Spot Check Evaluation

FCC ID	:	**UZ7EM45B1**
EQUIPMENT	:	**Enterprise Mobile**
BRAND NAME	:	**Zebra**
MODEL NAME	:	**EM45B1**
APPLICANT	:	**Zebra Technologies Corporation** **3 Overlook Point, Lincolnshire, IL 60069 USA**
MANUFACTURER	:	**Zebra Technologies Corporation** **3 Overlook Point, Lincolnshire, IL 60069 USA**
STANDARD	:	**47 CFR Part 22(H), 24(E), 27(L), 27(H), 27(F), 27(M), 27(N), 27(O), 27(Q), 90(S)** **47 CFR Part 15 Subpart C §15.247** **47 CFR Part 15 Subpart C §15.225** **47 CFR Part 15 Subpart E §15.407**

We, Sporton International Inc. (Kunshan), would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.26-2015 and shown compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International Inc. (Kunshan), the test report shall not be reproduced except in full.

Jason Jia

Approved by: Jason Jia

ACCREDITED Cert #5145.02

Sporton International Inc. (Kunshan)
No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300
People's Republic of China

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG460508-02G	Rev. 01	Initial issue of report	Feb. 13, 2025

1 General Description

1.1 Product Feature of Equipment Under Test

Product Feature	
Equipment	Enterprise Mobile
Brand Name	Zebra
Model Name	EM45B1
FCC ID	UZ7EM45B1
IMEI Code	Conducted: 350332150060484 Conduction: 350332150060096/350332150064049 Radiation: 350332150060260/350332150063959 CBP/DFS: 350332150060575
HW Version	DV
SW Version	14-24-09.00-UG-U00-PRD-ATH-04
MFD	09DEC24
EUT Stage	Identical Prototype

Specification of Accessory				
Battery	**Brand Name**	Zebra	**Model**	BT-000501
			Part Number	BT-000501-2000

Supported Unit used in test configuration and system				
AC Adapter 1 (Type C Wall Charger 1)	**Brand Name**	Zebra	**Model**	SAWA-102-22520A
			Part Number	PWR-WUA5V45W1US
AC Adapter 2 (Type A Wall Charger 2)	**Brand Name**	Zebra	**Model**	SAWA-65-20005A
			Part Number	PWR-WUA5V12W0US
Earphone 1 (Wired headset USB-C)	**Brand Name**	Zebra	**Part Number**	HDST-USBC-PTT1-01
Earphone 2 (Rugged Bluetooth Headset)	**Brand Name**	Zebra	**Part Number**	HS3100-OTH
Earphone 3 (3.5mm PTT Headset)	**Brand Name**	Zebra	**Part Number**	HDST-35MM-PTT1-02
Earphone 4 (Rugged Headset)	**Brand Name**	Zebra	**Part Number**	HS2100-OTH
3.5mm to 3.5mm audio connector	**Brand Name**	Zebra	**Part Number**	CBL-HS2100-3MS1-01
Type C-Audio Cable (Type C to 3.5mm)	**Brand Name**	Zebra	**Part Number**	ADP-USBC-35MM1-01
USB Cable 1 (USB-C to C Cable)	**Brand Name**	Zebra	**Part Number**	CBL-EC5X-USBC3A-01
USB Cable 2 (USB-A to C Cable)	**Brand Name**	Zebra	**Part Number**	CBL-TC5X-USBC2A-01
EM45 Protective Case	**Brand Name**	Zebra	**Part Number**	SG-EM45EXO2-01

1.2 Modification of EUT

No modifications are made to the EUT during all test items.

1.3 Testing Site

Sporton International Inc. (Kunshan) is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.02.

Test Firm	Sporton International Inc. (Kunshan)		
Test Site Location	No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300 People's Republic of China TEL : +86-512-57900158		
Test Site No.	**Sporton Site No.**	**FCC Designation No.**	**FCC Test Firm Registration No.**
	TH01-KS CO01-KS DFS01-KS 03CH02-KS 03CH04-KS 03CH06-KS	CN1257	314309

1.4 Test Software

Item	Site	Manufacturer	Name	Version
1.	TH01-KS	Tonscend	JS1120-3 test system China_210602	3.3.10
2.	03CH02-KS	AUDIX	E3	6.2009-8-24al
3.	03CH04-KS	AUDIX	E3	210616
4.	03CH06-KS	AUDIX	E3	210616
5.	DFS01-KS	Sporton	Test Tools	1.0
6.	CO01-KS	AUDIX	E3	6.2009-8-24

1.5 Applicable Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- FCC KDB 484596 D01 Referencing Test Data v02r03
- 47 CFR Part 22(H), 24(E), 27(L), 27(H), 27(F), 27(M), 27(N), 27(O), 27(Q), 90(S)
- ANSI C63.10-2013
- ANSI C63.26-2015
- 47 CFR Part 15 Subpart C §15.225
- 47 CFR Part 15 Subpart C §15.247
- 47 CFR Part 15 Subpart E §15.407

2 Re-use of Measured Data

2.1 Introduction Section

This application re-uses data collected on a similar device. The subject device of this application (Model: EM45B1, FCC ID: UZ7EM45B1) is electrically identical to the reference device (Model: EM45B2, FCC ID: UZ7EM45B2) for the portions of the circuitry corresponding to the data being re-used, following the FCC KDB 484596 D01 Referencing Test Data v02r03.

ECR Data Referencing Inquiry has been approved by FCC, and the data referencing and spot check test plan includes RF/EMC, the details are presented in section 2.3 of this report, and for SAR Reference detail, please refer to FCC SAR report FA460508-02.

The criteria set in section 3 of KDB 484596 D01 v02r03 is followed to determine whether the data referencing is justified. For SAR, the higher between the referenced value and the spot check value is used to determine compliance in both standalone and simultaneous transmission conditions.

The applicant takes full responsibility that the test data as referenced in this report represent compliance for this FCC ID: UZ7EM45B1.

2.2 Model Difference Information

The **main** difference between FCC ID: UZ7EM45B2 and FCC ID: UZ7EM45B1 is as below:

- Removed RFID function.
- Antenna 1 removed WWAN TX function，keep supported Low bands and Middle bands RX function.

Other differences and all the details of similarity and difference can be found in the confidential documents (UZ7EM45B1 Operational Description of Product Equality Declaration).

2.3 Reference detail Section:

Rule Part	Equipment Class	Frequency Band (MHz)	Reference FCC ID (Parent)	Reference on test	Reference Title	FCC ID Filling (Variant)	Test on the variant	Data Referencing (Y/N)
15C	DSS (BR/EDR)	2400~2483.5	UZ7EM45B2	Full test	FR460508A	UZ7EM45B1	Spot check	Y, All test items
	DTS (BLE)	2400~2483.5	UZ7EM45B2	Full test	FR460508B	UZ7EM45B1	Spot check	Y, All test items
	DTS (WLAN)	2400~2483.5	UZ7EM45B2	Full test	FR460508C	UZ7EM45B1	Spot check	Y, All test items
	DXX (NFC)	13.56	UZ7EM45B2	Full test	FR460508D	UZ7EM45B1	Spot check	Y, All test items
15E	U-NII	5180~5240	UZ7EM45B2	Full test	FR460508E	UZ7EM45B1	Spot check	Y, All test items
		5260~5320	UZ7EM45B2	Full test	FR460508E	UZ7EM45B1	Spot check	Y, All test items
		5500~5720	UZ7EM45B2	Full test	FR460508E	UZ7EM45B1	Spot check	Y, All test items
		5745~5825	UZ7EM45B2	Full test	FR460508E	UZ7EM45B1	Spot check	Y, All test items
		5260~5320 5500~5720	UZ7EM45B2	Full test	FZ460508	UZ7EM45B1	Spot check	Y, All test items
	6CD	5925~7125	UZ7EM45B2	Full test	FR460508G FR460508H	UZ7EM45B1	Spot check	Y, All test items
22, 24, 27, 90	PCE (GSM)	GSM 850/1900	UZ7EM45B2	Full test	FG460508A	UZ7EM45B1	Spot check	Y, All test items
	PCE (WCDMA)	Band II, IV, V	UZ7EM45B2	Full test	FG460508A	UZ7EM45B1	Spot check	Y, All test items
	PCE (LTE)	B2/4/5/7/13/17/26/38/41/42/66/71 ULCA 5B/7C/38C 41C/66B/66C	UZ7EM45B2	Full test	FG460508B FG460508C FG460508D FG460508F	UZ7EM45B1	Spot check	Y, All test items
	PCE (LTE)	B26 (90S)	UZ7EM45B2	Full test	FG460508E	UZ7EM45B1	Spot check	Y, All test items
	PCE (NR)	n2/n5/n7/n26/n38/n41/n66/n71/n77/n78	UZ7EM45B2	Full test	FG460508G FG460508H FG460508J FG460508K	UZ7EM45B1	Spot check	Y, All test items
	PCE (NR)	n26 (90S)	UZ7EM45B2	Full test	FG460508I	UZ7EM45B1	Spot check	Y, All test items

Y: Pointer to spot-check exhibit; N: Pointer to full test exhibit

2.4 Spot Check Verification Data Section

All test items test against the variant model based on the worst-case condition from the original model was performed in this filing to demonstrate the test data from original model remains representative for the variant model.
All test procedures follow the related section of parent report.

Spot-check measurements, while being always compliant with the applicable rule part(s) for the test under consideration, show a deviation d_{dB} from the reference data no larger than 3 dB:

$$d_{dB} = | V_{dB} – R_{dB} | \leq 3 \text{ dB} \quad (1)$$

V_{dB}, the variant spot-check level
R_{dB}, the corresponding measurement level for the reference model

An alternative to the limit of eq. (1) is available, and is based on considering how far the reference data R_{dB} is from the compliance threshold C_{dB} (also expressed in dB), for the particular test under consideration. In this case, if $M_{dB} = |C_{dB} – R_{dB}|$ is the margin in dB from the compliance limit, a spot check may be considered acceptable when the deviation ddB from the reference data satisfies the following condition:

$$d_{dB} = | V_{dB} – R_{dB} | \leq (3 + M_{dB}/20) \text{ dB , for } 0 \leq M_{dB} \leq 60 \text{ dB}$$

$$d_{dB} = | V_{dB} – R_{dB} | = 6 \text{ dB , for } M_{dB} > 60 \text{ dB} \quad (2)$$

where “| |” is the absolute value of the measured quantity.
When using the option in eq. (2), d_{dB} increases linearly from 3 dB to 6 dB.

Summary for spot check for each rule entry and technology is listed as below:

Mode	Test Item	UZ7EM45B2 Parent Worst mode Test Result	UZ7EM45B1 Variant Check Test Result	Deviation (dB)	Deviation Limit (dB)
BT 1Mbps (CH00)	Number of Channels	79	79	0	3
	Hopping Channel Separation	1.135	0.996	0.139	3
	Dwell Time of Each Channel	0.31	0.31	0	3
	20dB Bandwidth	0.94	0.95	0.01	3
	99% Bandwidth	0.851	0.89	0.039	3
	Conducted Band Edges	-41.78	-43.72	1.94	3
	Conducted Spurious Emission	-44.27	-46.4	2.13	3
BT 1Mbps (CH00)	Radiated Band Edges and Radiated Spurious Emission	56.93	55.71	1.22	3
BT	AC Conducted Emission	14.81	13.96	0.85	3
BLE 1Mbps (CH39)	6dB Bandwidth	0.68	0.69	0.01	3
	99% Bandwidth	1.027	1.035	0.008	3
	Power Spectral Density	-5.44	-6.6	1.16	3
	Conducted Band Edges	-57.54	-58.86	1.32	3
	Conducted Spurious Emission	-44.23	-45.77	1.54	3
BLE 2Mbps (CH39)	Radiated Band Edges and Spurious Emission	46.49	48.90	2.41	3
BLE	AC Conducted Emission	14.81	13.96	0.85	3
WIFI 2.4G (802.11b CH11)	6dB Bandwidth	8.56	8.56	0	3
	99% Bandwidth	13.187	13.307	0.12	3
	Power Spectral Density	-1.37	-1.5	0.13	3
	Conducted Band Edges	-47.92	-48.21	0.29	3
	Conducted Spurious Emission	-43.71	-46.01	2.3	3
WIFI 2.4G (802.11g CH01)	Radiated Band Edges and Spurious Emission	51.90	52.85	1.95	3
WIFI 2.4G	AC Conducted Emission	14.81	13.96	0.85	3
WIFI 5G (802.11a CH149)	26dB Bandwidth	19.15	19.29	0.14	3
	99% Bandwidth	16.705	16.705	0	3
	Power Spectral Density	6.94	6.92	0.02	3
	Unwanted Emissions	16.31	16.33	0.02	3
WIFI 5G (11ax HE160 Ch50)	Radiated Band Edges and Spurious Emission	50.75	52.88	2.13	3
WIFI 5G	AC Conducted Emission	11.52	14.22	2.70	3
WIFI 5G (802.11a CH116)	DFS	0.862829	0.935231	0.073	3
WIFI 6G UNII-5 (802.11ax HE160 CH15 6025MHz)-6CD Indoor Client	26dB Emission Bandwidth	165.79	166.17	0.38	3
	99% Occupied Bandwidth	156.8	156.495	0.305	3
	Fundamental Maximum EIRP	17.64	17.39	0.25	3
	Fundamental Power Spectral Density	-2.95	-3.42	0.47	3
	In-Band Emissions	-12.59	-11.73	0.86	3
WIFI 6G UNII-5 (802.11ax HE20 CH1 5955MHz)-6CD Standard Client	26dB Emission Bandwidth	21.15	21.25	0.1	3
	99% Occupied Bandwidth	19.048	19.086	0.038	3
	Fundamental Maximum EIRP	17.68	17.58	0.10	3
	Fundamental Power Spectral Density	5.13	4.38	0.75	3
	In-Band Emissions	-19.18	-18.83	0.35	3
WIFI 6G UNII-5 (802.11ax HE160 CH47 6185MHz)	Contention Based Protocol	-64.77	-66.92	2.15	3

WIFI 6G (802.11ax HE20 Ch233)	Radiated Band Edges and Spurious Emission	66.90	67.00	0.1	3
WIFI 6G	AC Conducted Emission	14.72	16.18	1.46	3
NFC	20dB Spectrum Bandwidth	2.48	2.49	0.01	3
	99% OBW Spectrum Bandwidth	2.11	2.11	0	3
	Frequency Stability	-21.3496	-22.382	1.0324	3
	Field Strength of Fundamental Emissions	60.61	60.41	0.2	3
	Radiated Spurious Emissions	36.17	36.86	0.69	3
	AC Conducted Emission	14.22	16.01	1.79	3

Mode	Test Item	UZ7EM45B2 Parent Worst mode Test Result	UZ7EM45B1 Variant Check Test Result	Deviation (dB)	Deviation Limit (dB)
Part 27F LTE Band 13	Radiated Spurious Emission	-62.22	-61.76	0.46	3
Part27O_N77	Equivalent Isotropic Radiated Power	26.23	25.90	0.33	3
	Peak-to-Average Ratio	5.24	5.04	0.2	3
	Occupied Bandwidth	57.948	57.853	0.095	3
	Conducted Band Edge	-14.04	-15.20	1.16	3
	Conducted Spurious Emission	-33.15	-33.32	0.17	3
	Frequency Stability	0.0039	0.0027	0.0012	3

Conducted power for Unlicensed bands

Test Item	Mode	UZ7EM45B2 Parent Worst mode Test Result	UZ7EM45B1 Variant Check Test Result	Deviation (dB)	Deviation Limit (dB)
Conducted Power(dBm) BT & BLE	BT BR/EDR	9.57	9.11	0.46	3
	BLE 1Mbps	9.57	9.10	0.47	3
	BLE 2Mbps	9.58	9.24	0.34	3
Conducted Power(dBm) WIFI 2.4G	11b, 2.4GHz	25.04	24.97	0.07	3
	11g, 2.4GHz	28.45	28.36	0.09	3
	11n HT20, 2.4GHz	28.38	28.34	0.04	3
	11ac VHT20, 2.4GHz	28.30	28.25	0.05	3
	11ax HE20, 2.4GHz	28.56	28.51	0.05	3
Conducted Power(dBm) WIFI 5G	11a, 5.2GHz	22.53	22.38	0.15	3
	11a, 5.3GHz	22.62	22.15	0.47	3
	11a, 5.5GHz	22.19	21.74	0.45	3
	11a, 5.8GHz	21.69	21.47	0.22	3
	11n HT20, 5.2GHz	21.34	21.26	0.08	3
	11n HT20, 5.3GHz	20.98	20.62	0.36	3
	11n HT20, 5.5GHz	21.32	21.26	0.06	3
	11n HT20, 5.8GHz	21.37	21.33	0.04	3
	11ac VHT20, 5.2GHz	21.41	21.29	0.12	3
	11ac VHT20, 5.3GHz	21.04	20.69	0.35	3
	11ac VHT20, 5.5GHz	21.36	21.33	0.03	3
	11ac VHT20, 5.8GHz	21.41	21.36	0.05	3
	11ax HE20, 5.2GHz	21.47	21.34	0.13	3
	11ax HE20, 5.3GHz	21.09	20.72	0.37	3
	11ax HE20, 5.5GHz	21.39	21.37	0.02	3
	11ax HE20, 5.8GHz	21.45	21.39	0.06	3
	11n HT40, 5.2GHz	20.76	20.71	0.05	3
	11n HT40, 5.3GHz	20.71	20.53	0.18	3
	11n HT40, 5.5GHz	20.62	20.58	0.04	3

	11n HT40, 5.8GHz	20.36	20.28	0.08	3
	11ac VHT40, 5.2GHz	20.82	20.76	0.06	3
	11ac VHT40, 5.3GHz	20.77	20.56	0.21	3
	11ac VHT40, 5.5GHz	20.67	20.62	0.05	3
	11ac VHT40, 5.8GHz	20.42	20.32	0.10	3
	11ax HE40, 5.2GHz	20.86	20.81	0.05	3
	11ax HE40, 5.3GHz	20.83	20.61	0.22	3
	11ax HE40, 5.5GHz	20.73	20.68	0.05	3
	11ax HE40, 5.8GHz	20.48	20.36	0.12	3
	11ac VHT80, 5.2GHz	20.07	19.99	0.08	3
	11ac VHT80, 5.3GHz	20.14	19.91	0.23	3
	11ac VHT80, 5.5GHz	20.32	20.08	0.24	3
	11ac VHT80, 5.8GHz	20.17	20.10	0.07	3
	11ax HE80, 5.2GHz	20.12	20.05	0.07	3
	11ax HE80, 5.3GHz	20.22	19.96	0.26	3
	11ax HE80, 5.5GHz	20.38	20.12	0.26	3
	11ax HE80, 5.8GHz	20.24	20.15	0.09	3
	11ac VHT160, 5.3GHz	19.81	19.66	0.15	3
	11ac VHT160, 5.5GHz	19.79	19.63	0.16	3
	11ax HE160, 5.3GHz	19.92	19.70	0.22	3
	11ax HE160, 5.5GHz	19.88	19.69	0.19	3
Conducted Power(dBm) WIFI 6G Indoor Client	6CD 11a, U-NII-5	7.05	6.75	0.30	3
	6CD 11a, U-NII-6	7.97	7.86	0.11	3
	6CD 11a, U-NII-7	6.64	6.58	0.06	3
	6CD 11a, U-NII-8	5.82	5.78	0.04	3
	6CD 11ax HE20, U-NII-5	10.85	10.84	0.01	3
	6CD 11ax HE20, U-NII-6	11.28	11.21	0.07	3
	6CD 11ax HE20, U-NII-7	10.12	10.07	0.05	3
	6CD 11ax HE20, U-NII-8	9.61	9.57	0.04	3
	6CD 11ax HE40, U-NII-5	13.76	13.74	0.02	3
	6CD 11ax HE40, U-NII-6	13.74	13.59	0.15	3
	6CD 11ax HE40, U-NII-7	13.04	12.79	0.25	3
	6CD 11ax HE40, U-NII-8	12.65	12.60	0.05	3
	6CD 11ax HE80, U-NII-5	16.97	16.93	0.04	3
	6CD 11ax HE80, U-NII-6	16.82	16.77	0.05	3
	6CD 11ax HE80, U-NII-7	16.36	16.30	0.06	3
	6CD 11ax HE80, U-NII-8	15.76	15.71	0.05	3
	6CD 11ax HE160, U-NII-5	17.29	17.04	0.25	3
	6CD 11ax HE160, U-NII-6	17.01	16.95	0.06	3
	6CD 11ax HE160, U-NII-7	17.06	17.01	0.05	3
	6CD 11ax HE160, U-NII-8	16.89	16.83	0.06	3
Conducted Power(dBm) WIFI 6G Standard Client	6CD 11a, U-NII-5	17.29	17.21	0.08	3
	6CD 11a, U-NII-7	17.11	17.07	0.04	3
	6CD 11ax HE20, U-NII-5	17.33	17.23	0.10	3
	6CD 11ax HE20, U-NII-7	17.08	17.04	0.04	3
	6CD 11ax HE40, U-NII-5	17.23	17.16	0.07	3
	6CD 11ax HE40, U-NII-7	16.97	16.93	0.04	3
	6CD 11ax HE80, U-NII-5	17.26	17.14	0.12	3
	6CD 11ax HE80, U-NII-7	16.96	16.92	0.04	3
	6CD 11ax HE160, U-NII-5	17.34	17.10	0.24	3
	6CD 11ax HE160, U-NII-7	17.12	17.07	0.05	3

Conducted power for Licensed bands

Test Item	Mode	UZ7EM45B2 Parent Worst mode Test Result	UZ7EM45B1 Variant Check Test Result	Deviation (dB)	Deviation Limit (dB)
Conducted Power (dBm)	GSM 850	32.32	32.3	0.02	3
	GSM 1900	29.07	28.82	0.25	3
	WCDMA 850	23.02	22.87	0.15	3
	WCDMA1900	22.91	22.64	0.27	3
	WCDMA1700	22.79	22.75	0.04	3
	LTE B2	22.84	22.78	0.06	3
	LTE B4	22.89	22.45	0.44	3
	LTE B5	22.84	22.71	0.13	3
	LTE B5B	22.84	22.77	0.07	3
	LTE B13	22.78	22.63	0.15	3
	LTE B17	22.75	22.56	0.19	3
	LTE B26H	23.04	22.72	0.32	3
	LTE B26L	22.80	22.75	0.05	3
	LTE B66	22.89	22.74	0.15	3
	LTE B71	22.98	22.51	0.47	3
	LTE B7	23.83	23.48	0.35	3
	LTE B7C	23.70	23.59	0.11	3
	LTE B38	22.84	22.7	0.14	3
	LTE B41	22.89	22.66	0.23	3
	LTE B38C	22.84	22.71	0.13	3
	LTE B41C	22.88	22.78	0.1	3
	LTE B42	22.64	22.6	0.04	3
	LTE B66B	22.73	22.54	0.19	3
	LTE B66C	22.72	22.55	0.17	3
	N2	23.69	23.19	0.5	3
	N5	23.19	22.85	0.34	3
	N26H	23.22	22.93	0.29	3
	N26L	22.91	22.73	0.18	3
	N7	24.85	24.37	0.48	3
	N38	23.31	22.85	0.46	3
	N41	23.01	22.67	0.34	3
	N66	23.28	23.12	0.16	3
	N71	23.60	23.22	0.38	3
	N77 27O	26.28	25.95	0.33	3
	N78 27O	26.24	26.02	0.22	3
	N77 27Q	26.29	25.97	0.32	3
	N78 27Q	26.25	25.93	0.32	3
	N77 27O MIMIO	24.32	23.89	0.43	3
	N78 27O MIMO	23.94	23.87	0.07	3
	N77 27Q MIMO	24.38	23.92	0.46	3
	N78 27Q MIMO	24.31	23.95	0.36	3

6CD- < indoor client>

<SISO mode>

U-NII-5 SISO																
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)		Conducted Power with duty factor (dBm)		DG (dBi)		EIRP Power (dBm)		EIRP Power Limit (dBm)	Pass /Fail	Power Setting	
					Ant 8	Ant 10	Ant 8	Ant 10	Ant 8	Ant 10	Ant 8	Ant 10			Ant 8	Ant 10
11a	6Mbps	1	093	6415	0.03	0.04	4.16	3.22	0.35	-0.85	4.51	2.37	24.00	Pass	6	6

U-NII-5 SISO																
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	RU Config.	Duty Factor (dB)		Conducted Power with duty factor (dBm)		DG (dBi)		EIRP Power (dBm)		EIRP Power Limit (dBm)	Pass /Fail	Power Setting	
						Ant 8	Ant 10	Ant 8	Ant 10	Ant 8	Ant 10	Ant 8	Ant 10			Ant 8	Ant 10
HE20	MCS0	1	093	6415	Full	0.00	0.00	8.03	7.42	0.35	-0.85	8.38	6.57	24.00	Pass	8	8
HE40	MCS0	1	091	6405	Full	0.00	0.00	10.87	10.38	0.35	-0.85	11.22	9.53	24.00	Pass	11	11
HE80	MCS0	1	087	6385	Full	0.00	0.00	14.22	13.48	0.35	-0.85	14.57	12.63	24.00	Pass	14	14
HE160	MCS0	1	015	6025	Full	0.00	0.00	13.83	14.15	0.35	-0.85	14.18	13.30	24.00	Pass	14	14

U-NII-6 SISO															
Mod.	Data Rate	NTX	Freq. (MHz)	Duty Factor (dB)		Conducted Power with duty factor (dBm)		DG (dBi)		EIRP Power (dBm)		EIRP Power Limit (dBm)	Pass /Fail	Power Setting	
				Ant 8	Ant 10	Ant 8	Ant 10	Ant 8	Ant 10	Ant 8	Ant 10			Ant 8	Ant 10
11a	6Mbps	1	6475	0.03	0.04	5.45	4.09	0.75	-2.44	6.20	1.65	24.00	Pass	5	5

U-NII-6 SISO																
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	RU Config.	Duty Factor (dB)		Conducted Power with duty factor (dBm)		DG (dBi)		EIRP Power (dBm)		EIRP Power Limit (dBm)	Pass /Fail	Power Setting	
						Ant 8	Ant 10	Ant 8	Ant 10	Ant 8	Ant 10	Ant 8	Ant 10			Ant 8	Ant 10
HE20	MCS0	1	105	6475	Full	0.00	0.00	8.42	7.86	0.75	-2.44	9.17	5.42	24.00	Pass	8.5	8.5
HE40	MCS0	1	107	6485	Full	0.00	0.00	11.05	9.97	0.75	-2.44	11.80	7.53	24.00	Pass	11	11
HE80	MCS0	1	103	6465	Full	0.00	0.00	14.09	13.15	0.75	-2.44	14.84	10.71	24.00	Pass	14	14
HE160	MCS0	1	111	6505	Full	0.00	0.00	14.21	13.31	0.75	-2.44	14.96	10.87	24.00	Pass	14	14

U-NII-7 SISO																
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)		Conducted Power with duty factor (dBm)		DG (dBi)		EIRP Power (dBm)		EIRP Power Limit (dBm)	Pass /Fail	Power Setting	
					Ant 8	Ant 10	Ant 8	Ant 10	Ant 8	Ant 10	Ant 8	Ant 10			Ant 8	Ant 10
11a	6Mbps	1	117	6535	0.03	0.04	4.25	2.69	1.02	0.16	5.27	2.85	24.00	Pass	3.5	3.5

U-NII-7 SISO																
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	RU Config.	Duty Factor (dB)		Conducted Power with duty factor (dBm)		DG (dBi)		EIRP Power (dBm)		EIRP Power Limit (dBm)	Pass /Fail	Power Setting	
						Ant 8	Ant 10	Ant 8	Ant 10	Ant 8	Ant 10	Ant 8	Ant 10			Ant 8	Ant 10
HE20	MCS0	1	181	6855	Full	0.00	0.00	7.03	6.95	1.02	0.16	8.05	7.11	24.00	Pass	7.5	7.5
HE40	MCS0	1	147	6685	Full	0.00	0.00	10.01	9.45	1.02	0.16	11.03	9.61	24.00	Pass	10	10
HE80	MCS0	1	135	6625	Full	0.00	0.00	13.55	12.93	1.02	0.16	14.57	13.09	24.00	Pass	13.5	13.5
HE160	MCS0	1	143	6665	Full	0.00	0.00	14.25	13.54	1.02	0.16	15.27	13.70	24.00	Pass	14	14

U-NII-8 SISO															
Mod.	Data Rate	NTX	Freq. (MHz)	Duty Factor (dB)		Conducted Power with duty factor (dBm)		DG (dBi)		EIRP Power (dBm)		EIRP Power Limit (dBm)	Pass /Fail	Power Setting	
				Ant 8	Ant 10	Ant 8	Ant 10	Ant 8	Ant 10	Ant 8	Ant 10			Ant 8	Ant 10
11a	6Mbps	1	6895	0.03	0.04	3.27	2.12	0.70	1.66	3.97	3.78	24.00	Pass	3	3

U-NII-8 SISO																
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	RU Config.	Duty Factor (dB)		Conducted Power with duty factor (dBm)		DG (dBi)		EIRP Power (dBm)		EIRP Power Limit (dBm)	Pass /Fail	Power Setting	
						Ant 8	Ant 10	Ant 8	Ant 10	Ant 8	Ant 10	Ant 8	Ant 10			Ant 8	Ant 10
HE20	MCS0	2	185	6875	Full	0.00	0.00	6.68	6.29	0.70	1.66	7.38	7.95	24.00	Pass	7	7
HE40	MCS0	2	195	6925	Full	0.00	0.00	9.78	9.32	0.70	1.66	10.48	10.98	24.00	Pass	10	10
HE80	MCS0	2	199	6945	Full	0.00	0.00	12.75	12.58	0.70	1.66	13.45	14.24	24.00	Pass	13	13
HE160	MCS0	2	207	6985	Full	0.00	0.00	13.97	13.60	0.70	1.66	14.67	15.26	24.00	Pass	14	14

<CDD mode>

U-NII-5 MIMO																
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)		Conducted Power with duty factor (dBm)			DG (dBi)		EIRP Power (dBm)	EIRP Power Limit (dBm)	Pass /Fail	Power Setting	
					Ant 8	Ant 10	Ant 8	Ant 10	SUM	Ant 8	Ant 10	SUM			Ant 8	Ant 10
11a	6Mbps	2	093	6415	0.03	0.04	4.18	3.25	6.75	0.35		7.10	24.00	Pass	6	

U-NII-6 MIMO														
Mod.	Data Rate	NTX	Freq. (MHz)	Duty Factor (dB)		Conducted Power with duty factor (dBm)			DG (dBi)		EIRP Power (dBm)	EIRP Power Limit (dBm)	Pass /Fail	Power Setting	
				Ant 8	Ant 10	Ant 8	Ant 10	SUM	Ant 8	Ant 10	SUM			Ant 8	Ant 10
11a	6Mbps	2	6475	0.03	0.04	5.49	4.11	7.86	0.75		8.61	24.00	Pass	5	

U-NII-7 MIMO																
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)		Conducted Power with duty factor (dBm)			DG (dBi)		EIRP Power (dBm)	EIRP Power Limit (dBm)	Pass /Fail	Power Setting	
					Ant 8	Ant 10	Ant 8	Ant 10	SUM	Ant 8	Ant 10	SUM			Ant 8	Ant 10
11a	6Mbps	2	117	6535	0.03	0.04	4.29	2.71	6.58	1.02		7.60	24.00	Pass	3.5	

U-NII-8 MIMO														
Mod.	Data Rate	NTX	Freq. (MHz)	Duty Factor (dB)		Conducted Power with duty factor (dBm)			DG (dBi)		EIRP Power (dBm)	EIRP Power Limit (dBm)	Pass /Fail	Power Setting	
				Ant 8	Ant 10	Ant 8	Ant 10	SUM	Ant 8	Ant 10	SUM			Ant 8	Ant 10
11a	6Mbps	2	6895	0.03	0.04	3.30	2.17	5.78	1.66		7.44	24.00	Pass	3	

<SDM mode>

U-NII-5 MIMO																	
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	RU Config.	Duty Factor (dB)		Conducted Power with duty factor (dBm)			DG (dBi)		EIRP Power (dBm)	EIRP Power Limit (dBm)	Pass /Fail	Power Setting	
						Ant 8	Ant 10	Ant 8	Ant 10	SUM	Ant 8	Ant 10	SUM			Ant 8	Ant 10
HE20	MCS0	2	093	6415	Full	0.00	0.00	8.18	7.45	10.84	0.35		11.19	24.00	Pass	8	
HE40	MCS0	2	091	6405	Full	0.00	0.00	11.01	10.43	13.74	0.35		14.09	24.00	Pass	11	
HE80	MCS0	2	087	6385	Full	0.00	0.00	14.29	13.52	16.93	0.35		17.28	24.00	Pass	14	
HE160	MCS0	2	015	6025	Full	0.00	0.00	13.88	14.18	17.04	0.35		17.39	24.00	Pass	14	

U-NII-6 MIMO																	
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	RU Config.	Duty Factor (dB)		Conducted Power with duty factor (dBm)			DG (dBi)		EIRP Power (dBm)	EIRP Power Limit (dBm)	Pass /Fail	Power Setting	
						Ant 8	Ant 10	Ant 8	Ant 10	SUM	Ant 8	Ant 10	SUM			Ant 8	Ant 10
HE20	MCS0	2	105	6475	Full	0.00	0.00	8.47	7.91	11.21	0.75		11.96	24.00	Pass	8.5	
HE40	MCS0	2	107	6485	Full	0.00	0.00	11.09	10.01	13.59	0.75		14.34	24.00	Pass	11	
HE80	MCS0	2	103	6465	Full	0.00	0.00	14.24	13.22	16.77	0.75		17.52	24.00	Pass	14	
HE160	MCS0	2	111	6505	Full	0.00	0.00	14.42	13.39	16.95	0.75		17.70	24.00	Pass	14	

U-NII-7 MIMO																	
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	RU Config.	Duty Factor (dB)		Conducted Power with duty factor (dBm)			DG (dBi)		EIRP Power (dBm)	EIRP Power Limit (dBm)	Pass /Fail	Power Setting	
						Ant 8	Ant 10	Ant 8	Ant 10	SUM	Ant 8	Ant 10	SUM			Ant 8	Ant 10
HE20	MCS0	2	181	6855	Full	0.00	0.00	7.09	7.02	10.07	1.02		11.09	24.00	Pass	7.5	
HE40	MCS0	2	147	6685	Full	0.00	0.00	10.06	9.48	12.79	1.02		13.81	24.00	Pass	10	
HE80	MCS0	2	135	6625	Full	0.00	0.00	13.59	12.97	16.30	1.02		17.32	24.00	Pass	13.5	
HE160	MCS0	2	143	6665	Full	0.00	0.00	14.35	13.61	17.01	1.02		18.03	24.00	Pass	14	

U-NII-8 MIMO																	
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	RU Config.	Duty Factor (dB)		Conducted Power with duty factor (dBm)			DG (dBi)		EIRP Power (dBm)	EIRP Power Limit (dBm)	Pass /Fail	Power Setting	
						Ant 8	Ant 10	Ant 8	Ant 10	SUM	Ant 8	Ant 10	SUM			Ant 8	Ant 10
HE20	MCS0	2	185	6875	Full	0.00	0.00	6.77	6.34	9.57	1.66		11.23	24.00	Pass	7	
HE40	MCS0	2	195	6925	Full	0.00	0.00	9.81	9.35	12.60	1.66		14.26	24.00	Pass	10	
HE80	MCS0	2	199	6945	Full	0.00	0.00	12.78	12.62	15.71	1.66		17.37	24.00	Pass	13	
HE160	MCS0	2	207	6985	Full	0.00	0.00	14.01	13.63	16.83	1.66		18.49	24.00	Pass	14	

<standard client >

<SISO mode>

U-NII-5 SISO																
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)		Conducted Power with duty factor (dBm)		DG (dBi)		EIRP Power (dBm)		EIRP Power Limit (dBm)	Pass /Fail	Power Setting	
					Ant 8	Ant 10	Ant 8	Ant 10	Ant 8	Ant 10	Ant 8	Ant 10			Ant 8	Ant 10
11a	6Mbps	1	001	5955	0.03	0.04	14.19	14.13	0.35	-0.85	14.54	13.28	30.00	Pass	14	

U-NII-5 SISO																
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	RU Config.	Duty Factor (dB)		Conducted Power with duty factor (dBm)		DG (dBi)		EIRP Power (dBm)		EIRP Power Limit (dBm)	Pass /Fail	Power Setting	
						Ant 8	Ant 10	Ant 8	Ant 10	Ant 8	Ant 10	Ant 8	Ant 10			Ant 8	Ant 10
HE20	MCS0	1	001	5955	Full	0.00	0.00	14.21	14.22	0.35	-0.85	14.56	13.37	30.00	Pass	14	14
HE40	MCS0	1	003	5965	Full	0.00	0.00	14.17	14.05	0.35	-0.85	14.52	13.20	30.00	Pass	14	14
HE80	MCS0	1	007	5985	Full	0.00	0.00	14.16	14.06	0.35	-0.85	14.51	13.21	30.00	Pass	14	14
HE160	MCS0	1	015	6025	Full	0.00	0.00	13.83	14.15	0.35	-0.85	14.18	13.30	30.00	Pass	14	14

U-NII-7 SISO																
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)		Conducted Power with duty factor (dBm)		DG (dBi)		EIRP Power (dBm)		EIRP Power Limit (dBm)	Pass /Fail	Power Setting	
					Ant 8	Ant 10	Ant 8	Ant 10	Ant 8	Ant 10	Ant 8	Ant 10			Ant 8	Ant 10
11a	6Mbps	1	149	6695	0.03	0.04	14.27	13.78	1.02	0.16	15.29	13.94	30.00	Pass	14	14

U-NII-7 SISO																
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	RU Config.	Duty Factor (dB)		Conducted Power with duty factor (dBm)		DG (dBi)		EIRP Power (dBm)		EIRP Power Limit (dBm)	Pass /Fail	Power Setting	
						Ant 8	Ant 10	Ant 8	Ant 10	Ant 8	Ant 10	Ant 8	Ant 10			Ant 8	Ant 10
HE20	MCS0	1	149	6695	Full	0.00	0.00	14.22	13.78	1.02	0.16	15.24	13.94	30.00	Pass	14	14
HE40	MCS0	1	147	6685	Full	0.00	0.00	14.29	13.43	1.02	0.16	15.31	13.59	30.00	Pass	14	14
HE80	MCS0	1	135	6625	Full	0.00	0.00	14.27	13.47	1.02	0.16	15.29	13.63	30.00	Pass	14	14
HE160	MCS0	1	143	6665	Full	0.00	0.00	14.25	13.54	1.02	0.16	15.27	13.70	30.00	Pass	14	14

<CDD mode>

U-NII-5 MIMO																
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)		Conducted Power with duty factor (dBm)			DG (dBi)		EIRP Power (dBm)	EIRP Power Limit (dBm)	Pass /Fail	Power Setting	
					Ant 8	Ant 10	Ant 8	Ant 10	SUM	Ant 8	Ant 10	SUM			Ant 8	Ant 10
11a	6Mbps	2	001	5955	0.03	0.04	14.22	14.17	17.21	0.35		17.56	30.00	Pass	14	

U-NII-5 MIMO																
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	RU Config.	Duty Factor (dB)		Conducted Power with duty factor (dBm)			DG (dBi)		EIRP Power (dBm)	EIRP Power Limit (dBm)	Pass /Fail	Power Setting	
						Ant 8	Ant 10	Ant 8	Ant 10	SUM	Ant 8	Ant 10	SUM			Ant 8	Ant 10
HE20	MCS0	2	001	5955	Full	0.00	0.00	14.24	14.19	17.23	0.35		17.58	30.00	Pass	14	
HE40	MCS0	2	003	5965	Full	0.00	0.00	14.22	14.07	17.16	0.35		17.51	30.00	Pass	14	
HE80	MCS0	2	007	5985	Full	0.00	0.00	14.17	14.09	17.14	0.35		17.49	30.00	Pass	14	
HE160	MCS0	2	015	6025	Full	0.00	0.00	13.95	14.23	17.10	0.35		17.45	30.00	Pass	14	

U-NII-7 MIMO																
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)		Conducted Power with duty factor (dBm)			DG (dBi)		EIRP Power (dBm)	EIRP Power Limit (dBm)	Pass /Fail	Power Setting	
					Ant 8	Ant 10	Ant 8	Ant 10	SUM	Ant 8	Ant 10	SUM			Ant 8	Ant 10
11a	6Mbps	2	149	6695	0.03	0.04	14.31	13.80	17.07	1.02		18.09	30.00	Pass	14	

U-NII-7 MIMO																
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	RU Config.	Duty Factor (dB)		Conducted Power with duty factor (dBm)			DG (dBi)		EIRP Power (dBm)	EIRP Power Limit (dBm)	Pass /Fail	Power Setting	
						Ant 8	Ant 10	Ant 8	Ant 10	SUM	Ant 8	Ant 10	SUM			Ant 8	Ant 10
HE20	MCS0	2	149	6695	Full	0.00	0.00	14.24	13.81	17.04	1.02		18.06	30.00	Pass	14	
HE40	MCS0	2	147	6685	Full	0.00	0.00	14.32	13.48	16.93	1.02		17.95	30.00	Pass	14	
HE80	MCS0	2	135	6625	Full	0.00	0.00	14.29	13.49	16.92	1.02		17.94	30.00	Pass	14	
HE160	MCS0	2	143	6665	Full	0.00	0.00	14.39	13.71	17.07	1.02		18.09	30.00	Pass	14	

Conclusion:
All test items test against the variant model based on the worst-case condition from the original model was performed in this filing to demonstrate the test data from original model remains representative for the variant model.

Based on the spot check test result, the test data from the original model is representative for the variant model. All spot check test data are shown within expected level compliant to limit line.

We are using power and ERP/EIRP measurements from the original parent model reports to list on the grant.

The same detection mechanism/software/antenna gain is used in the variant of DFS. Hence, all test cases refer to parent report.

We confirm that the test data referencing policy of FCC KDB 484596 D01 Referencing Test Data v02r03 has been followed and the test data as referenced from the parent model report represents compliance with new FCC ID.

3 List of Measuring Equipment

For BT/WIFI:

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
EMI Test Receiver	Keysight	N9038A	MY56400023	3Hz~8.5GHz;Max 30dBm	Jan. 02, 2024	Nov. 06, 2024	Jan. 01, 2025	Radiation (03CH06-KS)
EXA Spectrum Analyzer	Keysight	N9010B	MY57471084	10Hz-44GHz	Jul. 04, 2024	Nov. 06, 2024	Jul. 03, 2025	Radiation (03CH06-KS)
Loop Antenna	R&S	HFH2-Z2E	101125	9kHz~30MHz	Sep. 08, 2024	Nov. 06, 2024	Sep. 07, 2025	Radiation (03CH06-KS)
Bilog Antenna	TeseQ	CBL6111D	59913	30MHz-1GHz	Sep. 03, 2024	Nov. 06, 2024	Sep. 02, 2025	Radiation (03CH06-KS)
Double Ridge Horn Antenna	ETS-Lindgren	3117	00218652	1GHz~18GHz	Apr. 11, 2024	Nov. 06, 2024	Apr. 10, 2025	Radiation (03CH06-KS)
SHF-EHF Horn	Com-power	AH-840	101093	18GHz~40GHz	Jan. 06, 2024	Nov. 06, 2024	Jan. 05, 2025	Radiation (03CH06-KS)
Amplifier	SONOMA	310N	372171	9KHz ~1GHZ	Jan. 02, 2024	Nov. 06, 2024	Jan. 01, 2025	Radiation (03CH06-KS)
Amplifier	EM	EM18G40GA	060728	18~40GHz	Jan. 02, 2024	Nov. 06, 2024	Jan. 01, 2025	Radiation (03CH06-KS)
high gain Amplifier	MITEQ	AMF-7D-00101800-30-10P	2082395	1Ghz-18Ghz	Jan. 02, 2024	Nov. 06, 2024	Jan. 01, 2025	Radiation (03CH06-KS)
Amplifier	Keysight	83017A	MY57280119	500MHz~26.5GHz	Oct. 09, 2024	Nov. 06, 2024	Oct. 08, 2025	Radiation (03CH06-KS)
AC Power Source	Chroma	61601	F104090004	N/A	NCR	Nov. 06, 2024	NCR	Radiation (03CH06-KS)
Turn Table	ChamPro	EM 1000-T	060762-T	0~360 degree	NCR	Nov. 06, 2024	NCR	Radiation (03CH06-KS)
Antenna Mast	ChamPro	EM 1000-A	060762-A	1 m~4 m	NCR	Nov. 06, 2024	NCR	Radiation (03CH06-KS)
EMI Receiver	R&S	ESCI7	100768	9kHz~7GHz;	Apr. 18, 2024	Oct. 27, 2024	Apr. 17, 2025	Conduction (CO01-KS)
AC LISN (for auxiliary equipment)	MessTec	AN3016	060103	9kHz~30MHz	Aug. 20, 2024	Oct. 27, 2024	Aug. 19, 2025	Conduction (CO01-KS)
AC LISN	MessTec	AN3016	060105	9kHz~30MHz	Apr. 18, 2024	Oct. 27, 2024	Apr. 17, 2025	Conduction (CO01-KS)
AC Power Source	Chroma	61602	ABP000000811	AC 0V~300V, 45Hz~1000Hz	Oct. 09, 2024	Oct. 27, 2024	Oct. 08, 2025	Conduction (CO01-KS)
Spectrum Analyzer	R&S	FSV40	101040	10Hz~40GHz	Oct. 10, 2024	Nov. 07, 2024~ Feb. 11, 2025	Oct. 09, 2025	Conducted (TH01-KS)
Pulse Power Senor	Anritsu	MA2411B	0917070	300MHz~40GHz	Jan. 02, 2024	Nov. 07, 2024~ Feb. 11, 2025	Jan. 01, 2025	Conducted (TH01-KS)
Pulse Power Senor	Anritsu	MA2411B	0917070	300MHz~40GHz	Jan. 02, 2025		Jan. 01, 2026	Conducted (TH01-KS)
Power Meter	Anritsu	ML2495A	1005002	50MHz Bandwidth	Jan. 02, 2024	Nov. 07, 2024~ Feb. 11, 2025	Jan. 01, 2025	Conducted (TH01-KS)
Power Meter	Anritsu	ML2495A	1005002	50MHz Bandwidth	Jan. 02, 2025		Jan. 01, 2026	Conducted (TH01-KS)
Spectrum Analyzer	R&S	FSV40	101040	10Hz~40GHz	Oct. 10, 2024	Nov. 05, 2024	Oct. 09, 2025	CBP (DFS01-KS)
MXG-B RF Vector Signal Genertor	Keysight	5182B /5182BX07	MY56200417/MY59360210	9kHz~7.2GHz	Apr. 17, 2024	Nov. 05, 2024	Apr. 16, 2025	CBP (DFS01-KS)
Vector Signal Generator	R&S	SMBV100A	258305	9kHz~6GHz	Jan. 02, 2024	Nov. 05, 2024	Jan. 01, 2025	CBP (DFS01-KS)
Combiner	MTJ Cooperation	MTJ7112	N/A	0.4-6GHz	NCR	Nov. 05, 2024	NCR	CBP (DFS01-KS)
Signal Analyzer	R&S	FSV7	101632	10Hz~7GHz	Jan. 02, 2024	Nov. 05, 2024	Jan. 01, 2025	DFS (DFS01-KS)
Vector Signal Generator	R&S	SMJ100A	101908	100kHz~6GHz	Jan. 02, 2024	Nov. 05, 2024	Jan. 01, 2025	DFS (DFS01-KS)
MXG-B RF Vector Signal Genertor	Keysight	5182B /5182BX07	MY56200417/MY59360210	9kHz~7.2GHz	Apr. 17, 2024	Nov. 05, 2024	Apr. 16, 2025	DFS (DFS01-KS)

Combiner	MTJ Cooperation	MTJ7114-M	N/A	0.5GHz~18GHz	NCR	Nov. 05, 2024	NCR	DFS (DFS01-KS)

NCR: No Calibration Required

For NFC:

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
EMI Test Receiver	R&S	ESR7	101403	9kHz~7GHz;Max 30dBm	Oct. 11, 2024	Oct. 24, 2024	Oct. 10, 2025	Radiation (03CH02-KS)
Loop Antenna	R&S	HFH2-Z2E	101125	9kHz~30MHz	Sep. 08, 2024	Oct. 24, 2024	Sep. 07, 2025	Radiation (03CH02-KS)
Bilog Antenna	TeseQ	CBL6111D	59915	30MHz-1GHz	Aug. 18, 2024	Oct. 24, 2024	Aug. 17, 2025	Radiation (03CH02-KS)
AC Power Source	Chroma	61601	616010002473	N/A	NCR	Oct. 24, 2024	NCR	Radiation (03CH02-KS)
Turn Table	MF	MF7802	N/A	0~360 degree	NCR	Oct. 24, 2024	NCR	Radiation (03CH02-KS)
Antenna Mast	MF	MF7802	N/A	1 m~4 m	NCR	Oct. 24, 2024	NCR	Radiation (03CH02-KS)
Amplifier	SONOMA	310N	413740	9KHz-1GHz	Jan. 03, 2024	Oct. 24, 2024	Jan. 02, 2025	Radiation (03CH02-KS)
EMI Receiver	R&S	ESCI7	100768	9kHz~7GHz;	Apr. 18, 2024	Oct. 26, 2024	Apr. 17, 2025	Conduction (CO01-KS)
AC LISN (for auxiliary equipment)	MessTec	AN3016	060103	9kHz~30MHz	Aug. 20, 2024	Oct. 26, 2024	Aug. 19, 2025	Conduction (CO01-KS)
AC LISN	MessTec	AN3016	060105	9kHz~30MHz	Apr. 18, 2024	Oct. 26, 2024	Apr. 17, 2025	Conduction (CO01-KS)
AC Power Source	Chroma	61602	ABP000000811	AC 0V~300V, 45Hz~1000Hz	Oct. 09, 2024	Oct. 26, 2024	Oct. 08, 2025	Conduction (CO01-KS)
Spectrum Analyzer	R&S	FSV40	101040	10Hz~40GHz	Oct. 10, 2024	Nov. 07, 2024	Oct. 09, 2025	Conducted (TH01-KS)
Pulse Power Senor	Anritsu	MA2411B	0917070	300MHz~40GHz	Jan. 02, 2024	Nov. 07, 2024	Jan. 01, 2025	Conducted (TH01-KS)
Power Meter	Anritsu	ML2495A	1005002	50MHz Bandwidth	Jan. 02, 2024	Nov. 07, 2024	Jan. 01, 2025	Conducted (TH01-KS)

NCR: No Calibration Required

For WWAN Bands:

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV40	101040	10Hz~40GHz	Oct. 10, 2024	Nov. 04, 2024	Oct. 09, 2025	Conducted (TH01-KS)
Power divider	STI	STI08-0055	-	0.5~40GHz	NCR	Nov. 04, 2024	NCR	Conducted (TH01-KS)
Temperature &humidity chamber	Hongzhan	LP-150U	H2014011440	-40~+150°C 20%~95%RH	Jul. 05, 2023	Nov. 04, 2024	Jul. 04, 2024	Conducted (TH01-KS)
EXA Spectrum Analyzer	Keysight	N9010A	MY553705 28	10Hz-44G,MAX 30dB	Oct. 11, 2024	Oct. 20, 2024	Oct. 10, 2025	Radiation (03CH04-KS)
Bilog Antenna	TeseQ	CBL6111D	44483	30MHz-1GHz	Dec. 06, 2023	Oct. 20, 2024	Dec. 05, 2024	Radiation (03CH04-KS)
Double Ridge Horn Antenna	ETS-Lindgren	3117	00227860	1GHz~18GHz	Aug. 16, 2024	Oct. 20, 2024	Aug. 15, 2025	Radiation (03CH04-KS)
SHF-EHF Horn	Com-power	AH-840	101070	18GHz~40GHz	Jan. 27, 2024	Oct. 20, 2024	Jan. 26, 2025	Radiation (03CH04-KS)
Amplifier	SONOMA	310N	413740	9KHz-1GHz	Jan. 03, 2024	Oct. 20, 2024	Jan. 02, 2025	Radiation (03CH04-KS)
Amplifier	EM	EM18G40GA	060728	18~40GHz	Jan. 02, 2024	Oct. 20, 2024	Jan. 01, 2025	Radiation (03CH04-KS)
high gain Amplifier	EM	EM01G18GA	060840	1Ghz-18Ghz	Oct. 09, 2024	Oct. 20, 2024	Oct. 08, 2025	Radiation (03CH04-KS)
Amplifier	EM	EM01G18GA	060892	1Ghz-18Ghz	Oct. 09, 2024	Oct. 20, 2024	Oct. 08, 2025	Radiation (03CH04-KS)
AC Power Source	Chroma	61601	F104090004	N/A	NCR	Oct. 20, 2024	NCR	Radiation (03CH04-KS)
Turn Table	ChamPro	EM 1000-T	060762-T	0~360 degree	NCR	Oct. 20, 2024	NCR	Radiation (03CH04-KS)
Antenna Mast	ChamPro	EM 1000-A	060762-A	1 m~4 m	NCR	Oct. 20, 2024	NCR	Radiation (03CH04-KS)
Signal Analyzer	R&S	FSV7	101472	10Hz~7GHz	Jan. 05, 2024	Nov. 12, 2024	Jan. 04, 2025	Conducted (DFS01-KS)
Combiner	MTJ Cooperation	MTJ7112	N/A	0.4-6GHz	NCR	Nov. 12, 2024	NCR	Conducted (DFS01-KS)

NCR: No Calibration Required

4 Measurement Uncertainty

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI 63.26-2015. All the measurement uncertainty value were shown with a coverage K=2 to indicate 95% level of confidence. The measurement data show herein meets or exceeds the CISPR measurement uncertainty values specified in CISPR 16-4-2 and can be compared directly to specified limit to determine compliance.

Uncertainty of Conducted Measurement (BT/WIFI2.4G/5G)

Test Item	Uncertainty
Conducted Spurious Emission & Bandedge	±2.22 dB
Occupied Channel Bandwidth	±0.1%
Conducted Power	±0.50 dB
Conducted Power Spectral Density	±0.90 dB
Frequency	±0.04 ppm

Uncertainty of Conducted Measurement(WIFI 6G)

Test Item	Uncertainty
Conducted Spurious Emission & Bandedge	±2.22 dB
Occupied Channel Bandwidth	±0.1%
Conducted Power	±0.50 dB
Conducted Power Spectral Density	±0.90 dB
Frequency	0.04ppm
Conducted Generated signal Levels	±0.56 dB
Conducted Time	0.54%

Uncertainty of Conducted Measurement(NFC)

Test Item	Uncertainty
Occupied Channel Bandwidth	±0.1%
Frequency	0.04ppm

Uncertainty of Conducted Measurement (DFS)

Test Item	Uncertainty
Conducted Generated signal Levels	±0.56 dB
Conducted Time	0.38%

Uncertainty of Conducted Measurement (WWAN)

Test Item	Uncertainty
Conducted Spurious Emission & Bandedge	±2.22 dB
Occupied Channel Bandwidth	±0.1%
Conducted Power	±0.50 dB
Peak to Average Ratio	±0.46 dB
Frequency Stability	±0.04 ppm

Uncertainty of AC Conducted Emission Measurement (0.15 MHz ~ 30 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	2.84 dB

03CH06-KS(BT/WIF):

Uncertainty of Radiated Emission Measurement (9 KHz ~ 30 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	3.30dB

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	6.08dB

Uncertainty of Radiated Emission Measurement (1 GHz ~ 18 GHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	5.18dB

Uncertainty of Radiated Emission Measurement (18 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	5.22dB

03CH02-KS(NFC):

Uncertainty of Radiated Emission Measurement (9 KHz ~ 30 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	3.30dB

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	6.04dB

03CH04-KS(WWAN):

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**2.83 dB**

Uncertainty of Radiated Emission Measurement (1 GHz ~ 18 GHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**2.83 dB**

Uncertainty of Radiated Emission Measurement (18 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**2.82 dB**

---------- THE END ----------

Appendix B. Reference Report

FCC RF Test Report

FCC ID	:	**UZ7EM45B2**
Equipment	:	**Enterprise Mobile**
Brand Name	:	**Zebra**
Model Name	:	**EM45B2**
Applicant	:	**Zebra Technologies Corporation** **3 Overlook Point, Lincolnshire, IL 60069 USA**
Manufacturer	:	**Zebra Technologies Corporation** **3 Overlook Point, Lincolnshire, IL 60069 USA**
Standard	:	**47 CFR Part 2, 22, 24, 27**
Classification	:	**PCS Licensed Transmitter Held to Ear (PCE)**
Test Date(s)	:	**Jul. 15, 2024 ~ Aug. 26, 2024**

We, Sporton International Inc. (Kunshan), would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.26-2015 and shown compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International Inc. (Kunshan), the test report shall not be reproduced except in full.

Jason Jia

Approved by: Jason Jia

ACCREDITED Cert #5145.02

Sporton International Inc. (Kunshan)
No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300
People's Republic of China

TABLE OF CONTENTS

REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG460508G	Rev. 01	Initial issue of report	Sep. 11, 2024

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.4	§2.1046	Conducted Output Power	Reporting Only	PASS	-
	§22.913(a)(5)	Effective Radiated Power (5G NR n5, n26)	ERP < 7 Watt		
	§24.232(c)	Equivalent Isotropic Radiated Power (5G NR n2)	EIRP < 2Watt		
	§27.50(d)(4)	Equivalent Isotropic Radiated Power (5G NR n66)	EIRP < 1Watt		
3.5	§24.232(d)	Peak-to-Average Ratio	<13 dB	PASS	-
3.6	§2.1049	Occupied Bandwidth	Reporting Only	PASS	-
3.7	§2.1051 §22.917(a) §24.238(a) §27.53(h)	Conducted Band Edge Measurement (5G NR n5, n26) (5G NR n2) (5G NR n66)	< 43+10log10(P[Watts])	PASS	-
3.8	§2.1051 §22.917(a) §24.238(a) §27.53(h)	Conducted Spurious Emission (5G NR n5, n26) (5G NR n2) (5G NR n66)	< 43+10log10(P[Watts])	PASS	-
3.9	§2.1055 §22.355	Frequency Stability Temperature & Voltage	< 2.5 ppm for Part 22	PASS	-
	§24.235 §27.54		Within Authorized Band		
4.4	§2.1053 §22.917(a) §24.238(a) §27.53(h)	Radiated Spurious Emission (5G NR n5, n26) (5G NR n2) (5G NR n66)	< 43+10log$_{10}$(P[Watts])	PASS	Under limit 35.23 dB at 3450.00 MHz

Conformity Assessment Condition:

1. The test results (PASS/FAIL) with all measurement uncertainty excluded are presented against the regulation limits or in accordance with the requirements stipulated by the applicant/manufacturer who shall bear all the risks of non-compliance that may potentially occur if measurement uncertainty is taken into account.
2. The measurement uncertainty please refer to each test result in the section “Measurement Uncertainty”

Disclaimer:

The product specifications of the EUT presented in the test report that may affect the test assessments are declared by the manufacturer who shall take full responsibility for the authenticity.

1 General Description

1.1 Product Feature of Equipment Under Test

Product Feature	
Equipment	Enterprise Mobile
Brand Name	Zebra
Model Name	EM45B2
FCC ID	UZ7EM45B2
IMEI Code	Conducted: 350854420036002/350854420037034 Radiation: 350854420030211/350854420030229 350854420038008/350854420038560
HW Version	EV2.5
SW Version	13-32-02.00-TG-U06-STD-ATH-04
MFD	02AUG24
EUT Stage	Identical Prototype

Remark: The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

Specification of Accessory				
Battery	**Brand Name**	Zebra	**Model**	BT-000501
			Part Number	BT-000501-2000

Supported Unit used in test configuration and system				
AC Adapter 1 (Type C Wall Charger 1)	**Brand Name**	Zebra	**Model**	SAWA-102-22520A
			Part Number	PWR-WUA5V45W1US
AC Adapter 2 (Type A Wall Charger 2)	**Brand Name**	Zebra	**Model**	SAWA-65-20005A
			Part Number	PWR-WUA5V12W0US
Earphone 1 (Wired headset USB-C)	**Brand Name**	Zebra	**Part Number**	HDST-USBC-PTT1-01
Earphone 2 (Rugged Bluetooth Headset)	**Brand Name**	Zebra	**Part Number**	HS3100-OTH
Earphone 3 (3.5mm PTT Headset)	**Brand Name**	Zebra	**Part Number**	HDST-35MM-PTT1-02
Earphone 4 (Rugged Headset)	**Brand Name**	Zebra	**Part Number**	HS2100-OTH
3.5mm to 3.5mm audio connector	**Brand Name**	Zebra	**Part Number**	CBL-HS2100-3MS1-01
Type C-Audio Cable (Type C to 3.5mm)	**Brand Name**	Zebra	**Part Number**	ADP-USBC-35MM1-01
USB Cable 1 (USB-C to C Cable)	**Brand Name**	Zebra	**Part Number**	CBL-EC5X-USBC3A-01
USB Cable 2 (USB-A to C Cable)	**Brand Name**	Zebra	**Part Number**	CBL-TC5X-USBC2A-01
EM45 Protective Case	**Brand Name**	Zebra	Part Number	SG-EM45EXO1-01

1.2 Product Specification of Equipment Under Test

Standards-related Product Specification	
Tx Frequency	5G NR n2 : 1850 MHz ~ 1910 MHz 5G NR n5 : 824 MHz ~ 849 MHz 5G NR n26 : 824 MHz ~ 849 MHz 5G NR n66 : 1710 MHz ~ 1780 MHz
Rx Frequency	5G NR n2 : 1930 MHz ~ 1990 MHz 5G NR n5 : 869 MHz ~ 894 MHz 5G NR n26 : 869 MHz ~ 894 MHz 5G NR n66 : 2110 MHz~ 2200 MHz
Bandwidth	n2, n5, n26 : 5MHz / 10MHz / 15MHz / 20MHz n66 : 5MHz / 10MHz / 15MHz / 20MHz / 30MHz / 40MHz
SCS	15kHz
Antenna Gain	**<Ant. 0>:** n5: -3 dBi n26: -3 dBi **<Ant. 1>:** n5: -2.11 dBi n26: -2.11 dBi **<Ant. 2>:** n2: -0.5 dBi n66: -0.5 dBi
Type of Modulation	CP-OFDM: QPSK / 16QAM / 64QAM / 256QAM DFT-s-OFDM: PI/2 BPSK / QPSK / 16QAM / 64QAM / 256QAM

Remark:

1. The maximum EIRP/ERP is calculated from max output power and max antenna gain, only the maximum ERP of Antenna 0 for n5/26, and EIRP of Antenna 2 for n2/n66 is shown in the report.
2. All the supported ENDC combinations are verified conducted power, only the ENDC combination with highest power are shown in the report.
3. 5G NR support SA (n2/n5/n26/n66) mode and NSA(n2/n5/n66) mode. According to the maximum power between SA and NSA mode, SA covers NSA mode.
4. The EN-DC mode combination could be referred to the product spec.

1.3 Modification of EUT

No modifications are made to the EUT during all test items.

1.4 Maximum ERP/EIRP and Emission Designator

5G NR n2		PI/2 BPSK / QPSK		16QAM / 64QAM / 256QAM	
BW (MHz)	Frequency Range (MHz)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)
5	1852.5 ~ 1907.5	0.2065	4M48G7D	0.1626	4M48W7D
10	1855.0 ~ 1905.0	0.2080	9M29G7D	0.1633	9M30W7D
15	1857.5 ~ 1902.5	0.2065	14M1G7D	0.1629	14M1W7D
20	1860.0 ~ 1900.0	0.2084	18M9G7D	0.1578	19M0W7D
5G NR n5		PI/2 BPSK / QPSK		16QAM / 64QAM / 256QAM	
BW (MHz)	Frequency Range (MHz)	Maximum ERP(W)	Emission Designator (99%OBW)	Maximum ERP(W)	Emission Designator (99%OBW)
5	826.5 ~ 846.5	0.0625	4M46G7D	0.0540	4M48W7D
10	829.0 ~ 844.0	0.0627	9M26G7D	0.0548	9M29W7D
15	831.5 ~ 841.5	0.0625	14M1G7D	0.0542	14M1W7D
20	834.0 ~ 839.0	0.0637	18M9G7D	0.0532	18M9W7D
5G NR n26		PI/2 BPSK / QPSK		16QAM / 64QAM / 256QAM	
BW (MHz)	Frequency Range (MHz)	Maximum ERP(W)	Emission Designator (99%OBW)	Maximum ERP(W)	Emission Designator (99%OBW)
5	826.5 ~ 846.5	0.0597	4M46G7D	0.0488	4M48W7D
10	829.0 ~ 844.0	0.0641	9M26G7D	0.0498	9M29W7D
15	831.5 ~ 841.5	0.0603	14M1G7D	0.0489	14M1W7D
20	834.0 ~ 839.0	0.0632	18M9G7D	0.0486	18M9W7D
5G NR n66		PI/2 BPSK / QPSK		16QAM / 64QAM / 256QAM	
BW (MHz)	Frequency Range (MHz)	Maximum EIRP(W)	Emission Designator (99%OBW)	Maximum EIRP(W)	Emission Designator (99%OBW)
5	1712.5 ~ 1777.5	0.1888	4M47G7D	0.1507	4M48W7D
10	1715.0 ~ 1775.0	0.1862	9M29G7D	0.1510	9M29W7D
15	1717.5 ~ 1772.5	0.1845	14M1G7D	0.1510	14M1W7D
20	1720.0 ~ 1770.0	0.1875	19M0G7D	0.1500	18M9W7D
30	1725.0 ~ 1765.0	0.1849	28M6G7D	0.1486	28M7W7D
40	1730.0 ~ 1760.0	0.1897	38M6G7D	0.1489	38M7W7D

Note:

1. 5G NR n26 overlaps the entire frequency range of 5G NR n5. Therefore, the test results provided in this report covers 5G NR n26 as well as 5G NR n5.
2. All modulations have been tested, only the worst test results of PSK & QAM are shown in the report.

1.5 Testing Location

Sporton International Inc. (Kunshan) is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.02.

Test Firm	Sporton International Inc. (Kunshan)		
Test Site Location	No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300 People's Republic of China TEL : +86-512-57900158		
Test Site No.	**Sporton Site No.**	**FCC Designation No.**	**FCC Test Firm Registration No.**
	03CH04-KS TH01-KS	CN1257	314309

1.6 Test Software

Item	Site	Manufacturer	Name	Version
1.	TH01-KS	Tonscend	JS1120-3 test system China_210602	3.3.10
2.	03CH04-KS	AUDIX	E3	6.2009-8-24al

1.7 Applicable Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- 47 CFR Part 22, 24, 27
- ANSI C63.26-2015
- FCC KDB 971168 D01 Power Meas License Digital Systems v03r01
- FCC KDB 412172 D01 Determining ERP and EIRP v01r01

Remark:

All test items were verified and recorded according to the standards and without any deviation during the test.

2 Test Configuration of Equipment Under Test

2.1 Test Mode

Antenna port conducted and radiated test items are performed according to KDB 971168 D01 Power Meas License Digital Systems v03r01 with maximum output power.

For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (X/Y/Z plane) were recorded in this report.

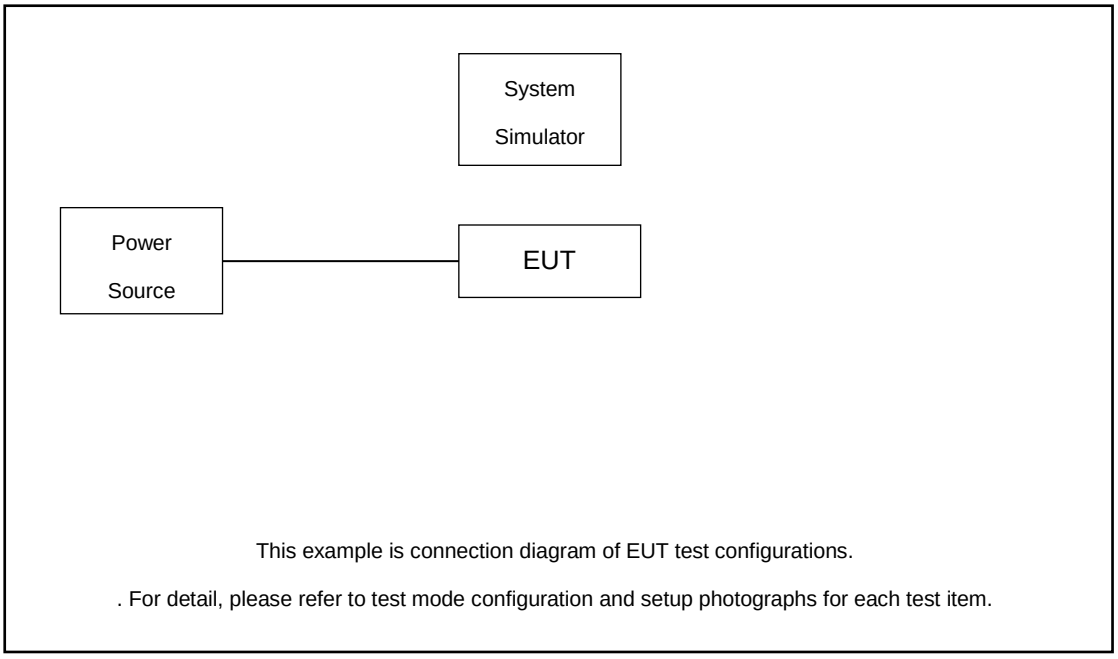
The device is investigated from 30MHz to 10 times of fundamental signal for radiated spurious emission test under different RB size/offset and modulations in exploratory test. Subsequently, only the worst case emissions are reported.

	X Plane	Y Plane	Z Plane
Orthogonal Planes of EUT			

Test Items	5G NR	Bandwidth (MHz)													Modulation					RB #		Test Channel		
		5	10	15	20	25	30	40	50	60	70	80	90	100	PI/2 BPSK	QPSK	16 QAM	64 QAM	256 QAM	1	Full	L	M	H
Max. Output Power	n2	v	v	v	v	-	-	-	-	-	-	-	-	-	v	v	v	v	v	v	v	v	v	v
	n5	v	v	v	v	-	-	-	-	-	-	-	-	-	v	v	v	v	v	v	v	v	v	v
	n26	v	v	v	v	-	-	-	-	-	-	-	-	-	v	v	v	v	v	v	v	v	v	v
	n66	v	v	v	v	-	v	v	-	-	-	-	-	-	v	v	v	v	v	v	v	v	v	v
Peak-to-Average Ratio	n2				v	-	-	-	-	-	-	-	-	-	v	v				v	v		v	
	n26				v	-	-	-	-	-	-	-	-	-	v	v				v	v		v	
	n66				v	-			-	-	-	-	-	-	v	v				v	v		v	
26dB and 99% Bandwidth	n2	v	v	v	v	-	-	-	-	-	-	-	-	-		v	v	v	v		v		v	
	n26	v	v	v	v	-	-	-	-	-	-	-	-	-		v	v	v	v		v		v	
	n66	v	v	v	v	-	v	v	-	-	-	-	-	-		v	v	v	v		v		v	
Conducted Band Edge	n2	v		v	v	-	-	-	-	-	-	-	-	-	v	v				v	v	v		v
	n26	v		v	v	-	-	-	-	-	-	-	-	-	v	v				v	v	v		v
	n66	v			v	-		v	-	-	-	-	-	-	v	v				v	v	v		v
Conducted Spurious Emission	n2	v		v	v	-	-	-	-	-	-	-	-	-	v	v				v		v	v	v
	n26	v		v	v	-	-	-	-	-	-	-	-	-	v	v				v		v	v	v
	n66	v			v	-		v	-	-	-	-	-	-	v	v				v		v	v	v
Frequency	n2				v	-	-	-	-	-	-	-	-	-		v					v		v	

Test Items	5G NR	Bandwidth (MHz)													Modulation					RB #		Test Channel		
		5	10	15	20	25	30	40	50	60	70	80	90	100	PI/2 BPSK	QPSK	16 QAM	64 QAM	256 QAM	1	Full	L	M	H
Stability	n26				v	-	-	-	-	-	-	-	-	-		v					v		v	
	n66				v	-			-	-	-	-	-	-		v					v		v	
E.R.P / E.I.R.P	n2	v	v	v	v	-	-	-	-	-	-	-	-	-	v	v	v	v	v	v	v	v	v	v
	n5	v	v	v	v	-	-	-	-	-	-	-	-	-	v	v	v	v	v	v	v	v	v	v
	n26	v	v	v	v	-	-	-	-	-	-	-	-	-	v	v	v	v	v	v	v	v	v	v
	n66	v	v	v	v	-	v	v	-	-	-	-	-	-	v	v	v	v	v	v	v	v	v	v
Radiated Spurious Emission	n2	Worst Case																				v	v	v
	n5	Worst Case																				v	v	v
	n26	Worst Case																				v	v	v
	n66	Worst Case																				v	v	v
Note	1. The mark "**v** " means that this configuration is chosen for testing 2. The mark "-" means that this bandwidth is not supported. 3. The device is investigated from 30MHz to 10 times of fundamental signal for radiated spurious emission test under different RB size/offset and modulations in exploratory test. Subsequently, only the worst case emissions are reported. 4. Frequency Stability：Normal Voltage = 3.85V ；Low Voltage =3.50V.；High Voltage =4.41V																							

2.2 Connection Diagram of Test System



This example is connection diagram of EUT test configurations.

. For detail, please refer to test mode configuration and setup photographs for each test item.

The EUT has been configuration operated in a manner tended to maximize its emission characteristics in a typical application.

2.3 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model No.	FCC ID	Data Cable	Power Cord
1.	DC Power Supply	GW	GPS-3030D	N/A	N/A	Unshielded, 1.8 m
2.	LTE Base Station	Anritsu	MT8821C	N/A	N/A	Unshielded, 1.8 m
3.	NR Base Station	Anritsu	MT8000A	N/A	N/A	Unshielded, 1.8 m

2.4 Measurement Results Explanation Example

For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss between EUT conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.

The spectrum analyzer offset is derived from RF cable loss.

Offset = RF cable loss.

Following shows an offset computation example with cable loss 5.8 dB.

Example :

Offset(dB) = RF cable loss(dB).

= 5.8 (dB)

2.5 Frequency List of Low/Middle/High Channels

5G NR n2 Channel and Frequency List				
BW [MHz]	**Channel/Frequency(MHz)**	**Lowest**	**Middle**	**Highest**
20	Channel	372000	376000	380000
	Frequency	1860	1880	1900
15	Channel	371500	376000	380500
	Frequency	1857.5	1880	1902.5
10	Channel	371000	376000	381000
	Frequency	1855	1880	1905
5	Channel	370500	376000	381500
	Frequency	1852.5	1880	1907.5

5G NR n5 Channel and Frequency List				
BW [MHz]	**Channel/Frequency(MHz)**	**Lowest**	**Middle**	**Highest**
20	Channel	166800	167300	167800
	Frequency	834	836.5	839
15	Channel	166300	167300	168300
	Frequency	831.5	836.5	841.5
10	Channel	165800	167300	168800
	Frequency	829	836.5	844
5	Channel	165300	167300	169300
	Frequency	826.5	836.5	846.5

5G NR n26 Channel and Frequency List				
BW [MHz]	**Channel/Frequency(MHz)**	**Lowest**	**Middle**	**Highest**
20	Channel	166800	167300	167800
	Frequency	834	836.5	839
15	Channel	166300	167300	168300
	Frequency	831.5	836.5	841.5
10	Channel	165800	167300	168800
	Frequency	829	836.5	844
5	Channel	165300	167300	169300
	Frequency	826.5	836.5	846.5

5G NR n66 Channel and Frequency List				
BW [MHz]	**Channel/Frequency(MHz)**	**Lowest**	**Middle**	**Highest**
40	Channel	346000	349000	352000
	Frequency	1730	1745	1760
30	Channel	345000	349000	353000
	Frequency	1725	1745	1765
20	Channel	344000	349000	354000
	Frequency	1720	1745	1770
15	Channel	343500	349000	354500
	Frequency	1717.5	1745	1772.5
10	Channel	343000	349000	355000
	Frequency	1715	1745	1775
5	Channel	342500	349000	355500
	Frequency	1712.5	1745	1777.5

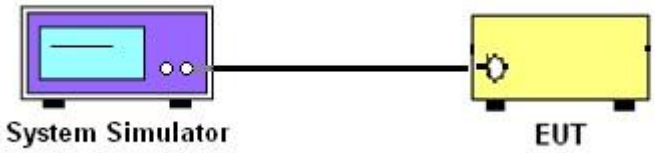
3 Conducted Test Items

3.1 Measuring Instruments

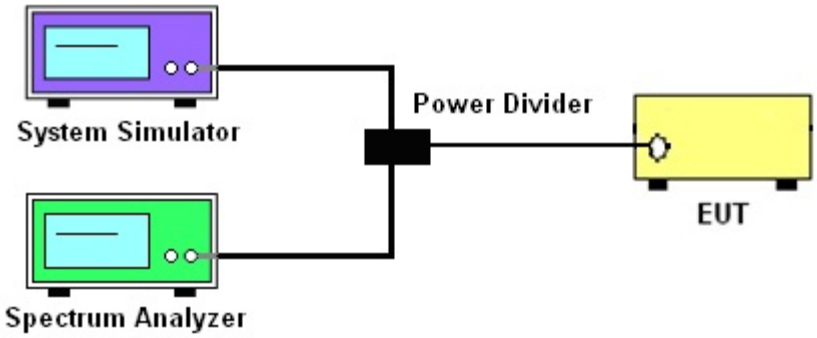
See list of measuring instruments of this test report.

3.2 Test Setup

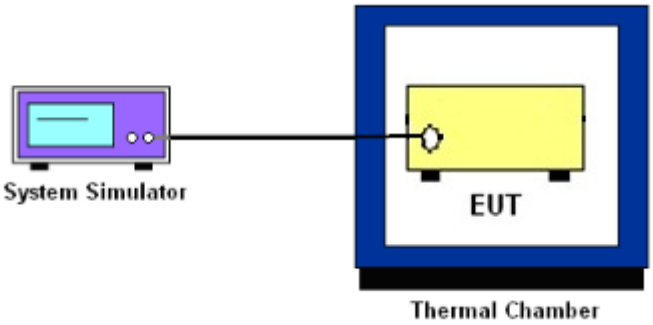
3.2.1 Conducted Output Power



3.2.2 Peak-to-Average Ratio, Occupied Bandwidth ,Conducted Band-Edge and Conducted Spurious Emission



3.2.3 Frequency Stability



3.3 Test Result of Conducted Test

Please refer to Appendix A.

3.4 Conducted Output Power and ERP/EIRP

3.4.1 Description of the Conducted Output Power Measurement and ERP/EIRP Measurement

A system simulator was used to establish communication with the EUT. Its parameters were set to force the EUT transmitting at maximum output power. The measured power in the radio frequency on the transmitter output terminals shall be reported.

The ERP of mobile transmitters must not exceed 7 Watts for 5G NR n5, n26.

The EIRP of mobile transmitters must not exceed 2 Watts for 5G NR n2.

The EIRP of mobile transmitters must not exceed 1 Watts for 5G NR n66.

According to KDB 412172 D01 Power Approach,

$EIRP = P_T + G_T – L_C$, $ERP = EIRP - 2.15$, where

P_T = transmitter output power in dBm

G_T = gain of the transmitting antenna in dBi

L_C = signal attenuation in the connecting cable between the transmitter and antenna in dB

3.4.2 Test Procedures

1. The testing follows ANSI C63.26 Section 5.2
2. The transmitter output port was connected to the system simulator.
3. Set EUT at maximum power through the system simulator.
4. Select lowest, middle, and highest channels for each band and different modulation.
5. Measure and record the power level from the system simulator.

3.5 Peak-to-Average Ratio

3.5.1 Description of the PAR Measurement

Power Complementary Cumulative Distribution Function (CCDF) curves provide a means for characterizing the power peaks of a digitally modulated signal on a statistical basis. A CCDF curve depicts the probability of the peak signal amplitude exceeding the average power level. Most contemporary measurement instrumentation include the capability to produce CCDF curves for an input signal provided that the instrument's resolution bandwidth can be set wide enough to accommodate the entire input signal bandwidth. 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.

3.5.2 Test Procedures

1. The testing follows ANSI C63.26 Section 5.2.3.4 (CCDF).
2. The EUT was connected to spectrum and system simulator via a power divider.
3. Set the CCDF (Complementary Cumulative Distribution Function) option in spectrum analyzer.
4. The highest RF powers were measured and recorded the maximum PAPR level associated with a probability of 0.1 %.
5. Record the deviation as Peak to Average Ratio.

3.6 Occupied Bandwidth

3.6.1 Description of Occupied Bandwidth Measurement

The occupied bandwidth is the width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5% of the total mean transmitted power.

The 26 dB emission bandwidth is defined as the frequency range between two points, one above and one below the carrier frequency, at which the spectral density of the emission is attenuated 26 dB below the maximum in-band spectral density of the modulated signal. Spectral density (power per unit bandwidth) is to be measured with a detector of resolution bandwidth equal to approximately 1.0% of the emission bandwidth.

3.6.2 Test Procedures

1. The testing follows ANSI C63.26 Section 5.4
2. The EUT was connected to spectrum analyzer and system simulator via a power divider.
3. The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The span range for the spectrum analyzer shall be between two and five times the anticipated OBW.
4. The nominal resolution bandwidth (RBW) shall be in the range of 1 to 5 % of the anticipated OBW, and the VBW shall be at least 3 times the RBW.
5. Set the detection mode to peak, and the trace mode to max hold.
6. Determine the reference value: Set the EUT to transmit a modulated signal. Allow the trace to stabilize. Set the spectrum analyzer marker to the highest level of the displayed trace. (this is the reference value)
7. Determine the “-26 dB down amplitude” as equal to (Reference Value – X).
8. Place two markers, one at the lowest and the other at the highest frequency of the envelope of the spectral display such that each marker is at or slightly below the “–X dB down amplitude” determined in step 6. If a marker is below this “-X dB down amplitude” value it shall be placed as close as possible to this value. The OBW is the positive frequency difference between the two markers.
9. Use the 99 % power bandwidth function of the spectrum analyzer and report the measured bandwidth.

3.7 Conducted Band Edge

3.7.1 Description of Conducted Band Edge Measurement

22.917(a)

For operations in the 824 – 849 MHz band, the FCC limit is 43 + $10\log_{10}$(P[Watts]) dB below the transmitter power P(Watts) in a 100kHz bandwidth. However, in the 1MHz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

24.238 (a)

For operations in the 1850-1910 and 1930-1990 MHz band, the FCC limit is 43 + $10\log_{10}$(P[Watts]) dB below the transmitter power P(Watts) in a 1MHz bandwidth. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

27.53 (h)

For operations in the 1710 – 1780 MHz band, the FCC limit is 43 + $10\log_{10}$(P[Watts]) dB below the transmitter power P(Watts) in a 1 MHz bandwidth. However, in the 1MHz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

3.7.2 Test Procedures

1. The testing follows ANSI C63.26 section 5.7
2. The EUT was connected to spectrum analyzer and system simulator via a power divider.
3. The band edges of low and high channels for the highest RF powers were measured.
4. Set RBW >= 1% EBW in the 1MHz band immediately outside and adjacent to the band edge.
5. Beyond the 1 MHz band from the band edge, RBW=1MHz was used or a narrower RBW was used (generally limited to no less than 1% of the OBW) and the measured power was integrated over the full required measurement bandwidth.
6. Set spectrum analyzer with RMS detector.
7. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
8. Checked that all the results comply with the emission limit line.
   Example:
   The limit line is derived from 43 + 10log(P)dB below the transmitter power P(Watts)
   = P(W)- [43 + 10log(P)] (dB)
   = [30 + 10log(P)] (dBm) - [43 + 10log(P)] (dB) = -13dBm.
9. When using the integration method, the starting frequency of the integration shall be centered at one-half of the RBW away from the band edge.

3.8 Conducted Spurious Emission

3.8.1 Description of Conducted Spurious Emission Measurement

The power of any emission outside of the authorized operating frequency ranges must be lower than the transmitter power (P) by a factor of at least 43 + 10 log (P) dB.

It is measured by means of a calibrated spectrum analyzer and scanned from 30 MHz up to a frequency including its 10^{th} harmonic.

3.8.2 Test Procedures

1. The testing follows ANSI C63.26 section 5.7
2. The EUT was connected to spectrum analyzer and system simulator via a power divider.
3. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
4. The middle channel for the highest RF power within the transmitting frequency was measured.
5. The conducted spurious emission for the whole frequency range was taken.
6. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz.
7. Set spectrum analyzer with RMS detector.
8. Taking the record of maximum spurious emission.
9. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
10. The limit line is derived from 43 + 10log(P)dB below the transmitter power P(Watts)
    = P(W)- [43 + 10log(P)] (dB)
    = [30 + 10log(P)] (dBm) - [43 + 10log(P)] (dB)
    = -13dBm.

3.9 Frequency Stability

3.9.1 Description of Frequency Stability Measurement

The frequency stability shall be measured by variation of ambient temperature and variation of primary supply voltage to ensure that the fundamental emission stays within the authorized frequency block. The frequency stability of the transmitter shall be maintained within ±0.00025% (±2.5ppm) of the center frequency.

3.9.2 Test Procedures for Temperature Variation

1. The testing follows ANSI C63.26 section 5.6.4
2. The EUT was set up in the thermal chamber and connected with the system simulator.
3. With power OFF, the temperature was decreased to -30°C and the EUT was stabilized before testing. Power was applied and the maximum change in frequency was recorded within one minute.
4. With power OFF, the temperature was raised in 10°C step up to 50°C. The EUT was stabilized at each step for at least half an hour. Power was applied and the maximum frequency change was recorded within one minute.

3.9.3 Test Procedures for Voltage Variation

1. The testing follows ANSI C63.26 section 5.6.5
2. The EUT was placed in a temperature chamber at 20±5°C and connected with the system simulator.
3. The power supply voltage to the EUT was varied from 85% to 115% of the nominal value for other than hand carried battery equipment.
4. For hand carried, battery powered equipment, reduce the primary ac or dc supply voltage to the battery operating end point, which shall be specified by the manufacturer.
5. The variation in frequency was measured for the worst case.

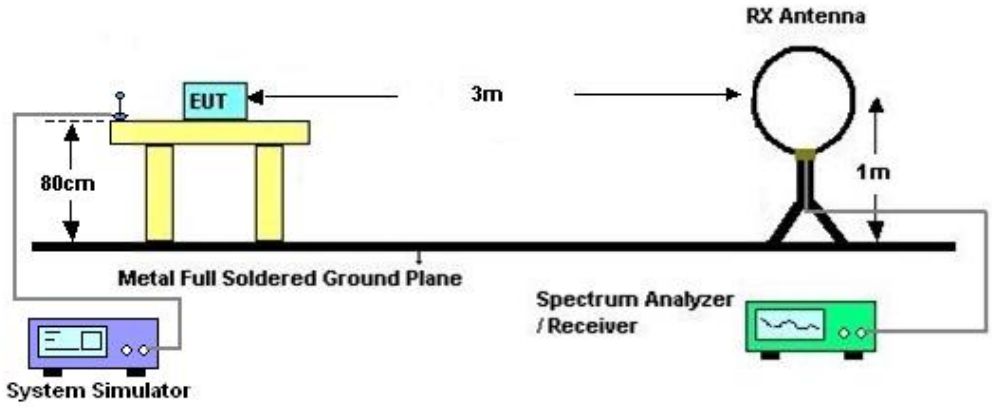
4 Radiated Test Items

4.1 Measuring Instruments

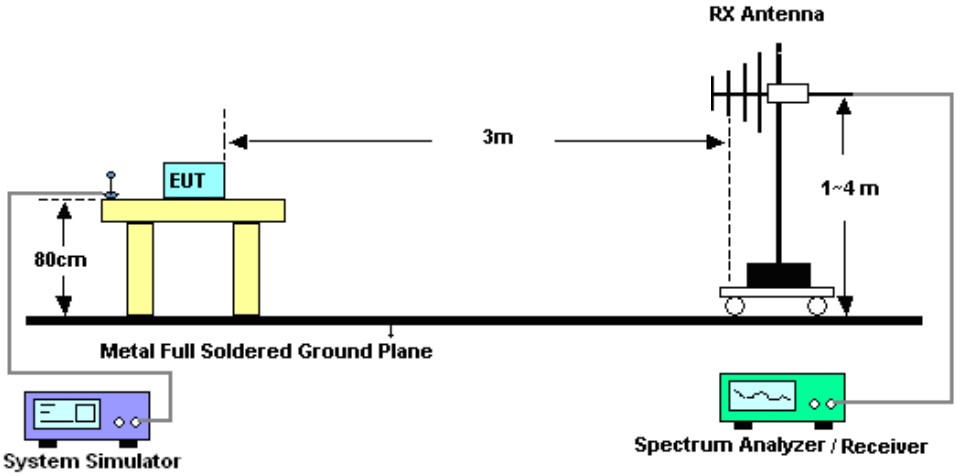
See list of measuring instruments of this test report.

4.2 Test Setup

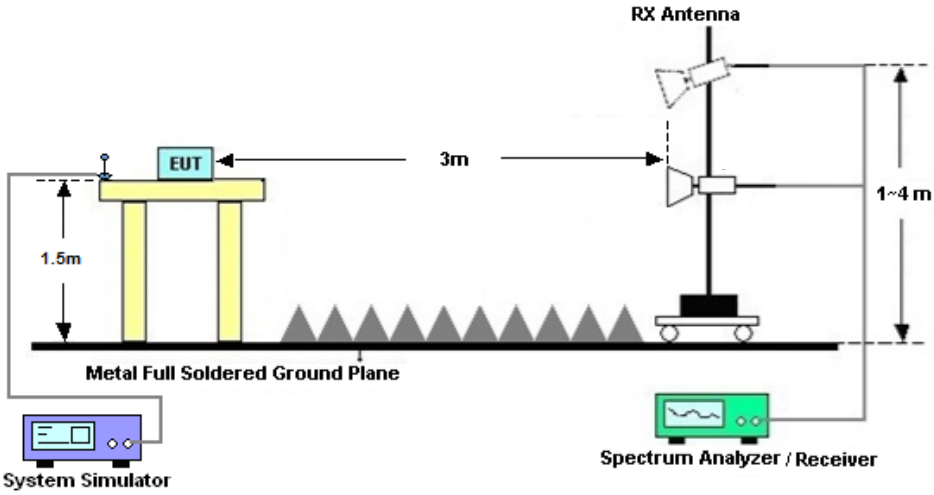
4.2.1 For radiated test below 30MHz



4.2.2 For radiated test from 30MHz to 1GHz



4.2.3 For radiated test above 1GHz



4.3 Test Result of Radiated Test

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line was not reported.

Please refer to Appendix B.

4.4 Radiated Spurious Emission

4.4.1 Description of Radiated Spurious Emission

The radiated spurious emission was measured by substitution method according to ANSI C63.26. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least 43 + 10 log (P) dB.

The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic.

4.4.2 Test Procedures

1. The testing follows ANSI C63.26 Section 5.5
2. The EUT was placed on a turntable with 0.8 meter height for frequency below 1GHz and 1.5 meter height for frequency above 1GHz respectively above ground.
3. The EUT was set 3 meters from the receiving antenna mounted on the antenna tower.
4. The table was rotated 360 degrees to determine the position of the highest spurious emission.
5. The height of the receiving antenna is varied between 1m to 4m to search the maximum spurious emission for both horizontal and vertical polarizations.
6. During the measurement, the system simulator parameters were set to force the EUT transmitting at maximum output power.
7. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking the record of maximum spurious emission.
8. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
9. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
10. EIRP (dBm) = S.G. Power – Tx Cable Loss + Tx Antenna Gain
11. ERP (dBm) = EIRP - 2.15
12. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
    The limit line is derived from 43 + 10log(P)dB below the transmitter power P(Watts)
    = P(W)- [43 + 10log(P)] (dB)
    = [30 + 10log(P)] (dBm) - [43 + 10log(P)] (dB)
    = -13dBm.

5 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV40	101040	10Hz~40GHz	Oct. 11, 2023	Jul. 15, 2024~ Jul. 18, 2024	Oct. 10, 2024	Conducted (TH01-KS)
Power divider	STI	STI08-0055	-	0.5~40GHz	NCR	Jul. 15, 2024~ Jul. 18, 2024	NCR	Conducted (TH01-KS)
Temperature & humidity chamber	Hongzhan	LP-150U	H2014011440	-40~+150°C 20%~95%RH	Jul. 04, 2024	Jul. 15, 2024~ Jul. 18, 2024	Jul. 03, 2025	Conducted (TH01-KS)
EXA Spectrum Analyzer	Keysight	N9010B	MY57471079	10Hz-44G,MAX 30dB	Oct. 11, 2023	Aug. 12, 2024~ Aug. 26, 2024	Oct. 10, 2024	Radiation (03CH04-KS)
Loop Antenna	R&S	HFH2-Z2E	101125	9kHz~30MHz	Sep. 11 2023	Aug. 12, 2024~ Aug. 26, 2024	Sep. 10, 2024	Radiation (03CH04-KS)
Bilog Antenna	TeseQ	CBL6111D	59913	30MHz-1GHz	Aug. 18, 2023	Aug. 12, 2024~ Aug. 26, 2024	Aug. 17, 2025	Radiation (03CH04-KS)
Double Ridge Horn Antenna	ETS-Lindgren	3117	75957	1GHz~18GHz	Oct. 23, 2023	Aug. 12, 2024~ Aug. 26, 2024	Oct. 22, 2024	Radiation (03CH04-KS)
SHF-EHF Horn	Com-power	AH-840	101070	18GHz~40GHz	Jan. 27, 2024	Aug. 12, 2024~ Aug. 26, 2024	Jan. 26, 2025	Radiation (03CH04-KS)
Amplifier	SONOMA	310N	413740	9KHz-1GHz	Jan. 03, 2024	Aug. 12, 2024~ Aug. 26, 2024	Jan. 02, 2025	Radiation (03CH04-KS)
Amplifier	EM	EM18G40GA	060728	18~40GHz	Jan. 02, 2024	Aug. 12, 2024~ Aug. 26, 2024	Jan. 01, 2025	Radiation (03CH04-KS)
high gain Amplifier	EM	EM01G18GA	060840	1Ghz-18Ghz	Oct. 11, 2023	Aug. 12, 2024~ Aug. 26, 2024	Oct. 10, 2024	Radiation (03CH04-KS)
Amplifier	EM	EM01G18GA	060892	1Ghz-18Ghz	Oct. 11, 2023	Aug. 12, 2024~ Aug. 26, 2024	Oct. 10, 2024	Radiation (03CH04-KS)
AC Power Source	Chroma	61601	F104090004	N/A	NCR	Aug. 12, 2024~ Aug. 26, 2024	NCR	Radiation (03CH04-KS)
Turn Table	ChamPro	EM 1000-T	060762-T	0~360 degree	NCR	Aug. 12, 2024~ Aug. 26, 2024	NCR	Radiation (03CH04-KS)
Antenna Mast	ChamPro	EM 1000-A	060762-A	1 m~4 m	NCR	Aug. 12, 2024~ Aug. 26, 2024	NCR	Radiation (03CH04-KS)

NCR: No Calibration Required

6 Measurement Uncertainty

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI 63.26-2015. All the measurement uncertainty value were shown with a coverage K=2 to indicate 95% level of confidence. The measurement data show herein meets or exceeds the CISPR measurement uncertainty values specified in CISPR 16-4-2 and can be compared directly to specified limit to determine compliance.

Uncertainty of Conducted Measurement

Test Item	Uncertainty
Conducted Spurious Emission & Bandedge	±2.22 dB
Occupied Channel Bandwidth	±0.1%
Conducted Power	±0.50 dB
Peak to Average Ratio	±0.50 dB
Frequency Stability	±0.04 ppm

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	2.83dB

Uncertainty of Radiated Emission Measurement (1 GHz ~ 18 GHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	2.83dB

Uncertainty of Radiated Emission Measurement (18 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	2.82dB

---------- THE END ----------

Appendix A. Test Results of Conducted Test

Test Engineer :	Smile Wang	**Temperature :**	22~23℃
		Relative Humidity :	40~42%

Software Version: 23.06.1602

FR1 N2_ANT2

Transmitter Conducted Output Power And EIRP, (G_T - L_C)=-0.5dB

NR Band	SCS	Band Width	Arfcn	Freq(MHz)	Modulation	RB	Conducted Power(dBm)	EIRP(dBm)	EIRP(W)
2	15	20	372000	1860	DFT-s-OFDM PI/2 BPSK	50@25	23.41	22.91	0.1954
2	15	20	372000	1860	DFT-s-OFDM PI/2 BPSK	1@1	23.49	22.99	0.1991
2	15	20	372000	1860	DFT-s-OFDM PI/2 BPSK	1@104	23.47	22.97	0.1982
2	15	20	372000	1860	DFT-s-OFDM QPSK	50@25	23.47	22.97	0.1982
2	15	20	372000	1860	DFT-s-OFDM QPSK	1@1	23.46	22.96	0.1977
2	15	20	372000	1860	DFT-s-OFDM QPSK	1@104	23.44	22.94	0.1968
2	15	20	372000	1860	DFT-s-OFDM 16 QAM	50@25	22.48	21.98	0.1578
2	15	20	372000	1860	DFT-s-OFDM 16 QAM	1@1	22.45	21.95	0.1567
2	15	20	372000	1860	DFT-s-OFDM 16 QAM	1@104	22.44	21.94	0.1563
2	15	20	372000	1860	DFT-s-OFDM 64 QAM	50@25	21.04	20.54	0.1132
2	15	20	372000	1860	DFT-s-OFDM 64 QAM	1@1	21.16	20.66	0.1164
2	15	20	372000	1860	DFT-s-OFDM 64 QAM	1@104	21.18	20.68	0.1169
2	15	20	372000	1860	DFT-s-OFDM 256 QAM	50@25	18.95	18.45	0.0700
2	15	20	372000	1860	DFT-s-OFDM 256 QAM	1@1	18.48	17.98	0.0628
2	15	20	372000	1860	DFT-s-OFDM 256 QAM	1@104	18.41	17.91	0.0618
2	15	20	372000	1860	CP-OFDM QPSK	53@26	22.01	21.51	0.1416
2	15	20	372000	1860	CP-OFDM QPSK	1@1	22	21.5	0.1413
2	15	20	372000	1860	CP-OFDM QPSK	1@104	21.97	21.47	0.1403
2	15	20	376000	1880	DFT-s-OFDM PI/2 BPSK	50@25	23.45	22.95	0.1972
2	15	20	376000	1880	DFT-s-OFDM PI/2 BPSK	1@1	23.53	23.03	0.2009
2	15	20	376000	1880	DFT-s-OFDM PI/2 BPSK	1@104	23.41	22.91	0.1954
2	15	20	376000	1880	DFT-s-OFDM QPSK	50@25	23.46	22.96	0.1977
2	15	20	376000	1880	DFT-s-OFDM QPSK	1@1	23.69	23.19	0.2084
2	15	20	376000	1880	DFT-s-OFDM QPSK	1@104	23.46	22.96	0.1977
2	15	20	376000	1880	DFT-s-OFDM 16 QAM	50@25	22.47	21.97	0.1574
2	15	20	376000	1880	DFT-s-OFDM 16 QAM	1@1	22.46	21.96	0.1570
2	15	20	376000	1880	DFT-s-OFDM 16 QAM	1@104	22.43	21.93	0.1560
2	15	20	376000	1880	DFT-s-OFDM 64 QAM	50@25	21.05	20.55	0.1135
2	15	20	376000	1880	DFT-s-OFDM 64 QAM	1@1	21.23	20.73	0.1183
2	15	20	376000	1880	DFT-s-OFDM 64 QAM	1@104	21.04	20.54	0.1132
2	15	20	376000	1880	DFT-s-OFDM 256 QAM	50@25	18.89	18.39	0.0690
2	15	20	376000	1880	DFT-s-OFDM 256 QAM	1@1	18.47	17.97	0.0627
2	15	20	376000	1880	DFT-s-OFDM 256 QAM	1@104	18.78	18.28	0.0673
2	15	20	376000	1880	CP-OFDM QPSK	53@26	22	21.5	0.1413
2	15	20	376000	1880	CP-OFDM QPSK	1@1	22.03	21.53	0.1422
2	15	20	376000	1880	CP-OFDM QPSK	1@104	21.77	21.27	0.1340
2	15	20	380000	1900	DFT-s-OFDM PI/2 BPSK	50@25	23.5	23	0.1995

2	15	20	380000	1900	DFT-s-OFDM PI/2 BPSK	1@1	23.41	22.91	0.1954
2	15	20	380000	1900	DFT-s-OFDM PI/2 BPSK	1@104	23.44	22.94	0.1968
2	15	20	380000	1900	DFT-s-OFDM QPSK	50@25	23.43	22.93	0.1963
2	15	20	380000	1900	DFT-s-OFDM QPSK	1@1	23.42	22.92	0.1959
2	15	20	380000	1900	DFT-s-OFDM QPSK	1@104	23.4	22.9	0.1950
2	15	20	380000	1900	DFT-s-OFDM 16 QAM	50@25	22.36	21.86	0.1535
2	15	20	380000	1900	DFT-s-OFDM 16 QAM	1@1	22.38	21.88	0.1542
2	15	20	380000	1900	DFT-s-OFDM 16 QAM	1@104	22.37	21.87	0.1538
2	15	20	380000	1900	DFT-s-OFDM 64 QAM	50@25	20.96	20.46	0.1112
2	15	20	380000	1900	DFT-s-OFDM 64 QAM	1@1	21.06	20.56	0.1138
2	15	20	380000	1900	DFT-s-OFDM 64 QAM	1@104	20.99	20.49	0.1119
2	15	20	380000	1900	DFT-s-OFDM 256 QAM	50@25	18.93	18.43	0.0697
2	15	20	380000	1900	DFT-s-OFDM 256 QAM	1@1	18.38	17.88	0.0614
2	15	20	380000	1900	DFT-s-OFDM 256 QAM	1@104	18.41	17.91	0.0618
2	15	20	380000	1900	CP-OFDM QPSK	53@26	21.81	21.31	0.1352
2	15	20	380000	1900	CP-OFDM QPSK	1@1	21.89	21.39	0.1377
2	15	20	380000	1900	CP-OFDM QPSK	1@104	21.96	21.46	0.1400
2	15	5	370500	1852.5	DFT-s-OFDM PI/2 BPSK	1@1	23.6	23.1	0.2042
2	15	5	370500	1852.5	DFT-s-OFDM QPSK	1@1	23.65	23.15	0.2065
2	15	5	370500	1852.5	DFT-s-OFDM 16 QAM	1@1	22.61	22.11	0.1626
2	15	5	376000	1880	DFT-s-OFDM PI/2 BPSK	1@1	23.49	22.99	0.1991
2	15	5	376000	1880	DFT-s-OFDM QPSK	1@1	23.55	23.05	0.2018
2	15	5	376000	1880	DFT-s-OFDM 16 QAM	1@1	22.51	22.01	0.1589
2	15	5	381500	1907.5	DFT-s-OFDM PI/2 BPSK	1@1	23.58	23.08	0.2032
2	15	5	381500	1907.5	DFT-s-OFDM QPSK	1@1	23.64	23.14	0.2061
2	15	5	381500	1907.5	DFT-s-OFDM 16 QAM	1@1	22.6	22.1	0.1622
2	15	10	371000	1855	DFT-s-OFDM PI/2 BPSK	1@1	23.64	23.14	0.2061
2	15	10	371000	1855	DFT-s-OFDM QPSK	1@1	23.61	23.11	0.2046
2	15	10	371000	1855	DFT-s-OFDM 16 QAM	1@1	22.59	22.09	0.1618
2	15	10	376000	1880	DFT-s-OFDM PI/2 BPSK	1@1	23.5	23	0.1995
2	15	10	376000	1880	DFT-s-OFDM QPSK	1@1	23.57	23.07	0.2028
2	15	10	376000	1880	DFT-s-OFDM 16 QAM	1@1	22.54	22.04	0.1600
2	15	10	381000	1905	DFT-s-OFDM PI/2 BPSK	1@1	23.61	23.11	0.2046
2	15	10	381000	1905	DFT-s-OFDM QPSK	1@1	23.68	23.18	0.2080
2	15	10	381000	1905	DFT-s-OFDM 16 QAM	1@1	22.63	22.13	0.1633
2	15	15	371500	1857.5	DFT-s-OFDM PI/2 BPSK	1@1	23.6	23.1	0.2042
2	15	15	371500	1857.5	DFT-s-OFDM QPSK	1@1	23.65	23.15	0.2065
2	15	15	371500	1857.5	DFT-s-OFDM 16 QAM	1@1	22.62	22.12	0.1629
2	15	15	376000	1880	DFT-s-OFDM PI/2 BPSK	1@1	23.48	22.98	0.1986
2	15	15	376000	1880	DFT-s-OFDM QPSK	1@1	23.53	23.03	0.2009
2	15	15	376000	1880	DFT-s-OFDM 16 QAM	1@1	22.48	21.98	0.1578
2	15	15	380500	1902.5	DFT-s-OFDM PI/2 BPSK	1@1	23.42	22.92	0.1959
2	15	15	380500	1902.5	DFT-s-OFDM QPSK	1@1	23.48	22.98	0.1986
2	15	15	380500	1902.5	DFT-s-OFDM 16 QAM	1@1	22.42	21.92	0.1556

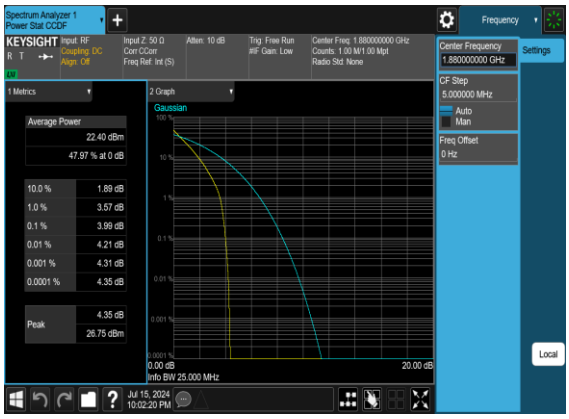
Frequency Stability

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Deviation (ppm)	Verdict	Environment
2	15	20	376000	1880.0	DFT-s-OFDM QPSK	100@0	-0.0035	**PASS**	NV
2	15	20	376000	1880.0	DFT-s-OFDM QPSK	100@0	-0.0012	**PASS**	LV
2	15	20	376000	1880.0	DFT-s-OFDM QPSK	100@0	0.0017	**PASS**	HV
2	15	20	376000	1880.0	DFT-s-OFDM QPSK	100@0	0.0033	**PASS**	-30℃
2	15	20	376000	1880.0	DFT-s-OFDM QPSK	100@0	-0.0041	**PASS**	-20℃
2	15	20	376000	1880.0	DFT-s-OFDM QPSK	100@0	0.0022	**PASS**	-10℃
2	15	20	376000	1880.0	DFT-s-OFDM QPSK	100@0	0.0019	**PASS**	0℃
2	15	20	376000	1880.0	DFT-s-OFDM QPSK	100@0	-0.0034	**PASS**	10℃
2	15	20	376000	1880.0	DFT-s-OFDM QPSK	100@0	-0.0032	**PASS**	20℃
2	15	20	376000	1880.0	DFT-s-OFDM QPSK	100@0	-0.0014	**PASS**	30℃
2	15	20	376000	1880.0	DFT-s-OFDM QPSK	100@0	-0.0026	**PASS**	40℃
2	15	20	376000	1880.0	DFT-s-OFDM QPSK	100@0	0.0019	**PASS**	50℃

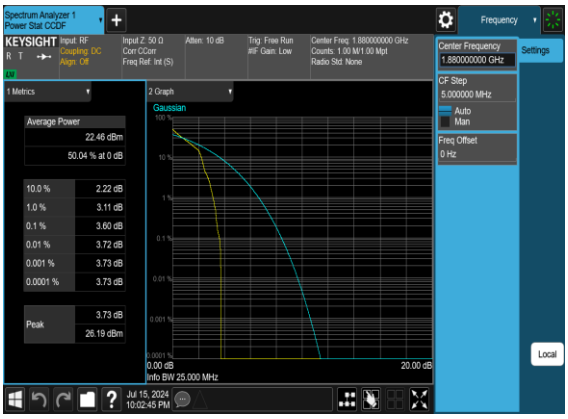
Peak to Average Ratio

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Result (dB)	Limit (dB)	Verdict
2	15	20	376000	1880.0	DFT-s-OFDM PI/2 BPSK	100@0	3.99	13	**PASS**
2	15	20	376000	1880.0	DFT-s-OFDM PI/2 BPSK	1@0	3.6	13	**PASS**
2	15	20	376000	1880.0	DFT-s-OFDM QPSK	100@0	5.32	13	**PASS**
2	15	20	376000	1880.0	DFT-s-OFDM QPSK	1@0	5.44	13	**PASS**

N2(20M)_DFT-s-OFDM_PI_2-BPSK_Outer_Full_Mid_CH



N2(20M)_DFT-s-OFDM_PI_2-BPSK_Edge_1RB_Left_Mid_CH



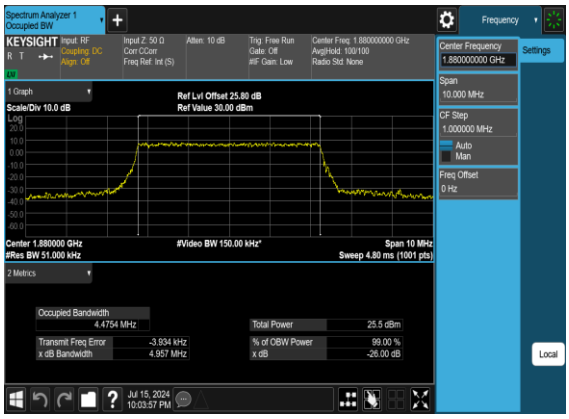
N2(20M)_DFT-s-OFDM_QPSK_Outer_Full_Mid_CH

N2(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH

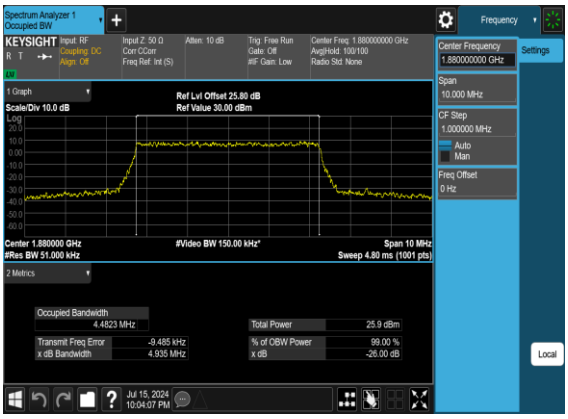
Occupied Bandwidth

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	OBW (MHz)	26dB BW (MHz)
2	15	5	376000	1880.0	CP-OFDM QPSK	25@0	4.4754	4.957
2	15	5	376000	1880.0	CP-OFDM 16 QAM	25@0	4.4823	4.935
2	15	5	376000	1880.0	CP-OFDM 64 QAM	25@0	4.4761	4.892
2	15	5	376000	1880.0	CP-OFDM 256 QAM	25@0	4.4676	4.849
2	15	10	376000	1880.0	CP-OFDM QPSK	52@0	9.2888	9.858
2	15	10	376000	1880.0	CP-OFDM 16 QAM	52@0	9.2753	9.826
2	15	10	376000	1880.0	CP-OFDM 64 QAM	52@0	9.2707	9.837
2	15	10	376000	1880.0	CP-OFDM 256 QAM	52@0	9.302	9.868
2	15	15	376000	1880.0	CP-OFDM QPSK	79@0	14.074	14.83
2	15	15	376000	1880.0	CP-OFDM 16 QAM	79@0	14.117	14.9
2	15	15	376000	1880.0	CP-OFDM 64 QAM	79@0	14.116	14.8
2	15	15	376000	1880.0	CP-OFDM 256 QAM	79@0	14.104	14.75
2	15	20	376000	1880.0	CP-OFDM QPSK	106@0	18.925	19.77
2	15	20	376000	1880.0	CP-OFDM 16 QAM	106@0	18.949	19.76
2	15	20	376000	1880.0	CP-OFDM 64 QAM	106@0	18.93	19.75
2	15	20	376000	1880.0	CP-OFDM 256 QAM	106@0	19.032	19.69

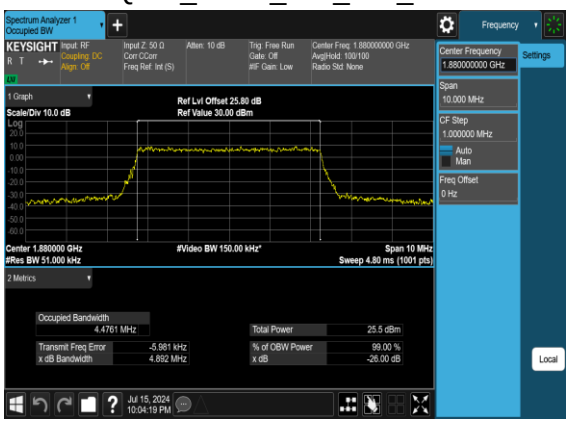
N2(5M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



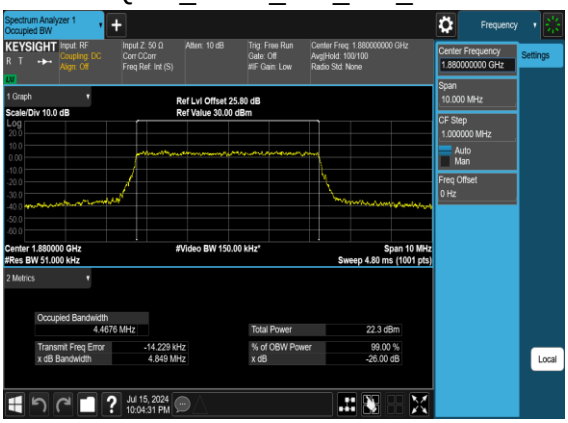
N2(5M)_CP-OFDM_16QAM_Outer_Full_Mid_CH



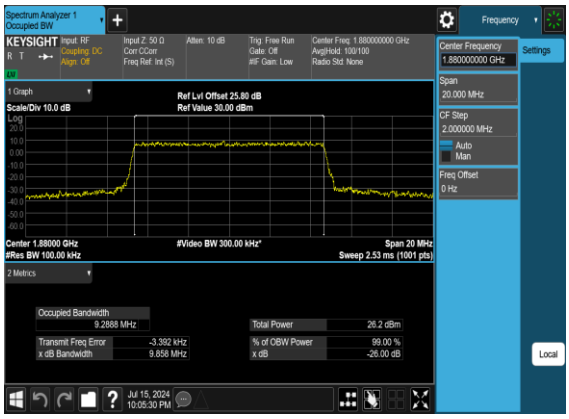
N2(5M)_CP-OFDM_64QAM_Outer_Full_Mid_CH



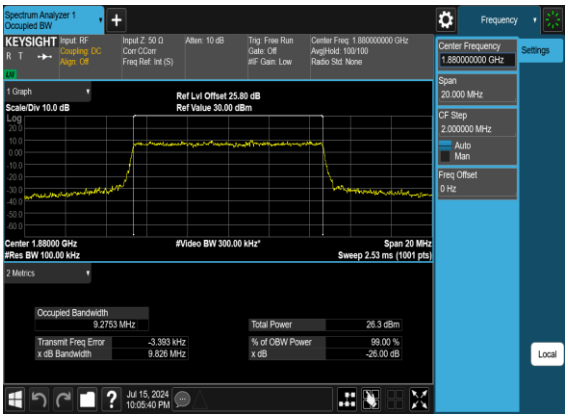
N2(5M)_CP-OFDM_256QAM_Outer_Full_Mid_CH



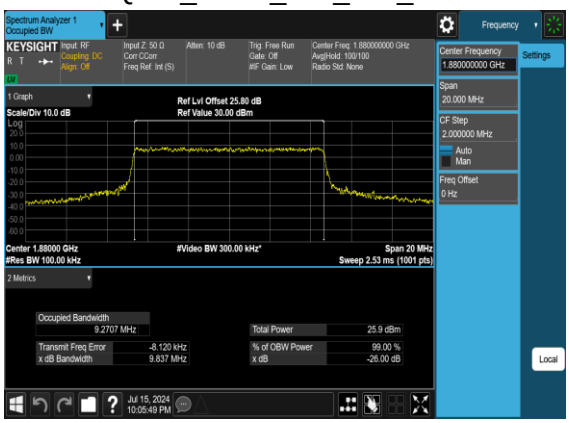
N2(10M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



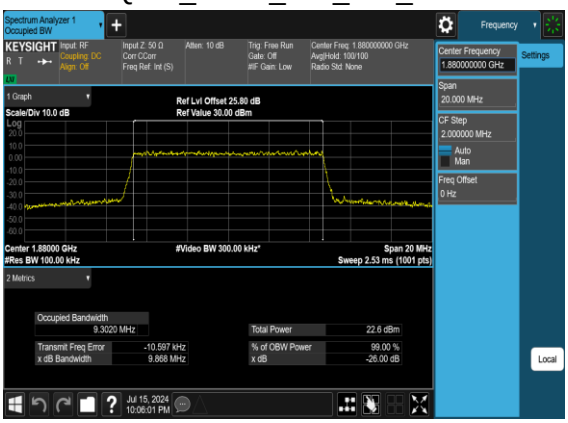
N2(10M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH



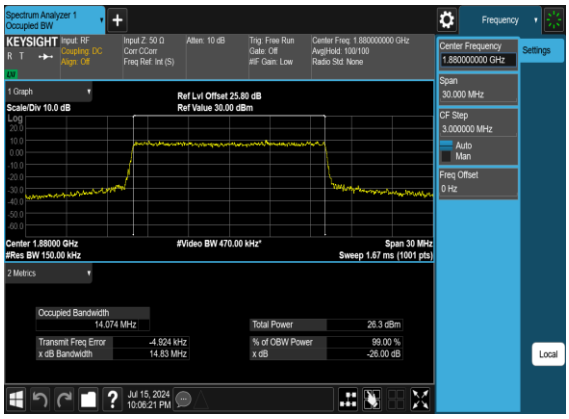
N2(10M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH



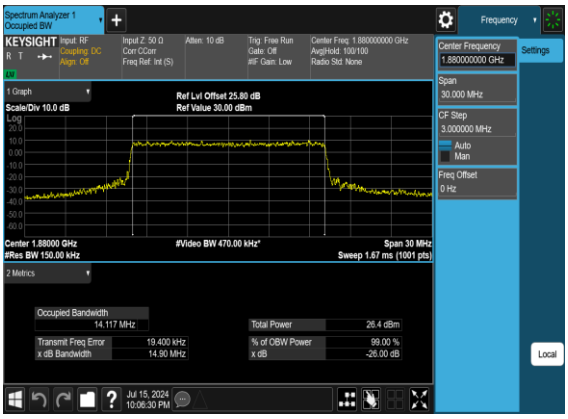
N2(10M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH



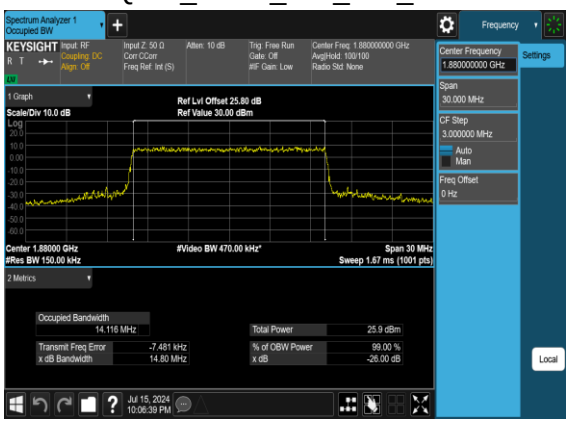
N2(15M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



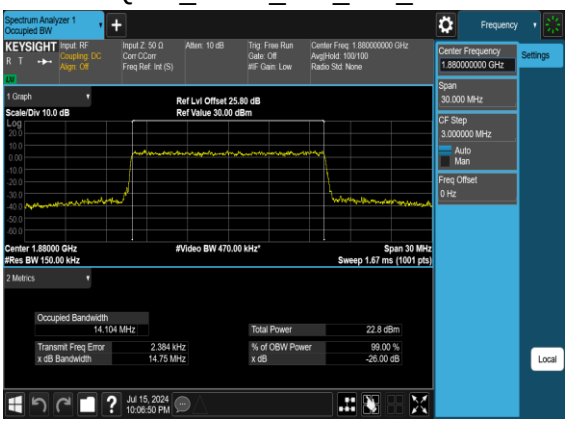
N2(15M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH



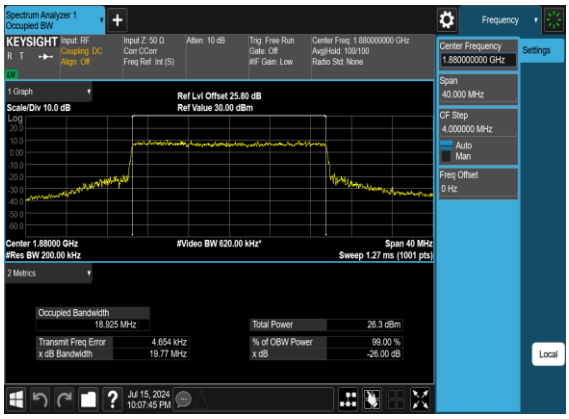
N2(15M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH



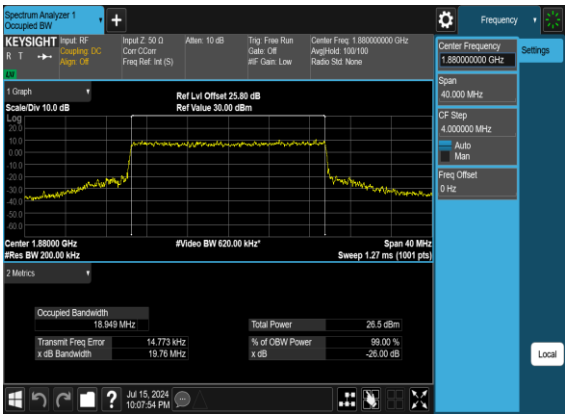
N2(15M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH



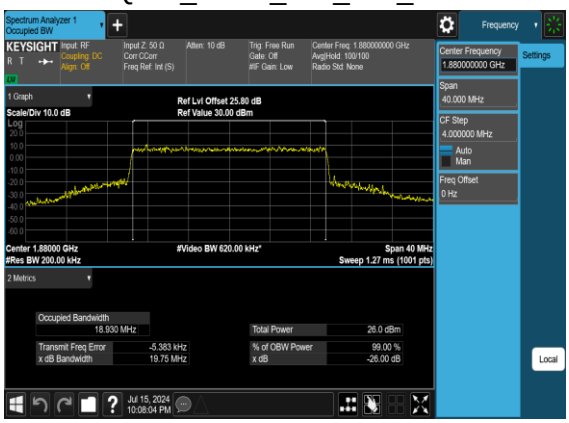
N2(20M)_CP-OFDM_QPSK_Outer_Full_Mid_CH



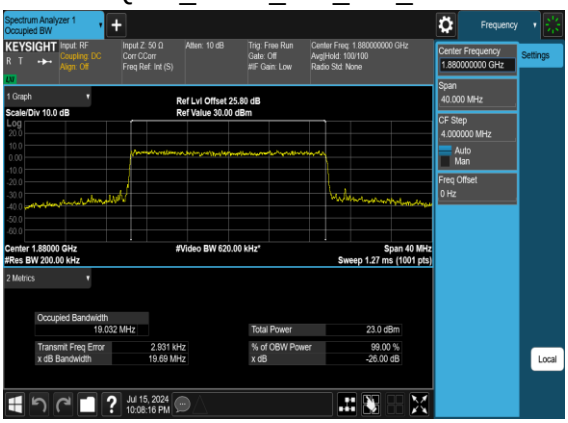
N2(20M)_CP-OFDM_16 QAM_Outer_Full_Mid_CH



N2(20M)_CP-OFDM_64 QAM_Outer_Full_Mid_CH



N2(20M)_CP-OFDM_256 QAM_Outer_Full_Mid_CH

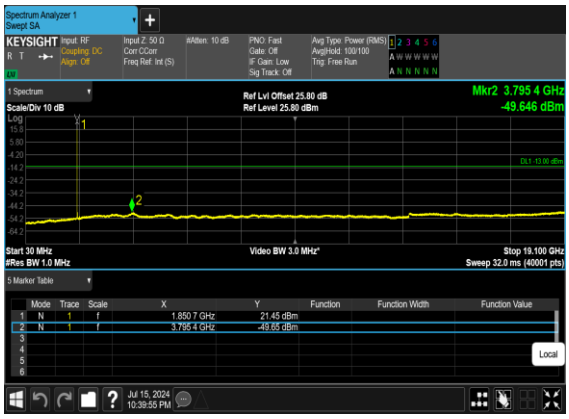


Conducted Spurious Emissions

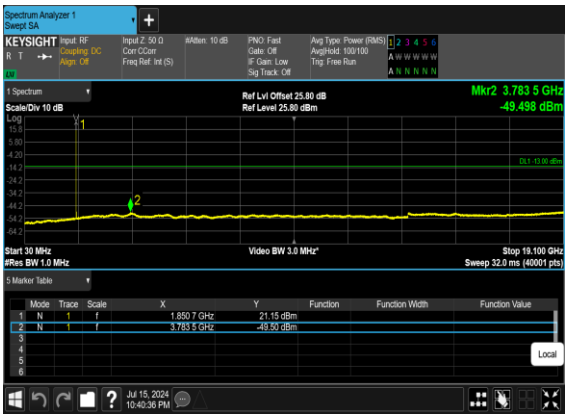
NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Result	Verdict
2	15	5	370500	1852.5	DFT-s-OFDM BPSK	1@0	see graph	---
2	15	5	370500	1852.5	DFT-s-OFDM BPSK	1@0	see graph	PASS
2	15	5	370500	1852.5	DFT-s-OFDM QPSK	1@0	see graph	---
2	15	5	370500	1852.5	DFT-s-OFDM QPSK	1@0	see graph	PASS
2	15	5	376000	1880.0	DFT-s-OFDM BPSK	1@0	see graph	---
2	15	5	376000	1880.0	DFT-s-OFDM BPSK	1@0	see graph	PASS
2	15	5	376000	1880.0	DFT-s-OFDM QPSK	1@0	see graph	---
2	15	5	376000	1880.0	DFT-s-OFDM QPSK	1@0	see graph	PASS
2	15	5	381500	1907.5	DFT-s-OFDM BPSK	1@0	see graph	---
2	15	5	381500	1907.5	DFT-s-OFDM BPSK	1@0	see graph	PASS
2	15	5	381500	1907.5	DFT-s-OFDM QPSK	1@0	see graph	---
2	15	5	381500	1907.5	DFT-s-OFDM QPSK	1@0	see graph	PASS
2	15	15	371500	1857.5	DFT-s-OFDM BPSK	1@0	see graph	---
2	15	15	371500	1857.5	DFT-s-OFDM BPSK	1@0	see graph	PASS
2	15	15	371500	1857.5	DFT-s-OFDM QPSK	1@0	see graph	---
2	15	15	371500	1857.5	DFT-s-OFDM QPSK	1@0	see graph	PASS
2	15	15	376000	1880.0	DFT-s-OFDM BPSK	1@0	see graph	---
2	15	15	376000	1880.0	DFT-s-OFDM BPSK	1@0	see graph	PASS
2	15	15	376000	1880.0	DFT-s-OFDM QPSK	1@0	see graph	---
2	15	15	376000	1880.0	DFT-s-OFDM QPSK	1@0	see graph	PASS

2	15	15	380500	1902.5	DFT-s-OFDM BPSK	1@0	see graph	**---**
2	15	15	380500	1902.5	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
2	15	15	380500	1902.5	DFT-s-OFDM QPSK	1@0	see graph	**---**
2	15	15	380500	1902.5	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
2	15	20	372000	1860.0	DFT-s-OFDM BPSK	1@0	see graph	**---**
2	15	20	372000	1860.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
2	15	20	372000	1860.0	DFT-s-OFDM QPSK	1@0	see graph	**---**
2	15	20	372000	1860.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
2	15	20	376000	1880.0	DFT-s-OFDM BPSK	1@0	see graph	**---**
2	15	20	376000	1880.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
2	15	20	376000	1880.0	DFT-s-OFDM QPSK	1@0	see graph	**---**
2	15	20	376000	1880.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
2	15	20	380000	1900.0	DFT-s-OFDM BPSK	1@0	see graph	**---**
2	15	20	380000	1900.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
2	15	20	380000	1900.0	DFT-s-OFDM QPSK	1@0	see graph	**---**
2	15	20	380000	1900.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**

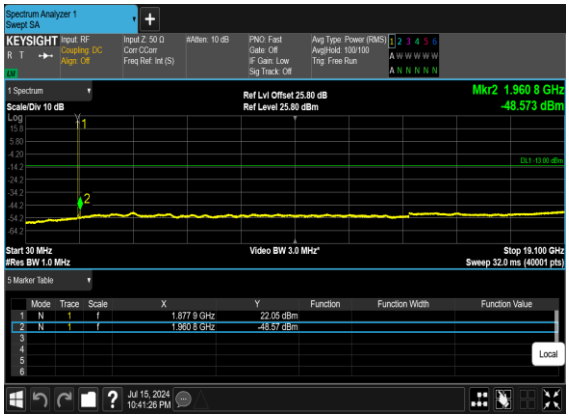
N2(5M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



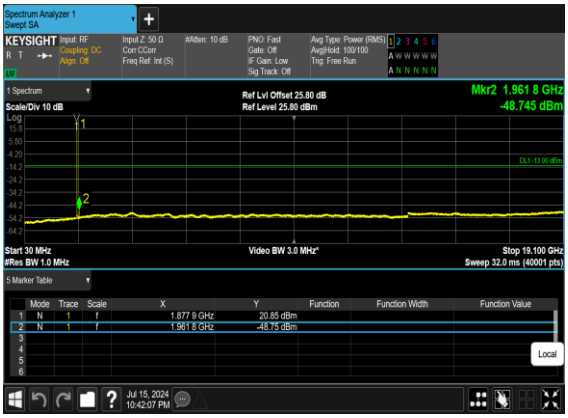
N2(5M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



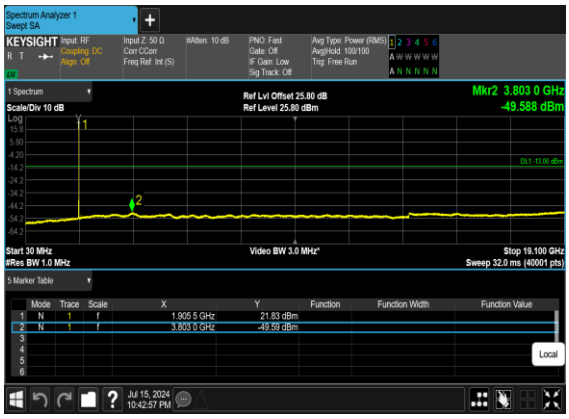
N2(5M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Mid_CH



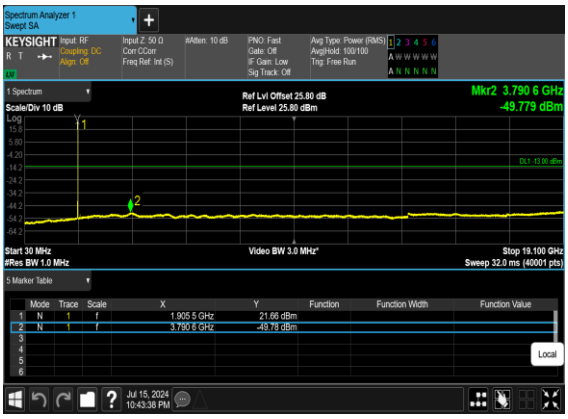
N2(5M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH



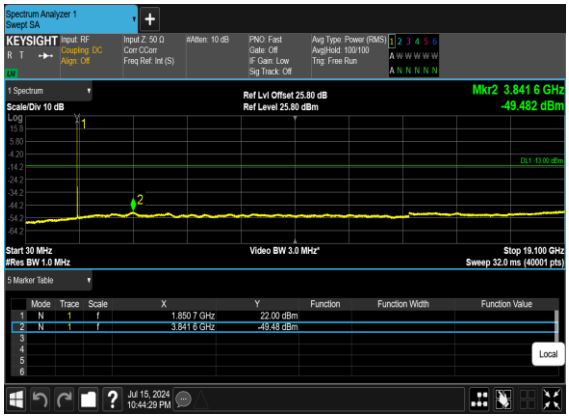
N2(5M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_High_CH



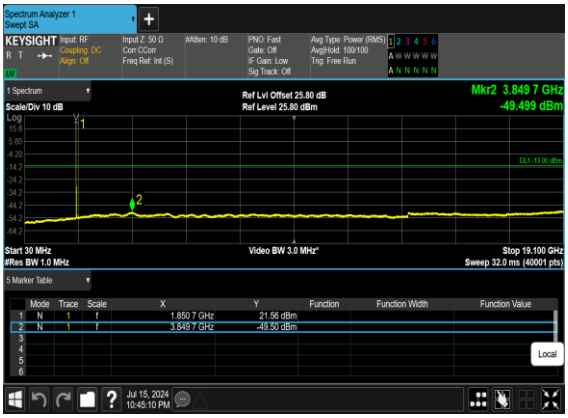
N2(5M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_High_CH



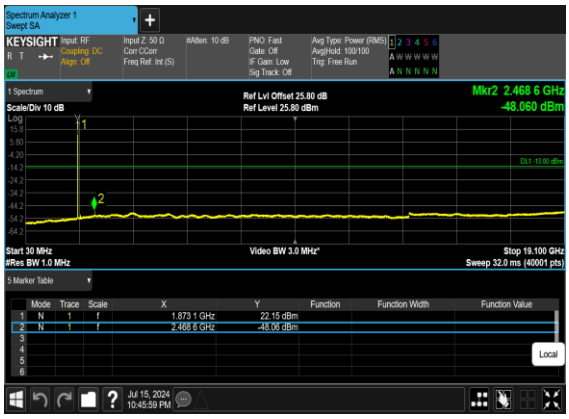
N2(15M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



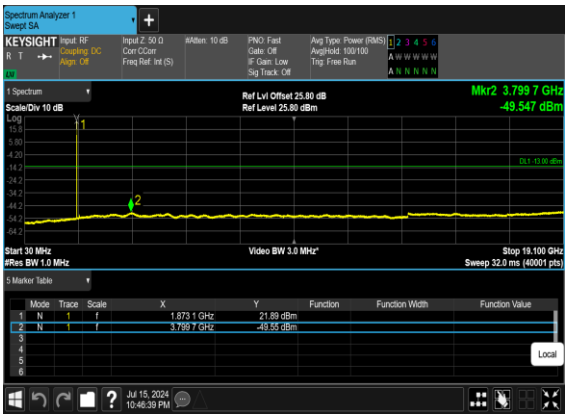
N2(15M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



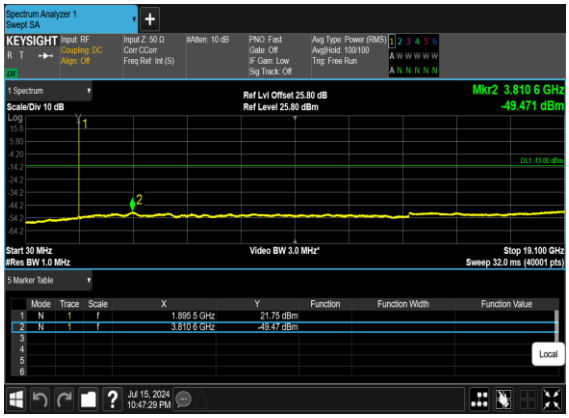
N2(15M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Mid_CH



N2(15M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH



N2(15M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_High_CH



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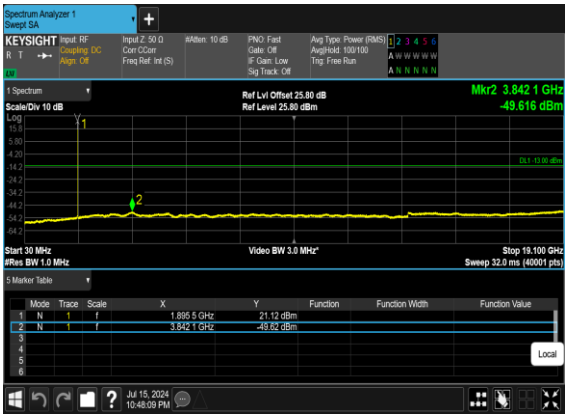
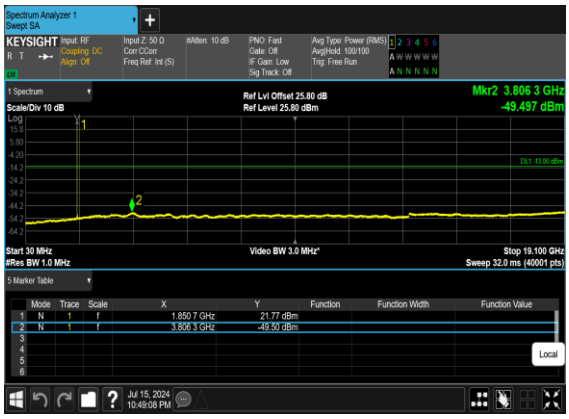
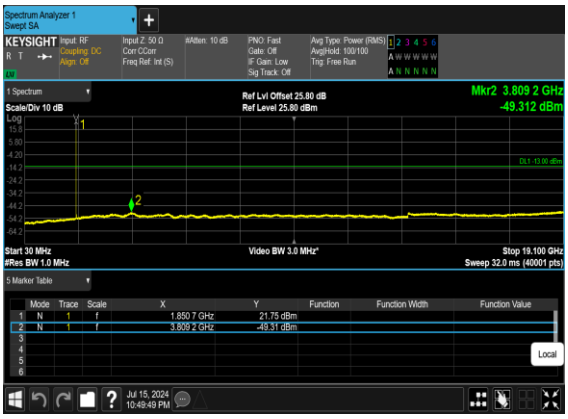


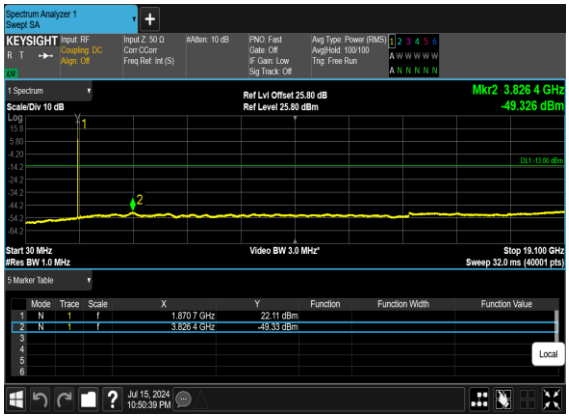
N2(20M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



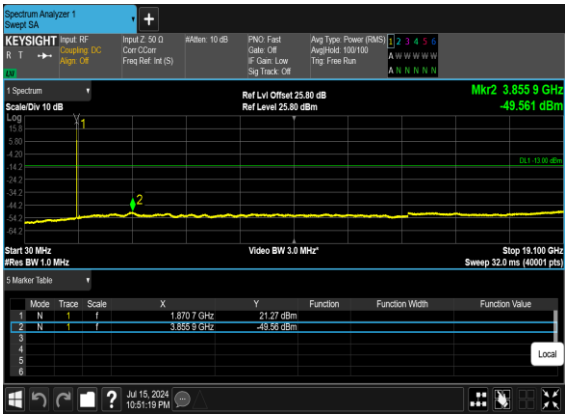
N2(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



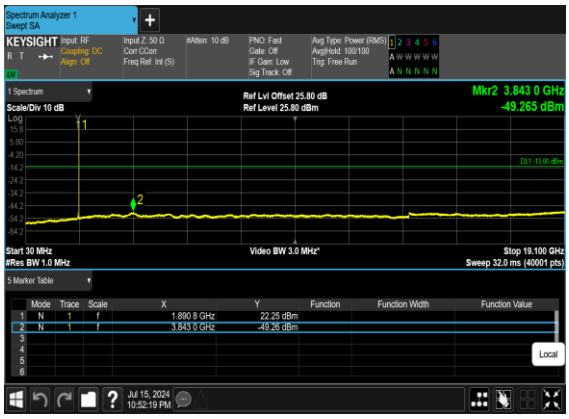
N2(20M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Mid_CH



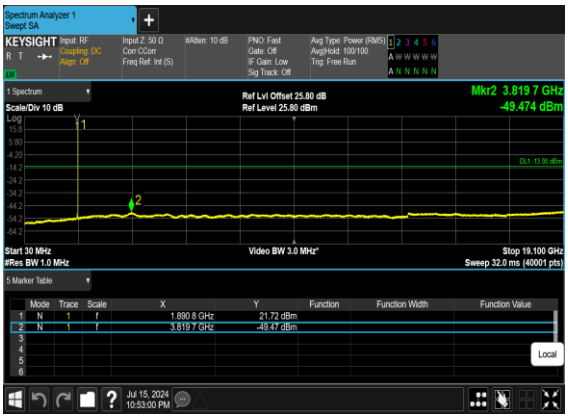
N2(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Mid_CH



N2(20M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_High_CH



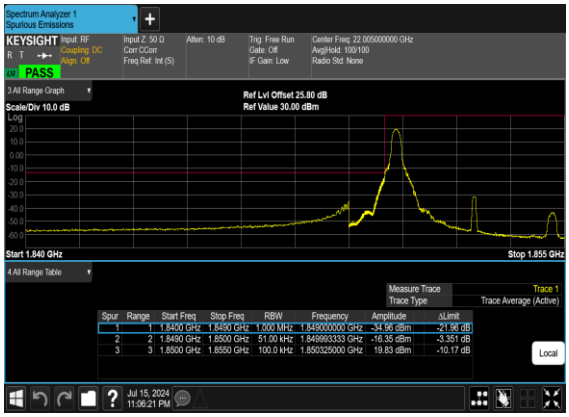
N2(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_High_CH



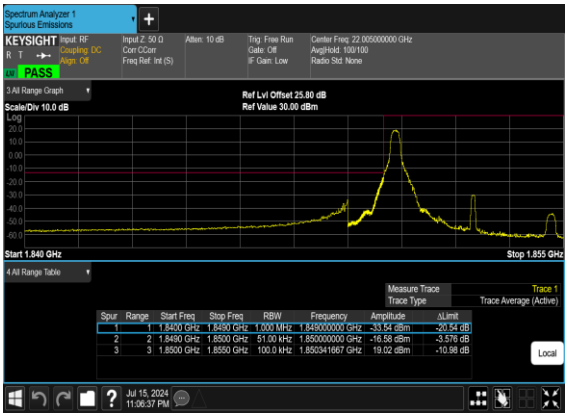
Conducted Band Edge

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Result	Verdict
2	15	5	370500	1852.5	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
2	15	5	370500	1852.5	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
2	15	5	370500	1852.5	DFT-s-OFDM BPSK	25@0	see graph	**PASS**
2	15	5	370500	1852.5	DFT-s-OFDM QPSK	25@0	see graph	**PASS**
2	15	5	381500	1907.5	DFT-s-OFDM BPSK	1@24	see graph	**PASS**
2	15	5	381500	1907.5	DFT-s-OFDM QPSK	1@24	see graph	**PASS**
2	15	5	381500	1907.5	DFT-s-OFDM BPSK	25@0	see graph	**PASS**
2	15	5	381500	1907.5	DFT-s-OFDM QPSK	25@0	see graph	**PASS**
2	15	15	371500	1857.5	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
2	15	15	371500	1857.5	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
2	15	15	371500	1857.5	DFT-s-OFDM BPSK	75@0	see graph	**PASS**
2	15	15	371500	1857.5	DFT-s-OFDM QPSK	75@0	see graph	**PASS**
2	15	15	380500	1902.5	DFT-s-OFDM BPSK	1@78	see graph	**PASS**
2	15	15	380500	1902.5	DFT-s-OFDM QPSK	1@78	see graph	**PASS**
2	15	15	380500	1902.5	DFT-s-OFDM BPSK	75@0	see graph	**PASS**
2	15	15	380500	1902.5	DFT-s-OFDM QPSK	75@0	see graph	**PASS**
2	15	20	372000	1860.0	DFT-s-OFDM BPSK	1@0	see graph	**PASS**
2	15	20	372000	1860.0	DFT-s-OFDM QPSK	1@0	see graph	**PASS**
2	15	20	372000	1860.0	DFT-s-OFDM BPSK	100@0	see graph	**PASS**
2	15	20	372000	1860.0	DFT-s-OFDM QPSK	100@0	see graph	**PASS**
2	15	20	380000	1900.0	DFT-s-OFDM BPSK	1@105	see graph	**PASS**
2	15	20	380000	1900.0	DFT-s-OFDM QPSK	1@105	see graph	**PASS**
2	15	20	380000	1900.0	DFT-s-OFDM BPSK	100@0	see graph	**PASS**
2	15	20	380000	1900.0	DFT-s-OFDM QPSK	100@0	see graph	**PASS**

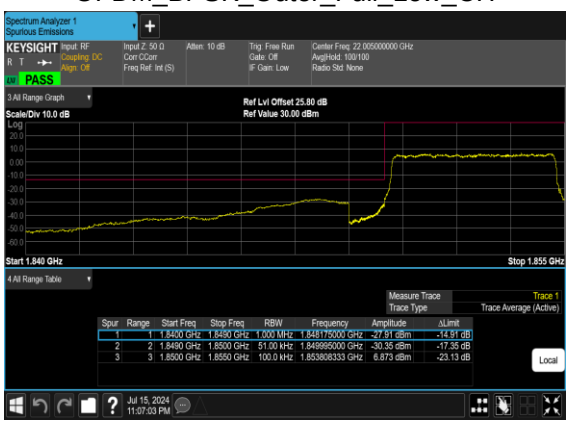
N2(5M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



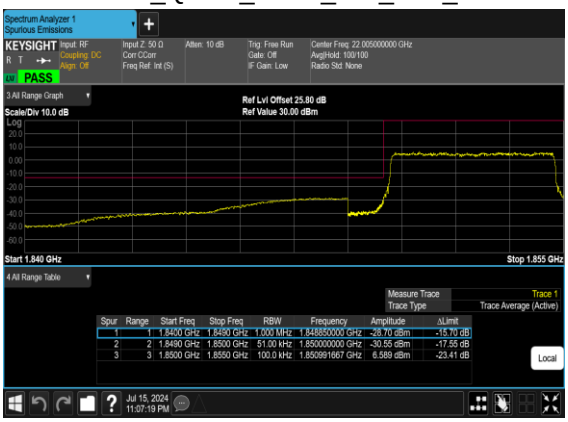
N2(5M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



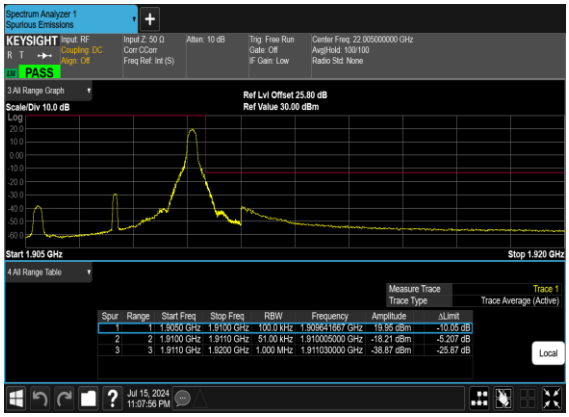
N2(5M)_DFT-s-OFDM_BPSK_Outer_Full_Low_CH



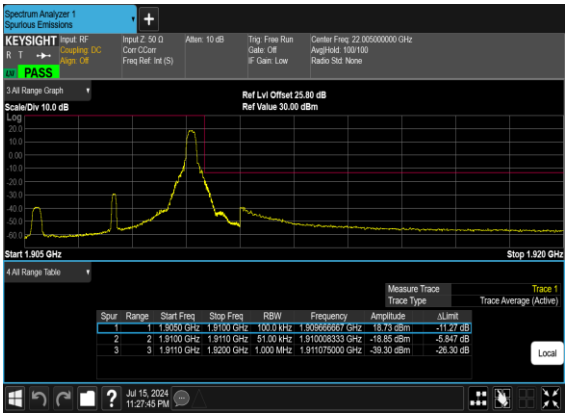
N2(5M)_DFT-s-OFDM_QPSK_Outer_Full_Low_CH



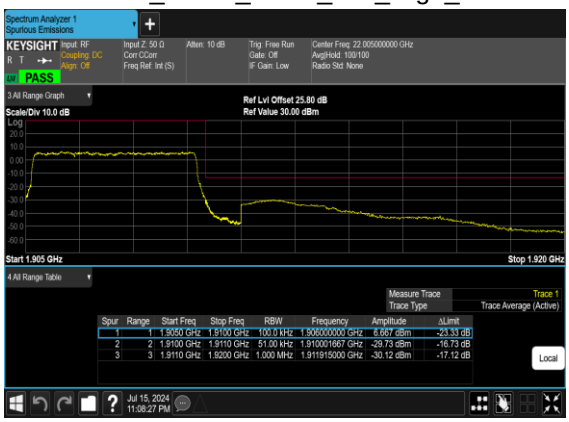
N2(5M)_DFT-s-OFDM_BPSK_Edge_1RB_Right_High_CH



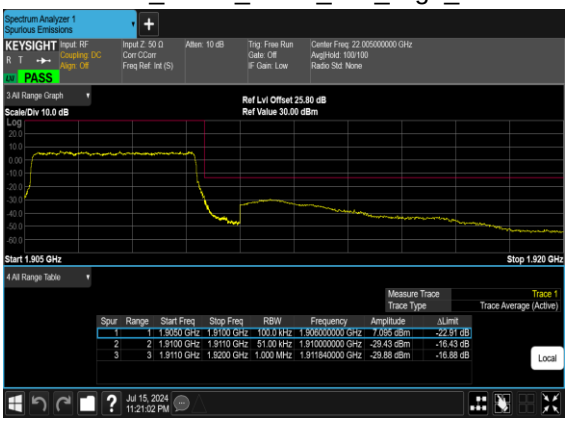
N2(5M)_DFT-s-OFDM_QPSK_Edge_1RB_Right_High_CH



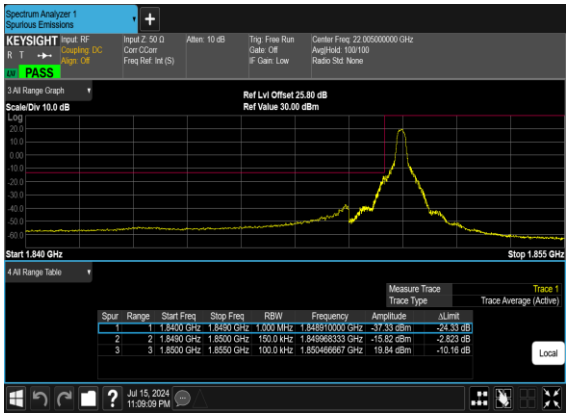
N2(5M)_DFT-s-OFDM_BPSK_Outer_Full_High_CH



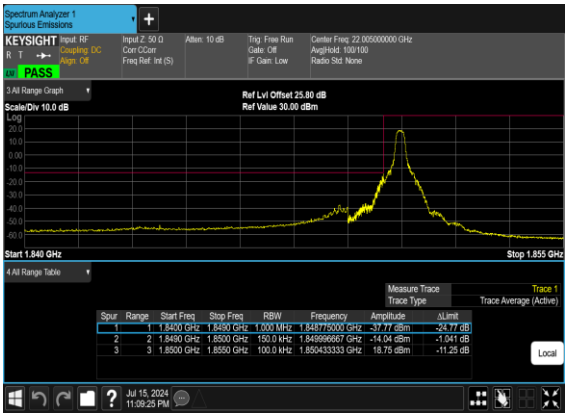
N2(5M)_DFT-s-OFDM_BPSK_Outer_Full_High_CH



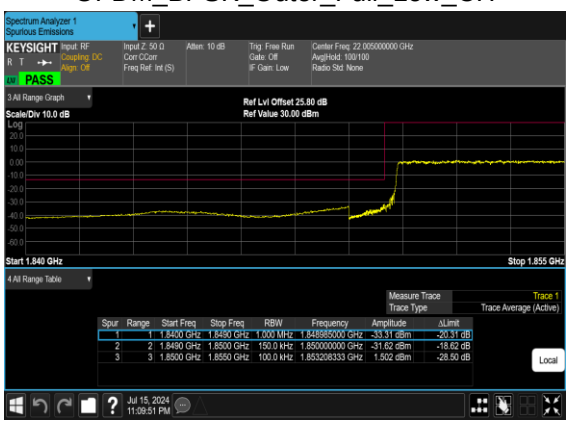
N2(15M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



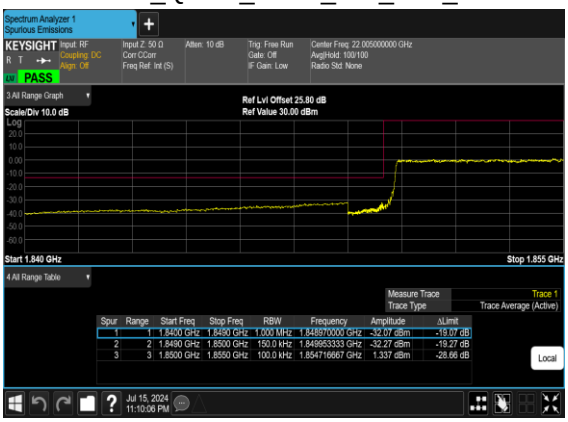
N2(15M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



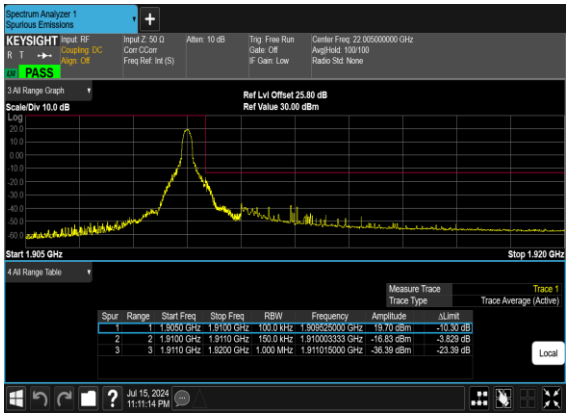
N2(15M)_DFT-s-OFDM_BPSK_Outer_Full_Low_CH



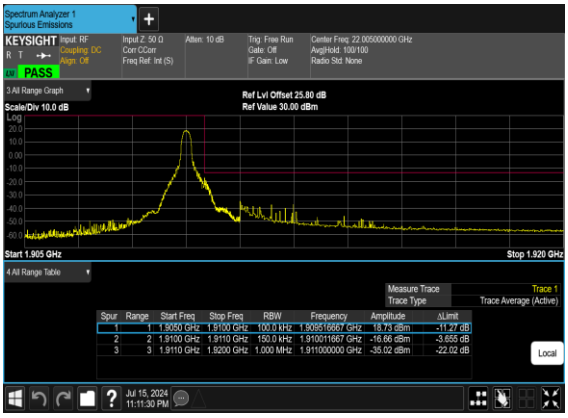
N2(15M)_DFT-s-OFDM_QPSK_Outer_Full_Low_CH



N2(15M)_DFT-s-OFDM_BPSK_Edge_1RB_Right_High_CH



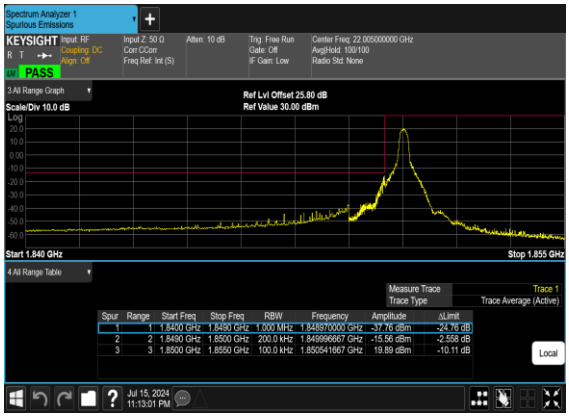
N2(15M)_DFT-s-OFDM_QPSK_Edge_1RB_Right_High_CH



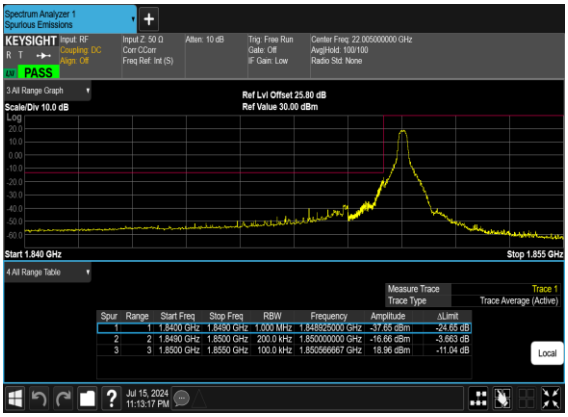
N2(15M)_DFT-s-OFDM_BPSK_Outer_Full_High_CH

N2(15M)_DFT-s-OFDM_QPSK_Outer_Full_High_CH

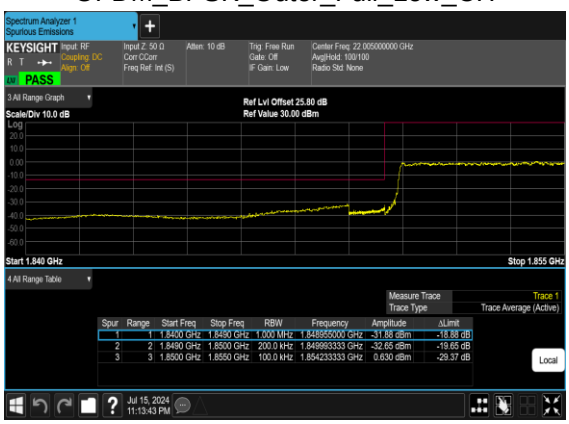
N2(20M)_DFT-s-OFDM_BPSK_Edge_1RB_Left_Low_CH



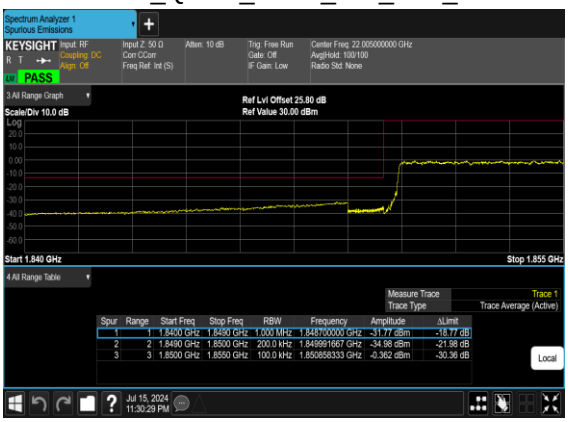
N2(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Left_Low_CH



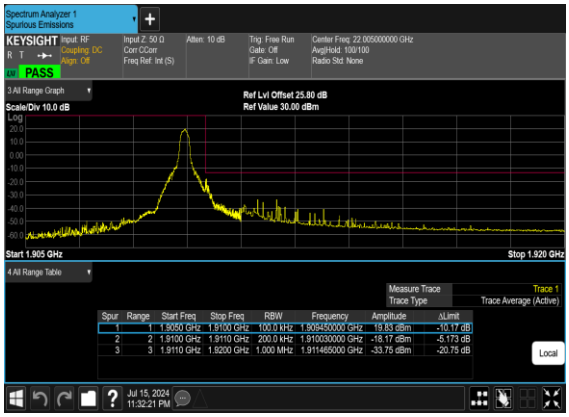
N2(20M)_DFT-s-OFDM_BPSK_Outer_Full_Low_CH



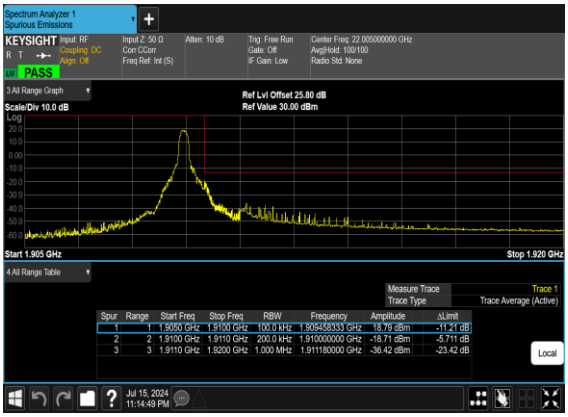
N2(20M)_DFT-s-OFDM_QPSK_Outer_Full_Low_CH



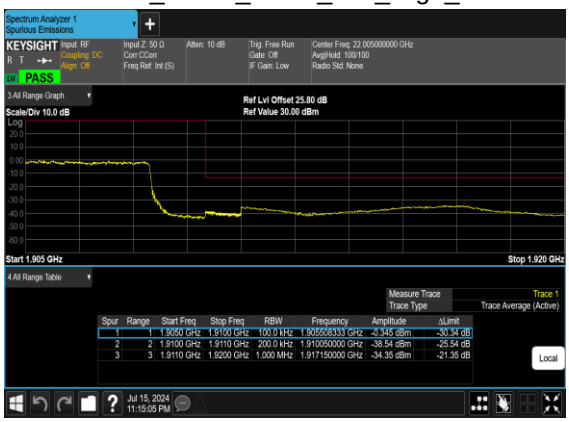
N2(20M)_DFT-s-OFDM_BPSK_Edge_1RB_Right_High_CH



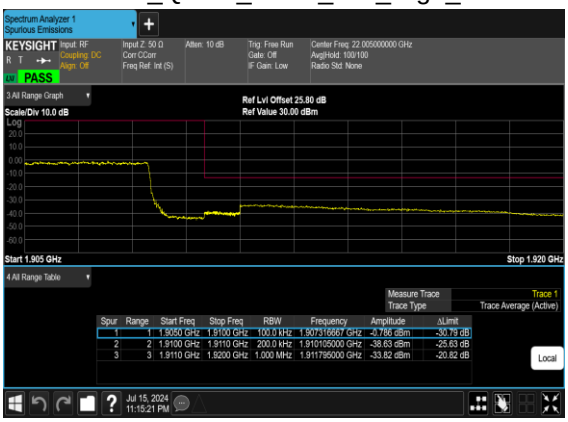
N2(20M)_DFT-s-OFDM_QPSK_Edge_1RB_Right_High_CH



N2(20M)_DFT-s-OFDM_BPSK_Outer_Full_High_CH



N2(20M)_DFT-s-OFDM_QPSK_Outer_Full_High_CH



Software Version: 23.06.1602

FR1 N5_ANT0

Transmitter Conducted Output Power And ERP, (G_T - L_C)=-3dB

NR Band	SCS	Band Width	Arfcn	Freq(MHz)	Modulation	RB	Conducted Power(dBm)	ERP(dBm)	ERP(W)
5	15	20	166800	834	DFT-s-OFDM PI/2 BPSK	50@25	23.08	17.93	0.0621
5	15	20	166800	834	DFT-s-OFDM PI/2 BPSK	1@1	22.98	17.83	0.0607
5	15	20	166800	834	DFT-s-OFDM PI/2 BPSK	1@104	22.88	17.73	0.0593
5	15	20	166800	834	DFT-s-OFDM QPSK	50@25	23.13	17.98	0.0628
5	15	20	166800	834	DFT-s-OFDM QPSK	1@1	23.16	18.01	0.0632
5	15	20	166800	834	DFT-s-OFDM QPSK	1@104	22.89	17.74	0.0594
5	15	20	166800	834	DFT-s-OFDM 16 QAM	50@25	22.08	16.93	0.0493
5	15	20	166800	834	DFT-s-OFDM 16 QAM	1@1	22.41	17.26	0.0532
5	15	20	166800	834	DFT-s-OFDM 16 QAM	1@104	21.93	16.78	0.0476
5	15	20	166800	834	DFT-s-OFDM 64 QAM	50@25	20.64	15.49	0.0354
5	15	20	166800	834	DFT-s-OFDM 64 QAM	1@1	20.87	15.72	0.0373
5	15	20	166800	834	DFT-s-OFDM 64 QAM	1@104	20.43	15.28	0.0337
5	15	20	166800	834	DFT-s-OFDM 256 QAM	50@25	18.62	13.47	0.0222
5	15	20	166800	834	DFT-s-OFDM 256 QAM	1@1	18.5	13.35	0.0216
5	15	20	166800	834	DFT-s-OFDM 256 QAM	1@104	18.08	12.93	0.0196
5	15	20	166800	834	CP-OFDM QPSK	53@26	21.51	16.36	0.0433
5	15	20	166800	834	CP-OFDM QPSK	1@1	21.85	16.7	0.0468
5	15	20	166800	834	CP-OFDM QPSK	1@104	21.39	16.24	0.0421
5	15	20	167300	836.5	DFT-s-OFDM PI/2 BPSK	50@25	23	17.85	0.0610
5	15	20	167300	836.5	DFT-s-OFDM PI/2 BPSK	1@1	23.19	18.04	0.0637
5	15	20	167300	836.5	DFT-s-OFDM PI/2 BPSK	1@104	22.79	17.64	0.0581
5	15	20	167300	836.5	DFT-s-OFDM QPSK	50@25	23.03	17.88	0.0614
5	15	20	167300	836.5	DFT-s-OFDM QPSK	1@1	23.12	17.97	0.0627
5	15	20	167300	836.5	DFT-s-OFDM QPSK	1@104	22.86	17.71	0.0590
5	15	20	167300	836.5	DFT-s-OFDM 16 QAM	50@25	22	16.85	0.0484
5	15	20	167300	836.5	DFT-s-OFDM 16 QAM	1@1	22.38	17.23	0.0528
5	15	20	167300	836.5	DFT-s-OFDM 16 QAM	1@104	21.94	16.79	0.0478
5	15	20	167300	836.5	DFT-s-OFDM 64 QAM	50@25	20.5	15.35	0.0343
5	15	20	167300	836.5	DFT-s-OFDM 64 QAM	1@1	20.85	15.7	0.0372
5	15	20	167300	836.5	DFT-s-OFDM 64 QAM	1@104	20.43	15.28	0.0337
5	15	20	167300	836.5	DFT-s-OFDM 256 QAM	50@25	18.35	13.2	0.0209
5	15	20	167300	836.5	DFT-s-OFDM 256 QAM	1@1	18.5	13.35	0.0216
5	15	20	167300	836.5	DFT-s-OFDM 256 QAM	1@104	18.1	12.95	0.0197
5	15	20	167300	836.5	CP-OFDM QPSK	53@26	21.5	16.35	0.0432
5	15	20	167300	836.5	CP-OFDM QPSK	1@1	21.84	16.69	0.0467
5	15	20	167300	836.5	CP-OFDM QPSK	1@104	21.35	16.2	0.0417
5	15	20	167800	839	DFT-s-OFDM PI/2 BPSK	50@25	23	17.85	0.0610

5	15	20	167800	839	DFT-s-OFDM PI/2 BPSK	1@1	23.16	18.01	0.0632
5	15	20	167800	839	DFT-s-OFDM PI/2 BPSK	1@104	22.77	17.62	0.0578
5	15	20	167800	839	DFT-s-OFDM QPSK	50@25	23.01	17.86	0.0611
5	15	20	167800	839	DFT-s-OFDM QPSK	1@1	23.08	17.93	0.0621
5	15	20	167800	839	DFT-s-OFDM QPSK	1@104	22.8	17.65	0.0582
5	15	20	167800	839	DFT-s-OFDM 16 QAM	50@25	21.98	16.83	0.0482
5	15	20	167800	839	DFT-s-OFDM 16 QAM	1@1	22.17	17.02	0.0504
5	15	20	167800	839	DFT-s-OFDM 16 QAM	1@104	21.85	16.7	0.0468
5	15	20	167800	839	DFT-s-OFDM 64 QAM	50@25	20.55	15.4	0.0347
5	15	20	167800	839	DFT-s-OFDM 64 QAM	1@1	20.71	15.56	0.0360
5	15	20	167800	839	DFT-s-OFDM 64 QAM	1@104	20.37	15.22	0.0333
5	15	20	167800	839	DFT-s-OFDM 256 QAM	50@25	18.48	13.33	0.0215
5	15	20	167800	839	DFT-s-OFDM 256 QAM	1@1	18.38	13.23	0.0210
5	15	20	167800	839	DFT-s-OFDM 256 QAM	1@104	18.03	12.88	0.0194
5	15	20	167800	839	CP-OFDM QPSK	53@26	21.52	16.37	0.0434
5	15	20	167800	839	CP-OFDM QPSK	1@1	21.66	16.51	0.0448
5	15	20	167800	839	CP-OFDM QPSK	1@104	21.19	16.04	0.0402
5	15	5	165300	826.5	DFT-s-OFDM PI/2 BPSK	1@1	22.89	17.74	0.0594
5	15	5	165300	826.5	DFT-s-OFDM QPSK	1@1	22.96	17.81	0.0604
5	15	5	165300	826.5	DFT-s-OFDM 16 QAM	1@1	22.47	17.32	0.0540
5	15	5	167300	836.5	DFT-s-OFDM PI/2 BPSK	1@1	23.05	17.9	0.0617
5	15	5	167300	836.5	DFT-s-OFDM QPSK	1@1	23.11	17.96	0.0625
5	15	5	167300	836.5	DFT-s-OFDM 16 QAM	1@1	22.23	17.08	0.0511
5	15	5	169300	846.5	DFT-s-OFDM PI/2 BPSK	1@1	22.91	17.76	0.0597
5	15	5	169300	846.5	DFT-s-OFDM QPSK	1@1	23.02	17.87	0.0612
5	15	5	169300	846.5	DFT-s-OFDM 16 QAM	1@1	22.07	16.92	0.0492
5	15	10	165800	829	DFT-s-OFDM PI/2 BPSK	1@1	23.12	17.97	0.0627
5	15	10	165800	829	DFT-s-OFDM QPSK	1@1	23.09	17.94	0.0622
5	15	10	165800	829	DFT-s-OFDM 16 QAM	1@1	22.54	17.39	0.0548
5	15	10	167300	836.5	DFT-s-OFDM PI/2 BPSK	1@1	23.01	17.86	0.0611
5	15	10	167300	836.5	DFT-s-OFDM QPSK	1@1	23.1	17.95	0.0624
5	15	10	167300	836.5	DFT-s-OFDM 16 QAM	1@1	22.17	17.02	0.0504
5	15	10	168800	844	DFT-s-OFDM PI/2 BPSK	1@1	22.83	17.68	0.0586
5	15	10	168800	844	DFT-s-OFDM QPSK	1@1	22.86	17.71	0.0590
5	15	10	168800	844	DFT-s-OFDM 16 QAM	1@1	21.98	16.83	0.0482
5	15	15	166300	831.5	DFT-s-OFDM PI/2 BPSK	1@1	23.09	17.94	0.0622
5	15	15	166300	831.5	DFT-s-OFDM QPSK	1@1	22.98	17.83	0.0607
5	15	15	166300	831.5	DFT-s-OFDM 16 QAM	1@1	22.49	17.34	0.0542
5	15	15	167300	836.5	DFT-s-OFDM PI/2 BPSK	1@1	23.11	17.96	0.0625
5	15	15	167300	836.5	DFT-s-OFDM QPSK	1@1	23.05	17.9	0.0617
5	15	15	167300	836.5	DFT-s-OFDM 16 QAM	1@1	22.46	17.31	0.0538
5	15	15	168300	841.5	DFT-s-OFDM PI/2 BPSK	1@1	22.95	17.8	0.0603
5	15	15	168300	841.5	DFT-s-OFDM QPSK	1@1	23.08	17.93	0.0621
5	15	15	168300	841.5	DFT-s-OFDM 16 QAM	1@1	22.12	16.97	0.0498

Software Version: 23.06.1602

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Transmitter Conducted Output Power And ERP, (G_T - L_C)=-3dB

NR Band	SCS	Band Width	Arfcn	Freq(MHz)	Modulation	RB	Conducted Power(dBm)	ERP(dBm)	ERP(W)
26	15	5	165300	826.5	DFT-s-OFDM PI/2 BPSK	1@1	22.8	17.65	0.0582
26	15	5	165300	826.5	DFT-s-OFDM QPSK	1@1	22.9	17.75	0.0596
26	15	5	165300	826.5	DFT-s-OFDM 16 QAM	1@1	21.95	16.8	0.0479
26	15	5	167300	836.5	DFT-s-OFDM PI/2 BPSK	1@1	22.84	17.69	0.0587
26	15	5	167300	836.5	DFT-s-OFDM QPSK	1@1	22.91	17.76	0.0597
26	15	5	167300	836.5	DFT-s-OFDM 16 QAM	1@1	22.03	16.88	0.0488
26	15	5	169300	846.5	DFT-s-OFDM PI/2 BPSK	1@1	22.75	17.6	0.0575
26	15	5	169300	846.5	DFT-s-OFDM QPSK	1@1	22.87	17.72	0.0592
26	15	5	169300	846.5	DFT-s-OFDM 16 QAM	1@1	21.89	16.74	0.0472
26	15	10	165800	829	DFT-s-OFDM PI/2 BPSK	1@1	23.05	17.9	0.0617
26	15	10	165800	829	DFT-s-OFDM QPSK	1@1	23.22	18.07	0.0641
26	15	10	165800	829	DFT-s-OFDM 16 QAM	1@1	22.09	16.94	0.0494
26	15	10	167300	836.5	DFT-s-OFDM PI/2 BPSK	1@1	22.91	17.76	0.0597
26	15	10	167300	836.5	DFT-s-OFDM QPSK	1@1	22.96	17.81	0.0604
26	15	10	167300	836.5	DFT-s-OFDM 16 QAM	1@1	22.12	16.97	0.0498
26	15	10	168800	844	DFT-s-OFDM PI/2 BPSK	1@1	22.82	17.67	0.0585
26	15	10	168800	844	DFT-s-OFDM QPSK	1@1	22.9	17.75	0.0596
26	15	10	168800	844	DFT-s-OFDM 16 QAM	1@1	21.87	16.72	0.0470
26	15	15	166300	831.5	DFT-s-OFDM PI/2 BPSK	1@1	22.91	17.76	0.0597
26	15	15	166300	831.5	DFT-s-OFDM QPSK	1@1	22.91	17.76	0.0597
26	15	15	166300	831.5	DFT-s-OFDM 16 QAM	1@1	22.04	16.89	0.0489
26	15	15	167300	836.5	DFT-s-OFDM PI/2 BPSK	1@1	22.92	17.77	0.0598
26	15	15	167300	836.5	DFT-s-OFDM QPSK	1@1	22.95	17.8	0.0603
26	15	15	167300	836.5	DFT-s-OFDM 16 QAM	1@1	22	16.85	0.0484
26	15	15	168300	841.5	DFT-s-OFDM PI/2 BPSK	1@1	22.75	17.6	0.0575
26	15	15	168300	841.5	DFT-s-OFDM QPSK	1@1	22.79	17.64	0.0581
26	15	15	168300	841.5	DFT-s-OFDM 16 QAM	1@1	21.87	16.72	0.0470
26	15	20	166800	834	DFT-s-OFDM PI/2 BPSK	50@25	23.16	18.01	0.0632
26	15	20	166800	834	DFT-s-OFDM PI/2 BPSK	1@1	23.09	17.94	0.0622
26	15	20	166800	834	DFT-s-OFDM PI/2 BPSK	1@104	22.98	17.83	0.0607
26	15	20	166800	834	DFT-s-OFDM QPSK	50@25	22.81	17.66	0.0583
26	15	20	166800	834	DFT-s-OFDM QPSK	1@1	23.02	17.87	0.0612
26	15	20	166800	834	DFT-s-OFDM QPSK	1@104	22.78	17.63	0.0579
26	15	20	166800	834	DFT-s-OFDM 16 QAM	50@25	21.81	16.66	0.0463
26	15	20	166800	834	DFT-s-OFDM 16 QAM	1@1	22.02	16.87	0.0486
26	15	20	166800	834	DFT-s-OFDM 16 QAM	1@104	21.79	16.64	0.0461
26	15	20	166800	834	DFT-s-OFDM 64 QAM	50@25	20.36	15.21	0.0332

26	15	20	166800	834	DFT-s-OFDM 64 QAM	1@1	20.49	15.34	0.0342
26	15	20	166800	834	DFT-s-OFDM 64 QAM	1@104	20.27	15.12	0.0325
26	15	20	166800	834	DFT-s-OFDM 256 QAM	50@25	18.24	13.09	0.0204
26	15	20	166800	834	DFT-s-OFDM 256 QAM	1@1	18.15	13	0.0200
26	15	20	166800	834	DFT-s-OFDM 256 QAM	1@104	17.97	12.82	0.0191
26	15	20	166800	834	CP-OFDM QPSK	53@26	21.34	16.19	0.0416
26	15	20	166800	834	CP-OFDM QPSK	1@1	21.47	16.32	0.0429
26	15	20	166800	834	CP-OFDM QPSK	1@104	21.21	16.06	0.0404
26	15	20	167300	836.5	DFT-s-OFDM PI/2 BPSK	50@25	22.77	17.62	0.0578
26	15	20	167300	836.5	DFT-s-OFDM PI/2 BPSK	1@1	22.88	17.73	0.0593
26	15	20	167300	836.5	DFT-s-OFDM PI/2 BPSK	1@104	22.67	17.52	0.0565
26	15	20	167300	836.5	DFT-s-OFDM QPSK	50@25	22.79	17.64	0.0581
26	15	20	167300	836.5	DFT-s-OFDM QPSK	1@1	22.93	17.78	0.0600
26	15	20	167300	836.5	DFT-s-OFDM QPSK	1@104	22.64	17.49	0.0561
26	15	20	167300	836.5	DFT-s-OFDM 16 QAM	50@25	21.76	16.61	0.0458
26	15	20	167300	836.5	DFT-s-OFDM 16 QAM	1@1	21.98	16.83	0.0482
26	15	20	167300	836.5	DFT-s-OFDM 16 QAM	1@104	21.73	16.58	0.0455
26	15	20	167300	836.5	DFT-s-OFDM 64 QAM	50@25	20.32	15.17	0.0329
26	15	20	167300	836.5	DFT-s-OFDM 64 QAM	1@1	20.49	15.34	0.0342
26	15	20	167300	836.5	DFT-s-OFDM 64 QAM	1@104	20.23	15.08	0.0322
26	15	20	167300	836.5	DFT-s-OFDM 256 QAM	50@25	18.14	12.99	0.0199
26	15	20	167300	836.5	DFT-s-OFDM 256 QAM	1@1	18.22	13.07	0.0203
26	15	20	167300	836.5	DFT-s-OFDM 256 QAM	1@104	17.93	12.78	0.0190
26	15	20	167300	836.5	CP-OFDM QPSK	53@26	21.31	16.16	0.0413
26	15	20	167300	836.5	CP-OFDM QPSK	1@1	21.47	16.32	0.0429
26	15	20	167300	836.5	CP-OFDM QPSK	1@104	21.23	16.08	0.0406
26	15	20	167800	839	DFT-s-OFDM PI/2 BPSK	50@25	22.69	17.54	0.0568
26	15	20	167800	839	DFT-s-OFDM PI/2 BPSK	1@1	22.85	17.7	0.0589
26	15	20	167800	839	DFT-s-OFDM PI/2 BPSK	1@104	22.57	17.42	0.0552
26	15	20	167800	839	DFT-s-OFDM QPSK	50@25	22.74	17.59	0.0574
26	15	20	167800	839	DFT-s-OFDM QPSK	1@1	23	17.85	0.0610
26	15	20	167800	839	DFT-s-OFDM QPSK	1@104	22.64	17.49	0.0561
26	15	20	167800	839	DFT-s-OFDM 16 QAM	50@25	21.72	16.57	0.0454
26	15	20	167800	839	DFT-s-OFDM 16 QAM	1@1	21.96	16.81	0.0480
26	15	20	167800	839	DFT-s-OFDM 16 QAM	1@104	21.72	16.57	0.0454
26	15	20	167800	839	DFT-s-OFDM 64 QAM	50@25	20.3	15.15	0.0327
26	15	20	167800	839	DFT-s-OFDM 64 QAM	1@1	20.55	15.4	0.0347
26	15	20	167800	839	DFT-s-OFDM 64 QAM	1@104	20.25	15.1	0.0324
26	15	20	167800	839	DFT-s-OFDM 256 QAM	50@25	18.19	13.04	0.0201
26	15	20	167800	839	DFT-s-OFDM 256 QAM	1@1	18.18	13.03	0.0201
26	15	20	167800	839	DFT-s-OFDM 256 QAM	1@104	17.9	12.75	0.0188
26	15	20	167800	839	CP-OFDM QPSK	53@26	21.21	16.06	0.0404
26	15	20	167800	839	CP-OFDM QPSK	1@1	21.54	16.39	0.0436
26	15	20	167800	839	CP-OFDM QPSK	1@104	21.2	16.05	0.0403

Frequency Stability

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Deviation (ppm)	Verdict	Environment
26	15	20	167300	836.5	DFT-s-OFDM QPSK	100@0	-0.0037	**PASS**	NV
26	15	20	167300	836.5	DFT-s-OFDM QPSK	100@0	-0.0032	**PASS**	LV
26	15	20	167300	836.5	DFT-s-OFDM QPSK	100@0	0.0021	**PASS**	HV
26	15	20	167300	836.5	DFT-s-OFDM QPSK	100@0	0.0025	**PASS**	-30℃
26	15	20	167300	836.5	DFT-s-OFDM QPSK	100@0	-0.0019	**PASS**	-20℃
26	15	20	167300	836.5	DFT-s-OFDM QPSK	100@0	0.0023	**PASS**	-10℃
26	15	20	167300	836.5	DFT-s-OFDM QPSK	100@0	0.0014	**PASS**	0℃
26	15	20	167300	836.5	DFT-s-OFDM QPSK	100@0	-0.0027	**PASS**	10℃
26	15	20	167300	836.5	DFT-s-OFDM QPSK	100@0	-0.0022	**PASS**	20℃
26	15	20	167300	836.5	DFT-s-OFDM QPSK	100@0	-0.0014	**PASS**	30℃
26	15	20	167300	836.5	DFT-s-OFDM QPSK	100@0	-0.0019	**PASS**	40℃
26	15	20	167300	836.5	DFT-s-OFDM QPSK	100@0	0.0025	**PASS**	50℃

Peak to Average Ratio

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Result (dB)	Limit (dB)	Verdict
26	15	20	167300	836.5	DFT-s-OFDM PI/2 BPSK	100@0	4.18	13	**PASS**
26	15	20	167300	836.5	DFT-s-OFDM PI/2 BPSK	1@0	4.77	13	**PASS**
26	15	20	167300	836.5	DFT-s-OFDM QPSK	100@0	5.55	13	**PASS**
26	15	20	167300	836.5	DFT-s-OFDM QPSK	1@0	6.18	13	**PASS**