

TEST REPORT

FCC LTE B48 Test for TM19FNNAHD4 Certification

APPLICANT LG Electronics Inc.

REPORT NO. HCT-RF-2412-FC046

DATE OF ISSUE December 13, 2024

> **Tested by** Jae Ryang Do

Technical Manager Jong Seok Lee



F-TP22-03(Rev.06)

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T E S T R E P O R T	REPORT NO. HCT-RF-2412-FC046 DATE OF ISSUE December 13, 2024
Applicant	LG Electronics Inc. 128, Yeoui-daero, Yeongdeungpo-gu, Seoul, Republic of Korea
Product Name Model Name	Telematics TM19FNNAHD4
Date of Test	August 21, 2024 ~ December 09, 2024
FCC ID	BEJTM19FNNAHD4
Location of Test	■ Permanent Testing Lab □ On Site Testing (Address: 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, Republic of Korea)
FCC Classification:	Citizens Band End User Devices (CBE)
Test Standard Used	FCC Rule Part: §96
Test Results	PASS



REVISION HISTORY

The revision history for this test report is shown in table.

Revision No.	Date of Issue	Description
0	December 13, 2024	Initial Release

Notice

Content

The measurements shown in this report were made in accordance with the procedures specified in CFR47 section § 2.947. I assume full responsibility for the accuracy and completeness of these measurements, and for the qualifications of all persons taking them.

HCT CO., LTD. Certifies that no party to this application has subject to a denial of Federal benefits that includes FCC benefits pursuant to section 5301 of the Anti-Drug Abuse Act of 1998,21 U.S. C.853(a)

The results shown in this test report only apply to the sample(s), as received, provided by the applicant, unless otherwise stated.

The test results have only been applied with the test methods required by the standard(s).

The laboratory is not accredited for the test results marked *. Information provided by the applicant is marked **. Test results provided by external providers are marked ***.

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The test results in this test report are not associated with the ((KS Q) ISO/IEC 17025) accreditation by KOLAS (Korea Laboratory Accreditation Scheme) / A2LA (American Association for Laboratory Accreditation) that are under the ILAC (International Laboratory Accreditation Cooperation) Mutual Recognition Agreement (MRA).



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MEASUREMENT REPORT

1. GENERAL INFORMATION

Applicant Name:	LG Electronics Inc.
Address:	128, Yeoui-daero, Yeongdeungpo-gu, Seoul, Republic of Korea
FCC ID:	BEJTM19FNNAHD4
Application Type:	Certification
FCC Classification:	Citizens Band End User Devices (CBE)
FCC Rule Part(s):	§ 96
EUT Type:	Mobile phone
Model(s):	Telematics
Additional Model(s)	TM19FNNAHD4
	3552.5 – 3697.5 : 5 MHz
T. F	3555.0 – 3695.0 : 10 MHz
Tx Frequency:	3557.5 – 3692.5 : 15 MHz
	3560.0 – 3690.0 : 20 MHz
Date(s) of Tests:	August 21, 2024 ~ December 09, 2024
Serial number:	Radiated : Honda MY26 #03
	Conducted : Honda MY26 #01
External Antenna Serial number:	8B505-3NAF-A000 : C03640005
Antenna Information	Please refer to the Antenna Approval Specification document.



1.1. MAXIMUM OUTPUT POWER

	- -	_		Conducted C	Conducted Output Power	
Mode (MHz)	Tx Frequency (MHz)	Emission Designator	Modulation	Max. Power (W)	Max. Power (dBm)	
		4M48G7D	QPSK	0.210	23.22	
		4M49W7D	16QAM	0.183	22.63	
LTE – Band 48 (5)	3552.5 – 3697.5	4M47W7D	64QAM	0.144	21.57	
		4M50W7D	256QAM	0.072	18.56	
		8M98G7D	QPSK	0.208	23.19	
LTE D = 140(10)		8M93W7D	16QAM	0.193	22.85	
LTE – Band 48 (10)	3555.0 – 3695.0	8M93W7D	64QAM	0.144	21.59	
		8M98W7D	256QAM	0.071	18.49	
		13M4G7D	QPSK	0.209	23.2	
		13M4W7D	16QAM	0.183	22.62	
LTE – Band 48 (15)	3557.5 – 3692.5	13M5W7D	64QAM	0.144	21.57	
		13M5W7D	256QAM	0.071	18.50	
		18M0G7D	QPSK	0.211	23.24	
	2560.0. 2600.0	17M9W7D	16QAM	0.183	22.62	
LTE – Band 48 (20)	3560.0 – 3690.0	17M9W7D	64QAM	0.147	21.68	
		17M9W7D	256QAM	0.070	18.47	



2. INTRODUCTION

2.1. DESCRIPTION OF EUT

The EUT was a Telematics with LTE, Sub 6

2.2. MEASURING INSTRUMENT CALIBRATION

The measuring equipment, which was utilized in performing the tests documented herein, has been calibrated in accordance with the manufacturer's recommendations for utilizing calibration equipment, which is traceable to recognized national standards.

2.3. TEST FACILITY

The Fully-anechoic chamber and conducted measurement facility used to collect the radiated data are located at the **74**, **Seoicheon-ro 578beon-gil**, **Majang-myeon**, **Icheon-si**, **Gyeonggi-do**, **Republic of Korea**



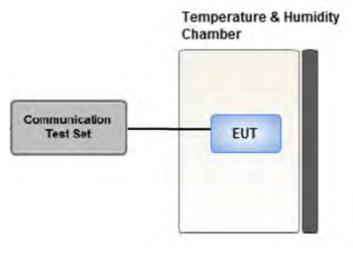
3. DESCRIPTION OF TESTS

3.1 TEST PROCEDURE

Test Description	Test Procedure Used
	- KDB 971168 D01 v03r01 – Section 4.3
Occupied Bandwidth	- ANSI C63.26-2015 – Section 5.4.4
	- KDB 940660 D01 v01
	- KDB 971168 D01 v03r01 – Section 6.0
Channel Edge/ ACLR	- ANSI C63.26-2015 – Section 5.7
	- KDB 940660 D01 v01
Courieus and Harmania Emissians at	- KDB 971168 D01 v03r01 – Section 6.0
Spurious and Harmonic Emissions at Antenna Terminal	- ANSI C63.26-2015 – Section 5.7
Antenna Terminat	- KDB 940660 D01 v01
Conducted Output Power	- N/A (See SAR Report)
	- KDB 971168 D01 v03r01 – Section 5.7
Peak- to- Average Ratio	- ANSI C63.26-2015 – Section 5.2.3.4
	- KDB 940660 D01 v01
	- ANSI C63.26-2015 – Section 5.6
Frequency stability	- KDB 940660 D01 v01
	- ANSI C63.26-2015 – Section 5.2.4.4
Radiated Power	- KDB 971168 D01 v03r01 – Section 5.8
	- KDB 940660 D01 v01
	- ANSI C63.26-2015 – Section 5.5.3
Radiated Spurious and Harmonic Emissions	- KDB 971168 D01 v03r01 – Section 5.8
	- KDB 940660 D01 v01
End User Device Additional Requirement	- KDB 940660 D01 v01
(CBSD Protocol)	- WINNF-TS-0122 V1.0.2



3.2 CONDUCTED OUTPUT POWER



Test setup

Test Overview

When an average power meter is used to perform RF output power measurements, the fundamental

condition that measurements be performed only over durations of active transmissions at maximum output power level applies.

Conducted Output Power was tested in accordance with KDB971168 D01 Power Meas License Digital Systems v03r01, Section 5.2.



3.3 RADIATED POWER

Test Overview

Radiated tests are performed in the Fully-anechoic chamber.

The equipment under test is placed on a non-conductive table 3-meters away from the receive antenna.

Test Settings

1. Radiated power measurements are performed using the signal analyzer's "channel power" measurement capability for signals with continuous operation.

- 2. RBW = 1 5 % of the expected OBW, not to exceed 1 MHz
- 3. VBW \geq 3 x RBW
- 4. Span = 1.5 times the OBW
- 5. No. of sweep points > 2 x span / RBW
- 6. Detector = RMS
- 7. Trigger is set to "free run" for signals with continuous operation with the sweep times set to "auto".
- 8. The integration bandwidth was roughly set equal to the measured OBW of the signal for signals with continuous operation.
- 9. Trace mode = trace averaging (RMS) over 100 sweeps
- 10. The trace was allowed to stabilize

Test Note

- 1. The turntable is rotated through 360 degrees, and the receiving antenna scans in order to determine the level of the maximized emission.
- 2. A half wave dipole is then substituted in place of the EUT. For emissions above 1 GHz, a horn antenna is substituted in place of the EUT. The substitute antenna is driven by a signal generator and the previously recorded signal was duplicated.

The power is calculated by the following formula;

 P_{d} (dBm) = Pg (dBm) - cable loss (dB) + antenna gain (dB)

Where: P_d is the dipole equivalent power and P_g is the generator output power into the substitution antenna.

3. The maximum value is calculated by adding the forward power to the calibrated source plus its appropriate gain value.

These steps are repeated with the receiving antenna in both vertical and horizontal polarization. the difference between the gain of the horn and an isotropic antenna are taken into consideration

- 4. The EUT was tested in three orthogonal planes(X, Y, Z) and in all possible test configurations and positioning.
- 5. All measurements are performed as RMS average measurements while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies.



3.4 RADIATED SPURIOUS EMISSIONS

Test Overview

Radiated tests are performed in the Fully-anechoic chamber.

Radiated Spurious Emission Measurements at 3 meters by Substitution Method.

Test Settings

- 1. RBW = 100 kHz for emissions below 1 GHz and 1 MHz for emissions above 1 GHz
- 2. VBW \geq 3 x RBW
- 3. Span = 1.5 times the OBW
- 4. No. of sweep points > 2 x span / RBW
- 5. Detector = Peak
- 6. Trace mode = Max Hold
- 7. The trace was allowed to stabilize
- 8. Test channel : Low/ Middle/ High
- 9. Frequency range : We are performed all frequency to 10th harmonics from 9 kHz.

Test Note

- Measurements value show only up to 3 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
- 2. The EUT was tested in three orthogonal planes(X, Y, Z) and in all possible test configurations and positioning. The worst case emissions are reported with the EUT positioning, modulations, RB sizes and offsets, and channel bandwidth configurations shown in the test data
- 3. For spurious emissions above 1 GHz, a horn antenna is substituted in place of the EUT. The substitute antenna is driven by a signal generator and the previously recorded signal was duplicated.

The spurious emissions is calculated by the following formula;

Result (dBm) = Pg (dBm) - cable loss (dB) + antenna gain (dBi)

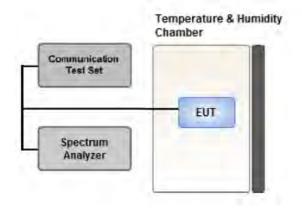
Where: Pg is the generator output power into the substitution antenna.

If the fundamental frequency is below 1 GHz, RF output power has been converted to EIRP.

EIRP (dBm) = ERP (dBm) + 2.15



3.5 PEAK- TO- AVERAGE RATIO



Test setup

① CCDF Procedure for PAPR

Test Settings

- 1. Set resolution/measurement bandwidth \geq signal's occupied bandwidth;
- 2. Set the number of counts to a value that stabilizes the measured CCDF curve;
- 3. Set the measurement interval as follows:
 - .- for continuous transmissions, set to 1 ms,
 - .- or burst transmissions, employ an external trigger that is synchronized with the EUT burst timing sequence, or use the internal burst trigger with a trigger level that allows the burst to stabilize and set the measurement interval to a time that is less than or equal to the burst duration.
- 4. Record the maximum PAPR level associated with a probability of 0.1 %.

② Alternate Procedure for PAPR

Use one of the procedures presented in 5.2(ANSI C63.26-2015) to measure the total peak power and record as as P $_{Pk}$.

Use one of the applicable procedures presented 5.2(ANSI C63.26-2015) to measure the total average power and record as P_{Avg} . Determine the P.A.R. from:

P.A.R (dB) = P Pk (dBm) - P Avg (dBm) (P Avg = Average Power + Duty cycle Factor)



Test Settings(Peak Power)

The measurement instrument must have a RBW that is greater than or equal to the OBW of the

signal to be measured and a VBW \geq 3 × RBW.

- 1. Set the RBW \geq OBW.
- 2. Set VBW \geq 3 × RBW.
- 3. Set span \geq 2 × OBW.
- 4. Sweep time \geq 10 × (number of points in sweep) × (transmission symbol period).
- 5. Detector = peak.
- 6. Trace mode = max hold.
- 7. Allow trace to fully stabilize.
- 8. Use the peak marker function to determine the peak amplitude level.

Test Settings(Average Power)

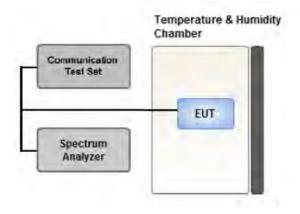
- 1. Set span to $2 \times to 3 \times the OBW$.
- 2. Set RBW \geq OBW.
- 3. Set VBW \geq 3 × RBW.
- 4. Set number of measurement points in sweep \geq 2 × span / RBW.
- 5. Sweep time:
 - Set \geq [10 × (number of points in sweep) × (transmission period)] for single sweep

(automation-compatible) measurement. The transmission period is the (on + off) time.

- 6. Detector = power averaging (rms).
- 7. Set sweep trigger to "free run."
- 8. Trace average at least 100 traces in power averaging (rms) mode if sweep is set to auto-couple. (To accurately determine the average power over the on and off period of the transmitter, it can be necessary to increase the number of traces to be averaged above 100 or, if using a manually configured sweep time, increase the sweep time.)
- 9. Use the peak marker function to determine the maximum amplitude level.
- Add [10 log (1/duty cycle)] to the measured maximum power level to compute the average power during continuous transmission. For example, add [10 log (1/0.25)] = 6 dB if the duty cycle is a constant 25 %.



3.6 OCCUPIED BANDWIDTH.



Test setup

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 power of a given emission. The EUT makes a call to the communication simulator.

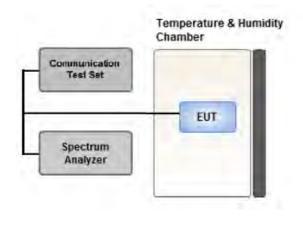
The conducted occupied bandwidth used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.

The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency. Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth

Test Settings

- 1. The signal analyzer's automatic bandwidth measurement capability was used to perform the 99 % occupied bandwidth and the 26 dB bandwidth. The bandwidth measurement was not influenced by any intermediate power nulls in the fundamental emission.
- 2. RBW = 1 5 % of the expected OBW
- 3. VBW \geq 3 x RBW
- 4. Detector = Peak
- 5. Trace mode = max hold
- 6. Sweep = auto couple
- 7. The trace was allowed to stabilize
- 8. If necessary, steps 2 7 were repeated after changing the RBW such that it would be within
 - 1-5~% of the 99 % occupied bandwidth observed in Step 7





3.7 SPURIOUS AND HARMONIC EMISSIONS AT ANTENNA TERMINAL



Test Overview

The level of the carrier and the various conducted spurious and harmonic frequencies is measured by means of a calibrated spectrum analyzer. The spectrum is scanned from the lowest frequency generated in the equipment up to a frequency including its 10th harmonic.

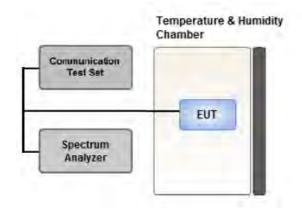
All out of band emissions are measured with a spectrum analyzer connected to the antenna terminal of the EUT while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies. All data rates were investigated to determine the worst case configuration. All modes of operation were investigated and the worst case configuration results are reported in this section.

Test Settings

- 1. RBW = 1 MHz
- 2. VBW \geq 3 MHz
- 3. Detector = RMS
- 4. Trace Mode = trace average
- 5. Sweep time > (number of points in sweep) × (symbol period)
- 6. Number of points in sweep \geq 2 x Span / RBW



3.8 CHANNEL EDGE



Test setup

Test Settings

- 1. Start and stop frequency were set such that the band edge would be placed in the center of the plot
- 2. Span was set large enough so as to capture all out of band emissions near the band edge
- 3. Within 1 MHz of the channel edge the RBW should be 2 % of EBW, then 1 MHz after that.
- 4. VBW > 3 x RBW
- 5. Detector = RMS
- 6. Number of sweep points \geq 2 x Span/RBW
- 7. Trace mode = trace average
- 8. Sweep time = auto couple
- 9. The trace was allowed to stabilize

Test Notes

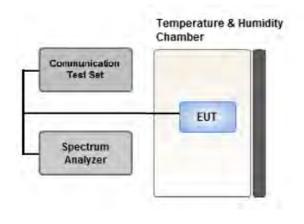
The conducted power of any emission outside the fundamental emission (whether in or outside of the authorized band) shall not exceed -13 dBm/MHz within 0-10 megahertz above the upper SAS-assigned channel edge and within 0-10 megahertz below the lower SAS-assigned channel edge. At all frequencies greater than 10 megahertz above the upper SAS assigned channel edge and less than 10 MHz below the lower SAS assigned channel edge, the conducted power of any emission shall not exceed -25 dBm/MHz.

The conducted power of any emissions below 3530 MHz or above 3720 MHz shall not exceed -40 dBm/Mhz

Where Margin < 1 dB the emission level is either corrected by 10 log(1 MHz/ RB) or the emission is integrated over a 1 MHz bandwidth to determine the final result. When using the integration method the integration window is either centered on the emission or, for emissions at the band edge, centered by an offset of 500 kHz from the block edge so that the integration window is the 1 MHz adjacent to the block edge.



3.9 Adjacent Channel Leakage Ratio



Test setup

Test Settings

- 1. Use ACP measurement function of Spectrum analyzer to measure adjacent channel leakage ratio
- 2. Integ BW = Assigned channel bandwidth
- 5. Detector = RMS
- 6. Number of sweep points \geq 2 x Span/RBW
- 7. Trace mode = trace average
- 8. Sweep time = 1 s
- 9. The trace was allowed to stabilize

Test Notes

the Adjacent Channel Leakage Ratio for End User Devices shall be at least 30 dB.



Communication Test Set EUT Spectrum Analyzer

Test setup

Test Overview

Frequency stability testing is performed in accordance with the guidelines of ANSI C63.26-2015.

3.10 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE

The frequency stability of the transmitter is measured by:

1. Temperature:

The temperature is varied from -30 °C to +50 °C in 10 °C increments using an environmental chamber.

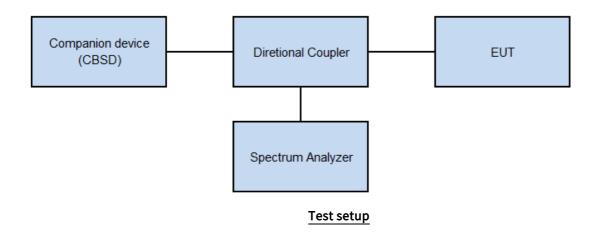
- 2. Primary Supply Voltage:
 - .- Unless otherwise specified, vary primary supply voltage from 85 % to 115 % of the nominal value for other than hand carried battery equipment.
 - .- For hand carried, battery powered equipment, reduce the primary ac or dc supply voltage to the battery operating end point, which shall be specified by the manufacturer.

Test Settings

- 1. The carrier frequency of the transmitter is measured at room temperature (20 °C to provide a reference).
- 2. The equipment is turned on in a "standby" condition for fifteen minutes before applying power to the transmitter. Measurement of the carrier frequency of the transmitter is made within one minute after applying power to the transmitter.
- 3. Frequency measurements are made at 10 °C intervals ranging from -30 °C to +50 °C. A period of at least one half-hour is provided to allow stabilization of the equipment at each temperature level.



3.11 End User Device Additional Requirement (CBSD Protocol)



Test Overview

End user device additional requirements (CBSD Protocol) are tested per the test procedures listed below. During testing, the EUT is connected to a certified CBSD (FCC ID: 2AS48SC-220) as a companion device to show compliance with Part 96.47.

End User Devices may operate only if they can positively receive and decode an authorization signal transmitted by a CBSD, including the frequencies and power limits for their operation.

Test Settings

- a. Setup companion device with 3570 MHz & 3610 MHz.
- b. Enable AP service from companion device.
- c. EUT is connected to a companion device.
- c. Check EUT Tx frequency and power.
- d. Disable AP service from companion device and check EUT stop transmission within 10 s.



3.12 WORST CASE(RADIATED TEST)

- The EUT was tested in three orthogonal planes(X, Y, Z) and in all possible test configurations and positioning.
- All modes of operation were investigated and the worst case configuration results are reported.
- All simultaneous transmission scenarios of operation were investigated, and the test results showed no additional significant emissions relative to the least restrictive limit were observed.
- Therefore, only the worst case(stand-alone) results were reported.
- The worst case is reported with the EUT positioning, modulations, and paging service configurations
- shown in the test data
- Please refer to the table below.

[Worst case]						
Test Description	Modulation	RB size	RB offset	Axis		
	QPSK,	See Section 8.1		Y		
Effective Isotropic Radiated Power	16QAM,					
	64QAM,					
	256QAM					
Radiated Spurious and Harmonic Emissions	64QAM	See Se	ection 8.2	Y		



3.13 WORST CASE(CONDUCTED TEST)

- All modes of operation were investigated and the worst case configuration results are reported.

	[Wo	rst case]			
Test Description	Modulation	Bandwidth (MHz)	Frequency	RB size	RB offset
Occupied Bandwidth	QPSK, 16QAM, 64QAM, 256QAM	5, 10, 15, 20	Mid	Full RB	0
Peak-To-Average Radio	QPSK, 16QAM, 64QAM, 256QAM	5, 10, 15, 20	Mid	Full RB	0
	QPSK	5	Low High	1	0 24
		10 15 20	Low	1	0 49
Channel Edge			Low	1	0
-			Low High	1	0
		5, 10, 15, 20	Low, Mid, High	Full RB	0
Spurious and Harmonic Emissions at Antenna Terminal	QPSK	5, 10, 15, 20	Low, Mid, High	1	0



4. LIST OF TEST EQUIPMENT

Equipment	Model	Manufacturer	Serial No.	Due to Calibration	Calibration Interval
RF Switching System	Switch box(1.2 G HPF+LNA)	HCT CO., LTD.,	F1L1	11/11/2025	Annual
RF Switching System	Switch box(3.3 G HPF+LNA)	HCT CO., LTD.,	F1L2	11/11/2025	Annual
RF Switching System	Switch box(LNA)	HCT CO., LTD.,	F1L4	11/11/2025	Annual
RF Switching System	Switch box(6 G HPF+LNA)	HCT CO., LTD.,	F1L7	11/11/2025	Annual
Power Splitter(DC ~ 26.5 GHz)	11667B	Hewlett Packard	5001	04/17/2025	Annual
DC Power Supply	E3632A	Agilent	MY40010147	08/06/2025	Annual
Dipole Antenna	UHAP	Schwarzbeck	01274	03/10/2026	Biennial
Dipole Antenna	UHAP	Schwarzbeck	01288	08/07/2026	Biennial
Chamber	SU-642	ESPEC	93008124	02/19/2025	Annual
Horn Antenna(1 ~ 18 GHz)	BBHA 9120D	Schwarzbeck	147	08/17/2025	Biennial
Horn Antenna(1 ~ 18 GHz)	BBHA 9120D	Schwarzbeck	9120D-1298	09/11/2025	Biennial
Horn Antenna(15 ~ 40 GHz)	BBHA 9170	Schwarzbeck	BBHA9170342	09/20/2026	Biennial
Horn Antenna(15 ~ 40 GHz)	BBHA 9170	Schwarzbeck	BBHA9170124	03/28/2025	Biennial
Signal Analyzer(10 Hz ~ 26.5 GHz)	N9020A	Agilent	MY52090906	04/19/2025	Annual
ATTENUATOR(20 dB)	8493C	Hewlett Packard	17280	04/17/2025	Annual
Spectrum Analyzer(10 Hz ~ 40 GHz)	FSV40	REOHDE & SCHWARZ	100931	08/06/2025	Annual
Base Station	8960 (E5515C)	Agilent	MY48360800	08/05/2025	Annual
Loop Antenna(9 kHz ~ 30 MHz)	FMZB1513	Schwarzbeck	1513-333	03/07/2026	Biennial
Trilog Broadband Antenna	VULB9168	Schwarzbeck	895	08/28/2026	Biennial
Trilog Broadband Antenna	VULB9168	Schwarzbeck	1135	08/19/2026	Biennial
Wideband Radio Communication Tester	MT8821C	Anritsu Corp.	6262094331	11/13/2025	Annual
Wideband Radio Communication Tester	MT8820C	Anritsu Corp.	6201026545	12/11/2024	Annual
SIGNAL GENERATOR (100 kHz ~ 40 GHz)	SMB100A	REOHDE & SCHWARZ	177633	07/26/2025	Annual
Signal Analyzer(5 Hz ~ 40.0 GHz)	N9030B	KEYSIGHT	MY55480167	05/17/2025	Annual
FCC LTE Mobile Conducted RF Automation Test Software	-	HCT CO., LTD.,	-	-	-

Note:

1. Equipment listed above that has a calibration due date during the testing period, the testing is completed before equipment expiration date.

2. Especially, all antenna for measurement is calibrated in accordance with the requirements of C63.5 (Version : 2017).



5. MEASUREMENT UNCERTAINTY

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI C63.4:2014.

All measurement uncertainty values are shown with a coverage factor of k = 2 to indicate a 95 % level of confidence. The measurement data shown herein meets or exceeds the U_{CISPR} measurement uncertainty values specified in CISPR 16-4-2 and, thus, can be compared directly to specified limits to determine compliance.

Parameter	Expanded Uncertainty (±dB)
Conducted Disturbance (150 kHz ~ 30 MHz)	1.98 (Confidence level about 95 %, <i>k</i> =2)
Radiated Disturbance (9 kHz ~ 30 MHz)	4.36 (Confidence level about 95 %, <i>k</i> =2)
Radiated Disturbance (30 MHz ~ 1 GHz)	5.70 (Confidence level about 95 %, <i>k</i> =2)
Radiated Disturbance (1 GHz ~ 18 GHz)	5.52 (Confidence level about 95 %, <i>k</i> =2)
Radiated Disturbance (18 GHz ~ 40 GHz)	5.66 (Confidence level about 95 %, <i>k</i> =2)
Radiated Disturbance (Above 40 GHz)	5.58 (Confidence level about 95 %, <i>k</i> =2)



6. SUMMARY OF TEST RESULTS

6.1 Test Condition: Conducted Test

Test Description	FCC Part Section(s)	Test Limit	Test Result
Occupied Bandwidth	§ 2.1049	N/A	PASS
Band Edge / Spurious and Harmonic Emissions at Antenna Terminal.	§ 2.1051, § 96.41(e)	 -13 dBm/Mhz at frequencies within 0-10 MHz of channel edge -25 dBm/MHz at frequencies greater than 10 MHz above and below channel edge -40 dBm/MHz at frequencies below 3530 MHz and above 3720 MHz 	PASS
Adjacent Channel Leakage Ratio	§ 96.41(e)	At least 30 dB.	PASS
Conducted Output Power	§ 2.1046	N/A	PASS
Frequency stability / variation of ambient temperature	§ 2.1055,	Emission must remain in band	PASS
Peak- to- Average Ratio	§ 96.41	< 13 dB	PASS
End User Device Additional Requirements (CBSD Protocol)	§ 96.47	End User Devices may operate only if they can positively receive and decode an authorization signal transmitted by a CBSD, including the frequencies and power limits for their operation. An End User Device must discontinue operations, change frequencies, or change its operational power level within 10 seconds of receiving instructions from its associated CBSD.	PASS

Note:

1. The EUT is an End User Device

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6.2 Test Condition: Radiated Test

Test Description	FCC Part Section(s)	Test Limit	Test Result
Equivalent Isotropic Radiated Power	§ 96.41(b)	23 dBm/10 MHz	PASS
Radiated Spurious and	§ 2.1053,	40 dBm /MHz	DASS
Harmonic Emissions	§ 96.41(e)	-40 dBm/MHz	PASS



7. SAMPLE CALCULATION

7.1 ERP Sample Calculation

Ch.	/ Freq.	Measured	Substitute	Ant. Gain	<u> </u>	Del	ERP		
channel	Freq.(MHz)	Level (dBm)	Level (dBm)	(dBd)	C.L	Pol.	w	dBm	
128	824.20	-21.37	38.40	-10.61	0.95	Н	0.483	26.84	

ERP = Substitute LEVEL(dBm) + Ant. Gain - CL(Cable Loss)

1) The EUT mounted on a non-conductive turntable is 2.5 meter above test site ground level.

- 2) During the test, the turn table is rotated until the maximum signal is found.
- 3) Record the field strength meter's level.
- 4) Replace the EUT with dipole/Horn antenna that is connected to a calibrated signal generator.
- 5) Increase the signal generator output till the field strength meter's level is equal to the item (3).
- 6) The signal generator output level with Ant. Gain and cable loss are the rating of effective radiated power.

7.2 EIRP Sample Calculation

Ch.	/ Freq.	Measured	Substitute	Ant. Gain	C I	Pol.	EIRP		
channel	Freq.(MHz)	Level (dBm)	Level (dBm)	(dBi)	C.L	P01.	W	dBm	
20175	1,732.50	-15.75	18.45	9.90	1.76	Н	0.456	26.59	

EIRP = Substitute LEVEL(dBm) + Ant. Gain – CL(Cable Loss)

- 1) The EUT mounted on a non-conductive turntable is 2.5 meter above test site ground level.
- 2) During the test, the turn table is rotated until the maximum signal is found.
- 3) Record the field strength meter's level.
- 4) Replace the EUT with dipole/Horn antenna that is connected to a calibrated signal generator.
- 5) Increase the signal generator output till the field strength meter's level is equal to the item (3).
- 6) The signal generator output level with Ant. Gain and cable loss are the rating of equivalent isotropic radiated power.





7.3. Emission Designator

GSM Emission Designator

Emission Designator = 249KGXW GSM BW = 249 kHz G = Phase Modulation X = Cases not otherwise covered W = Combination (Audio/Data)

EDGE Emission Designator

Emission Designator = 249KG7W GSM BW = 249 kHz G = Phase Modulation 7 = Quantized/Digital Info W = Combination (Audio/Data)

WCDMA Emission Designator

Emission Designator = 4M17F9W WCDMA BW = 4.17 MHz F = Frequency Modulation 9 = Composite Digital Info W = Combination (Audio/Data)

QPSK Modulation

Emission Designator = 4M48G7D LTE BW = 4.48 MHz G = Phase Modulation 7 = Quantized/Digital Info D = Data transmission; telemetry; telecommand

<u>QAM Modulation</u> Emission Designator = 4M48W7D LTE BW = 4.48 MHz W = Amplitude/Angle Modulated 7 = Quantized/Digital Info D = Data transmission; telemetry; telecommand



8. TEST DATA

8.1 Conducted Output Power

B 1 1 1 1			RB	Max.	dBm)	Target	Target	
Bandwidth	Modulation	RB SIZE	Offset	55265	55990	56715	MPR	Power
				3552.5 MHz	3625 MHz	3697.5 MHz	- (dB)	
		1	0	23.20	23.16	23.05	0	23
		1	12	23.11	23.06	22.93	0	23
		1	24	23.22	23.13	23.03	0	23
	QPSK	12	0	22.23	22.27	22.14	1	22
		12	6	22.25	22.23	22.10	1	22
		12	11	22.27	22.23	22.10	1	22
		25	0	22.23	22.19	22.10	1	22
		1	0	22.53	22.50	22.39	1	22
		1	12	22.50	22.51	22.30	1	22
		1	24	22.63	22.44	22.32	1	22
	16QAM	12	0	21.34	21.35	21.17	2	21
		12	6	21.30	21.26	21.23	2	21
		12	11	21.32	21.26	21.22	2	21
		25	0	21.34	21.26	21.19	2	21
5 MHz		1	0	21.22	21.54	21.50	2	21
		1	12	21.31	21.55	21.36	2	21
		1	24	21.45	21.57	21.41	2	21
	64QAM	12	0	20.30	20.37	20.19	3	20
		12	6	20.24	20.24	20.23	3	20
		12	11	20.28	20.26	20.19	3	20
		25	0	20.27	20.24	20.13	3	20
		1	0	18.56	18.49	18.32	5	18
		1	12	18.32	18.41	18.20	5	18
		1	24	18.56	18.42	18.38	5	18
	256QAM	12	0	18.32	18.40	18.22	5	18
		12	6	18.33	18.25	18.18	5	18
		12	11	18.34	18.28	18.19	5	18
		25	0	18.34	18.24	18.19	5	18

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5 I · W			RB	Max.	dBm)	Target	Target	
Bandwidth	Modulation	RB SIZE	Offset	55290	55990	56690	- MPR	Power
				3555 MHz	3625 MHz	3695 MHz	(dB)	
		1	0	23.15	23.19	23.02	0	23
		1	24	23.02	23.08	22.91	0	23
		1	49	23.11	23.16	23.14	0	23
	QPSK	25	0	22.17	22.26	22.11	1	22
		25	12	22.21	22.19	22.15	1	22
		25	24	22.16	22.20	22.06	1	22
		50	0	22.18	22.19	22.15	1	22
		1	0	22.56	22.56	22.42	1	22
	16QAM	1	24	22.35	22.44	22.30	1	22
		1	49	22.85	22.57	22.39	1	22
		25	0	21.26	21.29	21.15	2	21
		25	12	21.24	21.23	21.15	2	21
		25	24	21.25	21.22	21.11	2	21
		50	0	21.19	21.19	21.16	2	21
10 MHz		1	0	21.59	21.59	21.37	2	21
		1	24	21.51	21.52	21.23	2	21
		1	49	21.37	21.59	21.32	2	21
	64QAM	25	0	20.29	20.31	20.13	3	20
		25	12	20.30	20.28	20.22	3	20
		25	24	20.20	20.20	20.15	3	20
		50	0	20.24	20.23	20.16	3	20
		1	0	18.49	18.49	18.33	5	18
		1	24	18.47	18.27	18.30	5	18
		1	49	18.34	18.49	18.32	5	18
	256QAM	25	0	18.34	18.29	18.16	5	18
		25	12	18.30	18.28	18.17	5	18
		25	24	18.23	18.24	18.12	5	18
		50	0	18.26	18.25	18.16	5	18



D I. MIL			RB	Max./	Average Power	(dBm)	Target	Target
Bandwidth	Modulation	RB SIZE	Offset	55315	55990	56665	- MPR	Power
				3557.5 MHz	3625 MHz	3692.5 MHz	– (dB)	
		1	0	23.16	23.13	22.92	0	23
		1	36	23.13	23.06	22.92	0	23
		1	74	23.19	23.20	23.00	0	23
	QPSK	36	0	22.31	22.32	22.15	1	22
		36	18	22.26	22.22	22.16	1	22
		36	39	22.27	22.23	22.10	1	22
		75	0	22.26	22.22	22.18	1	22
		1	0	22.53	22.54	22.22	1	22
	16QAM	1	36	22.35	22.46	22.28	1	22
		1	74	22.62	22.57	22.34	1	22
		36	0	21.30	21.34	21.19	2	21
		36	18	21.30	21.26	21.16	2	21
		36	39	21.29	21.22	21.14	2	21
15.444		75	0	21.27	21.25	21.17	2	21
15 MHz		1	0	21.57	21.52	21.42	2	21
		1	36	21.38	21.53	21.39	2	21
		1	74	21.55	21.44	21.48	2	21
	64QAM	36	0	20.33	20.31	20.16	3	20
		36	18	20.32	20.25	20.19	3	20
		36	39	20.28	20.26	20.12	3	20
		75	0	20.30	20.23	20.20	3	20
		1	0	18.42	18.50	18.35	5	18
		1	36	18.37	18.32	18.19	5	18
		1	74	18.45	18.44	18.30	5	18
	256QAM	36	0	18.34	18.36	18.19	5	18
		36	18	18.30	18.27	18.20	5	18
		36	39	18.33	18.28	18.15	5	18
		75	0	18.33	18.25	18.22	5	18



B			RB	Max.	Average Power (dBm)	Target	Target
Bandwidth	Modulation	RB SIZE	Offset	55340	55990	56640	- MPR	Power
				3560 MHz	3625 MHz	3690 MHz	– (dB)	
		1	0	23.22	23.24	23.11	0	23
		1	49	23.14	23.13	22.98	0	23
		1	99	23.07	23.15	23.01	0	23
	QPSK	50	0	22.30	22.31	22.15	1	22
		50	25	22.24	22.24	22.14	1	22
		50	49	22.17	22.19	22.20	1	22
		100	0	22.26	22.24	22.15	1	22
		1	0	22.62	22.53	22.28	1	22
	16QAM	1	49	22.34	22.44	22.28	1	22
		1	99	22.45	22.46	22.38	1	22
		50	0	21.30	21.29	21.17	2	21
		50	25	21.32	21.26	21.17	2	21
		50	49	21.22	21.24	21.11	2	21
20 MU		100	0	21.27	21.21	21.21	2	21
20 MHz		1	0	21.68	21.67	21.50	2	21
		1	49	21.49	21.47	21.32	2	21
		1	99	21.46	21.56	21.44	2	21
	64QAM	50	0	20.34	20.36	20.18	3	20
		50	25	20.32	20.27	20.18	3	20
		50	49	20.21	20.31	20.10	3	20
		100	0	20.33	20.26	20.19	3	20
		1	0	18.46	18.38	18.47	5	18
		1	49	18.37	18.38	18.26	5	18
		1	99	18.27	18.32	18.28	5	18
	256QAM	50	0	18.23	18.19	18.20	5	18
		50	25	18.31	18.28	18.19	5	18
		50	49	18.18	18.28	18.12	5	18
		100	0	18.28	18.25	18.17	5	18



8.2 EQUIVALENT ISOTROPIC RADIATED POWER

Freq	D a is divided	Man Jul 441 - 14	Measured	Substitute	Ant.	<u> </u>	Del	Limit	EIRP		RB	
(MHz)	Bandwidth	Modulation	Level (dBm)	Level (dBm)	Gain(dBi)	C.L	Pol	w	w	dBm	Size	Offset
		QPSK	-27.32	11.79	12.39	3.09	V		0.129	21.09		
2552 5		16-QAM	-27.08	12.03	12.39	3.09	V		0.136	21.33	1	0
3552.5		64-QAM	-27.10	12.01	12.39	3.09	V		0.135	21.31	1	0
	_	256-QAM	-27.24	11.87	12.39	3.09	V		0.131	21.17		
		QPSK	-28.48	10.88	12.25	3.13	V		0.100	20.00		
2625.0	LTE B48/	16-QAM	-28.21	11.15	12.25	3.13	V	.0.2	0.106	20.27	- 1	0
3625.0	5 MHz	64-QAM	-28.20	11.16	12.25	3.13	V	< 0.2	0.107	20.28		
		256-QAM	-28.28	11.08	12.25	3.13	V		0.105	20.20		
		QPSK	-29.73	9.82	12.30	3.07	V		0.080	19.05		
2007 5	7.5	16-QAM	-29.52	2 10.03 12.30 3.07 V		0.084	19.26		_			
3697.5		64-QAM	-29.46	10.09	12.30	3.07	V	V 0.086	19.32	1	0	
		256-QAM	-29.54	10.01	12.30	3.07	V		0.084	19.24		

Freq	Davaduut dah		Measured	Substitute	Ant.		Del	Limit	EI	RP		RB
(MHz)	Bandwidth	Modulation	Level (dBm)	Level (dBm)	Gain(dBi)	C.L	Pol	W	w	dBm	Size	Offset
		QPSK	-27.35	11.76	12.39	3.09	V		0.128	21.06		
		16-QAM	-27.12	11.99	12.39	3.09	V		0.135	21.29	1	0
3555.0	.0	64-QAM	-27.10	12.01	12.39	3.09	V		0.135	21.31	1	0
		256-QAM	-27.26	11.85	12.39	3.09	V		0.130	21.15		
	-	QPSK	-28.42	10.94	12.25	3.13	V		0.101	20.06	- 1	
2625.0	LTE B48/	16-QAM	-28.17	11.19	12.25	3.13	V	/ < 0.2	0.107	20.31		0
3625.0	10 MHz	64-QAM	-28.16	11.20	12.25	3.13	V		0.108	20.32		0
		256-QAM	-28.26	11.10	12.25	3.13	V		0.105	20.22		
		QPSK	-29.70	9.78	12.29	3.08	V		0.079	18.99		
2005.0	2605.0	16-QAM	-29.53	9.95	12.29	3.08	V		0.082	19.16	1	0
3695.0		64-QAM	-29.50	9.98	12.29	3.08	V		0.083	19.19	1	0
		256-QAM	-29.58	9.90	12.29	3.08	V		0.081	19.11		



Freq	Dowelout date	Madulatian	Measured	Substitute	Ant.	<u> </u>	Del	Limit	EI	RP		RB
(MHz)	Bandwidth	Modulation	Level (dBm)	Level (dBm)	Gain(dBi)	C.L	Pol	W	W	dBm	Size	Offset
		QPSK	-27.40	11.67	12.38	3.09	V		0.125	20.96		
		16-QAM	-27.16	11.91	12.38	3.09	V		0.132	21.20	1	0
3557.5		64-QAM	-27.13	11.94	12.38	3.09	V		0.133	21.23	1	0
		256-QAM	-27.26	11.81	12.38	3.09	V		0.129	21.10		
		QPSK	-27.84	11.52	12.25	3.13	V		0.116	20.64		
2625.0	LTE B48/	16-QAM	-27.62	11.74	12.25	3.13	V		0.122	20.86	1	0
3625.0	15 MHz	64-QAM	-27.60	11.76	12.25	3.13	V	< 0.2	0.122	20.88	-	0
		256-QAM	-27.66	11.70	12.25	3.13	V		0.121	20.82		
		QPSK	-29.65	9.83	12.29	3.08	V		0.080	19.04		
2602 5		16-QAM	-29.54	9.94	12.29	3.08	V		0.082	19.15		0
3692.5		64-QAM	-29.47	10.01	12.29	3.08	V		0.084	19.22	1	0
		256-QAM	-29.51	9.97	12.29	3.08	V	V 0.	0.083	19.18		

Freq	Dau duut dah		Measured	Substitute	Ant.	<u></u>	D-I	Limit	EI	RP		RB
(MHz)	Bandwidth	Modulation	Level (dBm)	Level (dBm)	Gain(dBi)	C.L	Pol	W	w	dBm	Size	Offset
		QPSK	-26.85	12.22	12.38	3.09	V		0.142	21.51		
2560.0		16-QAM	-26.77	12.30	12.38	3.09	V		0.144	21.59	1	0
3560.0		64-QAM	-26.74	12.33	12.38	3.09	V		0.145	21.62	1	0
	_	256-QAM	-26.79	12.28	12.38	3.09	V		0.144	21.57		
		QPSK	-27.64	11.72	12.25	3.13	V		0.121	20.84		
2625.0	LTE B48/	16-QAM	-27.48	11.88	12.25	3.13	V		0.126	21.00		•
3625.0	20 MHz	64-QAM	-27.43	11.93	12.25	3.13	V	< 0.2	0.127	21.05	-	0
		256-QAM	-27.53	11.83	12.25	3.13	V		0.124	20.95		
	-	QPSK	-29.19	10.21	12.28	3.08	V		0.087	19.41		
	690.0	16-QAM	-29.08	10.32	12.28	3.08	V		0.090	19.52		
3690.0		64-QAM	-28.99	10.41	12.28	3.08	V	1	0.091	19.61	- 1 L	0
		256-QAM	-29.05	10.35	12.28	3.08	V	-	0.090	19.55		

The report shall not be (partly) reproduced except in full without approval of the laboratory.



8.3 RADIATED SPURIOUS EMISSIONS

MODE:	LTE B48
MODULATION SIGNAL:	5 MHz QPSK
DISTANCE:	1 meters

Ch		Measured	Ant.	Substitute	<u> </u>	Pol	Result	Limit		RB
Ch	Freq (MHz)	Level (dBm)	Gain (dBd)	Level (dBm)	C.L	POL	(dBm)	(dBm)	Size	Offset
	7 105.00	-52.70	11.07	-55.26	4.48	V	-48.67	-40.00		
55265 (3552.5)	10 657.50	-56.14	10.63	-49.67	5.67	V	-44.71	-40.00	1	0
(3332.3)	14 210.00	-60.68	11.62	-48.49	6.66	V	-43.53	-40.00		
	7 250.00	-52.61	10.99	-54.02	4.53	V	-47.56	-40.00		
55990 (3625.0)	10 875.00	-57.19	10.43	-50.03	5.82	V	-45.42	-40.00	1	0
(3023.0)	14 500.00	-61.05	11.52	-48.53	6.69	V	-43.70	-40.00		
	7 395.00	-53.46	10.91	-55.29	4.59	V	-48.97	-40.00		
56715 (3697.5)	11 092.50	-56.75	10.91	-50.44	5.88	V	-45.41	-40.00	1	0
(3031.3)	14 790.00	-60.89	11.64	-48.21	6.73	V	-43.30	-40.00		



MODE:	LTE B48
MODULATION SIGNAL:	<u>10 MHz QPSK</u>
DISTANCE:	1 meters

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBd)	Substitute Level (dBm)	C.L	Pol	Result (dBm)	Limit (dBm)	RB	
									Size	Offset
55290 (3555.0)	7 110.00	-52.89	11.07	-55.03	4.48	V	-48.44	-40.00		
	10 665.00	-56.80	10.63	-50.34	5.68	V	-45.39	-40.00	1	0
	14 220.00	-61.23	11.62	-48.21	6.63	V	-43.22	-40.00		
55990 (3625.0)	7 250.00	-52.57	10.99	-53.98	4.53	V	-47.52	-40.00		
	10 875.00	-57.67	10.43	-50.51	5.82	V	-45.90	-40.00	1	0
	14 500.00	-60.56	11.52	-48.04	6.69	V	-43.21	-40.00		
56690 (3695.0)	7 390.00	-52.86	10.94	-55.00	4.60	V	-48.66	-40.00		
	11 085.00	-57.43	10.80	-50.95	5.85	V	-46.00	-40.00	1	0
	14 780.00	-60.89	11.64	-48.19	6.73	V	-43.28	-40.00	-	



MODE:	LTE B48
MODULATION SIGNAL:	<u>15 MHz QPSK</u>
DISTANCE:	1 meters

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBd)	Substitute Level (dBm)	C.L	Pol	Result (dBm)	Limit (dBm)	RB	
									Size	Size
55315 (3557.5)	7 115.00	-51.73	11.07	-53.43	4.47	V	-46.83	-40.00		
	10 672.50	-57.55	10.63	-51.27	5.70	V	-46.34	-40.00	1	0
	14 230.00	-61.54	11.62	-48.11	6.58	V	-43.07	-40.00		
55990 (3625.0)	7 250.00	-52.31	10.99	-53.72	4.53	V	-47.26	-40.00		
	10 875.00	-57.66	10.43	-50.50	5.82	V	-45.89	-40.00	1	0
	14 500.00	-60.55	11.52	-48.03	6.69	V	-43.20	-40.00		
56665 (3692.5)	7 385.00	-52.31	10.94	-54.57	4.61	V	-48.24	-40.00		
	11 077.50	-56.25	10.80	-49.71	5.84	V	-44.75	-40.00	1	0
	14 770.00	-60.92	11.64	-48.14	6.72	V	-43.22	-40.00		



MODE:	LTE B48
MODULATION SIGNAL:	20 MHz QPSK
DISTANCE:	1 meters

Ch	Freq (MHz)	Measured	Ant. Gain	Substitute Level (dBm)	C 1	Pol	Result	Limit	RB	
	ггец (мпz)	Level (dBm)	(dBd)		C.L	POL	(dBm)	(dBm)	Size	Size
	7 120.00	-51.00	11.07	-52.26	4.46	V	-45.65	-40.00		
55340 (3560.0)	10 680.00	-58.40	10.63	-52.29	5.71	V	-47.37	-40.00	1	0
(3300.0)	14 240.00	-61.66	11.62	-48.25	6.54	V	-43.17	-40.00		
	7 250.00	-52.12	10.99	-53.53	4.53	V	-47.07	-40.00		
55990 (3625.0)	10 875.00	-58.15	10.43	-50.99	5.82	V	-46.38	-40.00	1	0
(3023.0)	14 500.00	-60.96	11.52	-48.44	6.69	V	-43.61	-40.00		
	7 380.00	-53.55	10.94	-55.94	4.61	V	-49.61	-40.00		
56640 (3690.0)	11 070.00	-57.37	10.80	-50.91	5.79	V	-45.90	-40.00	1	0
	14 760.00	-61.05	11.64	-48.14	6.71	V	-43.21	-40.00		





8.4 PEAK-TO-AVERAGE RATIO

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (dB)
		QPSK		5.50		
	5 MHz		16-QAM	25		6.33
	Э МП2		64-QAM	25		6.99
			256-QAM			7.01
			QPSK	- 50		5.52
	10 MHz	0 MHz 3625.0	16-QAM		0	6.13
			64-QAM			7.02
48			256-QAM			7.19
40		3025.0	QPSK			5.34
	15 MHz		16-QAM			6.07
			64-QAM	75		6.59
			256-QAM			7.80
			QPSK			5.34
	20 MHz		16-QAM	100		6.06
			64-QAM	100		6.58
			256-QAM			6.68

Note:

1. Plots of the EUT's Peak- to- Average Ratio are shown Page 77 \sim 92.





8.5 OCCUPIED BANDWIDTH

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (MHz)	
				QPSK			4.4745
	5 MHz		16-QAM	- 25		4.4904	
	5 MHZ		64-QAM			4.4700	
			256-QAM			4.5042	
		3625.0	QPSK	- 50		8.9803	
	10 MHz		16-QAM		0	8.9327	
			64-QAM			8.9261	
40			256-QAM			8.9763	
48			QPSK			13.428	
	15 1411		16-QAM	76		13.422	
	15 MHz		64-QAM	- 75		13.505	
			256-QAM			13.486	
			QPSK			17.958	
	20 MHz		16-QAM	100		17.894	
			64-QAM	100		17.896	
			256-QAM			17.888	

Note:

1. Plots of the EUT's Occupied Bandwidth are shown Page 61 ~ 76.



8.6 CONDUCTED SPURIOUS EMISSIONS

Band	Band Width (MHz)	Frequency (MHz)	Frequency of Maximum Harmonic (GHz)	Factor (dB)	Measurement Maximum Data (dBm)	Result (dBm)	Limit (dBm)
		3552.5	36.1620	34.189	-84.634	-50.445	
	5	3625.0	36.1785	34.189	-84.881	-50.692	
	36	3697.5	36.2095	34.189	-84.307	-50.118	
		3555.0	36.2110	34.189	-84.571	-50.382	
	10	3625.0	36.1780	34.189	-85.104	-50.915	
40		3695.0	36.1695	34.189	-84.585	-50.396	40.00
48		3557.5	36.1655	34.189	-85.219	-51.030	40.00
	15	3625.0	36.1450	34.189	-84.575	-50.386	
		3692.5	36.1660	34.189	-84.854	-50.665	
		3560.0	36.1855	34.189	-84.571	-50.382	
	20	3625.0	36.1700	34.189	-84.829	-50.640	
		3690.0	36.1850	34.189	-84.743	-50.554	

Note:

1. Plots of the EUT's Conducted Spurious Emissions are shown Page 149 \sim 172.

2. Conducted Spurious Emissions was Tested QPSK Modulation, Resource Block Size 1 and Resource Block Offset 0

3. Result (dBm) = Measurement Maximum Data (dBm) + Factor (dB) + Duty Cycle factor(dB) 3.979

4. Factor (dB) = Cable Loss + Attenuator + Power Splitter + Duty Cycle factor

•	
Frequency Range (GHz)	Factor [dB]
0.03 - 1	31.479
1 - 5	32.091
5 - 10	32.613
10 - 15	33.224
15 - 20	33.490
Above 20(26.5)	34.189



8.7 CHANNEL EDGE

			Outside of the authorized band (dBm)								
	RB			Lower Side(MHz)				Upper Side(MHz)			
BW (Size/ (MHz) Offset)	Freq. (MHz)	Below 3530 MHz	-[B]MHz ~ 3530 MHz	-1 MHz ~ -[B]MHz	0 MHz ~ -1 MHz	0 MHz ~ +1 MHz	1 MHz ~ +[B]MHz	+[B]MHz ~ 3720 MHz	Above 3720 MHz		
		3552.5	-46.44	-41.27	-32.09	-31.35	-30.24	-32.14	-41.22	-	
5	25/0	3625.0	-	-41.18	-33.95	-30.92	-30.91	-31.46	-40.60	-	
		3697.5	-	-40.19	-29.72	-31.09	-30.50	-30.11	-39.06	-44.23	
		3555.0	-43.52	-40.33	-32.78	-34.51	-34.82	-35.18	-40.26	-	
10	50/0	3625.0	-	-40.30	-33.85	-34.52	-34.32	-32.77	-39.39	-	
		3695.0	-	-39.36	-29.78	-33.73	-32.33	-30.42	-39.05	-41.03	
		3557.5	-44.98	-38.34	-31.54	-35.04	-35.72	-34.07	-43.42	-	
15	75/0	3625.0	-	-44.44	-32.22	-34.63	-36.10	-33.11	-42.22	-	
		3692.5	-	-42.24	-29.87	-34.79	-35.45	-31.82	-37.37	-41.93	
		3560.0	-43.48	-36.82	-31.45	-34.96	-35.34	-32.42	-42.59	-	
20	100/0	3625.0	-	-42.55	-32.93	-35.40	-35.43	-32.93	-41.03	-	
		3690.0	-	-41.48	-31.55	-34.95	-35.83	-31.83	-35.73	-41.57	
	Limit (dBm)		-40.00	-25.00	-13.00	-13.00	-13.00	-13.00	-25.00	-40.00	

Note:

1. C.E = Channel Edge

2. Plots of the EUT's Channel Edge are shown Page 105 ~ 148.



			Outside of the authorized band (dBm)							
				Lower S	ide(MHz)		Upper Side(MHz)			
BW (MHz)	RB (Size/ Offset)	Freq. (MHz)	Below 3530 MHz	-[B]MHz ~ 3530 MHz	-1 MHz ~ -[B]MHz	0 MHz ~ -1 MHz	0 MHz ~ +1 MHz	1 MHz ~ +[B]MHz	+[B]MHz ~ 3720 MHz	Above 3720 MHz
	Lower Side: 1/0	3552.5	-46.93	-42.12	-30.43	-22.30	-22.23	-30.26	-41.99	-
5	Upper Side:	3625.0	-	-41.86	-31.31	-22.01	-21.90	-30.99	-41.44	-
	1/24	3697.5	-	-41.59	-31.23	-22.48	-22.58	-30.63	-41.72	-45.44
	Lower Side: 1/0	3555.0	-46.84	-44.40	-34.29	-29.14	-28.99	-34.04	-44.62	-
10	Upper Side:	3625.0	-	-44.36	-33.49	-28.51	-29.10	-33.69	-44.12	-
	1/49	3695.0	-	-43.59	-33.92	-29.24	-29.01	-33.63	-43.65	-45.37
	Lower Side: 1/0	3557.5	-47.13	-37.01	-36.55	-30.36	-29.73	-35.96	-45.92	-
15	Upper Side:	3625.0	-	-46.38	-35.84	-29.50	-29.43	-35.68	-45.17	-
	1/74	3692.5	-	-44.69	-35.65	-29.34	-30.04	-35.12	-38.79	-45.49
	Lower Side: 1/0	3560.0	-47.08	-37.05	-37.25	-30.96	-30.62	-36.58	-46.60	-
20	20 Upper Side:	3625.0	-	-46.60	-36.73	-31.14	-29.62	-36.17	-45.86	-
	1/99	3690.0	-	-45.59	-36.45	-31.17	-31.14	-36.84	-40.60	-45.47
	Limit (dBm)		-40.00	-25.00	-13.00	-13.00	-13.00	-13.00	-25.00	-40.00

Note:

1. C.E = Channel Edge

2. Plots of the EUT's Channel Edge are shown Page $105 \sim 148$.



8.8 Adjacent Channel Leakage Ratio(ACLR)

Band	RB	Frequency	Adjacent Channel L	eakage Ratio(dB)
Width	(Size/ Offset)	(MHz)	Lower Side	Upper Side
		3552.5	48.31	48.26
5 MHz	25/0	3625.0	49.61	48.98
		3697.5	46.84	46.67
	łz 50/0	3555.0	49.19	50.24
10 MHz		3625.0	49.47	49.02
		3695.0	46.28	46.79
		3557.5	47.11	49.27
15 MHz	75/0	3625.0	47.45	48.62
		3692.5	45.35	46.38
		3560.0	46.23	48.12
20 MHz	100/0	3625.0	46.90	47.62
		3690.0	45.35	46.18
	Limit (dB)	ACLR > 30 dB	ACLR > 30 dB

Note:

- 1. Duty Cycle factor already applied on the factor.
- Duty Cycle factor(dB) = 3.979
- Factor(dB) = Duty Cycle factor + Cable Loss + Ext. Attenuator + Power Splitter
- 2. Plots of the EUT's Adjacent Channel Leakage Ratio(ACLR) are shown Page 93 ~ 104.



8.9 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE

- OPERATING FREQUENCY:
- BANDWIDTH:

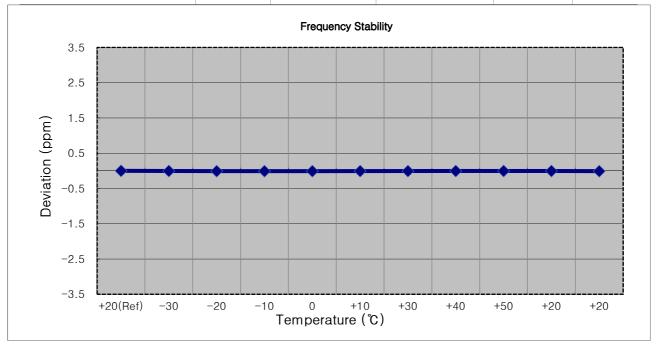
3,552,500,000 Hz 5 MHz

- REFERENCE VOLTAGE:
- DEVIATION LIMIT:

13.200 VDC

Emission must remain in band

Voltage	Power	Temp.	Frequency	Frequency Error	Deviation	
(%)	(VDC)	(°C)	(Hz)	(Hz)	(%)	ppm
100 %		+20(Ref)	3552 499 974	0.0	0.000 000	0.000
100 %		-30	3552 499 957	-16.9	0.000 000	-0.005
100 %		-20	3552 499 944	-30.1	-0.000 001	-0.008
100 %		-10	3552 499 942	-31.8	-0.000 001	-0.009
100 %	13.200	0	3552 499 944	-30.1	-0.000 001	-0.008
100 %		+10	3552 499 946	-27.9	-0.000 001	-0.008
100 %		+30	3552 499 946	-27.7	-0.000 001	-0.008
100 %		+40	3552 499 954	-19.6	-0.000 001	-0.006
100 %		+50	3552 499 957	-16.9	0.000 000	-0.005
115 %	6	+20	3552 499 960	-13.7	0.000 000	-0.004
85 %)	+20	3552 499 944	-29.4	-0.000 001	-0.008



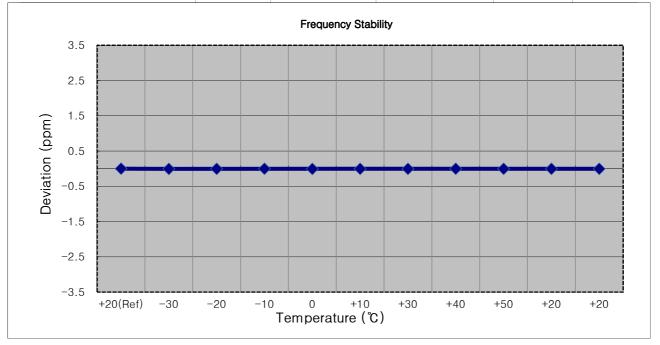


OPERATING FREQUENCY:	3,555,000,000 Hz
----------------------	------------------

- BANDWIDTH: <u>10 MHz</u>
- REFERENCE VOLTAGE: <u>13.200 VDC</u>
- DEVIATION LIMIT:

<u>13.200 VDC</u> Emission must remain in band

Voltage	Power	Temp.	Frequency	Frequency Error	Deviation	
(%)	(VDC)	(°C)	(Hz)	(Hz)	(%)	ppm
100 %		+20(Ref)	3554 999 991	0.0	0.000 000	0.000
100 %		-30	3554 999 971	-19.7	-0.000 001	-0.006
100 %		-20	3554 999 978	-13.0	0.000 000	-0.004
100 %		-10	3554 999 981	-10.1	0.000 000	-0.003
100 %	13.200	0	3554 999 968	-23.0	-0.000 001	-0.006
100 %		+10	3554 999 974	-16.5	0.000 000	-0.005
100 %		+30	3554 999 977	-13.5	0.000 000	-0.004
100 %		+40	3554 999 983	-8.1	0.000 000	-0.002
100 %		+50	3554 999 972	-18.8	-0.000 001	-0.005
115 %		+20	3554 999 977	-14.4	0.000 000	-0.004
85 %		+20	3554 999 978	-12.6	0.000 000	-0.004

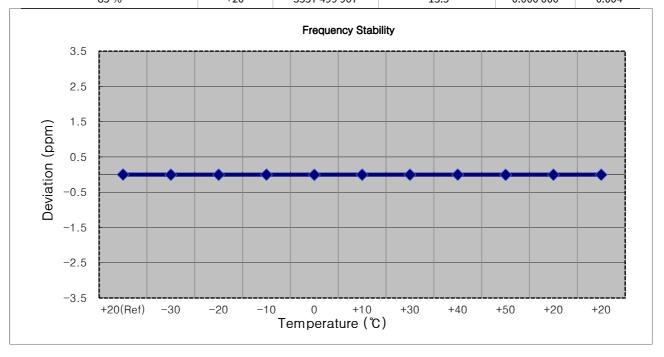


F-TP22-03 (Rev. 06)



OPERATING FREQUENCY:	<u>3,557,500,000 Hz</u>
BANDWIDTH:	<u>15 MHz</u>
REFERENCE VOLTAGE:	13.200 VDC
DEVIATION LIMIT:	Emission must remain in band

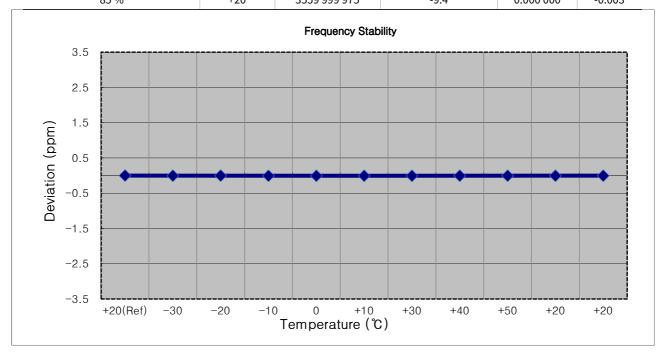
Voltage	Power	Temp.	Frequency	Frequency Error	Deviation	
(%)	(VDC)	(°C)	(Hz)	(Hz)	(%)	ppm
100 %		+20(Ref)	3557 499 981	0.0	0.000 000	0.000
100 %		-30	3557 499 967	-13.8	0.000 000	-0.004
100 %		-20	3557 499 971	-9.3	0.000 000	-0.003
100 %		-10	3557 499 978	-2.6	0.000 000	-0.001
100 %	13.200	0	3557 499 961	-19.3	-0.000 001	-0.005
100 %		+10	3557 499 966	-14.7	0.000 000	-0.004
100 %		+30	3557 499 968	-12.8	0.000 000	-0.004
100 %		+40	3557 499 975	-5.8	0.000 000	-0.002
100 %		+50	3557 499 962	-18.6	-0.000 001	-0.005
115 %	6	+20	3557 499 965	-15.6	0.000 000	-0.004
85 %)	+20	3557 499 967	-13.5	0.000 000	-0.004





OPERATING FREQUENCY:	<u>3,560,000,000 Hz</u>
BANDWIDTH:	<u>20 MHz</u>
REFERENCE VOLTAGE:	13.200 VDC
DEVIATION LIMIT:	Emission must remain in band

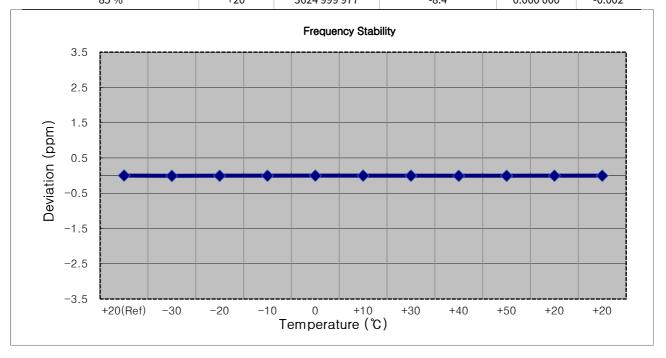
Voltage	Power	Temp.	Frequency	Frequency Error	Deviation	
(%)	(VDC)	(VDC) (°C)	(Hz)	(Hz)	(%)	ppm
100 %		+20(Ref)	3559 999 984	0.0	0.000 000	0.000
100 %		-30	3559 999 974	-10.0	0.000 000	-0.003
100 %		-20	3559 999 978	-6.3	0.000 000	-0.002
100 %		-10	3559 999 966	-18.6	-0.000 001	-0.005
100 %	13.200	0	3559 999 964	-20.5	-0.000 001	-0.006
100 %		+10	3559 999 967	-17.6	0.000 000	-0.005
100 %		+30	3559 999 966	-17.8	-0.000 001	-0.005
100 %		+40	3559 999 970	-14.3	0.000 000	-0.004
100 %		+50	3559 999 972	-12.5	0.000 000	-0.004
115 %	6	+20	3559 999 974	-10.4	0.000 000	-0.003
85 %)	+20	3559 999 975	-9.4	0.000 000	-0.003





OPERATING FREQUENCY:	3,625,000,000 Hz
BANDWIDTH:	5 MHz
REFERENCE VOLTAGE:	13.200 VDC
DEVIATION LIMIT:	Emission must remain in band

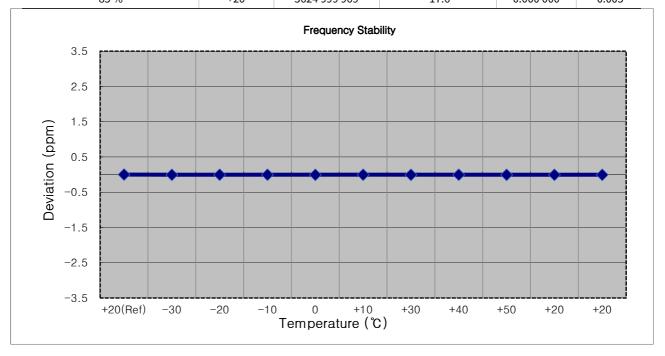
Voltage	Power	Temp.	Frequency	Frequency Error	Deviation	
(%)	(VDC)	(°C)	(Hz)	(Hz)	(%)	ppm
100 %		+20(Ref)	3624 999 986	0.0	0.000 000	0.000
100 %		-30	3624 999 960	-25.7	-0.000 001	-0.007
100 %		-20	3624 999 966	-19.8	-0.000 001	-0.005
100 %		-10	3624 999 975	-10.9	0.000 000	-0.003
100 %	13.200	0	3624 999 981	-5.0	0.000 000	-0.001
100 %		+10	3624 999 981	-4.7	0.000 000	-0.001
100 %		+30	3624 999 972	-13.2	0.000 000	-0.004
100 %		+40	3624 999 964	-21.7	-0.000 001	-0.006
100 %		+50	3624 999 968	-17.4	0.000 000	-0.005
115 %	6	+20	3624 999 970	-16.1	0.000 000	-0.004
85 %)	+20	3624 999 977	-8.4	0.000 000	-0.002





OPERATING FREQUENCY:	3,625,000,000 Hz
BANDWIDTH:	<u>10 MHz</u>
REFERENCE VOLTAGE:	13.200 VDC
DEVIATION LIMIT:	Emission must remain in band

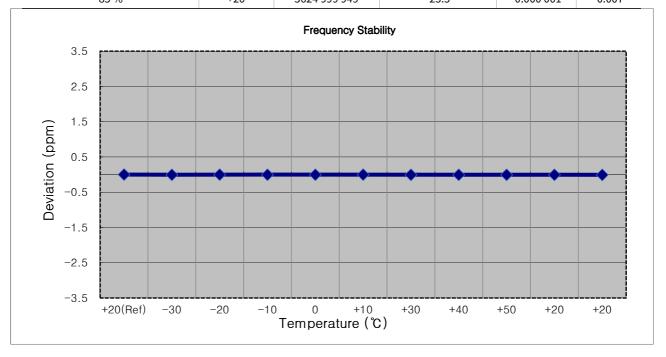
Voltage	Power	Temp.	Frequency	Frequency Error	Deviation	
(%)	(VDC)	(°C)	(Hz)	(Hz)	(%)	ppm
100 %		+20(Ref)	3624 999 987	0.0	0.000 000	0.000
100 %		-30	3624 999 967	-20.2	-0.000 001	-0.006
100 %		-20	3624 999 974	-13.2	0.000 000	-0.004
100 %		-10	3624 999 979	-8.5	0.000 000	-0.002
100 %	13.200	0	3624 999 969	-18.1	0.000 000	-0.005
100 %		+10	3624 999 976	-10.9	0.000 000	-0.003
100 %		+30	3624 999 966	-21.3	-0.000 001	-0.006
100 %		+40	3624 999 971	-15.6	0.000 000	-0.004
100 %		+50	3624 999 963	-24.0	-0.000 001	-0.007
115 %	6	+20	3624 999 966	-21.1	-0.000 001	-0.006
85 %)	+20	3624 999 969	-17.6	0.000 000	-0.005





OPERATING FREQUENCY:	3,625,000,000 Hz
BANDWIDTH:	<u>15 MHz</u>
REFERENCE VOLTAGE:	13.200 VDC
DEVIATION LIMIT:	Emission must remain in band

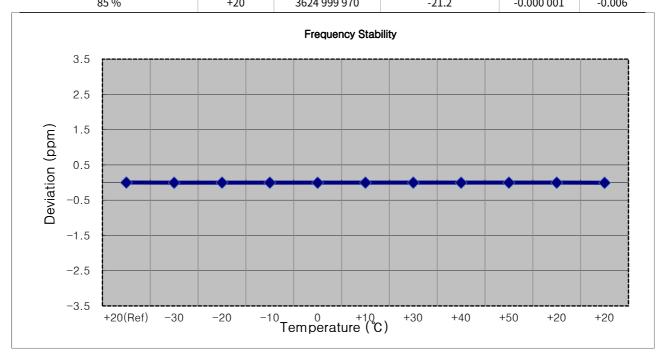
Voltage	Power	Temp.	Frequency	Frequency Error	Deviation	ppm
(%)	(VDC)	(°C)	(Hz)	(Hz)	(%)	
100 %		+20(Ref)	3624 999 975	0.0	0.000 000	0.000
100 %		-30	3624 999 952	-23.0	-0.000 001	-0.006
100 %		-20	3624 999 968	-6.6	0.000 000	-0.002
100 %		-10	3624 999 959	-16.1	0.000 000	-0.004
100 %	13.200	0	3624 999 965	-10.1	0.000 000	-0.003
100 %		+10	3624 999 970	-5.1	0.000 000	-0.001
100 %		+30	3624 999 958	-16.9	0.000 000	-0.005
100 %		+40	3624 999 955	-19.5	-0.000 001	-0.005
100 %		+50	3624 999 952	-22.5	-0.000 001	-0.006
115 %	6	+20	3624 999 955	-20.1	-0.000 001	-0.006
85 %)	+20	3624 999 949	-25.5	-0.000 001	-0.007





OPERATING FREQUENCY:	<u>3,625,000,000 Hz</u>
BANDWIDTH:	<u>20 MHz</u>
REFERENCE VOLTAGE:	13.200 VDC
DEVIATION LIMIT:	Emission must remain in band

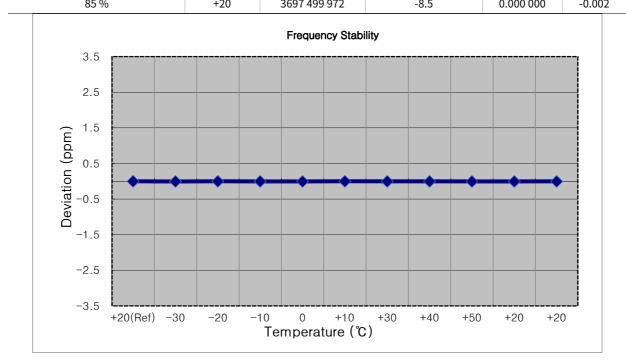
Voltage	Power	Temp.	Frequency	Frequency Error	Deviation	
(%)	(VDC)	(°C)	(Hz)	(Hz)	(%)	ppm
100 %		+20(Ref)	3624 999 991	0.0	0.000 000	0.000
100 %		-30	3624 999 973	-18.2	-0.000 001	-0.005
100 %		-20	3624 999 979	-11.7	0.000 000	-0.003
100 %		-10	3624 999 985	-5.7	0.000 000	-0.002
100 %	13.200	0	3624 999 974	-16.9	0.000 000	-0.005
100 %		+10	3624 999 980	-11.0	0.000 000	-0.003
100 %		+30	3624 999 985	-5.5	0.000 000	-0.002
100 %		+40	3624 999 974	-16.5	0.000 000	-0.005
100 %		+50	3624 999 980	-11.1	0.000 000	-0.003
115 %	<i></i>	+20	3624 999 980	-10.4	0.000 000	-0.003
85 %	1	+20	3624 999 970	-21.2	-0.000 001	-0.006





OPERATING FREQUENCY:	<u>3,697,500,000 Hz</u>
BANDWIDTH:	5 MHz
REFERENCE VOLTAGE:	13.200 VDC
DEVIATION LIMIT:	Emission must remain in band

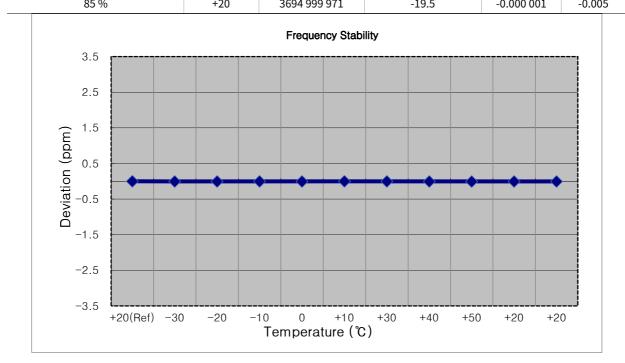
Voltage	ge Power Temp. Frequency Fre		Frequency Error	Deviation			
(%)	(VDC)	(°C)	(Hz)	(Hz)	(%)	ppm	
100 %		+20(Ref)	3697 499 981	0.0	0.000 000	0.000	
100 %		-30	3697 499 959	-21.4	-0.000 001	-0.006	
100 %		-20	3697 499 973	-7.4	0.000 000	-0.002	
100 %		-10	3697 499 967	-13.1	0.000 000	-0.004	
100 %	13.200	0	3697 499 961	-19.7	-0.000 001	-0.005	
100 %		+10	3697 499 975	-5.6	0.000 000	-0.002	
100 %		+30	3697 499 969	-11.4	0.000 000	-0.003	
100 %		+40	3697 499 967	-13.8	0.000 000	-0.004	
100 %		+50	3697 499 961	-19.7	-0.000 001	-0.005	
115 %	6	+20	3697 499 963	-17.2	0.000 000	-0.005	
85 %)	+20	3697 499 972	-8.5	0.000 000	-0.002	





OPERATING FREQUENCY:	<u>3,695,000,000 Hz</u>
BANDWIDTH:	<u>10 MHz</u>
REFERENCE VOLTAGE:	13.200 VDC
DEVIATION LIMIT:	Emission must remain in band

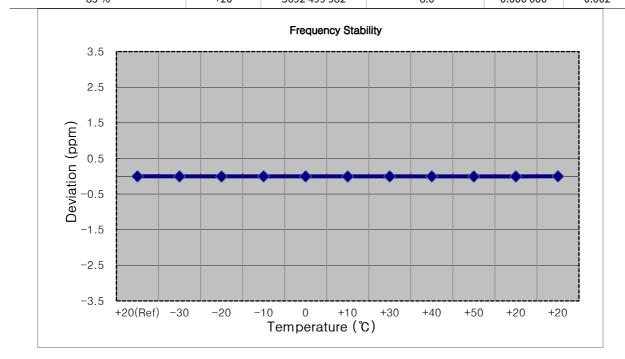
Voltage	Power	Temp. Frequency F		Frequency Error	Deviation		
(%)	(VDC)	(°C)	(Hz)	(Hz) (Hz)		ppm	
100 %		+20(Ref)	3694 999 990	0.0	0.000 000	0.000	
100 %		-30	3694 999 973	-17.2	0.000 000	-0.005	
100 %		-20	3694 999 971	-19.5	-0.000 001	-0.005	
100 %		-10	3694 999 978	-12.1	0.000 000	-0.003	
100 %	13.200	0	3694 999 971	-19.5	-0.000 001	-0.005	
100 %		+10	3694 999 983	-7.6	0.000 000	-0.002	
100 %		+30	3694 999 976	-14.8	0.000 000	-0.004	
100 %		+40	3694 999 970	-20.0	-0.000 001	-0.005	
100 %		+50	3694 999 963	-27.0	-0.000 001	-0.007	
115 %	6	+20	3694 999 966	-24.3	-0.000 001	-0.007	
85 %)	+20	3694 999 971	-19.5	-0.000 001	-0.005	





OPERATING FREQUENCY:	<u>3,692,500,000 Hz</u>
BANDWIDTH:	<u>15 MHz</u>
REFERENCE VOLTAGE:	13.200 VDC
DEVIATION LIMIT:	Emission must remain in band

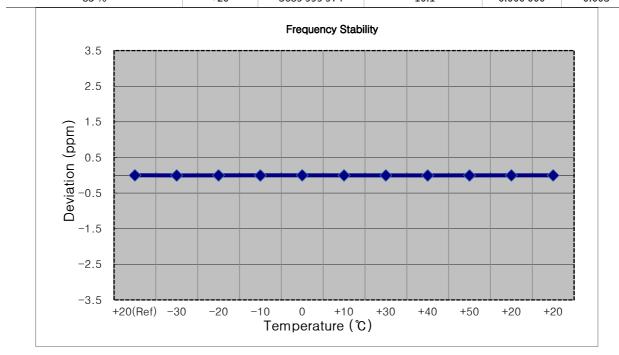
Voltage	tage Power Temp.		Frequency	Frequency Frequency Error			
(%)	(VDC)	(°C)	(Hz)	(Hz)	(%)	ppm	
100 %		+20(Ref)	3692 499 990	0.0	0.000 000	0.000	
100 %		-30	3692 499 977	-12.4	0.000 000	-0.003	
100 %		-20	3692 499 972	-17.4	0.000 000	-0.005	
100 %		-10	3692 499 982	-7.2	0.000 000	-0.002	
100 %	13.200	0	3692 499 977	-12.6	0.000 000	-0.003	
100 %		+10	3692 499 971	-18.9	-0.000 001	-0.005	
100 %		+30	3692 499 981	-8.2	0.000 000	-0.002	
100 %		+40	3692 499 975	-14.8	0.000 000	-0.004	
100 %		+50	3692 499 969	-20.5	-0.000 001	-0.006	
115 %) D	+20	3692 499 971	-18.7	-0.000 001	-0.005	
85 %		+20	3692 499 982	-8.0	0.000 000	-0.002	





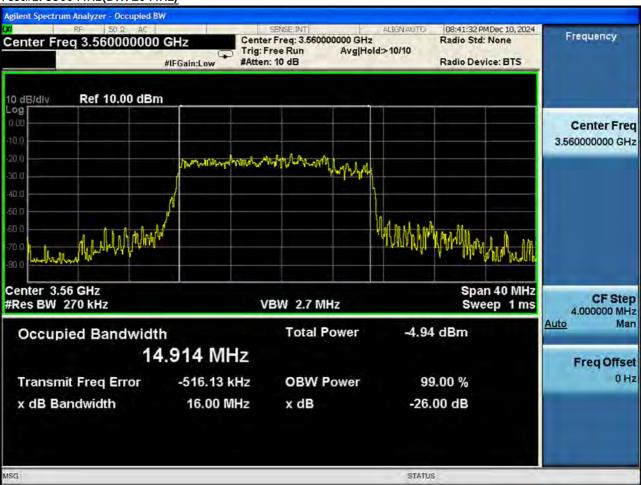
OPERATING FREQUENCY:	3,690,000,000 Hz
BANDWIDTH:	<u>20 MHz</u>
REFERENCE VOLTAGE:	13.200 VDC
DEVIATION LIMIT:	Emission must remain in band

Voltage	Voltage Power		age Power Temp. Frequency Freque		Frequency Error	Deviation	
(%)	(VDC)	(°C)	(Hz)	(Hz)	(%)	ppm	
100 %		+20(Ref)	3689 999 984	0.0	0.000 000	0.000	
100 %		-30	3689 999 964	-20.3	-0.000 001	-0.006	
100 %		-20	3689 999 970	-14.8	0.000 000	-0.004	
100 %		-10	3689 999 965	-19.3	-0.000 001	-0.005	
100 %	13.200	0	3689 999 979	-5.7	0.000 000	-0.002	
100 %		+10	3689 999 975	-9.8	0.000 000	-0.003	
100 %		+30	3689 999 970	-14.8	0.000 000	-0.004	
100 %		+40	3689 999 967	-17.1	0.000 000	-0.005	
100 %		+50	3689 999 967	-17.0	0.000 000	-0.005	
115 %	0	+20	3689 999 974	-10.6	0.000 000	-0.003	
85 %)	+20	3689 999 974	-10.1	0.000 000	-0.003	





8.10 End User Device Additional Requirements (CBSD Protocol)



Test#1: 3560 MHz(BW: 20 MHz)

Operation Mode



Stop Operation Within 10 s

RF 50 Center Freq 3.560	DOOOOOO GHz PNO: Fast • IFGain:Low	Trig: Free Run #Atten: 12 dB	ALIGNAUTO Avg Type: Log-Pwr Avg Hold: 1/1	08:42:56 PMDec 10, 2024 TRACE 2 3 4 5 6 TYPE M 44474444 DET P P N N N N	Frequency
0 dB/div Ref 2.00	dBm			ΔMkr3 10.00 s -41.485 dB	Auto Tune
.0g 8.00 18.0 28.0					Center Fred 3.560000000 GHz
38 0. 48 0 58 0	2	3∆4	. In second s	the state of the second second	Start Free 3.560000000 GHz
68.0 78.0 88.0					Stop Free 3.560000000 GH:
Center 3.56000000 Res BW 8 MHz		W 50 MHz	Sweep	Span 0 Hz 30.00 s (1001 pts) FUNCTION VALUE	CF Step 8.000000 MH: <u>Auto</u> Mar
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	30.00 ms (/ 4.140 s 10.00 s (/ 4.140 s	40.763 dB -19.647 dBm			Freq Offse 0 Ha
9 10 11 				y.	

Note:

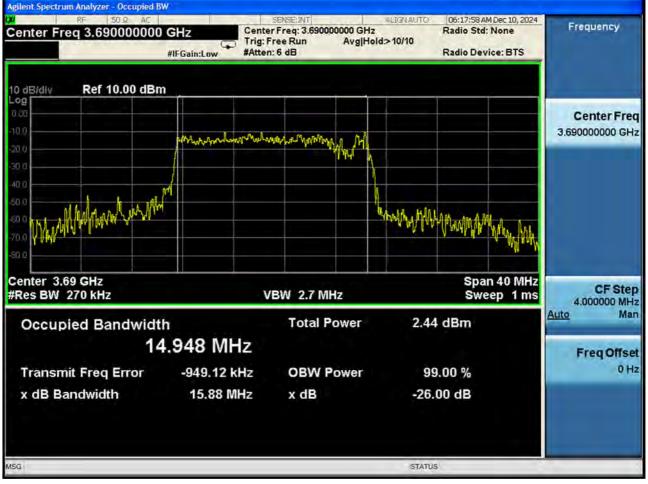
Marker 2: CBSD sends instructions to discontinue LTE operations.

Marker 1 \triangle 2: EUT discontinues operation. (0.03 s)

Marker $3\triangle 4$: 10 seconds elapsed time from CBSD sending instructions to EUT.(10.0 s)



Test#1: 3690 MHz(BW: 20 MHz)



Operation Mode



Stop Operation Within 10 s

Center Freq 3.690	000000 GHz PNO: Fast IFGain:Lov		Avg Type: Log-Pwr Avg Hold: 1/1	06:19:38 AM Dec 10, 2024 TRACE 1 2 3 4 5 0 TYPE M WWWWWW DET P P NNNN	Frequency
10 dB/div Ref -4.00) dBm			ΔMkr3 10.00 s -34.870 dB	Auto Tune
24.0 34.0	X2				Center Fred 3.69000000 GH
44.0 54.0 64.0	€ ^{1Δ2}	3∆4 	a to a star a transfer and the start of the	an - A. A. A. Mar and a star of the star	Start Free 3.690000000 GH
74.0 84.0 94.0					Stop Fre 3.690000000 GH
Center 3.69000000 Res BW 8 MHz		W 50 MHz	Sweep	Span 0 Hz 30.00 s (1001 pts)	CF Ster 8.000000 MH Auto Ma
MKR MODE TRC SCL 1 Δ2 1 t (Δ)	× 30.00 ms		ICTION FUNCTION WIDTH	FUNCTION VALUE	<u>Hato</u> ma
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	5.550 s 10.00 s 5.550 s	-25.652 dBm			Freq Offse 0 H
6 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2					
9 10 11				~	

Note:

Marker 2: CBSD sends instructions to discontinue LTE operations.

Marker 1 \triangle 2: EUT discontinues operation. (0.03 s)

Marker $3\triangle 4$: 10 seconds elapsed time from CBSD sending instructions to EUT.(10.0 s)

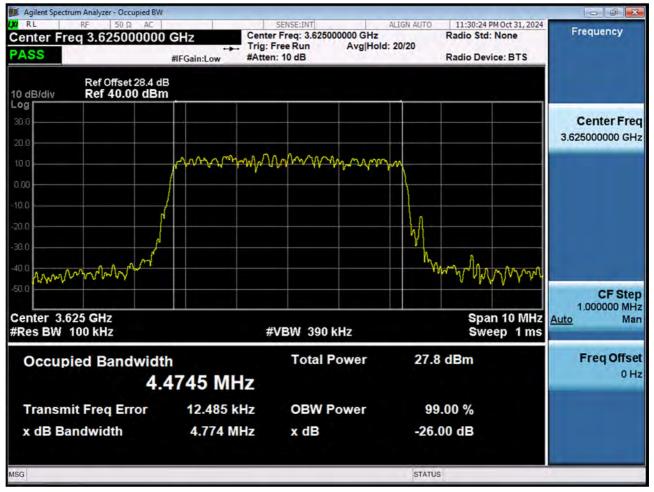


Report No. HCT-RF-2412-FC046

9. TEST PLOTS

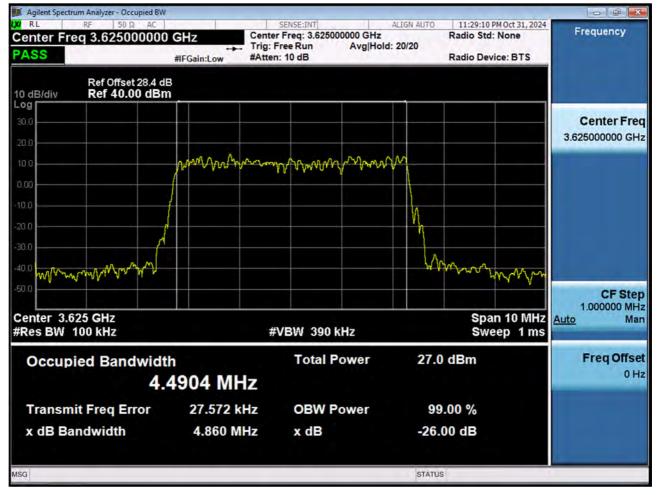






BAND 48. Occupied Bandwidth Plot (5 MHz Ch.55990 QPSK RB 25)





BAND 48. Occupied Bandwidth Plot (5 MHz Ch.55990 16-QAM RB 25)





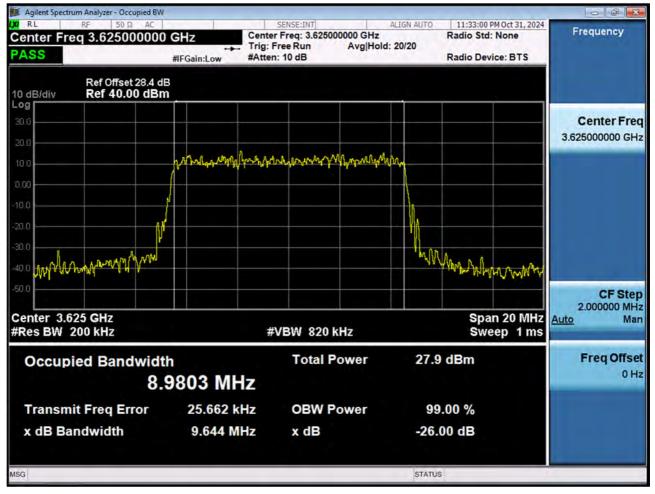
BAND 48. Occupied Bandwidth Plot (5 MHz Ch.55990 64-QAM RB 25)





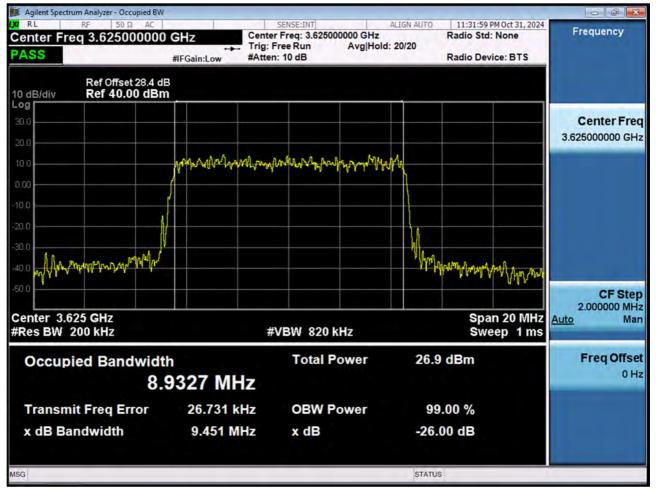
BAND 48. Occupied Bandwidth Plot (5 MHz Ch.55990 256-QAM RB 25)





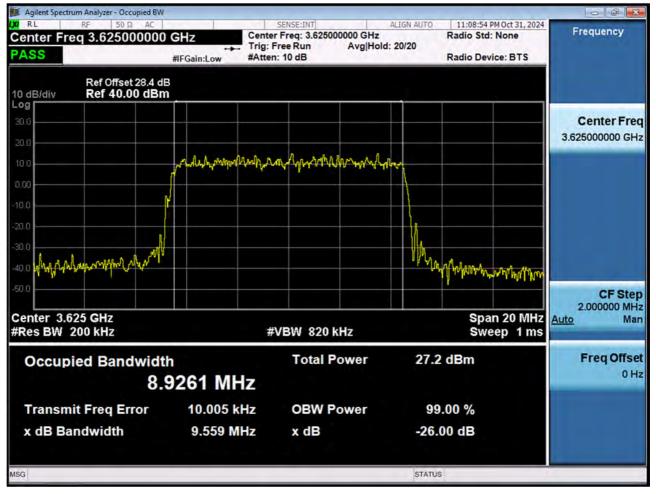
BAND 48. Occupied Bandwidth Plot (10 MHz Ch.55990 QPSK RB 50)





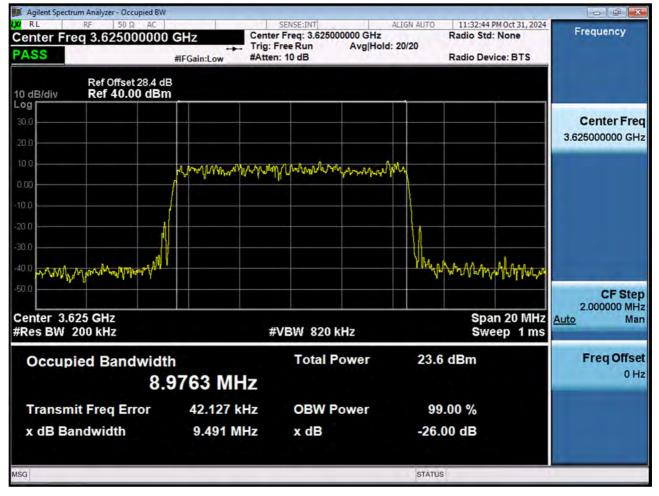
BAND 48. Occupied Bandwidth Plot (10 MHz Ch.55990 16-QAM RB 50)





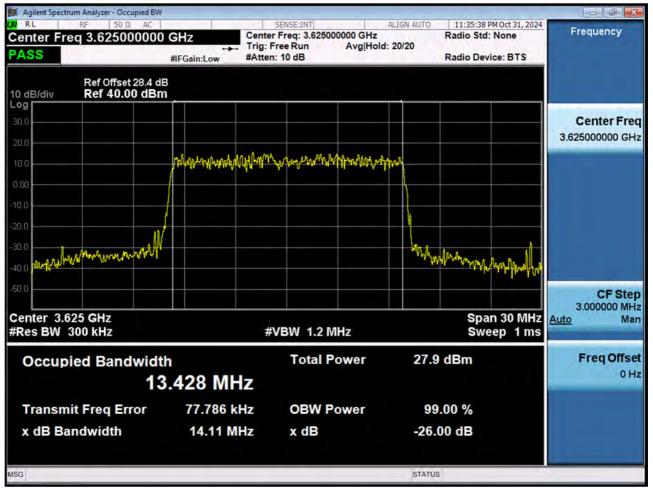
BAND 48. Occupied Bandwidth Plot (10 MHz Ch.55990 64-QAM RB 50)





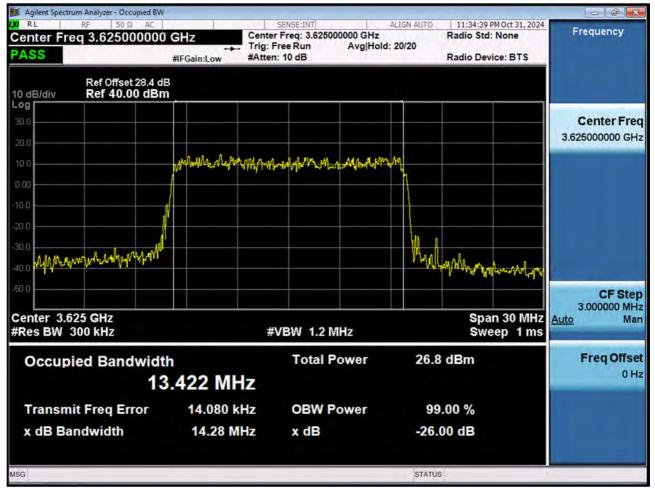
BAND 48. Occupied Bandwidth Plot (10 MHz Ch.55990 256-QAM RB 50)





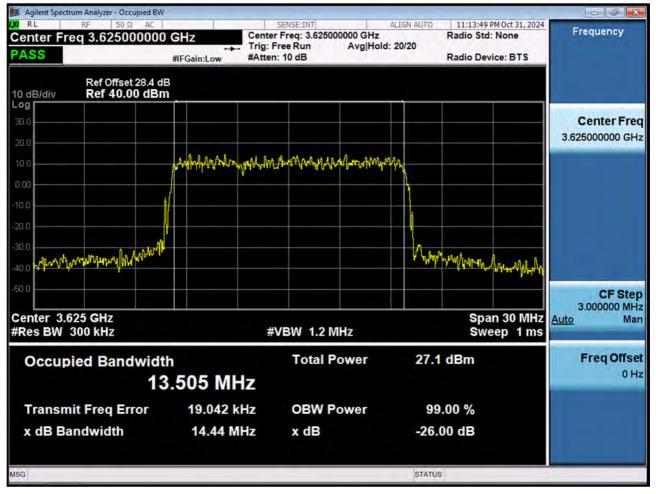
BAND 48. Occupied Bandwidth Plot (15 MHz Ch.55990 QPSK RB 75)





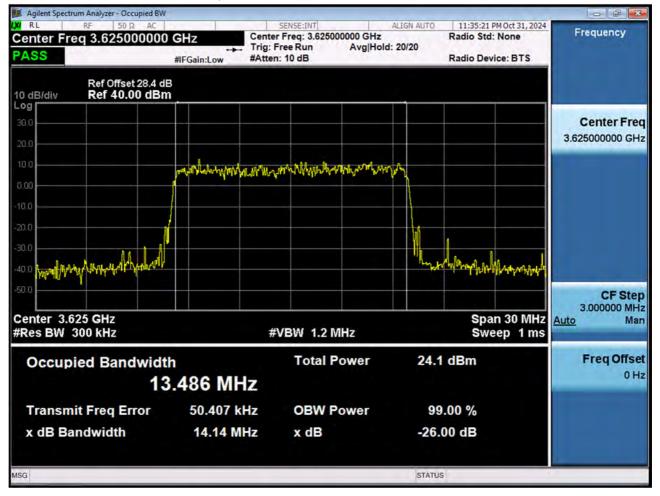
BAND 48. Occupied Bandwidth Plot (15 MHz Ch.55990 16-QAM RB 75)





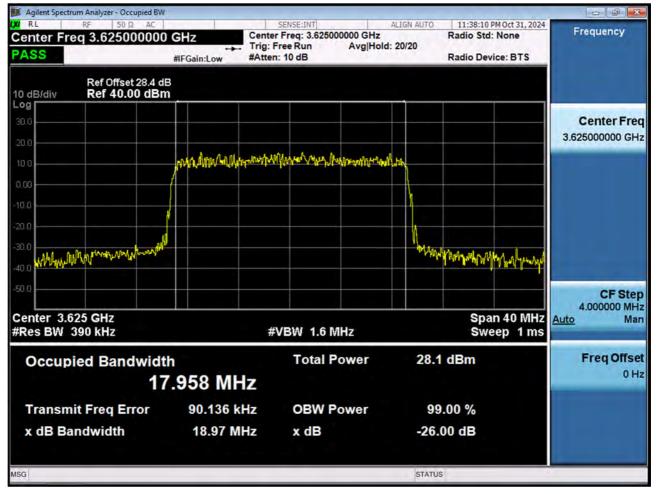
BAND 48. Occupied Bandwidth Plot (15 MHz Ch.55990 64-QAM RB 75)





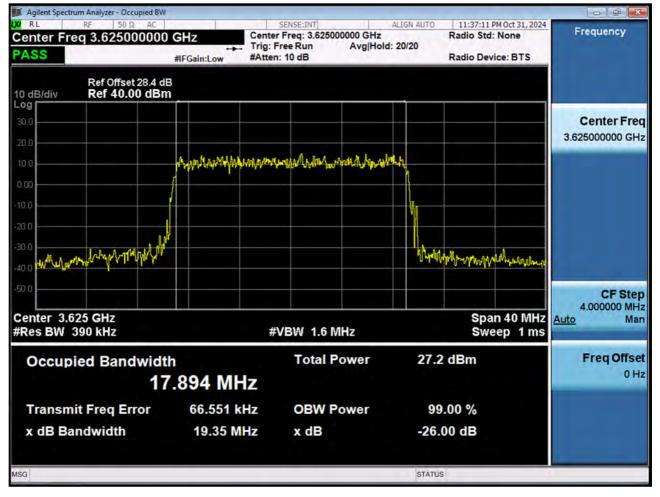
BAND 48. Occupied Bandwidth Plot (15 MHz Ch.55990 256-QAM RB 75)





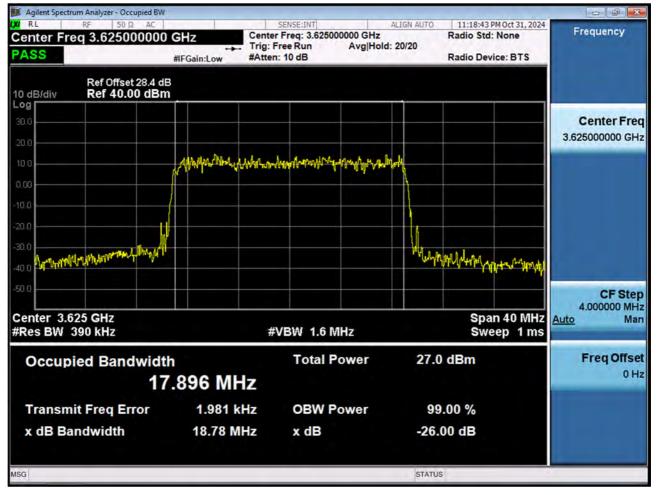
BAND 48. Occupied Bandwidth Plot (20 MHz Ch.55990 QPSK RB 100)





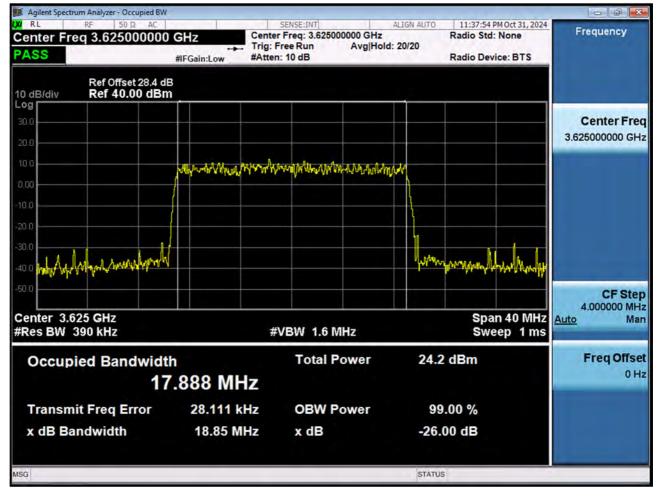
BAND 48. Occupied Bandwidth Plot (20 MHz Ch.55990 16-QAM RB 100)





BAND 48. Occupied Bandwidth Plot (20 MHz Ch.55990 64-QAM RB 100)

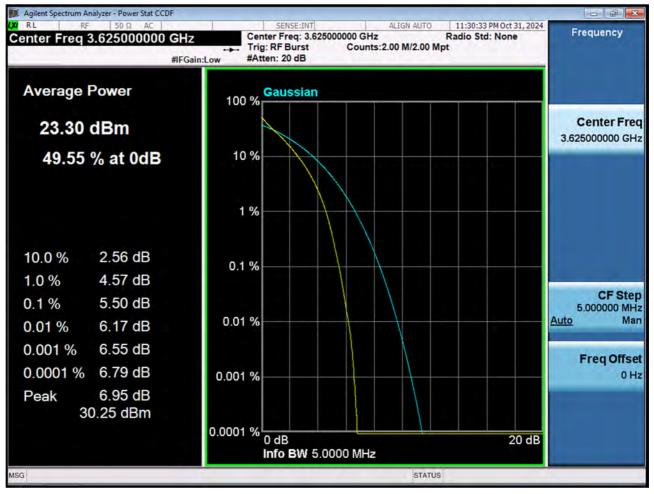




BAND 48. Occupied Bandwidth Plot (20 MHz Ch.55990 256-QAM RB 100)







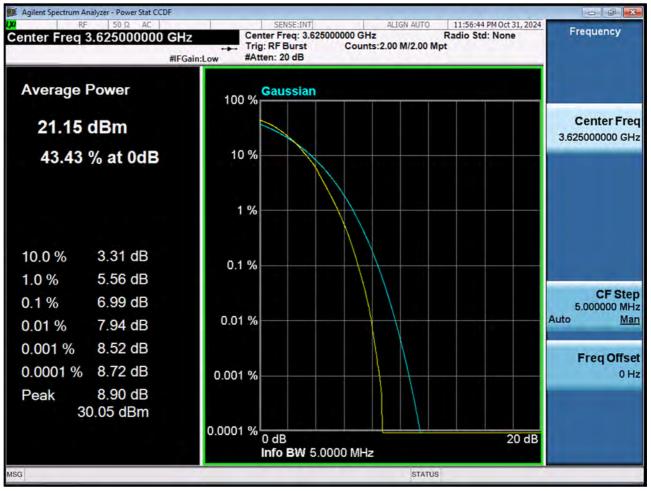
BAND 48. PAR Plot (5 M BW_Ch.55990_QPSK_RB25_0)





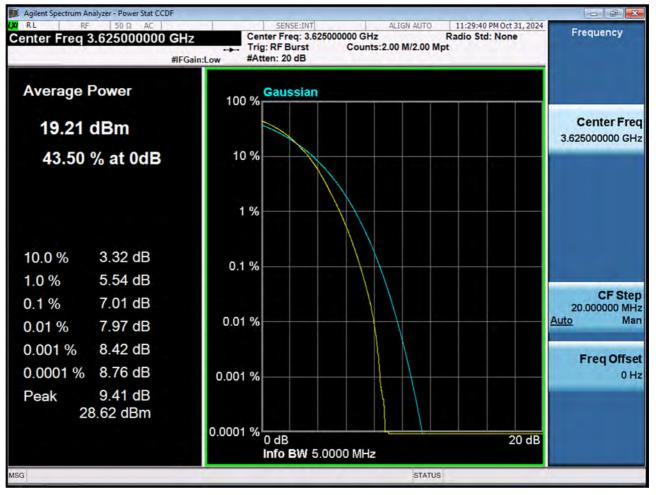
BAND 48. PAR Plot (5 M BW_Ch.55990_16QAM_RB25_0)





BAND 48. PAR Plot (5 M BW_Ch.55990_64QAM_RB25_0)

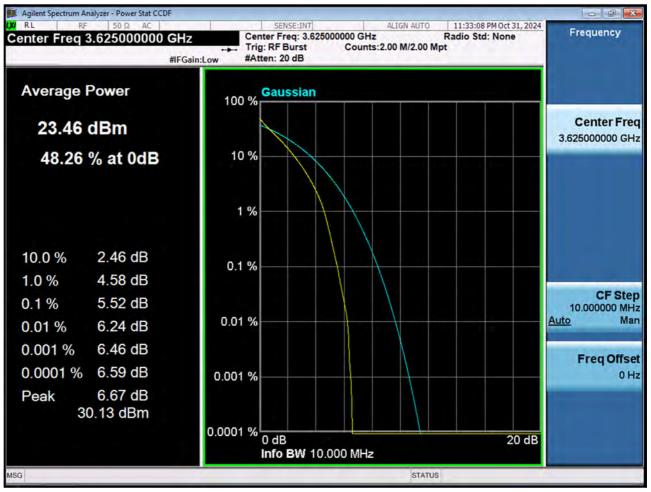




BAND 48. PAR Plot (5 M BW_Ch.55990_256QAM_RB25_0)

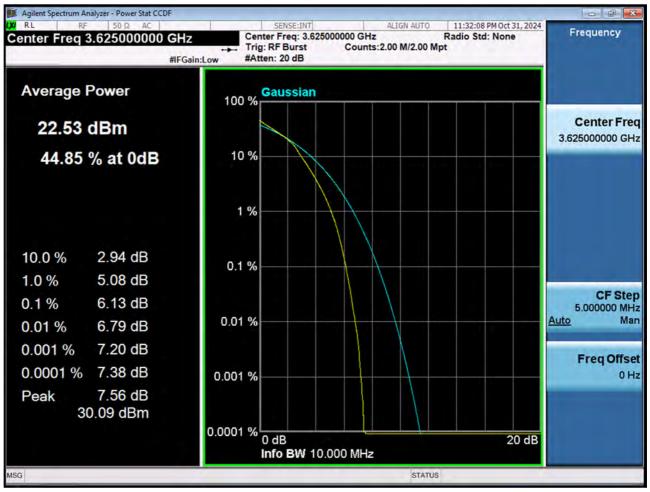






BAND 48. PAR Plot (10 M BW_Ch.55990_QPSK_RB50_0)





BAND 48. PAR Plot (10 M BW_Ch.55990_16QAM_RB50_0)



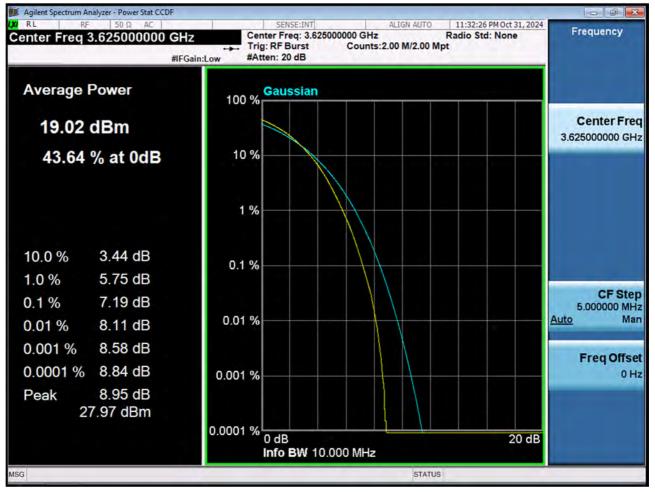




BAND 48. PAR Plot (10 M BW_Ch.55990_64QAM_RB50_0)



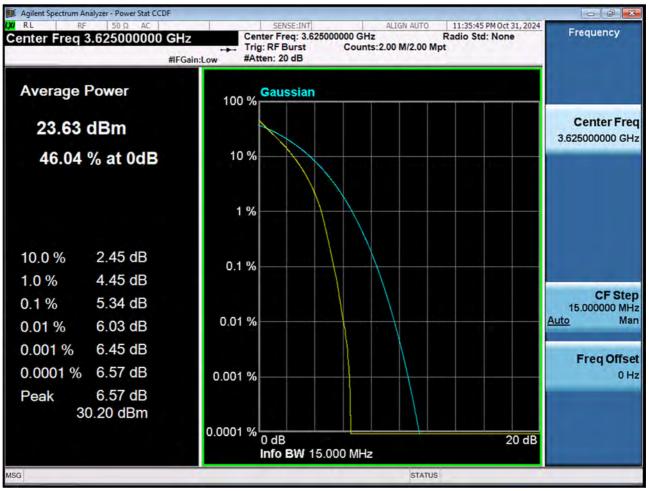




BAND 48. PAR Plot (10 M BW_Ch.55990_256QAM_RB50_0)

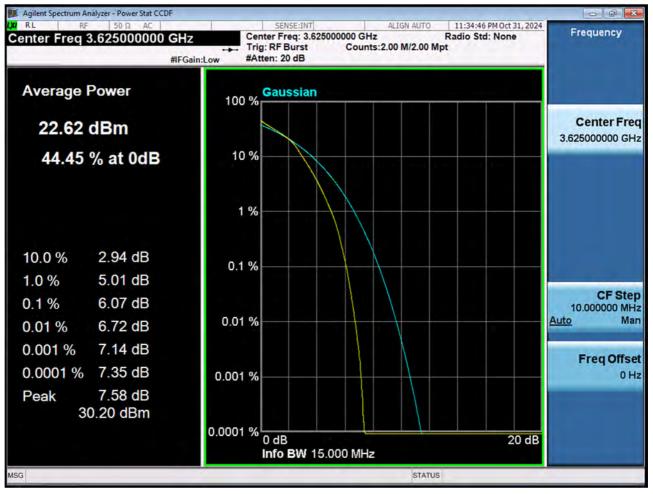






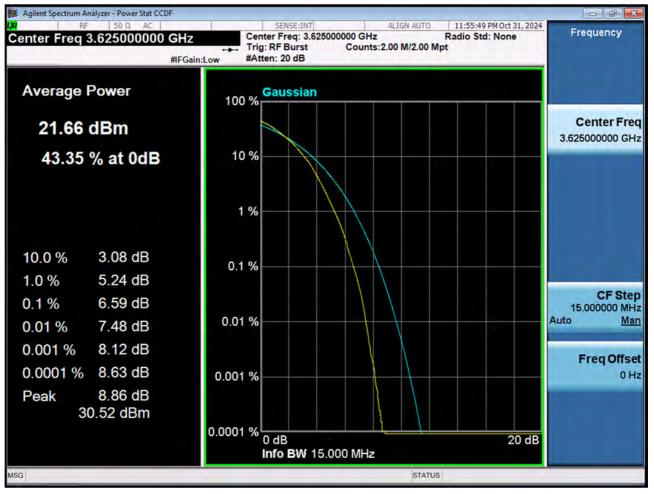
BAND 48. PAR Plot (15 M BW_Ch.55990_QPSK_RB75_0)





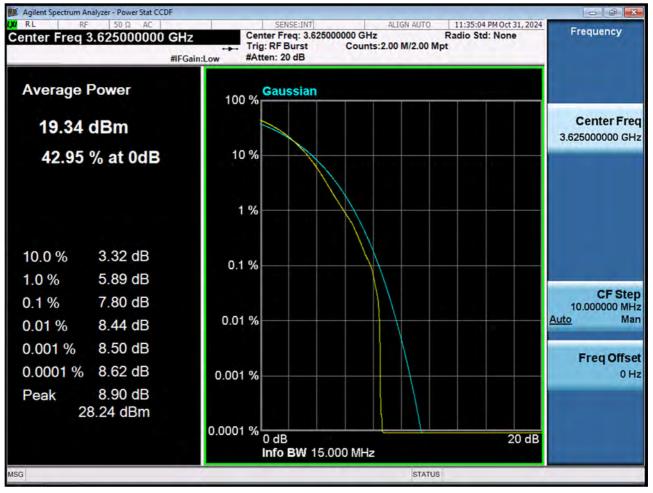
BAND 48. PAR Plot (15 M BW_Ch.55990_16QAM_RB75_0)





BAND 48. PAR Plot (15 M BW_Ch.55990_64QAM_RB75_0)

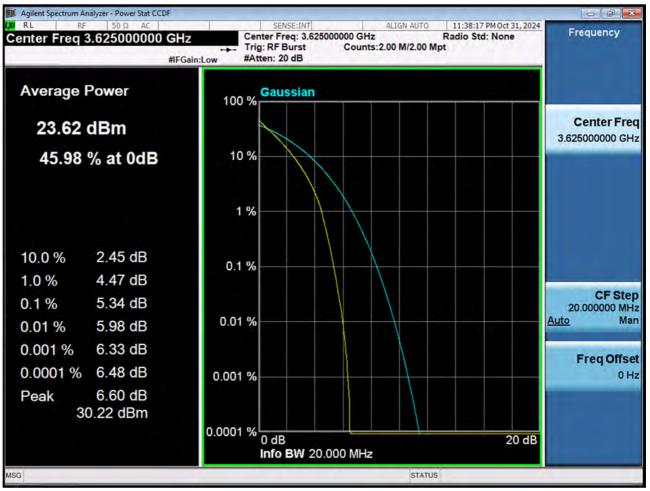




BAND 48. PAR Plot (15 M BW_Ch.55990_256QAM_RB75_0)



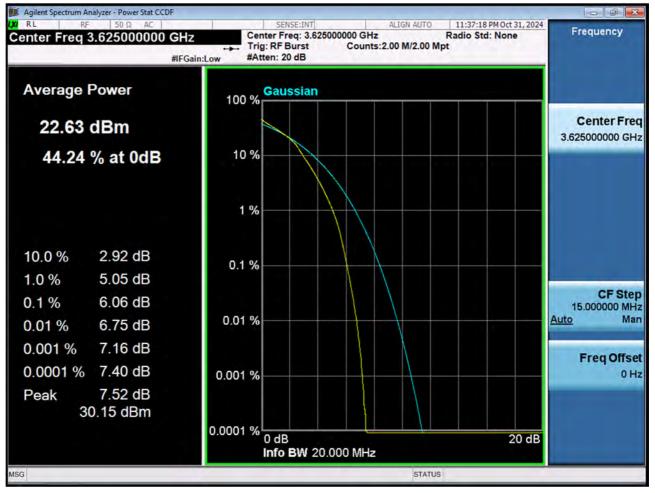




BAND 48. PAR Plot (20 M BW_Ch.55990_QPSK_RB100_0)



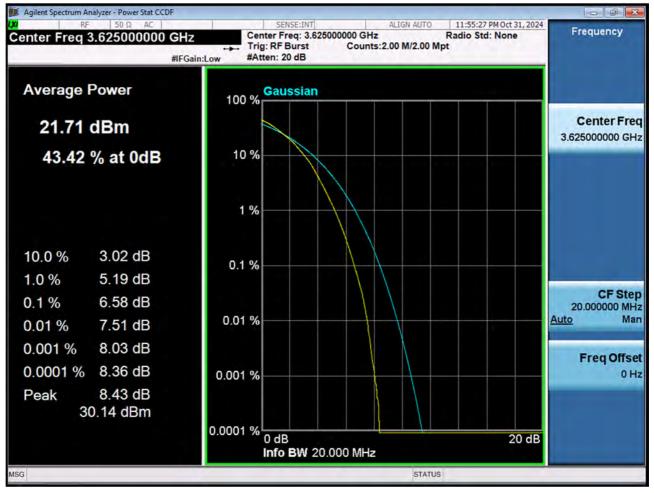




BAND 48. PAR Plot (20 M BW_Ch.55990_16QAM_RB100_0)

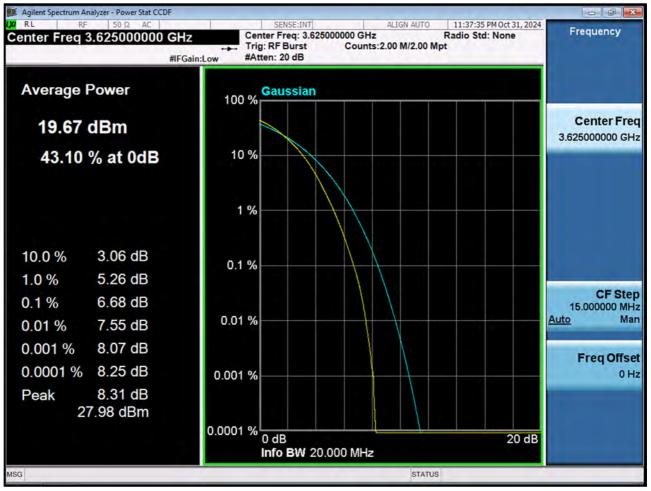






BAND 48. PAR Plot (20 M BW_Ch.55990_64QAM_RB100_0)





BAND 48. PAR Plot (20 M BW_Ch.55990_256QAM_RB100_0)



Agilent Spectrum Analyzer - ACP					- # ×
RL RF 50 Ω AC Center Freq 3.55250000 AC AC	00 GHz IFGain:Low	SENSE:INT Center Freq: 3.55250 Trig: Free Run #Atten: 10 dB	ALIGN AUTO 0000 GHz Avg Hold: 10/10	Radio Device:	ne Frequency
Ref Offset 32.3 10 dB/div Ref 30.00 dE					
20.0 10.0 0.00		23.0 dBm	enner -	-48.3 dBc	Center Freq 3.552500000 GHz
10.0 20.0 30.0 40.0 50.0	derstander			managhilitetaan	Average
Center 3.553 GHz Res BW 150 kHz		#VBW 620 k		Span 1 #Swee	ep 1 s 1.500000 MH
Total Carrier Power 22.9 Carrier Power	94 dBm/ 5.00 MHz Filter Offs	ACP-I	BW Lower dBc dBm	Upper dBc dBm	Auto Mar Filter Freq Offse
1 22.994 dBm / 5.000 MH		0 MHz 5.000 MHz	-48.31 -25.32 -4	48.26 -25.27	OFF 0 Hz
ISG			STAT	rus	

BAND 48. Adjacent Channel Leakage Ratio(ACLR) Plot (5 MHz Ch.55265 QPSK RB 25, Offset 0)



RL RF 50 Ω AC Center Freq 3.625000000 GH PASS IFC	Z SENSE:INT ALIGN AUTO 07:18:25 PM Oct 31, 2024 Center Freq: 3.625000000 GHz Radio Std: None Trig: Free Run Avg Hold: 10/10 #Atten: 10 dB Radio Device: BTS	Frequency
Ref Offset 32.38 dB 10 dB/div Ref 30.00 dBm		
Log 20.0	23.1 dBm ////////////////////////////////////	Center Fred 3.625000000 GH:
10.0 20.0 30.0		
40.0 50.0	hr Average 	
Center 3.625 GHz Res BW 150 kHz	Span 15 MHz #VBW 620 kHz #Sweep 1 s	CF Step 1.500000 MH
Total Carrier Power 23.119 dBr Carrier Power Filt	Lower Upper	<u>Ito</u> Mar Freq Offse
1 23.119 dBm / 5.000 MHz OFf	5.000 MHz 5.000 MHz -49.61 -26.49 -48.98 -25.86 OFF	0 H:
SG	STATUS	

BAND 48. Adjacent Channel Leakage Ratio(ACLR) Plot (5 MHz Ch.55990 QPSK RB 25, Offset 0)



Agilent Spectrum Analyzer - ACP					0 8 8
RL RF S0 R AC Center Freq 3.697500000 (AC AC <th< th=""><th>Center</th><th></th><th>old: 10/10</th><th>07:22:09 PM Oct 31, 2024 adio Std: None adio Device: BTS</th><th>Frequency</th></th<>	Center		old: 10/10	07:22:09 PM Oct 31, 2024 adio Std: None adio Device: BTS	Frequency
Ref Offset 32.38 dE 10 dB/div Ref 30.00 dBm	3				
-og 20.0		2.7 dBm	-46	.7 dBc	Center Freq 3.697500000 GHz
10.0 20.0 30.0 40.0 50.0	sauge de la companya		Congress delation of the	Average Lesenshowen way have a	
Center 3.698 GHz Res BW 150 kHz	#\ #Bm/ 5.00 MHz	/BW 620 kHz		Span 15 MHz #Sweep 1 s	CF Step 1.500000 MH Auto Mar
	Filter Offset Freq	ACP-IBW		Jpper dBm Filter	Freq Offse
1 22.703 dBm / 5.000 MHz 0	DFF 5,000 MHz	5.000 MHz -46.84	-24.14 -46.67	-23.96 OFF	0 H
SG			STATUS		

BAND 48. Adjacent Channel Leakage Ratio(ACLR) Plot (5 MHz Ch.56715 QPSK RB 25, Offset 0)



Agilent Spectrum Analyzer - ACP	AC		ENSE:INT		ALIGN AU	TO 0	17:25:35 PM	Oct 31, 2024	
Center Freq 3.555000		Center Trig: Fr	Freq: 3.555000 ee Run	0000 GHz Avg Hol		Ra	dio Std: N dio Devic	lone	Frequency
Ref Offset 3 0 dB/div Ref 30.00									
og 20.0		22	.9 dBm	numun		-50.2	2 dBc		Center Fre 3.555000000 GH
0.00									
30,0 40,0 50,0 60,0	, devlater reverestation of				Handoord Sudah	ىرى ئىرلىلىرلى ئ	اريغو زيرا وراريا وا	Average	
Center 3.555 GHz Res BW 270 kHz		#V	/BW 1.1 M	Hz			Span #Sw	30 MHz eep 1 s	CF Ste 3.000000 MH
Total Carrier Power	22.922 dBm/ 10.00 Filter) MHz Offset Freq	ACP-I		ower dBm	U dBc	pper dBm	Filter	<u>Auto</u> Mai Freq Offse
1 22.922 dBm / 10.00	MHz OFF	10.00 MHz	10.00 MHz	-49.19	-26.27	-50.24	-27.32	OFF	он
SG					ST	ATUS			

BAND 48. Adjacent Channel Leakage Ratio(ACLR) Plot (10 MHz Ch.55290 QPSK RB 50, Offset 0)



Agilent Spectrum Analyzer - AC									- @ X
RL RF 505 Center Freq 3.6250 PASS		Center Fr		0000 GHz Avg Hol	ALIGN AU d: 10/10	Ra	dio Std: N		Frequency
0 dB/div Ref 30.0	t 32.38 dB 00 dBm			_					
20.0		23.0	dBm Namilian	www		-49.() dBc		Center Free 3.625000000 GH2
0.00 10.0 20.0									
30.0 40.0 50.0 60.0	handlander Marriage				humunuuu	luvHvhnul	welantaanthay	Average	
Center 3.625 GHz Res BW 270 kHz		#VE	3W 1.1 M	Hz			Span #Sw	30 MHz eep 1 s	CF Stej 3.000000 MH
Total Carrier Power Carrier Power	23.049 dBm/ 10.0 Filter		ACP-I		ower dBm	U dBc	pper dBm	Filter	<u>Auto</u> Mai Freq Offse
1 23.049 dBm / 10.0	DO MHZ OFF	10.00 MHz	10.00 MHz	-49.47	-26,42	-49.02	-25.97	OFF	0 H:
SG					ST	ATUS			

BAND 48. Adjacent Channel Leakage Ratio(ACLR) Plot (10 MHz Ch.55990 QPSK RB 50, Offset 0)



Agilent Spectrum Analyzer - ACP									- 6 ×
RL RF 50 Ω Center Freq 3.695000 PASS	AC 000 GHz IFGain:Low	Center F		0000 GHz Avg Hol	ALIGN AU	Ra	dio Std: N dio Devic		Frequency
Ref Offset 32 10 dB/div Ref 30.00									
-og 20.0	/	22.	7 dBm	muhy		-46.8	3 dBc		Center Free 3.695000000 GH
10.0 20.0 30.0									
40.0 50.0 50.0	Wate-Alimakatina ⁴			~	ternet wederso	www.eshw	domonosilariya	Àverage	
Center 3.695 GHz Res BW 270 kHz			BW 1.1 M	Hz				30 MHz eep 1 s	CF Ste 3.000000 MH
Total Carrier Power 2 Carrier Power	2.733 dBm/ 10.00 Filter	0 MHz Offset Freq	ACP-I		ower dBm	U dBc	pper dBm	Filter	<u>Auto</u> Ma Freq Offse
1 22.733 dBm / 10.00 l	MHz OFF	10.00 MHz	10.00 MHz	-46.28	-23.55	-46.79	-24.05	OFF	ОH
SG					ST	ATUS			

BAND 48. Adjacent Channel Leakage Ratio(ACLR) Plot (10 MHz Ch. 56690 QPSK RB 50, Offset 0)



Agilent Spectrum Analyzer -					1.000		0 8 ×
Center Freq 3.557	50 Ω AC 7500000 GHz IFGain:Lov	Trig: Free Ru	3.557500000 GHz n Avg Hc	ALIGN AUTO	Radio Devic		Frequency
10 dB/div Ref 3	set 32.38 dB 0.00 dBm						
20.0 10.0 0.00	1 dBc	23.0 dB	n		-49.3 dBc		Center Freq 3.557500000 GHz
-10.0							
-40.0 -50.0				hannen hale hannen	مان المراجع ال	Average	
Center 3.558 GHz Res BW 430 kHz	20.001 /0-145.0		1.8 MHz		Span #Sw	45 MHz veep 1 s	CF Step 4.500000 MHz Auto Man
Total Carrier Power Carrier Power	23.031 dBm/ 15.0 Filter	Offset Freq Inte	g BW dBc		Upper dBc dBm	Filter	Freq Offset
1 23.031 dBm / 1	5.00 MHz OFF	15.00 MHz 15.0	0 MHz _47.11	-24.08 -	49.27 -26.24	OFF	0 Hz
MSG				STAT	rus		

BAND 48. Adjacent Channel Leakage Ratio(ACLR) Plot (15 MHz Ch.55315 QPSK RB 75, Offset 0)



and the second se	um Analyzer - ACP								o & ×
Center Fre	RF 50 Ω AC eq 3.625000000) GHz IFGain:L	Center Trig: Fr			ALIGN AUTO bid: 10/10	Radio Std: Radio Devi		Frequency
10 dB/div	Ref Offset 32.38 Ref 30.00 dBr								
20.0 10.0 0.00	-47.4 dBc		23	.1 dBm www.minikami.wk	mmwy		-48.6 dBc		Center Fred 3.625000000 GHz
10.0									
40.0 50.0 mm///////	annar tan airtean airtean an tarain an ta	wanterwater				Youworninammin	Wandoowanalaaa	Average retronomination	
Center 3.6 Res BW 43	30 kHz			/BW 1.8 MI				145 MHz veep 1s	CF Stej 4.500000 MH Auto Ma
Total Carrie Carrier Pov		5 dBm/ 15 Filter	Offset Freq	ACP-I	dBo		Upper dBc dBm	Filter	Freq Offse
1 23.06	5 dBm / 15.00 MHz	OFF	15.00 MHz	15.00 MHz	-47.45	-24,38 -4	48.62 -25.56	OFF	0 H:
SG						STAT	rus		

BAND 48. Adjacent Channel Leakage Ratio(ACLR) Plot (15 MHz Ch.55990 QPSK RB 75, Offset 0)



Agilent Spectrum Analyzer - ACP				4					- # ×
RL RF 50 Q AC Center Freq 3.69250000 PASS				0000 GHz Avg Hol	ALIGN AU	Ra	7:42:17 PM dio Std: N dio Devic	1000	Frequency
Ref Offset 32.38 10 dB/div Ref 30.00 dB				_					
Log 20.0 10.0 0.00		22. 	7 dBm www.py.www.u	ummuu		-46.4	dBc		Center Freq 3.692500000 GHz
-10.0									
-30.0 -50.0 -60.0	MMMMMMMMM				нилтрици	norrend hanne	nu manana	Average	
Center 3.693 GHz Res BW 430 kHz			BW 1.8 M					45 MHz reep 1 s	CF Step 4.500000 MHz Auto Mar
Total Carrier Power 22.6 Carrier Power	97 dBm/ 15.00 l Filter _0	MHz Iffset Freq	ACP-I		ower dBm	U dBc	oper dBm	Filter	Auto Mar Freq Offset
1 22.697 dBm / 15.00 MHz	z OFF 1	5.00 MHz	15.00 MHz	-45.35	-22.65	-46.38	-23.68	OFF	0 Hz

BAND 48. Adjacent Channel Leakage Ratio(ACLR) Plot (15 MHz Ch.56665 QPSK RB 75, Offset 0)



Agilent Spectrum Analyzer - ACP	12.5.0			1.3	- # ×
RL RF 50 Ω Center Freq 3.56000 PASS		SENSE:INT Center Freq: 3.5600 Trig: Free Run #Atten: 10 dB	ALIGN AUTO 00000 GHz Avg Hold: 10/10	Radio Device: B	Frequency
10 dB/div Ref 30.00					
Log 20.0		23.0 dBm		-48.1 dBc	Center Free 3.560000000 GHz
20.0					
-30.0 -40.0 -50.0 -60.0			Lawrences	and the state of the second	Average
Center 3.56 GHz Res BW 560 kHz		#VBW 2.2 N	ЛНz	Span 60 #Sweep	0 1 s 6.000000 MH
Total Carrier Power Carrier Power	23.030 dBm/ 20.00 M Filter of	MHz ACP	-IBW Lower dBc dBm	Upper dBc dBm F	Auto Mar ilter Freq Offse
1 23.030 dBm / 20.00		0.00 MHz 20.00 MHz	-46.23 -23.20 -4	8.12 -25.09 O	FF 0Hz
SG			STAT	US	

BAND 48. Adjacent Channel Leakage Ratio(ACLR) Plot (20 MHz Ch.55340 QPSK RB 100, Offset 0)



Agilent Spectrum Analyzer - ACP		-			×
RL RF 50 Q Center Freq 3.625000 PASS		SENSE:INT Center Freq: 3.625000 Trig: Free Run #Atten: 10 dB	ALIGN AUTO 0000 GHz Avg Hold: 10/10	07:49:18 PM Oct 31, 2 Radio Std: None Radio Device: BTS	Frequency
10 dB/div Ref 30.00					
Log 20.0 10.0		23.1 dBm		-47.6 dBc	Center Freq 3.625000000 GHz
20.0					
30.0 40.0 50.0 60.0				Ave	rage
Center 3,625 GHz Res BW 560 kHz		#VBW 2.2 M	Hz	Span 60 MI #Sweep 1	6.000000 MH
Total Carrier Power	23.107 dBm/ 20.00 M Filter Of	MHz ACP-I	Lower	Upper dBc dBm Filter	Auto Mar Freq Offse
1 23.107 dBm / 20.00	MHz OFF 20	0.00 MHz 20.00 MHz	-46.90 -23.80 -47	7.62 -24.51 OFF	
SG			STATU	S	

BAND 48. Adjacent Channel Leakage Ratio(ACLR) Plot (20 MHz Ch.55990 QPSK RB 100, Offset 0)



Agilent Spectrum Analyzer - ACP		-		-		o 🗟 🗙
Center Freq 3.690000 PASS		SENSE:INT Center Freq: 3.69000 Trig: Free Run #Atten: 10 dB	ALIGN AUT 00000 GHz Avg Hold: 10/10	0 07:52:57 PM Radio Std: N Radio Device	one	Frequency
Ref Offset 32						
.og 20.0 10.0 .00		22.8 dBm		-46.2 dBc		Center Free 3.690000000 GH
0.0						
80.0 40.0 50.0 50.0	annon ann ann an ann ann an ann ann ann		Margamanag	anna an ann an an ann an an ann an an an	Average	
enter 3.69 GHz tes BW 560 kHz		#VBW 2.2 N	1Hz	Span #Swe	60 MHz eep 1 s	CF Ste 6.000000 MH
Total Carrier Power 2	2.789 dBm/ 20.00 M Filter Of	IHz ACP-	IBW Lower dBc dBm	Upper dBc dBm	Filter	<u>uuto</u> Mai Freq Offse
1 22.789 dBm / 20.00 l		.00 MHz 20.00 MHz	-45.35 -22.56 -	46.18 -23.39	OFF	он
G			STA	TUS		

BAND 48. Adjacent Channel Leakage Ratio(ACLR) Plot (20 MHz Ch.56640 QPSK RB 100, Offset 0)

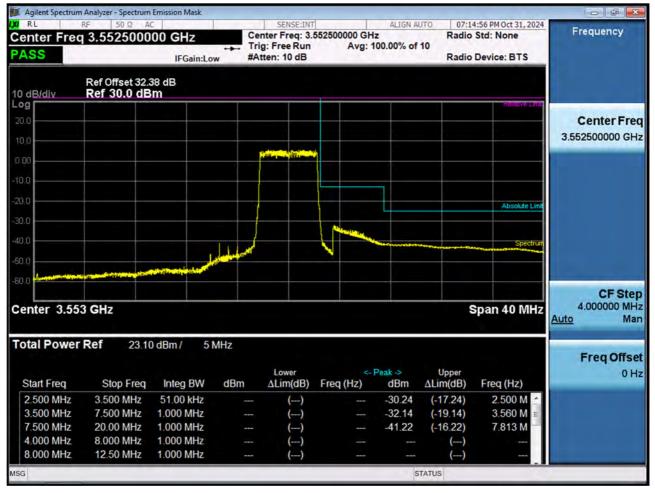




RL RF 50 Ω AC Center Freq 3.552500000 GHz PASS IFGain:Low			+++ Tr	SENSE:INT ALIGN AUTO Center Freq: 3.552500000 GHz Trig: Free Run Avg: 100.00% of 10 #Atten: 10 dB				4:23 PM Oct 31, 2024 Std: None Device: BTS	Frequency
dB/div	Ref Offset 32. Ref 30.0 dB								
9 0.0 0.0								Aradistrikate Linna	Center Fre 3.552500000 GH
				under som					
j.q									
3.0 3.0			_	1					
0.0 1.0					September 1	Wasserfangener (******	Spectrum	
enter 3.55	53 GHz						ş	Span 85 MHz	CF Ste 8.500000 MH Auto Ma
otal Power			MHz	Lower		Peak ->	Upper	-	Freq Offs 0 H
Start Freq	Stop Freq	Integ BW	dBm	ΔLim(dB)	Freq (Hz)	dBm	ΔLim(dB)	Freq (Hz)	
2.500 MHz 3.500 MHz	3.500 MHz 7.500 MHz	51.00 kHz 1.000 MHz	-31.35 -32.09	(-18.35) (-19.09)	-2.505 M -3.520 M		()	Â	
12.50 MHz	22,50 MHz	1.000 MHz	-32.09	(-19.09)	-3.520 M -12.95 M		() ()		
22.50 MHz	42.50 MHz	1.000 MHz	-45.05	(-16.03)	-12.95 M		()		
7.500 MHz	12.50 MHz	1.000 MHz	-41.27	(-16.27)	-7.525 M		()		
							/		

BAND 48. 5 M BandEdge(Lower)_Low_3552.5 MHz_QPSK_Full RB





BAND 48. 5 M_BandEdge(Upper)_Low_3552.5 MHz_QPSK_Full RB





RL RF 50Ω A Center Freq 3.5525000 ASS			+++ Tr	SENSE:INT ALIGN AUTO Center Freq: 3.552500000 GHz Trig: Free Run Avg: 100.00% of 10 #Atten: 10 dB				6:50 PM Oct 31, 2024 Std: None Device: BTS	Frequency
dB/div	Ref Offset 32. Ref 30.0 dB								
g								Assisting	
).0									Center Fre 3.552500000 GH
00									
			^	4					
.0					may home warman			Spectrum	
enter 3.55	3 GHz						ş	Span 85 MHz	CF Ste 8.500000 MH Auto Ma
otal Power			MHz	Lower	<-	Peak ->	Upper		Freq Offs
Start Freq	Stop Freq	Integ BW	dBm	∆Lim(dB)	Freq (Hz)	dBm	∆Lim(dB)	Freq (Hz)	
2.500 MHz	3.500 MHz	51.00 kHz	-22.30	(-9.30)	-2.500 M		()		
3.500 MHz	7.500 MHz	1.000 MHz	-30.43	(-17.43)	-3.500 M		()		
12.50 MHz	22.50 MHz	1.000 MHz	-44.58	(-19.58)	-12.50 M		()		
22.50 MHz	42.50 MHz 12.50 MHz	1.000 MHz 1.000 MHz	-46.93 -42.12	(-6.93) (-17.12)	-22.80 M -7.525 M		() ()		
7.500 MHz					SZ 3 IVI				

BAND 48. 5 M_BandEdge(Lower)_Low_3552.5 MHz_QPSK_1RB





RL RF 50 Ω A0 Center Freq 3.5525000 PASS			+++ Tri	SENSE:INT ALIGN AUTO Center Freq: 3.552500000 GHz Trig: Free Run Avg: 100.00% of 10 #Atten: 10 dB				5:58 PM Oct 31, 2024 Std: None Device: BTS	Frequency
) dB/div	Ref Offset 32. Ref 30.0 dB								
pg								Relative Limit	
0.0									Center Fre 3.552500000 GH
j.ġ								Absolute Limit	
0.0 0.0					5			Spectrum	
0.0 0.0 		an and the second second second		They we	4				
enter 3.55	3 CH2							Span 40 MHz	CF Ste 4.000000 MH
								opun to minz	<u>Auto</u> Ma
otal Power			MHz	Lower		Peak ->	Upper	-	Freq Offs 0 H
Start Freq	Stop Freq	Integ BW	dBm	ΔLim(dB)	Freq (Hz)	dBm	ΔLim(dB)	Freq (Hz)	
2.500 MHz 3.500 MHz	3.500 MHz 7.500 MHz	51.00 kHz 1.000 MHz		()		-22.23	(-9.23)	2.500 M 3.520 M ≡	
7.500 MHz	20.00 MHz	1.000 MHz		() ()		-30.26 -41,99	(-17.26) (-16.99)	7.500 M	
4.000 MHz	8.000 MHz	1.000 MHz		()		-41.99	()	7.500 W	
8.000 MHz	12.50 MHz	1.000 MHz		()			()		
		the second se					1		

BAND 48. 5 M_BandEdge(Upper)_Low_3552.5 MHz_QPSK_1RB





enter Free ASS	RF 50 Ω A q 3.6250000		+++ Tr	sense:INT enter Freq: 3. ig: Free Run tten: 10 dB	625000000 GH	ALIGN AL 12 100.00% of	Radio	8:05 PM Oct 31, 2024 Std: None Device: BTS	Frequency
) dB/div	Ref Offset 32.3 Ref 30.0 dB								
og								Relative and	
0.0									Center Fre 3.625000000 GH
				1, gadaa 2010, 1920, 1970, 1971, 1971, 1970					
0.0								Absolute Limit	
0.0					-				
0.0								Spectrum	
enter 3.62	5 GHz							Span 40 MHz	CF Ste 4.000000 MH
otal Power	Ref 23.12	2 dBm / 51	MHz						<u>Auto</u> Ma
				Lower		Peak ->	Upper		Freq Offs 0 H
Start Freq	Stop Freq	Integ BW	dBm	∆Lim(dB)	Freq (Hz)	dBm	∆Lim(dB)	Freq (Hz)	
2.500 MHz	3.500 MHz	51.00 kHz	-30.92	(-17.92)	-2.500 M	-30.91	(-17.91)	2.500 M 🔶	
3.500 MHz	7.500 MHz	1.000 MHz	-33.95	(-20.95)	-3.620 M	-31.46	(-18.46)	3.500 M ≡	
7.500 MHz	20.00 MHz	1.000 MHz	-41.18	(-16.18)	-8.125 M	-40.60	(-15.60)	8.563 M	
4.000 MHz 8.000 MHz	8.000 MHz 12.50 MHz	1.000 MHz 1.000 MHz		() ()			() ()		

BAND 48. 5 M_BandEdge(Center)_Mid_3625 MHz_QPSK_Full RB





RL Center Fred ASS	RF 50 Ω A q 3.6250000		+++ Tr	sense:INT nter Freq: 3. ig: Free Run tten: 10 dB	625000000 GH	ALIGN AU	Radio	0:23 PM Oct 31, 2024 Std: None Device: BTS	Frequency
0 dB/div	Ref Offset 32.3 Ref 30.0 dB								
og 20.0 10.0								relatvé Limit	Center Fre 3.625000000 GH
0.00 0.0 0.0								Absolute Linit	
x0.0 10.0 10.0		^	1	V				Spectrum	
enter 3.62	5 GHz							Span 40 MHz	CF Ste 4.000000 MH Auto Ma
otal Power	Ref 24.32 Stop Freq	2 dBm / 5 M	/Hz dBm	Lower ∆Lim(dB)	< Freq (Hz)	Peak -> dBm	Upper ∆Lim(dB)	Freg (Hz)	Freq Offs 0 F
2.500 MHz 3.500 MHz	3.500 MHz 7.500 MHz	51.00 kHz 1.000 MHz	-22.01	(-9.01) (-18.31)	-2.500 M -3.500 M	-46.49 -41.16	(-33.49) (-28.16)	2.515 M 3.900 M =	
7.500 MHz 4.000 MHz 8.000 MHz	20.00 MHz 8.000 MHz 12.50 MHz	1.000 MHz 1.000 MHz 1.000 MHz	-41.86	(-16.86) () ()	-7.500 M	-43.73	(-20.10) (-18.73) () ()	7.500 M	
G G	12.00 100 12	1.000 11112				c	TATUS		

BAND 48. 5 M_BandEdge(Lower)_Mid_3625 MHz_QPSK_1RB





enter Fred	RF 50 Ω A 3.6250000		+++ Tri	SENSE:INT enter Freq: 3. ig: Free Run tten: 10 dB	625000000 GH	ALIGN AU 2 100.00% of 1	Radio 0	9:24 PM Oct 31, 2024 Std: None Device: BTS	Frequency
dB/div	Ref Offset 32.3 Ref 30.0 dB								
9g 0.0 0.0					A			relativé umit	Center Fre 3.625000000 GH
00).0).0								Absolute Limit	
0.0 0.0 0.0			* .d/	w	M		internet metru	Spectrum	
enter 3.62	5 GHz							Span 40 MHz	CF Ste 4.000000 MH <u>Auto</u> Ma
otal Power			MHz	Lower		Peak ->	Upper	Free (Up)	Freq Offs 0 H
Start Freq 2,500 MHz	Stop Freq 3,500 MHz	Integ BW 51.00 kHz	dBm -46.10	ΔLim(dB) (-33.10)	Freq (Hz) -2.805 M	dBm -21.90	∆Lim(dB) (-8.90)	Freq (Hz) 2.505 M	
3.500 MHz	7.500 MHz	1.000 MHz	-46.10	(-35.10)	-2.805 M	-30.99	(-0.90)	3.500 M =	
7.500 MHz	20.00 MHz	1.000 MHz	-44.09	(-19.09)	-7.500 M	-41.44	(-16.44)	7.563 M	
4.000 MHz	8.000 MHz 12.50 MHz	1.000 MHz 1.000 MHz		() ()			() ()		
8.000 MHz				()			()		

BAND 48. 5 M_BandEdge(Upper)_Mid_3625 MHz_QPSK_1RB





enter Fred	RF 50Ω A 3.6975000		+++ Tr	sense:INT inter Freq: 3. ig: Free Run itten: 10 dB	697500000 GH	ALIGN AU 2 100.00% of 1	Radio	1:04 PM Oct 31, 2024 Std: None Device: BTS	Frequency
) dB/div	Ref Offset 32.3 Ref 30.0 dB								
9 g 0.0 0.0								ARSTRATELING	Center Fre 3.697500000 GH
.ço				nerophilipperophies					
0.0			ل ا		Wall war with the start				
0.0 0.0						particular	*****	Spectrum	
enter 3.69	8 GHz						ş	Span 40 MHz	CF Ste 4.000000 MH Auto Ma
otal Power			MHz	Lower		Peak ->	Upper	-	Freq Offs 01
Start Freq	Stop Freq	Integ BW	dBm	ΔLim(dB)	Freq (Hz)	dBm	ΔLim(dB)	Freq (Hz)	
2.500 MHz 3.500 MHz	3.500 MHz 7.500 MHz	51.00 kHz 1.000 MHz	-31.09 -29.72	(-18.09) (-16.72)	-2.500 M -3.640 M		() ()	<u></u>	
7.500 MHz	20.00 MHz	1.000 MHz	-40.19	(-15.19)	-7.500 M		()	1	
4.000 MHz	8.000 MHz	1.000 MHz	40.15	()	-1.000 101		()		
8.000 MHz	12.50 MHz	1.000 MHz		()			()		
								-	

BAND 48. 5 M_BandEdge(Lower)_High_3697.5 MHz_QPSK_Full RB





Center Fro 3.697500000 G 3.697500000 G 4.000 4.000 6.000 6.00000 6.00000 6.0000 6.00000 6.0000 6.0000 6.0000 6.0000 6.0000 6.00000 6.00000 6.00000 6.00000 6.00000 6.00000 6.00000 6.00000 6.00000 6.00000 6.00000 6.00000 6.00000 6.00000 6.000000 6.00000 6.00000 6.00000 6.00000 6.00000000	RL Center Fred ASS	RF 50Ω A q 3.6975000		+++ Tri	SENSE:INT nter Freq: 3. g: Free Run tten: 10 dB	697500000 GH	ALIGN A 100.00% of	Radio 10	1:50 PM Oct 31, 2024 Std: None Device: BTS	Frequency
Center Fr Center Fr Control Control Control Control Control Control Control Control Control Control Control Control Control Control Control Co	0 dB/div									
00 3.697500000 G 00 Absolve Unit 00 Spectrum Spectrum Spectrum Spectrum Spectrum Start Freq Stop Freq Integ BW 01al Power Ref 22.76 dBm / 5 MHz 2500 MHz 3.500 MHz 51.00 kHz 2500 MHz 3.500 MHz 51.00 kHz 2500 MHz 3.500 MHz 1.000 MHz 22.50 MHz 1.000 MHz - 25.5	og								Relatives white	
000 Absolute Lind 000 Absolute Lind 000 Spectrum 010 Spectrum 010 Spectrum 010 Spectrum 010 Spectrum 010 Spectrum 011 Spectrum 012 Spectrum 013 Stop Freq 112 Stop Freq 112 Stop MHz 12 Stop MHz <td>20.0</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>Center Fre 3.697500000 GH</td>	20.0									Center Fre 3.697500000 GH
000 Absolute Line 000 Absolute Line 000 Spectrue 010 Spectrue 010 Spectrue 010 Spectrue 010 Spectrue 011 Spectrue 012 Spectrue Start Freq Start Freq Start Freq Integ BW dBm ALim(dB) Freq (Hz) dBm J.500 MHz 3.500 MHz J.000 MHz J.500 MHz 1.000 MHz J.500 MHz 1.000 MHz J.500 MHz 1.000 MHz J.500 MHz 1.000 MHz J.500 MHz 1.000 MHz J.500 MHz <	1.00				hrushers					
0.0 Absolvé Lind 0.0 Absolvé Lind 0.0 Spectral 0.0 Spe	Ó.Q									
Other Absolute Link 00 Spectrum 01 Spectrum 02 Spectrum 03 Spectrum 04 Spectrum 05 Spectrum 06 Spectrum 07 Spectrum 08 Spectrum 09 Spectrum 01 Spectrum 01 Spectrum 01 Spectrum 01 Spectrum 01 Spectrum 01 Spectrum 02 Spectrum 03 Spectrum 100 MHz 100 MHz 100 MHz 100	0.0							-		
CF Ster enter 3.698 GHz Span 85 MHz otal Power Ref 22.76 dBm / 5 MHz Lower < Peak > Upper Start Freq Stop Freq Integ BW dBm ΔLim(dB) Freq (Hz) Glam 2.500 MHz 3.500 MHz 5.000 MHz -30.50 (-17.50) 2.500 M 2.500 MHz 3.500 MHz 1.000 MHz () -30.11 (-17.11) 3.500 M 2.500 MHz 22.50 MHz 1.000 MHz () -41.53 (-16.53) 12.55 M 22.50 MHz 42.50 MHz 1.000 MHz () -44.23 (-4.23) 22.60 M	0.0								Absolute Limit	
CF Ster enter 3.698 GHz Span 85 MHz otal Power Ref 22.76 dBm / 5 MHz Lower < Peak > Upper Start Freq Stop Freq Integ BW dBm ΔLim(dB) Freq (Hz) 01 2.500 MHz 3.500 MHz 51.00 KHz -30.50 (-17.50) 2.500 M 01 3.500 MHz 7.500 MHz 1.000 MHz () -30.11 (-17.11) 3.500 M 12 12.50 MHz 22.50 MHz 1.000 MHz () -41.53 (-16.53) 12.55 M 12.55 M 22.50 MHz 42.50 MHz 1.000 MHz () -44.23 (-4.23) 22.60 M 12.55 M	0.0			للجي	~ \					
Lower <-Peak Vpper Start Freq Stop Freq Integ BW dBm ΔLim(dB) Freq (Hz) 0 I 2.500 MHz 3.500 MHz 5.000 MHz -30.50 (-17.50) 2.500 M 1 12.50 MHz 22.50 MHz 1.000 MHz () -30.11 (-17.11) 3.500 M 1 12.50 MHz 22.50 MHz 1.000 MHz () -41.53 (-16.53) 12.55 M 1 22.50 MHz 42.50 MHz 1.000 MHz () -44.23 (-4.23) 22.60 M	io.io			and the second second						
Lower <-Peak Upper Start Freq Stop Freq Integ BW dBm ΔLim(dB) Freq (Hz) dBm ΔLim(dB) Freq (Hz) 0 2.500 MHz 3.500 MHz 51.00 kHz -30.50 (-17.50) 2.500 M 1 12.50 MHz 22.50 MHz 1.000 MHz () -30.11 (-17.11) 3.500 M 1 1 12.55 M 12.50 MHz 22.50 MHz 1.000 MHz () -41.53 (-16.53) 12.55 M 22.50 MHz 42.50 MHz 1.000 MHz () -44.23 (-4.23) 22.60 M										CF Ste
Lower <-Peak -> Upper Start Freq Stop Freq Integ BW dBm ΔLim(dB) Freq (Hz) dBm ΔLim(dB) Freq (Hz) 01 2.500 MHz 3.500 MHz 51.00 kHz () -30.50 (-17.50) 2.500 M 01 3.500 MHz 7.500 MHz 1.000 MHz () -30.11 (-17.11) 3.500 M 12 12.50 MHz 22.50 MHz 1.000 MHz () -41.53 (-16.53) 12.55 M 22.50 MHz 42.50 MHz 1.000 MHz () -44.23 (-4.23) 22.60 M	enter 3.69	8 GHz							Span 85 MHz	
Lower <-Peak -> Upper Start Freq Stop Freq Integ BW dBm ΔLim(dB) Freq (Hz) dBm ΔLim(dB) Freq (Hz) 01 2.500 MHz 3.500 MHz 51.00 kHz () -30.50 (-17.50) 2.500 M 1 3.500 MHz 7.500 MHz 1.000 MHz () -30.11 (-17.11) 3.500 M 1 12.50 MHz 22.50 MHz 1.000 MHz () -41.53 (-16.53) 12.55 M 22.50 MHz 42.50 MHz 1.000 MHz () -44.23 (-4.23) 22.60 M	otal Power	Ref 22.70	∂dBm/ 5M	ИНz						Freq Offse
2.500 MHz 3.500 MHz 51.00 kHz () -30.50 (-17.50) 2.500 M 3.500 MHz 7.500 MHz 1.000 MHz () -30.11 (-17.11) 3.500 M 12.50 MHz 22.50 MHz 1.000 MHz () -30.11 (-16.53) 12.55 M 22.50 MHz 42.50 MHz 1.000 MHz () -41.23 (-4.23) 22.60 M										01
3.500 MHz 7.500 MHz 1.000 MHz () -30.11 (-17.11) 3.500 M 12.50 M 12.50 MHz 22.50 MHz 1.000 MHz () -41.53 (-16.53) 12.55 M 22.50 MHz 42.50 MHz 1.000 MHz () -44.23 (-4.23) 22.60 M			9	dBm	∆Lim(dB)	Freq (Hz)				
12.50 MHz 22.50 MHz 1.000 MHz () -41.53 (-16.53) 12.55 M 22.50 MHz 42.50 MHz 1.000 MHz () -44.23 (-4.23) 22.60 M										
22.50 MHz 42.50 MHz 1.000 MHz ()44.23 (-4.23) 22.60 M										
7.500 MHz 12.50 MHz 1.000 MHz ()39.06 (-14.06) 7.500 M										
	7.500 MHz	12.50 MHz	1.000 MHz		()		-39.06	(-14.06)	7.500 M	

BAND 48. 5 M_BandEdge(Upper)_High_3697.5 MHz_QPSK_Full RB





	Analyzer - Spectrum		_	SENSE:INT	1	ALIGN AU	0 07.2	3:50 PM Oct 31, 2024	0 0
	3.6975000		+++ Tr		697500000 GH		Radio 0	Std: None Device: BTS	Frequency
0 dB/div	Ref Offset 32.3 Ref 30.0 dB								
og 0.0								Aosulate Lini	Center Fre
0.0									3.697500000 GH
.00									
ó.ġ									
0.0									
0.0			11						
0.0			-1	MA					
0.0				" New	musuremmen	min market	MANING AND LODING	Spectrum	
									CF Ste
enter 3.69	8 GHz							Span 40 MHz	4.000000 Mi Auto M
otal Power	Ref 23.5	7 dBm / 5 N	MHz			an ta sh			Freq Offs
Start Freq	Stop Freq	Integ BW	dBm	Lower ∆Lim(dB)	Freq (Hz)	Peak -> dBm	Upper ∆Lim(dB)	Freq (Hz)	01
2.500 MHz	3.500 MHz	51.00 kHz	-22.48	(-9.48)	-2.500 M		()	^	
3.500 MHz	7.500 MHz	1.000 MHz	-31.23	(-18.23)	-3.520 M		()	E	
7.500 MHz	20.00 MHz	1.000 MHz	-41.59	(-16.59)	-7.500 M		()		
4.000 MHz	8.000 MHz	1.000 MHz		()			()		
8.000 MHz	12.50 MHz	1.000 MHz		()			()		
G						ST	ATUS		

BAND 48. 5 M_BandEdge(Lower)_High_3697.5 MHz_QPSK_1RB





RL enter Fred	RF 50 Ω A		Ce	SENSE:INT nter Freg: 3.	697500000 GH	ALIGN A		3:07 PM Oct 31, 2024 Std: None	Frequency
ASS	1 3.037 3000	IFGain:Lo	+++ Tr	g: Free Run tten: 10 dB		100.00% of		Device: BTS	
dB/div	Ref Offset 32.3 Ref 30.0 dB								
9 0.0 0.0								Kelatve Lima	Center Fre 3.697500000 GH
.00).0									
3.0 3.0				m	~			Absolute Limit	
J.Q		an a		V					CF Ste
enter 3.69	8 GHz							Span 85 MHz	8.500000 Mi Auto Ma
otal Power	Stop Freq	0 dBm / 5 M	dBm	Lower ∆Lim(dB)	<- Freq (Hz)	Peak -> dBm	Upper ∆Lim(dB)	Freq (Hz)	Freq Offs 0 F
2.500 MHz	3.500 MHz	51.00 kHz		()	rieq (nz)	-22.58	(-9.58)	2.505 M	
3.500 MHz	7.500 MHz	1.000 MHz		()		-22.56	(-9.56)	3.520 M ≡	
12.50 MHz	22.50 MHz	1.000 MHz		()		-43.49	(-18.49)	12.50 M	
22.50 MHz	42.50 MHz	1.000 MHz		()		-45.44	(-5.44)	22.80 M	
7.500 MHz	12.50 MHz	1.000 MHz		()		-41.72	(-16.72)	7.525 M	

BAND 48. 5 M_BandEdge(Upper)_High_3697.5 MHz_QPSK_1RB





	RF 50 Q A			SENSE:INT	r I	ALIGN AU	TO 07:2	4:42 PM Oct 31, 2024	
enter Fred	ן 3.5550000 ן	IOO GHz IFGain:Lov	+++ Tr	nter Freq: 3. ig: Free Run tten: 10 dB	555000000 GH Avg: 1	lz 100.00% of 1	0	Std: None Device: BTS	Frequency
0 dB/div	Ref Offset 32.3 Ref 30.0 dB								
og 20.0 .0.0								Akos Cilitis Linni	Center Fre 3.555000000 GH
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Ó.Ú									
0.0	ſ								
0.0					White I				
0,0 0.0					1. minter	where we are a second and the second s	Warnen	Spectrum	
enter 3.55							ş	Span 90 MHz	CF Ste 9.000000 MH Auto Ma
otal Power		4 dBm / 10 N		Lower		Peak ->	Upper	-	Freq Offs 0 H
Start Freq	Stop Freq	Integ BW	dBm	∆Lim(dB)	Freq (Hz)	dBm	ΔLim(dB)	Freq (Hz)	
5.000 MHz 6.000 MHz	6.000 MHz 15.00 MHz	100.0 kHz 1.000 MHz	-34.51 -32.78	(-21.51) (-19.78)	-5.000 M -6.135 M		() ()		
15.00 MHz	25.00 MHz	1.000 MHz	-40.33	(-15.33)	-20.00 M		()		
25.00 MHz	45.00 MHz	1.000 MHz	-43.52	(-3.52)	-25.00 M		()		
15.00 MHz	15.00 MHz	1.000 MHz		()			()		
						ST			

BAND 48. 10 M_BandEdge(Lower)_Low_3555 MHz_QPSK_Full RB





	RF 50Ω A 3.55550000	-	+++ Tri	sense:INT inter Freq: 3.5 ig: Free Run itten: 10 dB		ALIGN A 2 00.00% of	Radio 10	5:17 PM Oct 31, 2024 Std: None Device: BTS	Frequency
) dB/div	Ref Offset 32. Ref 30.0 dB								
og								Relative Link	
0.0									Center Fre 3.555000000 GH
0.0			w	www.www.www.www.www.www.www.	M				3.555000000 GP
.00									
0.0									
0.0								Absolute Limit	
0.0					1				
0.0		الأسال ا	interester		A CONTRACTOR	I ta tita		Spectrum	
0.0	NHIN MARKANINA								
0.0					_				05.04
enter 3.55								Span 60 MHz	CF Ste 6.000000 MH Auto Ma
otal Power			MHz	Lower		Peak ->	Upper		Freq Offs
Start Freq 5.000 MHz	Stop Freq 6.000 MHz	Integ BW 100.0 kHz	dBm		Freq (Hz)	dBm	$\Delta Lim(dB)$	Freq (Hz) 5.005 M	
6.000 MHz	6.000 MHZ 15.00 MHZ	1.000 KHZ		() ()		-34.82 -35.18	(-21.82)	6.180 M =	
15.00 MHz	30.00 MHz	1.000 MHz		()		-35.16	(-22.16)	20.70 M	
4.000 MHz	8.000 MHz	1.000 MHz		()		40.20	()	20.70 10	
8.000 MHz	12.50 MHz	1.000 MHz		()			()		

BAND 48. 10 M_BandEdge(Upper)_Low_3555 MHz_QPSK_Full RB



enter Free	RF 50Ω A q 3.55550000		+++ Tr	sense:INT enter Freq: 3. ig: Free Run tten: 10 dB	555000000 GH	ALIGN AU 12 100.00% of 1	Radio 0	7:03 PM Oct 31, 2024 Std: None Device: BTS	Frequency
dB/div	Ref Offset 32. Ref 30.0 dB								
g								Assette Linit	
),0),0									Center Fre 3.555000000 GH
00									
).Q	r								
0.0 1.0			-						
0.0 0.0				M	hourstannaille		·····	Spectrum	
enter 3.55	5 GHz							Span 90 MHz	CF Ste 9.000000 MH Auto Ma
otal Power			MHz	Lower	¢.	Peak ->	Upper		Freq Offs
Start Freq	Stop Freq	Integ BW	dBm	∆Lim(dB)	Freq (Hz)	dBm	ΔLim(dB)	Freq (Hz)	
5.000 MHz	6.000 MHz	100.0 kHz	-29.14	(-16.14)	-5.000 M		()	^	
6.000 MHz	15.00 MHz	1.000 MHz	-34.29	(-21.29)	-6.000 M		()	=	
15.00 MHz	25.00 MHz	1.000 MHz	-44.40	(-19.40)	-15.15 M		()		
25.00 MHz	45.00 MHz 15.00 MHz	1.000 MHz 1.000 MHz	-46.84	(-6.84) ()	-25.20 M		() ()		
15.00 MHz									

BAND 48. 10 M_BandEdge(Lower)_Low_3555 MHz_QPSK_1RB





	RF 50 Ω A 3.55550000		+++ Tri	sense:INT nter Freq: 3. g: Free Run tten: 10 dB	555000000 GH	ALIGN AU Iz 100.00% of	Radio	6:17 PM Oct 31, 2024 Std: None Device: BTS	Frequency
dB/div	Ref Offset 32. Ref 30.0 dE								
pg								Relative Limit	
),0),0									Center Fre 3.555000000 GH
Q0									
).0).0									
 					Δ	L		Absolute Limit	
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0.¢			, A	we want watch				Spectrum	
0.0		man and a second	Contraction of the second			_			05.044
enter 3.55								Span 60 MHz	CF Ste 6.000000 MH Auto Ma
otal Power			MHz	Lower		Peak ->	Upper		Freq Offs
Start Freq	Stop Freq	Integ BW	dBm	∆Lim(dB)	Freq (Hz)	dBm	∆Lim(dB)	Freq (Hz)	
5.000 MHz	6.000 MHz	100.0 kHz		()		-28.99	(-15.99)	5.000 M 🔶	
6.000 MHz	15.00 MHz	1.000 MHz		()		-34.04	(-21.04)	6.000 M ≡	
15.00 MHz	30.00 MHz	1.000 MHz		()		-44.62	(-19.62)	15.08 M	
4.000 MHz	8.000 MHz 12.50 MHz	1.000 MHz 1.000 MHz		() ()			() ()		
8.000 MHz									

BAND 48. 10 M_BandEdge(Upper)_Low_3555 MHz_QPSK_1RB





and the second se	RF 50 Q A			SENSE:INT	1 1	ALIGN AL	ITO 07:3	8:19 PM Oct 31, 2024	
	3.6250000		+++ Tr		625000000 GH		Radio	Std: None Device: BTS	Frequency
10 dB/div	Ref Offset 32. Ref 30.0 dE							Relative Line	
20.0 10.0									Center Fre 3.625000000 GH
0.00			/*						
20.0								Absolute Limit	
40.0			J		a sugar			Spectrum	
enter 3.62	5 CH2							Span 60 MHz	CF Ste
otal Power		0 dBm / 10 l	MHz					opan oo minz	<u>Auto</u> Ma
				Lower		Peak ->	Upper		Freq Offs 0 H
Start Freq	Stop Freq	Integ BW	dBm	∆Lim(dB)	Freq (Hz)	dBm	ΔLim(dB)	Freq (Hz)	
5.000 MHz	6.000 MHz	100.0 kHz	-34.52	(-21.52)	-5.005 M	-34.32	(-21.32)	5.015 M	
6.000 MHz	15.00 MHz	1.000 MHz	-33.85	(-20.85)	-6.000 M	-32.77	(-19.77)	6.090 M =	
15.00 MHz 4.000 MHz	30.00 MHz 8.000 MHz	1.000 MHz 1.000 MHz	-40.30	(-15.30)	-20,10 M	-39.39	(-14.39)	20.85 M	
4.000 MIMZ				()			()		II - Income and the second
8.000 MHz	12.50 MHz	1.000 MHz		()			()		

BAND 48. 10 M_BandEdge(Center)_Mid_3625 MHz_QPSK_Full RB



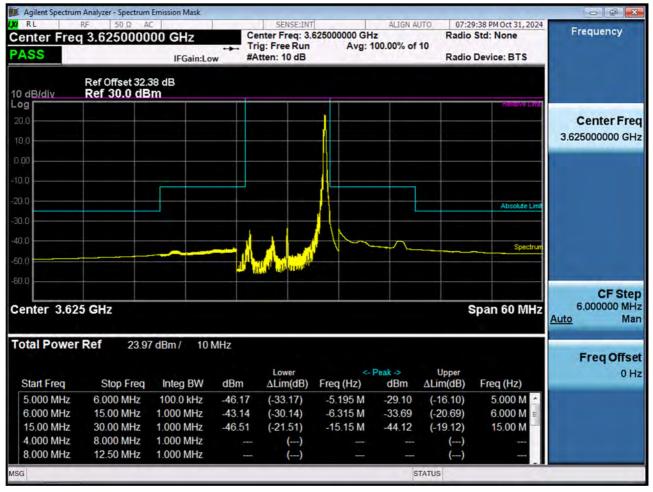




BAND 48. 10 M_BandEdge(Lower)_Mid_3625 MHz_QPSK_1RB







BAND 48. 10 M_BandEdge(Upper)_Mid_3625 MHz_QPSK_1RB





	Analyzer - Spectrum			SENSE:INT	1	ALIGN AU	TO 07·3	1:18 PM Oct 31, 2024		
Center Freq 3.695000000 GHz					695000000 GH		Radio 0	Std: None Device: BTS	Frequency	
0 dB/div	Ref Offset 32. Ref 30.0 dB									
og								Associates in ma		
0.0									Center Fre	
0,0									3.695000000 GI	
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0.0										
									CF St	
enter 3.69							ŝ	Span 60 MHz	6.000000 M Auto M	
otal Power	Ref 22.68	8 dBm / 10 l	MHz	Lower		Peak ->	Harris		Freq Offs	
Start Freq	Stop Freq	Integ BW	dBm	ΔLim(dB)	Freq (Hz)		Upper ΔLim(dB)	Freq (Hz)	0	
5.000 MHz	6.000 MHz	100.0 kHz	-33.73	(-20.73)	-5.000 M		()			
6.000 MHz	15.00 MHz	1.000 MHz	-29.78	(-16.78)	-6.000 M		()			
15.00 MHz	30.00 MHz	1.000 MHz	-39.36	(-14.36)	-20.10 M		()			
4.000 MHz	8.000 MHz	1.000 MHz		()			()			
8.000 MHz	12.50 MHz	1.000 MHz		()			()			
3						ST	ATUS			

BAND 48. 10 M_BandEdge(Lower)_High_3695 MHz_QPSK_Full RB





T RF 50 Ω AC Center Freq 3.695000000 GHz ASS				sense:INT nter Freq: 3. g: Free Run tten: 6 dB	695000000 GH	ALIGN A Iz 100.00% of	Radio 10	7:22 AM Nov 01, 2024 Std: None Device: BTS	Frequency	
) dB/div	Ref Offset 32.3 Ref 30.0 dB				_					
og 0.0 0.0								neblive Lind	Center Fre 3.695000000 GH	
.00				nopeutropyteurs						
0.0 0.0										
0.0 0.0					June			Absolute Limit		
0,0		wanterson	energed by allowing					Spectrum		
enter 3.69	5 GHz							Span 90 MHz	CF Ste 9.000000 MH	
otal Power	Ref 22.6	1 dBm / 10 M	MHz						Auto <u>Ma</u>	
				Lower		Peak ->	Upper		Freq Offs 0 H	
Start Freq	Stop Freq	Integ BW	dBm	∆Lim(dB)	Freq (Hz)	dBm	ΔLim(dB)	Freq (Hz)		
5.000 MHz 6.000 MHz	6.000 MHz 15.00 MHz	150.0 kHz 1.000 MHz		() ()		-32.33 -30.42	(-19.33) (-17.42)	5.000 M 🖆		
15.00 MHz	25.00 MHz	1.000 MHz		() ()	-	-30.42	(-17.42)	20.20 M		
25.00 MHz	45.00 MHz	1.000 MHz		()		-41.03	(-14.03)	25.00 M		
17.50 MHz	17.50 MHz	1.000 MHz		()			()	20.00 1		

BAND 48. 10 M_BandEdge(Upper)_High_3695 MHz_QPSK_Full RB





enter Free ASS	RF 50Ω A q 3.6950000	++ Tri	sense:INT nter Freq: 3. g: Free Run tten: 10 dB	695000000 GH	ALIGN AL	Radio	3:48 PM Oct 31, 2024 Std: None Device: BTS	Frequency	
0 dB/div	Ref Offset 32. Ref 30.0 dB								
og 0.0 0.0								Aradisia (Cater Li Inno)	Center Fre 3.695000000 GH
0.00 0.0 0.0									
0.0									
0.0 0.0				mer	when when	·····		Spectrum	CF Ste
enter 3.69	5 GHz						\$	Span 60 MHz	6.000000 MH Auto Ma
otal Power	Stop Freq	8 dBm / 10 l	MHz dBm	Lower ∆Lim(dB)	<- Freq (Hz)	Peak -> dBm	Upper ∆Lîm(dB)	Freg (Hz)	Freq Offs 0 H
5.000 MHz	6.000 MHz	100.0 kHz	-29.24	(-16.24)	-5.000 M	UDIII	ΔLIIII(GB) ()		
6.000 MHz	15.00 MHz	1.000 MHz	-29.24	(-10.24)	-6.000 M		()		
15.00 MHz	30.00 MHz	1.000 MHz	-43.59	(-18.59)	-15.00 M		()		
4.000 MHz	8.000 MHz	1.000 MHz		()			()		
8.000 MHz	12.50 MHz	1.000 MHz		()			()		
									·

BAND 48. 10 M_BandEdge(Lower)_High_3695 MHz_QPSK_1RB





Center Fr 3.69500000 G 3.69500000 G 3.69500000 G 3.69500000 G 3.69500000 G 3.69500000 G Center Fr 3.69500000 G CF St Auto Mathematical States of the	RL RF 50 Ω AC Center Freq 3.695000000 GHz IFGain:Low			+++ Tri	sense:INT nter Freq: 3. ig: Free Run tten: 10 dB	695000000 GH	ALIGN A 2 100.00% of	Radio 10	3:05 PM Oct 31, 2024 Std: None Device: BTS	Frequency
Center Fr 00 0) dB/div									
000 0000 0000 0000 000 000 <t< th=""><th>og 0.0</th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th>Relative Lint</th><th>Center Fre</th></t<>	og 0.0								Relative Lint	Center Fre
00 00 <td< td=""><td>0.0</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>3.695000000 GH</td></td<>	0.0									3.695000000 GH
10 Absolute Line 10 Absolute Line <td>.00</td> <td></td> <td></td> <td>-</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	.00			-						
10 4bcolde Ling 10 4bcolde Ling 10 5pectrar 10 5pectrar 10 5pectrar 10 5pectrar 10 100 10 100 10 100 10 100 10 100 10 100 10 100 10 100 10 100 10 100 10 100 <td>0.0</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	0.0									
Lower Peak > Upper Start Freq Stop Freq Integ BW dBm ΔLim(dB) Freq (Hz) 0	0.0									
Lower < Peak > Upper Start Freq Stop Freq Integ BW dBm ΔLim(dB) Freq (Hz) 0	0.0					N.			Absolute Limit	
Lower C Peak > Upper Start Freq Stop Freq Integ BW dBm ΔLim(dB) Freq (Hz) 0 5.000 MHz 6.000 MHz 1000 MHz -29.01 (-16.01) 5.005 M 0 5.000 MHz 15.00 MHz 1.000 MHz -33.63 (-20.63) 6.045 M 0 15.00 MHz 25.00 MHz 1.000 MHz -43.65 (-18.65) 15.00 M 15.00 M 25.00 MHz 45.00 MHz 1.000 MHz -45.37 (-5.37) 25.00 M	0.0				A Aller	In			Spectrum	
Lower <- Peak Span 90 MHz 9.000000 M Auto otal Power Ref 23.95 dBm / 10 MHz Image: Start Freq Start Freq Start Freq Upper Freq Offs 0 Start Freq Stop Freq Integ BW dBm ALim(dB) Freq (Hz) dBm ALim(dB) Freq (Hz) 0 5.000 MHz 6.000 MHz 100.0 kHz -29.01 (-16.01) 5.005 M 0 6.000 MHz 15.00 MHz 1.000 MHz () -33.63 (-20.63) 6.045 M 1 15.00 MHz 25.00 MHz 1.000 MHz () 43.65 (-18.65) 15.00 M 25.00 MHz 1.000 MHz () 45.37 (-5.37) 25.00 M	0.0									
Lower <-Peak -> Upper Start Freq Stop Freq Integ BW dBm ΔLim(dB) Freq (Hz) dBm ΔLim(dB) Freq (Hz) 0 5.000 MHz 6.000 MHz 100.0 kHz () -29.01 (-16.01) 5.005 M 0 6.000 MHz 15.00 MHz 1.000 MHz () -33.63 (-20.63) 6.045 M 1 15.00 MHz 25.00 MHz 1.000 MHz () -43.65 (-18.65) 15.00 M 25.00 MHz 45.00 MHz 1.000 MHz () -45.37 (-5.37) 25.00 M	enter 3.69	95 GHz							Span 90 MHz	CF Ste 9.000000 MH Auto Ma
5.000 MHz 6.000 MHz 100.0 kHz () -29.01 (-16.01) 5.005 M 6.000 MHz 15.00 MHz 1.000 MHz () -33.63 (-20.63) 6.045 M 15.00 MHz 25.00 MHz 1.000 MHz () -43.65 (-18.65) 15.00 M 25.00 MHz 45.00 MHz 1.000 MHz () -45.37 (-5.37) 25.00 M									Erog (Hz)	Freq Offs 01
6.000 MHz 15.00 MHz 1.000 MHz () -33.63 (-20.63) 6.045 M 1000 MHz 15.00 MHz 25.00 MHz 1.000 MHz () -43.65 (-18.65) 15.00 M 25.00 MHz 45.00 MHz 1.000 MHz () -43.65 (-5.37) 25.00 M										
15.00 MHz 25.00 MHz 1.000 MHz () -43.65 (-18.65) 15.00 M 25.00 MHz 45.00 MHz 1.000 MHz () -45.37 (-5.37) 25.00 M										
	15.00 MHz	25.00 MHz	1.000 MHz		()		-43.65	(-18.65)	15.00 M	
15.00 MHz 15.00 MHz 1.000 MHz () ()	25.00 MHz	45.00 MHz	1.000 MHz		()		-45.37	(-5.37)	25.00 M	
	15.00 MHz	15.00 MHz	1.000 MHz		()			()		

BAND 48. 10 M_BandEdge(Upper)_High_3695 MHz_QPSK_1RB





BAND 48. 15 M_BandEdge(Lower)_Low_3557.5 MHz_QPSK_Full RB_1





enter Frec	C 100 GHz IFGain:	Low	SENSE:INT ALIGN AUTO Center Freq: 3.557500000 GHz Trig: Free Run Avg: 100.00% of 10 #Atten: 10 dB					Std: None Device: BTS	Frequency	
) dB/div	Ref Offset 32. Ref 30.0 dE									
g									Relative Lind	
0.0 0.0										Center Fre 3.557500000 GH
.00					winnonnonnon	69647				
j.o										
).ġ									Absolute Limit	
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0.0			MANACALANA		-	- U	and the second second	man	Spectrum	
0.0	winging with the second	- Ale of the office office of the office of the office of the office of the office off					_			
.0										CF Ste
enter 3.55	8 GHz				1				Span 75 MHz	7.500000 MH Auto Ma
otal Power			5 MHz		Lower		- Peak ->	Upper		Freq Offs 0 F
Start Freq	Stop Freq	Integ BW				Freq (Hz)	dBm	∆Lim(dB)	Freq (Hz)	
7.500 MHz 8.500 MHz	8.500 MHz 22.50 MHz	150.0 kHz 1.000 MHz			()		-35.72	(-22.72)	7.505 M 🔔 8.640 M 💼	
22.50 MHz	22.50 MHz 37.50 MHz	1.000 MHz 1.000 MHz			() ()		-34.07 -43.42	(-21.07) (-18.42)	8.640 M ≊ 29.40 M	
4.000 MHz	8.000 MHz	1.000 MHz			()		-40.42	(-10.42)	23.40 10	
8.000 MHz	12.50 MHz	1.000 MHz			()			()		

BAND 48. 15 M_BandEdge(Upper)_Low_3557.5 MHz_QPSK_Full RB





enter Frec ASS	++ Tri	sense:INT nter Freq: 3. g: Free Run tten: 10 dB	557500000 GH	ALIGN AU	Radio	7:04 PM Oct 31, 2024 Std: None Device: BTS	Frequency		
0 dB/div	Ref Offset 32. Ref 30.0 dE								
og								Assistant	
0,0									Center Fre 3.557500000 GH
0.00									
0.Q									
0.0		Δ							
0.0				mark has	Manana			Spectrum	
0.0						عديمدأة وتثلا		الدينية فعد	05.044
enter 3.55							ŝ	Span 95 MHz	CF Ste 9.500000 MH Auto Ma
otal Power			MHz	Lower		Peak ->	Upper		Freq Offs
Start Freq	Stop Freq	Integ BW	dBm	∆Lim(dB)	Freq (Hz)	dBm	ΔLim(dB)	Freq (Hz)	
7.500 MHz	8.500 MHz	150.0 kHz	-30.36	(-17.36)	-7.505 M		()		
8.500 MHz	22.50 MHz	1.000 MHz	-36.55	(-23.55)	-8.570 M		()		
17.50 MHz	27.50 MHz	1.000 MHz	-37.01	(-12.01)	-19.95 M		()		
	47.50 MHz	1.000 MHz	-47.13	(-7.13)	-27.50 M		()		
27.50 MHz 17.50 MHz	17.50 MHz	1.000 MHz		()			()		

BAND 48. 15 M_BandEdge(Lower)_Low_3557.5 MHz_QPSK_1RB