

TEST REPORT

FCC CA_7C Test for TM18FNNABM0
Certification

APPLICANT
LG Electronics Inc.

REPORT NO.
HCT-RF-2507-FC006

DATE OF ISSUE
July 10, 2025

Tested by
Jae Ryang Do



Technical Manager
Jong Seok Lee



Accredited by KOLAS, Republic of KOREA

HCT CO., LTD.
BongJai Huh
BongJai Huh / CEO



HCT CO.,LTD.

2-6, 73, 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, Republic of Korea
Tel. +82 31 645 6300 Fax. +82 31 645 6401



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Applicant **LG Electronics Inc.**
128, Yeoui-daero, Yeongdeungpo-gu, Seoul, Republic of Korea

Product Name Telematics
Model Name TM18FNNABM0

Date of Test July 07, 2025 ~ July 10, 2025

FCC ID 2B03LTM18FNNABM0

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: PCS Licensed Transmitter (PCB)

FCC Rule Part(s): § 27, § 2

Test Results PASS

REVISION HISTORY

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

Revision No.	Date of Issue	Description
0	July 10, 2025	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 ***.

When confirmation of authenticity of this test report is required, please contact www.hct.co.kr

This test report provides test result(s) under the scope accredited by the Korea Laboratory Accreditation Scheme (KOLAS), which signed the ILAC-MRA.
(KOLAS (KS Q ISO/IEC 17025) Accreditation No. KT197)

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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:	2BO3LTM18FNNABM0
Application Type:	Certification
FCC Classification:	PCS Licensed Transmitter (PCB)
FCC Rule Part(s):	§ 27, § 2
EUT Type:	Telematics
Model(s):	TM18FNNABM0
Tx Frequency:	2505.5 - 2560.0: 10 MHz+20 MHz 2507.5 - 2564.7: 15 MHz+10 MHz 2507.5 - 2562.5: 15 MHz+15 MHz 2507.8 - 2560.0: 15 MHz+20 MHz 2510.0 - 2564.5: 20 MHz+10 MHz 2510.0 - 2562.2: 20 MHz+15 MHz 2510.0 - 2560.0: 20 MHz+20 MHz
Date(s) of Tests:	July 07, 2025 ~ July 10, 2025
EUT Serial number:	Radiated : BMW ICON-25SF Radiated #1 Conducted : BMW ICON-25SF Conducted #5
Uplink CA :	7C
Antenna Information	Please refer to the Antenna Specification document.

1.1. SUPPORTED BANDS PER ANTENNA PORT

Antenna Port	Supported bands
MIMO 1	- WCDMA: B2, 5 - LTE: B2, 4, 5, 7, 7C, 12, 13, 17, 25, 66, 26, 38, 42, 48, 71 - NR: n2, 5, 7, 12, 25, 41, 48, 66, 71, 77, 78
MIMO 2	- LTE: B42, 48 - NR: n48, 77, 78
MIMO 3	Only RX
MIMO 4	Only RX
Int. BUA (Back Up Antenna)	- WCDMA: B2, 5 - LTE: B2, 4, 5, 7, 7C, 25, 26, 38, 66 - NR: n2, 5, 7, 25, 41, 66

Note:

1. Since the Int. BUA uses the same antenna port as MIMO1, only radiated testing was performed.

1.2. MAXIMUM OUTPUT POWER

Mode (PCC+SCC)	Tx Frequency (MHz)	Modulation	Emission Designator	Conducted Output Power	
				Max. Power (dBm)	Max. Power (W)
15 MHz+10 MHz	2507.5 - 2564.7	QPSK	23M1G7D	23.15	0.207
		16QAM	23M1W7D	22.66	0.185
		64QAM	23M1W7D	20.80	0.120
		256QAM	23M1W7D	18.80	0.076
20 MHz+20 MHz	2510.0 - 2560.0	QPSK	37M5G7D	22.88	0.194
		16QAM	37M5W7D	22.27	0.169
		64QAM	37M4W7D	20.36	0.109
		256QAM	37M5W7D	18.43	0.070

2. INTRODUCTION

2.1. DESCRIPTION OF EUT

Please refer to the [3G] Test Report.

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 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
Occupied Bandwidth	- KDB 971168 D01 v03r01 – Section 4.3 - ANSI C63.26-2015 – Section 5.4.4
Channel Edge	- KDB 971168 D01 v03r01 – Section 6.0 - ANSI C63.26-2015 – Section 5.7
Spurious and Harmonic Emissions at Antenna Terminal	- KDB 971168 D01 v03r01 – Section 6.0 - ANSI C63.26-2015 – Section 5.7
Conducted Output Power	- KDB 971168 D01 v03r01 - Section 5.2.4 - ANSI C63.26-2015 - Section 5.2.1 & 5.2.4.2
Peak- to- Average Ratio	- KDB 971168 D01 v03r01 – Section 5.7 - ANSI C63.26-2015 – Section 5.2.3.4
Frequency stability	- ANSI C63.26-2015 – Section 5.6
Radiated Power	- ANSI C63.26-2015 – Section 5.2.4.4 - KDB 971168 D01 v03r01 – Section 5.8
Radiated Spurious and Harmonic Emissions	- ANSI C63.26-2015 – Section 5.5.3 - KDB 971168 D01 v03r01 – Section 5.8

3.2 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;

$$P_d \text{ (dBm)} = P_g \text{ (dBm)} - \text{cable loss (dB)} + \text{antenna gain (dB)}$$

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.

3.3 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 $\geq 3 \times$ RBW
3. Span = 1.5 times the OBW
4. No. of sweep points $> 2 \times$ 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

1. 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;

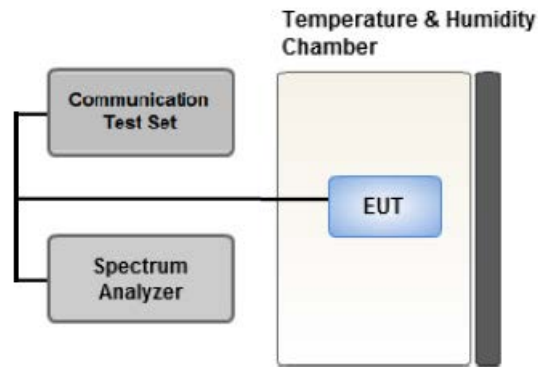
$$\text{Result}_{(\text{dBm})} = \text{Pg}_{(\text{dBm})} - \text{cable loss}_{(\text{dB})} + \text{antenna gain}_{(\text{dBi})}$$

Where: P_g 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.

$$\text{EIRP}_{(\text{dBm})} = \text{ERP}_{(\text{dBm})} + 2.15$$

3.4 PEAK- TO- AVERAGE RATIO



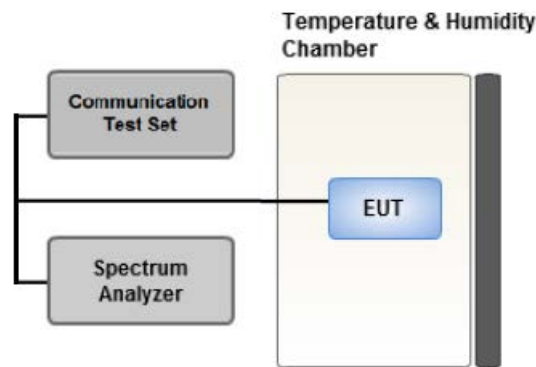
Test setup

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 %.

3.5 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.

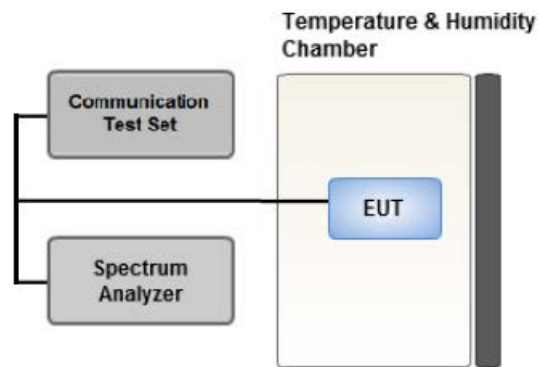
The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency.

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. $VBW \geq 3 \times RBW$
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

3.6 SPURIOUS AND HARMONIC EMISSIONS AT ANTENNA TERMINAL



Test setup

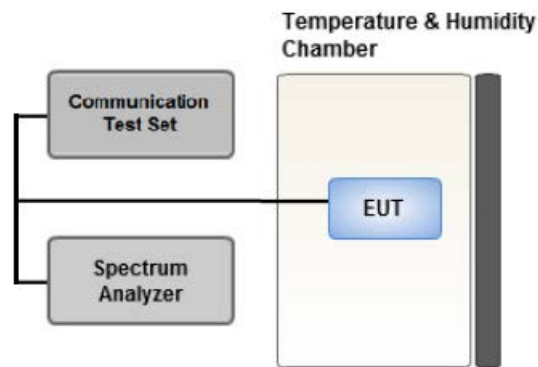
Test Overview

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 = Peak
4. Trace Mode = Max Hold
5. Sweep time = auto
6. Number of points in sweep $\geq$ 2 x Span / RBW

3.7 CHANNEL EDGE



Test setup

Test Overview

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 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

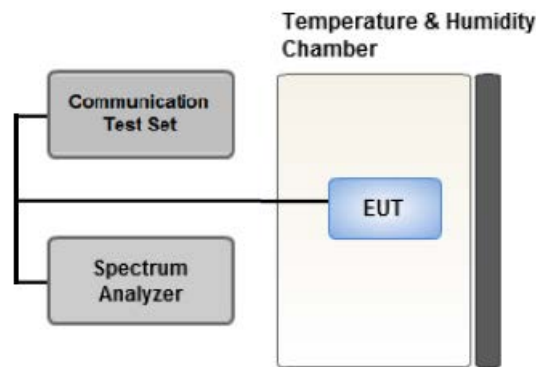
1. Start and stop frequency were set such that the band edge would be placed in the center of the plot
2. Span was set large enough so as to capture all out of band emissions near the band edge
3. Within 1MHz of the channel edge the RBW should be 2 % of EBW, then 1 MHz after that.
4. $VBW > 3 \times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

Test Notes

1. The attenuation factor shall be not less than $40 + 10 \log (P)$ dB on all frequencies between the channel edge and 5 megahertz from the channel edge,
2. $43 + 10 \log (P)$ dB on all frequencies between 5 megahertz and X megahertz from the channel edge.
3. $55 + 10 \log (P)$ dB on all frequencies more than X megahertz from the channel edge.
4. The attenuation factor shall not be less than $43 + 10 \log (P)$ dB on all frequencies between 2490.5 MHz and 2496 MHz.
5. $55 + 10 \log (P)$ dB at or below 2490.5 MHz.
6. X is the greater of 6MHz or the actual emission bandwidth
7. The band edge measurement used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer

Where Margin < 1 dB the emission level is either corrected by $10 \log(1 \text{ MHz} / \text{RB})$ 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.

3.8 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE



Test setup

Test Overview

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

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.

3.9 WORST CASE(OVERVIEW)

The EUT is set up to transmit two contiguous LTE channels. The power level of both carriers 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.

Note

1. All tests were evaluated for the two contiguous channels using various combinations of RB size, RB offset, modulation, and channel bandwidth.
2. Channel bandwidth is shown in the tables below based only on the channel bandwidths that were supported in this device.

Channel Bandwidth (PCC)	Channel Bandwidth (SCC)	Maximum aggregated bandwidth (MHz)
10	20	30
15	10	25
15	15	30
15	20	35
20	10	30
20	15	35
20	20	40

3.10 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.
- 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.
- MIMO3 and MIMO4 have three types of Rx antennas. Operating modes were investigated for all Rx antennas, and the worst-case configuration results were reported.

(Worst-case: FSA antenna)

[Worst case]

Test Description	Mod	Operating frequency	PCC					SCC				
			BW (MHz)	Freq. (MHz)	Ch.	RB	RB Offset	BW (MHz)	Freq. (MHz)	Ch.	RB	RB Offset
Radiated	QPSK	Low	15	2507.5	20825	1	74	10	2519.5	20945	1	0
Spurious		Mid	15	2530.1	21051	1	74	10	2542.1	21171	1	0
Emissions		High	15	2542.9	21179	1	74	20	2560.0	21350	1	0

3.11 WORST CASE(CONDUCTED TEST)

- All modes of operation were investigated and the worst case configuration results are reported.
- Both 85% and 115% conditions were measured for the Frequency Stability test, and results for the worst-case configuration (85%) were reported.
- In accordance with the customer's specification of 3.7V as the lowest operating voltage, testing was performed at 3.7V instead of 85% (3.57V).

[Worst case]

Test Description	Mod	Operating frequency	PCC					SCC				
			BW (MHz)	Freq. (MHz)	Ch.	RB	RB Offset	BW (MHz)	Freq. (MHz)	Ch.	RB	RB Offset
Conducted Spurious Emissions, Channel Edge	QPSK	Low	15	2507.5	20825	1	0	10	2519.5	20945	1	49
		Mid	15	2530.1	21051	1	0	10	2542.1	21171	1	49
		High	15	2552.7	21277	1	0	10	2564.7	21397	1	49
		Low	15	2507.5	20825	1	74	10	2519.5	20945	1	0
		Mid	15	2530.1	21051	1	74	10	2542.1	21171	1	0
		High	15	2552.7	21277	1	74	10	2564.7	21397	1	0
		Low	15	2507.5	20825	75	0	10	2519.5	20945	50	0
		Mid	15	2530.1	21051	75	0	10	2542.1	21171	50	0
		High	15	2552.7	21277	75	0	10	2564.7	21397	50	0
		Low	20	2510.0	20850	100	0	20	2529.8	21048	100	0
		Mid	20	2525.1	21001	100	0	20	2544.9	21199	100	0
		High	20	2540.2	21152	100	0	20	2560.0	21350	100	0
OBW, PAR	QPSK, 16QAM, 64QAM, 256QAM	Mid	10	2525.6	21006	50	0	20	2540	21150	100	0
			15	2530.1	21051	75	0	10	2542.1	21171	50	0
			15	2527.5	21025	75	0	15	2542.5	21175	75	0
			15	2525.3	21003	75	0	20	2542.4	21174	100	0
			20	2530.1	21051	100	0	10	2544.5	21195	50	0
			20	2527.6	21026	100	0	15	2544.7	21197	75	0
			20	2525.1	21001	100	0	20	2544.9	21199	100	0
Frequency stability	QPSK	Low	10	2505.5	20805	50	0	20	2519.9	20949	100	0
			15	2507.8	20828	75	0	20	2524.9	20999	100	0
			20	2510.0	20850	100	0	20	2529.8	21048	100	0
		High	10	2545.6	21206	50	0	20	2560.0	21350	100	0
			15	2542.9	21179	75	0	20	2560.0	21350	100	0
			20	2540.2	21152	100	0	20	2560.0	21350	100	0

4. LIST OF TEST EQUIPMENT

[Radiated]

Equipment	Model	Manufacturer	Serial No.	Due to Calibration	Calibration Interval
RF Switch System	FBSR-04C(3G HPF+LNA)	TNM System	S4L1	03/12/2026	Annual
RF Switch System	FBSR-04C(7G HPF+LNA)	TNM System	S4L5	03/12/2026	Annual
RF Switch System	FBSR-04C(LNA)	TNM System	S4L4	03/12/2026	Annual
RF Switch System	FBSR-04C(Thru)	TNM System	S4L6	03/12/2026	Annual
Antenna Position Tower	MA4640	Innco systems	S4AM	08/07/2025	Annual
Turn Table	DS2000-S	Innco systems	N/A	N/A	-
Controller (Antenna mast & Turn Table)	CO3000	Innco systems	CO3000/1251/4 8920320/P	N/A	-
Amp & Filter Bank Switch Controller	FBSM-01B	TNM system	TM20090002	N/A	-
RF Switching System	Switch box(1 G HPF+LNA)	HCT CO., LTD.,	F2L2	12/12/2025	Annual
RF Switching System	Switch box(3 G HPF+LNA)	HCT CO., LTD.,	F2L3	12/12/2025	Annual
RF Switching System	Switch box(LNA)	HCT CO., LTD.,	F2L5	12/12/2025	Annual
RF Switching System	Switch box(6 G HPF+LNA)	HCT CO., LTD.,	F2L14	12/12/2025	Annual
HIGHPASS FILTER	WHKX10-900-1000-15000-40SS	WAINWRIGHT INSTRUMENTS	16	07/24/2025	Annual
LOW NOISE AMPLIFIER	310N	SONOMA Instrument	186169	02/05/2026	Annual
LOW NOISE AMPLIFIER	TK-PA1840H	TESTEK	170011-L	10/11/2025	Annual
Power Amplifier	CBL18265035	CERNEX	22966	11/07/2025	Annual
Power Amplifier	CBL26405040	CERNEX	25956	02/19/2026	Annual
Power Splitter(DC ~ 26.5 GHz)	11667B	Hewlett Packard	5001	04/10/2026	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
Horn Antenna(1 ~ 18 GHz)	BBHA 9120D	Schwarzbeck	03197	11/28/2025	Biennial
Horn Antenna(1 ~ 18 GHz)	BBHA 9120D	Schwarzbeck	03201	11/28/2025	Biennial
Horn Antenna(1 ~ 18 GHz)	BBHA 9120	Schwarzbeck	937	02/07/2027	Biennial
Horn Antenna(15 ~ 40 GHz)	BBHA 9170	Schwarzbeck	BBHA9170124	03/23/2027	Biennial
Horn Antenna(15 ~ 40 GHz)	BBHA 9170	Schwarzbeck	BBHA9170342	09/20/2026	Biennial

Equipment	Model	Manufacturer	Serial No.	Due to Calibration	Calibration Interval
Spectrum Analyzer(10 Hz ~ 40 GHz)	FSV40	ROHDE & SCHWARZ	101733	09/19/2025	Annual
Spectrum Analyzer(10 Hz ~ 40 GHz)	FSV40	REOHDE & SCHWARZ	101436	02/04/2026	Annual
Signal & Spectrum Analyzer (2 Hz~67 GHz)	FSW67	REOHDE & SCHWARZ	101736	05/27/2026	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	VULB 9168	Schwarzbeck	9168-0895	08/28/2026	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.	6262287701	05/14/2026	Annual
Wideband Radio Communication Tester	MT8000A	Anritsu Corp.	6272613402	08/28/2025	Annual
SIGNAL GENERATOR (100 kHz ~ 40 GHz)	SMB100A	REOHDE & SCHWARZ	177633	07/26/2025	Annual
Automation Software	FCC LTE Radiated	HCT CO., LTD	-	-	-
Automation Software	FCC NR Radiated	HCT CO., LTD	-	-	-

[Conducted]

Equipment	Model	Manufacturer	Serial No.	Due to Calibration	Calibration Interval
Power Splitter (DC ~ 26.5 GHz)	11667B	Hewlett Packard	5001	04/10/2026	Annual
DC Power Supply	E3632A	Agilent	MY40010147	08/06/2025	Annual
Chamber	SU-642	ESPEC	93008124	02/11/2026	Annual
ATTENUATOR (20 dB)	8493C	Hewlett Packard	17280	04/10/2026	Annual
Base Station	8960 (E5515C)	Agilent	MY48360800	08/05/2025	Annual
Wideband Radio Communication Tester	MT8821C	Anritsu Corp.	6262094331	11/13/2025	Annual
UXM 5G Wireless Test Platform	E7515B	KEYSIGHT	MY60101126	02/10/2026	Annual
Signal Analyzer (2 Hz ~ 50.0 GHz)	N9030B	KEYSIGHT	MY56320554	02/03/2026	Annual
FCC LTE Mobile Conducted RF Automation Test Software	-	HCT CO., LTD.	-	-	-
Automation Software	FCC 2G/3G/4G Conducted	HCT CO., LTD	-	-	-
Automation Software	FCC NR Conducted	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 ($\pm$ kHz)
Occupied Bandwidth	95 (Confidence level about 95 %, $k=2$)
Frequency stability	28 (Confidence level about 95 %, $k=2$)

Parameter	Expanded Uncertainty ($\pm$ dB)
Block Edge	0.70 (Confidence level about 95 %, $k=2$)
Conducted Spurious Emissions	1.18 (Confidence level about 95 %, $k=2$)
Peak- to- Average Ratio	0.68 (Confidence level about 95 %, $k=2$)
Radiated Power	4.74 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (9 kHz ~ 30 MHz)	4.36 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (30 MHz ~ 1 GHz)	5.68 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (1 GHz ~ 18 GHz)	5.75 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (18 GHz ~ 40 GHz)	5.82 (Confidence level about 95 %, $k=2$)
Radiated Disturbance (Above 40 GHz)	5.58 (Confidence level about 95 %, $k=2$)

6. SUMMARY OF TEST RESULTS

-. The decision rule applies 'simple acceptance'

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, § 27.53(m)(4)	■ $< 40 + 10\log_{10} (P[\text{Watts}])$ at Channel edges ■ $< 43 + 10\log_{10} (P[\text{Watts}])$ between 5 and X MHz from Channel edges ■ $< 55 + 10\log_{10} (P[\text{Watts}])$ beyond X MHz beyond from Channel edges ■ $< 43 + 10 \log (P)$ dB on all frequencies between 2490.5 MHz and 2496 MHz	PASS
Conducted Output Power	§ 2.1046	N/A	PASS
Frequency stability / variation of ambient temperature	§ 2.1055, § 27.54	Emission must remain in band	PASS

6.2 Test Condition: Radiated Test

Test Description	FCC Part Section(s)	Test Limit	Test Result
Equivalent Isotropic Radiated Power	§ 27.50(h)(2)	< 2 Watts max. EIRP	PASS
Radiated Spurious and Harmonic Emissions	§ 2.1053, § 27.53(m)(4)	$< 55 + 10\log_{10} (P[\text{Watts}])$	PASS

7. SAMPLE CALCULATION

7.1 ERP Sample Calculation

Ch./Freq.		Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBd)	C.L	Pol.	ERP	
channel	Freq.(MHz)						W	dBm
128	824.20	-21.37	38.40	-10.61	0.95	H	0.483	26.84

$$\text{ERP} = \text{Substitute LEVEL(dBm)} + \text{Ant. Gain} - \text{CL(Cable Loss)}$$

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

$$\text{EIRP} = \text{Substitute LEVEL(dBm)} + \text{Ant. Gain} - \text{CL(Cable Loss)}$$

- 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

QAM Modulation

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

8. TEST DATA (MIMO1)

8.1 Conducted Power

Operating frequency	PCC					SCC					Conducted. Power [dBm]
	Bandwidth [MHz]	Freq. (MHz)	Channel	RB	RB Offset	Bandwidth [MHz]	Freq. (MHz)	Channel	RB	RB Offset	
Low	10	2505.5	20805	1	49	20	2519.9	20949	1	0	22.86
	15	2507.5	20825	1	74	10	2519.5	20945	1	0	23.00
	15	2507.5	20825	1	74	15	2522.5	20975	1	0	22.91
	15	2507.8	20828	1	74	20	2524.9	20999	1	0	22.82
	20	2510.0	20850	1	99	10	2524.4	20994	1	0	22.69
	20	2510.0	20850	1	99	15	2527.1	21021	1	0	22.63
	20	2510.0	20850	1	99	20	2529.8	21048	1	0	22.62
Mid	10	2525.6	21006	1	49	20	2540.0	21150	1	0	22.68
	15	2530.1	21051	1	74	10	2542.1	21171	1	0	23.05
	15	2527.5	21025	1	74	15	2542.5	21175	1	0	23.02
	15	2525.3	21003	1	74	20	2542.4	21174	1	0	22.91
	20	2530.1	21051	1	99	10	2544.5	21195	1	0	22.87
	20	2527.6	21026	1	99	15	2544.7	21197	1	0	22.82
	20	2525.1	21001	1	99	20	2544.9	21199	1	0	22.87
High	10	2545.6	21206	1	49	20	2560.0	21350	1	0	22.88
	15	2552.7	21277	1	74	10	2564.7	21397	1	0	23.15
	15	2547.5	21225	1	74	15	2562.5	21375	1	0	23.06
	15	2542.9	21179	1	74	20	2560.0	21350	1	0	23.10
	20	2550.1	21251	1	99	10	2564.5	21395	1	0	22.91
	20	2545.1	21201	1	99	15	2562.2	21372	1	0	22.90
	20	2540.2	21152	1	99	20	2560.0	21350	1	0	22.88

Note:

Modulation : QPSK(1RB)

Operating frequency	PCC					SCC					Conducted.
	Bandwidth [MHz]	Freq. (MHz)	Channel	RB	RB Offset	Bandwidth [MHz]	Freq. (MHz)	Channel	RB	RB Offset	Power [dBm]
Low	10	2505.5	20805	50	0	20	2519.9	20949	100	0	21.31
	15	2507.5	20825	75	0	10	2519.5	20945	50	0	21.41
	15	2507.5	20825	75	0	15	2522.5	20975	75	0	21.40
	15	2507.8	20828	75	0	20	2524.9	20999	100	0	21.39
	20	2510.0	20850	100	0	10	2524.4	20994	50	0	21.27
	20	2510.0	20850	100	0	15	2527.1	21021	75	0	21.34
	20	2510.0	20850	100	0	20	2529.8	21048	100	0	21.26
Mid	10	2525.6	21006	50	0	20	2540.0	21150	100	0	21.20
	15	2530.1	21051	75	0	10	2542.1	21171	50	0	21.38
	15	2527.5	21025	75	0	15	2542.5	21175	75	0	21.29
	15	2525.3	21003	75	0	20	2542.4	21174	100	0	21.27
	20	2530.1	21051	100	0	10	2544.5	21195	50	0	21.29
	20	2527.6	21026	100	0	15	2544.7	21197	75	0	21.26
	20	2525.1	21001	100	0	20	2544.9	21199	100	0	21.21
High	10	2545.6	21206	50	0	20	2560.0	21350	100	0	21.42
	15	2552.7	21277	75	0	10	2564.7	21397	50	0	21.61
	15	2547.5	21225	75	0	15	2562.5	21375	75	0	21.47
	15	2542.9	21179	75	0	20	2560.0	21350	100	0	21.38
	20	2550.1	21251	100	0	10	2564.5	21395	50	0	21.45
	20	2545.1	21201	100	0	15	2562.2	21372	75	0	21.40
	20	2540.2	21152	100	0	20	2560.0	21350	100	0	21.30

Note:

Modulation : QPSK(Full RB)

Operating frequency	PCC					SCC					Conducted. Power [dBm]
	Bandwidth [MHz]	Freq. (MHz)	Channel	RB	RB Offset	Bandwidth [MHz]	Freq. (MHz)	Channel	RB	RB Offset	
Low	15	2507.5	20825	1	74	10	2519.5	20945	1	0	22.53
Mid	15	2530.1	21051	1	74	10	2542.1	21171	1	0	22.66
High	15	2552.7	21277	1	74	10	2564.7	21397	1	0	22.65
Low	15	2507.5	20825	75	0	10	2519.5	20945	50	0	20.41
Mid	15	2530.1	21051	75	0	10	2542.1	21171	50	0	20.38
High	15	2552.7	21277	75	0	10	2564.7	21397	50	0	20.59
Low	20	2510.0	20850	1	99	20	2529.8	21048	1	0	21.99
Mid	20	2525.1	21001	1	99	20	2544.9	21199	1	0	22.16
High	20	2540.2	21152	1	99	20	2560.0	21350	1	0	22.27
Low	20	2510.0	20850	100	0	20	2529.8	21048	100	0	20.31
Mid	20	2525.1	21001	100	0	20	2544.9	21199	100	0	20.24
High	20	2540.2	21152	100	0	20	2560.0	21350	100	0	20.38

Note:

Modulation : 16QAM

Operating frequency	PCC					SCC					Conducted. Power [dBm]
	Bandwidth [MHz]	Freq. (MHz)	Channel	RB	RB Offset	Bandwidth [MHz]	Freq. (MHz)	Channel	RB	RB Offset	
Low	15	2507.5	20825	1	74	10	2519.5	20945	1	0	20.64
Mid	15	2530.1	21051	1	74	10	2542.1	21171	1	0	20.80
High	15	2552.7	21277	1	74	10	2564.7	21397	1	0	20.79
Low	15	2507.5	20825	75	0	10	2519.5	20945	50	0	20.38
Mid	15	2530.1	21051	75	0	10	2542.1	21171	50	0	20.36
High	15	2552.7	21277	75	0	10	2564.7	21397	50	0	20.58
Low	20	2510.0	20850	1	99	20	2529.8	21048	1	0	20.13
Mid	20	2525.1	21001	1	99	20	2544.9	21199	1	0	20.31
High	20	2540.2	21152	1	99	20	2560.0	21350	1	0	20.36
Low	20	2510.0	20850	100	0	20	2529.8	21048	100	0	20.29
Mid	20	2525.1	21001	100	0	20	2544.9	21199	100	0	20.22
High	20	2540.2	21152	100	0	20	2560.0	21350	100	0	20.35

Note:

Modulation : 64QAM

Operating frequency	PCC					SCC					Conducted. Power [dBm]
	Bandwidth [MHz]	Freq. (MHz)	Channel	RB	RB Offset	Bandwidth [MHz]	Freq. (MHz)	Channel	RB	RB Offset	
Low	15	2507.5	20825	1	74	10	2519.5	20945	1	0	18.54
Mid	15	2530.1	21051	1	74	10	2542.1	21171	1	0	18.80
High	15	2552.7	21277	1	74	10	2564.7	21397	1	0	18.78
Low	15	2507.5	20825	75	0	10	2519.5	20945	50	0	18.42
Mid	15	2530.1	21051	75	0	10	2542.1	21171	50	0	18.39
High	15	2552.7	21277	75	0	10	2564.7	21397	50	0	18.60
Low	20	2510.0	20850	1	99	20	2529.8	21048	1	0	18.24
Mid	20	2525.1	21001	1	99	20	2544.9	21199	1	0	18.41
High	20	2540.2	21152	1	99	20	2560.0	21350	1	0	18.43
Low	20	2510.0	20850	100	0	20	2529.8	21048	100	0	18.31
Mid	20	2525.1	21001	100	0	20	2544.9	21199	100	0	18.27
High	20	2540.2	21152	100	0	20	2560.0	21350	100	0	18.34

Note:

Modulation : 256QAM

8.2 Equivalent Isotropic Radiated Power

	PCC			SCC			Measured	Substitute	Ant.			E.I.R.P	
	BW [MHz]	Channel	RB/Offset	BW [MHz]	Channel	RB/Offset	Level (dBm)	Level (dBm)	Gain (dBi)	C.L	Pol.	W	dBm
Low	10	20805	1/49	20	20949	1/0	-24.25	14.28	10.26	2.51	H	0.160	22.03
	15	20825	1/74	10	20945	1/0	-23.92	14.61	10.26	2.51	H	0.172	22.36
	15	20825	1/74	15	20975	1/0	-24.06	14.51	10.26	2.53	H	0.168	22.24
	15	20828	1/74	20	20999	1/0	-24.10	14.47	10.26	2.53	H	0.166	22.20
	20	20850	1/99	10	20994	1/0	-24.25	14.32	10.26	2.53	H	0.160	22.05
	20	20850	1/99	15	21021	1/0	-24.24	14.37	10.26	2.54	H	0.162	22.08
	20	20850	1/99	20	21048	1/0	-24.44	14.17	10.26	2.54	H	0.154	21.88
Mid	10	21006	1/49	20	21150	1/0	-24.30	14.46	10.25	2.54	H	0.165	22.16
	15	21051	1/74	10	21171	1/0	-24.06	14.77	10.25	2.54	H	0.177	22.49
	15	21025	1/74	15	21175	1/0	-24.20	14.63	10.25	2.54	H	0.172	22.35
	15	21003	1/74	20	21174	1/0	-24.25	14.51	10.25	2.54	H	0.167	22.21
	20	21051	1/99	10	21195	1/0	-24.64	14.19	10.25	2.54	H	0.155	21.91
	20	21026	1/99	15	21197	1/0	-24.52	14.31	10.25	2.54	H	0.160	22.03
	20	21001	1/99	20	21199	1/0	-24.29	14.54	10.25	2.54	H	0.168	22.26
High	10	21206	1/49	20	21350	1/0	-25.05	13.96	10.24	2.53	H	0.147	21.67
	15	21277	1/74	10	21397	1/0	-25.02	14.02	10.26	2.59	H	0.148	21.69
	15	21225	1/74	15	21375	1/0	-25.06	13.97	10.25	2.56	H	0.146	21.66
	15	21179	1/74	20	21350	1/0	-24.87	14.14	10.24	2.53	H	0.153	21.85
	20	21251	1/99	10	21395	1/0	-25.48	13.56	10.26	2.59	H	0.133	21.23
	20	21201	1/99	15	21372	1/0	-25.19	13.82	10.24	2.53	H	0.142	21.53
	20	21152	1/99	20	21350	1/0	-24.90	14.11	10.24	2.53	H	0.152	21.82

Note:

1. Modulation : QPSK
2. Limit : < 2 Watts

PCC			SCC			Measured	Substitute	Ant.			E.I.R.P	
BW [MHz]	Channel	RB/ Offset	BW [MHz]	Channel	RB/ Offset	Level (dBm)	Level (dBm)	Gain (dBi)	C.L	Pol.	W	dBm
10	20805	1/49	20	20949	1/0	-25.21	13.32	10.26	2.51	H	0.128	21.07
15	20825	1/74	10	20945	1/0	-24.65	13.88	10.26	2.51	H	0.146	21.63
15	20825	1/74	15	20975	1/0	-24.67	13.90	10.26	2.53	H	0.146	21.63
15	20828	1/74	20	20999	1/0	-24.97	13.60	10.26	2.53	H	0.136	21.33
20	20850	1/99	10	20994	1/0	-25.15	13.42	10.26	2.53	H	0.130	21.15
20	20850	1/99	15	21021	1/0	-25.15	13.46	10.26	2.54	H	0.131	21.17
20	20850	1/99	20	21048	1/0	-25.12	13.49	10.26	2.54	H	0.132	21.20
15	21051	1/74	10	21171	1/0	-24.32	14.51	10.25	2.54	H	0.167	22.23
15	21179	1/74	20	21350	1/0	-25.59	13.42	10.24	2.53	H	0.130	21.13

Note:

1. Modulation : 16QAM
2. Limit : < 2 Watts

PCC			SCC			Measured	Substitute	Ant.			E.I.R.P	
BW [MHz]	Channel	RB/ Offset	BW [MHz]	Channel	RB/ Offset	Level (dBm)	Level (dBm)	Gain (dBi)	C.L	Pol.	W	dBm
10	20805	1/49	20	20949	1/0	-27.35	11.18	10.26	2.51	H	0.078	18.93
15	20825	1/74	10	20945	1/0	-26.82	11.71	10.26	2.51	H	0.088	19.46
15	20825	1/74	15	20975	1/0	-26.94	11.63	10.26	2.53	H	0.086	19.36
15	20828	1/74	20	20999	1/0	-27.21	11.36	10.26	2.53	H	0.081	19.09
20	20850	1/99	10	20994	1/0	-27.41	11.16	10.26	2.53	H	0.077	18.89
20	20850	1/99	15	21021	1/0	-27.32	11.29	10.26	2.54	H	0.079	19.00
20	20850	1/99	20	21048	1/0	-27.27	11.34	10.26	2.54	H	0.080	19.05
15	21051	1/74	10	21171	1/0	-26.64	12.19	10.25	2.54	H	0.098	19.91
15	21179	1/74	20	21350	1/0	-27.84	11.17	10.24	2.53	H	0.077	18.88

Note:

1. Modulation : 64QAM
2. Limit : < 2 Watts

PCC			SCC			Measured	Substitute	Ant.			E.I.R.P	
BW [MHz]	Channel	RB/ Offset	BW [MHz]	Channel	RB/ Offset	Level (dBm)	Level (dBm)	Gain (dBi)	C.L	Pol.	W	dBm
10	20805	1/49	20	20949	1/0	-29.21	9.32	10.26	2.51	H	0.051	17.07
15	20825	1/74	10	20945	1/0	-28.60	9.93	10.26	2.51	H	0.059	17.68
15	20825	1/74	15	20975	1/0	-28.83	9.74	10.26	2.53	H	0.056	17.47
15	20828	1/74	20	20999	1/0	-29.05	9.52	10.26	2.53	H	0.053	17.25
20	20850	1/99	10	20994	1/0	-29.22	9.35	10.26	2.53	H	0.051	17.08
20	20850	1/99	15	21021	1/0	-29.24	9.37	10.26	2.54	H	0.051	17.08
20	20850	1/99	20	21048	1/0	-29.23	9.38	10.26	2.54	H	0.051	17.09
15	21051	1/74	10	21171	1/0	-28.48	10.35	10.25	2.54	H	0.064	18.07
15	21179	1/74	20	21350	1/0	-29.65	9.36	10.24	2.53	H	0.051	17.07

Note:

1. Modulation : 256QAM
2. Limit : < 2 Watts

8.3 Conducted Spurious Emissions

Operating frequency	PCC				SCC				Measurement Maximum Frequency (GHz)	Factor (dB)	Measurement Maximum Data (dBm)	Result (dBm)
	BW [MHz]	Ch.	Freq. (MHz)	RB/ Offset	BW [MHz]	Ch.	Freq. (MHz)	RB/ Offset				
Low	15	20825	2507.5	1/0	10	20945	2519.5	1/49	6.8395	28.98	-64.50	-35.52
Mid	15	21051	2530.1	1/0	10	21171	2542.1	1/49	3.9283	28.37	-62.09	-33.72
High	15	21277	2552.7	1/0	10	21397	2564.7	1/49	4.7757	28.37	-64.61	-36.24
Low	15	20825	2507.5	1/74	10	20945	2519.5	1/0	5.9921	28.98	-63.74	-34.76
Mid	15	21051	2530.1	1/74	10	21171	2542.1	1/0	6.1715	28.98	-64.33	-35.35
High	15	21277	2552.7	1/74	10	21397	2564.7	1/0	4.7857	28.37	-63.20	-34.83
Low	15	20825	2507.5	75/0	10	20945	2519.5	50/0	3.2304	28.37	-63.75	-35.38
Mid	15	21051	2530.1	75/0	10	21171	2542.1	50/0	4.8355	28.37	-63.87	-35.50
High	15	21277	2552.7	75/0	10	21397	2564.7	50/0	4.3271	28.37	-64.74	-36.37
Low	20	20850	2510.0	100/0	20	21048	2529.8	100/0	9.5314	28.98	-63.93	-34.95
Mid	20	21001	2525.1	100/0	20	21199	2544.9	100/0	8.3649	28.98	-64.00	-35.02
High	20	21152	2540.2	100/0	20	21350	2560.0	100/0	3.7289	28.37	-63.03	-34.66

Note:

1. Factor(dB) = Cable Loss + Ext. Attenuator + Power Splitter

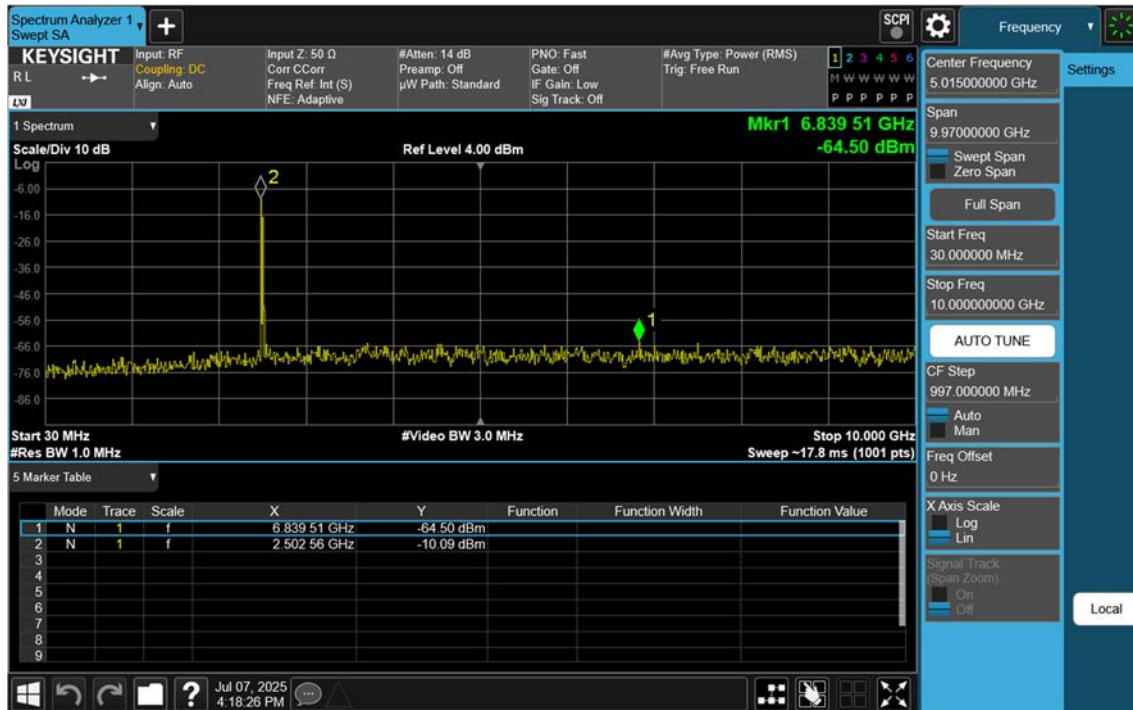
2. Factors for frequency :

Frequency Range (GHz)	Factor [dB]
0.03 – 1	25.670
1 – 5	28.370
5 – 10	28.980
10 – 15	29.520
15 – 20	29.890
Above 20	30.530

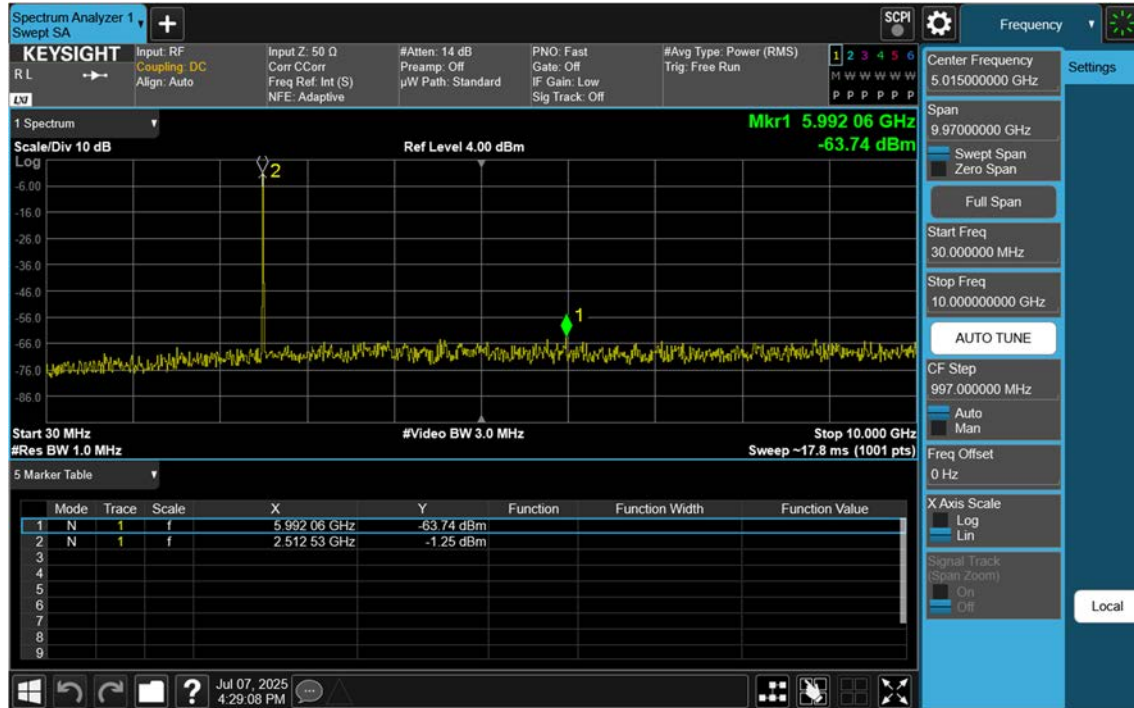
3. Limit : -25.0 dBm

Frequency Range : 30 MHz ~ 10 GHz

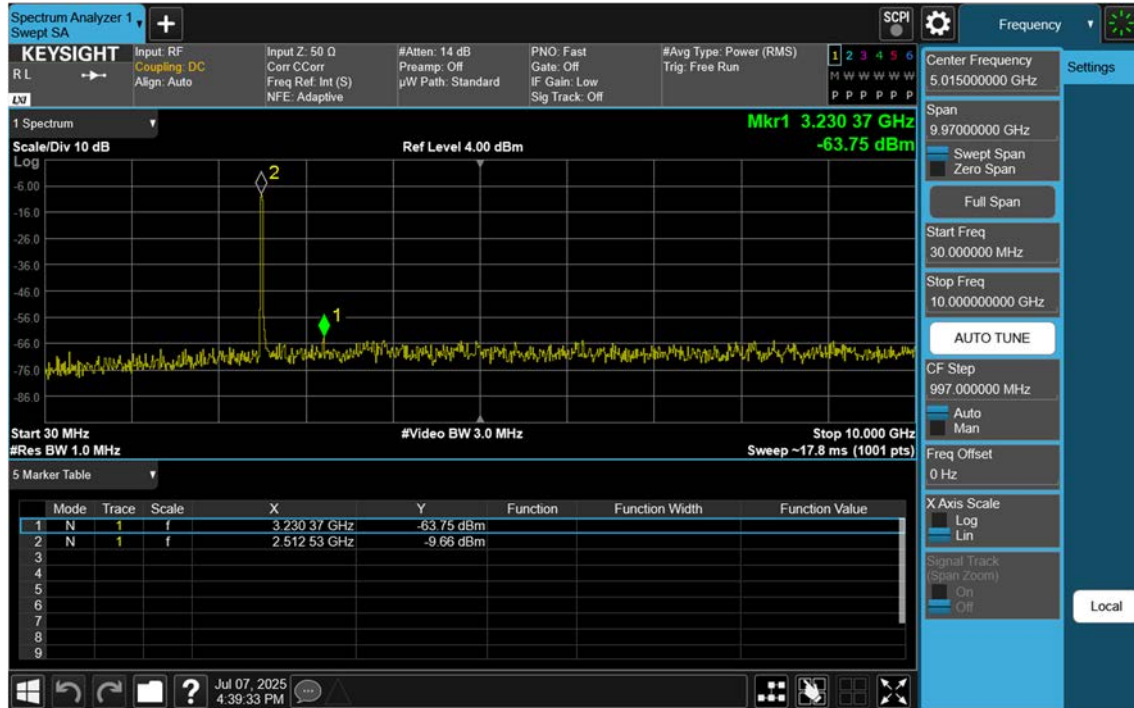
PCC 15MHz Ch20825 RB1 Offset0 SCC 10MHz Ch20945 RB1 Offset49



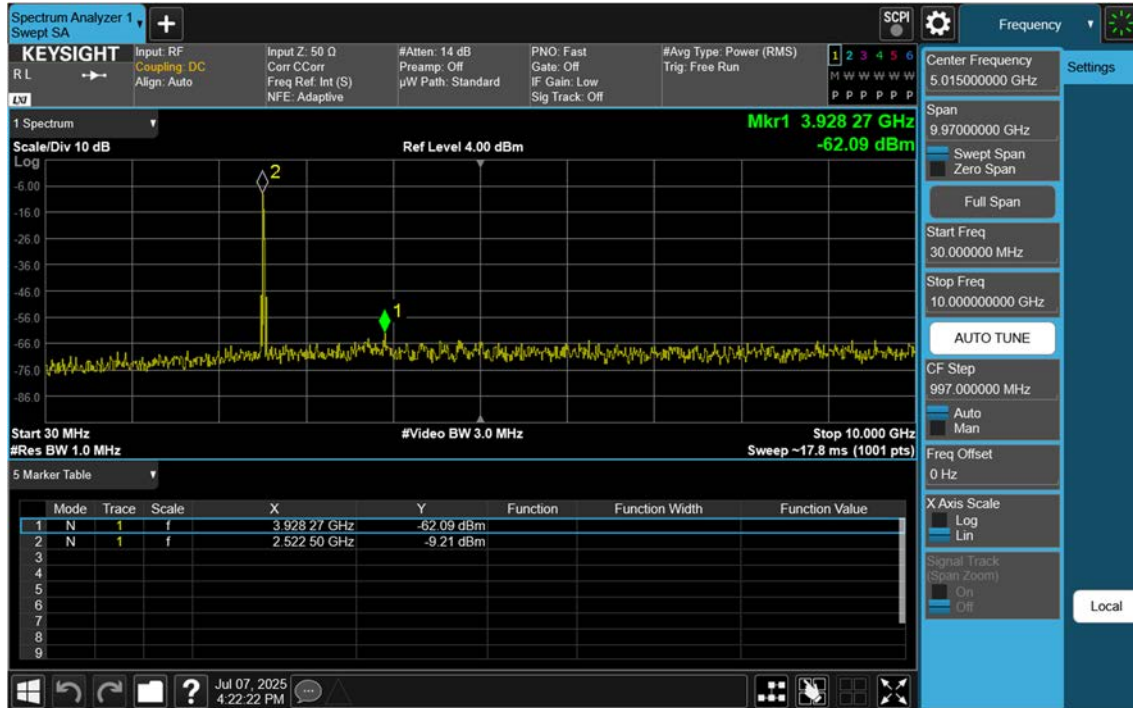
PCC 15MHz Ch20825 RB1 Offset74 SCC 10MHz Ch20945 RB1 Offset0



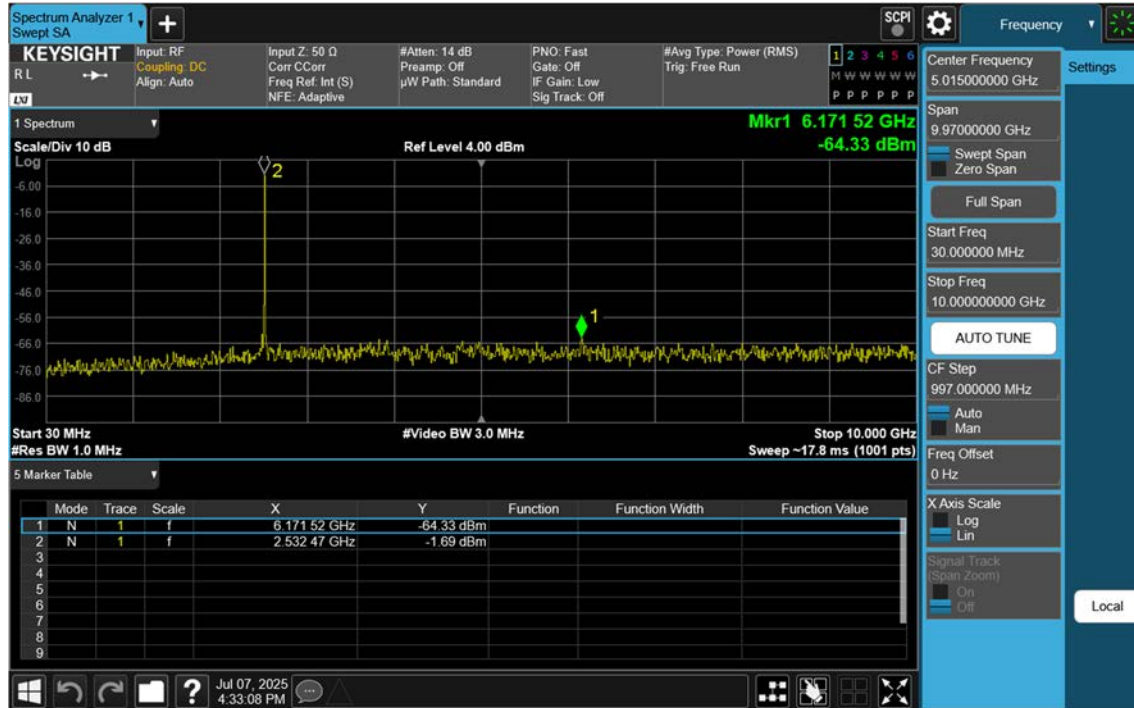
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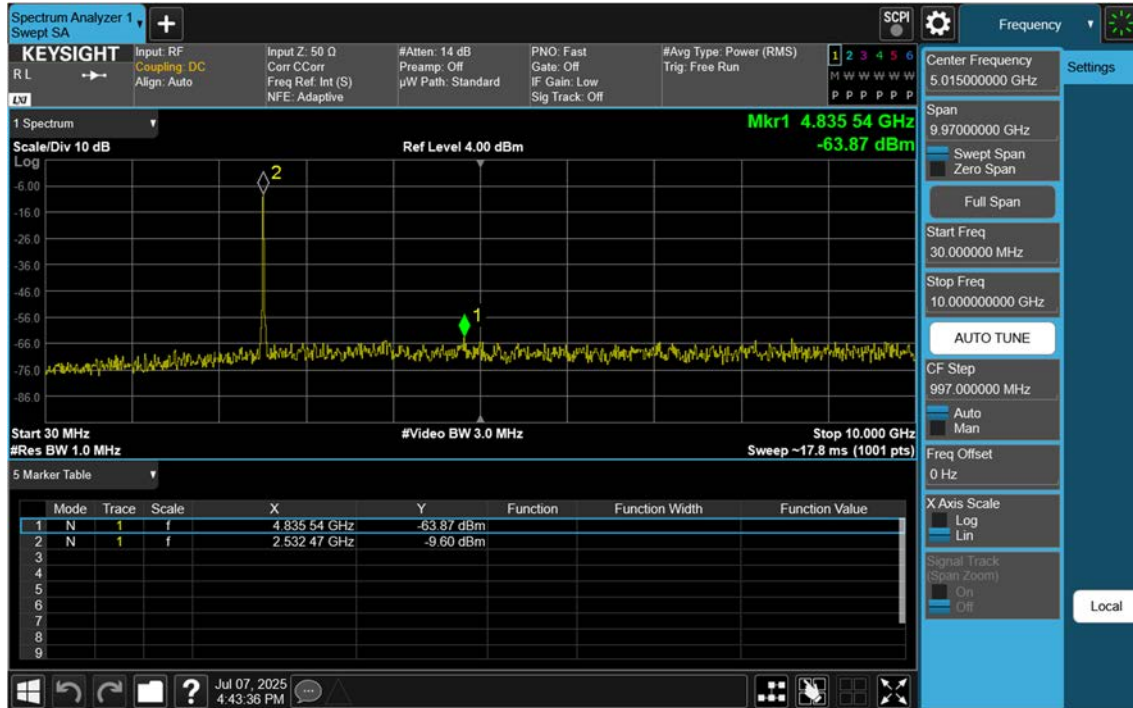
PCC 15MHz Ch21051 RB1 Offset0 SCC 10MHz Ch21171 RB1 Offset49



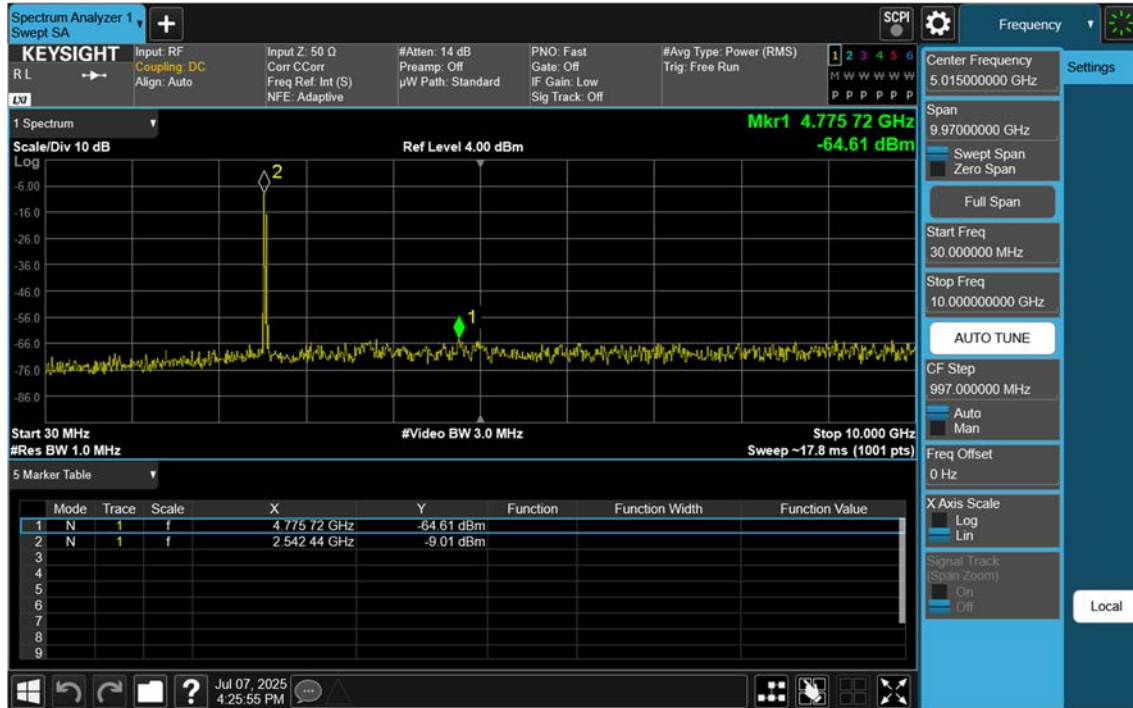
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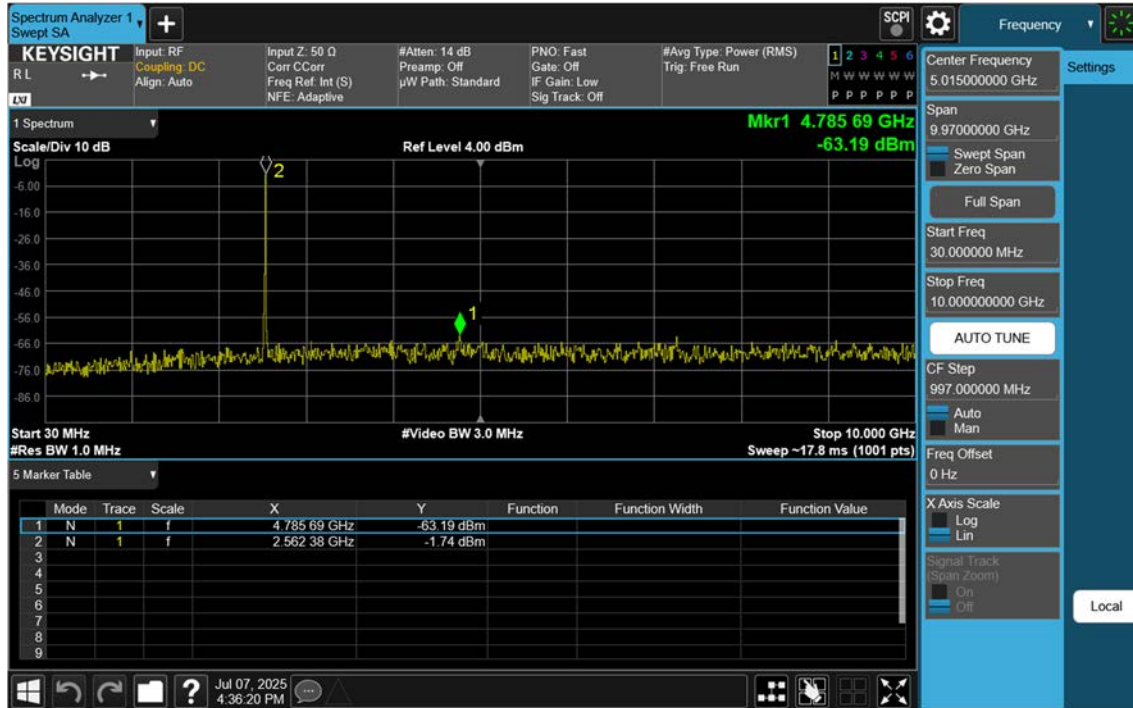
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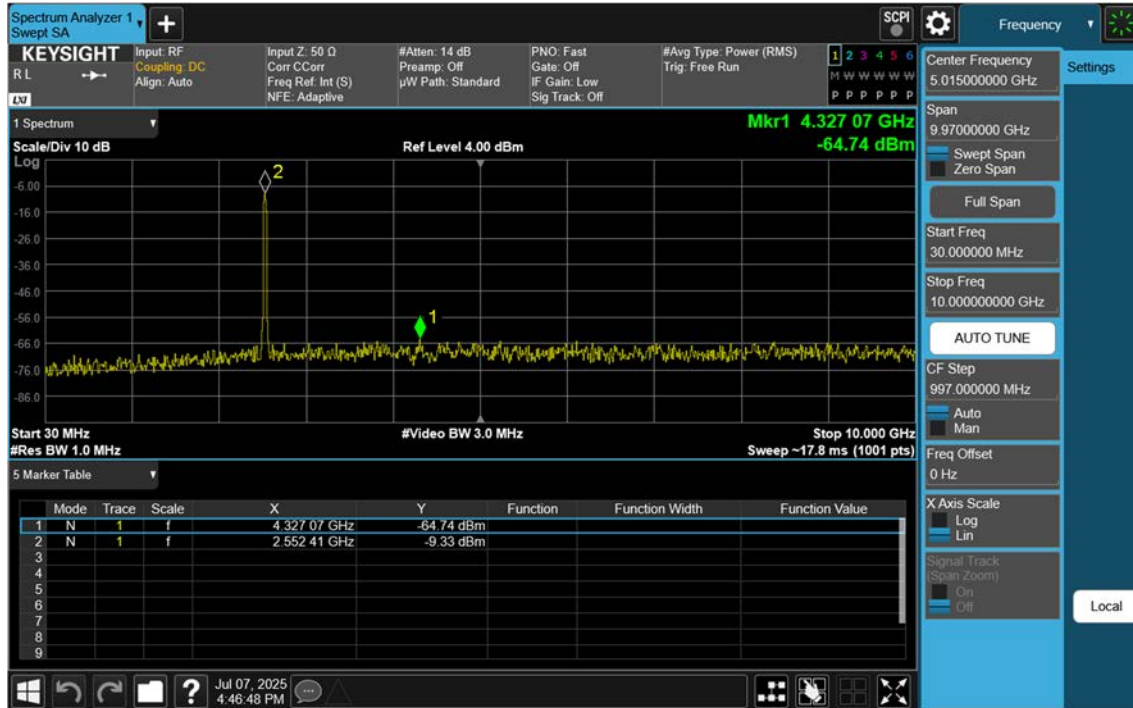
PCC 15MHz Ch21277 RB1 Offset0 SCC 10MHz Ch21397 RB1 Offset49



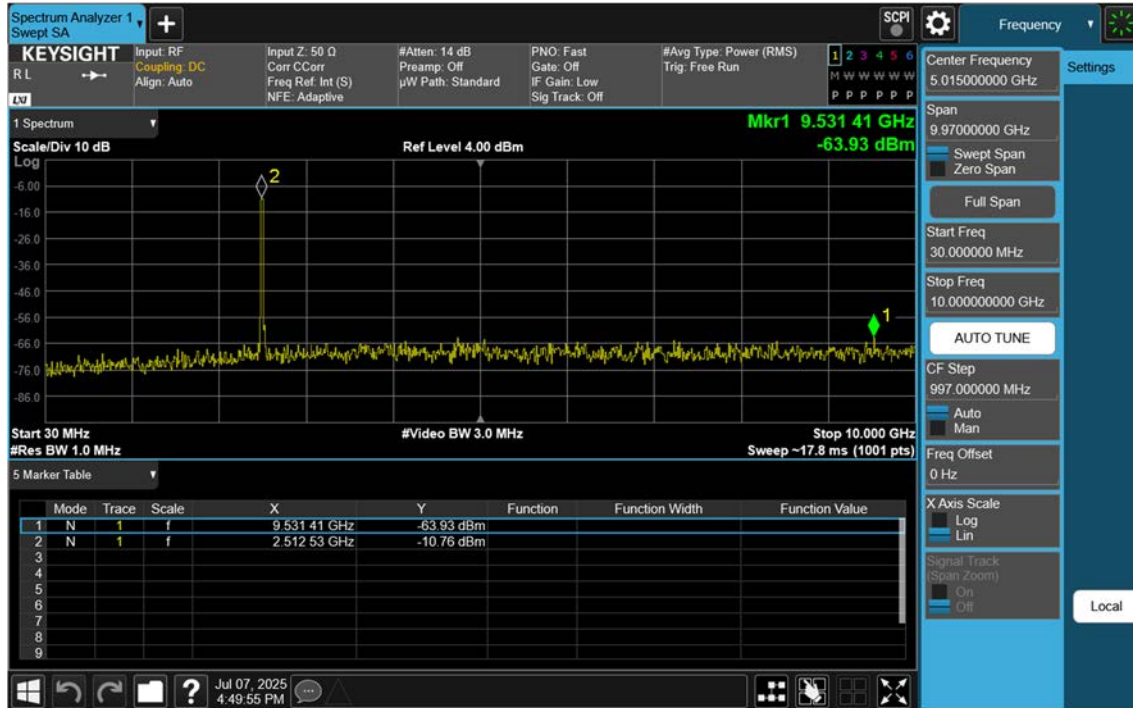
PCC 15MHz Ch21277 RB1 Offset74 SCC 10MHz Ch21397 RB1 Offset0



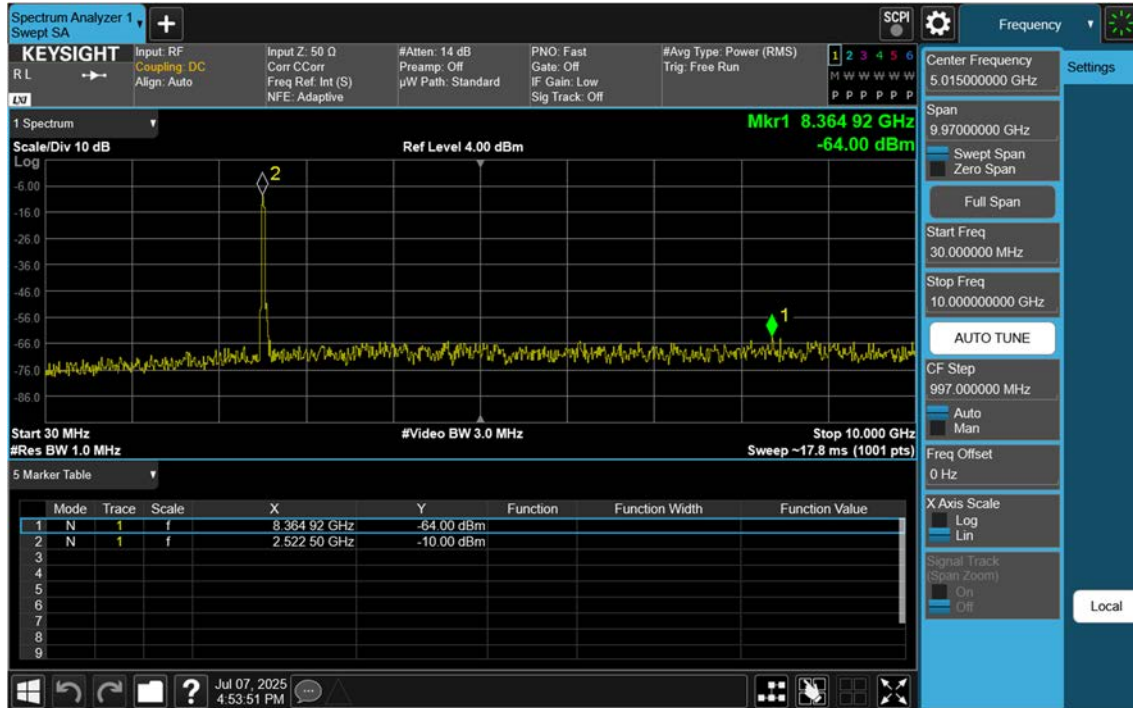
PCC 15MHz Ch21277 RB75 Offset0 SCC 10MHz Ch21397 RB50 Offset0



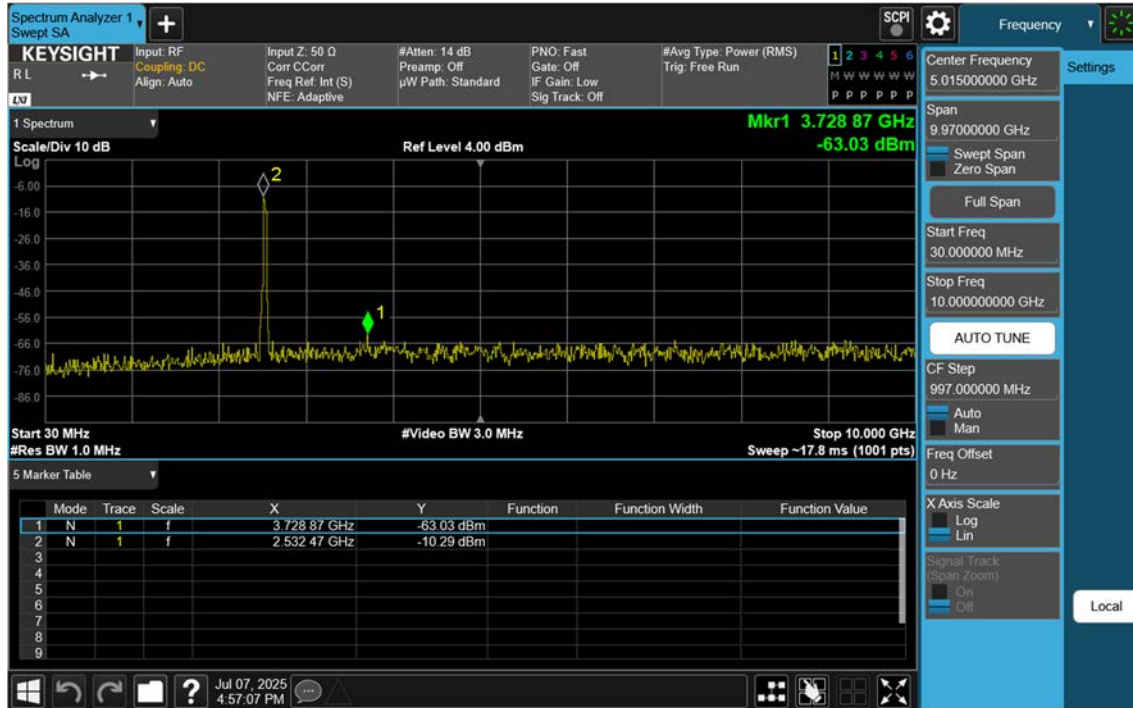
PCC 20MHz Ch20850 RB100 Offset0 SCC 20MHz Ch21048 RB100 Offset0



PCC 20MHz Ch21001 RB100 Offset0 SCC 20MHz Ch21199 RB100 Offset0

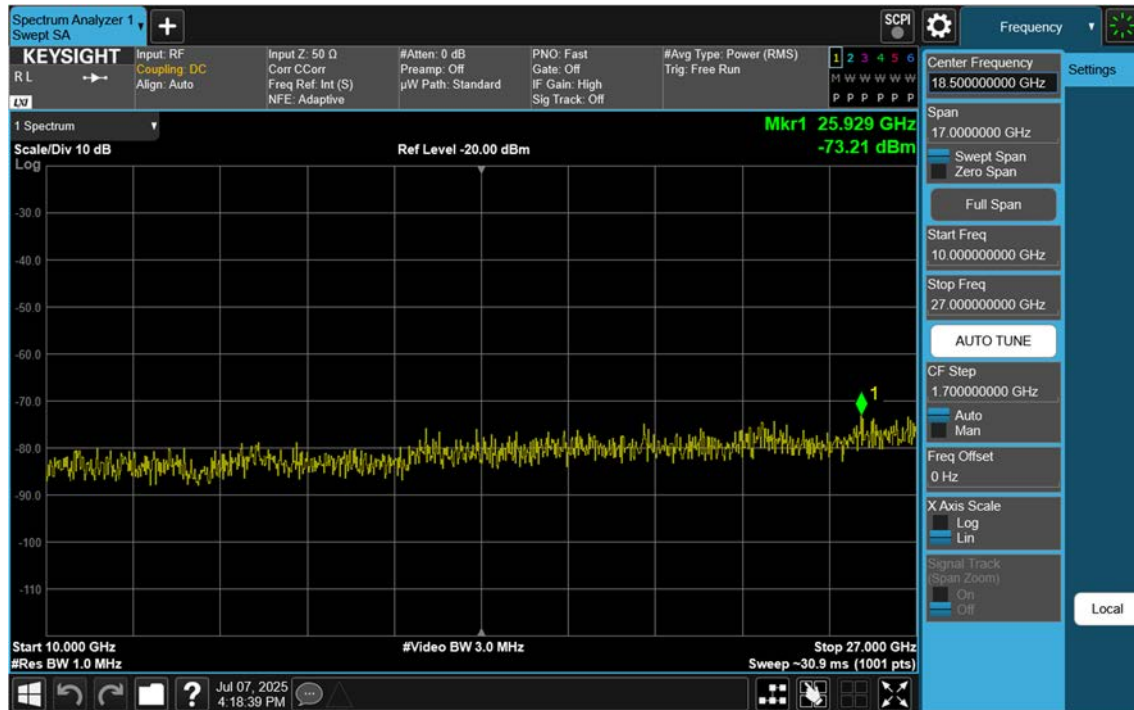


PCC 20MHz Ch21152 RB100 Offset0 SCC 20MHz Ch21350 RB100 Offset0



Frequency Range : 10GHz ~ 26.5GHz

PCC 15MHz Ch20825 RB1 Offset0, SCC 10MHz Ch20945 RB1 Offset49



Spectrum Analyzer 1
Swept SA

KEYSIGHT

Input: RF
Coupling: DC
Align: Auto

Input Z: 50 Ω
Corr C: Off
Freq Ref: Int (S)
NFE: Adaptive

#Atten: 0 dB
Preamp: Off
 μ W Path: Standard

PNO: Fast
Gate: Off
IF Gain: High
Sig Track: Off

#Avg Type: Power (RMS)
Trig: Free Run

1 2 3 4 5 6
M W W W W W
P P P P P P

SCPI

Frequency

Settings

Center Frequency
18.500000000 GHz

Span
17.000000000 GHz

Swept Span
Zero Span

Full Span

Start Freq
10.000000000 GHz

Stop Freq
27.000000000 GHz

AUTO TUNE

CF Step
1.700000000 GHz

Auto
Man

Freq Offset
0 Hz

X Axis Scale
Log
Lin

Signal Track
(Span Zoom)
On
Off

Local

1 Spectrum
Scale/Div 10 dB
Log

Ref Level -20.00 dBm

Mkr1 26.048 GHz
-73.86 dBm

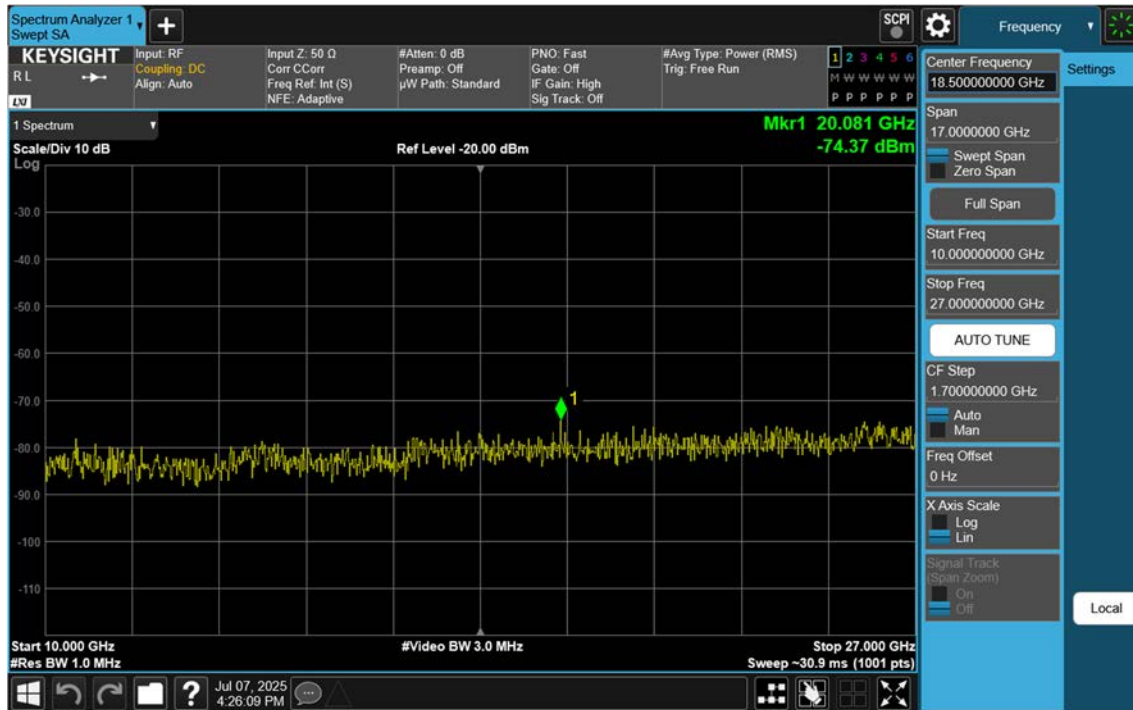
Start 10.000 GHz
#Res BW 1.0 MHz

#Video BW 3.0 MHz

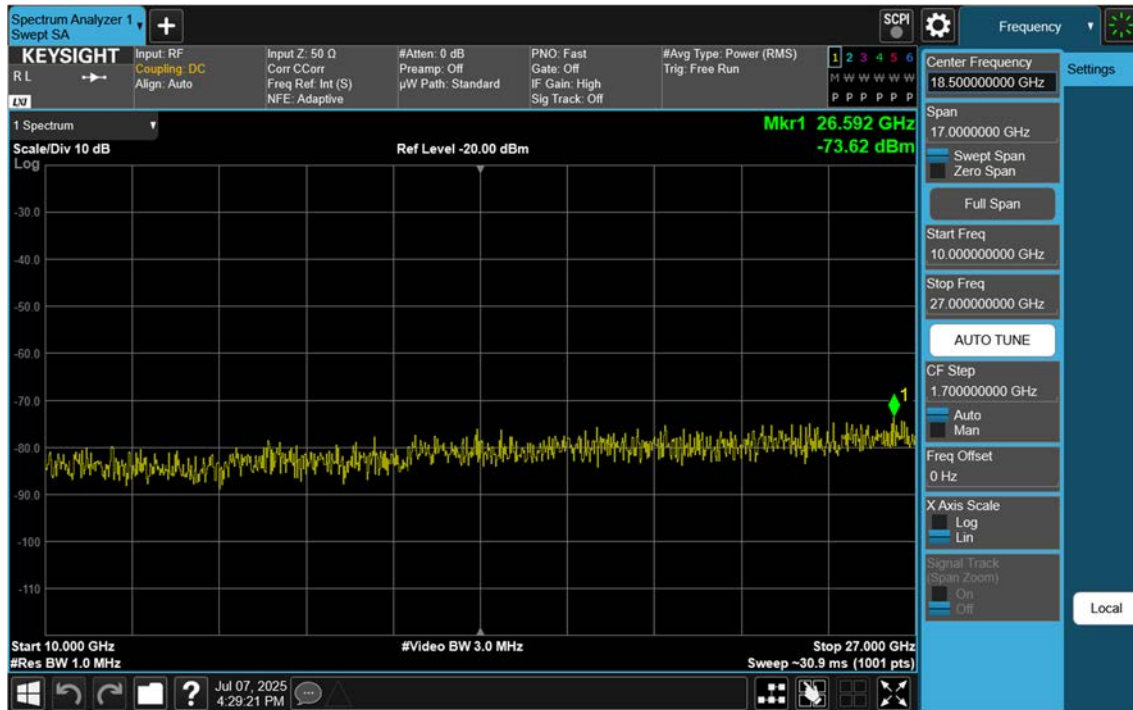
Stop 27.000 GHz
Sweep ~30.9 ms (1001 pts)

Jul 07, 2025
4:22:36 PM

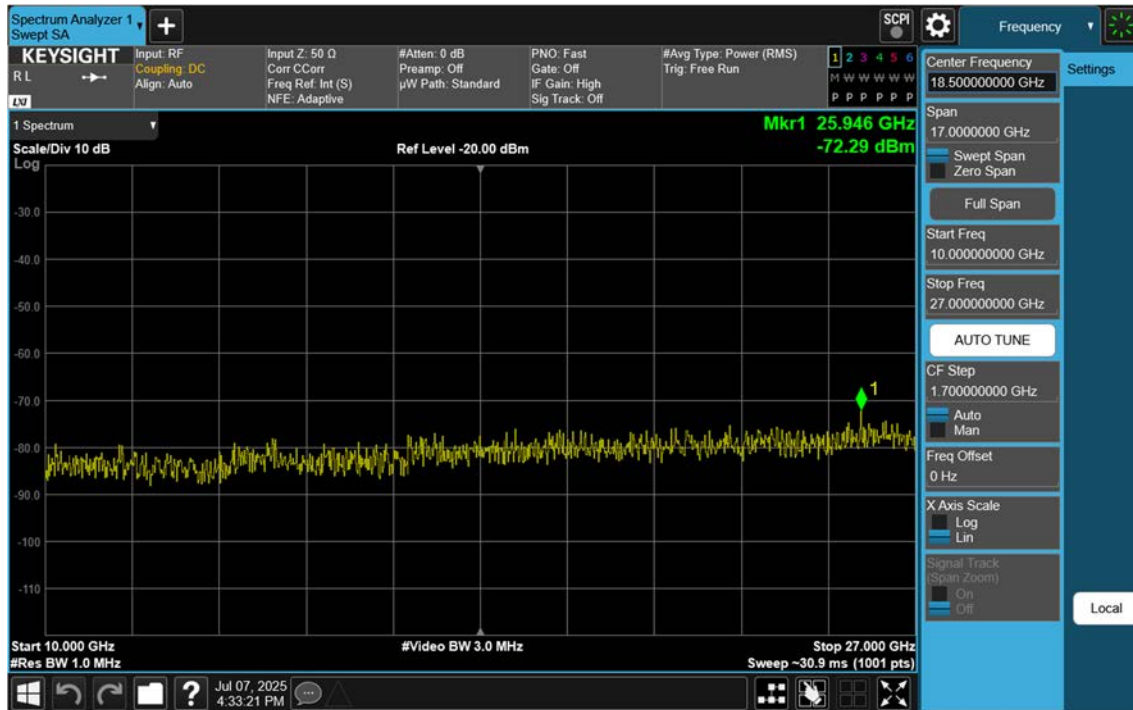
PCC 15MHz Ch21277 RB1 Offset0, SCC 10MHz Ch21397 RB1 Offset49



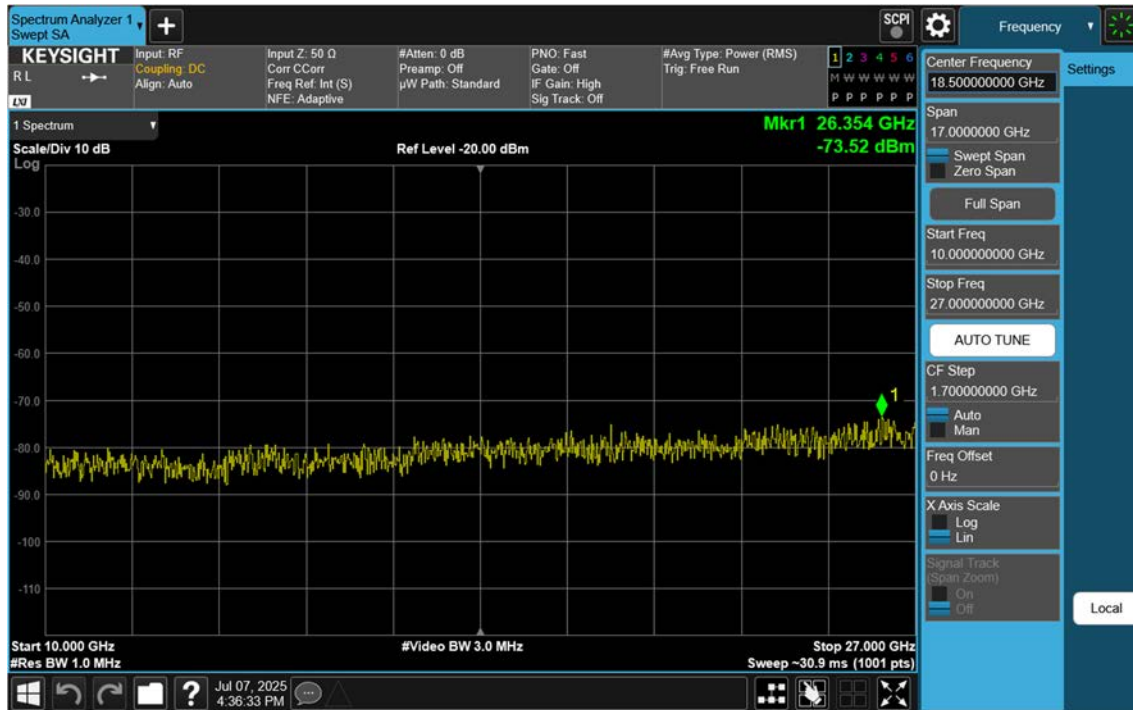
PCC 15MHz Ch20825 RB1 Offset74, SCC 10MHz Ch20945 RB1 Offset0



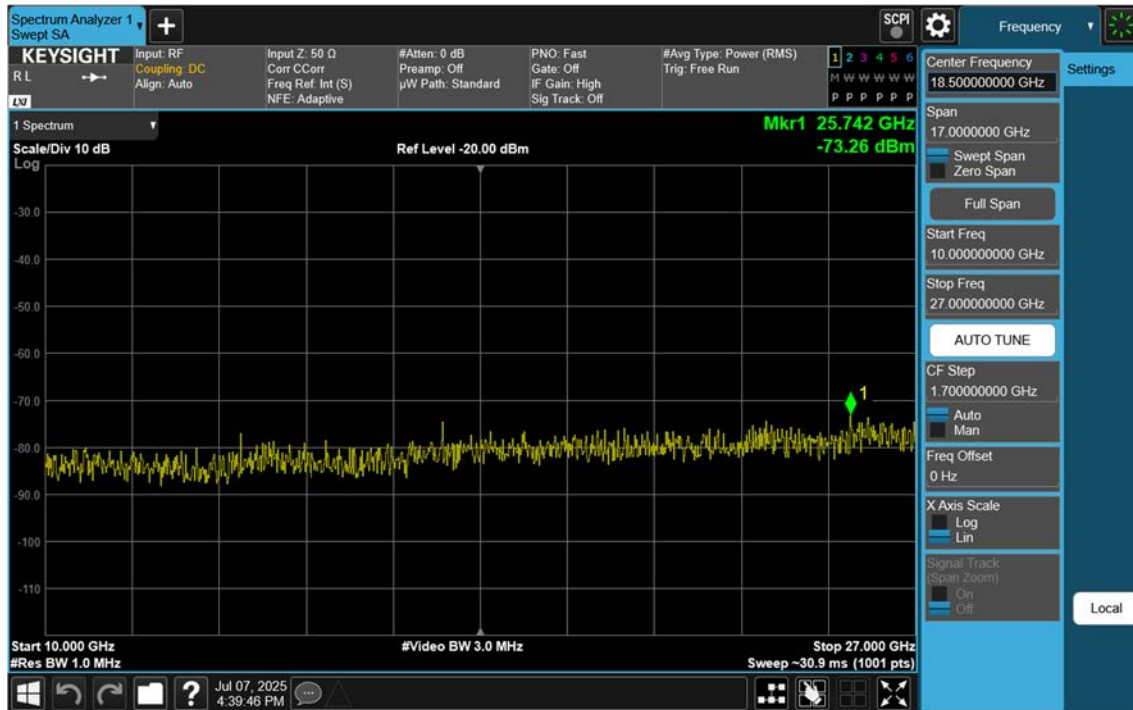
PCC 15MHz Ch21051 RB1 Offset74, SCC 10MHz Ch21171 RB1 Offset0



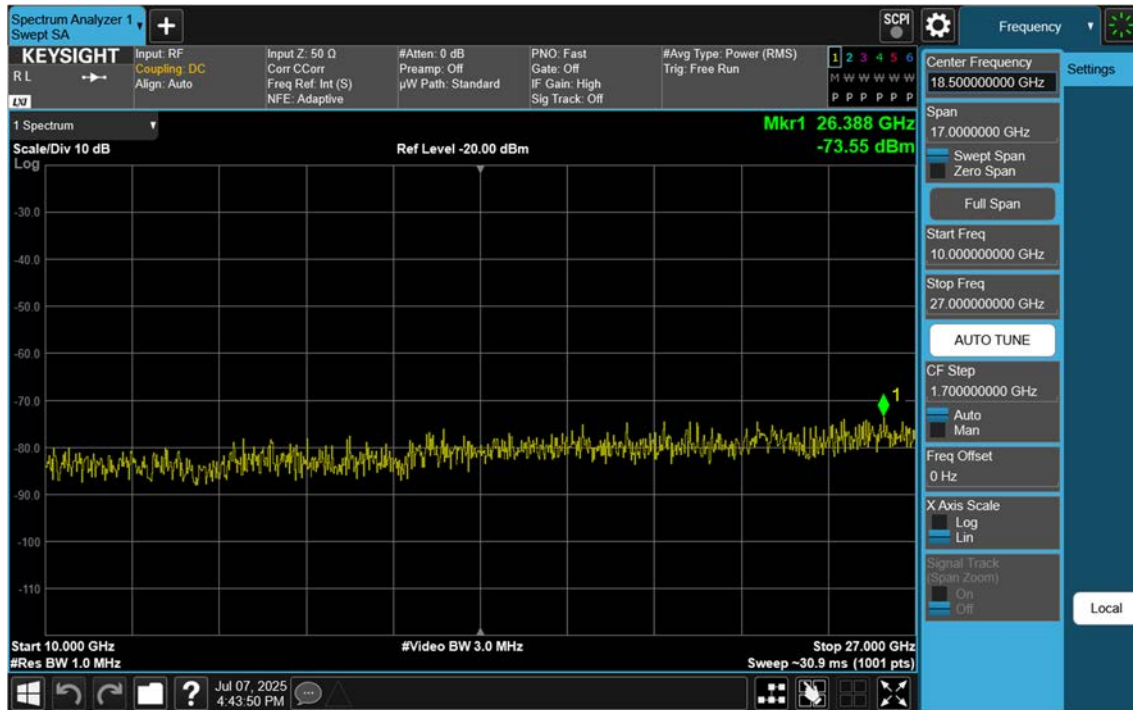
PCC 15MHz Ch21277 RB1 Offset74, SCC 10MHz Ch21397 RB1 Offset0



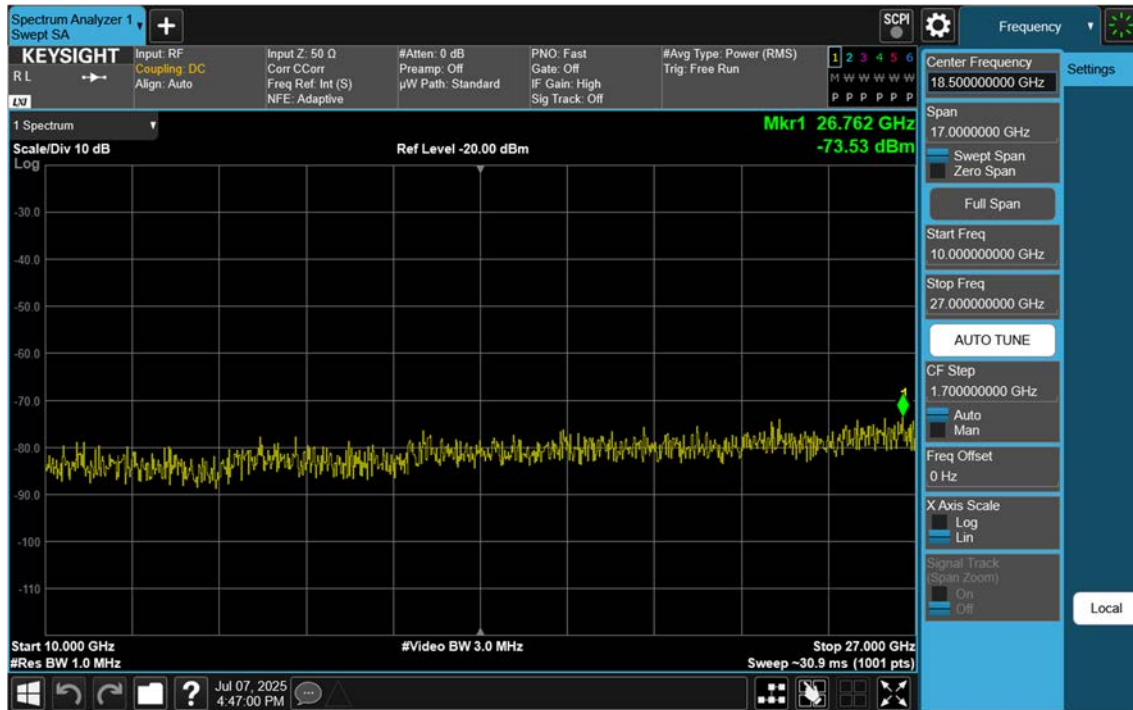
PCC 15MHz Ch20825 RB75 Offset0, SCC 10MHz Ch20945 RB50 Offset0



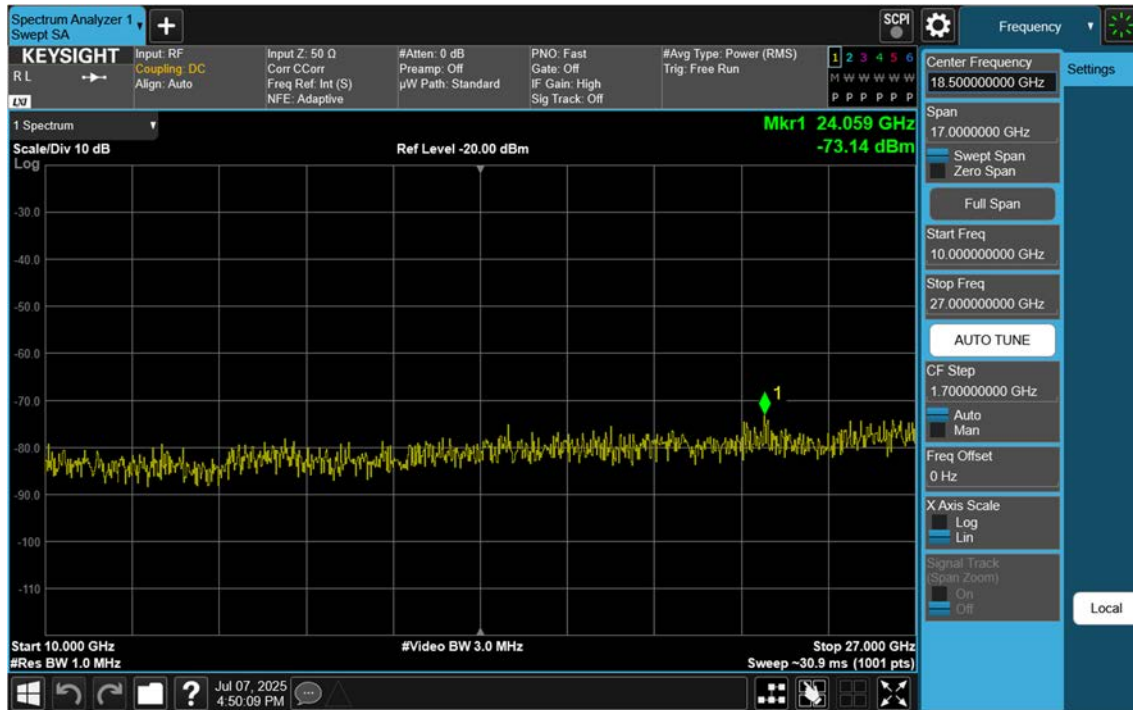
PCC 15MHz Ch21051 RB75 Offset0, SCC 10MHz Ch21171 RB50 Offset0



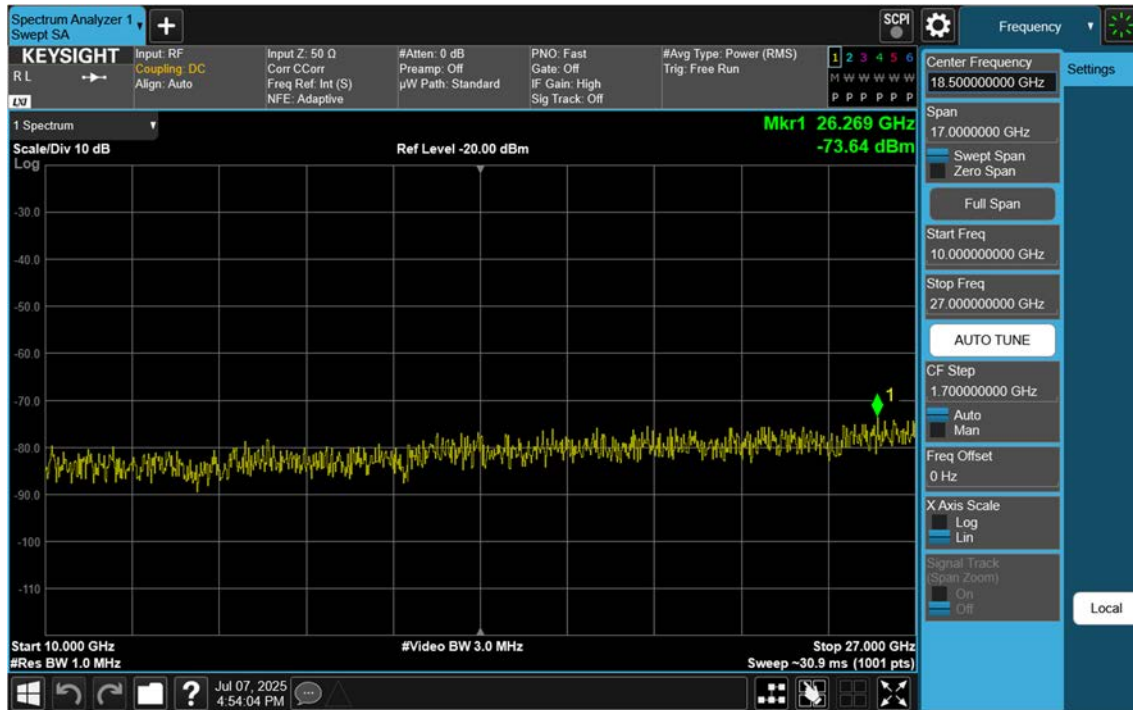
PCC 15MHz Ch21277 RB75 Offset0, SCC 10MHz Ch21397 RB50 Offset0



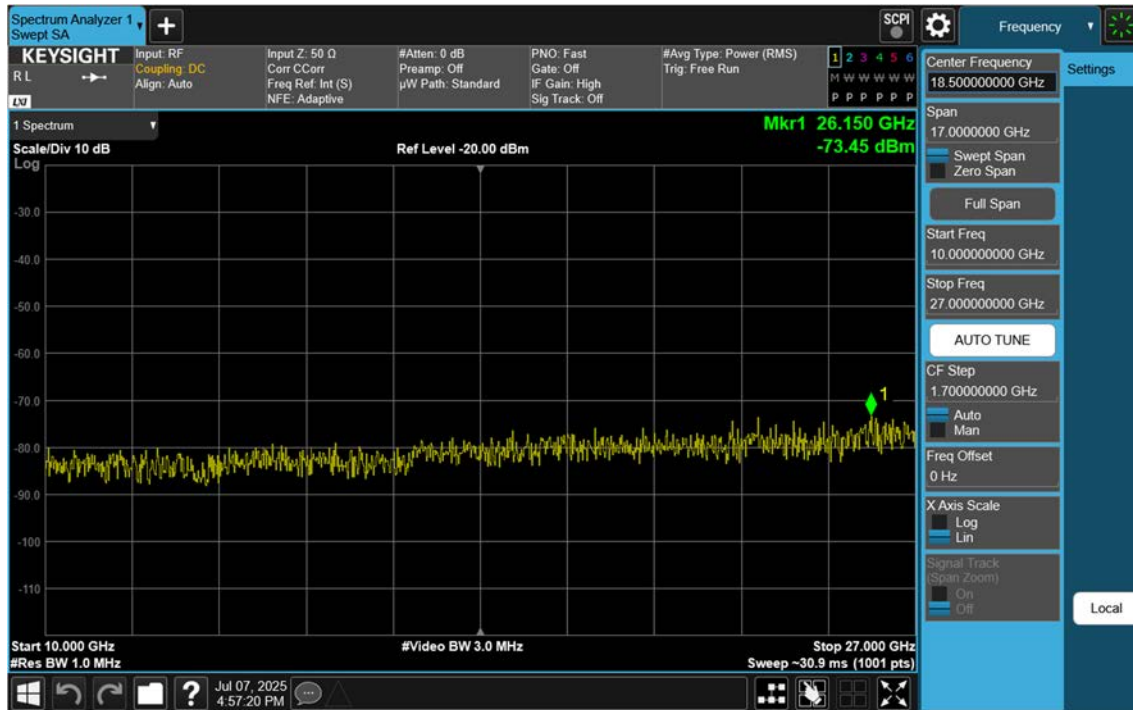
PCC 20MHz Ch20850 RB100 Offset0, SCC 20MHz Ch21048 RB100 Offset0



PCC 20MHz Ch21001 RB100 Offset0, SCC 20MHz Ch21199 RB100 Offset0

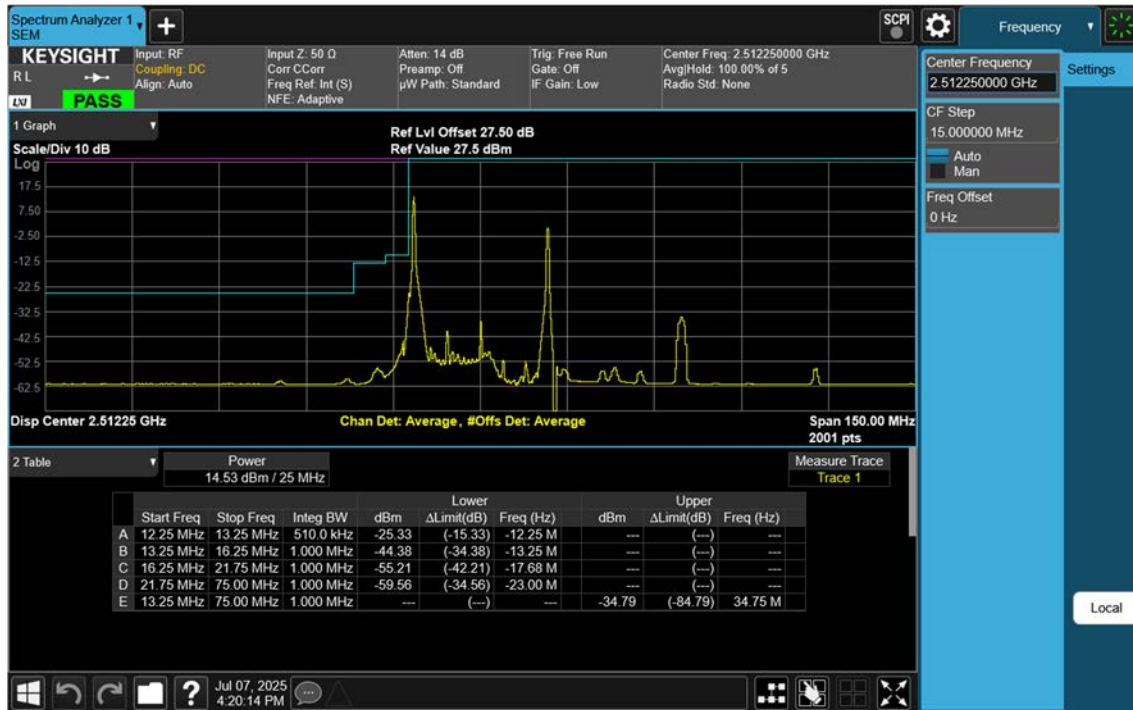


PCC 20MHz Ch21152 RB100 Offset0, SCC 20MHz Ch21350 RB100 Offset0

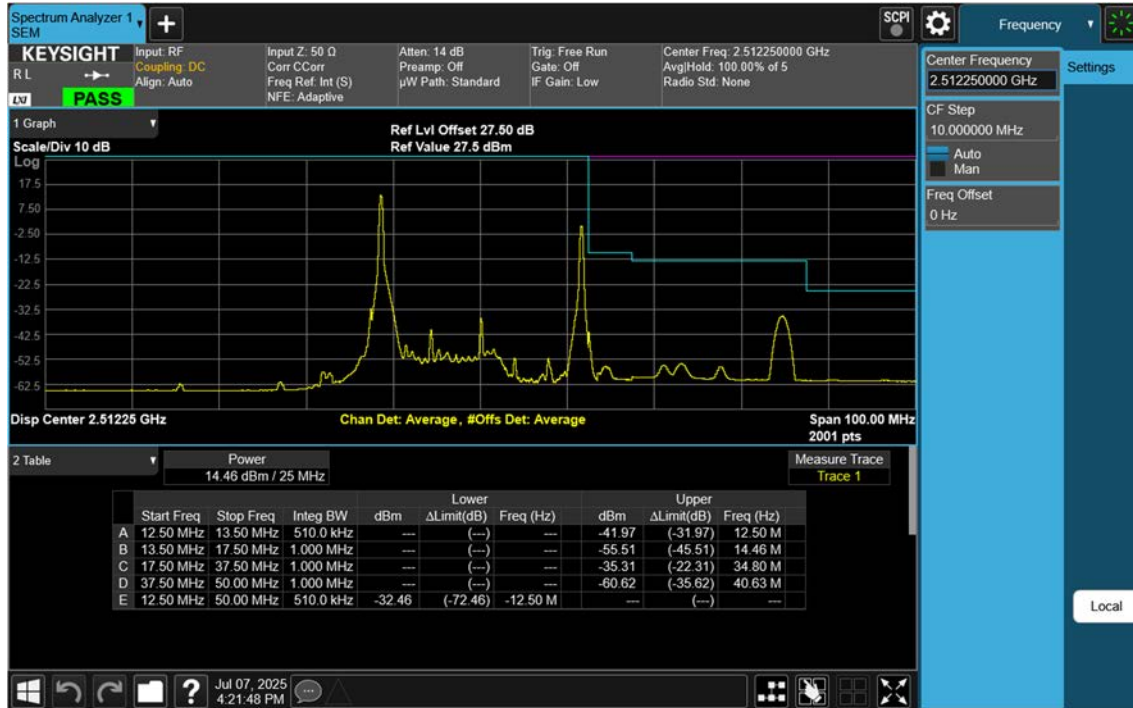


8.4 CHANNEL EDGE

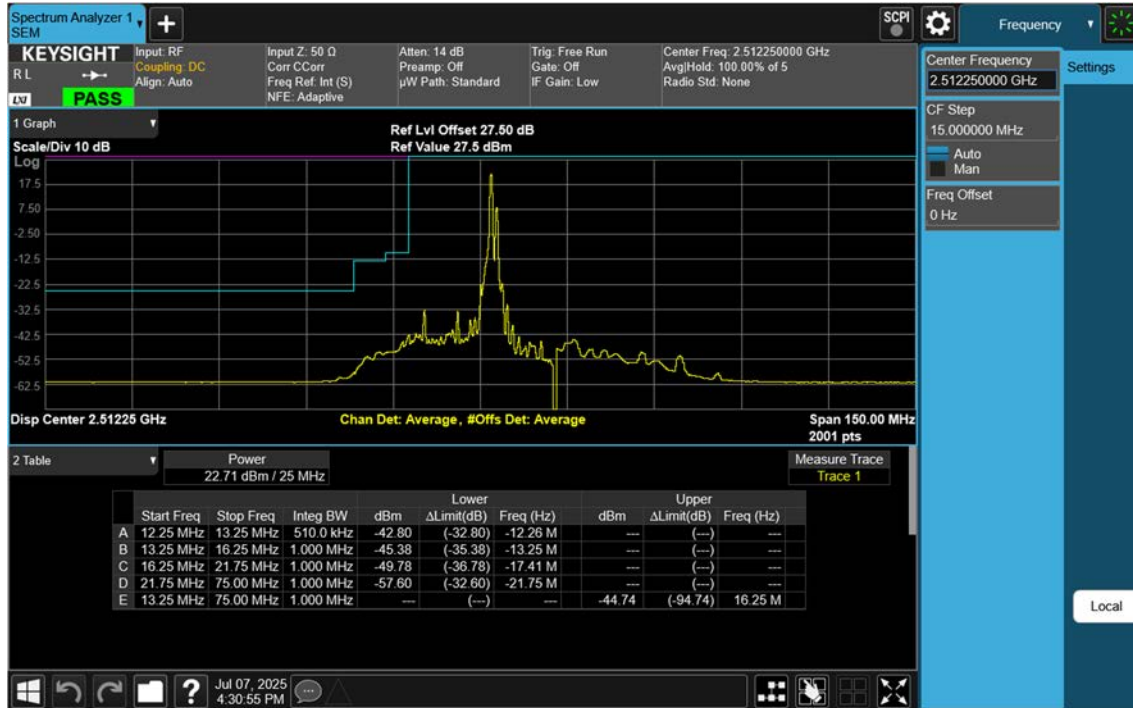
PCC 15MHz Ch20825 RB1 Offset0, SCC 10MHz Ch20945 RB1 Offset49-1



PCC 15MHz Ch20825 RB1 Offset0, SCC 10MHz Ch20945 RB1 Offset49-2



PCC 15MHz Ch20825 RB1 Offset74, SCC 10MHz Ch20945 RB1 Offset0-1



PCC 15MHz Ch20825 RB1 Offset74, SCC 10MHz Ch20945 RB1 Offset0-2



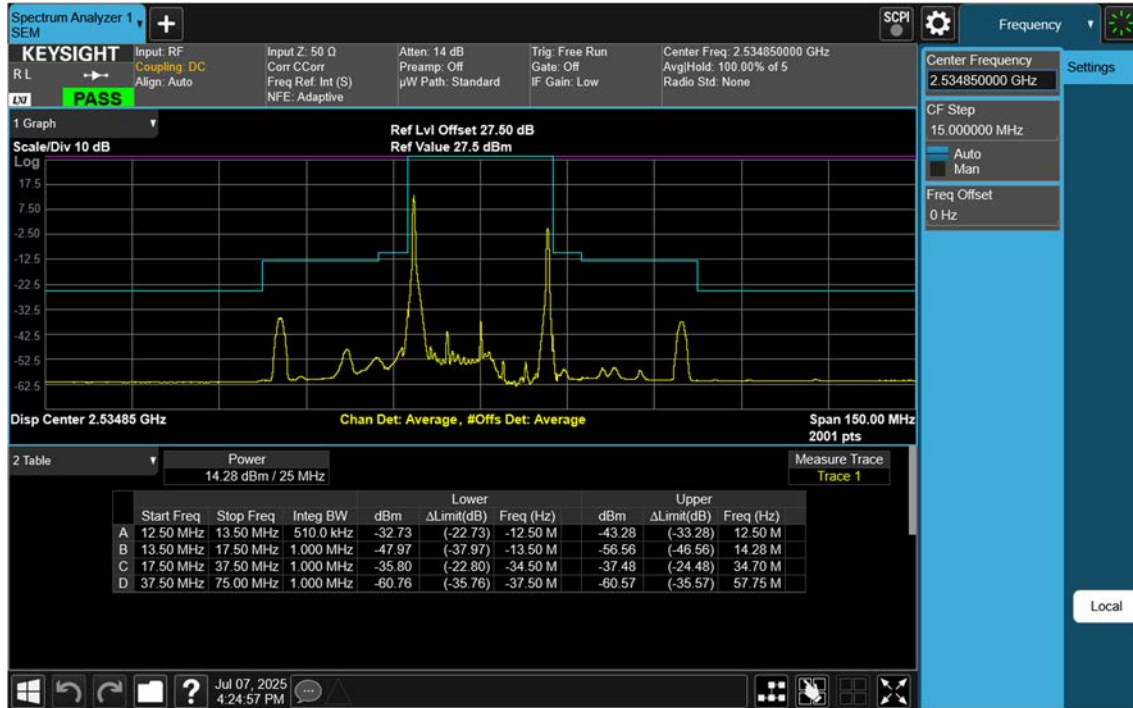
PCC 15MHz Ch20825 RB75 Offset0, SCC 10MHz Ch20945 RB50 Offset0-1



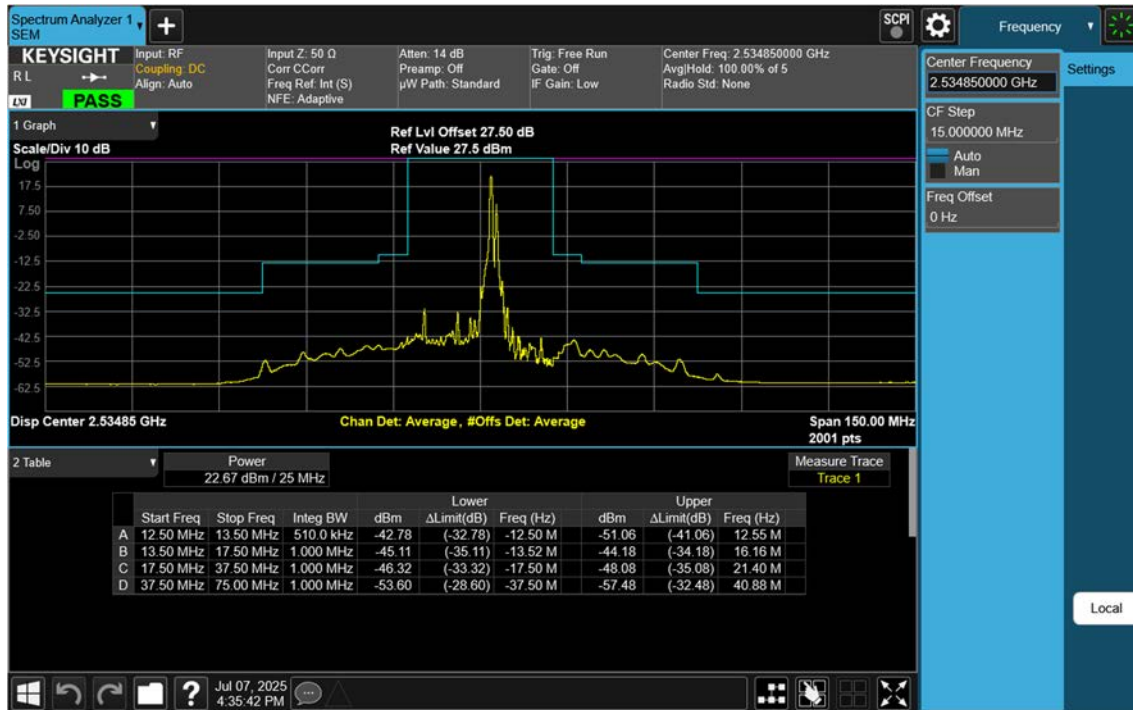
PCC 15MHz Ch20825 RB75 Offset0, SCC 10MHz Ch20945 RB50 Offset0-2



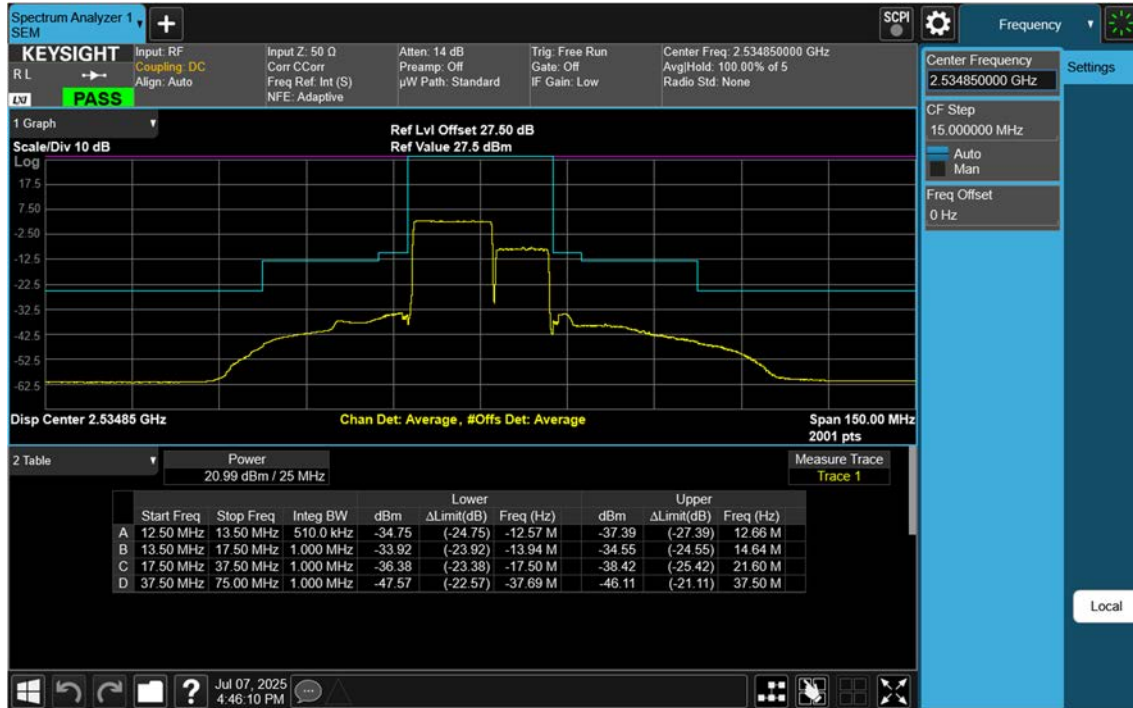
PCC 15MHz Ch21051 RB1 Offset0, SCC 10MHz Ch21171 RB1 Offset49



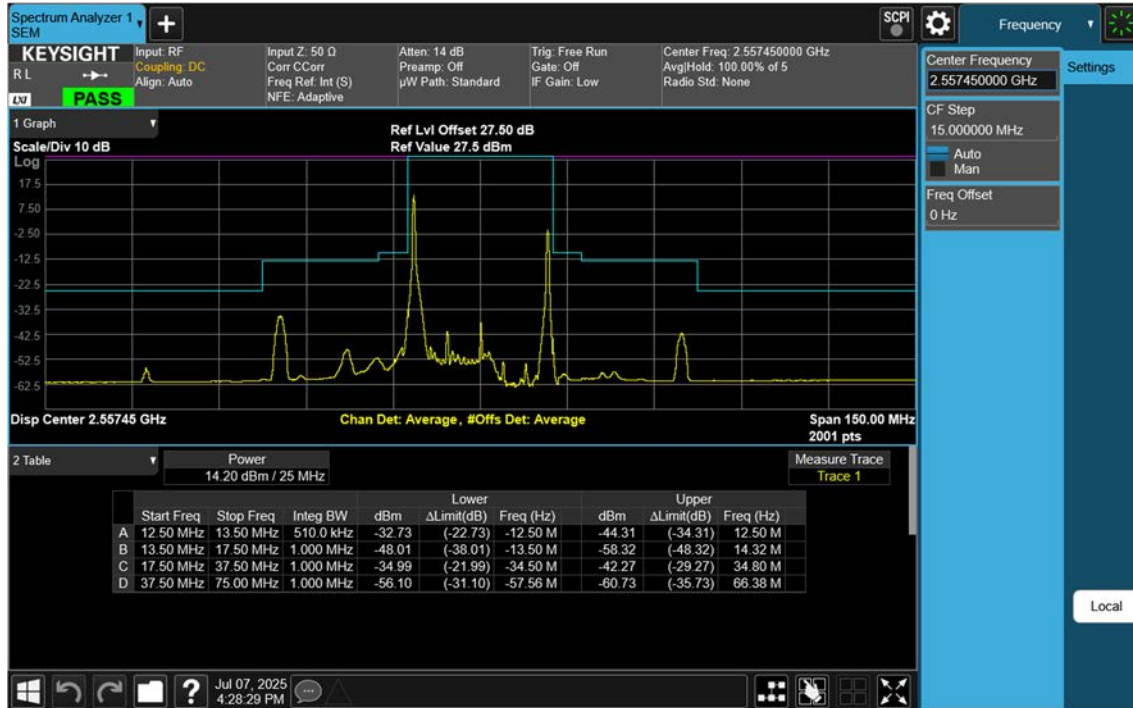
PCC 15MHz Ch21051 RB1 Offset74, SCC 10MHz Ch21171 RB1 Offset0



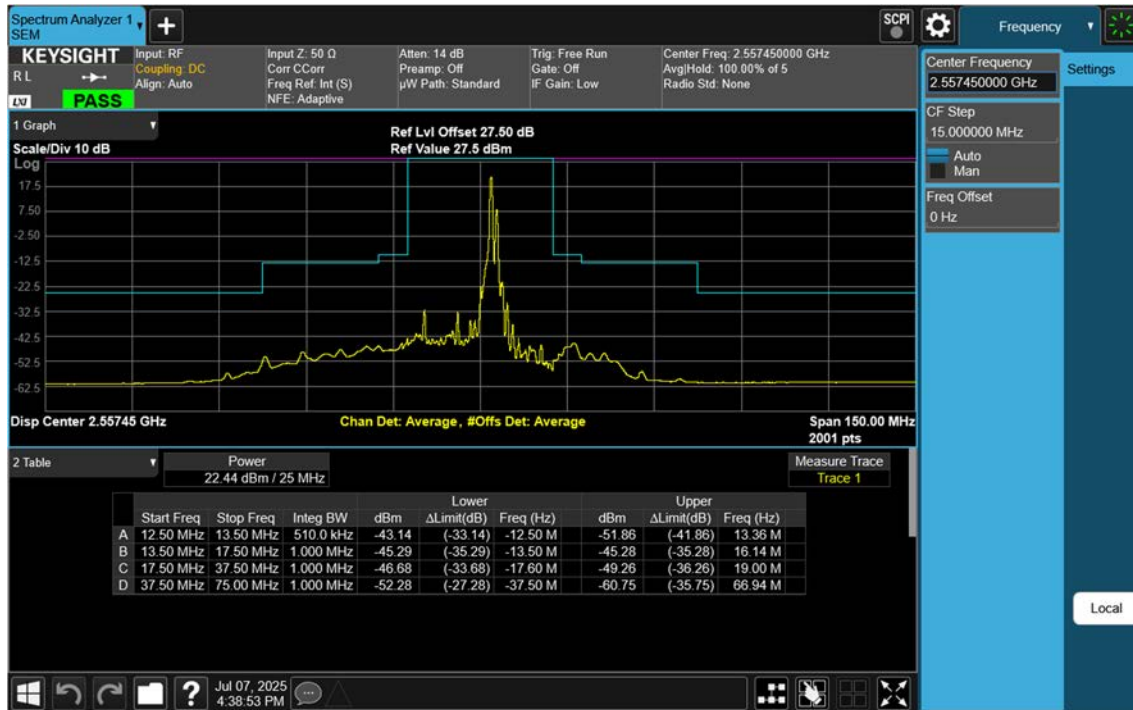
PCC 15MHz Ch21051 RB75 Offset0, SCC 10MHz Ch21171 RB50 Offset0



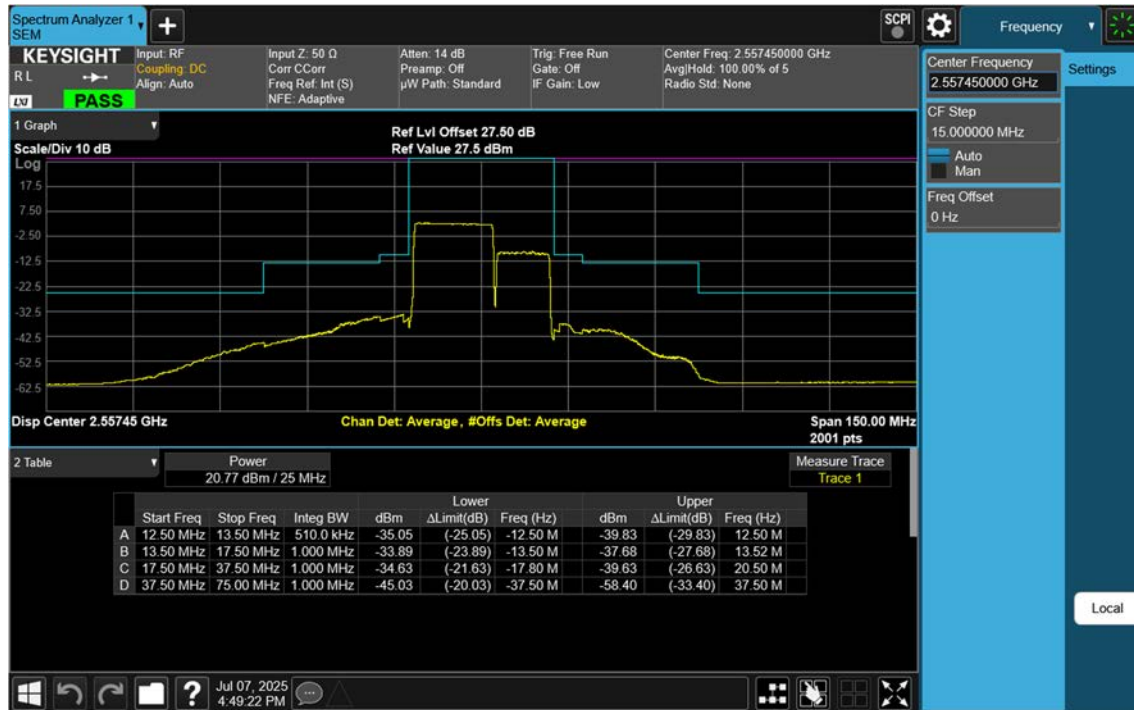
PCC 15MHz Ch21277 RB1 Offset0, SCC 10MHz Ch21397 RB1 Offset49



PCC 15MHz Ch21277 RB1 Offset74, SCC 10MHz Ch21397 RB1 Offset0



PCC 15MHz Ch21277 RB75 Offset0, SCC 10MHz Ch21397 RB50 Offset0



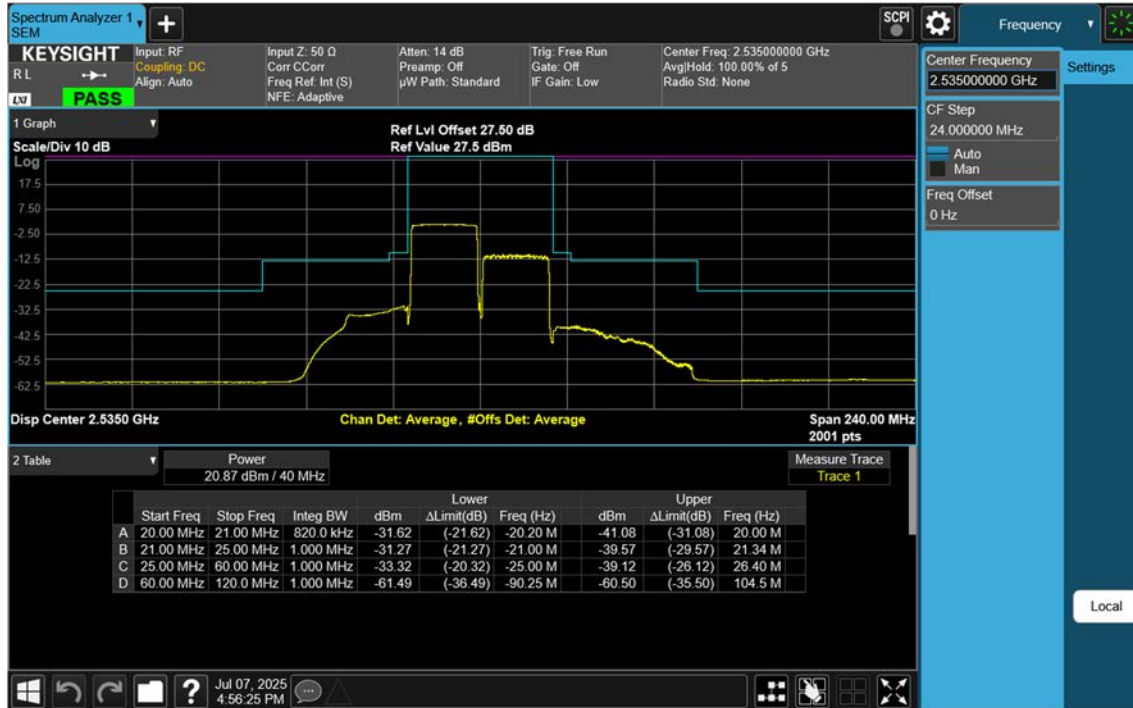
PCC 20MHz Ch20850 RB100 Offset0, SCC 20MHz Ch21048 RB100 Offset0-1



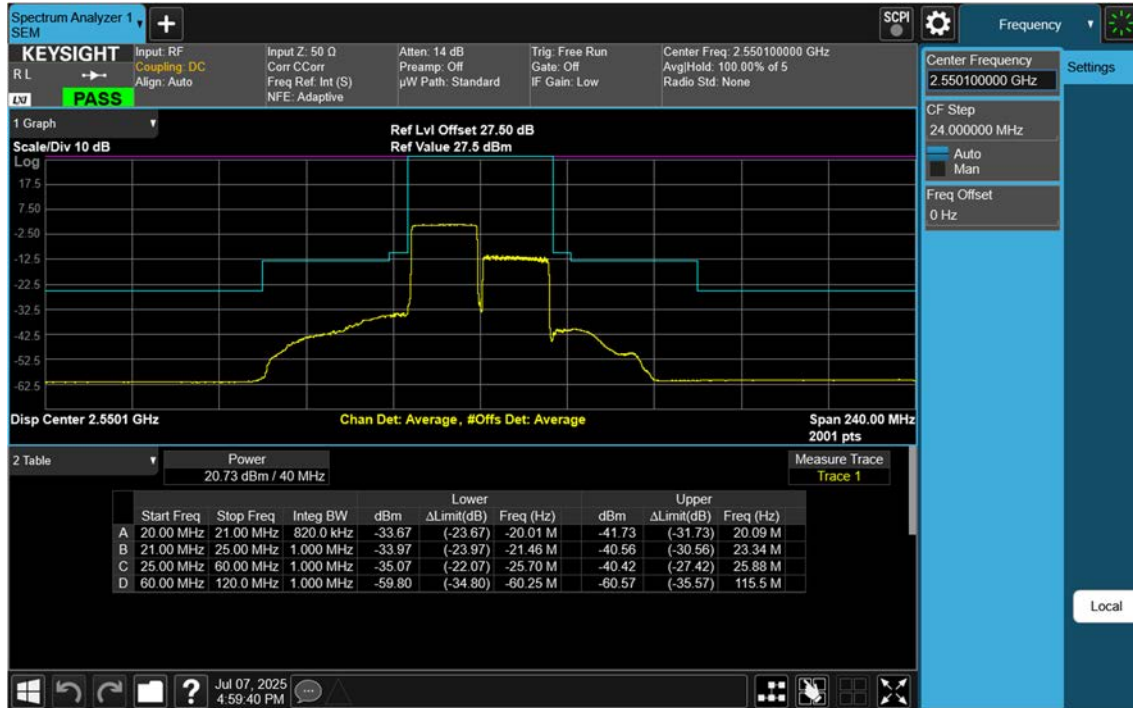
PCC 20MHz Ch20850 RB100 Offset0, SCC 20MHz Ch21048 RB100 Offset0-2



PCC 20MHz Ch21001 RB100 Offset0, SCC 20MHz Ch21199 RB100 Offset0



PCC 20MHz Ch21152 RB100 Offset0, SCC 20MHz Ch21350 RB100 Offset0



8.5 Frequency Stability /Variation Of Ambient Temperature

▣ PCC Channel:	20805	
▣ PCC Frequency:	2505.5	MHz
▣ PCC BandWidth:	10	MHz
▣ SCC Channel:	20949	
▣ SCC Frequency:	2519.9	MHz
▣ SCC BandWidth:	20	MHz
▣ Voltage :	4.200	VDC
▣ LIMIT:	Emission must remain in band	

Voltage (%)	Power (VDC)	Temp. (°C)	PPM		Frequency Error (MHz)	
			PCC	SCC	PCC	SCC
100 %	4.200	+20(Ref)	-0.0510	0.0595	2505.49987	2519.90015
100 %		-30	0.0500	0.0596	2505.50013	2519.90015
100 %		-20	-0.0412	-0.0558	2505.49990	2519.89986
100 %		-10	0.0589	0.0473	2505.50015	2519.90012
100 %		0	-0.0521	0.0524	2505.49987	2519.90013
100 %		10	0.0562	0.0514	2505.50014	2519.90013
100 %		30	-0.0532	-0.0436	2505.49987	2519.89989
100 %		40	0.0413	0.0544	2505.50010	2519.90014
100 %		50	0.0576	0.0506	2505.50014	2519.90013
Lowest voltage	3.700	20	0.0542	0.0501	2505.50014	2519.90013

▣ PCC Channel:	20828	
▣ PCC Frequency:	2507.8	MHz
▣ PCC BandWidth:	15	MHz
▣ SCC Channel:	20999	
▣ SCC Frequency:	2524.9	MHz
▣ SCC BandWidth:	20	MHz
▣ Voltage :	4.200	VDC
▣ LIMIT:	Emission must remain in band	

Voltage (%)	Power (VDC)	Temp. (°C)	PPM		Frequency Error (MHz)	
			PCC	SCC	PCC	SCC
100 %	4.200	+20(Ref)	-0.0602	-0.0605	2507.79985	2524.89985
100 %		-30	0.0499	0.0499	2507.80013	2524.90013
100 %		-20	0.0471	0.0467	2507.80012	2524.90012
100 %		-10	-0.0445	0.0569	2507.79989	2524.90014
100 %		0	0.0605	0.0528	2507.80015	2524.90013
100 %		10	0.0449	0.0521	2507.80011	2524.90013
100 %		30	0.0562	-0.0545	2507.80014	2524.89986
100 %		40	0.0559	0.0530	2507.80014	2524.90013
100 %		50	-0.0448	-0.0558	2507.79989	2524.89986
Lowest voltage	3.700	20	0.0583	0.0567	2507.80015	2524.90014

▣ PCC Channel:	20850	
▣ PCC Frequency:	2510.0	MHz
▣ PCC BandWidth:	20	MHz
▣ SCC Channel:	21048	
▣ SCC Frequency:	2529.8	MHz
▣ SCC BandWidth:	20	MHz
▣ Voltage :	4.200	VDC
▣ LIMIT:	Emission must remain in band	

Voltage (%)	Power (VDC)	Temp. (°C)	PPM		Frequency Error (MHz)	
			PCC	SCC	PCC	SCC
100 %	4.200	+20(Ref)	-0.0470	0.0484	2509.99988	2529.80012
100 %		-30	0.0532	0.0529	2510.00013	2529.80013
100 %		-20	0.0504	0.0608	2510.00013	2529.80015
100 %		-10	0.0444	-0.0495	2510.00011	2529.79987
100 %		0	0.0426	0.0453	2510.00011	2529.80011
100 %		10	-0.0477	0.0571	2509.99988	2529.80014
100 %		30	-0.0507	0.0478	2509.99987	2529.80012
100 %		40	-0.0531	-0.0604	2509.99987	2529.79985
100 %		50	-0.0467	-0.0452	2509.99988	2529.79989
Lowest voltage	3.700	20	0.0523	-0.0541	2510.00013	2529.79986

▣ PCC Channel:	21206	
▣ PCC Frequency:	2545.6	MHz
▣ PCC BandWidth:	10	MHz
▣ SCC Channel:	21350	
▣ SCC Frequency:	2560.0	MHz
▣ SCC BandWidth:	20	MHz
▣ Voltage :	4.200	VDC
▣ LIMIT:	Emission must remain in band	

Voltage (%)	Power (VDC)	Temp. (°C)	PPM		Frequency Error (MHz)	
			PCC	SCC	PCC	SCC
100 %	4.200	+20(Ref)	-0.0430	0.0521	2545.59989	2560.00013
100 %		-30	0.0485	0.0524	2545.60012	2560.00013
100 %		-20	0.0461	-0.0535	2545.60012	2559.99986
100 %		-10	0.0603	-0.0538	2545.60015	2559.99986
100 %		0	0.0433	-0.0595	2545.60011	2559.99985
100 %		10	0.0418	0.0584	2545.60011	2560.00015
100 %		30	0.0572	0.0464	2545.60015	2560.00012
100 %		40	0.0433	0.0421	2545.60011	2560.00011
100 %		50	0.0579	0.0415	2545.60015	2560.00011
Lowest voltage	3.700	20	0.0490	0.0518	2545.60012	2560.00013

▣ PCC Channel:	21179	
▣ PCC Frequency:	2542.9	MHz
▣ PCC BandWidth:	15	MHz
▣ SCC Channel:	21350	
▣ SCC Frequency:	2560.0	MHz
▣ SCC BandWidth:	20	MHz
▣ Voltage :	4.200	VDC
▣ LIMIT:	Emission must remain in band	

Voltage (%)	Power (VDC)	Temp. (°C)	PPM		Frequency Error (MHz)	
			PCC	SCC	PCC	SCC
100 %	4.200	+20(Ref)	0.0430	0.0499	2542.90011	2560.00013
100 %		-30	-0.0510	0.0507	2542.89987	2560.00013
100 %		-20	0.0559	-0.0422	2542.90014	2559.99989
100 %		-10	-0.0417	-0.0449	2542.89989	2559.99989
100 %		0	0.0468	-0.0609	2542.90012	2559.99984
100 %		10	0.0475	-0.0486	2542.90012	2559.99988
100 %		30	0.0543	0.0610	2542.90014	2560.00016
100 %		40	-0.0473	-0.0562	2542.89988	2559.99986
100 %		50	-0.0452	0.0424	2542.89989	2560.00011
Lowest voltage	3.700	20	0.0483	-0.0570	2542.90012	2559.99985

▣ PCC Channel:	21152	
▣ PCC Frequency:	2540.2	MHz
▣ PCC BandWidth:	20	MHz
▣ SCC Channel:	21350	
▣ SCC Frequency:	2560.0	MHz
▣ SCC BandWidth:	20	MHz
▣ Voltage :	4.200	VDC
▣ LIMIT:	Emission must remain in band	

Voltage (%)	Power (VDC)	Temp. (°C)	PPM		Frequency Error (MHz)	
			PCC	SCC	PCC	SCC
100 %	4.200	+20(Ref)	-0.0454	-0.0435	2540.19988	2559.99989
100 %		-30	-0.0517	0.0449	2540.19987	2560.00011
100 %		-20	0.0539	0.0540	2540.20014	2560.00014
100 %		-10	-0.0564	0.0427	2540.19986	2560.00011
100 %		0	0.0560	0.0503	2540.20014	2560.00013
100 %		10	0.0455	0.0501	2540.20012	2560.00013
100 %		30	0.0452	-0.0422	2540.20011	2559.99989
100 %		40	-0.0503	0.0609	2540.19987	2560.00016
100 %		50	-0.0600	0.0541	2540.19985	2560.00014
Lowest voltage	3.700	20	0.0531	-0.0428	2540.20013	2559.99989

8.6 Radiated Spurious Emissions

▣ PCC Channel :	20825 (2507.5 MHz)
▣ PCC BW(MHz) :	15
▣ PCC RB/ RB Offset :	1/ 74
▣ SCC Channel :	20945 (2519.5 MHz)
▣ SCC BW(MHz) :	10
▣ SCC RB/ RB Offset :	1/0
▣ DISTANCE:	1 meters
▣ LIMIT:	-25.0 dBm

Freq.(MHz)	Measured Level [dBm]	Ant. Gain (dBi)	Substitute Level [dBm]	C.L	Pol.	Result (dBm)
5 027.00	-54.86	10.90	-61.57	3.68	V	-54.35
7 540.50	-54.72	11.62	-57.16	4.61	V	-50.15
10 054.00	-53.36	11.38	-52.82	5.48	V	-46.93
12 567.50	-56.23	13.09	-52.56	6.24	V	-45.72
15 081.00	-62.32	14.44	-44.36	6.82	V	-36.75

☐ PCC Channel : 21051 (2530.1 MHz)
☐ PCC BW(MHz) : 15
☐ PCC RB/ RB Offset : 1/ 74
☐ SCC Channel : 21171 (2542.1 MHz)
☐ SCC BW(MHz) : 10
☐ SCC RB/ RB Offset : 1/ 0
☐ DISTANCE: 1 meters
☐ LIMIT: -25.0 dBm

Freq.(MHz)	Measured Level [dBm]	Ant. Gain (dBi)	Substitute Level [dBm]	C.L	Pol.	Result (dBm)
5 072.20	-54.64	10.92	-61.40	3.80	H	-54.28
7 608.30	-54.85	11.65	-57.03	4.64	H	-50.02
10 144.40	-54.71	11.33	-54.19	5.48	V	-48.33
12 680.50	-55.84	12.87	-51.80	6.23	V	-45.16
15 216.60	-63.07	14.82	-44.63	6.82	V	-36.63

☐ PCC Channel : 21179 (2542.9 MHz)
☐ PCC BW(MHz) : 15
☐ PCC RB/ RB Offset : 1/ 74
☐ SCC Channel : 21350 (2560.0 MHz)
☐ SCC BW(MHz) : 20
☐ SCC RB/ RB Offset : 1/ 0
☐ DISTANCE: 1 meters
☐ LIMIT: -25.0 dBm

Freq.(MHz)	Measured Level [dBm]	Ant. Gain (dBi)	Substitute Level [dBm]	C.L	Pol.	Result (dBm)
5 102.90	-53.38	10.95	-60.10	3.78	H	-52.93
7 654.35	-55.02	11.63	-57.03	4.69	V	-50.08
10 205.80	-53.30	11.36	-52.80	5.54	H	-46.98
12 757.25	-56.24	12.77	-51.94	6.23	H	-45.39
15 308.70	-62.93	15.08	-43.97	6.83	H	-35.71

8.7 Occupied Bandwidth

PCC					SCC					Data (MHz)
BW [MHz]	Ch	Freq [MHz]	Mod	RB/ Offset	BW [MHz]	Ch	Freq [MHz]	Mod	RB/ Offset	
10	21006	2525.6	QPSK	50/0	20	21150	2540.0	QPSK	100/0	27.660
15	21051	2530.1	QPSK	75/0	10	21171	2542.1	QPSK	50/0	23.088
15	21025	2527.5	QPSK	75/0	15	21175	2542.5	QPSK	75/0	28.294
15	21003	2525.3	QPSK	75/0	20	21174	2542.4	QPSK	100/0	32.488
20	21051	2530.1	QPSK	100/0	10	21195	2544.5	QPSK	50/0	27.777
20	21026	2527.6	QPSK	100/0	15	21197	2544.7	QPSK	75/0	32.637
20	21001	2525.1	QPSK	100/0	20	21199	2544.9	QPSK	100/0	37.519

PCC					SCC					Data (MHz)
BW [MHz]	Ch	Freq [MHz]	Mod	RB/ Offset	BW [MHz]	Ch	Freq [MHz]	Mod	RB/ Offset	
10	21006	2525.6	16QAM	50/0	20	21150	2540.0	16QAM	100/0	27.630
15	21051	2530.1	16QAM	75/0	10	21171	2542.1	16QAM	50/0	23.101
15	21025	2527.5	16QAM	75/0	15	21175	2542.5	16QAM	75/0	28.295
15	21003	2525.3	16QAM	75/0	20	21174	2542.4	16QAM	100/0	32.578
20	21051	2530.1	16QAM	100/0	10	21195	2544.5	16QAM	50/0	27.805
20	21026	2527.6	16QAM	100/0	15	21197	2544.7	16QAM	75/0	32.634
20	21001	2525.1	16QAM	100/0	20	21199	2544.9	16QAM	100/0	37.487

PCC					SCC					Data (MHz)
BW [MHz]	Ch	Freq [MHz]	Mod	RB/ Offset	BW [MHz]	Ch	Freq [MHz]	Mod	RB/ Offset	
10	21006	2525.6	64QAM	50/0	20	21150	2540.0	64QAM	100/0	27.566
15	21051	2530.1	64QAM	75/0	10	21171	2542.1	64QAM	50/0	23.126
15	21025	2527.5	64QAM	75/0	15	21175	2542.5	64QAM	75/0	28.283
15	21003	2525.3	64QAM	75/0	20	21174	2542.4	64QAM	100/0	32.441
20	21051	2530.1	64QAM	100/0	10	21195	2544.5	64QAM	50/0	27.665
20	21026	2527.6	64QAM	100/0	15	21197	2544.7	64QAM	75/0	32.530
20	21001	2525.1	64QAM	100/0	20	21199	2544.9	64QAM	100/0	37.399

PCC					SCC					Data (MHz)
BW [MHz]	Ch	Freq [MHz]	Mod	RB/ Offset	BW [MHz]	Ch	Freq [MHz]	Mod	RB/ Offset	
10	21006	2525.6	256QAM	50/0	20	21150	2540.0	256QAM	100/0	27.632
15	21051	2530.1	256QAM	75/0	10	21171	2542.1	256QAM	50/0	23.099
15	21025	2527.5	256QAM	75/0	15	21175	2542.5	256QAM	75/0	28.295
15	21003	2525.3	256QAM	75/0	20	21174	2542.4	256QAM	100/0	32.531
20	21051	2530.1	256QAM	100/0	10	21195	2544.5	256QAM	50/0	27.788
20	21026	2527.6	256QAM	100/0	15	21197	2544.7	256QAM	75/0	32.534
20	21001	2525.1	256QAM	100/0	20	21199	2544.9	256QAM	100/0	37.472

Note:

In order to simplify the report, attached plots were only Max.Bandwidth(20+20)

PCC 20 MHz Ch21001 RB100 Offset0, SCC 20 MHz Ch21199 RB100 Offset0_(QPSK)



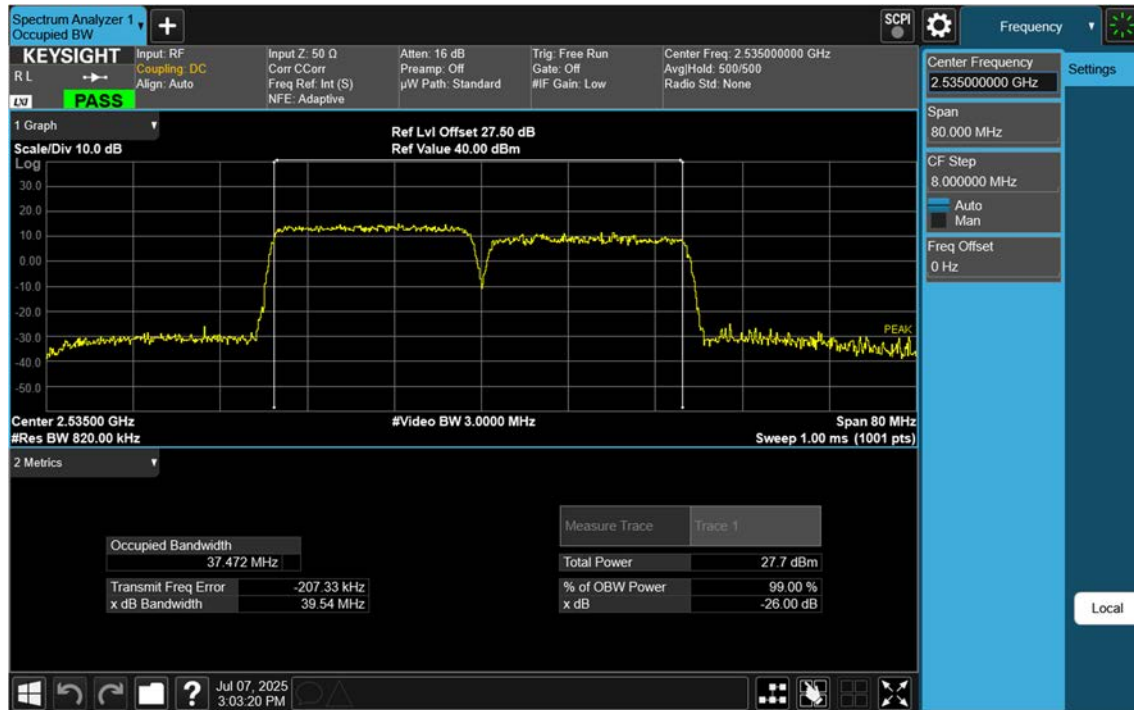
PCC 20 MHz Ch21001 RB100 Offset0, SCC 20 MHz Ch21199 RB100 Offset0_(16QAM)



PCC 20 MHz Ch21001 RB100 Offset0, SCC 20 MHz Ch21199 RB100 Offset0_(64QAM)



PCC 20 MHz Ch21001 RB100 Offset0, SCC 20 MHz Ch21199 RB100 Offset0_(256QAM)



8.8 Peak- to- Average Ratio

PCC					SCC					Data (dBm)	Limit (dB)
BW [MHz]	Ch	Freq [MHz]	Mod	RB/ Offset	BW [MHz]	Ch	Freq [MHz]	Mod	RB/ Offset		
10	21006	2525.6	QPSK	50/0	20	21150	2540.0	QPSK	100/0	6.01	13.00
15	21051	2530.1	QPSK	75/0	10	21171	2542.1	QPSK	50/0	5.91	
15	21025	2527.5	QPSK	75/0	15	21175	2542.5	QPSK	75/0	6.50	
15	21003	2525.3	QPSK	75/0	20	21174	2542.4	QPSK	100/0	5.87	
20	21051	2530.1	QPSK	100/0	10	21195	2544.5	QPSK	50/0	5.77	
20	21026	2527.6	QPSK	100/0	15	21197	2544.7	QPSK	75/0	5.79	
20	21001	2525.1	QPSK	100/0	20	21199	2544.9	QPSK	100/0	6.37	

PCC					SCC					Data (dBm)	Limit (dB)
BW [MHz]	Ch	Freq [MHz]	Mod	RB/ Offset	BW [MHz]	Ch	Freq [MHz]	Mod	RB/ Offset		
10	21006	2525.6	16QAM	50/0	20	21150	2540.0	16QAM	100/0	6.55	13.00
15	21051	2530.1	16QAM	75/0	10	21171	2542.1	16QAM	50/0	6.44	
15	21025	2527.5	16QAM	75/0	15	21175	2542.5	16QAM	75/0	6.85	
15	21003	2525.3	16QAM	75/0	20	21174	2542.4	16QAM	100/0	6.42	
20	21051	2530.1	16QAM	100/0	10	21195	2544.5	16QAM	50/0	6.42	
20	21026	2527.6	16QAM	100/0	15	21197	2544.7	16QAM	75/0	6.38	
20	21001	2525.1	16QAM	100/0	20	21199	2544.9	16QAM	100/0	6.74	

PCC					SCC					Data (dBm)	Limit (dB)
BW [MHz]	Ch	Freq [MHz]	Mod	RB/Offset	BW [MHz]	Ch	Freq [MHz]	Mod	RB/Offset		
10	21006	2525.6	64QAM	50/0	20	21150	2540.0	64QAM	100/0	6.63	13.00
15	21051	2530.1	64QAM	75/0	10	21171	2542.1	64QAM	50/0	6.60	
15	21025	2527.5	64QAM	75/0	15	21175	2542.5	64QAM	75/0	6.90	
15	21003	2525.3	64QAM	75/0	20	21174	2542.4	64QAM	100/0	6.58	
20	21051	2530.1	64QAM	100/0	10	21195	2544.5	64QAM	50/0	6.55	
20	21026	2527.6	64QAM	100/0	15	21197	2544.7	64QAM	75/0	6.57	
20	21001	2525.1	64QAM	100/0	20	21199	2544.9	64QAM	100/0	7.13	

PCC					SCC					Data (dBm)	Limit (dB)
BW [MHz]	Ch	Freq [MHz]	Mod	RB/Offset	BW [MHz]	Ch	Freq [MHz]	Mod	RB/Offset		
10	21006	2525.6	256QAM	50/0	20	21150	2540.0	256QAM	100/0	6.62	13.00
15	21051	2530.1	256QAM	75/0	10	21171	2542.1	256QAM	50/0	6.61	
15	21025	2527.5	256QAM	75/0	15	21175	2542.5	256QAM	75/0	6.77	
15	21003	2525.3	256QAM	75/0	20	21174	2542.4	256QAM	100/0	6.63	
20	21051	2530.1	256QAM	100/0	10	21195	2544.5	256QAM	50/0	6.56	
20	21026	2527.6	256QAM	100/0	15	21197	2544.7	256QAM	75/0	6.65	
20	21001	2525.1	256QAM	100/0	20	21199	2544.9	256QAM	100/0	6.90	

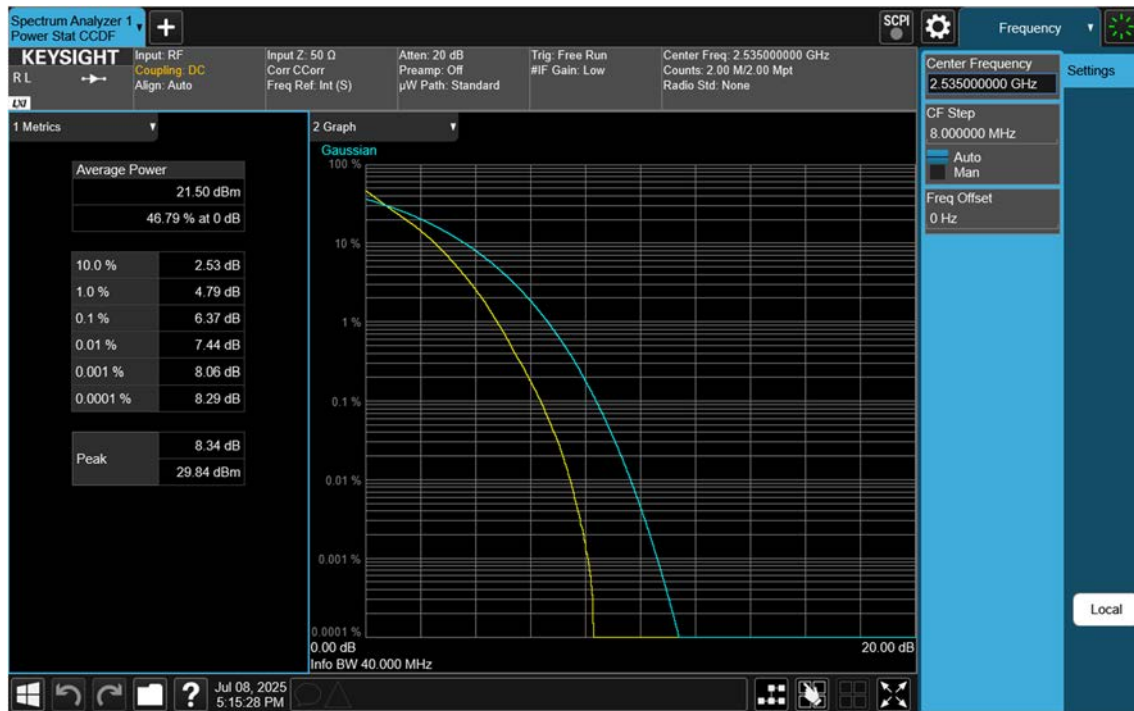
Note:

1. P.A.P.R is not required. These values are reported for information only.

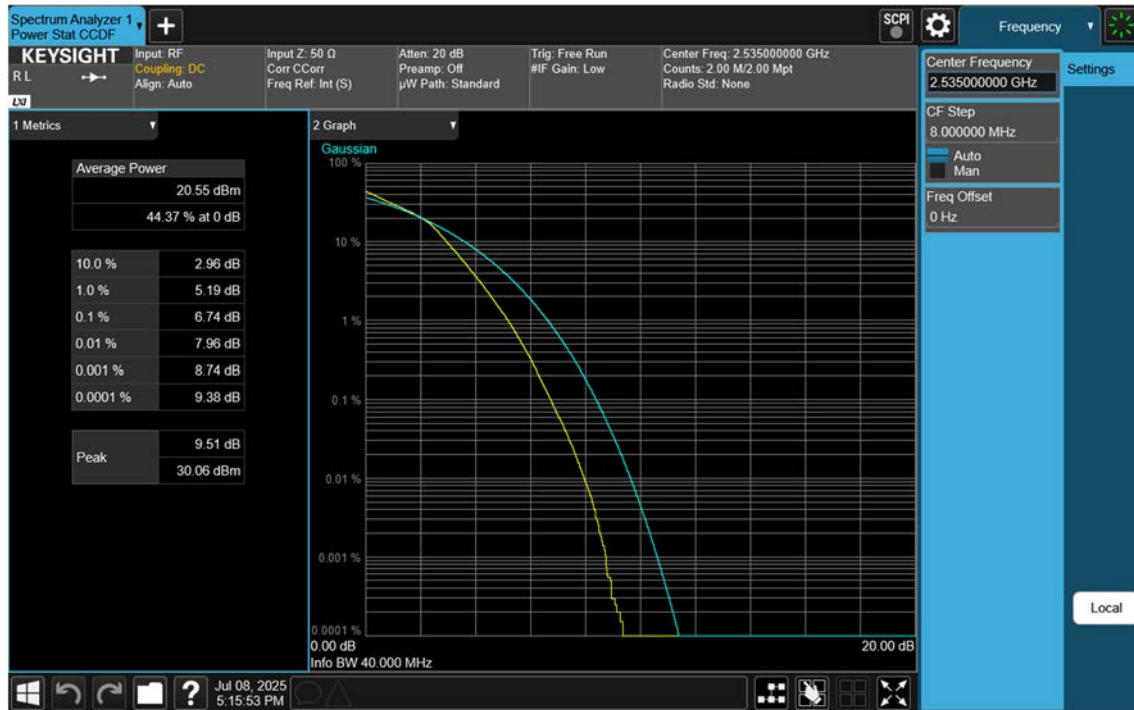
Note:

In order to simplify the report, attached plots were only Max.Bandwidth(20+20)

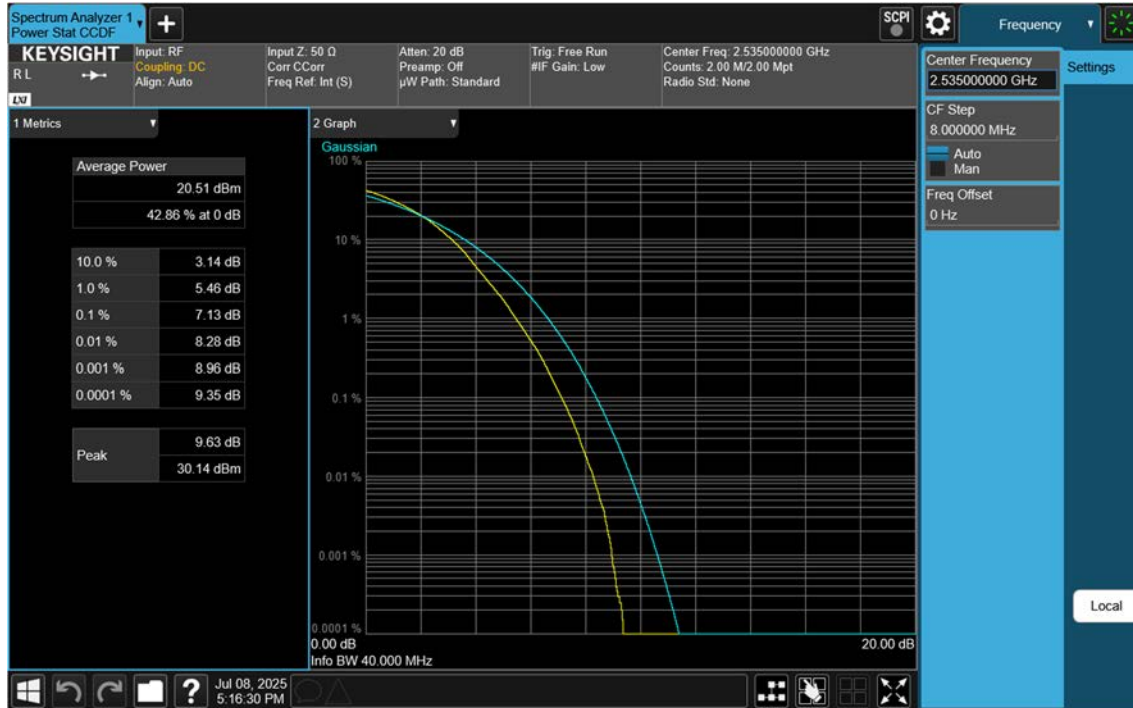
PCC 20 MHz Ch21001 RB100 Offset0, SCC 20 MHz Ch21199 RB100 Offset0_(QPSK)



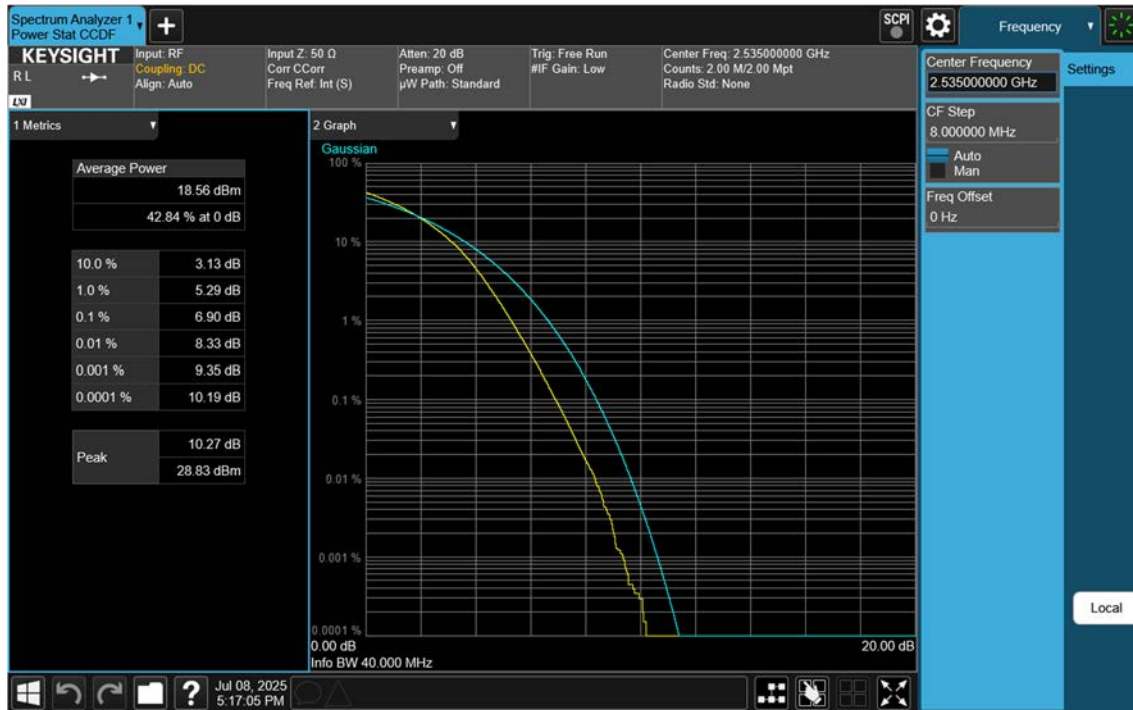
PCC 20 MHz Ch21001 RB100 Offset0, SCC 20 MHz Ch21199 RB100 Offset0_(16QAM)



PCC 20 MHz Ch21001 RB100 Offset0, SCC 20 MHz Ch21199 RB100 Offset0_(64QAM)



PCC 20 MHz Ch21001 RB100 Offset0, SCC 20 MHz Ch21199 RB100 Offset0_(256QAM)



9. TEST DATA (Int.BUA)

9.1 Equivalent Isotropic Radiated Power

	PCC			SCC			Measured	Substitute	Ant.	C.L	Pol.	E.I.R.P	
	BW [MHz]	Channel	RB/Offset	BW [MHz]	Channel	RB/Offset	Level (dBm)	Level (dBm)	Gain (dBi)			W	dBm
Low	10	20805	1/49	20	20949	1/0	-24.56	13.97	10.26	2.51	H	0.149	21.72
	15	20825	1/74	10	20945	1/0	-24.06	14.47	10.26	2.51	H	0.167	22.22
	15	20825	1/74	15	20975	1/0	-24.13	14.44	10.26	2.53	H	0.165	22.17
	15	20828	1/74	20	20999	1/0	-23.93	14.64	10.26	2.53	H	0.173	22.37
	20	20850	1/99	10	20994	1/0	-24.13	14.44	10.26	2.53	H	0.165	22.17
	20	20850	1/99	15	21021	1/0	-24.11	14.50	10.26	2.54	H	0.166	22.21
	20	20850	1/99	20	21048	1/0	-24.03	14.58	10.26	2.54	H	0.170	22.29
Mid	10	21006	1/49	20	21150	1/0	-24.10	14.66	10.25	2.54	H	0.172	22.36
	15	21051	1/74	10	21171	1/0	-23.56	15.27	10.25	2.54	H	0.199	22.99
	15	21025	1/74	15	21175	1/0	-23.59	15.24	10.25	2.54	H	0.198	22.96
	15	21003	1/74	20	21174	1/0	-23.77	14.99	10.25	2.54	H	0.186	22.69
	20	21051	1/99	10	21195	1/0	-24.01	14.82	10.25	2.54	H	0.179	22.54
	20	21026	1/99	15	21197	1/0	-23.75	15.08	10.25	2.54	H	0.190	22.80
	20	21001	1/99	20	21199	1/0	-23.77	15.06	10.25	2.54	H	0.190	22.78
High	10	21206	1/49	20	21350	1/0	-24.11	14.90	10.24	2.53	H	0.183	22.61
	15	21277	1/74	10	21397	1/0	-24.02	15.02	10.26	2.59	H	0.186	22.69
	15	21225	1/74	15	21375	1/0	-23.98	15.05	10.25	2.56	H	0.188	22.74
	15	21179	1/74	20	21350	1/0	-23.97	15.04	10.24	2.53	H	0.188	22.75
	20	21251	1/99	10	21395	1/0	-24.22	14.82	10.26	2.59	H	0.178	22.49
	20	21201	1/99	15	21372	1/0	-24.32	14.69	10.24	2.53	H	0.174	22.40
	20	21152	1/99	20	21350	1/0	-24.22	14.79	10.24	2.53	H	0.178	22.50

Note:

1. Modulation : QPSK
2. Limit : < 2 Watts

PCC			SCC			Measured	Substitute	Ant.			E.I.R.P	
BW [MHz]	Channel	RB/ Offset	BW [MHz]	Channel	RB/ Offset	Level (dBm)	Level (dBm)	Gain (dBi)	C.L	Pol.	W	dBm
15	20828	1/74	20	20999	1/0	-24.47	14.10	10.26	2.53	H	0.152	21.83
10	21006	1/49	20	21150	1/0	-24.47	14.29	10.25	2.54	H	0.158	21.99
15	21051	1/74	10	21171	1/0	-24.23	14.60	10.25	2.54	H	0.171	22.32
15	21025	1/74	15	21175	1/0	-24.45	14.38	10.25	2.54	H	0.162	22.10
15	21003	1/74	20	21174	1/0	-24.51	14.25	10.25	2.54	H	0.157	21.95
20	21051	1/99	10	21195	1/0	-24.77	14.06	10.25	2.54	H	0.151	21.78
20	21026	1/99	15	21197	1/0	-24.56	14.27	10.25	2.54	H	0.158	21.99
20	21001	1/99	20	21199	1/0	-24.36	14.47	10.25	2.54	H	0.166	22.19
15	21179	1/74	20	21350	1/0	-24.47	14.54	10.24	2.53	H	0.168	22.25

Note:

1. Modulation : 16QAM
2. Limit : < 2 Watts

PCC			SCC			Measured	Substitute	Ant.			E.I.R.P	
BW [MHz]	Channel	RB/ Offset	BW [MHz]	Channel	RB/ Offset	Level (dBm)	Level (dBm)	Gain (dBi)	C.L	Pol.	W	dBm
15	20828	1/74	20	20999	1/0	-26.66	11.91	10.26	2.53	H	0.092	19.64
10	21006	1/49	20	21150	1/0	-26.85	11.91	10.25	2.54	H	0.092	19.61
15	21051	1/74	10	21171	1/0	-26.42	12.41	10.25	2.54	H	0.103	20.13
15	21025	1/74	15	21175	1/0	-26.65	12.18	10.25	2.54	H	0.098	19.90
15	21003	1/74	20	21174	1/0	-26.87	11.89	10.25	2.54	H	0.091	19.59
20	21051	1/99	10	21195	1/0	-27.16	11.67	10.25	2.54	H	0.087	19.39
20	21026	1/99	15	21197	1/0	-27.06	11.77	10.25	2.54	H	0.089	19.49
20	21001	1/99	20	21199	1/0	-26.71	12.12	10.25	2.54	H	0.096	19.84
15	21179	1/74	20	21350	1/0	-26.89	12.12	10.24	2.53	H	0.096	19.83

Note:

1. Modulation : 64QAM
2. Limit : < 2 Watts

PCC			SCC			Measured	Substitute	Ant.			E.I.R.P	
BW [MHz]	Channel	RB/ Offset	BW [MHz]	Channel	RB/ Offset	Level (dBm)	Level (dBm)	Gain (dBi)	C.L	Pol.	W	dBm
15	20828	1/74	20	20999	1/0	-28.52	10.05	10.26	2.53	H	0.060	17.78
10	21006	1/49	20	21150	1/0	-28.57	10.19	10.25	2.54	H	0.062	17.89
15	21051	1/74	10	21171	1/0	-28.51	10.32	10.25	2.54	H	0.064	18.04
15	21025	1/74	15	21175	1/0	-28.59	10.24	10.25	2.54	H	0.062	17.96
15	21003	1/74	20	21174	1/0	-28.55	10.21	10.25	2.54	H	0.062	17.91
20	21051	1/99	10	21195	1/0	-28.88	9.95	10.25	2.54	H	0.058	17.67
20	21026	1/99	15	21197	1/0	-28.74	10.09	10.25	2.54	H	0.060	17.81
20	21001	1/99	20	21199	1/0	-28.52	10.31	10.25	2.54	H	0.064	18.03
15	21179	1/74	20	21350	1/0	-28.69	10.32	10.24	2.53	H	0.064	18.03

Note:

1. Modulation : 256QAM
2. Limit : < 2 Watts

9.2 Radiated Spurious Emissions

▣ PCC Channel :	20828 (2507.8 MHz)
▣ PCC BW(MHz) :	15
▣ PCC RB/ RB Offset :	1/ 74
▣ SCC Channel :	20999 (2524.9 MHz)
▣ SCC BW(MHz) :	20
▣ SCC RB/ RB Offset :	1/0
▣ DISTANCE:	1 meters
▣ LIMIT:	-25.0 dBm

Freq.(MHz)	Measured Level [dBm]	Ant. Gain (dBi)	Substitute Level [dBm]	C.L	Pol.	Result (dBm)
5 032.70	-54.52	10.90	-61.46	3.67	V	-54.23
7 549.05	-54.60	11.63	-56.99	4.63	H	-49.98
10 065.40	-54.48	11.37	-53.94	5.47	H	-48.05
12 581.75	-55.21	13.07	-51.49	6.25	V	-44.67
15 098.10	-62.77	14.49	-44.98	6.80	V	-37.30

☐ PCC Channel : 21051 (2530.1 MHz)
☐ PCC BW(MHz) : 15
☐ PCC RB/ RB Offset : 1/ 74
☐ SCC Channel : 21171 (2542.1 MHz)
☐ SCC BW(MHz) : 10
☐ SCC RB/ RB Offset : 1/ 0
☐ DISTANCE: 1 meters
☐ LIMIT: -25.0 dBm

Freq.(MHz)	Measured Level [dBm]	Ant. Gain (dBi)	Substitute Level [dBm]	C.L	Pol.	Result (dBm)
5 072.20	-54.76	10.92	-61.52	3.80	H	-54.40
7 608.30	-53.91	11.65	-56.09	4.64	V	-49.08
10 144.40	-53.04	11.33	-52.52	5.48	V	-46.66
12 680.50	-55.84	12.87	-51.80	6.23	V	-45.16
15 216.60	-61.05	14.82	-42.61	6.82	H	-34.61

☐ PCC Channel : 21179 (2542.9 MHz)
☐ PCC BW(MHz) : 15
☐ PCC RB/ RB Offset : 1/ 74
☐ SCC Channel : 21350 (2560.0 MHz)
☐ SCC BW(MHz) : 20
☐ SCC RB/ RB Offset : 1/ 0
☐ DISTANCE: 1 meters
☐ LIMIT: -25.0 dBm

Freq.(MHz)	Measured Level [dBm]	Ant. Gain (dBi)	Substitute Level [dBm]	C.L	Pol.	Result (dBm)
5 102.90	-51.05	10.95	-57.77	3.78	H	-50.60
7 654.35	-53.94	11.63	-55.95	4.69	V	-49.00
10 205.80	-53.90	11.36	-53.40	5.54	V	-47.58
12 757.25	-56.48	12.77	-52.18	6.23	V	-45.63
15 308.70	-61.70	15.08	-42.74	6.83	V	-34.48

10. ANNEX A_ TEST SETUP PHOTO

Please refer to test setup photo file no. as follows;

No.	Description
1	HCT-RF-2507-FC006-P