



Industrial Internet Innovation Center (Shanghai) Co.,Ltd.

SRD TEST REPORT

PRODUCT	5G CPE
BRAND	ATEL
MODEL	PW550+,PW550,PW550 Plus,PW550 Pro,JW515, PW550-NA
APPLICANT	Asiatelco Technologies Co.
FCC ID	XYO-PW550NA
ISSUE DATE	September 30, 2024
STANDARD(S)	FCC Part15C

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1. Summary of Test Report

1.1 Test Standard(s)

No.	Test Standard	Title	Version
1	FCC Part15C	FCC CFR 47, Part 15, Subpart C: 15.205 Restricted bands of operation; 15.209 Radiated emission limits, general requirements; 15.247 Operation within the bands 902-928MHz, 2400-2483.5MHz, and 5725-5850MHz.	--

1.2 Reference Documents

No.	Test Standard	Title	Version
1	ANSI C63.10	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices	2013
2	KDB 558074 D01 15.247 Meas Guidance v05r02	Guidance for Performing Compliance Measurements on Frequency Hopping Spread Spectrum systems (DSS) Operating Under §15.247	--

Note: The standard of KDB 558074 D01 15.247 Meas Guidance v05r02 has not been accredited by A2LA.

1.3 Summary of Test Results

No.	Measurement Items	FCC Rules	Verdict
1	Maximum Peak Output Power	15.247(b)	Pass
2	Peak Power Spectral Density	15.247(e)	Pass
3	6dB Occupied Bandwidth	15.247(a)	Pass
4	99% Occupied Bandwidth	N/A	Pass
5	Band Edges Compliance	15.247(d)	Pass
6	Transmitter Spurious Emission-Conducted	15.247(d)	Pass
7	Transmitter Spurious Emission-Radiated	15.247/15.205/15.209	Pass
8	AC Powerline Conducted Emission	15.207	Pass
9	Antenna requirement	15.203/15.247(c)	Pass ^{Note 2}

Note 1:

The PW550,PW550Plus,PW550 Pro,JW515, PW550-NA,PW550+ manufactured by Asiatelco Technologies Co. is a new product for testing.

Industrial Internet Innovation Center (Shanghai) Co., Ltd. only performed test cases which identified with Pass/Fail/Inc result in section 1.3.

Industrial Internet Innovation Center (Shanghai) Co., Ltd. has verified that the compliance of the tested device specified in section 4 of this test report is successfully evaluated according to the procedure and test methods as defined in type certification requirement listed in section 1 of this test report.

Note2:

2.4G WLAN used a internal antenna with max Gain 3.50/3.60 dBi that complied with 15.203

Requirements.

a. All the test data for each data were verified, but only the worst case was reported.

1.4 Data Provided by Applicant

No.	Item(s)	Data
1	Antenna gain of EUT	ANT1: 3.50 dBi ANT2: 3.60 dBi
Note: The data of antenna gain is provided by the Antenna specification may affect the validity of the test results in this report, and the impact and consequences of this shall be undertaken by the customer.		

Cyclic Delay Diversity(CDD)System:

FCC KDB 662911 D01 Multiple Transmitter Output v02r01

If all antennas have the same gain, G_{ANT} , Directional gain = G_{ANT} + Array Gain, where Array Gain is as follows.

For power spectral density (PSD) measurements on all devices,

$Array\ Gain = 10 \log(N_{ANT}/N_{SS})\ dB$.

For power measurements on IEEE 802.11 devices, 1,2

$Array\ Gain = 0\ dB$ (i.e., no array gain) for $N_{ANT} \leq 4$;

$Array\ Gain = 0\ dB$ (i.e., no array gain) for channel widths $\geq 40\ MHz$ for any N_{ANT} ;

$Array\ Gain = 5 \log(N_{ANT}/N_{SS})\ dB$ or $3\ dB$, whichever is less, for 20-MHz channel widths with $N_{ANT} \geq 5$.

For power measurements on all other devices:

$Array\ Gain = 10 \log(N_{ANT}/N_{SS})\ dB$. The FCC may permit a lower array gain value based on analysis involving the specific cyclic delays, signal bandwidths, channelization, and antenna configurations used by the device. Contact the FCC through the Knowledge

Unequal antenna gains, with equal transmit powers. For antenna gains given by $G_1, G_2, \dots, G_N\ dBi$

(i) If transmit signals are *correlated*, then

Directional gain = $10 \log[(10^{G_1/20} + 10^{G_2/20} + \dots + 10^{G_N/20})^2 / N_{ANT}]\ dBi$ [Note the "20"s in the denominator of each exponent and the square of the sum of terms; the object is to combine the signal levels coherently.]

(ii) If all transmit signals are *completely uncorrelated*, then

Directional gain = $10 \log[(10^{G_1/10} + 10^{G_2/10} + \dots + 10^{G_N/10}) / N_{ANT}]\ dBi$

The Power and PSD limit should be modified if the directional gain of eut is over 6dbi.

The EUT supports CDD System Unequal antenna gain:

ANT Gain1 (dBi)	ANT Gain2 (dBi)	Directional gainFor Power (dBi)	Directional gainFor PSD(dBi)	Power Limit Reduction (dBm)	PSD LimitReduction (dBm)
3.5	3.6	6.56	6.56	0.56	0.56

Power Limit Reduction = Directional gain- 6dBi, (Directional gain >6dBi)= 6.56-6=0.56

PSD Limit Reduction= Directional gain -6dBi, (Directional gain> 6dBi)=6.56-6=0.56

2. General Information of The Laboratory

2.1 Testing Laboratory

Lab Name	Industrial Internet Innovation Center (Shanghai) Co.,Ltd.
Address	Building 4, No. 766, Jingang Road, Pudong, Shanghai, China
Telephone	021-68866880
FCC Registration No.	708870
FCC Designation No.	CN1364

2.2 Laboratory Environmental Requirements

Temperature	15°C~35°C
Relative Humidity	86kPa~106kPa
Atmospheric Pressure	86kPa~106kPa

2.3 Project Information

Project Manager	Xu Yuting
Test Date	August 26, 2024 to September 25, 2024

3. General Information of The Customer

3.1 Applicant

Company	Asiatelco Technologies Co.
Address	#68 HuaTuo Road, Building-8, Zhangjiang Hi-Tech Park, Pudong, Shanghai 201204, China
Telephone	N/A

3.2 Manufacturer

Company	Asiatelco Technologies Co.
Address	#68 HuaTuo Road, Building-8, Zhangjiang Hi-Tech Park, Pudong, Shanghai 201204, China
Telephone	N/A

4. General Information of The Product

4.1 Product Description for Equipment under Test (EUT)

Product Name	5G CPE
Model name	PW550, PW550 Plus, PW550 Pro, JW515, PW550-NA, PW550+
Date of Receipt	S01aa/S04aa: August 26, 2024
EUT ID*	S01aa/S04aa
SN/IMEI	S01aa: 862424050281897 S04aa: NA
Supported Radio Technology and Bands	WCDMA Band II/IV/V LTE Band 2/4/5/7/12/13/14/17/25/26/30/41/48/66/71 LTE Band CA_41C NR n2/n5/n7/n12/n14/n25/n30/n41/n66/n71/n77/n78 WLAN 802.11b/g/n/ax WLAN 802.11a/ac/ax BT 5.0 BLE
Hardware Version	PW55-P1
Software Version	CPE5_PW550_NO_00_v1.0.2
FCC ID	XYO-PW550NA

NOTE1: EUT ID is the internal identification code of the laboratory.

NOTE2: Samples in the test report are provided by the customer. The test results are only applicable to the samples received by the laboratory.

4.2 Internal Identification of AE used during the test

AE ID*	Description	Model	SN/Remark
AE1	RF cable	N/A	N/A

NOTE: *AE ID is the internal identification code of the laboratory.

4.3 Additional Information

WLAN Frequency	2412MHz-2462MHz
WLAN Channel	CH1-11
WLAN type of modulation	802.11b: DSSS 802.11g/n/ax: OFDM

Test frequency list:

BW_20M	Channel	1	6	11
	Freq. (MHz)	2412	2437	2462
BW_40M	Channel	3	6	9
	Freq. (MHz)	2422	2437	2452

Note: This report is for 2.4G WLAN only.

4.4 Emissions Information WIFI 2.4G

TestMode	Frequency Min(MHz)	Frequency Max(MHz)	Max OutPut Power EIRP(dBm)	Max OutPut Power EIRP(W)	OBW (KHz)	Necessary Bandwidth & Emission Classification
11B	2412	2462	29.32	0.8551	12840	12M8G1D
11G	2412	2462	28.84	0.7656	17320	17M3D1D
11N20	2412	2462	25.81	0.3811	18160	18M2D1D
11N40	2422	2452	25.49	0.354	36560	36M6D1D
11AX20	2412	2462	28.4	0.6918	19440	19M4D1D
11AX40	2422	2452	28.64	0.7311	37920	37M9D1D

5. Test Configuration Information

5.1 Laboratory Environmental Conditions

5.1.1 Permanent Facilities

Relative Humidity	Min. = 45 %, Max. = 55 %		
Atmospheric Pressure	101kPa		
Temperature	Normal	Minimum	Maximum
	25°C	-20°C	60°C
Working Voltage of EUT	Normal	Minimum	Maximum
	24V	22.8V	25.2V

5.2 Test Equipments Utilized

5.2.1 Conducted Test System

No.	Name	Model	S/N	SW Version	HW Version	Manuf acturer	Cal. Date	Cal. Interval
1	Test Software	TS1120	10671	V3.2.22	N/A	Tonsce nd	N/A	N/A
2	Automatic control unit	JS0806 -2	221806062 1	N/A	N/A	Tonsce nd	2024-03-25	1 Year
3	Wireless communication comprehensive tester	CMW2 70	100919	V3.5.137	N/A	R&S	2024-07-25	1 Year
4	Spectrum Analyzer	FSQ40	200063	V4.75	N/A	R&S	2023-10-16	1 Year
5	Vector Signal Generator	SMU20 0A	104684	V03.20.28 6.21	N/A	R&S	2024-07-25	1 Year
6	Vector Signal Generator	SMBV1 00A	257904	V4.15.125. 49	N/A	R&S	2023-12-19	1 Year
7	Programmable Power Supply	Keithle y 2303	4039070	N/A	N/A	Keithle y	2024-06-07	1 Year
8	Temperature box	B-TF-107C	BTF107C-201804107	N/A	N/A	Boyi	2024-06-07	1 Year
9	Network test unit AP	GT-AXE11 000	N2IG0X401 637KWF	V3.0.0.4.3 86_45940	N/A	ASUS	N/A	N/A
10	Vector Signal Generator	SMBV1 00A	257904	V4.15.125. 49	N/A	R&S	2023-10-16	1 Year

5.2.2 Radiated Emission Test System

No	Name	Model	S/N	SW Version	HW Version	Manufacturer	Cal. Date	Cal. Interval
1	Universal Radio Communication Tester	CMU200	123126	V5.2.1	B12	R&S	2023-10-16	1 Year
2	Universal Radio Communication Tester	CMW500	104178	V3.7.20	1206.0600.00	R&S	2023-10-16	1 Year
3	EMI Test Receiver	ESU40	100307	V5.1-24-3	01	R&S	2023-12-19	1 Year
4	TRILOG Broadband Antenna	VULB9163	01345	N/A	N/A	Schwarzbeck	2024-03-29	1 Year
5	Double-ridged Waveguide Antenna	ETS-3117	00135890	N/A	N/A	ETS	2024-03-16	1 Year
6	EMI Test Software	EMC32 V10.35.02	N/A	V10.35.02	N/A	R&S	N/A	N/A
7	Horn Antenna	3160-09	LM6321	N/A	N/A	R&S	2024-08-03	1 Year
8	Horn Antenna	3160-10	LM5942	N/A	N/A	R&S	2024-08-03	1 Year
9	Preamplifier	SCU08F1	8320024	N/A	N/A	R&S	2023-10-16	1 Year
10	Preamplifier	SCU18	10155	N/A	N/A	R&S	2023-10-16	1 Year
11	Preamplifier	SCU26	10025	N/A	N/A	R&S	2023-10-16	1 Year
12	Preamplifier	SCU40	10020	N/A	N/A	R&S	2023-10-16	1 Year
13	2-Line V-Network	ENV216	101380	N/A	N/A	R&S	2023-12-19	1 Year
14	EMI Test Software	EMC32 V10.35.02	N/A	N/A	N/A	R&S	N/A	N/A
15	Test Receiver	ESCI	101235	V5.1-24-3	0	R&S	2023-12-19	1 Year
16	Antenna Tower	TPMDC-LF	N/A	N/A	N/A	Top Precision	N/A	N/A
17	Antenna Tower	TPMDC-HF	N/A	N/A	N/A	Top Precision	N/A	N/A

5.2.3 Test Environment

Shielding Room1 (6.0 meters×3.0 meters×2.7 meters) did not exceed following limits along the conducted RF performance testing:

Temperature	Min. = 15 °C, Max. = 35 °C
Relative humidity	Min. = 20 %, Max. = 75 %
Shielding effectiveness	> 100 dB
Ground system resistance	< 0.5 Ω
Temperature	Min. = 15 °C, Max. = 35 °C

Control room did not exceed following limits along the EMC testing:

Temperature	Min. = 15 °C, Max. = 35 °C
Relative humidity	Min. = 30 %, Max. = 60 %
Shielding effectiveness	> 100 dB
Electrical insulation	> 10 kΩ
Ground system resistance	< 0.5 Ω

Fully-anechoic chamber1 (9.8 meters×6.7 meters×6.7 meters) did not exceed following limits along the EMC testing:

Temperature	Min. = 15 °C, Max. = 35 °C
Relative humidity	Min. = 25 %, Max. = 75 %
Shielding effectiveness	> 100 dB
Electrical insulation	> 10 kΩ
Ground system resistance	< 0.5 Ω
VSWR	Between 0 and 6 dB, from 1GHz to 18GHz
Site Attenuation Deviation	Between -4 and 4 dB, 30MHz to 1GHz

5.3 Measurement Uncertainty

Measurement Uncertainty of Conduction test

Item(s)	Frequency range	Confidence Level	Uncertainty
DTS Bandwidth	2400–2483.5MHz	95%	±1.9%
Maximum Conducted Output Power	2400–2483.5MHz	95%	± 1.18 dB
Maximum Power Spectral Density Level	2400–2483.5MHz	95%	±0.98 dB
Band-edge Compliance	2400–2483.5MHz	95%	±1.21dB
Unwanted Emissions In Non-restricted Freq Bands	9kHz-7GHz	95%	9kHz-7GHz:±1.21dB

	7GHz-40GHz	95%	7GHz-40GHz:±3.31dB
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Measurement Uncertainty of Radiation test

Measurement Items	Uncertainty(dB)
Radiated Emission 30MHz-1000MHz	±5.10
Radiated Emission 1000MHz-18000MHz	±5.66
Radiated Emission 18000MHz-40000MHz	±5.22
AC Powerline Conducted Emission	±4.38

Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

6. Test Results

6.1 Duty cycle

6.1.1 Measurement Limit

Standard	Limit (dBm)
FCC 47 Part 15.247(b)	N/A

6.1.2 Test Procedure

This measurement is according to ANSI C63.10 clause 11.6

Measurements of duty cycle and transmission duration shall be performed using one of the following techniques:

- A diode detector and an oscilloscope that together have a sufficiently short response time to permit accurate measurements of the ON and OFF times of the transmitted signal.
- The zero-span mode on a spectrum analyzer or EMI receiver if the response time and spacing between bins on the sweep are sufficient to permit accurate measurements of the ON and OFF times of the transmitted signal:
 - Set the center frequency of the instrument to the center frequency of the transmission.
 - Set $RBW \geq OBW$ if possible; otherwise, set RBW to the largest available value.
 - Set $VBW \geq RBW$. Set detector = peak or average.
 - The zero-span measurement method shall not be used unless both RBW and VBW are $> 50/T$ and the number of sweep points across duration T exceeds 100. (For example, if VBW and/or RBW are limited to 3 MHz, then the zero-span method of measuring the duty cycle shall not be used if $T \leq 16.7 \mu s$.)

6.1.3 Measurement Results

TestMode	Antenna	Frequency[MHz]	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	Factor
11B	Ant1	2412	1.25	1.31	95.42	0.20
11B	Ant2	2412	1.25	1.31	95.42	0.20
11B	Ant1	2437	1.25	1.31	95.42	0.20
11B	Ant2	2437	1.25	1.31	95.42	0.20
11B	Ant1	2462	1.25	1.31	95.42	0.20
11B	Ant2	2462	1.25	1.31	95.42	0.20
11B-CDD	Ant1	2412	1.25	1.31	95.42	0.20
11B-CDD	Ant2	2412	1.25	1.31	95.42	0.20
11B-CDD	Ant1	2437	1.25	1.31	95.42	0.20
11B-CDD	Ant2	2437	1.25	1.31	95.42	0.20
11B-CDD	Ant1	2462	1.25	1.31	95.42	0.20
11B-CDD	Ant2	2462	1.25	1.31	95.42	0.20
11G	Ant1	2412	1.05	1.11	94.59	0.24
11G	Ant2	2412	1.05	1.11	94.59	0.24
11G	Ant1	2437	1.06	1.12	94.64	0.24
11G	Ant2	2437	1.05	1.11	94.59	0.24

11G	Ant1	2462	1.05	1.11	94.59	0.24
11G	Ant2	2462	1.06	1.12	94.64	0.24
11G-CDD	Ant1	2412	1.05	1.11	94.59	0.24
11G-CDD	Ant2	2412	1.06	1.12	94.64	0.24
11G-CDD	Ant1	2437	1.05	1.11	94.59	0.24
11G-CDD	Ant2	2437	1.05	1.11	94.59	0.24
11G-CDD	Ant1	2462	1.05	1.11	94.59	0.24
11G-CDD	Ant2	2462	1.05	1.11	94.59	0.24
11N20SISO	Ant1	2412	1.07	1.13	94.69	0.24
11N20SISO	Ant2	2412	1.08	1.13	95.58	0.20
11N20SISO	Ant1	2437	1.07	1.13	94.69	0.24
11N20SISO	Ant2	2437	1.07	1.13	94.69	0.24
11N20SISO	Ant1	2462	1.07	1.13	94.69	0.24
11N20SISO	Ant2	2462	1.07	1.13	94.69	0.24
11N20MIMO	Ant1	2412	1.07	1.13	94.69	0.24
11N20MIMO	Ant2	2412	1.07	1.13	94.69	0.24
11N20MIMO	Ant1	2437	1.07	1.13	94.69	0.24
11N20MIMO	Ant2	2437	1.07	1.13	94.69	0.24
11N20MIMO	Ant1	2462	1.07	1.13	94.69	0.24
11N20MIMO	Ant2	2462	1.07	1.13	94.69	0.24
11N40SISO	Ant1	2422	1.03	1.09	94.50	0.25
11N40SISO	Ant2	2422	1.03	1.09	94.50	0.25
11N40SISO	Ant1	2437	1.03	1.09	94.50	0.25
11N40SISO	Ant2	2437	1.03	1.09	94.50	0.25
11N40SISO	Ant1	2452	1.03	1.09	94.50	0.25
11N40SISO	Ant2	2452	1.03	1.09	94.50	0.25
11N40MIMO	Ant1	2422	1.03	1.09	94.50	0.25
11N40MIMO	Ant2	2422	1.03	1.09	94.50	0.25
11N40MIMO	Ant1	2437	1.03	1.09	94.50	0.25
11N40MIMO	Ant2	2437	1.03	1.09	94.50	0.25
11N40MIMO	Ant1	2452	1.03	1.09	94.50	0.25
11N40MIMO	Ant2	2452	1.03	1.09	94.50	0.25
11AX20SISO	Ant1	2412	0.30	0.36	83.33	0.79
11AX20SISO	Ant2	2412	0.56	0.62	90.32	0.44
11AX20SISO	Ant1	2437	0.30	0.36	83.33	0.79
11AX20SISO	Ant2	2437	0.56	0.62	90.32	0.44
11AX20SISO	Ant1	2462	0.30	0.36	83.33	0.79
11AX20SISO	Ant2	2462	0.56	0.62	90.32	0.44
11AX20MIMO	Ant1	2412	0.95	1.01	94.06	0.27
11AX20MIMO	Ant2	2412	0.95	1.01	94.06	0.27
11AX20MIMO	Ant1	2437	0.95	1.01	94.06	0.27
11AX20MIMO	Ant2	2437	0.95	1.01	94.06	0.27
11AX20MIMO	Ant1	2462	0.95	1.01	94.06	0.27

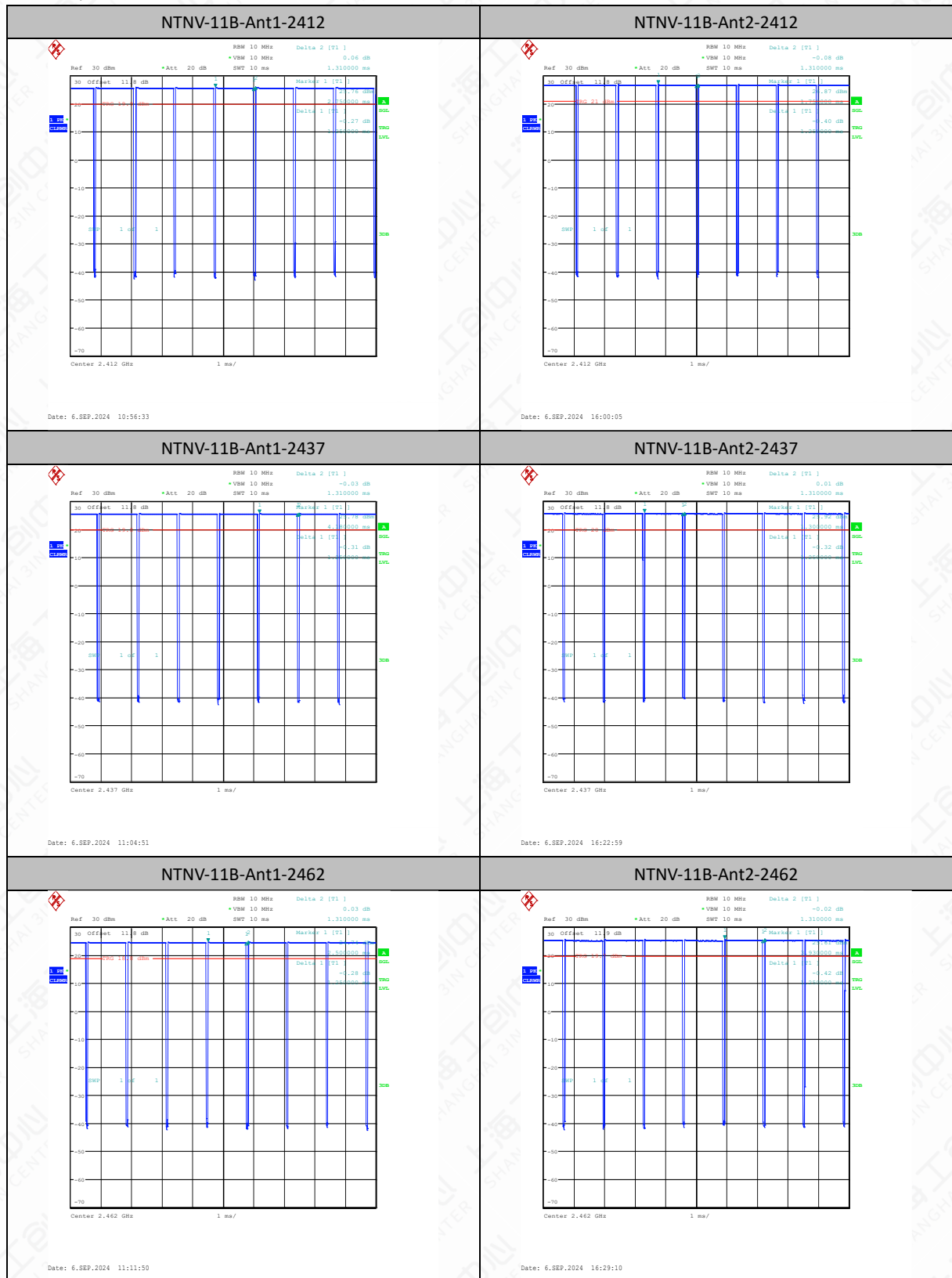
11AX20MIMO	Ant2	2462	0.95	1.01	94.06	0.27
11AX40SISO	Ant1	2422	0.51	0.57	89.47	0.48
11AX40SISO	Ant2	2422	0.20	0.26	76.92	1.14
11AX40SISO	Ant1	2437	0.51	0.57	89.47	0.48
11AX40SISO	Ant2	2437	0.20	0.26	76.92	1.14
11AX40SISO	Ant1	2452	0.51	0.57	89.47	0.48
11AX40SISO	Ant2	2452	0.20	0.26	76.92	1.14
11AX40MIMO	Ant1	2422	0.51	0.57	89.47	0.48
11AX40MIMO	Ant2	2422	0.51	0.57	89.47	0.48
11AX40MIMO	Ant1	2437	0.51	0.57	89.47	0.48
11AX40MIMO	Ant2	2437	0.51	0.57	89.47	0.48
11AX40MIMO	Ant1	2452	0.51	0.57	89.47	0.48
11AX40MIMO	Ant2	2452	0.51	0.57	89.47	0.48

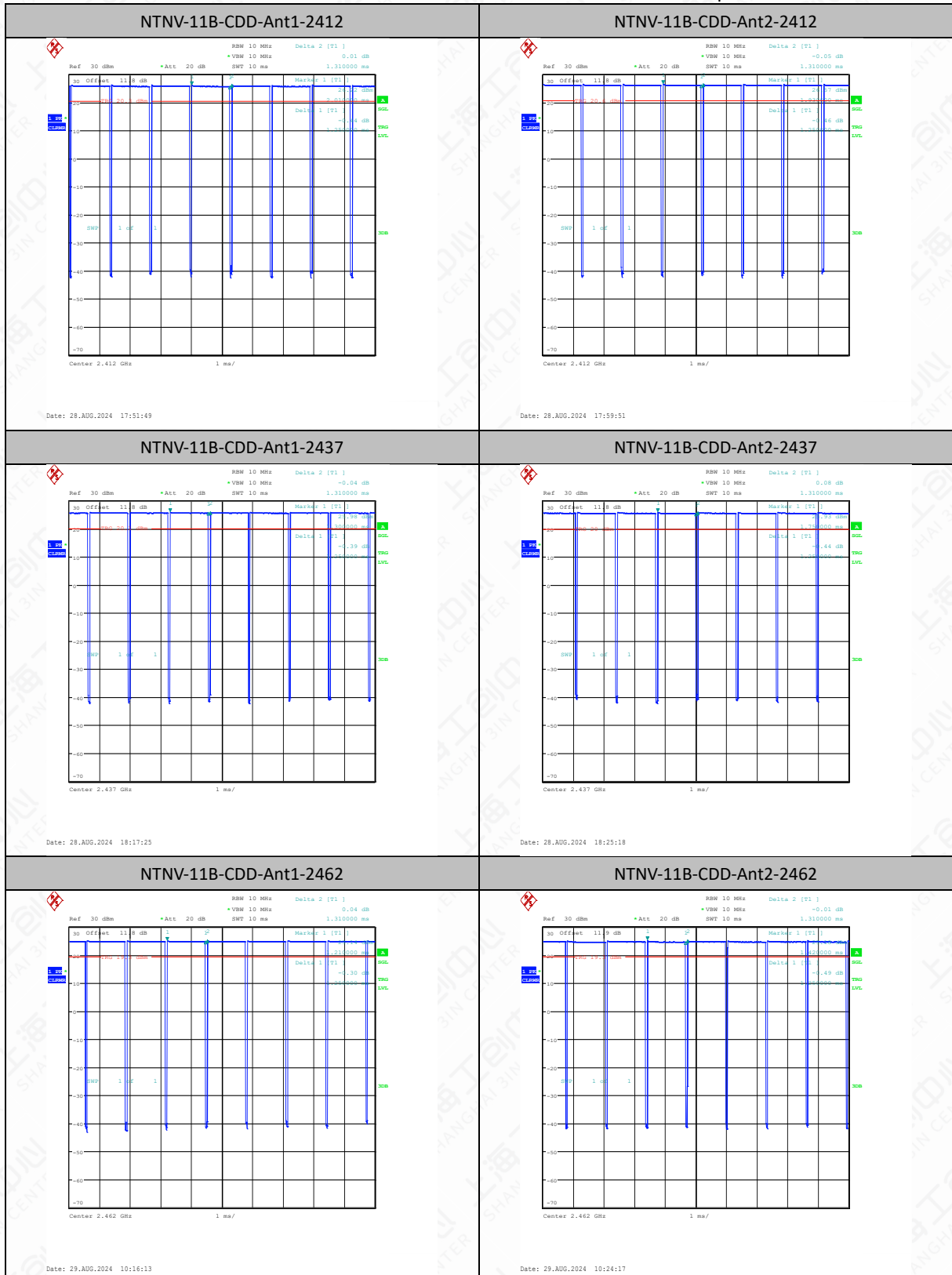
AX Part RU_Multi-User

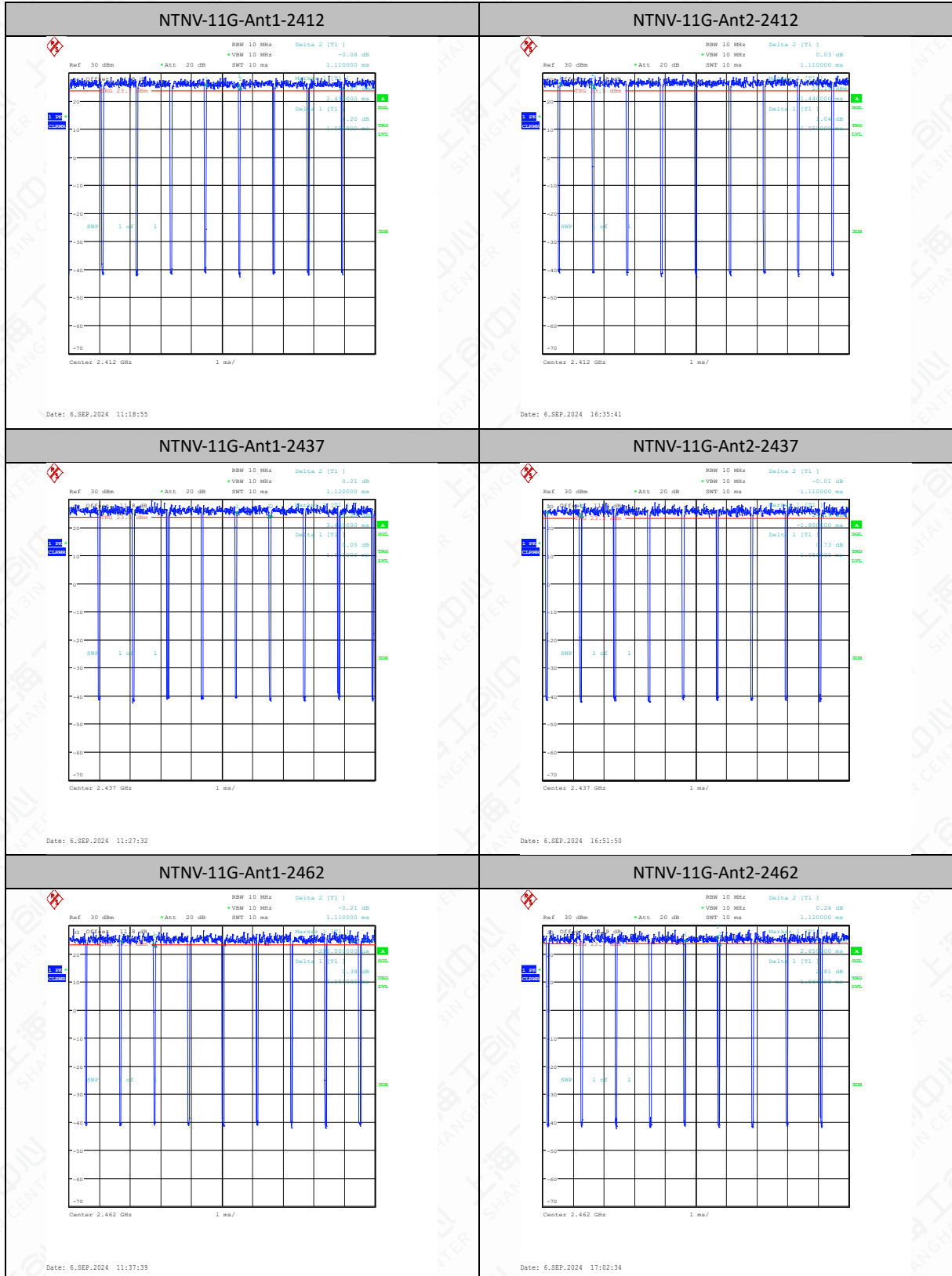
TestMode	Antenna	Frequency [MHz]	RuSize	RuIndex	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]
11AX20SISO	Ant1	2412	26Tone	RU0	0.81	0.87	93.10
11AX20SISO	Ant2	2412	26Tone	RU0	0.81	0.87	93.10
11AX20SISO	Ant1	2412	52Tone	RU37	0.54	0.60	90.00
11AX20SISO	Ant2	2412	52Tone	RU37	0.54	0.60	90.00
11AX20SISO	Ant1	2412	106Tone	RU53	0.39	0.45	86.67
11AX20SISO	Ant2	2412	106Tone	RU53	0.39	0.45	86.67
11AX20SISO	Ant1	2437	26Tone	RU0	0.82	0.88	93.18
11AX20SISO	Ant2	2437	26Tone	RU0	0.82	0.88	93.18
11AX20SISO	Ant1	2437	52Tone	RU37	0.54	0.60	90.00
11AX20SISO	Ant2	2437	52Tone	RU37	0.54	0.60	90.00
11AX20SISO	Ant1	2437	106Tone	RU53	0.39	0.45	86.67
11AX20SISO	Ant2	2437	106Tone	RU53	0.39	0.45	86.67
11AX20SISO	Ant1	2462	26Tone	RU0	0.82	0.88	93.18
11AX20SISO	Ant2	2462	26Tone	RU0	0.81	0.87	93.10
11AX20SISO	Ant1	2462	52Tone	RU37	0.54	0.60	90.00
11AX20SISO	Ant2	2462	52Tone	RU37	0.54	0.60	90.00
11AX20SISO	Ant1	2462	106Tone	RU53	0.39	0.45	86.67
11AX20SISO	Ant2	2462	106Tone	RU53	0.39	0.45	86.67
11AX20MIMO	Ant1	2412	26Tone	RU0	0.81	0.87	93.10
11AX20MIMO	Ant2	2412	26Tone	RU0	0.81	0.87	93.10
11AX20MIMO	Ant1	2412	52Tone	RU37	0.54	0.60	90.00
11AX20MIMO	Ant2	2412	52Tone	RU37	0.54	0.60	90.00
11AX20MIMO	Ant1	2412	106Tone	RU53	0.40	0.46	86.96
11AX20MIMO	Ant2	2412	106Tone	RU53	0.40	0.46	86.96
11AX20MIMO	Ant1	2437	26Tone	RU0	0.82	0.88	93.18
11AX20MIMO	Ant2	2437	26Tone	RU0	0.82	0.88	93.18

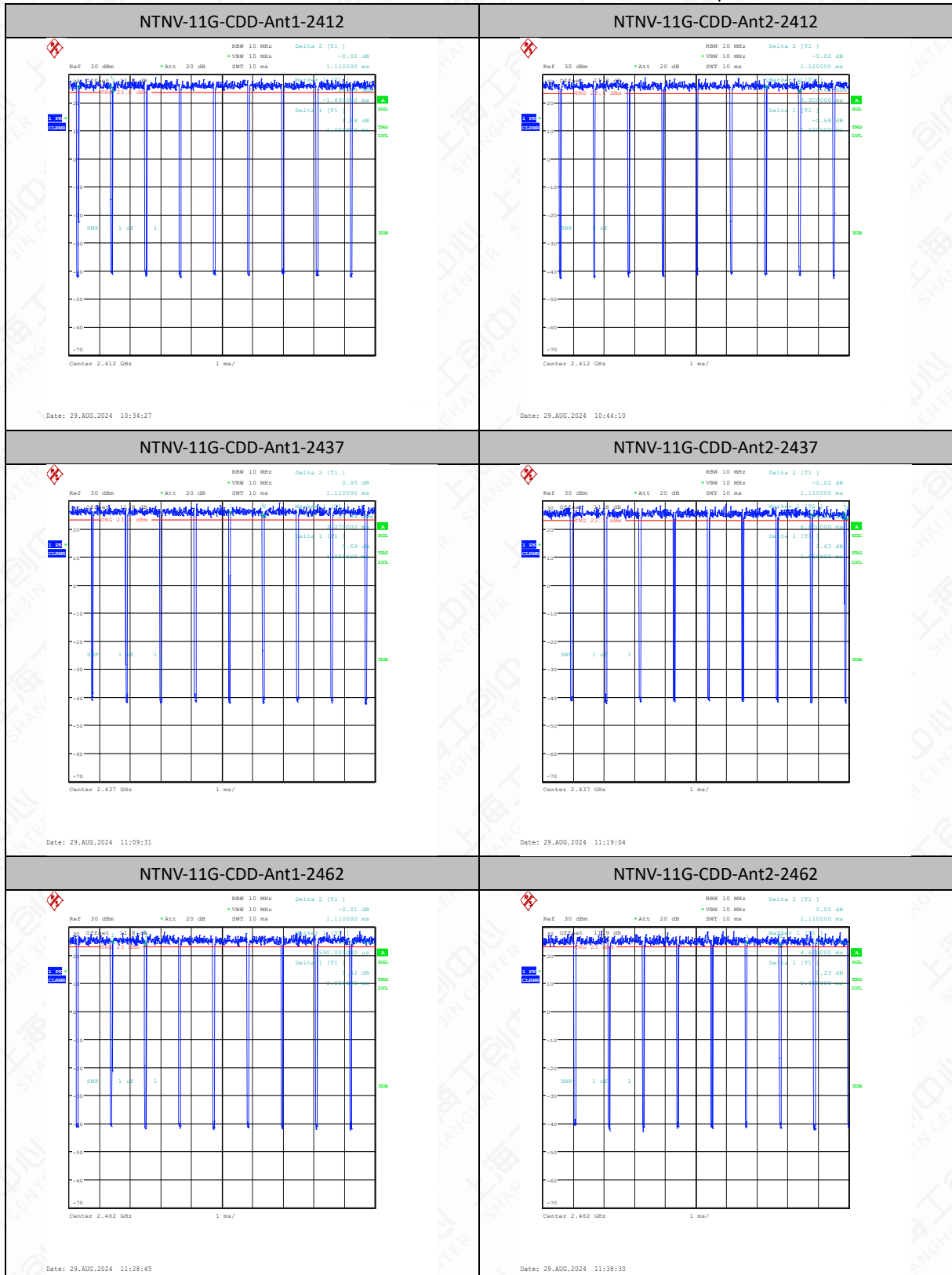
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11AX20MIMO	Ant2	2437	52Tone	RU37	0.54	0.60	90.00
11AX20MIMO	Ant1	2437	106Tone	RU53	0.40	0.46	86.96
11AX20MIMO	Ant2	2437	106Tone	RU53	0.40	0.46	86.96
11AX20MIMO	Ant1	2462	26Tone	RU0	0.82	0.88	93.18
11AX20MIMO	Ant2	2462	26Tone	RU0	0.82	0.88	93.18
11AX20MIMO	Ant1	2462	52Tone	RU37	0.54	0.60	90.00
11AX20MIMO	Ant2	2462	52Tone	RU37	0.54	0.60	90.00
11AX20MIMO	Ant1	2462	106Tone	RU53	0.40	0.46	86.96
11AX20MIMO	Ant2	2462	106Tone	RU53	0.40	0.46	86.96
11AX40SISO	Ant1	2422	242Tone	RU61	0.31	0.37	83.78
11AX40SISO	Ant2	2422	242Tone	RU61	0.31	0.37	83.78
11AX40SISO	Ant1	2422	242Tone	RU62	0.31	0.37	83.78
11AX40SISO	Ant2	2422	242Tone	RU62	0.01	0.06	16.67
11AX40SISO	Ant2	2437	242Tone	RU61	0.31	0.37	83.78
11AX40SISO	Ant1	2437	242Tone	RU61	0.31	0.37	83.78
11AX40SISO	Ant1	2437	242Tone	RU62	0.31	0.37	83.78
11AX40SISO	Ant2	2437	242Tone	RU62	0.31	0.37	83.78
11AX40SISO	Ant2	2452	242Tone	RU61	0.31	0.37	83.78
11AX40SISO	Ant1	2452	242Tone	RU61	0.31	0.37	83.78
11AX40SISO	Ant1	2452	242Tone	RU62	0.31	0.37	83.78
11AX40SISO	Ant2	2452	242Tone	RU62	0.31	0.37	83.78
11AX40MIMO	Ant1	2422	242Tone	RU61	0.31	0.37	83.78
11AX40MIMO	Ant2	2422	242Tone	RU61	0.31	0.37	83.78
11AX40MIMO	Ant1	2422	242Tone	RU62	0.31	0.37	83.78
11AX40MIMO	Ant2	2422	242Tone	RU62	0.31	0.37	83.78
11AX40MIMO	Ant1	2437	242Tone	RU61	0.31	0.37	83.78
11AX40MIMO	Ant2	2437	242Tone	RU61	0.31	0.37	83.78
11AX40MIMO	Ant1	2437	242Tone	RU62	0.31	0.37	83.78
11AX40MIMO	Ant2	2437	242Tone	RU62	0.31	0.37	83.78
11AX40MIMO	Ant1	2452	242Tone	RU61	0.31	0.37	83.78
11AX40MIMO	Ant2	2452	242Tone	RU61	0.31	0.37	83.78
11AX40MIMO	Ant1	2452	242Tone	RU62	0.31	0.37	83.78
11AX40MIMO	Ant2	2452	242Tone	RU62	0.31	0.37	83.78

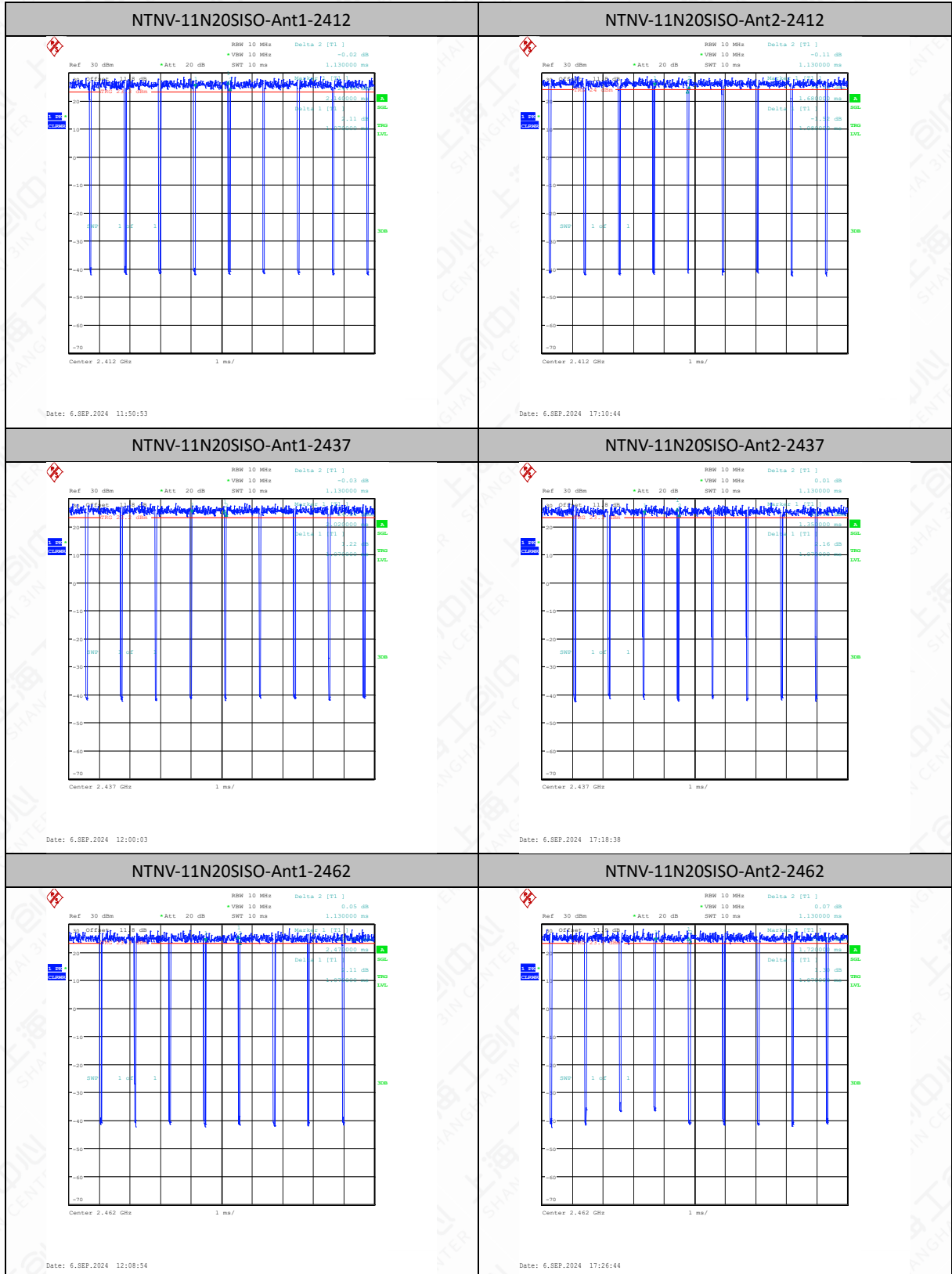
Test Graphs

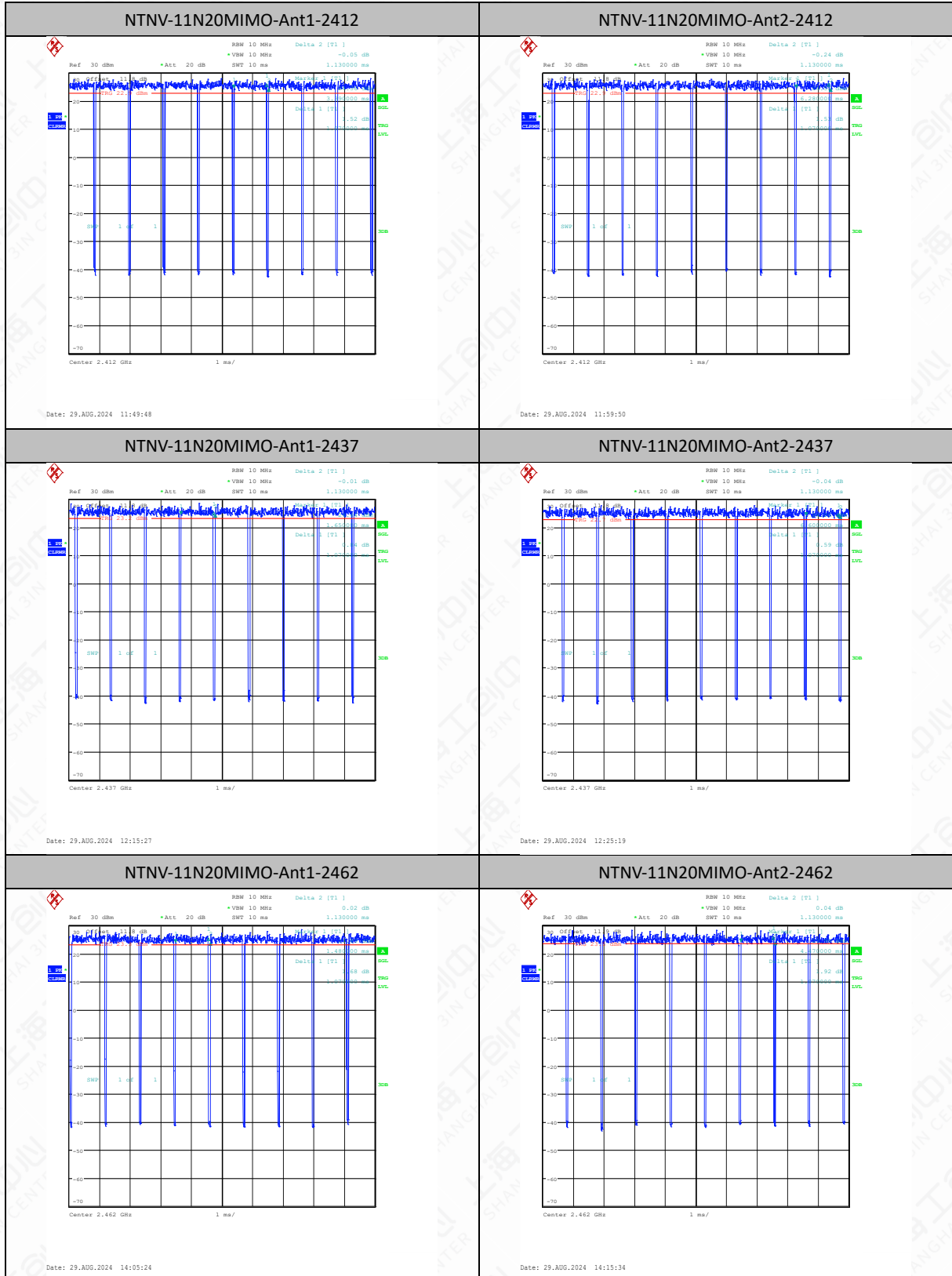


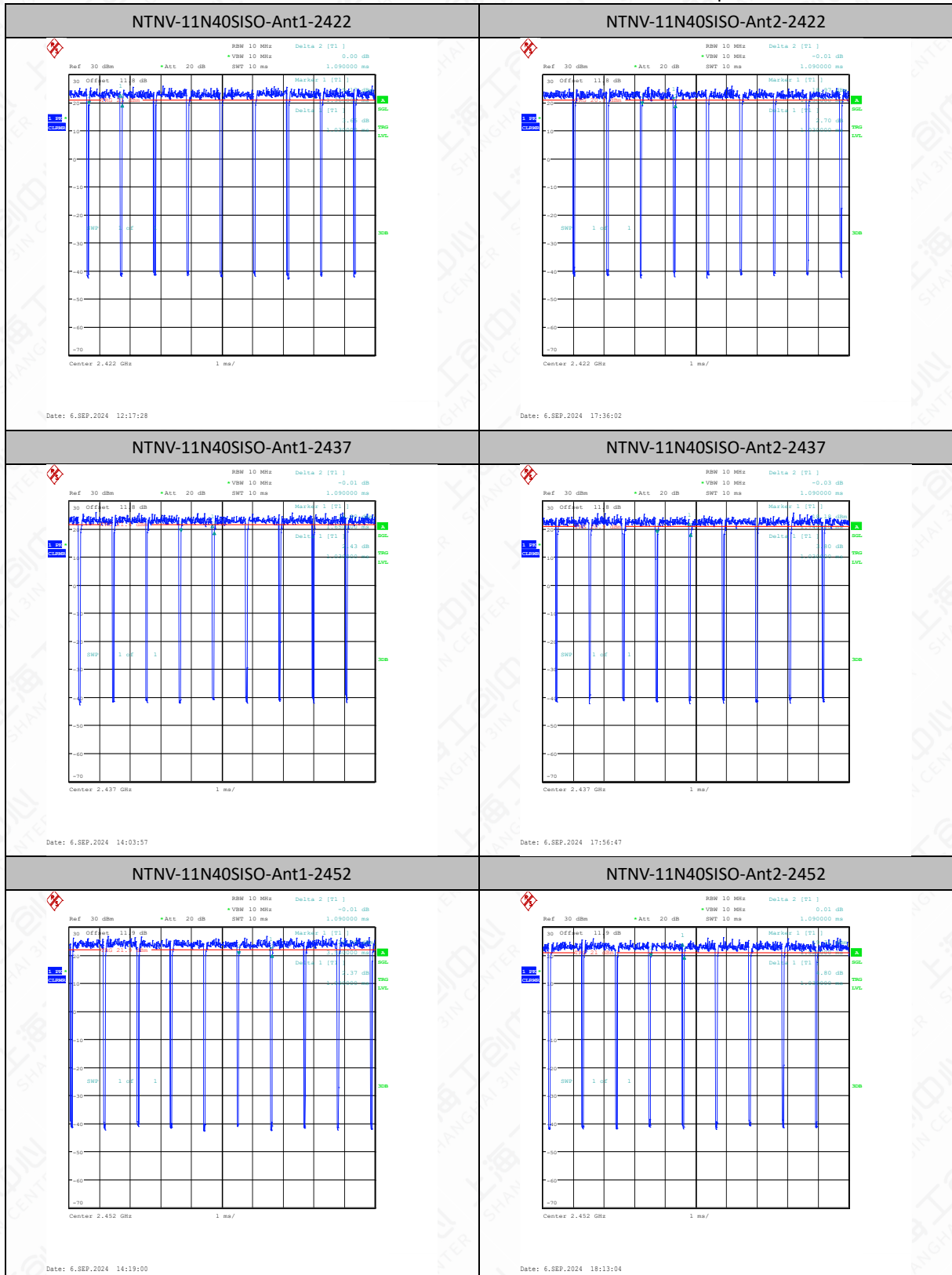


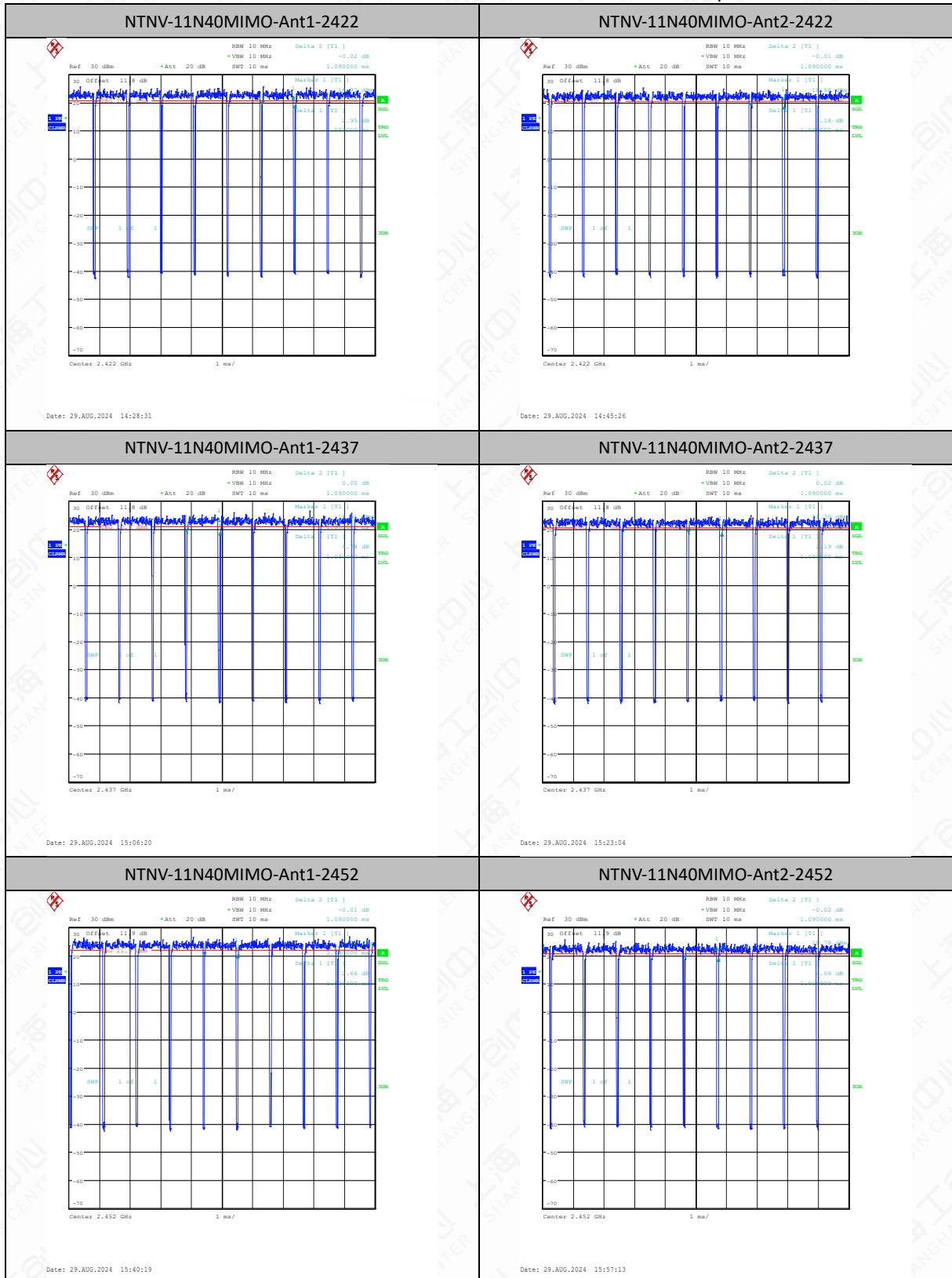


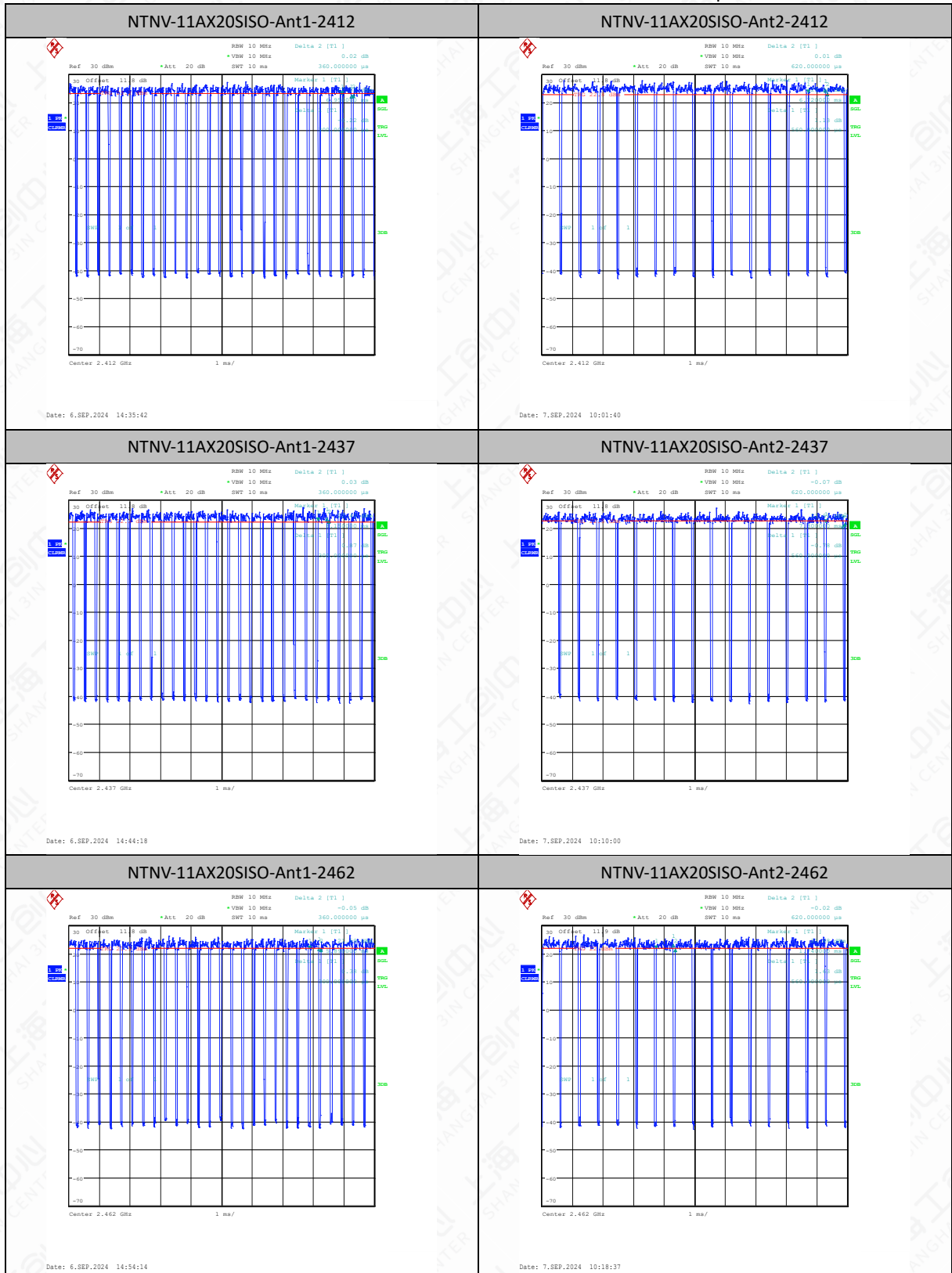




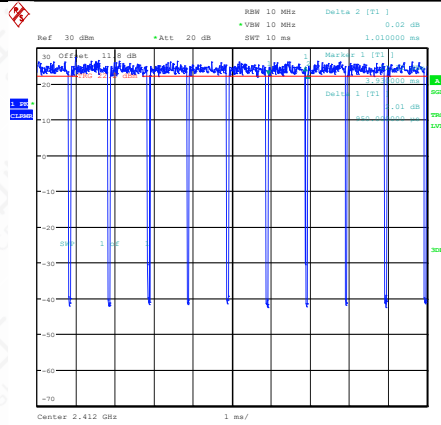






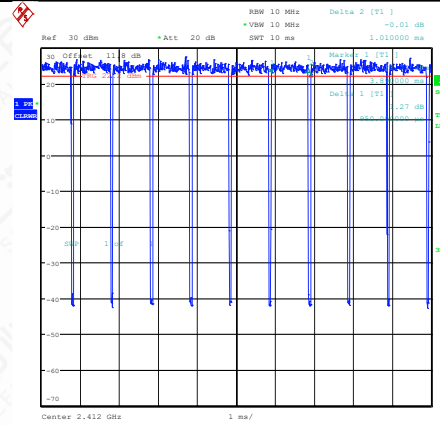


NTNV-11AX20MIMO-Ant1-2412



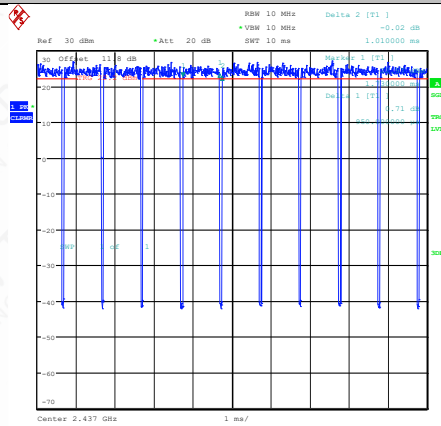
Date: 29.AUG.2024 17:20:00

NTNV-11AX20MIMO-Ant2-2412



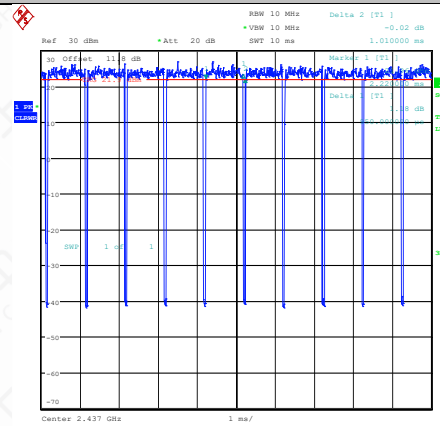
Date: 29.AUG.2024 17:30:26

NTNV-11AX20MIMO-Ant1-2437



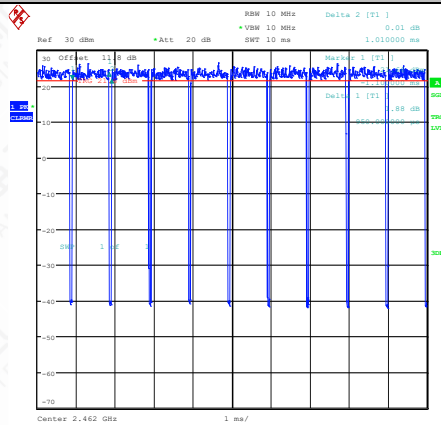
Date: 29.AUG.2024 17:41:31

NTNV-11AX20MIMO-Ant2-2437



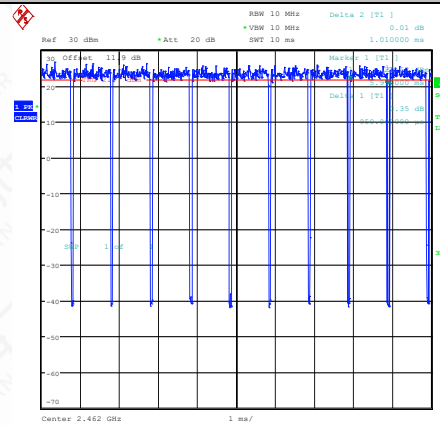
Date: 29.AUG.2024 17:51:43

NTNV-11AX20MIMO-Ant1-2462

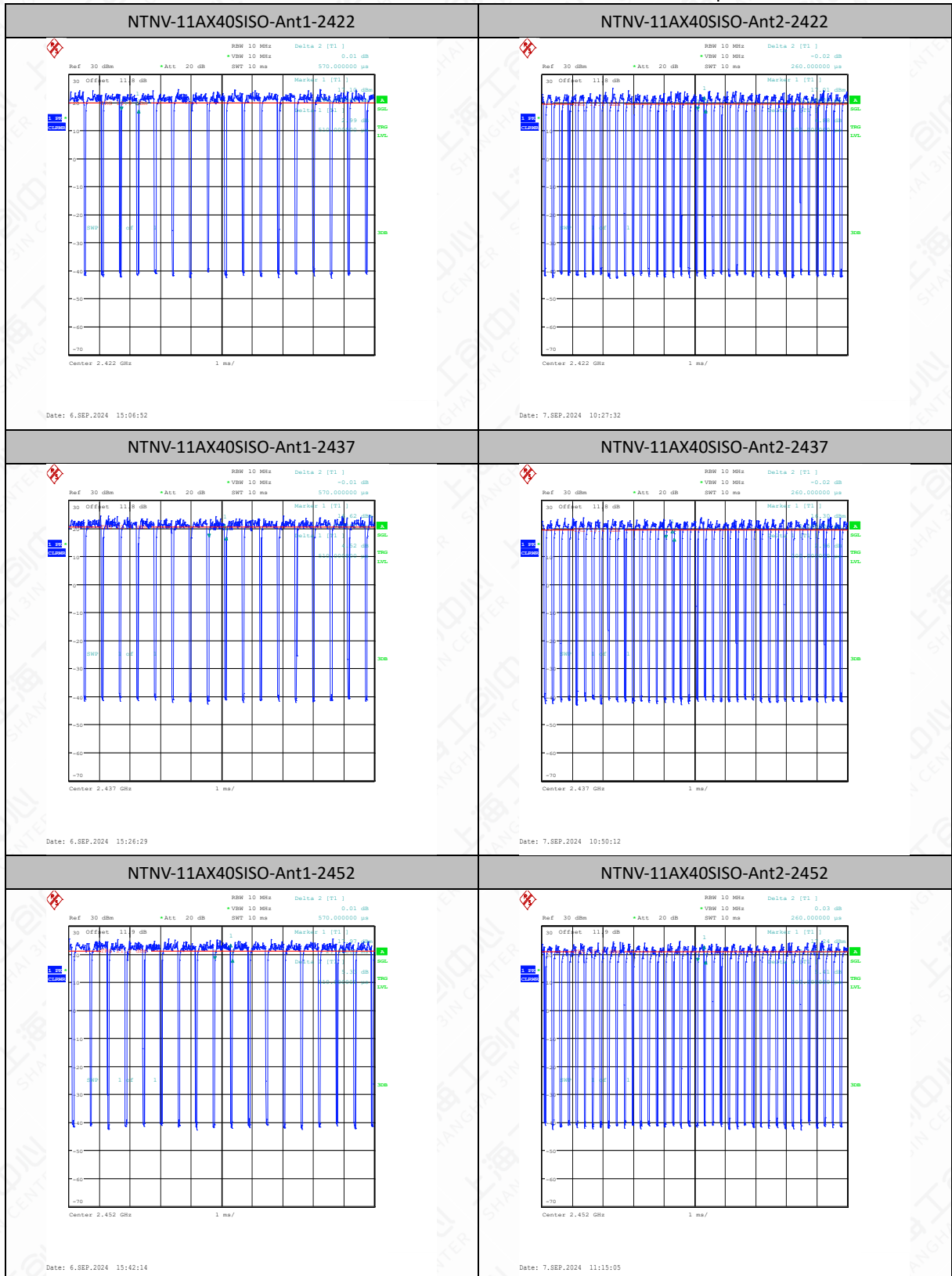


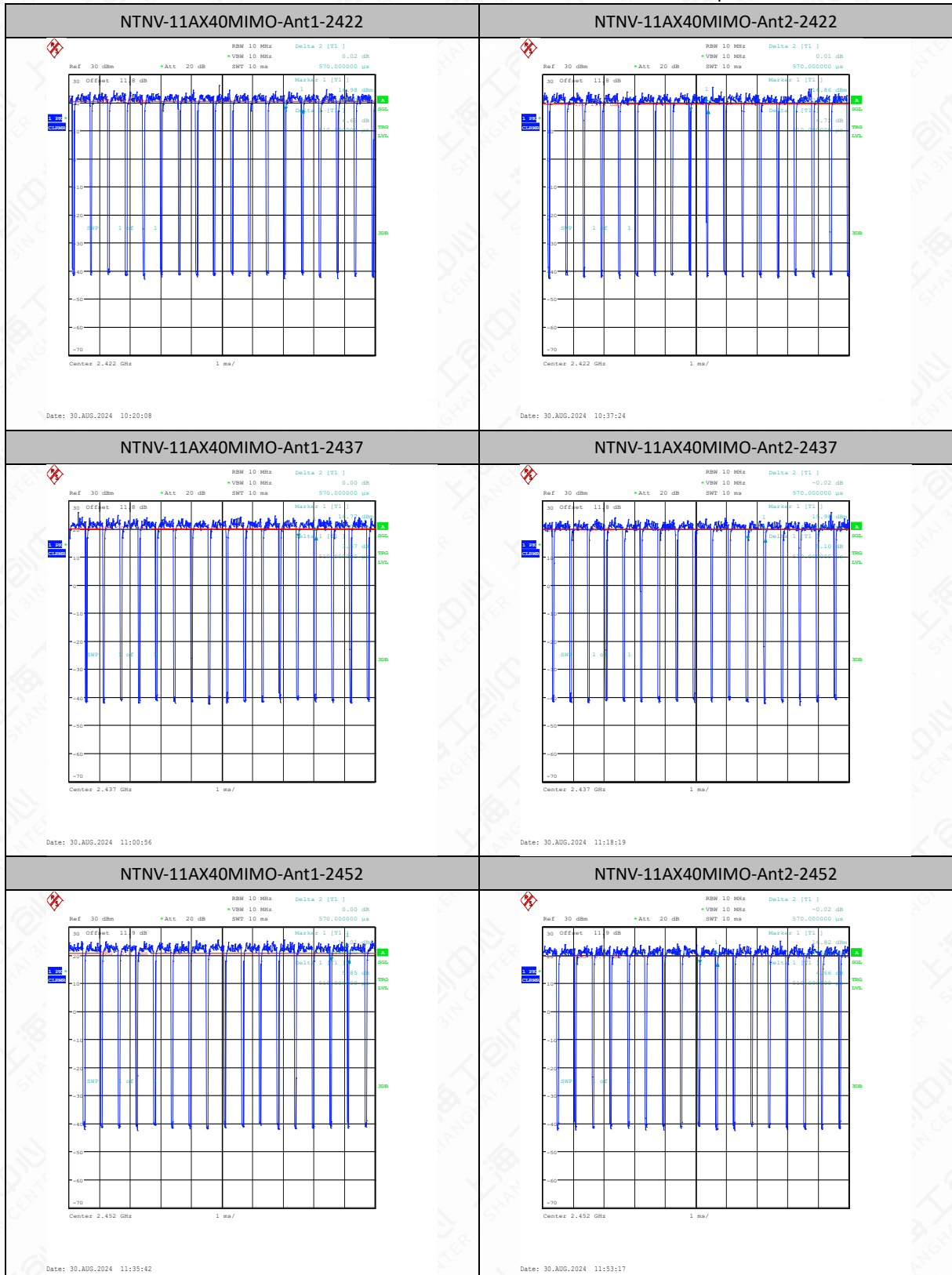
Date: 29.AUG.2024 18:02:29

NTNV-11AX20MIMO-Ant2-2462

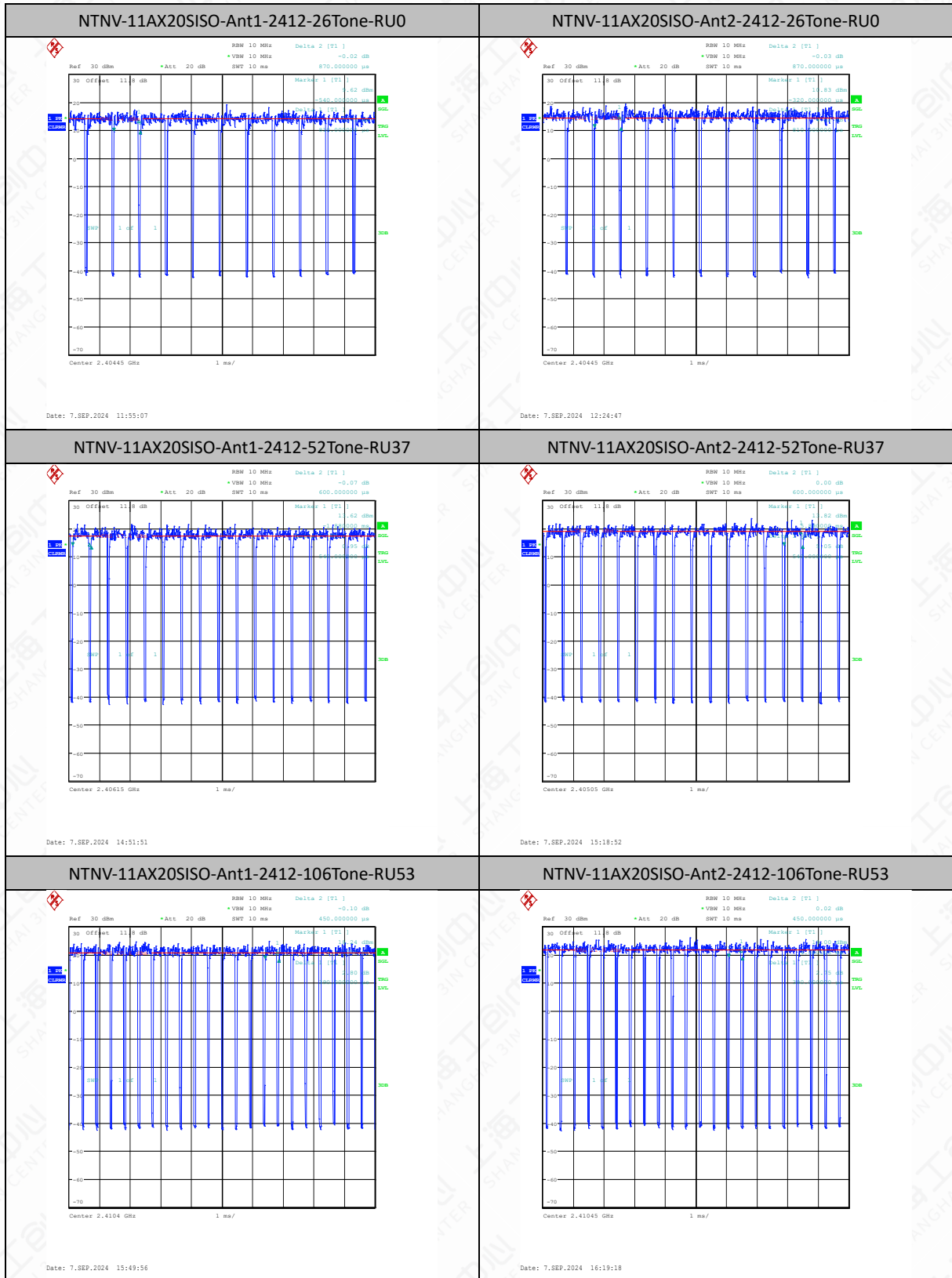


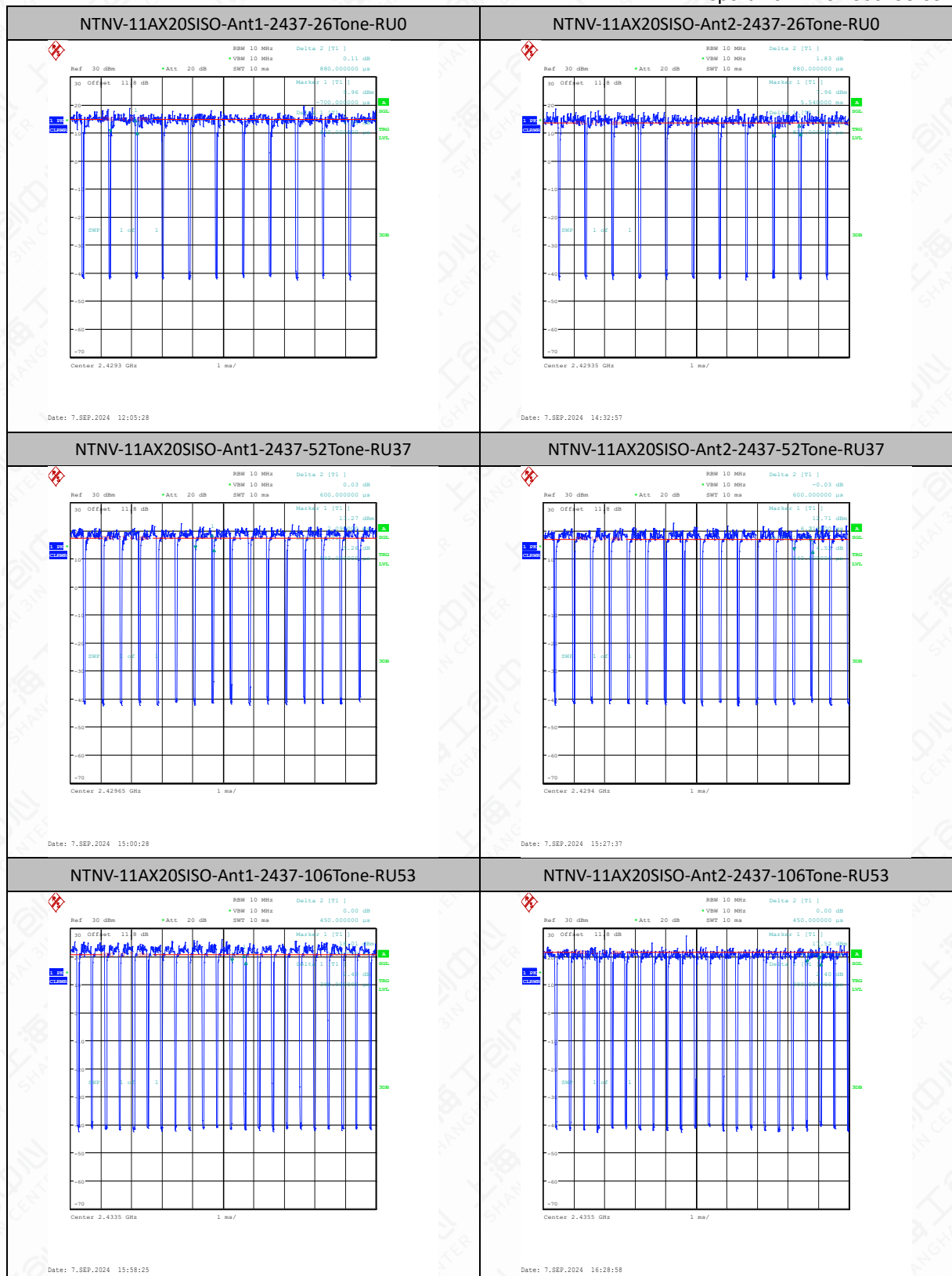
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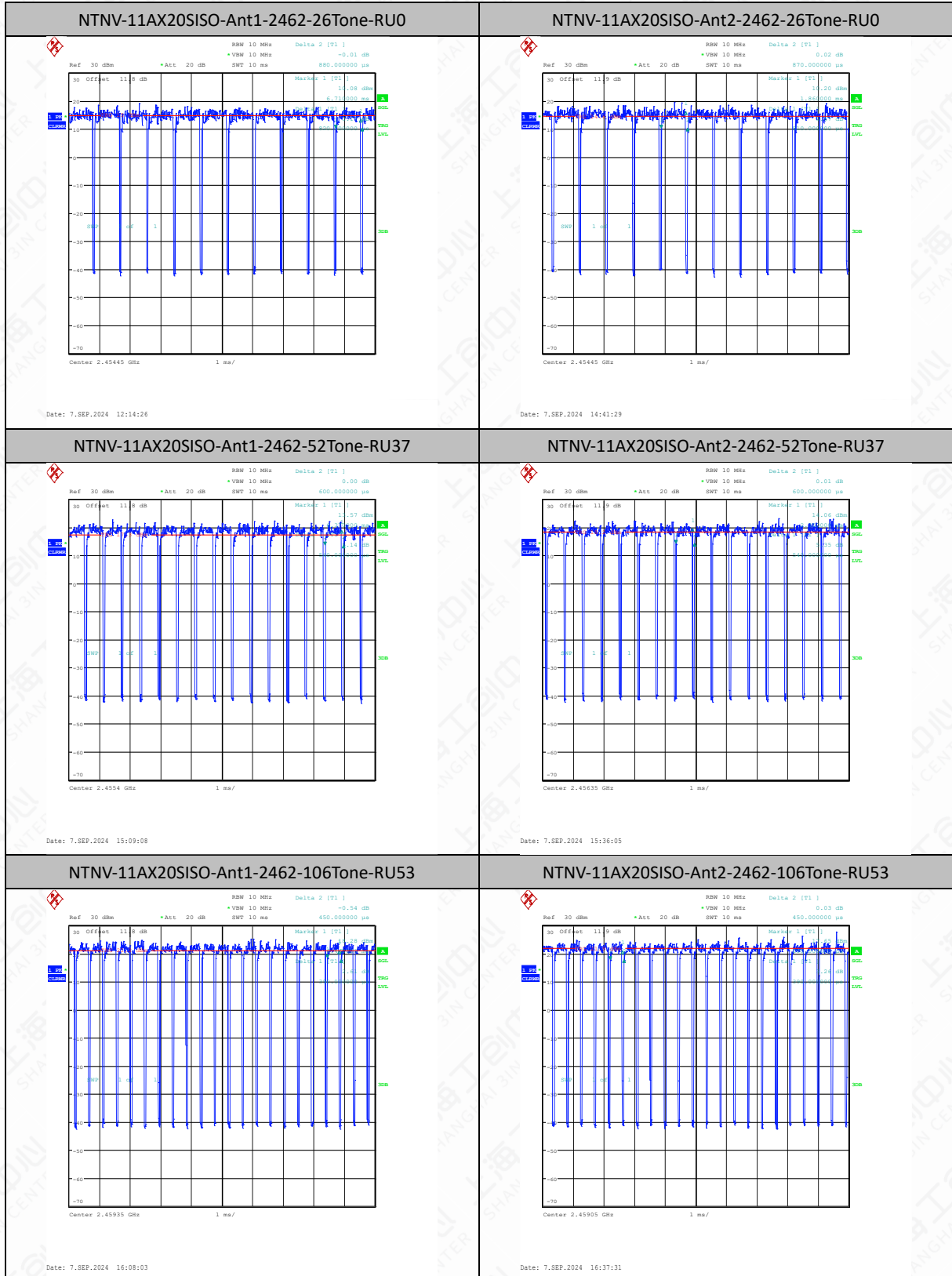


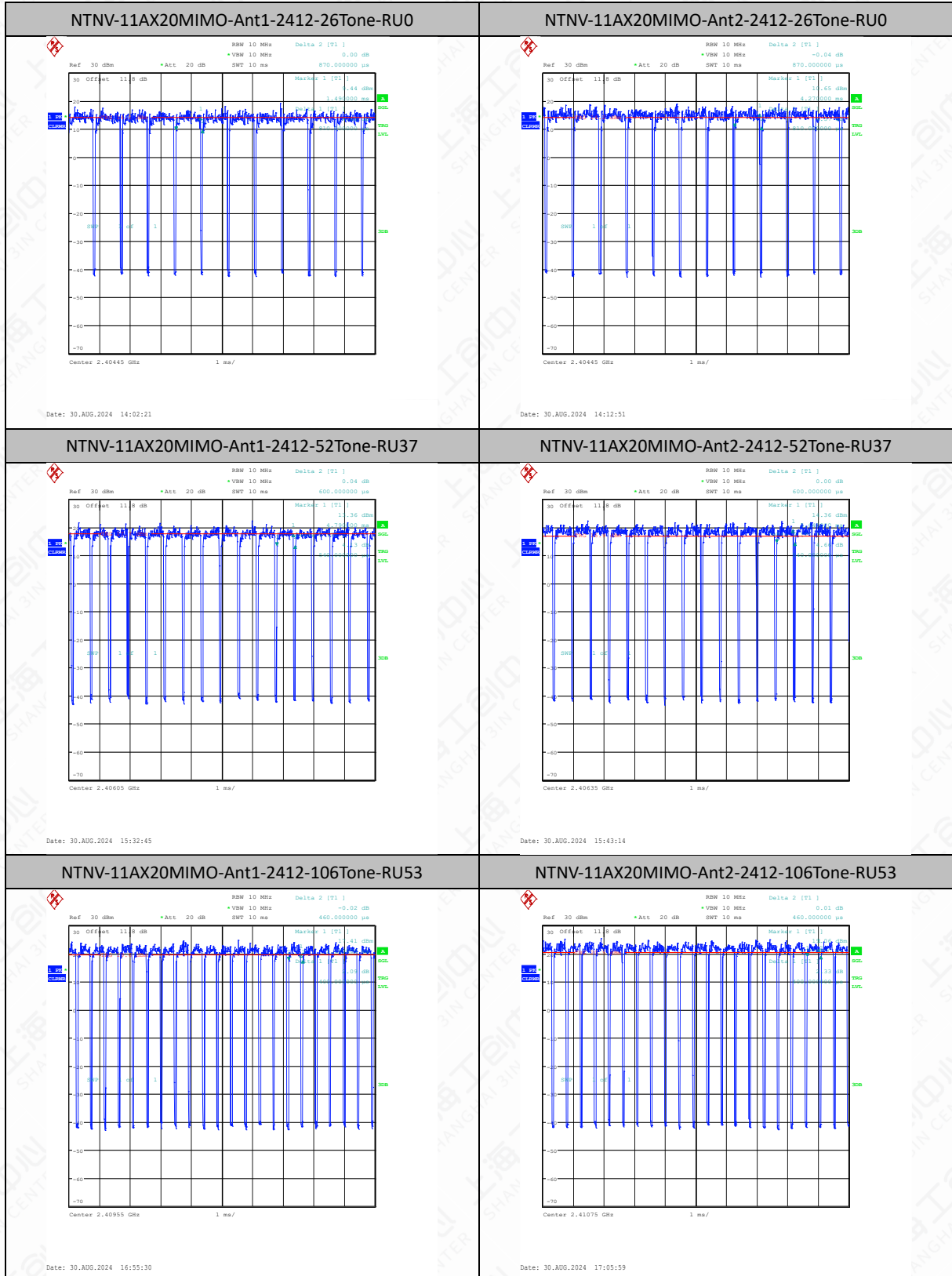


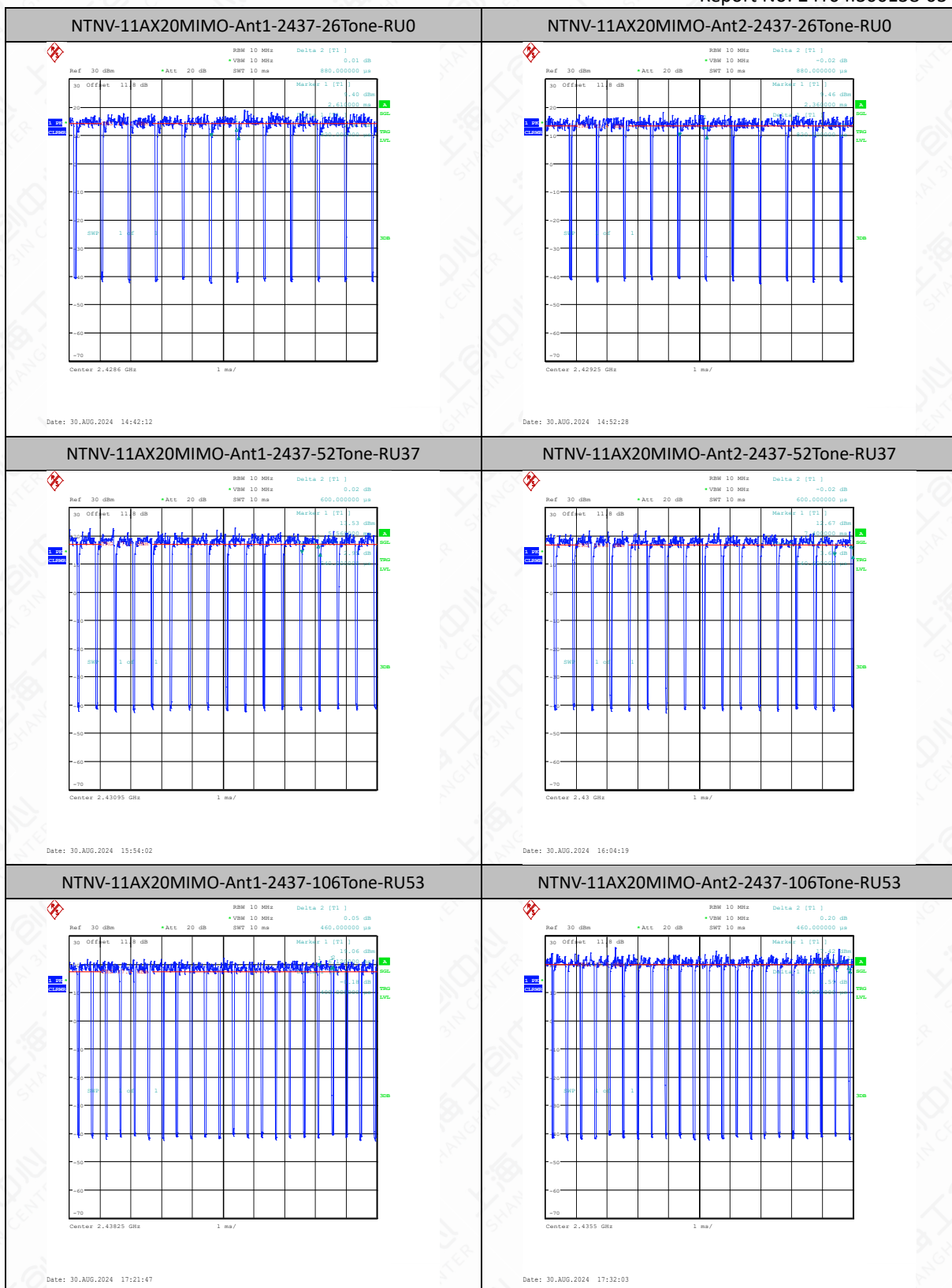
AX Part RU_Multi-User Test Graph

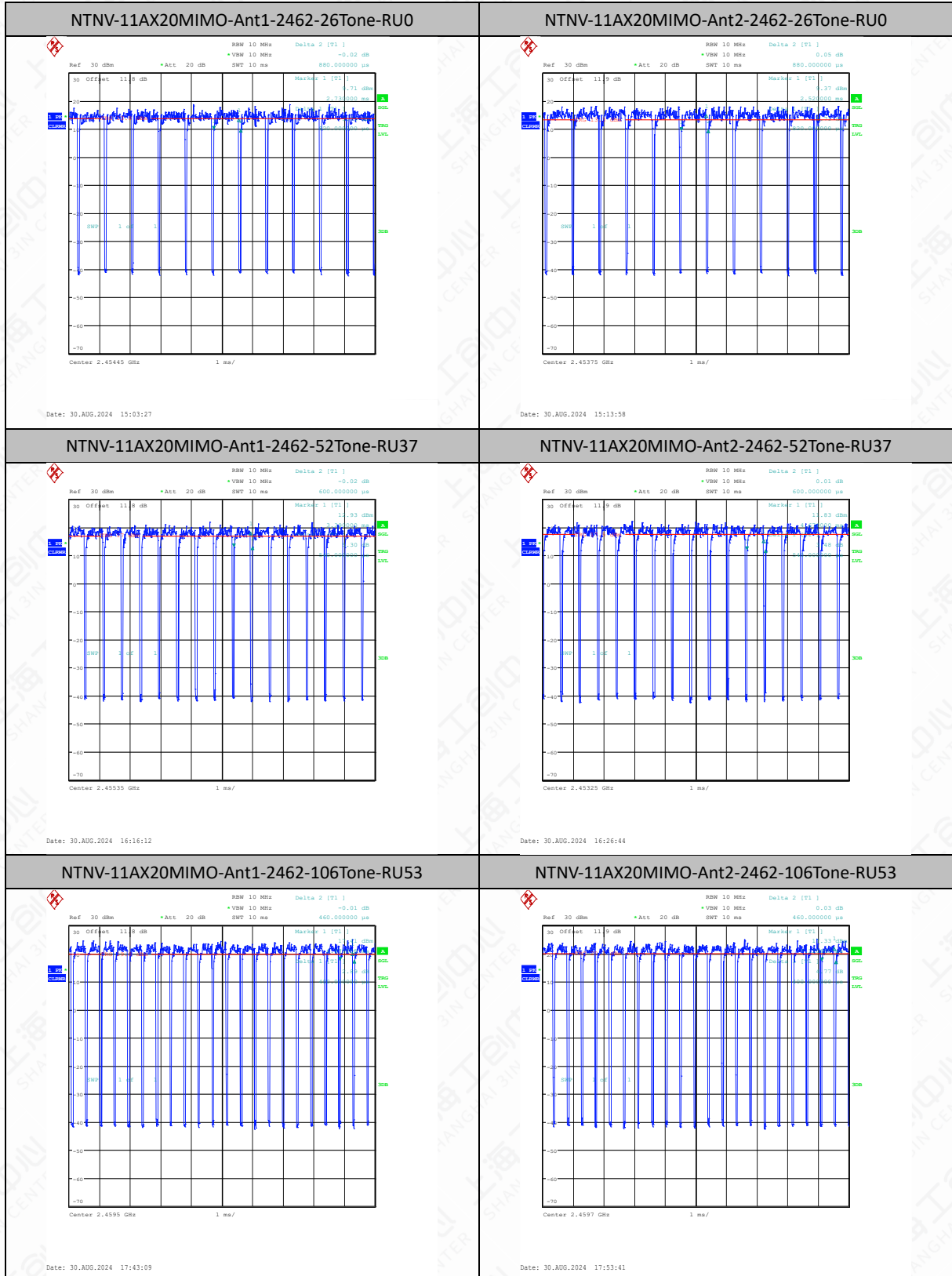


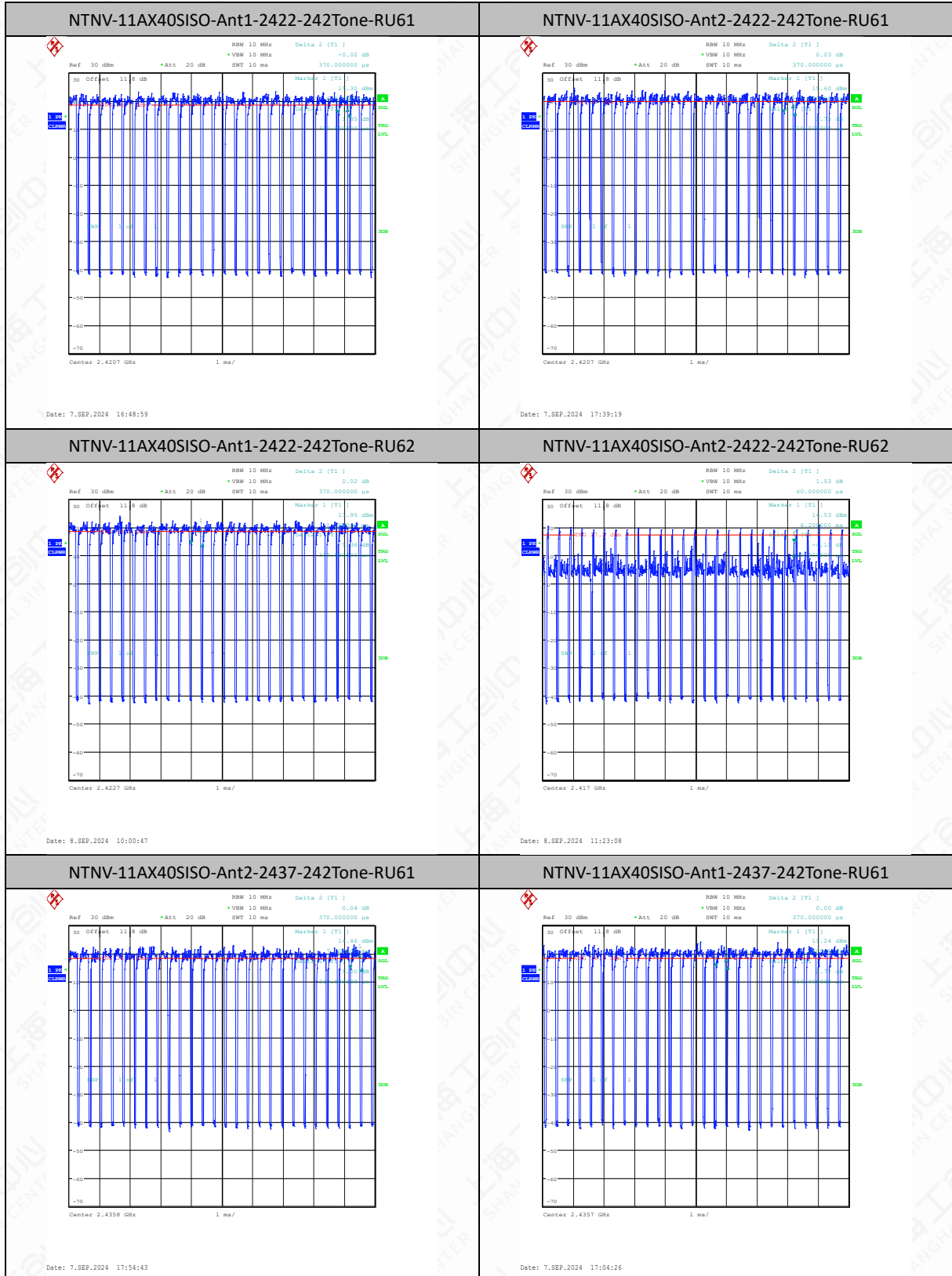


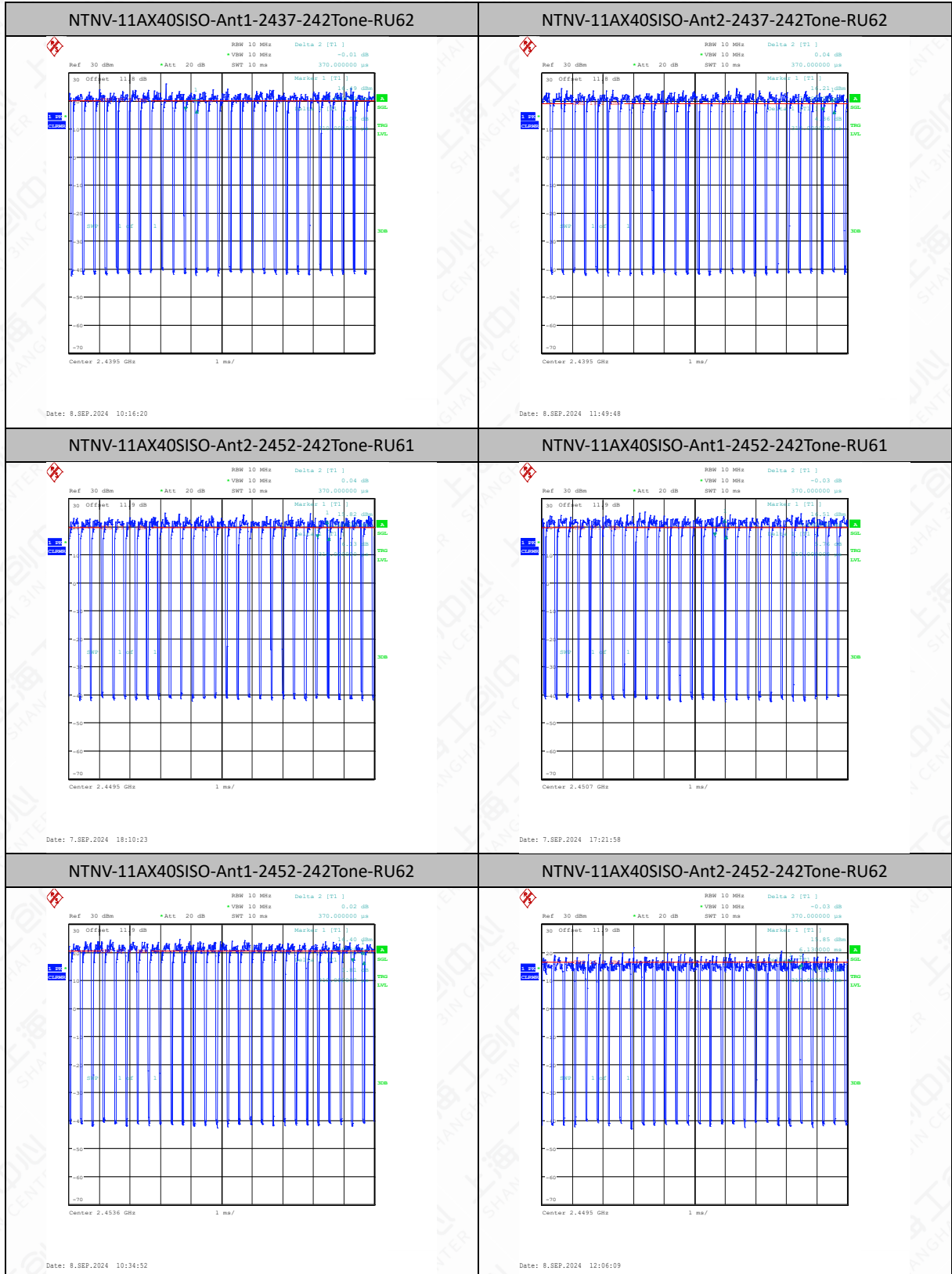




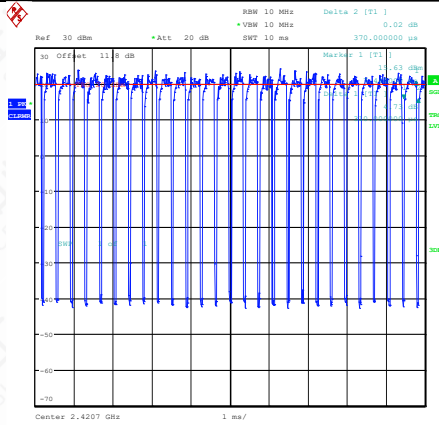






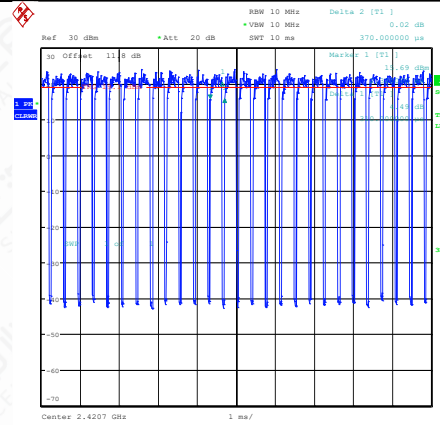


NTNV-11AX40MIMO-Ant1-2422-242Tone-RU61



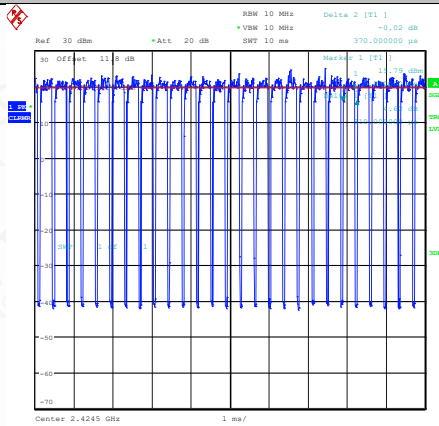
Date: 30.AUG.2024 18:08:57

NTNV-11AX40MIMO-Ant2-2422-242Tone-RU61



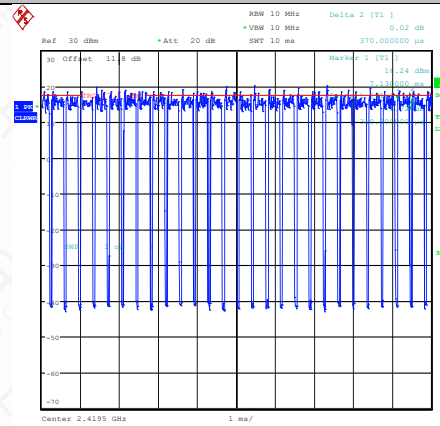
Date: 3.SEP.2024 15:59:22

NTNV-11AX40MIMO-Ant1-2422-242Tone-RU62



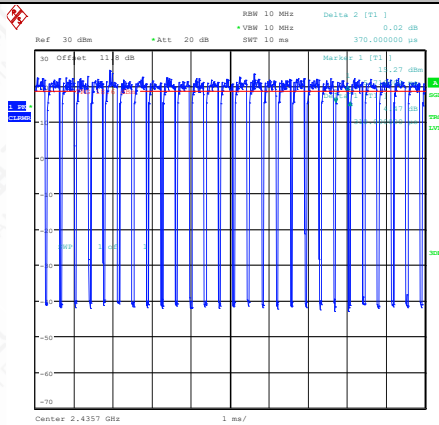
Date: 3.SEP.2024 18:09:29

NTNV-11AX40MIMO-Ant2-2422-242Tone-RU62



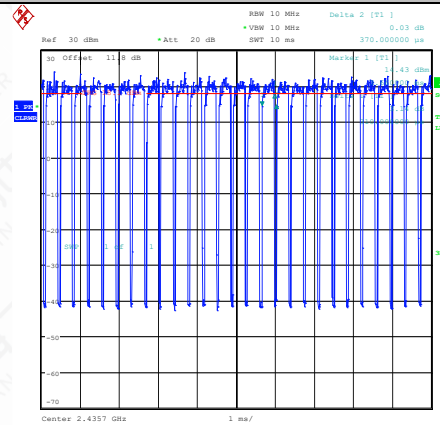
Date: 4.SEP.2024 10:02:13

NTNV-11AX40MIMO-Ant1-2437-242Tone-RU61



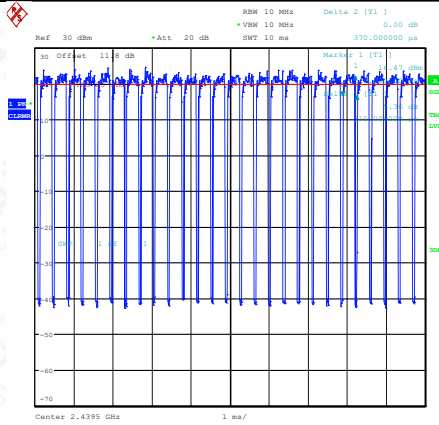
Date: 3.SEP.2024 16:17:32

NTNV-11AX40MIMO-Ant2-2437-242Tone-RU61



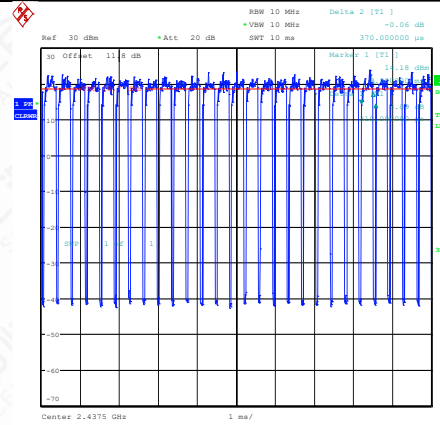
Date: 3.SEP.2024 16:34:58

NTNV-11AX40MIMO-Ant1-2437-242Tone-RU62



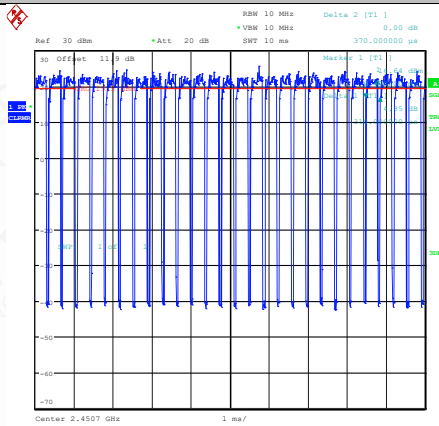
Date: 4.SEP.2024 10:20:51

NTNV-11AX40MIMO-Ant2-2437-242Tone-RU62



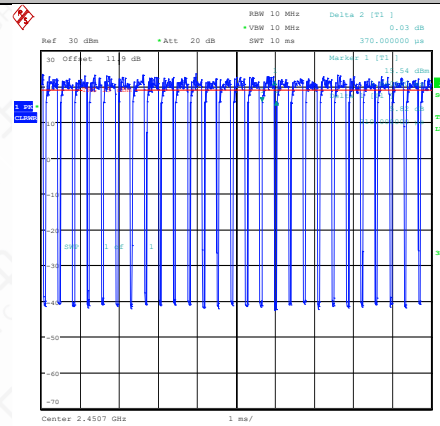
Date: 4.SEP.2024 10:46:57

NTNV-11AX40MIMO-Ant1-2452-242Tone-RU61



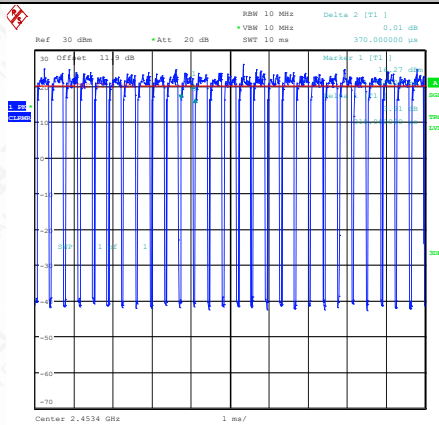
Date: 3.SEP.2024 16:57:22

NTNV-11AX40MIMO-Ant2-2452-242Tone-RU61



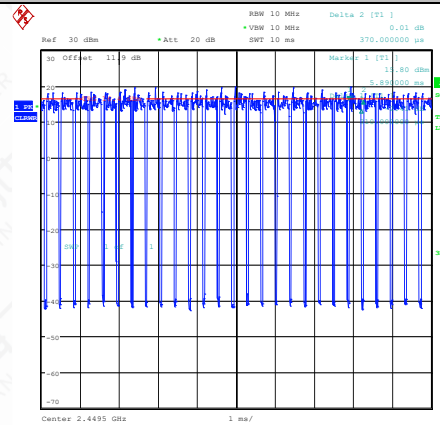
Date: 3.SEP.2024 17:15:00

NTNV-11AX40MIMO-Ant1-2452-242Tone-RU62



Date: 4.SEP.2024 11:05:19

NTNV-11AX40MIMO-Ant2-2452-242Tone-RU62



Date: 4.SEP.2024 11:22:56

6.2 Output Power-Conducted

6.2.1 Measurement Limit

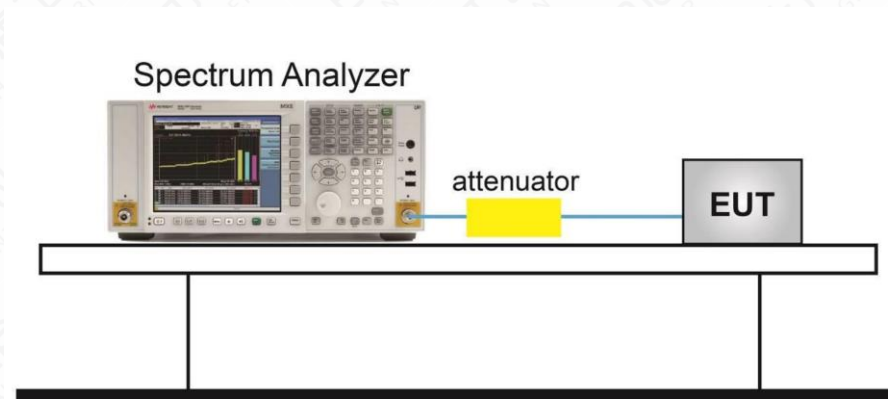
Standard	Conducted Limit(dBm)	EIRP Limit(dBm)
FCC 47 Part 15.247(b)(3)	<30	N/A
Note: Except as shown in paragraphs (b)(3) (i), (ii) and (iii) of this section, if transmitting antennas of directional gain greater than 6 dBi are used the peak output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1) or (b)(2) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.		

6.2.2 Test Procedure

The measurement is according to ANSI C63.10 clause 11.9.

1. Measure the duty cycle D of the transmitter output signal as described in 11.6.
2. Set span to at least 1.5 times the OBW.
3. Set RBW = 1% to 5% of the OBW, not to exceed 1 MHz.
4. Set VBW $\geq [3 \times \text{RBW}]$.
5. Number of points in sweep $\geq [2 \times \text{span} / \text{RBW}]$. (This gives bin-to-bin spacing $\leq \text{RBW} / 2$, so that narrowband signals are not lost between frequency bins.)
6. Sweep time = auto.
7. Detector = RMS (i.e., power averaging), if available. Otherwise, use the sample detector mode.
8. Do not use sweep triggering. Allow the sweep to “free run.”
9. Trace average at least 100 traces in power averaging (rms) mode; however, the number of traces to be averaged shall be increased above 100 as needed such that the average accurately represents the true average over the ON and OFF periods of the transmitter.
10. Compute power by integrating the spectrum across the OBW of the signal using the instrument’s band power measurement function with band limits set equal to the OBW band edges. If the instrument does not have a band power function, then sum the spectrum levels (in power units) at intervals equal to the RBW extending across the entire OBW of the spectrum.
11. Add $[10 \log (1 / D)]$, where D is the duty cycle, to the measured power to compute the average power during the actual transmission times (because the measurement represents an average over both the ON and OFF times of the transmission). For example, add $[10 \log (1/0.25)] = 6 \text{ dB}$ if the duty cycle is 25%.

6.2.3 Test setup



6.2.4 Measurement Results

Test Results:

TestMode	Antenna	Frequency [MHz]	Set Power	Peak Power[dBm]	Conducted Limit[dBm]	Verdict
11B	Ant1	2412	---	18.70	≤30.00	PASS
11B	Ant2	2412	---	19.72	≤30.00	PASS
11B	Ant1	2437	---	18.62	≤30.00	PASS
11B	Ant2	2437	---	18.54	≤30.00	PASS
11B	Ant1	2462	---	17.94	≤30.00	PASS
11B	Ant2	2462	---	18.29	≤30.00	PASS
11B-CDD	Ant1	2412	---	18.66	≤30.00	PASS
11B-CDD	Ant2	2412	---	19.75	≤30.00	PASS
11B-CDD	total	2412	---	22.25	≤29.44	PASS
11B-CDD	Ant1	2437	---	18.80	≤30.00	PASS
11B-CDD	Ant2	2437	---	17.82	≤30.00	PASS
11B-CDD	total	2437	---	21.35	≤29.44	PASS
11B-CDD	Ant1	2462	---	18.14	≤30.00	PASS
11B-CDD	Ant2	2462	---	18.38	≤30.00	PASS
11B-CDD	total	2462	---	21.27	≤29.44	PASS
11G	Ant1	2412	---	18.43	≤30.00	PASS
11G	Ant2	2412	---	18.95	≤30.00	PASS
11G	Ant1	2437	---	18.48	≤30.00	PASS
11G	Ant2	2437	---	18.07	≤30.00	PASS
11G	Ant2	2462	---	17.81	≤30.00	PASS
11G	Ant1	2462	---	17.67	≤30.00	PASS
11G-CDD	Ant1	2412	---	18.69	≤30.00	PASS
11G-CDD	Ant2	2412	---	18.83	≤30.00	PASS
11G-CDD	total	2412	---	21.77	≤29.44	PASS
11G-CDD	Ant1	2437	---	18.67	≤30.00	PASS

11G-CDD	Ant2	2437	---	18.35	≤30.00	PASS
11G-CDD	total	2437	---	21.52	≤29.44	PASS
11G-CDD	Ant1	2462	---	18.01	≤30.00	PASS
11G-CDD	Ant2	2462	---	17.98	≤30.00	PASS
11G-CDD	total	2462	---	21.01	≤29.44	PASS
11N20SISO	Ant2	2412	---	18.65	≤30.00	PASS
11N20SISO	Ant1	2412	---	18.27	≤30.00	PASS
11N20SISO	Ant2	2437	---	17.98	≤30.00	PASS
11N20SISO	Ant1	2437	---	18.40	≤30.00	PASS
11N20SISO	Ant2	2462	---	17.73	≤30.00	PASS
11N20SISO	Ant1	2462	---	17.62	≤30.00	PASS
11N20MIMO	Ant1	2412	---	18.59	≤30.00	PASS
11N20MIMO	Ant2	2412	---	18.88	≤30.00	PASS
11N20MIMO	total	2412	---	21.75	≤29.44	PASS
11N20MIMO	Ant1	2437	---	18.75	≤30.00	PASS
11N20MIMO	Ant2	2437	---	18.06	≤30.00	PASS
11N20MIMO	total	2437	---	21.43	≤29.44	PASS
11N20MIMO	Ant1	2462	---	17.89	≤30.00	PASS
11N20MIMO	Ant2	2462	---	17.74	≤30.00	PASS
11N20MIMO	total	2462	---	20.83	≤29.44	PASS
11N40SISO	Ant2	2422	---	18.00	≤30.00	PASS
11N40SISO	Ant1	2422	---	17.65	≤30.00	PASS
11N40SISO	Ant2	2437	---	17.62	≤30.00	PASS
11N40SISO	Ant1	2437	---	17.99	≤30.00	PASS
11N40SISO	Ant2	2452	---	17.78	≤30.00	PASS
11N40SISO	Ant1	2452	---	18.47	≤30.00	PASS
11N40MIMO	Ant1	2422	---	17.26	≤30.00	PASS
11N40MIMO	Ant2	2422	---	18.03	≤30.00	PASS
11N40MIMO	total	2422	---	20.67	≤29.44	PASS
11N40MIMO	Ant1	2437	---	18.40	≤30.00	PASS
11N40MIMO	Ant2	2437	---	17.63	≤30.00	PASS
11N40MIMO	total	2437	---	21.04	≤29.44	PASS
11N40MIMO	Ant1	2452	---	18.88	≤30.00	PASS
11N40MIMO	Ant2	2452	---	17.74	≤30.00	PASS
11N40MIMO	total	2452	---	21.36	≤29.44	PASS
11AX20SISO	Ant2	2412	---	19.00	≤30.00	PASS
11AX20SISO	Ant1	2412	---	18.98	≤30.00	PASS
11AX20SISO	Ant1	2437	---	19.02	≤30.00	PASS
11AX20SISO	Ant2	2437	---	18.16	≤30.00	PASS
11AX20SISO	Ant1	2462	---	18.24	≤30.00	PASS
11AX20SISO	Ant2	2462	---	17.93	≤30.00	PASS
11AX20MIMO	Ant1	2412	---	17.96	≤30.00	PASS
11AX20MIMO	Ant2	2412	---	18.66	≤30.00	PASS

11AX20MIMO	total	2412	---	21.33	≤29.44	PASS
11AX20MIMO	Ant1	2437	---	18.38	≤30.00	PASS
11AX20MIMO	Ant2	2437	---	17.79	≤30.00	PASS
11AX20MIMO	total	2437	---	21.11	≤29.44	PASS
11AX20MIMO	Ant1	2462	---	17.50	≤30.00	PASS
11AX20MIMO	Ant2	2462	---	17.54	≤30.00	PASS
11AX20MIMO	total	2462	---	20.53	≤29.44	PASS
11AX40SISO	Ant1	2422	---	18.41	≤30.00	PASS
11AX40SISO	Ant2	2422	---	19.27	≤30.00	PASS
11AX40SISO	Ant1	2437	---	18.72	≤30.00	PASS
11AX40SISO	Ant2	2437	---	18.90	≤30.00	PASS
11AX40SISO	Ant1	2452	---	19.25	≤30.00	PASS
11AX40SISO	Ant2	2452	---	19.12	≤30.00	PASS
11AX40MIMO	Ant1	2422	---	17.94	≤30.00	PASS
11AX40MIMO	Ant2	2422	---	18.28	≤30.00	PASS
11AX40MIMO	total	2422	---	21.12	≤29.44	PASS
11AX40MIMO	Ant1	2437	---	18.28	≤30.00	PASS
11AX40MIMO	Ant2	2437	---	17.90	≤30.00	PASS
11AX40MIMO	total	2437	---	21.10	≤29.44	PASS
11AX40MIMO	Ant1	2452	---	18.96	≤30.00	PASS
11AX40MIMO	Ant2	2452	---	18.11	≤30.00	PASS
11AX40MIMO	total	2452	---	21.57	≤29.44	PASS

AX Part RU_Multi-User

TestMode	Antenna	Frequency [MHz]	RuSize	RuIndex	Result [dBm]	Limit[dBm]	Verdict
11AX20SISO	Ant1	2412	26Tone	RU0	6.67	≤30.00	PASS
11AX20SISO	Ant2	2412	26Tone	RU0	7.56	≤30.00	PASS
11AX20SISO	Ant1	2412	52Tone	RU37	10.49	≤30.00	PASS
11AX20SISO	Ant2	2412	52Tone	RU37	8.45	≤30.00	PASS
11AX20SISO	Ant1	2412	106Tone	RU53	14.14	≤30.00	PASS
11AX20SISO	Ant2	2412	106Tone	RU53	15.49	≤30.00	PASS
11AX20SISO	Ant1	2437	26Tone	RU0	7.21	≤30.00	PASS
11AX20SISO	Ant2	2437	26Tone	RU0	7.11	≤30.00	PASS
11AX20SISO	Ant1	2437	52Tone	RU37	10.56	≤30.00	PASS
11AX20SISO	Ant2	2437	52Tone	RU37	10.40	≤30.00	PASS
11AX20SISO	Ant1	2437	106Tone	RU53	14.29	≤30.00	PASS
11AX20SISO	Ant2	2437	106Tone	RU53	14.03	≤30.00	PASS
11AX20SISO	Ant1	2462	26Tone	RU0	7.16	≤30.00	PASS
11AX20SISO	Ant2	2462	26Tone	RU0	6.65	≤30.00	PASS
11AX20SISO	Ant1	2462	52Tone	RU37	10.53	≤30.00	PASS
11AX20SISO	Ant2	2462	52Tone	RU37	11.27	≤30.00	PASS
11AX20SISO	Ant1	2462	106Tone	RU53	14.08	≤30.00	PASS
11AX20SISO	Ant2	2462	106Tone	RU53	14.60	≤30.00	PASS
11AX20MIMO	Ant1	2412	26Tone	RU0	6.78	≤30.00	PASS

11AX20MIMO	Ant2	2412	26Tone	RU0	7.67	≤30.00	PASS
11AX20MIMO	total	2412	26Tone	RU0	10.26	≤29.44	PASS
11AX20MIMO	Ant2	2412	52Tone	RU37	10.88	≤30.00	PASS
11AX20MIMO	total	2412	52Tone	RU37	13.61	≤29.44	PASS
11AX20MIMO	Ant1	2412	52Tone	RU37	10.30	≤30.00	PASS
11AX20MIMO	Ant1	2412	106Tone	RU53	14.20	≤30.00	PASS
11AX20MIMO	Ant2	2412	106Tone	RU53	15.43	≤30.00	PASS
11AX20MIMO	total	2412	106Tone	RU53	17.87	≤29.44	PASS
11AX20MIMO	Ant1	2437	26Tone	RU0	7.55	≤30.00	PASS
11AX20MIMO	Ant2	2437	26Tone	RU0	7.03	≤30.00	PASS
11AX20MIMO	total	2437	26Tone	RU0	10.31	≤29.44	PASS
11AX20MIMO	Ant1	2437	52Tone	RU37	10.66	≤30.00	PASS
11AX20MIMO	Ant2	2437	52Tone	RU37	10.41	≤30.00	PASS
11AX20MIMO	total	2437	52Tone	RU37	13.55	≤29.44	PASS
11AX20MIMO	Ant1	2437	106Tone	RU53	14.46	≤30.00	PASS
11AX20MIMO	Ant2	2437	106Tone	RU53	14.23	≤30.00	PASS
11AX20MIMO	total	2437	106Tone	RU53	17.36	≤29.44	PASS
11AX20MIMO	Ant1	2462	26Tone	RU0	7.33	≤30.00	PASS
11AX20MIMO	Ant2	2462	26Tone	RU0	7.81	≤30.00	PASS
11AX20MIMO	total	2462	26Tone	RU0	10.59	≤29.44	PASS
11AX20MIMO	Ant1	2462	52Tone	RU37	10.58	≤30.00	PASS
11AX20MIMO	Ant2	2462	52Tone	RU37	11.06	≤30.00	PASS
11AX20MIMO	total	2462	52Tone	RU37	13.84	≤29.44	PASS
11AX20MIMO	Ant1	2462	106Tone	RU53	14.32	≤30.00	PASS
11AX20MIMO	Ant2	2462	106Tone	RU53	14.62	≤30.00	PASS
11AX20MIMO	total	2462	106Tone	RU53	17.48	≤29.44	PASS
11AX40SISO	Ant1	2422	242Tone	RU61	15.20	≤30.00	PASS
11AX40SISO	Ant2	2422	242Tone	RU61	15.91	≤30.00	PASS
11AX40SISO	Ant1	2422	242Tone	RU62	15.02	≤30.00	PASS
11AX40SISO	Ant2	2422	242Tone	RU62	22.55	≤30.00	PASS
11AX40SISO	Ant1	2437	242Tone	RU61	15.01	≤30.00	PASS
11AX40SISO	Ant2	2437	242Tone	RU61	14.93	≤30.00	PASS
11AX40SISO	Ant1	2437	242Tone	RU62	15.74	≤30.00	PASS
11AX40SISO	Ant2	2437	242Tone	RU62	15.76	≤30.00	PASS
11AX40SISO	Ant1	2452	242Tone	RU61	15.67	≤30.00	PASS
11AX40SISO	Ant2	2452	242Tone	RU61	15.92	≤30.00	PASS
11AX40SISO	Ant1	2452	242Tone	RU62	16.03	≤30.00	PASS
11AX40SISO	Ant2	2452	242Tone	RU62	15.32	≤30.00	PASS
11AX40MIMO	Ant1	2422	242Tone	RU61	15.19	≤30.00	PASS
11AX40MIMO	Ant2	2422	242Tone	RU61	15.82	≤30.00	PASS
11AX40MIMO	total	2422	242Tone	RU61	18.53	≤29.44	PASS
11AX40MIMO	Ant1	2422	242Tone	RU62	15.14	≤30.00	PASS
11AX40MIMO	Ant2	2422	242Tone	RU62	15.37	≤30.00	PASS

11AX40MIMO	total	2422	242Tone	RU62	18.27	≤29.44	PASS
11AX40MIMO	Ant2	2437	242Tone	RU61	14.74	≤30.00	PASS
11AX40MIMO	total	2437	242Tone	RU61	17.89	≤29.44	PASS
11AX40MIMO	Ant1	2437	242Tone	RU61	15.01	≤30.00	PASS
11AX40MIMO	Ant1	2437	242Tone	RU62	15.97	≤30.00	PASS
11AX40MIMO	Ant2	2437	242Tone	RU62	15.65	≤30.00	PASS
11AX40MIMO	total	2437	242Tone	RU62	18.82	≤29.44	PASS
11AX40MIMO	Ant1	2452	242Tone	RU61	15.86	≤30.00	PASS
11AX40MIMO	Ant2	2452	242Tone	RU61	15.69	≤30.00	PASS
11AX40MIMO	total	2452	242Tone	RU61	18.79	≤29.44	PASS
11AX40MIMO	Ant1	2452	242Tone	RU62	16.16	≤30.00	PASS
11AX40MIMO	Ant2	2452	242Tone	RU62	15.24	≤30.00	PASS
11AX40MIMO	total	2452	242Tone	RU62	18.73	≤29.44	PASS

Note:

- 1.The Duty Cycle Factor is compensated in the graph.
2. In the graph, the Center frequency = (Low frequency of 99% OBW + High frequency of 99% OBW) / 2.

Test Graphs Peak

