

TEST REPORT

FCC LTE B66(4) Test for SM-M356B/DS Certification

APPLICANT SAMSUNG Electronics Co., Ltd.

REPORT NO. HCT-RF-2403-FC009

DATE OF ISSUE March 21, 2024

> **Tested by** Seok Hyun Kim

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F-TP22-03(Rev.06)

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T E S T R E P O R T	REPORT NO. HCT-RF-2403-FC009 DATE OF ISSUE March 21, 2024 Additional Model -
Applicant	SAMSUNG Electronics Co., Ltd. 129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Rep. of Korea
Product Name Model Name	Mobile Phone SM-M356B/DS
Date of Test	February 07, 2024 ~ March 20, 2024
FCC ID	A3LSMM356B
Location of Test	■ Permanent Testing Lab □ On Site Testing (Address: 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, 17383 Republic of Korea)
FCC Classification:	PCS Licensed Transmitter Held to Ear (PCE)
FCC Rule Part(s):	§ 27





REVISION HISTORY

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

Revision No.	Date of Issue	Description
1	March 21, 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 ***.

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

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:	SAMSUNG Electronics Co., Ltd.			
Address:	129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Rep. of Korea			
FCC ID:	A3LSMM356B			
Application Type:	Certification			
FCC Classification:	PCS Licensed Transmitter Held to Ear (PCE)			
FCC Rule Part(s):	§ 27			
EUT Type:	Mobile phone			
Model(s):	SM-M356B/DS			
Additional Model(s)	-			
Tx Frequency:	1710.7 MHz – 1779.3 MHz (LTE – Band 66/4 (1.4 MHz)) 1711.5 MHz – 1778.5 MHz (LTE – Band 66/4 (3 MHz)) 1712.5 MHz – 1777.5 MHz (LTE – Band 66/4 (5 MHz)) 1715.0 MHz – 1775.0 MHz (LTE – Band 66/4 (10 MHz)) 1717.5 MHz – 1772.5 MHz (LTE – Band 66/4 (15 MHz)) 1720.0 MHz – 1770.0 MHz (LTE – Band 66/4 (20 MHz))			
Date(s) of Tests:	February 07, 2024 ~ March 20, 2024			
Serial number:	Radiated : R3CX20423XJ Conducted : R3CX2042JMR			



1.1. MAXIMUM OUTPUT POWER

		Emission Designator		EIRP	
Mode (MHz)	Tx Frequency (MHz)		Modulation	Max. Power (W)	Max. Power (dBm)
		1M10G7D	QPSK	0.138	21.41
	1710 7 1770 2	1M10W7D	16QAM	0.116	20.64
LTE – Band66/4 (1.4)	1710.7 – 1779.3	1M10W7D	64QAM	0.093	19.68
		1M10W7D	256QAM	0.047	16.69
		2M72G7D	QPSK	0.139	21.42
	1711 5 1770 5	2M73W7D	16QAM	0.117	20.68
LTE – Band66/4 (3)	1711.5 – 1778.5	2M72W7D	64QAM	0.092	19.64
	-	2M71W7D	256QAM	0.047	16.71
	1712.5 - 1777.5 -	4M53G7D	QPSK	0.138	21.39
		4M52W7D	16QAM	0.116	20.66
LTE – Band66/4 (5)		4M54W7D	64QAM	0.092	19.66
		4M53W7D	256QAM	0.047	16.68
		9M04G7D	QPSK	0.135	21.29
	1715 0 1775 0	9M01W7D	16QAM	0.112	20.48
LTE – Band66/4 (10)	1715.0 – 1775.0	9M01W7D	64QAM	0.090	19.55
		9M00W7D	256QAM	0.046	16.60
		13M5G7D	QPSK	0.135	21.30
	1717 5 1770 5	13M5W7D	16QAM	0.114	20.57
LTE – Band66/4 (15)	1717.5 – 1772.5	13M5W7D	64QAM	0.090	19.53
		13M5W7D	256QAM	0.046	16.60
		18M0G7D	QPSK	0.130	21.14
	1700 0 1770 0	18M0W7D	16QAM	0.108	20.33
LTE – Band66/4 (20)	1720.0 – 1770.0 –	18M0W7D	64QAM	0.088	19.44
		18M0W7D	256QAM	0.045	16.49





2. INTRODUCTION

2.1. DESCRIPTION OF EUT

The EUT was a Mobile Phone with GSM/GPRS/EGPRS/UMTS and LTE, Sub 6. It also supports IEEE 802.11 a/b/g/n/ac/ax (20/40/80 MHz), Bluetooth, BT LE, NFC.

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**, **17383**, **Rep. 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
Band 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	- N/A (See SAR Report)
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
Effective Radiated Power/ Effective Isotropic Radiated Power	- KDB 971168 D01 v03r01 – Section 5.2 & 5.8 - ANSI/TIA-603-E-2016 – Section 2.2.17
Radiated Spurious and Harmonic Emissions	- KDB 971168 D01 v03r01 – Section 6.2 - ANSI/TIA-603-E-2016 – Section 2.2.12



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 in accordance with ANSI/TIA-603-E-2016 Clause 2.2.17.

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.





3.3 RADIATED SPURIOUS EMISSIONS

Test Overview

Radiated tests are performed in the Fully-anechoic chamber.

Radiated Spurious Emission Measurements at 3 meters by Substitution Method according to ANSI/TIA-603-E-2016.

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)

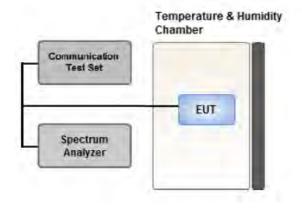
Where: P_{g} is the generator output power into the substitution antenna.

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

EIRP (dBm) = ERP (dBm) + 2.15



3.4 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 $_{\rm Pk}$.

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:

 $P.A.R_{(dB)} = P_{Pk(dBm)} - P_{Avg(dBm)} (P_{Avg} = Average Power + Duty cycle Factor)$

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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 $\geq 3 \times$ RBW.

- 1. Set the RBW \geq OBW.
- 2. Set VBW \geq 3 × RBW.
- 3. Set span $\geq 2 \times OBW$.
- 4. Sweep time $\geq 10 \times$ (number of points in sweep) \times (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 × to 3 × the OBW.
- 2. Set RBW \geq OBW.
- 3. Set VBW \geq 3 × RBW.
- 4. Set number of measurement points in sweep $\geq 2 \times \text{span} / \text{RBW}$.
- 5. Sweep time:

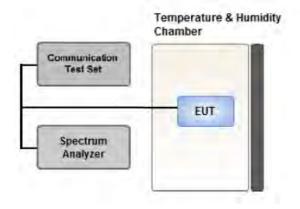
Set \geq [10 × (number of points in sweep) × (transmission period)] for single sweep

(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 %.



3.5 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 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



Communication Test Set Spectrum Analyzer

3.6 SPURIOUS AND HARMONIC EMISSIONS AT ANTENNA TERMINAL

Test setup

Test Overview

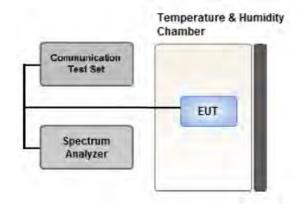
The level of the carrier and the various conducted spurious and harmonic frequencies is measured by means of a calibrated spectrum analyzer. The spectrum is scanned from the lowest frequency generated in the equipment up to a frequency including its 10th harmonic. All out of band emissions are measured 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 = RMS
- 4. Trace Mode = trace average
- 5. Sweep time = auto
- 6. Number of points in sweep $\geq 2 \times \text{Span} / \text{RBW}$



3.7 BAND 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 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. 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. RBW > 1 % of the emission bandwidth
- 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 = auto couple
- 9. The trace was allowed to stabilize



Test Notes

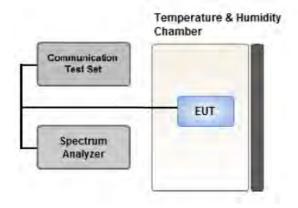
According to FCC 22.917, 24.238, 27.53 specified that power of any emission outside of The authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB. In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

All measurements were done at 2 channels(low and high operational frequency range.) 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 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.



3.8 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(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.
 Mode : Stand alone, Stand alone + External accessories (Earphone, AC adapter, etc)
 Worst case : Stand alone
- We were performed the RSE test in condition of co-location.
 Mode : Stand alone, Simultaneous transmission scenarios
 Worst case : Stand alone
- In the case of radiated spurious emissions, all bandwidth of operation were investigated and the worst case bandwidth results are reported. (Worst case : 3 MHz)
- The worst case is reported with the EUT positioning, modulations, RB sizes and offsets, and channel bandwidth configurations shown in the test data.
- Please refer to the table below.
- LTE Band 66 (1710 1780 MHz) overlaps the entire frequency range of LTE Band 4 (1710 1755 MHz) and they have the same Tune-up power. Therefore, test data provided in this report covers Band 4 as well as Band 66.

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



3.10 WORST CASE(CONDUCTED TEST)

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

- LTE Band 66 (1710 – 1780 MHz) overlaps the entire frequency range of LTE Band 4 (1710 - 1755 MHz) and they have the same Tune-up power. Therefore, test data provided in this report covers Band 4 as well as Band 66.

[Worst case]					
Test Description	Modulation	Bandwidth (MHz)	Frequency	RB size	RB offset
Occupied Bandwidth	QPSK, 16QAM, 64QAM, 256QAM	1.4, 3, 5, 10, 15, 20	Mid	Full RB	0
Peak-To-Average Ratio	QPSK, 16QAM, 64QAM, 256QAM	1.4, 3, 5, 10, 15, 20	Mid	Full RB	0
		1.4	Low	1	0
		1.4	High	1	5
	QPSK	3	Low	1	0
			High	1	14
			Low	1	0
			High	1	24
Band Edge		10	Low	1	0
0			High	1	49
		15	Low	1	0
			High	1	74
			Low	1	0
		20	High	1	99
		1.4, 3, 5, 10, 15, 20	Low, High	Full RB	0
Spurious and Harmonic Emissions at Antenna Terminal	QPSK	1.4, 3, 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	FBSR-02B(1.2G HPF+LNA)	T&M SYSTEM	F1L1	12/11/2024	Annual
RF Switching System	FBSR-02B(3.3G HPF+LNA)	T&M SYSTEM	F1L2	12/11/2024	Annual
Power Splitter(DC ~ 26.5 GHz)	11667B	Hewlett Packard	5001	04/19/2024	Annual
DC Power Supply	E3632A	Agilent	MY40010147	06/23/2024	Annual
Dipole Antenna	UHAP	Schwarzbeck	557	03/09/2025	Biennial
Dipole Antenna	UHAP	Schwarzbeck	558	03/09/2025	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	09/29/2024	Biennial
Horn Antenna(15 ~ 40 GHz)	BBHA 9170	Schwarzbeck	BBHA9170124	03/28/2025	Biennial
Signal Analyzer(10 Hz ~ 26.5 GHz)	N9020A	Agilent	MY52090906	04/20/2024	Annual
ATTENUATOR(20 dB)	8493C	Hewlett Packard	17280	04/19/2024	Annual
Spectrum Analyzer(10 Hz ~ 40 GHz)	FSV40	REOHDE & SCHWARZ	100931	08/17/2024	Annual
Base Station	8960 (E5515C)	Agilent	MY48360800	08/10/2024	Annual
Loop Antenna(9 kHz ~ 30 MHz)	FMZB1513	Schwarzbeck	1513-333	03/07/2026	Biennial
Trilog Broadband Antenna	VULB9168	Schwarzbeck	895	08/16/2024	Biennial
Trilog Broadband Antenna	VULB9168	Schwarzbeck	1135	03/21/2024	Biennial
Wideband Radio Communication Tester	MT8821C	Anritsu Corp.	6262094331	11/17/2024	Annual
Wideband Radio Communication Tester	MT8820C	Anritsu Corp.	6201026545	12/11/2024	Annual
SIGNAL GENERATOR (100 kHz ~ 40 GHz)	SMB100A	REOHDE & SCHWARZ	177633	06/22/2024	Annual
Signal Analyzer(5 Hz ~ 40.0 GHz)	N9030B	KEYSIGHT	MY55480167	05/24/2024	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, § 27.53(h)	< 43 + 10log10 (P[Watts]) at Band Edge and for all out-of-band emissions	PASS
Conducted Output Power	§ 2.1046	N/A	See Note1
Peak- to- Average Ratio	§ 27.50(d)(5)	< 13 dB	PASS
Frequency stability / variation of ambient temperature	§ 2.1055, § 27.54	Emission must remain in band	PASS

Note:

1. See SAR Report

6.2 Test Condition : Radiated Test

Test Description	FCC Part Section(s)	Test Limit	Test Result
Equivalent Isotropic Radiated Power	§ 27.50(d)(4)	< 1 Watts max. EIRP	PASS
Radiated Spurious and	§ 2.1053,	<43+10log10 (P[Watts]) for	DACC
Harmonic Emissions	§ 27.53(h)	all out-of band emissions	PASS



7. SAMPLE CALCULATION

7.1 ERP Sample Calculation

Ch.	/ Freq.	Measured	Substitute	Ant. Gain			EF	RP
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	Aeasured Level (dBm)				EI	RP
channel	Freq.(MHz)		Level (dBm)	(dBi)	C.L	Pol.	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

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8. TEST DATA

8.1 EQUIVALENT ISOTROPIC RADIATED POWER

Freq	Mod/		Measured	Substitute	Ant. Gain			Limit	EI	RP	I	RB
(MHz)	Bandwidth	Modulation	Level (dBm)	Level (dBm)	(dBi)	C.L	Pol	w	W	dBm	Size	Offset
		QPSK	-20.02	13.71	9.94	2.24	Н		0.138	21.41		
1710 7		16-QAM	-20.79	12.94	9.94	2.24	Н		0.116	20.64	1	0
1710.7		64-QAM	-21.75	11.98	9.94	2.24	Н		0.093	19.68	1	0
		256-QAM	-24.74	8.99	9.94	2.24	Н		0.047	16.69		
		QPSK	-20.59	13.09	10.15	2.15	Н		0.129	21.09		
1745.0	LTE B66/B4	16-QAM	-21.40	12.28	10.15	2.15	Н	< 1.00	0.107	20.28	1	5
1745.0	1.4 MHz	64-QAM	-22.39	11.29	10.15	2.15	Н	< 1.00	0.085	19.29	1	5
		256-QAM	-25.41	8.27	10.15	2.15	Н		0.042	16.27		
		QPSK	-20.78	12.91	10.21	2.26	Н		0.122	20.86		
1770.0		16-QAM	-21.60	12.09	10.21	2.26	Н		0.101	20.04	1	0
1779.3		64-QAM	-22.53	11.16	10.21	2.26	Н		0.081	19.11	1	0
		256-QAM	-25.58	8.11	10.21	2.26	Н		0.040	16.06		

Frag	Mod/		Measured Substitute Ant. Gain				Limit EIRP		RP	RB		
Freq (MHz)	Bandwidth	Modulation	Level (dBm)	Level (dBm)	(dBi)	C.L	Pol	w	W	dBm	Size	Offset
		QPSK	-20.01	13.72	9.94	2.24	Н		0.139	21.42		
1711.5		16-QAM	-20.75	12.98	9.94	2.24	Н		0.117	20.68	1	0
1711.5		64-QAM	-21.79	11.94	9.94	2.24	Н		0.092	19.64	L	0
		256-QAM	-24.72	9.01	9.94	2.24	Н		0.047	16.71		
		QPSK	-20.60	13.08	10.15	2.15	Н		0.128	21.08		
1745.0	LTE B66/B4	16-QAM	-21.33	12.35	10.15	2.15	Н	< 1.00	0.108	20.35	1	14
1745.0	3 MHz	64-QAM	-22.33	11.35	10.15	2.15	Н	< 1.00	0.086	19.35	1	14
		256-QAM	-25.34	8.34	10.15	2.15	Н		0.043	16.34		
		QPSK	-20.75	12.94	10.21	2.26	Н		0.123	20.89		
1778.5		16-QAM	-21.51	12.18	10.21	2.26		20.13	1	0		
		64-QAM	-22.47	11.22	10.21	2.26	Н			19.17	7 1	0
		256-QAM	-25.46	8.23	10.21	2.26	Н		0.041	16.18		

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Freq	Mod/		Measured	Substitute	Ant. Gain			Limit	EI	RP		RB
(MHz)	Bandwidth	Modulation	Level (dBm)	Level (dBm)	(dBi)	C.L	Pol	w	W	dBm	Size	Offset
		QPSK	-20.04	13.69	9.94	2.24	Н		0.138	21.39		
1710 5		16-QAM	-20.77	12.96	9.94	2.24	Н		0.116	20.66	1	0
1712.5		64-QAM	-21.77	11.96	9.94	2.24	Н		0.092	19.66	1	0
		256-QAM	-24.75	8.98	9.94	2.24	Н		0.047	16.68		
		QPSK	-20.65	13.03	10.15	2.15	Н		0.127	21.03		
1745.0	LTE B66/B4	16-QAM	-21.38	12.30	10.15	2.15	Н	< 1.00	0.107	20.30	1	24
1745.0	5 MHz	64-QAM	-22.35	11.33	10.15	2.15	Н	< 1.00	0.086	19.33	1	24
		256-QAM	-25.35	8.33	10.15	2.15	Н		0.043	16.33		
		QPSK	-20.68	13.01	10.21	2.26	Н		0.125	20.96		
1777 5		16-QAM	-21.39	12.30	10.21	2.26	Н		0.106	20.25	1	0
1777.5		64-QAM	-22.44	11.25	10.21	2.26	Н		19.20	L	0	
		256-QAM	-25.36	8.33	10.21	2.26	Н		0.042	16.28		

Frog	Mod/		Measured	Substitute	Ant. Gain			Limit	EIRP		RB	
Freq (MHz)	Bandwidth	Modulation	Level (dBm)	Level (dBm)	(dBi)	C.L	Pol	w	W	dBm	Size	Offset
		QPSK	-20.09	13.55	9.98	2.23	Н		0.135	21.29		
1715.0		16-QAM	-20.90	12.74	9.98	2.23	Н		0.112	20.48	1	0
1715.0		64-QAM	-21.83	11.81	9.98	2.23	Н		0.090	19.55	1	0
		256-QAM	-24.78	8.86	9.98	2.23	Н		0.046	16.60		
		QPSK	-20.58	13.10	10.15	2.15	Н		0.129	21.10		
1745.0	LTE B66/B4	16-QAM	-21.34	12.34	10.15	2.15	Н	< 1.00	0.108	20.34	1	49
1745.0	10 MHz	64-QAM	-22.34	11.34	10.15	2.15	Н	< 1.00	0.086	19.34	T	49
		256-QAM	-25.34	8.34	10.15	2.15	Н		0.043	16.34		
		QPSK	-20.63	13.02	10.21	2.25	Н		0.125	20.98		
1775.0		16-QAM	-21.44	12.21	10.21	2.25	Н		20.17	1	0	
		64-QAM	-22.40	11.25	10.21	2.25	Н		19.21	1	0	
		256-QAM	-25.36	8.29	10.21	2.25	Н		0.042	16.25		



Freq	Mod/		Measured	Substitute	Ant. Gain			Limit	EI	RP		RB
(MHz)	Bandwidth	Modulation	Level (dBm)	Level (dBm)	(dBi)	C.L	Pol	w	W	dBm	Size	Offset
		QPSK	-20.13	13.51	10.01	2.22	Н		0.135	21.30		
1717.5		16-QAM	-20.86	12.78	10.01	2.22	Н		0.114	20.57	1	0
1111.5		64-QAM	-21.90	11.74	10.01	2.22	Н		0.090	19.53	1	U
		256-QAM	-24.83	8.81	10.01	2.22	Н		0.046	16.60		
		QPSK	-20.55	13.13	10.15	2.15	Н		0.130	21.13		
1745.0	LTE B66/B4	16-QAM	-21.36	12.32	10.15	2.15	Н	< 1.00	0.108	20.32	1	74
1745.0	15 MHz	64-QAM	-22.36	11.32	10.15	2.15	Н	< 1.00	0.086	19.32	1	14
		256-QAM	-25.34	8.34	10.15	2.15	Н		0.043	16.34		
		QPSK	-20.78	12.83	10.20	2.23	Н		0.120	20.80		
1772 5	1772.5	16-QAM	-21.47	12.14	10.20	2.23	Н		0.103	20.11		0
1112.5		64-QAM	-22.53	11.08	10.20	2.23	Н		0.080	19.05	05 ¹	0
		256-QAM	-25.45	8.16	10.20	2.23	Н		0.041	16.13		

Frog	Mod/		Measured	Substitute	Ant Cain			Limit	EIRP		RB	
Freq (MHz)	Bandwidth	Modulation	Level (dBm)	Level (dBm)	Ant. Gain (dBi)	C.L	Pol	w	W	dBm	Size	Offset
		QPSK	-20.16	13.35	10.01	2.22	Н		0.130	21.14		
1720.0		16-QAM	-20.97	12.54	10.01	2.22	Н		0.108	20.33	1	0
1720.0		64-QAM	-21.86	11.65	10.01	2.22	Н		0.088	19.44	1	0
		256-QAM	-24.81	8.70	10.01	2.22	Н		0.045	16.49		
		QPSK	-20.69	12.99	10.15	2.15	Н		0.126	20.99		
1745.0	LTE B66/B4	16-QAM	-21.44	12.24	10.15	2.15	Н	< 1.00	0.106	20.24	1	99
1745.0	20 MHz	64-QAM	-22.46	11.22	10.15	2.15	Н	< 1.00	0.084	19.22	L	99
		256-QAM	-25.42	8.26	10.15	2.15	Н		0.042	16.26		
		QPSK	-20.77	12.84	10.20	2.23	Н		0.121	20.81		
1770.0		16-QAM	-21.57	12.04	10.20	2.23		0.100	20.01		0	
		64-QAM	-22.49	11.12	10.20	2.23	Н			19.09	1	0
		256-QAM	-25.49	8.12	10.20	2.23	Н		0.041	16.09		

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8.2 RADIATED SPURIOUS EMISSIONS

OPERATING FREQUENCY:	<u>1711.5 MHz</u>
MEASURED OUTPUT POWER:	21.42 dBm = 0.139 W
MODE:	LTE B66/B4
MODULATION SIGNAL:	3 MHz QPSK
DISTANCE:	<u>3 meters</u>
LIMIT: 43 + 10 log10 (W) =	<u>34.42 dBc</u>

Ch	Freq (MHz)	Measured Level	Ant. Gain	Substitute Level	C I	C.L Pol		dBc	F	RB	
Cli	Fied (MHZ)	(dBm)	(dBi)	(dBm)	U.L	PUI	(dBm)	UDC	Size	Offset	
	3 423.00	-58.64	12.44	-65.56	3.03	Н	-56.15	77.56			
131987 (1711.5)	5 134.50	-60.46	12.33	-57.85	3.94	V	-49.46	70.87	1	0	
(1111.5)	6 846.00	-59.55	11.91	-53.17	4.49	V	-45.75	67.17			
	3 490.00	-58.73	12.34	-64.74	3.08	V	-55.48	76.90			
132322 (1745.0)	5 235.00	-58.23	12.84	-57.31	3.95	V	-48.42	69.84	1	14	
(1110.0)	6 980.00	-60.73	11.40	-53.12	4.56	V	-46.28	67.70			
	3 557.00	-56.71	12.34	-62.50	3.24	V	-53.40	74.82			
132657 (1778.5)	5 335.50	-59.69	13.09	-59.06	3.94	Н	-49.92	71.34	1	0	
(1110.3)	7 114.00	-59.81	10.85	-50.83	4.58	Н	-44.56	65.97			



8.3 PEAK-TO-AVERAGE RATIO

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (dB)
			QPSK			5.51
	1 4 141		16-QAM			6.32
	1.4 MHz		64-QAM	6		6.71
		-	256-QAM			7.04
			QPSK			5.52
	3 MHz	16-QAM 15	15		6.32	
	3 MHZ		64-QAM	15		6.69
			256-QAM			6.83
			QPSK			5.44
			16-QAM	25		6.33
	5 MHz		64-QAM	- 25		6.66
CC / A		1745 0	256-QAM		0	6.80
66/4		1745.0	QPSK		0	4.97
	10 141		16-QAM	50		6.34
	10 MHz		64-QAM	50		6.70
			256-QAM			6.79
			QPSK			5.23
	15 MUL-		16-QAM	75		6.35
	15 MHz		64-QAM	75		6.69
			256-QAM			6.82
			QPSK			5.22
			16-QAM	100		6.35
	20 MHz		64-QAM	100		6.67
			256-QAM			6.87

Note:

1. Plots of the EUT's Peak- to- Average Ratio are shown Page 111 ~ 134.



8.4 OCCUPIED BANDWIDTH

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (MHz)
			QPSK			1.0983
	1 4 141-		16-QAM	C		1.1003
	1.4 MHz		64-QAM	6		1.0973
			256-QAM			1.0948
		QPSK 16-QAM	QPSK			2.7150
	2 1411-		15		2.7274	
	3 MHz		64-QAM	15		2.7163
			256-QAM			2.7100
			QPSK			4.5278
			16-QAM	25		4.5209
	5 MHz	1745.0	64-QAM	25		4.5352
6614			.745.0 256-QAM 0		4.5322	
66/4		1745.0	QPSK		0	9.0376
	10.141		16-QAM	50		9.0093
	10 MHz		64-QAM	50		9.0107
			256-QAM			8.9973
			QPSK			13.522
	15 141-		16-QAM	75		13.468
	15 MHz		64-QAM	75		13.474
			256-QAM			13.507
			QPSK			17.980
			16-QAM	100		17.957
	20 MHz		64-QAM	100		17.968
			256-QAM	•		17.981

Note:

1. Plots of the EUT's Occupied Bandwidth are shown Page 87 ~ 110.



Band	Band Width (MHz)	Frequency (MHz)	Frequency of Maximum Harmonic (GHz)	Factor (dB)	Measurement Maximum Data (dBm)	Result (dBm)	Limit (dBm)
		1710.7	3.6870	27.976	-67.338	-39.362	
	1.4	1745.0	3.6950	27.976	-67.301	-39.325	
		1779.3	3.7099	27.976	-67.364	-39.388	
		1711.5	3.6800	27.976	-67.013	-39.037	
	3	1745.0	3.1631	27.976	-67.215	-39.239	
		1778.5	3.7099	27.976	-67.095	-39.119	
	5	1712.5	3.7039	27.976	-67.168	-39.192	
		1745.0	3.6910	27.976	-67.435	-39.459	
66/4		1777.5	3.6825	27.976	-67.352	-39.376	12.00
66/4	10 1	1715.0	3.7089	27.976	-67.137	-39.161	-13.00
		1745.0	3.7059	27.976	-67.374	-39.398	
		1775.0	3.6855	27.976	-67.097	-39.121	
		1717.5	3.6865	27.976	-67.287	-39.311	
	15	1745.0	2.6950	27.976	-67.391	-39.415	
		1772.5	3.6950	27.976	-67.130	-39.154	
		1720.0	3.6950	27.976	-67.233	-39.257	
	20	1745.0	3.6990	27.976	-67.329	-39.353	
		1770.0	3.6845	27.976	-67.186	-39.210	

8.5 CONDUCTED SPURIOUS EMISSIONS

Note:

1. Plots of the EUT's Conducted Spurious Emissions are shown Page 135 ~ 170.

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)

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

Frequency Range (GHz)	Factor [dB]
0.03 - 1	25.270
1 - 5	27.976
5 – 10	28.591
10 - 15	29.116
15 - 20	29.489
Above 20(26.5)	30.131

8.6 BAND EDGE

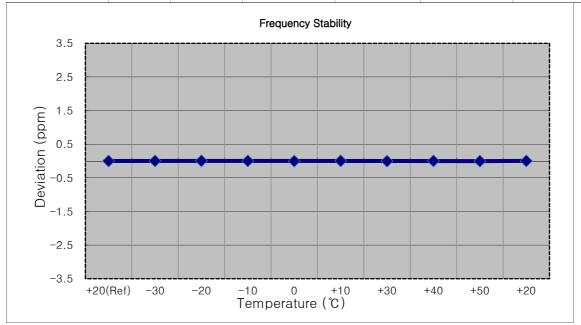
- Plots of the EUT's Band Edge are shown Page 51 ~ 86.



8.7 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE

MODE:	LTE 66/4
OPERATING FREQUENCY:	1710,700,000 Hz
CHANNEL:	<u>131979 (1.4 MHz)</u>
REFERENCE VOLTAGE:	3.850 VDC
DEVIATION LIMIT:	Emission must remain in band

Voltage	Power	Temp.	Frequency	Frequency	Deviation	
(%)	(VDC)	(°C)	(Hz)	Error (Hz)	(%)	ppm
100 %		+20(Ref)	1710 700 007	0.0	0.000 000	0.000
100 %		-30	1710 700 010	3.0	0.000 000	0.002
100 %		-20	1710 700 016	9.0	0.000 001	0.005
100 %		-10	1710 700 012	5.3	0.000 000	0.003
100 %	3.850	0	1710 700 003	-3.5	0.000 000	-0.002
100 %		+10	1710 700 014	7.4	0.000 000	0.004
100 %		+30	1710 700 001	-5.7	0.000 000	-0.003
100 %		+40	1710 700 011	4.0	0.000 000	0.002
100 %		+50	1710 700 001	-5.9	0.000 000	-0.003
Batt. Endpoint	3.400	+20	1710 700 012	5.2	0.000 000	0.003

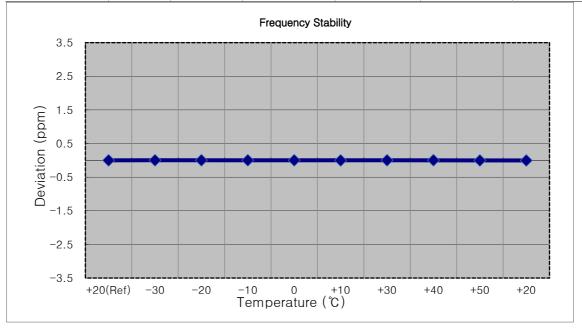


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MODE:	LTE 66/4
OPERATING FREQUENCY:	1711,500,000 Hz
CHANNEL:	131987 (3 MHz)
REFERENCE VOLTAGE:	3.850 VDC
DEVIATION LIMIT:	Emission must remain in band

Voltage	Power	Temp.	Frequency	Frequency	Deviation	
(%)	(VDC)	(°C)	(Hz)	Error (Hz)	(%)	ppm
100 %		+20(Ref)	1711 499 995	0.0	0.000 000	0.000
100 %		-30	1711 500 000	4.8	0.000 000	0.003
100 %	-	-20	1711 499 999	4.3	0.000 000	0.003
100 %		-10	1711 500 000	4.6	0.000 000	0.003
100 %	3.850	0	1711 499 998	3.3	0.000 000	0.002
100 %		+10	1711 499 991	-3.9	0.000 000	-0.002
100 %		+30	1711 499 999	3.9	0.000 000	0.002
100 %		+40	1711 500 000	5.3	0.000 000	0.003
100 %		+50	1711 499 991	-4.5	0.000 000	-0.003
Batt. Endpoint	3.400	+20	1711 499 990	-5.1	0.000 000	-0.003

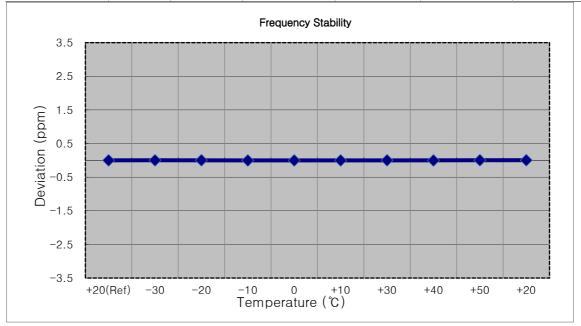


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MODE:	LTE 66/4
OPERATING FREQUENCY:	1712,500,000 Hz
CHANNEL:	131997 (5 MHz)
REFERENCE VOLTAGE:	3.850 VDC
DEVIATION LIMIT:	Emission must remain in band

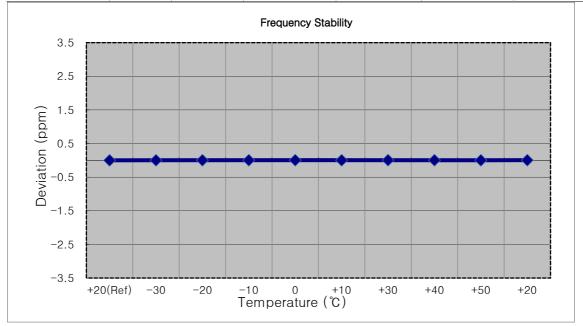
Voltage	Power	Temp.	Frequency	Frequency	Deviation	
(%)	(VDC)	(°C)	(Hz)	Error (Hz)	(%)	ppm
100 %		+20(Ref)	1712 499 995	0.0	0.000 000	0.000
100 %		-30	1712 499 998	3.3	0.000 000	0.002
100 %	-	-20	1712 499 999	4.1	0.000 000	0.002
100 %		-10	1712 499 989	-5.1	0.000 000	-0.003
100 %	3.850	0	1712 499 989	-5.3	0.000 000	-0.003
100 %		+10	1712 499 991	-3.9	0.000 000	-0.002
100 %	-	+30	1712 499 998	3.9	0.000 000	0.002
100 %		+40	1712 499 989	-5.2	0.000 000	-0.003
100 %		+50	1712 500 000	5.3	0.000 000	0.003
Batt. Endpoint	3.400	+20	1712 500 002	7.7	0.000 000	0.004





MODE:	LTE 66/4
OPERATING FREQUENCY:	1715,000,000 Hz
CHANNEL:	<u>132022 (10 MHz)</u>
REFERENCE VOLTAGE:	3.850 VDC
DEVIATION LIMIT:	Emission must remain in band

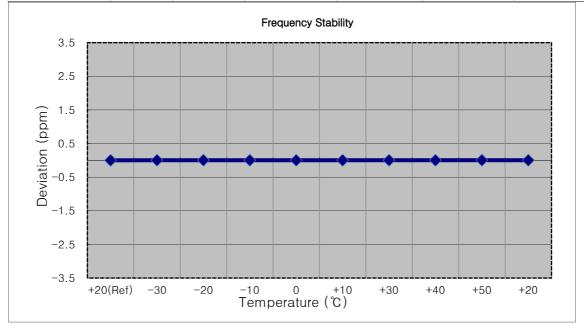
Voltage	Power	Temp.	Frequency	Frequency	Deviation	
(%)	(VDC)	(°C)	(Hz)	Error (Hz)	(%)	ppm
100 %		+20(Ref)	1715 000 008	0.0	0.000 000	0.000
100 %		-30	1715 000 012	4.8	0.000 000	0.003
100 %	-	-20	1715 000 013	5.3	0.000 000	0.003
100 %		-10	1715 000 015	7.5	0.000 000	0.004
100 %	3.850	0	1715 000 016	8.3	0.000 000	0.005
100 %		+10	1715 000 012	4.4	0.000 000	0.003
100 %	-	+30	1715 000 018	10.5	0.000 001	0.006
100 %		+40	1715 000 015	7.6	0.000 000	0.004
100 %		+50	1715 000 011	3.4	0.000 000	0.002
Batt. Endpoint	3.400	+20	1715 000 017	9.0	0.000 001	0.005





MODE:	LTE 66/4
OPERATING FREQUENCY:	1717,500,000 Hz
CHANNEL:	132047 (15 MHz)
REFERENCE VOLTAGE:	3.850 VDC
DEVIATION LIMIT:	Emission must remain in band

Voltage	Power	Temp.	Frequency	Frequency	Deviation	
(%)	(VDC)	(°C)	(Hz)	Error (Hz)	(%)	ppm
100 %		+20(Ref)	1717 500 008	0.0	0.000 000	0.000
100 %		-30	1717 500 013	5.6	0.000 000	0.003
100 %	-	-20	1717 500 014	6.1	0.000 000	0.004
100 %		-10	1717 500 014	6.3	0.000 000	0.004
100 %	3.850	0	1717 500 012	4.4	0.000 000	0.003
100 %		+10	1717 500 013	5.2	0.000 000	0.003
100 %	-	+30	1717 500 012	4.2	0.000 000	0.002
100 %		+40	1717 500 013	4.9	0.000 000	0.003
100 %		+50	1717 500 015	7.0	0.000 000	0.004
Batt. Endpoint	3.400	+20	1717 500 013	5.4	0.000 000	0.003

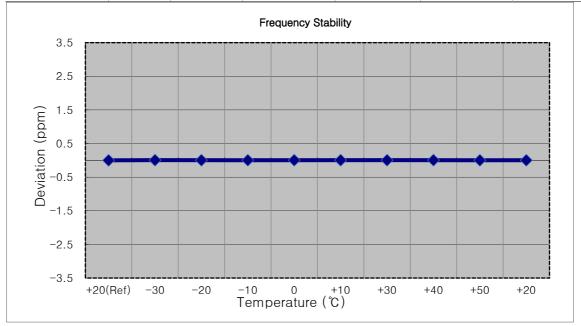


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MODE:	LTE 66/4
OPERATING FREQUENCY:	1720,000,000 Hz
CHANNEL:	<u>132072 (20 MHz)</u>
REFERENCE VOLTAGE:	3.850 VDC
DEVIATION LIMIT:	Emission must remain in band

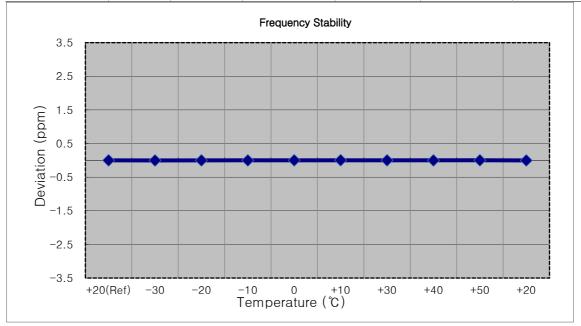
Voltage	Power	Temp.	Frequency	Frequency	Deviation	
(%)	(VDC)	(°C)	(Hz)	Error (Hz)	(%)	ppm
100 %		+20(Ref)	1720 000 005	0.0	0.000 000	0.000
100 %		-30	1720 000 016	11.1	0.000 001	0.006
100 %	-	-20	1720 000 011	5.8	0.000 000	0.003
100 %		-10	1720 000 012	7.1	0.000 000	0.004
100 %	3.850	0	1720 000 013	7.5	0.000 000	0.004
100 %		+10	1720 000 013	7.9	0.000 000	0.005
100 %		+30	1720 000 012	7.1	0.000 000	0.004
100 %		+40	1720 000 015	9.7	0.000 001	0.006
100 %		+50	1720 000 009	3.8	0.000 000	0.002
Batt. Endpoint	3.400	+20	1720 000 010	5.2	0.000 000	0.003





MODE:	LTE 66/4
OPERATING FREQUENCY:	1745,000,000 Hz
CHANNEL:	<u>132322 (1.4 MHz)</u>
REFERENCE VOLTAGE:	3.850 VDC
DEVIATION LIMIT:	Emission must remain in band

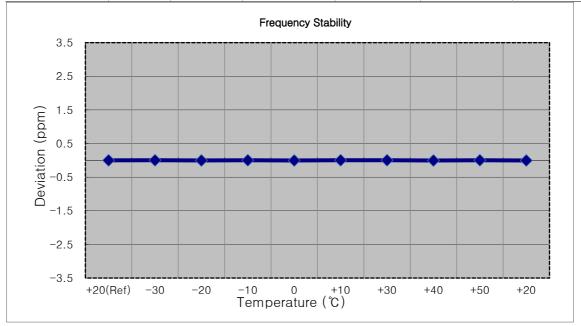
Voltage	Power	Temp.	Frequency	Frequency	Deviation	
(%)	(VDC)	(°C)	(Hz)	Error (Hz)	(%)	- ppm
100 %		+20(Ref)	1744 999 997	0.0	0.000 000	0.000
100 %		-30	1744 999 992	-5.5	0.000 000	-0.003
100 %		-20	1744 999 995	-1.9	0.000 000	-0.001
100 %		-10	1744 999 994	-2.7	0.000 000	-0.002
100 %	3.850	0	1744 999 999	2.2	0.000 000	0.001
100 %		+10	1745 000 003	5.5	0.000 000	0.003
100 %	-	+30	1744 999 998	1.4	0.000 000	0.001
100 %		+40	1744 999 995	-2.3	0.000 000	-0.001
100 %		+50	1745 000 000	3.4	0.000 000	0.002
Batt. Endpoint	3.400	+20	1744 999 993	-4.3	0.000 000	-0.002





MODE:	LTE 66/4
OPERATING FREQUENCY:	1745,000,000 Hz
CHANNEL:	<u>132322 (3 MHz)</u>
REFERENCE VOLTAGE:	3.850 VDC
DEVIATION LIMIT:	Emission must remain in band

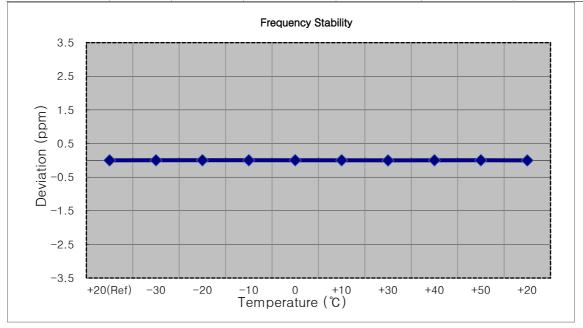
Voltage	Power	Temp.	Frequency	Frequency	Deviation	
(%)	(VDC)	(°C)	(Hz)	Error (Hz)	(%)	ppm
100 %		+20(Ref)	1745 000 005	0.0	0.000 000	0.000
100 %		-30	1745 000 010	5.3	0.000 000	0.003
100 %	-	-20	1744 999 999	-5.9	0.000 000	-0.003
100 %		-10	1745 000 010	4.6	0.000 000	0.003
100 %	3.850	0	1744 999 998	-7.2	0.000 000	-0.004
100 %		+10	1745 000 010	5.1	0.000 000	0.003
100 %		+30	1745 000 011	6.1	0.000 000	0.003
100 %		+40	1744 999 998	-7.3	0.000 000	-0.004
100 %		+50	1745 000 009	4.2	0.000 000	0.002
Batt. Endpoint	3.400	+20	1744 999 998	-6.9	0.000 000	-0.004





MODE:	LTE 66/4
OPERATING FREQUENCY:	1745,000,000 Hz
CHANNEL:	132322 (5 MHz)
REFERENCE VOLTAGE:	3.850 VDC
DEVIATION LIMIT:	Emission must remain in band

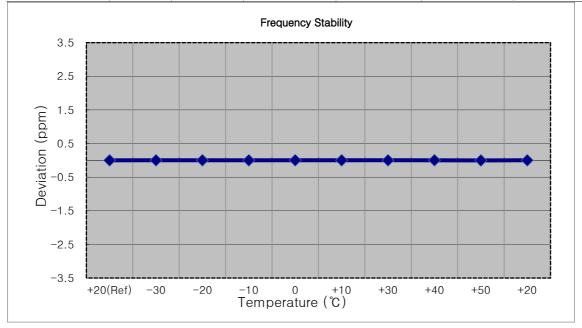
Voltage	Power	Temp.	Frequency	Frequency	Deviation	
(%)	(VDC)	(°C)	(Hz)	Error (Hz)	(%)	ppm
100 %		+20(Ref)	1745 000 003	0.0	0.000 000	0.000
100 %		-30	1745 000 008	5.3	0.000 000	0.003
100 %	-	-20	1745 000 009	6.2	0.000 000	0.004
100 %		-10	1745 000 008	4.6	0.000 000	0.003
100 %	3.850	0	1745 000 010	6.5	0.000 000	0.004
100 %		+10	1745 000 007	4.2	0.000 000	0.002
100 %	-	+30	1745 000 000	-3.5	0.000 000	-0.002
100 %	-	+40	1745 000 008	5.3	0.000 000	0.003
100 %		+50	1745 000 008	5.3	0.000 000	0.003
Batt. Endpoint	3.400	+20	1745 000 000	-3.2	0.000 000	-0.002





MODE:	LTE 66/4
OPERATING FREQUENCY:	1745,000,000 Hz
CHANNEL:	<u>132322 (10 MHz)</u>
REFERENCE VOLTAGE:	3.850 VDC
DEVIATION LIMIT:	Emission must remain in band

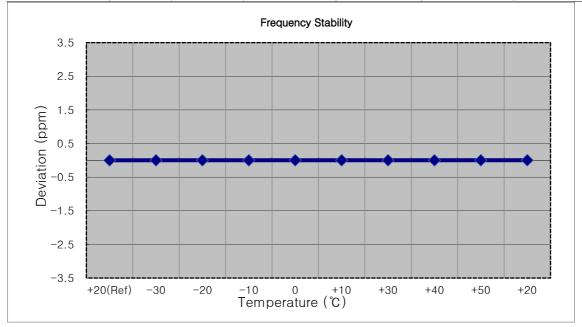
Voltage	Power	Temp.	Frequency	Frequency	Deviation	
(%)	(VDC)	(°C)	(Hz)	Error (Hz)	(%)	ppm
100 %		+20(Ref)	1745 000 003	0.0	0.000 000	0.000
100 %		-30	1745 000 006	3.6	0.000 000	0.002
100 %	-	-20	1745 000 007	4.5	0.000 000	0.003
100 %		-10	1745 000 006	3.6	0.000 000	0.002
100 %	3.850	0	1745 000 007	4.2	0.000 000	0.002
100 %		+10	1745 000 007	3.9	0.000 000	0.002
100 %		+30	1745 000 007	3.9	0.000 000	0.002
100 %		+40	1745 000 008	5.6	0.000 000	0.003
100 %		+50	1744 999 998	-4.2	0.000 000	-0.002
Batt. Endpoint	3.400	+20	1745 000 006	3.7	0.000 000	0.002





MODE:	LTE 66/4
OPERATING FREQUENCY:	1745,000,000 Hz
CHANNEL:	<u>132322 (15 MHz)</u>
REFERENCE VOLTAGE:	3.850 VDC
DEVIATION LIMIT:	Emission must remain in band

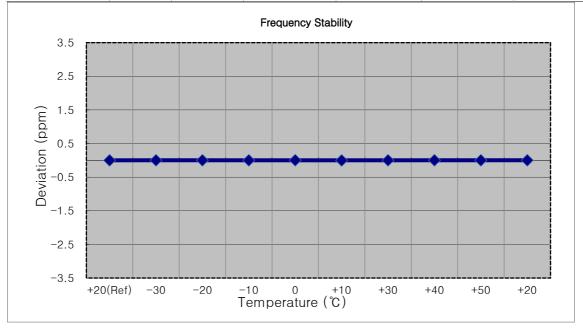
Voltage	Power	Temp.	Frequency	Frequency	Deviation	
(%)	(VDC)	(°C)	(Hz)	Error (Hz)	(%)	ppm
100 %		+20(Ref)	1745 000 004	0.0	0.000 000	0.000
100 %		-30	1745 000 008	3.7	0.000 000	0.002
100 %		-20	1745 000 007	3.4	0.000 000	0.002
100 %		-10	1745 000 007	3.5	0.000 000	0.002
100 %	3.850	0	1745 000 009	4.9	0.000 000	0.003
100 %		+10	1745 000 007	3.5	0.000 000	0.002
100 %	-	+30	1745 000 009	5.1	0.000 000	0.003
100 %		+40	1745 000 006	2.1	0.000 000	0.001
100 %		+50	1745 000 009	5.2	0.000 000	0.003
Batt. Endpoint	3.400	+20	1745 000 009	5.5	0.000 000	0.003





MODE:	LTE 66/4
OPERATING FREQUENCY:	1745,000,000 Hz
CHANNEL:	<u>132322 (20 MHz)</u>
REFERENCE VOLTAGE:	3.850 VDC
DEVIATION LIMIT:	Emission must remain in band

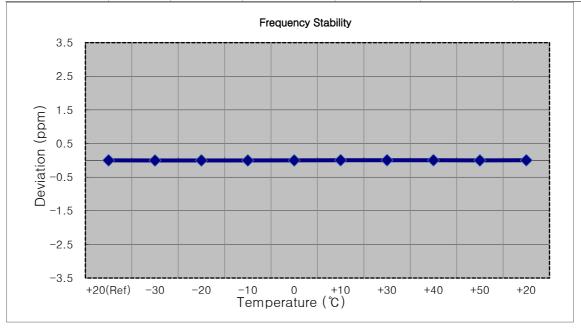
Voltage	Power	Temp.	Frequency	Frequency	Deviation	
(%)	(VDC)	(°C)	(Hz)	Error (Hz)	(%)	ppm
100 %		+20(Ref)	1745 000 003	0.0	0.000 000	0.000
100 %		-30	1745 000 007	4.4	0.000 000	0.003
100 %	-	-20	1745 000 006	3.1	0.000 000	0.002
100 %		-10	1745 000 007	3.7	0.000 000	0.002
100 %	3.850	0	1745 000 009	5.7	0.000 000	0.003
100 %		+10	1745 000 000	-3.1	0.000 000	-0.002
100 %	-	+30	1745 000 007	3.9	0.000 000	0.002
100 %	-	+40	1745 000 007	4.4	0.000 000	0.003
100 %		+50	1745 000 007	3.8	0.000 000	0.002
Batt. Endpoint	3.400	+20	1745 000 007	4.3	0.000 000	0.002





MODE:	LTE 66/4
OPERATING FREQUENCY:	1779,300,000 Hz
CHANNEL:	<u>132665 (1.4 MHz)</u>
REFERENCE VOLTAGE:	3.850 VDC
DEVIATION LIMIT:	Emission must remain in band

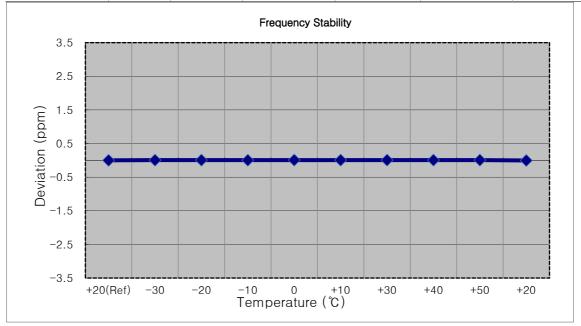
Voltage	Power	Temp.	Frequency	Frequency	Deviation	
(%)	(VDC)	(°C)	(Hz)	Error (Hz)	(%)	ppm
100 %		+20(Ref)	1779 300 005	0.0	0.000 000	0.000
100 %		-30	1779 299 999	-5.9	0.000 000	-0.003
100 %	-	-20	1779 300 002	-3.2	0.000 000	-0.002
100 %		-10	1779 300 000	-4.9	0.000 000	-0.003
100 %	3.850	0	1779 300 001	-3.9	0.000 000	-0.002
100 %		+10	1779 300 011	5.6	0.000 000	0.003
100 %	-	+30	1779 300 013	7.2	0.000 000	0.004
100 %		+40	1779 300 012	6.2	0.000 000	0.003
100 %		+50	1779 300 002	-3.6	0.000 000	-0.002
Batt. Endpoint	3.400	+20	1779 300 011	5.2	0.000 000	0.003





MODE:	LTE 66/4
OPERATING FREQUENCY:	1778,500,000 Hz
CHANNEL:	<u>132657 (3 MHz)</u>
REFERENCE VOLTAGE:	3.850 VDC
DEVIATION LIMIT:	Emission must remain in band

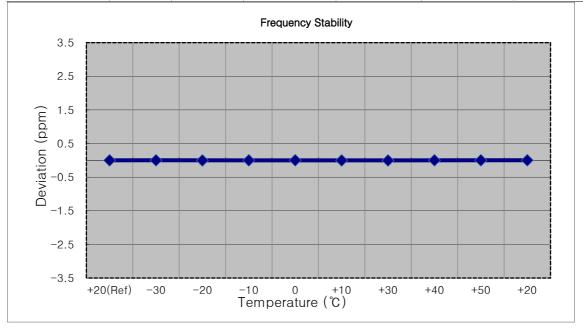
Voltage	Power	Temp.	Frequency	Frequency	Deviation	
(%)	(VDC)	(°C)	(Hz)	Error (Hz)	(%)	ppm
100 %		+20(Ref)	1778 500 009	0.0	0.000 000	0.000
100 %		-30	1778 500 022	12.4	0.000 001	0.007
100 %		-20	1778 500 021	11.3	0.000 001	0.006
100 %		-10	1778 500 016	7.1	0.000 000	0.004
100 %	3.850	0	1778 500 024	14.4	0.000 001	0.008
100 %		+10	1778 500 022	12.2	0.000 001	0.007
100 %		+30	1778 500 022	12.7	0.000 001	0.007
100 %		+40	1778 500 021	11.7	0.000 001	0.007
100 %		+50	1778 500 022	13.1	0.000 001	0.007
Batt. Endpoint	3.400	+20	1778 500 002	-7.1	0.000 000	-0.004





MODE:	LTE 66/4
OPERATING FREQUENCY:	1777,500,000 Hz
CHANNEL:	132647 (5 MHz)
REFERENCE VOLTAGE:	3.850 VDC
DEVIATION LIMIT:	Emission must remain in band

Voltage	Power	Temp.	Frequency	Frequency	Deviation	
(%)	(VDC)	(°C)	(Hz)	Error (Hz)	(%)	ppm
100 %		+20(Ref)	1777 500 005	0.0	0.000 000	0.000
100 %		-30	1777 500 008	3.8	0.000 000	0.002
100 %	-	-20	1777 500 000	-4.5	0.000 000	-0.003
100 %		-10	1777 500 007	1.9	0.000 000	0.001
100 %	3.850	0	1777 500 009	4.7	0.000 000	0.003
100 %		+10	1777 500 001	-3.9	0.000 000	-0.002
100 %	-	+30	1777 500 000	-5.0	0.000 000	-0.003
100 %	-	+40	1777 500 008	3.5	0.000 000	0.002
100 %		+50	1777 500 009	4.0	0.000 000	0.002
Batt. Endpoint	3.400	+20	1777 500 010	5.2	0.000 000	0.003

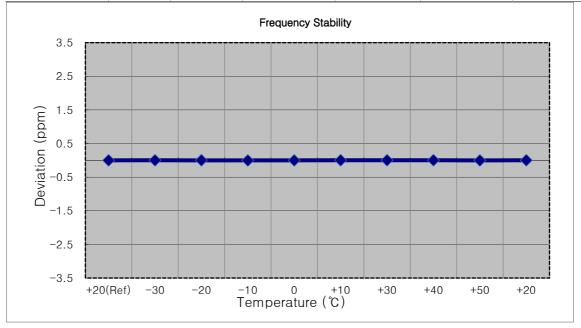


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MODE:	LTE 66/4
OPERATING FREQUENCY:	1775,000,000 Hz
CHANNEL:	<u>132622 (10 MHz)</u>
REFERENCE VOLTAGE:	3.850 VDC
DEVIATION LIMIT:	Emission must remain in band

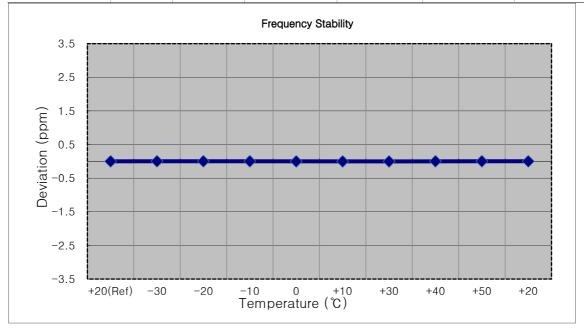
Voltage	Power	Temp.	Frequency	Frequency	Deviation	
(%)	(VDC)	(°C)	(Hz)	Error (Hz)	(%)	ppm
100 %		+20(Ref)	1775 000 004	0.0	0.000 000	0.000
100 %		-30	1775 000 008	3.5	0.000 000	0.002
100 %		-20	1775 000 009	4.7	0.000 000	0.003
100 %		-10	1775 000 000	-4.9	0.000 000	-0.003
100 %	3.850	0	1775 000 002	-2.1	0.000 000	-0.001
100 %		+10	1775 000 009	4.7	0.000 000	0.003
100 %	-	+30	1775 000 010	5.6	0.000 000	0.003
100 %		+40	1775 000 011	6.5	0.000 000	0.004
100 %		+50	1775 000 001	-3.8	0.000 000	-0.002
Batt. Endpoint	3.400	+20	1775 000 009	4.4	0.000 000	0.002





MODE:	LTE 66/4
OPERATING FREQUENCY:	1772,500,000 Hz
CHANNEL:	<u>132597 (15 MHz)</u>
REFERENCE VOLTAGE:	3.850 VDC
DEVIATION LIMIT:	Emission must remain in band

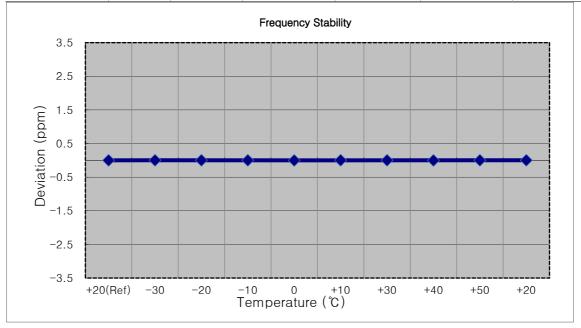
Voltage	Power	Temp.	Frequency	Frequency	Deviation	
(%)	(VDC)	(°C)	(Hz)	Error (Hz)	(%)	ppm
100 %		+20(Ref)	1772 500 004	0.0	0.000 000	0.000
100 %		-30	1772 500 009	5.3	0.000 000	0.003
100 %		-20	1772 500 008	4.3	0.000 000	0.002
100 %		-10	1772 500 009	4.8	0.000 000	0.003
100 %	3.850	0	1772 500 001	-3.0	0.000 000	-0.002
100 %		+10	1772 500 001	-3.3	0.000 000	-0.002
100 %		+30	1772 500 000	-3.8	0.000 000	-0.002
100 %	-	+40	1772 500 008	3.9	0.000 000	0.002
100 %		+50	1772 500 008	4.2	0.000 000	0.002
Batt. Endpoint	3.400	+20	1772 500 008	4.0	0.000 000	0.002





MODE:	LTE 66/4
OPERATING FREQUENCY:	1770,000,000 Hz
CHANNEL:	<u>132572 (20 MHz)</u>
REFERENCE VOLTAGE:	3.850 VDC
DEVIATION LIMIT:	Emission must remain in band

Voltage	Power	Temp.	Frequency	Frequency	Deviation	nnm
(%)	(VDC)	(°C)	(Hz)	Error (Hz)	(%)	ppm
100 %		+20(Ref)	1770 000 004	0.0	0.000 000	0.000
100 %		-30	1770 000 009	4.6	0.000 000	0.003
100 %		-20	1770 000 008	3.2	0.000 000	0.002
100 %		-10	1770 000 008	3.5	0.000 000	0.002
100 %	3.850	0	1770 000 000	-4.3	0.000 000	-0.002
100 %		+10	1770 000 009	5.0	0.000 000	0.003
100 %	-	+30	1770 000 009	4.7	0.000 000	0.003
100 %		+40	1770 000 000	-4.4	0.000 000	-0.002
100 %		+50	1770 000 008	4.0	0.000 000	0.002
Batt. Endpoint	3.400	+20	1770 000 009	4.4	0.000 000	0.002





Report No. HCT-RF-2403-FC009

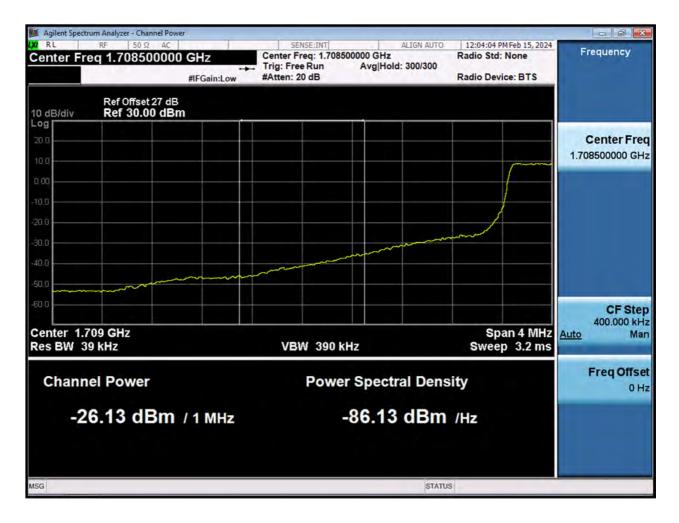
9. TEST PLOTS



Agilent Spectrum Analyzer - Swept SA					- 6 ×
RL RF 50 Q AC Center Freq 1.71000000	DO GHZ PNO: Wide	SENSE:INT	#Avg Type: RMS	12:03:55 PM Feb 15, 2024 TRACE 1 2 3 4 5 6 TYPE A WWWW DET A A A A A A	Frequency
Ref Offset 27 dB 0 dB/div Ref 27.00 dBm	IFGain:Low	#Atten: 20 dB	Mkr1	1.710 000 GHz -26.175 dBm	Auto Tune
17.0					Center Freq 1.710000000 GHz
3.00			and an and a second		Start Freq 1.708000000 GHz
13.0				-13.00 dBm	Stop Freq 1.712000000 GHz
13.0	work of the second second			An and a name of the	CF Step 400.000 kHz Auto Man
53.0					Freq Offset 0 Hz
^{33.0} Center 1.710000 GHz Res BW 15 kHz	#VBW	47 kHz	#Sweep	Span 4.000 MHz 1.000 s (1001 pts)	
SG			STATU		

BW1.4 M_BandEdge_Lowest Channel_QPSK_FullRB(1)





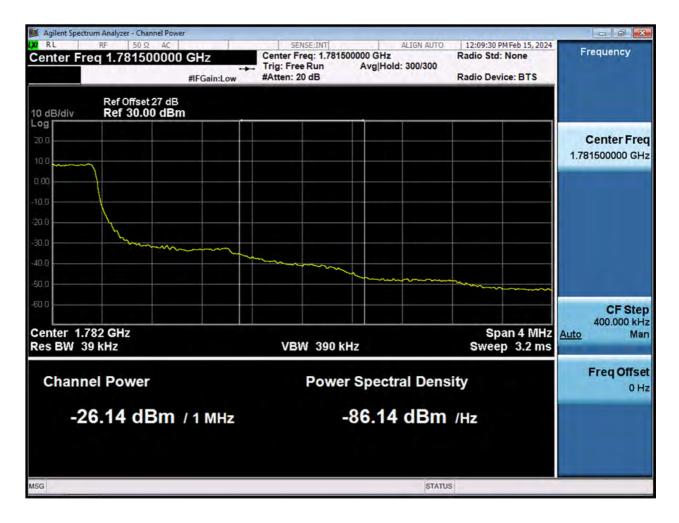
BW1.4 M_BandEdge_Lowest Channel_QPSK_FullRB(2)



				Spectrum Analyzer - Swept SA
Frequency	12:09:21 PM Feb 15, 2024 TRACE 1 2 3 4 5 6 TYPE A WWWW DET A A A A A A	#Avg Type: RMS	SENSE:INT	RF 50 Ω AC Freq 1.780000000 GHz
Auto Tune	DET A A A A A A 1.780 000 GHz -27.593 dBm	Mkr1	#Atten: 20 dB	PNO: Wide IFGain:Low Ref Offset 27 dB v Ref 27.00 dBm
Center Free 1.780000000 GH				
Start Fre 1.778000000 GH				
Stop Fre 1.782000000 GH	-13.00 dBm		1	
CF Ste 400.000 k⊢ <u>Auto</u> Ma		www.	the management	more and the second sec
Freq Offse 0 H	and he was a second of the sec			
	Span 4.000 MHz 1.000 s (1001 pts)	#Sweep	47 kHz	1.780000 GHz W 15 kHz #VBM
		STATUS		

BW1.4 M_BandEdge_Highest Channel_QPSK_FullRB(1)





BW1.4 M_BandEdge_Highest Channel_QPSK_FullRB(2)



- 6 2								um Analyzer - Swe	
Frequency	12:04:29 PM Feb 15, 2024 TRACE 1 2 3 4 5 0 TYPE A WWWW DET A A A A A A	ALIGN AUTO	#Avg T			Hz PNO: Wide FGain:Low	000000	RF 50 S eq 1.7100	nter Fi
Auto Tun	1.710 000 GHz -22.832 dBm	Mkr1					7 dB	Ref Offset 27 Ref 27.00	dB/div g
Center Fre 1.710000000 GH				m					8 .0
Start Fre 1.708000000 GH									00 00
Stop Fre 1.712000000 GH	-13.00 d9m			1					.a .a
CF Ste 400.000 kH Auto Ma		June	how		and a second				.0
Freq Offse 0 H	RMS	m					an and a subserved and a subser	and the second sec	0 magana
	Span 4.000 MHz 1.000 s (1001 pts)	#Sweep			47 kHz	#VBW	z	10000 GHz 5 kHz	enter 1.7
		STATUS							1

BW1.4 M_BandEdge_Lowest Channel_QPSK_1RB



				trum Analyzer - Swept SA	
Frequency	12:09:59 PM Feb 15, 2024 TRACE 1 2 3 4 5 0 TYPE A WWWW DET A A A A A A	ALIGN AUTO #Avg Type: RMS	Trig: Free Run #Atten: 20 dB	RF 50 Ω AC req 1.780000000 GHz PNO: Wide → IFGain:Low	Center Fr
Auto Tune	1.780 000 GHz -21.373 dBm	Mkr1		Ref Offset 27 dB Ref 27.00 dBm	10 dB/div
Center Freq 1.780000000 GHz			m		17.0
Start Freq 1.778000000 GHz					-3.00
Stop Freq 1.782000000 GHz	-13.00 dBm		1		-13.0
CF Step 400.000 kHz Auto Man		-	- h	many some from	-33,0
Freq Offset 0 Hz	RMS	temper			-63.0
	Span 4.000 MHz 1.000 s (1001 pts)	#Sweep	V 47 kHz	780000 GHz 15 kHz #VBW	Center 1.7
		STATUS			MSG

BW1.4 M_BandEdge_Highest Channel_QPSK_1RB



- 6 ×	Lot of the			ctrum Analyzer - Swept SA	
Frequency	01:06:26 PM Feb 15, 2024 TRACE 1 2 3 4 5 0 TYPE A WWWW DET A A A A A A	ALIGN AUTO #Avg Type: RMS	SENSE:INT Trig: Free Run #Atten: 20 dB	RF 50 Ω AC req 1.710000000 GHz PNO: Wide ↔ IFGain:Low	
Auto Tune	1.710 000 GHz -23.658 dBm	Mkr1	#Atten: 20 db	Ref Offset 27 dB Ref 27.00 dBm	
Center Fred 1.710000000 GHz					17.0
Start Free 1.708000000 GH:	RMS	an a			3,00
Stop Free 1.712000000 GH:	-13.00 dBm		1		13.0
CF Step 400.000 kH <u>Auto</u> Mar				di taana di mangali pangali na saka ang mga ng m	43.0
Freq Offse 0 H					53.0
	Span 4.000 MHz 1.000 s (1001 pts)	#Sweep	91 kHz		Center 1.710000 #Res BW 30 kHz
		STATUS			ISG

BW3 M_BandEdge_Lowest Channel_QPSK_FullRB(1)



RL	RF 50 Ω AC		SENSE:INT	ALIGN AUTO	01:06:36 PM Feb 15, 2024	Frequency
enter Fr	eq 1.70850000		Center Freq: 1.7085 Trig: Free Run #Atten: 20 dB	00000 GHz Avg Hold: 300/300	Radio Std: None Radio Device: BTS	Center Free 1.708500000 GH:
0 dB/div	Ref Offset 27 dE Ref 30.00 dB		_			
. og 20.0						
0.0						
0.0 0.0					amount	
0.0 0.0	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~					
enter 1.7	709 GH7				Span 4 MHz	CF Ste 400.000 kH Auto Ma
es BW 3			VBW 390 k	Hz	Sweep 3.2 ms	<u>Auto</u> Iwa
Chann	el Power		Powe	r Spectral Dens	sity	Freq Offset 0 Hz
-1	8.54 dBm	/ 1 MHz		78.54 dBm	/Hz	

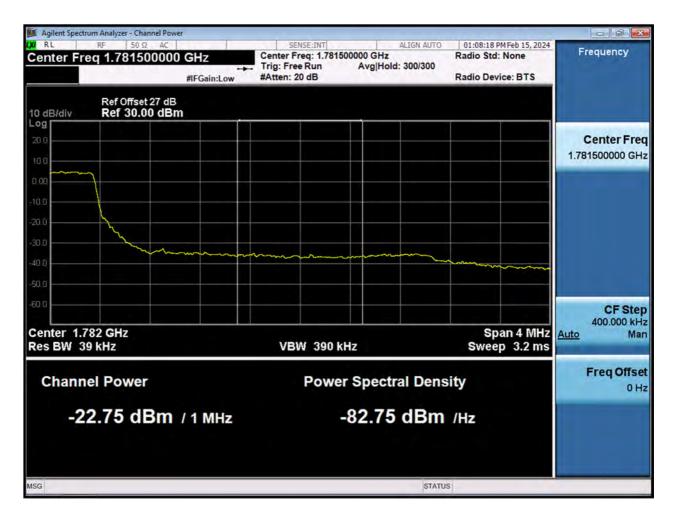
BW3 M_BandEdge_Lowest Channel_QPSK_FullRB(2)



- 6 ×				ctrum Analyzer - Swept SA	
Frequency	01:08:08 PM Feb 15, 2024 TRACE 1 2 3 4 5 0 TYPE A WWWW DET A A A A A A	#Avg Type: RMS	SENSE:INT Trig: Free Run #Atten: 20 dB	RF 50 Ω AC Freq 1.780000000 GHz PNO: Wide ↔	
Auto Tune	1.780 008 GHz -24.052 dBm	Mkr1	#Atten: 20 db	IFGain:Low Ref Offset 27 dB Ref 27.00 dBm	10 dB/div Ref 27
Center Freq 1.780000000 GHz					17.0
Start Fred 1.778000000 GH;					7.00
Stop Free 1.782000000 GH:	-13.00 dBm		1		-13.0
CF Step 400.000 kH <u>Auto</u> Mar	FMS have beging a stand management of a start of	Mary-18584471294242471449-1-4-6-899-9-94-9			-33,0
Freq Offse 0 H:					-63.0
	Span 4.000 MHz 1.000 s (1001 pts)	#Sweep	91 kHz	780000 GHz 30 KHz	Center 1.780000
		STATUS			MSG

BW3 M_BandEdge_Highest Channel_QPSK_FullRB(1)





BW3 M_BandEdge_Highest Channel_QPSK_FullRB(2)



								n Analyzer - Swep	and the second s
Frequency	COO PM Feb 15, 2024	01:07:00 TR/ T	ALIGN AUTO	Run	Trig: Free	NO: Wide	0000 GH	RF 50 Ω 1.71000	nter Fre
Auto Tune	0 000 GHz .635 dBm		Mkr1	dB	#Atten: 20	Gain:Low	dB	ef Offset 27 ef 27.00 (dB/div
Center Fred 1.710000000 GH:				\bigcap					0
Start Free 1.708000000 GH									io
Stop Free 1.712000000 GH	-13.00 dBm			í					o
CF Stej 400.000 kH <u>Auto</u> Ma	RMS		1 mg		and the second		\sim		o
Freq Offse 0 H	and and a second							-	سنسيس 0
	n 4.000 MHz s (1001 pts)	Span 1.000 s	#Sweep		91 kHz	#VBW		0000 GHz kHz	nter 1.7 es BW 3
			STATUS						

BW3 M_BandEdge_Lowest Channel_QPSK_1RB



- 6 ×					ctrum Analyzer - Swept SA	
Frequency	01:08:47 PM Feb 15, 2024 TRACE 1 2 3 4 5 6 TYPE A ***********************************	#Avg Type: RMS	Trig: Free Run #Atten: 20 dB	DO GHz PNO: Wide	RF 50 Q AC	Center F
Auto Tune	1.780 000 GHz -17.161 dBm	Mkr1	#Atten: 20 dB	IFGain:Low	Ref Offset 27 dB Ref 27.00 dBm	10 dB/div
Center Freq 1.780000000 GHz			\cap			17,0
Start Fred 1.778000000 GH2						7.00. 3.00
Stop Fred 1.782000000 GH:	-13.00 dBm		1			-13.0
CF Step 400.000 kH: <u>Auto</u> Mar						-33,0
Freq Offse 0 Ha	RMS					-53.0
	Span 4.000 MHz 1.000 s (1001 pts)	#Sweep	91 kHz	#VBW	780000 GHz 30 kHz	Center 1. #Res BW
		STATUS				ASG

BW3 M_BandEdge_Highest Channel_QPSK_1RB



				n Analyzer - Swept SA	
Frequency	12:28:03 PM Feb 15, 2024 TRACE 1 2 3 4 5 0 TYPE A WWWW DET A A A A A A	ALIGN AUTO #Avg Type: RMS	SENSE:INT	RF 50 Ω AC q 1.710000000 GHz PNO: Wide ↔	Center Fre
Auto Tune	1.710 000 GHz -23.618 dBm	Mkr1	#Atten: 20 dB	IFGain:Low lef Offset 27 dB lef 27.00 dBm	10 dB/div
Center Fred 1.710000000 GHz					17.0
Start Fred 1.708000000 GH;	RMS	n ngunu ktoren singe, un singegrenn verse fan	ſ		-3,00
Stop Fred 1.712000000 GH:	-13.00 dBm		1		-13.0
CF Step 400.000 kH: Auto Mar				an a	-33.0
Freq Offse 0 H					63.0
	Span 4.000 MHz 1.000 s (1001 pts)	#Sweep	160 kHz	0000 GHz kHz #VBW	-63,0 Center 1.71 #Res BW 5
		STATUS			MSG

BW5 M_BandEdge_Lowest Channel_QPSK_FullRB(1)



RL	RF 50 Q AC		SENSE:INT	ALIGN AUTO	12:28:12 PM Feb 15, 2024		
enter Fr	eq 1.70850000		Center Freq: 1.70850 Trig: Free Run #Atten: 20 dB	0000 GHz Avg Hold: 300/300	Radio Std: None Radio Device: BTS	Frequency	
0 dB/div	Ref Offset 27 dl Ref 30.00 dB						
. og 20.0						Center Fre 1.708500000 GH	
0.00							
20.0				~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~			
40.0 50.0							
enter 1.7					Span 4 MHz	CF Ste 400.000 kH Auto Ma	
es BW 3	9 kHz		VBW 390 kH	łz	Sweep 3.2 ms		
Chann	Channel Power		Power	Power Spectral Density			
-1	8.67 dBm	/ 1 MHz		78.67 dBm	/Hz		

BW5 M_BandEdge_Lowest Channel_QPSK_FullRB(2)



- 6 ×				ctrum Analyzer - Swept SA	
Frequency	12:33:07 PM Feb 15, 2024 TRACE 1 2 3 4 5 0 TYPE A WWWWW DET A A A A A A	ALIGN AUTO #Avg Type: RMS	SENSE:INT	RF 50 Ω AC Freq 1.780000000 GHz PNO: Wide ↔ IFGain:Low	Center F
Auto Tune	1.780 004 GHz -24.411 dBm	Mkr1		Ref Offset 27 dB Ref 27.00 dBm	10 dB/div
Center Fred 1.780000000 GH2					17.0
Start Fred 1.778000000 GH:					3,00
Stop Fred 1.782000000 GH:	-13.00 dBm		1		-13.0
CF Step 400.000 kH: Auto Mar	RIMS	and the second			33,0
Freq Offse 0 H:					63.0
	Span 4.000 MHz 1.000 s (1001 pts)	#Sweep	160 kHz	780000 GHz 51 kHz #VBW	Center 1.7 #Res BW
		STATUS			ISG

BW5 M_BandEdge_Highest Channel_QPSK_FullRB(1)



M Agilent Spectru	RF 50 Q AC	er	SENSE:INT	ALIGN AUTO	12:33:16 PM Feb 15, 2024	- 6 ×
	eq 1.781500000	HFGain:Low	Center Freq: 1.78150		Radio Device: BTS	Frequency
10 dB/div	Ref Offset 27 dB Ref 30.00 dBn	n				
20.0 10.0						Center Fred 1.781500000 GHz
10,0						
20.0	hormon					
40.0 50.0						
Center 1.7					Span 4 MHz	CF Stej 400.000 kH Auto Ma
Res BW 39	9 kHz		VBW 390 kH	Iz	Sweep 3.2 ms	Freq Offse
Channe	Channel Power		Power	Power Spectral Density		
-24	4.89 dBm	/ 1 MHz	-	84.89 dBm	/Hz	
ISG				STATU	S	

BW5 M_BandEdge_Highest Channel_QPSK_FullRB(2)



	ctrum Analyzer - Swept SA				100000000000000000000000000000000000000	- 6 ×
Center F	RF 50 Q AC	PNO: Wide ++	SENSE:INT	#Avg Type: RMS	12:28:37 PM Feb 15, 2024 TRACE 1 2 3 4 5 6 TYPE A WWWW DET A A A A A A	Frequency
10 dB/div	Ref Offset 27 dB Ref 27.00 dBm	IFGain:Low	#Atten: 20 dB	Mkr1	1.710 000 GHz -20.555 dBm	Auto Tune
17,0			(Center Fred 1.710000000 GH
3.00						Start Free 1.708000000 GH
13.0			•1		-13.00 dBm	Stop Free 1.712000000 GH
33,0				hang	RMS	CF Ster 400.000 kH <u>Auto</u> Ma
53.0						Freq Offse 0 H
Center 1.	710000 GHz 51 kHz	#VBW	160 kHz	#Sweep	Span 4.000 MHz 1.000 s (1001 pts)	
ISG				STATU		

BW5 M_BandEdge_Lowest Channel_QPSK_1RB



- 6 ×				trum Analyzer - Swept SA	
Frequency	12:33:45 PM Feb 15, 2024 TRACE 1 2 3 4 5 0 TYPE A WWWWW DET A A A A A A	#Avg Type: RMS	SENSE:INT Trig: Free Run #Atten: 20 dB	RF 50 Ω AC req 1.780000000 GHz PNO: Wide ↔	Center Fr
Auto Tune	1.780 000 GHz -20.821 dBm	Mkr1	#Atten: 20 db	Ref Offset 27 dB Ref 27.00 dBm	10 dB/div
Center Freq 1.780000000 GHz			γ		17.0
Start Fred 1.778000000 GHz					7.00
Stop Fred 1.782000000 GHz	-13.00 dBm		1		-13.0
CF Step 400.000 kHz <u>Auto</u> Mar	RMS	~	Juneting		-33,0
Freq Offsel 0 Hz					-53.0
	Span 4.000 MHz 1.000 s (1001 pts)	#Sweep	160 kHz	/80000 GHz 51 kHz #VBW	Center 1.7 #Res BW \$
		STATUS			MSG

BW5 M_BandEdge_Highest Channel_QPSK_1RB



- 6 ×	and the second			ectrum Analyzer - Swept SA	
Frequency	12:35:46 PM Feb 15, 2024 TRACE 1 2 3 4 5 6 TYPE A WWWW DET A A A A A A	ALIGN AUTO #Avg Type: RMS	SENSE:INT	RF 50 Ω AC Freq 1.710000000 GHz PNO: Wide ↔	Center Fre
Auto Tune	1.709 984 GHz -25.765 dBm	Mkr1	#Atten: 20 dB	IFGain:Low Ref Offset 27 dB Ref 27.00 dBm	10 dB/div Log r
Center Fred 1.710000000 GHz					17.0
Start Free 1.708000000 GH:	RMS				3,00
Stop Free 1.712000000 GH:	-13.00 dBm		1		-13.0
CF Stej 400.000 kH <u>Auto</u> Ma				and the second	33.0
Freq Offse 0 H					-63.0
	Span 4.000 MHz 1.000 s (1001 pts)	#Sweep	300 kHz	.710000 GHz / 100 kHz #VBW	-63,0 Center 1.71 #Res BW 1
		STATUS			MSG

BW10 M_BandEdge_Lowest Channel_QPSK_FullRB(1)



Agilent Spectr	RF 50 Q AC		I manage start	0.100.0000		- 6 💌
enter Freq 1.708500000 GHz #IFGain:Low			SENSE:INT Center Freq: 1.7085000 Trig: Free Run #Atten: 20 dB	ALIGN AUTO 000 GHz Avg Hold: 300/300	12:35:55 PM Feb 15, 2024 Radio Std: None Radio Device: BTS	Frequency
10 dB/div	Ref Offset 27 dB Ref 30.00 dBm					
20.0 10.0						Center Fre 1.708500000 GH
0.00 0.0 0.0						
0.0		~~~~~			······································	
enter 1.7					Span 4 MHz	CF Ste 400.000 kF <u>Auto</u> Ma
es BW 39 kHz Channel Power			VBW 390 kHz Sweep 3.2 ms Power Spectral Density			
-1	9.45 dBm /	1 MHz	-7	9.45 dBm	/Hz	
SG				STATU	s	

BW10 M_BandEdge_Lowest Channel_QPSK_FullRB(2)



					ctrum Analyzer - Swept SA	
Frequency	12:40:47 PM Feb 15, 2024 TRACE 1 2 3 4 5 0 TYPE A WWWWW DET A A A A A A	#Avg Type: RMS	Trig: Free Run #Atten: 20 dB	GHz PNO: Wide ↔ IFGain:Low	RF 50 Q AC req 1.780000000	Center F
Auto Tune	1.780 012 GHz -28.112 dBm	Mkr1			Ref Offset 27 dB Ref 27.00 dBm	10 dB/div
Center Fred 1.780000000 GH:						17.0
Start Free 1.778000000 GH:						-3,00
Stop Free 1.782000000 GH:	-13.00 dBm					-13.0
CF Stej 400.000 kH Auto Mai	RMS	and the second and the second seco	The second secon			33,0
Freq Offse 0 H						-53.0
	Span 4.000 MHz 1.000 s (1001 pts)	#Sweep	300 kHz	#VBW	780000 GHz 100 kHz	Center 1. #Res BW
		STATUS				ASG

BW10 M_BandEdge_Highest Channel_QPSK_FullRB(1)



RL	um Analyzer - Channel Pow RF 50 Q AC			ENSE:INT	mar line	ALIGN AUTO	12:40:57 PM Feb 15, 2024	
enter Freq 1.781500000 GHz #FGain:Low		Talas Es		00000 GHz Avg Hold	: 300/300	Radio Std: None Radio Device: BTS	Frequency	
0 dB/div	Ref Offset 27 dB Ref 30.00 dBr							
og 20.0 10.0								Center Fr 1.781500000 G
0.00								
	·····	~	·····					
enter 1.7 es BW 39			VE	W 390 k	H7		Span 4 MHz Sweep 3.2 ms	CF St 400.000 F <u>Auto</u> M
	Channel Power				r Spectr	al Dens	Ereg	
-20	6.95 dBm	/ 1 MHz			86.95	dBm	/Hz	

BW10 M_BandEdge_Highest Channel_QPSK_FullRB(2)



Agilent Spectrum Analyzer - Swept SA				A CONTRACTOR	- 6 ×
RL RF 50 Q 40 Center Freq 1.7100000	00 GHz PNO: Wide	. Trig: Free Run #Atten: 20 dB	#Avg Type: RMS	12:36:21 PM Feb 15, 2024 TRACE 1 2 3 4 5 0 TYPE A WWWWW DET A A A A A A A	Frequency
Ref Offset 27 dB 10 dB/div Ref 27.00 dBn	IFGain:Low	#Atten: 20 dB	Mkr1	1.710 000 GHz -30.990 dBm	Auto Tune
17.0					Center Fred 1.710000000 GHz
3.00					Start Fred 1.708000000 GH:
23.0				-13.00 dBm	Stop Fred 1.712000000 GH:
33.0	and the start of t	1		RMS	CF Stej 400.000 kH <u>Auto</u> Mai
53.0					Freq Offse 0 H
63.0 Center 1.710000 GHz #Res BW 100 kHz	#VBW	300 kHz	#Sweep	Span 4.000 MHz 1.000 s (1001 pts)	
ISG			STATUS		

BW10 M_BandEdge_Lowest Channel_QPSK_1RB



	and the second				ctrum Analyzer - Swept S	
Frequency	12:41:25 PM Feb 15, 2024 TRACE 1 2 3 4 5 6 TYPE A WWWW DET A A A A A A	ALIGN AUTO #Avg Type: RMS	SENSE:INT	PNO: Wide	req 1.780000	Center F
Auto Tune	1.780 000 GHz -30.454 dBm	Mkr1	#Atten: 20 dB		Ref Offset 27 d Ref 27.00 dE	10 dB/div
Center Fred 1.780000000 GHz						17.0
Start Free 1.778000000 GH						3.00
Stop Free 1.782000000 GH	-13.00 dBm					13.0
CF Stej 400.000 kH Auto Ma			1		man and grant and a second	33.0
Freq Offse 0 H	RMS					53.0
	Span 4.000 MHz 1.000 s (1001 pts)	#Sweep	300 kHz	#VBW	780000 GHz 100 kHz	
		STATUS				ISG

BW10 M_BandEdge_Highest Channel_QPSK_1RB



- 6 💌				trum Analyzer - Swept SA	and the second se
Frequency	12:43:29 PM Feb 15, 2024 TRACE 1 2 3 4 5 6 TYPE A WWWW DET A A A A A A	ALIGN AUTO #Avg Type: RMS	SENSE:INT	RF 50 Ω AC req 1.710000000 GHz PNO: Wide ↔	Center Fr
Auto Tune	1.709 996 GHz -27.517 dBm	Mkr1	#Atten: 20 dB	IFGain:Low Ref Offset 27 dB Ref 27.00 dBm	10 dB/div
Center Freq 1.710000000 GHz					17.0
Start Fred 1.708000000 GHz	RMS				-3,00
Stop Freq 1.712000000 GHz	-13.00 dBm		1		-13.0
CF Step 400.000 kH Auto Mar				an a	-33,0
Freq Offse 0 H:					-53.0
	Span 4.000 MHz 1.000 s (1001 pts)	#Sweep	470 kHz	710000 GHz 150 kHz #VBM	Center 1.7
	nood s (noor pts)	STATUS			MSG

BW15 M_BandEdge_Lowest Channel_QPSK_FullRB(1)



	um Analyzer - Channel Power					
Center Fre	RF 50 Q AC eq 1.708500000 G #	Hz FGain:Low	SENSE:INT Center Freq: 1.70850 Trig: Free Run #Atten: 20 dB	ALIGN AUTO 00000 GHz Avg Hold: 300/300	12:43:39 PM Feb 15, 2024 Radio Std: None Radio Device: BTS	Frequency
10 dB/div	Ref Offset 27 dB Ref 30.00 dBm					
Log 20.0 10.0 0.00 -10.0						Center Free 1.708500000 GH
20.0 30.0 40.0 50.0						
Center 1.7 Res BW 39			VBW 390 kł	tz	Span 4 MHz Sweep 3.2 ms	CF Ste 400.000 kH <u>Auto</u> Ma
Channel Power		ower Power Spectral Density			Freq Offse 0 H	
-2	2.52 dBm //	1 MHz		82.52 dBm	/Hz	
ISG				STATU	s	

BW15 M_BandEdge_Lowest Channel_QPSK_FullRB(2)



- 6 ×					Agilent Spectrum Analy
Frequency	12:48:28 PM Feb 15, 2024 TRACE 1 2 3 4 5 6 TYPE A WWWW DET A A A A A A	#Avg Type: RMS	Trig: Free Run #Atten: 20 dB	50 Ω 4C 1.780000000 GHz PNO: Wide ↔ IFGain:Low	M RL RF Center Freq 1.
Auto Tune	1.780 000 GHz -31.619 dBm	Mkr1		Offset 27 dB 7 27.00 dBm	10 dB/div Ref 2
Center Fred 1.780000000 GHz					17.0
Start Free 1.778000000 GH:					3,00
Stop Free 1.782000000 GH:	-13.00 dBm				-13.0
CF Step 400.000 kH Auto Mar	RMS	na anti-trajectore de la terretaria de la constanción de la constanción de la constanción de la constanción de	1		-33,0
Freq Offse 0 H					-53.0
	Span 4.000 MHz 1.000 s (1001 pts)	#Sweep	470 kHz		-63.0 Center 1.780000 #Res BW 150 kł
		STATUS			MSG

BW15 M_BandEdge_Highest Channel_QPSK_FullRB(1)



	um Analyzer - Channel					
Center Fre	RF 50 Ω A eq 1.7815000	000 GHz	SENSE:INT Center Freq: 1.78150 Trig: Free Run #Atten: 20 dB	ALIGN AUTO 0000 GHz Avg Hold: 300/300	12:48:37 PM Feb 15, 2024 Radio Std: None Radio Device: BTS	Frequency
0 dB/div	Ref Offset 27 Ref 30.00 d					
og 20.0						Center Fre 1.781500000 GH
0.00						
0.0 0.0 0.0	mmm					
enter 1.7 es BW 39			VBW 390 kH	17	Span 4 MHz Sweep 3.2 ms	CF Ste 400.000 kF <u>Auto</u> Ma
	el Power		for the second	Spectral Dens		Freq Offs 0 F
-2	9.45 dBr	n / 1 MHz	-	89.45 dBm	/Hz	
G				STATU	s	

BW15 M_BandEdge_Highest Channel_QPSK_FullRB(2)



- 6 ×	The second second				Agilent Spectrum Ana
Frequency	12:44:03 PM Feb 15, 2024 TRACE 1 2 3 4 5 0 TYPE A WWWW DET A A A A A A	ALIGN AUTO #Avg Type: RMS	SENSE:INT Trig: Free Run #Atten: 20 dB	50 Ω AC 1.710000000 GHz PNO: Wide ↔ IFGain:Low	Center Freq 1.
Auto Tune	1.709 996 GHz -23.761 dBm	Mkr1	March. 19 40	Offset 27 dB f 27.00 dBm	
Center Fred 1.710000000 GHz					17.0
Start Fred 1.708000000 GHz					-3.00
Stop Fred 1.712000000 GH2	-13.00 dBm		1		-13.0
CF Step 400.000 kH Auto Mar					33,0
Freq Offse 0 H					53.0
	Span 4.000 MHz 1.000 s (1001 pts)	#Sween	470 kHz		-63,0 Center 1.71000 #Res BW 150 k
		STATUS			NSG

BW15 M_BandEdge_Lowest Channel_QPSK_1RB





BW15 M_BandEdge_Highest Channel_QPSK_1RB



Agilent Spectrum Analyzer - Swept SA					- 6 ×
Center Freq 1.71000000	DO GHz	SENSE:INT	#Avg Type: RMS	12:52:43 PM Feb 15, 2024 TRACE 1 2 3 4 5 0 TYPE A WWWW DET A A A A A A A	Frequency
Ref Offset 27 dB 10 dB/div Ref 27.00 dBm			Mkr1	1.710 000 GHz -28.293 dBm	Auto Tune
17.0					Center Freq 1.710000000 GHz
-3,00				RMS	Start Freq 1.708000000 GHz
-13.0		1		-13.00 dBm	Stop Freq 1.712000000 GHz
-33.0					CF Step 400.000 kHz Auto Mar
-63.0					Freq Offsel 0 Hz
-63.0 Center 1.710000 GHz #Res BW 200 kHz	#VBW 6	20 kHz	#Sweep	Span 4.000 MHz 1.000 s (1001 pts)	
MSG			STATUS		

BW20 M_BandEdge_Lowest Channel_QPSK_FullRB(1)



Agilent Spectr	RF 50 Q AC	er i	SENSE:INT	ALIGN AUTO	12:52:54 PM Feb 15, 2024	
	eq 1.708500000	GHz #IFGain:Low	Center Freq: 1.70850		Radio Device: BTS	Frequency
0 dB/div	Ref Offset 27 dB Ref 30.00 dBn	1				
.og 20.0 10.0						Center Fre 1.708500000 GH
0.00						
0.0						
0.0						CF Ste
enter 1.7 es BW 3			VBW 390 kH	lz	Span 4 MHz Sweep 3.2 ms	400.000 kH
Channel Power		Power Spectral Density			Freq Offset 0 Hz	
-2	3.21 dBm	/ 1 MHz	-	83.21 dBm	/Hz	
SG				STATU	s	

BW20 M_BandEdge_Lowest Channel_QPSK_FullRB(2)



- 6 💌					Agilent Spectrum Analyzer - Swept SA
Frequency	12:57:42 PM Feb 15, 2024 TRACE 1 2 3 4 5 0 TYPE A WWWWW DET A A A A A A	#Avg Type: RMS	SENSE:INT	PNO: Wide	RL RF 50 Q AC enter Freq 1.78000000
Auto Tune	1.780 008 GHz -33.379 dBm	Mkr1	#Atten: 20 dB		Ref Offset 27 dB
Center Fred 1.780000000 GH					7.0
Start Fre 1.778000000 GH					.00
Stop Fre 1.782000000 GH	-13.00 dBm				3.0
CF Ste 400.000 k⊢ <u>Auto</u> Ma	RMS		menetration and 1		3.0
Freq Offse 0 H					3.0
	Span 4.000 MHz 1.000 s (1001 pts)	#Sweep	620 kHz		enter 1.780000 GHz Res BW 200 kHz
		STATUS			G

BW20 M_BandEdge_Highest Channel_QPSK_FullRB(1)



	um Analyzer - Channel Powe	r.				- 6 ×
Center Fre	RF 50 Q AC 2q 1.781500000	GHz #IFGain:Low	SENSE:INT Center Freq: 1.781500 Trig: Free Run #Atten: 20 dB	ALIGN AUTO 000 GHz Avg Hold: 300/300	Adio Device: BTS	Frequency
10 dB/div	Ref Offset 27 dB Ref 30.00 dBn	1				
- og 20.0 10.0						Center Fre 1.781500000 GH
0.00 10.0 20.0						
10.0						
						CF Ste 400.000 kH
enter 1.7 es BW 39			VBW 390 kHz	:	Span 4 MHz Sweep 3.2 ms	<u>Auto</u> Ma
Channel Power		Power	Power Spectral Density			
-30	0.71 dBm	/ 1 MHz	-9	0.71 dBm	/Hz	
SG				STATU	s	

BW20 M_BandEdge_Highest Channel_QPSK_FullRB(2)



Agilent Spectrum Analyzer - Swept SA					- # ×
RL RF 50 Q AC Center Freq 1.71000000		SENSE:INT	ALIGN AUTO #Avg Type: RMS	12:53:18 PM Feb 15, 2024 TRACE 1 2 3 4 5 0 TYPE A WWWW DET A A A A A A	Frequency
Ref Offset 27 dB 10 dB/div Ref 27.00 dBm			Mkr	1 1.710 000 GHz -33.319 dBm	Auto Tune
17.0			\square		Center Freq 1.710000000 GHz
-3.00					Start Freq 1.708000000 GHz
-13.0				-13.00 dBn	Stop Fred 1.712000000 GHz
43.0					CF Step 400.000 kH: Auto Mar
-53.0					Freq Offse 0 Hz
-63.0 Center 1.710000 GHz #Res BW 200 kHz	#VBW 620	kHz	#Sweer	Span 4.000 MHz 0 1.000 s (1001 pts)	
ISG			STATU		

BW20 M_BandEdge_Lowest Channel_QPSK_1RB



Agilent Spectrum Analyzer - Swept SA					- 6 🗙
RL RF 50 Q AC Center Freq 1.78000000	0 GHz PNO: Wide	SENSE:INT Trig: Free Run #Atten: 20 dB	ALIGN AUTO #Avg Type: RMS	12:58:19 PM Feb 15, 2024 TRACE 1 2 3 4 5 6 TYPE A WWWW DET A A A A A A	Frequency
Ref Offset 27 dB 10 dB/div Ref 27.00 dBm	I Gameow		Mkr1	1.780 000 GHz -32.756 dBm	Auto Tune
17.0					Center Freq 1.780000000 GHz
3.00					Start Fred 1.778000000 GH;
23.0	North Real			-13.00 dBm	Stop Free 1.782000000 GH:
43.0		1		mind phone RMS	CF Step 400.000 kH Auto Mar
53.0					Freq Offse 0 H
-63.0 Center 1.780000 GHz #Res BW 200 kHz	#VBW	620 kHz	#Sweep	Span 4.000 MHz 1.000 s (1001 pts)	
ASG			STATUS		

BW20 M_BandEdge_Highest Channel_QPSK_1RB



XI RL	Analyzer - Occupied BW RF 50 Ω AC 1.7450000000	GHz #IFGain:Low	Center F			ALIGN AUTO	07:14:03 Radio Std Radio Dev		Frequency
10 dB/div	Ref Offset 27 dB Ref 40.00 dBm								
20.0									Center Fre 1.745000000 GF
10.0		S second second				Y M			
-10.0 -20.0 -30.0	www.mw					- Sound Starter	harrow	rmm	
40.0									CF Ste
Center 1.743 Res BW 27 I			#V	BW 110 k	(Hz		Spa Sweep	n 2.8 MHz 3.667 ms	280.000 kH <u>Auto</u> Ma
Occupie	d Bandwidth 1.0	983 MI	łz	Total P	ower	31.1	l dBm		Freq Offs 0 F
Transmit x dB Ban	Freq Error dwidth	3.887 k 1.340 M		OBW P x dB	ower		9.00 % 00 dB		
MSG						STATUS	S		

BW1.4 M_OBW_Middle Channel_QPSK_FullRB



Agilent Spectrum Analyzer - Occupied BW RL RF 50 Ω AC Center Freq 1.745000000 PASS	Trig	SENSE:INT ter Freq: 1.745000000 GHz : Free Run Avg Hok en: 20 dB	ALIGN AUTO 07:12:51 PM Feb 1 Radio Std: None d: 500/500 Radio Device: B	Frequency
Ref Offset 27 dB 10 dB/div Ref 40.00 dBm				
20.0				Center Fred 1.745000000 GH
10.0	Ammin	munhum		
-10.0			hourse and	
20.0			mannahan	vult
50.0				CF Step 280,000 kH
Center 1.745 GHz Res BW 27 kHz		#VBW 110 kHz	Span 2.8 Sweep 3.66	MHz Auto Mai
Occupied Bandwidt	h 1003 MHz	Total Power	30.1 dBm	Freq Offse 0 H
Transmit Freq Error	4.235 kHz	OBW Power	99.00 %	
x dB Bandwidth	1.315 MHz	x dB	-26.00 dB	
ISG			STATUS	

BW1.4 M_OBW_Middle Channel_16QAM_FullRB



Agilent Spectrum Analyzer - Occupied B R RL RF 50 Q AC Center Freq 1.74500000 PASS		Center F			ALIGN AUTO	07:13:23 PM Feb 15, 20 Radio Std: None Radio Device: BTS	Frequency
Ref Offset 27 dE 10 dB/div Ref 40.00 dB							
20.0							Center Free 1.745000000 GH
10.0	m	mm	mm	man			
10.0					Arra and		
20.0 30.0 Mm m MMM					N.N.C	Manna	~
40.0							CF Ste
Center 1.745 GHz Res BW 27 kHz	J	#V	BW 1101	kHz		Span 2.8 MH Sweep 3.667 n	
Occupied Bandwid	th .0973 MI	۰	Total P	ower	29.3	dBm	Freq Offse 0 H
Transmit Freq Error	2.307		OBW P	ower	99	.00 %	
x dB Bandwidth	1.305 N	IHz	x dB		-26.	00 dB	
ISG					STATU	5	

BW1.4 M_OBW_Middle Channel_64QAM_FullRB



Magilent Spectrum Analyzer - Occupied BW RL RF 50 Ω AC		SENSE:INT		12:06:33 PM Feb 15, 2024	
Center Freq 1.745000000 PASS	Tri	nter Freq: 1.745000000 GHz g: Free Run Avg Ho tten: 20 dB	ld: 500/500	idio Std: None idio Device: BTS	Frequency
Ref Offset 27 dB 10 dB/div Ref 40.00 dBn	1		_		
30.0 20.0					Center Free 1.745000000 GH
10.0	mm	~ ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~		
-10.0	J. J		A A		
30.0			- Marine	m mm	
50.0 Center 1.745 GHz				Span 2.8 MHz	CF Stej 280.000 kH
Res BW 27 kHz		#VBW 110 kHz	S	weep 3.667 ms	<u>Auto</u> Mai
Occupied Bandwidt 1.	^h 0948 MHz	Total Power	27.4 di	Зm	Freq Offse 0 Ha
Transmit Freq Error	4.661 kHz	OBW Power	99.00	%	
x dB Bandwidth	1.304 MHz	x dB	-26.00	dB	
ISG			STATUS		

BW1.4 M_OBW_Middle Channel_256QAM_FullRB



RL RF 50 Q AC Center Freq 1.745000000 PASS) GHz #IFGain:Low	Center	SENSE:INT Freq: 1.74500 ree Run : 20 dB		ALIGN AUTO	07:16:28 Radio Sto Radio De		Fre	quency
Ref Offset 27 dB 10 dB/div Ref 40.00 dBr									
20.0									enter Fred
10.0		her and the	And a company of						
-10.0 Man					A A	mm	A. A.		
30.0							vV-		
40.0 50.0									CF Step
Center 1.745 GHz #Res BW 62 kHz		#\	/BW 2401	kHz		Si Sweep	oan 6 MHz 1.533 ms	Auto	500.000 kHz Mar
Occupied Bandwid	th 7150 MH	Ηz	Total P	ower	31.2	2 dBm		F	req Offset 0 Hz
Transmit Freq Error	10.969 k	Hz	OBW P	ower		0.00 %			
x dB Bandwidth	3.094 M	IHz	x dB		-26.	00 dB			
ISG					STATU	S			

BW3 M_OBW_Middle Channel_QPSK_FullRB



RL RF 50 Q AC Center Freq 1.745000000 PASS) GHz #IFGain:Low	Center Trig: F	SENSE:INT Freq: 1.7450 ree Run : 20 dB		IGN AUTO	07:15:28 Radio Std Radio Dev		Fr	equency
Ref Offset 27 dB 10 dB/div Ref 40.00 dBr									
20.0									enter Fred
10.0	monin	mm		mmm	\				
-10.0	/				J. A.				
20.0 mmmmmmmmmm					M	howy	and m		
-40.0									
50.0									CF Step 600.000 kHz
Center 1.745 GHz #Res BW 62 kHz		#\	VBW 240	kHz		Sweep	an 6 MHz 1.533 ms	<u>Auto</u>	Mar
Occupied Bandwid			Total P	ower	30.2	dBm		a de la	Freq Offsel
2.	7274 MI	ΗZ							0112
Transmit Freq Error	10.893	KHz	OBW P	ower	99	.00 %			
x dB Bandwidth	3.097 N	IHz	x dB		-26.0	00 dB			
ISG					STATUS	-			

BW3 M_OBW_Middle Channel_16QAM_FullRB



Center Freq 1.7450000		Center	Freq: 1.7450 ree Run : 20 dB		GN AUTO	07:15:54 Radio Std Radio Dev		Frequenc	y
Ref Offset 27 d 0 dB/div Ref 40.00 dB									
∘g 30.0 20.0								Center 1.745000000	
10.0	portan	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	m					
10.0	/				1 h				
00 man hour hour					he he he	~M~	Maria		
40,0								CF	Stal
Center 1.745 GHz #Res BW 62 kHz		#\	/BW 240	kHz		Sp Sweep	oan 6 MHz 1.533 ms	600.000	
Occupied Bandwig	dth 2.7163 MI	Hz	Total F	ower	29.4	dBm		Freq O	ffse 0 H:
Transmit Freq Error	11.886	kHz	OBW P	ower	99.	.00 %			
x dB Bandwidth	3.064 N	MHz	x dB		-26.0	0 dB			
ISG					STATUS	-			

BW3 M_OBW_Middle Channel_64QAM_FullRB



RL RF 50 Ω AC Center Freq 1.745000000 PASS PASS		SENSE:INT Center Freq: 1.74500 Trig: Free Run #Atten: 20 dB		GN AUTO	12:22:30 Radio Std Radio Dev		Frequency	
Ref Offset 27 dB								
20.0							Center F 1.745000000	
10.0	mmm	han han have have have have have have have have	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~					
-10.0				La la				
30.0				ľ,	www.	mon		
50.0							CF S 600.000	
Center 1.745 GHz #Res BW 62 kHz		#VBW 2401	kHz		Sp Sweep	an 6 MHz 1.533 ms	<u>Auto</u> I	Mar
Occupied Bandwidth	100 MHz	Total P	ower	27.2	dBm		Freq Off (fsel D Hz
Transmit Freq Error	8.129 kH	z OBW P	ower	99	.00 %			
x dB Bandwidth	3.127 MH	z x dB		-26.0	00 dB			
NSG				STATUS				-

BW3 M_OBW_Middle Channel_256QAM_FullRB



RL RF 50 Ω Center Freq 1.745000 PASS		SENSE:INT Center Freq: 1.745000000 Trig: Free Run Av #Atten: 20 dB	ALIGN AUTO GHz /g Hold: 500/500	07:18:43 PM Feb 15, 20 Radio Std: None Radio Device: BTS	Frequency
Ref Offset 27 Ref 40.00			-		
-og 30.0 20.0					Center Fred 1.745000000 GHz
10.0	man	- mar mar mar and a second	m		
10.0	, Marina and Anna		- And	N	
20.0 My Man mark Mark				m man mark	^
40.0					CE Stor
Center 1.745 GHz #Res BW 100 kHz		#VBW 390 kHz		Span 10 MH Sweep 1 m	CF Step 1.000000 MHz Iz <u>Auto</u> Mar
Occupied Bandw	idth	Total Powe	er 31.	1 dBm	Freq Offset
	4.5278 M	Hz			0 Hz
Transmit Freq Erro	r 29.178	kHz OBW Powe	er 9	9.00 %	
x dB Bandwidth	5.265 M	MHz x dB	-26	.00 dB	
ISG			STAT	us	

BW5 M_OBW_Middle Channel_QPSK_FullRB



RL RF Center Freq 1	alyzer - Occupied BW 50 Ω AC .7450000000	+	Center Fre		ALIGN AUTO GHz g Hold: 500/500	07:17:47 PMF Radio Std: N Radio Device	one	Frequency
R 10 dB/div R	ef Offset 27 dB ef 40.00 dBm	#IFGain:Low	#Atten: 20			Radio Device		
- og 30.0 20.0								Center Free 1.745000000 GH
10.0		p.A.m.		un warden wa Ander warden w	mm			
10.0	an marthan				Dury.	martan	h m non	
20.0 My Markov My 30.0								
0.0								CF Ste 1.000000 MH
enter 1.745 Res BW 100			#VBV	V 390 kHz		Span Swee	10 MHz A p 1 ms	<u>uto</u> Ma
Occupied	Bandwidth 4.5	5209 MI		Total Powe	er 30.	3 dBm		Freq Offse 0 H
Transmit F x dB Bandv		23.119 I 5.408 N		DBW Powe		9.00 % .00 dB		
SG					STAT	IIS		

BW5 M_OBW_Middle Channel_16QAM_FullRB



CRL RF 50 Ω AC Center Freq 1.745000000 CASS) GHz #IFGain:Low	. Trig: F	SENSE:INT Freq: 1.7450 Free Run I: 20 dB		ALIGN AUTO	07:18:111 Radio Std Radio Dev		Frequency
0 dB/div Ref Offset 27 dB Ref 40.00 dBr								
0g 30.0 20.0								Center Free 1.745000000 GH
10.0	Jamam	m	mm	mann	min t			
0.0	/				h			
10.0 magnature market						mm	hmm	
0.0								CF Step 1.000000 MH
center 1.745 GHz Res BW 100 kHz		#	VBW 390	kHz		Spa Swe	ep 1 ms	<u>Auto</u> Mar
Occupied Bandwid 4.	th 5352 MH	Ηz	Total F	Power	29.1	dBm		Freq Offse 0 Ha
Transmit Freq Error	14.306 k	Hz	OBW F	ower	99	.00 %		
x dB Bandwidth	5.351 M	Hz	x dB		-26.	00 dB		
SG					STATUS	6		

BW5 M_OBW_Middle Channel_64QAM_FullRB



Magilent Spectrum Analyzer - Occupied BW RL RF 50 Ω AC		SENSE:INT		12:30:34 PM Feb 15, 2024 adio Std: None	Frequency
Center Freq 1.745000000 PASS			ld: 500/500	adio Sta: None	
Ref Offset 27 dB 10 dB/div Ref 40.00 dBn	1				
20.0					Center Free 1.745000000 GH
10.0	A	man har	h		
10.0 20.0 30.0			- Norder	mmm	
40.0					CE Sto
Center 1.745 GHz #Res BW 100 kHz		#VBW 390 kHz		Span 10 MHz Sweep 1 ms	CF Stej 1.000000 MH <u>Auto</u> Ma
Occupied Bandwidt 4.	Total Power	27.2 d	Bm	Freq Offset 0 Hz	
Transmit Freq Error x dB Bandwidth	27.101 kHz 5.166 MHz		99.00 -26.00		
ISG			STATUS		

BW5 M_OBW_Middle Channel_256QAM_FullRB



Center Fro PASS	RF 50 Ω AC eq 1.74500000		Trig: I	SENSE:INT r Freq: 1.7450 Free Run h: 20 dB	00000 GHz Avg Hold	ALIGN AUTO	Radio Sto	PMFeb 15, 2024 d: None vice: BTS	Frequency
0 dB/div	Ref Offset 27 dl Ref 40.00 dB								
- og 30.0 20.0									Center Free 1.745000000 GH
10.0.		mann	francis (Mai	manzanar	rultuhuw				
10.0	manhowmputant	af				Maryo	allanan	man	
20.0 30.0	MP Control and the second								
40.0 50.0									CF Ster
Center 1.7 Res BW			#	VBW 820	kH7			an 20 MHz eep 1 ms	2.000000 MH
	ied Bandwid	th		Total F		31.1	dBm		Freq Offse
		.0376 M	Hz						0 Ha
Transm	Transmit Freq Error 82		kHz	OBW P	ower	99	.00 %		
x dB Ba	indwidth	10.45	MHz	x dB		-26.	00 dB		
SG						STATUS	10		

BW10 M_OBW_Middle Channel_QPSK_FullRB



Agilent Spectrum An RL RF Center Freq 1 PASS	50 Q AC	GHz #IFGain:Low	SENSE:INT Center Freq: 1.74 Trig: Free Run #Atten: 20 dB		ALIGN AUTO	07:20:12 F Radio Std: Radio Dev		Frequency
10 dB/div R	ef Offset 27 dB ef 40.00 dBm							
- og 30.0 20.0								Center Fred 1.745000000 GHz
10.0		ronnontin	www.www.www.www.www.www.www.www.www.ww	mythan	m			
-10.0	and a start				- Why	Rober And And		
20.0 30.0 http://www.	Andrean						~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	
-40.0								CF Step 2.000000 MHz
Center 1.745 (#Res BW 200			#VBW 82	0 kHz	·_,		n 20 MHz ep 1 ms	
Occupied Bandwidth 9.0093 MHz				Power	30.2 dBm			Freq Offset 0 Hz
Transmit F	req Error	62.142 kl	Hz OBW	Power	99	99.00 %		
x dB Bandy	width	10.27 MI	Hz x dB		-26.	00 dB		
ISG					STATU	s		

BW10 M_OBW_Middle Channel_16QAM_FullRB



RL RF 50 Q AC Center Freq 1.745000000 PASS	GHz #IFGain:Low	. Trig: F	SENSE:INT Freq: 1.7450 Free Run 1: 20 dB		500/500	Radio Dev		Frequency
Ref Offset 27 dB Ref 40.00 dBr								
- og 30.0 20.0								Center Fred 1.745000000 GH:
10.0	Janamerer	Lain John	NWWWWW	han man	~~ \			
10.00	<i>[</i>				W.			
20.0 and an an an an and an						henrymakal	evertentime	
-40.0								
Center 1.745 GHz #Res BW 200 kHz		#	VBW 820	kHz		Spa Swe	n 20 MHz ep 1 ms	CF Step 2.000000 MH; Auto Mar
Occupied Bandwidt	^h 0107 MI	47	Total F	ower	29.	1 dBm		Freq Offset 0 Hz
Transmit Freq Error	53.356		OBW P	ower	99.00 %			
x dB Bandwidth	10.28 N	10.28 MHz			-26	.00 dB		
ISG					STATU	IS		

BW10 M_OBW_Middle Channel_64QAM_FullRB



RL RF 50 Ω AC Center Freq 1.745000000 PASS	GHz #IFGain:Low	SENSE:INT Center Freq: 1.745000000 GH Trig: Free Run Avg H #Atten: 20 dB	z Rad old: 500/500	2:38:15 PM Feb 15, 2024 dio Std: None dio Device: BTS	Frequency
Ref Offset 27 dB 10 dB/div Ref 40.00 dBn	n				
20.0					Center Fred 1.745000000 GHz
10.0	monter	Martin martine American	unun		
-10.0			- Andrew -		
30.0 months and a			بهرميس	mmmmmm	
50.0					CF Step 2.000000 MH
Center 1.745 GHz #Res BW 200 kHz		#VBW 820 kHz		Span 20 MHz Sweep 1 ms	<u>Auto</u> Mar
Occupied Bandwidt 8.	Total Power Z	27.2 dE	lm	Freq Offset 0 Hz	
Transmit Freq Error x dB Bandwidth	54.563 kH 10.19 MH		99.00 -26.00 d		
	10.19 MF		-20.00 (
ASG			STATUS		

BW10 M_OBW_Middle Channel_256QAM_FullRB



RL RF 50 Q AC Center Freq 1.745000000 PASS	O GHz #IFGain:Low	Center Trig: F	SENSE:INT Freq: 1.7450 ree Run : 20 dB	00000 GHz Avg Hold	ALIGN AUTO	Radio Dev		Frequency
Ref Offset 27 dB								
- og 30.0								Center Free 1.745000000 GH
10.0	Jamiran	www.www.in	an and a second	le le proprie provente de la constancia de				
20.0 20.0	/				William	ᢣᡗᡚᡘᢣ᠕ᡎᡕᡬᢏᠬᡵ	alwannama	
40.0								
60.0 Center 1.745 GHz						Spa	an 30 MHz	CF Step 3.000000 MH: Auto Mar
#Res BW 300 kHz		#	VBW 1.2 N	/IHz			eep 1 ms	
	Occupied Bandwidth 13.522 MHz			ower	31.1	l dBm		Freq Offset 0 Hz
Transmit Freq Error	96.068	kHz	OBW P	ower	99	0.00 %		
x dB Bandwidth	15.31 N	IHz	x dB		-26.	00 dB		
ISG					STATU	s		

BW15 M_OBW_Middle Channel_QPSK_FullRB



RL RF 50 Q AC Center Freq 1.74500000 PASS	0 GHz #IFGain:Low	Center			LIGN AUTO	Radio Ste	d: None	Frequency
Ref Offset 27 dB 10 dB/div Ref 40.00 dB					_			
30.0 20.0								Center Free 1.745000000 GH
10.0	permanant	water	no monderman	mennhahma	~n			
20.0 20.0 30.0 www.ll.fr.shahahahahahahahahahahahahahahahahahaha	4				AND BOARD	AMMANINA	Mphrodolfy	
40.0								CF Step
Center 1.745 GHz #Res BW 300 kHz		#V	/BW 1.2 N	1Hz			an 30 MHz reep 1 ms	3.000000 MH <u>Auto</u> Mar
	Occupied Bandwidth 13.468 MHz			ower	30.	2 dBm		Freq Offse 0 Ha
Transmit Freq Error	79.179	kHz	OBW P	ower	99.00 %			
x dB Bandwidth	15.26 N	MHz	x dB		-26	.00 dB		
NSG					STATU	s		

BW15 M_OBW_Middle Channel_16QAM_FullRB



RL RF 50 Q AC Center Freq 1.74500000 PASS	0 GHz #IFGain:Low	SENSE:INT Center Freq: 1.74500 Trig: Free Run #Atten: 20 dB	ALIGN AUTO 0000 GHz Avg Hold: 500/500	07:23:20 PM Feb 15, 2024 Radio Std: None Radio Device: BTS	Frequency
Ref Offset 27 dE 10 dB/div Ref 40.00 dB					
20.0					Center Fred 1.745000000 GH:
10.0	Masmowh	monsolwanterander	normany by		
-10.0	a ⁶		- Mr.		
20.0 30.0 Josephino and Market				topor my common what have	
40.0					CE Stor
Center 1.745 GHz #Res BW 300 kHz		#VBW 1.2 M	Hz	Span 30 MHz Sweep 1 ms	CF Step 3.000000 MHz <u>Auto</u> Mar
Occupied Bandwid	th 3.474 MI	Total Po	ower 29	2 dBm	Freq Offset 0 Hz
Transmit Freq Error	84.307 k		ower 9	9.00 %	
x dB Bandwidth	15.29 M	lHz x dB	-26	.00 dB	
ISG			STAT	US	

BW15 M_OBW_Middle Channel_64QAM_FullRB



Agilent Spectrum Analyzer - Occupied BW		SENSE:INT		ALIGN AUTO	12:45:58 PM Feb 15, 2024	
Center Freq 1.74500000 PASS	#IFGain:Low	Center Freq: 1.74		: 500/500	adio Std: None adio Device: BTS	Frequency
Ref Offset 27 dB 10 dB/div Ref 40.00 dBr	n			_		
200						Center Free 1.745000000 GH
10.0	manument	malation malater	walterano	m		
-10.0	<mark>با</mark>			- U		
20.0				hum	mannon	
-40.0						
Center 1.745 GHz					Span 30 MHz	CF Step 3.000000 MH
#Res BW 300 kHz		#VBW 1.3	2 MHz		Sweep 1 ms	<u>Auto</u> Mar
Occupied Bandwidth 13.507 MHz			l Power	27.4 d	Bm	Freq Offset 0 Hz
Transmit Freq Error	71.812 k	Hz OBW	Power	99.0	0 %	
x dB Bandwidth	14.96 M	IHz x dB		-26.00	dB	
MSG				STATUS		

BW15 M_OBW_Middle Channel_256QAM_FullRB



RL	um Analyzer - Occupie RF 50 Ω # eq 1.7450000	AC	Trig:	SENSE:INT Freq: 1.74500 Free Run n: 20 dB		ALIGN AUTO 500/500	07:25:58 Radio Sto Radio De		Frequency
0 dB/div	Ref Offset 27 Ref 40.00 c								
- og 30.0 20.0									Center Free 1.745000000 GH
10.0.		rener	where where	nangramlyse	gently the total and	wn			
0.00 10.0						hun	www.	March The March 100	
20.0 30.0	neral Martin Concernational	<i>,</i> //							
40.0									CF Ster
Center 1.7 #Res BW			#	VBW 1.6 N	1Hz			an 40 MHz eep 1 ms	4.000000 MH
	ied Bandw	idth		Total P		31.	1 dBm		Freq Offse
		17.980	MHz						0 H:
Transm	Transmit Freq Error 127.42			dz OBW Power			9.00 %		
x dB Ba	ndwidth	19.	56 MHz	x dB		-26	.00 dB		_
ISG						STATU	15		

BW20 M_OBW_Middle Channel_QPSK_FullRB



RL RF 50 Ω AC Center Freq 1.745000000 PASS	GHz #IFGain:Low	SENSE:INT Center Freq: 1.74 Trig: Free Run #Atten: 20 dB		ALIGN AUTO 500/500	07:25:06 Radio Std		Frequency
Ref Offset 27 dB 10 dB/div Ref 40.00 dBn	1						
-og 30.0 							Center Fred 1.745000000 GH
10.0	plandinghing	for the second					
×10.0	1			hand	6.1		
20.0 30.0 loguna film film film film film film film					Waln-Million of	http://www.	
-40.0 -50.0							CF Step
Center 1.745 GHz #Res BW 390 kHz		#VBW 1.0	6 MHz			n 40 MHz eep 1 ms	4.000000 MHz <u>Auto</u> Mar
	Occupied Bandwidth 17.957 MHz			30.2	dBm		Freq Offse 0 Ha
Transmit Freq Error	134.26 k	Hz OBW	OBW Power		99.00 %		
x dB Bandwidth	19.56 M	Hz x dB		-26.	00 dB		
ISG				STATUS	0		

BW20 M_OBW_Middle Channel_16QAM_FullRB



RL RF 50Ω AC Center Freq 1.745000000 PASS) GHz #IFGain:Low	SENSE:INT Center Freq: 1.74 Trig: Free Run #Atten: 20 dB	45000000 GHz Avg Hold	ALIGN AUTO	07:25:28 Radio Sto Radio Der		Frequency
Ref Offset 27 dB 10 dB/div Ref 40.00 dBr					_		
- og 30.0 							Center Fred 1.745000000 GH:
10.0	manomen	n man and a start and and and and and a start and a	edin the strategy and the state of the state	1			
-10.0	/			h.			
20.0				, h	-Art Concernants of	Mulinen live	
40.0							
50.0							CF Step 4.000000 MH
Center 1.745 GHz #Res BW 390 kHz		#VBW 1.	6 MHz			an 40 MHz eep 1 ms	<u>Auto</u> Mar
Occupied Bandwidt	Tota HZ	l Power	29.	1 dBm		Freq Offse 0 Ha	
Transmit Freq Error	150.51 I	Hz OBW	/ Power	9	9.00 %		
x dB Bandwidth	19.71 N	IHz x dB		-26	.00 dB		
MSG				STATU	JS		

BW20 M_OBW_Middle Channel_64QAM_FullRB



Agilent Spectrum Analyzer - Occupied BW		SENSE:INT A	LIGN AUTO 12:55:13 PM Feb 15	2024
Center Freq 1.745000000 PASS	- Irig	ter Freq: 1.745000000 GHz : Free Run Avg Hold: en: 20 dB	Radio Std: None	Frequency
Ref Offset 27 dB 10 dB/div Ref 40.00 dBm	1			
20.0				Center Free 1.745000000 GH
10.0	monorian	ment of the state		
10.0			h	
30.0 WyAltower man and			Hummunn	
50.0				CF Step
Center 1.745 GHz #Res BW 390 kHz		#VBW 1.6 MHz	Span 40 f Sweep 1	Auto MH MHz Auto Mai
Occupied Bandwidtl	ո .981 MHz	Total Power	27.5 dBm	Freq Offse 0 Hi
Transmit Freq Error	130.91 kHz	OBW Power	99.00 %	
x dB Bandwidth	19.58 MHz	x dB	-26.00 dB	
MSG			STATUS	

BW20 M_OBW_Middle Channel_256QAM_FullRB







BW1.4 M_PAR_Middle Channel_QPSK_FullRB







BW1.4 M_PAR_Middle Channel_16QAM_FullRB



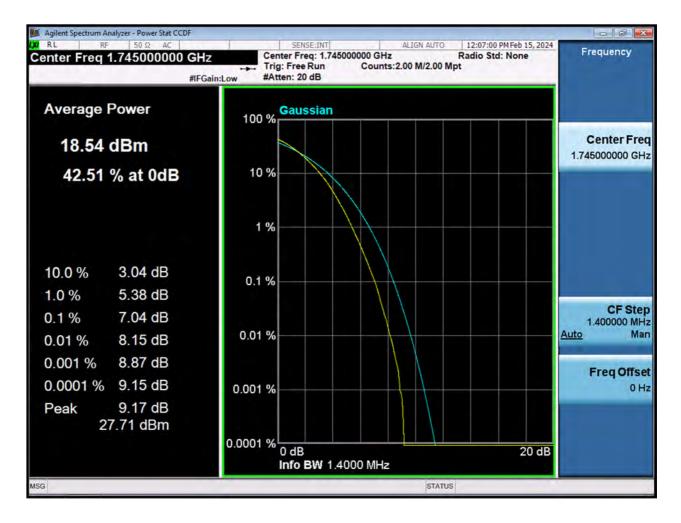




BW1.4 M_PAR_Middle Channel_64QAM_FullRB







BW1.4 M_PAR_Middle Channel_256QAM_FullRB



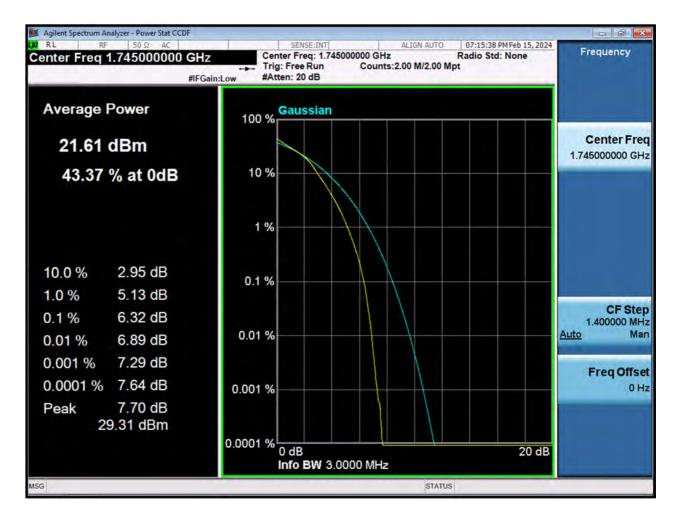




BW3 M_PAR_Middle Channel_QPSK_FullRB



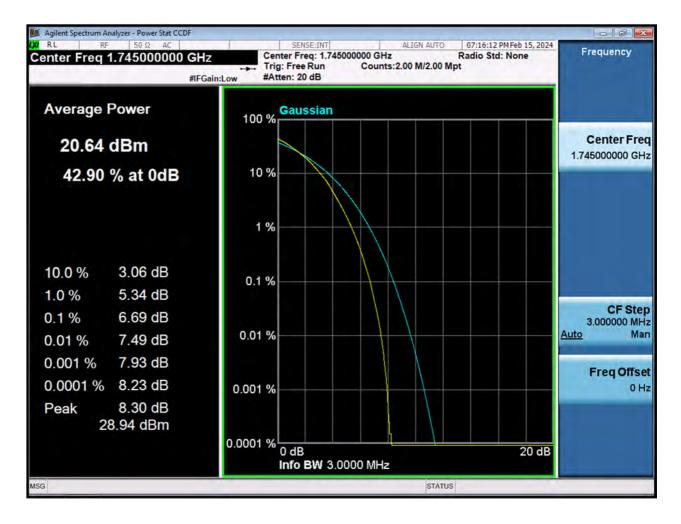




BW3 M_PAR_Middle Channel_16QAM_FullRB







BW3 M_PAR_Middle Channel_64QAM_FullRB







BW3 M_PAR_Middle Channel_256QAM_FullRB







BW5 M_PAR_Middle Channel_QPSK_FullRB







BW5 M_PAR_Middle Channel_16QAM_FullRB







BW5 M_PAR_Middle Channel_64QAM_FullRB







BW5 M_PAR_Middle Channel_256QAM_FullRB



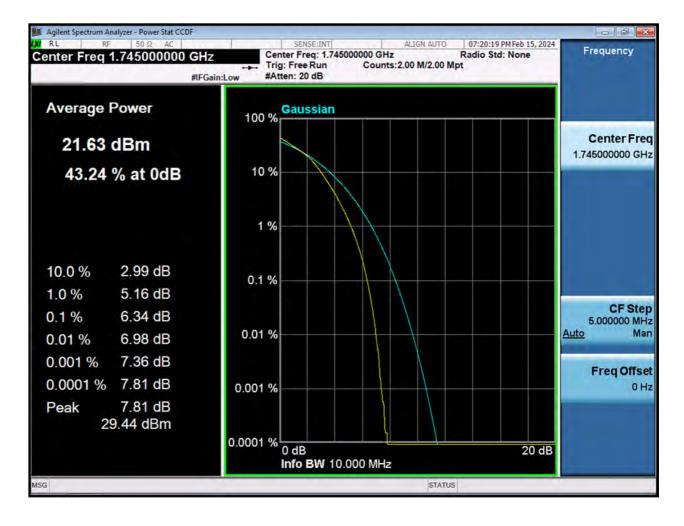




BW10 M_PAR_Middle Channelz_QPSK_FullRB



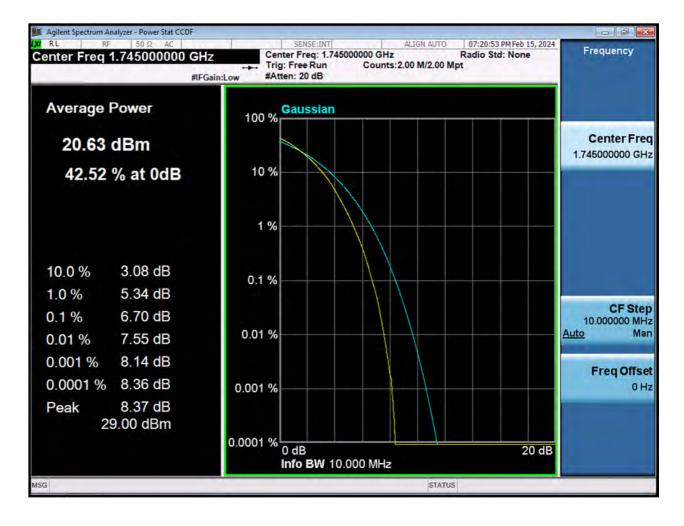




BW10 M_PAR_Middle Channel_16QAM_FullRB







BW10 M_PAR_Middle Channel_64QAM_FullRB





BW10 M_PAR_Middle Channel_256QAM_FullRB







BW15 M_PAR_Middle Channel_QPSK_FullRB







BW15 M_PAR_Middle Channel_16QAM_FullRB







BW15 M_PAR_Middle Channel_64QAM_FullRB



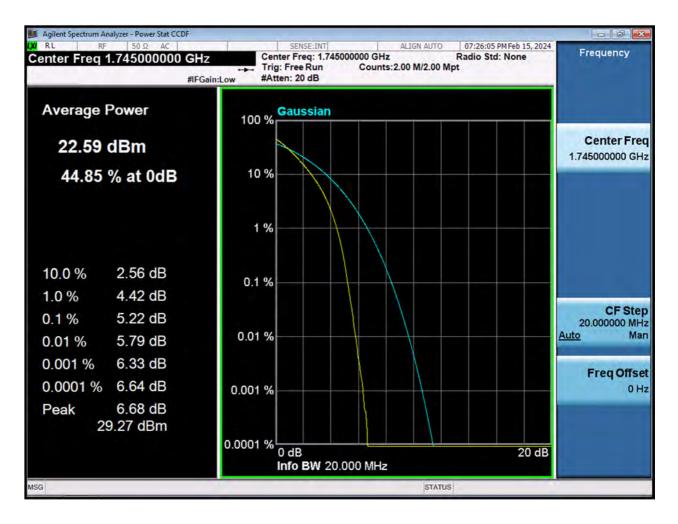












BW20 M_PAR_Middle Channel_QPSK_FullRB



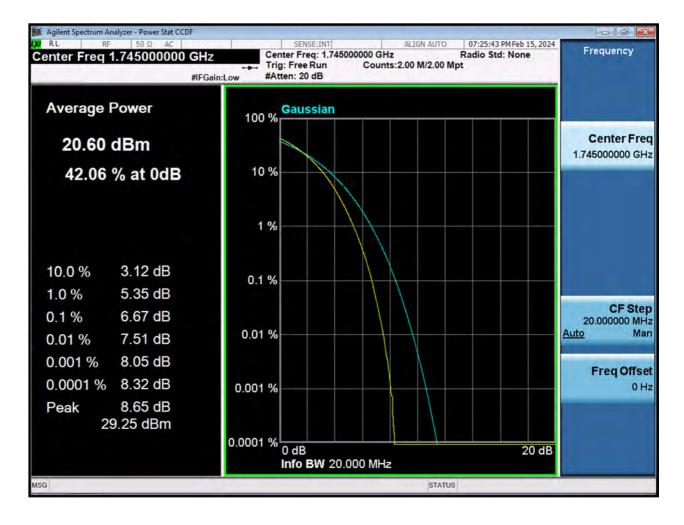




BW20 M_PAR_Middle Channel_16QAM_FullRB







BW20 M_PAR_Middle Channel_64QAM_FullRB







BW20 M_PAR_Middle Channel_256QAM_FullRB



- 6 ×							rum Analyzer -	
Frequency	2:04:43 PM Feb 15, 2024 TRACE 1 2 3 4 5 0 TYPE A WWWW DET A A A A A A	ALIGN AUTO	#Avg	Trig: Free Run #Atten: 20 dB	CHZ PNO: Fast ↔ IFGain:Low			ter Fre
Auto Tune	3.687 0 GHz 67.338 dBm	Mkr		WAIten: 20 db	IFGall:LOW		Ref 10.0	B/div
Center Freq 5.015000000 GHz								
Start Free 30.000000 MHz								
Stop Free 10.000000000 GH:	RMS							
CF Step 997.000000 MH	op 10.000 GHz ms (20001 pts)	Sweep 17.3		3.0 MHz	#VBV		Hz 1.0 MHz	t 30 M s BW 1
Auto Mar	FUNCTION VALUE	FUNCTION WIDTH	FUNCTION	Y -67.338 dBm	37 0 GHz	X 3 69	SCL	
Freq Offse 0 Ha	u.			-3.600 dBm	10 9 GHz	1.71	f	N 1
				m				
		STATUS						

BW1.4 M_CSE(30 M-10 G)_Lowest Channel_QPSK_1RB



- 6 🗙							Analyzer - Sw			
Frequency	7:52 PM Feb 15, 2024 TRACE 1 2 3 4 5 0 TYPE A WANNAWAY DET A A A A A A	ALIGN AUTO	#Avg	SENSE:IN	HZ PNO: Fast ↔	AC 00000 G				Cen
Auto Tune	695 0 GHz 7.301 dBm	Mkr		#Atten: 20 dB	Gain:Low		ef 10.00	R	B/div	
Center Fred 5.015000000 GHz							¢			-10.0
Start Free 30.000000 MH;										-30.0 -40.0 -50.0
Stop Free 10.000000000 GH	RMS							-		60.0 70.0 80,0
CF Step 997.000000 MH Auto Mai	o 10.000 GHz s (20001 pts)	Sweep 17.3		3.0 MHz	#VBV		MHz		rt 30 Is BV	
Freq Offse 0 H	INCTION VALUE	FUNCTION WIDTH	FUNCTION	Y -67.301 dBm -4.974 dBm	5 0 GHz 5 3 GHz	× 3.695 1.745		TRC SC 1 f 1 f		1 2 3 4 5 6
	,			m						7 8 9 10 11
		STATUS							-	ISG

BW1.4 M_CSE(30 M-10 G)_Middle Channel_QPSK_1RB



Fast + Trig: Free Run #Atten: 20 dB	#Avg Typ	oe: RMS Mkr1 3	10:13 PM Feb 15, 2024 TRACE 1 2 3 4 5 6 TYPE A AAAAAA 7,709 9 GHz 7,364 dBm	Frequency Auto Tune Center Freq 5.01500000 GHz Start Freq 30.000000 MHz Stop Freq
		Mkr1 3 _6	.709 9 GHz 57.364 dBm	Center Freq 5.015000000 GHz Start Freq 30.000000 MHz
			RMS	5.015000000 GH: Start Free 30.000000 MH:
*****			RMS	30.000000 MH:
			RMS	Stop Free
				10.000000000 GH
#VBW 3.0 MHz	s	Sto Sweep 17.33 n	p 10.000 GHz ns (20001 pts)	CF Step 997.000000 MH Auto Mar
Y Hz -67.364 dBm	FUNCTION FUI	NCTION WIDTH F	UNCTION VALUE	<u>Auto</u> Mai
Hz -4.455 dBm			1	Freq Offse 0 H
m				
	Y Iz -67,364 dBm Iz -4.455 dBm	Y FUNCTION FU Iz -67.364 dBm Iz -4.455 dBm	Y FUNCTION FUNCTION WDTH F Iz -67.364 dBm -67.	Y FUNCTION FUNCTION WIDTH FUNCTION VALUE 12 -67.364 dBm -67.364 dBm -67.364 dBm 12 -4.455 dBm -67.364 dBm -67.364 dBm

BW1.4 M_CSE(30 M-10 G)_Highest Channel_QPSK_1RB



Agilent Spectrum Analyzer - Swept S						- 6 🛛
ଅ RL ା ନ⊧ା 50 ହ Center Freq 5.015000	AC 000 GHz PNO: Fast ~ IFGain:Low	Trig: Free Run #Atten: 20 dB	#Avg	ALIGN AUTO Type: RMS	12:20:47 PM Feb 15, 2024 TRACE 1 2 3 4 5 0 TYPE A WWWWW DET A A A A A A	Frequency
10 dB/div Ref 10.00 dE				Mk	r1 3.680 0 GHz -67.013 dBm	Auto Tun
2 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.						Center Fre 5.015000000 GH
30 0 40 0 50 0						Start Fre 30.000000 MH
50.0 70.0 30.0					RMS	Stop Fre 10.00000000 GF
tart 30 MHz Res BW 1.0 MHz	#VB	W 3.0 MHz		Sweep 17	Stop 10.000 GHz 33 ms (20001 pts)	CF Ste 997.000000 MH Auto Ma
IKR MODE TRC SCL	X 3.680 0 GHz	-67.013 dBm	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	Auto Ma
2 N 1 f 3 4 5 6 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7 8 7	1.710 9 GHz	-3.627 dBm				Freq Offs 0 F
9 10 11 11		m				
SG				STATUS		

BW3 M_CSE(30 M-10 G)_Lowest Channel_QPSK_1RB



	m Analyzer - Swept SA						
Center Fre	q 5.015000000	PNO: Fast +	Trig: Free Rur	#Avg	ALIGN AUTO	12:23:38 PM Feb 15, 2024 TRACE 1 2 3 4 5 0 TYPE A WAWAWA	Frequency
10 dB/div	Ref 10.00 dBm	IFGain:Low	#Atten: 20 dB		Mk	r1 3.163 1 GHz -67.215 dBm	Auto Tune
-10.0							Center Fre 5.015000000 GH
30.0 40.0 50.0							Start Fre 30.000000 MH
60.0 70.0 80,0					<u> </u>	RMS	Stop Fre 10.00000000 GH
Start 30 MH Res BW 1.		#VB	W 3.0 MHz		Sweep 17	Stop 10.000 GHz .33 ms (20001 pts)	CF Ste 997.000000 MH
		.163 1 GHz	Y -67.215 dBm	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	<u>Auto</u> Ma
		.744 3 GHz	-4.584 dBm				Freq Offse 0 H
6 7 8 9							
11 			m				
SG					STATUS		

BW3 M_CSE(30 M-10 G)_Middle Channel_QPSK_1RB



Agilent Spectrum Analyzer - Swept SA			Sector Sector	- 6 ×
RL RF 50.0 AC Center Freq 5.015000000	CHZ PNO: Fast IFGain:Low #Atten: 20 dB	#Avg Type: RMS	12:25:59 PM Feb 15, 2024 TRACE 1 2 3 4 5 0 TYPE A WWWW DET A A A A A A A	Frequency
10 dB/div Ref 10.00 dBm		M	r1 3.709 9 GHz -67.095 dBm	Auto Tune
2 000 100 -200				Center Free 5.015000000 GH
30 0 40 0 50 0				Start Free 30.000000 MH
60.0 70.0 80.0			RMS	Stop Fre 10.000000000 GH
Start 30 MHz #Res BW 1.0 MHz	#VBW 3.0 MHz	Sweep 17	Stop 10.000 GHz .33 ms (20001 pts)	CF Ster 997.000000 MH Auto Mai
MKR MODE TRC SCL X 1 N 1 f 3. 2 N 1 f 1	Y 709 9 GHz -67.095 dBm 780 2 GHz -4.475 dBm	FUNCTION FUNCTION WIDTH	FUNCTION VALUE	<u>Auto</u> Mai
3 4 5 6 7 7 8 9	760 2 GHZ -4.473 dBm		E	Freq Offse 0 H
10 11 •	m	STATU		

BW3 M_CSE(30 M-10 G)_Highest Channel_QPSK_1RB



Agilent Spectrum Analyzer - Swept SA				_		- 6 ×
RL RF 50 Q AC Center Freq 5.015000000	PNO: Fast	Trig: Free Run #Atten: 20 dB		ALIGN AUTO Type: RMS	12:28:52 PM Feb 15, 202 TRACE 1 2 3 4 5 TYPE A WWWW DET A A A A A	Frequency
0 dB/div Ref 10.00 dBm	IFGain:Low	#Atten: 20 db		Mk	r1 3.703 9 GHz -67.168 dBm	Auto Tune
-og 0.00 10.0 20.0						Center Fre 5.015000000 GH
40.0						Start Fre 30.000000 MH
50 0 70 0 80 0	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~				RM	Stop Fre 10.000000000 GH
Start 30 MHz Res BW 1.0 MHz	#VB\	V 3.0 MHz		Sweep 17	Stop 10.000 GHz .33 ms (20001 pts	CF Ste 997.000000 MH Auto Ma
MKR MODE TRC SCL X 1 N 1 f 3. 2 N 1 f 1. 3 4 5	703 9 GHz 710 9 GHz	Y -67.168 dBm -3.821 dBm	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	Freq Offse
6 20 20 20 20 20 20 20 20 20 20 20 20 20						
sg		m		STATUS	•	

BW5 M_CSE(30 M-10 G)_Lowest Channel_QPSK_1RB



Agilent Spectrum Analyzer - Swept SA						- 6 💌
RL RF 50 Q AC Center Freq 5.015000000	O GHz PNO: Fast ↔ IFGain:Low	Trig: Free Run #Atten: 20 dB	#Avg	ALIGN AUTO Type: RMS	12:31:38 PM Feb 15, 2024 TRACE 1 2 3 4 5 6 TYPE A WWWW DET A A A A A A	Frequency
10 dB/div Ref 10.00 dBm	I Game Gw			Mk	r1 3.691 0 GHz -67.435 dBm	Auto Tune
Log 0.00 -10.0 -20.0						Center Freq 5.015000000 GHz
-30.0						Start Free 30.000000 MHz
-60 0 -70 0 -80 0					RMS	Stop Free 10.000000000 GH:
Start 30 MHz #Res BW 1.0 MHz	#VBW	/ 3.0 MHz		Sweep 17.	Stop 10.000 GHz 33 ms (20001 pts)	CF Step 997.000000 MH
MKR MODE TRC SCL X	3.691 0 GHz	Y -67.435 dBm	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	<u>Auto</u> Mar
2 N 1 f 1 3 4 5 6	1.743 3 GHz	-4.138 dBm			E.	Freq Offse 0 Ha
7 8 9 10 11		m				
ISG				STATUS		

BW5 M_CSE(30 M-10 G)_Middle Channel_QPSK_1RB