

Mavenir Systems, Inc

TR44KA Base Station

FCC 25:2022 L-band ATC Base Station

Report: MASY0006 Rev. 2, Issue Date: September 26, 2022





CERTIFICATE OF TEST



Last Date of Test: August 12, 2022 Mavenir Systems, Inc EUT: TR44KA Base Station

Radio Equipment Testing

Standards	
Specification	Method
FCC 25:2022	ANSI C63.26:2015, KDB 273109 D01

Results

Test Description	Result	Specification Section(s)	Method Section(s)	Comments
Average Power	Pass	2.1046,	5.2.4.2	Client provided Waiver Document FCC-20-48A1 was considered for the Licensed Band of Operation.
Power Spectral Density	Pass	2.1046, 25.253(d)(1)	5.2.3.5	
Peak and Average (PAPR) CCDF	N/A	2.1046	5.2.3.4	
Frequency Stability	Pass	2.1055 25.202 (d)	5.6	
Modulation Chacteristics	N/A	2.1047(d)	N/A	Not required as the device only uses digital modulation
Occupied Bandwidth	Pass	2.1049	5.4	
Radiated Spurious Emissions	Pass	2.1053, 25.202(f), 25.253(d)(9)	5.5	Client provided Waiver Document FCC-20-48A1 was considered for the Licensed Band of Operation
Spurious Emissions at the Antenna Terminals	Pass	2.1051, 25.202(f)	5.7	
Spurious Emissions at the Antenna Terminals - Emissions Mask	Pass	2.1051, 25.202(f)	5.7	
Spurious Emissions at the Antenna Terminals Band Edge	Pass	2.1053, 25.253(b)	5.7	
Spurious Emissions at the Antenna Terminals in the Restricted Bands	Pass	2.1051, 25.253(d)(9)	5.7	Client provided Waiver Document FCC-20-48A1 was considered for the Licensed Band of Operation

Deviations From Test Standards

None

Product compliance is the responsibility of the client; therefore, the tests and equipment modes of operation represented in this report were agreed upon by the client, prior to testing. The results of this test pertain only to the sample(s) tested. The specific description is noted in each of the individual sections of the test report supporting this certificate of test. This report reflects only those tests from the referenced standards shown in the certificate of test. It does not include inspection or verification of labels, identification, marking or user information. As indicated in the Statement of Work sent with the quotation, Element's standard process is to always use the latest published version of the test methods even when earlier versions are cited in the test specification. Issuance of a purchase order was de facto acceptance of this approach. Otherwise, the client would have advised Element in writing of the specific version of the test methods they wanted applied to the subject testing.

CERTIFICATE OF TEST



Approved By:

Adam Bruno, Operations Manager

Product compliance is the responsibility of the client; therefore, the tests and equipment modes of operation represented in this report were agreed upon by the client, prior to testing. The results of this test pertain only to the sample(s) tested. The specific description is noted in each of the individual sections of the test report supporting this certificate of test. This report reflects only those tests from the referenced standards shown in the certificate of test. It does not include inspection or verification of labels, identification, marking or user information. As indicated in the Statement of Work sent with the quotation, Element's standard process is to always use the latest published version of the test methods even when earlier versions are cited in the test specification. Issuance of a purchase order was de facto acceptance of this approach. Otherwise, the client would have advised Element in writing of the specific version of the test methods they wanted applied to the subject testing.

REVISION HISTORY



Revision Number	Description	Date (yyyy-mm-dd)	Page Number
	Changed from cellular to L-band ATC Base Station	2022-09-18	1
	RRH is now defined in the Product Description and the additional information has been added.	2022-09-18	11
	Testing objective updated	2022-09-18	11
	Removed the waiver from the Specifications column. Changed the 25.243 to 25.253 which is correct.	2022-09-18	2
01	Updated configurations to reflect both an attenuator and Notch filter.	2022-09-18	14-21
	Port 3 comment replaced with worst case mode QPSK 5MHz for the All ports modules. Mimo reworked to point out Mimo tables are in the tabular data for all related calculations.	2022-09-18	All 'all ports' modules
	Updated test description	2022-09-18	77, 171
	All modular headers were changed to reflect .1%	2022-09-18	77-116
	Added substitution equipment to the equipment list.	2022-09-18	423, 426
02	No Retesting was required, just a value change.	2022-09-26	429-492

ACCREDITATIONS AND AUTHORIZATIONS



United States

FCC - Designated by the FCC as a Telecommunications Certification Body (TCB). Certification chambers, Open Area Test Sites, and conducted measurement facilities are listed with the FCC.

A2LA - Each laboratory is accredited by A2LA to ISO / IEC 17025, and as a product certifier to ISO / IEC 17065 which allows Element to certify transmitters to FCC and IC specifications.

Canada

ISED - Recognized by Innovation, Science and Economic Development Canada as a Certification Body (CB) and as a CAB for the acceptance of test data.

European Union

European Commission – Recognized as an EU Notified Body validated for the EMCD and RED Directives.

United Kingdom

BEIS - Recognized by the UK as an Approved Body under the UK Radio Equipment and UK EMC Regulations.

Australia/New Zealand

ACMA - Recognized by ACMA as a CAB for the acceptance of test data.

Korea

MSIT / RRA - Recognized by KCC's RRA as a CAB for the acceptance of test data.

Japan

VCCI - Associate Member of the VCCI. Conducted and radiated measurement facilities are registered.

Taiwan

BSMI – Recognized by BSMI as a CAB for the acceptance of test data.

NCC - Recognized by NCC as a CAB for the acceptance of test data.

Singapore

IDA – Recognized by IDA as a CAB for the acceptance of test data.

Israel

MOC – Recognized by MOC as a CAB for the acceptance of test data.

Hong Kong

OFCA – Recognized by OFCA as a CAB for the acceptance of test data.

Vietnam

MIC – Recognized by MIC as a CAB for the acceptance of test data.

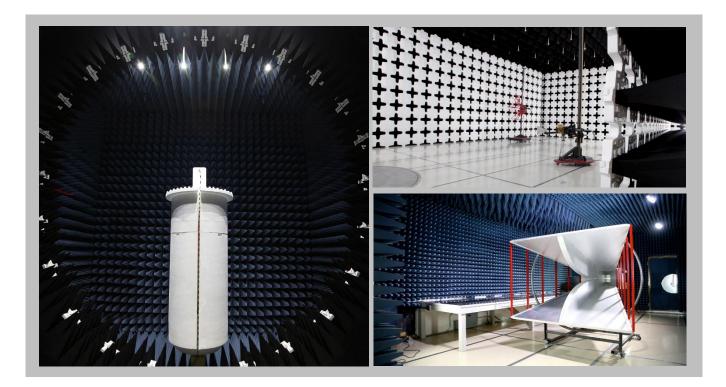
		SCOPE				
For details on the Scopes of our Accreditations, please visit:						
<u>California</u>	<u>Minnesota</u>	<u>Oregon</u>	<u>Texas</u>	Washington		

FACILITIES





California Labs OC01-17 41 Tesla Irvine, CA 92618 (949) 861-8918	Minnesota Labs MN01-11 9349 W Broadway Ave. Brooklyn Park, MN 55445 (612)-638-5136	Oregon Labs EV01-12 6775 NE Evergreen Pkwy #400 Hillsboro, OR 97124 (503) 844-4066	Texas Labs TX01-09 3801 E Plano Pkwy Plano, TX 75074 (469) 304-5255	Washington Labs NC01-05 19201 120 th Ave NE Bothell, WA 98011 (425)984-6600			
		A2LA					
Lab Code: 3310.04	Lab Code: 3310.05	Lab Code: 3310.02	Lab Code: 3310.03	Lab Code: 3310.06			
Innovation, Science and Economic Development Canada							
2834B-1, 2834B-3	2834E-1, 2834E-3	2834D-1	2834G-1	2834F-1			
		BSMI					
SL2-IN-E-1154R	SL2-IN-E-1152R	SL2-IN-E-1017	SL2-IN-E-1158R	SL2-IN-E-1153R			
		VCCI					
A-0029	A-0109	A-0108	A-0201	A-0110			
Recognized Phase I CAB for ISED, ACMA, BSMI, IDA, KCC/RRA, MIC, MOC, NCC, OFCA							
US0158	US0175	US0017	US0191	US0157			



MEASUREMENT UNCERTAINTY



Measurement Uncertainty

When a measurement is made, the result will be different from the true or theoretically correct value. The difference is the result of tolerances in the measurement system that cannot be completely eliminated. To the extent that technology allows us, it has been our aim to minimize this error. Measurement uncertainty is a statistical expression of measurement error qualified by a probability distribution.

A measurement uncertainty estimation has been performed for each test per our internal quality document QM205.4.6. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty (K=2) can be found in the table below. A lab specific value may also be found in the applicable test description section. Our measurement data meets or exceeds the measurement uncertainty requirements of the applicable specification; therefore, the test data can be compared directly to the specification limit to determine compliance. The calculations for estimating measurement uncertainty are based upon ETSI TR 100 028 (or CISPR 16-4-2 as applicable), and are available upon request.

The following table represents the Measurement Uncertainty (MU) budgets for each of the tests that may be contained in this report.

Test	+ MU	- MU
Frequency Accuracy	0.0007%	-0.0007%
Amplitude Accuracy (dB)	1.2 dB	-1.2 dB
Conducted Power (dB)	1.2 dB	-1.2 dB
Radiated Power via Substitution (dB)	0.7 dB	-0.7 dB
Temperature (degrees C)	0.7°C	-0.7°C
Humidity (% RH)	2.5% RH	-2.5% RH
Voltage (AC)	1.0%	-1.0%
Voltage (DC)	0.7%	-0.7%
Field Strength (dB)	5.1 dB	-5.1 dB
AC Powerline Conducted Emissions (dB)	3.1 dB	-3.1 dB

TEST SETUP BLOCK DIAGRAMS

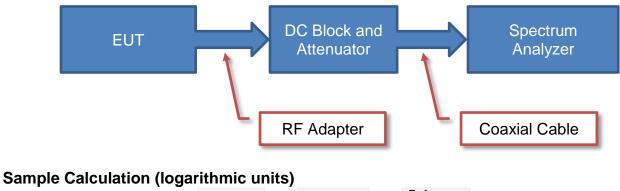


Measurement Bandwidths

Frequency Range (MHz)	Peak Data (kHz)	Quasi-Peak Data (kHz)	Average Data (kHz)		
0.01 - 0.15	1.0	0.2	0.2		
0.15 - 30.0	10.0	9.0	9.0		
30.0 - 1000	100.0	120.0	120.0		
Above 1000	1000.0	N/A	1000.0		

Unless otherwise stated, measurements were made using the bandwidths and detectors specified. No video filter was used.

Antenna Port Conducted Measurements

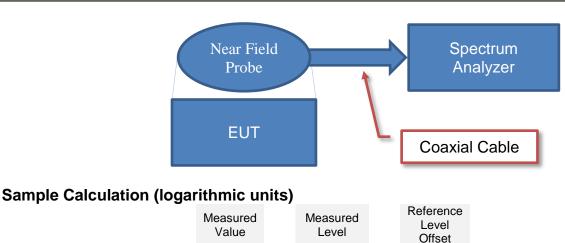


-	Measured Value	-	Measured Level		Reference Level Offset
	71.2	=	42.6	+	28.6

Near Field Test Fixture Measurements

71.2

=



42.6

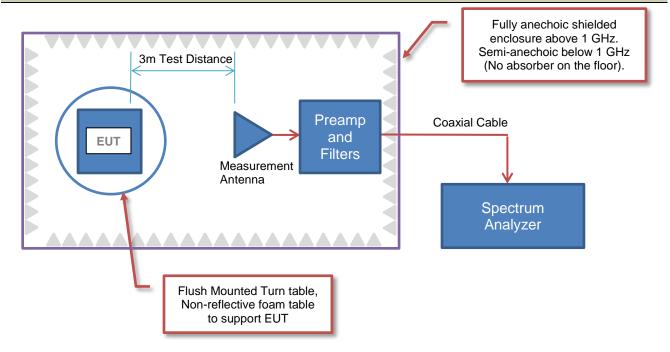
+

28.6

TEST SETUP BLOCK DIAGRAMS



Emissions Measurements

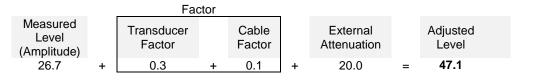


Sample Calculation (logarithmic units)

Radiated Emissions:

			Factor								
Measured Level (Amplitude)	ntenna Factor		Cable Factor		Amplifier Gain		Distance Adjustment Factor		External Attenuation		Field Strength
42.6 +	28.6	+	3.1	-	40.8	+	0.0	+	0.0	=	33.5

Conducted Emissions:



Radiated Power (ERP/EIRP) – Substitution Method:

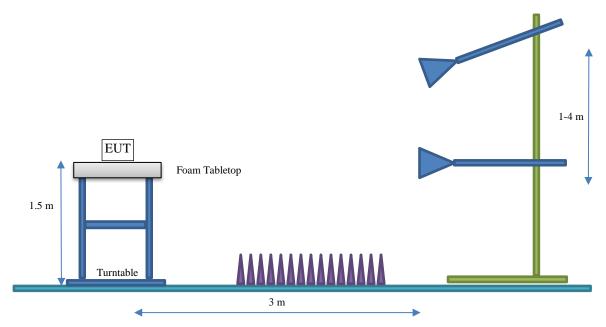
Measured Level into Substitution Antenna (Amplitude dBm)		Substitution Antenna Factor (dBi)		EIRP to ERP (if applicable)		Measured power (dBm ERP/EIRP)
10.0	+	6.0	-	2.15	=	13.9/16.0

TEST SETUP BLOCK DIAGRAMS



Bore Sighting (>1GHz)

The diameter of the illumination area is the dimension of the line tangent to the EUT formed by 3 dB beamwidth of the measurement antenna at the measurement distance. At a 3 meter test distance, the diameter of the illumination area was 3.8 meters at 1 GHz and greater than 2.1 meters up to 6 GHz. Above 1 GHz, when required by the measurement standard, the antenna is pointed for both azimuth and elevation to maintain the receive antenna within the cone of radiation from the EUT. The specified measurement detectors were used for comparison of the emissions to the peak and average specification limits.



PRODUCT DESCRIPTION



Client and Equipment under Test (EUT) Information

Company Name:	Mavenir Systems, Inc
Address:	1700 International Parkway Suite 200
City, State, Zip:	Richardson, TX 75081
Test Requested By:	Jean-Pierre Botha
EUT:	TR44KA Base Station
First Date of Test:	July 29, 2022
Last Date of Test:	August 12, 2022
Receipt Date of Samples:	June 16, 2022
Equipment Design Stage:	Production
Equipment Condition:	No Damage
Purchase Authorization:	Verified

Information Provided by the Party Requesting the Test

Functional Description of the EUT:

Mavenir TR44KA Remote Radio Head (RRH) or Base Station is a 4T4R 4x4 MIMO 5G NR digital transport platform supporting cellular and wideband public safety technologies on fibre optic cable using the CPRI protocol. The power amplifier technology adopts Digital Pre-Distortion, allowing for a significant improvement in power consumption compared with analogue technology. This platform is ideal for multi-operator multi-band deployments of cellular services into underground tunnels & outdoor coverage areas. Additional Information includes FCC ID: 2WAS910-00130, Equipment Class: Licensed non-broadcast transmitter.

Testing Objective:

To demonstrate compliance of the ATC Base Station operating in the forward-band mode on the L-band to FCC part 25 requirements under FCC waiver: FCC-20-48A1.

POWER SETTINGS AND ANTENNAS



The power settings, antenna gain value(s) and cable loss (if applicable) used for the testing contained in this report were provided by the customer and will affect the validity of the results. Element assumes no responsibility for the accuracy of this information. The power settings below reflect the maximum power that the EUT is allowed to transmit at during normal operation.

ANTENNA GAIN (dBi)

Туре	Provided by:	Frequency Range (MHz)	Gain (dBi)
L-Band 4T4R	ACE Technologies	1526-1680	3

The EUT was tested using the power settings provided by the manufacturer which were based upon:

 \Box Test software settings

Test software/firmware installed on EUT: Please See Configurations

 \boxtimes Rated gain settings

SETTINGS FOR ALL TESTS IN THIS REPORT

			UL Frequency	DL Frequency	
Bandwidths	Modulation Types	Channels	Range (MHz)	Range (MHz)	Gain Setting
5	QPSK, 16-QAM, 64-QAM, 256-QAM	Low, High	1627.5-1637.5, 1646.5-1656.5	1526-1536	42
10	QPSK, 16-QAM, 64-QAM, 256-QAM	Mid	1627.5-1637.5, 1646.5-1656.5	1526-1536	42

POWER SETTINGS AND ANTENNAS



The power settings, antenna gain value(s) and cable loss (if applicable) used for the testing contained in this report were provided by the customer and will affect the validity of the results. Element assumes no responsibility for the accuracy of this information. The power settings below reflect the maximum power that the EUT is allowed to transmit at during normal operation.

ANTENNA GAIN (dBi)

Туре	Provided by:	Frequency Range (MHz)	Gain (dBi)
L-Band 4T4R	ACE Technologies	1526-1680	16

The EUT was tested using the power settings provided by the manufacturer which were based upon:

 \Box Test software settings

Test software/firmware installed on EUT: Please See Configurations

 \boxtimes Rated gain settings

SETTINGS FOR ALL TESTS IN THIS REPORT

			UL Frequency	DL Frequency	
Bandwidths	Modulation Types	Channels	Range (MHz)	Range (MHz)	Gain Setting
5	QPSK, 16-QAM, 64-QAM, 256-QAM	Low, High	1627.5-1637.5, 1646.5-1656.5	1526-1536	29
10	QPSK, 16-QAM, 64-QAM, 256-QAM	Mid	1627.5-1637.5, 1646.5-1656.5	1526-1536	29



Configuration MASY0006-1

Software/Firmware Running During Test				
Description	Version			
U504A Open RAN studio	1.3.10702.0			
webomt web interface	1.0.0.0			
Tera Term	4.104			
Windows 10 Pro	21H2			

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
TR44KA Base Station	Mavenir Systems, Inc	910-00130-01	SV2146TR44KA000001

Peripherals in Test Setup Boundary				
Description	Manufacturer	Model/Part Number	Serial Number	
4.3 to N-Type Adapter x3	CentricRF	C8510	None	
N-Type Termination, 5 Watt to 18 GHz x3	Fairview Microwave	ST18N531	None	
DC Power Supply	BK PRECISION	1902B	476G20102	
Distributed Unit (DU)	BITTWARE	TRBX-1000	SQEGNYW00008	
GPS 10MHz Source	QULSAR	100-825-02	48207	
Keyboard	Logitech	820-008207	1914MR22FCF8	
Monitor	Dell	P2212Hb	CN-0NDMRP-74261-29F- 1F4U	
Mouse	Dell	M-UVDEL4	NCM43708	
10dB Attenuator	None	None	None	
30dB Attenuator	CentricRF	64671	None	
8 Channel Clock Distribution Accessory	NATIONAL INSTRUMENTS	CDA-2990	3208F4A	
AC/DC Adapter (Distribution Accessory)	CUI INC	AT5024T-W061V	NEBA-P10-C1	
AC/DC Adapter (GPS Clock Source)	SL POWER and AULT	ME20A4803F01	None	
Portable Camera	Logitech	None	None	
Wi-Fi USB Antenna	tp-link	AC1300	221A239000366	
USB to Ethernet Adapter	tp-link	UE300	22143C9003563	
USB to USB Slitter	SIIG	BUB1731X	JU-H40F12-S1	



Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
DC Power Cable (Base Station)	Yes	2.4m	No	Base Station	DC Power Supply
GPS Antenna Cable	Yes	30.0m	No	GPS Antenna	GPS Clock Source
Portable Camera USB Cable	Yes	2.0m	No	DU	Portable Camera
AC Power Cable (DC Power Supply)	No	2.5m	No	DC Power Supply	AC Mains
Keyboard USB Cable	Yes	2.0m	No	DU	Keyboard
VGA Cable (Monitor)	Yes	2.3m	Yes	Monitor	DU
Mouse USB Cable	Yes	2.0m	No	DU	Mouse
AC Power Cable (Adapter Distribution Accessory)	No	1.5m	No	Adapter	AC Mains
DC Power Cable (Adapter Distribution Accessory)	No	3.0m	No	Adapter	Distribution Accessory
AC Power Cable (Adapter GPS Clock Source)	No	2.0m	No	Adapter	AC Mains
DC Power Cable (Adapter GPS Clock Source)	No	2.5m	No	Adapter	GPS Clock Source
AC Power Cable (Distribution Unit)	No	2.1m	No	DU	AC Mains
AC Power Cable (Monitor)	No	2.1m	No	Monitor	AC Mains
USB to Ethernet Cable length	Yes	0.1m	No	DU	Ethernet Cable
Fiber Optic Cable	No	3.0m	No	DU	Base Station
Ethernet Cable	Yes	2.2m	No	USB to Ethernet Adapter	Base Station
Client Cable	Yes	0.5m	No	30dB attenuator	Base station



Configuration MASY0006-2

Software/Firmware Running During Test				
Description	Version			
U504A Open RAN studio	1.3.10702.0			
webomt web interface	1.0.0.0			
Tera Term	4.104			
Windows 10 Pro	21H2			

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
TR44KA Base Station	Mavenir Systems, Inc	910-00130-01	SV2146TR44KA000001

Peripherals in Test Setup Bo	Peripherals in Test Setup Boundary					
Description	Manufacturer	Model/Part Number	Serial Number			
4.3 to N-Type Adapter x3	CentricRF	C8510	None			
N-Type Termination, 5 Watt to 18 GHz x3	Fairview Microwave	ST18N531	None			
DC Power Supply	BK PRECISION	1902B	476G20102			
Distributed Unit (DU)	BITTWARE	TRBX-1000	SQEGNYW00008			
GPS 10MHz Source	QULSAR	100-825-02	48207			
Keyboard	Logitech	820-008207	1914MR22FCF8			
Monitor	Dell	P2212Hb	CN-0NDMRP-74261-29F- 1F4U			
Mouse	Dell	M-UVDEL4	NCM43708			
Notch Filter 1 - 2GHz	SUNWAVE	SW-BRF-1526-10- S01	SW142211106021			
N-Type Termination, 10 Watt	CentricRF	C6N10	None			
3 Port Slitter	None	None	None			
8 Channel Clock Distribution Accessory	NATIONAL INSTRUMENTS	CDA-2990	3208F4A			
AC/DC Adapter (Distribution Accessory)	CUI INC	AT5024T-W061V	NEBA-P10-C1			
AC/DC Adapter (GPS Clock Source)	SL POWER and AULT	ME20A4803F01	None			
Portable Camera	Logitech	None	None			
Wi-Fi USB Antenna	tp-link	AC1300	221A239000366			
USB to Ethernet Adapter	tp-link	UE300	22143C9003563			
USB to USB Slitter	SIIG	BUB1731X	JU-H40F12-S1			



Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
DC Power Cable (Base Station)	Yes	2.4m	No	Base Station	DC Power Supply
GPS Antenna Cable	Yes	30.0m	No	GPS Antenna	GPS Clock Source
Portable Camera USB Cable	Yes	2.0m	No	DU	Portable Camera
AC Power Cable (DC Power Supply)	No	2.5m	No	DC Power Supply	AC Mains
Keyboard USB Cable	Yes	2.0m	No	DU	Keyboard
VGA Cable (Monitor)	Yes	2.3m	Yes	Monitor	DU
Mouse USB Cable	Yes	2.0m	No	DU	Mouse
AC Power Cable (Adapter Distribution Accessory)	No	1.5m	No	Adapter	AC Mains
DC Power Cable (Adapter Distribution Accessory)	No	3.0m	No	Adapter	Distribution Accessory
AC Power Cable (Adapter GPS Clock Source)	No	2.0m	No	Adapter	AC Mains
DC Power Cable (Adapter GPS Clock Source)	No	2.5m	No	Adapter	GPS Clock Source
AC Power Cable (Distribution Unit)	No	2.1m	No	DU	AC Mains
AC Power Cable (Monitor)	No	2.1m	No	Monitor	AC Mains
USB to Ethernet Cable length	Yes	0.1m	No	DU	Ethernet Cable
Fiber Optic Cable	No	3.0m	No	DU	Base Station
Ethernet Cable	Yes	2.2m	No	USB to Ethernet Adapter	Base Station
Client Cable	Yes	0.5m	No	30dB attenuator	Base station



Configuration MASY0006-3

Software/Firmware Running During Test			
Description	Version		
U504A Open RAN studio	1.3.10702.0		
webomt web interface	1.0.0.0		
Tera Term	4.104		
Windows 10 Pro	21H2		

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
TR44KA Base Station	Mavenir Systems, Inc	910-00130-01	SV2146TR44KA000001

Peripherals in Test Setup Bo	oundary		
Description	Manufacturer	Model/Part Number	Serial Number
4.3 to N-Type Adapter x3	CentricRF	C8510	None
N-Type Termination, 5 Watt to 18 GHz x3	Fairview Microwave	ST18N531	None
DC Power Supply	BK PRECISION	1902B	476G20102
Distributed Unit (DU)	BITTWARE	TRBX-1000	SQEGNYW00008
GPS 10MHz Source	QULSAR	100-825-02	48207
Keyboard	Logitech	820-008207	1914MR22FCF8
Monitor	Dell	P2212Hb	CN-0NDMRP-74261-29F- 1F4U
Mouse	Dell	M-UVDEL4	NCM43708
10dB Attenuator	None	None	None
30dB Attenuator	CentricRF	64671	None
8 Channel Clock Distribution Accessory	NATIONAL INSTRUMENTS	CDA-2990	3208F4A
AC/DC Adapter (Distribution Accessory)	CUI INC	AT5024T-W061V	NEBA-P10-C1
AC/DC Adapter (GPS Clock Source)	SL POWER and AULT	ME20A4803F01	None
Portable Camera	Logitech	None	None
Wi-Fi USB Antenna	tp-link	AC1300	221A239000366
USB to Ethernet Adapter	tp-link	UE300	22143C9003563
USB to USB Slitter	SIIG	BUB1731X	JU-H40F12-S1



Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
DC Power Cable (Base Station)	Yes	2.4m	No	Base Station	DC Power Supply
GPS Antenna Cable	Yes	30.0m	No	GPS Antenna	GPS Clock Source
DC Multi Meter Leads	No	0.5m	No	DC Multi Meter	DC Power Supply
Portable Camera USB Cable	Yes	2.0m	No	DU	Portable Camera
AC Power Cable (DC Power Supply)	No	2.5m	No	DC Power Supply	AC Mains
Keyboard USB Cable	Yes	2.0m	No	DU	Keyboard
VGA Cable (Monitor)	Yes	2.3m	Yes	Monitor	DU
Mouse USB Cable	Yes	2.0m	No	DU	Mouse
AC Power Cable (Adapter Distribution Accessory)	No	1.5m	No	Adapter	AC Mains
DC Power Cable (Adapter Distribution Accessory)	No	3.0m	No	Adapter	Distribution Accessory
AC Power Cable (Adapter GPS Clock Source)	No	2.0m	No	Adapter	AC Mains
DC Power Cable (Adapter GPS Clock Source)	No	2.5m	No	Adapter	GPS Clock Source
AC Power Cable (Distribution Unit)	No	2.1m	No	DU	AC Mains
AC Power Cable (Monitor)	No	2.1m	No	Monitor	AC Mains
USB to Ethernet Cable length	Yes	0.1m	No	DU	Ethernet Cable
Fiber Optic Cable	No	3.0m	No	DU	Base Station
Ethernet Cable	Yes	2.2m	No	USB to Ethernet Adapter	Base Station
Client Cable	Yes	0.5m	No	30dB attenuator	Base station



Configuration MASY0006- 4

Software/Firmware Running During Test		
Description	Version	
U504A Open RAN studio	1.3.10702.0	
webomt web interface	1.0.0.0	
Tera Term	4.104	
Windows 10 Pro	21H2	

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
TR44KA Base Station	Mavenir Systems, Inc	910-00130-01	SV2146TR44KA000001

Peripherals in Test Setup Boundary			
Description	Manufacturer	Model/Part Number	Serial Number
4.3 to N-Type Adapter x3	CentricRF	C8510	None
N-Type Termination, 5 Watt to 18 GHz x3	Fairview Microwave	ST18N531	None
N-Type Termination, 5 Watt to 18 GHz x4	Fairview Microwave	ST18N531	None
DC Power Supply	BK PRECISION	1902B	476G20102

Remote Equipment Outside	of Test Setup Boundary		
Description	Manufacturer	Model/Part Number	Serial Number
Distributed Unit (DU)	BITTWARE	TRBX-1000	SQEGNYW00008
GPS 10MHz Source	QULSAR	100-825-02	48207
Keyboard	Logitech	820-008207	1914MR22FCF8
Monitor	Dell	P2212Hb	CN-0NDMRP-74261-29F- 1F4U
Mouse	Dell	M-UVDEL4	NCM43708
8 Channel Clock Distribution	NATIONAL	CDA-2990	3208F4A
Accessory	INSTRUMENTS	00/(2000	02001 4/1
AC/DC Adapter (Distribution	CULINC	AT5024T-W061V	NEBA-P10-C1
Accessory)		///002/////0011	
AC/DC Adapter (GPS Clock	SL POWER and AULT	ME20A4803F01	None
Source)	SET OWER and AGET		
Portable Camera	Logitech	None	None
Wi-Fi USB Antenna	tp-link	AC1300	221A239000366
USB to Ethernet Adapter	tp-link	UE300	22143C9003563
USB to USB Slitter	SIIG	BUB1731X	JU-H40F12-S1



Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
DC Power Cable (Base Station)	Yes	2.4m	No	Base Station	DC Power Supply
AC Power Cable (DC Power Supply)	No	2.5m	No	DC Power Supply	AC Mains
Fiber Optic Cable	No	10.0m	No	DU	Base Station
Ethernet Cable	Yes	10.0m	No	USB to Ethernet Adapter	Base Station
Client Cable	Yes	0.5m	No	30dB attenuator	Base station
Fiber Optic Cable	No	3.0m	No	Unterminated	Base station

MODIFICATIONS



Equipment Modifications

Item	Date	Test	Modification	Note	Disposition of EUT
1	2022-07-29	Spurious Emissions at the Antenna Terminals	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
2	2022-07-29	Restricted Bands	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
3	2022-08-09	Spurious Emissions at the Antenna Terminals – Band Edge	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
4	2022-08-09	Spurious Emissions at the Antenna Terminals – Emission Mask	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
5	2022-08-10	Peak and Average (PAPR) CCDF	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
6	2022-08-11	Power Spectral Density	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
7	2022-08-11	Occupied Bandwidth	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
8	2022-08-11	Average Power	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
9	2022-08-12	Radiated Spurious Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	Scheduled testing was completed.



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	SD3235-2148	ANF	2022-05-27	2023-05-27
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFN	2022-01-19	2023-01-19
Cable	UtiFlex Micro-Coax	UFD1150A-1-0720-200200	TXK	2021-09-13	2022-09-13
Generator - Signal	Agilent	N5173B	TIW	2020-07-17	2023-07-17

TEST DESCRIPTION

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

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

The Remote Radio Head (RRH) may operate as a 4 port MIMO transmitter with transmitter outputs connected to two crosspolarized antennas [two transmitter outputs are connected to (+) radiators and two transmitter outputs are connected to (-) radiators]. The measurement is adjusted to +3dB [10 log (2)] per FCC KDB 662911D01 v02r01, ANSI C63.26-2015 section 6.4.6.3 b)2) and KDB 662911 D02v01 page 3 example (2) since the transmitter outputs to each antenna are 90 degree-phase shifted relative to each other (cross-polarized radiators).

RF conducted emissions testing was performed only on one port. The Remote Radio Head (RRH) antenna ports are essentially electrically identical (the RF power variation between antenna ports is small as shown during 4 port output power testing) and antenna port 3 was selected to perform the testing under this effort as allowed by ANSI C63.26-2015 paragraphs 5.2.5.3, 5.7.2i and 6.4.

The total average transmit power of all antenna ports was determined per ANSI C63.26-2015 paragraph 6.4.3.1.

The EIRP limit is defined by the FCC-20-48A1 waiver document as 9.8dBW converted to 39.8dBm.



								TbtTx 2022.06.03.0	XMit 2022.02.0
	TR44KA Base Station						Work Order:	MASY0006 10-Aug-22	
Serial Number: Customer:							Date: Temperature:		
Attendees:							Humidity:		
Project:							Barometric Pres.:		
Tested by:	Brandon Hobbs		Power: 4				Job Site:		
TEST SPECIFICAT	IONS			est Method					
FCC 25:2022			A	NSI C63.26:2015					
COMMENTS			E						
	n losses were accounted f	for: cables, attenuators, adapters	, DC block and notch filter	r. The PA gain wa	is adjusted for a 3	dBi antenna (Final sof	ware value of 42). The	output power was	s measured for a
		rst case port 3. The total output p							
		erations, the total output power f					ower for four port oper	ation is single por	t power + 3dB
	l available Resource Bloc M TEST STANDARD	k / Offset configurations were us	ed for each bandwidth. Th	e operating duty	cycle was set at 1	00%.			
None	ILST STANDARD								
			_	1.					
Configuration #	1		1 fait	1-1					
		Signature	Initial Value	A	Duty Cycle	2 Devt (2v2 MIMO)		Linuit	
			Initial Value dBm/Carrier BW	Antenna Gain (dBi)	Duty Cycle Factor (dB)	2 Port (2x2 MIMO) dBm/Carrier BW	4 Port (4x4 MIMO) dBm/Carrier BW	Limit (dBm)	Results
5G NR, Band n24, S	SCS 15kHz			Gain (GDI)	ractor (ub)	abilitoarrici bit		(ubiii)	Results
	5 MHz Bandwidth								
	QPSK Modu								
		Low Channel 1528.5 MHz	00.000	0	0.0	00.0	00.0	00.0	Dees
		25 RB/0 Offset High Channel 1533.5 MHz	29.966	3	0.0	33.0	36.0	39.8	Pass
		25 RB/0 Offset	29.976	3	0.0	33.0	36.0	39.8	Pass
	16-QAM Mo	dulation		-					
		Low Channel 1528.5 MHz							
		25 RB/0 Offset	29.919	3	0.0	32.9	35.9	39.8	Pass
		High Channel 1533.5 MHz 25 RB/0 Offset	30.025	3	0.0	33.0	36.0	39.8	Pass
	64-QAM Mo		00.020	0	0.0	00.0	50.0	00.0	1 435
		Low Channel 1528.5 MHz							
		25 RB/0 Offset	29.858	3	0.0	32.9	35.9	39.8	Pass
		High Channel 1533.5 MHz	20.044	2	0.0	22.0	25.0	20.0	Deee
	256-QAM M	25 RB/0 Offset	29.941	3	0.0	32.9	35.9	39.8	Pass
	200-QAWIW	Low Channel 1528.5 MHz							
		25 RB/0 Offset	29.867	3	0.0	32.9	35.9	39.8	Pass
		High Channel 1533.5 MHz							
	10 MHz Bandwidth	25 RB/0 Offset	30.001	3	0.0	33.0	36.0	39.8	Pass
	QPSK Modu	lation							
	di bitiliodo	Mid Channel 1531 MHz							
		25 RB/0 Offset	24.566	3	0.0	27.6	30.6	39.8	Pass
		25 RB/13 Offset	26.802	3	0.0	29.8	32.8	39.8	Pass
		25 RB/27 Offset 40 RB/0 Offset	24.679 26.670	3 3	0.0 0.0	27.7 29.7	30.7 32.7	39.8 39.8	Pass Pass
		40 RB/6 Offset	26.441	3	0.0	29.4	32.4	39.8	Pass
		40 RB/12 Offset	26.602	3	0.0	29.6	32.6	39.8	Pass
		52 RB/0 Offset	28.221	3	0.0	31.2	34.2	39.8	Pass
	16-QAM Mo								
		Mid Channel 1531 MHz 25 RB/0 Offset	26.564	3	0.0	29.6	32.6	39.8	Pass
		25 RB/0 Offset	26.803	3	0.0	29.8	32.8	39.8	Pass Pass
		25 RB/27 Offset	26.694	3	0.0	29.7	32.7	39.8	Pass
		40 RB/0 Offset	26.620	3	0.0	29.6	32.6	39.8	Pass
		40 RB/6 Offset	26.383	3	0.0	29.4	32.4	39.8	Pass
		40 RB/12 Offset 52 RB/0 Offset	26.610 30.065	3 3	0.0 0.0	29.6 33.1	32.6 36.1	39.8 39.8	Pass Pass
	64-QAM Mo		30.000	<u> </u>	0.0	00.1	00.1	55.0	1 000
		Mid Channel 1531 MHz							
		25 RB/0 Offset	24.543	3	0.0	27.5	30.5	39.8	Pass
		25 RB/13 Offset	26.758	3	0.0	29.8	32.8	39.8	Pass
		25 RB/27 Offset 40 RB/0 Offset	24.688 26.629	3 3	0.0 0.0	27.7 29.6	30.7 32.6	39.8 39.8	Pass Pass
		40 RB/6 Offset	26.332	3	0.0	29.3	32.3	39.8	Pass
		40 RB/12 Offset	26.561	3	0.0	29.6	32.6	39.8	Pass
		52 RB/0 Offset	30.007	3	0.0	33.0	36.0	39.8	Pass
	256-QAM M	lodulation Mid Channel 1531 MHz							
		25 RB/0 Offset	26.532	3	0.0	29.5	32.5	39.8	Pass
		25 RB/13 Offset	24.777	3	0.0	29.5	30.8	39.8	Pass
		25 RB/27 Offset	24.710	3	0.0	27.7	30.7	39.8	Pass
		40 RB/0 Offset	26.640	3	0.0	29.6	32.6	39.8	Pass
		40 RB/6 Offset	26.366	3	0.0	29.4	32.4	39.8	Pass
		40 RB/12 Offset 52 RB/0 Offset	26.597 29.986	3 3	0.0 0.0	29.6 33.0	32.6 36.0	39.8 39.8	Pass Pass
		JZ KD/U UIISEL	29.900	3	0.0	33.0	50.0	53.0	F d 3 3



Initial Value dBm/Carrier BW	Antenna	Duty Cycle	2 Port (2x2 MIMO)	on, Low Channel 1528.5 4 Port (4x4 MIMO)	Limit	÷L
	Gain (dBi)	Factor (dB)	dBm/Carrier BW	dBm/Carrier BW	(dBm)	Results
29.966	3	0	32.966	35.966	39.8	Pass
Keysight Spectrum Analyzer - Element	ent Materials Technology	- Points: 601, Detector: Av	erage (RMS)			
<mark>LX/</mark> RL RF 50 Ω	DC	SENSE:IN	ter Freq: 1.528500000 GHz	Rad	01:25:45 PM Jun 17, 2022 lio Std: None	
	#IFG		:FreeRun Avg en:30 dB	Hold: 100/100 Rac	io Device: BTS	
Ref Offset 4	0.9 dB					
10 dB/div Ref 34.00	dBm					
24.0						
4.00						
-6.00						
-16.0		<mark>/</mark>				
-26.0						
-36.0						
-56.0						
Center 1.52850 GHz					Span 20.00 MHz	
#Res BW 100 kHz			#VBW 300 kHz		#Sweep 601 ms	
Channel Power			ower Spectral De	noitu		
MSG	Dond a24, 000 4		duidth ODCK Meduleti			
	Band n24, SCS 1 Antenna	5kHz, 5 MHz Ban Duty Cycle	dwidth, QPSK Modulatio 2 Port (2x2 MIMO)		5 MHz, 25 RB/0 Offse Limit	et
5G NR, E Initial Value dBm/Carrier BW	Antenna Gain (dBi)	Duty Cycle Factor (dB)	dwidth, QPSK Modulatio 2 Port (2x2 MIMO) dBm/Carrier BW	on, High Channel 1533. 4 Port (4x4 MIMO) dBm/Carrier BW	Limit (dBm)	Results
5G NR, E Initial Value	Antenna	Duty Cycle	dwidth, QPSK Modulatio 2 Port (2x2 MIMO)	on, High Channel 1533.5 4 Port (4x4 MIMO)	Limit	
5G NR, E Initial Value dBm/Carrier BW 29.976	Antenna Gain (dBi) 3	Duty Cycle Factor (dB) 0 - Points: 601, Detector: Av	dwidth, QPSK Modulatio 2 Port (2x2 MIMO) dBm/Carrier BW 32.976	on, High Channel 1533. 4 Port (4x4 MIMO) dBm/Carrier BW 35.976	Limit (dBm) 39.8	Results
5G NR, I Initial Value dBm/Carrier BW 29.976	Antenna Gain (dBi) 3	Duty Cycle Factor (dB) 0 - Points: 601, Detector: Av SENSE:IN Cen	dwidth, QPSK Modulatio 2 Port (2x2 MIMO) dBm/Carrier BW 32.976	n, High Channel 1533. 4 Port (4x4 MIMO) dBm/Carrier BW 35.976 F	Limit (dBm) 39.8	Results
5G NR, E Initial Value dBm/Carrier BW 29.976	Antenna Gain (dBi) 3	Duty Cycle Factor (dB) 0 - Points: 601, Detector: Av SENSE:IN Cen Trig	dwidth, QPSK Modulatio 2 Port (2x2 MIMO) dBm/Carrier BW 32.976	on, High Channel 1533.5 4 Port (4x4 MIMO) dBm/Carrier BW 35.976 F Rate Hold: 100/100	Limit (dBm) 39.8	Results
5G NR, E Initial Value dBm/Carrier BW 29.976 29.976 W RL RF 50 Ω RL RF 50 Ω Ref Offset 4	Antenna Gain (dBi) 3 ent Materials Technology DC #FG 0.9 dB	Duty Cycle Factor (dB) 0 - Points: 601, Detector: Av SENSE:IN Cen Trig	dwidth, QPSK Modulatio 2 Port (2x2 MIMO) dBm/Carrier BW 32.976 erage (RMS) Ther Freq: 1.83350000 GHz Free Run Avg	on, High Channel 1533.5 4 Port (4x4 MIMO) dBm/Carrier BW 35.976 F Rate Hold: 100/100	Limit (dBm) 39.8 01:58:12 PM Jun 17, 2022 io Std: None	Results
5G NR, E Initial Value dBm/Carrier BW 29.976 29.976 Δ Resight Spectrum Analyzer - Elem W RL RF 50 Ω Ref Offset 4 10 dB/div Ref 34.00	Antenna Gain (dBi) 3 ent Materials Technology DC #FG 0.9 dB	Duty Cycle Factor (dB) 0 - Points: 601, Detector: Av SENSE:IN Cen Trig	dwidth, QPSK Modulatio 2 Port (2x2 MIMO) dBm/Carrier BW 32.976 erage (RMS) Ther Freq: 1.83350000 GHz Free Run Avg	on, High Channel 1533.5 4 Port (4x4 MIMO) dBm/Carrier BW 35.976 F Rate Hold: 100/100	Limit (dBm) 39.8 01:58:12 PM Jun 17, 2022 io Std: None	Results
5G NR, E Initial Value dBm/Carrier BW 29.976 Keysight Spectrum Analyzer - Elem W RL RF 50Ω Ref Offset 4 10 dB/div Ref 34.00	Antenna Gain (dBi) 3 ent Materials Technology DC #FG 0.9 dB	Duty Cycle Factor (dB) 0 - Points: 601, Detector: Av SENSE:IN Cen Trig	dwidth, QPSK Modulatio 2 Port (2x2 MIMO) dBm/Carrier BW 32.976 erage (RMS) Ther Freq: 1.83350000 GHz Free Run Avg	on, High Channel 1533.5 4 Port (4x4 MIMO) dBm/Carrier BW 35.976 F Rate Hold: 100/100	Limit (dBm) 39.8 01:58:12 PM Jun 17, 2022 io Std: None	Results
5G NR, E Initial Value dBm/Carrier BW 29.976 29.976 Keysight Spectrum Analyzer - Elem M RL RF 50 Ω RL RF 50 Ω Ref Offset 4 10 dB/div Ref 34.00	Antenna Gain (dBi) 3 ent Materials Technology DC #FG 0.9 dB	Duty Cycle Factor (dB) 0 - Points: 601, Detector: Av SENSE:IN Cen Trig	dwidth, QPSK Modulatio 2 Port (2x2 MIMO) dBm/Carrier BW 32.976 erage (RMS) Ther Freq: 1.83350000 GHz Free Run Avg	on, High Channel 1533.5 4 Port (4x4 MIMO) dBm/Carrier BW 35.976 F Rate Hold: 100/100	Limit (dBm) 39.8 01:58:12 PM Jun 17, 2022 io Std: None	Results
5G NR, I Initial Value dBm/Carrier BW 29.976 Imitial Value Keysight Spectrum Analyzer - Elem M RL Ref Offset 4 10 dB/div Ref Offset 4 14.0 4.00 6.00	Antenna Gain (dBi) 3 ent Materials Technology DC #FG 0.9 dB	Duty Cycle Factor (dB) 0 - Points: 601, Detector: Av SENSE:IN Cen Trig	dwidth, QPSK Modulatio 2 Port (2x2 MIMO) dBm/Carrier BW 32.976 erage (RMS) Ther Freq: 1.83350000 GHz Free Run Avg	on, High Channel 1533.5 4 Port (4x4 MIMO) dBm/Carrier BW 35.976 F Rate Hold: 100/100	Limit (dBm) 39.8 01:58:12 PM Jun 17, 2022 io Std: None	Results
5G NR, E Initial Value dBm/Carrier BW 29.976 29.976 CM RL RF 50 Ω CM RL RF 34.00 CM RF 34	Antenna Gain (dBi) 3 ent Materials Technology DC #FG 0.9 dB	Duty Cycle Factor (dB) 0 - Points: 601, Detector: Av SENSE:IN Cen Trig	dwidth, QPSK Modulatio 2 Port (2x2 MIMO) dBm/Carrier BW 32.976 erage (RMS) Ther Freq: 1.83350000 GHz Free Run Avg	on, High Channel 1533.5 4 Port (4x4 MIMO) dBm/Carrier BW 35.976 F Rate Hold: 100/100	Limit (dBm) 39.8 01:58:12 PM Jun 17, 2022 io Std: None	Results
5G NR, I Initial Value dBm/Carrier BW 29.976 Imitial Value Keysight Spectrum Analyzer - Elem M RL Ref Offset 4 10 dB/div Ref Offset 4 14.0 4.00 6.00	Antenna Gain (dBi) 3 ent Materials Technology DC #FG 0.9 dB	Duty Cycle Factor (dB) 0 - Points: 601, Detector: Av SENSE:IN Cen Trig	dwidth, QPSK Modulatio 2 Port (2x2 MIMO) dBm/Carrier BW 32.976 erage (RMS) Ther Freq: 1.83350000 GHz Free Run Avg	on, High Channel 1533.5 4 Port (4x4 MIMO) dBm/Carrier BW 35.976 F Rate Hold: 100/100	Limit (dBm) 39.8 01:58:12 PM Jun 17, 2022 io Std: None	Results
5G NR, E Initial Value dBm/Carrier BW 29.976 Imitial Value W 29.976 Imitial Value VI Ref Offset 4 10 dB/div Ref Offset 4 14.0 4.00 14.0 15.0 26.0	Antenna Gain (dBi) 3 ent Materials Technology DC #FG 0.9 dB	Duty Cycle Factor (dB) 0 - Points: 601, Detector: Av SENSE:IN Cen Trig	dwidth, QPSK Modulatio 2 Port (2x2 MIMO) dBm/Carrier BW 32.976 erage (RMS) Ther Freq: 1.83350000 GHz Free Run Avg	on, High Channel 1533.5 4 Port (4x4 MIMO) dBm/Carrier BW 35.976 F Rate Hold: 100/100	Limit (dBm) 39.8 01:58:12 PM Jun 17, 2022 io Std: None	Results
5G NR, E Initial Value dBm/Carrier BW 29.976 Expression Keysight Spectrum Analyzer - Elem W RF SO Ω Ref Offset 4 Log 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0	Antenna Gain (dBi) 3 ent Materials Technology DC #FG 0.9 dB	Duty Cycle Factor (dB) 0 - Points: 601, Detector: Av SENSE:IN Cen Trig	dwidth, QPSK Modulatio 2 Port (2x2 MIMO) dBm/Carrier BW 32.976 erage (RMS) Ther Freq: 1.83350000 GHz Free Run Avg	on, High Channel 1533.5 4 Port (4x4 MIMO) dBm/Carrier BW 35.976 F Rate Hold: 100/100	Limit (dBm) 39.8 01:58:12 PM Jun 17, 2022 io Std: None	Results
5G NR, E Initial Value dBm/Carrier BW 29.976 Keysight Spectrum Analyzer - Elem M RL RF S0 Ω Ref Offset 4 Log 4.00 6.00 -16 0 -26 0 -36 0	Antenna Gain (dBi) 3 ent Materials Technology DC #FG 0.9 dB	Duty Cycle Factor (dB) 0 - Points: 601, Detector: Av SENSE:IN Cen Trig	dwidth, QPSK Modulatio 2 Port (2x2 MIMO) dBm/Carrier BW 32.976 erage (RMS) Ther Freq: 1.83350000 GHz Free Run Avg	on, High Channel 1533.5 4 Port (4x4 MIMO) dBm/Carrier BW 35.976 F Rate Hold: 100/100	Limit (dBm) 39.8 01:58:12 PM Jun 17, 2022 io Std: None	Results
5G NR, E Initial Value dBm/Carrier BW 29.976 29.976 Keysight Spectrum Analyzer - Elem M RL RF S0 Q Ref Offset 4 Log 240 600 600 -60	Antenna Gain (dBi) 3 ent Materials Technology DC #FG 0.9 dB	Duty Cycle Factor (dB) 0 - Points: 601, Detector: Av SENSE:IN Sein:Low Cere Trig #Att	dwidth, QPSK Modulatio 2 Port (2x2 MIMO) dBm/Carrier BW 32.976 rage (RMS) rff ALIGN OF ter Freq: 1.533500000 GHz : Free Run Avg en: 30 dB	pon, High Channel 1533. 4 Port (4x4 MIMO) dBm/Carrier BW 35.976 F Illoid: 100/100 Rac Rac Illoid: 100/100 Rac	Limit (dBm) 39.8	Results



Conter Prog. 1.5380000 OH: afGalactor af	Initial Value	Antenna	Duty Cycle	2 Port (2x2 MIMO)	4 Port (4x4 MIMO)	Limit	Deaute
Image: Section of the sectin of the section of the section of the section of the							
Image: Section of the sectin of the section of the section of the section of the							
Ref G4.0.0 dBm Ref G4.0.0 dBm			SENSE:IN	IT ALIGN OF		01:32:24 PM Jun 17, 2022	
Ref 34.00 dBm Ref 34			🛶 Trig	: Free Run Avg	Hold: 100/100		
Ref 34.00 dBm ref 34			Sain:Low #Att	en: 30 dB	Radi	o Device: BTS	
State State State State State State State State State State State	Ref Offset 4 10 dB/div Ref 34.00	0.9 dB dBm					
Image: series of the series	24.0						
Span 20 00 MHz Span 20 M	14.0						
signed results and results are results are results are results are results and results are	4.00		f I				
span 20.00 MHz span 20.00 MHz	-16.0						
Signed Provided AD State	-26.0						
All	-36.0						
span 20.00 MHz #VEW 300 KHz #VEW 300 KHz	-46.0						
Res BW 100 kHz #VBW 300 kHz #Sweep 601 ms Channel Power Power Spectral Density 29.92 dBm / 4.914 MHz 23.00 dBm /MHz 3 Channel Power 56 NR, Band n24, SCS 15kHz, 5 MHz Bandwidth, 16-0AM Modulation, High Channel 1533.5 MHz, 25 RB/0 Offset Initial Value Antenna Duty Cycle 2 Port (2x2 MIMO) 4 Bru/Carrier BW Gain (dB) 30.025 3 0 33.025 30.025 3 0 33.025 30.025 30.0 30.025 30.0 30.025 30.0 30.025 30.025 30.027 30.0 90 Center Free: (1533000 Oftz Reid Offset 40.9 dB Reid Std: None Reid Std: None Radio Std: None Reid Std: None Span 20.00 MHz #FFGaint.cw Effect Biddw Ref Offset 40.9 dB Ref Std: 00 dBm Span 20.00 MHz #Steere Bid 100 kHz #VBW 300 kHz #Steere Bid 100 kHz #VBW 300 kHz						Snon 20 00 Mar	
29.92 dBm / 4.914 MHz 23.00 dBm / MHz	#Res BW 100 kHz			#VBW 300 kHz			
29.92 dBm / 4.914 MHz 23.00 dBm / MHz							
30.025 3 0 33.025 36.025 39.8 Pass Keysight Spectrum Analyzer - Element Materials Technology - Points: 60, Detector. Average (RMS) RL SENSE:INT Center Free: 1.033500000 GHz Radio Std: None # Sense:INT Average (RMS) Center Free: 1.033500000 GHz Radio Device: BTS Center Free: 1.033500000 GHz Radio Device: BTS Ref Offset 40.9 dB Ref Offset 40.9 dB Ref Offset 40.9 dB Span 20.00 MHz Span 20.00				Lo ST/	NTUS		-
RL RF 50 Ω DC SENSE:INT Autom OFF 02:04:34 PM Jun 17, 2022 Center Freq: 1.533500000 GHz Radio Std: None Radio Std: None Ref Offset 40.9 dB Ref 34.00 dBm Odd/div Ref 34.00 dBm Ref 0ffset 40.9 dB Ref 34.00 dBm Channel Power Power Spectral Density	sg 5G NR, B Initial Value	and n24, SCS 15 Antenna	ikHz, 5 MHz Band Duty Cycle	dwidth, 16-QAM Modulat 2 Port (2x2 MIMO)	ion, High Channel 1533. 4 Port (4x4 MIMO)	Limit	
RL RF 50 Ω DC SENSE:INT Autom OFF 02:04:34 PM Jun 17, 2022 Center Freq: 1.533500000 GHz Radio Std: None Radio Std: None Ref Offset 40.9 dB Ref 34.00 dBm Odd/div Ref 34.00 dBm Ref 0ffset 40.9 dB Ref 34.00 dBm Channel Power Power Spectral Density	5G NR, B Initial Value dBm/Carrier BW	and n24, SCS 15 Antenna Gain (dBi)	ikHz, 5 MHz Band Duty Cycle Factor (dB)	width, 16-QAM Modulat 2 Port (2x2 MIMO) dBm/Carrier BW	ion, High Channel 1533. 4 Port (4x4 MIMO) dBm/Carrier BW	Limit (dBm)	Results
#IFGain:Low #Atten: 30 dB Radio Device: BTS ref Offset 40.9 dB Ref 34.00 dBm Image: State of the state	JG NR, B Initial Value dBm/Carrier BW 30.025	and n24, SCS 15 Antenna Gain (dBi) 3	ikHz, 5 MHz Band Duty Cycle Factor (dB) 0	width, 16-QAM Modulat 2 Port (2x2 MIMO) dBm/Carrier BW 33.025	ion, High Channel 1533. 4 Port (4x4 MIMO) dBm/Carrier BW	Limit (dBm) 39.8	Results Pass
Page 2000 MHz Page 2000 MHz Page 2000 MHz Page 2000 KHz Power Spectral Density Power Spectral Density	5G NR, B Initial Value dBm/Carrier BW 30.025 Keysight Spectrum Analyzer - Elem	and n24, SCS 15 Antenna Gain (dBi) 3	ikHz, 5 MHz Band Duty Cycle Factor (dB) 0 - Points 601, Detector Av SENSE:IN Cen	width, 16-QAM Modulat 2 Port (2x2 MIMO) dBm/Carrier BW 33.025	ion, High Channel 1533. 4 Port (4x4 MIMO) dBm/Carrier BW 36.025	Limit (dBm) 39.8 02:04:34 PM Jun 17, 2022	Results Pass
Page 2000 MHz Page 2000 MHz Page 2000 MHz Page 2000 KHz Power Spectral Density Power Spectral Density	5G NR, B Initial Value dBm/Carrier BW 30.025 Keysight Spectrum Analyzer - Elem	and n24, SCS 15 Antenna Gain (dBi) 3	ikHz, 5 MHz Band Duty Cycle Factor (dB) 0 Points: 601, Detector: Av SENSE:IN Cen Tria	twidth, 16-QAM Modulat 2 Port (2x2 MIMO) dBm/Carrier BW 33.025 arrier BW ALIGN OF ter Freq: 1.533500000 GHz i Free Run Avg	ion, High Channel 1533. 4 Port (4x4 MIMO) dBm/Carrier BW 36.025 F Bloid: 100/100	Limit (dBm) 39.8 02:04:34 PMJun 17, 2022 o Std: None	Results Pass
Image: constraint of the second se	ISG 5G NR, B Initial Value dBm/Carrier BW 30.025 Solution 30.025 Solution 2000 Keysight Spectrum Analyzer - Elemi Keysight Spectrum Analyzer - Elemi Keysight Spectrum Analyzer - Elemi Keysight Spectrum Analyzer - Elemi	and n24, SCS 15 Antenna Gain (dBi) 3 ent Materials Technology DC #IFG	ikHz, 5 MHz Band Duty Cycle Factor (dB) 0 Points: 601, Detector: Av SENSE:IN Cen Tria	twidth, 16-QAM Modulat 2 Port (2x2 MIMO) dBm/Carrier BW 33.025 arrier BW ALIGN OF ter Freq: 1.533500000 GHz i Free Run Avg	ion, High Channel 1533. 4 Port (4x4 MIMO) dBm/Carrier BW 36.025 F Bloid: 100/100	Limit (dBm) 39.8 02:04:34 PMJun 17, 2022 o Std: None	Results Pass
000 0<	Initial Value dBm/Carrier BW 30.025 Keysight Spectrum Analyzer - Elem Ref Offset 4 Ref Offset 4 Ref 30.00	and n24, SCS 15 Antenna Gain (dBi) 3 ent Materials Technology DC #IFG	ikHz, 5 MHz Band Duty Cycle Factor (dB) 0 Points: 601, Detector: Av SENSE:IN Cen Tria	twidth, 16-QAM Modulat 2 Port (2x2 MIMO) dBm/Carrier BW 33.025 arrier BW ALIGN OF ter Freq: 1.533500000 GHz i Free Run Avg	ion, High Channel 1533. 4 Port (4x4 MIMO) dBm/Carrier BW 36.025 F Bloid: 100/100	Limit (dBm) 39.8 02:04:34 PMJun 17, 2022 o Std: None	Results Pass
Solution Solution Solution Solu	ASG 5G NR, B Initial Value dBm/Carrier BW 30.025 Solution Keysight Spectrum Analyzer - Elem Keysight Spectrum Analyzer - Elem Ref Offiset 4 10 dB/div Ref 34.00 Log 24.0	and n24, SCS 15 Antenna Gain (dBi) 3 ent Materials Technology DC #IFG	ikHz, 5 MHz Band Duty Cycle Factor (dB) 0 Points: 601, Detector: Av SENSE:IN Cen Tria	twidth, 16-QAM Modulat 2 Port (2x2 MIMO) dBm/Carrier BW 33.025 arrier BW ALIGN OF ter Freq: 1.533500000 GHz i Free Run Avg	ion, High Channel 1533. 4 Port (4x4 MIMO) dBm/Carrier BW 36.025 F Bloid: 100/100	Limit (dBm) 39.8 02:04:34 PMJun 17, 2022 o Std: None	Results Pass
enter 1.53350 GHz Res BW 100 kHz #VBW 300 kHz #Sweep 601 ms Channel Power Power Spectral Density	ASG 5G NR, B Initial Value dBm/Carrier BW 30.025 30.025 Keysight Spectrum Analyzer - Elem Keysight Spectrum Analyzer - Elem Ref Offset 4 Ref Offset 4 Ref 34.00 Log	and n24, SCS 15 Antenna Gain (dBi) 3 ent Materials Technology DC #IFG	ikHz, 5 MHz Band Duty Cycle Factor (dB) 0 Points: 601, Detector: Av SENSE:IN Cen Tria	twidth, 16-QAM Modulat 2 Port (2x2 MIMO) dBm/Carrier BW 33.025 arrier BW ALIGN OF ter Freq: 1.533500000 GHz i Free Run Avg	ion, High Channel 1533. 4 Port (4x4 MIMO) dBm/Carrier BW 36.025 F Bloid: 100/100	Limit (dBm) 39.8 02:04:34 PMJun 17, 2022 o Std: None	Results Pass
State State State State	SG NR, B Initial Value dBm/Carrier BW 30.025 30.025 Reysight Spectrum Analyzer - Elem Keysight Spectrum Analyzer - Elem Ref Offset 4 10 dB/div Ref 34.00 24.0 24.0 14.0	and n24, SCS 15 Antenna Gain (dBi) 3 ent Materials Technology DC #IFG	ikHz, 5 MHz Band Duty Cycle Factor (dB) 0 Points: 601, Detector: Av SENSE:IN Cen Tria	twidth, 16-QAM Modulat 2 Port (2x2 MIMO) dBm/Carrier BW 33.025 arrier BW ALIGN OF ter Freq: 1.533500000 GHz i Free Run Avg	ion, High Channel 1533. 4 Port (4x4 MIMO) dBm/Carrier BW 36.025 F Bloid: 100/100	Limit (dBm) 39.8 02:04:34 PMJun 17, 2022 o Std: None	Results Pass
Store Image: Store Image: Store Image: Store Image: Store Store<	ASG SG NR, B Initial Value dBm/Carrier BW 30.025 30.025 Keysight Spectrum Analyzer - Elemi Ref Offset 4 R R R F 50 Ω R R G Offset 4 Ref Offset 4.00 Log 400 -6.00 -6.00	and n24, SCS 15 Antenna Gain (dBi) 3 ent Materials Technology DC #IFG	ikHz, 5 MHz Band Duty Cycle Factor (dB) 0 Points: 601, Detector: Av SENSE:IN Cen Tria	twidth, 16-QAM Modulat 2 Port (2x2 MIMO) dBm/Carrier BW 33.025 arrier BW ALIGN OF ter Freq: 1.533500000 GHz i Free Run Avg	ion, High Channel 1533. 4 Port (4x4 MIMO) dBm/Carrier BW 36.025 F Bloid: 100/100	Limit (dBm) 39.8 02:04:34 PMJun 17, 2022 o Std: None	Results Pass
enter 1.53350 GHz Res BW 100 kHz #VBW 300 kHz #Sweep 601 ms Channel Power Power Spectral Density	Keysight Spectrum Analyzer - Eleminiation Keysight Spectrum Analyzer - Eleminiation	and n24, SCS 15 Antenna Gain (dBi) 3 ent Materials Technology DC #IFG	ikHz, 5 MHz Band Duty Cycle Factor (dB) 0 Points: 601, Detector: Av SENSE:IN Cen Tria	twidth, 16-QAM Modulat 2 Port (2x2 MIMO) dBm/Carrier BW 33.025 arrier BW ALIGN OF ter Freq: 1.533500000 GHz i Free Run Avg	ion, High Channel 1533. 4 Port (4x4 MIMO) dBm/Carrier BW 36.025 F Bloid: 100/100	Limit (dBm) 39.8 02:04:34 PMJun 17, 2022 o Std: None	Results Pass
Res BW 100 kHz #Sweep 601 ms Channel Power Power Spectral Density	ASG SG NR, B Initial Value dBm/Carrier BW 30.025 30.025 Keysight Spectrum Analyzer - Elemi Ref Offset 4 R R R F 50 Ω R R G Offset 4 Ref Offset 4.00 Log 400 -6.00 -6.00	and n24, SCS 15 Antenna Gain (dBi) 3 ent Materials Technology DC #IFG	ikHz, 5 MHz Band Duty Cycle Factor (dB) 0 Points: 601, Detector: Av SENSE:IN Cen Tria	twidth, 16-QAM Modulat 2 Port (2x2 MIMO) dBm/Carrier BW 33.025 arrier BW ALIGN OF ter Freq: 1.533500000 GHz i Free Run Avg	ion, High Channel 1533. 4 Port (4x4 MIMO) dBm/Carrier BW 36.025 F Bloid: 100/100	Limit (dBm) 39.8 02:04:34 PMJun 17, 2022 o Std: None	Results Pass
Channel Power Power Spectral Density	Keysight Spectrum Analyzer - Eleman Keysight Spectrum Analyzer - Eleman R L RF 50 Ω Ref Offset 4 10 dB/div Ref Offset 4 140 - - 40 - - 50 Q - - 10 dB/div Ref Offset 4 - 10 dB/div Ref 34.00 - 10 dB/div - - 10 dB/div Ref 34.00 - 14.0 - - - 15.0 - - - 16.0 - - - 36.0 - - -	and n24, SCS 15 Antenna Gain (dBi) 3 ent Materials Technology DC #IFG	ikHz, 5 MHz Band Duty Cycle Factor (dB) 0 Points: 601, Detector: Av SENSE:IN Cen Tria	twidth, 16-QAM Modulat 2 Port (2x2 MIMO) dBm/Carrier BW 33.025 arrier BW ALIGN OF ter Freq: 1.533500000 GHz i Free Run Avg	ion, High Channel 1533. 4 Port (4x4 MIMO) dBm/Carrier BW 36.025 F Bloid: 100/100	Limit (dBm) 39.8 02:04:34 PMJun 17, 2022 o Std: None	Results Pass
	IsiG 5G NR, B Initial Value dBm/Carrier BW 30.025 30.025 Keysight Spectrum Analyzer - Elem Ref Offset 4 Ref Offset 4 Ref 34.00 Log 24.0 4.00 4.00 600 4.00 36.0 4.00 4.00 4.00 50.0 4.00 50.0 5.00 Center 1.53350 GHz 5.00	and n24, SCS 15 Antenna Gain (dBi) 3 ent Materials Technology DC #IFG	ikHz, 5 MHz Band Duty Cycle Factor (dB) 0 Points: 601, Detector: Av SENSE:IN Cen Tria	dwidth, 16-QAM Modulat 2 Port (2x2 MIMO) dBm/Carrier BW 33.025	ion, High Channel 1533. 4 Port (4x4 MIMO) dBm/Carrier BW 36.025 F Hold: 100/100 Radi	Limit (dBm) 39.8 02:04:34 PM Jun 17, 2022 o Std: None o Device: BTS	Results Pass
30.03 dBm / 4.893 MHz 23.13 dBm /MHz	MSG 5G NR, B Initial Value dBm/Carrier BW 30.025 30.025 Keysight Spectrum Analyzer - Elem Ref Offset 4 IO dB/div Ref Offset 4 0 400 400 400 -160	and n24, SCS 15 Antenna Gain (dBi) 3 ent Materials Technology DC #IFG	ikHz, 5 MHz Band Duty Cycle Factor (dB) 0 Points: 601, Detector: Av SENSE:IN Cen Tria	dwidth, 16-QAM Modulat 2 Port (2x2 MIMO) dBm/Carrier BW 33.025	ion, High Channel 1533. 4 Port (4x4 MIMO) dBm/Carrier BW 36.025 F Hold: 100/100 Radi	Limit (dBm) 39.8 02:04:34 PM Jun 17, 2022 o Std: None o Device: BTS	Results Pass
	Isig 5G NR, B Initial Value dBm/Carrier BW 30.025 30.025 Keysight Spectrum Analyzer - Elem X Ref Offset 4 Ref Offset 4 Code 24.0 4.00 4.00 6.00 4.00	and n24, SCS 15 Antenna Gain (dBi) 3 ent Materials Technology DC #IFG	ikHz, 5 MHz Band Duty Cycle Factor (dB) 0 - Points 601, Detector Av SENSEIN Gain:Low #Att	width, 16-QAM Modulat 2 Port (2x2 MIMO) dBm/Carrier BW 33.025 rerage (RMS) TT	ion, High Channel 1533. 4 Port (4x4 MIMO) dBm/Carrier BW 36.025 F Radi Hold: 100/100 Radi	Limit (dBm) 39.8 02:04:34 PM Jun 17, 2022 o Std: None o Device: BTS	Results Pass



dBm/Carrier BW	Antenna Gain (dBi)	Duty Cycle Factor (dB)	2 Port (2x2 MIMO) dBm/Carrier BW	4 Port (4x4 MIMO) dBm/Carrier BW	Limit (dBm)	Results	
29.858	3	0	32.858	35.858	39.8	Pass	
Keysight Spectrum Analyzer - Eleme					- 8		
<mark>ιχν</mark> RL RF 50 Ω	DC	SENSE:IN Cent	ter Freq: 1.528500000 GHz	F Rad I Hold: 100/100	01:41:12 PM Jun 17, 20 lio Std: None	022	
	#IFGai		en: 30 dB		lio Device: BTS		
Ref Offset 4 10 dB/div Ref 34.00	0.9 dB dBm						
24.0							
4.00							
-6.00							
-26.0							
-36.0							
-56.0							
Center 1.52850 GHz #Res BW 100 kHz			#VBW 300 kHz		Span 20.00 Mi #Sweep 601 n	Hz	
					"owcep oorn		
Channel Power		Po	wer Spectral De	nsity			
29.86 dB	m / 4.874 M	Hz	22.98 dBr	n /MHz			
29.86 dB	m / 4.874 M	Hz	22.98 dBr	n /MHz			
29.86 dB	m / 4.874 M	Hz	22.98 dBr	n /MHz			
29.86 dB	5 m / 4.874 M	Hz	22.98 dBr	MHz			
29.86 dB	т / 4.874 M	Hz	22.98 dBr				
MSG			Lo ST.	ATUS	5 MHz. 25 RB/0 (Offset	
^{MSG} 5G NR, Ba Initial Value	and n24, SCS 15ki Antenna	Hz, 5 MHz Band Duty Cycle	জেলে width, 64-QAM Modulat 2 Port (2x2 MIMO)	atus ion, High Channel 1533. 4 Port (4x4 MIMO)	Limit		
^{MSG} 5G NR, B	and n24, SCS 15k	Hz, 5 MHz Band	মিঠ ^{জন} width, 64-QAM Modulat	ATUS		Offset Results Pass	1
5G NR, Ba Initial Value dBm/Carrier BW 29.941	and n24, SCS 15kl Antenna Gain (dBi) 3	Hz, 5 MHz Band Duty Cycle Factor (dB) 0	width, 64-QAM Modulat 2 Port (2x2 MIMO) dBm/Carrier BW 32.941	ion, High Channel 1533. 4 Port (4x4 MIMO) dBm/Carrier BW	Limit (dBm) 39.8	Results Pass	1
^{MSG} 5G NR, Ba Initial Value _dBm/Carrier BW	and n24, SCS 15ki Antenna Gain (dBi) 3	Hz, 5 MHz Band Duty Cycle Factor (dB) 0 Points: 601, Detector: Av SENSE: IN Cent	width, 64-QAM Modulat 2 Port (2x2 MIMO) dBm/Carrier BW 32.941	ATUS ion, High Channel 1533. 4 Port (4x4 MIMO) dBm/Carrier BW 35.941 Ŧ Rac	Limit (dBm)	Results Pass	1
MSG 5G NR, Ba Initial Value dBm/Carrier BW 29.941 29.941	and n24, SCS 15ki Antenna Gain (dBi) 3	Hz, 5 MHz Band Duty Cycle Factor (dB) 0 Points: 601, Detector Av SENSE:IN Cent	width, 64-QAM Modulat 2 Port (2x2 MIMO) dBm/Carrier BW 32.941	tion, High Channel 1533. 4 Port (4x4 MIMO) dBm/Carrier BW 35.941 ∓ Rac	Limit (dBm) 39.8	Results Pass	1
MSG 5G NR, Ba Initial Value dBm/Carrier BW 29.941 29.941 Seysight Spectrum Analyzer - Eleme M RL RF 50 Ω	and n24, SCS 15ki Antenna Gain (dBi) 3 ent Materials Technology - 1 DC #IFGai	Hz, 5 MHz Band Duty Cycle Factor (dB) 0 Points: 601, Detector Av SENSE:IN Cent	width, 64-QAM Modulat 2 Port (2x2 MIMO) dBm/Carrier BW 32.941 erage (RMS) T ALIGN OF ter Freq: 1.533500000 GHz Free Run Avg	tion, High Channel 1533. 4 Port (4x4 MIMO) dBm/Carrier BW 35.941 ∓ Rac	Limit (dBm) 39.8 02:13:04 PM Jun 17, 20 lio Std: None	Results Pass	1
MSG 5G NR, Ba Initial Value dBm/Carrier BW 29.941 29.941	and n24, SCS 15ki Antenna Gain (dBi) 3 ent Materials Technology - 1 DC #IFGai	Hz, 5 MHz Band Duty Cycle Factor (dB) 0 Points: 601, Detector Av SENSE:IN Cent	width, 64-QAM Modulat 2 Port (2x2 MIMO) dBm/Carrier BW 32.941 erage (RMS) T ALIGN OF ter Freq: 1.533500000 GHz Free Run Avg	tion, High Channel 1533. 4 Port (4x4 MIMO) dBm/Carrier BW 35.941 ∓ Rac	Limit (dBm) 39.8 02:13:04 PM Jun 17, 20 lio Std: None	Results Pass	1
MSG 5G NR, Bi Initial Value dBm/Carrier BW 29,941 29,941 Keysight Spectrum Analyzer - Eleme MSG Keysight Spectrum Analyzer - Eleme RE Keysight Spectrum Ref 94,00 Ref 94,00 Log 10 24.0 14.0	and n24, SCS 15ki Antenna Gain (dBi) 3 ent Materials Technology - 1 DC #IFGai	Hz, 5 MHz Band Duty Cycle Factor (dB) 0 Points: 601, Detector Av SENSE:IN Cent	width, 64-QAM Modulat 2 Port (2x2 MIMO) dBm/Carrier BW 32.941 erage (RMS) T ALIGN OF ter Freq: 1.533500000 GHz Free Run Avg	tion, High Channel 1533. 4 Port (4x4 MIMO) dBm/Carrier BW 35.941 ∓ Rac	Limit (dBm) 39.8 02:13:04 PM Jun 17, 20 lio Std: None	Results Pass	1
MSG 5G NR, Bi Initial Value dBm/Carrier BW 29,941 29,941 Keysight Spectrum Analyzer - Eleme M RL RF 50 Ω Ref Offset 44 10 dB/div Ref 34,00 24.0	and n24, SCS 15ki Antenna Gain (dBi) 3 ent Materials Technology - 1 DC #IFGai	Hz, 5 MHz Band Duty Cycle Factor (dB) 0 Points: 601, Detector Av SENSE:IN Cent	width, 64-QAM Modulat 2 Port (2x2 MIMO) dBm/Carrier BW 32.941 erage (RMS) T ALIGN OF ter Freq: 1.533500000 GHz Free Run Avg	tion, High Channel 1533. 4 Port (4x4 MIMO) dBm/Carrier BW 35.941 ∓ Rac	Limit (dBm) 39.8 02:13:04 PM Jun 17, 20 lio Std: None	Results Pass	1
MSG 5G NR, Bi Initial Value dBm/Carrier BW 29.941 29.941 Keysight Spectrum Analyzer - Eleme RL RL RF 50 Ω I 0 dB/div Ref Offset 44 Log 10 dB/div Ref 34.00 Log 14.0 14.0 10.0 16.0 16.0	and n24, SCS 15ki Antenna Gain (dBi) 3 ent Materials Technology - 1 DC #IFGai	Hz, 5 MHz Band Duty Cycle Factor (dB) 0 Points: 601, Detector Av SENSE:IN Cent	width, 64-QAM Modulat 2 Port (2x2 MIMO) dBm/Carrier BW 32.941 erage (RMS) T ALIGN OF ter Freq: 1.533500000 GHz Free Run Avg	tion, High Channel 1533. 4 Port (4x4 MIMO) dBm/Carrier BW 35.941 ∓ Rac	Limit (dBm) 39.8 02:13:04 PM Jun 17, 20 lio Std: None	Results Pass	1
MSG 5G NR, B: Initial Value dBm/Carrier BW dBm/Carrier BW 29.941 Image: Spectrum Analyzer - Eleme MSG Image: Spectrum Analyzer - Eleme	and n24, SCS 15ki Antenna Gain (dBi) 3 ent Materials Technology - 1 DC #IFGai	Hz, 5 MHz Band Duty Cycle Factor (dB) 0 Points: 601, Detector Av SENSE:IN Cent	width, 64-QAM Modulat 2 Port (2x2 MIMO) dBm/Carrier BW 32.941 erage (RMS) T ALIGN OF ter Freq: 1.533500000 GHz Free Run Avg	tion, High Channel 1533. 4 Port (4x4 MIMO) dBm/Carrier BW 35.941 ∓ Rac	Limit (dBm) 39.8 02:13:04 PM Jun 17, 20 lio Std: None	Results Pass	1
MSG 5G NR, Bit Initial Value dBm/Carrier BW 29.941 29.941 Keysight Spectrum Analyzer - Eleme Kef Offset 41 0 dB/div Ref Offset 41 10 dB/div Ref 34.00 24.0 40 46.0 46.0	and n24, SCS 15ki Antenna Gain (dBi) 3 ent Materials Technology - 1 DC #IFGai	Hz, 5 MHz Band Duty Cycle Factor (dB) 0 Points: 601, Detector Av SENSE:IN Cent	width, 64-QAM Modulat 2 Port (2x2 MIMO) dBm/Carrier BW 32.941 erage (RMS) T ALIGN OF ter Freq: 1.533500000 GHz Free Run Avg	tion, High Channel 1533. 4 Port (4x4 MIMO) dBm/Carrier BW 35.941 ∓ Rac	Limit (dBm) 39.8 02:13:04 PM Jun 17, 20 lio Std: None	Results Pass	1
MSG SG NR, Bit Initial Value dBm/Carrier BW 29.941 29.941 Keysight Spectrum Analyzer - Eleme Ref Offset 4/4 Log Ref 34.00 4.0 4.0 10 dB/div Ref 34.00 6.00	and n24, SCS 15ki Antenna Gain (dBi) 3 ent Materials Technology - 1 DC #IFGai	Hz, 5 MHz Band Duty Cycle Factor (dB) 0 Points: 601, Detector Av SENSE:IN Cent	width, 64-QAM Modulat 2 Port (2x2 MIMO) dBm/Carrier BW 32.941 erage (RMS) T ALIGN OF ter Freq: 1.533500000 GHz Free Run Avg	tion, High Channel 1533. 4 Port (4x4 MIMO) dBm/Carrier BW 35.941 ∓ Rac	Limit (dBm) 39.8 02:13:04 PMJun 17, 20 lio Std: None lio Device: BTS	Results Pass	1
MSG 5G NR, Bit Initial Value dBm/Carrier BW 29.941 29.941 Keysight Spectrum Analyzer - Eleme Kef Offset 41 0 dB/div Ref Offset 41 10 dB/div Ref 34.00 24.0 40 46.0 46.0	and n24, SCS 15ki Antenna Gain (dBi) 3 ent Materials Technology - 1 DC #IFGai	Hz, 5 MHz Band Duty Cycle Factor (dB) 0 Points: 601, Detector Av SENSE:IN Cent	width, 64-QAM Modulat 2 Port (2x2 MIMO) dBm/Carrier BW 32.941 erage (RMS) T ALIGN OF ter Freq: 1.533500000 GHz Free Run Avg	tion, High Channel 1533. 4 Port (4x4 MIMO) dBm/Carrier BW 35.941 ∓ Rac	Limit (dBm) 39.8 02:13:04 PM Jun 17, 20 lio Std: None	Results Pass	1



29.867 3 0 32.867 35.867 39.8	Pass
X RL RE 50.9 DC SENSE:INT ALIGN OFE 01:45:32 PM Jun 17	
Center Freq: 1.528500000 GHz Radio Std: None	,2022
Trig: Free Run Avg Hold: 100/100 #IFGain:Low #Atten: 30 dB Radio Device: BTS	
Ref Offset 40.9 dB	
10 dB/div Ref 34.00 dBm	
24.0	
14.0	
6.00	
-16.0	
-36.0	
-46.0	
Center 1.52850 GHz Span 20.00 #Res BW 100 kHz #VBW 300 kHz #Sweep 601	MHZ
29.87 dBm / 4.896 мнz 22.97 dBm /мнz	
29.87 dBm / 4.896 MHz 22.97 dBm /MHz	
Msg 5G NR, Band n24, SCS 15kHz, 5 MHz Bandwidth, 256-QAM Modulation, High Channel 1533.5 MHz, 25 RB/	//0 Offset
MSG STATUS 5G NR, Band n24, SCS 15kHz, 5 MHz Bandwidth, 256-QAM Modulation, High Channel 1533.5 MHz, 25 RB/ Initial Value Antenna Duty Cycle 2 Port (2x2 MIMO) 4 Port (4x4 MIMO)	
Msg 5G NR, Band n24, SCS 15kHz, 5 MHz Bandwidth, 256-QAM Modulation, High Channel 1533.5 MHz, 25 RB/	/0 Offset Results Pass
MSG Image: Status 5G NR, Band n24, SCS 15kHz, 5 MHz Bandwidth, 256-QAM Modulation, High Channel 1533.5 MHz, 25 RB/ Initial Value Antenna Duty Cycle 2 Port (2x2 MIMO) 4 Port (4x4 MIMO) Limit dBm/Carrier BW Gain (dBi) Factor (dB) dBm/Carrier BW dBm/Carrier BW	Results
MSG SG NR, Band n24, SCS 15kHz, 5 MHz Bandwidth, 256-QAM Modulation, High Channel 1533.5 MHz, 25 RB/ Initial Value Antenna Duty Cycle 2 Port (2x2 MIMO) 4 Port (4x4 MIMO) Limit dBm/Carrier BW Gain (dBi) Factor (dB) dBm/Carrier BW dBm/Carrier BW (dBm) 30.001 3 0 33.001 36.001 39.8	Results Pass
MSG LossTATUS 5G NR, Band n24, SCS 15kHz, 5 MHz Bandwidth, 256-QAM Modulation, High Channel 1533.5 MHz, 25 RB/ Initial Value Antenna Duty Cycle 2 Port (2x2 MIMO) 4 Port (4x4 MIMO) Limit Limit dBm/Carrier BW Gain (dBi) Factor (dB) dBm/Carrier BW dBm/Carrier BW 30.001 3 0 33.001 36.001 39.8 Keysight Spectrum Analyzer - Element Materials Technology - Points: 601, Detector: Average (RMS) 02:25:13 PM/Jun 17 R L RF 50 Ω DC SENSE:INT ALIGN AUTO 02:25:13 PM/Jun 17	Results Pass
MSG Contraction 5G NR, Band n24, SCS 15kHz, 5 MHz Bandwidth, 256-QAM Modulation, High Channel 1533.5 MHz, 25 RB/ Initial Value Antenna Duty Cycle 2 Port (2x2 MIMO) 4 Port (4x4 MIMO) dBm/Carrier BW Gain (dBi) Factor (dB) dBm/Carrier BW dBm/Carrier BW 30.001 3 0 33.001 36.001 39.8 Keysight Spectrum Analyzer - Element Materials Technology - Points: 601, Detector: Average (RMS) Contraction Contraction Contraction R L RF 50 Ω DC SENSE:INT ALIGN AUTO 02:25:13 PM Jun 17	Results Pass
MSG STATUS 5G NR, Band n24, SCS 15kHz, 5 MHz Bandwidth, 256-QAM Modulation, High Channel 1533.5 MHz, 25 RB/ Initial Value Antenna Duty Cycle 2 Port (2x2 MIMO) 4 Port (4x4 MIMO) Limit Limit dBm/Carrier BW Gain (dBi) 30.001 3 0 30.001 3 0 30.001 3 0 30.001 3 0 30.001 3 0 30.001 3 0 30.001 3 0 30.001 3 0 30.001 3 0 30.001 3 0 30.001 3 0 30.001 3 0 30.001 3 0 30.01 36.001 39.8 Center Freq: 1.53300000 GHz 02:25:13 PM Jun 17 Trig: Free Run Avg Hold: 100/100 Radio Std: None #IFGain:Low #Atten: 30 dB Radio Device: BTS Ref Offset 40.9 dB B Avg Hold: 100/100	Results Pass
MSG Image: Status 5G NR, Band n24, SCS 15kHz, 5 MHz Bandwidth, 256-QAM Modulation, High Channel 1533.5 MHz, 25 RB/ Initial Value Antenna Duty Cycle 2 Port (2x2 MIMO) 4 Port (4x4 MIMO) Limit Bm/Carrier BW Gain (dBi) 30.001 3 0 33.001 30.001 3 0 33.001 36.001 Keysight Spectrum Analyzer - Element Materials Technology - Points: 601, Detector: Average (RMS) 0 02:25:13 PH/Jun 17 Center Freq: 1.533600000 GHz Radio Std: None Frig: Free Run AugHold: 100/100 #IFGain:Low #IFGain:St dB Radio Device: BTS 10 dB/div Ref Offset 40.9 dB Ref Offset 40.9 dB	Results Pass
MSG STATUS 5G NR, Band n24, SCS 15kHz, 5 MHz Bandwidth, 256-QAM Modulation, High Channel 1533.5 MHz, 25 RB/ Initial Value Antenna Duty Cycle 2 Port (2x2 MIMO) 4 Port (4x4 MIMO) Limit Limit dBm/Carrier BW Gain (dBi) 30.001 3 0 30.001 3 0 30.001 3 0 30.001 3 0 30.001 3 0 30.001 3 0 30.001 3 0 30.001 3 0 30.001 3 0 30.001 3 0 30.001 3 0 30.001 3 0 30.001 3 0 30.01 36.001 39.8 Center Freq: 1.53300000 GHz 02:25:13 PM Jun 17 Trig: Free Run Avg Hold: 100/100 Radio Std: None #IFGain:Low #Atten: 30 dB Radio Device: BTS Ref Offset 40.9 dB B Avg Hold: 100/100	Results Pass
SG NR, Band n24, SCS 15kHz, 5 MHz Bandwidth, 256-QAM Modulation, High Channel 1533.5 MHz, 25 RB/ Initial Value Antenna Duty Cycle 2 Port (2x2 MIMO) 4 Port (4x4 MIMO) Limit Bm/Carrier BW Gain (dBi) Factor (dB) Bm/Carrier BW dBm/Carrier BW 30.001 3 0 33.001 36.001 39.8 Keysight Spectrum Analyzer - Element Materials Technology - Points 601, Detector Average (RMS) Center Freq: 1.533500000 GHz 02:25:13 PMJun 17. RL RF 50 Ω DC SENSE:INT ALIGN AUTO 02:25:13 PMJun 17. Center Freq: 1.533500000 GHz Trig: Free Run Avg Hold: 100/100 Radio Std: None #IFGain:Low #IFGain:Low #Atten: 30 dB Radio Device: BTS 10 dB/div Ref Offset 40.9 dB Ref Offset 40.9 dB Ref 34.00 dBm Ref 34.00 dBm	Results Pass
SG NR, Band n24, SCS 15kHz, 5 MHz Bandwidth, 256-QAM Modulation, High Channel 1533.5 MHz, 25 RB/ Initial Value Antenna Duty Cycle 2 Port (2x2 MIMO) 4 Port (4x4 MIMO) Limit Limit dBm/Carrier BW Gain (dBi) Factor (dB) dBm/Carrier BW dBm/Carrier BW Gain (dBi) 30.001 3 0 33.001 30.001 3 0 33.001 30.001 3 0 33.001 30.001 3 0 33.001 30.001 3 0 33.001 30.001 3 0 33.001 30.001 3 0 33.001 30.001 38.8 Center Freq: 1.533500000 GHz Ref 50 Ω ØFFGain:Low #Atten: 30 dB Ref Offset 40.9 dB 10 dB/div Ref Offset 40.9 dB 10 dB/div Ref 34.00 dBm 24.0 Aug	Results Pass
SG NR, Band n24, SCS 15kHz, 5 MHz Bandwidth, 256-QAM Modulation, High Channel 1533.5 MHz, 25 RB/ Initial Value Antenna Duty Cycle 2 Port (2x2 MIMO) 4 Port (4x4 MIMO) Limit dBm/Carrier BW Gain (dBi) Factor (dB) dBm/Carrier BW dBm/Carrier BW (dBm) 30.001 3 0 33.001 36.001 39.8 Keysight Spectrum Analyzer - Element Materials Technology - Points: 601, Detector: Average (RMS) Center Freq: 1.53300000 GHz Radio Std: None Trig: Free Run # Key Sight Spectrum Analyzer - Element Materials Technology - Points: 601, Detector: Average (RMS) Center Freq: 1.53300000 GHz Radio Std: None Trig: Free Run # Std: Scientic Bot colspan="2">Radio Std: None # Std: Scientic	Results Pass
Msg SG NR, Band n24, SCS 15kHz, 5 MHz Bandwidth, 256-QAM Modulation, High Channel 1533.5 MHz, 25 RB/ Initial Value Antenna Duty Cycle 2 Port (2x2 MIMO) 4 Port (4x4 MIMO) Limit dBm/Carrier BW Gain (dBi) Factor (dB) dBm/Carrier BW dBm/Carrier BW (dBm) 30.001 3 0 33.001 36.001 39.8 Keysight Spectrum Analyzer - Element Materials Technology - Points: 601, Detector: Average (RMS) Center Freq: 1.533500000 GHz Radio Std: None Trig: Free Run ALIGN AUTO 02:25:13 PMJ n1 7Z Center Freq: 1.533500000 GHz Radio Std: None Trig: Free Run AVg Hold: 100/100 Radio Std: None #IFGain:Low #Atten: 30 dB Radio Device: BTS 10 dB/div Ref Offset 40.9 dB Log Center Freq: 1.533500000 GHz Radio Std: None Radio Std: None Ref Offset 40.9 dB Autor colspan="2">Autor colspan="2" Center	Results Pass
SG NR, Band n24, SCS 15kHz, 5 MHz Bandwidth, 256-QAM Modulation, High Channel 1533.5 MHz, 25 RB/ Initial Value Antenna Duty Cycle 2 Port (2x2 MIMO) 4 Port (4x4 MIMO) Limit dBm/Carrier BW Gain (dBi) Factor (dB) dBm/Carrier BW dBm/Carrier BW (dBm) 30.001 3 0 33.001 36.001 39.8 Center Freq: 1.53300000 GHz Center Freq: 1.53300000 GHz Radio Std: None Trig: Freq Run #Fe Gin:Low #Atten: 30 dB Ref Offset 40.9 dB Context Ref 34.00 dBm Center Freq: 1.53300000 GHz Radio Device: BTS	Results Pass
MSG Ibitial Value Antenna Duty Cycle 2 Port (2x2 MIMO) 4 Port (4x4 MIMO) Limit dBm/Carrier BW Gain (dBi) Factor (dB) dBm/Carrier BW dBm/Carrier BW (dBm) 30.001 3 0 33.001 36.001 39.8 Keysight Spectrum Analyzer - Element Materials Technology - Points: 601, Detector: Average (RMS) Center Freq: 1.533500000 GHz Radio Std: None Trig: Free Run Avg Hold: 100/100 Radio Device: BTS Ref Offset 40.9 dB HFGain:Low #Atten: 30 dB Radio Device: BTS 10 dB/div Ref 34.00 dBm Image: August and	Results Pass
SG SG NR, Band n24, SCS 15kHz, 5 MHz Bandwidth, 256-QAM Modulation, High Channel 1533.5 MHz, 25 RB/ Initial Value Antenna Duty Cycle 2 Port (2x2 MIMO) 4 Port (4x4 MIMO) Limit dBm/Carrier BW Gain (dBi) Factor (dB) dBm/Carrier BW dBm/Carrier BW (dBm) 30.001 3 0 33.001 36.001 39.8 Keysight Spectrum Analyzer - Element Materials Technology - Points: 601, Detector: Average (RMS) Center Freq: 1.53500000 GHz Radio Std: None MRL RF 50.9 DC SENSE:INT ALIGN AUTO 02:25:13 PM Jun 12 VI RL Ref Offset 40.9 dB Ref Offset 40.9 dB Radio Device: BTS Radio Device: BTS 10 dB/div Ref Offset 40.9 dB Ref 34.00 dBm Image: Ref 34.00 dBm Image: Ref 34.00 dBm Image: Ref 34.00 dBm 240 Image: Ref 34.00 dBm Image:	Results Pass
SG NR, Band n24, SCS 15kHz, 5 MHz Bandwidth, 256-QAM Modulation, High Channel 1533.5 MHz, 25 RB/ Initial Value Antenna Duty Cycle 2 Port (2x2 MIMO) 4 Port (4x4 MIMO) Jano 1 30.001 3 0 33.001 36.001 39.8 Image: Sector Analyzer - Element Materials Technology - Points: 601, Detector: Average (RMS) Image: Sector Analyzer - Element Materials Technology - Points: 601, Detector: Average (RMS) Image: Sector Average (RMS) Image: Sector Analyzer - Element Materials Technology - Points: 601, Detector: Average (RMS) Image: Sector Average (RMS) Image: Sector Average (RMS) Image: Sector Analyzer - Element Materials Technology - Points: 601, Detector: Average (RMS) Image: Sector Average (RMS) Image: Sector Average (RMS) Image: Sector Average (RMS) Image: Sector Average (RMS) Image: Sector Average (RMS) Image: Sector Average (RMS) Image: Sector Average (RMS) Image: Sector Average (RMS) Image: Sector Average (RMS) Image: Sector Average (RMS) Image: Sector Average (RMS) Image: Sector Average (RMS) Image: Sector Average (RMS) Image: Sector Average (RMS) Image: Sector Average (RMS) Image: Sector Average: Sector Average (RMS) Image: Sector Average (RMS) Image: Sector Average (RMS) Image: Sector Average (RMS) Image: Sector Average (RMS) <td>Results Pass</td>	Results Pass

23.10 dBm /мнz

STATUS

MSG

30.00 dBm / 4.901 MHz



dBm/Carrier BW	Antenna Gain (dBi)	Duty Cycle Factor (dB)	2 Port (2x2 MIMO) dBm/Carrier BW	4 Port (4x4 MIMO) dBm/Carrier BW	Limit (dBm)	Results
24.566	3	0	27.566	30.566	39.8	Pass
Keysight Spectrum Analyzer - Elem IXI RL RF 50 Ω		y - Points: 601, Detector: Av SENSE:IN		TO	03:00:03 PM Jul 23, 2022	
		🛶 Trig	ter Freq: 1.531000000 GHz : Free Run Avg	Radi Hold: 100/100	o Std: None	-
		Gain:Low #Att	ten: 30 dB	Radi	o Device: BTS	
Ref Offset 4 10 dB/div Ref 32.00	dBm					
22.0						
2.00						
-8.00						
-28.0						
-38.0						
-58.0						
Center 1.53100 GHz					Span 25.00 MHz	
#Res BW 200 kHz			#VBW 680 kHz		#Sweep 601 ms	
Channel Power		Po	ower Spectral De	nsity		
24.57 dB	m / 9.905 I	MHz	14.61 dBr	n /MHz		
24.57 dB	m / 9.905 I	MHz	14.61 dBr	n /MHz		
24.57 dB	m / 9.905 I	MHz	14.61 dBr	n /MHz		
24.57 dB	m / 9.905 I	MHz	14.61 dBr	n /MHz		
	m / 9.905 i	MHz				
MSG			Lo ST/	NTUS		-
MSG			Lo ST/		/IHz, 25 RB/13 Offse Limit	ot
5G NR, Initial Value dBm/Carrier BW	Band n24, SCS 1 Antenna Gain (dBi)	15kHz, 10 MHz Ba Duty Cycle Factor (dB)	andwidth, QPSK Modulat 2 Port (2x2 MIMO) dBm/Carrier BW	tion, Mid Channel 1531 M 4 Port (4x4 MIMO) dBm/Carrier BW	Limit (dBm)	Results
5G NR, Initial Value dBm/Carrier BW 26.802	Band n24, SCS 1 Antenna Gain (dBi) 3	15kHz, 10 MHz Ba Duty Cycle Factor (dB) 0	andwidth, QPSK Modular 2 Port (2x2 MIMO) dBm/Carrier BW 29.802	אדעט tion, Mid Channel 1531 M 4 Port (4x4 MIMO)	Limit	
5G NR, Initial Value dBm/Carrier BW	Band n24, SCS 1 Antenna Gain (dBi) 3	15kHz, 10 MHz Ba Duty Cycle Factor (dB) 0 y-Points: 601, Detector: Av SENSE:IN	andwidth, QPSK Modular 2 Port (2x2 MIMO) dBm/Carrier BW 29.802	tion, Mid Channel 1531 M 4 Port (4x4 MIMO) dBm/Carrier BW 32.802	Limit (dBm) 39.8	Results
MSG 5G NR, Initial Value dBm/Carrier BW 26.802	Band n24, SCS 1 Antenna Gain (dBi) 3 ent Materials Technology DC	15kHz, 10 MHz Ba Duty Cycle Factor (dB) 0 y-Points 601, Detector Av SENSE IN Cermi	andwidth, QPSK Modular 2 Port (2x2 MIMO) dBm/Carrier BW 29.802 rerage (RMS) rrf ALIGN AUT ter Freq: 1.531000000 GHz	tion, Mid Channel 1531 M 4 Port (4x4 MIMO) dBm/Carrier BW 32.802 32.802 Radi	Limit (dBm) 39.8 06:46:43 AM Jul 26, 2022 o Std: None	Results
MSG 5G NR, Initial Value dBm/Carrier BW 26.802 Keysight Spectrum Analyzer - Elem Ø RL RF 50 Ω Ref Offset 4	Band n24, SCS 1 Antenna Gain (dBi) 3 ent Materials Technology PC #IFC 0.9 dB	15kHz, 10 MHz Ba Duty Cycle Factor (dB) 0 y-Points: 601, Detector.Av SENSE:IN Cerei	andwidth, QPSK Modular 2 Port (2x2 MIMO) dBm/Carrier BW 29.802 errage (RMS) atl Free (1.53100000 GHz 5 Free Run Avg	tion, Mid Channel 1531 M 4 Port (4x4 MIMO) dBm/Carrier BW 32.802 32.802 Radi	Limit (dBm) 39.8	Results
MSG 5G NR, Initial Value dBm/Carrier BW 26.802 26.802 26.802 26.802 26.802 26.802 26.802 26.802 26.802 26.802 26.802 26.802 26.802 20.	Band n24, SCS 1 Antenna Gain (dBi) 3 ent Materials Technology PC #IFC 0.9 dB	15kHz, 10 MHz Ba Duty Cycle Factor (dB) 0 y-Points 601, Detector Av SENSE IN Cermi	andwidth, QPSK Modular 2 Port (2x2 MIMO) dBm/Carrier BW 29.802 errage (RMS) atl Free (1.53100000 GHz 5 Free Run Avg	tion, Mid Channel 1531 M 4 Port (4x4 MIMO) dBm/Carrier BW 32.802 32.802 Radi	Limit (dBm) 39.8 06:46:43 AM Jul 26, 2022 o Std: None	Results
MSG 5G NR, Initial Value dBm/Carrier BW 26.802 Keysight Spectrum Analyzer - Elem M RL RF 50 Ω Ref Offset 4 10 dB/div Ref 34.00	Band n24, SCS 1 Antenna Gain (dBi) 3 ent Materials Technology PC #IFC 0.9 dB	15kHz, 10 MHz Ba Duty Cycle Factor (dB) 0 y-Points 601, Detector Av SENSE IN Cermi	andwidth, QPSK Modular 2 Port (2x2 MIMO) dBm/Carrier BW 29.802 errage (RMS) atl Free (1.53100000 GHz 5 Free Run Avg	tion, Mid Channel 1531 M 4 Port (4x4 MIMO) dBm/Carrier BW 32.802 32.802 Radi	Limit (dBm) 39.8 06:46:43 AM Jul 26, 2022 o Std: None	Results
MSG 5G NR, Initial Value dBm/Carrier BW 26.802 26.802 Comparing to the section Analyzer - Elem M RL RF 50 Ω Ref Offset 4 10 dB/div Ref 34.00 24.0	Band n24, SCS 1 Antenna Gain (dBi) 3 ent Materials Technology PC #IFC 0.9 dB	15kHz, 10 MHz Ba Duty Cycle Factor (dB) 0 y-Points 601, Detector Av SENSE IN Cermi	andwidth, QPSK Modular 2 Port (2x2 MIMO) dBm/Carrier BW 29.802 errage (RMS) atl Free (1.53100000 GHz 5 Free Run Avg	tion, Mid Channel 1531 M 4 Port (4x4 MIMO) dBm/Carrier BW 32.802 32.802 Radi	Limit (dBm) 39.8 06:46:43 AM Jul 26, 2022 o Std: None	Results
SG SG NR, Initial Value dBm/Carrier BW 26.802 SG NR, dBm/Carrier BW 26.802 SG NR, SG	Band n24, SCS 1 Antenna Gain (dBi) 3 ent Materials Technology PC #IFC 0.9 dB	15kHz, 10 MHz Ba Duty Cycle Factor (dB) 0 y-Points 601, Detector Av SENSE IN Cermi	andwidth, QPSK Modular 2 Port (2x2 MIMO) dBm/Carrier BW 29.802 errage (RMS) atl Free (1.53100000 GHz 5 Free Run Avg	tion, Mid Channel 1531 M 4 Port (4x4 MIMO) dBm/Carrier BW 32.802 32.802 Radi	Limit (dBm) 39.8 06:46:43 AM Jul 26, 2022 o Std: None	Results
SG NR, Initial Value dBm/Carrier BW 26.802 Keysight Spectrum Analyzer - Elem M RL RF S0 Ω Ref Offset 4 10 dB/div Ref 34.00 Log 24.0 14.0	Band n24, SCS 1 Antenna Gain (dBi) 3 ent Materials Technology PC #IFC 0.9 dB	15kHz, 10 MHz Ba Duty Cycle Factor (dB) 0 y-Points 601, Detector Av SENSE IN Cermi	andwidth, QPSK Modular 2 Port (2x2 MIMO) dBm/Carrier BW 29.802 errage (RMS) atl Free (1.53100000 GHz 5 Free Run Avg	tion, Mid Channel 1531 M 4 Port (4x4 MIMO) dBm/Carrier BW 32.802 32.802 Radi	Limit (dBm) 39.8 06:46:43 AM Jul 26, 2022 o Std: None	Results
MSG 5G NR, Initial Value dBm/Carrier BW 26.802 26.802 Keysight Spectrum Analyzer - Elem Ref Offset 4 M RL RF 50 Ω Ref Offset 4 Ref 34.00 Log 4.00 4.00 14.0 4.00 4.00 15.0 36.0 36.0	Band n24, SCS 1 Antenna Gain (dBi) 3 ent Materials Technology PC #IFC 0.9 dB	15kHz, 10 MHz Ba Duty Cycle Factor (dB) 0 y-Points 601, Detector Av SENSE IN Cermi	andwidth, QPSK Modular 2 Port (2x2 MIMO) dBm/Carrier BW 29.802 errage (RMS) atl Free (1.53100000 GHz 5 Free Run Avg	tion, Mid Channel 1531 M 4 Port (4x4 MIMO) dBm/Carrier BW 32.802 32.802 Radi	Limit (dBm) 39.8 06:46:43 AM Jul 26, 2022 o Std: None	Results
MSG 5G NR, Initial Value dBm/Carrier BW 26.802 26.802 Log Ref Offset 4 Od B/div Ref Offset 4 Log 4.0 14.0 4.00 16.0 26.0	Band n24, SCS 1 Antenna Gain (dBi) 3 ent Materials Technology PC #IFC 0.9 dB	15kHz, 10 MHz Ba Duty Cycle Factor (dB) 0 y-Points 601, Detector Av SENSE IN Cermi	andwidth, QPSK Modular 2 Port (2x2 MIMO) dBm/Carrier BW 29.802 errage (RMS) atl Free (1.53100000 GHz 5 Free Run Avg	tion, Mid Channel 1531 M 4 Port (4x4 MIMO) dBm/Carrier BW 32.802 32.802 Radi	Limit (dBm) 39.8 06:46:43 AM Jul 26, 2022 o Std: None	Results
MSG SG NR, Initial Value dBm/Carrier BW 26.802 2 Imitial Value dBm/Carrier BW 26.802 Imitial Value dBm/Carrier BW 26.902 Imitial Value dBm/Carrier BW 26.902 <t< td=""><td>Band n24, SCS 1 Antenna Gain (dBi) 3 ent Materials Technology PC #IFC 0.9 dB</td><td>15kHz, 10 MHz Ba Duty Cycle Factor (dB) 0 y-Points 601, Detector Av SENSE IN Cermi</td><td>andwidth, QPSK Modulat 2 Port (2x2 MIMO) dBm/Carrier BW 29.802 TI ALIGNAUT TI ALIGNAUT Er Freq: 1.53100000 GHz :: Free Run Avg</td><td>Ition, Mid Channel 1531 N 4 Port (4x4 MIMO) dBm/Carrier BW 32.802</td><td>Limit (dBm) 39.8</td><td>Results Pass</td></t<>	Band n24, SCS 1 Antenna Gain (dBi) 3 ent Materials Technology PC #IFC 0.9 dB	15kHz, 10 MHz Ba Duty Cycle Factor (dB) 0 y-Points 601, Detector Av SENSE IN Cermi	andwidth, QPSK Modulat 2 Port (2x2 MIMO) dBm/Carrier BW 29.802 TI ALIGNAUT TI ALIGNAUT Er Freq: 1.53100000 GHz :: Free Run Avg	Ition, Mid Channel 1531 N 4 Port (4x4 MIMO) dBm/Carrier BW 32.802	Limit (dBm) 39.8	Results Pass
MSG SG NR, Initial Value dBm/Carrier BW 26.802 26.802 Imitial Value dBm/Carrier BW Ref Offset 4 Imitial Value dBm/Carrier BW Ref Offset 4 Imitial Value dBm/Carrier BW Imitial Value dBm/Carrier BW Imitial Value dBm/Carrier BW Ref Offset 4 Imitial Value dBm/Carrier BW Imitial Value dBm/Carrier BW Imitial Vale dBm/Carrier BW <td< td=""><td>Band n24, SCS 1 Antenna Gain (dBi) 3 ent Materials Technology PC #IFC 0.9 dB</td><td>15kHz, 10 MHz Ba Duty Cycle Factor (dB) 0 y-Points: 601, Detector: Av SENSEIN: Gen:Low #Att</td><td>andwidth, QPSK Modular 2 Port (2x2 MIMO) dBm/Carrier BW 29.802 errage (RMS) atl Free (1.53100000 GHz 5 Free Run Avg</td><td>In the second se</td><td>Limit (dBm) 39.8 06:46:43 AM Jul 26, 2022 o Std: None o Device: BTS</td><td>Results Pass</td></td<>	Band n24, SCS 1 Antenna Gain (dBi) 3 ent Materials Technology PC #IFC 0.9 dB	15kHz, 10 MHz Ba Duty Cycle Factor (dB) 0 y-Points: 601, Detector: Av SENSEIN: Gen:Low #Att	andwidth, QPSK Modular 2 Port (2x2 MIMO) dBm/Carrier BW 29.802 errage (RMS) atl Free (1.53100000 GHz 5 Free Run Avg	In the second se	Limit (dBm) 39.8 06:46:43 AM Jul 26, 2022 o Std: None o Device: BTS	Results Pass



Initial Value Antenna Duty Cycle 2 Port (2x2 MIMO) 4 Port (4x4 MIMO) Limit dBm/Carrier BW dBm/Carrier BW dBm/Carrier BW dBm/Carrier BW (dBm) Results 24.68 dBm / 9.905 MHz 14.72 dBm /MHz S0 NR, Band n24, SCS 15kHz, 10 MHz Bandwidth, QPSK Modulation, Mid Channel 1531 MHz, 40 RB/0 Offset Initial Value Antenna Duty Cycle 2 Port (2x2 MIMO) 4 Port (4x4 MIMO) Limit dBm/Carrier BW dBit (dBit) Fortor (dBit) Port (carrier BW dBm/Carrier BW dBm/Carrier BW dBm/Carrier BW dBit) 25.005 MHz 12.005 MHz I 4.00 M/Carrier BW dBit) Port (dBit) Port (carrier BW dBm/Carrier BW dBm/Carrier BW dBit) Port (carrier BW dBit) Prove (carrier BW dBit) Port (carrier BW dBit) Port (carrier BW dBit) Prove (carrier BW dBit) Port (carrier BW dBit) Parts Port (carrier BW dBit) Port (carrier BW dBit) Parts Part	5G NF	R, Band n24, SCS	15kHz, 10 MHz Ba	ndwidth, QPSK Modula	tion, Mid Channel 1531	MHz, 25 RB/27 Ot	ffset	
24.679 3 0 27.679 30.679 39.8 Pass Kerlight Spectrum Analyzer - Bennet Material Technology - Points 60, Detector Average (0MS) Aug Marto 001349 PM Ad2, 2022 R.L RF 59.0 DC Strikt (MT) Aug Marto 001349 PM Ad2, 2022 R.L RF 59.0 DC Strikt (MT) Aug Marto 001349 PM Ad2, 2022 R.L RF 59.0 DC Strikt (MT) Aug Marto 001349 PM Ad2, 2022 R.L RF SP0.0 DC Strikt (MT) Aug Marto 001349 PM Ad2, 2022 R.L RF SP0.0 DC Strikt (MT) Aug Marto 001349 PM Ad2, 2022 R.L RF SP0.0 DC Strikt (MT) Radio Device: BTS Radio Device: BTS Ref 07.0 RE Ref 07.0 Aug Marto Strikt (MT) Radio Device: BTS Ref 07.0 RE Ref 07.0 BM Strikt (MT) Strikt (MT) Center 1.53100 GHz #VEW 680 kHz Span 25.00 MHz Span 25.00 MHz <t< th=""><th>Initial Value</th><th>Antenna</th><th>Duty Cycle</th><th>2 Port (2x2 MIMO)</th><th>4 Port (4x4 MIMO)</th><th>Limit</th><th></th><th></th></t<>	Initial Value	Antenna	Duty Cycle	2 Port (2x2 MIMO)	4 Port (4x4 MIMO)	Limit		
Keyigidi Spectrum Analyzer - Bernent Materials Technology - Points 601, Detector Average (945) ALGRA AUTO 02:3348 PMJul 23, 2022 RL RF 9.0 DC SERVE:LINT ALGRA AUTO 02:3348 PMJul 23, 2022 Ref Offreet 40.9 dB Center Freg: 1.53100000 GHz Redio Std: None Radio Device: BTS Ref Offreet 40.9 dB Center Freg: 1.53100 August 24, 200 Ref 30, 200 Ref 30, 200 220 Center 1.53100 GHz Span 25,00 MHz Span 25,00 MHz Center 1.53100 GHz #VBW 680 kHz #Sweep 601 ms Center 1.53100 CHz #VBW 680 kHz #Sweep 601 ms Channel Power Power Spectral Density 24,68 dBm / 9,905 MHz 14,72 dBm /MHz SG NR, Band n24, SCS 15kHz, 10 MHz Bandwidth, OPSK Modulation, Mid Channel 1531 MHz, 40 RB/0 Offset Initial Value Antenna Duty Cycle 2 Port (2x2 MIMO) 4 Port (4x4 MIMO) Limit dBm/Carrier BW Gain (dB) Pattor (dB) dBm/Carrier BW (dBm) Results								-
RL RF S0:0 DC StrikEIMT ALION AT/D 03:13:48 PM J23, 20:22. Radio Ski: None Radio Ski: None Radio Ski: None Radio Ski: None Ref Offset 40:9 dB Fig: Free Run Avg Hold: 100/100 Radio Device: BTS 10 d5/div Ref 32.00 dBm Image: Ski: None Radio Ski: None 200 Image: Ski: Ski: None Radio Device: BTS Radio Device: BTS 200 Image: Ski: Ski: None Radio Device: BTS Radio Device: BTS 200 Image: Ski: Ski: None Radio Device: BTS Radio Device: BTS 200 Image: Ski: Ski: Ski: Ski: Ski: Ski: Ski: Ski	24.679	3	0	27.679	30.679	39.8	Pass	
5G NR, Band n24, SCS 15kHz, 10 MHz Bandwidth, QPSK Modulation, Mid Channel 1531 MHz, 40 RB/0 Offset Initial Value Antenna Duty Cycle 2 Port (2x2 MIMO) 4 Port (4x4 MIMO) Limit dBm/Carrier BW Gain (dBi) Factor (dB) dBm/Carrier BW dBm/Carrier BW (dBm) Results	Ref S0 (2000) Ref Offse Ref Offse Ref Offse Ref Offse 22.0	2 DC	SENSE:IN Cent	rt ALIGN AU ter Freg: 1.531000000 GHZ :: Free Run Avg en: 30 dB	Rad g Hold: 100/100	03:13:48 PM Jul 23, 20; iio Std: None iio Device: BTS		
Initial Value Antenna Duty Cycle 2 Port (2x2 MIMO) 4 Port (4x4 MIMO) Limit IBm/Carrier BW Gain (dBi) Factor (dB) dBm/Carrier BW dBm/Carrier BW (dBm) Results								
Initial Value Antenna Duty Cycle 2 Port (2x2 MIMO) 4 Port (4x4 MIMO) Limit dBm/Carrier BW Gain (dBi) Factor (dB) dBm/Carrier BW dBm/Carrier BW (dBm) Results	24.68 d			14.72 dBr	m /MHz			
dBm/Carrier BW Gain (dBi) Factor (dB) dBm/Carrier BW dBm/Carrier BW (dBm) Results	24.68 d	Bm / 9.905	MHz	14.72 dBr	MHz			
	24.68 d	Bm / 9.905 R, Band n24, SCS	MHz 5 15kHz, 10 MHz Ba	14.72 dBr	MHz /MHz ation, Mid Channel 1531		fiset	
	24.68 d	Bm / 9.905 R, Band n24, SCS Antenna	MHz 15kHz, 10 MHz Ba Duty Cycle	14.72 dBr	M /MHz ATUS ation, Mid Channel 1531 4 Port (4x4 MIMO)	Limit		
Ref Offset 40.9 dB	24.68 d	Bm / 9.905 R, Band n24, SCS Antenna Gain (dBi) 3 ement Materials Technolog 2 DC	MHZ 5 15kHz, 10 MHz Ba Duty Cycle Factor (dB) 0 agy - Points: 601, Detector. Av SENSE:IN Cent Trig	14.72 dBr	ATUS ATUS	Limit (dBm)	Results Pass	1

nter 1.5310	0.647			Span 25	00 MHz
es BW 200		#VBW 680 kHz		#Sweep	601 ms
	_	Power Spectral I	Density		
Channel	Power	Power Spectral I	Density		



Initial Value	Antenna Duty Cy		4 Port (4x4 MIMO)	Limit	
dBm/Carrier BW 26.441	Gain (dBi) Factor (d 3 0	B) dBm/Carrier BW 29.441	dBm/Carrier BW 32.441	(dBm) 39.8	Results Pass
- Keysight Spectrum Analyzer - Element					
Reysignt spectrum Analyzer - Element		ENSE:INT ALIGN AL Center Freq: 1.531000000 GHz		07:25:41 AM Jul 26, 2022	
	#IFGain:Low	Trig: Free Run Av #Atten: 30 dB	g Hold: 100/100 R	adio Device: BTS	-
Ref Offset 40. 10 dB/div Ref 32.00 d	9 dB Bm				
22.0					
2.00					
-8.00					
-28.0					
-38.0					
-58.0					
Center 1.53100 GHz #Res BW 200 kHz		#VBW 680 kHz		Span 25.00 MHz #Sweep 601 ms	
Channel Power		Power Spectral De	aneity		
		•	-		
26.44 dBn	n / 9.905 MHz	16.48 dB	m /MHz		
MSG		K os	TATUS		
	and n24, SCS 15kHz, 10 MH	ಗ _ರ ಣ Hz Bandwidth, QPSK Modula		1 MHz, 40 RB/12 Offs	et
	and n24, SCS 15kHz, 10 Mł Antenna Duty Cy Gain (dBi) Factor (c	Hz Bandwidth, QPSK Modula Cle 2 Port (2x2 MIMO)	ation, Mid Channel 153		Results
5G NR, Ba	Antenna Duty Cy	Hz Bandwidth, QPSK Modula Cle 2 Port (2x2 MIMO)	ation, Mid Channel 153 4 Port (4x4 MIMO)	Limit	
5G NR, Ba Initial Value dBm/Carrier BW 26.602	Antenna Duty Cyu Gain (dBi) Factor (d 3 0 Materials Technology - Points: 601, Dete	Iz Bandwidth, QPSK Modula cle 2 Port (2x2 MIMO) IB) dBm/Carrier BW 29.602	ation, Mid Channel 153 4 Port (4x4 MIMO) dBm/Carrier BW 32.602	Limit (dBm) 39.8	Results Pass
5G NR, Ba Initial Value dBm/Carrier BW 26.602	Antenna Duty Cyc Gain (dBi) Factor (c 3 0 Materials Technology - Points: 601, Dete C SI	Hz Bandwidth, QPSK Modula Cle 2 Port (2x2 MIMO) HB) dBm/Carrier BW 29.602 ctor.Average (RMS) ENSE:INT ALIGN AL Center Freq: 1.53100000 GHz Trig: Free Run Av	ation, Mid Channel 153 4 Port (4x4 MIMO) dBm/Carrier BW 32.602 JTO R g Hold: 100/100	Limit (dBm) 39.8 09:10:14 AM Jul 26, 2022 adio Std: None	Results Pass
5G NR, Ba Initial Value dBm/Carrier BW 26.602 Keysight Spectrum Analyzer - Element M RL RF 50 Ω D Ref Offset 40.	Antenna Duty Cyc Gain (dBi) Factor (c 3 0 Materials Technology - Points: 601, Dete C St #IFGain:Low	Hz Bandwidth, QPSK Modula cle 2 Port (2x2 MIMO) IB) dBm/Carrier BW 29.602	ation, Mid Channel 153 4 Port (4x4 MIMO) dBm/Carrier BW 32.602 JTO R g Hold: 100/100	Limit (dBm) 39.8 09:10:14 AM Jul 26, 2022	Results Pass
5G NR, Ba Initial Value dBm/Carrier BW 26.602 Keysight Spectrum Analyzer - Element W RL RF 50 Ω D Ref Offset 40: 10 dB/div Ref 32.00 d	Antenna Duty Cyc Gain (dBi) Factor (c 3 0 Materials Technology - Points: 601, Dete C St #IFGain:Low	Hz Bandwidth, QPSK Modula Cle 2 Port (2x2 MIMO) HB) dBm/Carrier BW 29.602 ctor.Average (RMS) ENSE:INT ALIGN AL Center Freq: 1.53100000 GHz Trig: Free Run Av	ation, Mid Channel 153 4 Port (4x4 MIMO) dBm/Carrier BW 32.602 JTO R g Hold: 100/100	Limit (dBm) 39.8 09:10:14 AM Jul 26, 2022 adio Std: None	Results Pass
5G NR, Ba Initial Value dBm/Carrier BW 26.602 Keysight Spectrum Analyzer - Element W RL RF 50 Ω D Ref Offset 40: 10 dB/div Ref 32.00 d	Antenna Duty Cyc Gain (dBi) Factor (c 3 0 Materials Technology - Points: 601, Dete C St #IFGain:Low	Hz Bandwidth, QPSK Modula Cle 2 Port (2x2 MIMO) HB) dBm/Carrier BW 29.602 ctor.Average (RMS) ENSE:INT ALIGN AL Center Freq: 1.53100000 GHz Trig: Free Run Av	ation, Mid Channel 153 4 Port (4x4 MIMO) dBm/Carrier BW 32.602 JTO R g Hold: 100/100	Limit (dBm) 39.8 09:10:14 AM Jul 26, 2022 adio Std: None	Results Pass
5G NR, Ba Initial Value dBm/Carrier BW 26.602 Image: State of the state	Antenna Duty Cyc Gain (dBi) Factor (c 3 0 Materials Technology - Points: 601, Dete C St #IFGain:Low	Hz Bandwidth, QPSK Modula Cle 2 Port (2x2 MIMO) HB) dBm/Carrier BW 29.602 ctor.Average (RMS) ENSE:INT ALIGN AL Center Freq: 1.53100000 GHz Trig: Free Run Av	ation, Mid Channel 153 4 Port (4x4 MIMO) dBm/Carrier BW 32.602 JTO R g Hold: 100/100	Limit (dBm) 39.8 09:10:14 AM Jul 26, 2022 adio Std: None	Results Pass
5G NR, Ba Initial Value dBm/Carrier BW 26.602 Image: State S	Antenna Duty Cyc Gain (dBi) Factor (c 3 0 Materials Technology - Points: 601, Dete C St #IFGain:Low	Hz Bandwidth, QPSK Modula Cle 2 Port (2x2 MIMO) HB) dBm/Carrier BW 29.602 ctor.Average (RMS) ENSE:INT ALIGN AL Center Freq: 1.53100000 GHz Trig: Free Run Av	ation, Mid Channel 153 4 Port (4x4 MIMO) dBm/Carrier BW 32.602 JTO R g Hold: 100/100	Limit (dBm) 39.8 09:10:14 AM Jul 26, 2022 adio Std: None	Results Pass
5G NR, Ba Initial Value dBm/Carrier BW 26.602 26.802 Reysight Spectrum Analyzer - Element Ref Offset 40. 10 dB/div Ref Offset 40. 22.0 12.0 8.00	Antenna Duty Cyc Gain (dBi) Factor (c 3 0 Materials Technology - Points: 601, Dete C St #IFGain:Low	Hz Bandwidth, QPSK Modula Cle 2 Port (2x2 MIMO) HB) dBm/Carrier BW 29.602 ctor.Average (RMS) ENSE:INT ALIGN AL Center Freq: 1.53100000 GHz Trig: Free Run Av	ation, Mid Channel 153 4 Port (4x4 MIMO) dBm/Carrier BW 32.602 JTO R g Hold: 100/100	Limit (dBm) 39.8 09:10:14 AM Jul 26, 2022 adio Std: None	Results Pass
5G NR, Ba Initial Value dBm/Carrier BW 26.602 Keysight Spectrum Analyzer - Element Kall RF 50 Ω Ref Offset 402 10 dB/div Ref 32.00 d 20 10 dB/div Ref 32.00 d -800 -800 -80 -80 -80 -80 -80	Antenna Duty Cyc Gain (dBi) Factor (c 3 0 Materials Technology - Points: 601, Dete C St #IFGain:Low	Hz Bandwidth, QPSK Modula Cle 2 Port (2x2 MIMO) HB) dBm/Carrier BW 29.602 ctor.Average (RMS) ENSE:INT ALIGN AL Center Freq: 1.53100000 GHz Trig: Free Run Av	ation, Mid Channel 153 4 Port (4x4 MIMO) dBm/Carrier BW 32.602 JTO R g Hold: 100/100	Limit (dBm) 39.8 09:10:14 AM Jul 26, 2022 adio Std: None	Results Pass
SG NR, Ba Initial Value dBm/Carrier BW 26.602 26.602 26.602 26.602 26.602 26.602 26.602 26.602 26.602 26.602 26.602 27.0 28.0 22.0 22.0 22.0 22.0 22.0 22.0 22.0 22.0 22.0 22.0 22.0 22.0 22.0 22.0 23.00 24.00 25.00 26.00 27.00 28.00 28.00 28.00 28.00 28.00 28.00 28.00 28.00 28.00 28.00 28.00 28.00 28.00	Antenna Duty Cyc Gain (dBi) Factor (c 3 0 Materials Technology - Points: 601, Dete C St #IFGain:Low	Hz Bandwidth, QPSK Modula Cle 2 Port (2x2 MIMO) HB) dBm/Carrier BW 29.602 ctor.Average (RMS) ENSE:INT ALIGN AL Center Freq: 1.53100000 GHz Trig: Free Run Av	ation, Mid Channel 153 4 Port (4x4 MIMO) dBm/Carrier BW 32.602 JTO R g Hold: 100/100	Limit (dBm) 39.8 09:10:14 AM Jul 26, 0222 adio Std: None adio Device: BTS	Results Pass
5G NR, Ba Initial Value dBm/Carrier BW 26.602 Keysight Spectrum Analyzer - Element Kall RF 50 Ω Ref Offset 402 10 dB/div Ref 32.00 d 20 10 dB/div Ref 32.00 d -800 -800 -80 -80 -80 -80 -80	Antenna Duty Cyc Gain (dBi) Factor (c 3 0 Materials Technology - Points: 601, Dete C St #IFGain:Low	Hz Bandwidth, QPSK Modula Cle 2 Port (2x2 MIMO) HB) dBm/Carrier BW 29.602 ctor.Average (RMS) ENSE:INT ALIGN AL Center Freq: 1.53100000 GHz Trig: Free Run Av	ation, Mid Channel 153 4 Port (4x4 MIMO) dBm/Carrier BW 32.602 JTO R g Hold: 100/100	Limit (dBm) 39.8 09:10:14 AM Jul 26, 2022 adio Std: None	Results Pass
5G NR, Ba Initial Value dBm/Carrier BW 26.602 Keysight Spectrum Analyzer - Element K Resight Spectrum Analyzer - Element Ref Offset 402 10 dB/div Ref 32.00 d 220 12.0 200 8.00 -180 -180 -280 -380 -48.0 -59.0 Center 1.53100 GHz	Antenna Duty Cyc Gain (dBi) Factor (c 3 0 Materials Technology - Points: 601, Dete C St #IFGain:Low	Hz Bandwidth, QPSK Modula cle 2 Port (2x2 MIMO) IB) dBm/Carrier BW 29.602 ctor: Average (RMS) NSE:INT ALIGN AL Center Freq: 1.53100000 GHz Trig: Free Run Av #Atten: 30 dB	ation, Mid Channel 153 4 Port (4x4 MIMO) dBm/Carrier BW 32.602	Limit (dBm) 39.8 09:10:14 AM Jul 26, 2022 adio Std: None Radio Device: BTS	Results Pass
SG NR, Ba Initial Value dBm/Carrier BW 26.602 Image: State of the state	Antenna Duty Cyo Gain (dBi) Factor (c 3 0 Materials Technology - Points: 601, Dete C SI #IFGain:Low 9 dB Bm	Hz Bandwidth, QPSK Modula Cle 2 Port (2x2 MIMO) IB) dBm/Carrier BW 29.602 Correct Average (RMS) INSEINT ALIGN AL Center Freq: 1.53100000 GHz Trig: Free Run Av #Atten: 30 dB #VBW 680 kHz Power Spectral De	ation, Mid Channel 153 4 Port (4x4 MIMO) dBm/Carrier BW 32.602 g Hold: 100/100 R ation, Mid Channel 153 R R R R R R R R R R R R R	Limit (dBm) 39.8 09:10:14 AM Jul 26, 2022 adio Std: None Radio Device: BTS	Results Pass
SG NR, Ba Initial Value dBm/Carrier BW 26.602 Image: State of the state	Antenna Duty Cyc Gain (dBi) Factor (c 3 0 Materials Technology - Points: 601, Dete C St #IFGain:Low	Hz Bandwidth, QPSK Modula Cle 2 Port (2x2 MIMO) IB) dBm/Carrier BW 29.602 Ctor: Average (RMS) NSE:INT ALIGN AL Center Freq: 1.531000000 GHz Trig: Free Run Av #Atten: 30 dB	ation, Mid Channel 153 4 Port (4x4 MIMO) dBm/Carrier BW 32.602 g Hold: 100/100 R ation, Mid Channel 153 R R R R R R R R R R R R R	Limit (dBm) 39.8 09:10:14 AM Jul 26, 2022 adio Std: None Radio Device: BTS	Results Pass
SG NR, Ba Initial Value dBm/Carrier BW 26.602 Image: State of the state	Antenna Duty Cyo Gain (dBi) Factor (c 3 0 Materials Technology - Points: 601, Dete C SI #IFGain:Low 9 dB Bm	Hz Bandwidth, QPSK Modula Cle 2 Port (2x2 MIMO) IB) dBm/Carrier BW 29.602 Correct Average (RMS) INSEINT ALIGN AL Center Freq: 1.53100000 GHz Trig: Free Run Av #Atten: 30 dB #VBW 680 kHz Power Spectral De	ation, Mid Channel 153 4 Port (4x4 MIMO) dBm/Carrier BW 32.602 g Hold: 100/100 R ation, Mid Channel 153 R R R R R R R R R R R R R	Limit (dBm) 39.8 09:10:14 AM Jul 26, 2022 adio Std: None Radio Device: BTS	Results Pass



220 200 400 400 400 400 400 400					tion, Mid Channel 1531		ffset	
28.221 3 0 31.221 34.221 39.8 Pass Monophilis Spectrum Analyzer - Bernert Materials Technology - Points (00) Extension of the technology - Points (00) Extension of technology - Points (Desults	
Replight Spectrum Analyzer - Bement Materials Technology - Points 601, Detector Average (MMS) 014804 MP Jun 19, 2022 Rt Ref 35.00 Gitted FF ALIGN AUTO 014804 MP Jun 19, 2022 Ref Gitted FF Main 19, 2022 Radio Std: None Radio Std: None 014804 MP Jun 19, 2022 FF Gain Low FF Gain Low FF Gain Low Radio Device: BTS 014804 MP Jun 19, 2022 Radio Device: BTS Radio Device: BTS Radio Device: BTS 014804 MP Jun 19, 2022 Radio Device: BTS Radio Device: BTS 014804 MP Jun 19, 2022 FF Gain Low FF Gain Low FF Gain Low 014804 MP Jun 19, 2022 Radio Device: BTS Radio Device: BTS 014804 MP Jun 19, 2024 FF Gain Low FF Gain Low FF Gain Low 014804 MP Jun 19, 2024 FF Gain Low FF Gain Low Radio Device: BTS 014804 MP Jun 19, 2024 FF Gain Low FF Gain Low FF Gain Low FF Gain Low 014804 MP Jun 19, 2024 FF Gain Low FF Gain Low FF Gain Low FF Gain Low 014804 MP Jun 19, 2024 FF Gain Low FF Gain Low FF Gain Low FF Gain Low 0200 MP Jun 19, 2024 FF Ga								-
RL RP 50.0 DC Strike:EMT Augit Auto 0.14864 PPM.mis.2022. Radio Std:: None Radio Std:: None Radio Std:: None Radio Device: BTS 10 dB/dy Ref 32.00 dBm	20.221	3	0	31.221	34.221	39.0	F 855	
RL RP 50.0 DC Strike:EMT Augit Auto 0.14864 PPM.mis.2022. Radio Std:: None Radio Std:: None Radio Std:: None Radio Device: BTS 10 dB/dy Ref 32.00 dBm	Kanaiaht Saaataan Aashaas - Elaa	and Materials Technology	Deleter 601 Detector A	(0) 40)				
Center 1.53100 GHz #VEW 680 kHz Channel Power Channel Powe					ro I	01:48:04 PM Jun 18, 2	022	
#FGalinLow #Atten: 30 dB Radio Device: BTS Ref Offset 40.9 dB			Cen	ter Freq: 1.531000000 GHz	Rad	o Std: None		
Ref Offset 40.9 dB 10 dB/d/v Ref 32.00 dBm 220		#IF				o Device: BTS		
10 dB/dV Ref 32.00 dBm 220 220 220 220 220 220 220 22								
Log 220 220 220 200 200 200 200 20	10 dB/div Ref 32.00	dBm						
100 1	Log							
200 3.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4								
Bill			(
1100 1			f					
220 230 2	-8.00							
300 3	-18.0							
440 1	-28.0				·			
Center 1.53100 GHz #VBW 680 kHz Span 25.00 MHz #Res BW 200 kHz #VBW 680 kHz #Sweep 601 ms Channel Power Power Spectral Density 28.22 dBm / 9.905 MHz 18.26 dBm /MHz Mage Status SG NR, Band n24, SCS 15kHz, 10 MHz Bandwidth, 16-QAM Modulation, Mid Channel 1531 MHz, 25 RB/0 Offset SG NR, Band n24, SCS 15kHz, 10 MHz Bandwidth, 16-QAM Modulation, Mid Channel 1531 MHz, 25 RB/0 Offset Initial Value Antenna Duty Cycle 2 Port (2x2 MIMO) 4 Port (4x4 MIMO) Limit dBm/Carrier BW Gain (dBi) Factor (dB) dBm/Carrier BW dBm/Carrier BW (dBm) Results	-38.0							
Center 1.53100 GHz #Res BW 200 kHz Span 25.00 MHz #VBW 680 kHz Span 25.00 MHz #Sweep 601 ms Channel Power Power Spectral Density 28.22 dBm / 9.905 MHz 18.26 dBm /MHz Asc Image: Comparison of the status SG NR, Band n24, SCS 15kHz, 10 MHz Bandwidth, 16-QAM Modulation, Mid Channel 1531 MHz, 25 RB/0 Offset Initial Value Antenna Duty Cycle 2 Port (2x2 MIMO) 4 Port (4x4 MIMO) Limit Gain (dBi) Factor (dB) dBm/Carrier BW dBm/Carrier BW	-48.0							
#Res BW 200 kHz #VBW 680 kHz #Śweep 601 ms Channel Power Power Spectral Density 28.22 dBm / 9.905 MHz 18.26 dBm /MHz Asg SG NR, Band n24, SCS 15kHz, 10 MHz Bandwidth, 16-QAM Modulation, Mid Channel 1531 MHz, 25 RB/0 Offset Initial Value Antenna Duty Cycle 2 Port (2x2 MIMO) 4 Port (4x4 MIMO) Limit dBm/Carrier BW Gain (dBi) Factor (dB) dBm/Carrier BW dBm/Carrier BW (dBm) Results	-58.0							
#Res BW 200 kHz #VBW 680 kHz #Śweep 601 ms Channel Power Power Spectral Density 28.22 dBm / 9.905 MHz 18.26 dBm /MHz Asg SG NR, Band n24, SCS 15kHz, 10 MHz Bandwidth, 16-QAM Modulation, Mid Channel 1531 MHz, 25 RB/0 Offset Initial Value Antenna Duty Cycle 2 Port (2x2 MIMO) 4 Port (4x4 MIMO) Limit dBm/Carrier BW Gain (dBi) Factor (dB) dBm/Carrier BW dBm/Carrier BW (dBm) Results								
Channel Power Power Spectral Density 28.22 dBm / 9.905 MHz 18.26 dBm /MHz MHz SS NR, Band n24, SCS 15kHz, 10 MHz Bandwidth, 16-QAM Modulation, Mid Channel 1531 MHz, 25 RB/0 Offset SG NR, Band n24, SCS 15kHz, 10 MHz Bandwidth, 16-QAM Modulation, Mid Channel 1531 MHz, 25 RB/0 Offset Initial Value Antenna Duty Cycle 2 Port (2x2 MIMO) 4 Port (4x4 MIMO) Limit dBm/Carrier BW dBm/Carrier BW (dBm)				#3/DW/ 600 kU-				
28.22 dBm / 9.905 MHz 18.26 dBm /MHz ASG SG NR, Band n24, SCS 15kHz, 10 MHz Bandwidth, 16-QAM Modulation, Mid Channel 1531 MHz, 25 RB/0 Offset Initial Value Antenna Duty Cycle 2 Port (2x2 MIMO) 4 Port (4x4 MIMO) Limit dBm/Carrier BW Gain (dBi) Factor (dB) dBm/Carrier BW dBm/Carrier BW (dBm) Results	#Res BW 200 KH2					#Sweep oor	lis	
5G NR, Band n24, SCS 15kHz, 10 MHz Bandwidth, 16-QAM Modulation, Mid Channel 1531 MHz, 25 RB/0 Offset Initial Value Antenna Duty Cycle 2 Port (2x2 MIMO) 4 Port (4x4 MIMO) Limit dBm/Carrier BW Gain (dBi) Factor (dB) dBm/Carrier BW dBm/Carrier BW (dBm) Results		m / 9.905 i						
Initial Value Antenna Duty Cycle 2 Port (2x2 MIMO) 4 Port (4x4 MIMO) Limit dBm/Carrier BW Gain (dBi) Factor (dB) dBm/Carrier BW dBm/Carrier BW (dBm) Results		m / 9.905						
dBm/Carrier BW Gain (dBi) Factor (dB) dBm/Carrier BW dBm/Carrier BW (dBm) Results		m / 9.905		18.26 dBr	n /MHz			
	28.22 dB	Band n24, SCS 1	MHz 5kHz, 10 MHz Ba	18.26 dBr	m /MHz		Dffset	
20.004 3 U 29.564 32.564 39.8 Pass	28.22 dB	Band n24, SCS 1 Antenna	MHz 5kHz, 10 MHz Ba Duty Cycle	18.26 dBr	m /MHz ATUS ation, Mid Channel 1531 4 Port (4x4 MIMO)	Limit		
	28.22 dB SG NR, E Initial Value dBm/Carrier BW	Band n24, SCS 1 Antenna Gain (dBi)	MHz 5kHz, 10 MHz Ba Duty Cycle Factor (dB)	18.26 dBr	m /MHz ation, Mid Channel 1531 4 Port (4x4 MIMO) dBm/Carrier BW	Limit (dBm)	Results	
	SG NR, E Initial Value dBm/Carrier BW 26.564	Band n24, SCS 1 Antenna Gain (dBi) 3	MHz 5kHz, 10 MHz Ba Duty Cycle Factor (dB) 0	18.26 dBr	m /MHz ation, Mid Channel 1531 4 Port (4x4 MIMO) dBm/Carrier BW	Limit (dBm) 39.8	Results Pass	1
X RL RF 50 Ω DC SENSE:INT ALIGN AUTO 03:02:13 PM Jul 23, 2022	SG NR, E Initial Value dBm/Carrier BW 26.564	Band n24, SCS 1 Antenna Gain (dBi) 3 ent Materials Technolog	MHz 5kHz, 10 MHz Ba Duty Cycle Factor (dB) 0 y-Points: 601, Detector: Av	18.26 dBr	m /MHz ation, Mid Channel 1531 4 Port (4x4 MIMO) dBm/Carrier BW 32.564	Limit (dBm) 39.8	Results Pass	
XI RF 50 Ω DC SEINSE:INT ALIGN AUTO 03:02:13 PM Jul 23, 2022 Center Freq: 1.531000000 GHz Radio Std: None	SG NR, E Initial Value dBm/Carrier BW 26.564	Band n24, SCS 1 Antenna Gain (dBi) 3 ent Materials Technolog	MHz 5kHz, 10 MHz Ba Duty Cycle Factor (dB) 0 y-Points: 601, Detector Av SENSE: IN Cen	18.26 dBr	m /MHz ation, Mid Channel 1531 4 Port (4x4 MIMO) dBm/Carrier BW 32.564	Limit (dBm) 39.8	Results Pass	
X RL RF 50 Ω DC SENSE:INT ALIGN AUTO 03:02:13 PM Jul 23, 2022	SG NR, E Initial Value dBm/Carrier BW 26.564	Band n24, SCS 1 Antenna Gain (dBi) 3 ent Materials Technolog, DC	MHz 5kHz, 10 MHz Ba Duty Cycle Factor (dB) 0 y-Points: 601, Detector Ao SENSE:IN Cere Trig	18.26 dBr	MIHZ ATUS ation, Mid Channel 1531 4 Port (4x4 MIMO) dBm/Carrier BW 32.564 32.564 Rad	Limit (dBm) 39.8 03:02:13 PMJul 23, 20 o Std: None	Results Pass	
X RL RF 50 Ω DC SENSE:INT ALIGN AUTO 03:02:13 PM Jul 23, 2022 Center Freq: 1.531000000 GHz Radio Std: None #FGain:Low #Freq: 1.63100000 GHz Radio Device: BTS	28.22 dB SG NR, E Initial Value dBm/Carrier BW 26.564 Keysight Spectrum Analyzer - Elem Keysight Spectrum Analyzer - Elem Keysight Spectrum Analyzer - Elem	Band n24, SCS 1 Antenna Gain (dBi) 3 ent Materials Technolog DC	MHz 5kHz, 10 MHz Ba Duty Cycle Factor (dB) 0 y-Points: 601, Detector Ao SENSE:IN Cere Trig	18.26 dBr	MIHZ ATUS ation, Mid Channel 1531 4 Port (4x4 MIMO) dBm/Carrier BW 32.564 32.564 Rad	Limit (dBm) 39.8 03:02:13 PMJul 23, 20 o Std: None	Results Pass	1
X RL RF 50 Ω DC SENSE:INT ALIGN AUTO 03:02:13 PM Jul 23, 2022 Center Freq: 1.531000000 GHz Radio Std: None #FGain:Low #Freq: 1.63100000 GHz Radio Device: BTS	28.22 dB SG NR, E Initial Value dBm/Carrier BW 26.564 Keysight Spectrum Analyzer - Elem Keysight Spectrum Analyzer - Elem Keysight Spectrum Analyzer - Elem	Band n24, SCS 1 Antenna Gain (dBi) 3 ent Materials Technolog DC	MHz 5kHz, 10 MHz Ba Duty Cycle Factor (dB) 0 y-Points: 601, Detector Ao SENSE:IN Cere Trig	18.26 dBr	MIHZ ATUS ation, Mid Channel 1531 4 Port (4x4 MIMO) dBm/Carrier BW 32.564 32.564 Rad	Limit (dBm) 39.8 03:02:13 PMJul 23, 20 o Std: None	Results Pass	1
M RL RF 50 Ω DC SENSE:INT ALIGN AUTO 0:3:02:13 PM Jul 23, 2022 Center Freq: 1.531000000 GHz Radio Std: None Trig: Free Run Avg Hold: 100/100 Radio Device: BTS #FGain:Low #Atten: 30 dB Ref Offfset 40.9 dB Ref 34.00 dBm	28.22 dB MSG 5G NR, E Initial Value dBm/Carrier BW 26.564 26.564 Keysight Spectrum Analyzer - Elem Keysight Spectrum Analyzer - Elem R E 50 Ω RL RF 50 Ω	Band n24, SCS 1 Antenna Gain (dBi) 3 ent Materials Technolog DC	MHz 5kHz, 10 MHz Ba Duty Cycle Factor (dB) 0 y-Points: 601, Detector Ao SENSE:IN Cere Trig	18.26 dBr	MIHZ ATUS ation, Mid Channel 1531 4 Port (4x4 MIMO) dBm/Carrier BW 32.564 32.564 Rad	Limit (dBm) 39.8 03:02:13 PMJul 23, 20 o Std: None	Results Pass	1
X RL RF 50 Ω DC SENSE:INT ALIGN AUTO 03:02:13 PM Jul 23, 2022 Center Freq: 1.531000000 GHz #IFGain:Low Trig: Freq Run Avg Hold: 100/100 Radio Std: None #IFGain:Low #IFGain:Low #Atten: 30 dB Avg Hold: 100/100 Radio Device: BTS 0 dB/div Ref 34.00 dBm	28.22 dB SG NR, E Initial Value dBm/Carrier BW 26.564 26.564 Keysight Spectrum Analyzer - Elem Keysight Spectrum Analyzer - Elem Ref Offset 4 10 dB/div Ref 34.00 24.0	Band n24, SCS 1 Antenna Gain (dBi) 3 ent Materials Technolog DC	MHz 5kHz, 10 MHz Ba Duty Cycle Factor (dB) 0 y-Points: 601, Detector Ao SENSE:IN Cere Trig	18.26 dBr	MIHZ ATUS ation, Mid Channel 1531 4 Port (4x4 MIMO) dBm/Carrier BW 32.564 32.564 Rad	Limit (dBm) 39.8 03:02:13 PMJul 23, 20 o Std: None	Results Pass	1
M RL RF 50 Ω DC SENSE:INT ALIGN AUTO 0:3:02:13 PM Jul 23, 2022 Center Freq: 1.531000000 GHz Radio Std: None Trig: Free Run Avg Hold: 100/100 Radio Device: BTS #FGain:Low #Atten: 30 dB Ref Offfset 40.9 dB Ref 34.00 dBm	28.22 dB SG NR, E Initial Value dBm/Carrier BW 26.564 26.564 Keysight Spectrum Analyzer - Elem Keysight Spectrum Analyzer - Elem Ref Offset 4 10 dB/div Ref 34.00 24.0	Band n24, SCS 1 Antenna Gain (dBi) 3 ent Materials Technolog DC	MHz 5kHz, 10 MHz Ba Duty Cycle Factor (dB) 0 y-Points: 601, Detector Ao SENSE:IN Cere Trig	18.26 dBr	MIHZ ATUS ation, Mid Channel 1531 4 Port (4x4 MIMO) dBm/Carrier BW 32.564 32.564 Rad	Limit (dBm) 39.8 03:02:13 PMJul 23, 20 o Std: None	Results Pass	1
X RL RF 50 Ω DC SENSE:INT ALIGN AUTO 03:02:13 PM Jul 23, 2022 Center Freq: 1.531000000 GHz #IFGain:Low Trig: Freq Run Avg Hold: 100/100 Radio Std: None #IFGain:Low #IFGain:Low #Atten: 30 dB Avg Hold: 100/100 Radio Device: BTS 0 dB/div Ref 34.00 dBm	28.22 dB MSG 5G NR, E Initial Value dBm/Carrier BW 26.564 26.564 Keysight Spectrum Analyzer - Elem Keysight Spectrum Analyzer - Elem Ref Offset 4 10 dB/div Ref 34.00 24.0 14.0	Band n24, SCS 1 Antenna Gain (dBi) 3 ent Materials Technolog DC	MHz 5kHz, 10 MHz Ba Duty Cycle Factor (dB) 0 y-Points: 601, Detector Ao SENSE:IN Cere Trig	18.26 dBr	MIHZ ATUS ation, Mid Channel 1531 4 Port (4x4 MIMO) dBm/Carrier BW 32.564 32.564 Rad	Limit (dBm) 39.8 03:02:13 PMJul 23, 20 o Std: None	Results Pass	1
M RL RF 50 Ω DC SENSE:INT ALIGN AUTO 0:0:0:13 PM Jul 23, 2022 Center Freq: 1.531000000 GHz Freq: 1.531000000 GHz Radio Std: None #IFGain:Low #Atten: 30 dB Avg Hold: 100/100 Ref Offset 40.9 dB Ref 34.00 dBm Log 24.0 140 Image: Center Freq: 1.53100000 GHz	28.22 dB SG NR, E Initial Value dBm/Carrier BW 26.564 Keysight Spectrum Analyzer - Elem RE SD Ω RE SD Ω RE Offset 4 10 dB/div Ref 34.00 24.0 14.0 4.00	Band n24, SCS 1 Antenna Gain (dBi) 3 ent Materials Technolog DC	MHz 5kHz, 10 MHz Ba Duty Cycle Factor (dB) 0 y-Points: 601, Detector Ao SENSE:IN Cere Trig	18.26 dBr	MIHZ ATUS ation, Mid Channel 1531 4 Port (4x4 MIMO) dBm/Carrier BW 32.564 32.564 Rad	Limit (dBm) 39.8 03:02:13 PMJul 23, 20 o Std: None	Results Pass	
M RL RF 50 Ω DC SENSE:INT ALIGN AUTO 0:0:0:13 PM Jul 23, 2022 Center Freq: 1.53100000 GHz Radio Std: None Trig: Freq: 1.53100000 GHz Ref Offset 40.9 dB Code/display Ref 34.00 dBm Code/display Auton 0:0:0:13 PM Jul 23, 2022 Ref offset 40.9 dB Code/display Code/display Ref 34.00 dBm Code/display Code/display Code/display Code/display Code/display Code/display Code/display Center Freq: Code/display Ref 0ffset 40.9 dB Code/display	28.22 dB	Band n24, SCS 1 Antenna Gain (dBi) 3 ent Materials Technolog DC	MHz 5kHz, 10 MHz Ba Duty Cycle Factor (dB) 0 y-Points: 601, Detector Ao SENSE:IN Cere Trig	18.26 dBr	MIHZ ATUS ation, Mid Channel 1531 4 Port (4x4 MIMO) dBm/Carrier BW 32.564 32.564 Rad	Limit (dBm) 39.8 03:02:13 PMJul 23, 20 o Std: None	Results Pass	
M RL RF 50 Ω DC SENSE:INT ALIGN AUTO 0:0:0:1:3 PM Jul 23, 2022 M Radio Std: None Radio Std: None #// FGain:Low #// FGain:Low #// Atten: 30 dB Avg/Hold: 100/100 Radio Device: BTS Ref Offset 40.9 dB Common Frage 1.53100000 GHz Avg/Hold: 100/100 Radio Device: BTS 0 dB/div Ref 34.00 dBm Common Frage Auton	28.22 dB	Band n24, SCS 1 Antenna Gain (dBi) 3 ent Materials Technolog DC	MHz 5kHz, 10 MHz Ba Duty Cycle Factor (dB) 0 y-Points: 601, Detector Ao SENSE:IN Cere Trig	18.26 dBr	MIHZ ATUS ation, Mid Channel 1531 4 Port (4x4 MIMO) dBm/Carrier BW 32.564 32.564 Rad	Limit (dBm) 39.8 03:02:13 PMJul 23, 20 o Std: None	Results Pass	1
X RL RF 50 Ω DC SENSE:INT ALIGN AUTO 0:0:02:13 PM Jul 23, 2022 Center Freq: 1.53100000 GHz Radio Std: None #IFGain:Low #IFGain:Low #Atten: 30 dB Avg Hold: 100/100 Radio Device: BTS Ref Offset 40.9 dB Center Freq: 1.53100000 GHz Avg Hold: 100/100 Radio Device: BTS Composition Ref 34.00 dBm Center Freq: 1.53100000 GHz Avg Hold: 100/100 Radio Device: BTS Composition Ref 34.00 dBm Center Freq: 1.53100000 GHz Center Freq: 1.53100000 GHz Ref 34.00 dBm Center Freq34.00 dBm Center Freq34.00 dBm	28.22 dB	Band n24, SCS 1 Antenna Gain (dBi) 3 ent Materials Technolog DC	MHz 5kHz, 10 MHz Ba Duty Cycle Factor (dB) 0 y-Points: 601, Detector Ao SENSE:IN Cere Trig	18.26 dBr	MIHZ ATUS ation, Mid Channel 1531 4 Port (4x4 MIMO) dBm/Carrier BW 32.564 32.564 Rad	Limit (dBm) 39.8 03:02:13 PMJul 23, 20 o Std: None	Results Pass	1
RL RF 50 Ω DC SENSE:INT ALIGN AUTO 03:02:13 PM Jul 23, 2022 Center Freq: 1.53100000 GHz Radio Std: None #IFGain:Low #IFGain:Low Avg Hold: 100/100 Ref Offset 40.9 dB Pog Pog Pog 24.0 Pog Pog Pog Pog 14.0 Pog Pog Pog Pog 24.0 Pog Pog Pog Pog 14.0 Pog Pog Pog Pog 24.0 Pog Pog Pog Pog Pog 26.0 Pog Pog Pog Pog <td>28.22 dB</td> <td>Band n24, SCS 1 Antenna Gain (dBi) 3 ent Materials Technolog DC </td> <td>MHz 5kHz, 10 MHz Ba Duty Cycle Factor (dB) 0 y-Points: 601, Detector Ao SENSE:IN Cere Trig</td> <td>18.26 dBr</td> <td>MIHZ ATUS ation, Mid Channel 1531 4 Port (4x4 MIMO) dBm/Carrier BW 32.564 32.564 Rad</td> <td>Limit (dBm) 39.8 03:02:13 PMJul 23, 20 o Std: None</td> <td>Results Pass</td> <td>1</td>	28.22 dB	Band n24, SCS 1 Antenna Gain (dBi) 3 ent Materials Technolog DC	MHz 5kHz, 10 MHz Ba Duty Cycle Factor (dB) 0 y-Points: 601, Detector Ao SENSE:IN Cere Trig	18.26 dBr	MIHZ ATUS ation, Mid Channel 1531 4 Port (4x4 MIMO) dBm/Carrier BW 32.564 32.564 Rad	Limit (dBm) 39.8 03:02:13 PMJul 23, 20 o Std: None	Results Pass	1

 Center 1.53100 GHz
 Span 25.00 MHz

 #Res BW 200 kHz
 #VBW 680 kHz
 \$Span 25.00 MHz

 #Channel Power
 Power Spectral Density

 26.56 dBm / 9.88 MHz
 16.62 dBm /MHz



Initial Value	Antenna	Duty Cycle	2 Port (2x2 MIMO)	4 Port (4x4 MIMO)	Limit	
dBm/Carrier BW	Gain (dBi)	Factor (dB)	dBm/Carrier BW	dBm/Carrier BW	(dBm)	Results
26.803	3	0	29.803	32.803	39.8	Pass
	nent Materials Technologi	- Points 601 Detector Av	arage (RMS)			
LX RL RF 50 Ω		SENSE:IN	T ALIGN AU		06:50:21 AM Jul 26, 20	
			er Freq: 1.531000000 GHz Free Run Avg	Hold: 100/100	lio Std: None	
	#IFC	Gain:Low #Atte	en: 30 dB		lio Device: BTS	
Ref Offset 4						
10 dB/div Ref 34.00	dBm			<u>.</u>		
24.0						
14.0						
4.00	التصعيم	<u>/</u>				
-6.00	المسطعة		_			
-16.0						
-26.0						
-36.0	التنصيم					
-46.0						
-56.0						
Center 1.53100 GHz					Span 25.00 M	
#Res BW 200 kHz			#VBW 680 kHz		#Sweep 601	ms
					-	
Channel Power		Po	wer Spectral De	nsity		
26.80 dE	3m / 9.88 м	Hz	16.85 dBr	n /MHz		
MSQ			L ST.	XTUS		
мед			I st	XTUS		
	3and n24, SCS 1	5kHz, 10 MHz Ban	-	xτυs ation, Mid Channel 1531	MHz, 25 RB/27	Offset
	Band n24, SCS 18 Antenna Gain (dBi)	5kHz, 10 MHz Ban Duty Cycle Factor (dB)	-		MHz, 25 RB/27 (Limit (dBm)	Offset Results

RL RF 50 Ω DC		SENSE:INT Center Freg: 1.5310	ALIGN AUTO	03:17:56 PM Jul 23, 2022 Radio Std: None
	++ #IFGain:Low		Avg Hold: 100/100	Radio Sta: None Radio Device: BTS
Ref Offset 40.9 dB dB/div Ref 34.00 dBm				
9				
0				
0		//		
) 				
0				
nter 1.53100 GHz es BW 200 kHz		#VBW 68	0 kHz	Span 25.00 MHz #Sweep 601 ms
Channel Power		Power Spec	ctral Density	
26.69 dBm /	9.88 MHz	16.7	′5 dBm /мнz	



Initial Value	Antenna Du	ity Cycle	2 Port (2x2 MIMO)	ulation, Mid Channel 15 4 Port (4x4 MIMO)		Oliset	
dBm/Carrier BW		ctor (dB)	dBm/Carrier BW	dBm/Carrier BW	,	Results	_
26.62	3	0	29.62	32.62	39.8	Pass	
Maniaht Casadaun Analas - C	Materials Technology D. 1	601 Deterts	(D.MC)				
Keysight Spectrum Analyzer - Element		SENSE:IN	NT ALIGN AL		07:10:16 AM Jul 26, 2		
		Trig		g Hold: 100/100	Radio Std: None		
	#IFGain:Lov	v #Att	ten: 30 dB	F	Radio Device: BTS		
Ref Offset 40. 10 dB/div Ref 32.00 d	.9 dB						
Log							
22.0							
2.00	\sim						
-8.00	1						
-18.0							
-28.0							
-38.0							
-48.0							
-58.0							
Center 1.53100 GHz					Span 25.00 N		
#Res BW 200 kHz							
#Res BW 200 KH2			#VBW 680 kHz		#Śweep 601	ms	
		De		nsity	#Sweep 601	ms	
Channel Power		Po	#VBW 680 kHz	ensity	#Sweep 601	ms	
Channel Power	n / 9.88 MHz	Po			#Sweep 601	ms	
Channel Power	n / 9.88 MHz	Po	ower Spectral De		#Sweep 601	ms	
Channel Power	n / 9.88 MHz	Pc	ower Spectral De		#Sweep 601	ms	
Channel Power	n / 9.88 MHz	Po	ower Spectral De		#Sweep 601	ms	
Channel Power	n / 9.88 MHz	Pc	ower Spectral De		#Sweep 601	ms	
Channel Power	ຠ / 9.88 MHz	Pc	ower Spectral De 16.67 dB		#Sweep 601	ms	
Channel Power 26.62 dBn			ower Spectral De 16.67 dB	m /MHz			
Channel Power 26.62 dBn	and n24, SCS 15kHz,	10 MHz Ba	ower Spectral De 16.67 dB 16.67 dB	TATUS	531 MHz, 40 RB/6 (
Channel Power 26.62 dBm	and n24, SCS 15kHz, Antenna Du		andwidth, 16-QAM Modu 2 Port (2x2 MIMO) dBm/Carrier BW	M /MHz TATUS Jlation, Mid Channel 15 4 Port (4x4 MIMO) dBm/Carrier BW	531 MHz, 40 RB/6 () Limit (dBm)	Offset	_
Channel Power 26.62 dBn ^{MSG} 5G NR, Ba Initial Value	and n24, SCS 15kHz, Antenna Du	10 MHz Ba ity Cycle	ndwidth, 16-QAM Modu 2 Port (2x2 MIMO)	m /MHz TATUS Jlation, Mid Channel 15 4 Port (4x4 MIMO)	531 MHz, 40 RB/6 () Limit	Offset	1
Channel Power 26.62 dBm	and n24, SCS 15kHz, Antenna Du Gain (dBi) Fa 3	10 MHz Ba ity Cycle ctor (dB) 0	andwidth, 16-QAM Modu 2 Port (2x2 MIMO) dBm/Carrier BW 29.383	M /MHz TATUS Jlation, Mid Channel 15 4 Port (4x4 MIMO) dBm/Carrier BW	531 MHz, 40 RB/6) Limit (dBm) 39.8	Offset Results Pass	7
Channel Power 26.62 dBm	and n24, SCS 15kHz, Antenna Du Gain (dBi) Fa 3	10 MHz Ba ity Cycle ctor (dB) 0 601, Detector Av SENSE IN	andwidth, 16-QAM Modu 2 Port (2x2 MIMO) dBm/Carrier BW 29.383	m /MHz TATUS Jlation, Mid Channel 15 4 Port (4x4 MIMO) dBm/Carrier BW 32.383	531 MHz, 40 RB/6 () Limit (dBm)	Offset Results Pass	
Channel Power 26.62 dBm SG 5G NR, Ba Initial Value dBm/Carrier BW 26.383	and n24, SCS 15kHz, Antenna Du Gain (dBi) Fa 3	10 MHz Ba tty Cycle ctor (dB) 0 601, Detector Av SENSE:ID Cen	andwidth, 16-QAM Modu 2 Port (2x2 MIMO) dBm/Carrier BW 29.383	m /MHz TATUS Jlation, Mid Channel 15 4 Port (4x4 MIMO) dBm/Carrier BW 32.383	531 MHz, 40 RB/6 f) Limit (dBm) 39.8	Offset Results Pass	7
Channel Power 26.62 dBn MSG 5G NR, Ba Initial Value dBm/Carrier BW 26.383	and n24, SCS 15kHz, Antenna Du Gain (dBi) Fa 3	10 MHz Ba tty Cycle ctor (dB) 0 601, Detector Av SENSE:1N Cen Trig	andwidth, 16-QAM Modu 2 Port (2x2 MIMO) dBm/Carrier BW 29.383	TATUS Jation, Mid Channel 15 4 Port (4x4 MIMO) dBm/Carrier BW 32.383	531 MHz, 40 RB/6) Limit (dBm) 39.8 09:15:42 AM Jul 26, 2	Offset Results Pass	

		#IFGain:Low	Trig: Free Run #Atten: 30 dB	Avg Hold: 100/100	Radio Device: BTS
dB/div	Ref Offset 40.9 dB Ref 32.00 dBm			•second topological topologica	
g					
o				<u> </u>	
·					
- 					
·					
	3100 GHz 200 kHz		#VBW 680 k	Hz	Span 25.00 MHz #Sweep 601 ms
Chann	el Power		Power Spectr	al Density	
2	6.38 dBm / 9	.88 MHz	16.43	dBm /мнz	
				STATUS	



Initial Value Antenna Duty Cycle 2 Port (2x2 MIMO) 4 Port (4x4 MIMO) Limit dBm/Carrier BW Gain (dBi) 3 0 29.61 32.61 39.8 Pass 28.61 3 0 29.61 32.61 39.8 Pass Reveal 3 0 29.61 32.61 39.8 Pass Reveal 35.60 DC 50.00 Control of the						ation, Mid Channel 1531			
28.61 3 0 29.61 32.61 39.8 Pass Provide Spectrum Andrexer: Element Materials Technology: - Points 601, Datector: Average (MM) Alido Auro 09.90.20 AM Alaba, 2022 Ref MF 39.9 OC Stock Intil Alido Auro 09.90.20 AM Alaba, 2022 Ref MF 30.9 OC Stock Intil Alido Auro Redio Stat: None Ref 30.9 OC Stock Intil Alido Auro Redio Stat: None Redio Stat: None Ref 32.00 Alido Auro Ref Offset 40.3 dB Ref 32.00 dBm Ref 23.00 dBm Ref 32.00 dBm Ref 32.00 dBm 22.0 Intil Alido Auro Span 25.00 MHz Span 25.00 MHz Span 25.00 MHz #Res BW 200 kHz #VBW 680 kHz #Sweep 601 ms Channel Power Power Spectral Density 26.61 dBm / 9.88 MHz 16.66 dBm / MHz Stock Intil Value Antenna Duty Cycle 2 Port (2x2 MIM0) Hort (4x4 MIMC) Mod Antenna Duty Cycle 2 Port (2x2 MIM0) 4 Port (4x4 MIMC) Limit dBm/Carrier BW Gain (dBi) Pacot (x4 MIMC) Amena Limit								Desults	
Repaipint Spectrum Analyzer - Bienest Mittenials Technology - Points 601. Detection: Average (PMS) OPENEE CINIT ALION AUTO OPENEE CINIT R.L RP 30 DC SERVEC.INIT ALION AUTO 09:20:23 AM Jul 26; 2022 Radio Stati. Nome Radio Stati. Nome Radio Stati. Nome Radio Stati. Nome Radio Device: BTS 10 dEfader.Low Tig: Free Rule: 30 dB Avg Hold: 100/100 Radio Device: BTS 20 0 0 0 0 0 0 20 0 0 0 0 0 0 20 0 0 0 0 0 0 20 0 0 0 0 0 0 0 20 0 0 0 0 0 0 0 0 20 0 0 0 0 0 0 0 0 0 20 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0									1
RL 95 90.00 SERVELINIT ALON MITO 09:20:221 AM Juli 28, 20:22 Center Freis: Free Run Avg Hold: 100/100 Radio Std: None Radio Std: None 10 dB/dly Ref Offset 40.9 dB Image: Std: Std: None Radio Device: BTS 220 Image: Std: Std: None Image: Std: Std: None Radio Device: BTS 230 Image: Std: Std: None Image: Std: Std: None Image: Std: Std: None 230 Image: Std: Std: None Image: Std: Std: None Image: Std: Std: None 400 Image: Std: Std: None Image: Std: Std: None Image: Std: Std: None 240 Image: Std: Std: None Image: Std: Std: None Image: Std: Std: None 240 Image: Std: Std: None Image: Std: Std: None Image: Std: Std: Std: Std: Std: Std: Std: Std		20.01	3	0	29.01	32.01	39.0	Pass	
RL RE SS 00 DC SERVECHIT ALON MTO 09:20:23 AM Jalo, 20:22 Radio Davice: BTS Radio Std: None Radio Std: None Ref Offset 40.9 dB Optimizer Trig: Free Run Avg Hold: 100/100 Radio Davice: BTS Ref Offset 40.9 dB Optimizer Exercision Avg Hold: 100/100 Radio Davice: BTS Ref Offset 40.9 dB Optimizer Exercision Avg Hold: 100/100 Radio Davice: BTS Ref Offset 40.9 dB Optimizer Span 25.00 MHz Span 25.00 MHz 200 Optimizer Span 25.00 MHz Span 25.00 MHz #Res BW 200 kHz #VEW 680 kHz #Sweep 601 ms Channel Power Power Spectral Density Span 25.00 MHz 26.61 dBm / 9.88 MHz 16.66 dBm /MHz Span 25.00 Cmst Sea Span 25.00 Cmst Span 25.00 Cmst Std NL, SCS 15kHz, 10 MHz Bandwidth, 16-0AM Modulation, Mid Channel 1531 MHz, 52 RB/0 Offset Initial Value Antenna Duty Cycle 2 Port (2x2 MIMO) 4 Port (4x4 MIMO) Limit MBCarrier BW Gain (dB) Factor (dB) dBm/Carrier BW dBm/Carrier BW Mesults	Ke	eysight Spectrum Analyzer - Elem	ent Materials Technolog	y - Points: 601, Detector: Av	erage (RMS)			×	
Image: Prestring: Free Run #Avg Hold: 100/100 Radio Device: BTS Radio Device: BTS Radio Device: BTS 10 dB/dv Ref 32.00 dBm 220 Image: Prestring and the second	L <mark>XI</mark> R	L RF 50 Ω	DC				09:20:23 AM Jul 26, 20		
Ref Offset 40.9 dB 10 dE/div Ref 32.00 dBm 120				🛶 Trig	:Free Run Avg	Hold: 100/100			
10 dB/div Ref 32.00 dBm 220 10 dB/div 220 10 dB/div 120 10 dB/div 200 10 dB/div 130 10 dB/div 130 10 dB/div 200 10 dB/div			#IF	Gain:Low #Att	en: 30 dB	Rad	io Device: BTS		
Log 220 200 400 400 400 400 400 400		Ref Offset	10.9 dB						
220 200 200 400 400 400 400 400			dBm			1			
20 30 40 40 40 40 40 40 40 40 40 4									
800 1	12.0								
1480 1	2.00								
1480 1	-8.00			{					
200 300 400 400 400 400 400 400 4									
300 3									
480 ABD A									
Center 1.53100 GHz Span 25.00 MHz #Res BW 200 kHz #VBW 680 kHz #Sweep 601 ms Channel Power Power Spectral Density 26.61 dBm / 9.88 MHz 16.66 dBm /MHz Msa SG NR, Band n24, SCS 15kHz, 10 MHz Bandwidth, 16-QAM Modulation, Mid Channel 1531 MHz, 52 RB/0 Offset Initial Value Antenna Duty Cycle 2 Port (2x2 MIMO) 4 Port (4x4 MIMO) Limit dBm/Carrier BW Gain (dBi) Factor (dB) dBm/Carrier BW dBm/Carrier BW (dBm) Results									
Center 1.53100 GHz Span 25.00 MHz #Res BW 200 kHz #VBW 680 kHz #Sweep 601 ms Channel Power Power Spectral Density 26.61 dBm / 9.88 MHz 16.66 dBm /MHz Msg Image: Signa 200 kHz Sg NR, Band n24, SCS 15kHz, 10 MHz Bandwidth, 16-QAM Modulation, Mid Channel 1531 MHz, 52 RB/0 Offset Initial Value Antenna Duty Cycle 2 Port (2x2 MIMO) 4 Port (4x4 MIMO) Limit Gain (dBi) Factor (dB) dBm/Carrier BW dBm/Carrier BW									
#Res BW 200 kHz #VBW 680 kHz #Śweep 601 ms Channel Power Power Spectral Density 26.61 dBm / 9.88 MHz 16.66 dBm /MHz MSG SG NR, Band n24, SCS 15kHz, 10 MHz Bandwidth, 16-QAM Modulation, Mid Channel 1531 MHz, 52 RB/0 Offset Initial Value Antenna Duty Cycle 2 Port (2x2 MIMO) 4 Port (4x4 MIMO) Limit dBm/Carrier BW Gain (dBi) Factor (dB) dBm/Carrier BW dBm/Carrier BW (dBm) Results									
Channel Power Power Spectral Density 26.61 dBm / 9.88 MHz 16.66 dBm /MHz Mea SG NR, Band n24, SCS 15kHz, 10 MHz Bandwidth, 16-QAM Modulation, Mid Channel 1531 MHz, 52 RB/0 Offset Initial Value Antenna Duty Cycle 2 Port (2x2 MIMO) A Port (4x4 MIMO) Limit dBm/Carrier BW Gain (dBi) Factor (dB) dBm/Carrier BW (dBm/Carrier BW dBm/Carrier BW dBm/Carrier BW									
26.61 dBm / 9.88 MHz MSG SG NR, Band n24, SCS 15kHz, 10 MHz Bandwidth, 16-QAM Modulation, Mid Channel 1531 MHz, 52 RB/0 Offset Initial Value Antenna Duty Cycle 2 Port (2x2 MIMO) 4 Port (4x4 MIMO) Limit dBm/Carrier BW Gain (dBi) Factor (dB) dBm/Carrier BW dBm/Carrier BW (dBm) Results						U			
5G NR, Band n24, SCS 15kHz, 10 MHz Bandwidth, 16-QAM Modulation, Mid Channel 1531 MHz, 52 RB/0 Offset Initial Value Antenna Duty Cycle 2 Port (2x2 MIMO) 4 Port (4x4 MIMO) Limit dBm/Carrier BW Gain (dBi) Factor (dB) dBm/Carrier BW dBm/Carrier BW (dBm) Results	#Re	es BW 200 kHz Channel Power			ower Spectral De				
Initial Value Antenna Duty Cycle 2 Port (2x2 MIMO) 4 Port (4x4 MIMO) Limit dBm/Carrier BW Gain (dBi) Factor (dB) dBm/Carrier BW dBm/Carrier BW (dBm) Results	#Re	es BW 200 kHz Channel Power	Sm / 9.88 M		ower Spectral De				
Initial Value Antenna Duty Cycle 2 Port (2x2 MIMO) 4 Port (4x4 MIMO) Limit dBm/Carrier BW Gain (dBi) Factor (dB) dBm/Carrier BW dBm/Carrier BW (dBm) Results	#Re	es BW 200 kHz Channel Power	3m / 9.88 M		ower Spectral De 16.66 dBi	n /MHz			
dBm/Carrier BW Gain (dBi) Factor (dB) dBm/Carrier BW dBm/Carrier BW (dBm) Results	#Re C	es BW 200 kHz Channel Power 26.61 dE		IHz	ower Spectral De 16.66 dBr	m /MHz	#Śweep 601 n	ns	
	#Re C	200 kHz Channel Power 26.61 dE	Band n24, SCS 1	IHZ I5kHz, 10 MHz Ba	ower Spectral De 16.66 dBr Ibost Ibo	тия мтия lation, Mid Channel 1531	#Śweep 601 n MHz, 52 RB/0 O	ns	
	#Re C	25 BW 200 kHz Channel Power 26.61 dE 56 NR, Initial Value	Band n24, SCS 1 Antenna	IHZ 15kHz, 10 MHz Bar Duty Cycle	ndwidth, 16-QAM Modu 2 Port (2x2 MIMO)	MIHz ATUS Iation, Mid Channel 1531 4 Port (4x4 MIMO)	#Śweep 601 n MHz, 52 RB/0 Q Limit	ffset	
	#Re C	SBW 200 kHz Channel Power 26.61 dE 5G NR, Initial Value dBm/Carrier BW	Band n24, SCS 1 Antenna Gain (dBi)	1H2 15kHz, 10 MHz Bar Duty Cycle Factor (dB)	ndwidth, 16-QAM Modu 2 Port (2x2 MIMO) dBm/Carrier BW	MIHz MIHz Iation, Mid Channel 1531 4 Port (4x4 MIMO) dBm/Carrier BW	#Śweep 601 n MHz, 52 RB/0 O Limit (dBm)	ns ffset Results	1
	MSG N	SBW 200 kHz Channel Power 26.61 dE 5G NR, Initial Value dBm/Carrier BW 30.065	Band n24, SCS 1 Antenna Gain (dBi) 3	IHz I5kHz, 10 MHz Bar Duty Cycle Factor (dB) 0	ndwidth, 16-QAM Modu 2 Port (2x2 MIMO) dBm/Carrier BW 33.065	MIHz MIHz Iation, Mid Channel 1531 4 Port (4x4 MIMO) dBm/Carrier BW	#Śweep 601 n MHz, 52 RB/0 O Limit (dBm) 39.8	ns ffset Results Pass	1
Keysight Spectrum Analyzer - Element Materials Technology - Points: 601, Detector: Average (RMS) X RL RF 50 Ω DC SENSE:INT ALIGN AUTO 01:52:17 PM Jun 18, 2022	#Re C	SG NR, Initial Value dBm/Carrier BW 30.065	Band n24, SCS 1 Antenna Gain (dBi) 3 rent Materials Technolog	IHZ I5kHz, 10 MHz Bar Duty Cycle Factor (dB) 0 y- Points: 601, Detector: Av	ndwidth, 16-QAM Modu 2 Port (2x2 MIMO) dBm/Carrier BW 33.065	MIHz ATUS Iation, Mid Channel 1531 4 Port (4x4 MIMO) dBm/Carrier BW 36.065	#Śweep 601 m MHz, 52 RB/0 O Limit (dBm) 39.8	ns ffset Results Pass	1
χt RL RF 50 Ω DC SENSE:INT ALIGN AUTO 01:52:17 PM Jun 18, 2022 Center Freg: 1.531000000 GHz Radio Std: None	MSG KE	SG NR, Initial Value dBm/Carrier BW 30.065	Band n24, SCS 1 Antenna Gain (dBi) 3 rent Materials Technolog	IHZ I5kHz, 10 MHz Bai Duty Cycle Factor (dB) 0 y-Points 601, Detector: Av SENSE:IN Cent	ALIGN AU	MIHz ATUS lation, Mid Channel 1531 4 Port (4x4 MIMO) dBm/Carrier BW 36.065	#Śweep 601 m MHz, 52 RB/0 O Limit (dBm) 39.8 01:52:17 PMJun 18,20	ns ffset Results Pass	1
X RL RF 50 Ω DC SENSE:INT ALIGN AUTO 01:52:17 PM Jun 18, 2022	MSG KE	SG NR, Initial Value dBm/Carrier BW 30.065	Band n24, SCS 1 Antenna Gain (dBi) 3 ent Materials Technolog	ISkHz, 10 MHz Ba Duty Cycle Factor (dB) 0 y-Points 601, Detector Av SENSE IN Certin	ndwidth, 16-QAM Modu 2 Port (2x2 MIMO) dBm/Carrier BW 33.065	MIHZ ATUS Iation, Mid Channel 1531 4 Port (4x4 MIMO) dBm/Carrier BW 36.065 TO Rad	#Śweep 601 m MHz, 52 RB/0 O Limit (dBm) 39.8 01:52:17 PMJun 18, 20 io Std: None	ns ffset Results Pass	1
X R.L RF 50 Ω DC SENSE:INT ALIGN AUTO 01:52:17 PMJun 18, 2022 Center Freq: 1.531000000 GHz Freq: 1.531000000 GHz Radio Std: None #FGain:Low #Atten: 30 dB Radio Device: BTS	#Re C	SBW 200 kHz Channel Power 26.61 dE 5G NR, Initial Value dBm/Carrier BW 30.065	Band n24, SCS 1 Antenna Gain (dBi) 3 nent Materials Technolog DC	ISkHz, 10 MHz Ba Duty Cycle Factor (dB) 0 y-Points 601, Detector Av SENSE IN Certin	ndwidth, 16-QAM Modu 2 Port (2x2 MIMO) dBm/Carrier BW 33.065	MIHZ ATUS Iation, Mid Channel 1531 4 Port (4x4 MIMO) dBm/Carrier BW 36.065 TO Rad	#Śweep 601 m MHz, 52 RB/0 O Limit (dBm) 39.8 01:52:17 PMJun 18, 20 io Std: None	ns ffset Results Pass	1
X RL RF 50 Ω DC SENSE:UTI AUGN AUTO 01:52:17 PM Jun 18, 2022 Center Freq: 1.531000000 GHz Radio Std: None #FGain:Low #Atten: 30 dB Radio Device: BTS	#Re C	SBW 200 kHz Channel Power 26.61 dE 5G NR, Initial Value dBm/Carrier BW 30.065 sysight Spectrum Analyzer - Eler L RF 50 Ω Ref Offset 4	Band n24, SCS 1 Antenna Gain (dBi) 3 ent Materials Technology DC #IFf	ISkHz, 10 MHz Ba Duty Cycle Factor (dB) 0 y-Points 601, Detector Av SENSE IN Certin	ndwidth, 16-QAM Modu 2 Port (2x2 MIMO) dBm/Carrier BW 33.065	MIHZ ATUS Iation, Mid Channel 1531 4 Port (4x4 MIMO) dBm/Carrier BW 36.065 TO Rad	#Śweep 601 m MHz, 52 RB/0 O Limit (dBm) 39.8 01:52:17 PMJun 18, 20 io Std: None	ns ffset Results Pass	1
X RF 50 Ω DC SEMSE:INT ALIGN AUTO 01:52:17 PMJun 18, 2022 Center Freq: Center Freq: 1.531000000 GHz Radio Std: None #/FGain:Low #/FGain:Low #/Atten: 30 dB Avg Hold: 100/100 Ref Offset 40.9 dB Ref 34.00 dBm Log Ref 34.00 dBm	#Re C MSG MSG	SBW 200 kHz Channel Power 26.61 dE 5G NR, Initial Value dBm/Carrier BW 30.065 sysight Spectrum Analyzer - Eler RF 50 Q B/div Ref Offset - Ref Offset - Ref Offset -	Band n24, SCS 1 Antenna Gain (dBi) 3 ent Materials Technology DC #IFf	ISkHz, 10 MHz Ba Duty Cycle Factor (dB) 0 y-Points 601, Detector Av SENSE IN Certin	ndwidth, 16-QAM Modu 2 Port (2x2 MIMO) dBm/Carrier BW 33.065	MIHZ ATUS Iation, Mid Channel 1531 4 Port (4x4 MIMO) dBm/Carrier BW 36.065 TO Rad	#Śweep 601 m MHz, 52 RB/0 O Limit (dBm) 39.8 01:52:17 PMJun 18, 20 io Std: None	ns ffset Results Pass	1
R L RF 50 Ω DC SENSE:INT ALIGN AUTO 01:52:17 PMJun 18, 2022 Center Freq: 1.531000000 GHz Trig: Freq Run Avg Hold: 100/100 Radio Std: None #//FGain:Low #//HEGain:Low #//Htten: 30 dB Radio Device: BTS Ref Offset 40.9 dB Ref 34.00 dBm Center Freq: 1.531000000 GHz Radio Device: BTS 24.0 Center Freq: 1.00 Center Freq: 1.531000000 GHz Radio Device: BTS	10 d 24.0	SBW 200 kHz Channel Power 26.61 dE 5G NR, Initial Value dBm/Carrier BW 30.065 syight Spectrum Analyzer - Eler L RF S0 Q B/div Ref 0ffset - B/div Ref 34.00	Band n24, SCS 1 Antenna Gain (dBi) 3 ent Materials Technology DC #IFf	ISkHz, 10 MHz Ba Duty Cycle Factor (dB) 0 y-Points 601, Detector Av SENSE IN Certin	ndwidth, 16-QAM Modu 2 Port (2x2 MIMO) dBm/Carrier BW 33.065	MIHZ ATUS Iation, Mid Channel 1531 4 Port (4x4 MIMO) dBm/Carrier BW 36.065 TO Rad	#Śweep 601 m MHz, 52 RB/0 O Limit (dBm) 39.8 01:52:17 PMJun 18, 20 io Std: None	ns ffset Results Pass]
RL RF 50 Ω DC SENSE:INT ALIGN AUTO 01:52:17 PMJun 18, 2022 Center Freq: 1.531000000 GHz Radio Std: None #IFGain:Low #Atten: 30 dB Radio Device: BTS Ref Offset 40.9 dB Ref 34.00 dBm		SBW 200 kHz Channel Power 26.61 dE 5G NR, Initial Value dBm/Carrier BW 30.065 syight Spectrum Analyzer - Eler L RF S0 Q B/div Ref 0ffset - B/div Ref 34.00	Band n24, SCS 1 Antenna Gain (dBi) 3 ent Materials Technology DC #IFf	ISkHz, 10 MHz Ba Duty Cycle Factor (dB) 0 y-Points 601, Detector Av SENSE IN Certin	ndwidth, 16-QAM Modu 2 Port (2x2 MIMO) dBm/Carrier BW 33.065	MIHZ ATUS Iation, Mid Channel 1531 4 Port (4x4 MIMO) dBm/Carrier BW 36.065 TO Rad	#Śweep 601 m MHz, 52 RB/0 O Limit (dBm) 39.8 01:52:17 PMJun 18, 20 io Std: None	ns ffset Results Pass	1

50.00 dBm	7 9.00 11172		20.12 (16)		
Channel Power 30.06 dBm	/ 0. 99 MLI-		r Spectral De 20.12 dBr		
nter 1.53100 GHz es BW 200 kHz		#VI	3W 680 kHz	Span #Swe	25.00 MHz ep 601 ms
		_			



Initial Value		I5kHz. 10 MHz Ba	ndwidth, 64-QAM Modu	lation, Mid Channel 15	31 MHz, 25 RB/0 C)ffset	_
	Antenna	Duty Cycle	2 Port (2x2 MIMO)	4 Port (4x4 MIMO)			
dBm/Carrier BW	Gain (dBi)	Factor (dB)	dBm/Carrier BW	dBm/Carrier BW	(dBm)	Results	_
24.543	3	0	27.543	30.543	39.8	Pass	
Keysight Spectrum Analyzer - Elen K R R S0 Ω		SENSE:IN	IT ALIGN AU		03:05:51 PM Jul 23, 20		
		Cen	ter Freq: 1.531000000 GHz		adio Std: None		
	#IF	Gain:Low #Att	en: 30 dB	R	adio Device: BTS		
Ref Offset	40.9 dB						
10 dB/div Ref 32.00	dBm						
22.0							
12.0							
2.00							
-8.00							
-18.0	إكسوه						
-28.0							
-38.0	التحصيم						
-48.0	السميع						
-58.0							
Contor 1 53400 CU-					Enon 25 00 M		
Center 1.53100 GHz #Res BW 200 kHz			#VBW 680 kHz		Span 25.00 M #Sweep 601 r		
Channel Power		Po	wer Spectral De	nsity			
		MHz	14.59 dBr	n /MHz			
24.54 dE	3m / 9.889 i						
24.54 dE	3m / 9.889						
24.54 dE	3m / 9.889						
24.54 dE	3m / 9.889						
24.54 dE	3m / 9.889						
24.54 dE	3m / 9.889		() st	NTUS			
мsg							
msg∣ 5G NR, I	Band n24, SCS 1:	5kHz, 10 MHz Bar	ndwidth, 64-QAM Modul	ation, Mid Channel 153		Dffset	
աsg 5G NR, E Initial Value	Band n24, SCS 1: Antenna	5kHz, 10 MHz Bar Duty Cycle	ndwidth, 64-QAM Modul 2 Port (2x2 MIMO)	ation, Mid Channel 153 4 Port (4x4 MIMO)	Limit		
5G NR, I Initial Value _dBm/Carrier BW	Band n24, SCS 1 Antenna Gain (dBi)	5kHz, 10 MHz Bar Duty Cycle Factor (dB)	ndwidth, 64-QAM Modul 2 Port (2x2 MIMO) dBm/Carrier BW	ation, Mid Channel 153 4 Port (4x4 MIMO) dBm/Carrier BW	Limit (dBm)	Results	
MSG 5G NR, E Initial Value	Band n24, SCS 1: Antenna	5kHz, 10 MHz Bar Duty Cycle	ndwidth, 64-QAM Modul 2 Port (2x2 MIMO)	ation, Mid Channel 153 4 Port (4x4 MIMO)	Limit		1
SG NR, E Initial Value dBm/Carrier BW 26.758	Band n24, SCS 1 Antenna Gain (dBi) 3	5kHz, 10 MHz Bar Duty Cycle Factor (dB) 0	ndwidth, 64-QAM Modul 2 Port (2x2 MIMO) dBm/Carrier BW 29.758	ation, Mid Channel 153 4 Port (4x4 MIMO) dBm/Carrier BW	Limit (dBm) 39.8	Results Pass	1
5G NR, I Initial Value dBm/Carrier BW	Band n24, SCS 1: Antenna Gain (dBi) 3 nent Materials Technolog	5kHz, 10 MHz Bar Duty Cycle Factor (dB) 0 y - Points: 601, Detector: Av SENSE:IN	ndwidth, 64-QAM Modul 2 Port (2x2 MIMO) dBm/Carrier BW 29.758	ation, Mid Channel 153 4 Port (4x4 MIMO) dBm/Carrier BW 32.758	Limit (dBm) 39.8	Results Pass	1
SG NR, E Initial Value dBm/Carrier BW 26.758	Band n24, SCS 1: Antenna Gain (dBi) 3 nent Materials Technolog	5kHz, 10 MHz Bar Duty Cycle Factor (dB) 0 y-Points: 601, Detector Av SENSE:IN Cen	erage (RMS)	ation, Mid Channel 153 4 Port (4x4 MIMO) dBm/Carrier BW 32.758	Limit (dBm) 39.8	Results Pass	1
SG NR, E Initial Value dBm/Carrier BW 26.758	Band n24, SCS 1 Antenna Gain (dBi) 3 ment Materials Technolog DC	5kHz, 10 MHz Bar Duty Cycle Factor (dB) 0 y- Points: 601, Detector Av SENSE:IN Cere Trig	erage (RMS)	ation, Mid Channel 153 4 Port (4x4 MIMO) dBm/Carrier BW 32.758	Limit (dBm) 39.8	Results Pass	1
SG NR, E Initial Value dBm/Carrier BW 26.758 26.758 Keysight Spectrum Analyzer - Elen X RL RF 50 Ω	Band n24, SCS 1 Antenna Gain (dBi) 3 nent Materials Technolog DC	5kHz, 10 MHz Bar Duty Cycle Factor (dB) 0 y- Points 601, Detector Av SENSE:IN Cem	erage (RMS) IF Free RMS IF Free RMS IF Free RMS ALIGN AU AU AU AU AU AU AU AU AU AU	ation, Mid Channel 153 4 Port (4x4 MIMO) dBm/Carrier BW 32.758	Limit (dBm) 39.8 06:53:58 AM Jul 26, 20 adio Std: None	Results Pass	1
5G NR, E Initial Value dBm/Carrier BW 26.758 Keysight Spectrum Analyzer - Elen	Band n24, SCS 1: Antenna Gain (dBi) 3 nent Materials Technolog DC #IF4	5kHz, 10 MHz Bar Duty Cycle Factor (dB) 0 y- Points 601, Detector Av SENSE:IN Cem	erage (RMS) IF Free RMS IF Free RMS IF Free RMS ALIGN AU AU AU AU AU AU AU AU AU AU	ation, Mid Channel 153 4 Port (4x4 MIMO) dBm/Carrier BW 32.758	Limit (dBm) 39.8 06:53:58 AM Jul 26, 20 adio Std: None	Results Pass	1
5G NR, I Initial Value Bm/Carrier BW 26.758 RF 50 Ω RF 50 Ω	Band n24, SCS 1: Antenna Gain (dBi) 3 nent Materials Technolog DC #IF4	5kHz, 10 MHz Bar Duty Cycle Factor (dB) 0 y- Points 601, Detector Av SENSE:IN Cem	erage (RMS) IF Free RMS IF Free RMS IF Free RMS ALIGN AU AU AU AU AU AU AU AU AU AU	ation, Mid Channel 153 4 Port (4x4 MIMO) dBm/Carrier BW 32.758	Limit (dBm) 39.8 06:53:58 AM Jul 26, 20 adio Std: None	Results Pass	1

Ref Offset 40.9 dB dB/div Ref 34.00 dBm				
)				
		<i>[</i>		
)	<u>لر ا</u>		$\mathbf{\lambda}$	
nter 1.53100 GHz es BW 200 kHz		#VBW 680	kHz	Span 25.00 MHz #Sweep 601 ms
Channel Power		Power Spect	ral Density	
		16.81		
26.76 dBm / 9	.889 MHZ	10.01		
26.76 dBm / s	.889 MHZ	10.01		
26.76 dBm /s	.889 MHZ	10.01		
26.76 dBm / s	.889 MHZ	10.01		



Initial Value dBm/Carrier BW	Antenna Gain (dBi)	Duty Cycle Factor (dB)	2 Port (2x2 MIMO) dBm/Carrier BW	4 Port (4x4 MIMO) dBm/Carrier BW	Limit (dBm)	Results
24.688	3	0	27.688	30.688	39.8	Pass
Keysight Spectrum Analyzer - Elem	ont Materials Technel	Reinter 601 Detecto	(PMR)			
Ceysight Spectrum Analyzer - Elem C RL RF 50 Ω		SENSE:IN	NT ALIGN AU		03:21:09 PM Jul 23, 2022	
		Trig	nter Freq: 1.531000000 GHz g: Free Run Avg ten: 30 dB	Hold: 100/100	dio Std: None dio Device: BTS	
		ain:Low #Att		Ray		ĩ
Ref Offset 4 0 dB/div Ref 32.00	0.9 dB dBm					
og 22.0						
12.0			<i>(</i>			
2.00						
18.0						
28.0						
38.0						
48.0						
					Span 25.00 Mu	
Center 1.53100 GHz Res BW 200 kHz			#VBW 680 kHz		Span 25.00 MHz #Sweep 601 ms	
Channel Power		Po	ower Spectral De	nsity		
24.69 dB			14.74 dBi	ΑΤυς		
sa				ΑΤυς	1 MHz, 40 RB/0 Offs Limit (dBm)	et Results
sc 5G NR, I Initial Value	Band n24, SCS 15 Antenna	ikHz, 10 MHz Ba Duty Cycle	andwidth, 64-QAM Modu 2 Port (2x2 MIMO)	ATUS lation, Mid Channel 153 4 Port (4x4 MIMO)	Limit	
5G NR, I Initial Value dBm/Carrier BW 26.629	Band n24, SCS 15 Antenna Gain (dBi) 3	ikHz, 10 MHz Ba Duty Cycle Factor (dB) 0	andwidth, 64-QAM Modu 2 Port (2x2 MIMO) dBm/Carrier BW 29.629	lation, Mid Channel 153 4 Port (4x4 MIMO) dBm/Carrier BW	Limit (dBm)	Results Pass
SG NR, I Initial Value dBm/Carrier BW 26.629 Keysight Spectrum Analyzer - Elem	Band n24, SCS 15 Antenna Gain (dBi) 3	ikHz, 10 MHz Ba Duty Cycle Factor (dB) 0 Points: 601, Detector Av SENSE: IN Cen	Andwidth, 64-QAM Modu 2 Port (2x2 MIMO) dBm/Carrier BW 29.629 Verage (RMS) VTI ALIGN AU Iter Freq: 1.531000000 GHz	ATUS lation, Mid Channel 153 4 Port (4x4 MIMO) dBm/Carrier BW 32.629	Limit (dBm) 39.8	Results Pass
SG SG NR, I Initial Value dBm/Carrier BW 26.629 Keysight Spectrum Analyzer - Elem	Band n24, SCS 15 Antenna Gain (dBi) 3 ent Materials Technology DC	ikHz, 10 MHz Ba Duty Cycle Factor (dB) 0 Points: 601, Detector Av SENSE:IN Cen Tric	Andwidth, 64-QAM Modu 2 Port (2x2 MIMO) dBm/Carrier BW 29.629 Verage (RMS) VTI ALIGN AU Iter Freq: 1.531000000 GHz	Iation, Mid Channel 153 4 Port (4x4 MIMO) dBm/Carrier BW 32.629	Limit (dBm) 39.8	Results Pass
SG 5G NR, I Initial Value dBm/Carrier BW 26.629 RL RF 50Ω RL RF 50Ω	Band n24, SCS 15 Antenna Gain (dBi) 3 ent Materials Technology pc #IFGa	ikHz, 10 MHz Ba Duty Cycle Factor (dB) 0 Points: 601, Detector Av SENSE:IN Cen Tric	andwidth, 64-QAM Modu 2 Port (2x2 MIMO) dBm/Carrier BW 29.629 verage (RMS) NT ALIGN AU ter Freq: 1.53100000 GHz i: Free Run Avg	Iation, Mid Channel 153 4 Port (4x4 MIMO) dBm/Carrier BW 32.629	Limit (dBm) 39.8 07:15:10 AM Jul 26, 2022 dio Std: None	Results Pass
SG SG NR, I Initial Value dBm/Carrier BW 26.629 26.629 RL RF S0Ω RL RF S0Ω RL RF S0Ω	Band n24, SCS 15 Antenna Gain (dBi) 3 ent Materials Technology pc #IFGa	ikHz, 10 MHz Ba Duty Cycle Factor (dB) 0 Points: 601, Detector Av SENSE:IN Cen Tric	andwidth, 64-QAM Modu 2 Port (2x2 MIMO) dBm/Carrier BW 29.629 verage (RMS) NT ALIGN AU ter Freq: 1.53100000 GHz i: Free Run Avg	Iation, Mid Channel 153 4 Port (4x4 MIMO) dBm/Carrier BW 32.629	Limit (dBm) 39.8 07:15:10 AM Jul 26, 2022 dio Std: None	Results Pass
SG SG NR, I Initial Value dBm/Carrier BW 26.629 26.629 26.629 RL RF 50 Ω RL RF 50 Ω Ref Offset 4 Ref Offset 4 Ref Offset 4 Ref 32.00 22.0	Band n24, SCS 15 Antenna Gain (dBi) 3 ent Materials Technology pc #IFGa	ikHz, 10 MHz Ba Duty Cycle Factor (dB) 0 Points: 601, Detector Av SENSE:IN Cen Tric	andwidth, 64-QAM Modu 2 Port (2x2 MIMO) dBm/Carrier BW 29.629 verage (RMS) NT ALIGN AU ter Freq: 1.53100000 GHz i: Free Run Avg	Iation, Mid Channel 153 4 Port (4x4 MIMO) dBm/Carrier BW 32.629	Limit (dBm) 39.8 07:15:10 AM Jul 26, 2022 dio Std: None	Results Pass
ISG SG NR, I Initial Value dBm/Carrier BW 26.629 26.629 Keysight Spectrum Analyzer - Elem Ref Offset 4 Ref 30.00 Log	Band n24, SCS 15 Antenna Gain (dBi) 3 ent Materials Technology pc #IFGa	ikHz, 10 MHz Ba Duty Cycle Factor (dB) 0 Points: 601, Detector Av SENSE:IN Cen Tric	andwidth, 64-QAM Modu 2 Port (2x2 MIMO) dBm/Carrier BW 29.629 verage (RMS) NT ALIGN AU ter Freq: 1.53100000 GHz i: Free Run Avg	Iation, Mid Channel 153 4 Port (4x4 MIMO) dBm/Carrier BW 32.629	Limit (dBm) 39.8 07:15:10 AM Jul 26, 2022 dio Std: None	Results Pass
Initial Value dBm/Carrier BW 26.629 Keysight Spectrum Analyzer - Elem Ref Offset 4 Ref Offset 4 Control Control Contro	Band n24, SCS 15 Antenna Gain (dBi) 3 ent Materials Technology pc #IFGa	ikHz, 10 MHz Ba Duty Cycle Factor (dB) 0 Points: 601, Detector Av SENSE:IN Cen Tric	andwidth, 64-QAM Modu 2 Port (2x2 MIMO) dBm/Carrier BW 29.629 verage (RMS) NT ALIGN AU ter Freq: 1.53100000 GHz i: Free Run Avg	Iation, Mid Channel 153 4 Port (4x4 MIMO) dBm/Carrier BW 32.629	Limit (dBm) 39.8 07:15:10 AM Jul 26, 2022 dio Std: None	Results Pass
SG NR, f Initial Value dBm/Carrier BW 26.629 Keysight Spectrum Analyzer - Elem R L RF S0 Ω Ref Offset 4 Ref Offset 22.00 21 220 21 220 21 <	Band n24, SCS 15 Antenna Gain (dBi) 3 ent Materials Technology pc #IFGa	ikHz, 10 MHz Ba Duty Cycle Factor (dB) 0 Points: 601, Detector Av SENSE:IN Cen Tric	andwidth, 64-QAM Modu 2 Port (2x2 MIMO) dBm/Carrier BW 29.629 verage (RMS) NT ALIGN AU ter Freq: 1.53100000 GHz i: Free Run Avg	Iation, Mid Channel 153 4 Port (4x4 MIMO) dBm/Carrier BW 32.629	Limit (dBm) 39.8 07:15:10 AM Jul 26, 2022 dio Std: None	Results Pass
ISG SG NR, E Initial Value dBm/Carrier BW 26.629 Keysight Spectrum Analyzer - Elem R RL RF 50 Ω RL RF 50 Ω RE SO Ω RE	Band n24, SCS 15 Antenna Gain (dBi) 3 ent Materials Technology pc #IFGa	ikHz, 10 MHz Ba Duty Cycle Factor (dB) 0 Points: 601, Detector Av SENSE:IN Cen Tric	andwidth, 64-QAM Modu 2 Port (2x2 MIMO) dBm/Carrier BW 29.629 verage (RMS) NT ALIGN AU ter Freq: 1.53100000 GHz i: Free Run Avg	Iation, Mid Channel 153 4 Port (4x4 MIMO) dBm/Carrier BW 32.629	Limit (dBm) 39.8 07:15:10 AM Jul 26, 2022 dio Std: None	Results Pass
SG NR, f Initial Value dBm/Carrier BW 26.629 Keysight Spectrum Analyzer - Elem R L RF S0 Ω Ref Offset 4 Ref Offset 22.00 21 220 21 220 21 <	Band n24, SCS 15 Antenna Gain (dBi) 3 ent Materials Technology pc #IFGa	ikHz, 10 MHz Ba Duty Cycle Factor (dB) 0 Points: 601, Detector Av SENSE:IN Cen Tric	andwidth, 64-QAM Modu 2 Port (2x2 MIMO) dBm/Carrier BW 29.629 verage (RMS) NT ALIGN AU ter Freq: 1.53100000 GHz i: Free Run Avg	Iation, Mid Channel 153 4 Port (4x4 MIMO) dBm/Carrier BW 32.629	Limit (dBm) 39.8 07:15:10 AM Jul 26, 2022 dio Std: None	Results Pass
Initial Value dBm/Carrier BW 26.629 Keysight Spectrum Analyzer - Elem R L RF SO Ω Ref Offset 4 10 dB/div Ref 32.00 20 20 38.0	Band n24, SCS 15 Antenna Gain (dBi) 3 ent Materials Technology pc #IFGa	ikHz, 10 MHz Ba Duty Cycle Factor (dB) 0 Points: 601, Detector Av SENSE:IN Cen Tric	andwidth, 64-QAM Modu 2 Port (2x2 MIMO) dBm/Carrier BW 29.629 verage (RMS) NT ALIGN AU ter Freq: 1.53100000 GHz i: Free Run Avg	Iation, Mid Channel 153 4 Port (4x4 MIMO) dBm/Carrier BW 32.629	Limit (dBm) 39.8 07:15:10 AM Jul 26, 2022 dio Std: None	Results Pass
Isid 5G NR, fl Initial Value dBm/Carrier BW 26.629 2 Keysight Spectrum Analyzer - Elem Ref Offset 4 Ref Offset 4 Ref 32.00 20 8 20 9 20 9 21 9 22.0 9 30.0 9	Band n24, SCS 15 Antenna Gain (dBi) 3 ent Materials Technology pc #IFGa	ikHz, 10 MHz Ba Duty Cycle Factor (dB) 0 Points: 601, Detector Av SENSE:IN Cen Tric	Andwidth, 64-QAM Modu 2 Port (2x2 MIMO) dBm/Carrier BW 29.629 Verage (RMS) MT ALIGN AU Her Freq: 1.53100000 GHz p: Free Run Avg	Iation, Mid Channel 153 4 Port (4x4 MIMO) dBm/Carrier BW 32.629	Limit (dBm) 39.8 07:15:10 AM Jul 26, 2022 dio Std: None dio Device: BTS	Results Pass
SG 5G NR, f Initial Value dBm/Carrier BW 26.629 26.629 Keysight Spectrum Analyzer - Elem Ref Offset 4 R R G Offset 4 Ref Offset 2.00 20 20 21 20 22.01 20 23.01 20 24.02 20 25.03 20	Band n24, SCS 15 Antenna Gain (dBi) 3 ent Materials Technology pc #IFGa	ikHz, 10 MHz Ba Duty Cycle Factor (dB) 0 Points: 601, Detector Av SENSE:IN Cen Tric	andwidth, 64-QAM Modu 2 Port (2x2 MIMO) dBm/Carrier BW 29.629 verage (RMS) NT ALIGN AU ter Freq: 1.53100000 GHz i: Free Run Avg	Iation, Mid Channel 153 4 Port (4x4 MIMO) dBm/Carrier BW 32.629	Limit (dBm) 39.8 07:15:10 AM Jul 26, 2022 dio Std: None dio Device: BTS	Results Pass
SG SG NR, F Initial Value dBm/Carrier BW 26.629 Reysight Spectrum Analyzer - Elem Ref Offset 4 0 dB/div Ref Offset 4 0 dB/div Ref 32.00 0 dB/div	Band n24, SCS 15 Antenna Gain (dBi) 3 ent Materials Technology pc #IFGa	ikHz, 10 MHz Ba Duty Cycle Factor (dB) 0 Points: 601, Detector A SENSEIN in:Low #Att	Andwidth, 64-QAM Modu 2 Port (2x2 MIMO) dBm/Carrier BW 29.629 Verage (RMS) MT ALIGN AU Her Freq: 1.53100000 GHz p: Free Run Avg	ATUS lation, Mid Channel 153 4 Port (4x4 MIMO) dBm/Carrier BW 32.629 TO g Hold: 100/100 Rat g Hold: 100/100 Rat	Limit (dBm) 39.8 07:15:10 AM Jul 26, 2022 dio Std: None dio Device: BTS	Results Pass
G 5G NR, f Initial Value dBm/Carrier BW 26.629 Keysight Spectrum Analyzer - Elem RL RE 0 dB/div Ref 32.00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Band n24, SCS 15 Antenna Gain (dBi) 3 ent Materials Technology pc #IFGa	ikHz, 10 MHz Ba Duty Cycle Factor (dB) 0 Points: 601, Detector A SENSE:ID Cen ain:Low #Att	Andwidth, 64-QAM Modu 2 Port (2x2 MIMO) dBm/Carrier BW 29.629 verage (RMS) NT ALIGN AU p: Free Run Avg ten: 30 dB	ATUS lation, Mid Channel 153 4 Port (4x4 MIMO) dBm/Carrier BW 32.629 TO Rat g Hold: 100/100 Rat 100 100 100 100 100 100 100 10	Limit (dBm) 39.8 07:15:10 AM Jul 26, 2022 dio Std: None dio Device: BTS	Results Pass



Initial Value	Antenna		,	lation, Mid Channel 1 4 Port (4x4 MIMO		Offset	
dBm/Carrier BW	Gain (dBi)	Duty Cycle Factor (dB)	2 Port (2x2 MIMO) dBm/Carrier BW	dBm/Carrier BW		Results	
26.332	3		29.332	32.332	39.8	Pass	
20.002	Ũ	ő	20.002	02.002	00.0	1 466	
🔤 Keysight Spectrum Analyzer - Elem	ent Materials Technology -	- Points: 601 Detector: Av	verage (RMS)				
μ RL RF 50 Ω		SENSE:IN	NT ALIGN AU		09:26:54 AM Jul 26		
			iter Freq: 1.531000000 GHz j: Free Run Avg	Hold: 100/100	Radio Std: None		
	#IFGa	ain:Low #Att	ten: 30 dB		Radio Device: BTS		
Ref Offset 4	10.9 dB						
10 dB/div Ref 32.00	dBm						
22.0							
12.0							
2.00							
-8.00							
-18.0							
-28.0	1						
-38.0							
-48.0							
-58.0							
-55.0							
Center 1.53100 GHz					Span 25.00	MHz	
#Res BW 200 kHz			#VBW 680 kHz		#Śweep 60	1 ms	
Channel Dever		D		m a ita			
Channel Power		Po	ower Spectral De	nsity			
	Sm / 9.889 N		ower Spectral De 16.38 dBi				
	Sm / 9.889 N						
	Sm / 9.889 N						
	Sm / 9.889 M						
	3m / 9.889 N						
	3m / 9.889 M			m /MHz			
26.33 dB		1Hz	16.38 dBi	M /MHz			
26.33 dB	3and n24, SCS 151	1Hz kHz, 10 MHz Bar	16.38 dBi	M /MHz		2 Offset	
26.33 dB	Band n24, SCS 150 Antenna	IHz kHz, 10 MHz Bar Duty Cycle	16.38 dB	M /MHz ATUS ation, Mid Channel 15 4 Port (4x4 MIMO) Limit		
26.33 dB	Band n24, SCS 150 Antenna Gain (dBi)	kHz, 10 MHz Bar Duty Cycle Factor (dB)	16.38 dB toos ndwidth, 64-QAM Modul 2 Port (2x2 MIMO) dBm/Carrier BW	M /MHz ATUS ation, Mid Channel 15 4 Port (4x4 MIMO dBm/Carrier BW) Limit (dBm)	Results	
26.33 dB	Band n24, SCS 150 Antenna	IHz kHz, 10 MHz Bar Duty Cycle	16.38 dB	M /MHz ATUS ation, Mid Channel 15 4 Port (4x4 MIMO) Limit		
26.33 dB MSG SG NR, B Initial Value dBm/Carrier BW 26.561	Band n24, SCS 15 Antenna Gain (dBi) 3	hHz kHz, 10 MHz Bar Duty Cycle Factor (dB) 0	16.38 dB total ndwidth, 64-QAM Modul 2 Port (2x2 MIMO) dBm/Carrier BW 29.561	M /MHz ATUS ation, Mid Channel 15 4 Port (4x4 MIMO dBm/Carrier BW) Limit (dBm) 39.8	Results Pass	1
26.33 dB	Band n24, SCS 150 Antenna Gain (dBi) 3	KHz, 10 MHz Bar Duty Cycle Factor (dB) 0	16.38 dB 16.38 dB 16.38 dB 10001 100000 10000 10000 100000 100000 10000 10000 10000 1000	m /MHz atus ation, Mid Channel 15 4 Port (4x4 MIMO dBm/Carrier BW 32.561) Limit (dBm) 39.8	Results Pass	
26.33 dB MSG 5G NR, B Initial Value dBm/Carrier BW 26.561 Keysight Spectrum Analyzer - Elem	Band n24, SCS 150 Antenna Gain (dBi) 3	1Hz kHz, 10 MHz Bar Duty Cycle Factor (dB) 0 Points: 601, Detector: A SENSE:IT Cen	16.38 dB 16.38 dB 16.38 dB 10 state 10 sta	ATUS ATUS) Limit (dBm) 39.8	Results Pass	
26.33 dB MSG 5G NR, B Initial Value dBm/Carrier BW 26.561 Keysight Spectrum Analyzer - Elem	Band n24, SCS 15i Antenna Gain (dBi) 3 ent Materials Technology- DC	KHZ, 10 MHZ Bar Duty Cycle Factor (dB) 0 Points: 601, Detector A SENSE:ID Cen Trig	16.38 dB 16.38 dB 16.38 dB 10 state 10 sta	TTUS ATUS) Limit (dBm) 39.8	Results Pass	
26.33 dB MSG 5G NR, B Initial Value dBm/Carrier BW 26.561 Carrier Company 26.561	Band n24, SCS 150 Antenna Gain (dBi) 3 ent Materials Technology - DC	KHZ, 10 MHZ Bar Duty Cycle Factor (dB) 0 - Points: 601, Detector A SENSE:ID Cen Trig	16.38 dB 16.38 dB 16.38 dB 10.00000 10.00000 10.00000 10.00000 10.00000 10.0	TTUS ATUS) Limit (dBm) 39.8 09:30:27 AM Jul 26 Radio Std: None	Results Pass	

		#IFGain:Low	Trig: Free Run #Atten: 30 dB	Avg Hold: 100/100	Radio Device: BTS
dB/div	Ref Offset 40.9 dB Ref 32.00 dBm				
g .0					
0					
o 					
, 				l	
0					
) 		_			
D 0					
0					
•					
	3100 GHz 200 kHz		#VBW 680	kHz	Span 25.00 MHz #Sweep 601 ms
Chann	el Power		Power Spect	ral Density	
2	6.56 dBm / 9.8	89 MHz	16.61	IdBm /мнz	
				STATUS	



Initial Value	Antenna	Duty Cycle	2 Port (2x2 MIMO)	ation, Mid Channel 153 4 Port (4x4 MIMO)	Limit	B
dBm/Carrier BW 30.007	Gain (dBi) 3	Factor (dB) 0	dBm/Carrier BW 33.007	dBm/Carrier BW 36.007	(dBm) 39.8	Results Pass
The section Analyzer - Elemin Keysight Spectrum Analyzer - Elemin		SENSE:IN			01:56:01 PM Jun 18, 202 io Std: None	
	#10	🛶 Trig	: Free Run Avg en: 30 dB	Hold: 100/100	lio Sta: None	
Ref Offset 4		Gameeow				Ī
Ref Offset 4 10 dB/div Ref 34.00 Log	dBm					
24.0						
4.00		\int				
-6.00						
-16.0						
-36.0						
-46.0						
-56.0						
Center 1.53100 GHz #Res BW 200 kHz			#VBW 680 kHz		Span 25.00 MH #Sweep 601 m	
Channel Power			wer Spectral De	isity		
30.01 dB	m / 9.889	MHZ	20.06 dBr			
MSG			L. STA	TUS	1 MHz. 25 RB/0 Of	fset
^{MSG} 5G NR, B Initial Value	and n24, SCS 1: Antenna	5kHz, 10 MHz Bar Duty Cycle	towidth, 256-QAM Modu 2 Port (2x2 MIMO)	الالتان Iation, Mid Channel 153 4 Port (4x4 MIMO)	Limit	
мза 5G NR, B	and n24, SCS 1:	5kHz, 10 MHz Bar	towidth, 256-QAM Modu	NTUS		íset Results Pass
5G NR, B Initial Value dBm/Carrier BW 26.532	and n24, SCS 1: Antenna Gain (dBi) 3	5kHz, 10 MHz Bar Duty Cycle Factor (dB) 0	dwidth, 256-QAM Modu 2 Port (2x2 MIMO) dBm/Carrier BW 29.532	العنه Iation, Mid Channel 153 4 Port (4x4 MIMO) dBm/Carrier BW	Limit (dBm) 39.8	Results Pass
5G NR, B Initial Value dBm/Carrier BW	and n24, SCS 1: Antenna Gain (dBi) 3 ent Materials Technolog	5kHz, 10 MHz Bar Duty Cycle Factor (dB) 0 y- Points: 601, Detector: Av SENSE IN	dwidth, 256-QAM Modu 2 Port (2x2 MIMO) dBm/Carrier BW 29.532	Iation, Mid Channel 153 4 Port (4x4 MIMO) dBm/Carrier BW 32.532	Limit (dBm) 39.8	Results Pass
MSG 5G NR, B Initial Value dBm/Carrier BW 26.532 ≪ Keysight Spectrum Analyzer - Elem	and n24, SCS 1 Antenna Gain (dBi) 3 ent Materials Technolog	5kHz, 10 MHz Bar Duty Cycle Factor (dB) 0 y - Points: 601, Detector: Av SENSE: IN Cerei	dwidth, 256-QAM Modu 2 Port (2x2 MIMO) dBm/Carrier BW 29.532	Iation, Mid Channel 153 4 Port (4x4 MIMO) dBm/Carrier BW 32.532	Limit (dBm) 39.8	Results Pass
MSG 5G NR, B Initial Value dBm/Carrier BW 26.532 Keysight Spectrum Analyzer - Elem M RL RF 50 Ω Ref Offrset 4	and n24, SCS 1: Antenna Gain (dBi) 3 ent Materials Technolog PC #IFf #IFf 0.9 dB	5kHz, 10 MHz Bar Duty Cycle Factor (dB) 0 y-Points:601, Detector.Av SENSE:IN Centin Trig	dwidth, 256-QAM Modu 2 Port (2x2 MIMO) dBm/Carrier BW 29.532 erage (RMS) The Freq: 1.53100000 GHz Free Run Avg	Iation, Mid Channel 153 4 Port (4x4 MIMO) dBm/Carrier BW 32.532	Limit (dBm) 39.8 03:09:31 PM Jul 23, 2022 io Std: None	Results Pass
MSG 5G NR, B Initial Value dBm/Carrier BW 26.532 26.532 Keysight Spectrum Analyzer - Elem W RL RF 50 Ω 10 dB/div Ref Offset 4 Ref Offset 4 Ref 34.00	and n24, SCS 1: Antenna Gain (dBi) 3 ent Materials Technolog PC #IFf #IFf 0.9 dB	5kHz, 10 MHz Bar Duty Cycle Factor (dB) 0 y-Points:601, Detector.Av SENSE:IN Centin Trig	dwidth, 256-QAM Modu 2 Port (2x2 MIMO) dBm/Carrier BW 29.532 erage (RMS) The Freq: 1.53100000 GHz Free Run Avg	Iation, Mid Channel 153 4 Port (4x4 MIMO) dBm/Carrier BW 32.532	Limit (dBm) 39.8 03:09:31 PM Jul 23, 2022 io Std: None	Results Pass
MSG 5G NR, B Initial Value dBm/Carrier BW 26.532 Keysight Spectrum Analyzer - Elem M RL RF 50 Ω Keysight Spectrum Carlos Controls	and n24, SCS 1: Antenna Gain (dBi) 3 ent Materials Technolog PC #IFf #IFf 0.9 dB	5kHz, 10 MHz Bar Duty Cycle Factor (dB) 0 y-Points:601, Detector.Av SENSE:IN Centin Trig	dwidth, 256-QAM Modu 2 Port (2x2 MIMO) dBm/Carrier BW 29.532 erage (RMS) The Freq: 1.53100000 GHz Free Run Avg	Iation, Mid Channel 153 4 Port (4x4 MIMO) dBm/Carrier BW 32.532	Limit (dBm) 39.8 03:09:31 PM Jul 23, 2022 io Std: None	Results Pass
SG NR, B Initial Value dBm/Carrier BW 26.532 Keysight Spectrum Analyzer - Elem M RL RF 50 Ω Ref Offset 4 10 dB/div Ref 34.00 14.0 4.00	and n24, SCS 1: Antenna Gain (dBi) 3 ent Materials Technolog PC #IFf #IFf 0.9 dB	5kHz, 10 MHz Bar Duty Cycle Factor (dB) 0 y-Points:601, Detector.Av SENSE:IN Centin Trig	dwidth, 256-QAM Modu 2 Port (2x2 MIMO) dBm/Carrier BW 29.532 erage (RMS) The Freq: 1.53100000 GHz Free Run Avg	Iation, Mid Channel 153 4 Port (4x4 MIMO) dBm/Carrier BW 32.532	Limit (dBm) 39.8 03:09:31 PM Jul 23, 2022 io Std: None	Results Pass
SG NR, B Initial Value dBm/Carrier BW 26.532 Keysight Spectrum Analyzer - Elemin RL RF S0 Ω	and n24, SCS 1: Antenna Gain (dBi) 3 ent Materials Technolog PC #IFf #IFf 0.9 dB	5kHz, 10 MHz Bar Duty Cycle Factor (dB) 0 y-Points:601, Detector.Av SENSE:IN Centin Trig	dwidth, 256-QAM Modu 2 Port (2x2 MIMO) dBm/Carrier BW 29.532 erage (RMS) The Freq: 1.53100000 GHz Free Run Avg	Iation, Mid Channel 153 4 Port (4x4 MIMO) dBm/Carrier BW 32.532	Limit (dBm) 39.8 03:09:31 PM Jul 23, 2022 io Std: None	Results Pass
SG NR, B Initial Value dBm/Carrier BW 26.532 Keysight Spectrum Analyzer - Elem M RL RF 50 Ω Ref Offset 4 10 dB/div Ref 34.00 14.0 4.00	and n24, SCS 1: Antenna Gain (dBi) 3 ent Materials Technolog PC #IFf #IFf 0.9 dB	5kHz, 10 MHz Bar Duty Cycle Factor (dB) 0 y-Points:601, Detector.Av SENSE:IN Centin Trig	dwidth, 256-QAM Modu 2 Port (2x2 MIMO) dBm/Carrier BW 29.532 erage (RMS) The Freq: 1.53100000 GHz Free Run Avg	Iation, Mid Channel 153 4 Port (4x4 MIMO) dBm/Carrier BW 32.532	Limit (dBm) 39.8 03:09:31 PM Jul 23, 2022 io Std: None	Results Pass
MSG 5G NR, B Initial Value dBm/Carrier BW 26.532 2 Keysight Spectrum Analyzer - Elem 2 RL<	and n24, SCS 1: Antenna Gain (dBi) 3 ent Materials Technolog PC #IFf #IFf 0.9 dB	5kHz, 10 MHz Bar Duty Cycle Factor (dB) 0 y-Points:601, Detector.Av SENSE:IN Centin Trig	dwidth, 256-QAM Modu 2 Port (2x2 MIMO) dBm/Carrier BW 29.532 erage (RMS) The Freq: 1.53100000 GHz Free Run Avg	Iation, Mid Channel 153 4 Port (4x4 MIMO) dBm/Carrier BW 32.532	Limit (dBm) 39.8 03:09:31 PM Jul 23, 2022 io Std: None	Results Pass
MSG 5G NR, B Initial Value dBm/Carrier BW 26.532 2 Keysight Spectrum Analyzer - Eleminology Ref Offset 4 MSG Ref Offset 4 Log 24.0 14.0 Ref 34.00 -6.00 -6.00 -6.00 -6.00 -6.00 -6.00	and n24, SCS 1: Antenna Gain (dBi) 3 ent Materials Technolog PC #IFf #IFf 0.9 dB	5kHz, 10 MHz Bar Duty Cycle Factor (dB) 0 y-Points:601, Detector.Av SENSE:IN Centin Trig	dwidth, 256-QAM Modu 2 Port (2x2 MIMO) dBm/Carrier BW 29.532 erage (RMS) The Freq: 1.53100000 GHz Free Run Avg	Iation, Mid Channel 153 4 Port (4x4 MIMO) dBm/Carrier BW 32.532	Limit (dBm) 39.8 03:09:31 PM Jul 23, 2022 io Std: None	Results Pass
MSG 5G NR, B Initial Value dBm/Carrier BW 26.532 Keysight Spectrum Analyzer - Elem Keysight Spectrum Analyzer - El	and n24, SCS 1: Antenna Gain (dBi) 3 ent Materials Technolog PC #IFf #IFf 0.9 dB	5kHz, 10 MHz Bar Duty Cycle Factor (dB) 0 y-Points:601, Detector.Av SENSE:IN Centin Trig	dwidth, 256-QAM Modu 2 Port (2x2 MIMO) dBm/Carrier BW 29.532 erage (RMS) The Freq: 1.53100000 GHz Free Run Avg	Iation, Mid Channel 153 4 Port (4x4 MIMO) dBm/Carrier BW 32.532	Limit (dBm) 39.8 03:09:31 PM Jul 23, 2022 io Std: None	Results Pass
MSG 5G NR, B Initial Value dBm/Carrier BW 26.532 Keysight Spectrum Analyzer - Elem Keysight Spectrum Analyzer - Elem Keysight Spectrum Analyzer - Elem Keysight Spectrum Analyzer - Elem Ref Offset 4 10 dB/div Ref 34.00 Ref 0ffset 4 10 dB/div Ref 34.00 6.00 	and n24, SCS 1: Antenna Gain (dBi) 3 ent Materials Technolog PC #IFf #IFf 0.9 dB	5kHz, 10 MHz Bar Duty Cycle Factor (dB) 0 y- Points: 601, Detector: Av SENSEIN Gain:Low #Att	Adwidth, 256-QAM Modu 2 Port (2x2 MIMO) dBm/Carrier BW 29.532 erage (RMS) TI ALIGN AUT Er Freq: 1.531000000 GHz : Free Run Avg en: 30 dB	Iation, Mid Channel 153 4 Port (4x4 MIMO) dBm/Carrier BW 32.532	Limit (dBm) 39.8 03:09:31 PM Jul 23, 2022 iio Std: None lio Device: BTS	Results Pass

STATUS

G



dBm/Carrier BW	Antenna Gain (dBi)	Duty Cycle Factor (dB)	2 Port (2x2 MIMO) dBm/Carrier BW	4 Port (4x4 MIMO) dBm/Carrier BW	Limit (dBm)	Results
24.777	Gain (dbi)		27.777	30.777	39.8	Pass
27.111	5	0	21.111	50.111	33.0	1 835
	ent Materials Technology	- Points: 601 Detector: Av	verage (RMS)		- 6	×
LXI RL RF 50 Ω		SENSE:IN	ALIGN AUT		06:57:31 AM Jul 26, 20	
			ter Freq: 1.531000000 GHz j: Free Run Avg	Rad Hold: 100/100	io Std: None	
	#IFC	Gain:Low #Att	ten: 30 dB		io Device: BTS	
Ref Offset 4	10.9 dB					
10 dB/div Ref 32.00	dBm					
22.0						
12.0						
2.00			\			
-8.00						
-18.0						
-28.0	/					
-38.0						
-48.0						
-58.0						
-50.0						
Center 1.53100 GHz					Span 25.00 M	
#Res BW 200 kHz			#VBW 680 kHz		#Śweep 601 r	ns
Channel Bower		De	wer Spectral De	noitr		
Channel Power		Po	ower Spectral De	nsity		
	m /0.0021		•			
	Sm / 9.883 I		ower Spectral De 14.83 dBr			
	Sm / 9.883 I		•			
	im / 9.883 i		•			
	Sm / 9.883 r		•			
	Sm / 9.883 I		•			
	3m / 9.883 r		•	n /MHz		
24.78 dB		MHz	14.83 dBr	n /MHz		
24.78 dB	and n24, SCS 15	MHz kHz, 10 MHz Ban	14.83 dBr	n /MHz	,	Offset
24.78 dB	and n24, SCS 15 Antenna	MHz kHz, 10 MHz Ban Duty Cycle	14.83 dBr	n /MHz ^{xτυs} ation, Mid Channel 1531 4 Port (4x4 MIMO)	Limit	
24.78 dB SG NR, Ba Initial Value dBm/Carrier BW	and n24, SCS 15 Antenna Gain (dBi)	NHz kHz, 10 MHz Ban Duty Cycle Factor (dB)	14.83 dBr	n /MHz ation, Mid Channel 1531 4 Port (4x4 MIMO) dBm/Carrier BW	Limit (dBm)	Results
24.78 dB	and n24, SCS 15 Antenna	MHz kHz, 10 MHz Ban Duty Cycle	14.83 dBr	n /MHz ^{xτυs} ation, Mid Channel 1531 4 Port (4x4 MIMO)	Limit	
24.78 dB 5G NR, Ba Initial Value dBm/Carrier BW 24.71	and n24, SCS 15 Antenna Gain (dBi) 3	MHz kHz, 10 MHz Ban Duty Cycle Factor (dB) 0	14.83 dBr	n /MHz ation, Mid Channel 1531 4 Port (4x4 MIMO) dBm/Carrier BW	Limit (dBm) 39.8	Results Pass
24.78 dB 5G NR, Ba Initial Value dBm/Carrier BW	and n24, SCS 15 Antenna Gain (dBi) 3	KHz, 10 MHz Ban Duty Cycle Factor (dB) 0	dwidth, 256-QAM Modul 2 Port (2x2 MIMO) dBm/Carrier BW 27.71	n /MHz ation, Mid Channel 1531 4 Port (4x4 MIMO) dBm/Carrier BW 30.71	Limit (dBm) 39.8	Results Pass
SG NR, Ba Initial Value dBm/Carrier BW 24.71	and n24, SCS 15 Antenna Gain (dBi) 3	KHz, 10 MHz Ban Duty Cycle Factor (dB) 0 r-Points: 601, Detector Av SENSE: In Cen	14.83 dBr	n /MHz ation, Mid Channel 1531 4 Port (4x4 MIMO) dBm/Carrier BW 30.71	Limit (dBm) 39.8	Results Pass
SG NR, Ba Initial Value dBm/Carrier BW 24.71	and n24, SCS 15 Antenna Gain (dBi) 3	KHz, 10 MHz Ban Duty Cycle Factor (dB) 0	14.83 dBr	n /MHz ation, Mid Channel 1531 4 Port (4x4 MIMO) dBm/Carrier BW 30.71 Rad Hold: 100/100	Limit (dBm) 39.8	Results Pass

		1	IFGain:Low	#Atten: 30 d		Avg Hold: 1	100/100	Radio Devid	e: BTS
dB/div	Ref Offset 4 Ref 32.00								
g									
) — — — I					~				
)									
						}			
L									
	3100 GHz 200 kHz	L		#VBI	N 680 kH:	z		Spar #Swe	25.00 MHz ep 601 ms
Chann	el Power			Power	Spectra	l Density			
2	4.71 dB	m / 9.88	3 MHz	1	4.76	dBm /M	۱Hz		
						STATUS			
				a terretari de la ferrada					



Initial Value dBm/Carrier BW	Antenna Gain (dBi)	Duty Cycle Factor (dB)	2 Port (2x2 MIMO) dBm/Carrier BW	4 Port (4x4 MIMO) dBm/Carrier BW	Limit (dBm)	Results
26.64	Gain (db) 3	Pactor (db)	29.64	32.64	(dBm) 39.8	Pass
	ent Materials Technology	Painta 601 Detector A	Nerzee (DMC)			
C RL RF 50 Ω		SENSE:I		TO Bad	07:21:36 AM Jul 26, 2022 io Std: None	
	#IFG	Trig	g: Free Run Avi tten: 30 dB	Hold: 100/100	io Device: BTS	
Ref Offset 4	0.9 dB					Ī
10 dB/div Ref 32.00	dBm					
22.0						
2.00		·	\			
-8.00						
-28.0						
-38.0						
-48.0						
Center 1.53100 GHz					Span 25.00 MHz	
#Res BW 200 kHz			#VBW 680 kHz		#Śweep 601 ms	
Channel Power		P	ower Spectral De	nsity		
MSG 5G NR. B	and n24. SCS 15	kHz. 10 MHz Ba	ស្រែទា Indwidth. 256-QAM Mod		1 MHz. 40 RB/6 Off	set
5G NR, B Initial Value dBm/Carrier BW	Antenna Gain (dBi)	Duty Cycle Factor (dB)	ndwidth, 256-QAM Mod 2 Port (2x2 MIMO) dBm/Carrier BW	ulation, Mid Channel 153 4 Port (4x4 MIMO) dBm/Carrier BW	Limit (dBm)	Results
5G NR, B Initial Value	Antenna	Duty Cycle	indwidth, 256-QAM Mod 2 Port (2x2 MIMO)	ulation, Mid Channel 153 4 Port (4x4 MIMO)	Limit	
5G NR, B Initial Value dBm/Carrier BW 26.366	Antenna Gain (dBi) 3	Duty Cycle Factor (dB) 0 - Points: 601, Detector: A	Indwidth, 256-QAM Mod 2 Port (2x2 MIMO) dBm/Carrier BW 29.366	ulation, Mid Channel 153 4 Port (4x4 MIMO) dBm/Carrier BW 32.366	Limit (dBm) 39.8	Results Pass
5G NR, B Initial Value dBm/Carrier BW 26.366	Antenna Gain (dBi) 3	Duty Cycle Factor (dB) 0 - Points: 601, Detector: A SENSE: Cer Trif	Indwidth, 256-QAM Mod 2 Port (2x2 MIMO) dBm/Carrier BW 29.366 XVerage (RMS) INT ALIGN AU http: Free (1.53100000 GHz 5; Free Run Ay	ulation, Mid Channel 153 4 Port (4x4 MIMO) dBm/Carrier BW 32.366	Limit (dBm) 39.8	Results Pass
5G NR, B Initial Value dBm/Carrier BW 26.366 Σεκχείght Spectrum Analyzer - Elem	Antenna Gain (dBi) 3 ent Materials Technology DC #IFG	Duty Cycle Factor (dB) 0 - Points: 601, Detector: A SENSE: Cer Trif	Indwidth, 256-QAM Mod 2 Port (2x2 MIMO) dBm/Carrier BW 29.366 Werage (RMS) NT ALIGN AU Inter Freq: 1.531000000 GHz	Jlation, Mid Channel 153 4 Port (4x4 MIMO) dBm/Carrier BW 32.366 70 Rad	Limit (dBm) 39.8	Results Pass
5G NR, B Initial Value dBm/Carrier BW 26.366 Keysight Spectrum Analyzer - Elem M RL RF 50 Ω RL RF 50 Ω Ref Offset 4 10 dB/div Ref 32.00	Antenna Gain (dBi) 3 ent Materials Technology DC #IFG	Duty Cycle Factor (dB) 0 - Points: 601, Detector: A SENSE:T Cer	Indwidth, 256-QAM Mod 2 Port (2x2 MIMO) dBm/Carrier BW 29.366 XVerage (RMS) INT ALIGN AU http: Free (1.53100000 GHz 5; Free Run Ay	Jlation, Mid Channel 153 4 Port (4x4 MIMO) dBm/Carrier BW 32.366 70 Rad	Limit (dBm) 39.8 09:34:15 AH Jul 26, 2022 io Std: None	Results Pass
5G NR, B Initial Value dBm/Carrier BW 26.366 Keysight Spectrum Analyzer - Elem JX RL RF 50 Ω RE RF 50 Ω Ref Offset 4 Ref Offset 4 Ref 32.00	Antenna Gain (dBi) 3 ent Materials Technology DC #IFG	Duty Cycle Factor (dB) 0 - Points: 601, Detector: A SENSE:T Cer	Indwidth, 256-QAM Mod 2 Port (2x2 MIMO) dBm/Carrier BW 29.366 XVerage (RMS) INT ALIGN AU http: Free (1.53100000 GHz 5; Free Run Ay	Jlation, Mid Channel 153 4 Port (4x4 MIMO) dBm/Carrier BW 32.366 70 Rad	Limit (dBm) 39.8 09:34:15 AH Jul 26, 2022 io Std: None	Results Pass
5G NR, B Initial Value dBm/Carrier BW 26.366 Keysight Spectrum Analyzer - Elem JX RL RF 50 Ω Ref Offset 4 Ref 32.00	Antenna Gain (dBi) 3 ent Materials Technology DC #IFG	Duty Cycle Factor (dB) 0 - Points: 601, Detector: A SENSE:T Cer	Indwidth, 256-QAM Mod 2 Port (2x2 MIMO) dBm/Carrier BW 29.366 XVerage (RMS) INT ALIGN AU http: Free (1.53100000 GHz 5; Free Run Ay	Jlation, Mid Channel 153 4 Port (4x4 MIMO) dBm/Carrier BW 32.366 70 Rad	Limit (dBm) 39.8 09:34:15 AH Jul 26, 2022 io Std: None	Results Pass
5G NR, B Initial Value dBm/Carrier BW 26.366 Image: Spectrum Analyzer - Elem Image: Ref Offset 4 10 dB/div Ref Offset 4 10 dB/div Ref Offset 4 22.0 32.0 32.0 32.0	Antenna Gain (dBi) 3 ent Materials Technology DC #IFG	Duty Cycle Factor (dB) 0 - Points: 601, Detector: A SENSE:T Cer	Indwidth, 256-QAM Mod 2 Port (2x2 MIMO) dBm/Carrier BW 29.366 XVerage (RMS) INT ALIGN AU http: Free (1.53100000 GHz 5; Free Run Ay	Jlation, Mid Channel 153 4 Port (4x4 MIMO) dBm/Carrier BW 32.366 70 Rad	Limit (dBm) 39.8 09:34:15 AH Jul 26, 2022 io Std: None	Results Pass
5G NR, B Initial Value dBm/Carrier BW 26.366 Image: Spectrum Analyzer - Elem RL RF So Ω RL RF So Ω Image: Spectrum Analyzer - Elem Ref Offset 4 Log 22.0 12.0 2.00 -18.0	Antenna Gain (dBi) 3 ent Materials Technology DC #IFG	Duty Cycle Factor (dB) 0 - Points: 601, Detector: A SENSE:T Cer	Indwidth, 256-QAM Mod 2 Port (2x2 MIMO) dBm/Carrier BW 29.366 XVerage (RMS) INT ALIGN AU http: Free (1.53100000 GHz 5; Free Run Ay	Jlation, Mid Channel 153 4 Port (4x4 MIMO) dBm/Carrier BW 32.366 70 Rad	Limit (dBm) 39.8 09:34:15 AH Jul 26, 2022 io Std: None	Results Pass
5G NR, B Initial Value dBm/Carrier BW 26.366 Image: Spectrum Analyzer - Elem Image: Ref Offset 4 10 dB/div Ref Offset 4 10 dB/div Ref Offset 4 10 dB/div 22.0 12.0 2.00 -8.00	Antenna Gain (dBi) 3 ent Materials Technology DC #IFG	Duty Cycle Factor (dB) 0 - Points: 601, Detector: A SENSE:T Cer	Indwidth, 256-QAM Mod 2 Port (2x2 MIMO) dBm/Carrier BW 29.366 XVerage (RMS) INT ALIGN AU http: Free (1.53100000 GHz 5; Free Run Ay	Jlation, Mid Channel 153 4 Port (4x4 MIMO) dBm/Carrier BW 32.366 70 Rad	Limit (dBm) 39.8 09:34:15 AH Jul 26, 2022 io Std: None	Results Pass
5G NR, B Initial Value dBm/Carrier BW 26.366 m Keysight Spectrum Analyzer - Elem RL RF S0 Ω RL RF 10 dB/div Ref Offset 4 12 0 120 -200 -200 -800 -200 -800 -48.0	Antenna Gain (dBi) 3 ent Materials Technology DC #IFG	Duty Cycle Factor (dB) 0 - Points: 601, Detector: A SENSE:T Cer	Indwidth, 256-QAM Mod 2 Port (2x2 MIMO) dBm/Carrier BW 29.366 XVerage (RMS) INT ALIGN AU http: Free (1.53100000 GHz 5; Free Run Ay	Jlation, Mid Channel 153 4 Port (4x4 MIMO) dBm/Carrier BW 32.366 70 Rad	Limit (dBm) 39.8 09:34:15 AH Jul 26, 2022 io Std: None	Results Pass
5G NR, B Initial Value dBm/Carrier BW 26.366 Initial Spectrum Analyzer - Elem RL RF SO Q RL Ref Offset 4 10 dB/div Ref 32.00 200 - 800 - -800 -<	Antenna Gain (dBi) 3 ent Materials Technology DC #IFG	Duty Cycle Factor (dB) 0 - Points: 601, Detector: A SENSE:T Cer	Indwidth, 256-QAM Mod 2 Port (2x2 MIMO) dBm/Carrier BW 29.366 XVerage (RMS) INT ALIGN AU http: Free (1.53100000 GHz 5; Free Run Ay	Jlation, Mid Channel 153 4 Port (4x4 MIMO) dBm/Carrier BW 32.366 70 Rad	Limit (dBm) 39.8 09:34:15 AM Jul 26, 2022 io Std: None io Device: BTS	Results Pass
5G NR, B Initial Value dBm/Carrier BW 26.366 m Keysight Spectrum Analyzer - Elem RL RF S0 Ω RL RF 10 dB/div Ref Offset 4 12 0 120 -200 -200 -800 -200 -800 -48.0	Antenna Gain (dBi) 3 ent Materials Technology DC #IFG	Duty Cycle Factor (dB) 0 - Points: 601, Detector: A SENSE:T Cer	Indwidth, 256-QAM Mod 2 Port (2x2 MIMO) dBm/Carrier BW 29.366 XVerage (RMS) INT ALIGN AU http: Free (1.53100000 GHz 5; Free Run Ay	Jlation, Mid Channel 153 4 Port (4x4 MIMO) dBm/Carrier BW 32.366 70 Rad	Limit (dBm) 39.8 09:34:15 AH Jul 26, 2022 io Std: None	Results Pass
5G NR, B Initial Value dBm/Carrier BW 26.366 m Keysight Spectrum Analyzer - Elem RL RF S0 Ω RL RF 10 dB/div Ref Offset 4 Log 200 200 200 -200 -200 -38.0 -26.0 -48.0 -26.0 -48.0 -26.0 -58.0 -26.0 Center 1.53100 GHz	Antenna Gain (dBi) 3 ent Materials Technology DC #IFG	Duty Cycle Factor (dB) 0 - Points: 601, Detector A SENSE:I SENSE:I Trip ain:Low HAt	Indwidth, 256-QAM Mod 2 Port (2x2 MIMO) dBm/Carrier BW 29.366 Inter Free 1.531000000 GHz g: Free Run Avri ten: 30 dB	ulation, Mid Channel 153 4 Port (4x4 MIMO) dBm/Carrier BW 32.366	Limit (dBm) 39.8 09:34:15 AM Jul 26, 2022 io Std: None io Device: BTS	Results Pass
SG NR, B Initial Value dBm/Carrier BW 26.366 26.366 RL RF 50 Ω Ref Offset 4 Control Ref Offset 4 Control Ref 22.00 22.0 22.0 22.0 22.0 23.0 48.0 48.0 48.0 48.0 48.0 48.0 Center 1.53100 GHz #Res BW 200 kHz Channel Power	Antenna Gain (dBi) 3 ent Materials Technology DC #IFG	Duty Cycle Factor (dB) 0 - Points: 601, Detector A SENSE:I SENSE:I Cere Trig ain:Low	#VBW 680 KHz	Jlation, Mid Channel 153 4 Port (4x4 MIMO) dBm/Carrier BW 32.366 TO g Hold: 100/100 Rac nsity	Limit (dBm) 39.8 09:34:15 AM Jul 26, 2022 io Std: None io Device: BTS	Results Pass



dBm/Carrier BW 26.597 Keysight Spectrum Analyzer - Eler RL RF 50 Ω	Gain (dBi)		2 Port (2x2 MIMO)	4 Port (4x4 MIMO)	Limit	Desults
Keysight Spectrum Analyzer - Eler	3	Factor (dB)	dBm/Carrier BW 29.597	dBm/Carrier BW 32.597	(dBm) 39.8	Results Pass
	•	•	· · · · ·			
10 50 32		y - Points: 601, Detector: Av SENSE:IN		0	09:42:42 AM Jul 26, 20	
		Cen	ter Freg: 1.531000000 GHz	Radi Hold: 100/100	o Std: None	
	#IF	Gain:Low #Att	en: 30 dB	Radi	o Device: BTS	
Ref Offset 0 dB/div Ref 32.00	40.9 dB					
og	0 dBm					
22.0						
2.0						
2.00						
8.0						
8.0				·		
38.0						
8.0						
enter 1.53100 GHz Res BW 200 kHz			#VBW 680 kHz		Span 25.00 MI #Sweep 601 n	HZ
			1			
De			K STA			
5G NR, 1			ndwidth, 256-QAM Modu	lation, Mid Channel 1531		Dffset
	Band n24, SCS 1 Antenna Gain (dBi)	5kHz, 10 MHz Bar Duty Cycle Factor (dB)			MHz, 52 RB/0 C Limit (dBm)	Diffset Results

 Center 1.53100 GHz
 Span 25.00 MHz

 #Res BW 200 kHz
 #VBW 680 kHz
 #Sweep 601 ms

 Channel Power
 Power Spectral Density

 29.99 dBm / 9.883 MHz
 20.04 dBm /MHz