FCC RF Test Report

APPLICANT	: Motorola Mobility LLC
EQUIPMENT	: Mobile Cellular Phone
BRAND NAME	: Motorola
MODEL NAME	: XT2141-1
FCC ID	: IHDT56ZP1
STANDARD	: 47 CFR Part 2, Part 27 Subpart Q
CLASSIFICATION	: PCS Licensed Transmitter Held to Ear (PCE)
TEST DATE(S)	: Jun. 28, 2021 ~ Jul. 13, 2021

We, Sporton International (ShenZhen) Inc., 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 (ShenZhen) Inc., the test report shall not be reproduced except in full.

Reviewed by: Derreck Chen / Supervisor

Approved by: Eric Shih / Manager

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People's Republic of China

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG151701-02D	Rev. 01	Initial issue of report	Jul. 16, 2021
FG151701-02D	Rev. 02	Remove EN-DC combinations of DC_48A_n77A	Jul. 23, 2021

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.4	§2.1046	Conducted Output Power	Reporting Only	PASS	-
3.5	§27.50 (k)(4)	Peak-to-Average Ratio	<13dB	PASS	
3.6	§27.50 (k)(3)	EIRP	EIRP < 1W (30dBm)	PASS	-
3.7	§2.1049	Occupied Bandwidth	Reporting Only	PASS	-
3.8	§2.1051 §27.53 (n)(2)	Conducted Band Edge Measurement	-13dBm/MHz	PASS	-
3.9	§2.1051 §27.53 (n)(2)	Conducted Spurious Emission	-13dBm/MHz	PASS	-
3.10	§2.1055 §27.54	Frequency Stability Temperature & Voltage	Within the band	PASS	-
4.4	§2.1053 §27.53 (n)(2)	Radiated Spurious Emission	-13dBm/MHz	PASS	Under limit 30.73 dB at 15165.800 MHz

Declaration of Conformity:
The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.
Comments and Explanations:
The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

1 General Description

1.1 Applicant

Motorola Mobility LLC
222 W, Merchandise Mart Plaza, Chicago IL 60654 USA

1.2 Manufacturer

Motorola Mobility LLC
222 W, Merchandise Mart Plaza, Chicago IL 60654 USA

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Mobile Cellular Phone
Brand Name	Motorola
Model Name	XT2141-1
FCC ID	IHDT56ZP1
IMEI Code	Conducted: 351758640006316 Radiation: 351758640006985
HW Version	DVT2
SW Version	RRM31.Q3
EUT Stage	Identical Prototype

1.4 Product Specification of Equipment Under Test

Product Feature	
Tx/Rx Frequency	5G NR n77/n78: 3450 MHz ~ 3550 MHz
Bandwidth	5G NR n77/n78 : 20MHz / 30MHz / 40MHz / 50MHz / 60MHz / 70MHz / 80MHz / 90MHz / 100MHz
SCS	30kHz
SA mode	n77
NSA mode	EN-DC 2A_n77A, 5A_n77A, 13A_n77A, 66A_n77A; EN-DC 2A_n78A, 5A_n78A, 13A_n78A, 66A_n78A;
Maximum Output Power to Antenna	5G NR n77 : 26.10 dBm 5G NR n77 UL MIMO : 23.78 dBi 5G NR n78 : 22.88 dBm
Antenna Gain	5G NR n77 : -2.78 dBi 5G NR n77 UL MIMO : 0.23 dBi 5G NR n78 : -2.59 dBi
Type of Modulation	CP-OFDM: QPSK / 16QAM / 64QAM / 256QAM DFT-s-OFDM: PI/2 BPSK / QPSK / 16QAM / 64QAM / 256QAM

Remark:

1. 5G NR n77 supports SA mode and NSA mode. For NSA mode of all EN-DC combination, we only show the combination of the maximum power among all NSA combinations in the report.
2. For modulation of CP-OFDM and DFT-s-OFDM, the maximum power of CP-OFDM is lower than DFT-s-OFDM modulation, therefore, we chose higher power (DFT-s-OFDM modulation) to perform all tests and show in the report.
3. 5G NR n77 support HPUE and UL MIMO.

1.5 Modification of EUT

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

1.6 Re-use of Measured Data

1.6.1 Introduction Section

This application re-uses data collected on a similar device. The subject device of this application (Model: XT2141-1, FCC ID: IHDT56ZP1) is electrically identical to the reference device (Model: XT2141-2, FCC ID: IHDT56ZP2) for the portions of the circuitry corresponding to the data being re-used, as treated by KDB Publication 484596 D01.

1.6.2 Difference Section

For details concerning the similarity with respect to component placement, mechanical/electrical design etc., please refer to the Product Equality Declaration.

The re-used RF data includes the following bands provided in Appendix D (Sporton RF Report No. FG151701-01H for the reference device Model: XT2141-2, FCC ID: IHDT56ZP2).

1.6.3 Reference detail Section:

Equipment Class	Reference FCC ID	Folder Test	Report Title/Section
PCE	IHDT56ZP2	Part27Q (Report No. FG151701-01H)	All sections applicable except n77 UL MIMO and NSA n77 EIRP

1.6.4 Spot Check Verification Data Section

In order to confirm hardware similarity of the subject device with the reference device, spot check measurements were performed on the subject device for the following test items, the test result were consistent with FCC ID: IHDT56ZP2.

Assertions concerning the similarity of these devices are based on representations by the applicant. The applicant accepts full responsibility for the validity of the similarity claim, and for the determination that verification test data are sufficient to support it.

Test Item	Mode	IHDT56ZP2 Worst Result	IHDT56ZP1 Worst Result	Difference (dB)
Average Conducted Power (dBm)	EN DC_2A-n77A(100M)	26.79	26.05	0.74
	EN DC_5A-n77A(100M)	26.32	25.55	0.77
	EN DC_13A-n77A(100M)	26.42	25.89	0.53
	EN DC_66A-n77A(100M)	26.44	26.1	0.34
	EN DC_2A-n78A(100M)	23.37	22.88	0.49
	EN DC_5A-n78A(100M)	23.23	22.62	0.61
	EN DC_13A-n78A(100M)	23.11	22.63	0.48
	EN DC_66A-n78A(100M)	23.11	22.81	0.3
	n77A(100M)	26.96	26.01	0.95

1.7 Maximum EIRP Power and Emission Designator

5G NR n77/n78		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)
40	3470.01 ~ 3529.98	0.2515	38M2G7D	0.2351	38M2W7D
100	3500.01 ~ 3500.01	0.2308	97M5G7D	0.2062	97M7W7D

Note:

1. 5G NR n77 overlaps the entire frequency range of n78, Therefore, the test results provided in this report covers n77 as well as n78.
2. All modulations have been evaluation, only the worst test results of PSK & QAM are shown in the report .

1.8 Testing Site

Sporton International (Shenzhen) Inc. is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.01.

Test Firm	Sporton International (Shenzhen) Inc.		
Test Site Location	1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan, Shenzhen, 518055 People's Republic of China TEL: +86-755-86379589 FAX: +86-755-86379595		
Test Site No.	Sporton Site No.	FCC Designation No.	FCC Test Firm Registration No.
	TH01-SZ	CN1256	421272

Test Firm	Sporton International (Shenzhen) Inc.		
Test Site Location	101, 1st Floor, Block B, Building 1, No. 2, Tengfeng 4th Road, Fenghuang Community, Fuyong Street, Baoan District, Shenzhen City Guangdong Province China 518103 TEL: +86-755-33202398		
Test Site No.	Sporton Site No.	FCC Designation No.	FCC Test Firm Registration No.
	03CH02-SZ	CN1256	421272

1.9 Test Software

Item	Site	Manufacturer	Name	Version
1.	03CH02-SZ	AUDIX	E3	6.2009-8-24a

1.10 Applied Standards

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

- 47 CFR Part 2, Part 27 Subpart Q
- ANSI C63.26-2015
- FCC KDB 971168 Power Meas License Digital Systems D01 v03r01
- FCC KDB 412172 D01 Determining ERP and EIRP v01r01

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.

1.11 Specification of Accessory

Specification of Accessory				
AC Adapter 1	**Brand Name**	Motorola (Salom)	**Model Name**	MC-301
AC Adapter 2	**Brand Name**	Motorola (Acbel)	**Model Name**	MC-301
Battery	**Brand Name**	Motorola (ATL)	**Model Name**	MB50
USB Cable 1	**Brand Name**	Motorola (Luxshare)	**Model Name**	SC18D13217
USB Cable 2	**Brand Name**	Motorola (Saibao)	**Model Name**	SC18D13215
USB Cable 3	**Brand Name**	Motorola (Cabletech)	**Model Name**	SC18D13216

2 Test Configuration of Equipment Under Test

2.1 Test Mode

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

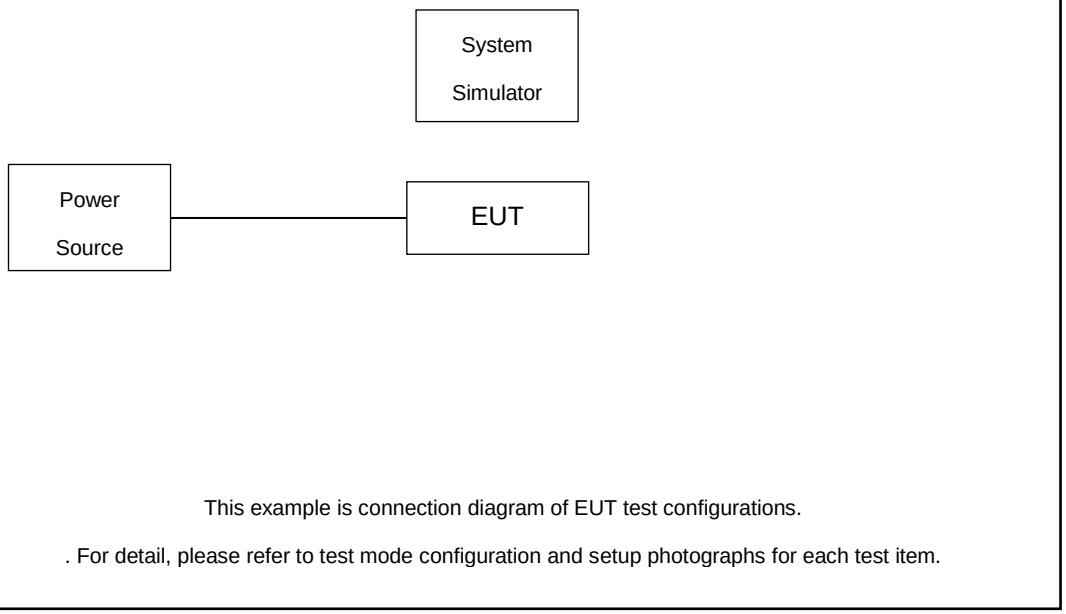
Radiated measurements are performed by rotating the EUT in three different orthogonal test planes to find the maximum emission.

Test Cases	Band	Bandwidth (MHz)	Modulation	RB #	Test Channel
		eg. 20M, 30M, 40M, 50M, 60M, 70M, 80M, 90M, 100M	eg. PI/2 BPSK, QPSK, 16QAM, 64QAM, 256QAM	1RB, Partial RB, Full RB	L/M/H
Max. Output Power	5G n77	20M, 30M, 40M, 50M, 60M, 70M, 80M, 90M, 100M	QPSK, 16QAM, 64QAM, 256QAM	1RB, Partial RB, Full RB	L, M, H
Peak-to-Average Ratio	5G n77	20M	QPSK	1RB, Full RB	L, M, H
E.I.R.P	5G n77	20M, 30M, 40M, 50M, 60M, 70M, 80M, 90M, 100M	QPSK, 16QAM, 64QAM, 256QAM	1RB, Partial RB, Full RB	L, M, H
26dB and 99% Bandwidth	5G n77	20M, 30M, 40M, 50M, 60M, 70M, 80M, 90M, 100M	QPSK, 16QAM, 64QAM, 256QAM	Full RB	M
Conducted Band Edge	5G n77	20M, 60M, 100M	QPSK	1RB, Full RB	L, H
Conducted Spurious Emission	5G n77	20M, 60M, 100M	QPSK	1RB	L, M, H
Frequency Stability	5G n77	20M	QPSK	Full RB	M
Radiated Spurious Emission	5G n77	Worst case from maximum power			M

Note:

1. 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.
2. Based on engineering evaluation, only the worst modulations test results are shown in the report.
3. 5G NR n77 overlaps the entire frequency range of n78, Therefore, the test results provided in this report covers n77 as well as n78.

2.2 Connection Diagram of Test System



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.	Power Supply	GWINSTEK	PSS-2002	N/A	N/A	Unshielded, 1.8 m
2.	Base Station	Anritsu	MT8000A	N/A	N/A	Unshielded,1.8m
3.	Base Station	Anritsu	MT8821C	N/A	N/A	Unshielded,1.8m

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 and attenuator factor 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 and attenuator factor.

Offset = RF cable loss + attenuator factor.

Following shows an offset computation example with cable loss 5.0 dB and 10dB attenuator.

Example :

Offset(dB) = RF cable loss(dB) + attenuator factor(dB).

= 5.0 + 10 = 15.0 (dB)

2.5 Frequency List of Low/Middle/High Channels

5G n77/n78 Channel and Frequency List				
BW [MHz]	**Channel/Frequency(MHz)**	**Lowest**	**Middle**	**Highest**
100	Channel	-	633334	-
	Frequency	-	3500.01	-
90	Channel	633000	633334	633666
	Frequency	3495.00	3500.01	3504.99
80	Channel	632668	633334	634000
	Frequency	3490.02	3500.01	3510.00
70	Channel	632334	633334	634332
	Frequency	3485.01	3500.01	3514.98
60	Channel	632000	633334	634666
	Frequency	3480.00	3500.01	3519.99
50	Channel	631668	633334	635000
	Frequency	3475.02	3500.01	3525.00
40	Channel	631334	633334	635332
	Frequency	3470.01	3500.01	3529.98
30	Channel	631000	633334	635666
	Frequency	3465.00	3500.01	3534.99
20	Channel	630668	633334	636000
	Frequency	3460.02	3500.01	3540.00

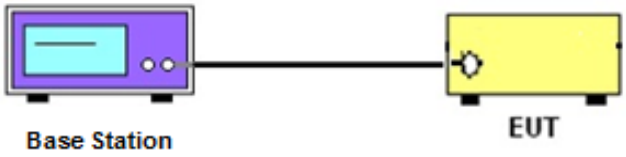
3 Conducted Test Items

3.1 Measuring Instruments

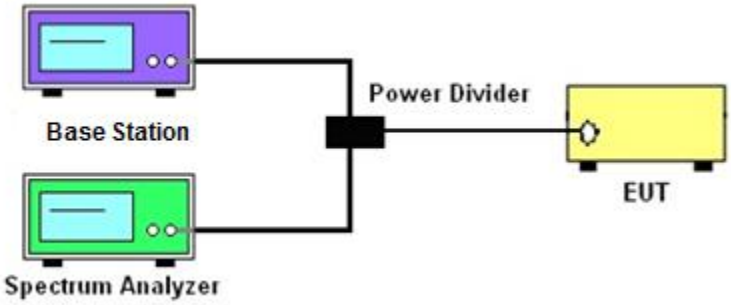
See list of measuring instruments of this test report.

3.2 Test Setup

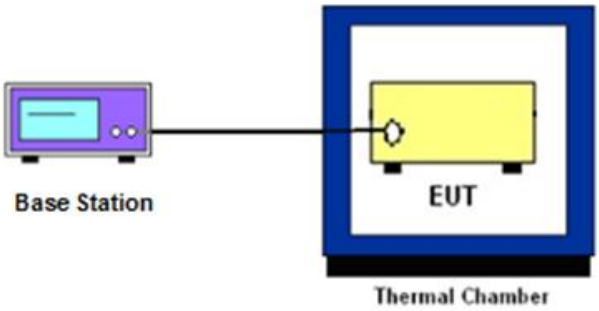
3.2.1 Conducted Output Power



3.2.2 Peak-to-Average Ratio, Occupied / 26dB Bandwidth ,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 Measurement

3.4.1 Description of the Conducted Output Power Measurement

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

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 EIRP

3.6.1 Description of EIRP Limit

§ 27.50 (k)(3)

Mobile devices are limited to 1Watt (30 dBm) EIRP. Mobile devices operating in these bands must employ a means for limiting power to the minimum necessary for successful communications

3.6.2 Test Procedures

1. According to KDB 412172 D01 Power Approach,
2. 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

3.7 Occupied Bandwidth

3.7.1 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.

3.7.2 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.

3.8 Conducted Band Edge Measurement

3.8.1 Description of Conducted Band Edge Measurement

§ 27.53 (n)(2)

For mobile operations in the 3450-3550 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed −13 dBm/MHz.

Compliance with this paragraph is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater. However, in the 1 megahertz 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, but limited to a maximum of 200 kHz. In the bands between 1 and 5 MHz removed from the licensee's frequency block, the minimum resolution bandwidth for the measurement shall be 500 kHz.

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 band edges of low and high channels for the highest RF powers were measured.
4. Set RBW ≥ 1% EBW but limited to a maximum of 200 kHz in the 1MHz band immediately outside and adjacent to the band edge.
5. Beyond the 1 MHz and 5 MHz removed from the band edge, set RBW ≥ 500KHz.
6. Beyond the 5 MHz removed from the band edge, set RBW = 1MHz.
7. Set spectrum analyzer with RMS detector.
8. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
9. Checked that all the results comply with the emission limit line.

3.9 Conducted Spurious Emission Measurement

3.9.1 Description of Conducted Spurious Emission Measurement

The power of any emission outside of the authorized operating frequency ranges shall not exceed −13 dBm/MHz.

It is measured by means of a calibrated spectrum analyzer and scanned from 9 kHz up to a frequency including its 10^{th} harmonic.

3.9.2 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. Checked that all the results comply with the emission limit line.

3.10 Frequency Stability Measurement

3.10.1 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.

3.10.2 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.

3.10.3 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.

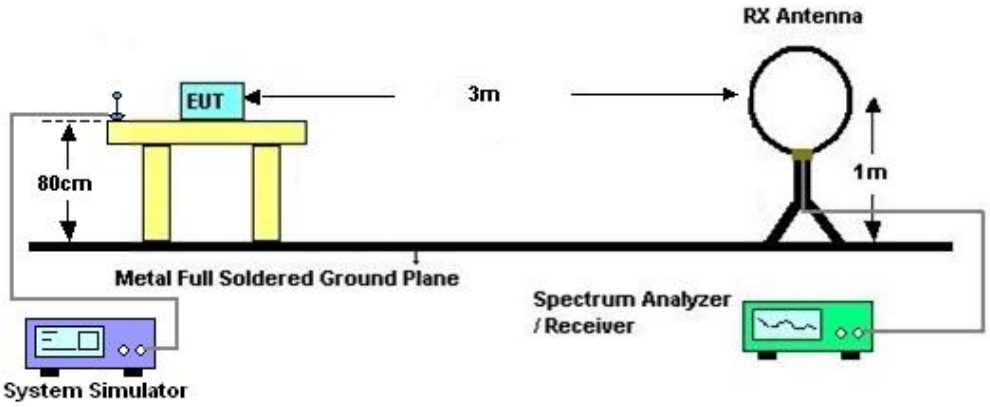
4 Radiated Test Items

4.1 Measuring Instruments

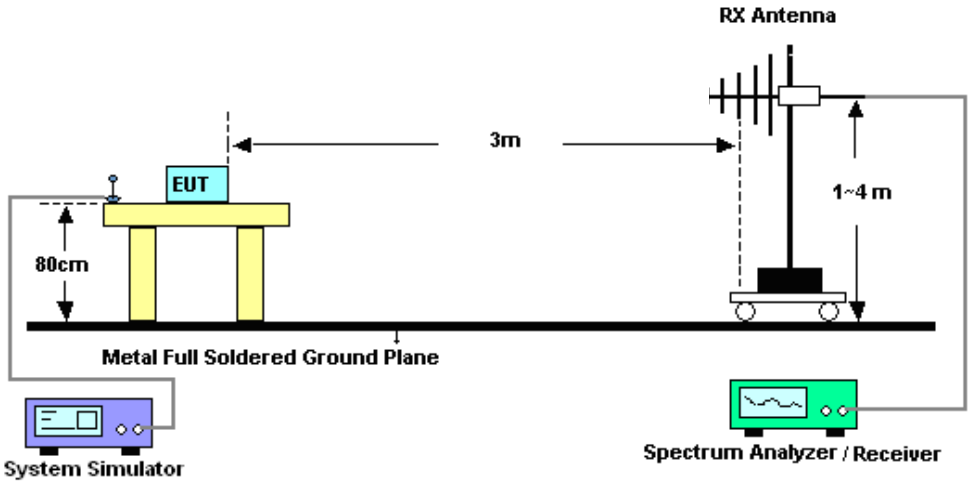
See list of measuring instruments of this test report.

4.2 Test Setup

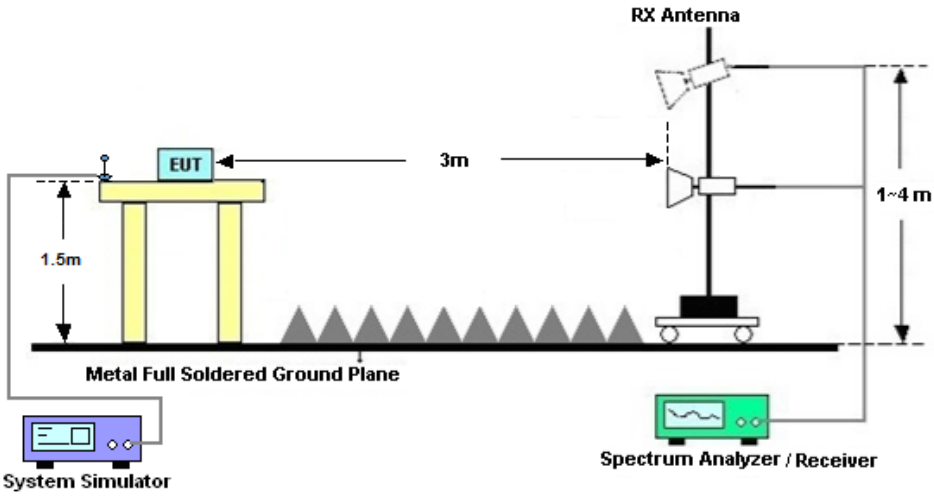
4.2.1 For radiated test below 30MHz



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 Measurement

4.4.1 Description of Radiated Spurious Emission

The radiated spurious emission was measured by substitution method according to ANSI/TIA-603-E.

The power of any emission outside of the authorized operating frequency ranges shall not exceed −13 dBm/MHz.

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.
   EIRP (dBm) = S.G. Power – Tx Cable Loss + Tx Antenna Gain
   ERP (dBm) = EIRP - 2.15
10. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

5 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV40	101078	10Hz~40GHz	Apr. 08, 2021	Jun. 28, 2021~ Jun. 29, 2021	Apr. 07, 2022	Conducted (TH01-SZ)
DC Power Supply	TTI	PL330P	290070	Max 32V，3A	Oct. 15, 2020	Jun. 28, 2021~ Jun. 29, 2021	Oct. 14, 2021	Conducted (TH01-SZ)
Power Divider	TOJOIN	PS-2SM-04 265	60.06.020.007 7	0.4GHz~26.5GHz	Dec. 26, 2020	Jun. 28, 2021~ Jun. 29, 2021	Dec. 25, 2021	Conducted (TH01-SZ)
Thermal Chamber	Ten Billion Hongzhangroup	LP-150U	H2014081803	-40~+150°C	Jul. 22, 2020	Jun. 28, 2021~ Jun. 29, 2021	Jul. 21, 2021	Conducted (TH01-SZ)
EMI Test Receiver	R&S	ESR7	101404	9kHz~7GHz	Oct. 16, 2020	Jul. 13, 2021	Oct. 15, 2021	Radiation (03CH02-SZ)
EXA Spectrum Analyzer	KEYSIGHT	N9010A	MY55150213	10Hz~44GHz	Jul. 21, 2020	Jul. 13, 2021	Jul. 20, 2021	Radiation (03CH02-SZ)
Bilog Antenna	TeseQ	CBL6112D	35407	30MHz-2GHz	Jul. 15, 2020	Jul. 13, 2021	Jul. 14, 2021	Radiation (03CH02-SZ)
Double Ridge Horn Antenna	ETS-Lindgren	3117	00119436	1GHz~18GHz	Jul. 25, 2020	Jul. 13, 2021	Jul. 24, 2021	Radiation (03CH02-SZ)
SHF-EHF Horn	com-power	AH-840	101071	18Ghz-40GHz	Apr. 23, 2021	Jul. 13, 2021	Apr. 22, 2022	Radiation (03CH02-SZ)
LF Amplifier	Burgeon	BPA-530	102211	0.01~3000Mhz	Oct. 16, 2020	Jul. 13, 2021	Oct. 15, 2021	Radiation (03CH02-SZ)
HF Amplifier	MITEQ	AMF-7D-00 101800-30-1 0P-R	1943528	1GHz~18GHz	Oct. 16, 2020	Jul. 13, 2021	Oct. 15, 2021	Radiation (03CH02-SZ)
HF Amplifier	KEYSIGHT	83017A	MY53270105	0.5GHz~26.5Ghz	Oct. 16, 2020	Jul. 13, 2021	Oct. 15, 2021	Radiation (03CH02-SZ)
HF Amplifier	MITEQ	TTA1840-35 -HG	1871923	18GHz~40GHz	Jul. 21, 2020	Jul. 13, 2021	Jul. 20, 2021	Radiation (03CH02-SZ)
AC Power Source	Chroma	61601	616010002470	N/A	NCR	Jul. 13, 2021	NCR	Radiation (03CH02-SZ)
Turn Table	Chaintek	T-200	N/A	0~360 degree	NCR	Jul. 13, 2021	NCR	Radiation (03CH02-SZ)
Antenna Mast	Chaintek	MBS-400	N/A	1 m~4 m	NCR	Jul. 13, 2021	NCR	Radiation (03CH02-SZ)

NCR: No Calibration Required

6 Uncertainty of Evaluation

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 Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**2.47dB**

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**3.31dB**

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**3.72dB**

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

Appendix A. Test Results of Conducted Test

Software Version: 21.02.062201

FR1 N77 UL MIMO

Transmitter Conducted Output Power And ERP/EIRP, UL MIMO gain=0.23dBi

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Ant3	Ant5	Conducted Power(dBm)	EIRP (dBm)	EIRP (W)
77	30	20	630668	3460.02	CP-OFDM QPSK	25@12	20.32	20.37	23.36	23.59	0.2283
77	30	20	630668	3460.02	CP-OFDM QPSK	1@1	20.44	20.46	23.46	23.69	0.2339
77	30	20	630668	3460.02	CP-OFDM QPSK	1@49	20.81	20.72	23.78	24.01	0.2515
77	30	20	630668	3460.02	CP-OFDM 16 QAM	25@12	20.22	20.06	23.15	23.38	0.2178
77	30	20	630668	3460.02	CP-OFDM 16 QAM	1@1	19.88	20.41	23.16	23.39	0.2185
77	30	20	630668	3460.02	CP-OFDM 16 QAM	1@49	20.02	20.16	23.10	23.33	0.2153
77	30	20	630668	3460.02	CP-OFDM 64 QAM	25@12	18.48	18.71	21.61	21.84	0.1527
77	30	20	630668	3460.02	CP-OFDM 64 QAM	1@1	18.2	18.42	21.32	21.55	0.1430
77	30	20	630668	3460.02	CP-OFDM 64 QAM	1@49	18.25	18.71	21.50	21.73	0.1488
77	30	20	630668	3460.02	CP-OFDM 256 QAM	25@12	15.08	14.84	17.97	18.20	0.0661
77	30	20	630668	3460.02	CP-OFDM 256 QAM	1@1	15.12	14.84	17.99	18.22	0.0664
77	30	20	630668	3460.02	CP-OFDM 256 QAM	1@49	14.97	15.04	18.02	18.25	0.0668
77	30	20	633334	3500.01	CP-OFDM QPSK	25@12	20.61	20.19	23.42	23.65	0.2315
77	30	20	633334	3500.01	CP-OFDM QPSK	1@1	20.83	20.33	23.60	23.83	0.2414
77	30	20	633334	3500.01	CP-OFDM QPSK	1@49	20.69	20.34	23.53	23.76	0.2376
77	30	20	633334	3500.01	CP-OFDM 16 QAM	25@12	20.02	19.8	22.92	23.15	0.2066
77	30	20	633334	3500.01	CP-OFDM 16 QAM	1@1	20.64	19.66	23.19	23.42	0.2197
77	30	20	633334	3500.01	CP-OFDM 16 QAM	1@49	20.3	19.64	22.99	23.22	0.2100
77	30	20	633334	3500.01	CP-OFDM 64 QAM	25@12	18.71	18.17	21.46	21.69	0.1475
77	30	20	633334	3500.01	CP-OFDM 64 QAM	1@1	18.67	18.49	21.59	21.82	0.1521
77	30	20	633334	3500.01	CP-OFDM 64 QAM	1@49	18.63	18.28	21.47	21.70	0.1479
77	30	20	633334	3500.01	CP-OFDM 256 QAM	25@12	15.01	14.82	17.93	18.16	0.0654
77	30	20	633334	3500.01	CP-OFDM 256 QAM	1@1	15.17	15.14	18.17	18.40	0.0691

77	30	20	633334	3500.01	CP-OFDM 256 QAM	1@49	14.99	14.96	17.99	18.22	0.0663
77	30	20	636000	3540	CP-OFDM QPSK	25@12	20.45	20.82	23.65	23.88	0.2443
77	30	20	636000	3540	CP-OFDM QPSK	1@1	20.57	20.32	23.46	23.69	0.2337
77	30	20	636000	3540	CP-OFDM QPSK	1@49	20.7	20.31	23.52	23.75	0.2371
77	30	20	636000	3540	CP-OFDM 16 QAM	25@12	19.69	20.36	23.05	23.28	0.2127
77	30	20	636000	3540	CP-OFDM 16 QAM	1@1	19.61	20.44	23.06	23.29	0.2131
77	30	20	636000	3540	CP-OFDM 16 QAM	1@49	20.62	20.28	23.46	23.69	0.2341
77	30	20	636000	3540	CP-OFDM 64 QAM	25@12	18.74	18.54	21.65	21.88	0.1542
77	30	20	636000	3540	CP-OFDM 64 QAM	1@1	18.16	18.21	21.20	21.43	0.1389
77	30	20	636000	3540	CP-OFDM 64 QAM	1@49	18.19	18.49	21.35	21.58	0.1440
77	30	20	636000	3540	CP-OFDM 256 QAM	25@12	15.01	15.17	18.10	18.33	0.0681
77	30	20	636000	3540	CP-OFDM 256 QAM	1@1	14.86	14.89	17.89	18.12	0.0648
77	30	20	636000	3540	CP-OFDM 256 QAM	1@49	14.95	14.94	17.96	18.19	0.0659
77	30	30	631000	3465	CP-OFDM QPSK	36@18	20.58	20.52	23.56	23.79	0.2394
77	30	30	631000	3465	CP-OFDM QPSK	1@1	20.78	20.44	23.62	23.85	0.2429
77	30	30	631000	3465	CP-OFDM QPSK	1@76	20.47	20.71	23.60	23.83	0.2417
77	30	30	631000	3465	CP-OFDM 16 QAM	36@18	19.63	20.47	23.08	23.31	0.2143
77	30	30	631000	3465	CP-OFDM 16 QAM	1@1	19.88	20.01	22.96	23.19	0.2083
77	30	30	631000	3465	CP-OFDM 16 QAM	1@76	19.64	19.94	22.80	23.03	0.2011
77	30	30	631000	3465	CP-OFDM 64 QAM	36@18	18.15	18.75	21.47	21.70	0.1479
77	30	30	631000	3465	CP-OFDM 64 QAM	1@1	18.23	18.71	21.49	21.72	0.1485
77	30	30	631000	3465	CP-OFDM 64 QAM	1@76	18.12	18.1	21.12	21.35	0.1365
77	30	30	631000	3465	CP-OFDM 256 QAM	36@18	14.91	14.99	17.96	18.19	0.0659
77	30	30	631000	3465	CP-OFDM 256 QAM	1@1	15.06	14.99	18.04	18.27	0.0671
77	30	30	631000	3465	CP-OFDM 256 QAM	1@76	15.06	15.05	18.07	18.30	0.0675
77	30	30	633334	3500.01	CP-OFDM QPSK	36@18	20.68	20.5	23.60	23.83	0.2416
77	30	30	633334	3500.01	CP-OFDM QPSK	1@1	20.34	20.51	23.44	23.67	0.2326
77	30	30	633334	3500.01	CP-OFDM QPSK	1@76	20.68	20.43	23.57	23.80	0.2397
77	30	30	633334	3500.01	CP-OFDM 16 QAM	36@18	20.34	20	23.18	23.41	0.2195

77	30	30	633334	3500.01	CP-OFDM 16 QAM	1@1	20.4	20.29	23.36	23.59	0.2283
77	30	30	633334	3500.01	CP-OFDM 16 QAM	1@76	20.15	20.27	23.22	23.45	0.2214
77	30	30	633334	3500.01	CP-OFDM 64 QAM	36@18	18.15	18.32	21.25	21.48	0.1405
77	30	30	633334	3500.01	CP-OFDM 64 QAM	1@1	18.57	18.47	21.53	21.76	0.1500
77	30	30	633334	3500.01	CP-OFDM 64 QAM	1@76	18.33	18.64	21.50	21.73	0.1489
77	30	30	633334	3500.01	CP-OFDM 256 QAM	36@18	14.88	14.97	17.94	18.17	0.0656
77	30	30	633334	3500.01	CP-OFDM 256 QAM	1@1	14.84	15.12	17.99	18.22	0.0664
77	30	30	633334	3500.01	CP-OFDM 256 QAM	1@76	15.18	15.1	18.15	18.38	0.0689
77	30	30	635666	3534.99	CP-OFDM QPSK	36@18	20.33	20.43	23.39	23.62	0.2302
77	30	30	635666	3534.99	CP-OFDM QPSK	1@1	20.7	20.4	23.56	23.79	0.2395
77	30	30	635666	3534.99	CP-OFDM QPSK	1@76	20.33	20.45	23.40	23.63	0.2307
77	30	30	635666	3534.99	CP-OFDM 16 QAM	36@18	20.3	19.93	23.13	23.36	0.2167
77	30	30	635666	3534.99	CP-OFDM 16 QAM	1@1	20.09	20.07	23.09	23.32	0.2148
77	30	30	635666	3534.99	CP-OFDM 16 QAM	1@76	20.41	20	23.22	23.45	0.2213
77	30	30	635666	3534.99	CP-OFDM 64 QAM	36@18	18.23	18.19	21.22	21.45	0.1397
77	30	30	635666	3534.99	CP-OFDM 64 QAM	1@1	18.26	18.37	21.33	21.56	0.1431
77	30	30	635666	3534.99	CP-OFDM 64 QAM	1@76	18.34	18.45	21.41	21.64	0.1457
77	30	30	635666	3534.99	CP-OFDM 256 QAM	36@18	14.99	14.91	17.96	18.19	0.0659
77	30	30	635666	3534.99	CP-OFDM 256 QAM	1@1	15.02	14.83	17.94	18.17	0.0656
77	30	30	635666	3534.99	CP-OFDM 256 QAM	1@76	15.08	14.99	18.05	18.28	0.0672
77	30	40	631334	3470.01	CP-OFDM QPSK	50@25	20.75	20.34	23.56	23.79	0.2394
77	30	40	631334	3470.01	CP-OFDM QPSK	1@1	20.82	20.43	23.64	23.87	0.2438
77	30	40	631334	3470.01	CP-OFDM QPSK	1@104	20.81	20.72	23.78	24.01	0.2515
77	30	40	631334	3470.01	CP-OFDM 16 QAM	50@25	20.07	20.46	23.28	23.51	0.2244
77	30	40	631334	3470.01	CP-OFDM 16 QAM	1@1	20.57	19.71	23.17	23.40	0.2189
77	30	40	631334	3470.01	CP-OFDM 16 QAM	1@104	20.34	20.6	23.48	23.71	0.2351
77	30	40	631334	3470.01	CP-OFDM 64 QAM	50@25	18.53	18.19	21.37	21.60	0.1447
77	30	40	631334	3470.01	CP-OFDM 64 QAM	1@1	18.72	18.6	21.67	21.90	0.1549
77	30	40	631334	3470.01	CP-OFDM 64 QAM	1@104	18.49	18.64	21.58	21.81	0.1516

77	30	40	631334	3470.01	CP-OFDM 256 QAM	50@25	14.92	14.88	17.91	18.14	0.0652
77	30	40	631334	3470.01	CP-OFDM 256 QAM	1@1	15.09	15.07	18.09	18.32	0.0679
77	30	40	631334	3470.01	CP-OFDM 256 QAM	1@104	15.02	14.99	18.02	18.25	0.0668
77	30	40	633334	3500.01	CP-OFDM QPSK	50@25	20.42	20.5	23.47	23.70	0.2345
77	30	40	633334	3500.01	CP-OFDM QPSK	1@1	20.75	20.61	23.69	23.92	0.2467
77	30	40	633334	3500.01	CP-OFDM QPSK	1@104	20.64	20.36	23.51	23.74	0.2367
77	30	40	633334	3500.01	CP-OFDM 16 QAM	50@25	20.25	19.72	23.00	23.23	0.2106
77	30	40	633334	3500.01	CP-OFDM 16 QAM	1@1	19.94	19.95	22.96	23.19	0.2082
77	30	40	633334	3500.01	CP-OFDM 16 QAM	1@104	20.04	19.68	22.87	23.10	0.2044
77	30	40	633334	3500.01	CP-OFDM 64 QAM	50@25	18.61	18.66	21.65	21.88	0.1540
77	30	40	633334	3500.01	CP-OFDM 64 QAM	1@1	18.38	18.45	21.43	21.66	0.1464
77	30	40	633334	3500.01	CP-OFDM 64 QAM	1@104	18.53	18.46	21.51	21.74	0.1491
77	30	40	633334	3500.01	CP-OFDM 256 QAM	50@25	15.09	14.89	18.00	18.23	0.0666
77	30	40	633334	3500.01	CP-OFDM 256 QAM	1@1	15.1	15.13	18.13	18.36	0.0685
77	30	40	633334	3500.01	CP-OFDM 256 QAM	1@104	14.82	15.02	17.93	18.16	0.0655
77	30	40	635332	3529.98	CP-OFDM QPSK	50@25	20.79	20.65	23.73	23.96	0.2490
77	30	40	635332	3529.98	CP-OFDM QPSK	1@1	20.42	20.53	23.49	23.72	0.2353
77	30	40	635332	3529.98	CP-OFDM QPSK	1@104	20.43	20.49	23.47	23.70	0.2345
77	30	40	635332	3529.98	CP-OFDM 16 QAM	50@25	20.49	19.9	23.22	23.45	0.2211
77	30	40	635332	3529.98	CP-OFDM 16 QAM	1@1	19.64	20.17	22.92	23.15	0.2067
77	30	40	635332	3529.98	CP-OFDM 16 QAM	1@104	20.37	19.77	23.09	23.32	0.2148
77	30	40	635332	3529.98	CP-OFDM 64 QAM	50@25	18.73	18.17	21.47	21.70	0.1479
77	30	40	635332	3529.98	CP-OFDM 64 QAM	1@1	18.71	18.48	21.61	21.84	0.1527
77	30	40	635332	3529.98	CP-OFDM 64 QAM	1@104	18.66	18.11	21.40	21.63	0.1457
77	30	40	635332	3529.98	CP-OFDM 256 QAM	50@25	15.07	15.06	18.08	18.31	0.0677
77	30	40	635332	3529.98	CP-OFDM 256 QAM	1@1	15.01	15.09	18.06	18.29	0.0675
77	30	40	635332	3529.98	CP-OFDM 256 QAM	1@104	15.04	14.93	18.00	18.23	0.0665
77	30	50	631668	3475.02	CP-OFDM QPSK	64@32	20.65	20.58	23.63	23.86	0.2430
77	30	50	631668	3475.02	CP-OFDM QPSK	1@1	20.49	20.32	23.42	23.65	0.2315

77	30	50	631668	3475.02	CP-OFDM QPSK	1@131	20.58	20.37	23.49	23.72	0.2353
77	30	50	631668	3475.02	CP-OFDM 16 QAM	64@32	20.51	19.78	23.17	23.40	0.2188
77	30	50	631668	3475.02	CP-OFDM 16 QAM	1@1	20.07	19.76	22.93	23.16	0.2069
77	30	50	631668	3475.02	CP-OFDM 16 QAM	1@131	20.28	20.37	23.34	23.57	0.2273
77	30	50	631668	3475.02	CP-OFDM 64 QAM	64@32	18.63	18.59	21.62	21.85	0.1531
77	30	50	631668	3475.02	CP-OFDM 64 QAM	1@1	18.25	18.64	21.46	21.69	0.1476
77	30	50	631668	3475.02	CP-OFDM 64 QAM	1@131	18.51	18.42	21.48	21.71	0.1481
77	30	50	631668	3475.02	CP-OFDM 256 QAM	64@32	15.01	15.13	18.08	18.31	0.0678
77	30	50	631668	3475.02	CP-OFDM 256 QAM	1@1	15.03	15.01	18.03	18.26	0.0670
77	30	50	631668	3475.02	CP-OFDM 256 QAM	1@131	15.17	14.81	18.00	18.23	0.0666
77	30	50	633334	3500.01	CP-OFDM QPSK	64@32	20.36	20.72	23.55	23.78	0.2390
77	30	50	633334	3500.01	CP-OFDM QPSK	1@1	20.54	20.62	23.59	23.82	0.2410
77	30	50	633334	3500.01	CP-OFDM QPSK	1@131	20.58	20.64	23.62	23.85	0.2427
77	30	50	633334	3500.01	CP-OFDM 16 QAM	64@32	20.09	19.91	23.01	23.24	0.2109
77	30	50	633334	3500.01	CP-OFDM 16 QAM	1@1	20.44	19.99	23.23	23.46	0.2219
77	30	50	633334	3500.01	CP-OFDM 16 QAM	1@131	19.71	20.33	23.04	23.27	0.2124
77	30	50	633334	3500.01	CP-OFDM 64 QAM	64@32	18.74	18.33	21.55	21.78	0.1507
77	30	50	633334	3500.01	CP-OFDM 64 QAM	1@1	18.22	18.16	21.20	21.43	0.1390
77	30	50	633334	3500.01	CP-OFDM 64 QAM	1@131	18.73	18.32	21.54	21.77	0.1503
77	30	50	633334	3500.01	CP-OFDM 256 QAM	64@32	14.86	14.85	17.87	18.10	0.0645
77	30	50	633334	3500.01	CP-OFDM 256 QAM	1@1	15.09	14.93	18.02	18.25	0.0669
77	30	50	633334	3500.01	CP-OFDM 256 QAM	1@131	15.03	14.86	17.96	18.19	0.0659
77	30	50	635000	3525	CP-OFDM QPSK	64@32	20.57	20.79	23.69	23.92	0.2467
77	30	50	635000	3525	CP-OFDM QPSK	1@1	20.48	20.5	23.50	23.73	0.2361
77	30	50	635000	3525	CP-OFDM QPSK	1@131	20.69	20.66	23.69	23.92	0.2464
77	30	50	635000	3525	CP-OFDM 16 QAM	64@32	20.29	19.83	23.08	23.31	0.2141
77	30	50	635000	3525	CP-OFDM 16 QAM	1@1	19.88	19.69	22.80	23.03	0.2008
77	30	50	635000	3525	CP-OFDM 16 QAM	1@131	19.84	19.9	22.88	23.11	0.2047
77	30	50	635000	3525	CP-OFDM 64 QAM	64@32	18.75	18.57	21.67	21.90	0.1549

77	30	50	635000	3525	CP-OFDM 64 QAM	1@1	18.48	18.14	21.32	21.55	0.1430
77	30	50	635000	3525	CP-OFDM 64 QAM	1@131	18.34	18.19	21.28	21.51	0.1415
77	30	50	635000	3525	CP-OFDM 256 QAM	64@32	14.98	14.86	17.93	18.16	0.0655
77	30	50	635000	3525	CP-OFDM 256 QAM	1@1	14.82	14.93	17.89	18.12	0.0648
77	30	50	635000	3525	CP-OFDM 256 QAM	1@131	15.12	15.15	18.15	18.38	0.0688
77	30	60	632000	3480	CP-OFDM QPSK	81@40	20.37	20.62	23.51	23.74	0.2365
77	30	60	632000	3480	CP-OFDM QPSK	1@1	20.62	20.51	23.58	23.81	0.2402
77	30	60	632000	3480	CP-OFDM QPSK	1@160	20.42	20.35	23.40	23.63	0.2304
77	30	60	632000	3480	CP-OFDM 16 QAM	81@40	20.28	20.04	23.17	23.40	0.2189
77	30	60	632000	3480	CP-OFDM 16 QAM	1@1	20.59	20.46	23.54	23.77	0.2380
77	30	60	632000	3480	CP-OFDM 16 QAM	1@160	20.15	19.82	23.00	23.23	0.2103
77	30	60	632000	3480	CP-OFDM 64 QAM	81@40	18.12	18.44	21.29	21.52	0.1420
77	30	60	632000	3480	CP-OFDM 64 QAM	1@1	18.19	18.53	21.37	21.60	0.1447
77	30	60	632000	3480	CP-OFDM 64 QAM	1@160	18.57	18.14	21.37	21.60	0.1446
77	30	60	632000	3480	CP-OFDM 256 QAM	81@40	15.06	15.05	18.07	18.30	0.0675
77	30	60	632000	3480	CP-OFDM 256 QAM	1@1	15.18	15.05	18.13	18.36	0.0685
77	30	60	632000	3480	CP-OFDM 256 QAM	1@160	15.14	15.2	18.18	18.41	0.0694
77	30	60	633334	3500.01	CP-OFDM QPSK	81@40	20.38	20.63	23.52	23.75	0.2370
77	30	60	633334	3500.01	CP-OFDM QPSK	1@1	20.67	20.8	23.75	23.98	0.2498
77	30	60	633334	3500.01	CP-OFDM QPSK	1@160	20.46	20.79	23.64	23.87	0.2437
77	30	60	633334	3500.01	CP-OFDM 16 QAM	81@40	19.68	20.19	22.95	23.18	0.2081
77	30	60	633334	3500.01	CP-OFDM 16 QAM	1@1	20.14	20.02	23.09	23.32	0.2148
77	30	60	633334	3500.01	CP-OFDM 16 QAM	1@160	19.74	20.23	23.00	23.23	0.2105
77	30	60	633334	3500.01	CP-OFDM 64 QAM	81@40	18.51	18.64	21.59	21.82	0.1519
77	30	60	633334	3500.01	CP-OFDM 64 QAM	1@1	18.43	18.57	21.51	21.74	0.1493
77	30	60	633334	3500.01	CP-OFDM 64 QAM	1@160	18.49	18.32	21.42	21.65	0.1461
77	30	60	633334	3500.01	CP-OFDM 256 QAM	81@40	14.95	14.91	17.94	18.17	0.0656
77	30	60	633334	3500.01	CP-OFDM 256 QAM	1@1	15.14	14.94	18.05	18.28	0.0673
77	30	60	633334	3500.01	CP-OFDM 256 QAM	1@160	15.18	15	18.10	18.33	0.0681

77	30	60	634666	3500.01	CP-OFDM QPSK	81@40	20.42	20.44	23.44	23.67	0.2328
77	30	60	634666	3500.01	CP-OFDM QPSK	1@1	20.49	20.37	23.44	23.67	0.2329
77	30	60	634666	3500.01	CP-OFDM QPSK	1@160	20.52	20.65	23.60	23.83	0.2413
77	30	60	634666	3500.01	CP-OFDM 16 QAM	81@40	20.34	20.6	23.48	23.71	0.2351
77	30	60	634666	3500.01	CP-OFDM 16 QAM	1@1	20.1	20.1	23.11	23.34	0.2158
77	30	60	634666	3500.01	CP-OFDM 16 QAM	1@160	20.17	20.37	23.28	23.51	0.2245
77	30	60	634666	3500.01	CP-OFDM 64 QAM	81@40	18.23	18.67	21.47	21.70	0.1478
77	30	60	634666	3500.01	CP-OFDM 64 QAM	1@1	18.1	18.21	21.17	21.40	0.1379
77	30	60	634666	3500.01	CP-OFDM 64 QAM	1@160	18.75	18.23	21.51	21.74	0.1492
77	30	60	634666	3519.99	CP-OFDM 256 QAM	81@40	14.83	14.81	17.83	18.06	0.0640
77	30	60	634666	3519.99	CP-OFDM 256 QAM	1@1	15.08	15.01	18.06	18.29	0.0674
77	30	60	634666	3519.99	CP-OFDM 256 QAM	1@160	14.88	15.2	18.05	18.28	0.0674
77	30	70	632334	3485.01	CP-OFDM QPSK	90@45	20.65	20.46	23.57	23.80	0.2397
77	30	70	632334	3485.01	CP-OFDM QPSK	1@1	20.63	20.42	23.54	23.77	0.2381
77	30	70	632334	3485.01	CP-OFDM QPSK	1@187	20.42	20.77	23.61	23.84	0.2421
77	30	70	632334	3485.01	CP-OFDM 16 QAM	90@45	20.54	20.34	23.45	23.68	0.2334
77	30	70	632334	3485.01	CP-OFDM 16 QAM	1@1	19.63	20.24	22.96	23.19	0.2083
77	30	70	632334	3485.01	CP-OFDM 16 QAM	1@187	19.94	19.97	22.97	23.20	0.2087
77	30	70	632334	3485.01	CP-OFDM 64 QAM	90@45	18.5	18.16	21.34	21.57	0.1437
77	30	70	632334	3485.01	CP-OFDM 64 QAM	1@1	18.51	18.51	21.52	21.75	0.1496
77	30	70	632334	3485.01	CP-OFDM 64 QAM	1@187	18.15	18.65	21.42	21.65	0.1461
77	30	70	632334	3485.01	CP-OFDM 256 QAM	90@45	14.99	14.97	17.99	18.22	0.0664
77	30	70	632334	3485.01	CP-OFDM 256 QAM	1@1	14.89	15.09	18.00	18.23	0.0666
77	30	70	632334	3485.01	CP-OFDM 256 QAM	1@187	14.95	14.94	17.96	18.19	0.0659
77	30	70	633334	3500.01	CP-OFDM QPSK	90@45	20.59	20.59	23.60	23.83	0.2416
77	30	70	633334	3500.01	CP-OFDM QPSK	1@1	20.52	20.65	23.60	23.83	0.2413
77	30	70	633334	3500.01	CP-OFDM QPSK	1@187	20.61	20.44	23.54	23.77	0.2380
77	30	70	633334	3500.01	CP-OFDM 16 QAM	90@45	20.5	20.04	23.29	23.52	0.2247
77	30	70	633334	3500.01	CP-OFDM 16 QAM	1@1	19.7	20.22	22.98	23.21	0.2093

77	30	70	633334	3500.01	CP-OFDM 16 QAM	1@187	20.57	20.07	23.34	23.57	0.2274
77	30	70	633334	3500.01	CP-OFDM 64 QAM	90@45	18.58	18.32	21.46	21.69	0.1477
77	30	70	633334	3500.01	CP-OFDM 64 QAM	1@1	18.59	18.17	21.40	21.63	0.1454
77	30	70	633334	3500.01	CP-OFDM 64 QAM	1@187	18.37	18.19	21.29	21.52	0.1420
77	30	70	633334	3500.01	CP-OFDM 256 QAM	90@45	15.02	15.01	18.03	18.26	0.0669
77	30	70	633334	3500.01	CP-OFDM 256 QAM	1@1	14.86	15.14	18.01	18.24	0.0667
77	30	70	633334	3500.01	CP-OFDM 256 QAM	1@187	15.12	15.12	18.13	18.36	0.0686
77	30	70	634332	3500.01	CP-OFDM QPSK	90@45	20.35	20.42	23.40	23.63	0.2304
77	30	70	634332	3500.01	CP-OFDM QPSK	1@1	20.76	20.58	23.68	23.91	0.2461
77	30	70	634332	3514.98	CP-OFDM QPSK	1@187	20.71	20.46	23.60	23.83	0.2414
77	30	70	634332	3514.98	CP-OFDM 16 QAM	90@45	20.42	20.56	23.50	23.73	0.2361
77	30	70	634332	3514.98	CP-OFDM 16 QAM	1@1	20.61	20.5	23.57	23.80	0.2397
77	30	70	634332	3514.98	CP-OFDM 16 QAM	1@187	19.75	20.61	23.21	23.44	0.2209
77	30	70	634332	3514.98	CP-OFDM 64 QAM	90@45	18.54	18.73	21.65	21.88	0.1541
77	30	70	634332	3514.98	CP-OFDM 64 QAM	1@1	18.29	18.56	21.44	21.67	0.1468
77	30	70	634332	3514.98	CP-OFDM 64 QAM	1@187	18.67	18.73	21.71	21.94	0.1563
77	30	70	634332	3514.98	CP-OFDM 256 QAM	90@45	14.98	14.97	17.99	18.22	0.0663
77	30	70	634332	3514.98	CP-OFDM 256 QAM	1@1	15.16	14.8	17.99	18.22	0.0664
77	30	70	634332	3514.98	CP-OFDM 256 QAM	1@187	14.96	14.93	17.96	18.19	0.0659
77	30	80	632668	3490.02	CP-OFDM QPSK	108@54	20.57	20.47	23.53	23.76	0.2377
77	30	80	632668	3490.02	CP-OFDM QPSK	1@1	20.48	20.45	23.48	23.71	0.2347
77	30	80	632668	3490.02	CP-OFDM QPSK	1@215	20.73	20.38	23.57	23.80	0.2398
77	30	80	632668	3490.02	CP-OFDM 16 QAM	108@54	20.38	20.25	23.33	23.56	0.2268
77	30	80	632668	3490.02	CP-OFDM 16 QAM	1@1	20.36	20.49	23.44	23.67	0.2326
77	30	80	632668	3490.02	CP-OFDM 16 QAM	1@215	19.98	20.56	23.29	23.52	0.2249
77	30	80	632668	3490.02	CP-OFDM 64 QAM	108@54	18.58	18.62	21.61	21.84	0.1528
77	30	80	632668	3490.02	CP-OFDM 64 QAM	1@1	18.64	18.18	21.43	21.66	0.1464
77	30	80	632668	3490.02	CP-OFDM 64 QAM	1@215	18.15	18.32	21.25	21.48	0.1405
77	30	80	632668	3490.02	CP-OFDM 256 QAM	108@54	14.89	15.19	18.05	18.28	0.0673

77	30	80	632668	3490.02	CP-OFDM 256 QAM	1@1	14.98	14.98	17.99	18.22	0.0664
77	30	80	632668	3490.02	CP-OFDM 256 QAM	1@215	14.82	14.86	17.85	18.08	0.0643
77	30	80	633334	3500.01	CP-OFDM QPSK	108@54	20.59	20.48	23.55	23.78	0.2386
77	30	80	633334	3500.01	CP-OFDM QPSK	1@1	20.52	20.7	23.62	23.85	0.2427
77	30	80	633334	3500.01	CP-OFDM QPSK	1@215	20.32	20.76	23.56	23.79	0.2391
77	30	80	633334	3500.01	CP-OFDM 16 QAM	108@54	20.23	19.61	22.94	23.17	0.2076
77	30	80	633334	3500.01	CP-OFDM 16 QAM	1@1	19.97	19.63	22.81	23.04	0.2016
77	30	80	633334	3500.01	CP-OFDM 16 QAM	1@215	19.84	19.67	22.77	23.00	0.1994
77	30	80	633334	3500.01	CP-OFDM 64 QAM	108@54	18.61	18.46	21.55	21.78	0.1505
77	30	80	633334	3500.01	CP-OFDM 64 QAM	1@1	18.48	18.47	21.49	21.72	0.1484
77	30	80	633334	3500.01	CP-OFDM 64 QAM	1@215	18.12	18.49	21.32	21.55	0.1429
77	30	80	633334	3500.01	CP-OFDM 256 QAM	108@54	15.19	14.85	18.03	18.26	0.0670
77	30	80	633334	3500.01	CP-OFDM 256 QAM	1@1	15.02	15.11	18.08	18.31	0.0677
77	30	80	633334	3500.01	CP-OFDM 256 QAM	1@215	15.2	15.18	18.20	18.43	0.0697
77	30	80	634000	3510	CP-OFDM QPSK	108@54	20.56	20.55	23.57	23.80	0.2396
77	30	80	634000	3510	CP-OFDM QPSK	1@1	20.3	20.36	23.34	23.57	0.2275
77	30	80	634000	3510	CP-OFDM QPSK	1@215	20.34	20.4	23.38	23.61	0.2297
77	30	80	634000	3510	CP-OFDM 16 QAM	108@54	20.11	20.51	23.32	23.56	0.2267
77	30	80	634000	3510	CP-OFDM 16 QAM	1@1	19.61	20.33	23.00	23.23	0.2102
77	30	80	634000	3510	CP-OFDM 16 QAM	1@215	20.57	19.79	23.21	23.44	0.2207
77	30	80	634000	3510	CP-OFDM 64 QAM	108@54	18.69	18.54	21.63	21.86	0.1533
77	30	80	634000	3510	CP-OFDM 64 QAM	1@1	18.63	18.75	21.70	21.93	0.1560
77	30	80	634000	3510	CP-OFDM 64 QAM	1@215	18.58	18.11	21.36	21.59	0.1443
77	30	80	634000	3510	CP-OFDM 256 QAM	108@54	14.82	14.95	17.90	18.13	0.0650
77	30	80	634000	3510	CP-OFDM 256 QAM	1@1	15.15	14.84	18.01	18.24	0.0667
77	30	80	634000	3510	CP-OFDM 256 QAM	1@215	15.2	15.15	18.19	18.42	0.0694
77	30	90	633000	3495	CP-OFDM QPSK	120@60	20.39	20.6	23.51	23.74	0.2364
77	30	90	633000	3495	CP-OFDM QPSK	1@1	20.67	20.58	23.64	23.87	0.2435
77	30	90	633000	3495	CP-OFDM QPSK	1@243	20.56	20.66	23.62	23.85	0.2427

77	30	90	633000	3495	CP-OFDM 16 QAM	120@60	19.77	19.88	22.84	23.07	0.2026
77	30	90	633000	3495	CP-OFDM 16 QAM	1@1	19.7	20.23	22.98	23.21	0.2096
77	30	90	633000	3495	CP-OFDM 16 QAM	1@243	20.16	20.46	23.32	23.55	0.2266
77	30	90	633000	3495	CP-OFDM 64 QAM	120@60	18.45	18.22	21.35	21.58	0.1438
77	30	90	633000	3495	CP-OFDM 64 QAM	1@1	18.43	18.74	21.60	21.83	0.1523
77	30	90	633000	3495	CP-OFDM 64 QAM	1@243	18.64	18.35	21.51	21.74	0.1492
77	30	90	633000	3495	CP-OFDM 256 QAM	120@60	14.93	15.06	18.01	18.24	0.0666
77	30	90	633000	3495	CP-OFDM 256 QAM	1@1	15.18	15.16	18.18	18.41	0.0694
77	30	90	633000	3495	CP-OFDM 256 QAM	1@243	15.16	15.13	18.16	18.39	0.0690
77	30	90	633334	3500.01	CP-OFDM QPSK	120@60	20.31	20.58	23.46	23.69	0.2338
77	30	90	633334	3500.01	CP-OFDM QPSK	1@1	20.51	20.37	23.45	23.68	0.2334
77	30	90	633334	3500.01	CP-OFDM QPSK	1@243	20.82	20.6	23.72	23.95	0.2484
77	30	90	633334	3500.01	CP-OFDM 16 QAM	120@60	20.37	20.49	23.44	23.67	0.2329
77	30	90	633334	3500.01	CP-OFDM 16 QAM	1@1	20.22	20.24	23.24	23.47	0.2224
77	30	90	633334	3500.01	CP-OFDM 16 QAM	1@243	20.33	19.97	23.16	23.39	0.2185
77	30	90	633334	3500.01	CP-OFDM 64 QAM	120@60	18.22	18.12	21.18	21.41	0.1384
77	30	90	633334	3500.01	CP-OFDM 64 QAM	1@1	18.69	18.35	21.53	21.76	0.1501
77	30	90	633334	3500.01	CP-OFDM 64 QAM	1@243	18.68	18.66	21.68	21.91	0.1553
77	30	90	633334	3500.01	CP-OFDM 256 QAM	120@60	15.14	15.17	18.17	18.40	0.0691
77	30	90	633334	3500.01	CP-OFDM 256 QAM	1@1	15.06	15.06	18.07	18.30	0.0676
77	30	90	633334	3500.01	CP-OFDM 256 QAM	1@243	14.87	15.18	18.04	18.27	0.0671
77	30	90	633666	3504.99	CP-OFDM QPSK	120@60	20.6	20.75	23.69	23.92	0.2464
77	30	90	633666	3504.99	CP-OFDM QPSK	1@1	20.41	20.78	23.61	23.84	0.2421
77	30	90	633666	3504.99	CP-OFDM QPSK	1@243	20.74	20.55	23.66	23.89	0.2447
77	30	90	633666	3504.99	CP-OFDM 16 QAM	120@60	20.48	19.6	23.07	23.30	0.2139
77	30	90	633666	3504.99	CP-OFDM 16 QAM	1@1	20.21	20.46	23.35	23.58	0.2279
77	30	90	633666	3504.99	CP-OFDM 16 QAM	1@243	19.69	20.52	23.14	23.37	0.2170
77	30	90	633666	3504.99	CP-OFDM 64 QAM	120@60	18.23	18.26	21.26	21.49	0.1408
77	30	90	633666	3504.99	CP-OFDM 64 QAM	1@1	18.61	18.75	21.69	21.92	0.1556

77	30	90	633666	3504.99	CP-OFDM 64 QAM	1@243	18.12	18.18	21.16	21.39	0.1377
77	30	90	633666	3504.99	CP-OFDM 256 QAM	120@60	15	14.83	17.93	18.16	0.0654
77	30	90	633666	3504.99	CP-OFDM 256 QAM	1@1	15.17	15.11	18.15	18.38	0.0689
77	30	90	633666	3504.99	CP-OFDM 256 QAM	1@243	15.08	14.88	17.99	18.22	0.0664
77	30	100	633334	3500.01	CP-OFDM QPSK	135@67	20.63	20.14	23.40	23.63	0.2308
77	30	100	633334	3500.01	CP-OFDM QPSK	1@1	20.44	19.94	23.21	23.44	0.2207
77	30	100	633334	3500.01	CP-OFDM QPSK	1@271	19.9	19.5	22.71	22.95	0.1970
77	30	100	633334	3500.01	CP-OFDM 16 QAM	135@67	20.15	19.64	22.91	23.14	0.2062
77	30	100	633334	3500.01	CP-OFDM 16 QAM	1@1	20.09	19.44	22.79	23.02	0.2003
77	30	100	633334	3500.01	CP-OFDM 16 QAM	1@271	20.23	19.47	22.88	23.11	0.2045
77	30	100	633334	3500.01	CP-OFDM 64 QAM	135@67	18.54	18.14	21.35	21.59	0.1441
77	30	100	633334	3500.01	CP-OFDM 64 QAM	1@1	18.56	18.15	21.37	21.60	0.1446
77	30	100	633334	3500.01	CP-OFDM 64 QAM	1@271	18.45	18.25	21.36	21.59	0.1443
77	30	100	633334	3500.01	CP-OFDM 256 QAM	135@67	14.93	14.7	17.83	18.06	0.0639
77	30	100	633334	3500.01	CP-OFDM 256 QAM	1@1	15.02	14.75	17.90	18.13	0.0650
77	30	100	633334	3500.01	CP-OFDM 256 QAM	1@271	15	14.76	17.89	18.12	0.0649

MIMO Gain(dBi)= max. G_{ANT} + Array Gain(10log2) (dB);

EIRP (W)= MIMO power (dBm) + MIMO Gain(dBi);

Software Version: 21.02.062201

FR1 N77

LTE Band: 66, LTE BW: 10M, LTE ARFCN: Mid

Transmitter Conducted Output Power And ERP/EIRP, (G_T - L_C)=-2.78dB

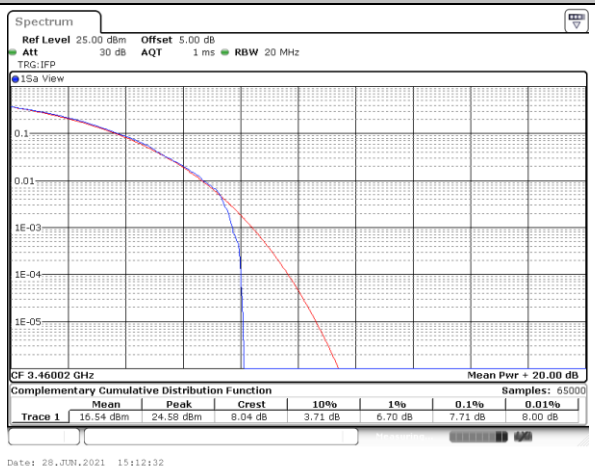
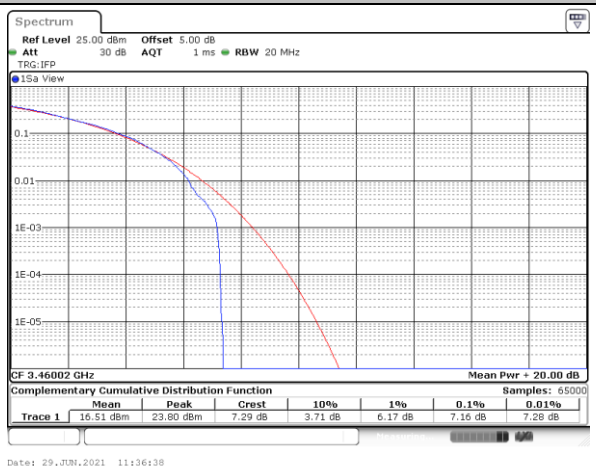
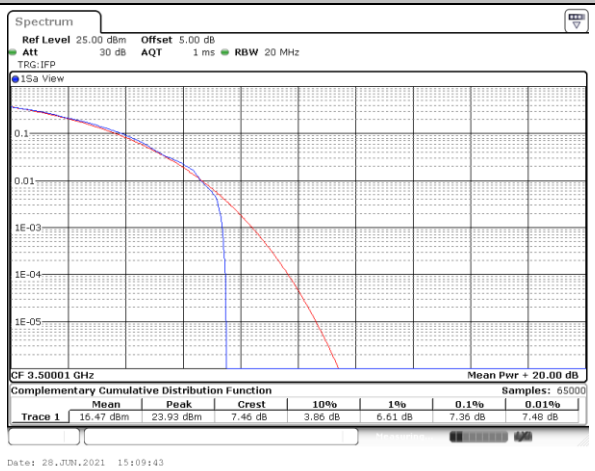
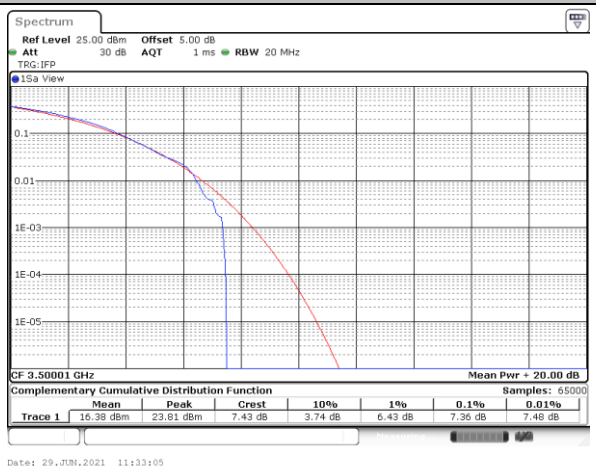
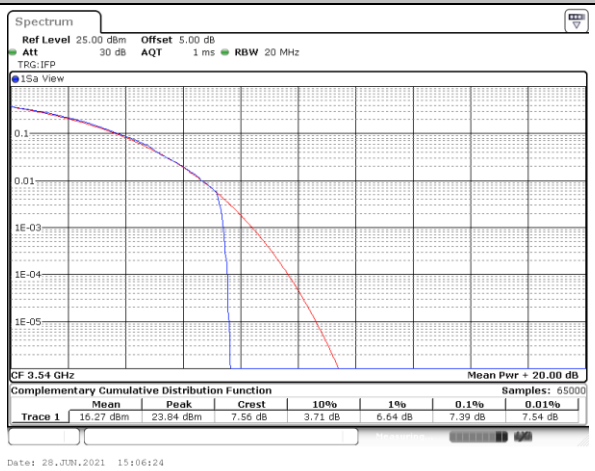
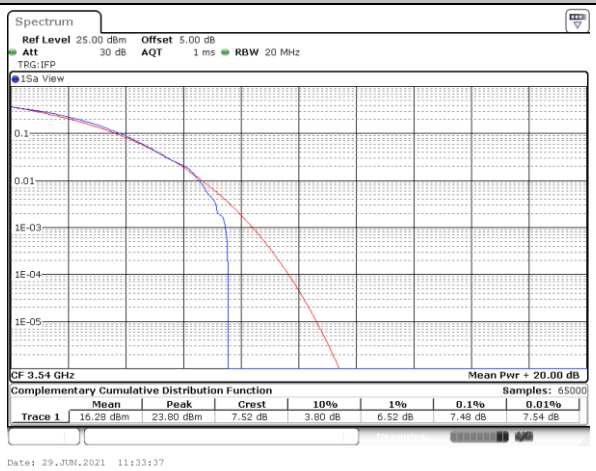
NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Conducted Power(dBm)	EIRP (dBm)	EIRP (W)
77	30	100	633334	3500.01	DFT-s-OFDM PI/2 BPSK	135@67	26.07	23.29	0.2133
77	30	100	633334	3500.01	DFT-s-OFDM PI/2 BPSK	1@1	25.75	22.97	0.1982
77	30	100	633334	3500.01	DFT-s-OFDM PI/2 BPSK	1@271	26.03	23.25	0.2113
77	30	100	633334	3500.01	DFT-s-OFDM QPSK	135@67	26.05	23.27	0.2123
77	30	100	633334	3500.01	DFT-s-OFDM QPSK	1@1	26.08	23.3	0.2138
77	30	100	633334	3500.01	DFT-s-OFDM QPSK	1@271	26.1	23.32	0.2148
77	30	100	633334	3500.01	DFT-s-OFDM 16 QAM	135@67	24.79	22.01	0.1589
77	30	100	633334	3500.01	DFT-s-OFDM 16 QAM	1@1	23.7	20.92	0.1236
77	30	100	633334	3500.01	DFT-s-OFDM 16 QAM	1@271	24.56	21.78	0.1507
77	30	100	633334	3500.01	DFT-s-OFDM 64 QAM	135@67	23.15	20.37	0.1089
77	30	100	633334	3500.01	DFT-s-OFDM 64 QAM	1@1	22.26	19.48	0.0887
77	30	100	633334	3500.01	DFT-s-OFDM 64 QAM	1@271	23.18	20.4	0.1096
77	30	100	633334	3500.01	DFT-s-OFDM 256 QAM	135@67	21.36	18.58	0.0721
77	30	100	633334	3500.01	DFT-s-OFDM 256 QAM	1@1	20.54	17.76	0.0597
77	30	100	633334	3500.01	DFT-s-OFDM 256 QAM	1@271	21.26	18.48	0.0705
77	30	100	633334	3500.01	CP-OFDM QPSK	137@68	24.18	21.4	0.1380
77	30	100	633334	3500.01	CP-OFDM QPSK	1@1	23.29	20.51	0.1125
77	30	100	633334	3500.01	CP-OFDM QPSK	1@271	23.84	21.06	0.1276

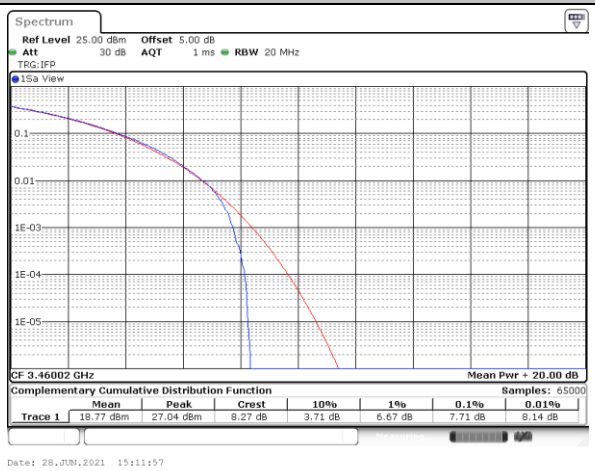
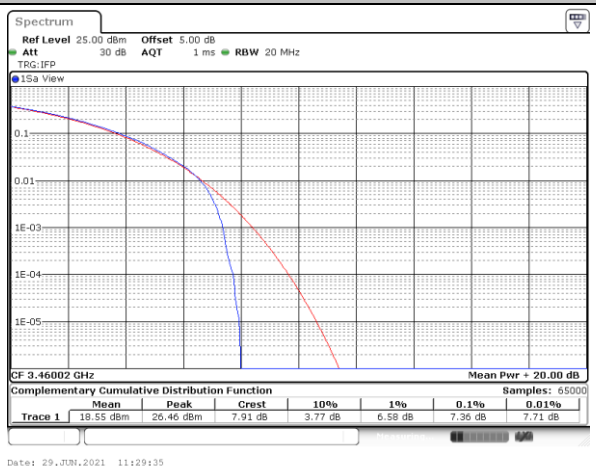
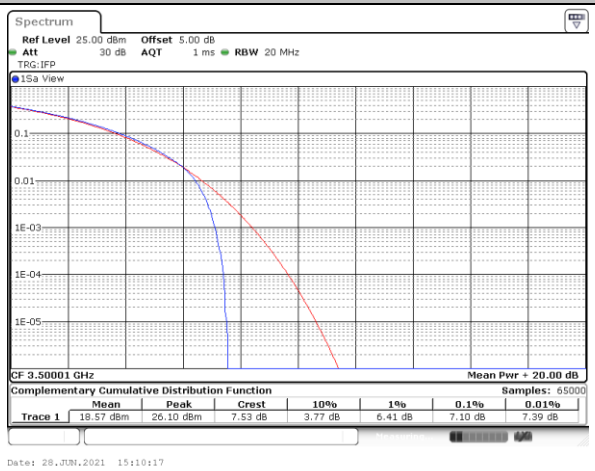
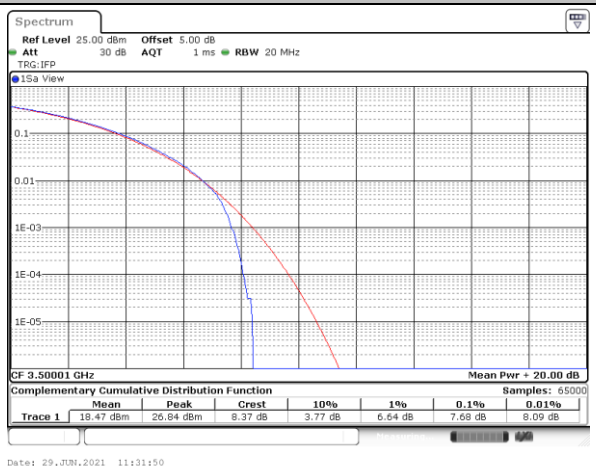
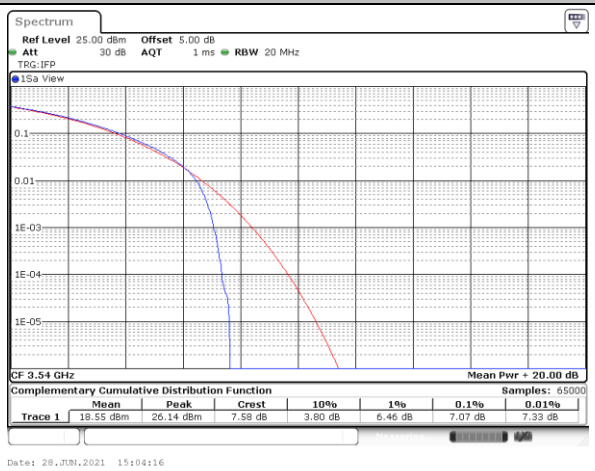
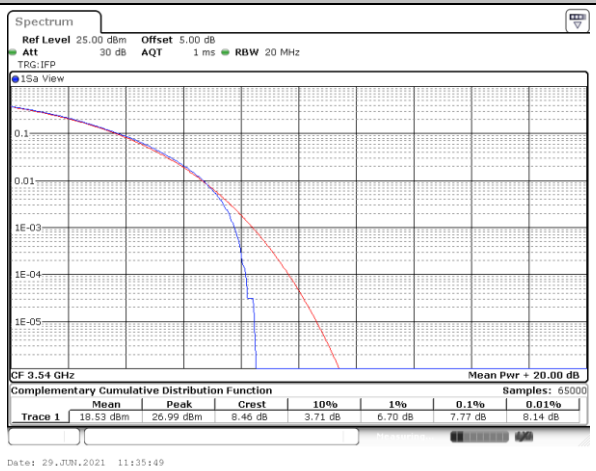
5G NR n77 UL-MIMO

Peak-to-Average Ratio

Mode	FR1 UL-MIMO n77 / 20MHz / CP-OFDM (Ant3)				
Mod.	QPSK	QPSK			Limit: 13dB
RB Size	1RB	Full RB			Result
Lowest CH	7.71	7.71			PASS
Middle CH	7.36	7.10			
Highest CH	7.39	7.07			

Mode	FR1 UL-MIMO n77 / 20MHz / CP-OFDM (Ant5)				
Mod.	QPSK	QPSK			Limit: 13dB
RB Size	1RB	Full RB			Result
Lowest CH	7.16	7.36			PASS
Middle CH	7.36	7.68			
Highest CH	7.48	7.77			

FR1 UL-MIMO n77 / 20MHz / CP-OFDM	
QPSK(Ant3)	**QPSK(Ant5)**
Lowest Channel / 1RB	**Lowest Channel / 1RB**
	
Middle Channel / 1 RB	**Middle Channel / 1 RB**
	
Highest Channel / 1 RB	**Highest Channel / 1 RB**
	

FR1 UL-MIMO n77 / 20MHz / CP-OFDM	
QPSK(Ant3)	**QPSK(Ant5)**
Lowest Channel / Full RB	**Lowest Channel / Full RB**
	
Middle Channel / Full RB	**Middle Channel / Full RB**
	
Highest Channel / Full RB	**Highest Channel / Full RB**
	

26dB Bandwidth

Mode	FR1 UL-MIMO n77 : 26dB BW(20MHz) / CP-OFDM							
	Ant3				Ant5			
BW	20MHz	20MHz	20MHz	20MHz	20MHz	20MHz	20MHz	20MHz
Mod.	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
Middle CH	19.021	19.181	19.50	19.021	19.381	19.461	19.061	19.461

Mode	FR1 UL-MIMO n77 : 26dB BW(30MHz) / CP-OFDM							
	Ant3				Ant5			
BW	30MHz	30MHz	30MHz	30MHz	30MHz	30MHz	30MHz	30MHz
Mod.	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
Middle CH	28.711	28.711	28.831	28.711	28.831	29.011	29.071	29.131

Mode	FR1 UL-MIMO n77 : 26dB BW(40MHz) / CP-OFDM							
	Ant3				Ant5			
BW	40MHz	40MHz	40MHz	40MHz	40MHz	40MHz	40MHz	40MHz
Mod.	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
Middle CH	40.20	40.519	40.280	40.280	40.20	40.20	40.20	40.36

Mode	FR1 UL-MIMO n77 : 26dB BW(50MHz) / CP-OFDM							
	Ant3				Ant5			
BW	50MHz	50MHz	50MHz	50MHz	50MHz	50MHz	50MHz	50MHz
Mod.	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
Middle CH	49.75	49.65	49.75	49.75	49.75	49.75	49.85	49.75

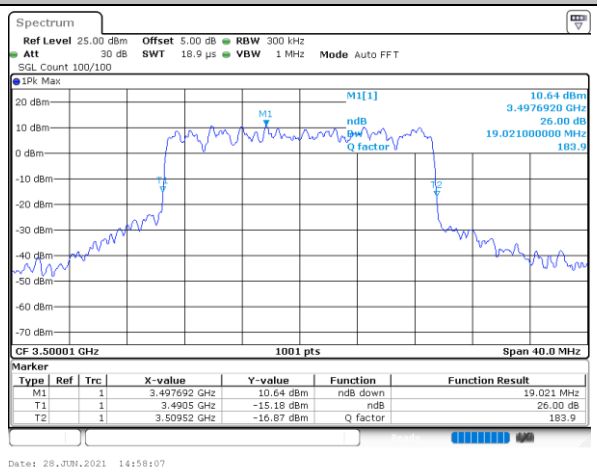
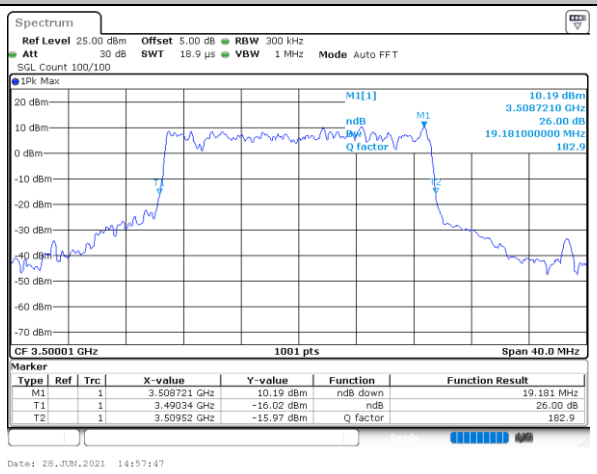
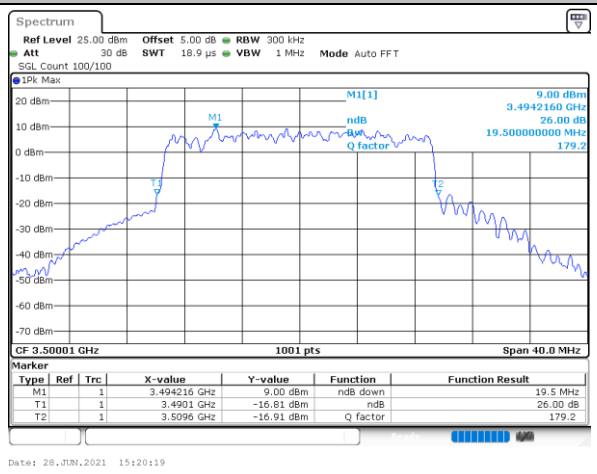
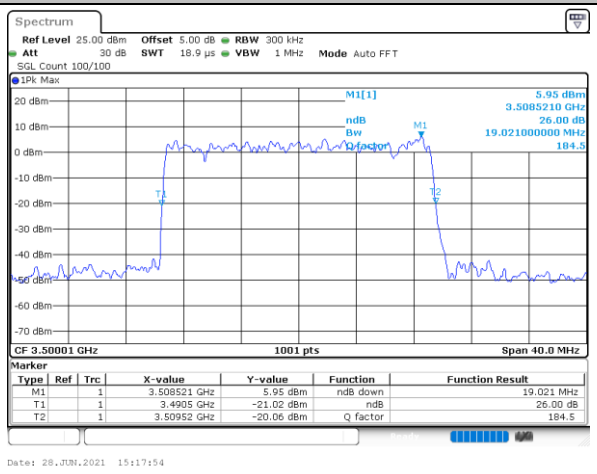
Mode	FR1 UL-MIMO n77 : 26dB BW(60MHz) / CP-OFDM							
	Ant3				Ant5			
BW	60MHz	60MHz	60MHz	60MHz	60MHz	60MHz	60MHz	60MHz
Mod.	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
Middle CH	60.42	60.54	60.42	60.54	60.66	60.42	60.66	60.42

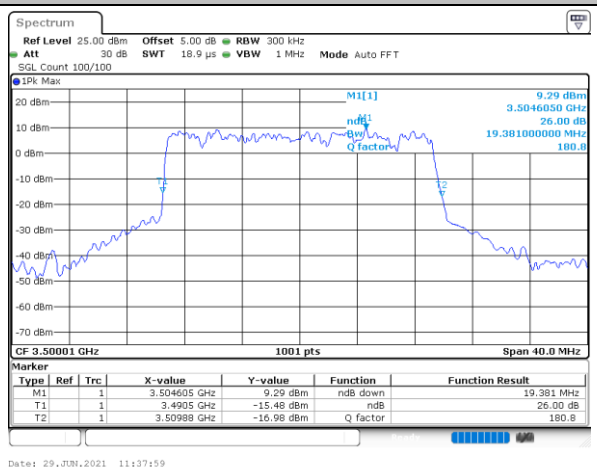
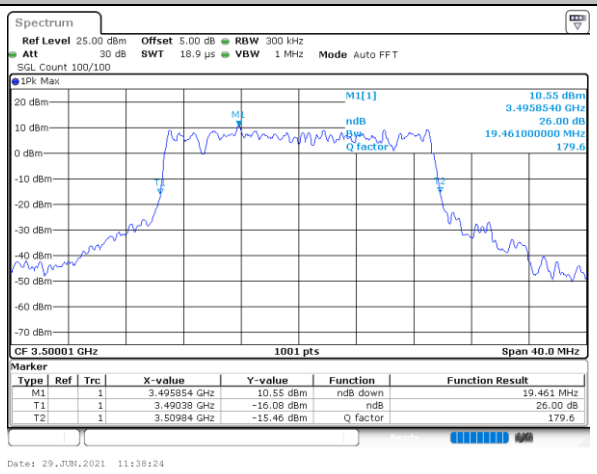
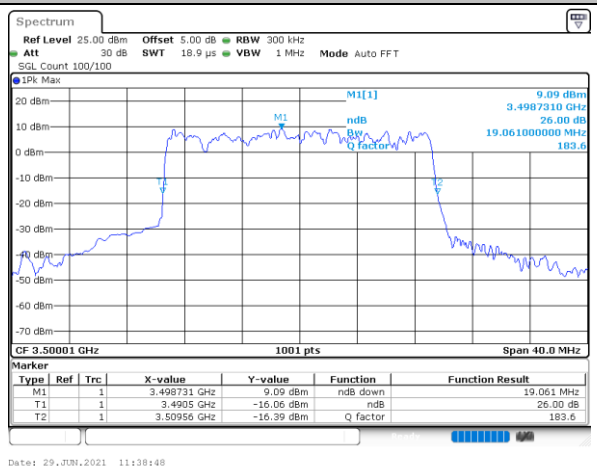
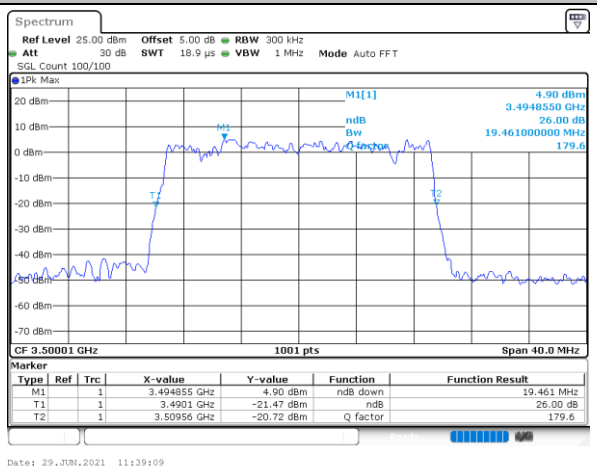
Mode	FR1 UL-MIMO n77 : 26dB BW(70MHz) / CP-OFDM							
	Ant3				Ant5			
BW	70MHz	70MHz	70MHz	70MHz	70MHz	70MHz	70MHz	70MHz
Mod.	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
Middle CH	70.07	70.21	70.07	70.21	70.21	70.35	70.07	69.93

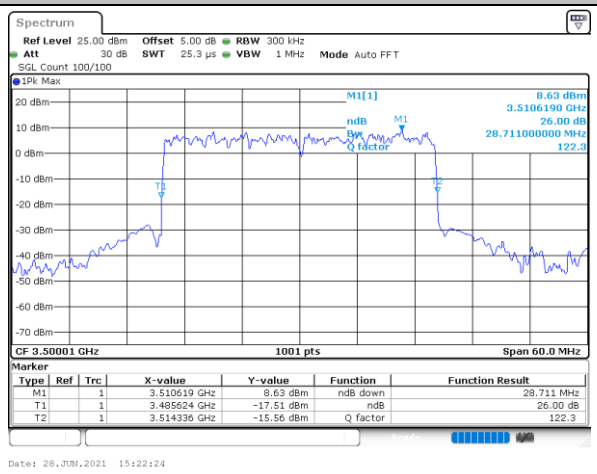
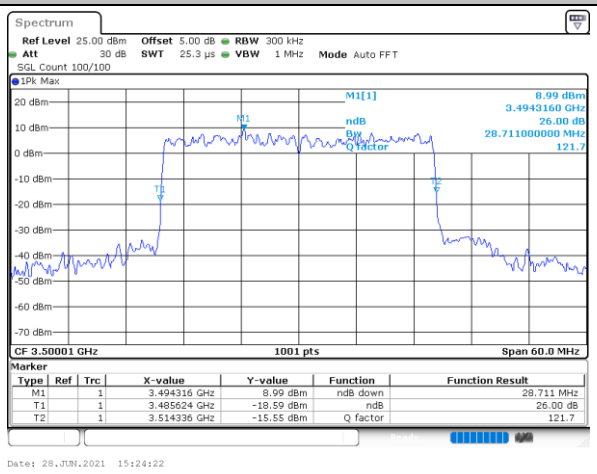
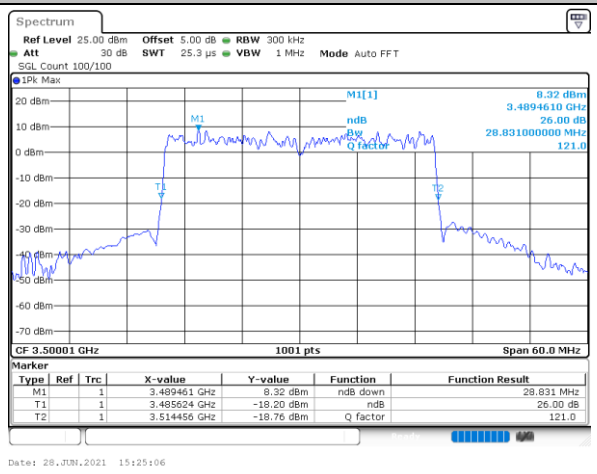
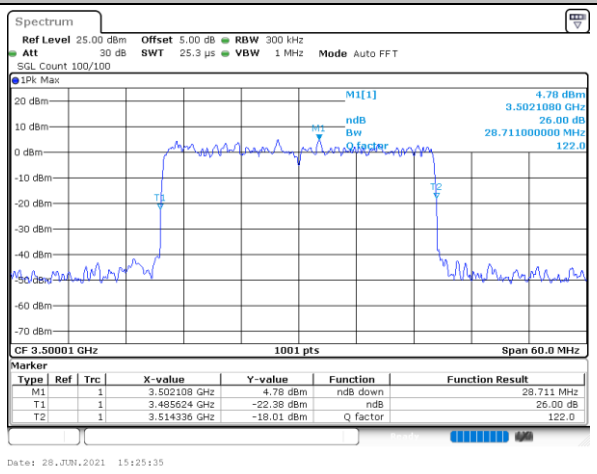
Mode	FR1 UL-MIMO n77 : 26dB BW(80MHz) / CP-OFDM							
	Ant3				Ant5			
BW	80MHz	80MHz	80MHz	80MHz	80MHz	80MHz	80MHz	80MHz
Mod.	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
Middle CH	79.92	79.92	79.92	79.92	79.92	79.92	79.92	79.92

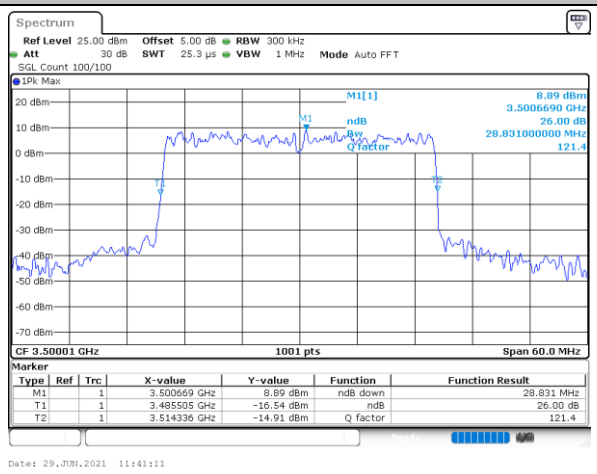
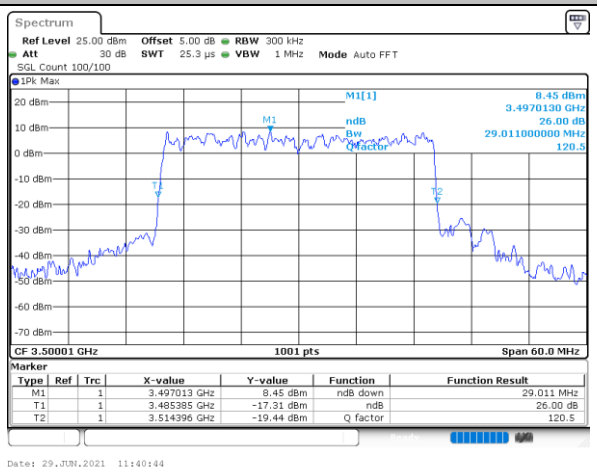
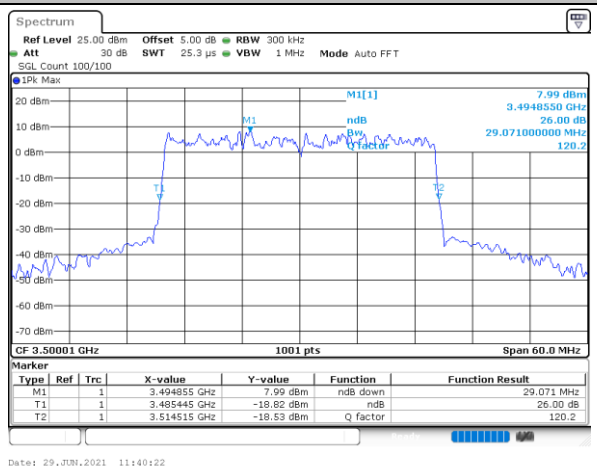
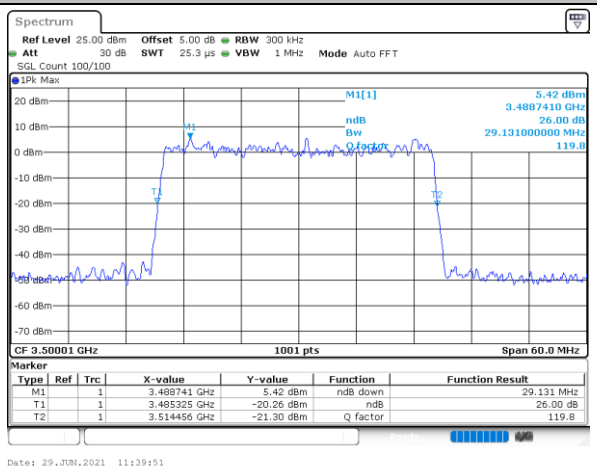
Mode	FR1 UL-MIMO n77 : 26dB BW(90MHz) / CP-OFDM							
	Ant3				Ant5			
BW	90MHz	90MHz	90MHz	90MHz	90MHz	90MHz	90MHz	90MHz
Mod.	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
Middle CH	90.27	90.45	90.45	90.27	90.27	90.27	90.27	90.27

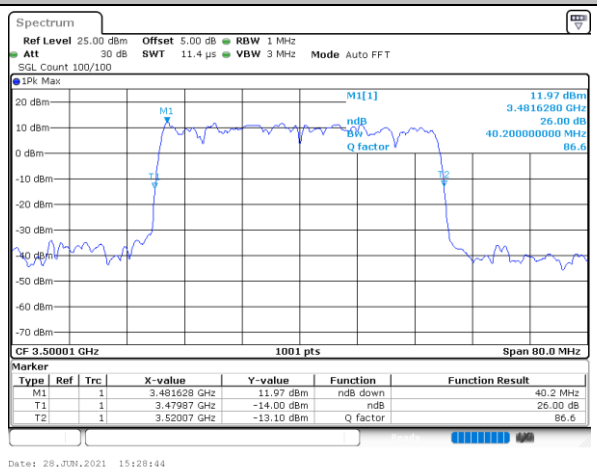
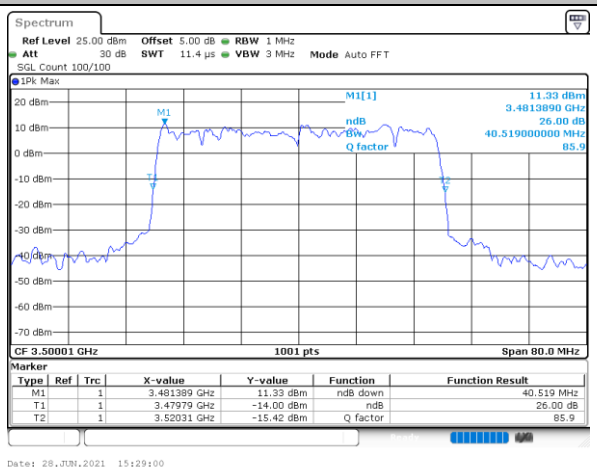
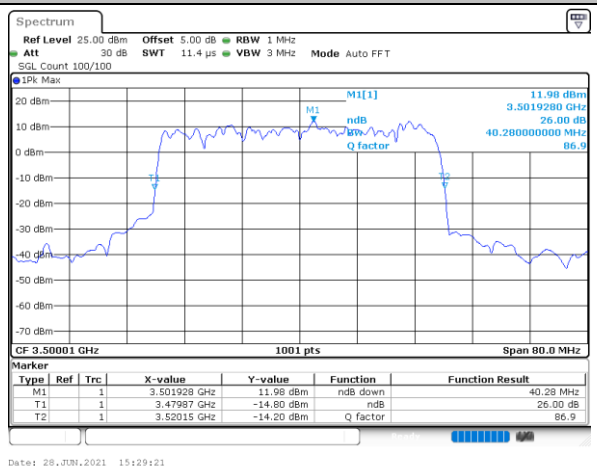
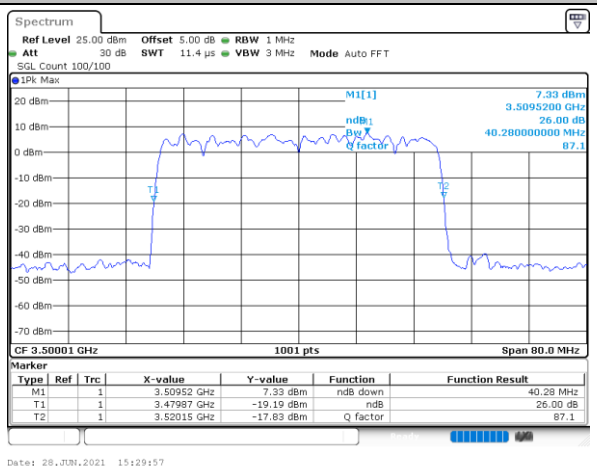
Mode	FR1 UL-MIMO n77 : 26dB BW(100MHz) / CP-OFDM							
	Ant3				Ant5			
BW	100MHz	100MHz	100MHz	100MHz	100MHz	100MHz	100MHz	100MHz
Mod.	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
Middle CH	100.50	100.10	100.30	100.30	100.50	100.70	100.50	100.70

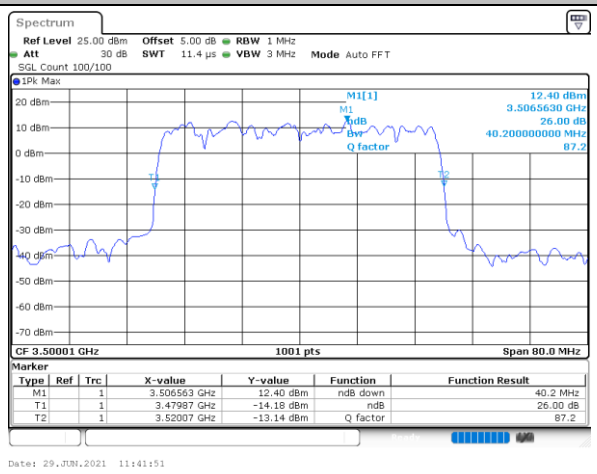
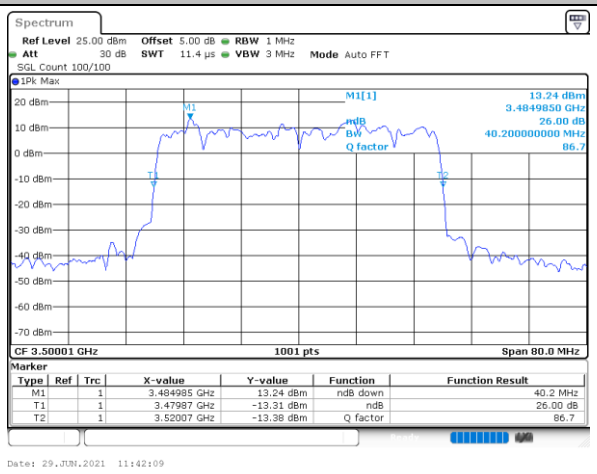
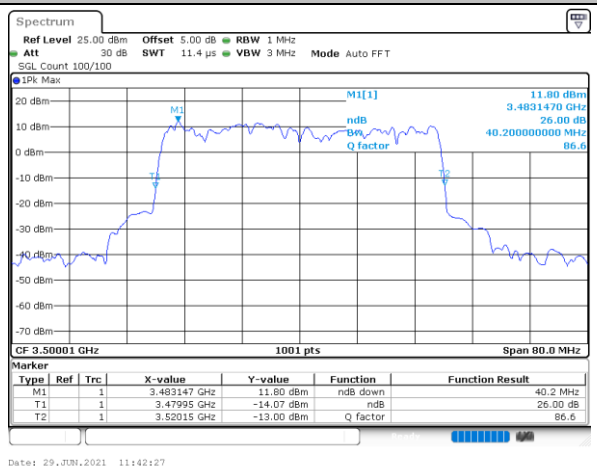
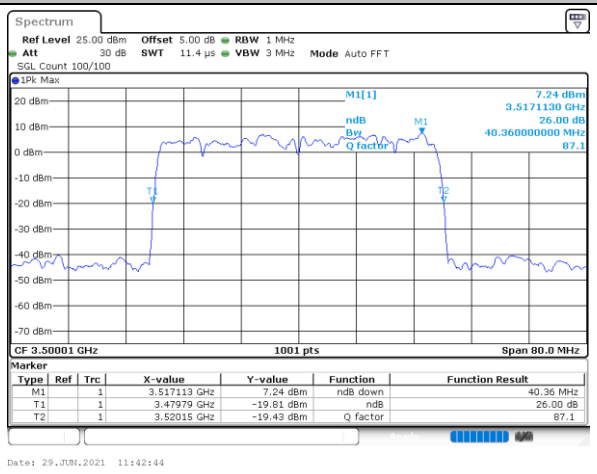
FR1 UL-MIMO n77 / 20MHz / CP-OFDM (Ant3)	
QPSK	**16QAM**
Middle Channel	**Middle Channel**
	
64QAM	**256QAM**
Middle Channel	**Middle Channel**
	

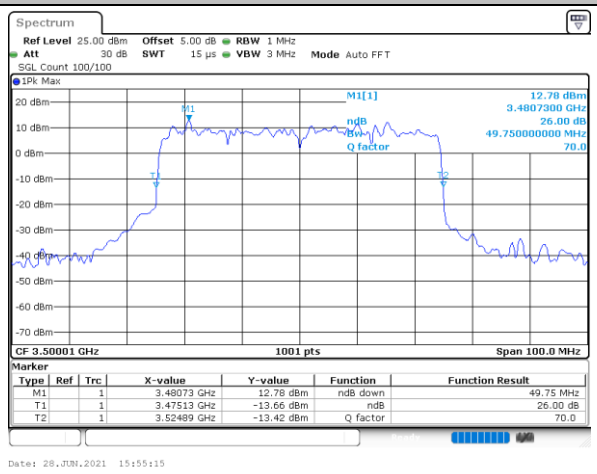
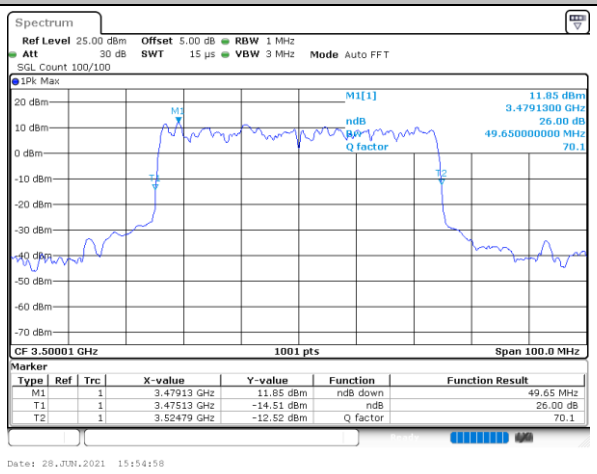
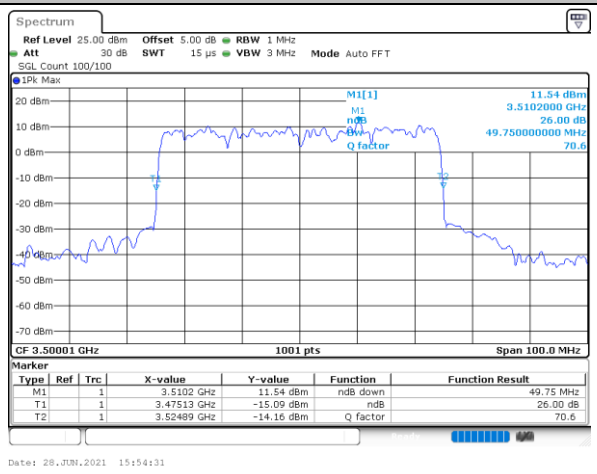
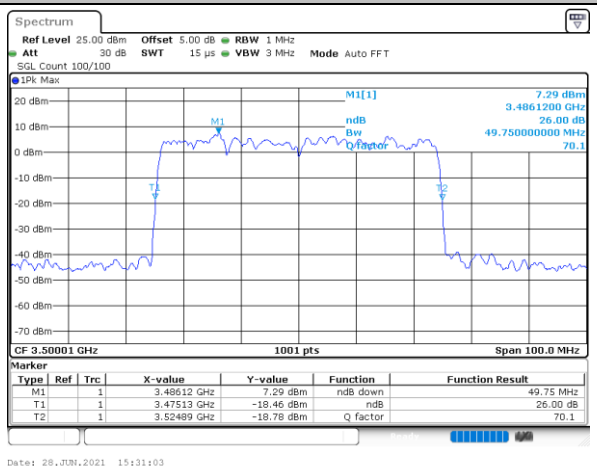
FR1 UL-MIMO n77 / 20MHz / CP-OFDM (Ant5)	
QPSK	**16QAM**
Middle Channel	**Middle Channel**
	
64QAM	**256QAM**
Middle Channel	**Middle Channel**
	

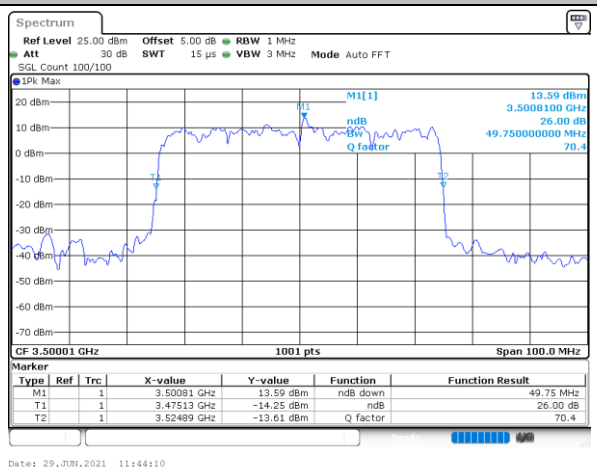
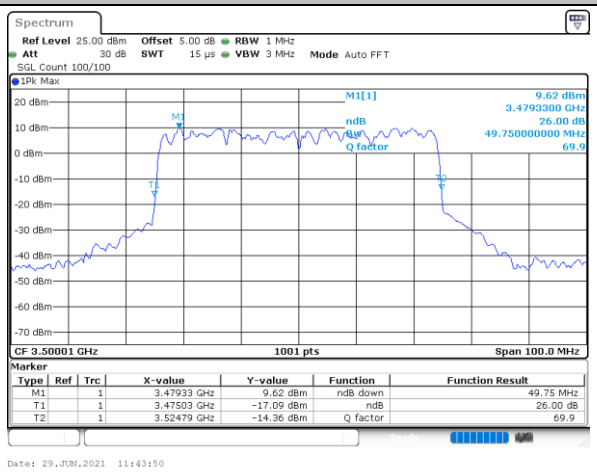
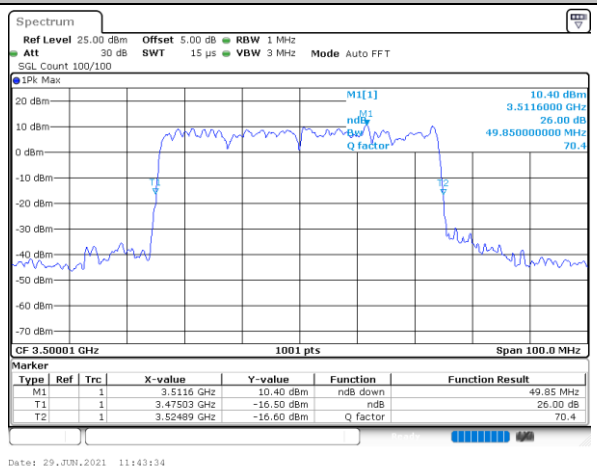
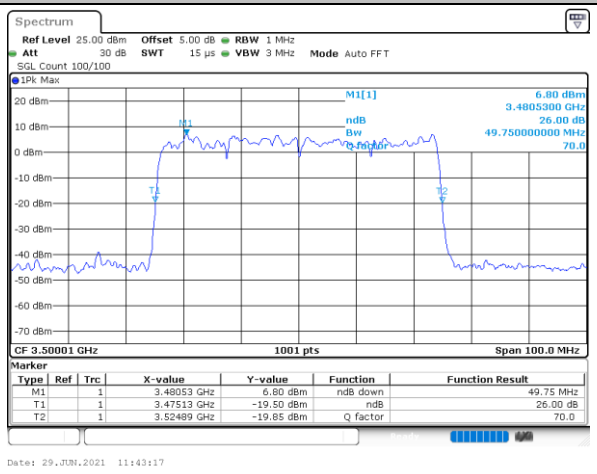
FR1 UL-MIMO n77 / 30MHz / CP-OFDM (Ant3)	
QPSK	**16QAM**
Middle Channel	**Middle Channel**
	
64QAM	**256QAM**
Middle Channel	**Middle Channel**
	

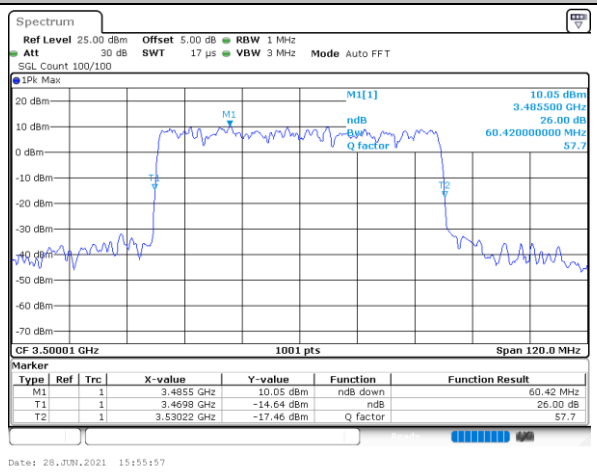
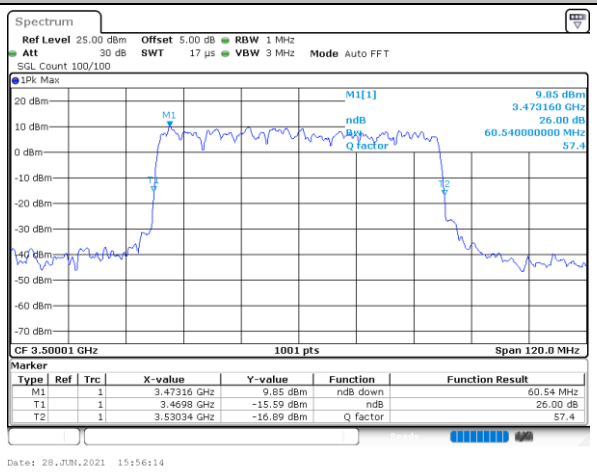
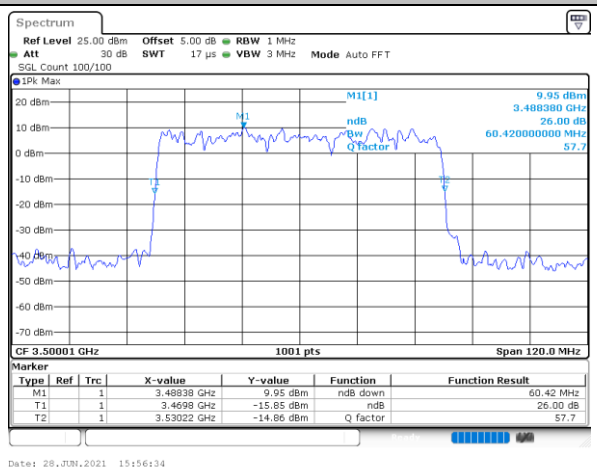
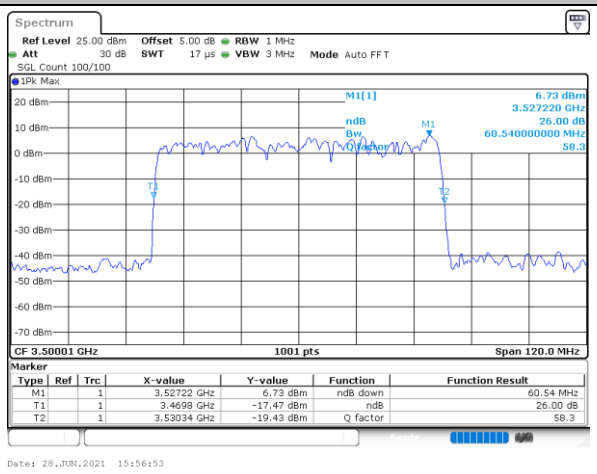
FR1 UL-MIMO n77 / 30MHz / CP-OFDM (Ant5)	
QPSK	**16QAM**
Middle Channel	**Middle Channel**
	
64QAM	**256QAM**
Middle Channel	**Middle Channel**
	

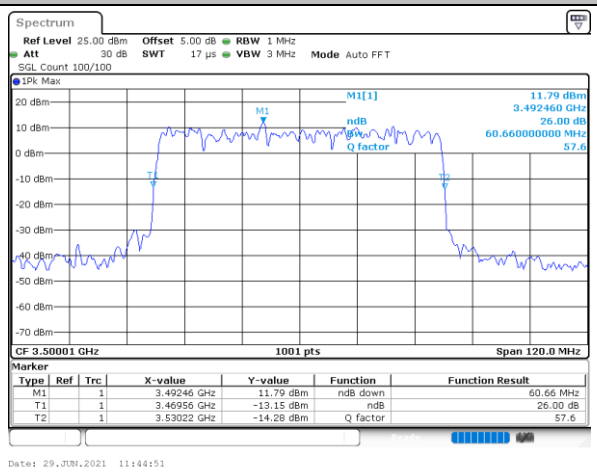
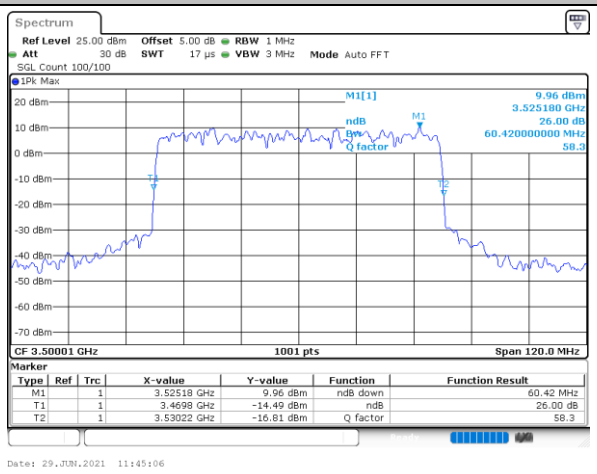
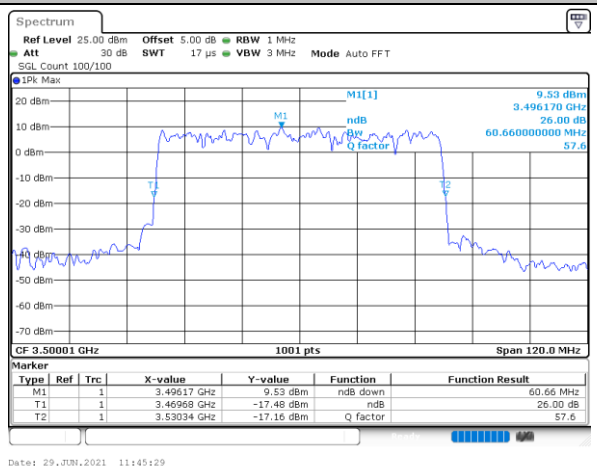
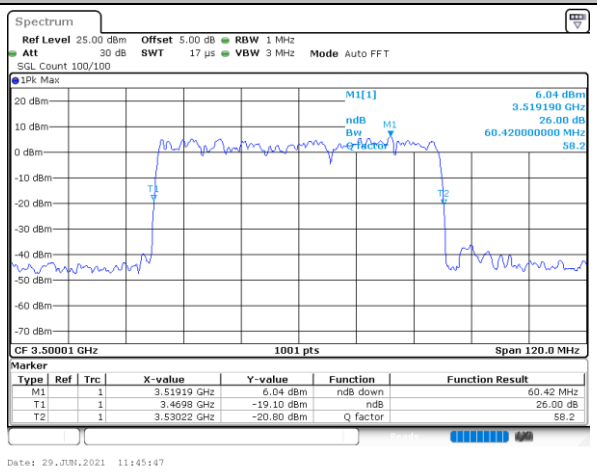
FR1 UL-MIMO n77 / 40MHz / CP-OFDM (Ant3)	
QPSK	**16QAM**
Middle Channel	**Middle Channel**
	
64QAM	**256QAM**
Middle Channel	**Middle Channel**
	

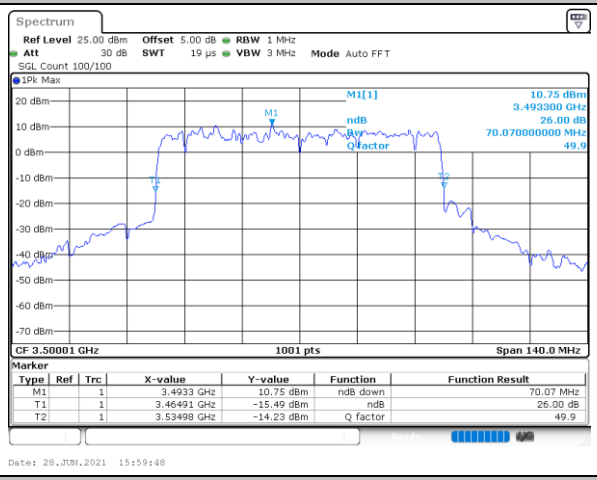
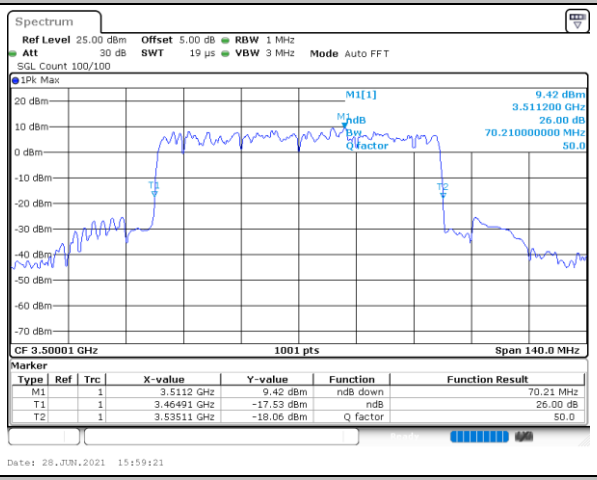
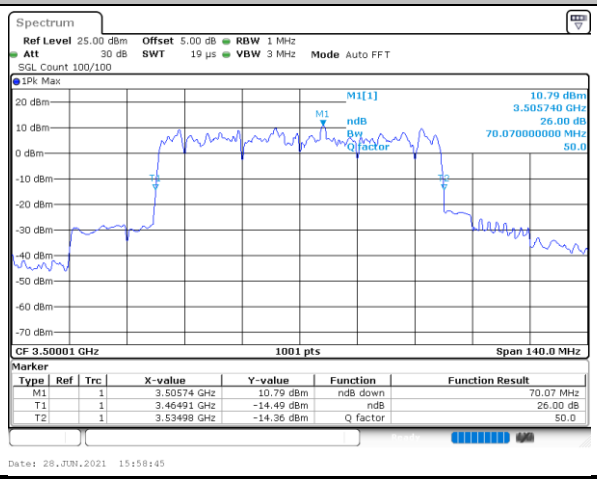
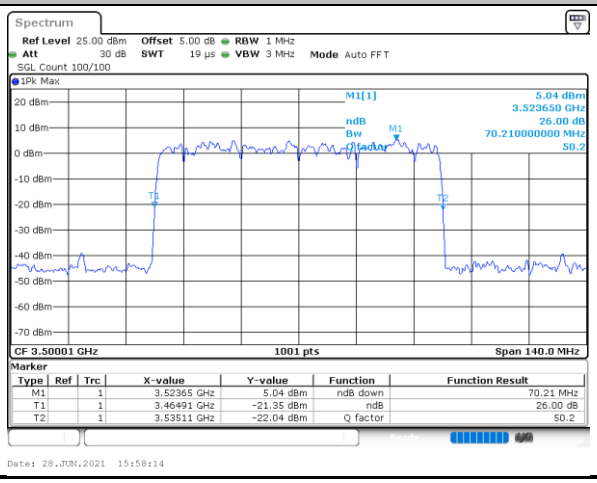
FR1 UL-MIMO n77 / 40MHz / CP-OFDM (Ant5)	
QPSK	**16QAM**
Middle Channel	**Middle Channel**
	
64QAM	**256QAM**
Middle Channel	**Middle Channel**
	

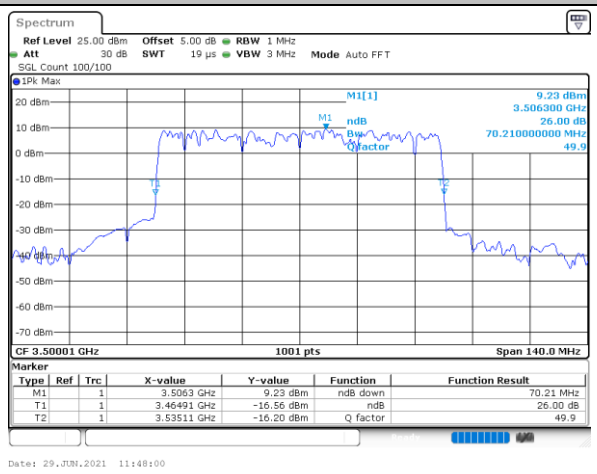
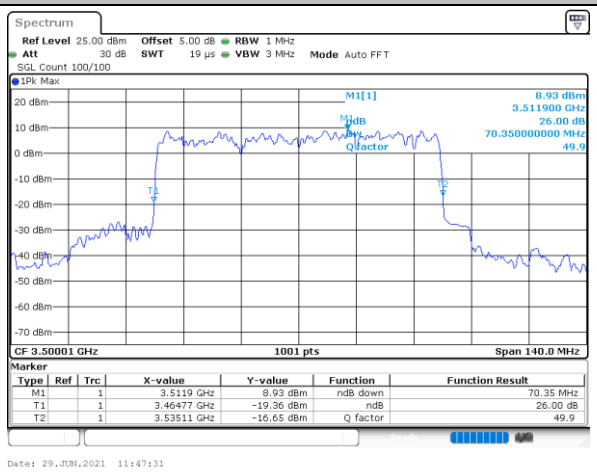
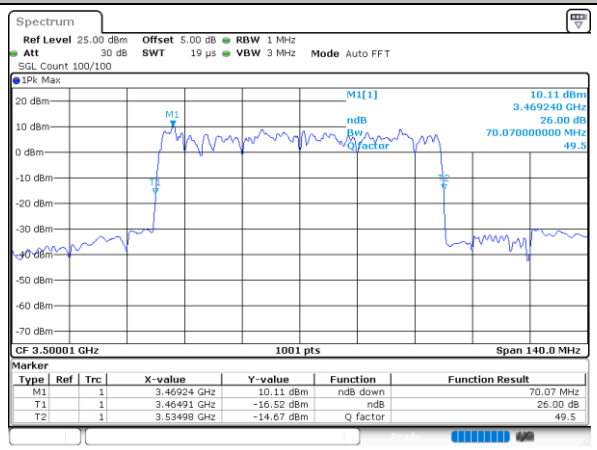
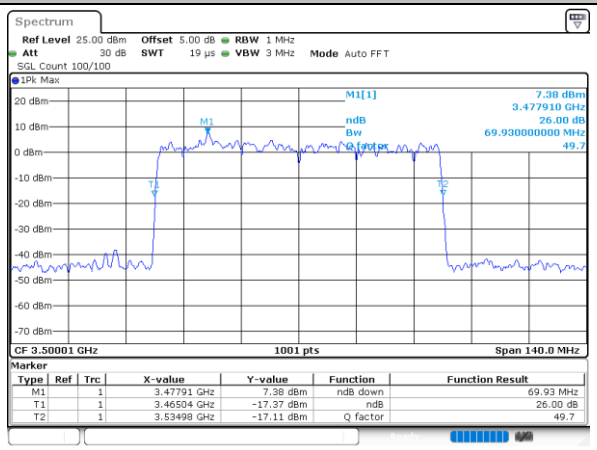
FR1 UL-MIMO n77 / 50MHz / CP-OFDM (Ant3)	
QPSK	**16QAM**
Middle Channel	**Middle Channel**
	
64QAM	**256QAM**
Middle Channel	**Middle Channel**
	

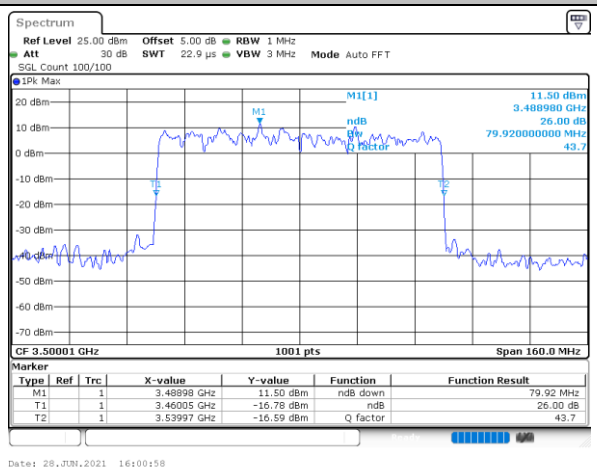
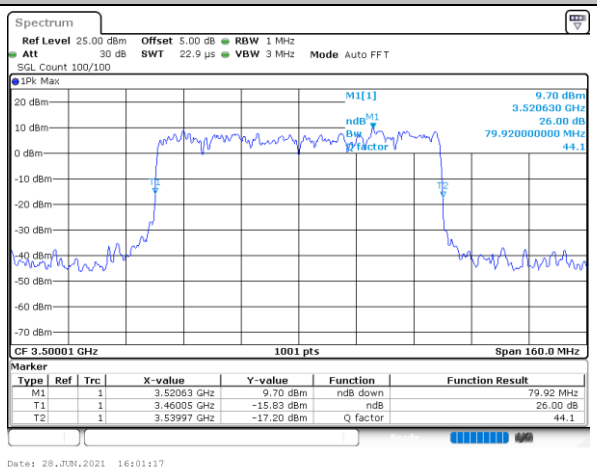
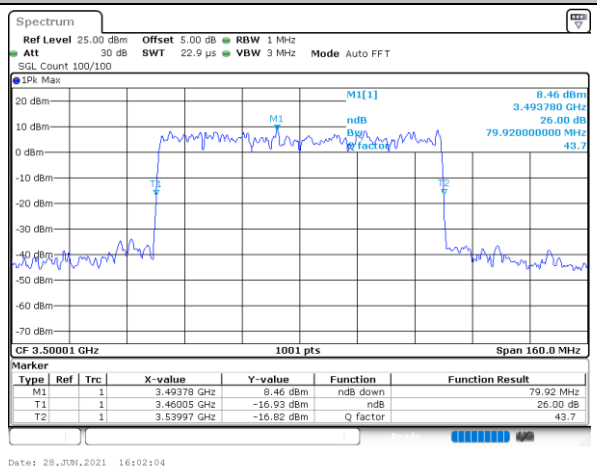
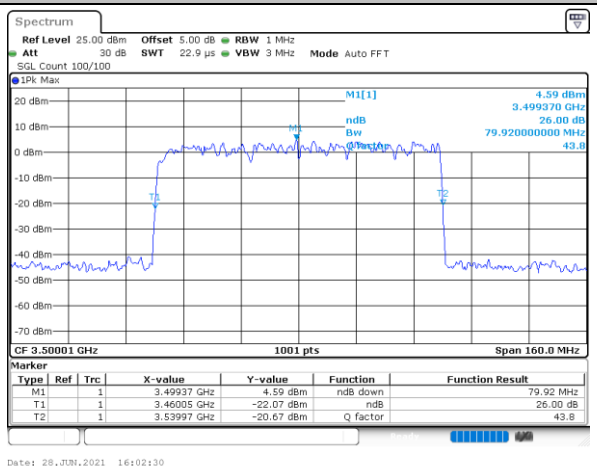
FR1 UL-MIMO n77 / 50MHz / CP-OFDM (Ant5)	
QPSK	**16QAM**
Middle Channel	**Middle Channel**
	
64QAM	**256QAM**
Middle Channel	**Middle Channel**
	

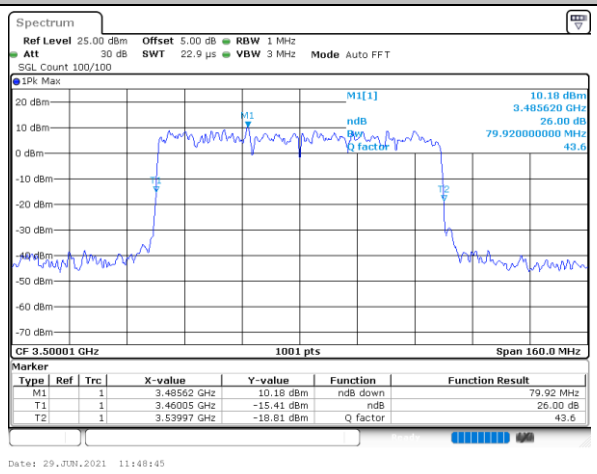
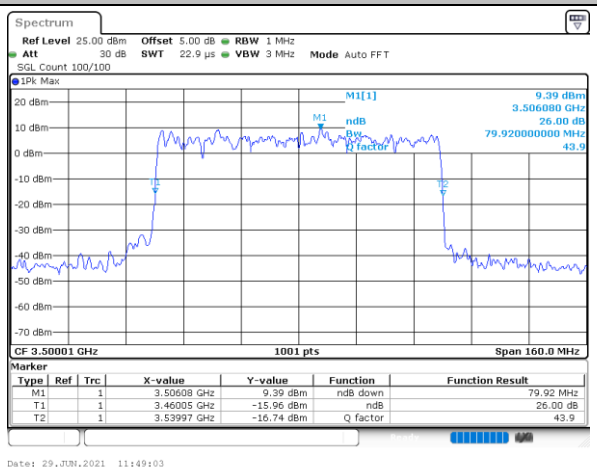
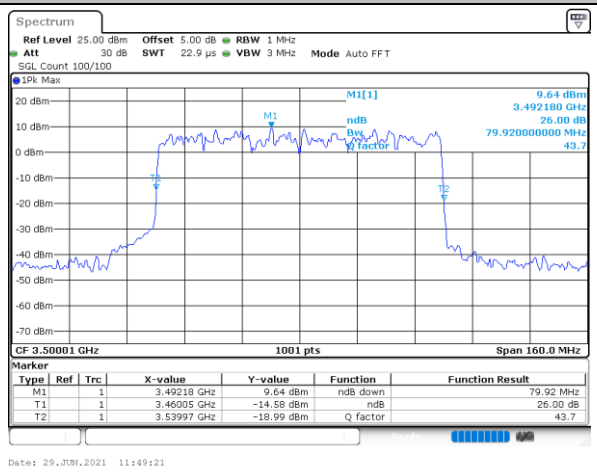
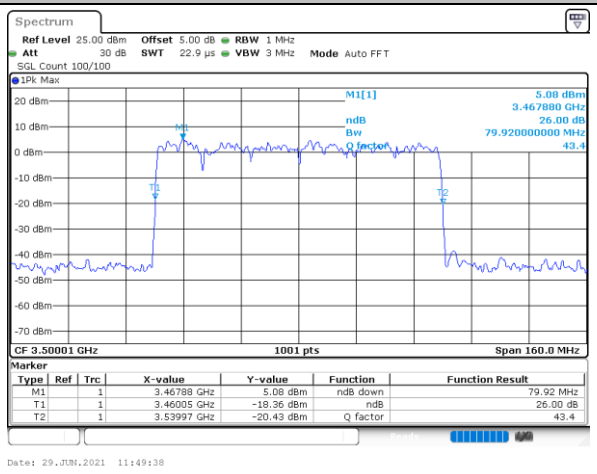
FR1 UL-MIMO n77 / 60MHz / CP-OFDM (Ant3)	
QPSK	**16QAM**
Middle Channel	**Middle Channel**
	
64QAM	**256QAM**
Middle Channel	**Middle Channel**
	

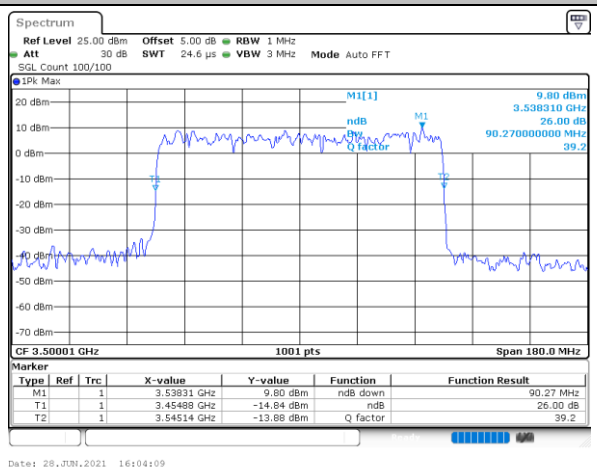
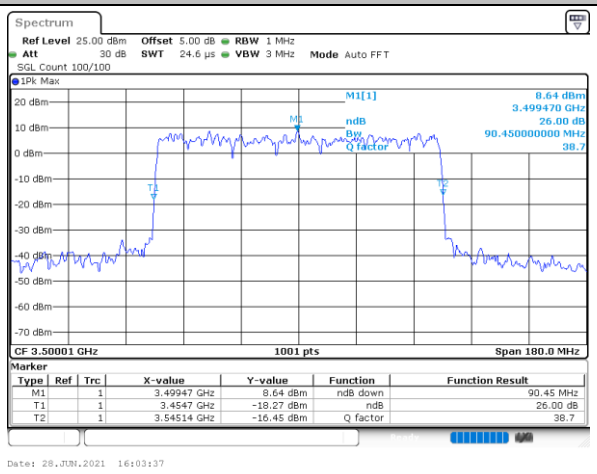
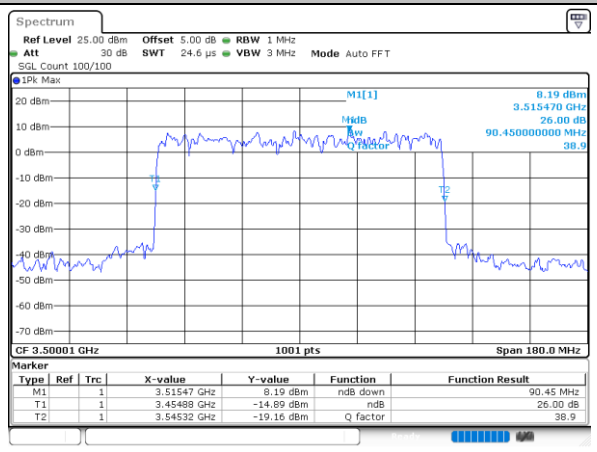
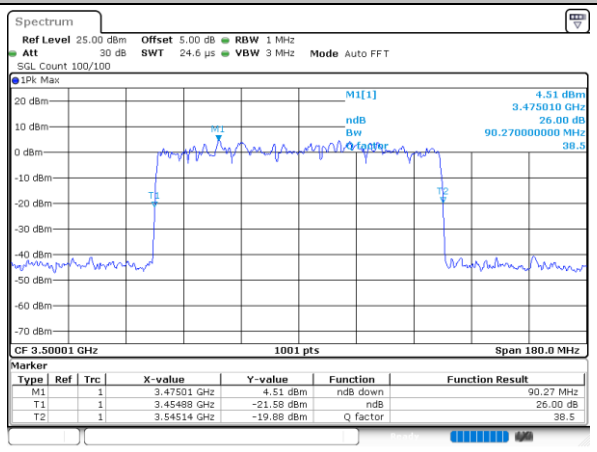
FR1 UL-MIMO n77 / 60MHz / CP-OFDM (Ant5)	
QPSK	**16QAM**
Middle Channel	**Middle Channel**
	
64QAM	**256QAM**
Middle Channel	**Middle Channel**
	

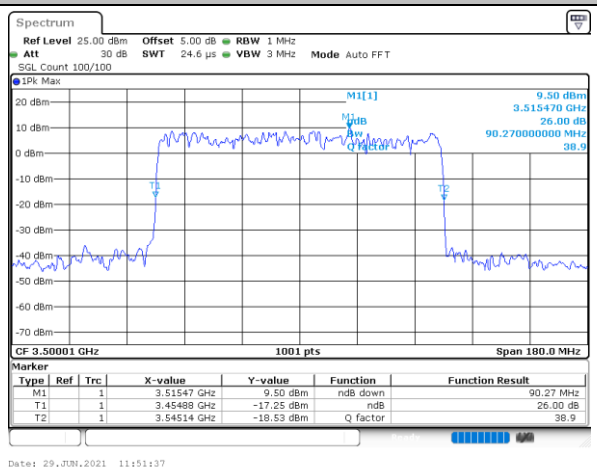
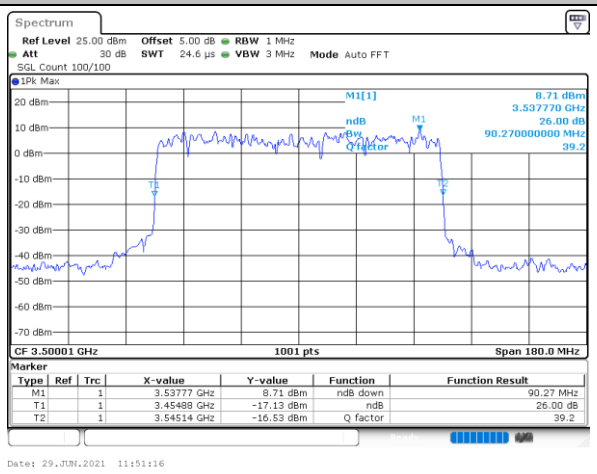
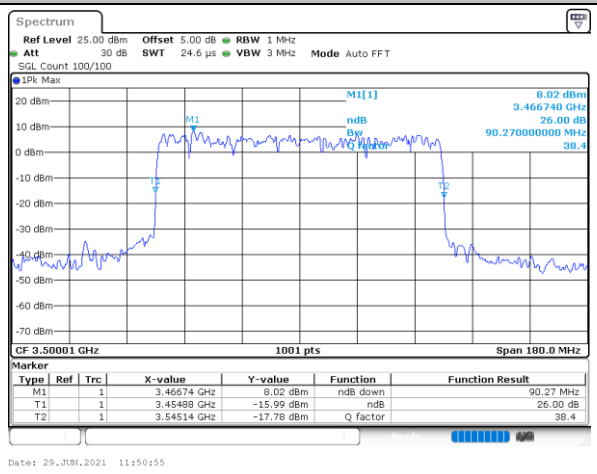
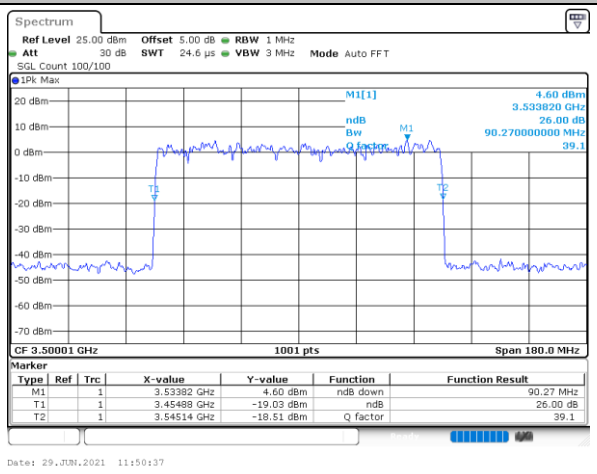
FR1 UL-MIMO n77 / 70MHz / CP-OFDM (Ant3)	
QPSK	**16QAM**
Middle Channel	**Middle Channel**
	
64QAM	**256QAM**
Middle Channel	**Middle Channel**
	

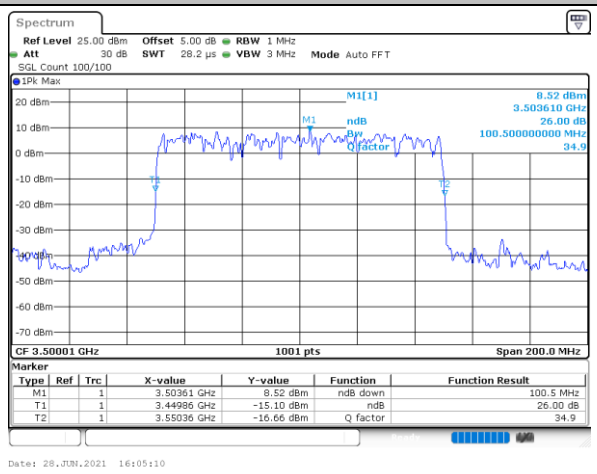
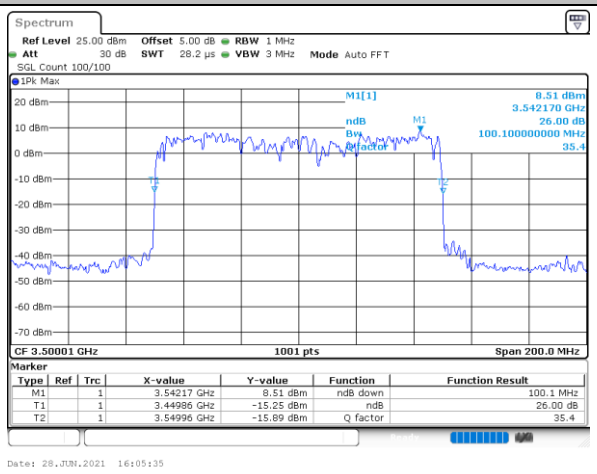
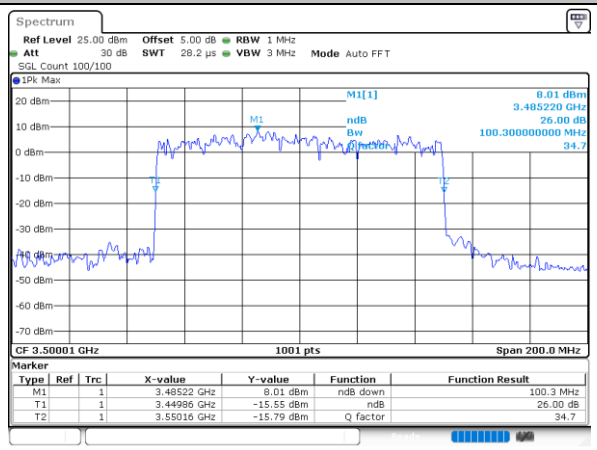
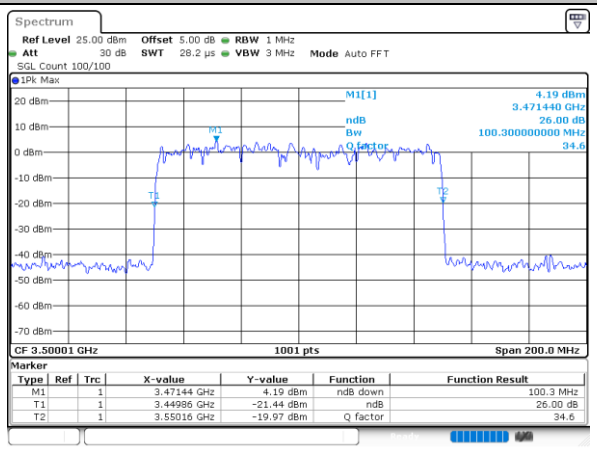
FR1 UL-MIMO n77 / 70MHz / CP-OFDM (Ant5)	
QPSK	**16QAM**
Middle Channel	**Middle Channel**
	
64QAM	**256QAM**
Middle Channel	**Middle Channel**
	

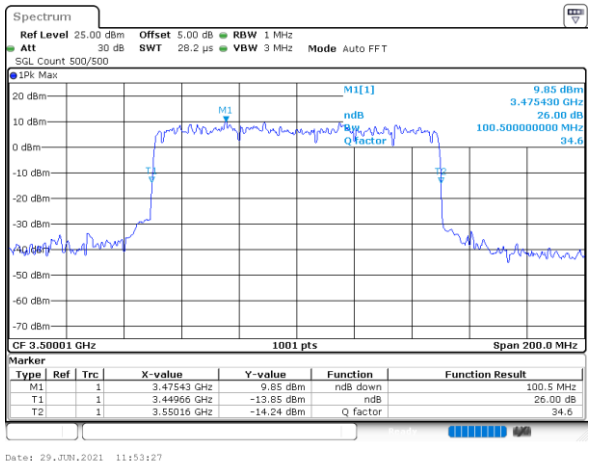
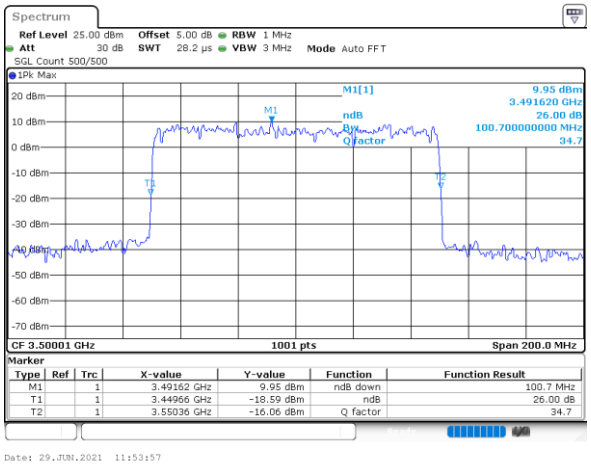
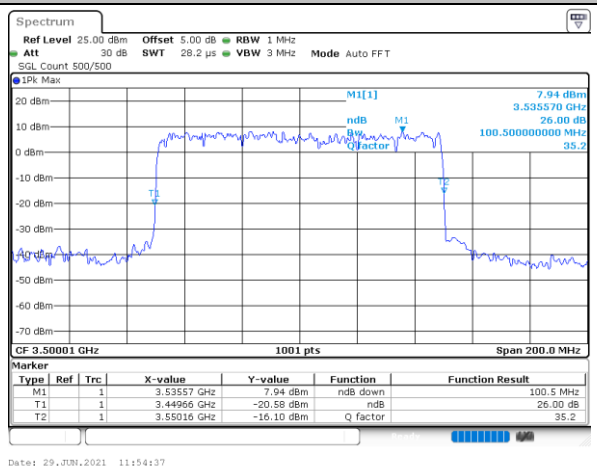
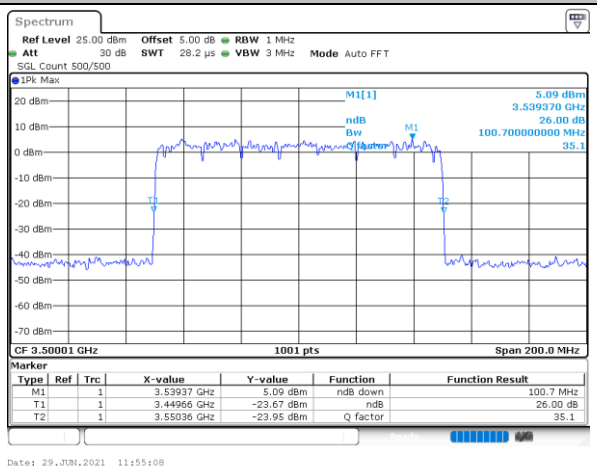
FR1 UL-MIMO n77 / 80MHz / CP-OFDM (Ant3)	
QPSK	**16QAM**
Middle Channel	**Middle Channel**
	
64QAM	**256QAM**
Middle Channel	**Middle Channel**
	

FR1 UL-MIMO n77 / 80MHz / CP-OFDM (Ant5)	
QPSK	**16QAM**
Middle Channel	**Middle Channel**
	
64QAM	**256QAM**
Middle Channel	**Middle Channel**
	

FR1 UL-MIMO n77 / 90MHz / CP-OFDM (Ant3)	
QPSK	**16QAM**
Middle Channel	**Middle Channel**
	
64QAM	**256QAM**
Middle Channel	**Middle Channel**
	

FR1 UL-MIMO n77 / 90MHz / CP-OFDM (Ant5)	
QPSK	**16QAM**
Middle Channel	**Middle Channel**
	
64QAM	**256QAM**
Middle Channel	**Middle Channel**
	

FR1 UL-MIMO n77 / 100MHz / CP-OFDM (Ant3)	
QPSK	**16QAM**
Middle Channel	**Middle Channel**
	
64QAM	**256QAM**
Middle Channel	**Middle Channel**
	

FR1 UL-MIMO n77 / 100MHz / CP-OFDM (Ant5)	
QPSK	**16QAM**
Middle Channel	**Middle Channel**
	
64QAM	**256QAM**
Middle Channel	**Middle Channel**
	

Occupied Bandwidth

Mode	FR1 UL-MIMO n77 : OBW(20MHz) / CP-OFDM							
	Ant3				Ant5			
BW	20MHz	20MHz	20MHz	20MHz	20MHz	20MHz	20MHz	20MHz
Mod.	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
Middle CH	18.10	18.26	18.14	18.34	18.26	18.22	18.14	18.18

Mode	FR1 UL-MIMO n77 : OBW(30MHz) / CP-OFDM							
	Ant3				Ant5			
BW	30MHz	30MHz	30MHz	30MHz	30MHz	30MHz	30MHz	30MHz
Mod.	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
Middle CH	27.87	27.87	27.69	27.81	27.81	27.75	27.75	27.75

Mode	FR1 UL-MIMO n77 : OBW(40MHz) / CP-OFDM							
	Ant3				Ant5			
BW	40MHz	40MHz	40MHz	40MHz	40MHz	40MHz	40MHz	40MHz
Mod.	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
Middle CH	38.20	38.12	38.20	38.12	37.80	37.96	37.80	38.12

Mode	FR1 UL-MIMO n77 : OBW(50MHz) / CP-OFDM							
	Ant3				Ant5			
BW	50MHz	50MHz	50MHz	50MHz	50MHz	50MHz	50MHz	50MHz
Mod.	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
Middle CH	47.75	47.45	47.55	47.45	47.55	47.55	47.55	47.25

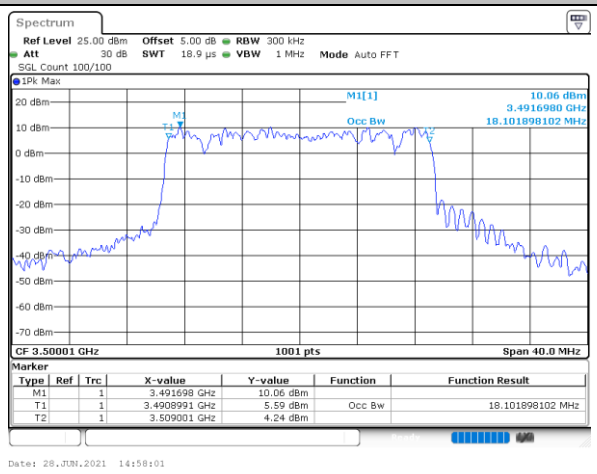
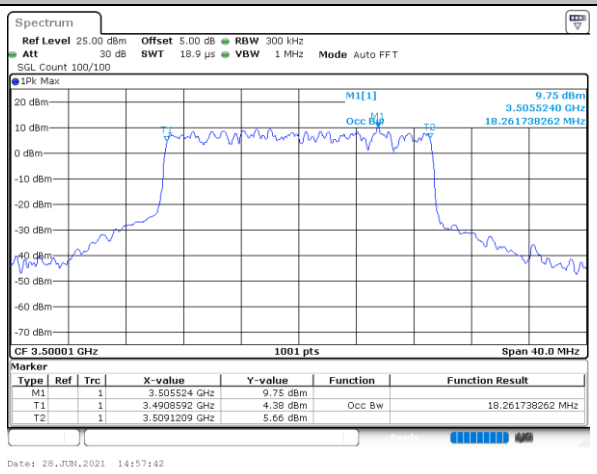
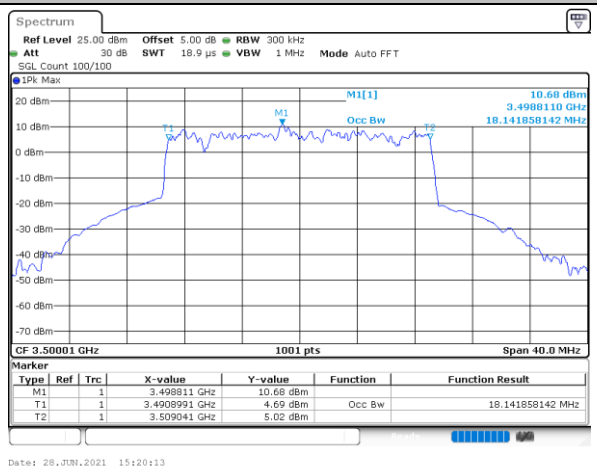
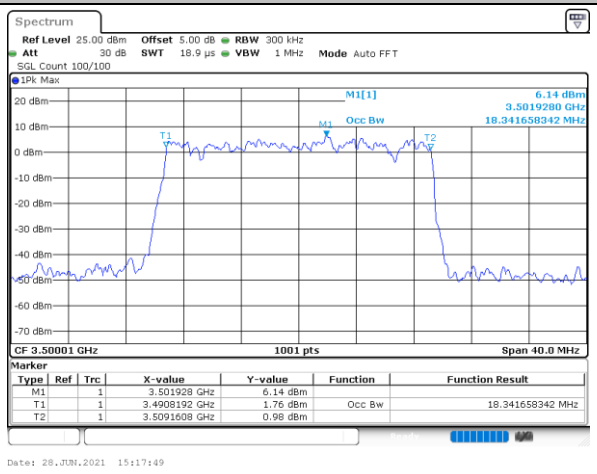
Mode	FR1 UL-MIMO n77 : OBW(60MHz) / CP-OFDM							
	Ant3				Ant5			
BW	60MHz	60MHz	60MHz	60MHz	60MHz	60MHz	60MHz	60MHz
Mod.	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
Middle CH	58.26	57.66	57.90	57.54	57.66	57.78	57.54	57.66

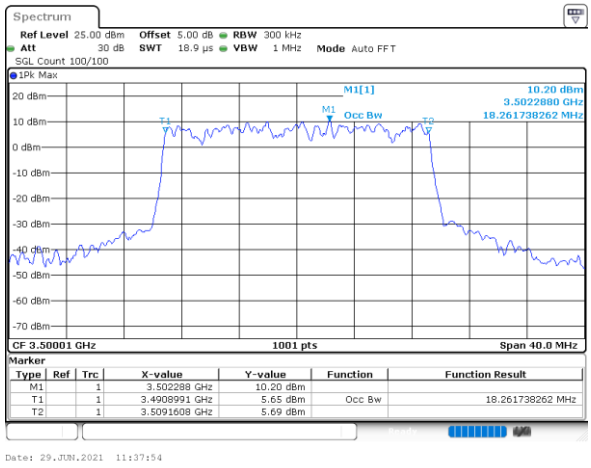
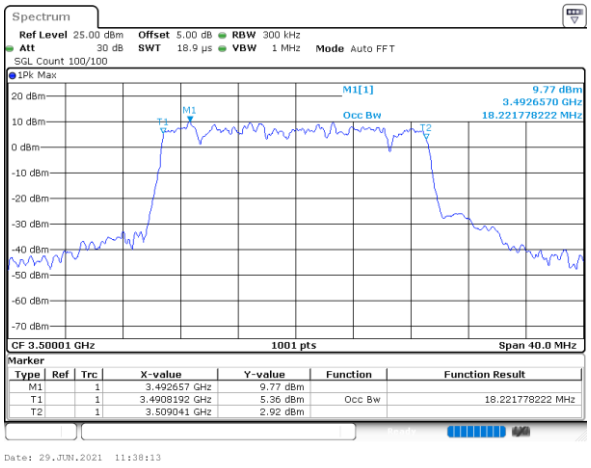
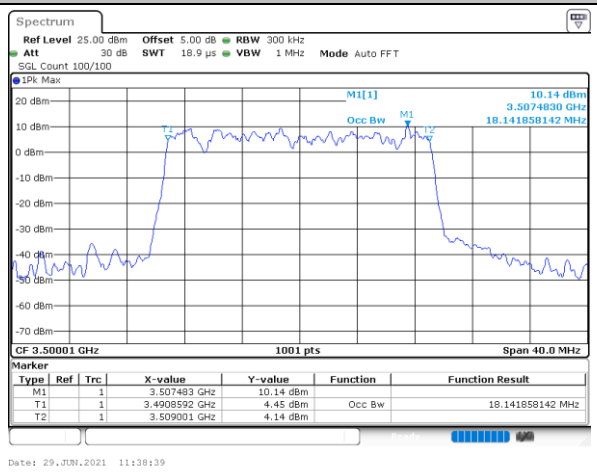
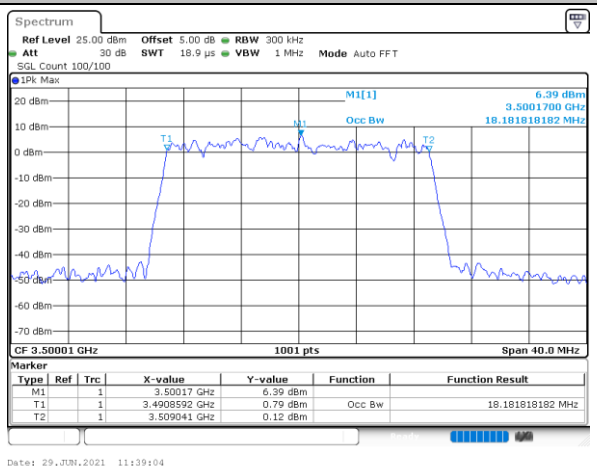
Mode	FR1 UL-MIMO n77 : OBW(70MHz) / CP-OFDM							
	Ant3				Ant5			
BW	70MHz	70MHz	70MHz	70MHz	70MHz	70MHz	70MHz	70MHz
Mod.	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
Middle CH	67.55	67.69	67.55	67.55	67.41	67.27	67.83	67.41

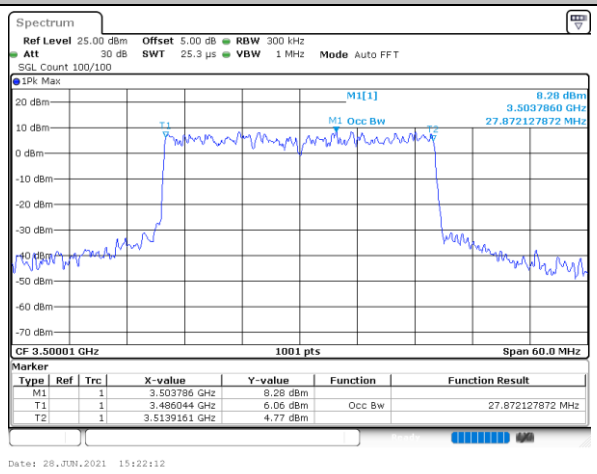
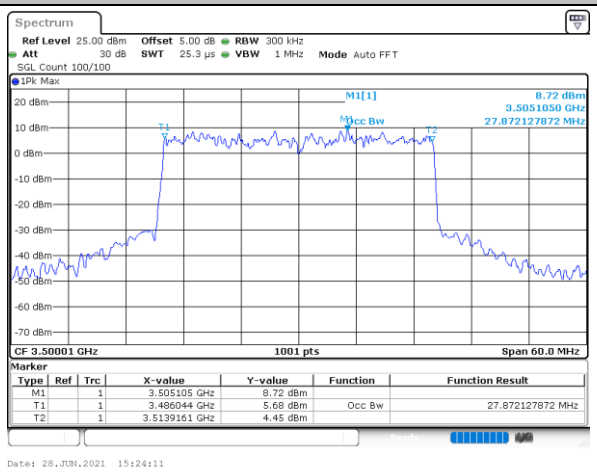
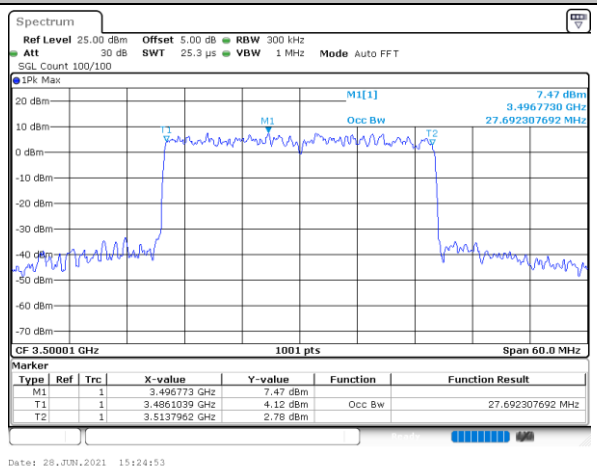
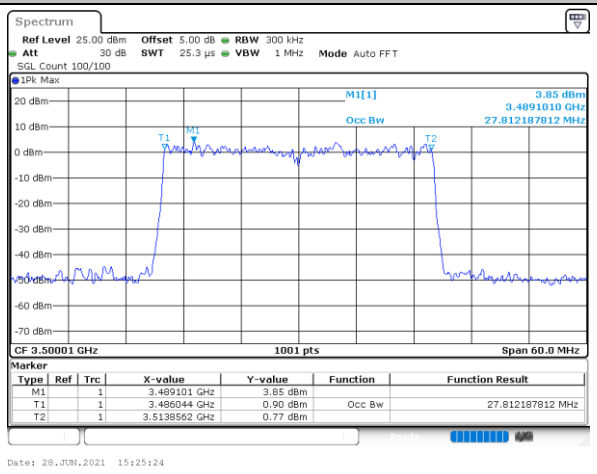
Mode	FR1 UL-MIMO n77 : OBW(80MHz) / CP-OFDM							
	Ant3				Ant5			
BW	80MHz	80MHz	80MHz	80MHz	80MHz	80MHz	80MHz	80MHz
Mod.	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
Middle CH	77.20	77.68	77.36	77.36	77.20	77.68	77.36	77.52

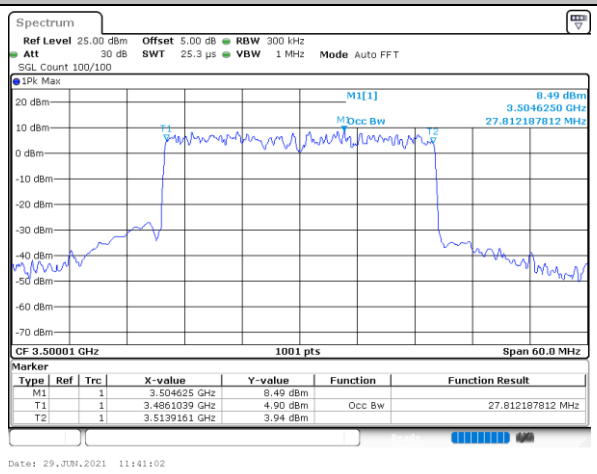
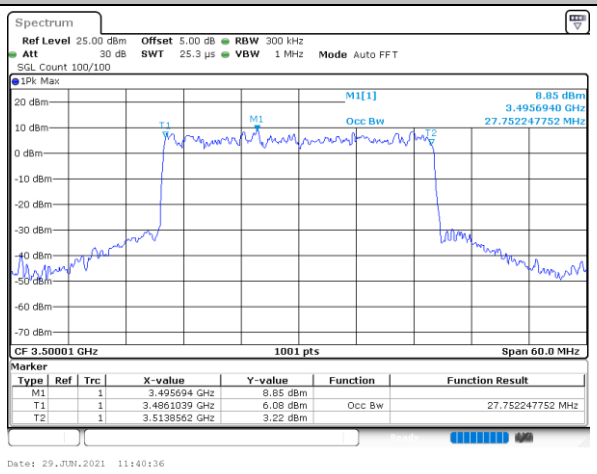
Mode	FR1 UL-MIMO n77 : OBW(90MHz) / CP-OFDM							
	Ant3				Ant5			
BW	90MHz	90MHz	90MHz	90MHz	90MHz	90MHz	90MHz	90MHz
Mod.	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
Middle CH	87.21	87.39	87.21	87.57	87.39	87.57	87.57	87.75

Mode	FR1 UL-MIMO n77 : OBW(100MHz) / CP-OFDM							
	Ant3				Ant5			
BW	100MHz	100MHz	100MHz	100MHz	100MHz	100MHz	100MHz	100MHz
Mod.	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
Middle CH	97.50	97.30	97.50	97.50	97.30	97.10	97.70	97.10

FR1 UL-MIMO n77 / 20MHz / CP-OFDM (Ant3)	
QPSK	**16QAM**
Middle Channel	**Middle Channel**
	
64QAM	**256QAM**
Middle Channel	**Middle Channel**
	

FR1 UL-MIMO n77 / 20MHz / CP-OFDM (Ant5)	
QPSK	**16QAM**
Middle Channel	**Middle Channel**
	
64QAM	**256QAM**
Middle Channel	**Middle Channel**
	

FR1 UL-MIMO n77 / 30MHz / CP-OFDM (Ant3)	
QPSK	**16QAM**
Middle Channel	**Middle Channel**
	
64QAM	**256QAM**
Middle Channel	**Middle Channel**
	

FR1 UL-MIMO n77 / 30MHz / CP-OFDM (Ant5)	
QPSK	**16QAM**
Middle Channel	**Middle Channel**
	
64QAM	**256QAM**
Middle Channel	**Middle Channel**