

RADIO TEST REPORT

No. 2500952STO-106

RF Performance

EQUIPMENT UNDER TEST

Equipment:	Radio operating in B66		
Model (PMN):	Radio 4471 HP B66		
Additional type/model:	KRC1614476/31		
Applicant:	Ericsson AB		
Tested by request of:	Ericsson AB		
FCC ID:	TA8AKRC1614476	Part Number:	KRC 1614476/3
ISED Reg. Number:	287AB-AS1614476	HVIN:	AS1614476

SUMMARY

Referring to the emission limits, and the operating mode during the tests specified in this report, the equipment complies with the requirements according to the following standards:

47 CFR part 2 (2023): Frequency Allocations and Radio Treaty Matters; General Rules and Regulations

47 CFR part 27 (2023): Subpart C: Technical Standards.

ISED RSS-GEN issue 5 (2018) + A1(2019) + A2(2021): General requirements of Compliance of radio apparatus

RSS-139 Issue 4 (2022): Advanced Wireless Services Equipment Operating in the Bands 1710-1780 MHz and 2110-2200 MHz
For details, see clause 2 – 4.

Prepared by:

Approved by:

Revision History

Test report number	Description	Changes
2500952STO-101	First release	
2500952STO-104	Second release	Added complimentary band edge measurements
2500952STO-105	Third release	Added complimentary OBW measurements.
2500952STO-106	Fourth release	Added complimentary power measurements

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1 CLIENT INFORMATION

The EUT has been tested by request of

Company	Ericsson AB Torshamnsgatan 23 16480 Kista Sweden
Name of contact	Patrik Hellström Ericsson AB Phone +46709864367
Client observer	Not Applicable

2 EQUIPMENT UNDER TEST (EUT)

2.1 Identification of the EUT

Equipment:	Radio Unit	Serial number of EUT:	E23G305405
Model (PMN):	Radio 4471HP B66	Software version:	CXP2021113/1-R24A461 & CXP2021113/1-R23C143
Brand name:	Ericsson	Hardware version:	R1B
Manufacturer:	Ericsson AB	Transmitter frequency range: LTE and NR: WCDMA:	2110 – 2200 MHz 2110 – 2155 MHz
Dimensions:	261x354x119 mm	Receiver frequency range: LTE and NR: WCDMA:	1710 – 1780 MHz 1710 – 1755 MHz
Weight:	11.0 Kg	Cooling:	Natural cooling with optional fan
Mounting:	pole, wall, or mast mount options.		

Port	Description
Antenna port A-D	RF output ports numbered from A to D
Data 1	Optical Data Interface 1
Data 2	Optical Data Interface 2
DC Input	-48 VDC
GND	Ground

Photo(s) of DUT



2.2 Configuration Description

Single carrier

Config no.	RAT	No. of Carriers	Carrier Bandwidth (MHz)	Low channel (MHz)	Middle channel (MHz)	High channel (MHz)	Power per carrier
1	LTE	1	5	2112.5	2155	2197.5	40 W
			10	2115	2155	2195	60 W
			15	2117.5	2155	2192.5	60 W
			20	2120	2155	2190	60 W
2	LTE NB-IoT Inband	1	5	2112.5	2155	2197.5	40 W
			10	2115	2155	2195	60 W
			15	2117.5	2155	2192.5	60 W
			20	2120	2155	2190	60 W
3	LTE NB-Io Guardband	1	10	2115	2155	2195	60 W
			15	2117.5	2155	2192.5	60 W
			20	2120	2155	2190	60 W
4	NR	1	5	2112.5	2155	2197.5	40 W
			10	2115	2155	2195	60 W
			15	2117.5	2155	2192.5	60 W
			20	2120	2155	2190	60 W
			25	2122.5	2155	2187.5	60 W
			30	2125	2155	2185	60 W
			40	2130	2155	2180	60 W
5	NR NB-IoT Inband	1	5	2112.5	2155	2197.5	40 W
			10	2115	2155	2195	60 W
			15	2117.5	2155	2192.5	60 W
			20	2120	2155	2190	60 W
			25	2122.5	2155	2187.5	60 W
6	WCDMA	1	4.2	2112.4	2132.5	2152.6	20 W
			5	2112.5	2132.5	2152.5	40 W

Multicarrier

Config no.	RAT	No. of Carriers	Carrier Bandwidth (MHz)	Carrier placements (MHz)	Power per carrier
7	LTE	2	5	2112.5, 2197.5	30 W
			10	2115, 2195	30 W
			15	2117.5, 2192.5	30 W
			20	2120, 2190	30 W
8		4	5	2112.5, 2117.5, 2192.5, 2197.5	15 W
			10	2115, 2125, 2185, 2195	15 W
			15	2117.5, 2132.5, 2177.5, 2192.5	15 W
			20	2120, 2140, 2170, 2190	15 W
9		6	5	2112.5, 2117.5, 2122.5, 2187.5, 2192.5, 2197.5	10 W
			10	2115, 2125, 2135, 2175, 2185, 2195	10 W
			15	2117.5, 2132.5, 2147.5, 2162.5, 2177.5, 2192.5	10 W
10	LTE NB-IoT In-band	2	5	2112.5, 2197.5	30 W
			10	2115, 2195	30 W
			15	2117.5, 2192.5	30 W
			20	2120, 2190	30 W
11		4	5	2112.5, 2117.5, 2192.5, 2197.5	15 W
			10	2115, 2125, 2185, 2195	15 W
			15	2117.5, 2132.5, 2177.5, 2192.5	15 W
			20	2120, 2140, 2170, 2190	15 W
12		6	5	2112.5, 2117.5, 2122.5, 2187.5, 2192.5, 2197.5	10 W
			10	2115, 2125, 2135, 2175, 2185, 2195	10 W
			15	2117.5, 2132.5, 2147.5, 2162.5, 2177.5, 2192.5	10 W
13	LTE NB-IoT Guard-band	2	10	2115, 2195	30 W
			15	2117.5, 2192.5	30 W
			20	2120, 2190	30 W
14		4	10	2115, 2125, 2185, 2195	15 W
			15	2117.5, 2132.5, 2177.5, 2192.5	15 W
			20	2120, 2140, 2170, 2190	15 W
15		6	10	2115, 2125, 2135, 2175, 2185, 2195	10 W
			15	2117.5, 2132.5, 2147.5, 2162.5, 2177.5, 2192.5	10 W
16	NR	2	5	2112.5, 2197.5	30 W
			10	2115, 2195	30 W
			15	2117.5, 2192.5	30 W
			20	2120, 2190	30 W
			25	2122.5, 2187.5	30 W
			30	2125, 2185	30 W
			40	2130, 2180	30 W
17		4	5	2112.5, 2117.5, 2192.5, 2197.5	15 W
			10	2115, 2125, 2185, 2195	15 W
			15	2117.5, 2132.5, 2177.5, 2192.5	15 W
			20	2120, 2140, 2170, 2190	15 W
18		6	5	2112.5, 2117.5, 2122.5, 2187.5, 2192.5, 2197.5	10 W
			10	2115, 2125, 2135, 2175, 2185, 2195	10 W
			15	2117.5, 2132.5, 2147.5, 2162.5, 2177.5, 2192.5	10 W
19	NR NB-IoT In-band	2	5	2112.5, 2197.5	30 W
			10	2115, 2195	30 W
			15	2117.5, 2192.5	30 W
			20	2120, 2190	30 W
			25	2122.5, 2187.5	30 W
20		4	5	2112.5, 2117.5, 2192.5, 2197.5	15 W
			10	2115, 2125, 2185, 2195	15 W
			15	2117.5, 2132.5, 2177.5, 2192.5	15 W
			20	2120, 2140, 2170, 2190	15 W

21	NR NB-IoT In-band	6	5	2112.5, 2117.5, 2122.5, 2187.5, 2192.5, 2197.5	10 W
			10	2115, 2125, 2135, 2175, 2185, 2195	10 W
			15	2117.5, 2132.5, 2147.5, 2162.5, 2177.5, 2192.5	10 W
22	WCDMA	2	4.2	2112.4, 2152.6	20 W
			5	2112.5, 2152.5	30 W
23		3	4.2	2112.4, 2117.1, 2152.6	20 W
			5	2112.5, 2117.5, 2152.5	20 W
24		4	4.2	2112.4, 2117.1, 2147.9, 2152.6	15 W
			5	2112.5, 2117.5, 2147.5, 2152.5	15 W
25		5	4.2	2112.4, 2117.1, 2122.1, 2147.9, 2152.6	12 W
			5	2112.5, 2117.5, 2122.5, 2147.5, 2152.5	12 W
26		6	4.2	2112.4, 2117.1, 2122.1, 2142.9, 2147.9, 2152.6	10 W
			5	2112.5, 2117.5, 2122.5, 2187.5, 2147.5, 2152.5	10 W

Multi-RAT

Config no.	RAT	No. of Carriers	Carrier Bandwidth RAT 1 (MHz)	Carrier Bandwidth RAT2 (MHz)	Carrier placements RAT 1 (MHz)	Carrier placements RAT 2 (MHz)	Power per carrier	
27	LTE + NR	1+1	5	5	2112.5	2197.5	30 W	
			10	10	2115	2195	30 W	
			20	40	2120	2180	30 W	
28		2+2	5	5	2112.5, 2117.5	2192.5, 2197.5	15 W	
			10	10	2115, 2125	2185, 2195	15 W	
			15	15	2117.5, 2132.5	2177.5, 2192.5	15 W	
			20	20	2120, 2140	2170, 2190	15 W	
			20	25	2120, 2140	2162.5, 2187.5	15 W	
29		3+3	5	5	2112.5, 2117.5, 2122.5	2187.5, 2192.5, 2197.5	10 W	
			10	10	2115, 2125, 2135	2175, 2185, 2195	10 W	
			15	15	2117.5, 2132.5, 2147.5	2162.5, 2177.5, 2192.5	10 W	
30		WCDMA + LTE	1+1	5	5	2112.5	2197.5	30 W
				5	10	2112.5	2195	30 W
				5	20	2112.5	2190	30 W
31			2+2	5	5	2112.5, 2117.5	2192.5, 2197.5	15 W
	5			10	2112.5, 2117.5	2185, 2195	15 W	
	5			20	2112.5, 2117.5	2170, 2190	15 W	
32	3+3		5	5	2112.5, 2117.5, 2122.5	2187.5, 2192.5, 2197.5	10 W	
			5	10	2112.5, 2117.5, 2122.5	2175, 2185, 2195	10 W	
			5	20	2112.5, 2117.5, 2122.5	2150, 2170, 2190	10 W	
33	WCDMA + NR	1+1	5	5	2112.5	2197.5	30 W	
			5	10	2112.5	2195	30 W	
			5	40	2112.5	2180	30 W	
34		2+2	5	5	2112.5, 2117.5	2177.5, 2192.5	15 W	
			5	10	2112.5, 2117.5	2185, 2195	15 W	
			5	40	2112.5, 2117.5	2140, 2180	15 W	
35		3+3	5	5	2112.5, 2117.5, 2122.5	2162.5, 2177.5, 2192.5	10 W	
			5	10	2112.5, 2117.5, 2122.5	2175, 2185, 2195	10 W	
			5	25	2112.5, 2117.5, 2122.5	2137.5, 2162.5, 2187.5	10 W	

Carrier Aggregation

Config no.	RAT	No. of Carriers	Carrier Bandwidth 1 (MHz)	Carrier Bandwidth 2 (MHz)	Carrier placements BW1 (MHz)	Carrier placements BW1 (MHz)	Power per carrier
36	LTE	4+1	20	10	2120, 2140, 2160, 2180	2195	12 W
37		6	15		2117.5, 2132.5, 2147.5, 2162.5, 2177.5, 2192.5		10 W
38	NR	3	30		2125, 2155, 2185		20 W
39		2+1	40	10	2130, 2170	2195	20 W
40		4+1	20	10	2120, 2140, 2160, 2180	2195	12 W
41		6	15		2117.5, 2132.5, 2147.5, 2162.5, 2177.5, 2192.5		10 W
42	WCDMA	6	5		2120, 2125, 2130, 2135, 2140, 2145		10 W

2.3 Declaration of build status

Product information	
Product name for Radio Unit (PMN):	Radio 4471 HP B66
Product number for Radio Unit:	KRC 161 4476/3 and Variant KRC1614476/31*
(2) FCC ID:	TA8AKRC1614476
(2) IC:	287AB-AS1614476
HVIN:	AS1614476
FVIN:	-
(5) Frequency band: NR, LTE (WCDMA)	DL:2110–2200 MHz, UL: 1710–1780 MHz (DL: 2110-2155MHz, UL: 1710-1755MHz)
Radio Configuration:	4 RX / 4 TX
Radio Access Technology, RAT: SR, MR.	LTE NR NB-IoT (IB, GB) WCDMA
Duplexing:	FDD
Supported transmission mode schemes, WCDMA, LTE, NR:	TX Diversity 2-way & 4-way supported MIMO User modes: SU Supported number of MIMO layers: 4
Supported channel bandwidth WCDMA	4.2, 5MHz
Supported channel bandwidth LTE SCS 15kHz:	5, 10 15, 20MHz
Supported channel bandwidth NR SCS 15kHz:	5, 10, 15, 20, 25 30, 40 MHz
Supported channel bandwidth ESS	10, 15, 20 MHz
Supported modulation scheme, WCDMA:	QPSK, 16QAM, 64QAM
Supported modulation scheme, LTE:	QPSK, 16QAM, 64QAM, 256QAM
Supported modulation scheme: NR:	QPSK, 16QAM, 64QAM, 256QAM
Supported modulation scheme, NB IoT:	QPSK
Type of emission, WCDMA	3M85F9W, 4M17F9W
Type of emission, LTE	4M52W7D, 9M08W7D, 13M6W7D, 18M0W7D
Type of emission, LTE NB IoT GB	9M57W7D, 14M3W7D, 18M7W7D
Type of emission, NR 15KHz	4M57W7D, 9M47W7D, 14M4W7D, 19M1W7D, 24M4W7D, 28M9W7D, 38M7W7D
Type of emission, Max CA WCDMA	28M9F9W
Type of emission, Max CA LTE	87M9W7D
Type of emission, Max CA NR	88M8W7D
Cooling	Natural cooling with optional fan.
Antenna	No integrated antenna

* The hardware and software (except for the security software) are identical for both types of Radios module KRC 161 4476/3 (Security unlocked) and module KRC 161 4476/31 (Security locked). The tests were performed on KRC 161 4476/3.

RF Power and Carrier configurations		
(7) Maximum power rating Maximum power rated per antenna port	240W CBW >5MHz 60W CBW 5MHz 40W CBW <5MHz 20W	
IBW	LTE/NR 90MHz, WCDMA 45MHz	
Carrier Aggregation, CA	Contiguous (CA), non Contiguous (NCA)	
RF power Tolerance:	+0.6/-0.9 dB	
Frequency Tolerance:	±0.05 ppm	
Maximum number of supported carriers per port	6	
Max number of supported NB IoT inband LTE carriers:	4	
Max number of supported NB IoT inband NR carriers:	4	
Max number of supported NB IoT guardband LTE carriers: >5MHz	2	
Power dynamic range, WCDMA:	≥18 dB per carrier	
(2&5) Range of Operating Power Power dynamic range, LTE Relative to Pcell: (in case no cell range reduction is required, Pcell = Pnom)	Bandwidth (MHz)	Power dynamic range relative to Pcell (dB)
	5	-13.5
	10	-16.5
	15	-18.3
	20	-19.6
(6) Range of Operating Power Power dynamic range, NR Relative to Pcell: (in case no cell range reduction is required, Pcell = Pnom)	Bandwidth (MHz)	Power dynamic range relative to Pcell (dB)
	5	-13.5
	10	-16.7
	15	-18.5
	20	-19.8
	25	-20.8
	30	-21.6
	40	-22.7
Cooling	Natural cooling with optional fan.	
(8) Final power amplifier voltage and current in normal operation.	50V/2.9A	

No responsibility will be accepted by Intertek as to the accuracy of the information declared in this document by the manufacturer

2.4 Additional models

Additional model/type	Difference as compared to the tested type (according to the manufacturer)
KRC1614476/31	The hardware and software (except for the security software) are identical for both types of Radios module KRC 161 4476/3 (Security unlocked) and module KRC 161 4476/31 (Security locked). The tests were performed on KRC 161 4476/3.

2.5 Modifications

Software	Dates	Test performed	Additional info
CXP20211 13/1- R24A461	6 March - 17 March	Initial testes performed before 17 March	Original Software
CXP20211 13/1- R23C143	17 March-	Tests performed after 17 March, including all tests for WCDMA 5MHz	According to the manufacturer, the difference in the two radio software versions has no impact on other FCC parameters beyond the digital channel filter used for WCDMA 5MHz.

There were no other modifications performed on the EUT during assessment.

3 TEST SPECIFICATIONS

3.1 Standards

Requirements:

47 CFR part 2 (2023): Frequency Allocations and Radio Treaty Matters; General Rules and Regulations

47 CFR part 27 (2023): Subpart C: Technical Standards

ISED RSS-GEN issue 5 (2018) + A1(2019) + A2(2021): General requirements of Compliance of radio apparatus

RSS-139 Issue 4 2022: Advanced Wireless Services Equipment Operating in the Bands 1710-1780 MHz and 2110-2200 MHz

SRSP-513 Issue 4 2022: Technical Requirements for Advanced Wireless Services in the Band 1710-1780 MHz and 2110-2180 MHz

SRSP-519 Issue 2 2022: Technical Requirements for the Ancillary Terrestrial Components of mobile-Satellite Services Systems Operating in the Bands 2000-2020 MHz and 2180-2200 MHz

Test methods:

ANSI C63.26-2015: American National Standard for Compliance Testing of Transmitters Used in License Radio Services

KDB 662911 D01 Multiple Transmitter Output v02r01

KDB 971168 D01 Power Meas License Digital System v03r01

3.2 Additions, deviations and exclusions from standards and accreditation

No additions, deviations or exclusions have been made from standards and accreditation.

3.3 Decision rule

The statements of conformity are reported as:

Passed – When the measured values are within the specified limits.

Failed – When one or more measures values are outside the specified limits

3.4 Test site

Measurements were performed at:

Intertek Semko AB.
Torshamnsgatan 43,
P.O. Box 1103
SE-164 40 Kista

Intertek Semko AB is a FCC listed test site with site registration number 90913

Intertek Semko AB is a FCC accredited conformity assessment body with designation number SE0002

Intertek Semko AB is an Industry Canada listed test facility with IC assigned code 2042G

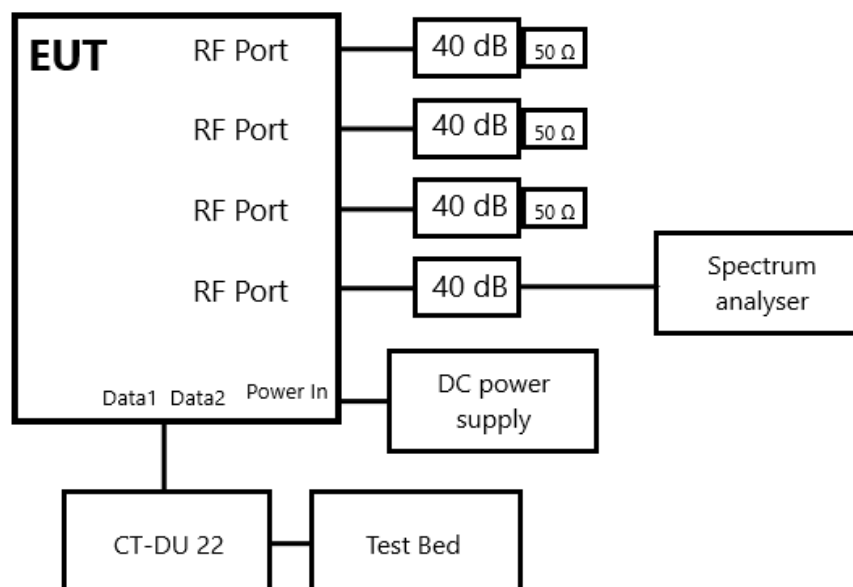
Intertek Semko AB is an ISED recognized wireless testing laboratory with CAB identifier SE0003.

3.5 Test setup

For all tests the EUT was setup in accordance with the relevant test standard and to represent normal operating conditions.

The EUT was supplied by a DC power supply with nominal voltage equal to the declared voltage $\pm$ 5%, except for frequency stability (see section 9).

Result (dBm) = SA reading (dBm) + Cable Attenuation (dB) + Attenuator (dB)



Conducted test setup

3.6 Observations and special notes

During pre-testing it was determined that Port A was the worst-case port, therefore all measurements was performed on this port.

During pre-testing it was determined that the worst-case modulation was 16QAM for WCDMA, 64QAM for LTE and QPSK for NR.

During pre-testing it was determined that a single inband NB-IoT carrier was the worst-case configuration when used with NR. It was also determined that double guard band NB-IoT was the worst-case configuration when used with LTE.

Tests for LTE inband NB-IoT was performed using a single NB-IoT carrier. For LTE inband the test data for all RF parameters show good margin to limit. The band edge has the smallest margin to limit, ~ 3 dB. LTE and NR are very similar in radio characteristics and the RF carrier power for NR with PRB 1, 2, 3 and 4 show very small deviations, ~ 0.1 dB. Test data for LTE inband with one PRB show also good margin to limit, ~ 6 dB. Therefore, it is unlikely that LTE inband with more than one PRBs, will reduce the margin to the limit by appreciable amount.

Photo of test setup



4 TEST SUMMARY

The results in this report apply only to sample tested:

Requirement	Description	Result
FCC 47§27.50 (d) RSS-GEN 6.12 RSS-139 5.5	Peak conducted output power	Pass
FCC 47§27.50 (d) RSS-GEN 6.12 RSS-139 5.5	Power spectral density	Pass
FCC 47§27.50 (d) RSS-139 5.5	Peak Average Ratio	Pass
FCC §2.1049	-26 dB Occupied bandwidth	Pass
FCC 47§2.1049 RSS-GEN 6.7	99% Occupied Bandwidth	Pass
FCC 47§27.53 RSS-139 5.6	Conducted Band Edge	Pass
FCC 47§27.53 RSS-139 5.6	Transmitter Spurious Emissions	Pass
FCC 47§27.54 RSS-139 5.4 RSS-GEN 6.11	Frequency Stability	Pass

5 MAXIMUM CARRIER CONDUCTED OUTPUT POWER, POWER SPECTRAL DENSITY AND PEAK TO AVERAGE RATIO

Date of test:	6 March – 15 April 2025	Test location:	E-torget
EUT Serial:	E23G305405	Ambient temp:	19-20 °C
Tested by:	Algot Rickman Nahome Michael	Relative humidity:	30-36 %
Test result:	Pass	Margin:	16 dB (Test no. 74 Total PSD to Urban PSD limit)

5.1 Test set-up and test procedure.

The test method is in accordance with KDB 971168D01 section 5.2.1 and ANSI C63.26-2015 section 5.2.4.4.1. For PAR measurement the test method was according to ANSI C63.26-2015 section 5.3.

The EUT was connected to spectrum analyser via rf-cable and a 40 dB attenuator.

The EUT was set up in order to emit maximum emissions.

Power measurements have only been performed on one of the EUTs four ports. To compensate for this, the result was adjusted by a factor $10 \log(N_{\text{ANT}})$ where N_{ANT} is the number of output ports. This was done according to KDB 662911D01 E.2.c). The port selected for the power measurement was the port determined to be the worst-case port.

This radio unit is tested without the antenna. Licenses are required to take into account installation and deployment criteria along with maximum power settings, antenna gain, and feeder loss for all carrier configurations to ensure compliance against EIRP limits as defined by the FCC/ISED regulations. To ensure compliance with this requirement, a worst-case calculation has been made using the configuration with the highest PSD value and the highest antenna gain of the radio and assuming a path loss of 1 dB.

5.2 Requirements

CFR 47§27.50(d)(1), (2), (5):

The power of each fixed or base station transmitting in the 1995-2000 MHz, 2110-2155 MHz, 2155-2180 MHz or 2180-2200 MHz band and located in any county with population density of 100 or fewer persons per square mile, based upon the most recently available population statistics from the Bureau of the Census, is limited to an EIRP of 3280 watts/MHz when transmitting with an emission bandwidth greater than 1 MHz.

The power of each fixed or base station transmitting in the 1995-2000 MHz, the 2110-2155 MHz 2155-2180 MHz band, or 2180-2200 MHz band and situated in any geographic location other than that described above is limited to an EIRP of 1640 watts/MHz when transmitting with an emission bandwidth greater than 1 MHz.

In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

RSS-139, Section 5.5:

Maximum power of equipment in the band 2110-2180 MHz, Non-AAS fixed station and base station: 65 dBm e.i.r.p./MHz.

Maximum power of equipment in the band 2180-2200 MHz, Non-AAS base station: 65 dBm e.i.r.p./MHz.

In addition, the peak to average power ratio (PAPR) of the equipment shall not exceed 13 dB for more than 0.1% of the time, using a signal that corresponds to the highest PAPR during periods of continuous transmission.

SRSP-513:

For fixed and base stations operating in the band 2110-2180 MHz with a channel bandwidth greater than 1 MHz, the maximum permissible e.i.r.p. is 62 dBm/MHz (i.e. no more than 62 dBm e.i.r.p. in any 1 MHz band segment), with an antenna HAAT of up to 300 m.

SRSP-519:

For base stations operating in the bands 2000-2020 MHz and 2180-2200 MHz with an antenna HAAT of up to 300 m, the e.i.r.p. shall not exceed 62 dBm/MHz when transmitting with an emission bandwidth greater than 1 MHz.

5.3 Test results

Maximum Antenna Gain calculation of the worst-case configuration.

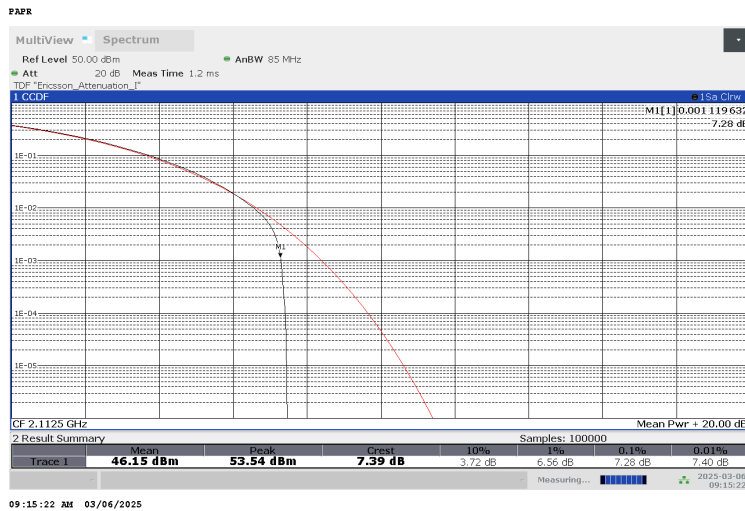
Measured PSD has been considered for correction factor for chain attenuation including attenuator, cables loss of measurement, and is the PSD at the output port of the radio. Estimated cable loss is the loss accounted for cable from the radio output port to antenna, in case of deployment.

The used formula is: Maximum antenna gain (dBi) = e.i.r.p limit (dBm) - Measured Total power/ 1 MHz (dBm) + feeder loss (dB). Please note that the maximum e.i.r.p limit for a specific site may be lower due to various site conditions. The gain value is the maximum antenna gain that can be used with the tested device for the configuration tested and still comply with the maximum e.i.r.p limits as defined in FCC 27.50 and RSS-139.

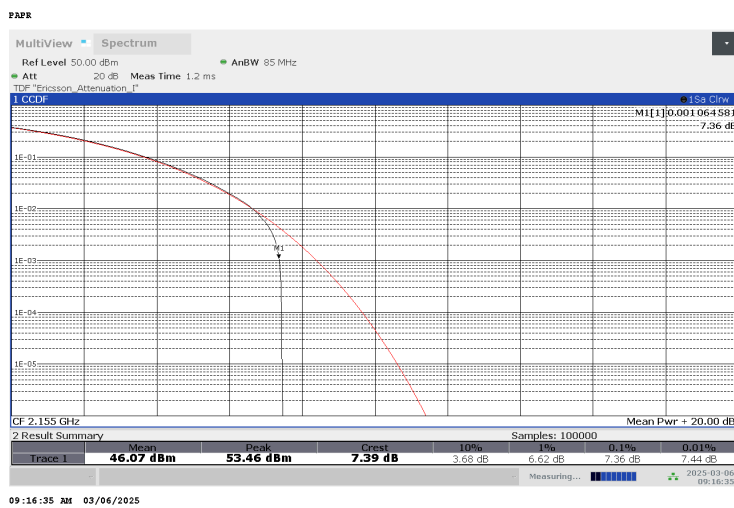
Test No.	Configuration	Measured PSD dBm/MHz	Total 4 port PSD dBm/MHz	Estimated cable loss dB	Total PSD with after losses (dBm/MHz)	Urban Limit 1640 W/MHz (dBm/MHz)	Non-Urban Limit 3280 W/MHz (dBm/MHz)	Maximum antenna gain for urban environment (dBi)	Maximum antenna gain for non-urban environment (dBi)
74	5 MHz WCDMA Middle channel	40.14	46.16	1	45.16	62.15	65.16	16.99	20

5.3.1 Single carrier

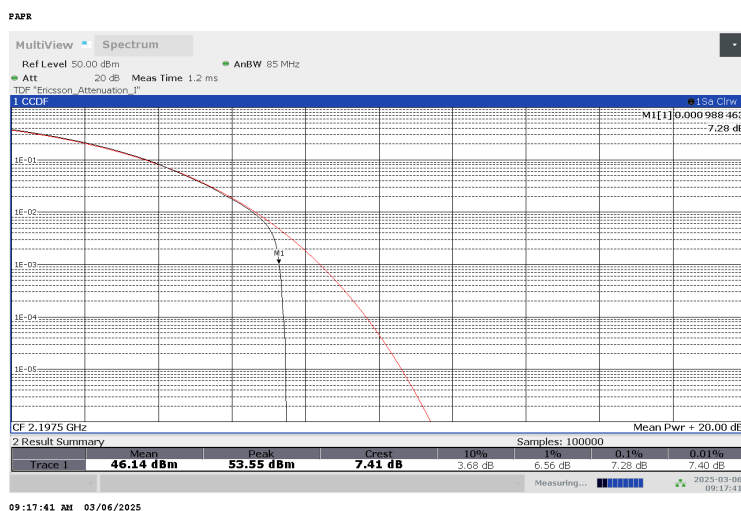
Configuration:		1						RAT:		LTE			
Test no.	Bandwidth (MHz)	Channel	PAR (dB)	PAR Limit (dB)	Meas. Power (dBm)	Total Power (dBm)	Meas. PSD (dBm/MHz)	Total PSD (dBm/MHz)	Urban Limit 1640 W/MHz (dBm/MHz)	Non-Urban Limit 3280 W/MHz (dBm/MHz)	Margin Urban (dB)	Margin, Non-Urban (dB)	
1	5	Low	7.28	13	46.11	52.13	39.25	45.27	62.15	65.16	16.88	19.89	
2	5	Mid	7.36	13	46.07	52.09	39.42	45.44	62.15	65.16	16.71	19.72	
3	5	High	7.28	13	46.09	52.11	39.50	45.52	62.15	65.16	16.63	19.64	
4	10	Low	7.36	13	47.64	53.66	37.93	43.95	62.15	65.16	18.20	21.21	
5	10	Mid	7.30	13	47.85	53.87	38.13	44.15	62.15	65.16	18.00	21.01	
6	10	High	7.40	13	47.32	53.34	37.18	43.20	62.15	65.16	18.95	21.96	
7	15	Low	7.34	13	47.62	53.64	36.19	42.21	62.15	65.16	19.94	22.95	
8	15	Mid	7.36	13	47.81	53.83	36.48	42.50	62.15	65.16	19.65	22.66	
9	15	High	7.40	13	47.36	53.38	35.82	41.84	62.15	65.16	20.30	23.32	
10	20	Low	7.40	13	47.70	53.72	34.89	40.91	62.15	65.16	21.24	24.25	
11	20	Mid	7.36	13	47.85	53.87	34.64	40.66	62.15	65.16	21.49	24.50	
12	20	High	7.54	13	47.49	53.51	35.03	41.05	62.15	65.16	21.10	24.11	



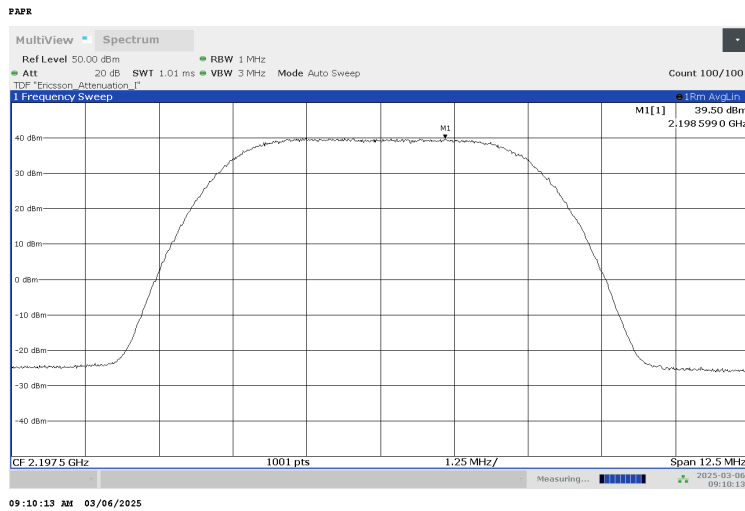
LTE, carrier bandwidth 5MHz, low channel



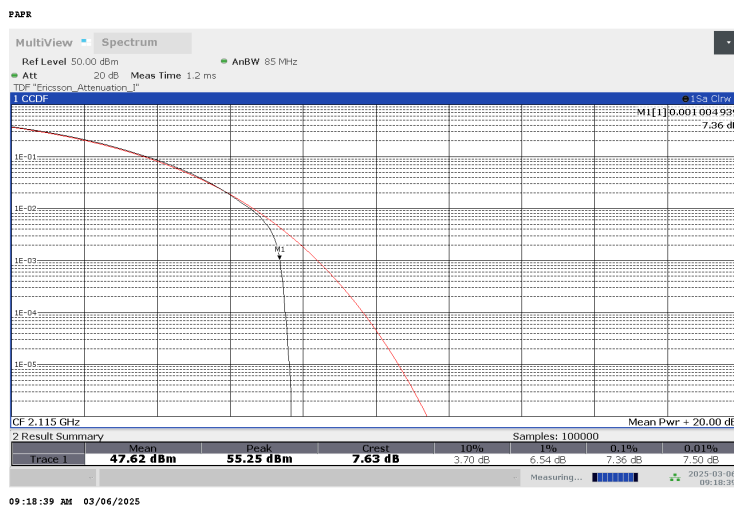
LTE, carrier bandwidth 5MHz, middle channel



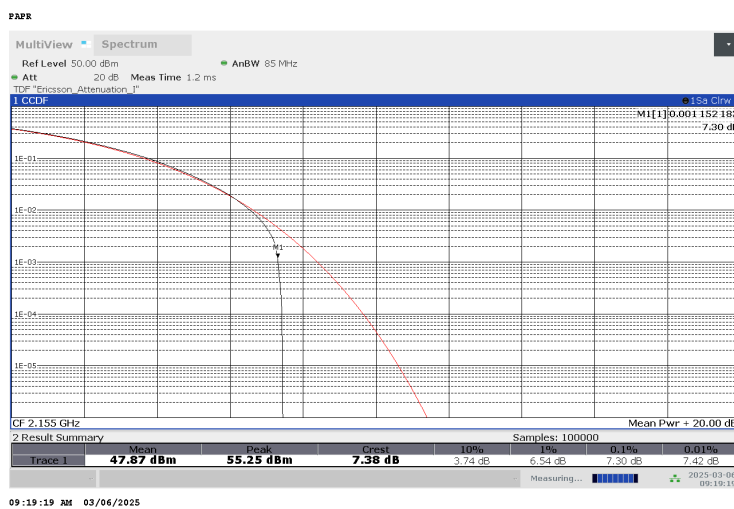
LTE, carrier bandwidth 5MHz, high channel



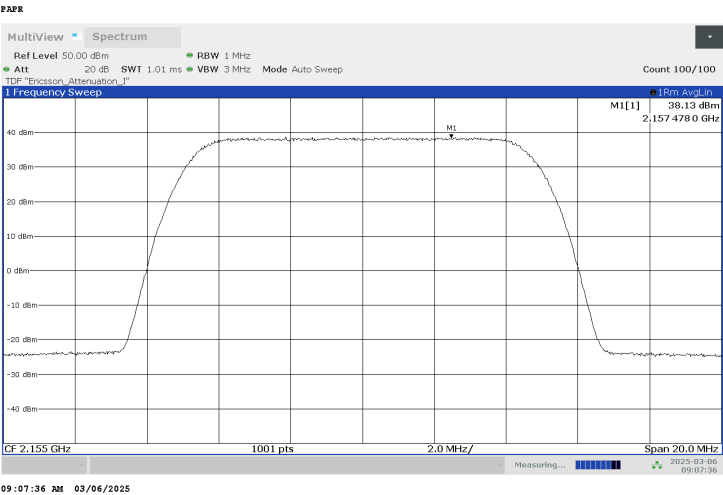
LTE, carrier bandwidth 5MHz, high channel PSD



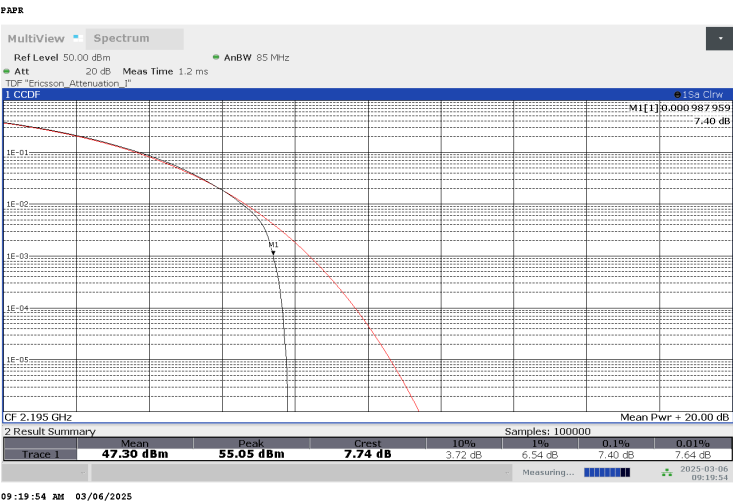
LTE, carrier bandwidth 10MHz, low channel



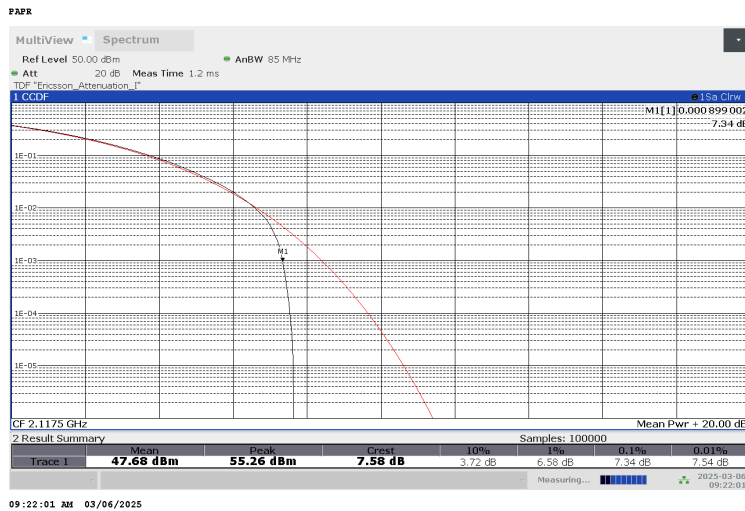
LTE, carrier bandwidth 10MHz, middle channel



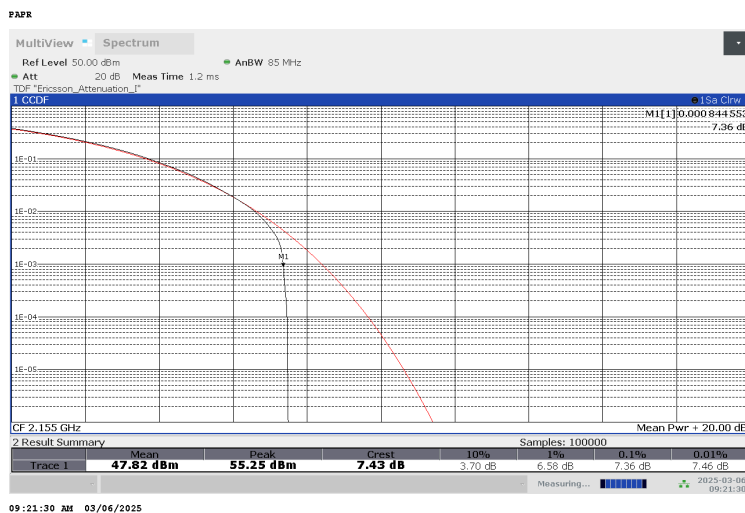
LTE, carrier bandwidth 10MHz, middle channel PSD



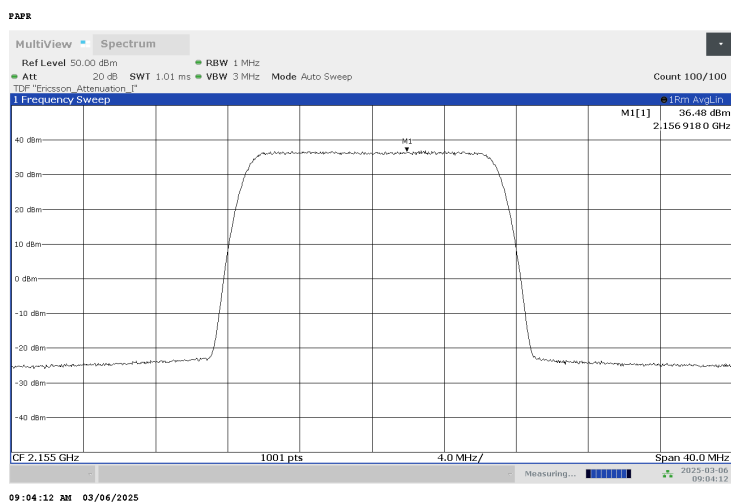
LTE, carrier bandwidth 10MHz, high channel



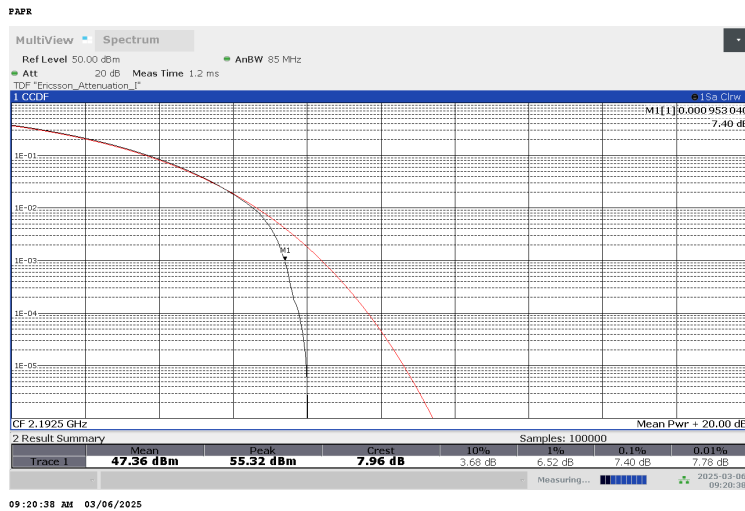
LTE, carrier bandwidth 15MHz, low channel



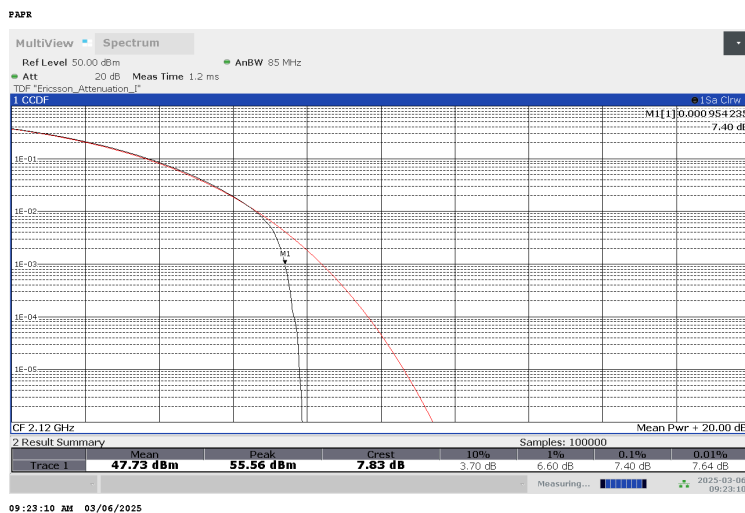
LTE, carrier bandwidth 15MHz, middle channel



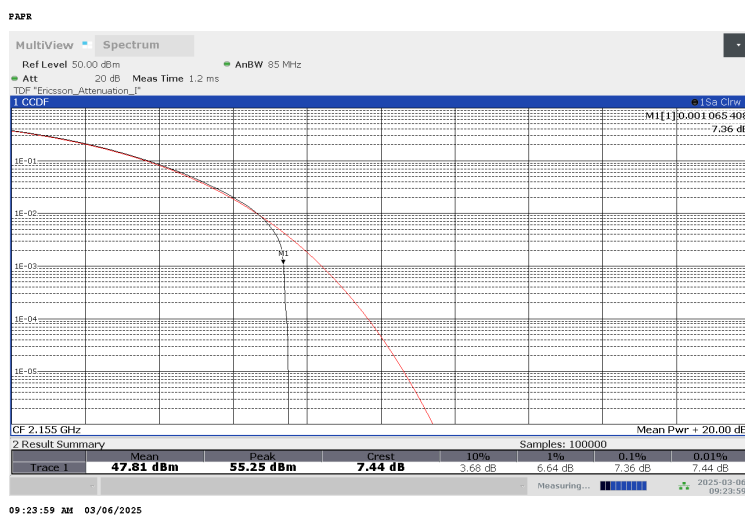
LTE, carrier bandwidth 15MHz, middle channel PSD



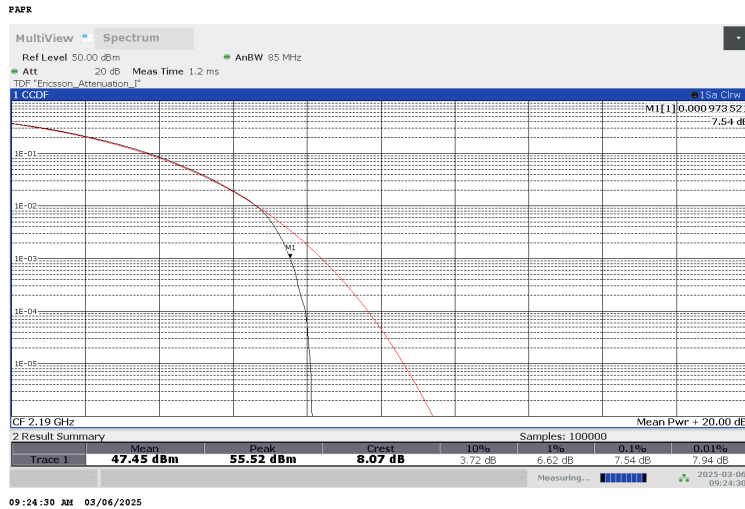
LTE, carrier bandwidth 15MHz, high channel



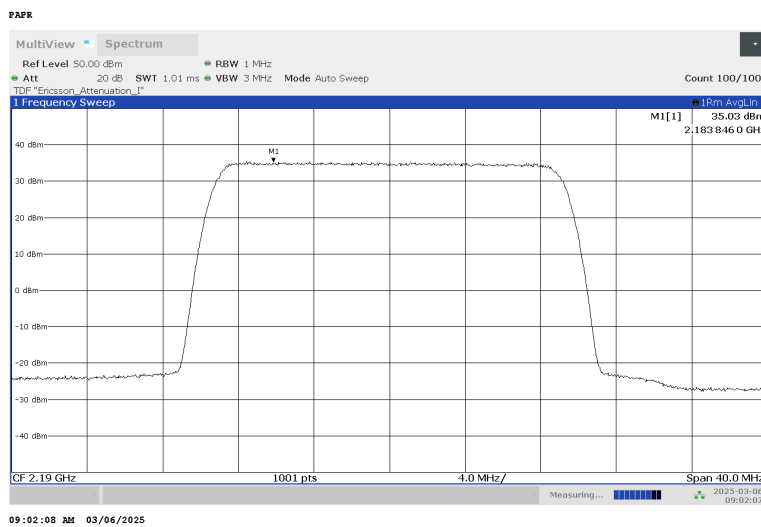
LTE, carrier bandwidth 20MHz, low channel



LTE, carrier bandwidth 20MHz, middle channel

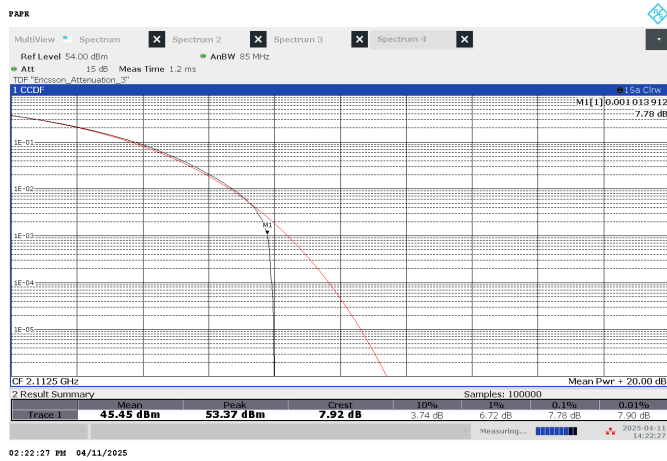


LTE, carrier bandwidth 20MHz, high channel

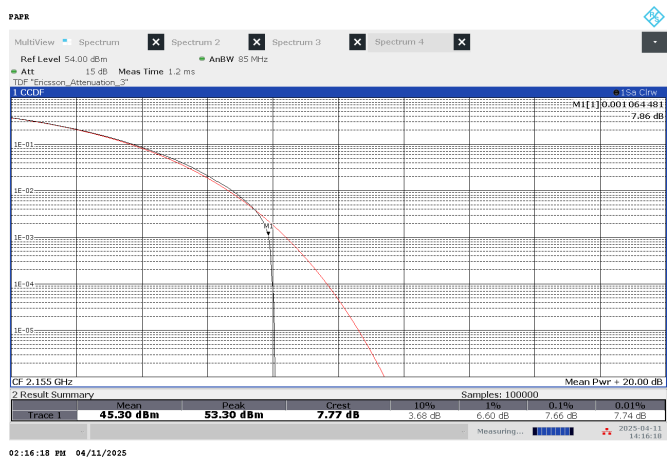


LTE, carrier bandwidth 20MHz, high channel PSD

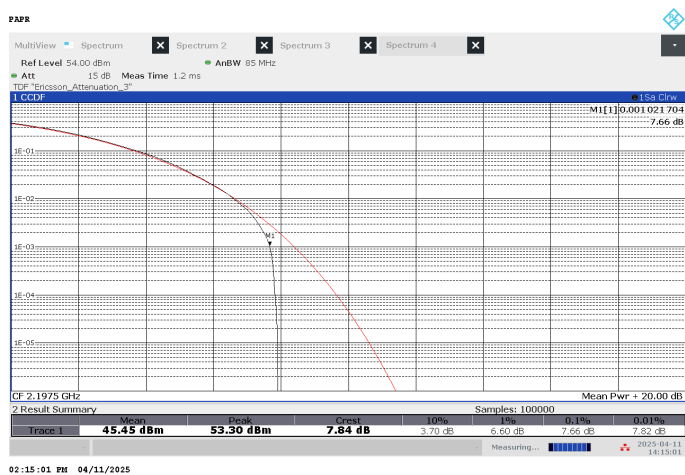
Configuration:		2	RAT:						LTE in-band NB-IoT			
Test no.	Bandwidth (MHz)	Channel	PAR (dB)	PAR Limit (dB)	Meas. Power (dBm)	Total Power (dBm)	Meas. PSD (dBm/MHz)	Total PSD (dBm/MHz)	Urban Limit 1640 W/MHz (dBm/MHz)	Non-Urban Limit 3280 W/MHz (dBm/MHz)	Margin Urban (dB)	Margin, Non-Urban (dB)
13	5	Low	7.78	13	45.53	51.55	38.99	45.01	62.15	65.16	17.14	20.15
14	5	Mid	7.86	13	45.43	51.45	39.21	45.23	62.15	65.16	16.92	19.93
15	5	High	7.66	13	45.41	51.43	39.38	45.40	62.15	65.16	16.75	19.76
16	10	Low	7.66	13	47.01	53.03	37.31	43.33	62.15	65.16	18.82	21.83
17	10	Mid	7.64	13	47.16	53.18	37.97	43.99	62.15	65.16	18.16	21.17
18	10	High	7.66	13	46.67	52.69	37.20	43.22	62.15	65.16	18.93	21.94
19	15	Low	7.64	13	47.00	53.02	35.67	41.69	62.15	65.16	20.46	23.47
20	15	Mid	7.60	13	47.22	53.24	35.77	41.79	62.15	65.16	20.36	23.37
21	15	High	7.74	13	46.73	52.75	35.29	41.31	62.15	65.16	20.84	23.85
22	20	Low	7.70	13	47.03	53.05	34.29	40.31	62.15	65.16	21.84	24.85
23	20	Mid	7.66	13	47.15	53.17	34.93	40.95	62.15	65.16	21.20	24.21
24	20	High	7.72	13	46.84	52.86	34.66	40.68	62.15	65.16	21.47	24.48



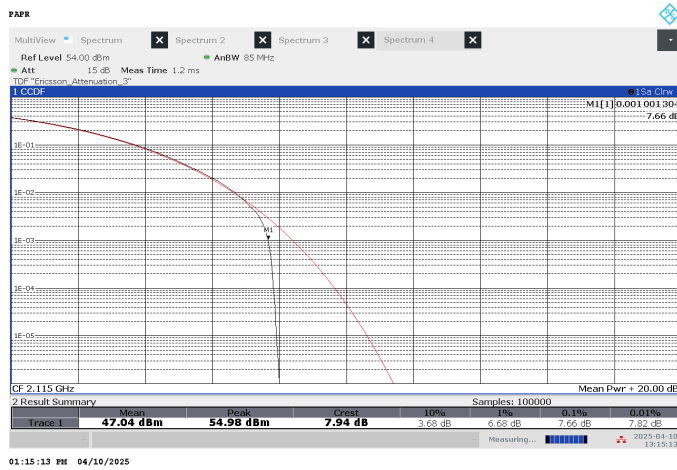
LTE in-band NB-IoT, carrier bandwidth 5 MHz, PAR, Low channel



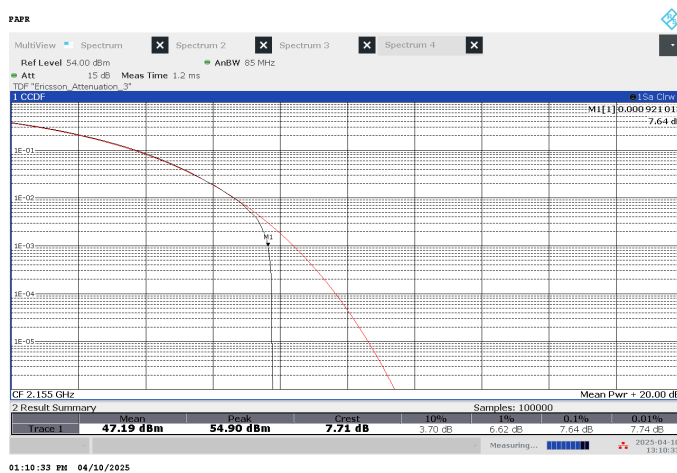
LTE in-band NB-IoT, carrier bandwidth 5 MHz, PAR, Middle channel



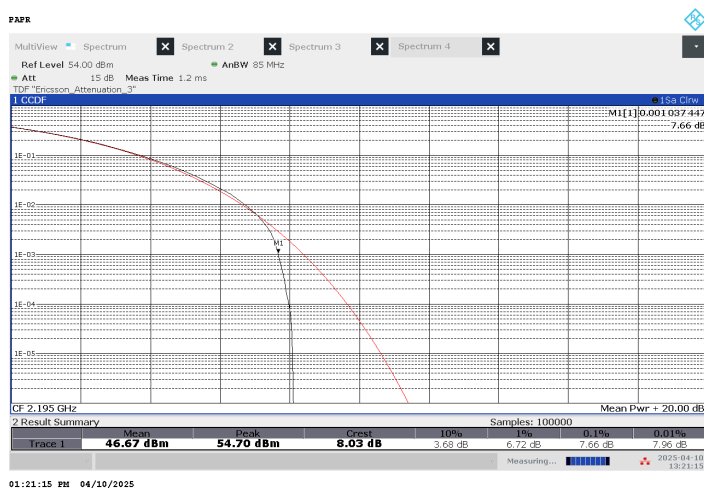
LTE in-band NB-IoT, carrier bandwidth 5 MHz, PAR, High channel



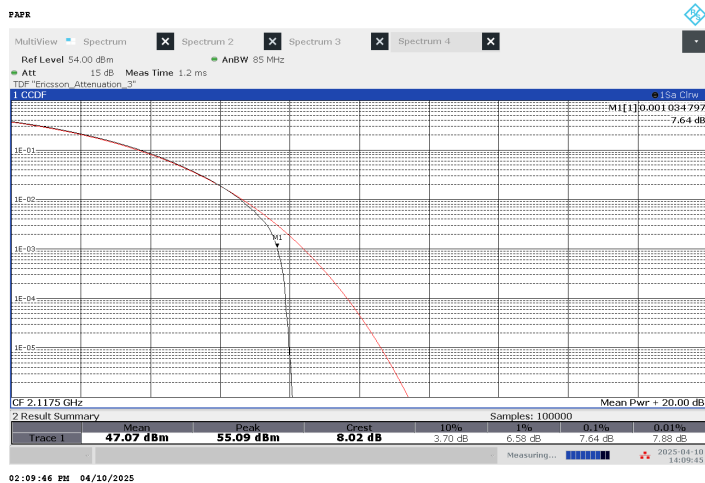
LTE in-band NB-IoT, carrier bandwidth 10 MHz, PAR, Low channel



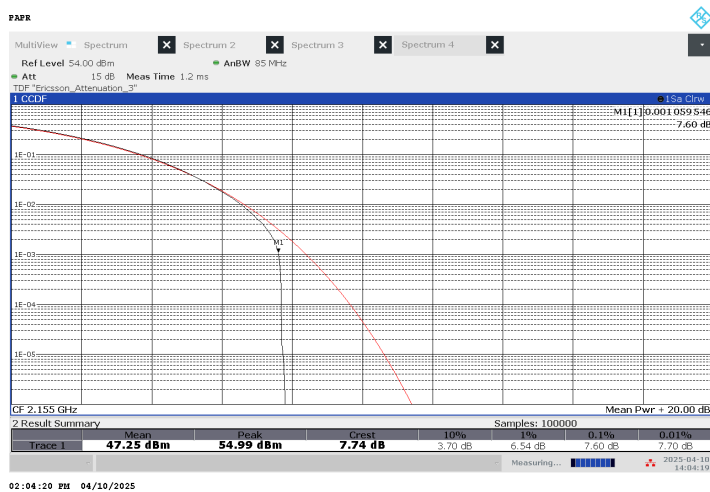
LTE in-band NB-IoT, carrier bandwidth 10 MHz, PAR, Middle channel



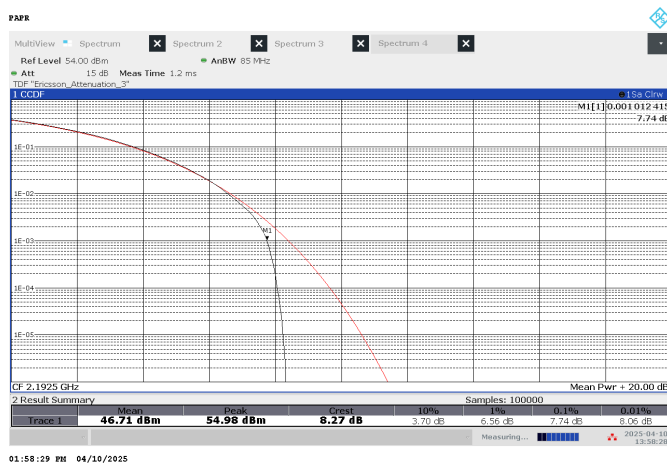
LTE in-band NB-IoT, carrier bandwidth 10 MHz, PAR, High channel



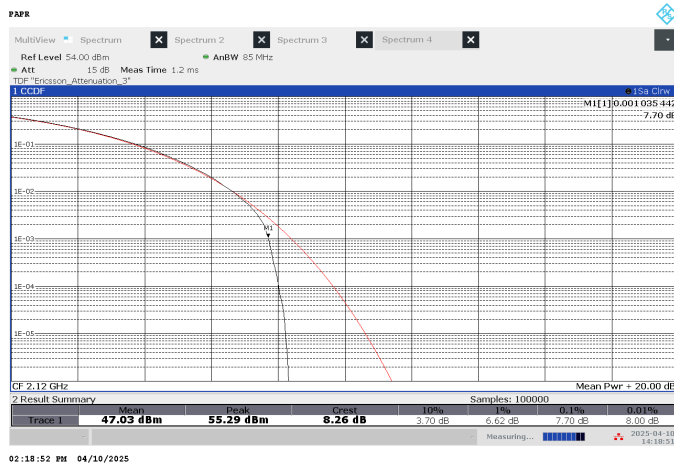
LTE in-band NB-IoT, carrier bandwidth 15 MHz, PAR, Low channel



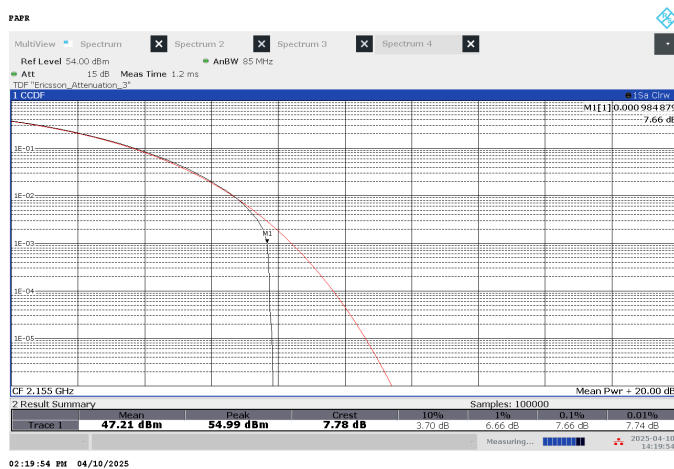
LTE in-band NB-IoT, carrier bandwidth 15 MHz, PAR, Middle channel



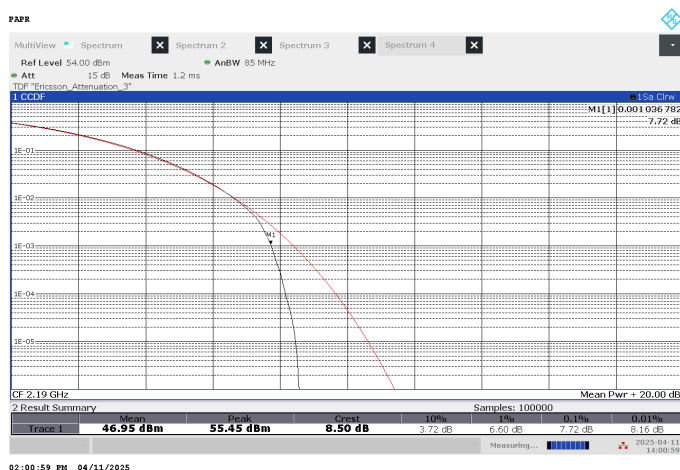
LTE in-band NB-IoT, carrier bandwidth 15 MHz, PAR, High channel



LTE in-band NB-IoT, carrier bandwidth 20 MHz, PAR, Low channel

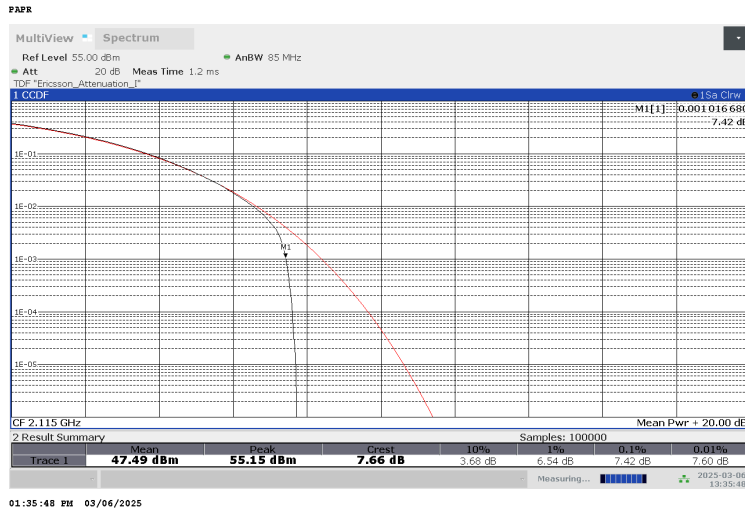


LTE in-band NB-IoT, carrier bandwidth 20 MHz, PAR, Middle channel

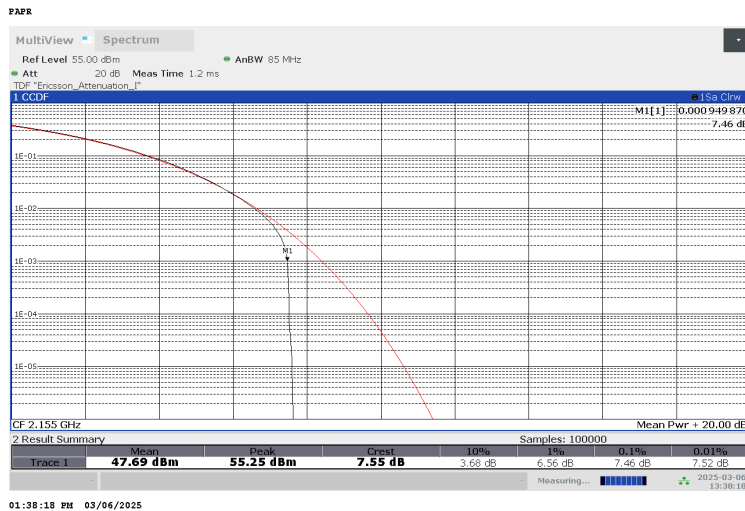


LTE in-band NB-IoT, carrier bandwidth 20 MHz, PAR, High channel

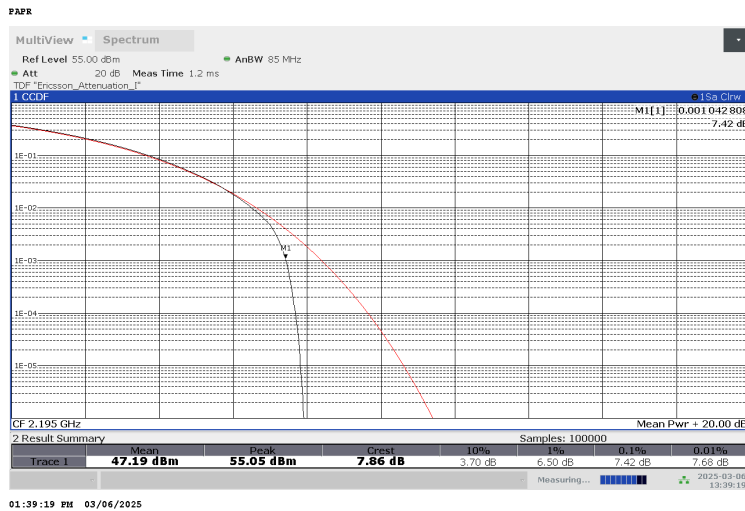
Configuration:			3			RAT:			LTE Guard-band NB-IoT			
Test no.	Bandwidth (MHz)	Channel	PAR (dB)	PAR Limit (dB)	Meas. Power (dBm)	Total Power (dBm)	Meas. PSD (dBm/MHz)	Total PSD (dBm/MHz)	Urban Limit 1640 W/MHz (dBm/MHz)	Non-Urban Limit 3280 W/MHz (dBm/MHz)	Margin Urban (dB)	Margin, Non-Urban (dB)
25	10	Low	7.42	13	47.56	53.58	37.83	43.85	62.15	65.16	18.3	21.31
26	10	Mid	7.46	13	47.74	53.76	38.01	44.03	62.15	65.16	18.12	21.13
27	10	High	7.42	13	47.21	53.23	37.75	43.77	62.15	65.16	18.38	21.39
28	15	Low	7.40	13	47.55	53.57	35.87	41.89	62.15	65.16	20.26	23.27
29	15	Mid	7.44	13	47.79	53.99	36.22	42.24	62.15	65.16	19.91	22.92
30	15	High	7.60	13	47.30	53.32	36.30	42.32	62.15	65.16	19.83	22.84
31	20	Low	7.38	13	47.65	53.67	35.51	41.53	62.15	65.16	20.62	23.63
32	20	Mid	7.38	13	47.80	53.82	35.21	41.23	62.15	65.16	20.92	23.93
33	20	High	7.54	13	47.43	53.45	35.57	41.59	62.15	65.16	20.56	23.57



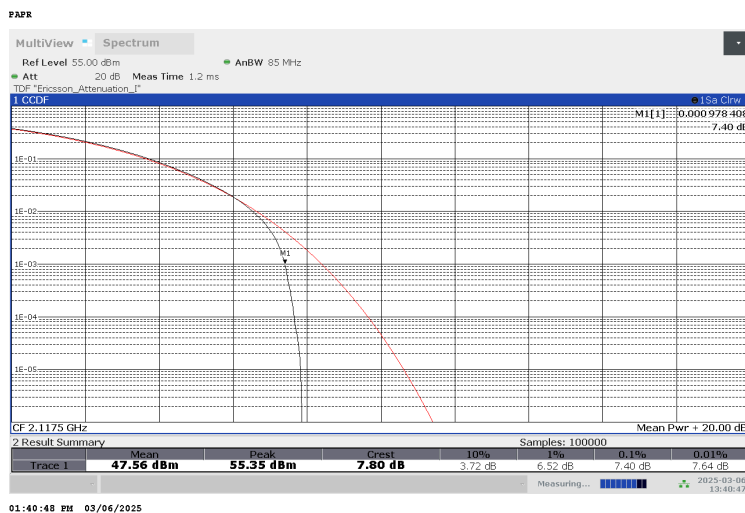
LTE Guard-band NB-IoT, carrier bandwidth 10 MHz, low channel



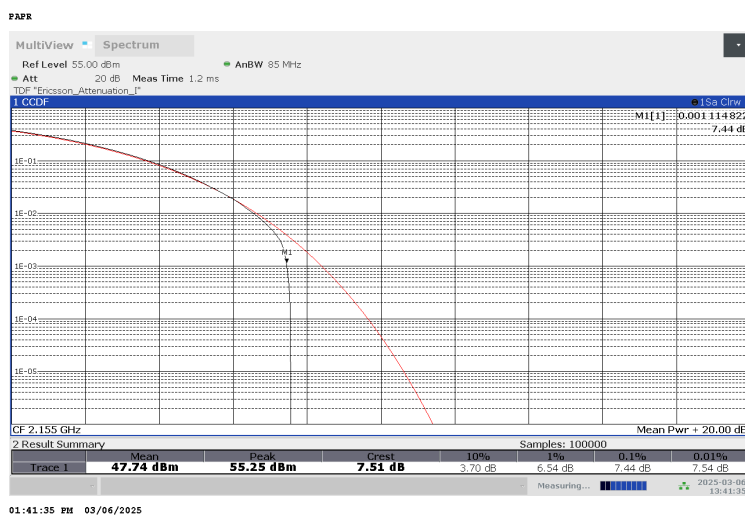
LTE Guard-band NB-IoT, carrier bandwidth 10 MHz, middle channel



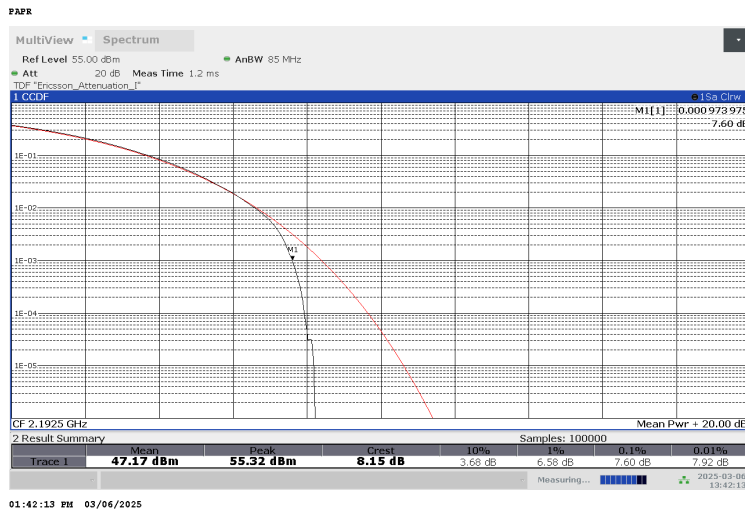
LTE Guard-band NB-IoT, carrier bandwidth 10 MHz, high channel



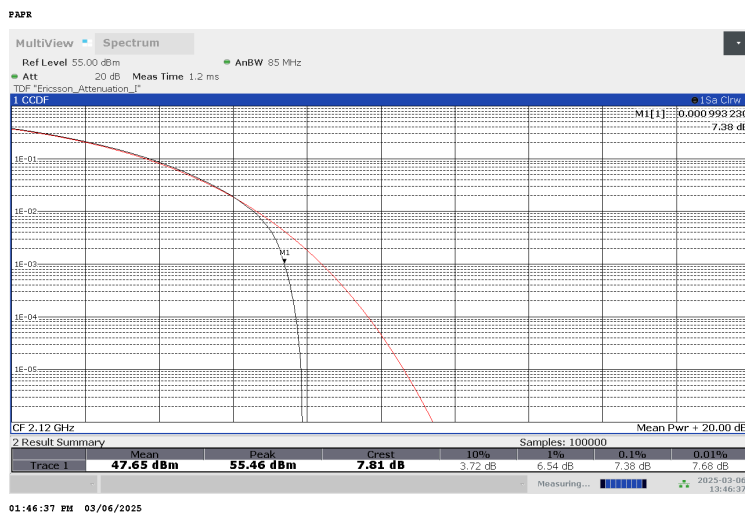
LTE Guard-band NB-IoT, carrier bandwidth 15 MHz, low channel



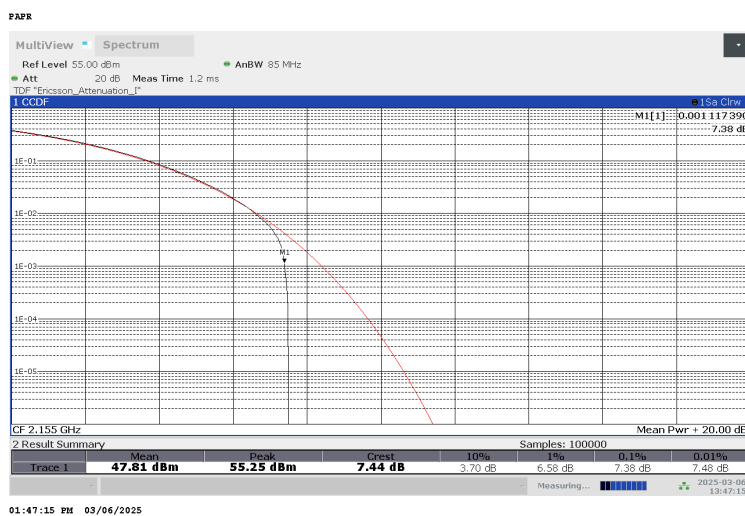
LTE Guard-band NB-IoT, carrier bandwidth 15 MHz, middle channel



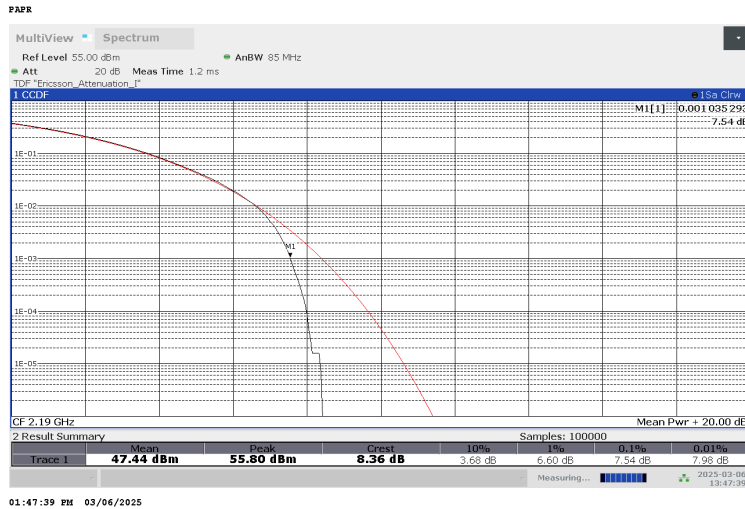
LTE Guard-band NB-IoT, carrier bandwidth 15 MHz, high channel



LTE Guard-band NB-IoT, carrier bandwidth 20 MHz, low channel

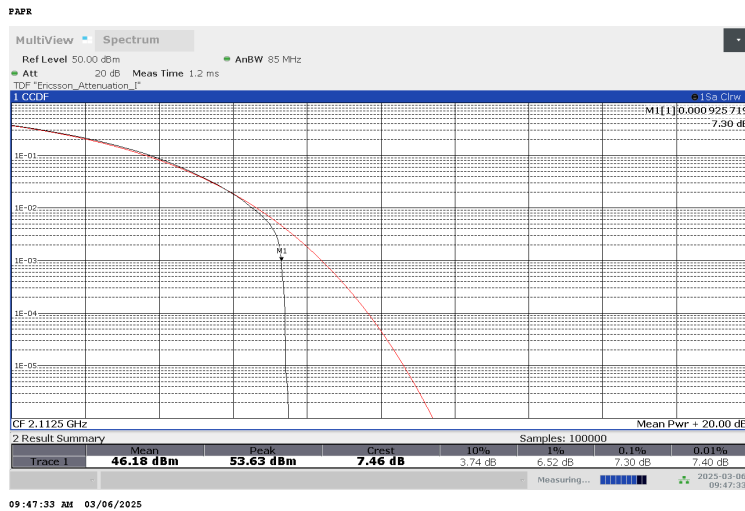


LTE Guard-band NB-IoT, carrier bandwidth 20 MHz, middle channel

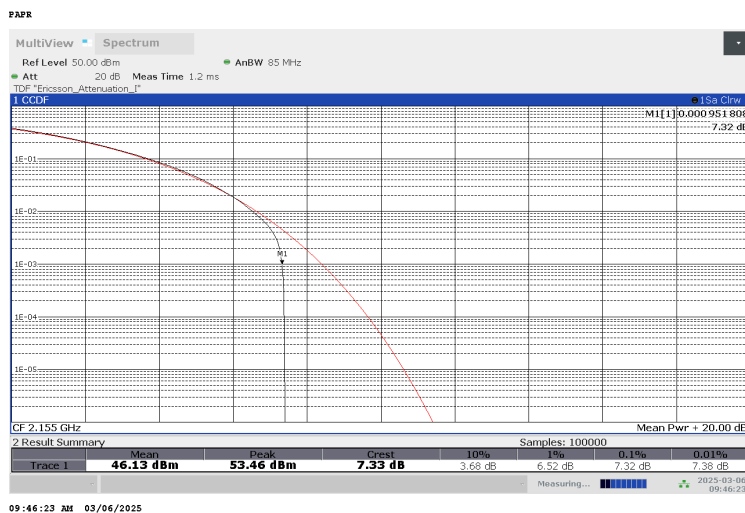


LTE Guard-band NB-IoT, carrier bandwidth 20 MHz, high channel

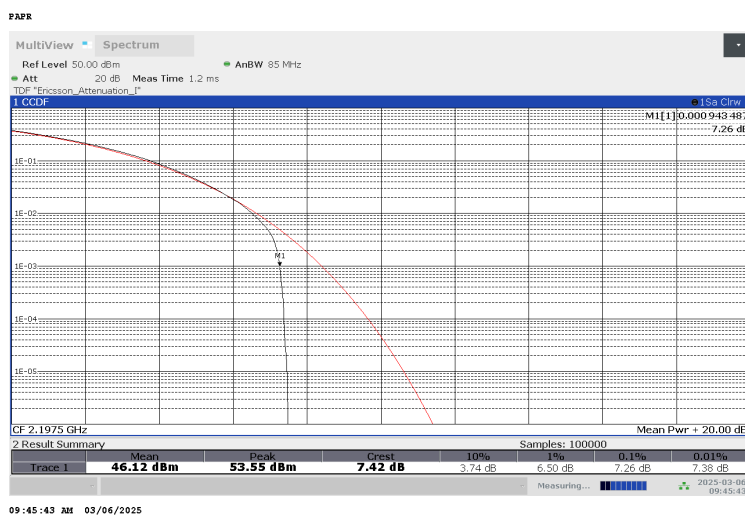
Configuration:			4		RAT:				NR			
Test no.	Bandwidth (MHz)	Channel	PAR (dB)	PAR Limit (dB)	Meas. Power (dBm)	Total Power (dBm)	Meas. PSD (dBm/MHz)	Total PSD (dBm/MHz)	Urban Limit 1640 W/MHz (dBm/MHz)	Non-Urban Limit 3280 W/MHz (dBm/MHz)	Margin Urban (dB)	Margin, Non-Urban (dB)
34	5	Low	7.30	13	46.18	52.2	39.49	45.51	62.15	65.16	16.64	19.65
35	5	Mid	7.32	13	46.13	52.15	39.38	45.40	62.15	65.16	16.75	19.76
36	5	High	7.26	13	46.16	52.18	39.39	45.41	62.15	65.16	16.74	19.75
37	10	Low	7.34	13	47.67	53.69	37.40	43.42	62.15	65.16	18.73	21.74
38	10	Mid	7.32	13	47.87	53.89	38.35	44.37	62.15	65.16	17.78	20.79
39	10	High	7.34	13	47.34	53.36	37.72	43.74	62.15	65.16	18.41	21.42
40	15	Low	7.38	13	47.61	53.63	36.00	42.02	62.15	65.16	20.13	23.14
41	15	Mid	7.32	13	47.83	53.85	35.80	41.82	62.15	65.16	20.33	23.34
42	15	High	7.44	13	47.36	53.38	36.17	42.19	62.15	65.16	19.96	22.97
43	20	Low	7.40	13	47.70	53.72	34.42	40.44	62.15	65.16	21.71	24.72
44	20	Mid	7.42	13	47.86	53.88	34.71	40.73	62.15	65.16	21.42	24.43
45	20	High	7.44	13	47.49	53.51	34.90	40.92	62.15	65.16	21.23	24.24
46	25	Low	7.44	13	47.63	53.65	33.57	39.59	62.15	65.16	22.56	25.57
47	25	Mid	7.30	13	47.76	53.48	33.96	39.98	62.15	65.16	22.17	25.18
48	25	High	7.58	13	47.45	53.47	33.70	39.72	62.15	65.16	22.43	25.44
49	30	Low	7.44	13	47.73	53.75	32.77	38.79	62.15	65.16	23.36	26.37
50	30	Mid	7.28	13	47.81	53.83	33.11	39.13	62.15	65.16	23.02	26.03
51	30	High	7.62	13	47.61	53.63	33.02	39.04	62.15	65.16	23.11	26.12
52	40	Low	7.50	13	47.70	53.72	31.40	37.42	62.15	65.16	24.73	27.74
53	40	Mid	7.30	13	47.67	53.69	31.54	37.56	62.15	65.16	24.59	27.60
54	40	High	7.70	13	47.55	53.57	31.62	37.64	62.15	65.16	24.51	27.52



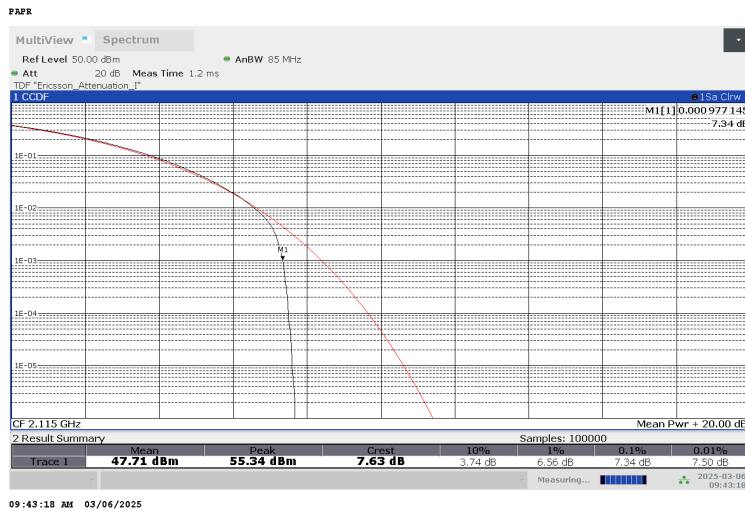
NR, carrier bandwidth 5 MHz, 15 KHz SCS, low channel



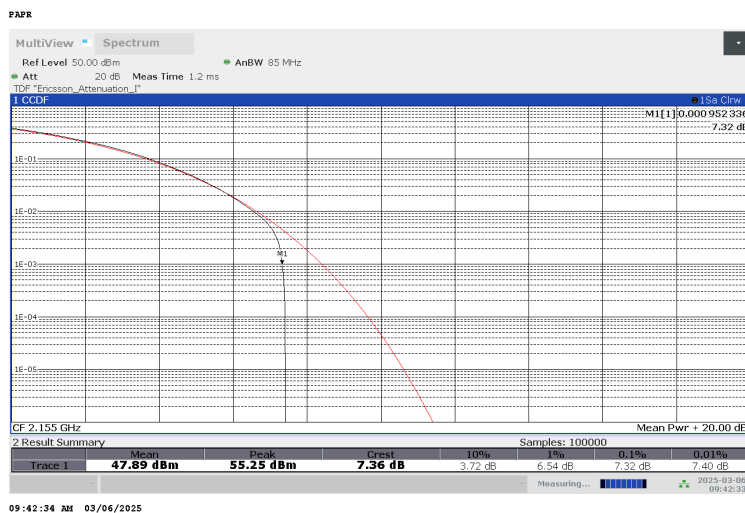
NR, carrier bandwidth 5 MHz, 15 KHz SCS, middle channel



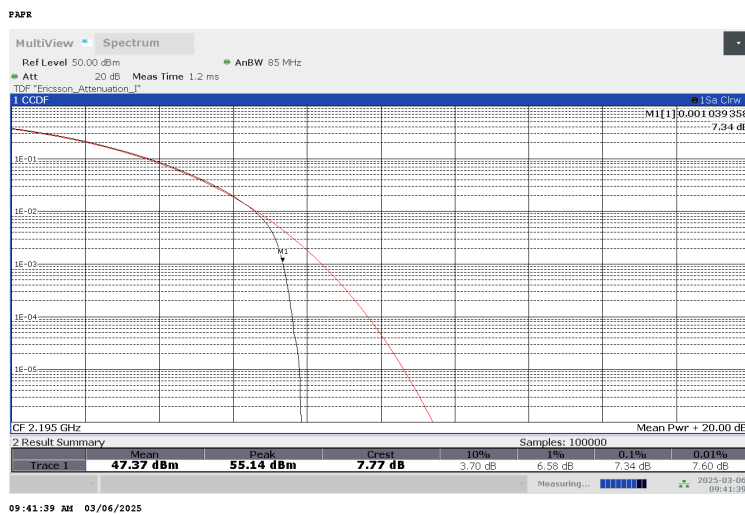
NR, carrier bandwidth 5 MHz, 15 KHz SCS, high channel



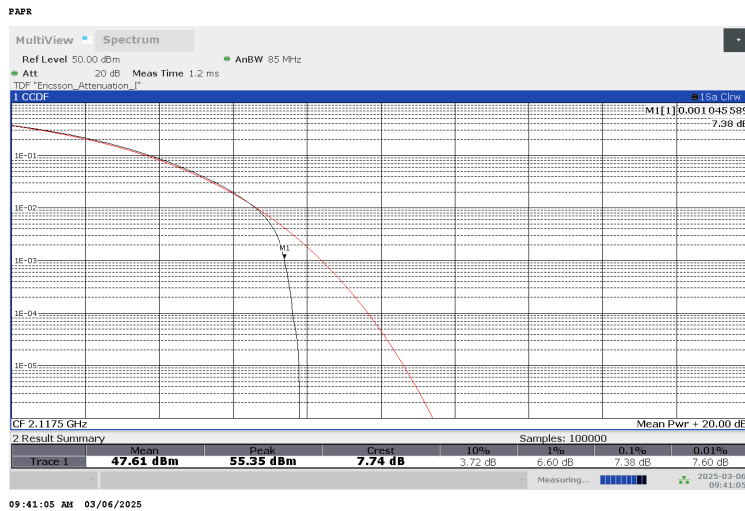
NR, carrier bandwidth 10 MHz, 15 KHz SCS, low channel



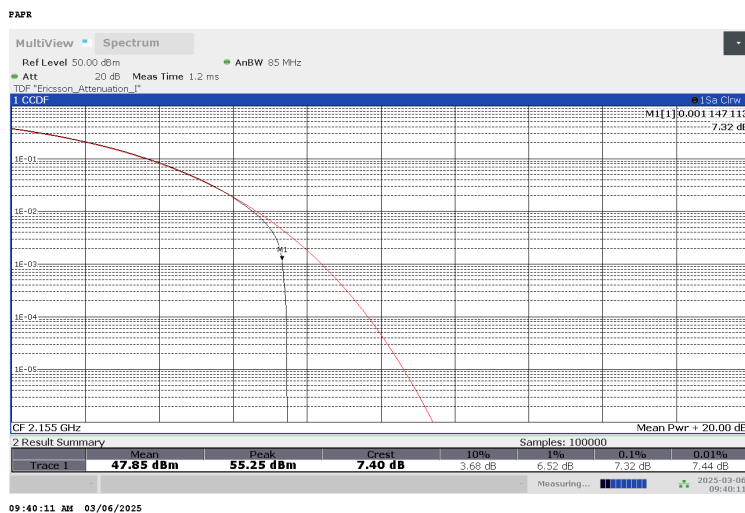
NR, carrier bandwidth 10 MHz, 15 KHz SCS, middle channel



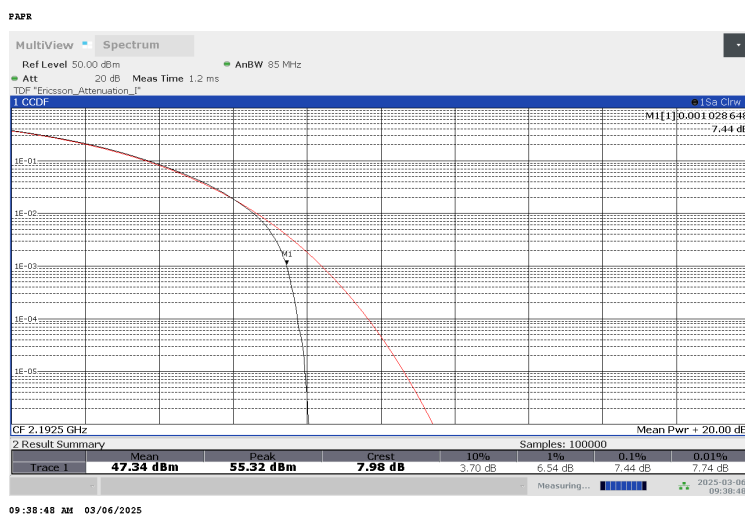
NR, carrier bandwidth 10 MHz, 15 KHz SCS, high channel



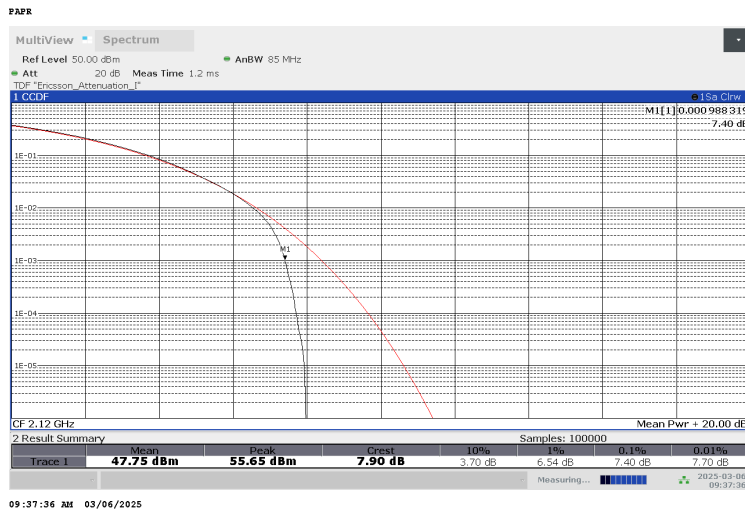
NR, carrier bandwidth 15 MHz, 15 KHz SCS, low channel



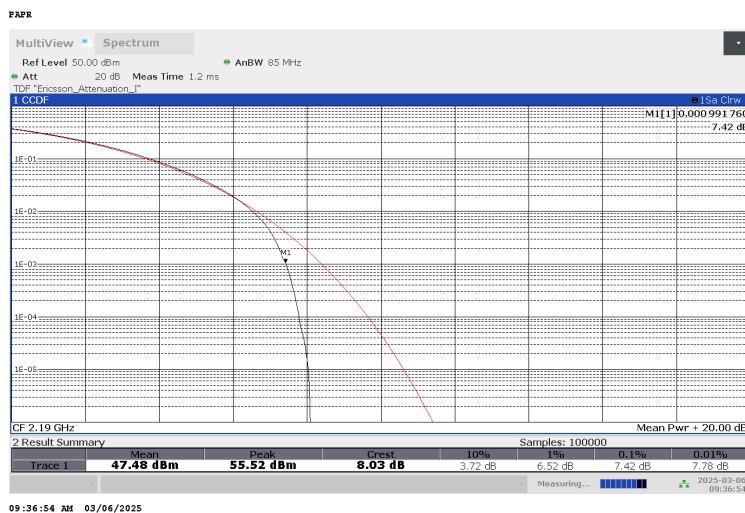
NR, carrier bandwidth 15 MHz, 15 KHz SCS, middle channel



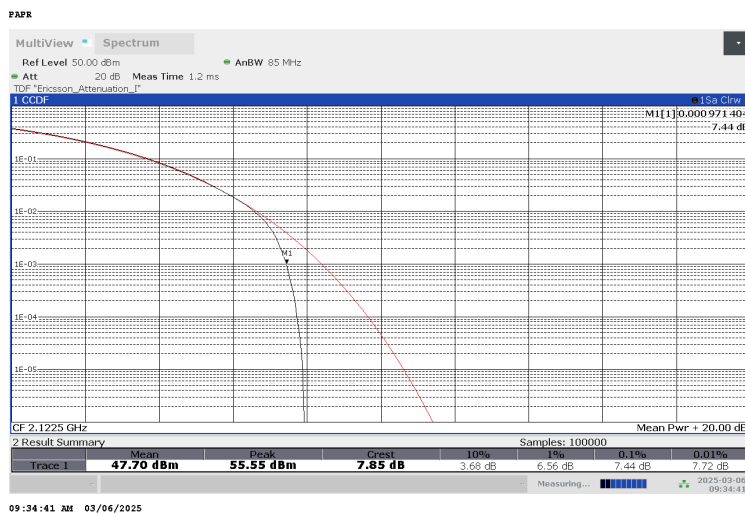
NR, carrier bandwidth 15 MHz, 15 KHz SCS, high channel



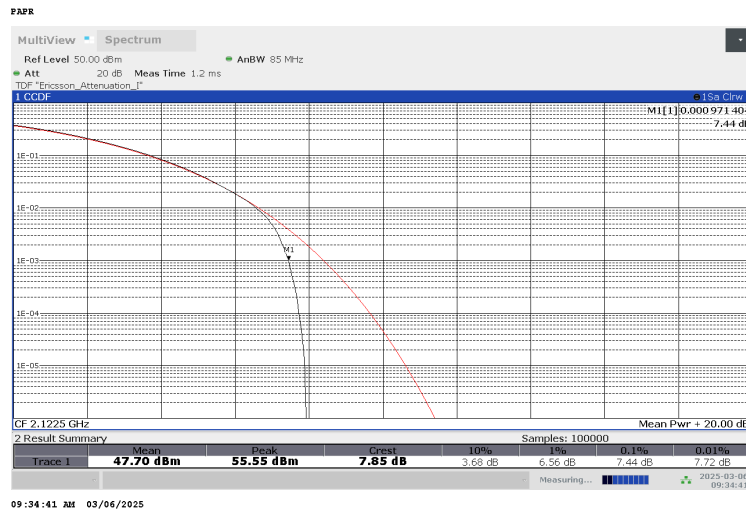
NR, carrier bandwidth 20 MHz, 15 KHz SCS, low channel



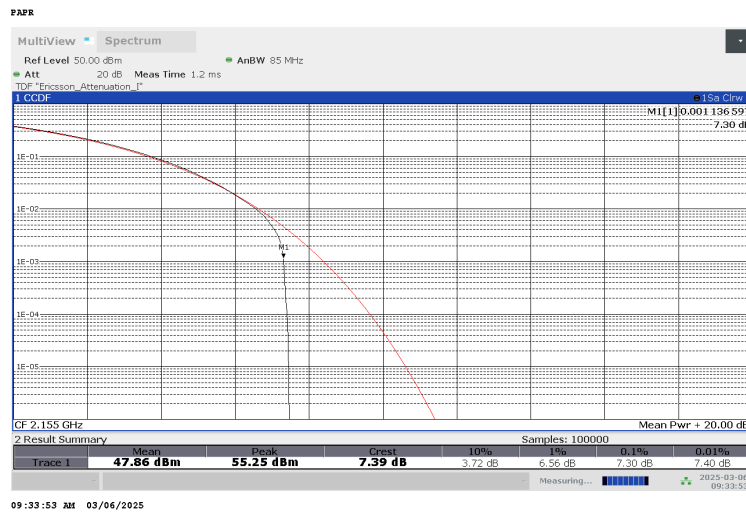
NR, carrier bandwidth 20 MHz, 15 KHz SCS, middle channel



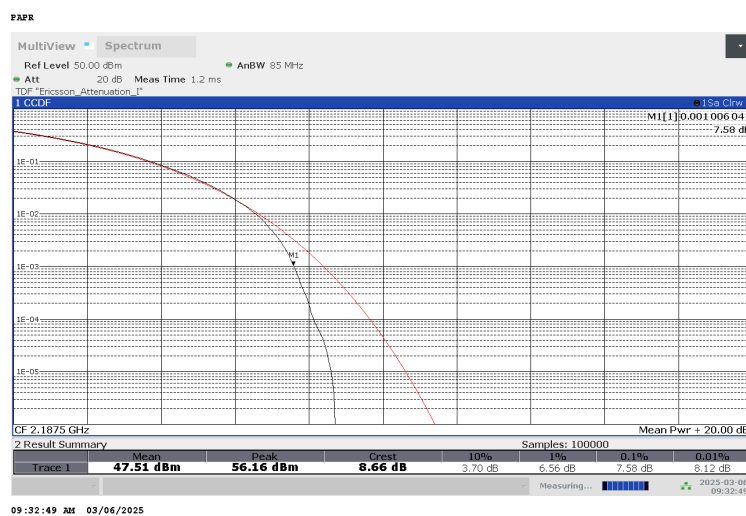
NR, carrier bandwidth 20 MHz, 15 KHz SCS, high channel



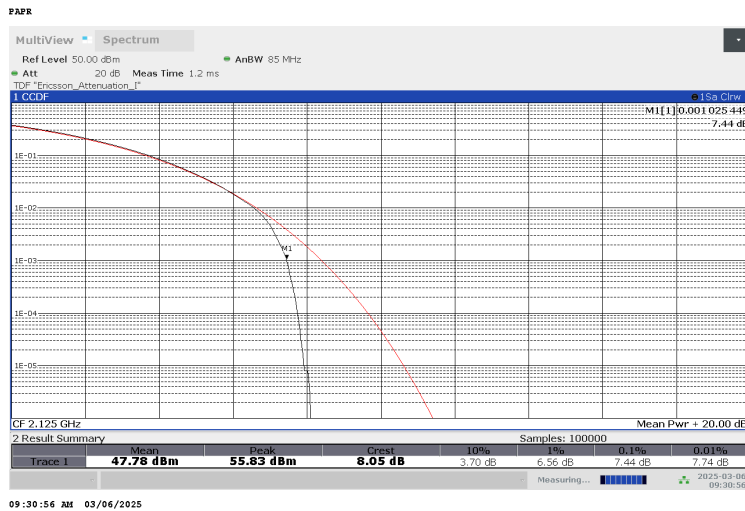
NR, carrier bandwidth 25 MHz, 15 KHz SCS, low channel



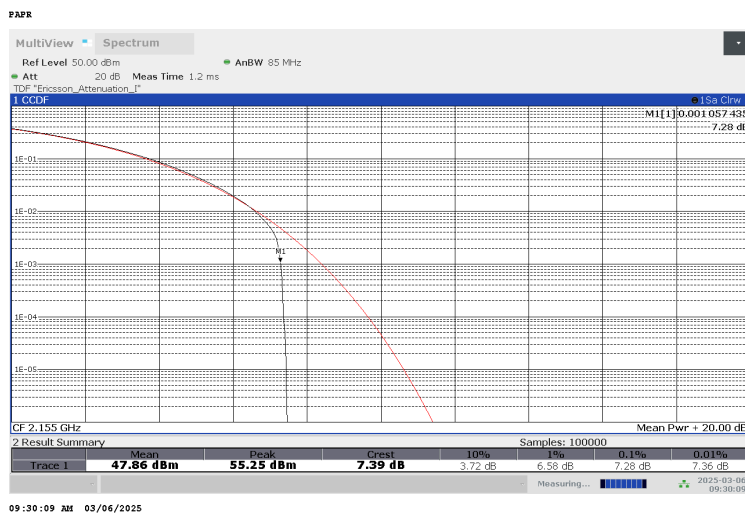
NR, carrier bandwidth 25 MHz, 15 KHz SCS, middle channel



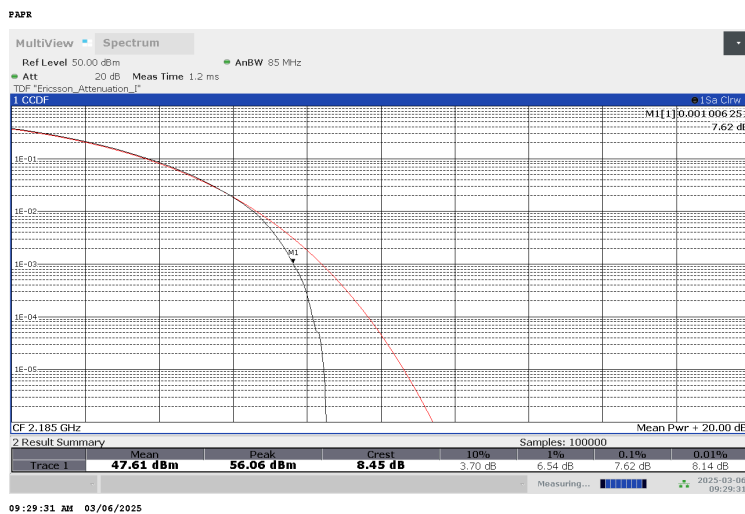
NR, carrier bandwidth 25 MHz, 15 KHz SCS, high channel



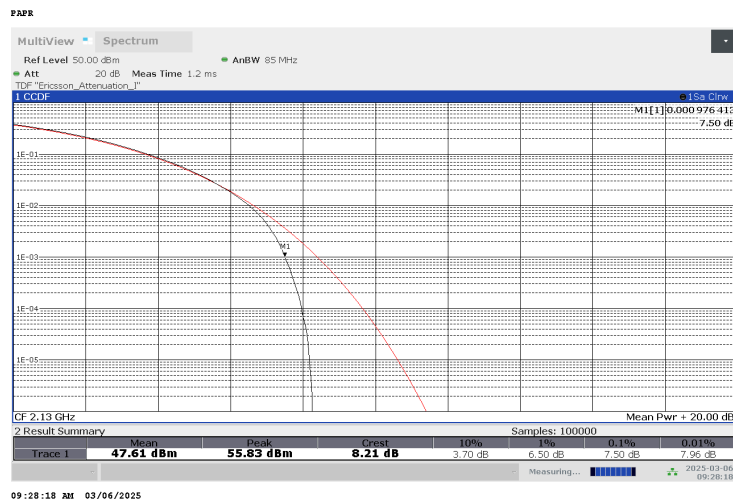
NR, carrier bandwidth 30 MHz, 15 KHz SCS, low channel



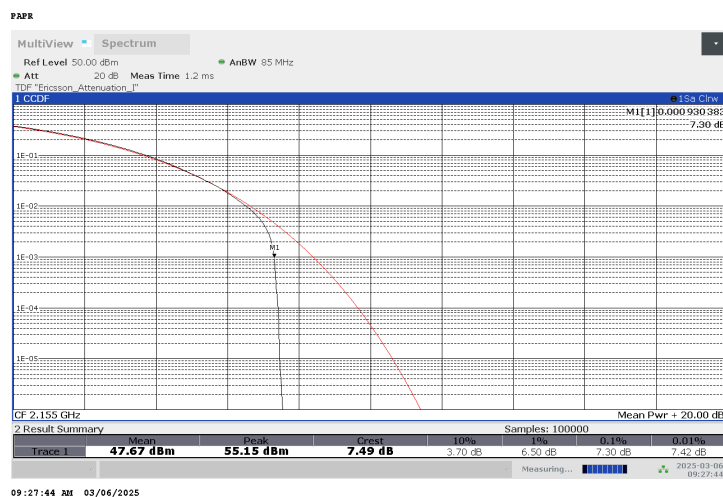
NR, carrier bandwidth 30 MHz, 15 KHz SCS, middle channel



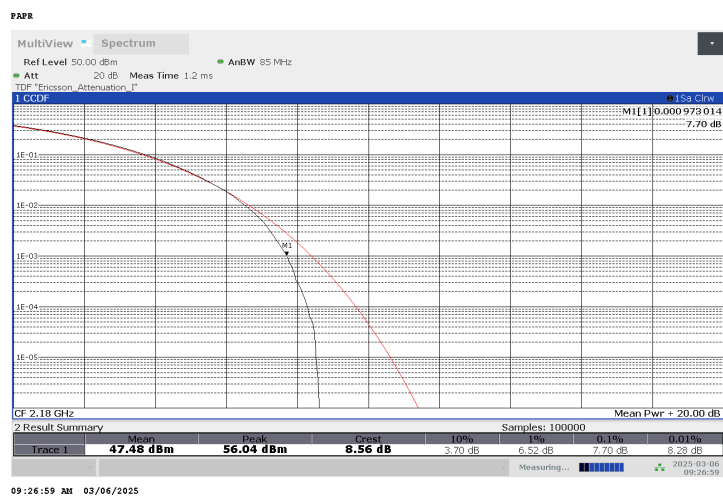
NR, carrier bandwidth 30 MHz, 15 KHz SCS, high channel



NR, carrier bandwidth 40 MHz, 15 KHz SCS, low channel

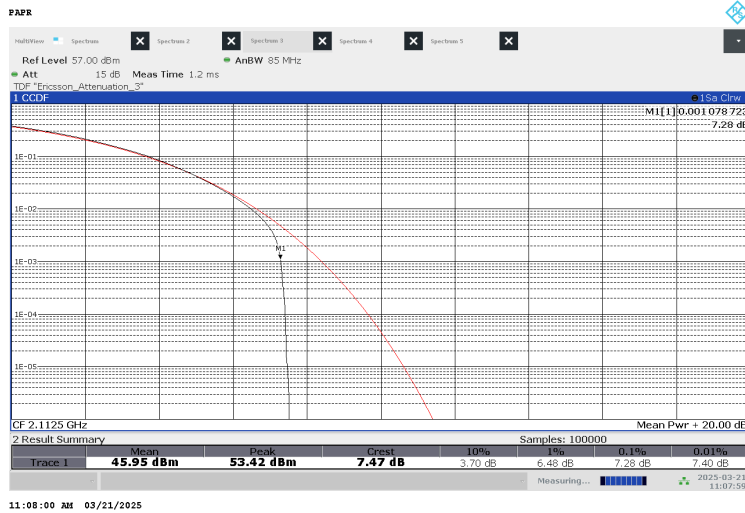


NR, carrier bandwidth 40 MHz, 15 KHz SCS, middle channel

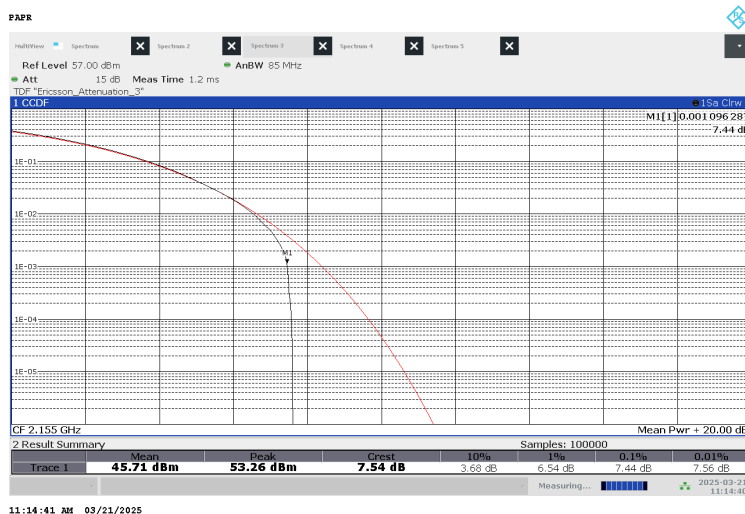


NR, carrier bandwidth 40 MHz, 15 KHz SCS, high channel

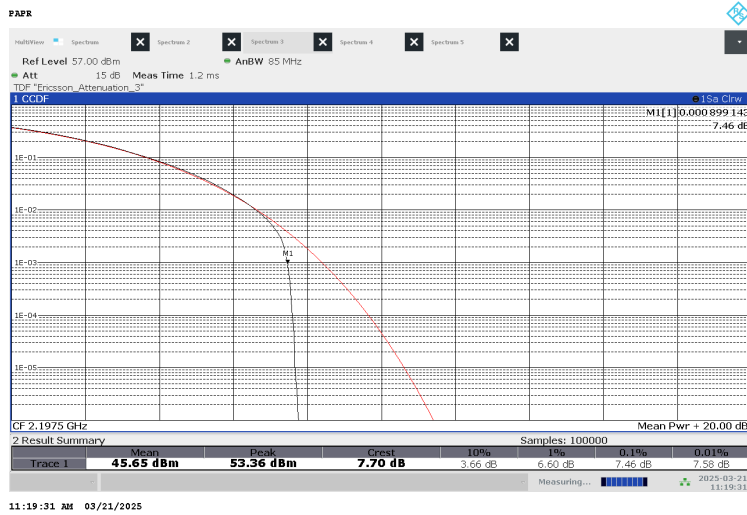
Configuration:		5							RAT:		NR In-band NB-IoT	
Test no.	Bandwidth (MHz)	Channel	PAR (dB)	PAR Limit (dB)	Meas. Power (dBm)	Total Power (dBm)	Meas. PSD (dBm/MHz)	Total PSD (dBm/MHz)	Urban Limit 1640 W/MHz (dBm/MHz)	Non-Urban Limit 3280 W/MHz (dBm/MHz)	Margin Urban (dB)	Margin, Non-Urban (dB)
55	5	Low	7.28	13	45.90	51.92	38.69	44.71	62.15	65.16	17.44	20.44
56	5	Mid	7.44	13	45.79	51.81	39.51	45.53	62.15	65.16	16.62	19.63
57	5	High	7.46	13	45.81	51.83	39.59	45.61	62.15	65.16	16.54	19.55
58	10	Low	7.36	13	47.29	53.31	36.99	43.01	62.15	65.16	19.14	22.15
59	10	Mid	7.38	13	47.44	53.46	37.64	43.66	62.15	65.16	18.49	21.50
60	10	High	7.44	13	46.94	52.96	37.56	43.58	62.15	65.16	18.57	21.58
61	15	Low	7.32	13	47.35	53.37	35.90	41.92	62.15	65.16	20.23	23.24
62	15	Mid	7.24	13	47.58	53.60	36.50	42.52	62.15	65.16	19.63	22.64
63	15	High	7.34	13	47.12	53.14	36.57	42.59	62.15	65.16	19.56	22.57
64	20	Low	7.38	13	47.43	53.45	34.60	40.62	62.15	65.16	21.53	24.54
65	20	Mid	7.32	13	47.58	53.60	34.79	40.81	62.15	65.16	21.34	24.35
66	20	High	7.50	13	47.21	53.23	34.85	40.87	62.15	65.16	21.28	24.29
67	25	Low	7.50	13	47.37	53.39	32.98	39.00	62.15	65.16	23.15	26.16
68	25	Mid	7.36	13	47.49	53.51	33.94	39.96	62.15	65.16	22.19	25.20
69	25	High	7.58	13	47.19	53.21	33.74	39.76	62.15	65.16	22.39	25.40



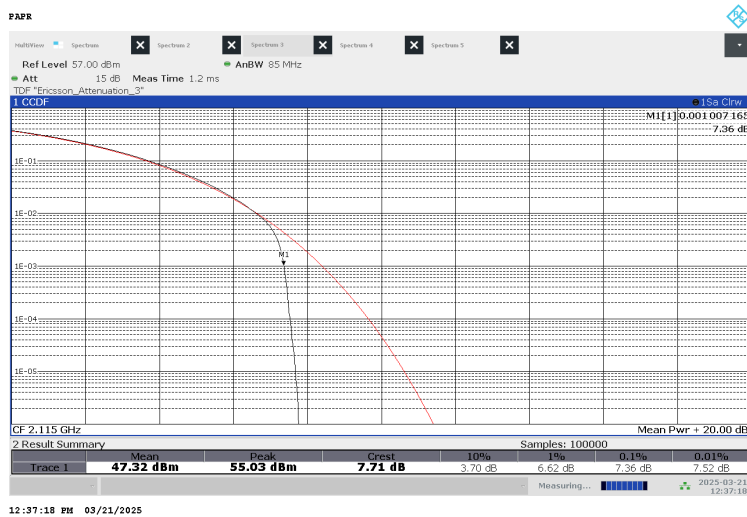
NR IB NB-IoT, carrier bandwidth 5 MHz, low channel



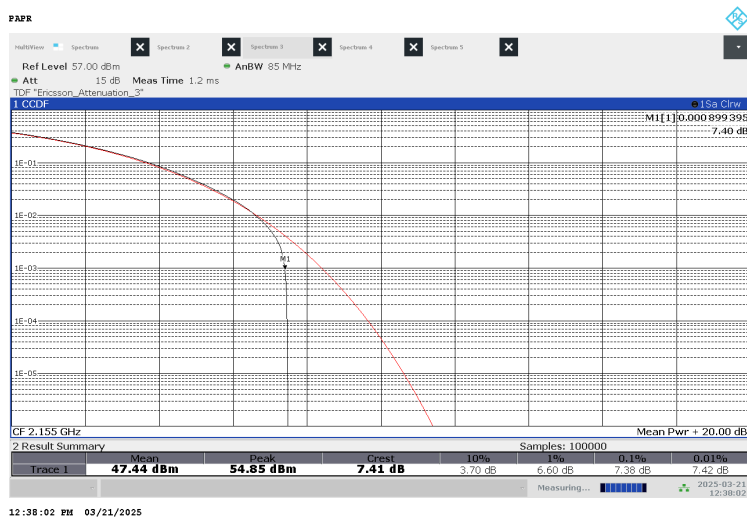
NR IB NB-IoT, carrier bandwidth 5 MHz, middle channel



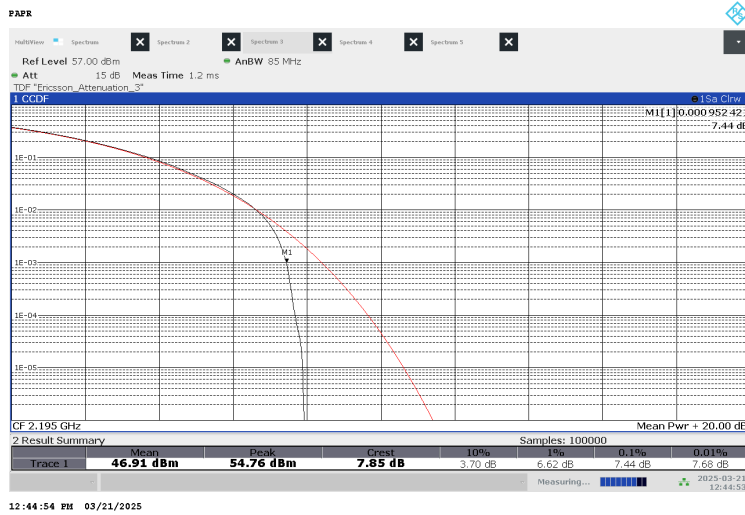
NR IB NB-IoT, carrier bandwidth 5 MHz, high channel



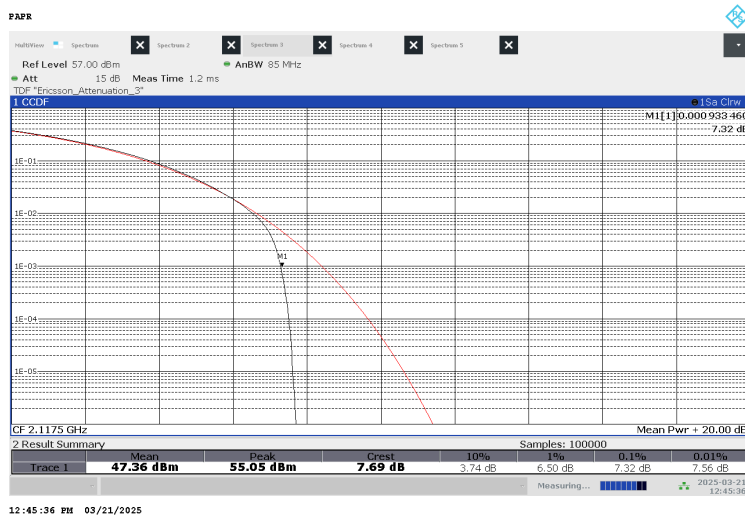
NR IB NB-IoT, carrier bandwidth 10 MHz, low channel



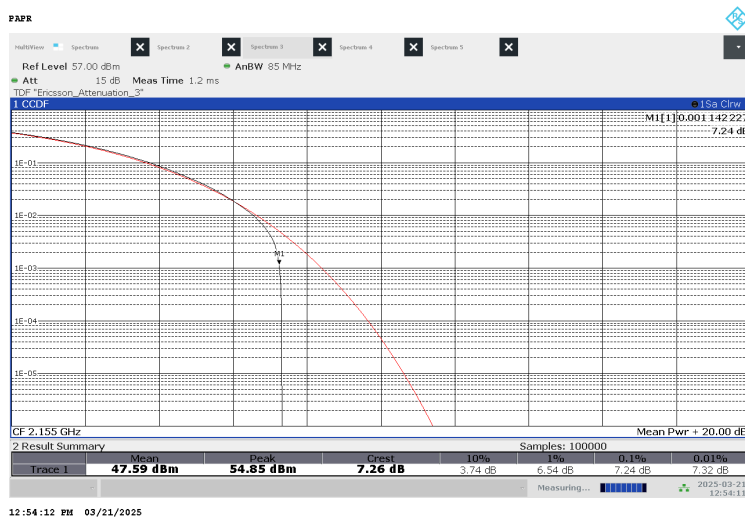
NR IB NB-IoT, carrier bandwidth 10 MHz, middle channel



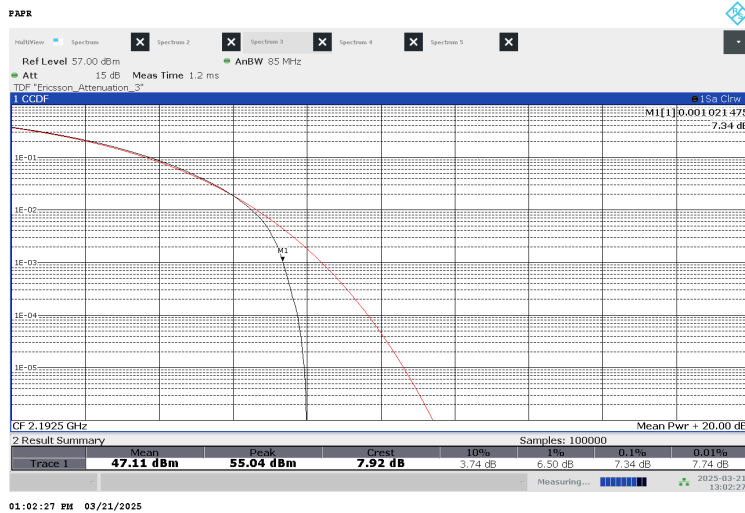
NR IB NB-IoT, carrier bandwidth 10 MHz, high channel



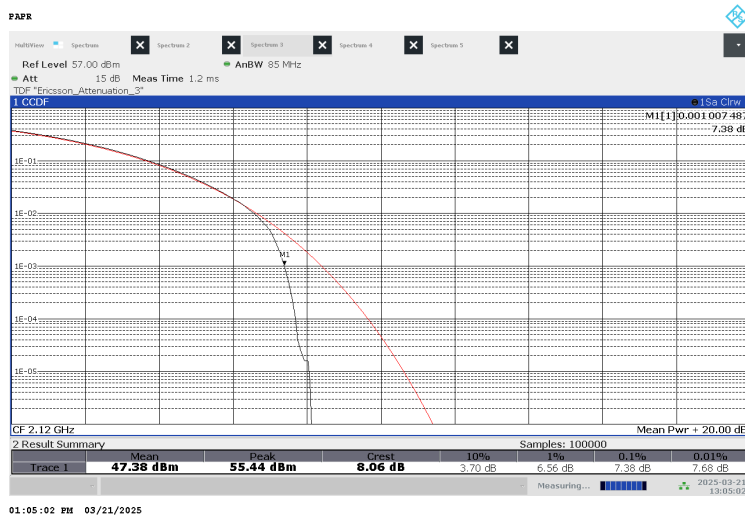
NR IB NB-IoT, carrier bandwidth 15 MHz, low channel



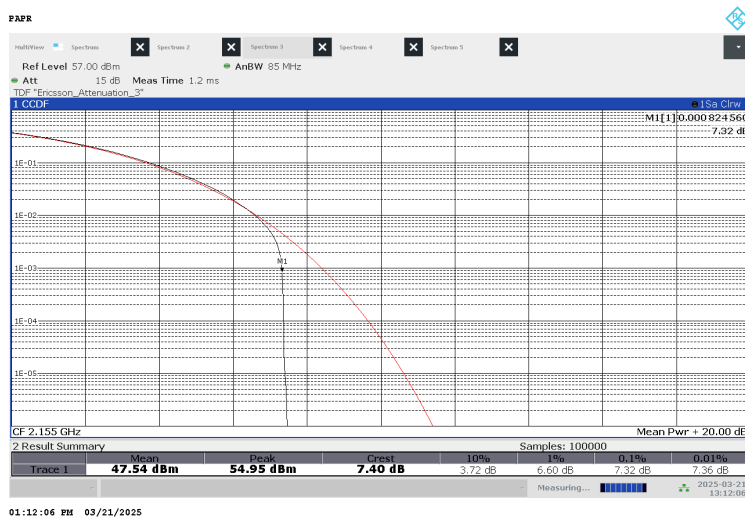
NR IB NB-IoT, carrier bandwidth 15 MHz, middle channel



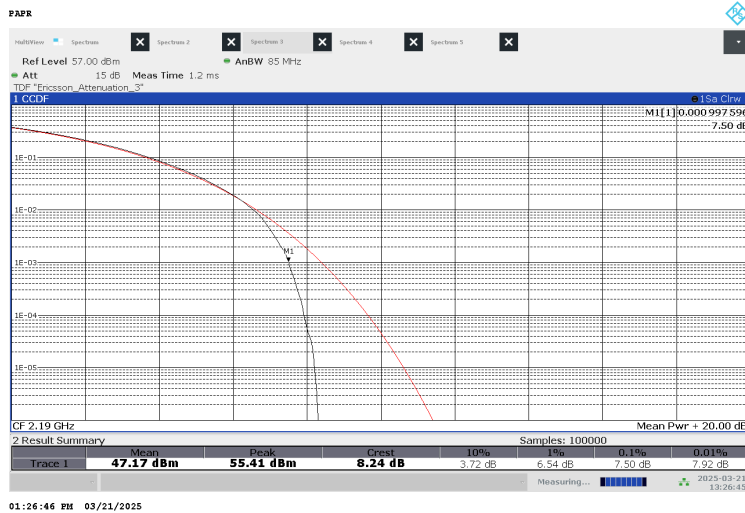
NR IB NB-IoT, carrier bandwidth 15 MHz, high channel



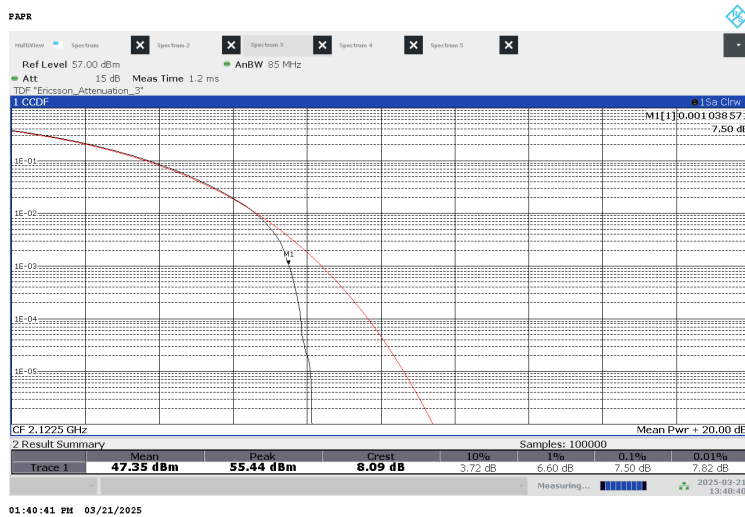
NR IB NB-IoT, carrier bandwidth 20 MHz, low channel



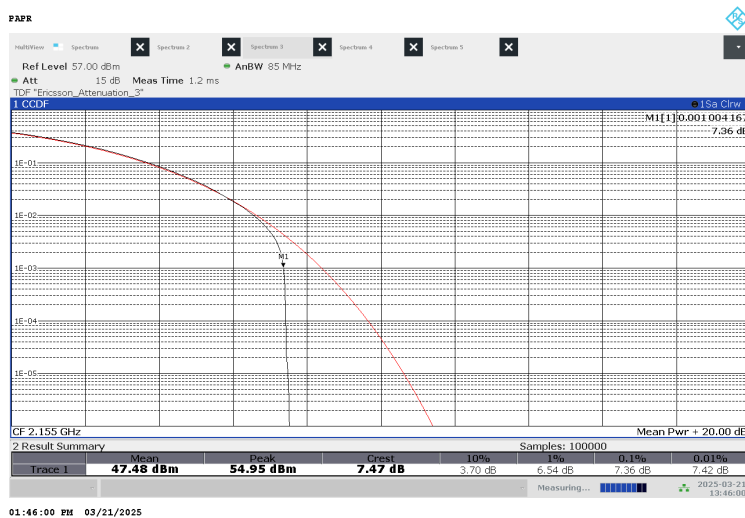
NR IB NB-IoT, carrier bandwidth 20 MHz, middle channel



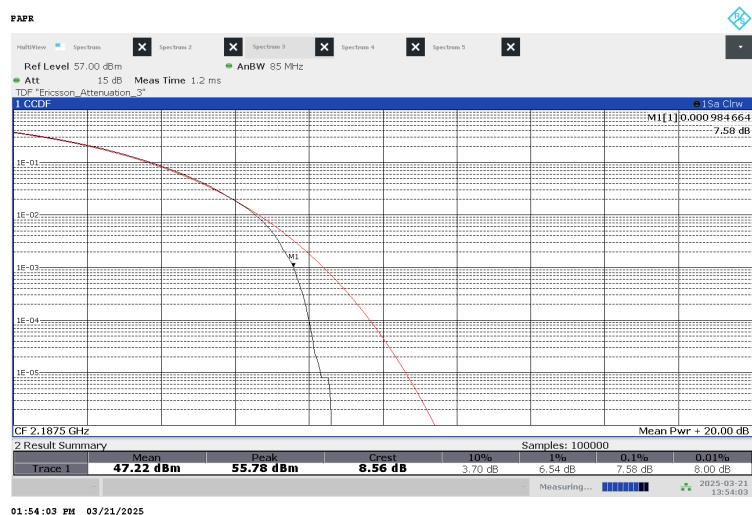
NR IB NB-IoT, carrier bandwidth 20 MHz, high channel



NR IB NB-IoT, carrier bandwidth 25 MHz, low channel

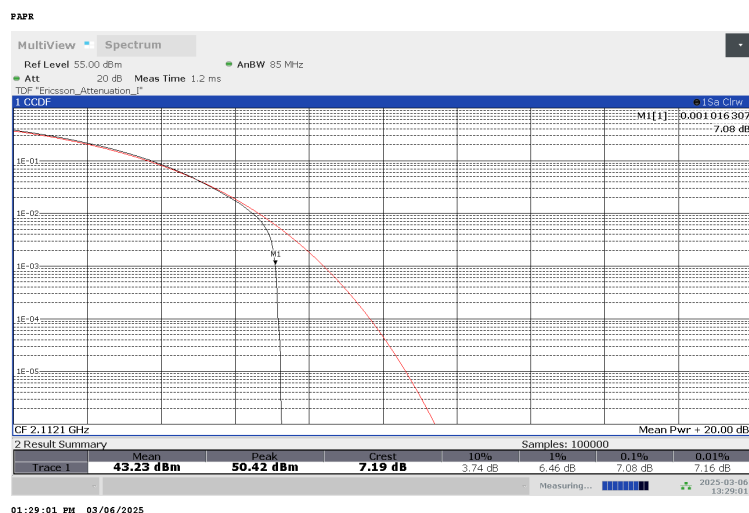


NR IB NB-IoT, carrier bandwidth 25 MHz, middle channel



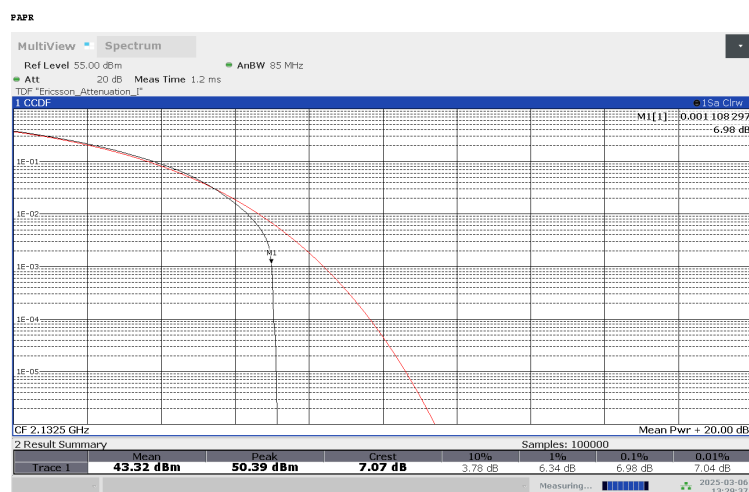
NR IB NB-IoT, carrier bandwidth 25 MHz, high channel

Configuration: 6									RAT: WCDMA			
Test no.	Bandwidth (MHz)	Channel	PAR (dB)	PAR Limit (dB)	Meas. Power (dBm)	Total Power (dBm)	Meas. PSD (dBm/MHz)	Total PSD (dBm/MHz)	Urban Limit 1640 W/MHz (dBm/MHz)	Non-Urban Limit 3280 W/MHz (dBm/MHz)	Margin Urban (dB)	Margin, Non-Urban (dB)
70	4.2	Low	7.08	13	43.24	49.26	36.99	43.01	62.15	65.16	19.14	22.15
71	4.2	Mid	6.98	13	43.25	49.27	36.89	42.91	62.15	65.16	19.24	22.25
72	4.2	High	7.08	13	43.23	49.25	36.82	42.84	62.15	65.16	19.31	22.32
73	5	Low	7.14	13	45.92	51.94	40.12	46.14	62.15	65.16	16.01	19.02
74	5	Mid	7.16	13	45.85	51.87	40.14	46.16	62.15	65.16	15.99	19.00
75	5	High	7.14	13	45.85	51.87	40.02	46.04	62.15	65.16	16.11	19.12



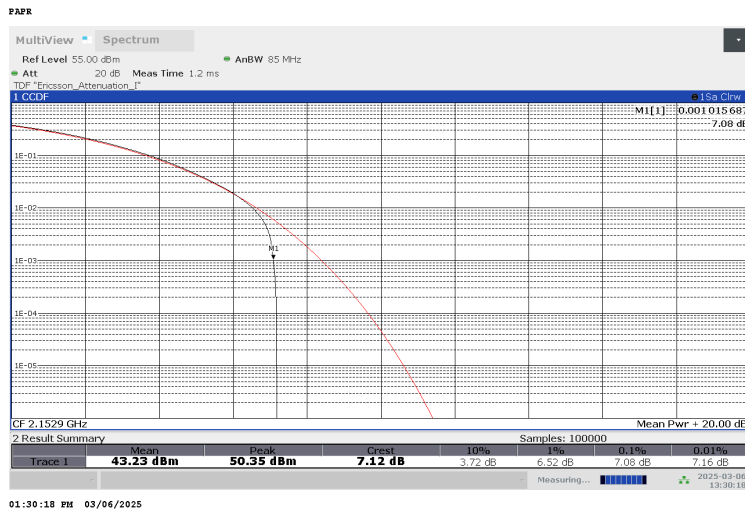
01:29:01 PM 03/06/2025

WCDMA, carrier bandwidth 4.2 MHz, low channel

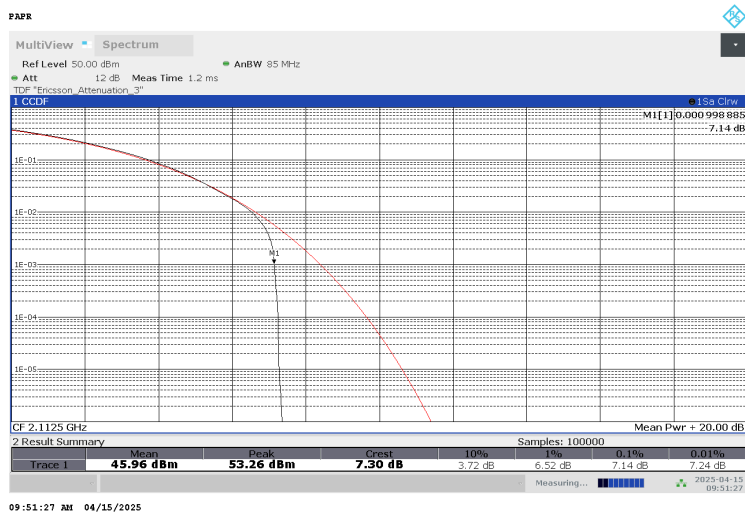


01:29:37 PM 03/06/2025

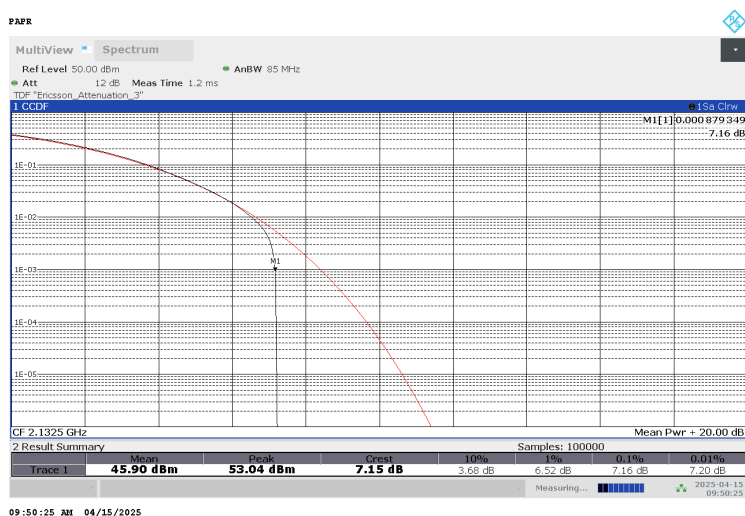
WCDMA, carrier bandwidth 4.2 MHz, middle channel



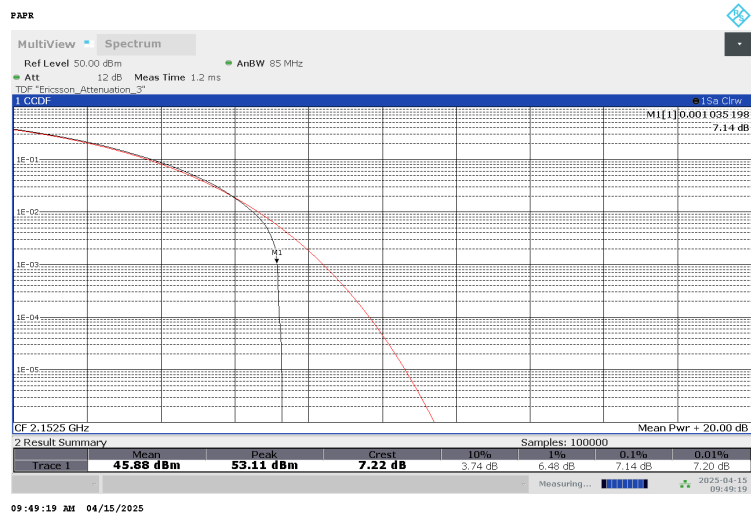
WCDMA, carrier bandwidth 4.2 MHz, high channel



WCDMA, carrier bandwidth 5 MHz, low channel



WCDMA, carrier bandwidth 5 MHz, middle channel



WCDMA, carrier bandwidth 5 MHz, high channel

5.3.2 Multicarrier

Configuration:		7	RAT:		LTE		No. Carriers:		2	
Test no.	Bandwidth (MHz)	Channel	Meas. Power (dBm)	Total Power (dBm)	Meas. PSD (dBm/MHz)	Total PSD (dBm/MHz)	Urban Limit 1640 W/MHz (dBm/MHz)	Non-Urban Limit 3280 W/MHz (dBm/MHz)	Margin Urban (dB)	Margin, Non-Urban (dB)
76	5	Low + High	46.51	52.53	35.87	41.89	62.15	65.16	20.26	23.27
77	10	Low + High	46.86	52.88	34.14	40.16	62.15	65.16	21.99	25.00
78	15	Low + High	46.97	52.99	32.50	38.52	62.15	65.16	23.63	26.64
79	20	Low + High	47.11	53.13	31.49	37.51	62.15	65.16	24.64	27.65

Configuration:		8	RAT:		LTE		No. Carriers:		4	
Test no.	Bandwidth (MHz)	Channel	Meas. Power (dBm)	Total Power (dBm)	Meas. PSD (dBm/MHz)	Total PSD (dBm/MHz)	Urban Limit 1640 W/MHz (dBm/MHz)	Non-Urban Limit 3280 W/MHz (dBm/MHz)	Margin Urban (dB)	Margin, Non-Urban (dB)
80	5	Low + High	46.54	52.56	33.66	39.68	62.15	65.16	22.47	25.48
81	10	Low + High	47.06	53.08	31.30	37.32	62.15	65.16	24.83	27.84
82	15	Low + High	47.19	53.21	30.06	36.08	62.15	65.16	26.07	29.08
83	20	Low + High	46.54	52.56	28.65	34.67	62.15	65.16	27.48	30.49

Configuration:		9	RAT:		LTE		No. Carriers:		6	
Test no.	Bandwidth (MHz)	Channel	Meas. Power (dBm)	Total Power (dBm)	Meas. PSD (dBm/MHz)	Total PSD (dBm/MHz)	Urban Limit 1640 W/MHz (dBm/MHz)	Non-Urban Limit 3280 W/MHz (dBm/MHz)	Margin Urban (dB)	Margin, Non-Urban (dB)
84	5	Low + High	46.54	52.56	32.02	38.04	62.15	65.16	24.11	27.12
85	10	Low + High	47.06	53.08	29.72	35.74	62.15	65.16	26.41	29.42
86	15	Low + High	47.19	53.21	28.04	34.06	62.15	65.16	28.09	31.10

Configuration 36				
RAT:		LTE		No. carriers
Test no.		Bandwidth 1 (MHz)	Bandwidth 2 (MHz)	Meas. Power (dBm)
87		4 x 20	10	47.40
				Total Power (dBm)
				53.42



Configuration:		10	RAT:		LTE In-band NB-IoT		No. Carriers:		2	
Test no.	Bandwidth (MHz)	Channel	Meas. Power (dBm)	Total Power (dBm)	Meas. PSD (dBm/MHz)	Total PSD (dBm/MHz)	Urban Limit 1640 W/MHz (dBm/MHz)	Non-Urban Limit 3280 W/MHz (dBm/MHz)	Margin Urban (dB)	Margin, Non-Urban (dB)
88	5	Low + High	45.83	51.85	36.83	42.85	62.15	65.16	19.3	22.31
89	10	Low + High	46.32	52.34	33.97	39.99	62.15	65.16	22.16	25.17
90	15	Low + High	46.33	52.35	31.95	37.97	62.15	65.16	24.18	27.19
91	20	Low + High	46.47	52.49	30.88	36.90	62.15	65.16	25.25	28.26

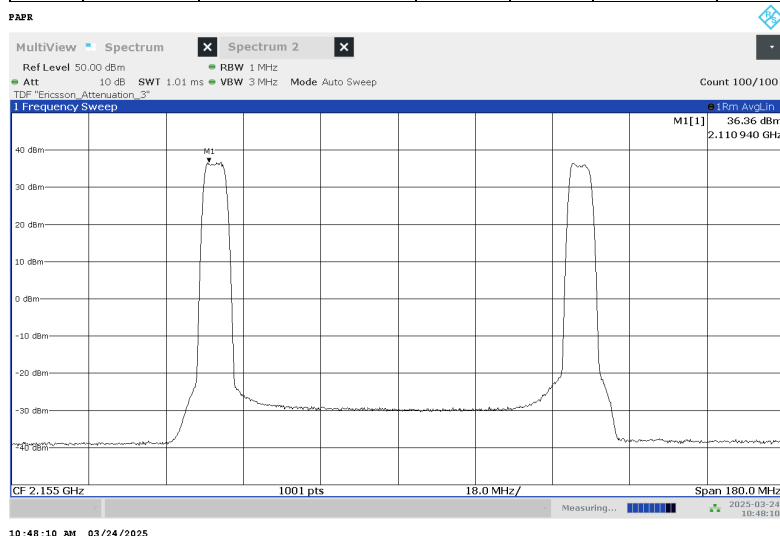
Configuration:		13	RAT:		LTE Guard-band NB-IoT		No. Carriers:		2	
Test no.	Bandwidth (MHz)	Channel	Meas. Power (dBm)	Total Power (dBm)	Meas. PSD (dBm/MHz)	Total PSD (dBm/MHz)	Urban Limit 1640 W/MHz (dBm/MHz)	Non-Urban Limit 3280 W/MHz (dBm/MHz)	Margin Urban (dB)	Margin, Non-Urban (dB)
92	10	Low + High	46.63	52.65	34.46	40.48	62.15	65.16	21.67	24.68
93	15	Low + High	46.82	52.84	32.29	38.31	62.15	65.16	23.84	26.85
94	20	Low + High	46.96	52.98	32.03	38.05	62.15	65.16	24.10	27.11

Configuration:		16	RAT:		NR		No. Carriers:		2	
Test no.	Bandwidth (MHz)	Channel	Meas. Power (dBm)	Total Power (dBm)	Meas. PSD (dBm/MHz)	Total PSD (dBm/MHz)	Urban Limit 1640 W/MHz (dBm/MHz)	Non-Urban Limit 3280 W/MHz (dBm/MHz)	Margin Urban (dB)	Margin, Non-Urban (dB)
95	5	Low + High	45.89	51.91	36.81	42.83	62.15	65.16	19.32	22.33
96	10	Low + High	46.95	52.97	34.40	40.42	62.15	65.16	21.73	24.74
97	15	Low + High	47.00	53.02	32.32	38.34	62.15	65.16	23.81	26.82
98	20	Low + High	47.22	53.24	31.25	37.27	62.15	65.16	24.88	27.89
99	30	Low + High	47.25	53.27	30.39	36.41	62.15	65.16	25.74	28.75
100	40	Low + High	47.56	53.58	29.68	35.7	62.15	65.16	26.45	29.46

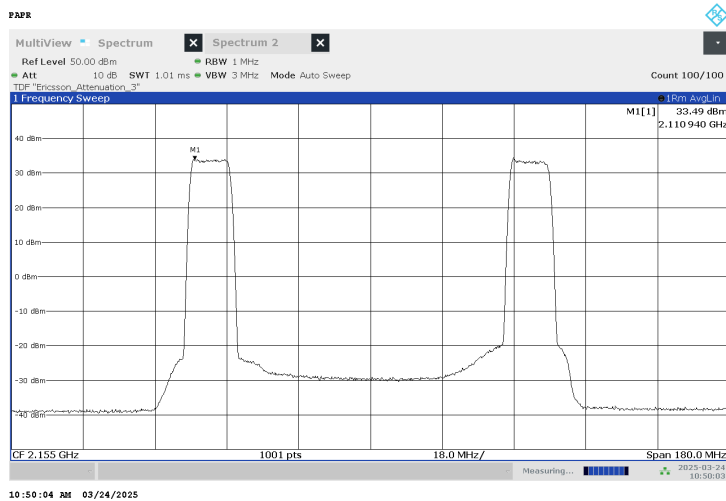
Configuration:		17	RAT:		NR		No. Carriers:		4	
Test no.	Bandwidth (MHz)	Channel	Meas. Power (dBm)	Total Power (dBm)	Meas. PSD (dBm/MHz)	Total PSD (dBm/MHz)	Urban Limit 1640 W/MHz (dBm/MHz)	Non-Urban Limit 3280 W/MHz (dBm/MHz)	Margin Urban (dB)	Margin, Non-Urban (dB)
101	5	Low + High	46.16	52.18	33.27	39.29	62.15	65.16	22.86	25.87
102	10	Low + High	46.67	52.69	30.65	36.67	62.15	65.16	25.48	28.49
103	15	Low + High	47.13	53.15	29.47	35.49	62.15	65.16	26.66	29.67
104	20	Low + High	47.05	53.07	28.32	34.34	62.15	65.16	27.81	30.82

Configuration:		18	RAT:		NR		No. Carriers:		6	
Test no.	Bandwidth (MHz)	Channel	Meas. Power (dBm)	Total Power (dBm)	Meas. PSD (dBm/MHz)	Total PSD (dBm/MHz)	Urban Limit 1640 W/MHz (dBm/MHz)	Non-Urban Limit 3280 W/MHz (dBm/MHz)	Margin Urban (dB)	Margin, Non-Urban (dB)
105	5	Low + High	46.51	52.53	31.88	37.90	62.15	65.16	24.25	27.26
106	10	Low + High	47.04	53.06	29.25	35.27	62.15	65.16	26.88	29.89
107	15	Low + High	47.21	53.23	27.99	34.01	62.15	65.16	28.14	31.15

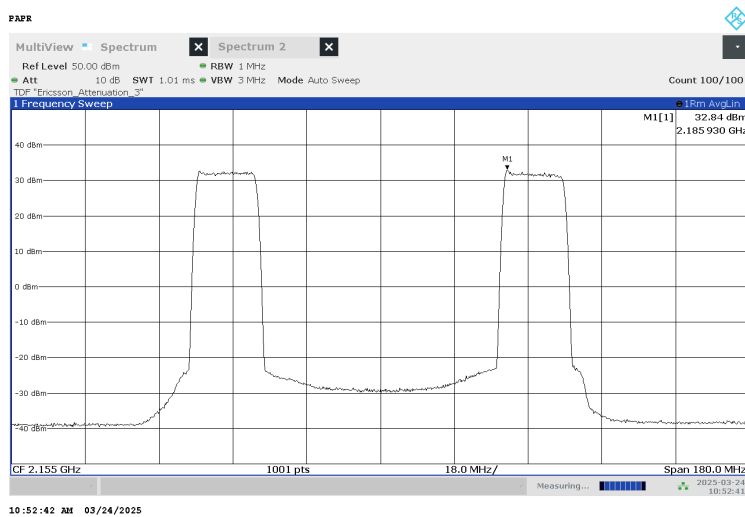
Configuration:		19	RAT:		NR In-band NB-IoT		No. Carriers:		2	
Test no.	Bandwidth (MHz)	Channel	Meas. Power (dBm)	Total Power (dBm)	Meas. PSD (dBm/MHz)	Total PSD (dBm/MHz)	Urban Limit 1640 W/MHz (dBm/MHz)	Non-Urban Limit 3280 W/MHz (dBm/MHz)	Margin Urban (dB)	Margin, Non-Urban (dB)
108	5	Low + High	46.11	52.13	36.36	42.38	62.15	65.16	19.77	22.78
109	10	Low + High	46.51	52.53	33.49	39.51	62.15	65.16	22.64	25.65
110	15	Low + High	46.72	52.74	32.84	38.86	62.15	65.16	23.29	26.30
111	20	Low + High	46.77	52.79	30.85	36.87	62.15	65.16	25.28	28.29
112	25	Low + High	46.83	52.85	30.23	36.25	62.15	65.16	25.90	28.91



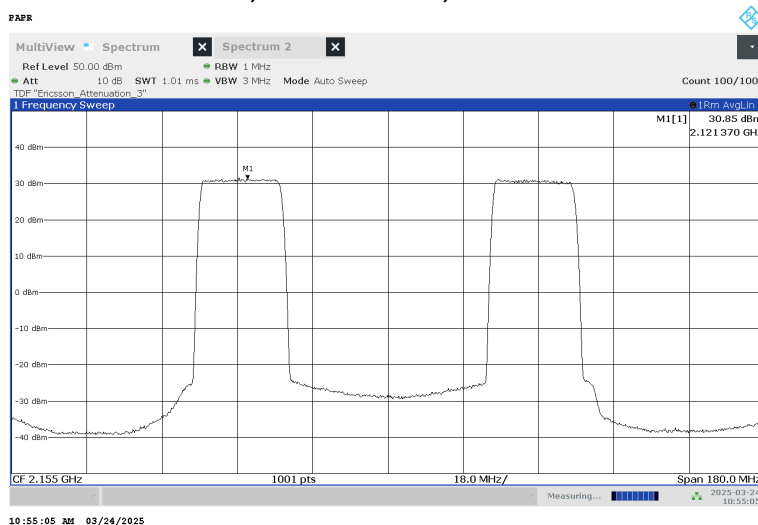
NR In-Band NB-IoT, 2 multi-carrier, carrier bandwidth 5MHz, low and high channel PSD



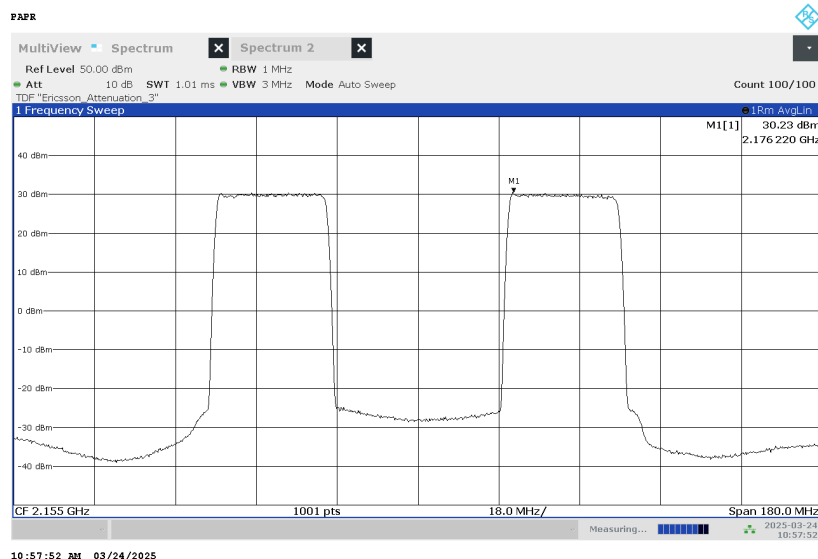
NR In-Band NB-IoT, 2 multi-carrier, carrier bandwidth 10 MHz, low and high channel PSD



NR In-Band NB-IoT, 2 multi-carrier, carrier bandwidth 15 MHz, low and high channel PSD

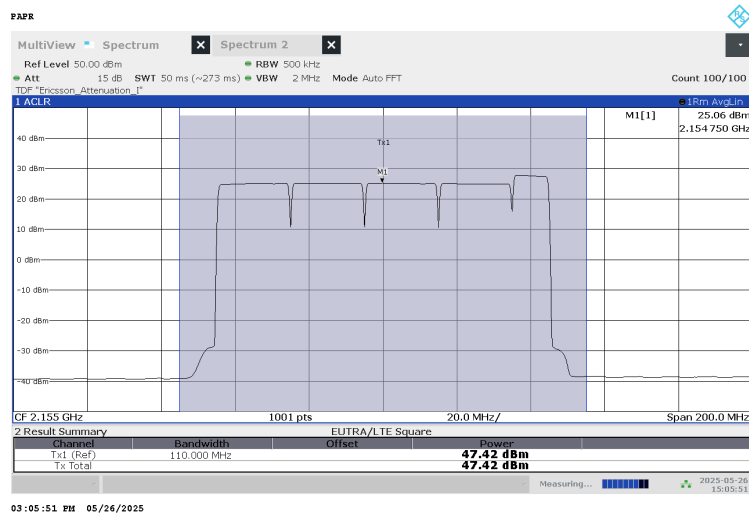


NR In-Band NB-IoT, 2 multi-carrier, carrier bandwidth 20 MHz, low and high channel PSD



NR In-Band NB-IoT, 2 multi-carrier, carrier bandwidth 25 MHz, low and high channel PSD

Configuration 40				
RAT:	NR		No. carriers	5
Test no.	Bandwidth 1 (MHz)	Bandwidth 2 (MHz)	Meas. Power (dBm)	Total Power (dBm)
115	4 x 20	10	47.42	53.44



Configuration:		22	RAT:		WCDMA			No. Carriers:		2	
Test no.	Bandwidth (MHz)	Channel	Meas. Power (dBm)	Total Power (dBm)	Meas. PSD (dBm/MHz)	Total PSD (dBm/MHz)	Urban Limit 1640 W/MHz (dBm/MHz)	Non-Urban Limit 3280 W/MHz (dBm/MHz)	Margin Urban (dB)	Margin, Non-Urban (dB)	
113	4.2	Low + High	45.40	51.42	36.40	42.42	62.15	65.16	19.73	22.74	
114	5	Low + High	47.21	53.18	38.41	44.43	62.15	65.16	17.72	20.73	

Configuration:		23	RAT:		WCDMA		No. Carriers:		3	
Test no.	Bandwidth (MHz)	Channel	Meas. Power (dBm)	Total Power (dBm)	Meas. PSD (dBm/MHz)	Total PSD (dBm/MHz)	Urban Limit 1640 W/MHz (dBm/MHz)	Non-Urban Limit 3280 W/MHz (dBm/MHz)	Margin Urban (dB)	Margin, Non-Urban (dB)
121	4.2	Low + High	46.56	52.58	35.93	41.95	62.15	65.16	20.20	23.21
122	5	Low + High	47.16	53.18	36.29	42.31	62.15	65.16	19.84	22.85

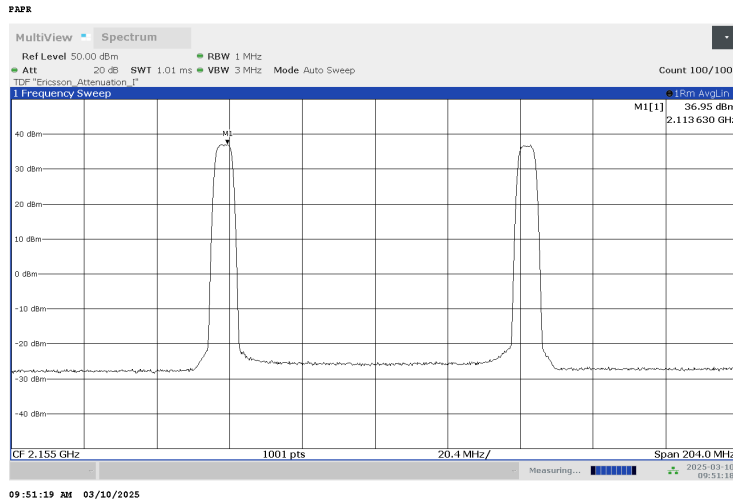
Configuration:		24	RAT:		WCDMA		No. Carriers:		4	
Test no.	Bandwidth (MHz)	Channel	Meas. Power (dBm)	Total Power (dBm)	Meas. PSD (dBm/MHz)	Total PSD (dBm/MHz)	Urban Limit 1640 W/MHz (dBm/MHz)	Non-Urban Limit 3280 W/MHz (dBm/MHz)	Margin Urban (dB)	Margin, Non-Urban (dB)
118	4.2	Low + High	47.33	53.35	35.22	41.24	62.15	65.16	20.91	23.92
119	5	Low + High	47.28	53.30	35.49	41.51	62.15	65.16	20.64	23.65

Configuration:		25	RAT:		WCDMA		No. Carriers:		5	
Test no.	Bandwidth (MHz)	Channel	Meas. Power (dBm)	Total Power (dBm)	Meas. PSD (dBm/MHz)	Total PSD (dBm/MHz)	Urban Limit 1640 W/MHz (dBm/MHz)	Non-Urban Limit 3280 W/MHz (dBm/MHz)	Margin Urban (dB)	Margin, Non-Urban (dB)
120	4.2	Low + High	47.06	53.08	34.45	40.47	62.15	65.16	21.68	24.69
121	5	Low + High	47.25	53.27	34.30	40.32	62.15	65.16	21.83	24.84

Configuration:		26	RAT:		WCDMA		No. Carriers:		6	
Test no.	Bandwidth (MHz)	Channel	Meas. Power (dBm)	Total Power (dBm)	Meas. PSD (dBm/MHz)	Total PSD (dBm/MHz)	Urban Limit 1640 W/MHz (dBm/MHz)	Non-Urban Limit 3280 W/MHz (dBm/MHz)	Margin Urban (dB)	Margin, Non-Urban (dB)
122	4.2	Low + High	47.06	53.08	33.62	39.64	62.15	65.16	22.51	25.52
123	5	Low + High	47.28	53.30	33.89	39.91	62.15	65.16	22.24	25.25

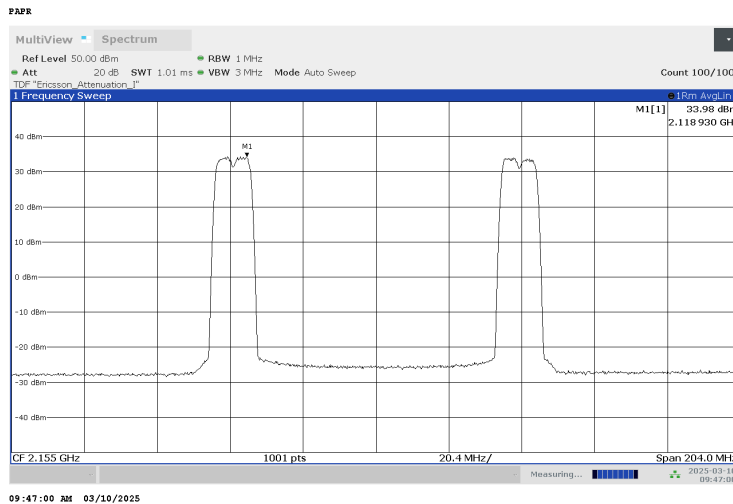
5.3.3 Multi RAT

Configuration:		27	RAT 1:	LTE		RAT 2:	NR		No. Carriers:		1 + 1
Test no.	Bandwidth 1 (MHz)	Bandwidth 2 (MHz)	Meas. Power (dBm)	Total Power (dBm)	Meas. PSD (dBm/MHz)	Total PSD (dBm/MHz)	Urban Limit 1640 W/MHz (dBm/MHz)	Non-Urban Limit 3280 W/MHz (dBm/MHz)	Margin Urban (dB)	Margin, Non-Urban (dB)	
124	5	5	45.28	51.30	36.95	42.97	62.15	65.16	19.18	22.19	
125	10	10	46.93	52.95	34.37	40.39	62.15	65.16	21.76	24.77	
126	20	40	47.49	53.51	31.88	37.90	62.15	65.16	24.25	27.26	



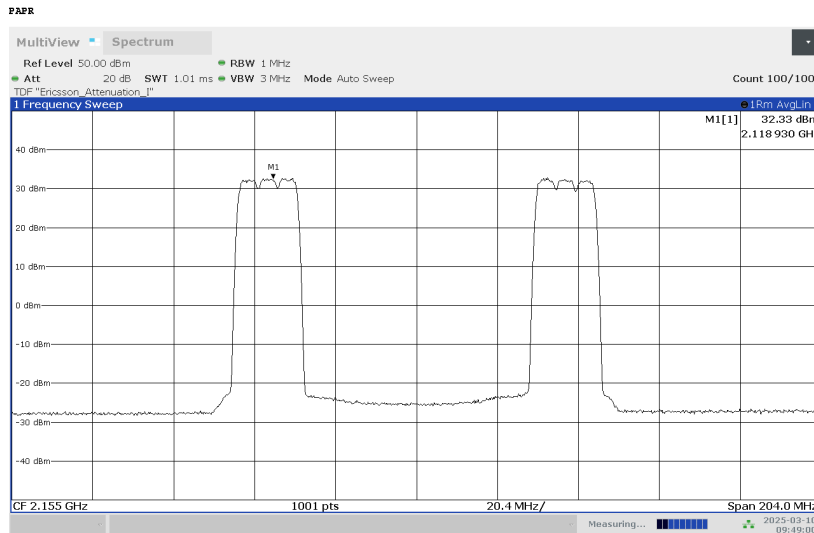
LTE and NR multi-RAT, carrier bandwidth 1x5 MHz and 1x5 MHz, PSD

Configuration:		28	RAT 1:	LTE		RAT 2:	NR		No. Carriers:		2 + 2
Test no.	Bandwidth 1 (MHz)	Bandwidth 2 (MHz)		Meas. Power (dBm)	Total Power (dBm)	Meas. PSD (dBm/MHz)	Total PSD (dBm/MHz)	Urban Limit 1640 W/MHz (dBm/MHz)	Non-Urban Limit 3280 W/MHz (dBm/MHz)	Margin Urban (dB)	Margin, Non-Urban (dB)
127	5	5		46.48	52.50	33.98	40.00	62.15	65.16	22.15	25.16
128	10	10		47.04	53.06	31.18	37.20	62.15	65.16	24.95	27.96
129	15	15		47.47	53.49	30.04	36.06	62.15	65.16	26.09	29.10
130	20	20		47.47	53.49	28.57	34.59	62.15	65.16	27.56	30.57
131	20	25		47.44	53.46	28.45	34.47	62.15	65.16	27.68	30.69



LTE and NR multi-RAT, carrier bandwidth 2x5 MHz and 2x5 MHz, PSD

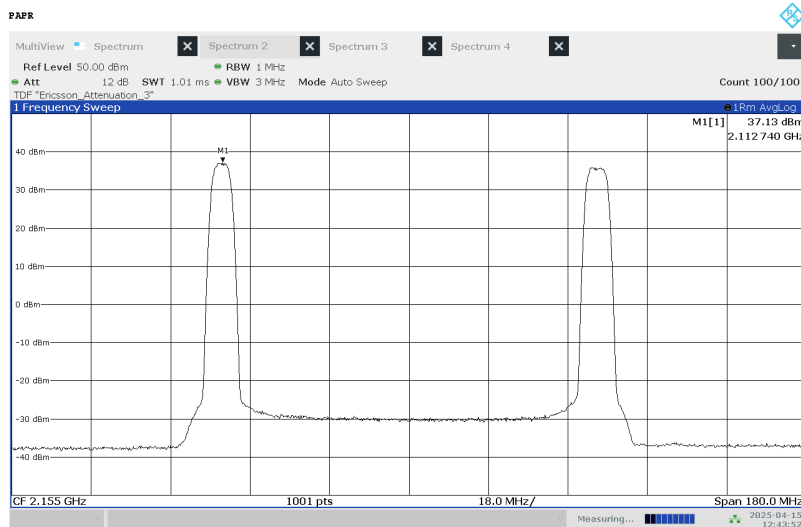
Configuration:		29	RAT 1:	LTE		RAT 2:	NR		No. Carriers:		3 + 3
Test no.	Bandwidth 1 (MHz)		Bandwidth 2 (MHz)	Meas. Power (dBm)	Total Power (dBm)	Meas. PSD (dBm/MHz)	Total PSD (dBm/MHz)	Urban Limit 1640 W/MHz (dBm/MHz)	Non-Urban Limit 3280 W/MHz (dBm/MHz)	Margin Urban (dB)	Margin, Non-Urban (dB)
132	5		5	46.90	52.92	32.33	38.35	62.15	65.16	23.80	26.81
133	10		10	47.40	53.42	30.08	36.10	62.15	65.16	26.05	29.06
134	15		15	47.60	53.62	28.61	34.63	62.15	65.16	27.52	30.53



09:49:01 AM 03/10/2025

LTE and NR multi-RAT, carrier bandwidth 3x5 MHz and 3x5 MHz, PSD

Configuration:		30	RAT 1:	WCDMA		RAT 2:	LTE		No. Carriers:		1 + 1
Test no.	Bandwidth 1 (MHz)	Bandwidth 2 (MHz)	Meas. Power (dBm)	Total Power (dBm)	Meas. PSD (dBm/MHz)	Total PSD (dBm/MHz)	Urban Limit 1640 W/MHz (dBm/MHz)	Non-Urban Limit 3280 W/MHz (dBm/MHz)	Margin Urban (dB)	Margin, Non-Urban (dB)	
135	5	5	46.17	52.19	37.13	43.15	62.15	65.16	19.00	22.01	
136	5	10	46.20	52.22	36.61	42.63	62.15	65.16	19.52	22.53	
137	5	20	46.34	52.36	37.10	43.12	62.15	65.16	19.03	22.04	



12:43:52 PM 04/15/2025

WCDMA and LTE multi-RAT, carrier bandwidth 1x5 MHz and 1x5 MHz, PSD

Configuration:		31	RAT 1:	WCDMA		RAT 2:	LTE		No. Carriers:		2 + 2
Test no.	Bandwidth 1 (MHz)	Bandwidth 2 (MHz)	Meas. Power (dBm)	Total Power (dBm)	Meas. PSD (dBm/MHz)	Total PSD (dBm/MHz)	Urban Limit 1640 W/MHz (dBm/MHz)	Non-Urban Limit 3280 W/MHz (dBm/MHz)	Margin Urban (dB)	Margin, Non-Urban (dB)	
138	5	5	46.19	52.21	34.08	40.10	62.15	65.16	22.05	25.06	
139	5	10	46.44	52.46	34.33	40.35	62.15	65.16	21.80	24.81	
140	5	20	46.58	52.60	34.28	40.30	62.15	65.16	21.85	24.86	

Configuration:		32	RAT 1:	WCDMA		RAT 2:	LTE		No. Carriers:		3 + 3
Test no.	Bandwidth 1 (MHz)		Bandwidth 2 (MHz)	Meas. Power (dBm)	Total Power (dBm)	Meas. PSD (dBm/MHz)	Total PSD (dBm/MHz)	Urban Limit 1640 W/MHz (dBm/MHz)	Non-Urban Limit 3280 W/MHz (dBm/MHz)	Margin Urban (dB)	Margin, Non-Urban (dB)
141	5		5	46.48	52.50	32.50	38.52	62.15	65.16	23.63	26.64
142	5		10	46.89	52.91	32.52	38.54	62.15	65.16	23.61	26.62
143	5		20	47.14	53.16	32.84	38.86	62.15	65.16	23.29	26.30

Configuration:		33	RAT 1:	WCDMA		RAT 2:	NR		No. Carriers:		1 + 1
Test no.	Bandwidth 1 (MHz)		Bandwidth 2 (MHz)	Meas. Power (dBm)	Total Power (dBm)	Meas. PSD (dBm/MHz)	Total PSD (dBm/MHz)	Urban Limit 1640 W/MHz (dBm/MHz)	Non-Urban Limit 3280 W/MHz (dBm/MHz)	Margin Urban (dB)	Margin, Non-Urban (dB)
144	5		5	46.18	52.20	37.04	43.06	62.15	65.16	19.09	22.10
145	5		10	46.19	52.21	36.84	42.86	62.15	65.16	19.29	22.30
146	5		40	46.64	52.66	36.95	42.97	62.15	65.16	19.18	22.19

Configuration:		34	RAT 1:	WCDMA		RAT 2:	NR		No. Carriers:		2 + 2
Test no.	Bandwidth 1 (MHz)		Bandwidth 2 (MHz)	Meas. Power (dBm)	Total Power (dBm)	Meas. PSD (dBm/MHz)	Total PSD (dBm/MHz)	Urban Limit 1640 W/MHz (dBm/MHz)	Non-Urban Limit 3280 W/MHz (dBm/MHz)	Margin Urban (dB)	Margin, Non-Urban (dB)
147	5		5	46.22	52.24	34.09	40.11	62.15	65.16	22.04	25.05
148	5		10	46.40	52.42	33.93	39.95	62.15	65.16	22.20	25.21
149	5		40	47.23	53.25	34.63	40.65	62.15	65.16	21.50	24.51

Configuration:		35	RAT 1:	WCDMA		RAT 2:	NR		No. Carriers:		3 + 3
Test no.	Bandwidth 1 (MHz)		Bandwidth 2 (MHz)	Meas. Power (dBm)	Total Power (dBm)	Meas. PSD (dBm/MHz)	Total PSD (dBm/MHz)	Urban Limit 1640 W/MHz (dBm/MHz)	Non-Urban Limit 3280 W/MHz (dBm/MHz)	Margin Urban (dB)	Margin, Non-Urban (dB)
150	5		5	46.43	52.45	32.58	38.60	62.15	65.16	23.55	26.56
151	5		10	46.89	52.91	32.60	38.62	62.15	65.16	23.53	26.54
152	5		25	47.17	53.19	32.59	38.61	62.15	65.16	23.54	26.55

6 OCCUPIED BANDWIDTH AND EMISSION BANDWIDTH

Date of test:	11 March – 15 April 2025, 14 May 2025	Test location:	E-torget
EUT Serial:	E23G305405	Ambient temp:	19°C - 21°C
Tested by:	Algot Rickman Nahome Michael	Relative humidity:	16% - 36%
Test result:	Pass	Margin:	N/A

6.1 Test set-up and test procedure.

The test method is in accordance with RSS-GEN section 6.7, KDB 97168D01 section 4 and ANSI C63.26-2015 section 5.4.3 and 5.4.4.

The EUT was connected to spectrum analyser via rf-cable and a 40 dB attenuator. A spectrum analyser with occupied bandwidth measurement function is used to determine the occupied bandwidth.

The EUT was set up in order to emit maximum emissions.

6.2 Limit

CFR 47 §27.53 (h)(3):

The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

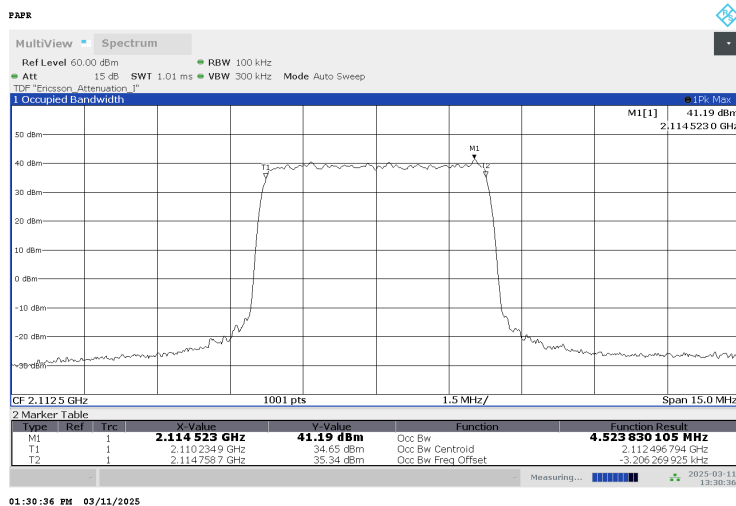
RSS-GEN 6.7:

The occupied bandwidth or the “99% emission bandwidth” is defined as the frequency range between two points, one above and the other below the carrier frequency, within which 99% of the total transmitted power of the fundamental transmitted emission is contained. The occupied bandwidth shall be reported for all equipment in addition to the specified bandwidth required in the applicable RSSs.

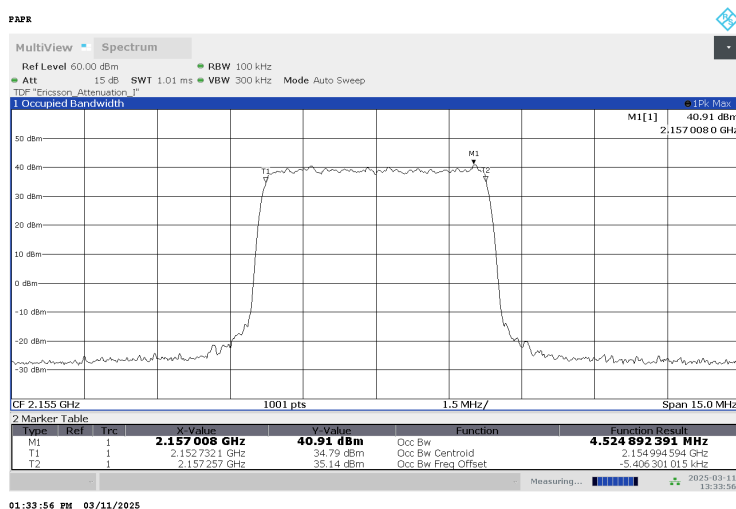
6.3 Test results

6.3.1 Single carrier

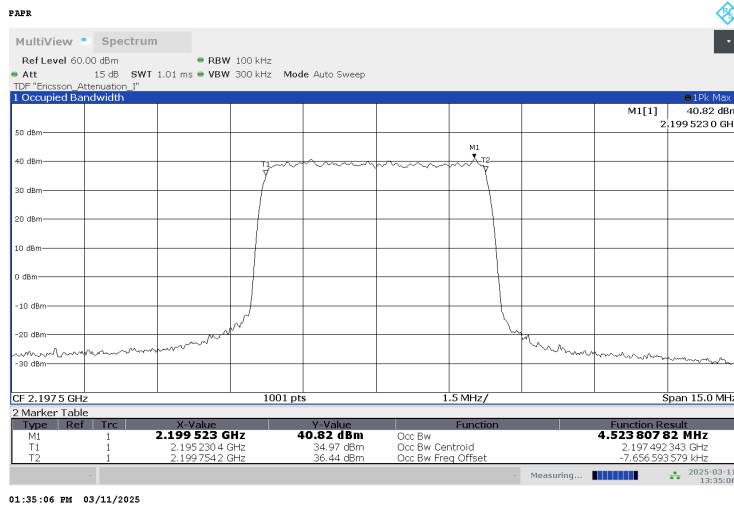
Configuration 1					
Port:	1		RAT:	LTE	
Test no.	Bandwidth (MHz)	channel	Frequency (MHz)	99% Bandwidth (MHz)	-26 dB Bandwidth (MHz)
1	5	Low	2112.5	4.52	4.88
2	5	Mid	2155	4.52	4.88
3	5	High	2197.5	4.52	4.90
4	10	Low	2115	9.07	9.95
5	10	Mid	2155	9.07	9.95
6	10	High	2195	9.08	9.95
7	15	Low	2117.5	13.62	15.02
8	15	Mid	2155	13.62	14.98
9	15	High	2192.5	13.63	14.98
10	20	Low	2120	18.02	20.44
11	20	Mid	2155	18.01	20.47
12	20	High	2190	18.01	20.44



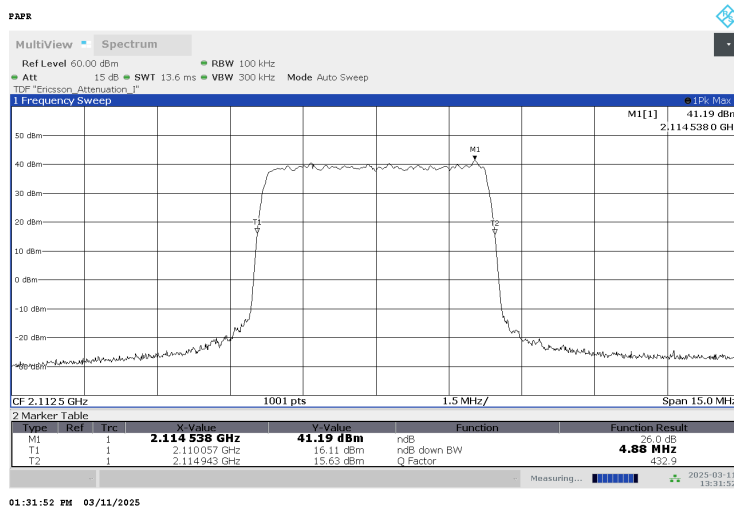
LTE, 5 MHz, 99% occupied bandwidth, low channel



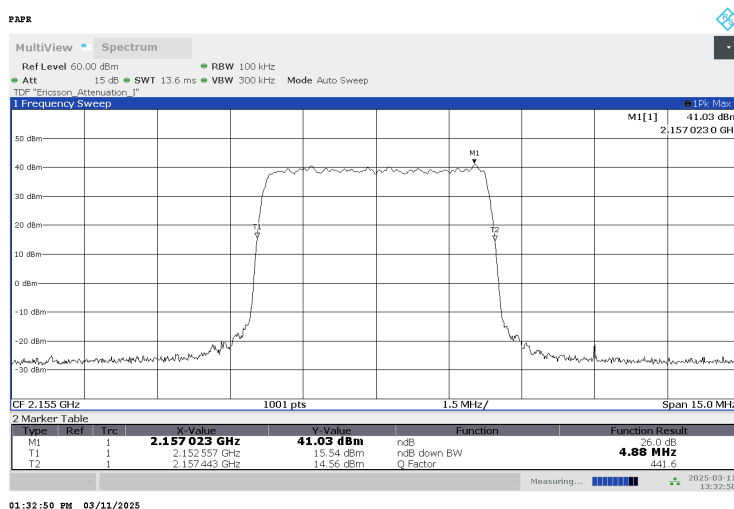
LTE, 5 MHz, 99% occupied bandwidth, middle channel



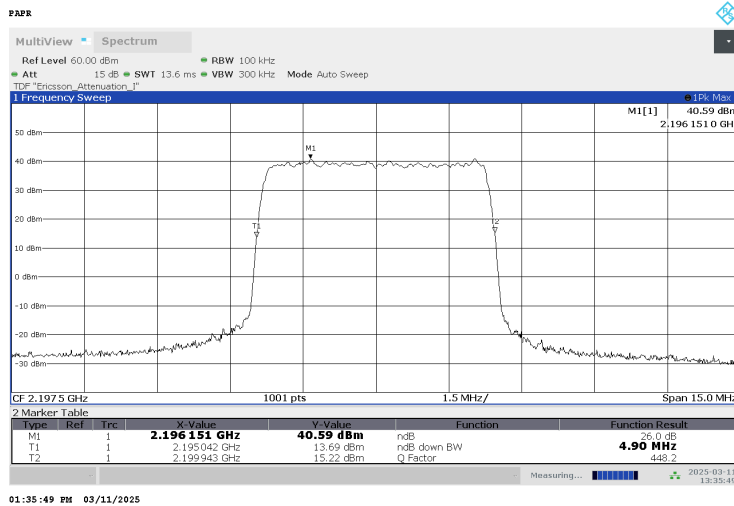
LTE, 5 MHz, 99% occupied bandwidth, high channel



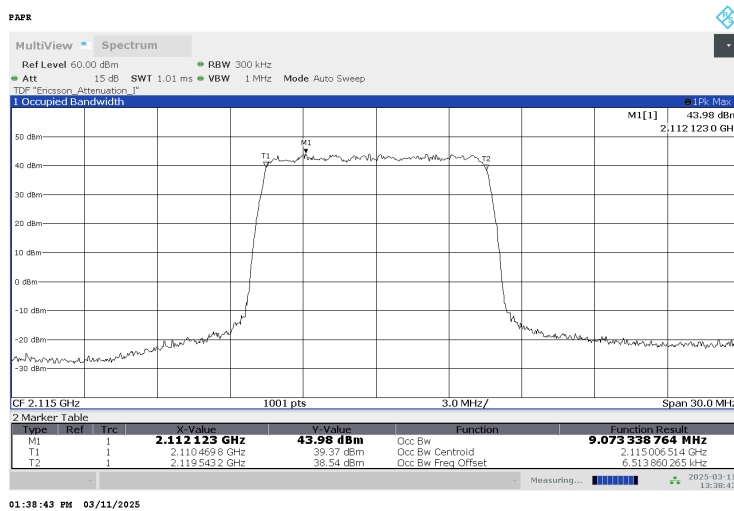
LTE, 5 MHz, -26 dBc emission bandwidth, low channel



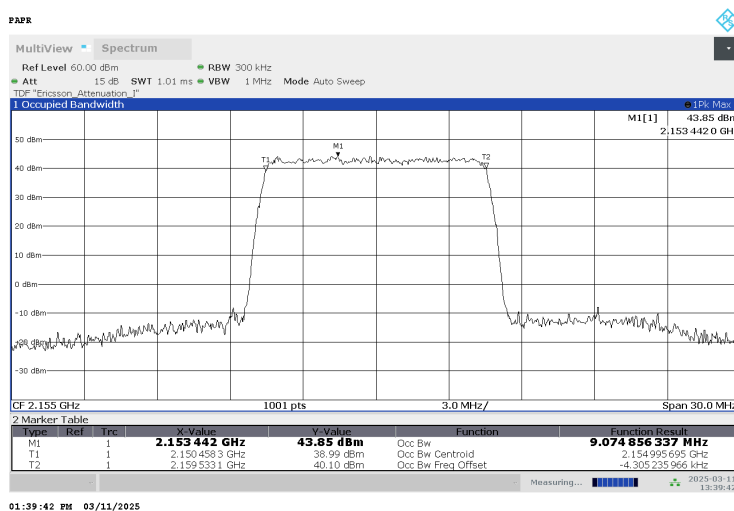
LTE, 5 MHz, -26 dBc emission bandwidth, middle channel



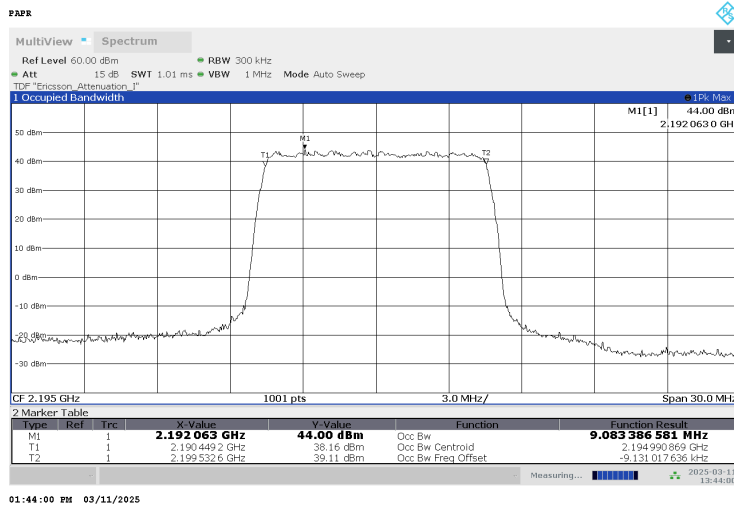
LTE, 5 MHz, -26 dBc emission bandwidth, high channel



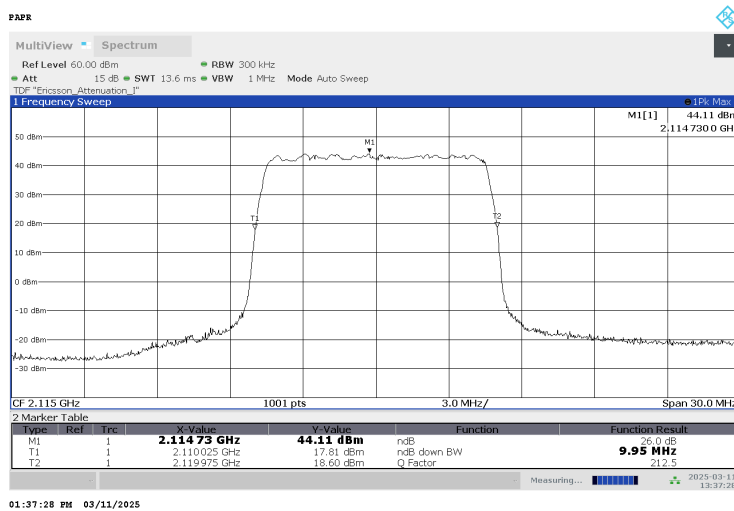
LTE, 10 MHz, 99% occupied bandwidth, low channel



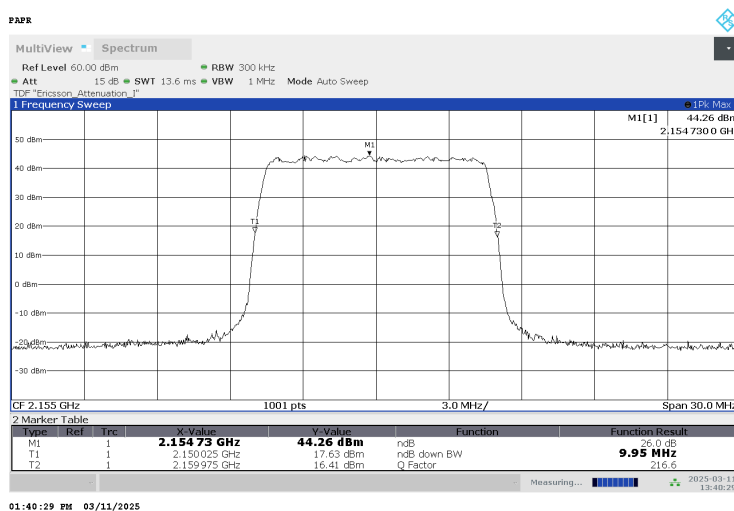
LTE, 10 MHz, 99% occupied bandwidth, middle channel



LTE, 10 MHz, 99% occupied bandwidth, high channel



LTE, 10 MHz, -26 dBc emission bandwidth, low channel



LTE, 10 MHz, -26 dBc emission bandwidth, middle channel