled at ma	ximum power. The total PS	D for multiport (2x2, 4x4
MIMO) operation w	as determined based ι	pon ANSI 63.26 clause 6.4.3.2.4 (10 log Nout). The	e total P	SD for two port operation is sir	ngle port PSD + 3dB	[i.e. 10log(2)] and the to	tal PSD for four port opera	tion is single port PSD +
6dB [i.e. 10log(4)].								
DEVIATIONS FROM	M TEST STANDARD							
None								
		m	~	24:				
Configuration #	2	That		Marti				
		Signature	8					
				Initial Value	Duty Cycle	Single Port	Two Port (2x2 MIMO)	Four Port (4x4 MIMO)
Dort 1				dBm/MHz	Factor (dB)	dBm/MHz == PSD	dBm/MHz == PSD	dBm/MHz == PSD
FULL	Band n12 729 - 745 M	hz						
	5 MHz Ba	ndwidth						
	o minz bu	QPSK Modulation						
		Low Channel, 731.5 MHz		42.791	0	42.8	45.8	48.8
		Mid Channel, 737.0 MHz		42.749	0	42.7	45.7	48.7
		High Channel, 742.5 MHz		42.687	0	42.7	45.7	48.7
		16QAM Modulation						
		Low Channel, 731.5 MHz		42.845	0	42.8	45.8	48.8
		Mid Channel, 737.0 MHz		42.773	0	42.8	45.8	48.8
		High Channel, 742.5 MHZ		42.767	0	42.8	45.8	48.8
		64QAM Modulation		42,856	0	42.0	45.0	48.0
		Mid Channel 737 0 MHz		42.000	0	42.3	45.8	48.8
		High Channel, 742.5 MHz		42.778	0	42.8	45.8	48.8
		256QAM Modulation						
		Low Channel, 731.5 MHz		42.841	0	42.8	45.8	48.8
		Mid Channel, 737.0 MHz		42.87	0	42.9	45.9	48.9
		High Channel, 742.5 MHz		42.778	0	42.8	45.8	48.8
	10 MHz B	andwidth						
		256QAM Modulation		20.025	0	20.0	12.0	45.0
		Mid Channel, 737.0 MHZ		39.625	0	39.6	42.6	45.6
	10 MINZ D	2560AM Modulation						
		Mid Channel 737 0 MHz		37 802	0	37.8	40.8	43.8
Port 2					-			
	Band n12, 729 - 745 M	hz						
	5 MHz Ba	ndwidth						
		QPSK Modulation		10				
		Low Channel, 731.5 MHz		42.772	0	42.8	45.8	48.8
		High Channel, 737.0 MHZ		42.768	0	42.8	45.8	48.8
		160AM Modulation		42.009	U	42.1	40.7	40./
		Low Channel, 731.5 MHz		42.745	0	42.7	45.7	48.7
		Mid Channel, 737.0 MHz		42.751	0	42.8	45.8	48.8
		High Channel, 742.5 MHz		42.655	0	42.7	45.7	48.7
		64QAM Modulation						
		Low Channel, 731.5 MHz		42.762	0	42.8	45.8	48.8
		Mid Channel, 737.0 MHz		42.776	0	42.8	45.8	48.8
		High Channel, 742.5 MHz		42.653	0	42.7	45.7	48.7
		2000/AM MODULATION		40.000	0	100	AE O	48 0
		Mid Channel 737.0 MHz		42.000	0	42.0	40.0	40.0
		High Channel, 742.5 MHz		42,702	0	42.7	45.7	48.7
	10 MHz B	andwidth		.2.702				10.1
		256QAM Modulation						
		Mid Channel, 737.0 MHz		39.591	0	39.6	42.6	45.6
	15 MHz B	andwidth						
		256QAM Modulation				<u></u>	46 -	40 -
		Mid Channel, 737.0 MHz		37.667	U	37.7	40.7	43.7

element



















Port 1, Band n12, 729 - 745 Mhz, 5 MHz Bandwidth, 64QAM Modulation, Mid Channel, 737.0 MHz								
			Initial Value	Duty Cycle	Single Port	Two Port (2x2 MIMO)	Four Port (4x4 MIMO)	
			dBm/MHz	Factor (dB)	dBm/MHz == PSD	dBm/MHz == PSD	dBm/MHz == PSD	
			42.784	0	42.8	45.8	48.8	



Report No. NOKI0047









Center 737.00 MHz #Res BW 1.0 MHz

#VBW 3.0 MHz*

Span 30.00 MHz #Sweep 601.0 ms (601 pts)

	Initial Value	e Duty Cycle	Single Port	Two Port (2x2 MIMO)	Four Port (4x4 MIMO)	
	dBm/MHz 42.772	Factor (dB)	dBm/MHz == PSD 42.8	dBm/MHz == PSD 45.8	dBm/MHz == PSD 48.8	
Keysight Spectr	rum Analyzer - Element M RF 50 Ω DC	laterials Technology	SENSE:INT	ALIGN AUTO	06:10:43 AM Aug 02, 2022	
		PNO: Fast IFGain:Low	↔→ Trig: Free Run #Atten: 30 dB	Avg Hold: 100/100		
	Ref Offset 41.21 di	В			Mkr1 732.483 MHz	
10 dB/div Log	Ref 61.21 dBm		Ť		42.772 dBm	
51.2						
41.2				↓ ¹		
31.2						
21.2						
11.2						
1.21						
-8.79						
-18.8						
-28.8						
					0	
Center 731	.500 MHz				Span 10.00 MHz	
Center 731. #Res BW 1. MSG	500 MHz 0 MHz	#	¢VBW 3.0 MHz*	#SV STATUS	span 10.00 MHZ weep 601.0 ms (601 pts)	
Center 731 #Res BW 1	500 MHz 0 MHz Port 2 Initial Value	, Band n12, 729 - 74 e Duty Cycle Factor (dR)	AVBW 3.0 MHz* 5 Mhz, 5 MHz Bandwid Single Port dBm/MHz == PSD	#SX STATUS th, QPSK Modulation, Mid Two Port (2x2 MIMO) dBm/MHz == PSD	Channel, 737.0 MHz Gour Port (4x4 MIMO) Channel, 797.0 MHz	
Center 731 #Res BW 1.	500 MHz 0 MHz Port 2 Initial Valu dBm/MHz 42.768	, Band n12, 729 - 74 e Duty Cycle Factor (dB) 0	VBW 3.0 MHz* 5 Mhz, 5 MHz Bandwid Single Port dBm/MHz == PSD 42.8	th, QPSK Modulation, Mid Two Port (2x2 MIMO) dBm/MHz == PSD 45.8	Span 10.00 WH2 weep 601.0 ms (601 pts) Channel, 737.0 MHz Four Port (4x4 MIMO) dBm/MHz == PSD 48.8	
Center 731 #Res BW 1 Msg	500 MHz 0 MHz Port 2 Initial Value dBm/MHz 42.768 am Analyzer - Element Mo	, Band n12, 729 - 74 e Duty Cycle Factor (dB) 0 aterials Technology	4VBW 3.0 MHz* 55 Mhz, 5 MHz Bandwid Single Port dBm/MHz == PSD 42.8	#St status th, QPSK Modulation, Mid Two Port (2x2 MIMO) dBm/MHz == PSD 45.8	Span 10.00 MHz weep 601.0 ms (601 pts) Channel, 737.0 MHz Four Port (4x4 MIMO) dBm/MHz == PSD 48.8	
Center 731 #Res BW 1 Msg Keysight Spectre	500 MHz 0 MHz Port 2 Initial Valu dBm/MHz 42.768 um Analyzer - Element M. RF 50 Ω DC	, Band n12, 729 - 74 e Duty Cycle Factor (dB) 0 aterials Technology	4VBW 3.0 MHz* 15 Mhz, 5 MHz Bandwid Single Port dBm/MHz == PSD 42.8 SENSE:INTI	#St status th, QPSK Modulation, Mid Two Port (2x2 MIMO) dBm/MHz == PSD 45.8 ALIGN AUTO #Avg Type: RMS AvgiHold: 100/100	Span 10.00 Winz weep 601.0 ms (601 pts) Channel, 737.0 MHz Four Port (4x4 MIMO) dBm/MHz == PSD 48.8 04:46:59 AM Aug 02, 2022 TRACE 123 4 5 6 TYPE	
Center 731 #Res BW 1 MSG	500 MHz 0 MHz Port 2 Initial Value dBm/MHz 42.768 um Analyzer - Element MI RF 50 Ω DC	, Band n12, 729 - 74 e Duty Cycle Factor (dB) 0 aterials Technology	4VBW 3.0 MHz* 55 Mhz, 5 MHz Bandwid Single Port dBm/MHz == PSD 42.8 SENSE:INTI F→ Trig: Free Run #Atten: 30 dB	#St status th, QPSK Modulation, Mid Two Port (2x2 MIMO) dBm/MHz == PSD 45.8 Ation Auto #Avg Type: RMS AvgiHold: 100/100	Span 10.00 WHZ weep 601.0 ms (601 pts) Channel, 737.0 MHz Four Port (4x4 MIMO) dBm/MHz == PSD 48.8 04:46:59 AM Aug 02, 2022 TAACE 123 45 6 TYPE A AAAAA	
Center 731 #Res BW 1 Msg Keysight Spectra W R L	500 MHz 0 MHz Port 2 Initial Value dBm/MHz 42.768 am Analyzer - Element M RF 50 Ω DC Ref Offiset 41.21 dE Ref 61.21 dE	, Band n12, 729 - 74 e Duty Cycle Factor (dB) 0 aterials Technology PNO: Fast IF Gain: Low	4VBW 3.0 MHz* 15 Mhz, 5 MHz Bandwid Single Port dBm/MHz == PSD 42.8 SENSE:INT ↓ Trig: Free Run #Atten: 30 dB	#St status th, QPSK Modulation, Mid Two Port (2x2 MIMO) dBm/MHz == PSD 45.8 ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100	Span 10.00 WHz weep 601.0 ms (601 pts) Channel, 737.0 MHz Four Port (4x4 MiMO) dBm/MHz == PSD 48.8 48.8 04:46:59 AM Aug 02, 2022 TRACE 12.3.4.5 04:46:59 AM Aug 02, 2022 TRACE 12.3.4.5 NYPE AAAAAA Mkr1 737.750 MHz 42.768 dBm	
Center 731 #Res BW 1 Msg	500 MHz 0 MHz Port 2 Initial Valu dBm/MHz 42.768 um Analyzer - Element Mi RF 50 Ω DC Ref Offset 41.21 dE Ref 61.21 dEm	, Band n12, 729 - 74 e Duty Cycle Factor (dB) 0 aterials Technology PNO: Fast IFGain:Low	4VBW 3.0 MHz* 15 Mhz, 5 MHz Bandwid Single Port dBm/MHz == PSD 42.8 SENSE:INT → Trig: Free Run #Atten: 30 dB	#St status th, QPSK Modulation, Mid Two Port (2x2 MIMO) dBm/MHz == PSD 45.8 Align AUTO #Avg Type: RMS Avg Hold: 100/100	Span 10.00 WHz weep 601.0 ms (601 pts) Channel, 737.0 MHz Four Port (4x4 MIMO) dBm/MHz == PSD 48.8 04:46:59 AM Aug 02, 2022 TRACE 04:40:40 AM Aug 02, 2022 05:40 AM Aug 02, 2022 10:40 AM Aug 02, 2022 10:40 AM Aug 02, 2022 10:40 AM Aug 02, 2022	
Center 731 #Res BW 1 MSG	500 MHz 0 MHz Port 2 Initial Value dBm/MHz 42.768 am Analyzer - Element Mi RF 50 Ω DC Ref Offset 41.21 dE Ref 61.21 dBm	, Band n12, 729 - 74 e Duty Cycle Factor (dB) 0 aterials Technology PNO: Fast IFGain:Low	4VBW 3.0 MHz* 15 Mhz, 5 MHz Bandwid Single Port dBm/MHz == PSD 42.8 SENSE:MTI → Trig: Free Run #Atten: 30 dB	#SV ISTATUS th, QPSK Modulation, Mid Two Port (2x2 MIMO) dBm/MHz == PSD 45.8 ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100	Span 10.00 Winz weep 601.0 ms (601 pts) Channel, 737.0 MHz Four Port (4x4 MIMO) dBm/MHz == PSD 48.8 04:46:59 MAug 02, 2022 TRACE 42:768 dBm	
Center 731 #Res BW 1 Msg	500 MHz 0 MHz Port 2 Initial Value dBm/MHz 42.768 am Analyzer - Element M RF 50 Ω DC Ref Offset 41.21 dE Ref 61.21 dBm	, Band n12, 729 - 74 e Duty Cycle Factor (dB) 0 aterials Technology PNO: Fast IF Gain: Low	4VBW 3.0 MHz* 15 Mhz, 5 MHz Bandwid Single Port dBm/MHz == PSD 42.8 SENSE:INT Frig: Free Run #Atten: 30 dB	#SV STATUS th, QPSK Modulation, Mid Two Port (2x2 MIMO) dBm/MHz == PSD 45.8 ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100 1	Span 10.00 WHz weep 601.0 ms (601 pts) Channel, 737.0 MHz Four Port (4x4 MIMO) dBm/MHz == PSD 48.8 48.8 04:46:59 AM Aug 02, 2022 TRACE 2 3 4 5 0 04:46:59 AM Aug 02, 2022 TRACE 2 3 4 5 0 DET AAAAAA Mkr1 737.750 MHz 42.768 dBm	
Center 731 #Res BW 1 Msg Keysight Spectr XX RL 10 dB/div F 10 dB/div F 51.2 41.2 31.2	500 MHz 0 MHz Port 2 Initial Valuu dBm/MHz 42.768 am Analyzer - Element MM RF 50 Q DC Ref Offiset 41.21 dE Ref 61.21 dBm	, Band n12, 729 - 74 e Duty Cycle Factor (dB) 0 aterials Technology PNO: Fast IFGain:Low	AVBW 3.0 MHz*	#St status th, QPSK Modulation, Mid Two Port (2x2 MIMO) dBm/MHz == PSD 45.8 ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100	Span 10.00 Winz weep 601.0 ms (601 pts) Channel, 737.0 MHz Four Port (4x4 MIMO) dBm/MHz == PSD 48.8 04:46:59 AM Aug 02, 2022 TRACE 12 3 4 5 6 04:46:59 AM Aug 02, 2022 TRACE 12 3 4 5 6 Mkr1 737.750 MHz 42.768 dBm	
Center 731 #Res BW 1 MSG Keysight Spectr X RL 10 dB/div F 10 dB/div F 10 dB/div F 10 dB/div F 21 2	500 MHz 0 MHz Port 2 Initial Value dBm/MHz 42.768 am Analyzer - Element Mi RF 50 Ω DC Ref Offset 41.21 dE Ref 61.21 dBm	, Band n12, 729 - 74 e Duty Cycle Factor (dB) 0 aterials Technology PNO: Fast IFGain:Low	AVBW 3.0 MHz* 15 Mhz, 5 MHz Bandwid Single Port dBm/MHz == PSD 42.8 ↓ 42.8 ↓ 5ENSE:INT ↓ ↓ → Trig: Free Run #Atten: 30 dB	#St status th, QPSK Modulation, Mid Two Port (2x2 MIMO) dBm/MHz == PSD 45.8 ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100	Span 10.00 Winz weep 601.0 ms (601 pts) Channel, 737.0 MHz Four Port (4x4 MIMO) dBm/MHz == PSD 48.8 04:46:59 AM Aug 02, 2022 TRACE 04:40:750 MHz 42.768 dBm	
Center 731 #Res BW 1 Msg Keysight Spectr X R L 10 dB/div 51.2 51.2 51.2 51.2 21.2 21.2	500 MHz 0 MHz Port 2 Initial Value dBm/MHz 42.768 am Analyzer - Element M. RF 50Ω DC Ref 61.21 dBm	, Band n12, 729 - 74 P Duty Cycle Factor (dB) 0 aterials Technology PNO: Fast IF Gain: Low	4VBW 3.0 MHz* 15 Mhz, 5 MHz Bandwid Single Port dBm/MHz == PSD 42.8 SENSE:INT → Trig: Free Run #Atten: 30 dB	#SV	Span 10.00 Winz weep 601.0 ms (601 pts) Channel, 737.0 MHz Four Port (4x4 MIMO) dBm/MHz == PSD 48.8 04:46:59 MAug 02, 2022 TRACE 23:45:6 04:46:59 MAug 02, 2022 TRACE 23:45:6 Mkr1 737.750 MHz 42.768 dBm	
Center 731 #Res BW 1 Msg Keysight Spectr X RL 10 dB/div 51.2 41.2 31.2 21.2 11.2	500 MHz 0 MHz Port 2 Initial Valuu dBm/MHz 42.768 am Analyzer - Element MM RF 50 DC Ref Offiset 41.21 dE Ref 61.21 dBm	, Band n12, 729 - 74 e Duty Cycle Factor (dB) 0 aterials Technology PNO: Fast IFGain:Low	AVBW 3.0 MHz*	#St status th, QPSK Modulation, Mid Two Port (2x2 MIMO) dBm/MHz == PSD 45.8 ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100	Span 10.00 Winz weep 601.0 ms (601 pts) Channel, 737.0 MHz Four Port (4x4 MIMO) dBm/MHz == PSD 48.8 04:46:59 AM Aug 02, 2022 TRACE 12:34 56 VTME AAAAAA Mkr1 737.750 MHz 42.768 dBm	
Center 731 #Res BW 1 Msg Keysight Spectr X RL 10 dB/div 51.2 41.2 31.2 21.2 11.2 1.21	500 MHz 0 MHz Port 2 Initial Value dBm/MHz 42.768 um Analyzer - Element M RF 50 Ω DC Ref 61.21 dBm	, Band n12, 729 - 74 e Duty Cycle Factor (dB) 0 aterials Technology PNO: Fast IFGain:Low	AVBW 3.0 MHz* 15 Mhz, 5 MHz Bandwid Single Port dBm/MHz == PSD 42.8 ↓ 42.8 ↓ 5ENSE:INT ↓ ↓ → Trig: Free Run #Atten: 30 dB	#St status th, QPSK Modulation, Mid Two Port (2x2 MIMO) dBm/MHz == PSD 45.8 ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100	Span 10.00 Winz weep 601.0 ms (601 pts) Channel, 737.0 MHz Four Port (4x4 MIMO) dBm/MHz == PSD 48.8 04:46:59 AM Aug 02, 2022 TPACE 23.450 04:46:59 AM Aug 02, 2022 TPACE 23.450 Der AAAAAA Mkr1 737.750 MHz 42.768 dBm	
Center 731 #Res BW 1 Msg 10 dB/div 51.2 31.2 21.2 11.2 1.21 .8.79	500 MHz 0 MHz Port 2 Initial Value dBm/MHz 42.768 am Analyzer - Element M. RF 50 Ω DC Stef 61.21 dBm Stef 61.21 dBm	, Band n12, 729 - 74 P Duty Cycle Factor (dB) 0 aterials Technology PNO: Fast IF Gain: Low	AVBW 3.0 MHz* IS Mhz, 5 MHz Bandwid Single Port dBm/MHz == PSD 42.8 SENSE:INT → Trig: Free Run #Atten: 30 dB	#SV	Span 10.00 WHz weep 601.0 ms (601 pts) Channel, 737.0 MHz Four Port (4x4 MIMO) dBm/MHz == PSD 48.8 04:46:59 MAug 02, 2022 TRACE 23:45:6 04:46:59 MAug 02, 2022 TRACE 23:45:6 Mkr1 737.750 MHz 42.768 dBm	
Center 731 #Res BW 1 Msg Keysight Spectr Xi R L 10 dB/div 51 2 41.2 31.2 21.2 11.2 1.21 -8.79	500 MHz 0 MHz Port 2 Initial Valuu dBm/MHz 42.768 am Analyzer - Element MM RF 50 Ω DC Ref Offiset 41.21 dE Ref 61.21 dBm	, Band n12, 729 - 74 e Duty Cycle Factor (dB) 0 aterials Technology PNO: Fast IFGain:Low	AVBW 3.0 MHz*	#St status th, QPSK Modulation, Mid Two Port (2x2 MIMO) dBm/MHz == PSD 45.8 ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100	Span 10.00 Winz weep 601.0 ms (601 pts) Channel, 737.0 MHz Four Port (4x4 MIMO) dBm/MHz == PSD 48.8 04:46:59 AM Aug 02, 2022 TRACE 123 45:6 Wkr1 737.750 MHz 42.768 dBm	
Center 731 #Res BW 1 Msg Keysight Spectr X RL 10 dB/div 51.2 41.2 31.2 21.2 11.2 1.21 -8.79 -18.8	500 MHz 0 MHz Port 2 Initial Valuu dBm/MHz 42.768 um Analyzer - Element MI RF 50 Ω DC Ref Offset 41.21 dE Ref 61.21 dEm	, Band n12, 729 - 74 Puty Cycle Factor (dB) 0 aterials Technology PNO: Fast IFGain:Low 3	AVBW 3.0 MHz* 15 Mhz, 5 MHz Bandwid Single Port dBm/MHz == PSD 42.8 SENSE:INT 1 → Trig: Free Run #Atten: 30 dB	#St status th, QPSK Modulation, Mid Two Port (2x2 MIMO) dBm/MHz == PSD 45.8 Augl Type: RMS Avg Hold: 100/100	Span 10.00 Winz weep 601.0 ms (601 pts) Channel, 737.0 MHz Four Port (4x4 MIMO) dBm/MHz == PSD 48.8 04:46:59 AM Aug 02, 2022 TRACE Pret AXAXAA Mkr1 737.750 MHz 42.768 dBm	
Center 731 #Res BW 1 Msg 10 dB/div 51.2 31.2 21.2 11.2 1.21 	500 MHz 0 MHz Port 2 Initial Value dBm/MHz 42.768 an Analyzer - Element M. RF 50Ω DC Stef 61.21 dBm Comparison of the second	A Band n12, 729 - 74 Puty Cycle Factor (dB) 0 aterials Technology PNO: Fast IF Gain:Low	AVBW 3.0 MHz* IS Mhz, 5 MHz Bandwid Single Port dBm/MHz == PSD 42.8 SENSE:INT → Trig: Free Run #Atten: 30 dB	#Sv status th, QPSK Modulation, Mid Two Port (2x2 MIMO) dBm/MHz == PSD 45.8 ALIGN AUTO #Avg Type: RMS Avg Hold: 100/100 ↓	Span 10.00 Winz weep 601.0 ms (601 pts) Channel, 737.0 MHz Four Port (4x4 MIMO) dBm/MHz == PSD 48.8 04:46:59 MAug02, 2022 TRACE 04:46:59 MAug02, 2022 TRACE 23:43:00 04:46:59 MAug02, 2022 TRACE 23:43:00 04:46:59 MAug02, 2022 TRACE 24:768 dBm	

Center 742.500 MHz #Res BW 1.0 MHz

STATUS

#VBW 3.0 MHz*

Span 10.00 MHz #Sweep 601.0 ms (601 pts)

EIRP Calculations

EIRP calculations are needed at each transmitter location to optimize base station operational performance while meeting regulatory requirements. Each cell site installation needs to consider the power measurements in the radio certification report as well as site specific regulatory requirements (such as antenna height, population density, etc.), site installation parameters (line loss between antenna and radio, antenna parameters, etc.) and base station operational parameters (MIMO operational setup, carrier power level, channel bandwidth, modulation type, etc.) to optimize performance. Transmitter output power may be reduced (from maximum) by base station setup parameters. Base station antennas are selected by the customer.

The base station antenna is selected by the customer and this EIRP calculation is based upon a sample worst case antenna. The EIRP calculation is based upon <u>Commscope</u> antenna assembly model "FF-65C-R1". The maximum Band n12 gain (15.8dBi) for this antenna was used for the EIRP calculation. This antenna assembly has a pair of \pm 45° cross-polarized radiators. The four antenna RF inputs on the antenna assembly are labeled as R1 +45°, R1 -45°, R2 +45° and R2 -45°. The four AHLOB transmitter outputs are connected to the antenna assembly RF inputs.

Equivalent Isotropically Radiated Power (EIRP) is calculated for four port MIMO (as specified in ANSI C63.26-2015 section 6.4 for uncorrelated output signals) from the results of power measurements (highest measured PSD for each channel bandwidth type). The maximum antenna gain was used for this calculation. The cable loss between the antenna and transmitter is site dependent (will not be 0 dB) but for this worst case EIRP calculation 0 dB was used. Calculations of worst-case EIRP for four port MIMO are as follows:

Parameter	5 MHz Ch BW	10 MHz Ch BW	15 MHz Ch BW
Worst Case PSD/Antenna Port	42.9 dBm/MHz	39.6 dBm/MHz	37.8 dBm/MHz
Number of Ant Ports per Polarization	2	2	2
Total PSD per Polarization	45.9	42.6	40.8
10Log(2) = +3dB			
Cable Loss (site dependent)	0 dB	0 dB	0 dB
Dir Gain = Maximum Antenna Gain (G _{Ant})	15.8 dBi	15.8 dBi	15.8 dBi
See Note 1			
EIRP per Polarization	61.7 dBm/MHz	58.4 dBm/MHz	56.6 dBm/MHz
= Total PSD/Pol + Dir Gain			
Number of Polarizations	2	2	2
	61.7 dBm/MHz	58.4 dBm/MHz	56.6 dBm/MHz
EIRP Total = R1 <u>+</u> 45°and R2 <u>+</u> 45°			
See Note 2			

Note 1: The directional gain is equal to antenna gain since the transmit signals are completely uncorrelated. See ANSI C63.26 sections 6.4.5.2.3b) and 6.4.5.3.1b) for guidance.

Note 2: The EIRP per antenna polarity is required to be below the regulatory limit as described in ANSI C63.26-2015 section 6.4.6.3 b)2) and KDB 662911 D02v01 page 3 example (2) since the two transmitter outputs to each antenna are 90 degree-phase shifted relative to each other (cross-polarized radiators).

EIRP Calculation Summary

The worst case AHLBBA Band 12 four port MIMO EIRP levels using antenna assembly model "FF-65C-R1" are less than the FCC and ISED (65.16 dBm/MHz and 62.15 dBm/MHz) EIRP Regulatory Limits for all (5, 10, & 15MHz) channel bandwidths.

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 power spectral density was measured using the channels and modes as called out on the following data sheets.

The method of ANSI C63.26-2015 section 5.2.4.5 was used to make this measurement.

The total PSD for all antenna ports (at the radio output) were determined per ANSI C63.26-2015 paragraph 6.4.3.2.4. The EIRP calculations are based upon ANSI C63.26-2015 paragraphs 6.4 for a four port MIMO base station.

AHLBBA antenna ports 1&4 are essentially electrically identical (the RF power variation between antenna ports is small as shown in this certification testing) and antenna port 1 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.

AHLBBA antenna ports 2&3 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.

FCC EIRP Requirements:

FCC 90.542(a)(3) Fixed and base stations transmitting a signal in the 758-768 MHz band with an emission bandwidth greater than 1 MHz must not exceed an ERP of 1000 watts/MHz and an antenna height of 305 m HAAT, except that antenna heights greater than 305 m HAAT are permitted if power levels are reduced below 1000 watts/MHz ERP accordance with Table 3 of this section.

FCC 90.542(a)(4) Fixed and base stations located in a county with population density of 100 or fewer persons per square mile, based upon the most recently available population statistics from the Bureau of the Census, and transmitting a signal in the 758-768 MHz band with an emission bandwidth greater than 1 MHz must not exceed an ERP of 2000 watts/MHz and an antenna height of 305 m HAAT, except that antenna heights greater than 305 m HAAT are permitted if power levels are reduced below 2000 watts/MHz ERP in accordance with Table 4 of this section.

ISED Requirements RSS-140 Section 4.3/SRSP-540 section 5.1.1:

SRSP-540 section 5.1.1 Fixed and base stations

For fixed and base stations transmitting in accordance with section 4 within the frequency range 758-768 MHz with a channel bandwidth greater than 1 MHz, the maximum permissible e.r.p. is 1000 W/MHz (i.e. no more than 1000 W e.r.p. in any 1 MHz band segment) with an antenna HAAT of up to 305 m.

Fixed and base stations located in geographical areas at a distance greater than 26 km from large or medium population centres and transmitting in accordance with section 4 within the frequency range 758-768 MHz may increase their e.r.p. up to a maximum of 2000 W/MHz (i.e. no more than 2000 W e.r.p. in any 1 MHz band segment), with an antenna HAAT of up to 305 m.

Note: EIRP = ERP + 2.15dB

1000 watts = 60.00 dBm, EIRP = (60 dBm + 2.15dB) /MHz = 62.15dBm/MHz or 1640W/MHz 2000 watts = 63.01 dBm. EIRP = (63 dBm + 2.15dB) /MHz = 65.16dBm/MHz or 3280W/MHz

							TbtTx 2022.05.02.0	XMit 2022.02.07.0
EUT:	AHLBBA (C2PC/C3PC F	CC/ISED)				Work Order:	NOK10047	
Serial Number:	K9193514835					Date:	4-Aug-22	
Customer:	Nokia Solutions and Ne	tworks				Temperature:	21 °C	
Attendees:	Mitchell Hill					Humidity:	59.5% RH	
Project:	None	D	50/00			Barometric Pres.:	1021 mbar	
I ested by:	Imarty Martin	Pov	Ver: 54VDC			Job Site:	1.807	
TEST SPECIFICAT	IUN5		Test Wethod					
DCC 440 loove 4: 0	040		ANICI 002 00-0045					
R55 140 ISSUE 1: 2	018		AINSI C03.20:2015					
COMMENTS			ANOI C03.20.2015					
All moseuromont n	ath lossos woro accour	ted for in the reference level offset including attenuat	ore cables DC block a	nd filtor whon in i	ico Tho carriore w	oro onablod at maximu	n nower. The total PSD f	for multiport (2x2 4x4
MIMO) operation w	attribuses were account	on ANSI 63 26 clause 6 4 3 2 4 (10 log Nout) The tota	I PSD for two port oper	nu inter when in t		Alog(2)] and the total D	D for four port operation	n is single port PSD +
6dB [i.e. 10log(4)].	as actermined based up	on Altor 66.20 clause 0.4.0.2.4 (10 log Nout). The tota		ation is single poi		olog(2)] and the total i c		in is single point ob .
DEVIATIONS FROM	I TEST STANDARD							
None								
		m -	nn					
Configuration #	2	11 Contry	Marti					
		Signature						
				Initial Value	Duty Cycle	Single Port	Two Port (2x2 MIMO)	Four Port (4x4 MIMO)
D 11				dBm/MHz	Factor (dB)	dBm/MHz == PSD	dBm/MHz == PSD	dBm/MHz == PSD
Port 1	Dond n14 759 769 Mb-							
	5 MHz Ban	twidth						
	O WITZ Dan	OPSK Modulation						
		Low Channel, 760.5 MHz		42.828	0	42.8	45.8	48.8
		Mid Channel, 763 MHz		42.877	0	42.9	45.9	48.9
		High Channel, 765.5 MHz		42.914	0	42.9	45.9	48.9
		16QAM Modulation						
		Low Channel, 760.5 MHz		42.837	0	42.8	45.8	48.8
		Mid Channel, 763 MHz		42.844	0	42.8	45.8	48.8
		High Channel, 765.5 MHz		42.898	0	42.9	45.9	48.9
		64QAM Modulation		40.000	0	40.0	45.0	40.0
		Low Channel, 760.5 MHz Mid Channel, 762 MHz		42.032	0	42.0	40.0	40.0
		High Channel 765 5 MHz		42.907	0	43 2	40	49
		256QAM Modulation		40.220	0	40.2	40.2	40.2
		Low Channel, 760.5 MHz		42,903	0	42.9	45.9	48.9
		Mid Channel, 763 MHz		42.981	0	43	46	49
		High Channel, 765.5 MHz		42.981	0	43	46	49
	10 MHz Bar	ndwidth						
		256QAM Modulation						
		Mid Channel, 763 MHz		39.64	0	39.6	42.6	45.6
Port 2	Deed a44 750 700 Mbs							
	5 MHz Bon	hwidth						
	J WILL DATE	OPSK Modulation						
		Low Channel, 760.5 MHz		42.697	0	42.7	45.7	48.7
		Mid Channel, 763 MHz		42.777	ō	42.8	45.8	48.8
		High Channel, 765.5 MHz		42.841	0	42.8	45.8	48.8
		16QAM Modulation						
		Low Channel, 760.5 MHz		42.71	0	42.7	45.7	48.7
		Mid Channel, 763 MHz		42.738	0	42.7	45.7	48.7
		High Channel, 765.5 MHz		42.821	0	42.8	45.8	48.8
		04QAM MOULIATION		12 751	0	12 0	AE 9	10 0
		Low Channel, 760.5 MHz		42.704	0	42.0	40.0	40.0
		High Channel 765 5 MHz		42.001	0	42.0	46	40.0
		256QAM Modulation		72.001	0	70	70	77
		Low Channel, 760.5 MHz		42.811	0	42.8	45.8	48.8
		Mid Channel, 763 MHz		42.764	0	42.8	45.8	48.8
		High Channel, 765.5 MHz		42.869	0	42.9	45.9	48.9
	10 MHz Bar	ndwidth						
		256QAM Modulation						
		Mid Channel, 763 MHz		39.66	0	39.7	42.7	45.7

element

Port 1, Band n14, 758 - 768 Mhz, 5 MHz Bandwidth, 64QAM Modulation, Mid Channel, 763 MHz								
			Initial Value	Duty Cycle	Single Port	Two Port (2x2 MIMO)	Four Port (4x4 MIMO)	
			dBm/MHz	Factor (dB)	dBm/MHz == PSD	dBm/MHz == PSD	dBm/MHz == PSD	
			42.957	0	43	46	49	

Keysight Spe	ectrum Analyzer - Element N	Aaterials Technolo	ду						
XI RL	RF 50 Ω DC		5	SENSE:INT	ALI	GN AUTO		03:04:33	AM Aug 04, 2022
		F IF	PNO: Fast +++ Gain:Low	Trig: Free Ru #Atten: 30 dl	un B	#Avg Type: Avg Hold: 1	RMS 00/100	TF.	ACE 1 2 3 4 5 6 TYPE A WWWWW DET A A A A A A
10 dB/div	Ref Offset 41.33 d Ref 61.33 dBm	В					P	/lkr1 761 42.	.900 MHz 957 dBm
.54.2				Ĭ					
51.3			•						
41.3									
31.3									
21.3									
1 22									
9.67	/								
10.7								,	
ne 7									
-20.7									
Center 76 #Res BW	3.000 MHz 1.0 MHz		#VB	N 3.0 MHz*			#Swee	Span 9 601.0 m	10.00 MHz ns (601 pts)
ISG		and the second second second			AND	STATUS	encerne to tempera	estation and states and states	a te faite faite faite faite.

STATUS

Port 2, Band n14, 758 - 768 Mhz, 5 MHz Bandwidth, 16QAM Modulation, Low Channel, 760.5 MHz									
Initial Value Duty Cycle Single Port					Single Port	Two Port (2x2 MIMO)	Four Port (4x4 MIMO)		
			dBm/MHz	Factor (dB)	dBm/MHz == PSD	dBm/MHz == PSD	dBm/MHz == PSD		
			42.71	0	42.7	45.7	48.7		

Proposed EIRP Page for Band 14 5G NR Single Carrier

EIRP Calculations

EIRP calculations are needed at each transmitter location to optimize base station operational performance while meeting regulatory requirements. Each cell site installation needs to consider the power measurements in the radio certification report as well as site specific regulatory requirements (such as antenna height, population density, etc.), site installation parameters (line loss between antenna and radio, antenna parameters, etc.) and base station operational parameters (MIMO operational setup, carrier power level, channel bandwidth, modulation type, etc.) to optimize performance. Transmitter output power may be reduced (from maximum) by base station setup parameters. Base station antennas are selected by the customer.

The base station antenna is selected by the customer and this EIRP calculation is based upon a sample worst case antenna. The EIRP calculation is based upon <u>Commscope</u> antenna assembly model "FF-65C-R1". The maximum Band n14 gain (15.8dBi) for this antenna was used for the EIRP calculation. This antenna assembly has a pair of ±45° cross-polarized radiators. The four antenna RF inputs on the antenna assembly re labeled as R1 +45°, R1 -45°, R2 +45° and R2 -45°. The four AHLBBA transmitter outputs are connected to the antenna assembly RF inputs.

Equivalent Isotropically Radiated Power (EIRP) is calculated for four port MIMO (as specified in ANSI C63.26-2015 section 6.4 for uncorrelated output signals) from the results of power measurements (highest measured PSD for each channel bandwidth type). The maximum antenna gain was used for this calculation. The cable loss between the antenna and transmitter is site dependent (will not be 0 dB) but for this worst case EIRP calculation 0 dB was used. Calculations of worst-case EIRP for four port MIMO are as follows:

Parameter	5 MHz Ch BW	10 MHz Ch BW
Worst Case PSD/Antenna Port	43.2 dBm/MHz	39.7 dBm/MHz
Number of Ant Ports per Polarization	2	2
Total PSD per Polarization 10Log(2) = +3dB	46.2	42.7
Cable Loss (site dependent)	0 dB	0 dB
Dir Gain = Maximum Antenna Gain (G _{Aut}) See Note 1	15.8 dBi	15.8 dBi
EIRP per Polarization = Total PSD/Pol + Dir Gain	62.0 dBm/MHz	58.5 dBm/MHz
Number of Polarizations	2	2
EIRP Total = R1 <u>+</u> 45°and R2 <u>+</u> 45° See Note 2	62.0 dBm/MHz	58.5 dBm/MHz

Note 1: The directional gain is equal to antenna gain since the transmit signals are completely uncorrelated. See ANSI C63.26 section 6.4.5.2.3b) and 6.4.5.3.1b) for guidance.

Note 2: The EIRP per antenna polarity is required to be below the regulatory limit as described in ANSI C63.26-2015 section 6.4.6.3 b)2) and KDB 662911 D02v01 page 3 example (2) since the two transmitter outputs to each antenna are 90 degree-phase shifted relative to each other (cross-polarized radiators).

EIRP Calculation Summary

The worst case AHLBBA Band 14 four port MIMO EIRP levels using antenna assembly model "FF-65C-R1" are less than the FCC and ISED (65.16 dBm/MHz and 62.15 dBm/MHz) EIRP Regulatory Limits for all (5 & 10MHz) channel bandwidths.

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 spurious RF conducted emissions at the edges of the authorized bands were measured with the EUT set to low and high transmit frequencies in the available band. The channels closest to the band edges were selected. The EUT was transmitting at the data rate(s) listed in the datasheet. For Multiband operation, measurements were taken at the lower band edge of the lower band and the upper band edge of the upper band.

The spectrum was scanned below the lower band edge and above the higher band edge.

All limits were adjusted by a factor of [-10*log((N)] to account for the device operation as a N port MIMO transmitter, as per FCC KDB 622911.

Per section 27.53(g) and RSS 130 4.7.1, the power of any emission outside of the authorized operating frequency range cannot exceed -13 dBm. The limit is adjusted to -19 dBm [-13 dBm -10 log (4)] per FCC KDB 662911D01 v02r01 because the BTS may operate as a 4 port MIMO transmitter for 5G NR Band n12.

FCC 27.53(g) and RSS 130 4.7.1 requires a >100 kHz measurement bandwidth for emissions 100 kHz outside of the RRH operating frequency range. FCC 27.53(g) requires a >30 kHz measurement bandwidth for emissions between 100 kHz outside of the RRH operating frequency range and band edge of the operating frequency range.

AHLBBA antenna ports 1&4 are essentially electrically identical (the RF power variation between antenna ports is small as shown in this certification testing) and antenna port 1 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.

AHLBBA antenna ports 2&3 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.

						TbtTx 2022.05.02.0	XMit 2022.02.07.0
EUT	E AHLBBA (C2PC/C3PC	FCC/ISED)			Work Order:	NOKI0047	
Serial Number	r: K9193514835	structure .			Date:	2-Aug-22	
Attendees	s: Mitchell Hill	STAOLUS			Humidity	54.7% RH	
Project	t: None				Barometric Pres.:	1021 mbar	
Tested by	y: Marty Martin	F	ower: 54VDC		Job Site:	TX07	
TEST SPECIFICA	TIONS 2019		Test Method				
FCC 27:2022	2019		ANSI C63.26:2015				
COMMENTS			14101 000.2012010				
All measurement	path losses were accoun	ted for in the reference level offset including attenue	ators, cables, DC block and filter wh	hen in use. The carriers wer	e enabled at maxim	ium power.	
DEVIATIONS FRO	OM TEST STANDARD						
None							
	-						
Configuration #	2	Signature	Marti				
			Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result
Port 1							
	5G NR Band n12, 729 - 1	745 Mhz					
	D IVITZ DAI	QPSK Modulation					
		Low Channel, 731.5 MHz	1	729	-29.2	-19	Pass
		Low Channel, 731.5 MHz	2	728.9	-24.8	-19	Pass
		High Channel, 742.5 MHz	1	745	-28.1	-19	Pass
		16QAM Modulation	Z	745.15	-24.2	-19	F d 55
		Low Channel, 731.5 MHz	1	729	-29.4	-19	Pass
		Low Channel, 731.5 MHz	2	728.9	-25.2	-19	Pass
		High Channel, 742.5 MHz High Channel, 742.5 MHz	1	745 745 1	-27.9	-19	Pass
		64QAM Modulation	<u>L</u>	745.1	-24.5	-13	1 435
		Low Channel, 731.5 MHz	1	729	-29.3	-19	Pass
		Low Channel, 731.5 MHz	2	728.9	-25.0	-19	Pass
		High Channel, 742.5 MHz	1	745 1	-20.1	-19	Pass
		256QAM Modulation	-	110.1	21.0	10	1 000
		Low Channel, 731.5 MHz	1	729	-28.7	-19	Pass
		Low Channel, 731.5 MHz	2	728.9	-24.8	-19	Pass
		High Channel, 742.5 MHz	1	745 1	-20.7	-19	Pass
	10 MHz Ba	ndwidth	-	1 10.1	20.0	10	1 000
		256QAM Modulation		700	04.0	10	
		Low Channel, 734 MHz	1	729	-31.0	-19	Pass
		High Channel, 740 MHz	2	725.04	-20.3	-19	Pass
		High Channel, 740 MHz	2	745.25	-25.7	-19	Pass
	15 MHz Ba	ndwidth					
		256QAM Modulation	1	729	-32.1	-19	Pass
		Low Channel, 736.5 MHz	2	728.73	-27.0	-19	Pass
		High Channel, 737.5 MHz	1	745	-30.6	-19	Pass
5 1 6		High Channel, 737.5 MHz	2	745.1	-25.8	-19	Pass
Port 2	5G NR Band n12, 729 - 5 5 MHz Ban	745 Mhz dwidth QPSK Modulation					
		Low Channel, 731.5 MHz	1	729	-26.7	-19	Pass
		Low Channel, 731.5 MHz	2	728.78	-23.0	-19	Pass
		High Channel, 742.5 MHz High Channel, 742.5 MHz	1	745 745 1	-28.1	-19	Pass
		16QAM Modulation	L	740.1	-24.5	-10	1 455
		Low Channel, 731.5 MHz	1	729	-27.3	-19	Pass
		Low Channel, 731.5 MHz	2	728.9	-23.0	-19	Pass
		High Channel, 742.5 MHz	1	745 1	-20.2	-19	Pass
		64QAM Modulation	-	110.1	20.0	10	1 000
		Low Channel, 731.5 MHz	1	729	-26.8	-19	Pass
		Low Channel, 731.5 MHz	2	728.83	-22.8	-19	Pass
		High Channel, 742.5 MHz High Channel, 742.5 MHz	1	745 745 1	-27.8	-19	Pass
		256QAM Modulation	L	740.1	-24.0	-10	1 455
		Low Channel, 731.5 MHz	1	729	-26.4	-19	Pass
		Low Channel, 731.5 MHz	2	728.83	-23.0	-19	Pass
		High Channel, 742.5 MHz	2	745	-25.2	-19	Pass
	10 MHz Ba	ndwidth	-				. 100
		256QAM Modulation	·			10	2
		Low Channel, 734 MHz Low Channel, 734 MHz	1	729 728 88	-29.0	-19 -19	Pass
		High Channel. 740 MHz	- 1	745	-28.9	-19	Pass
		High Channel, 740 MHz	2	745.1	-24.0	-19	Pass
	15 MHz Ba	ndwidth					
		256QAM Modulation	1	720	-20.1	-19	Pass
		Low Channel, 736.5 MHz	2	728.76	-23.9	-19	Pass
		High Channel, 737.5 MHz	1	745	-28.1	-19	Pass
		High Channel, 737.5 MHz	2	745.27	-23.1	-19	Pass

	Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result
	1	729	-29.18	-19	Pass
Keysight Spectru	RF 50 Ω DC CORREC	SENSE:INT	ALIGN AUTO		04:13:26 AM Aug 02, 2022
	PNO: W IFGain:l	_{ide} →→ Trig: Free Run .ow #Atten: 30 dB	Avg Type: Avg Hold: {	RMS 500/500	TRACE 1 2 3 4 5 6 TYPE A ******* DET A N N N N N
10 dB/div R	tef Offset 41.21 dB Ref 41.21 dBm			Mkr1 72	9.000 000 MHz -29.178 dBm
31.2					
21.2					
11.2					
1.21					
8 79					
0.10					
-18.8					DL1 -19.00 dBm
20.0		1			
-20.0					
-38.8					
-48.8					
0 4					
#Res BW 30	kHz	#VBW 100 kHz*		Sweep 1.	067 ms (8001 <u>pts)</u>
MSG			STATUS		
					- N 41 I
	Frequency	1Z, 5 MHZ Bandwidth, QPS Measured	Max Value	w Channel, 731.5 Limit	MHZ
	Range	Freq (MHz)	(dBm)	< (dBm)	Result
	2	728.9	-24.83	-19	Pass

Keysight Sp	ectrum Ana	lyzer - Elemen	t Materials Techr	nology								
LXI RL	RF	50 Ω [CORREC		SE	NSE:INT		ALIGN AUTO			04:14:30	5 AM Aug 02, 2022
				PNO: Fast + IFGain:Low	••	Trig: Free I #Atten: 30	Run dB	Avg Type: Avg Hold: 5	RMS 600/500		T	ACE 1 2 3 4 5 6 TYPE A WWWW DET A NNNNN
10 dB/div	Ref Of Ref 4	fset 41.21 1.21 dB	dB m							Mk	r1 728.9 -24.	00 0 MHz 828 dBm
31.2												
21.2												
11.2												
1.21												
-8.79												
-18.8												DL1 -19.00 d ^p m
-28.8												~~~~
-38.8	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~~~		~~~~~	~~~~~		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~		
10.0												
-48.8												
Start 708 #Res BW	.00 MH 100 kH	z Iz		#\	/BW	/ 300 kHz*	:		#S1	weep	Stop 7 1.067 ms	28.90 MHz (8001 pts)
MSG							10000000	STATUS				

	Frequency Range		Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result
	1		745	-28.11	-19	Pass
Keysight Spectrum Ar	nalvzer - Element Materials Techno	logy				
X RL RF	50 Ω DC CORREC	SE	INSE:INT	ALIGN AUTO		03:48:35 AM Aug 02, 2022
		PNO: Wide +++	Trig: Free Run #Atten: 30 dB	Avg Type: Avg Hold: {	RMS 500/500	TRACE 1 2 3 4 5 6 TYPE A WWWW DET A N N N N
Ref C 10 dB/div Ref	Dffset 41.21 dB 4 1.21 dBm				Mkr1 74	5.000 000 MHz -28.110 dBm
Log			Ť			
31.2						
21.2						
11.2						
1.01						
1.21						
-8.79						
-18.8						DL1 -19.00 dBm
			∼ ♦ ¹			
-28.8						
-38.8						
-48.8						
Start 744.9000	MHz		&		S	top 745.1000 MHz
#Res BW 30 kH	Iz	#VBW	/ 100 kHz*		#Sweep 1.	.067 ms (8001 pts)
MSG				STATUS		
P	ort 1. Band n12, 729 - 7	745 Mhz. 5 MH:	z Bandwidth. QPS	K Modulation. Hid	h Channel, 742.	5 MHz
	Frequency		Measured	Max Value	Limit	
r	Range		Freq (MHz)	(dBm)	< (dBm)	Result
	2		745.13	-24.2	-19	Pass

Keysight Spe	RF 50 Ω DC	CORREC	SENSE:INT	ALIGN AUTO	03:49:29 AM Aug 02, 2022
		PNO: Fast ↔ IFGain:Low	→ Trig: Free Run #Atten: 30 dB	Avg Type: RMS Avg Hold: 500/500	TRACE 12345 TYPE A WANNAN DET A N N N N
0 dB/div	Ref Offset 41.21 dB Ref 41.21 dBm				Mkr1 745.132 3 MHz -24.202 dBm
31.2					
21.2					
11.2					
1.21					
8.79					
18.8 - 1					DL1 -19.00 dBm
28.8		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~			~~~~~~
38.8					
48.8					
Start 745. #Res BW	100 MHz 100 kHz	#VI	BW 300 kHz*		Stop 765.000 MHz Sweep 1.067 ms (8001 pts
ISG				STATUS	

	Range		Freq (MHz)	(dBm)	< (dBm)	Result
	1		729	-29.38	-19	Pass
Keysight Spectrum Analy	zer - Element Materials Technology					
KAIRL RF	50 Ω DC CORREC	S	ENSE:INT		RMS	04:22:44 AM Aug 02, 202
	PNC IFGa	D:Wide ↔ ain:Low	Trig: Free Run #Atten: 30 dB	Avg Hold: 5	00/500	
Ref Offs 10 dB/div Ref 41	set 41.21 dB I. 21 dBm				Mkr1 7	29.000 000 MH -29.380 dBn
Log			Ť			
31.2						
21.2						
11.2						
1.21						
-8.79						
18.8						DL1 -19.00 dBi
-10.0			1			
-28.8						
-38.8						
-48.8						
Start 728.9000 M	Hz		k			Stop 729.1000 MH
#Res BW 30 kHz		#VBV	V 100 kHz*		#Sweep ′	1.067 ms (8001 pts
MSG				STATUS		
Port	1, Band n12, 729 - 745	Mhz, 5 MHz	z Bandwidth, <u>16Q</u> A	M Modulation, Lo	w Channel, 73	1.5 MHz
	Frequency		Measured	Max Value	Limit	
	Range		Freq (MHz)	(dBm)	< (dBm)	Result
	2		120.3	-20.10	-13	1 0 3 3

LXI RL	RF 50 Ω DC 0	CORREC	SENSE:INT	ALIGN AUTO	04:23:17 AM Aug 02, 2022
	_	PNO: Fast ↔ IFGain:Low	. Trig: Free Run #Atten: 30 dB	Avg Type: RM Avg Hold: 500/	S TRACE 1 2 3 4 5 6 500 TYPE A WWWWW DET A N N N N N
10 dB/div	Ref Offset 41.21 dB Ref 41.21 dBm				Mkr1 728.900 0 MHz -25.179 dBm
			Ĭ		
31.2					
21.2					
11.2					
1.21					
-8.79					
-18.8					DL1 -19.00 dBm
-28.8					- manual manual
-38.8		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	
-48.8					
Start 708.0 #Res BW	00 MHz 100 kHz	#VB	W 300 kHz*		Stop 728.90 MHz #Sweep 1.067 ms (8001 pts)
MSG				STATUS	

	Frequency		Measured	Max Value	Limit	
	Range		Freq (MHZ)	(dBm)	< (dBm)	Result
			745	-21.92	-19	Pass
My Kaurisht Sportnum	Analyzer Element Materials Technolo					
XI RL RF	50 Ω DC CORREC	SE	INSE:INT	ALIGN AUTO		03:38:18 AM Aug 02, 2022
	F	PNO: Wide ↔↔ FGain:Low	Trig: Free Run #Atten: 30 dB	Avg Type: Avg Hold: {	RMS 500/500	TRACE 1 2 3 4 5 6 TYPE A WWWW DET A NNNN
Ref 10 dB/div Ref	Offset 41.21 dB f 41.21 dBm				Mkr1 74	15.000 000 MHz -27.919 dBm
			Ť			
31.2						
21.2						
11.2						
1.21						
-8 79						
	<u> </u>					
-18.8						DL1 -19.00 dBm
			1			
-28.8						
-38.8						
-48.8						
						745 4000
start 744.9000 #Res BW 3 <u>0 k</u>	Hz	#VBW	/ 100 kHz*		#Sweep 1	.067 ms (8001 pts)
MSG				STATUS		
F	Port 1, Band n12, 729 - 74	5 Mhz, 5 MHz	Bandwidth, 16QA	M Modulation, Hi	gh Channel, 742	2.5 MHz
	Frequency		Measured	Max Value	Limit	
	Range		Freq (MHz)	(dBm)	< (dBm)	Result

🔤 Keysight Sp	oectrum Analyzer - Element Materia	als Technology				- 6 -
LXI RL	RF 50 Ω DC 0	CORREC	SENSE:INT	ALIGN AUTO	RMS	03:39:02 AM Aug 02, 2022
		PNO: Fast ↔→→ IFGain:Low	Trig: Free Run #Atten: 30 dB	Avg Hold: 5	00/500	TYPE A WWWWW DET A NNNNN
10 dB/div	Ref Offset 41.21 dB Ref 41.21 dBm				Mkr	1 745.100 0 MHz -24.311 dBm
			Ť			
31.2						
21.2						
11.2						
1.21						
9 70						
-0.75						
-18.8 <mark>1</mark>						DL1 -19.00 dBm
-28.8	~					
20.0		·····	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~			
-38.8						
40.0						
-40,0						
Start 745	.100 MHz		A			Stop 765.000 MHz
#Res BW	100 kHz	#VB	W 300 kHz*		#Sweep	1.067 ms (8001 pts)
MSG				STATUS		

1 729 -29.32 -19 Pass Keysight Spectrum Analyzer - Element Materials Technology Image: Construct of the second of	Fre R	quency ange	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result
Keysight Spectrum Analyzer - Element Materials Technology Allow AUTO Oral 22/03 Mag 02.2022 PNO: Wide		1	729	-29.32	-19	Pass
MR RF SO DC CORREC SENSEINT Aughtabul PHO: Wide AvgType: RMS AvgType: RMS A	Keysight Spectrum Analyzer - Element	Materials Technology				
Ref offset 41.21 dB Mkr1 729.000 000 MH; -29.323 dBm 312	ΙΧΙ RL RF 50 Ω D	C CORREC PNO: Wide	SENSE:INT Trig: Free Run #Atten: 30 dB	ALIGN AUTO Avg Type: Avg Hold: 5	RMS 500/500	04:27:03 AM Aug 02, 2022 TRACE 1 2 3 4 5 6 TYPE A WWWW DET A N N N N
Log 31.2	Ref Offset 41.21 10 dB/div Ref 41.21 dBr	dB n			Mkr1 72	9.000 000 MHz -29.323 dBm
312 212 112 112 121 121 121 121	Log		The second secon			
212 112 121 121 121 121 121 121	31.2					
112 1	21.2					
112 12 12 12 12 12 12 12 12 12 12 12 18.8 12 18.8 12 18.8 12 18.8 12 18.8 12 19.00 MHz #VBW 100 kHz* #Res BW 30 kHz #VBW 100 kHz* #Start 728.9000 MHz #VBW 100 kHz* #Sweep 1.067 ms (8001 pts) Msd startus Port 1, Band n12, 729 - 745 Mhz, 5 MHz Bandwidth, 64QAM Modulation, Low Channel, 731.5 MHz Frequency Measured Max Value Limit Range Freq (MHz) (dBm) 2 728.9 -250.01	21.2					
1.21 8.79 1.80 1.21 1.20 1.21 1.20 1.21 1.200 der 1.200 d	11.2					
B.79 B.79 B.79 B.79 B.79 B.79 B.79 B.79 B.79 B.79 B.70 B.729 B.7000 B.729	1.21					
-879 -875 -879 -879						
18.8 1	-8.79					
-28 8 -38 8 -48 8 -4	-18.8					DL1 -19.00 dBm
2003 30.8 -30.8 -46.8 -46.8 Stop 729,1000 MHz #Res BW 30 KHz #VBW 100 KHz* #Res BW 30 KHz #VBW 100 KHz* #Start 728,9000 MHz #Stop 729,1000 MHz #Res BW 30 KHz #VBW 100 KHz* #Stop 729,1000 MHz #Stop 729,1000 MHz #Res BW 30 KHz #VBW 100 KHz* #Stop 729,1000 MHz #Stop 729,1000 MHz #Res BW 30 KHz #VBW 100 KHz* #Stop 729,1000 MHz #Stop 729,1000 MHz #Res BW 30 KHz #VBW 100 KHz* #Stop 729,1000 MHz #Stop 729,1000 MHz #Res BW 30 KHz #VBW 100 KHz* #Stop 729,1000 MHz #Stop 729,1000 MHz #Res BW 30 KHz #VBW 100 KHz* #Res BW 30 KHz #VBW 100 KHz* #Res BW 30 KHz #Stop 729,100 MHz Frequency Measured Max Value Limit Range Freq (MHz) (dBm) 2 728 9 -25 01 -19 Pass 2 78 9 -25 01 -19	29.0		1			
-38 8 -48.8 -48.8 -48.8 Start 728.9000 MHz #Res BW 30 kHz #VBW 100 kHz* #VBW 100 kHz* #Stop 729.1000 MHz #Stop 729.10	-20.0					
48.8 Start 728.9000 MHz Stop 729.1000 MHz #Res BW 30 kHz #VBW 100 kHz* #Sweep 1.067 ms (8001 pts) Msc starts Port 1, Band n12, 729 - 745 Mhz, 5 MHz Bandwidth, 64QAM Modulation, Low Channel, 731.5 MHz Frequency Measured Max Value Limit Range Freq (MHz) 2 728.9 2 728.9	-38.8					
Start 728.9000 MHz Stop 729.1000 MHz #Res BW 30 kHz #VBW 100 kHz* #Sweep 1.067 ms (8001 pts) MSG STATUS STATUS Port 1, Band n12, 729 - 745 Mhz, 5 MHz Bandwidth, 64QAM Modulation, Low Channel, 731.5 MHz Frequency Measured Max Value Limit Range Freq (MHz) (dBm) < (dBm)	-48.8					
Start 728.9000 MHz Stop 729.1000 MHz #Res BW 30 kHz #VBW 100 kHz* #Sweep Msg start us Port 1, Band n12, 729 - 745 Mhz, 5 MHz Bandwidth, 64QAM Modulation, Low Channel, 731.5 MHz Frequency Measured Max Value Limit Range Freq (MHz) (dBm) < (dBm) Result 2 78.9 -79 Pass						
Port 1, Band n12, 729 - 745 Mhz, 5 MHz Bandwidth, 64QAM Modulation, Low Channel, 731.5 MHz Frequency Range Freq (MHz) (dBm) < (dBm) Result 2 728.9 - 25.01 - 19 Pass	Start 728.9000 MHz		*)/B)M 100 kHz*		Si #Sween 1	top 729.1000 MHz
Port 1, Band n12, 729 - 745 Mhz, 5 MHz Bandwidth, 64QAM Modulation, Low Channel, 731.5 MHz Frequency Measured Max Value Limit Range Freq (MHz) (dBm) < (dBm) Result 2 728.9 - 25.01 - 19 Pass	MSG			STATUS	"әмеер і.	007 ms (800 mpts)
Port 1, Band n12, 729 - 745 Mhz, 5 MHz Bandwidth, 64QAM Modulation, Low Channel, 731.5 MHz Frequency Measured Max Value Limit Range Freq (MHz) (dBm) < (dBm) Result 2 728.9 - 728.9 - 728.9 - 19 Pass		10 700 715 N			01 1 55 1	
Range Freq (MHz) (dBm) < (dBm) Result 2 778.9 -25.01 -19 Pass	Port 1, Band	n12, 729 - 745 Mhz, 5 auency	MHz Bandwidth, 64QA Measured	M Modulation, Lo Max Value	ow Channel, 731. Limit	5 MHz
I 7 I 7289 I -2501 I -19 I Pass	<u>R</u>	ange	Freq (MHz)	(dBm)	< (dBm)	Result
		2	728.9	-25.01	-19	Pass

		PNO: Fast ↔→ IFGain:Low	Trig: Free Run #Atten: 30 dB	Avg Type: RMS Avg Hold: 500/500	TRACE 12345 (TYPE A WWWW DET A NNNN
10 dB/div	Ref Offset 41.21 dB Ref 41.21 dBm				Mkr1 728.900 0 MHz -25.013 dBm
31.2					
21.2					
11.2					
1.21					
8.79					
18.8					DL1 -19.00 dP
28.8					
38.8					
48.8					
Start 708 Res BW	.00 MHz 100 kHz	#VBV	V 300 kHz*	#	Stop 728.90 MHz Sweep 1.067 ms (8001 pts
ISG				STATUS	

	Frequency Range		Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result
	1		745	-28.07	-19	Pass
Keysight Spectrum Analy	zer - Element Materials Technolog 50 Ω DC CORREC	JY SEN	ISE:INT	ALIGN AUTO		03:28:48 AM Aug 02, 2022
	P IF	NO:Wide ↔ Gain:Low	Trig: Free Run #Atten: 30 dB	Avg Type: Avg Hold: (RMS 500/500	TRACE 1 2 3 4 5 6 TYPE A WWWW DET A N N N N
Ref Offs 10 dB/div Ref 41	set 41.21 dB I .21 dBm				Mkr1 74	5.000 000 MHz -28.068 dBm
Log			The second se			
31.2						
21.2						
11.2						
1.1.1						
1.21						
-8.79						
18.8						DL1 -19.00 dBm
10.0		~	1			
-28.8						
-38.8						
-48.8						
-40.0						
Start 744.9000 M	Hz				S	top 745.1000 MHz
#Res BW 30 KHZ		#VBW	100 KHZ*		#Sweep 1.	.067 ms (8001 pts)
MSG				STATUS		
Port	1, Band n12, 729 - 74	5 Mhz, 5 MHz I	Bandwidth, 64QA	M Modulation, Hi	igh Channel, 742	.5 MHz
	Frequency		Measured	Max Value	Limit	Desult
	Range		745 1	(dBm)	< (dBm)	Result

Keysight Sp	ectrum Analyzer - Element Materia	s Technology			
LXI RL	RF 50 Ω DC C	ORREC	SENSE:INT	ALIGN AUTO	03:30:01 AM Aug 02, 2022
		PNO: Fast ↔→ IFGain:Low	Trig: Free Run #Atten: 30 dB	Avg Type: RMS Avg Hold: 500/500	TRACE 1 2 3 4 5 6 TYPE A WWWW DET A NNNNN
10 dB/div	Ref Offset 41.21 dB Ref 41.21 dBm				Mkr1 745.100 0 MHz -23.996 dBm
Log			Ť		
31.2					
21.2					
11.2					
1.21					
-8.79					
-18.8 - 1					DL1 -19.00 dBm
-28.8	~~				
20.0		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	
-38.8					
-48.8					
Start 745 #Res BW	.100 MHz 100 kHz	#VB	W 300 kHz*	#\$	Stop 765.000 MHz Sweep 1.067 ms (800 <u>1 pts)</u>
MSG				STATUS	

	Frequency Range		Measured Freq (MHz)	Max Value (dBm)	< (dBm)	Result
	1		729	-28.73	-19	Pass
Keysight Spectrum Analyzer	- Element Materials Technolog	v				
RL RF 5	0 Ω DC CORREC		SENSE:INT	ALIGN AUTO		11:19:01 AM Jul 30, 2022
	P) IF(IO: Wide ↔↔ Gain:Low	Trig: Free Run #Atten: 30 dB	Avg Hold: (500/500	TYPE A WWWW DET A NNNN
Ref Offset 10 dB/div Ref 41.2	41.21 dB 1 dBm				Mkr1 72	9.000 000 MH -28.728 dBn
Log			Ť			
31.2						
21.2						
11.2						
1.21						
-8.79						
10.0						DL1 -19.00 dB
-10.0			. 1			
-28.8						
-38.8						
-48.8						
Start 728.9000 MHz			k		S	top 729.1000 MH
#Res BW 30 kHz		#VB	W 100 kHz*		#Sweep 1.	067 ms (8001 pts
MSG				STATUS		
Port 1	Band n12 729 - 745	Mhz 5 MH	z Bandwidth 2560	AM Modulation	ow Channel 731	5 MHz
10111,	Frequency	10112, 0 1011 I	Measured	Max Value	Limit	
· · · · · · · · · · · · · · · · · · ·	Range		Freq (MHz)	(dBm)	< (dBm)	Result
	2		728.9	-24.84	-19	Pass

LXI RL	RF 50 Ω	DC CORREC		SI	ENSE:INT	AL	IGN AUTO			11:19:3	LAM Jul 30, 2022
			PNO: Fast IFGain:Low	• • •	Trig: Free Run #Atten: 30 dB	1	Avg Type: Avg Hold:	RMS 500/500		T	RACE 1 2 3 4 5 6 TYPE A WWWW DET A NNNN
10 dB/div	Ref Offset 41.: Ref 41.21 d	21 dB Bm							Mkr	1 728.9 -24.	00 0 MHz 836 dBm
					Ť						
31.2											
21.2											
11.2											
11.2											
1.21											
-8.79											
-18.8											DL1 -19.00 d ^{mm}
10.0											
-28.8									~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		
-38.8											
-48.8											
Start 708. #Res BW	00 MHz 100 kHz		#	VBV	/ 300 kHz*			#S	weep	Stop 7 1.067 ms	728.90 MHz s (8001 pts)
MSG		States and states				90 A. (A. (D	STATUS				

740 5 8411

	Frequency		Measured	wax value	Limit	
	Range		Freq (MHz)	(dBm)	< (dBm)	Result
	1		745	-28.67	-19	Pass
Keysight Spectrum Analyzer -	Element Materials Technolog	y I s	ENSE:INT	ALIGN AUTO		03:16:17 AM Aug 02, 20
			Tim Free Pro-	Avg Type:	RMS	TRACE 1 2 3 4
	PN	O: Wide	#Atten: 30 dB	Avginoid: 0	00/500	DETANNNI
Pat Offeat	44 04 dB				Mkr1 74	5.000 000 MH
10 dB/div Ref 41.21	1 dBm					-28.673 dB
			Ť			
31.2						
21.2						
11.2						
1.20						
-8.79						
	_					
-18.8						DL1 -19.00 d
			↓ ¹			
-28.8						
39.8						
-48.8						
Start 744.9000 MHz					Si	OD 745.1000 MH
#Res BIAL 30 kHz		#VB	N 100 kHz*		#Sweep 1.	067 ms (8001 pt

Dert 1 Dand n12 720 745 Mbz 5 MUz Dandwidth 2560 MM Madulatia

Port 1,	Band n12, 729 - 74	15 Mhz, 5 MHz	Bandwidth, 256Q/	AM Modulation, H	ligh Channel, 74	2.5 MHz
	Frequency		Measured	Max Value	Limit	
	Range		Freq (MHz)	(dBm)	< (dBm)	Result
	2		745.1	-23.94	-19	Pass
Kavright Spectrum Analyze	- Element Materials Techno	logy				
LXI RL RF	50 Ω DC CORREC	SE	NSE:INT	ALIGN AUTO		03:17:13 AM Aug 02, 2022
		PNO: Fast ↔→→ IFGain:Low	Trig: Free Run #Atten: 30 dB	Avg Type: Avg Hold: {	RMS 500/500	TRACE 1 2 3 4 5 6 TYPE A WWWWW DET A N N N N N
Ref Offse 10 dB/div Ref 41.3	t 41.21 dB 2 1 dBm				Mkr1	745.100 0 MHz -23.937 dBm
Log			Ť			
31.2						
21.2						
11.2						
1.21						
-8 79						
-18.8						DL1 -19.00 dBm
-28.8						
20.0						
-3010						
-48.8						
Start 745.100 MHz			k			Stop 765.000 MHz
#Res BW 100 kHz		#VBW	/ 300 kHz*		#Sweep 1	.067 ms (8001 pts)
MSG				STATUS	an and an and a state of the second	
	D	45 ML - 40 ML				
Port 1	Erequency	45 Mhz, 10 MH	Z Bandwidth, 2560	Max Value	Low Channel, 73	34 MHZ
	Range		Freq (MHz)	(dBm)	< (dBm)	Result
	1		729	-31.02	-19	Pass

RL	RF 5	50 Ω DC	CORREC		SENSE:INT		ALIGN AUTO		07:44:04	AM Aug 02, 20
				PNO: Wide ↔ IFGain:Low	. Trig: Free F #Atten: 30	Run dB	Avg Type: F Avg Hold: 5	RM S 00/500	TF	ACE 2345 TYPE A WWW DET A NNNN
) dB/div	Ref Offsel Ref 41.2	41.21 dE 1 dBm	3					Mkr1	729.000 -31.	000 MH 023 dBr
12										
1.2										
.2										
21										
9										
8										DL1 -19.00
8						1				
8										
.8										
art 728.9	000 MHz	2							Stop 729	9.1000 M
es BW 3	30 kHz			#VE	W 100 kHz*			#Sweep	1.067 ms	s (8001 p

F	Frequency	Measured	Max Value	Limit	Beault
<u>г</u>	2 Range	728.84	(dBm) -26.33	< (dBm)	Pass
	2	720.04	-20.00	-15	1 433
Keysight Spectrum Analyzer - Flen	nent Materials Technology				
LXI RL RF 50 Ω	DC CORREC	SENSE:INT	ALIGN AUTO		07:44:47 AM Aug 02, 2022
	DNO	Trig: Free Run	Avg Type: I Avg/Hold: 5	RMS 00/500	TRACE 1 2 3 4 5 6 TYPE A WWWW
	PNO: IFGain	Low #Atten: 30 dB	Bl		
Ref Offset 41	21 dB			Mkr1	728.842 5 MHz
10 dB/div Ref 41.21 d	Bm				-26.330 dBm
		The second se			
31.2					
21.2					
11.2					
1.21					
-8.79					
-18.8					DL1 -19.00 dBm
-28.8			~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		
-38.8					
-48.8					
Start 708.00 MHz		#\/B\W 200 kH=*		#Oween 4	Stop 728.90 MHz
#Res BW TOO KHZ		#VBW JOO KHZ	CTATUS	#Sweep 1.	007 ms (8001 pts)
MSG			STATUS		
Port 1 Bar	nd n12 729 - 745 Mb	z 10 MHz Bandwidth 2560	OAM Modulation	High Channel 74	40 MHz
F	Frequency	Measured	Max Value	Limit	
	Range	Freq (MHz)	(dBm)	< (dBm)	Result
	1	745	-30.96	-19	Pass
Keysight Spectrum Analyzer - Elen	nent Materials Technology				# <mark>_</mark>
KL RF 50 Ω	DC CORREC	SENSE:INT	ALIGN AUTO Avg Type: I	RMS	08:00:55 AM Aug 02, 2022 TRACE 1 2 3 4 5 6
		Construction of the Construction of the State of the S	and a second		Construction and the Construction of the Const

		IFGain:Low	#Atten: 30 dB		DET A NNNNN
10 dB/div	Ref Offset 41.21 dB Ref 41.21 dBm			Mkr	1 745.000 000 MHz -30.958 dBm
31.2					
21.2					
11.2					
1.21					
-8.79					
-18.8					DL1 -19.00 dBm
-28.8			1		
20.0					
-48.8					
Start 744 #Res BW	.9000 MHz 30 kHz	#VBV	V 100 kHz*	#Swe	Stop 745.1000 MHz ep 1.067 ms (8001 pts)
MSG				STATUS	

	Frequency Range		Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result
	2		745.25	-25.74	-19	Pass
Keysight Spectrum An	alyzer - Element Materials Technology	·				
K RL RF	50 Ω DC CORREC	SENS	EINT	ALIGN AUTO	RMS	08:01:29 AM Aug 02, 2022
	PM IFG	NO: Fast ↔→ T Sain:Low #	rig: Free Run Atten: 30 dB	Avg Hold:	500/500	TYPE A WWWWW DET A NNNN
Ref O 10 dB/div Ref 4	offset 41.21 dB 41.21 dBm				Mkr1	745.251 7 MHz -25.744 dBm
Log			Ť			
21.2						
21.2						
11.2						
1.21						
-8.79						
-18.8						DC1 -19.00 GBN
·····						
-28.8				·····	·····	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
-38.8						
-48.8						
						04 705 000 Mile
start 745.100 M #Res BW 100 k	Hz	#VBW 3	00 kHz*		#Sweep 1	stop 765.000 MHz .067 ms (8001 pts
MSG				STATUS		
Por	t 1, Band n12, 729 - 745 l	Mhz, 15 MHz B	andwidth, 256C	AM Modulation,	Low Channel, 73	6.5 MHz
	Frequency		Measured	Max Value	Limit	Bocult
	range		rieq (MHZ)	(uBM)	< (uBm)	Result

Keysight Sp	ectrum Analyzer - Element Materials	Technology	enter trel		
	RF 30.32 DC CC	PNO: Wide	Trig: Free Run #Atten: 30 dB	Avg Type: RMS Avg Hold: 500/500	109:10:54 AM AUG 02, 2022 TRACE 1 2 3 4 5 6 TYPE A WWWW DET A N N N N N
10 dB/div	Ref Offset 41.21 dB Ref 41.21 dBm			Mkı	1 729.000 000 MHz -32.053 dBm
31.2					
21.2					
11.2					
1.21					
-8.79					Di 4, 40.00 - 10
-18.8			11		
-38.8					
-48.8					
Start 728 #Res BW	.9000 MHz 30 kHz	#VB	W 100 kHz*	#Swe	Stop 729.1000 MHz ep 1.067 ms (800 <u>1 pts)</u>
MSG				STATUS	

	Frequency Range	Measured Freg (MHz)	Max Value (dBm)	Limit < (dBm)	Result
	2	728.73	-26.98	-19	Pass
Keysight Spectrum Analyzer - Ele R L RF 50 Ω	DC CORREC	SENSE:INT	ALIGN AUTO		09:11:30 AM Aug 02, 2022
	DNO	Free Run	Avg Type: Avg Hold: 5	RMS 500/500	TRACE 1 2 3 4 5 (TYPE A WWWWW
	IFGai	n:Low #Atten: 30 dB			DETANNNI
Ref Offset 41	.21 dB			Mkr1	728.732 8 MHz
10 dB/div Ref 41.21	dBm				-26.980 aBm
_					
31.2					
21.2					
11.2					
1.21					
-8.79					
-18.8					DL1 -19.00 dBm
					1
-28.8					~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~				
-38.8					
-48.8					
Start 708.00 MHz		<b>k</b>			Stop 728.90 MHz
#Res BW 100 kHz		#VBW 300 kHz*		#Sweep 1.	.067 ms (8001 pts
MSG			STATUS		
David Dav				link Channel 72	
POIL I, Dai	Frequency	Measured	Max Value	Limit	
	Range	Freq (MHz)	(dBm)	< (dBm)	Result
	1	745	-30.64	-19	Pass
					1
Keysight Spectrum Analyzer - Ele	DC CORREC	SENSE:INT	ALIGN AUTO		09:21:06 AM Aug 02, 2022
			Avg Type:	RMS	TRACE 1 2 3 4 5

		PNO: Wide ↔→ IFGain:Low	Trig: Free Run #Atten: 30 dB	Avg Hold: 500/500	TYPE A WWWW DET A NNNNN
10 dB/div	Ref Offset 41.21 dB Ref 41.21 dBm			Mk	r1 745.000 000 MHz -30.635 dBm
209					
31.2					
21.2					
11.2					
1.21					
0.70					
-0.79					
-18.8					DL1 -19.00 dBm
-28.8		~	1		
-38.8					
-48.8					
Start 744	9000 MHz 30 kHz	#\/B\/	100 kHz*	#Swe	Stop 745.1000 MHz
MSG		#789		STATUS	cp noor ins (soor prs)

![](_page_48_Picture_1.jpeg)

Frequency Range	Measu Freq (N	red Max Value IHz) (dBm)	Cimit < (dBm)	Result
2	745.	1 -25.77	-19	Pass
Keysight Spectrum Analyzer - Element Materials Tecl	nnology			
C RL RF 50 Ω DC CORRE	C SENSE:INT	ALIGN AUTO	DWA	09:21:41 AM Aug 02, 202
	PNO: Fast Trig: Free F IFGain:Low #Atten: 30	Avg Type Run Avg Hold: dB	500/500	TYPE A WWWW DET A NNNN
Ref Offset 41.21 dB 10 dB/div Ref 41.21 dBm			Mkr1	745.100 0 MHz -25.774 dBn
31.2				
21.2				
11.2				
1.21				
0.70				
-0.79				
-18.8				DL1 -19.00 dBr
-28.8		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
-38.8				
-48.8				
Start 745.100 MHz				Stop 765.000 MH

![](_page_49_Picture_1.jpeg)

	Frequency Range		Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result
	1		729	-26.74	-19	Pass
🛄 Keysight Spe	ectrum Analyzer - Element Materials Tec	hnology				
LXI RL	RF 50 Ω DC CORRE	c	SENSE:INT	ALIGN AUTO		06:08:12 AM Aug 02, 2022
		PNO: Wide ↔ IFGain:Low	. Trig: Free Run #Atten: 30 dB	Avg Type: Avg Hold: 5	RM S 600/500	TRACE 1 2 3 4 5 6 TYPE A WWWWW DET A NNNNN
10 dB/div	Ref Offset 41.21 dB Ref 41.21 dBm				Mkr1 7	29.000 000 MHz -26.740 dBm
Log			Y Y			
31.2						
24.2						
21.2						
11.2						
11.2						
1 21						
1.21						
-8 79						
-18.8						DL1 -19.00 dBm
			1			
-28.8						
-38.8						
-48.8						
Start 728	9000 MHz		▲			Stop 729,1000 MHz
#Res BW	30 kHz	#VB	W 100 kHz*		#Sweep	1.067 ms (8001 pts)
MSG				STATUS		
	Port 2, Band n12, 729	) - 745 Mhz, <u>5 M</u>	Hz Bandwidth, QPS	K Modulation, Lo	w Channel, 731	.5 MHz
	Frequency		Measured	Max Value	Limit	
	Range		Freq (MHz)	(dBm)	< (dBm)	Result
	2		728.78	-22.98	-19	Pass

Keysight Spe	ctrum Analyzer - Element Materials 1	Technology					
CX RL	RF 50 Ω DC COF	PNO: Fast	Trig: Free Run #Atten: 30 dB	ALIGN AUTO Avg Type: F Avg Hold: 50	M S 00/500	06:08:44 TF	AM Aug 02, 2022 ACE 1 2 3 4 5 6 TYPE A WWWWW DET A NNNNN
10 dB/div	Ref Offset 41.21 dB Ref 41.21 dBm				М	kr1 728.7 -22.	77 2 MHz 982 dBm
			Ť				
31.2							
21.2							
11.2							
1.21							
-8.79							
-18.8							DL1 -19.00 d
-28.8							
-38.8							
-48.8							
Start 709						Stop 7	29.00 MHz
#Res BW	100 kHz	#VBI	W 300 kHz*		#Swee	p 1.067 ms	s (8001 pts)
MSG			eng den staten en d	STATUS			

![](_page_50_Picture_1.jpeg)

	Frequency Range		Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result
	1		745	-28.14	-19	Pass
Keysight Spectrum Analyzer - El	ement Materials Technology					
X RL RF 50 S	2 DC CORREC	SE	NSE:INT	ALIGN AUTO	RMS	06:13:43 AM Aug 02, 2022 TRACE 2 3 4 5 6
	PNC IFG	D: Wide ↔→ ain:Low	Trig: Free Run #Atten: 30 dB	Avg Hold: 5	00/500	TYPE A WWWW DET A N N N N N
Ref Offset 4	.21 dB				Mkr1 74	5.000 000 MHz -28.137 dBm
			Y			
31.2						
21.2						
11.2						
1.21						
-8.79						
10.0						DL1 -19.00 dBm
-10.0			1			
200						
-20.0						
-38.8						
-48.8						
Start 744.9000 MHz		#1/D14/			#Euroan 4	top 745.1000 MHz
#Res DW JU KHZ		#VBW	TOO KHZ"	· · · · · ·	#Sweep 1	.007 ms (8001 pts)
MSG				STATUS		
Det 2 P	and n12 720 745	Mbz 5 MU-	Pondwidth OPC	K Modulation Lie	th Channel 742	
POR 2, B	Frequency	IVITZ, 3 IVIHZ	Moasured	Max Value	l imit	
	Range		Freg (MHz)	(dBm)	< (dBm)	Result
	2		745.1	-24.93	_10	Pass

Keysight Species	ctrum Analyzer - Element Materials Tech	nology						- • • <b>•</b>
LXI RL	RF 50 Ω DC CORREC		SENSE:INT		ALIGN AUTO		06:14:18	AM Aug 02, 2022
		PNO: Fast ++ IFGain:Low	. Trig: Free #Atten: 30	Run dB	Avg Hold: 5	00/500	1	DET A NNNNN
10 dB/div	Ref Offset 41.21 dB Ref 41.21 dBm					N	lkr1 745.1 -24.	00 0 MHz 926 dBm
				Ĭ				
31.2								
21.2								
11.2								
1.21								
-8.79								
								DI 1 -19 00 dBm
-18.8								Der Proto dom
-28.8	······	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~						
-38.8								
-48.8								
Start 745.	100 MHz						Stop 76	5.000 MHz
#Res BW	100 kHz	#VE	3W 300 kHz	*		#Swe	ep 1.067 ms	(8001 pts)
MSG					STATUS			

![](_page_51_Picture_1.jpeg)

	Frequency	Measured Freg (MHz)	Max Value (dBm)	< (dBm)	Result
	1	729	-27.27	-19	Pass
		I			•
Keysight Spectrum A	nalyzer - Element Materials Technology				
IXI RL RF	50 Ω DC CORREC	SENSE:INT	ALIGN AUTO		05:58:39 AM Aug 02, 2022
	PNO: V IFGain:	Vide ↔ Trig: Free Run Low #Atten: 30 dB	Avg Type: I Avg Hold: 5	RMS 00/500	TRACE 1 2 3 4 5 6 TYPE A WWWWW DET A N N N N N
10 dB/div Ref	Offset 41.21 dB <b>41.21 dBm</b>			Mkr1 72	29.000 000 MHz -27.266 dBm
		The second se			
31.2					
21.2					
11.2					
1.21					
0 70					
-0.75					$\sim$
-18.8					DL1 -19.00 dBm
		1			
-28.8					
-38.8					
-48.8					
	MUL-				700 4000
start 728.9000 #Res BW 30 ki	Hz	#VBW 100 kHz*		#Sweep 1	.067 ms (8001 pts)
MSG			STATUS		pro)
P	ort 2, Band n12, 729 - 745 Mł	nz, 5 MHz Bandwidth, 16QA	M Modulation, Lo	w Channel, 731	.5 MHz
	Frequency	Measured	Max Value	Limit	
	Range	Freq (MHz)	(dBm)	< (dBm)	Result
	2	728.9	-23.02	-19	Pass

R L	RF 51	Element Materials I Ω DC COR	REC	SENSE:INT	ALIGN AUTO		05:59:10	AM Aug 02, 202
	-		PNO: Fast ↔ IFGain:Low	Trig: Free Run #Atten: 30 dB	Avg Type: Avg Hold: {	RMS 500/500	TF	ACE 1 2 3 4 5 TYPE A WWW DET A NNNN
) dB/div	Ref Offset Ref 41.2	41.21 dB 1 dBm				М	kr1 728.9 -23.	00 0 M⊦ 018 dBi
1.2								
.2								
21								
79								
.8								DL1 -19.00
.8 8.	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~					
.8								
.8 8								
art 708.0 Res BW 1	00 MHz 100 kHz		#VE	3W 300 kHz*		#Swee	Stop 7	28.90 M
G					STATUS			

![](_page_52_Picture_1.jpeg)

	Frequency Range		Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result
	1		745	-28.23	-19	Pass
🔤 Keysight Spe	ctrum Analyzer - Element Materials Teo	chnology				
LXI RL	RF 50 Ω DC CORRE	EC S	ENSE:INT	ALIGN AUTO	DMS	06:21:06 AM Aug 02, 2022
		PNO: Wide +++ IFGain:Low	Trig: Free Run #Atten: 30 dB	Avg Hold: {	500/500	TYPE A WWWWW DET A NNNN
10 dB/div	Ref Offset 41.21 dB Ref 41.21 dBm				Mkr1 7	45.000 000 MHz -28.232 dBm
			Ť			
31.2						
21.2						
11.2						
1.21						
-8.79						
-18.8						DL1 -19.00 dBm
10.0			1			
-28.8						
-38.8						
-48.8						
Start 744.	9000 MHz					Stop 745.1000 MHz
#Res BW	30 KHZ	#VBV	V 100 kHz*		#Sweep	1.067 ms (8001 pts)
MSG				STATUS		
	Port 2 Band n12 720	- 745 Mbz 5 MH	z Bandwidth 160/	M Modulation Hi	ich Channel 7/	12.5 MHz
	Frequency		Measured	Max Value	Limit	
	Range		Freq (MHz)	(dBm)	< (dBm)	Result
	2		745.1	-24.97	-19	Pass

Keysight Species	ctrum Analyzer - Element Materials Tech	nnology						
LXI RL	RF 50 Ω DC CORRE	c	SENSE:INT	AL	IGN AUTO		06:21:40	AM Aug 02, 2022
		PNO: Fast ++ IFGain:Low	. Trig: Free R #Atten: 30 d	un IB	Avg Type: I Avg Hold: 5	CM S 00/500	IR I	ACE 1 2 3 4 5 6 TYPE A WWWWW DET A N N N N N
10 dB/div	Ref Offset 41.21 dB Ref 41.21 dBm					MI	(r1 745.1) -24.	00 0 MHz 973 dBm
			Ĭ					
31.2								
21.2								
11.2								
1.21								
-8.79								
								DI 1 -19 00 dBm
-16.8								
-28.8	······································							
-38.6								
-48.8								
Start 745.	100 MHz						Stop 76	5.000 MHz
#Res BW	100 kHz	#VB	W 300 kHz*			#Swee	p 1.067 ms	(8001 pts)
MSG					STATUS			

![](_page_53_Picture_1.jpeg)

	Frequency Range		Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result
	1		729	-26.82	-19	Pass
Keysight Spectrum	Analyzer - Element Materials Tech	nology				
IXI RL RI	F 50 Ω DC CORREC	S SI	ENSE:INT	ALIGN AUTO		05:46:42 AM Aug 02, 2022
		PNO: Wide ↔→ IFGain:Low	Trig: Free Run #Atten: 30 dB	Avg Type: Avg Hold:	RMS 500/500	TRACE 1 2 3 4 5 6 TYPE A WWWW DET A NNNN
Ref 10 dB/div Re	f Offset 41.21 dB f <b>41.21 dBm</b>				Mkr1 72	9.000 000 MHz -26.823 dBm
			Ĭ			
31.2						
21.2						
11.2						
11.2						
1.21						
-8.79						~~~~
-18.8						DL1 -19.00 dBm
			<b>↓</b> 1			
-28.8						
-30.6						
-48.8						
Start 728.900 #Res BW 30 k	0 MHz KHz	#VBV	V 100 kHz*		S #Sweep 1.	top 729.1000 MHz .067 ms (8001 pts)
MSG				STATUS		
	Port 2, Band n12, 729 ·	- 745 Mhz, 5 MHz	z Bandwidth, 64QA	M Modulation, L	ow Channel, 731.	5 MHz
	Frequency		Measured	Max Value	Limit	
· · · · · · · · · · · · · · · · · · ·	Range	T	Freq (MHz)	(dBm)	< (dBm)	Result

Keysight Sp	ectrum Anal	yzer - Element	Materials Techno	ology	and the street					
	KF	1.20.02 DC	L   LORREL	PNO: Fast - IFGain:Low	Trig: Free #Atten: 30	e Run D dB	ALIGN AUTO Avg Type: Avg Hold: {	RMS 600/500	U	TRACE 1 2 3 4 5 ( TYPE A WWWW DET A N N N N
10 dB/div	Ref Off Ref 4	set 41.21 o 1.21 dBn	dB n						Mkr1 72	28.826 9 MHz -22.817 dBm
.31.2										
21.2										
11.2										
1.21										
-8.79										
18.8										DL1 -19.00 d
-28.8	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~						~	~~~~~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	
-38.8										
-48.8										
Start 708. #Res BW	00 MHz 100 KH	z		#V	/BW 300 kHz	×		#Sv	Si weep 1.06	top 728.90 MHz 7 ms (8001_pts
ISG		Sector and	See See See S				STATUS			

![](_page_54_Picture_1.jpeg)

	Frequency		Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result
	1		745	-27.77	-19	Pass
Keysight Spectrum An	alyzer - Element Materials Technol 50 Ω DC CORREC	ogy	INSE:INT	ALIGN AUTO	PMS	06:26:26 AM Aug 02, 2022
		PNO: Wide ↔↔ FGain:Low	Trig: Free Run #Atten: 30 dB	Avg Hold:	500/500	
Ref O 10 dB/div Ref 4	ffset 41.21 dB 41.21 dBm				MKr1 74	-27.771 dBm
91.0						
010						
21.2						
11.2						
1.21						
-8.79						
-18.8			.1			DL1 -19.00 dBm
-28.8						
-38.8						
-48.8						
						4
#Res BW 30 kH	vinz z	#VBW	/ 100 kHz*		#Sweep 1	.067 ms (8001 pts)
MSG				STATUS		
Po	rt 2, Band n12, 729 - 74 Frequency	15 Mhz, 5 MHz	Bandwidth, 64QA Measured	M Modulation, H Max Value	gh Channel, 742 Limit	.5 MHz
	Range		Freq (MHz)	(dBm)	< (dBm)	Result Pass

Keysight Sp	ectrum Analyzer - I	lement Materials T	echnology						
LXI RL	RF 50	Ω DC COR	REC	SENSE:INT	AL	IGN AUTO	12-200-998°	06:28	00 AM Aug 02, 2022
			PNO: Fast ++ IFGain:Low	. Trig: Free R #Atten: 30 d	un IB	Avg Type: Avg Hold: 5	RMS 600/500		TRACE 1 2 3 4 5 6 TYPE A WWWW DET A NNNNN
10 dB/div	Ref Offset 4 Ref 41.21	1.21 dB dBm						Mkr1 745. -24	100 0 MHz 1.847 dBm
31.2									
21.2									
11.2									
1.21									
-8.79									
-18.8									DL1 -19.00 dBm
-28.8	~~~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		·····					
-38.8									
-48.8									
Start 745. #Res BW	100 MHz 100 kHz		#VE	SW 300 kHz*			#Sw	Stop 7 eep 1.067 n	765.000 MHz 1s (8001 pts)
MSG						STATUS			

![](_page_55_Picture_1.jpeg)

	Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result
	1	729	-26.43	-19	Pass
Keysight Specific Activity	ectrum Analyzer - Element Materials Technology				
XI RL	RF 50 Ω DC CORREC	SENSE:INT	ALIGN AUTO		05:27:52 AM Aug 02, 2022
	PNO: Wide IFGain:Lov	Trig: Free Run #Atten: 30 dB	Avg Type: Avg Hold: 5	RMS 500/500	TRACE 1 2 3 4 5 6 TYPE A WWWWW DET A NNNNN
10 dB/div	Ref Offset 41.21 dB Ref 41.21 dBm			Mkr1 72	9.000 000 MHz -26.425 dBm
		The second secon			
31.2					
21.2					
44.9					
11.2					
1.24					
1.21					
0.70					
-0.79					
10.0					DL1 -19.00 dBm
-10.0		1			
28.8					
-20.0					
20.0					
30.0					
-48.8					
Start 728.	.9000 MHz			St	top 729.1000 MHz
#Res BW	30 kHz	#VBW 100 kHz*		#Sweep 1.	067 ms (8001 pts)
NSG			STATUS		
	Port 2, Band n12, 729 - 745 Mhz, \$	5 MHz Bandwidth, 256Q/	AM Modulation, L	ow Channel, 731	.5 MHz
	Frequency	Measured	Max Value	Limit	
	Range	Freq (MHz)	(dBm)	< (dBm)	Result
	2	728.83	-23.04	-19	Pass

Keysight Spe	ctrum Analyzer - Element M	aterials Technology						
LXI RL	RF 50 Ω DC	CORREC	SENSE:INT		ALIGN AUTO		05:28:24	AM Aug 02, 2022
		PNO: Fas IFGain:Lo	st →→ Trig: I w #Atter	Free Run n: 30 dB	Avg Type: F Avg Hold: 5	RMS 00/500	TR. T	ACE 1 2 3 4 5 6 YPE A WWWWW DET A NNNNN
10 dB/div	Ref Offset 41.21 dE Ref 41.21 dBm	3				Mk	r1 728.82 -23.0	26 9 MHz 040 dBm
209								
31.2								
21.2								
11.2								
1.21								
-8.79								
-18.8								DL1 -19.00 d 1
-28.8			·····	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		~_^~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~~	
-38.8								
-48.8								
Start 708.	00 MHz		4VPW 2001	-11=*		<b>"C</b>	Stop 7	28.90 MHz
#Res BW			#VEW 3001		STATUS	#sweep	1.007 ms	(8001 pts)
mog					STATUS			

![](_page_56_Picture_1.jpeg)

	Frequency Range		Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result
	1		745	-28.13	-19	Pass
Keysight Spectrum Ar	nalyzer - Element Materials Technol 50 Ω DC CORREC	ogy S	ENSE:INT	ALIGN AUTO		06:35:04 AM Aug 02, 2022
		PNO: Wide ↔↔ IFGain:Low	Trig: Free Run #Atten: 30 dB	Avg Type: Avg Hold: 5	RMS 600/500	TRACE 1 2 3 4 5 6 TYPE A WWWW DET A NNNN
Ref ( 10 dB/div Ref	Dffset 41.21 dB <b>41.21 dBm</b>				Mkr1 74	15.000 000 MHz -28.131 dBm
Log			Ť			
31.2						
21.2						
11.2						
11.2						
1.21						
-8.79						
-18.8						DL1 -19.00 dBm
			<b>1</b>			
-28.8						
-38.8						
-48.8						
Start 744.9000	MHz	#\/D\			#Curson 4	top 745.1000 MHz
#Res BW JUKF	12	#VDV	N TOO KH2"	STATUS	#Sweep 1	.007 ms (8001 pts)
				SIAIOS		
Po	rt 2, Band n12, 729 - 74	5 Mhz, 5 MHz	Bandwidth, 256Q	AM Modulation, H	igh Channel, 742	2.5 MHz
	Frequency		Measured	Max Value	Limit	Bocult
[	Kange 2		745.1	-25.16	-19	Pass

Keysight Sp	ectrum Ana	ilyzer - Elem	ent Mate	rials Techno	ology									
LXI RL	RF	50 Ω	DC	CORREC		S	ENSE:INT		ALIGN	AUTO			06:35:41	AM Aug 02, 2022
					PNO: Fast IFGain:Low	•••	Trig: Free #Atten: 30	Run dB	,	Avg Type: Avg Hold: {	RMS 500/500		TF	ACE 1 2 3 4 5 6 TYPE A WWWW DET A NNNNN
10 dB/div	Ref Of <b>Ref 4</b>	ffset 41.2 1.21 di	21 dB Bm									Mkı	1 745.1 -25.	00 0 MHz 156 dBm
31.2														
21.2														
11.2														
1.21														
-8.79														
-18.8														DL1 -19.00 dBm
-28.8	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	·	~~~~		~~~~~		~~~~~~				
-38.8														
-48.8														
Start 745 #Res BW	.100 M 100 kl	Hz Iz			#	VBV	V 300 k <u>Hz</u>				#Sv	veep	Stop 76 1.067 ms	5.000 MHz (8001 p <u>ts)</u>
MSG			8. B.					20120		STATUS				

![](_page_57_Picture_1.jpeg)

	Frequency Range		Measured Freq (MHz)	Max Value (dBm)	< (dBm)	Result
	1		729	-28.97	-19	Pass
Keysight Spectrum A	Analyzer - Element Materials Technolog	av.				
LXI RL RF	50 Ω DC CORREC	S	ENSE:INT	ALIGN AUTO	DWG	08:26:33 AM Aug 02, 2022
	P	NO: Wide ↔↔ Gain:Low	Trig: Free Run #Atten: 30 dB	Avg Type: Avg Hold: {	RMS 500/500	TYPE A WWWWW DET A NNNN
Ref 10 dB/div Ref	Offset 41.21 dB 41.21 dBm				Mkr1 72	9.000 000 MHz -28.971 dBm
Log			Ť			
31.2						
21.2						
11.2						
11.2						
1.21						
-8.79						
-18.8						DL1 -19.00 dBm
			<b>1</b>			
-28.8						
-38.8						
-48.8						
Start 728.9000	MHz	#\/D\	N 400 KH-*		Si #Swaan 1	top 729.1000 MHz
#Res BW JU K	12	#VD\		STATUS	#Sweep 1.	007 ms (8001 pts)
Р	ort 2, Band n12, 729 - 74	5 Mhz, 10 Mł	Iz Bandwidth, 2560	QAM Modulation,	Low Channel, 73	34 MHz
	Frequency		Measured	Max Value	Limit	Posult
	2		728.88	-23.67	-19	Pass

RI PE 50 (	ement Materials Tech	nology	CENCE-INT	ALIGN AUTO		08-27-24	
1 10 1 50 3	e or conc	PNO: Fast ↔ IFGain:Low	Trig: Free Run #Atten: 30 dB	Avg Type: R Avg Hold: 50	MS 0/500	TR	ACE 1 2 3 4 5 YPE A WWWW DET A NNNN
Ref Offset 42 dB/div Ref 41.21	1.21 dB dBm				Mki	1 728.87 -23.0	79 1 MH 667 dBi
12							
1.2							
1.2							
.21							
79							
.8							DL1 -19.00 c
.8	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~			~~~~~			and the second s
.8							
.8							
art 708.00 MHz Res BW 100 kHz		#VB	W 300 kHz*		#Sweep	Stop 7	28.90 Mi (8001 pi
3				STATUS			

![](_page_58_Picture_1.jpeg)

Image: Note: Income and the second		Frequency Range	Measured Freg (MHz)	Max Value (dBm)	Limit < (dBm)	Result
Keylight Spectrum Analyzer - Benerit Materials Technology       Connect       Align Auton       0933050 Milling 02, 20         PND: Wide       PND: Wide       Trig: Free Run       Avg Type RM S       Trice: Free Run         Avg/Priod: 500.000       Ref Offset 41.21 dB       Mikr1 745.000.000 Milling       -28,862 dB         910       EEdint.cov       Free Run       -28,862 dB         910       Geldiv       Ref offset 41.21 dB       Mikr1 745.000.000 Milling         910       Geldiv       Ref offset 41.21 dB       Connect         911       Geldiv       Geldiv       Geldiv       Connect         912       Geldiv       Boldiv       Stop 745.1000 MM       Million (Connect         913       Geldiv       Boldiv       Boldiv       Stop 745.1000 MM         914       Boldiv		1	745	-28.86	-19	Pass
Explay System Analyze: Bowert Microits Technology         0       R.L. Ref       90 DC       CORREC       Status: 30 dB       Avg Type: RNS Avg[Hold: 500/500       Trice: 0.00 dF         10       BL/div       Ref Offset 41.21 dB       Mkr1 745.000 0.00.20.062 dB       -28.862 dB         10       BL/div       Ref offset 41.21 dB       Mkr1 745.000 0.00.20.062 dB       -28.862 dB         10       BL/div       Ref offset 41.21 dB       -28.862 dB       -28.862 dB         11       0       0       0       0       0       0         11       0       0       0       0       0       0       0         11.2       0       0       0       0       0       0       0       0         11.2       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0 </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>						
W       RL       RF       SO D       C. CORREC       SERVELIMIT       ALLON AUTO       08:35:05 AM Augus, 2:         PND: Wide       Trig: Free Run Ref Offset 41 21 dB       Avg Type: RMS Avg[Hold: 500/500       Tricc III 2:       Tricc IIII 2:       Tricc III 2:       Tricc III 2:       Tricc IIII 2:       Tricc IIII 2:       Tricc IIII 2:       TriIIII 2:       TriIIIII 2:       Tricc	🔤 Keysight Spectrum An	nalyzer - Element Materials Technology				
PNO: Wide IFGainLow         Trig: Free Run #Atten: 30 dB         Avg[Hold: 500/500         Trig: Free Run -28, 862 dB           0 dB/dity         Ref 0ffset 41.21 dB Ref 41.21 dB -28, 862 dB         Mkr1 745,000 000 MH -28, 862 dB         -28, 862 dB           31.2	LXI R L RF	50 Ω DC CORREC	SENSE:INT	ALIGN AUTO	RMS	08:35:05 AM Aug 02, 2022
Ref Offset 41.21 dB       Mkr1 745.000 000 MH         31.2		PNC IFGa	): Wide $\longrightarrow$ Trig: Free Run ain:Low #Atten: 30 dB	Avg Hold:	500/500	TYPE A WWWWW DET A NNNNN
Log       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2       31.2	10 dB/div Ref C	Dffset 41.21 dB <b>41.21 dBm</b>			Mkr1 74	5.000 000 MHz -28.862 dBm
31.2       21.2         11.2       21.2         11.2       21.2         12.1       21.2         12.1       21.2         12.1       21.2         12.1       21.2         12.1       21.2         12.1       21.2         12.1       21.2         12.1       21.2         12.1       21.2         12.1       21.2         12.1       21.2         12.1       21.2         13.8       21.2         14.8       21.2         14.8       21.2         14.8       21.2         15.1       21.2         14.8       21.2         14.8       21.2         14.8       21.2         15.2       21.2         15.2       21.2         15.2       2.2         15.2       2.2         12.2       2.2         12.2       2.2         12.2       2.2         12.2       2.2         12.2       2.2         12.2       2.2         12.2       2.2         12.2       <	Log		The second secon			
3.2       21.2         11.2       1.2         12.1       1.2         12.1       1.2         13.8       0.1.19000         20.8       0.1.19000         30.8       0.1.19000         30.8       0.1.19000         30.8       0.1.19000         30.8       0.1.19000         40.9       0.1.19000         40.9       0.1.19000         40.9       0.1.19000         40.9       0.1.19000         40.9       0.1.19000         40.9       0.1.19000         40.9       0.1.19000         40.9       0.1.19000         40.9       0.1.19000         40.9       0.1.19000         40.9       0.1.19000         40.9       0.1.19000         40.9       0.1.19000         40.9       0.1.19000         40.9       0.1.190000         40.9       0.1.190000         40.9       0.1.190000         40.9       0.1.190000         40.9       0.1.1900000         40.9       0.1.19000000000000000000000000000000000	21.2					
212       112         112       112         112       112         112       112         112       112         112       112         112       112         112       112         112       112         112       112         112       112         112       112         112       112         112       112         112       112         112       112         112       112         112       112         112       112         112       112         112       112         112       112         112       112         112       112         112       112         112       112         112       112         112       112         112       112         112       112         112       112         112       112         112       112         112       112         112       112         112       1	51.2					
11.2       1.21         1.21       1.21         1.21       1.21         1.21       1.21         1.21       1.21         1.21       1.21         1.22       1.21         1.23       1.21         1.24       1.21         22.3       1.21         22.3       1.21         23.4       1.21         23.6       1.21         23.7       1.21         23.7       1.22         24.7       1.22         25.7       1.22         25.7       1.22         27.7       1.22         27.7       1.22         27.7       1.23.95         27.7       1.23.95         28.7       1.22         29.7       1.23.95         20.7       1.23.95         20.7       1.23.95         20.7       1.23.95         20.7       1.23.95         20.7       1.23.95         1.19       1.23.95         1.19       1.23.95         1.19       1.23.95         1.19       1.23.95         1.10       1.23.95	21.2					
112						
1.21	11.2					
1.21						
8.79       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0 <td>1.21</td> <td></td> <td></td> <td></td> <td></td> <td></td>	1.21					
8.73       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>						
188       1       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0	-8.79					
-183       1       1       023.49002         -283       1       1       023.49002         -38.8       -38.8       -38.8       -38.8         -483       -483       -48.3       Stop 745.1000 MHz         #Res BW 30 KHz       #VEW 100 KHz*       #Stop 745.1000 MHz         #Kess BW 30 KHz       #VEW 100 KHz*       #Stop 745.1000 MHz         Mass       Frequency       Measured       Max Value         Limit       Range       Freq (MHz)       (dBm)       Result         2       745.1       -23.95       -19       Pass         Keysight Spectrum Analyzer - Element Materials Technology       08:35:37 AM Aug 02, 20       08:35:37 AM Aug 02, 20         PN0: Fast       →       Trg: Free Run       Avg Type: RMS       Trg: 23.4						
28.8       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1 <td>-18.8</td> <td></td> <td></td> <td></td> <td></td> <td>DL1 -19.00 dBm</td>	-18.8					DL1 -19.00 dBm
233       33.3         -33.3       -33.3         -43.3						
38.3       48.8         48.8       48.8         Start 744.9000 MHz       \$\$top 745.1000 MHz         #Res BW 30 KHz       #VBW 100 KHz*         #SG       \$\$tart \$\$top 745.1000 MHz         MSG       \$\$tart \$\$tart \$\$top 745.1000 MHz         Port 2, Band n12, 729 - 745 Mhz, 10 MHz Bandwidth, 256QAM Modulation, High Channel, 740 MHz         Frequency       Measured         Max Value       Limit         Range       Freq (MHz)         (dBm)       < (dBm)	-28.8					
43.3       Start 744.9000 MHz       Stop 745.1000 MH         #Res BW 30 KHz       #VBW 100 KHz*       #Sweep 1.067 ms (8001 pt         MSG       Start 744.9000 MHz       #Sweep 1.067 ms (8001 pt         MSG       Start 744.9000 MHz       #Sweep 1.067 ms (8001 pt         Port 2, Band n12, 729 - 745 Mhz, 10 MHz Bandwidth, 256QAM Modulation, High Channel, 740 MHz       Frequency         Max Value       Limit         Range       Freq (MHz)       (dBm)         2       745.1       -23.95       -19         Port 2, Band n12, 729 - 745 Mhz, 10 MHz Bandwidth, 256QAM Modulation, High Channel, 740 MHz       Result         Frequency       Measured       Max Value       Limit         Q       745.1       -23.95       -19       Pass         RL       RF       50 Ω DC       CORREC       SENSE:INT       ALIGN AUTO       08:35:37 AM Aug 02, 20         PN0: Fast       Trg: Free Run       Avg Type: RMS       Trace 23.41       Trg: 23.41	20.0					
-48.8       Start 744.9000 MHz       Stop 745.1000 MHz         #Res BW 30 KHz       #VBW 100 KHz*       #Sweep 1.067 ms (8001 pt         Msg       starts         Port 2, Band n12, 729 - 745 Mhz, 10 MHz Bandwidth, 256QAM Modulation, High Channel, 740 MHz         Frequency       Measured         Max Value       Limit         Range       Freq (MHz)         Q       745.1         -2       745.1         -2       745.1         -2       745.1         -23.95       -19         Pass         Keysight Spectrum Analyzer - Element Materials Technology         RL       RF         Start So Ω DC       CORREC         SENSE:INT       ALIGN AUTO         Avg Type: RMS       Trace 1234         PNO: Fast       Trg: Free Run	-30.0					
Start 744.9000 MHz #Res BW 30 kHz       \$top 745.1000 MHz #Sweep       Stop 745.1000 MHz 1.067 ms (8001 pt starus         Msg       start 744.9000 KHz*       #Sweep       1.067 ms (8001 pt 1.067 ms (8001 pt starus         Port 2, Band n12, 729 - 745 Mhz, 10 MHz Bandwidth, 256QAM Modulation, High Channel, 740 MHz       Frequency       Measured         Frequency       Measured       Max Value       Limit         2       745.1       -23.95       -19         Post 2, Band nalyzer - Element Materials Technology       08:35:37 AM aug 02, 20       08:35:37 AM aug 02, 20         RL       RF       50 Ω DC       CORREC       SENSE:INT       ALIGN AUTO       08:35:37 AM aug 02, 20         PNO: Fast       Trg: Free Run       Avg Type: RMS       Trg: 23.44       Trg: 23.44	-48.8					
Start 744.9000 MHz       #VBW 100 kHz*       Stop 745.1000 MHz         #Res BW 30 kHz       #VBW 100 kHz*       #Sweep       1.067 ms (8001 pt         Msg       status       status       status         Port 2, Band n12, 729 - 745 Mhz, 10 MHz Bandwidth, 256QAM Modulation, High Channel, 740 MHz       Frequency       Measured       Max Value       Limit         Range       Freq (MHz)       (dBm)       < (dBm)						
Statr 744.9000 WiH2     Stop 745.1000 Mi       #Res BW 30 kHz     #VBW 100 kHz*     #Stop 745.1000 Mi       #SG     \$Stop 745.1000 Mi     #Stop 745.1000 Mi       Port 2, Band n12, 729 - 745 Mhz, 10 MHz Bandwidth, 256QAM Modulation, High Channel, 740 MHz     Frequency     Measured       Range     Freq (MHz)     (dBm)     < (dBm)						
MSG     STATUS       Port 2, Band n12, 729 - 745 Mhz, 10 MHz Bandwidth, 256QAM Modulation, High Channel, 740 MHz       Frequency     Measured       Range     Freq (MHz)       2     745.1       -2     745.1       -2     745.1       -2     745.1       -19     Pass	Start 744.9000 #Res BW 30 kH		#VBW 100 kHz*		#Sween 1	100 745.1000 MHz 1067 ms (8001 pts)
Port 2, Band n12, 729 - 745 Mhz, 10 MHz Bandwidth, 256QAM Modulation, High Channel, 740 MHz         Frequency       Measured       Max Value       Limit         Range       Freq (MHz)       (dBm)       < (dBm)	MSG		"" OF TOO MILE	STATUS	"oncep n	
Port 2, Band n12, 729 - 745 Mhz, 10 MHz Bandwidth, 256QAM Modulation, High Channel, 740 MHz         Frequency       Measured       Max Value       Limit         Range       Freq (MHz)       (dBm)        Clean Colspan="2">Clean Colspan="2"         Align Auto       Clean Colspan="2"         Avg Type: RMS       Trace 12 34         Avg Type: RMS       Trace 12 34         Avg Type: RMS       Trace 12 34         PNO: Fast       Trig: Free Run       Avg Type: RMS          PNO: Fast        Avg Type: RMS						
Frequency Range     Measured Freq (MHz)     Max Value (dBm)     Limit <(dBm)       2     745.1     -23.95     -19       2     745.1     -23.95     -19       2     745.1     -23.95     -19       2     RL     RF     50 Ω     CORREC       SENSE:INT     ALIGN AUTO     08:35:37 AM Aug 02, 20       Avg Type: RMS     TRACE       PNO: Fast     Trig: Free Run     Avg(Hold: 500/500	Po	ort 2, Band n12, 729 - 745 M	Mhz, 10 MHz Bandwidth, 256	QAM Modulation,	High Channel, 74	40 MHz
Range         Freq (MHz)         (dBm)         < (dBm)         Result           2         745.1         -23.95         -19         Pass           Keysight Spectrum Analyzer - Element Materials Technology         08:35:37 AM Aug 02, 20         08:35:37 AM Aug 02, 20           RL         RF         50 Ω         DC         CORREC         Aug Type: RMS         TRACE           PNO: Fast         +         Trig: Free Run         Avg Hold: 500/500         Trie For Aug         Avg Hold: 500/500		Frequency	Measured	Max Value	Limit	
2     745.1     -23.95     -19     Pass       Δ     Keysight Spectrum Analyzer - Element Materials Technology     08:35:37 AM Aug 02, 20       Δ     RL     RF     50 Ω     DC     CORREC     SENSE:INT     ALIGN AUTO     08:35:37 AM Aug 02, 20       Δ     RL     RF     50 Ω     DC     CORREC     SENSE:INT     ALIGN AUTO     08:35:37 AM Aug 02, 20       PNO: Fast     +     Trig: Free Run     Avg Type: RMS     Trace 12 34		Range	Freq (MHz)	(dBm)	< (dBm)	Result
Weysight Spectrum Analyzer - Element Materials Technology         Image: RL       RF       50 Ω       DC       CORREC       SENSE:INT       ALIGN AUTO       08:35:37 AM Aug.02, 20         Image: RL       RF       50 Ω       DC       CORREC       SENSE:INT       ALIGN AUTO       08:35:37 AM Aug.02, 20         Image: RL       RF       50 Ω       DC       CORREC       SENSE:INT       ALIGN AUTO       08:35:37 AM Aug.02, 20         Image: RL       RF       SO Ω       CORREC       Trig: Free Run       Avg Type: RMS       TTREC #         PNO: Fast       +       Trig: Free Run       Avg/Hold: 500/500       TYPE #		2	745.1	-23.95	-19	Pass
Weysight Spectrum Analyzer - Element Materials Technology						
PNO: Fast →→ Trig: Free Run Avg Hold: 500/500 TYPE		nalyzer - Element Materials Technology				
PNO: Fast Trig: Free Run Avg Hold: 500/500 Type A	Keysight Spectrum An	50 O DC COPPEC	CENCETINT	ALIGN ALITO		09-25-27 AM Aug 02 2022
IEGain: Low #Atten: 30 dB	Keysight Spectrum An	50 Ω DC CORREC	SENSE:INT	ALIGN AUTO Avg Type:	RMS	08:35:37 AM Aug 02, 2022 TRACE 1 2 3 4 5 6

		PNO: Fast ↔→ IFGain:Low	Trig: Free Run #Atten: 30 dB	Avg Hold: 500/500	TYPE A WWWWW DET A NNNNN
10 dB/div	Ref Offset 41.21 dB Ref 41.21 dBm				Mkr1 745.100 0 MHz -23.954 dBm
31.2					
21.2					
11.2					
1.21					
.8 79					
-0.7.0					
-18.8 1					DE1 -19.00 dBm
-28.8		······	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
-38.6					
-48.8					
Start 745 #Res BW	.100 MHz 100 kHz	#VBV	V 300 kHz*	#Sv	Stop 765.000 MHz /eep 1.067 ms (8001 pts)
MSG				STATUS	

![](_page_59_Picture_1.jpeg)

	Frequency	Measured	Max Value	Limit	Pocult
	1 1	729	-29.12	-19	Pass
- I I	· .	. 20	20112	10	1 400
Keysight Spectrum Analyzer -	Element Materials Technology				
KI RF 51	Ω DC CORREC	SENSE:INT	ALIGN AUTO	DME	09:58:20 AM Aug 02, 2022
	PNO: 1 IFGain	Nide Trig: Free Run :Low #Atten: 30 dB	Avg Hold: {	500/500	TYPE A WWWWW DET A NNNN
Ref Offset	41.21 dB			Mkr1 72	9.000 000 MHz -29.119 dBm
Log		The second secon			
21.0					
31.2					
21.2					
11.2					
1.21					
-8.79					
-18.8					DL1 -19.00 dBm
10.0		1			
-28.8					
-38.8					
-48.8					
Start 728.9000 MHz #Res BM 30 kHz		#VBM 100 kHz*		#Sweep_1	op 729.1000 MHz
MSG		** <b>D</b> W 100 MH2	STATUS	"omeep h	oor me (ooor pts)
100			printee		
Port 2, B	and n12, 729 - 745 Mh	z, 15 MHz Bandwidth, 2560	QAM Modulation, I	Low Channel, 736	.5 MHz
	Frequency	Measured	Max Value	Limit	
<u>г</u>	Range	Freq (MHz)	(dBm)	< (dBm)	Result
	2	/28./6	-23.91	-19	Pass
Keysight Spectrum Analyzer -	Element Materials Technology				
X RL RE 5	DC COBBEC	SENSE:INT	ALIGN AUTO		09:59:10 AM Aug 02, 2022

		PNO: Fast +++ IFGain:Low	Trig: Free Run #Atten: 30 dB	Avg Type: RMS Avg Hold: 500/500	TRACE 1 2 3 4 5 6 TYPE A WWWW DET A N N N N
10 dB/div	Ref Offset 41.21 dB Ref 41.21 dBm				Mkr1 728.764 2 MHz -23.912 dBm
31.2					
21.2					
11.2					
1.21					
-8.79					
-18.8					DL1 -19.00 d
-28.8	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~			
-38.8					
-48.8					
Start 708 #Res BW	.00 MHz 100 kHz	#VBV	V 300 kHz*		Stop 728.90 MHz Sweep 1.067 ms (80 <u>01 pts)</u>
MSG				STATUS	

![](_page_60_Picture_1.jpeg)

	Frequency Range	Measured Freq (MHz)	Max Value (dBm)	Limit < (dBm)	Result
	1	745	-28.06	-19	Pass
Keysight Spectrum A	Analyzer - Element Materials Technology	CENCE-INT	ALIGN AUTO		10:06:14 AM Aug 02, 2022
	PNO: W IFGain:	ide ++- Trig: Free Run Low #Atten: 30 dB	Avg Type: Avg Hold:	RMS 500/500	TRACE 1 2 3 4 5 6 TYPE A WWWW DET A N N N N N
Ref 10 dB/div Ref	Offset 41.21 dB * <b>41.21 dBm</b>			Mkr1 74	5.000 000 MHz -28.059 dBm
- 09					
31.2					
21.2					
11.2					
1.21					
8 79					
-0,7.0					
-18.8					DL1 -19.00 dBm
		<b>\</b>			
-28.8					
-38.8					
-48.8					
Start 744.9000 #Res BW 30 kl	Hz	#VBW 100 kHz*		S #Sweep 1.	top 745.1000 MHz .067 ms (8001 pts)
MSG			STATUS		
Po	rt 2 Band n12 729 - 745 Mbz	15 MHz Bandwidth 2560	AM Modulation	High Channel 73	7 5 MHz
10	Frequency	Measured	Max Value	Limit	
	Range	Freq (MHz)	(dBm)	< (dBm)	Result
1	2	745 27	-23.14	-19	Pass

es BW 100 kHz	#VBV	V 300 kHz*		#Sweep	1.067 ms (8001 p
art 745.100 MHz		*			Stop 765.000 M
8					
8					
8					
8 ≱1					
9					
1					
2					
2					
B/div Ref 41.21 dBm		•			-23.140 di
Ref Offset 41.21 dB				Mkr	1 745.274 1 M
	PNO: Fast ++++ IFGain:Low	Trig: Free Run #Atten: 30 dB	Avg Hold: 50	0/500	DET A NN
			Avg Type: R	MS	TRACE 1 2 3

Report No. NOKI0047