



No.:
FCCSZ2025-0025-RF

TEST REPORT

FCC ID : 2BPVT-XTA4503S2U

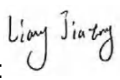
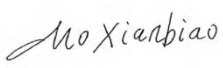
NAME OF SAMPLE : Portal Panel Automatic Satellite station

APPLICANT : Beijing Starway Technology Limited

CLASSIFICATION OF TEST : N/A

CVC Testing Technology (Shenzhen) Co., Ltd.



Applicant	Beijing Starway Technology Limited	
Address	Room 301, 3rd Floor, Zhongke Zhihui Workshop Building 3, Xisanqi Building Materials City, Haidian District, Beijing, China	
Manufacturer	Beijing Starway Technology Limited	
Address	Room 301, 3rd Floor, Zhongke Zhihui Workshop Building 3, Xisanqi Building Materials City, Haidian District, Beijing, China	
Product Name	Portal Panel Automatic Satellite station	
Brand Name	OneLinQ	
Model Name	XTA4503S2U	
Additional Model	N/A	
Date of Receipt.	Mar.24, 2025	
Date of testing	Sep.20, 2025~Sep.21, 2025	
Sample No.	1-1	
Standard(s)	FCC 47 CFR Part 2,25 ANSI C63.26-2015	
CONCLUSION:	The equipment under test was found to comply with the requirements of the standard(s) applied. Seal of CVC Issue Date: Sep.22, 2025	
Compiled by: Liang Jiatong	Reviewed by: Mo Xianbiao	Approved by: Dong Sanbi
Signature: 	Signature: 	Signature: 

This test report relates only to the EUT, and shall not be reproduced except in full, without written approval of CVC.



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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
FCCSZ2025-0025-RF	Original release	Sep.22, 2025



1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: CFR 47 Part 25 (Ku-Band)			
STANDARD SECTION	TEST TYPE AND LIMIT	RESULT	REMARK
§2.1046 §25.204	RF power output / Power limits	PASS	See section 3.1
§2.1046 §25.218	Off-axis EIRP density	PASS	See section 3.2
§2.1049	Occupied bandwidth	PASS	See section 3.3
§2.1053 §25.202	In-band Mask	PASS	See section 3.4
§2.1053 §25.202	Radiated Spurious Emission	PASS	See section 3.4
§22.1055, §25.202(d)	Frequency stability	PASS	See section 3.5



1.1 LIST OF TEST AND MEASUREMENT INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial Number	Cal. interval	Cal. Due
Radiation Spurious(Below 40GHz)					/
Signal&Spectrum Analyzer	Rohde&Schwarz	FSV 40	101898	1 year	2026.4.28
Signal&Spectrum Analyzer	keysight	N9040B	CS0300074	1 year	2026.5.21
EMI Test Receiver	Rohde&Schwarz	ESR3	102693	1 year	2026.5.21
Antenna(30MHz~1001MHz)	SCHWARZBECK	VULB 9168	1133	1 year	2026.1.22
Horn antenna(1GHz-18GHz)	ETS	3117	227611	1 year	2026.3.28
Horn antenna(18GHz-40GHz)	QMS	QMS-00880	22051	1 year	2026.3.21
3m anechoic chamber	MORI	966	CS0300011	3 year	2026.5.18
Filter group(RSE-BT/WiFi)	Rohde&Schwarz	WiFi /BT Variant 1	100820	1 year	2026.4.22
Filter group(RSE-Cellular)	Rohde&Schwarz	Cellular Variant 1	100768	1 year	2026.4.22
Preamplifier(1GHz-18GHz)	Rohde&Schwarz	SCU-18F	100799	1 year	2026.4.22
Preamplifier(1GHz-18GHz)	Rohde&Schwarz	SCU-18F	100801	1 year	2026.4.22
Preamplifier(18Gz-40GHz)	Rohde&Schwarz	SCU-40A	101209	1 year	2026.4.22
#2 control room	MORI	433	CS0200059	3 year	2026.5.16
Temperature and humidity meter	/	C193561517	C193561517	1 year	2026.4.28
Radiation Spurious(Above 40GHz)					/
Equipment	Manufacturer	Model No.	Serial Number	Cal. interval	Cal. Due
3m anechoic chamber	MORI	966	CS0300011	3 year	2026.5.18
#2 control room	MORI	433	CS0300028	3 year	2026.5.16
Temperature and humidity meter	/	C193561517	C193561517	1 year	2026.4.28
Signal&Spectrum Analyzer	keysight	N9040B	CS0300074	1 year	2026.5.21
SA Expansion Module(40-60GHz)	VDI	N9029AV19	CS0300075	3 year	2028.9.14
SA Expansion Module(60-90GHz)	VDI	N9029AV12	CS0300076	3 year	2028.9.14
SA Expansion Module(90-140GHz)	VDI	N9029AV08	CS0300077	3 year	2028.9.14
Horn antenna(40-60GHz)	CMI	HO19R	CS0300086	3 year	2028.9.14
Horn antenna(60-90GHz)	CMI	HO12R	CS0300088	3 year	2028.9.14
Horn antenna(90-140GHz)	CMI	HO08R	CS0300090	3 year	2028.9.14

1.2 TEST LOCATION

The tests and measurements refer to this report were performed by EMC testing Lab of CVC Testing Technology (Shenzhen) Co., Ltd.

Lab Address: No. 1301-14, Guanguang Road, Xinlan Community, Guanlan Subdistrict, Longhua District, Shenzhen, Guangdong, China

Post Code: 518110 Tel: 0755-23763060-8805

Fax: 0755-23763060 E-mail: sz-kf@cvc.org.cn

FCC(Test firm designation number: CN1363)

IC(Test firm CAB identifier number: CN0137)

CNAS(Test firm designation number: L16091)



1.3 MEASUREMENT UNCERTAINTY

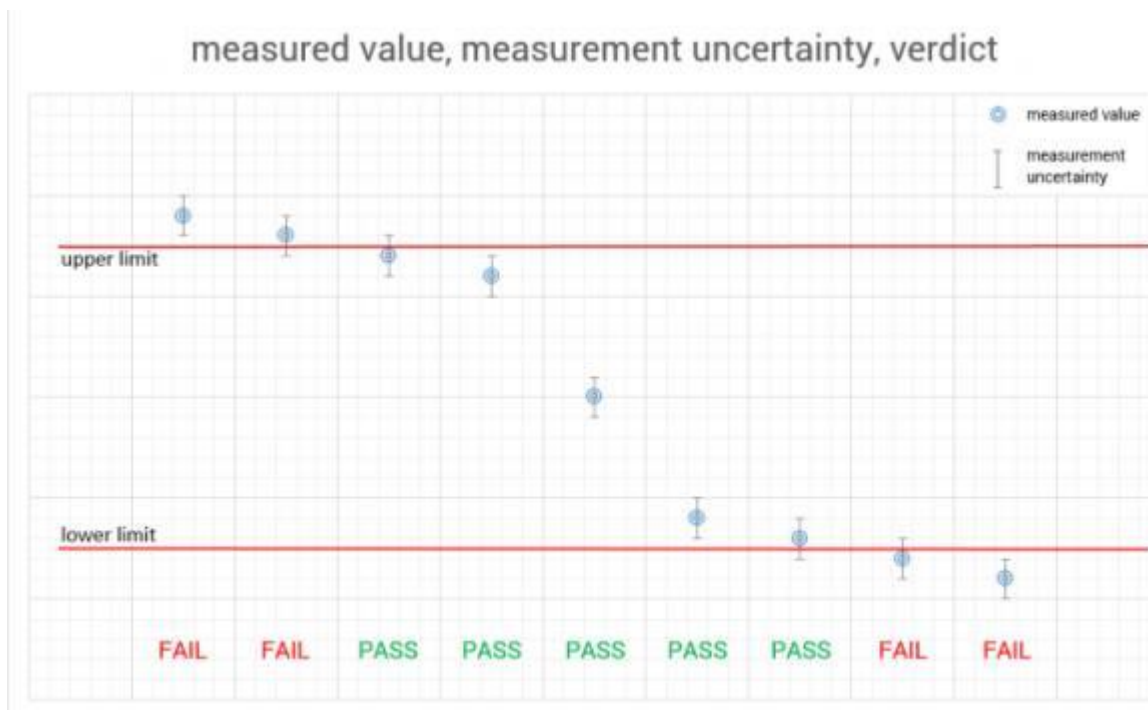
Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

Measurement Uncertainty		
No.	Item	Measurement Uncertainty
1	Occupied Channel Bandwidth	$\pm 1.86\%$
2	Radiated Emission (9kHz-30MHz)	± 5.6 dB
3	Radiated Emissions(30MHz-1GHz)	± 5.0 dB
4	Radiated Emissions(1GHz-18GHz)	± 4.8 dB
5	Radiated Emissions(18GHz-40GHz)	± 5.1 dB
6	Radiated Emissions(40GHz-60GHz)	± 4.8 dB
7	Radiated Emissions(60GHz-90GHz)	± 4.8 dB
8	Radiated Emissions(90GHz-140GHz)	± 5.0 dB
9	RF output power, conducted	± 0.9 dB
10	Power Spectral Density, conducted	± 0.8 dB
11	Conducted emission test	± 2.7 dB
12	Temperature	$\pm 0.73^{\circ}\text{C}$
13	Supply voltages	$\pm 0.37\%$
14	Humidity	$\pm 3.9\%$

Remark: 95% Confidence Levels, k=2.

Only the measured values related to their corresponding limits will be used to decide whether the equipment under test meets the requirements of the test standards listed.

The measurement uncertainty is mentioned in this test report, but is not taken into account - neither to the limits nor to the measurement results. Measurement results with a smaller margin to the corresponding limits than the measurement uncertainty have a potential risk of more than 5% that the decision might be wrong.





2 GENERAL INFORMATION

2.1 GENERAL PRODUCT INFORMATION

PRODUCT	Portal Panel Automatic Satellite station
BRAND	OneLinQ
TEST MODEL	XTA4503S2U
ADDITIONAL MODEL	N/A
POWER SUPPLY	100-240V AC
MODULATIONTECHNOLOGY	8PSK,QPSK,BPSK
FREQUENCY RANGE	TX: 13.75 – 14.50 GHz RX: 10.70 – 12.75 GHz
EIRP	50.6dBm
ANTENNA TYPE(Note 3)	Array patch antenna
I/O PORTS	Refer to user's manual
FIXED FREQUENCY SOFTWARE	Web control(192.168.0.1)
POWER SETTING LEVEL	-30

Note:

1. For more detailed features description, please refer to the manufacturer's specifications or the User's Manual.
2. For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.
3. Since the above data and/or information is provided by the client, CVC is not responsible for the authenticity, integrity and results of the data and information and/or the validity of the conclusion.

2.2 TEST MODE

MODE	DESCRIPTION	Data Rate	TEST ITEM
TM1	8PSK	128kbps	ALL
TM2	8PSK	7500kbps	ALL
TM3	BPSK	128kbps	ALL
TM4	BPSK	7500kbps	ALL
TM5	QPSK	128kbps	ALL
TM6	QPSK	7500kbps	ALL



2.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a RF product, according to the specifications of the manufacturers. It must comply with the requirements of the following standards:

FCC 47 CFR PART 2

FCC 47 CFR PART 25

ANSI C63.26-2015

All test items have been performed and recorded as per the above standards.

2.4 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Support Equipment							
NO	Description	Brand		Model No.	Serial Number		Supplied by
1	Adaptor	Aohai		A879-200500C-US1	N/A		Client
Support Cable							
NO	Description	Quantity (Number)	Length (cm)	Detachable (Yes/ No)	Shielded (Yes/ No)	Cores (Number)	Supplied by
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A



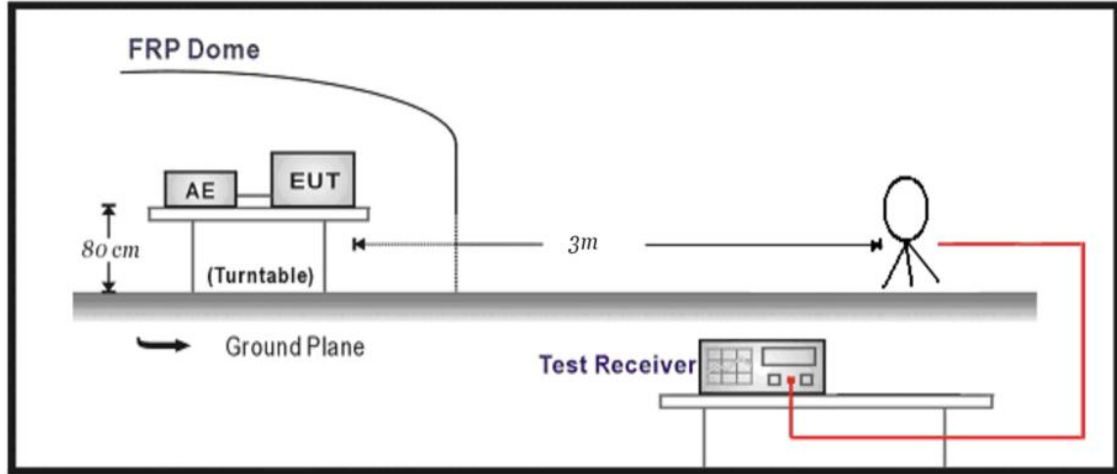
2.5 FAR FIELD CONDITION FOR FREQUENCY ABOVE 18GHZ

The equipment under test was transmitting while connected to its integral antenna and is placed on a turn table. The measurement antenna is in the far field of the EUT per formula $2D^2/\lambda$ where D is the larger between the dimension of the measurement antenna and the transmitting antenna of the EUT. In this case, "D" is the largest dimension of the measurement antenna. The EUT is manipulated through all orthogonal planes representative of its typical use to achieve the highest reading on the receive spectrum analyzer.

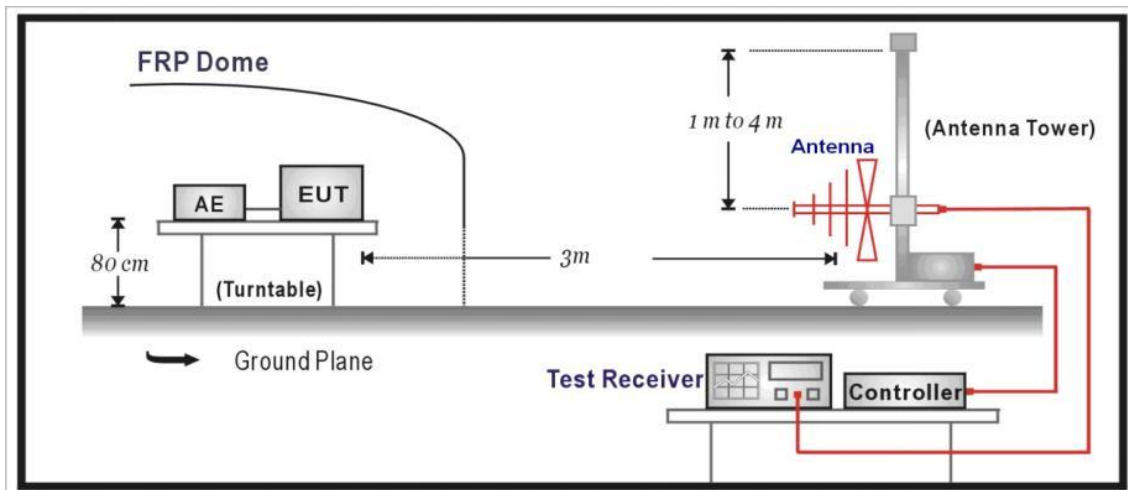
HornAntenna	Frequency (GHz)	Antenna Dimension A(m)	Wavelength (λ)(m)	Far field $R(m) \geq 2D^2/\lambda$	Measurement Distance(D)(m)
QMS-00880	18	0.08	0.0167	0.77	3
	40	0.08	0.0075	1.71	
HO19R	40	0.046	0.0075	0.56	1
	60	0.046	0.005	0.85	
HO12R	60	0.03	0.005	0.36	1
	90	0.03	0.0033	0.55	
HO8R	90	0.019	0.0033	0.22	1
	140	0.019	0.0021	0.34	
HO5R	140	0.012	0.0021	0.14	1
	220	0.012	0.0014	0.21	
HO3R	220	0.008	0.0014	0.09	1
	330	0.008	0.0009	0.14	

2.6 RADIATED TEST SETUP

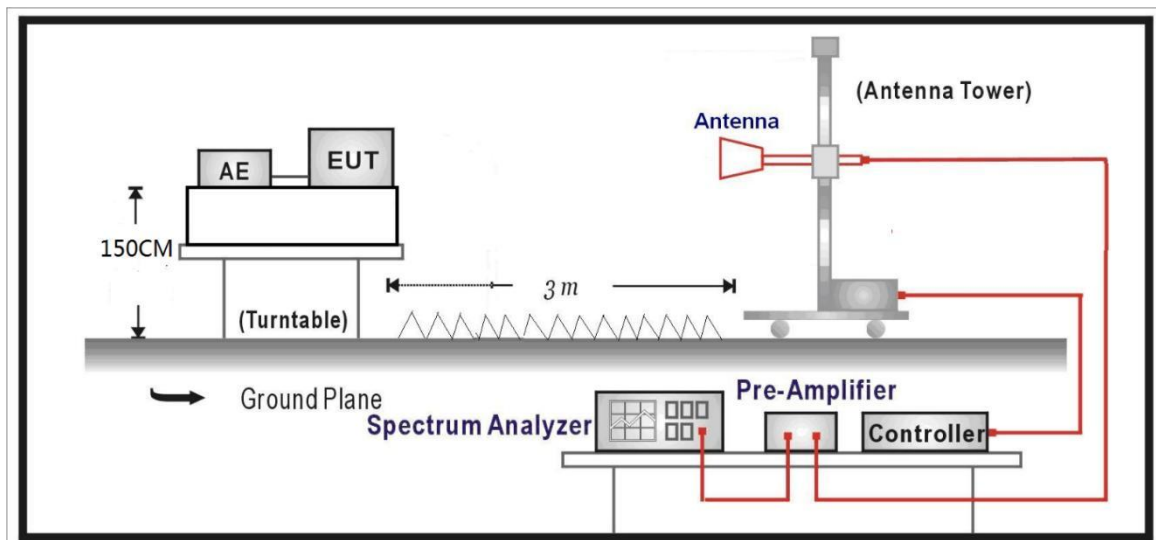
Below 30MHz Test Setup:



30MHz-1GHz Test Setup:

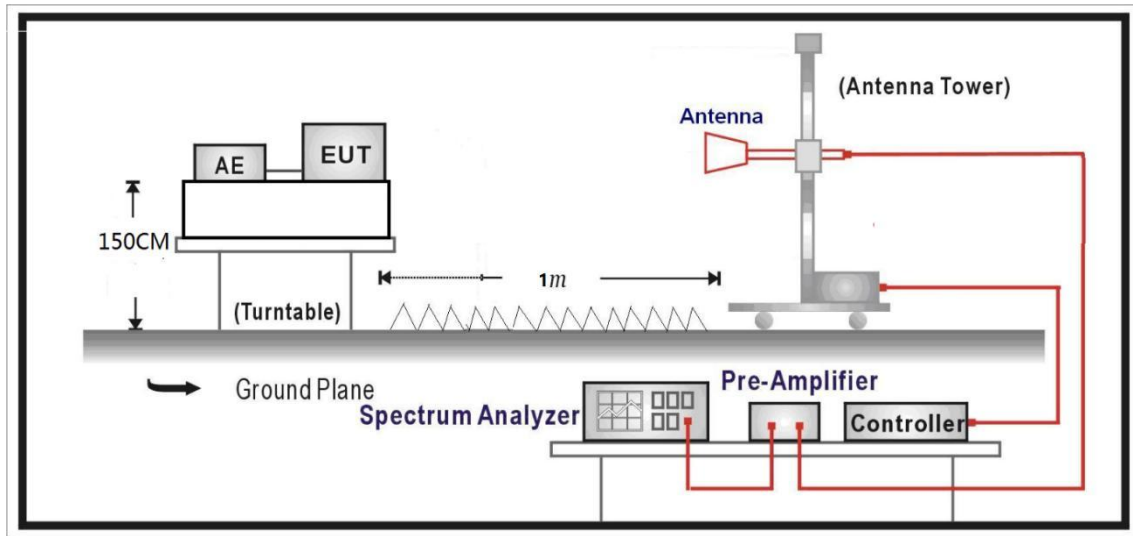


1GHz -40GHz Test Setup:





Above 40GHz Test Setup:





3 TEST TYPES AND RESULTS

3.1 RF POWER OUTPUT / POWER LIMITS

3.1.1 Limits

Part 25.203(c)(2)(ix)

Maximum equivalent isotropically radiated power (e.i.r.p.) density in the main beam in any 4kHz band, (dBW/4kHz) for frequency bands below 15GHz or in any 1MHz band (dBW/MHz) for frequency band above 15GHz,

Part 25.204(a)

In bands shared coequally with terrestrial radio communication services, the equivalent isotropically radiated power transmitted in any direction towards the horizon by an earth station, other than an ESV, operating in frequency bands between 1 and 15GHz, shall not exceed the following limits except as provided for in paragraph(c) of this section:

+ 40 dBW in any 4 kHz band for $\theta \leq 0^\circ$

+ 40 + 3 θ dBW in any 4 kHz band for $0^\circ < \theta \leq 5^\circ$

where θ is the angle of elevation of the horizon viewed from the center of radiation of the antenna of the earth station and measured in degrees as positive above the horizontal plane and negative below it.

3.1.2 Measurement procedure

Power Spectral Density Measurement using spectrum analyzer

1. Set span to 2 to 3 times the OBW
2. Set RBW = 1% to 5% of the OBW
(RBW shall set to the reference bandwidth specified by the applicable regulatory requirement, so set RBW = 3 kHz herein for measurement)
3. Set VBW $\geq 3 \times$ RBW
4. Detector = power averaging (RMS)
5. Trace mode = Trace average
6. Trace was allowed to stabilize
7. $10 \cdot \log(4\text{kHz}/3\text{kHz}) = 1.25\text{dB}$ was added to the reference offset to correct the result relative to any 4kHz band as per the requirement in 25.202(f).

Output Power Measurement using spectrum analyzer

1. Set span to 2 to 3 times the OBW
2. Set RBW = 1% to 5% of the OBW
3. Set VBW $\geq 3 \times$ RBW
4. Detector = power averaging (RMS)
5. Trace mode = Trace average
6. Trace was allowed to stabilize
7. Compute power by integrating the spectrum across the OBW of the signal using the channel power measurement function with channel limits set equal to the OBW band edges.

3.1.3 Test setup

See section 2.6 of this report.



3.1.4 Test results

8PSK

Test Mode	Test Frequency (MHz)	AVPSD (dBμV/3kHz)	AVPSD (dBm/3kHz)	EIRP PSD (dBm/4kHz)	EIRP PSD (dBW/4kHz)	Limit (dBW/4kHz)	Verdict
TM1	13750	127.802	32.602	33.852	3.852	40	PASS
TM1	14250	132.118	36.918	38.168	8.168	40	PASS
TM1	14500	131.417	36.217	37.467	7.467	40	PASS
TM2	13750	109.527	14.327	15.577	-14.423	40	PASS
TM2	14250	114.294	19.094	20.344	-9.656	40	PASS
TM2	14500	113.348	18.148	19.398	-10.602	40	PASS

Note 1: AV PSD (dBm/3KHz) =AVPSD (dBμV/m/3kHz) + Correction Factor @ 3m, Correction Factor @ 3m = 20log(D) - 104.7; where D is the measurement distance @3m = -95.2dB

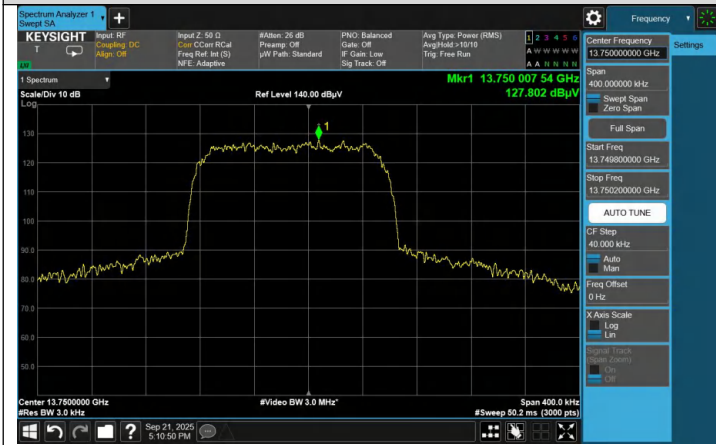
Note 2: EIRP PSD (dBm/4kHz) = AVPSD (dBm/3kHz) + Factor (dB).

Note 3: Factor = 10*log(4kHz/3kHz) = 1.25dB.

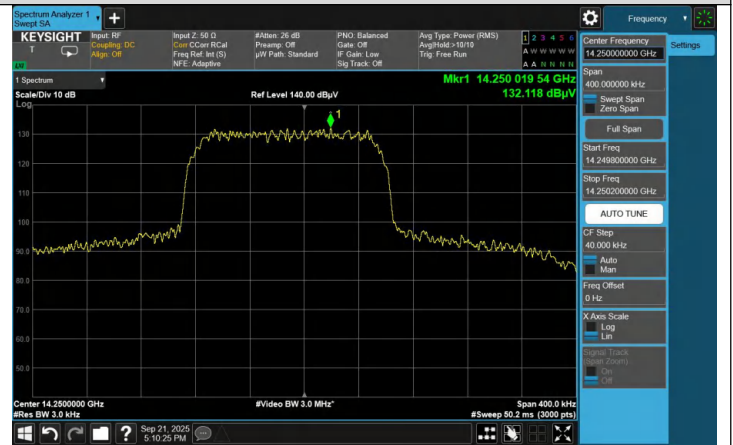
Note 4: EIRP PSD (dBW/4kHz) = EIRP PSD (dBm/4kHz) - 30.



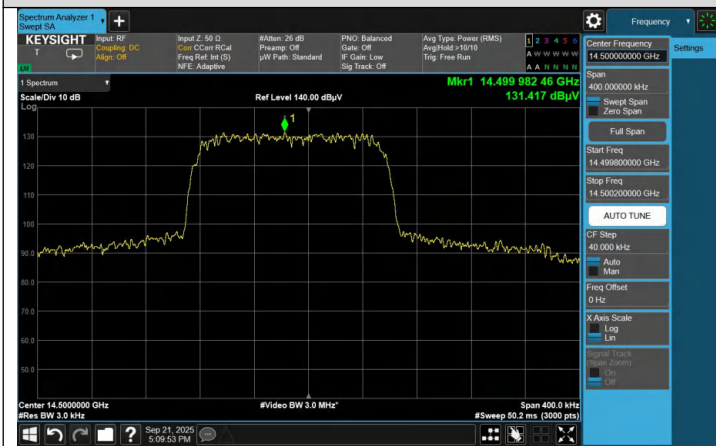
TM1-13750MHz



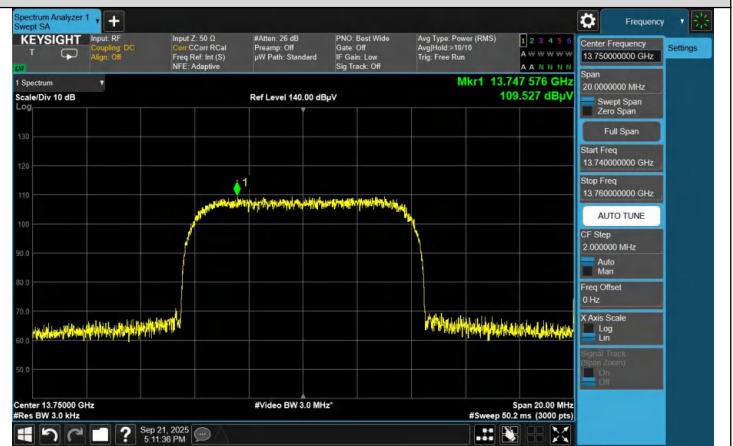
TM1-14250



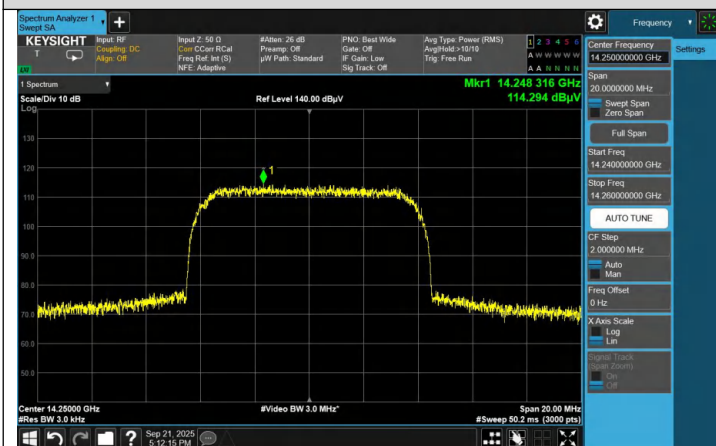
TM1-14500



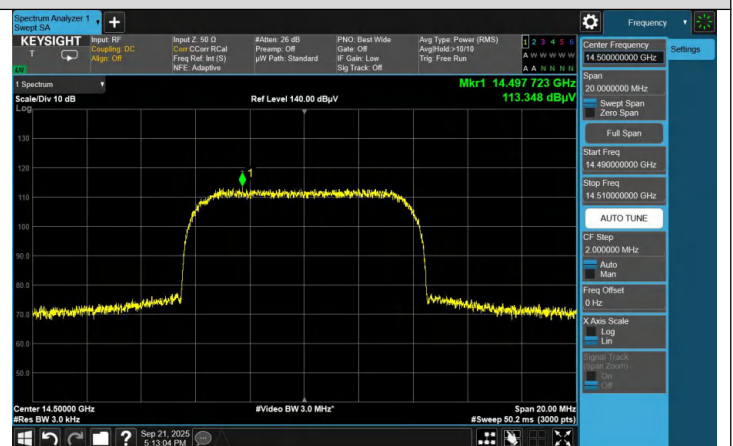
TM2-13750MHz



TM2-14250MHz



TM2-14500MHz





BPSK

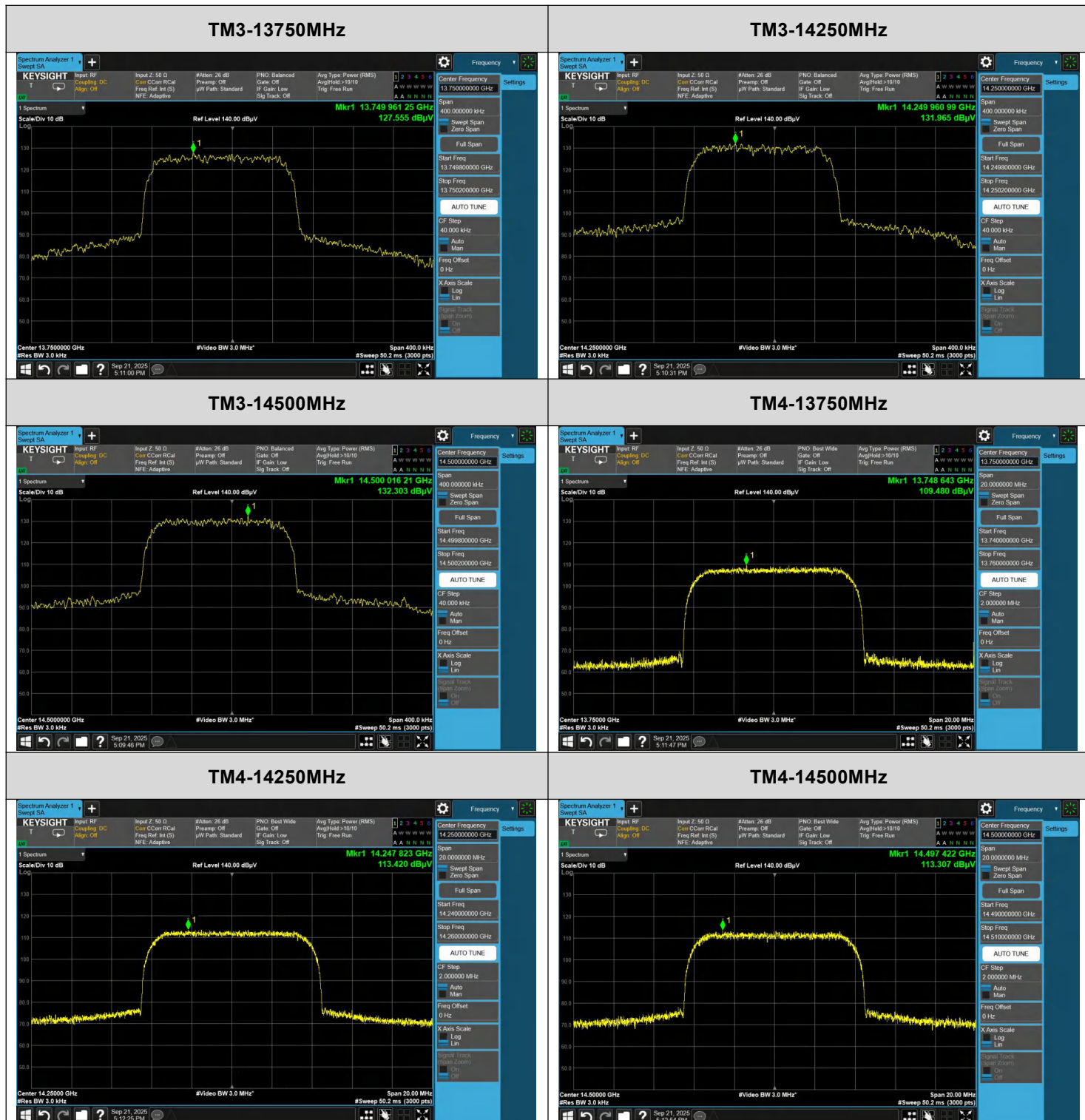
Test Mode	Test Frequency (MHz)	AVPSD (dBμV/3kHz)	AVPSD (dBm/3kHz)	EIRP PSD (dBm/4kHz)	EIRP PSD (dBW/4kHz)	Limit (dBW/4kHz)	Verdict
TM3	13750	127.555	32.355	33.605	3.605	40	PASS
TM3	14250	131.965	36.765	38.015	8.015	40	PASS
TM3	14500	132.303	37.103	38.353	8.353	40	PASS
TM4	13750	109.480	14.28	15.53	-14.47	40	PASS
TM4	14250	113.420	18.22	19.47	-10.53	40	PASS
TM4	14500	113.307	18.107	19.357	-10.643	40	PASS

Note 1: AV PSD (dBm/3KHz) = AVPSD (dBμV/m/3kHz) + Correction Factor @ 3m, Correction Factor @ 3m = $20\log(D) - 104.7$; where D is the measurement distance @3m = -95.2dB

Note 2: EIRP PSD (dBm/4kHz) = AVPSD (dBm/3kHz) + Factor (dB).

Note 3: Factor = $10 \cdot \log(4\text{kHz}/3\text{kHz}) = 1.25\text{dB}$.

Note 4: EIRP PSD (dBW/4kHz) = EIRP PSD (dBm/4kHz) - 30.





QPSK

Test Mode	Test Frequency (MHz)	AVPSD (dBμV/3kHz)	AVPSD (dBm/3kHz)	EIRP PSD (dBm/4kHz)	EIRP PSD (dBW/4kHz)	Limit (dBW/4kHz)	Verdict
TM5	13750	127.366	32.166	33.416	3.416	40	PASS
TM5	14250	132.030	36.83	38.08	8.08	40	PASS
TM5	14500	131.653	36.453	37.703	7.703	40	PASS
TM6	13750	108.913	13.713	14.963	-15.037	40	PASS
TM6	14250	114.417	19.217	20.467	-9.533	40	PASS
TM6	14500	112.815	17.615	18.865	-11.135	40	PASS

Note 1: AV PSD (dBm/3KHz) = AVPSD (dBμV/m/3kHz) + Correction Factor @ 3m, Correction Factor @ 3m = $20\log(D) - 104.7$; where D is the measurement distance @3m = -95.2dB

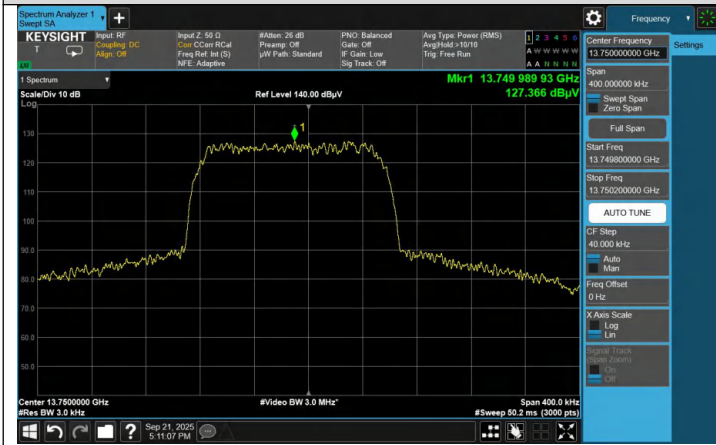
Note 2: EIRP PSD (dBm/4kHz) = AVPSD (dBm/3kHz) + Factor (dB).

Note 3: Factor = $10 \cdot \log(4\text{kHz}/3\text{kHz}) = 1.25\text{dB}$.

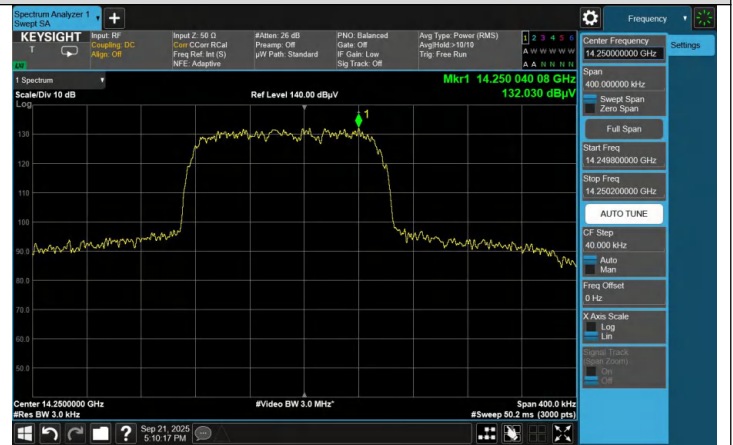
Note 4: EIRP PSD (dBW/4kHz) = EIRP PSD (dBm/4kHz) - 30.



TM3-13750MHz



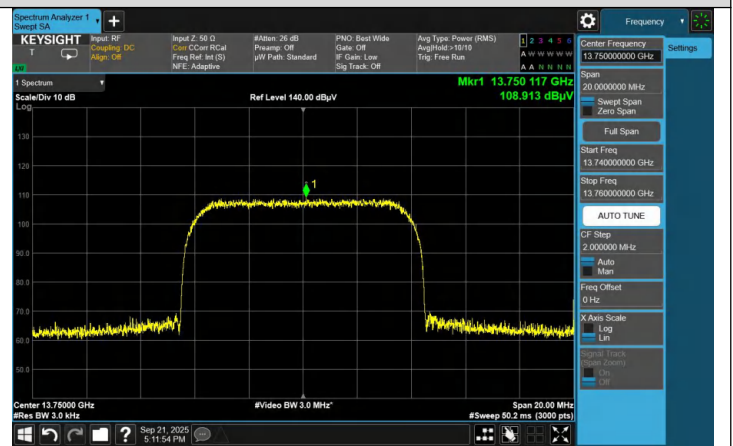
TM3-14250MHz



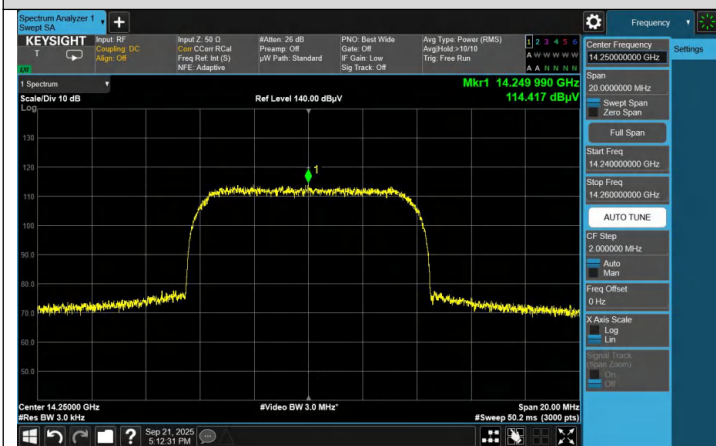
TM3-14500MHz



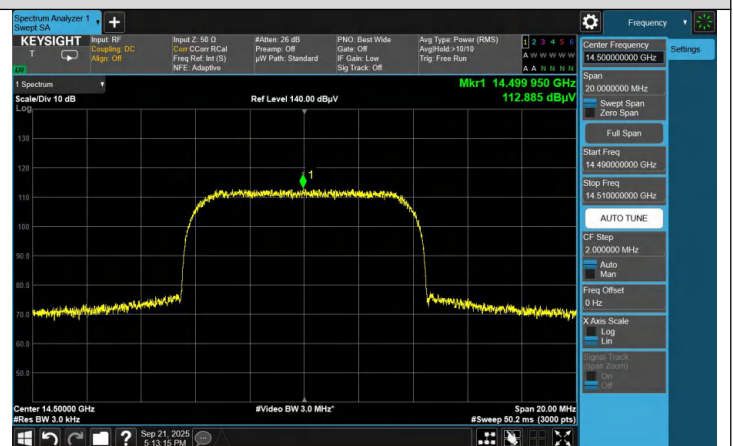
TM4-13750MHz



TM4-14250MHz



TM4-14500MHz





E.I.R.P. (dBm)

Test Mode	Test Frequency (MHz)	EIRP (dBm)
TM1	13750	45.8
TM1	14250	50.5
TM1	14500	50.1
TM2	13750	45.4
TM2	14250	50.2
TM2	14500	49.6
TM3	13750	45.6
TM3	14250	50.6
TM3	14500	49.9
TM4	13750	45.6
TM4	14250	50.2
TM4	14500	49.5
TM5	13750	45.9
TM5	14250	50.6
TM5	14500	50
TM6	13750	45.5
TM6	14250	50.2
TM6	14500	49.6



3.2 OFF-AXIS EIRP DENSITY

3.2.1 Limits

Part 25.203(c)(2)(ix)

Maximum equivalent isotropically radiated power (e.i.r.p.) density in the main beam in any 4kHz band, (dBW/4kHz) for frequency bands below 15GHz or in any 1MHz band (dBW/MHz) for frequency band above 15GHz,

Part 25.218

(f) Digital earth station operation in the conventional Ku-band.

(1) For co-polarized transmissions in the plane tangent to the GSO arc:

15 - 25*log θ	dBW /4 kHz	for $1.5^{\circ} \leq \theta \leq 7^{\circ}$
-6	dBW /4 kHz	for $7^{\circ} \leq \theta \leq 9.2^{\circ}$
18 - 25*log θ	dBW /4 kHz	for $9.2^{\circ} \leq \theta \leq 19.1^{\circ}$
-14	dBW /4 kHz	for $19.1^{\circ} \leq \theta \leq 180^{\circ}$

Where θ is the angle in degrees from a line from the earth station antenna to the assigned orbital location of the target satellite. The EIRP density levels specified for $\theta > 7^{\circ}$ may be exceeded by up to 3 dB in up to 10% of the range of theta (θ) angles from $\pm 7^{\circ}$ - 180° , and by up to 6 dB in the region of main reflector spillover energy.

(2) For co-polarized transmissions in the plane perpendicular to the GSO arc:

18 - 25*log θ	dBW /4 kHz	for $3^{\circ} \leq \theta \leq 19.1^{\circ}$
-14	dBW /4 kHz	for $19.1^{\circ} \leq \theta \leq 180^{\circ}$

Where θ is the angle in degrees from a line from the earth station antenna to the assigned orbital location of the target satellite. These EIRP density levels may be exceeded by up to 6 dB in the region of main reflector spillover energy and in up to 10% of the range of θ angles not included in that region, on each side of the line from the earth station to the target satellite.

(3) For cross-polarized transmissions in the plane tangent to the GSO arc and in the plane perpendicular to the GSO arc:

15 - 25*log θ	dBW /4 kHz	for $1.5^{\circ} \leq \theta \leq 7^{\circ}$
----------------------	------------	--

Where θ is the angle in degrees from a line from the earth station antenna to the assigned orbital location of the target satellite.



(h) Digital earth station operation in the extended Ku-band.

(1) For co-polarized transmissions in the plane tangent to the GSO arc:

15 - 25*log θ	dBW /4 kHz	for $1.5^\circ \leq \theta \leq 7^\circ$
-6	dBW /4 kHz	for $7^\circ \leq \theta \leq 9.2^\circ$
18 - 25*log θ	dBW /4 kHz	for $9.2^\circ \leq \theta \leq 19.1^\circ$
-14	dBW /4 kHz	for $48^\circ \leq \theta \leq 180^\circ$

Where θ is the angle in degrees from a line from the earth station antenna to the assigned orbital location of the target satellite. The EIRP density levels specified for $\theta > 7^\circ$ may be exceeded by up to 3 dB in up to 10% of the range of theta (θ) angles from $\pm 7^\circ$ - 180° , and by up to 6 dB in the region of main reflector spillover energy

(2) For co-polarized transmissions in the plane perpendicular to the GSO arc:

18 - 25*log θ	dBW /4 kHz	for $3^\circ \leq \theta \leq 48^\circ$
-24	dBW /4 kHz	for $48^\circ \leq \theta \leq 180^\circ$

Where θ is the angle in degrees from a line from the earth station antenna to the assigned orbital location of the target satellite. These EIRP density levels may be exceeded by up to 6 dB in the region of main reflector spillover energy and in up to 10% of the range of θ angles not included in that region, on each side of the line from the earth station to the target satellite.

(3) For cross-polarized transmissions in the plane tangent to the GSO arc and in the plane perpendicular to the GSO arc:

15 - 25*log θ	dBW /4 kHz	for $1.5^\circ \leq \theta \leq 7^\circ$
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Where θ is the angle in degrees from a line from the earth station antenna to the assigned orbital location of the target satellite.

3.2.2 Measurement procedure

Measurement procedures: ANSI C63.26-2015 - Section 5.2.4.5 & 5.2.4.4.1

1. Set span to 2 to 3 times the OBW
2. Set RBW = 1% to 5% of the OBW
(RBW shall set to the reference bandwidth specified by the applicable regulatory requirement, so set RBW = 3 kHz herein for measurement)
3. Set VBW $\geq 3 \times$ RBW
4. Detector = power averaging (RMS)
5. Trace mode = Trace average
6. Trace was allowed to stabilize
7. $10 \cdot \log(4\text{kHz}/3\text{kHz}) = 1.25\text{dB}$ was added to the reference offset to correct the result relative to any 4kHz band as per the requirement in 25.202(f).

3.2.3 Test setup

See section 2.6 of this report.



3.2.4 Test results

8PSK

Test Mode	Test Frequency (MHz)	EIRP PSD (dBμV/3kHz)	EIRP PSD (dBm/3kHz)	EIRP PSD (dBm/4kHz)	EIRP PSD (dBW/4kHz)	Angle (°)	Limit (dBW/4kHz)	Verdict
TM1	13750	126.840	31.64	32.89	2.89	1.5	10.6	PASS
TM1	13750	113.372	18.172	19.422	-10.578	8	-6.00+3 ^{Note4}	PASS
TM1	13750	110.842	15.642	16.892	-13.108	9.2	-6.09+3 ^{Note4}	PASS
TM1	13750	97.624	2.424	3.674	-26.326	48	-24.00+3 ^{Note4}	PASS
TM1	14250	131.597	36.397	37.647	7.647	1.5	10.6	PASS
TM1	14250	117.694	22.494	23.744	-6.256	8	-6.00+3 ^{Note4}	PASS
TM1	14250	111.750	16.55	17.8	-12.2	9.2	-6.09+3 ^{Note4}	PASS
TM1	14250	98.558	3.358	4.608	-25.392	19.1	-14.00+3 ^{Note4}	PASS
TM1	14500	130.528	35.328	36.578	6.578	1.5	10.6	PASS
TM1	14500	116.275	21.075	22.325	-7.675	8	-6.00+3 ^{Note4}	PASS
TM1	14500	107.301	12.101	13.351	-16.649	9.2	-6.09+3 ^{Note4}	PASS
TM1	14500	105.966	10.766	12.016	-17.984	19.1	-14.00+3 ^{Note4}	PASS

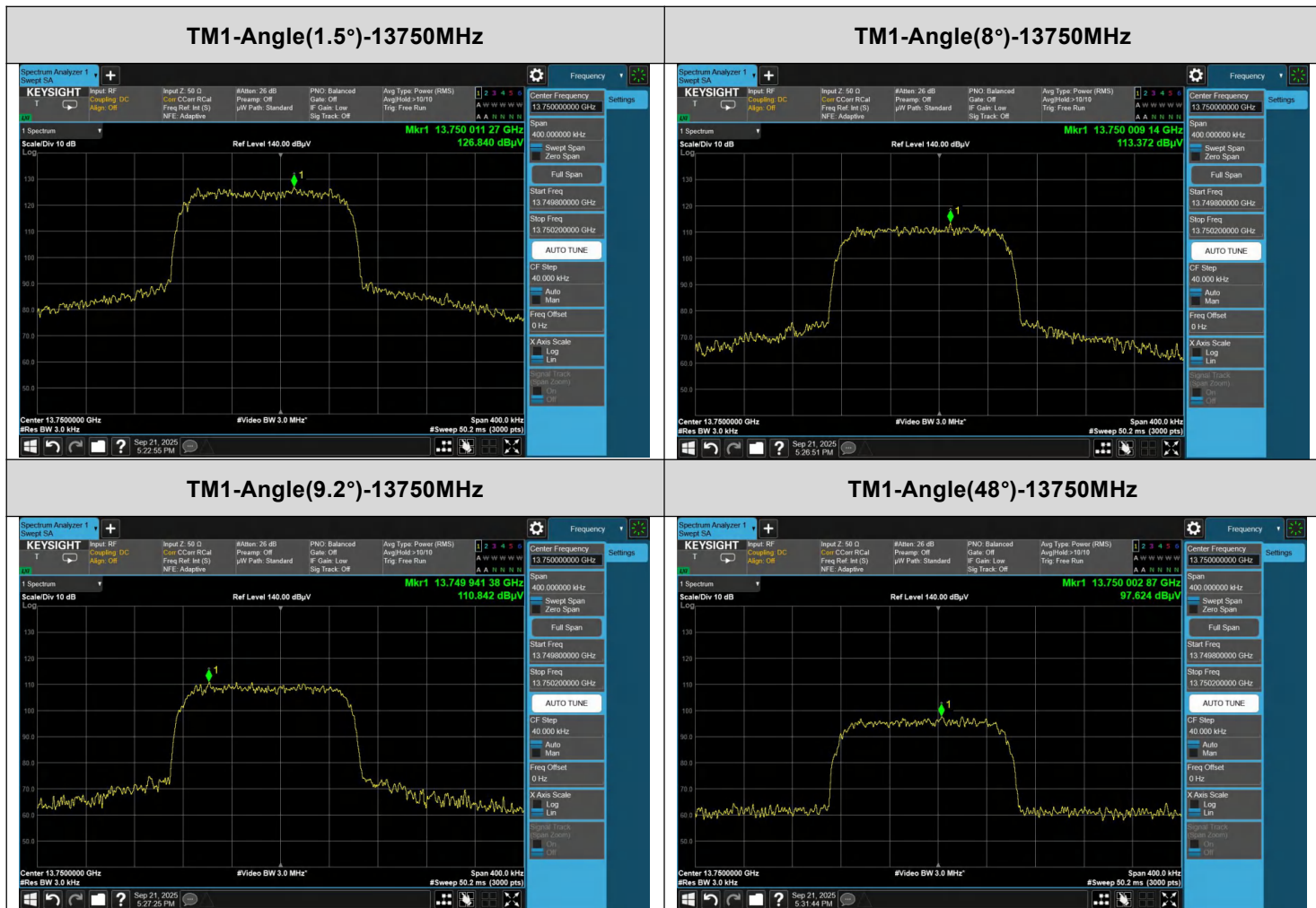
Note 1: EIRP PSD (dBm/3KHz) = EIRP PSD (dBμV/m/3kHz) + Correction Factor @ 3m, Correction Factor @ 3m = 20log(D) - 104.7; where D is the measurement distance @3m = -95.2dB

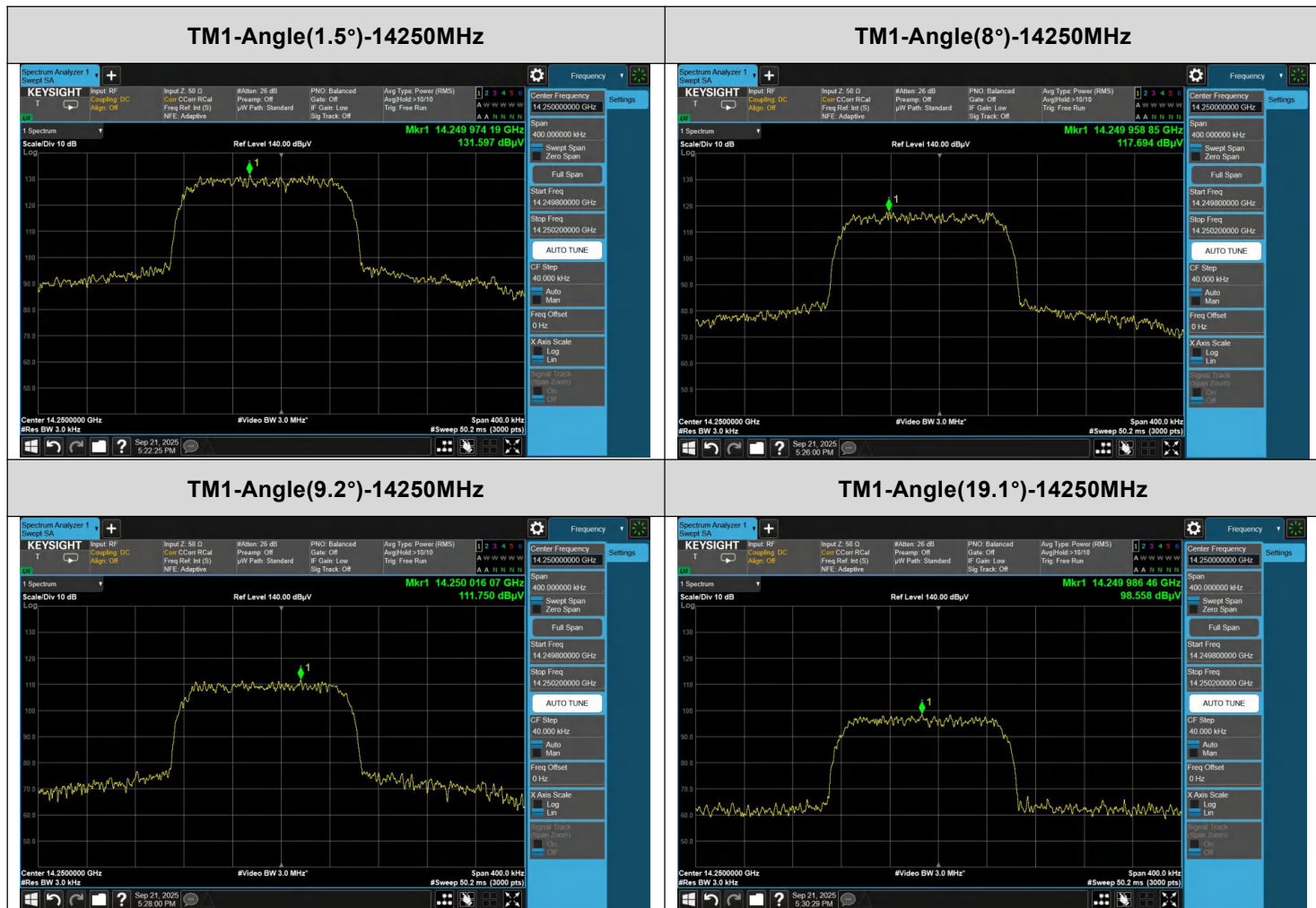
Note 2: EIRP PSD (dBm/4kHz) = EIRP PSD (dBm/3kHz) + Factor (dB).

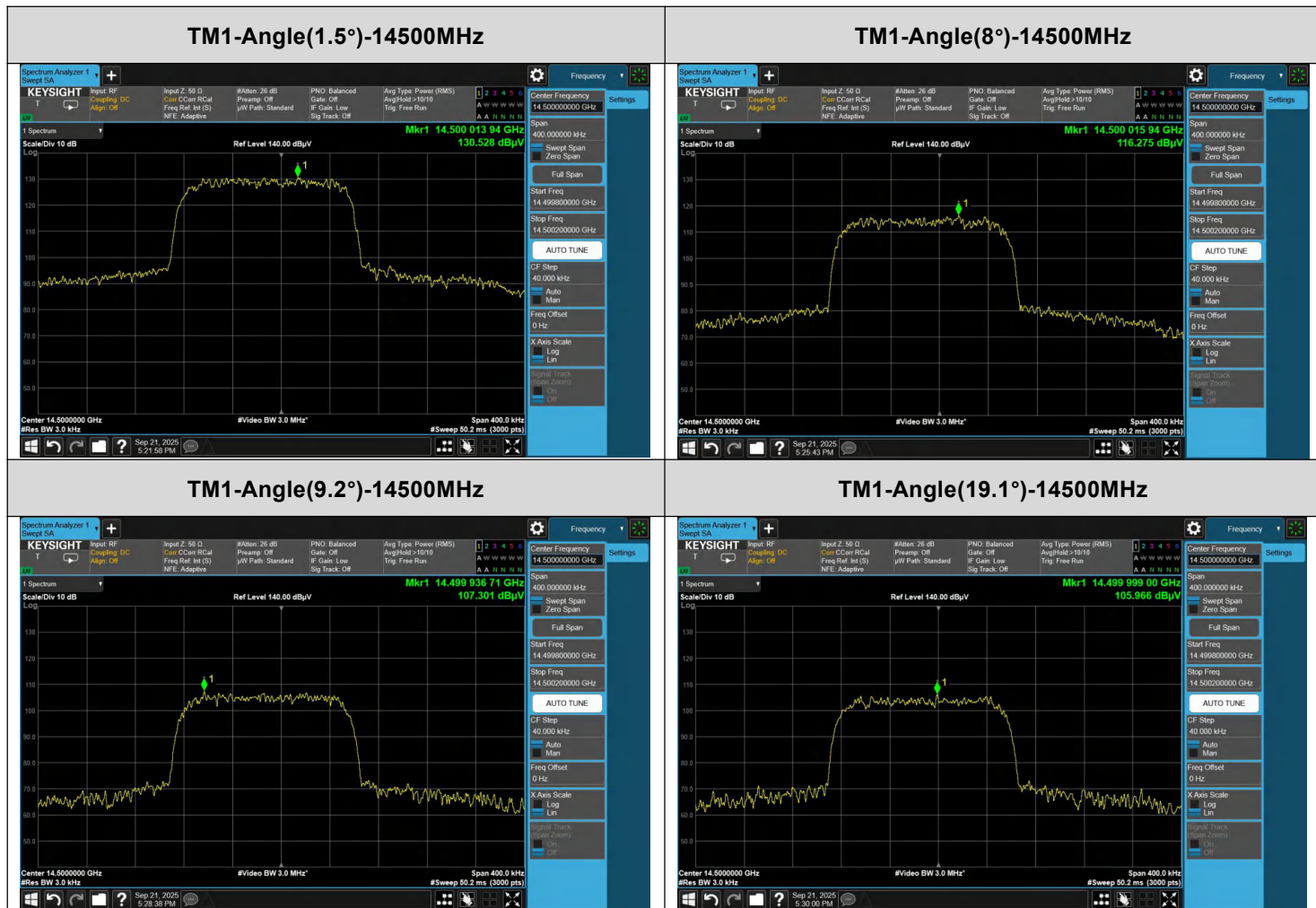
Note 3: Factor = 10*log(4kHz/3kHz) = 1.25dB.

Note 4: The EIRP density levels specified for $\theta > 7^\circ$ may be exceeded by up to 3 dB in up to 10% of the range of theta (θ) angles from $\pm 7^\circ$ -180°, as required by regulation Part 25.218(f) & (h).

Note 5: The off-axis Angle of the test is determined according to the off-axis antenna gain provided by the customer.









BPSK

Test Mode	Test Frequency (MHz)	EIRP PSD (dBμV/3kHz)	EIRP PSD (dBm/3kHz)	EIRP PSD (dBm/4kHz)	EIRP PSD (dBW/4kHz)	Angle (°)	Limit (dBW/4kHz)	Verdict
TM3	13750	126.592	31.392	32.642	2.642	1.5	10.6	PASS
TM3	13750	112.922	17.722	18.972	-11.028	8	-6.00+3 ^{Note4}	PASS
TM3	13750	110.835	15.635	16.885	-13.115	9.2	-6.09+3 ^{Note4}	PASS
TM3	13750	97.511	2.311	3.561	-26.439	48	-24.00+3 ^{Note4}	PASS
TM3	14250	130.722	35.522	36.772	6.772	1.5	10.6	PASS
TM3	14250	117.579	22.379	23.629	-6.371	8	-6.00+3 ^{Note4}	PASS
TM3	14250	110.723	15.523	16.773	-13.227	9.2	-6.09+3 ^{Note4}	PASS
TM3	14250	98.226	3.026	4.276	-25.724	19.1	-14.00+3 ^{Note4}	PASS
TM3	14500	131.251	36.051	37.301	7.301	1.5	10.6	PASS
TM3	14500	116.444	21.244	22.494	-7.506	8	-6.00+3 ^{Note4}	PASS
TM3	14500	107.291	12.091	13.341	-16.659	9.2	-6.09+3 ^{Note4}	PASS
TM3	14500	106.709	11.509	12.759	-17.241	19.1	-14.00+3 ^{Note4}	PASS

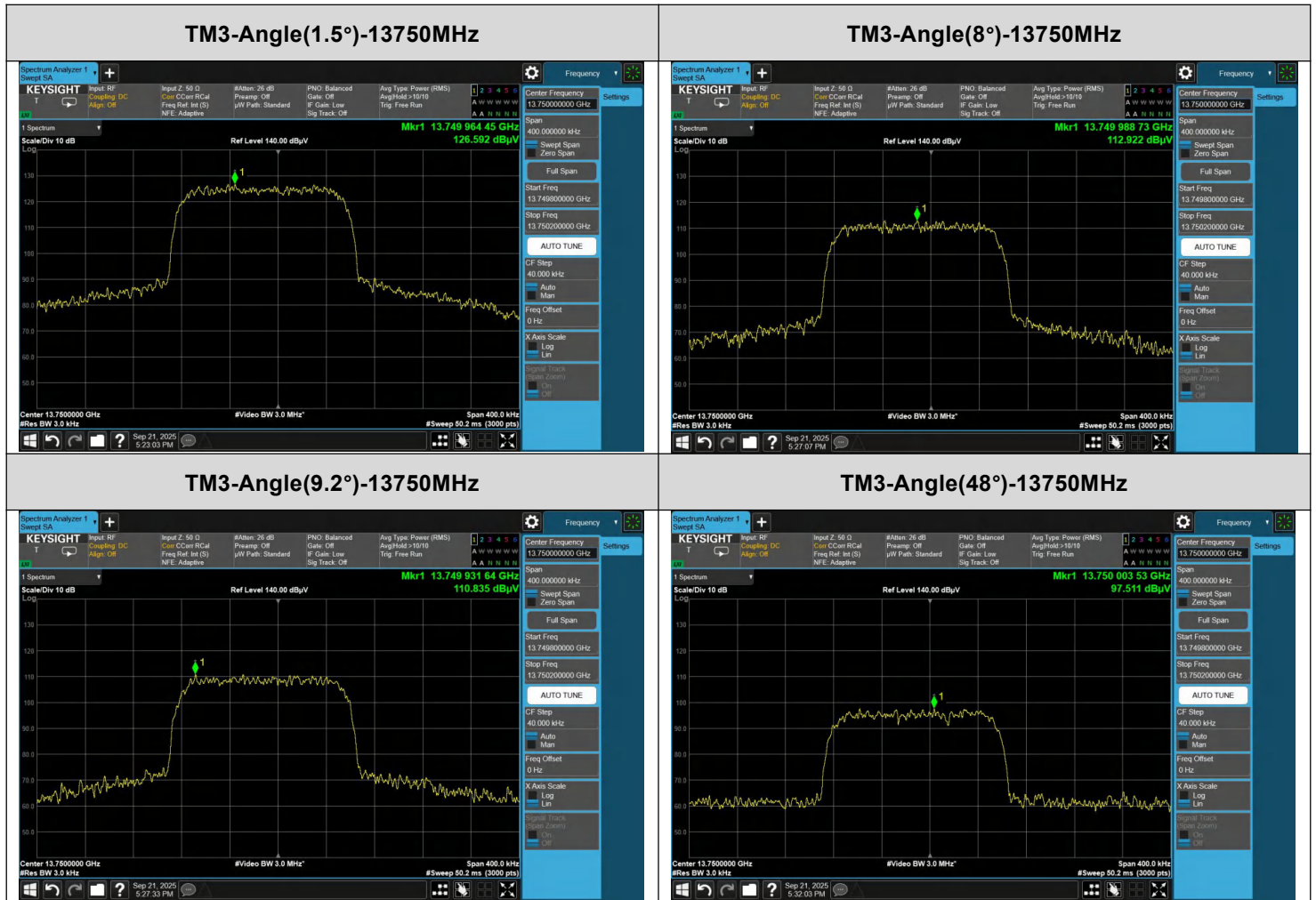
Note 1: EIRP PSD (dBm/3KHz) = EIRP PSD (dBμV/m/3kHz) + Correction Factor @ 3m, Correction Factor @ 3m = 20log(D) - 104.7; where D is the measurement distance @3m = -95.2dB

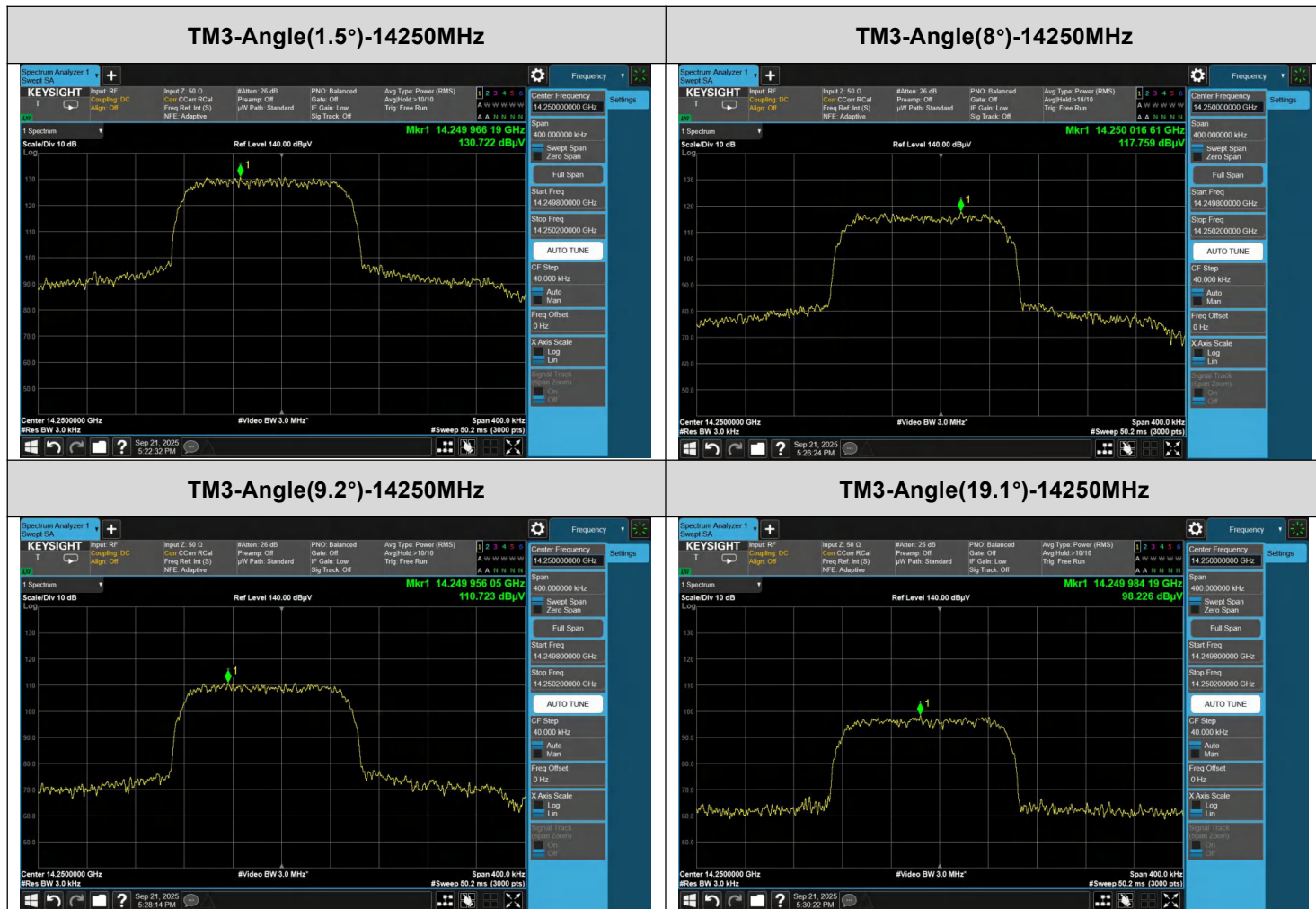
Note 2: EIRP PSD (dBm/4kHz) = EIRP PSD (dBm/3kHz) + Factor (dB).

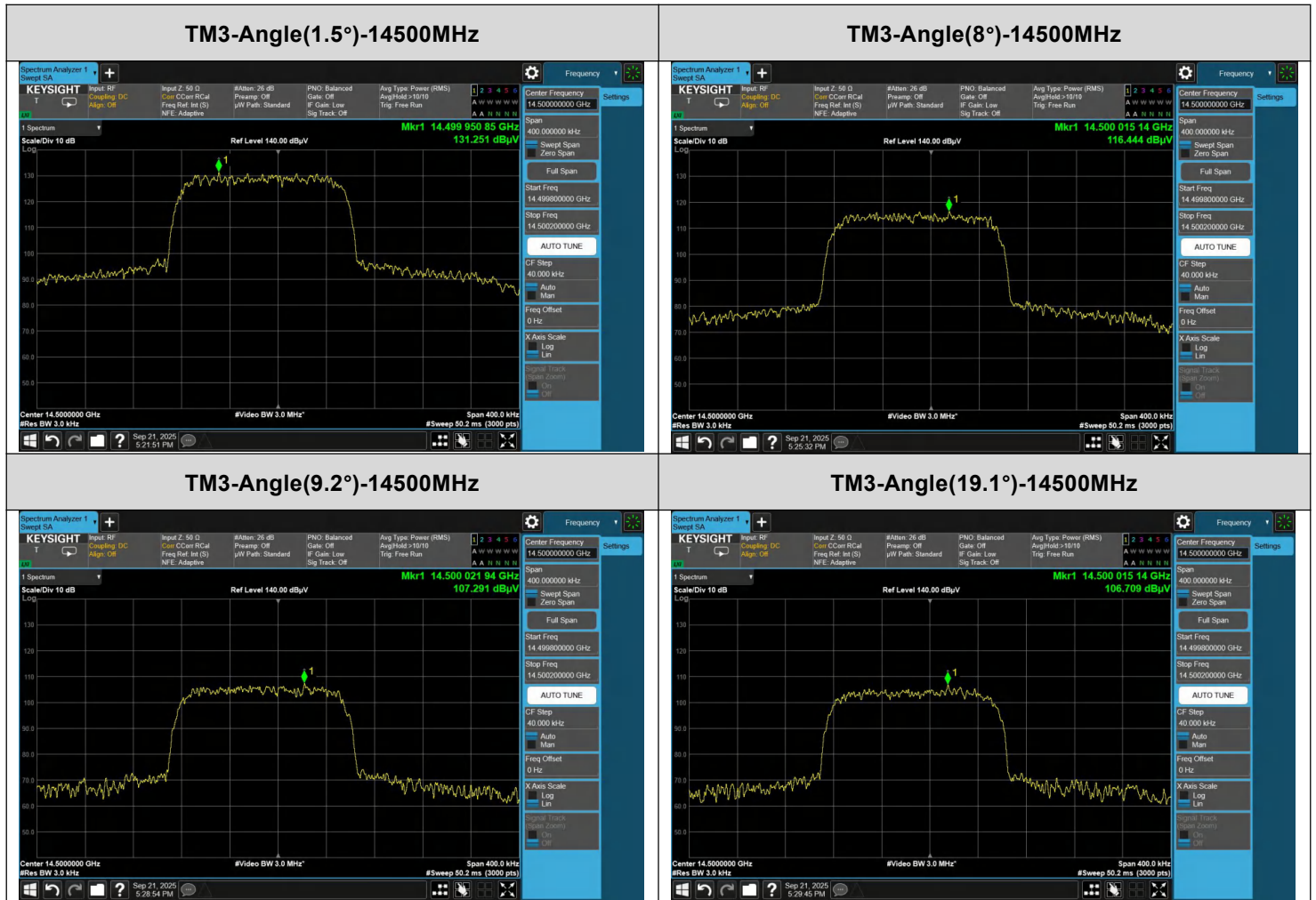
Note 3: Factor = 10*log(4kHz/3kHz) = 1.25dB.

Note 4: The EIRP density levels specified for $\theta > 7^\circ$ may be exceeded by up to 3 dB in up to 10% of the range of theta (θ) angles from $\pm 7^\circ$ -180°, as required by regulation Part 25.218(f) & (h).

Note 5: The off-axis Angle of the test is determined according to the off-axis antenna gain provided by the customer.









QPSK

Test Mode	Test Frequency (MHz)	EIRP PSD (dBμV/3kHz)	EIRP PSD (dBm/3kHz)	EIRP PSD (dBm/4kHz)	EIRP PSD (dBW/4kHz)	Angle (°)	Limit (dBW/4kHz)	Verdict
TM3	13750	126.723	31.523	32.773	2.773	1.5	10.6	PASS
TM3	13750	113.104	17.904	19.154	-10.846	8	-6.00+3 ^{Note4}	PASS
TM3	13750	110.553	15.353	16.603	-13.397	9.2	-6.09+3 ^{Note4}	PASS
TM3	13750	97.636	2.436	3.686	-26.314	48	-24.00+3 ^{Note4}	PASS
TM3	14250	131.807	36.607	37.857	7.857	1.5	10.6	PASS
TM3	14250	117.355	22.155	23.405	-6.595	8	-6.00+3 ^{Note4}	PASS
TM3	14250	111.287	16.087	17.337	-12.663	9.2	-6.09+3 ^{Note4}	PASS
TM3	14250	98.532	3.332	4.582	-25.418	19.1	-14.00+3 ^{Note4}	PASS
TM3	14500	130.492	35.292	36.542	6.542	1.5	10.6	PASS
TM3	14500	116.127	20.927	22.177	-7.823	8	-6.00+3 ^{Note4}	PASS
TM3	14500	106.338	11.138	12.388	-17.612	9.2	-6.09+3 ^{Note4}	PASS
TM3	14500	105.371	10.171	11.421	-18.579	19.1	-14.00+3 ^{Note4}	PASS

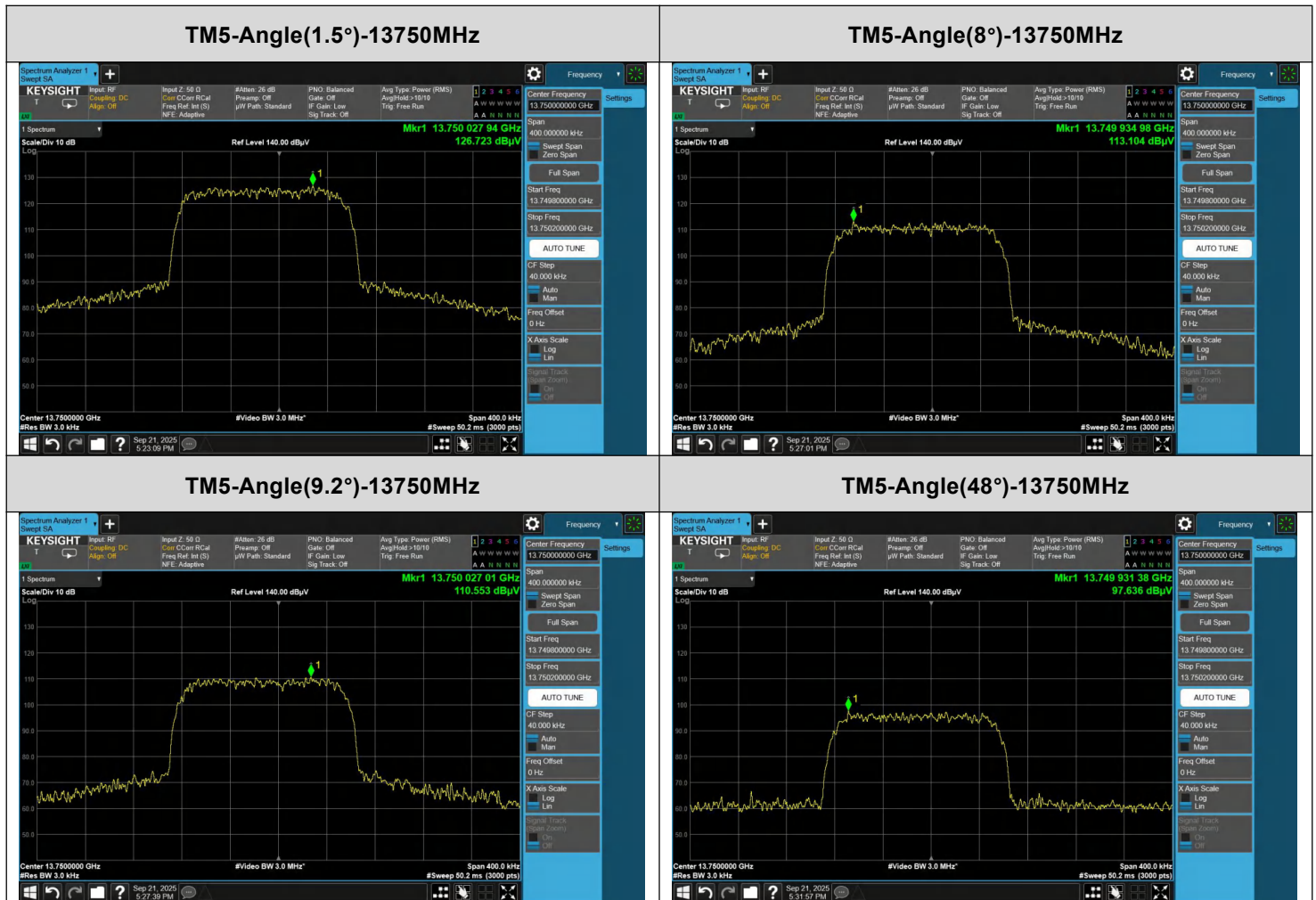
Note 1: EIRP PSD (dBm/3KHz) = EIRP PSD (dBμV/m/3kHz) + Correction Factor @ 3m, Correction Factor @ 3m = 20log(D) - 104.7; where D is the measurement distance @3m = -95.2dB

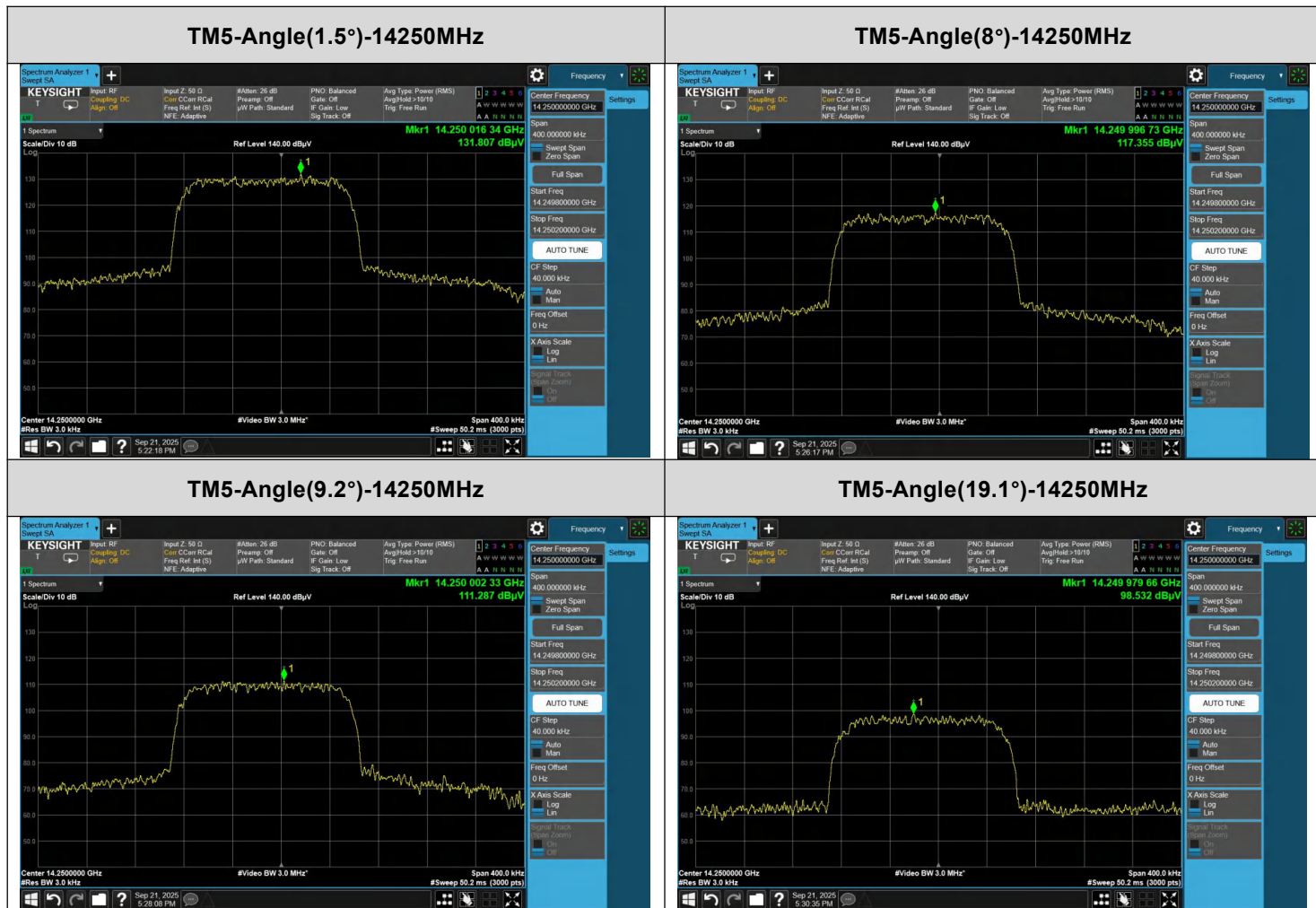
Note 2: EIRP PSD (dBm/4kHz) = EIRP PSD (dBm/3kHz) + Factor (dB).

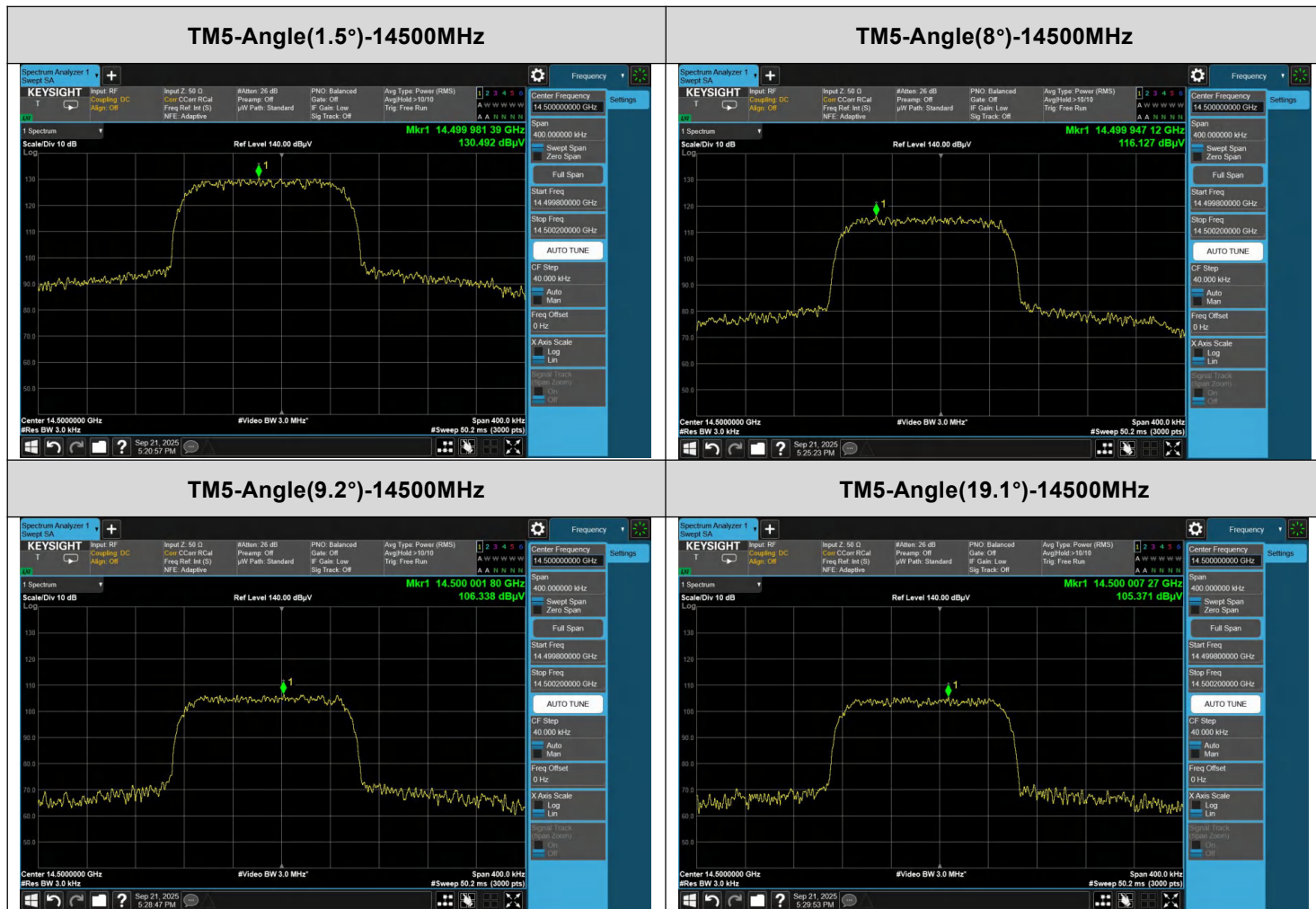
Note 3: Factor = 10*log(4kHz/3kHz) = 1.25dB.

Note 4: The EIRP density levels specified for $\theta > 7^\circ$ may be exceeded by up to 3 dB in up to 10% of the range of theta (θ) angles from $\pm 7^\circ$ -180°, as required by regulation Part 25.218(f) & (h).

Note 5: The off-axis Angle of the test is determined according to the off-axis antenna gain provided by the customer.









3.3 OCCUPIED BANDWIDTH

3.3.1 Limit

N/A

3.3.2 Measurement Procedure

Measurement procedures: ANSI C63.26-2015 - Section 5.4.4

1. The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be set wide enough to capture all modulation products including the emission skirts (typically a span of $1.5 \times \text{OBW}$ is sufficient)
2. Set RBW = 1% to 5% of the OBW
3. VBW $\geq 3 \times \text{RBW}$
4. Detector = Peak
5. Trace mode = Max hold
6. Sweep = Auto couple
7. Allow the trace was allowed to stabilize

3.3.3 Test setup

See section 2.6 of this report.

3.3.4 Test results

Test Mode	Test Frequency (MHz)	99%OBW (MHz)
TM1	13750	0.13798
TM1	14250	0.13854
TM1	14500	0.13817
TM2	13750	8.1459
TM2	14250	8.0714
TM2	14500	8.1433
TM3	13750	0.13736
TM3	14250	0.13844
TM3	14500	0.13785
TM4	13750	8.1566
TM4	14250	8.0820
TM4	14500	8.1835
TM5	13750	0.13872
TM5	14250	0.13876
TM5	14500	0.13845
TM6	13750	8.1352
TM6	14250	8.1233
TM6	14500	8.1279



TM1-13750MHz



TM1-14250



TM1-14500



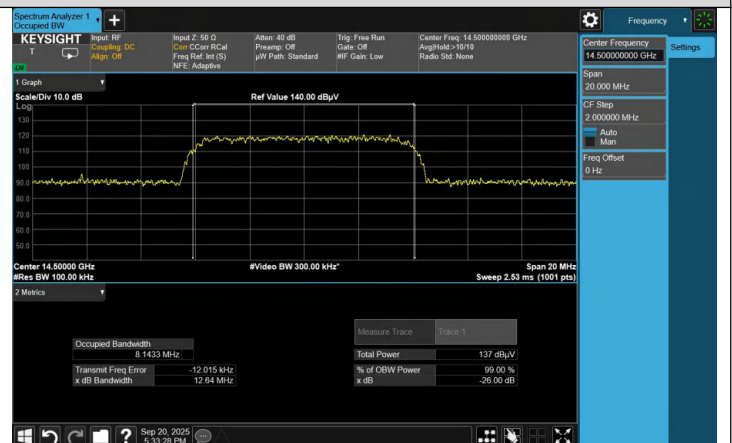
TM2-13750MHz



TM2-14250MHz



TM2-14500



TM3-13750MHz



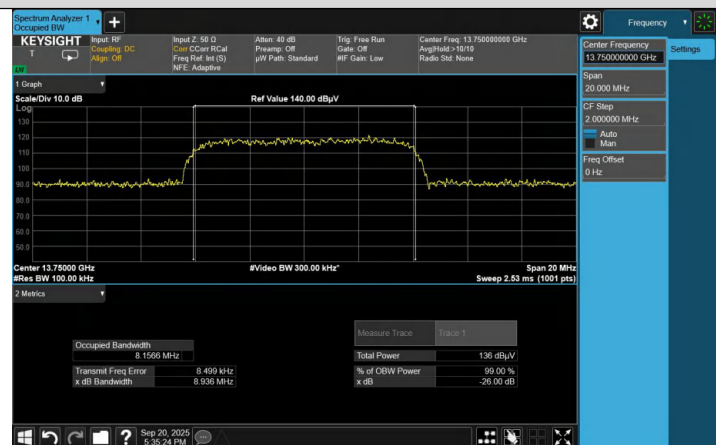
TM3-14250



TM3-14500MHz



TM4-13750MHz



TM4-14250MHz



TM4-14500MHz





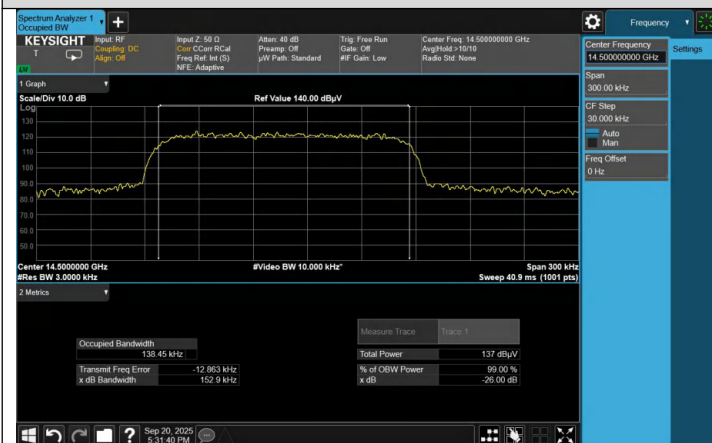
TM5-13750MHz



TM5-14250



TM5-14500



TM6-13750MHz



TM6-14250MHz



TM6-14500





3.4 RADIATED SPURIOUS EMISSION & IN-BAND EMISSION

3.4.1 Limit

Part 25.202(f) Emission Limit

The mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the schedule:

(1) In any 4kHz band, the center frequency of which is removed from the assigned frequency by more than 50 percent up to and including 100 percent of the authorized bandwidth: 25dB;

(2) In any 4kHz band, the center frequency of which is removed from the assigned frequency by more than 100 percent up to and including 250 percent of the authorized bandwidth: 35dB;

(3) In any 4kHz band, the center frequency of which is removed from the assigned frequency by more than 250 percent of the authorized bandwidth: An amount equal to 43dB plus 10 times the logarithm (to the base of the transmitter power in watts.

For Out-Of-Band Emission, The emission limit equal to 82.3dBμV/m.

$E \text{ (dBμV/m)} = \text{EIRP (dBm)} - 20 \log D + 104.8$; where D is the measurement distance in meters.

3.4.2 Measurement procedure

Measurement procedures: ANSI C63.26-2015 - Section 5.7

Spurious Emission – In-Band Emission

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 3kHz for in-band mask
3. VBW $\geq 3 \times$ RBW
4. Detect = power averaging (RMS)
5. Sweep time = Auto couple
6. Trace mode = Trace average
7. Trace was allowed to stabilize
8. $10 \times \log(4\text{kHz}/3\text{kHz}) = 1.25\text{dB}$ was added to the reference offset for in-band mask measurement to correct the result relative to any 4kHz band as per the requirement in 25.202(f)(1)&(2).

Spurious Emission – Out-of-Band Emission

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 100kHz for below 1GHz or 1MHz for above 1GHz
Set the RBW greater than 4kHz in order to increase the measurement speed
3. VBW = $3 \times$ RBW
4. Detector = power averaging (RMS)
5. Sweep time = Auto couple
6. Trace mode = Max hold
7. Trace was allowed to stabilize

3.4.3 Test setup

See section 2.6 of this report.



3.4.4 Test results Out-of-Band Emission

Only the worst case was shown in test report(TM1)

Test Mode		TM1_13750MHz				
Horizontal						
NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]
1	58.71	18.66	19.60	38.26	82.30	44.04
2	101.88	30.36	16.28	46.64	82.30	35.66
3	10622.80	11.76	42.55	54.31	83.20	28.89
4	14700.31	28.09	44.25	72.34	83.20	10.86
5	23432.25	40.19	-4.12	36.07	82.30	46.23
6	27500.43	71.33	-3.91	67.42	82.30	14.88
Vertical						
NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]
1	90.83	30.10	14.03	44.13	82.30	38.17
2	150.00	21.62	20.19	41.81	82.30	40.49
3	10968.50	10.67	42.67	53.34	83.20	29.86
4	15216.02	23.26	43.21	66.47	83.20	16.73
5	27500.43	42.38	-3.91	38.47	82.30	43.83
6	28445.47	40.48	-2.29	38.19	82.30	44.11
Remark: 1. The emission levels of other frequencies were greater than 20dB margin. 2. Level (dBuV/m) = Reading (dBuV) + Factor (dB/m). 3. Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB). 4. Margin(dB) = Limit(dBuV/m) - Level (dBuV/m)						

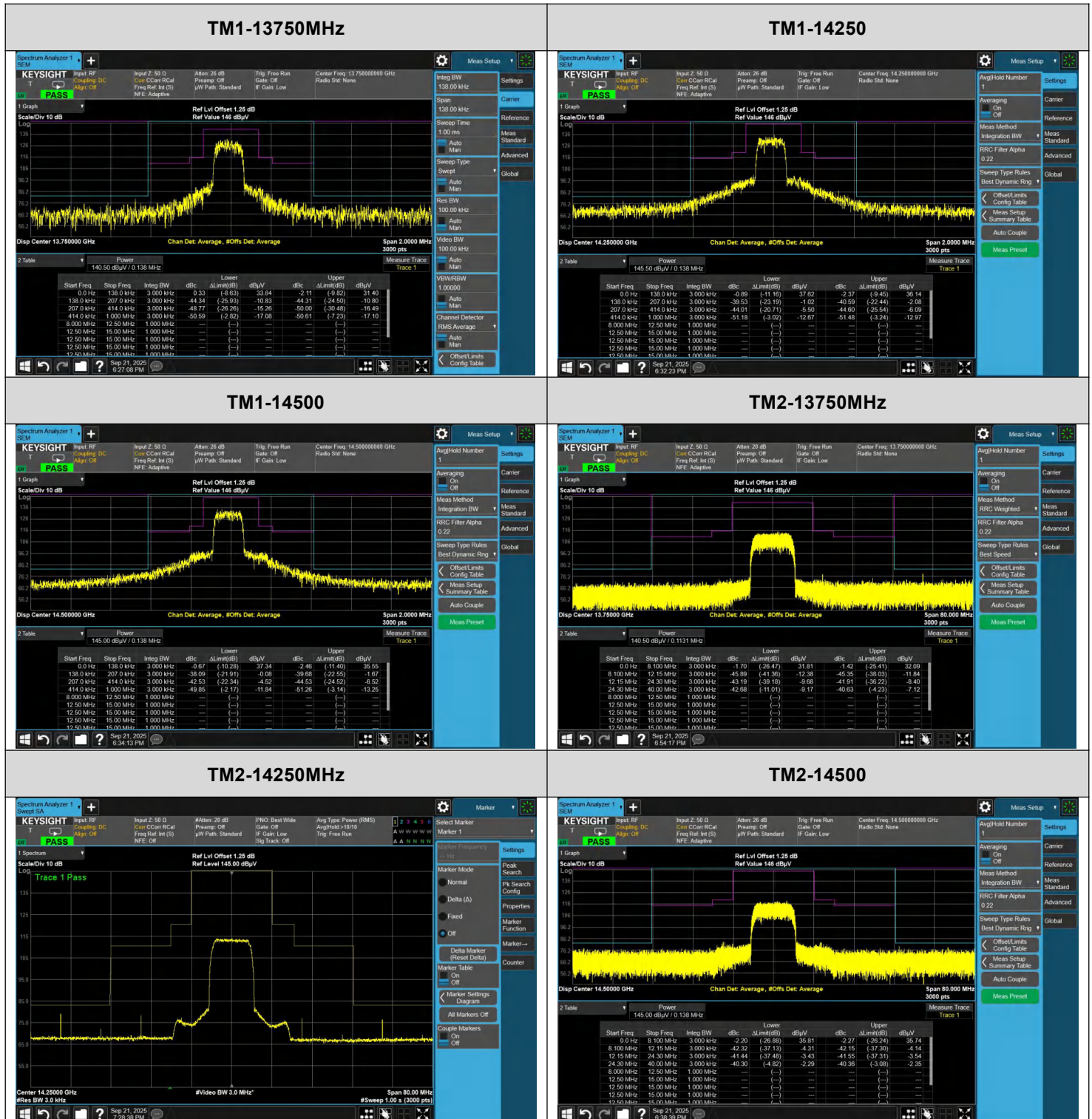


Test Mode		TM1_14250MHz				
Horizontal						
NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]
1	99.07	30.07	15.50	45.57	82.30	36.73
2	143.21	16.22	20.23	36.45	82.30	45.85
3	10795.65	11.10	42.75	53.85	83.20	29.35
4	15233.02	23.25	43.19	66.44	83.20	16.76
5	28500.48	75.26	-2.59	72.67	82.30	9.63
6	34272.74	46.96	-2.68	44.28	82.30	38.02
Vertical						
NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]
1	98.39	26.53	15.31	41.84	82.30	40.46
2	149.90	19.81	20.19	40.00	82.30	42.30
3	10143.93	10.72	42.03	52.75	83.20	30.45
4	12215.27	11.14	42.98	54.12	83.20	29.08
5	28500.48	68.97	-2.59	66.38	82.30	15.92
6	29375.52	39.92	-1.83	38.09	82.30	44.21
Remark:						
1. The emission levels of other frequencies were greater than 20dB margin.						
2. Level (dBuV/m) = Reading (dBuV) + Factor (dB/m).						
3. Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).						
4. Margin(dB) = Limit(dBuV/m) - Level (dBuV/m)						



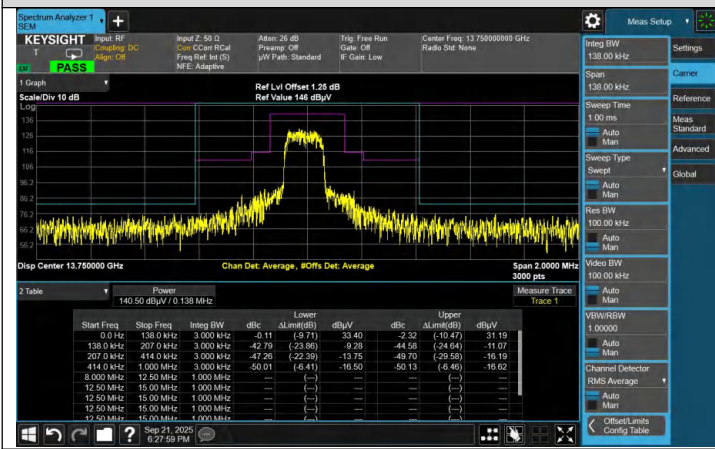
Test Mode		TM1_14500MHz				
Horizontal						
NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]
1	98.39	31.60	15.31	46.91	82.30	35.39
2	145.15	15.83	20.25	36.08	82.30	46.22
3	7052.50	11.33	39.09	50.42	83.20	32.78
4	10175.10	9.86	42.09	51.95	83.20	31.25
5	24801.31	39.69	-3.42	36.27	82.30	46.03
6	29000.50	73.05	-2.78	70.27	82.30	12.03
Vertical						
NO.	Freq. [MHz]	Reading [dBμV]	Factor [dB/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]
1	149.90	22.69	20.19	42.88	82.30	39.42
2	249.92	32.80	19.70	52.50	82.30	29.80
3	11515.38	11.93	42.72	54.65	83.20	28.55
4	15207.52	6.93	43.22	50.15	83.20	33.05
5	29000.50	70.40	-2.78	67.62	82.30	14.68
6	33387.70	41.48	-1.94	39.54	82.30	42.76
Remark:						
1. The emission levels of other frequencies were greater than 20dB margin.						
2. Level (dBuV/m) = Reading (dBuV) + Factor (dB/m).						
3. Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).						
4. Margin(dB) = Limit(dBuV/m) - Level (dBuV/m)						

3.4.5 Test results-In Band Emission

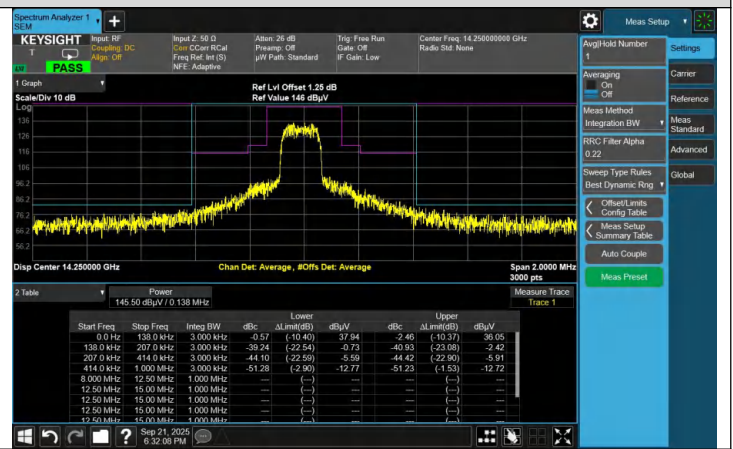




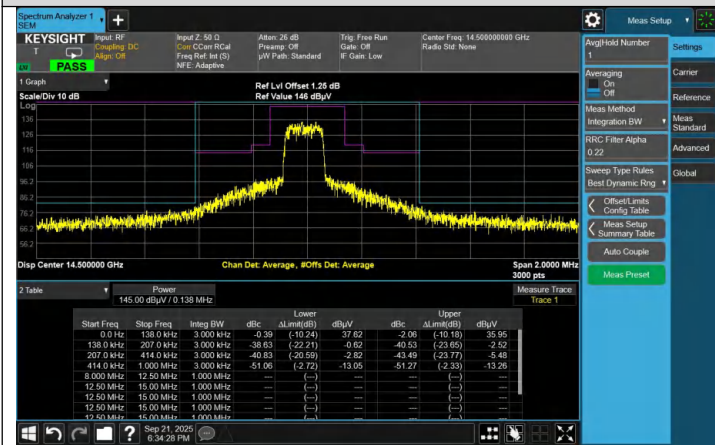
TM3-13750MHz



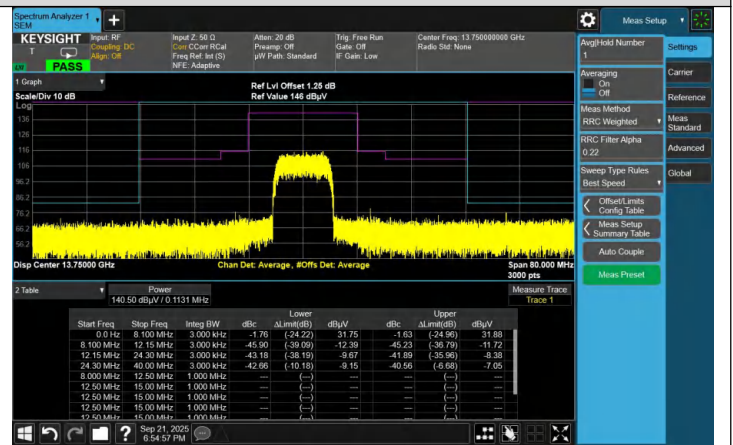
TM3-14250



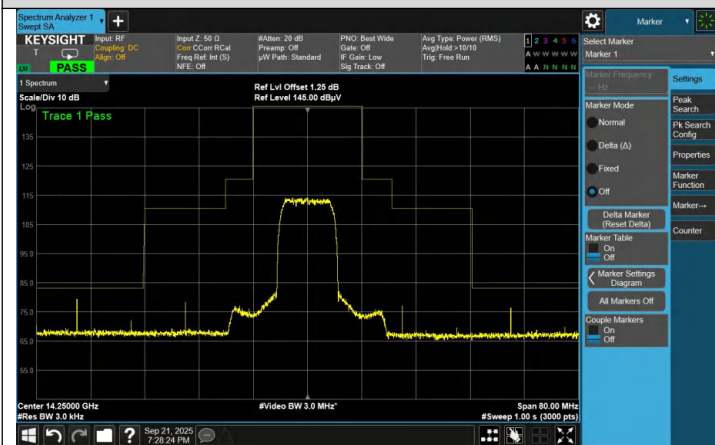
TM3-14500MHz



TM4-13750MHz



TM4-14250MHz



TM4-14500MHz

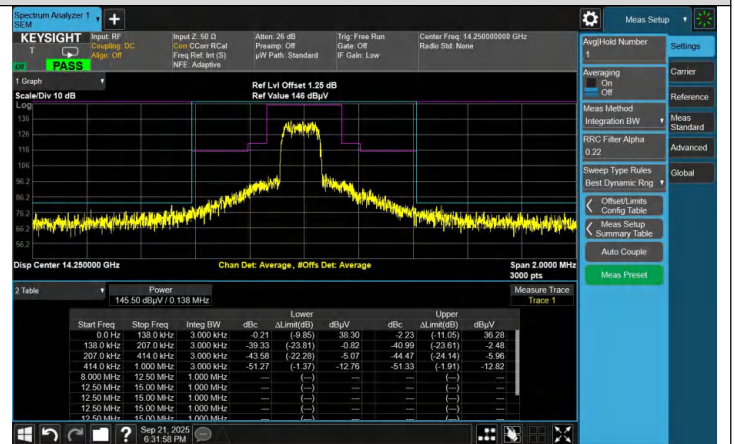




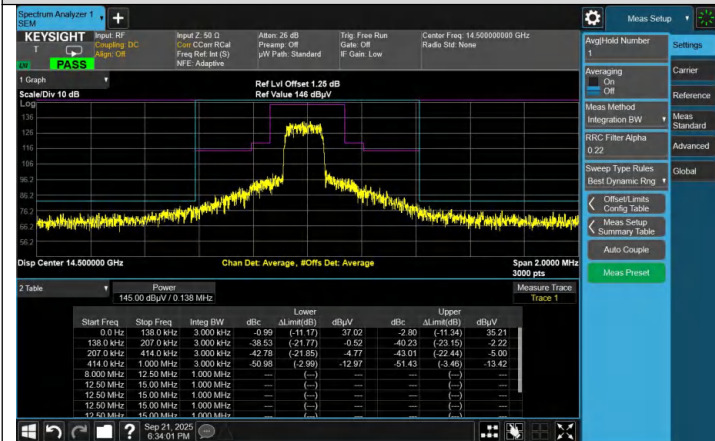
TM5-13750MHz



TM5-14250



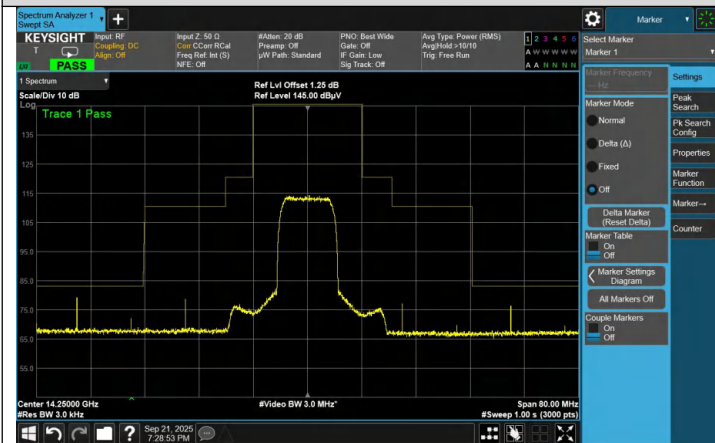
TM5-14500



TM6-13750MHz



TM6-14250MHz



TM6-14500





3.5 FREQUENCY STABILITY

3.5.1 Limit

The carrier frequency of each earth station transmitter authorized in these services shall be maintained within 0.001 (10ppm)percent of the reference frequency

3.5.2 Measurement Procedure

ANSI C63.26-2015 - Section 5.6.3 & 5.6.4 & 5.6.5

For performing the frequency stability test the whole system was placed in the climatic chamber and forced to transmit an unmodulated carrier (CW).

Adjust the temperature and supply voltage follow below:

- At 10°C intervals of temperatures between -30°C and +50°C at the manufacturer's rated supply voltage, and
- At +20°C temperature and $\pm 15\%$ supply voltage variations. If a product is specified to operate over a range of input voltage then the -15% variation is applied to the lowermost voltage and the +15% is applied to the uppermost voltage.

Adjust the detector bandwidth and span settings to achieve a resolution capable of accurate frequency measurements over the applicable frequency stability limits. Mark the highest point and record it. If an unmodulated carrier is not available, the mean frequency of a modulated carrier can be obtained by using a frequency counter with gating time set to an appropriately large multiple of bit periods (gating time depending on the required accuracy).

3.5.3 Test setup

See section 2.6 of this report.

3.5.4 Test results

TM1-14250MHz

FREQUENCY STABILITY						
Temperature (°C)	Voltage (Volt)	Center Frequency (MHz)	Test Frequency (MHz)	Deviation (ppm)	Limit (ppm)	Result
50	Normal Voltage	14250.000000	14250.006158	0.43	10	PASS
40		14250.000000	14250.005961	0.42		
30		14250.000000	14250.006152	0.43		
20		14250.000000	14250.006173	0.43		
10		14250.000000	14250.006341	0.44		
0		14250.000000	14250.005874	0.41		
-10		14250.000000	14250.006046	0.42		
-20		14250.000000	14250.006276	0.44		
-30		14250.000000	14250.006137	0.43		
20	115%	14250.000000	14250.006364	0.45		
20	85%	14250.000000	14250.006005	0.42		



4 PHOTOGRAPHS OF TEST SETUP

Please refer to the attached file (Test Photos).



5 PHOTOGRAPHS OF THE EUT

Please refer to the attached file (Test Photos).

----- End of the Report -----



Important

- (1) The test report is invalid without the official stamp of CVC;
- (2) Any part photocopies of the test report are forbidden without the written permission from CVC;
- (3) The test report is invalid without the signatures of tester, reviewer and approval;
- (4) The test report is invalid if altered;
- (5) Objections to the test report must be submitted to CVC within 15 days;
- (6) Generally, commission test results apply to the samples as received. The sample information is provided by the customer and laboratory is not responsible for its authenticity;
- (7) As for the test result “-” or “N” means “not applicable”, “/” means “not test”, “P” means “pass” and “F” means “fail”

Lab Address: No. 1301-14&16, Guanguang Road, Xinlan Community, Guanlan Subdistrict, Longhua District, Shenzhen, Guangdong, China

Post Code: 518110 Tel: 0755-23763060-8805

Fax: 0755-23763060 E-mail: sz-kf@cvc.org.cn