

TEST REPORT

FCC LTE B66(4) Test for SM-P625 Certification

APPLICANT SAMSUNG Electronics Co., Ltd.

REPORT NO. HCT-RF-2402-FC010-R1

DATE OF ISSUE February 20, 2024

> **Tested by** Jae Mun Do

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F-TP22-03(Rev.05)

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T E S T R E P O R T	REPORT NO. HCT-RF-2402-FC010-R1 DATE OF ISSUE February 20, 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	Tablet SM-P625
Date of Test	January 19, 2024 ~ February 07, 2024
FCC ID	A3LSMP625
Location of Test	■ Permanent Testing Lab □ On Site Testing (Address: 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi- do, Republic of Korea)
FCC Classification:	PCS Licensed Transmitter (PCB)
FCC Rule Part(s):	§ 27



REVISION HISTORY

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

Revision No.	Date of Issue	Description
0	February 16, 2024	Initial Release
1	February 20, 2024	Deleted the Additional Model

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).

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:	A3LSMP625			
Application Type:	Certification			
FCC Classification:	PCS Licensed Transmitter (PCB)			
FCC Rule Part(s):	§ 27			
EUT Type:	Tablet			
Model(s):	SM-P625			
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:	January 19, 2024 ~ February 07, 2024			
Serial number:	Radiated : R32WC0037FP Conducted : R32WC003BFW			



1.1. MAXIMUM OUTPUT POWER

		Emission Designator		EIRP	
Mode (MHz)	Tx Frequency (MHz)		Modulation	Max. Power (W)	Max. Power (dBm)
		1M10G7D	QPSK	0.307	24.87
	1710 7 1770 0	1M10W7D	16QAM	0.254	24.05
LTE – Band66/4 (1.4)	1710.7 – 1779.3	1M10W7D	64QAM	0.203	23.07
		1M10W7D	256QAM	0.099	19.97
		2M72G7D	QPSK	0.305	24.84
	1711 5 1770 5	2M73W7D	16QAM	0.259	24.14
LTE – Band66/4 (3)	1711.5 – 1778.5	2M71W7D	64QAM	0.204	23.09
		2M72W7D	256QAM	0.099	19.95
	1712.5 – 1777.5 –	4M55G7D	QPSK	0.309	24.90
		4M55W7D	16QAM	0.261	24.17
LTE – Band66/4 (5)		4M53W7D	64QAM	0.206	23.15
		4M51W7D	256QAM	0.100	20.01
	1715.0 – 1775.0 –	9M04G7D	QPSK	0.308	24.89
LTE D = dCC (4 (10))		9M00W7D	16QAM	0.259	24.13
LTE – Band66/4 (10)		9M02W7D	64QAM	0.204	23.09
		9M00W7D	256QAM	0.099	19.96
	1717 5 1770 5	13M5G7D	QPSK	0.306	24.86
		13M5W7D	16QAM	0.254	24.05
LTE – Band66/4 (15)	1717.5 – 1772.5	13M5W7D	64QAM	0.201	23.03
		13M4W7D	256QAM	0.099	19.97
		17M9G7D	QPSK	0.306	24.86
LTE Double C(4/20)	1720.0 – 1770.0 –	17M9W7D	16QAM	0.257	24.10
LTE – Band66/4 (20)		17M9W7D	64QAM	0.203	23.08
		17M9W7D	256QAM	0.098	19.92





2. INTRODUCTION

2.1. DESCRIPTION OF EUT

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

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;

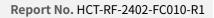
 P_{d} (dBm) = Pg (dBm) - cable loss (dB) + antenna gain (dB)

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)

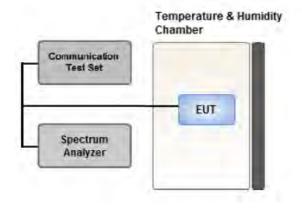
Where: P_{g} is the generator output power into the substitution antenna.

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:

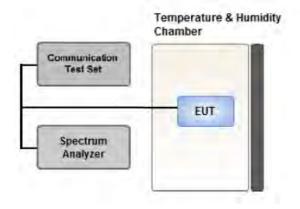
Set \geq [10 × (number of points in sweep) × (transmission period)] for single sweep

(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.
- 10. 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 EUT Spectrum Analyzer

3.6 SPURIOUS AND HARMONIC EMISSIONS AT ANTENNA TERMINAL

Test setup

Test Overview

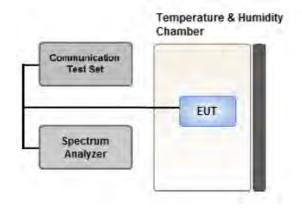
The level of the carrier and the various conducted spurious and harmonic frequencies is measured by means of a calibrated spectrum analyzer. The spectrum is scanned from the lowest frequency generated in the equipment up to a frequency including its 10th harmonic. All out of band emissions are measured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

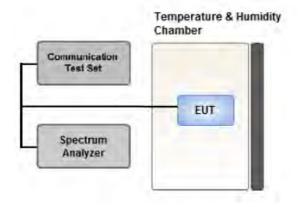
the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

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 : 5 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.

Test Description	Modulation	Bandwidth (MHz)	RB size	RB offset	Axis
		1.4	1	5	Y
	QPSK,	3	1	14	
Effective lectronic Dedicted Dever	16QAM,	5	1	24	
Effective Isotropic Radiated Power	64QAM,	10	1	49	Х
	256QAM	15	1	74	
		20	1	99	
Radiated Spurious and Harmonic Emissions	QPSK	5	1	24	Х

[Worst case]

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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	Bandwidt h (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	
		5	Low	1	0	
			High	1	24	
Band Edge		10	Low	1	0	
			High	1	49	
		15	Low	1	0	
			High	1	74	
		20	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	



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	02/22/2024	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	03/17/2024	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	C.L		El	RP
channel	Freq.(MHz)	Level (dBm)	Level (dBm)			Pol.	w	dBm
128	824.20	-21.37	38.40	-10.61	0.95	Н	0.483	26.84

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

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

2) During the test, the turn table is rotated until the maximum signal is found.

3) Record the field strength meter's level.

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

7.2 EIRP Sample Calculation

Ch.	/ Freq.	Measured	Substitute Ant. Gain				EI	RP
channel	Freq.(MHz)	Level (dBm)	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	<u> </u>	Del	Limit	Ell	RP
(MHz)	Bandwidth	Modulation	Level (dBm)	Level (dBm)	(dBi)	C.L	Pol	W	W	dBm
		QPSK	-17.81	15.92	9.94	2.24	Н		0.230	23.62
1710 7		16-QAM	-18.58	15.15	9.94	2.24	Н		0.193	22.85
1710.7		64-QAM	-19.57	14.16	9.94	2.24	Н		0.153	21.86
		256-QAM	-22.67	11.06	9.94	2.24	Н		0.075	18.76
		QPSK	-17.23	16.45	10.15	2.15 H		0.279	24.45	
1745 0		LTE B66/B4	16-QAM	-18.03	15.65	10.15	2.15	Н	. 1 00	
1745.0	1.4 MHz	64-QAM	-18.97	14.71	10.15	2.15	Н	< 1.00		22.71
		256-QAM	-22.14	11.54	10.15	2.15	Н		0.090	19.54
		QPSK	-16.77	16.92	10.21	2.26	Н		0.307	24.87
1770.0		16-QAM	-17.59	16.10	10.21	2.26	Н		0.254	24.05
1779.3		64-QAM	-18.57	15.12	10.21	2.26	Н		0.203	23.07
	_	256-QAM	-21.67	12.02	10.21	2.26	Н		0.099	19.97

Freq	Mod/	M - J.J. +	Measured	Substitute	Ant. Gain		D -1	Limit	EI	RP
(MHz)	Bandwidth	Modulation	Level (dBm)	Level (dBm)	(dBi)	C.L	Pol	w	W	dBm
		QPSK	-17.76	15.97	9.94	2.24	Н		0.233	23.67
1711 5		16-QAM	-18.50	15.23	9.94	2.24	Н		0.196	22.93
1711.5	1711.5	64-QAM	-19.54	14.19	9.94	2.24	Н		0.154	21.89
		256-QAM	-22.67	11.06	9.94	2.24	Н		0.075	18.76
		QPSK	-17.21	16.47	10.15	2.15	Н		0.280	24.47
1745 0	LTE B66/B4	16-QAM	-17.97	15.71	10.15	2.15	Н	< 1.00		23.71
1745.0	3 MHz	64-QAM	-19.00	14.68	10.15	2.15	Н	-< 1.00		22.68
		256-QAM	-22.11	11.57	10.15	2.15	Н		0.091	19.57
		QPSK	-16.80	16.89	10.21	2.26	Н		0.305	24.84
1770 E		16-QAM	-17.50	16.19	10.21	2.26	Н		0.259	24.14
1778.5		64-QAM	-18.55	15.14	10.21	2.26	Н		0.204	23.09
		256-QAM	-21.69	12.00	10.21	2.26	Н		0.099	19.95



Freq	Mod/	NA	Measured	Substitute	Ant. Gain		D-1	Limit	Ell	RP
(MHz)	Bandwidth	Modulation	Level (dBm)	Level (dBm)	(dBi)	C.L	Pol	W	W	dBm
		QPSK	-17.60	16.13	9.94	2.24	Н		0.242	23.83
1712 5		16-QAM	-18.45	15.28	9.94	2.24	Н		0.199	22.98
1712.5		64-QAM	-19.40	14.33	9.94	2.24	Н		0.160	22.03
		256-QAM	-22.54	11.19	9.94	2.24	Н		0.077	18.89
	LTE B66/B4	QPSK	-17.20	16.48	10.15	2.15	Н		0.281	24.48
1745.0		16-QAM	-18.02	15.66	10.15	2.15	Н	. 1 00		23.66
1745.0	5 MHz	64-QAM	-19.03	14.65	10.15	2.15	Н	< 1.00	0.184	22.65
		256-QAM	-22.13	11.55	10.15	2.15	Н		0.090	19.55
		QPSK	-16.74	16.95	10.21	2.26	Н		0.309	24.90
1777 5		16-QAM	-17.47	16.22	10.21	2.26	Н		0.261	24.17
1777.5		64-QAM	-18.49	15.20	10.21	2.26	Н		0.206	23.15
		256-QAM	-21.63	12.06	10.21	2.26	Н		0.100	20.01

Freq	Mod/	NA - J. J. +	Measured	Substitute	Ant. Gain	<u> </u>	D-1	Limit	EI	RP
(MHz)	Bandwidth	Modulation	Level (dBm)	Level (dBm)	(dBi)	C.L	Pol	W	W	dBm
1715.0		QPSK	-17.51	16.13	9.98	2.23	Н		0.244	23.87
		16-QAM	-18.30	15.34	9.98	2.23	Н		0.203	23.08
1715.0		64-QAM	-19.30	14.34	9.98	2.23	Н		0.161	22.08
		256-QAM	-22.45	11.19	9.98	2.23	Н		0.078	18.93
		QPSK	-17.14	16.54	10.15	2.15	Н		0.285	24.54
1745 0	LTE B66/B4	16-QAM	-17.91	15.77	10.15	2.15	Н	< 1.00		23.77
1745.0	10 MHz	64-QAM	-18.89	14.79	10.15	2.15	Н	< 1.00		22.79
		256-QAM	-22.07	11.61	10.15	2.15	Н		0.092	19.61
		QPSK	-16.72	16.93	10.21	2.25	Н		0.308	24.89
1775 0		16-QAM	-17.48	16.17	10.21	2.25	Н		0.259	24.13
1775.0		64-QAM	-18.52	15.13	10.21	2.25	Н		0.204	23.09
	_	256-QAM	-21.65	12.00	10.21	2.25	Н		0.099	19.96



Freq	Mod/	M - J. J - 42	Measured	Substitute	Ant. Gain		D.I	Limit	EI	RP
(MHz)	Bandwidth	Modulation	Level (dBm)	Level (dBm)	(dBi)	C.L	Pol	W	W	dBm
		QPSK	-17.39	16.25	10.01	2.22	Н		0.254	24.04
1717 5		16-QAM	-18.22	15.42	10.01	2.22	Н		0.209	23.21
1717.5		64-QAM	-19.13	14.51	10.01	2.22	Н		0.170	22.30
		256-QAM	-22.27	11.37	10.01	2.22	Н		0.082	19.16
		QPSK	-17.05	16.63	10.15	2.15	Н		0.290	24.63
1745.0	LTE B66/B4	16-QAM	-17.84	15.84	10.15	2.15	Н	- 1 00		23.84
1745.0	15 MHz	64-QAM	-18.82	14.86	10.15	2.15	Н	< 1.00		22.86
		256-QAM	-21.99	11.69	10.15	2.15	Н		0.093	19.69
		QPSK	-16.72	16.89	10.20	2.23	Н		0.306	24.86
1772 5		16-QAM	-17.53	16.08	10.20	2.23	Н		0.254	24.05
1772.5		64-QAM	-18.55	15.06	10.20	2.23	Н		0.201	23.03
		256-QAM	-21.61	12.00	10.20	2.23	Н		0.099	19.97

Freq	Mod/	N - J. J. +	Measured	Substitute	Ant. Gain	<u> </u>	D.I	Limit	EI	RP
(MHz)	Bandwidth	Modulation	Level (dBm)	Level (dBm)	(dBi)	C.L	Pol	w	W	dBm
		QPSK	-17.34	16.17	10.01	2.22	Н		0.249	23.96
1700.0		16-QAM	-18.06	15.45	10.01	2.22	Н		0.211	23.24
1720.0		64-QAM	-19.08	14.43	10.01	2.22	Н		0.167	22.22
		256-QAM	-22.25	11.26	10.01	2.22	Н		0.080	19.05
		QPSK	-17.06	16.62	10.15	2.15	Н		0.290	24.62
1745.0	LTE B66/B4	16-QAM	-17.84	15.84	10.15	2.15	Н	- 1 00		23.84
1745.0	20 MHz	64-QAM	-18.85	14.83	10.15	2.15	Н	< 1.00		22.83
		256-QAM	-22.03	11.65	10.15	2.15	Н		0.092	19.65
		QPSK	-16.72	16.89	10.20	2.23	Н		0.306	24.86
1770.0		16-QAM	-17.48	16.13	10.20	2.23	Н		0.257	24.10
1770.0		64-QAM	-18.50	15.11	10.20	2.23	Н		0.203	23.08
		256-QAM	-21.66	11.95	10.20	2.23	Н	1	0.098	19.92



8.2 RADIATED SPURIOUS EMISSIONS

OPERATING FREQUENCY:	1777.5 MHz
MEASURED OUTPUT POWER:	24.90 dBm = 0.309 W
MODE:	LTE B66/B4
MODULATION SIGNAL:	5 MHz QPSK
DISTANCE:	<u>3 meters</u>
LIMIT: 43 + 10 log10 (W) =	37.90 dBc

Ch	Freq (MHz)	Measured Level (dBm)	Ant. Gain (dBi)	Substitute Level (dBm)	C.L	Pol	Result (dBm)	dBc
	3 425.00	-55.74	12.43	-62.42	3.06	V	-53.05	77.95
131997 (1712.5)	5 137.50	-57.66	12.35	-54.91	3.92	V	-46.48	71.38
(1112:0)	6 850.00	-57.36	11.90	-50.88	4.49	Н	-43.47	68.37
	3 490.00	-55.65	12.34	-61.66	3.08	Н	-52.40	77.30
132322 (1745.0)	5 235.00	-55.90	12.84	-54.98	3.95	V	-46.09	70.99
()	6 980.00	-56.75	11.40	-49.14	4.56	Н	-42.30	67.20
	3 555.00	-55.78	12.34	-61.46	3.24	Н	-52.35	77.25
132647 (1777.5)	5 332.50	-55.58	13.08	-55.06	3.95	Н	-45.93	70.83
	7 110.00	-57.50	10.86	-48.75	4.58	Н	-42.47	67.36



8.3 PEAK-TO-AVERAGE RATIO

Band	Band Width	Frequency (MHz)	Modulation	Resource Block Size	Resource Block Offset	Data (dB)
			QPSK			5.68
	1 4 1411-		16-QAM	C		6.24
	1.4 MHz		64-QAM	6		6.35
			256-QAM			6.15
			QPSK			5.71
	2 1411-		16-QAM	15		6.35
	3 MHz		64-QAM	15		6.41
			256-QAM			6.22
			QPSK			5.61
			16-QAM	25 64-QAM 56-QAM		6.40
	5 MHz		64-QAM			6.43
CC 14			256-QAM		6.17	
66/4		1745.0	QPSK		0	5.70
	10 141		16-QAM	50		6.36
	10 MHz		64-QAM	50		6.44
			256-QAM			6.21
			QPSK			5.61
	15 141-		16-QAM	75		6.35
	15 MHz		64-QAM	75		6.42
			256-QAM			6.19
			QPSK			5.60
	20.1411		16-QAM	100		6.37
	20 MHz		64-QAM	100		6.46
			256-QAM			6.27

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			1.0970
	1 4 1411-		16-QAM	6		1.0996
	1.4 MHz		64-QAM			1.0979
			256-QAM			1.0976
			QPSK			2.7169
	2 MUL		16-QAM	15		2.7293
	3 MHz	z 1745.0 Iz	64-QAM	15		2.7066
			256-QAM			2.7145
	5 MHz		QPSK	25		4.5473
			16-QAM			4.5449
			64-QAM			4.5307
			256-QAM		0	4.5089
66/4			QPSK	50	0	9.0364
	10 MHz		16-QAM			9.0008
			64-QAM			9.0158
			256-QAM			9.0008
			QPSK			13.471
	15 MIL-		16-QAM	75		13.477
	15 MHz		64-QAM	75		13.482
			256-QAM			13.440
			QPSK			17.915
	20 1411		16-QAM		17.889	
	20 MHz		64-QAM	100		17.919
						17.940

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	3.6880	27.976	-66.895	-38.919		
	1.4	1745.0	3.7074	27.976	-67.188	-39.212		
		1779.3	3.7010	27.976	-67.163	-39.187		
		1711.5	3.7029	27.976	-67.190	-39.214		
	3	3	1745.0	3.6970	27.976	-66.997	-39.021	
		1778.5	3.7029	27.976	-67.113	-39.137		
	5	1712.5	3.6780	27.976	-67.394	-39.418		
		1745.0	3.6805	27.976	-67.320	-39.344		
CC / A		1777.5	3.6925	27.976	-66.787	-38.811	12.00	
66/4	10	1715.0	3.6795	27.976	-67.011	-39.035	-13.00	
		1745.0	3.7059	27.976	-66.987	-39.011		
		1775.0	3.7024	27.976	-67.060	-39.084		
		1717.5	3.6740	27.976	-67.263	-39.287		
	15	1745.0	3.6735	27.976	-67.085	-39.109		
		1772.5	3.6810	27.976	-66.810	-38.834		
		1720.0	3.7084	27.976	-67.111	-39.135		
	20	1745.0	3.6900	27.976	-67.284	-39.308		
		1770.0	3.6955	27.976	-66.797	-38.821		

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

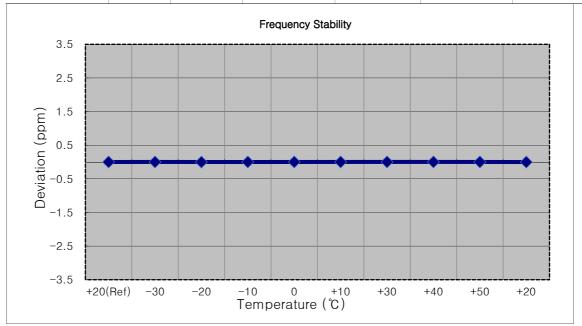
- Plots of the EUT's Band Edge are shown Page 51 ~ 86.



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

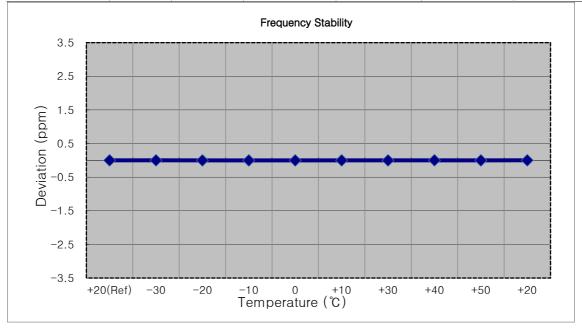
Voltage	Power	Temp.	Frequency	Frequency	Deviation	
(%)	(VDC)	(°C)	(Hz)	Error (Hz)	(%)	ppm
100 %		+20(Ref)	1710 699 998	0.0	0.000 000	0.000
100 %		-30	1710 700 000	2.1	0.000 000	0.001
100 %	3.850	-20	1710 699 995	-3.0	0.000 000	-0.002
100 %		-10	1710 700 000	2.1	0.000 000	0.001
100 %		0	1710 700 001	3.5	0.000 000	0.002
100 %		+10	1710 700 000	1.7	0.000 000	0.001
100 %		+30	1710 700 001	3.3	0.000 000	0.002
100 %		+40	1710 700 001	3.0	0.000 000	0.002
100 %		+50	1710 700 001	2.6	0.000 000	0.002
Batt. Endpoint	3.400	+20	1710 699 995	-2.5	0.000 000	-0.001





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

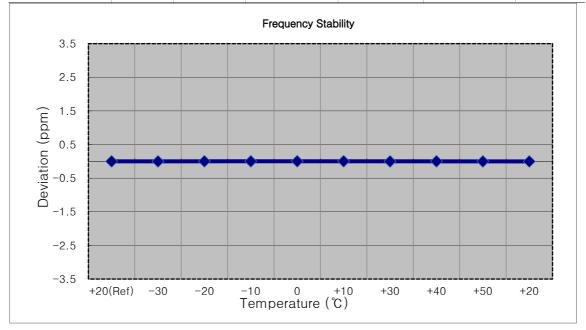
Voltage	Power	Temp.	Frequency	Frequency	Deviation	
(%)	(VDC)	(°C)	(Hz)	Error (Hz)	(%)	- ppm
100 %		+20(Ref)	1711 500 003	0.0	0.000 000	0.000
100 %		-30	1711 500 004	1.3	0.000 000	0.001
100 %	-	-20	1711 500 000	-2.1	0.000 000	-0.001
100 %		-10	1711 500 000	-2.8	0.000 000	-0.002
100 %	3.850	0	1711 500 000	-2.8	0.000 000	-0.002
100 %		+10	1711 500 001	-1.5	0.000 000	-0.001
100 %		+30	1711 500 000	-2.3	0.000 000	-0.001
100 %		+40	1711 500 006	3.3	0.000 000	0.002
100 %		+50	1711 500 001	-1.8	0.000 000	-0.001
Batt. Endpoint	3.400	+20	1711 500 005	2.6	0.000 000	0.002





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 499 997	0.0	0.000 000	0.000
100 %		-30	1712 499 996	-1.6	0.000 000	-0.001
100 %	3.850	-20	1712 499 999	1.8	0.000 000	0.001
100 %		-10	1712 500 000	2.5	0.000 000	0.001
100 %		0	1712 500 003	5.5	0.000 000	0.003
100 %		+10	1712 500 001	3.9	0.000 000	0.002
100 %	-	+30	1712 499 995	-2.5	0.000 000	-0.001
100 %		+40	1712 500 000	2.3	0.000 000	0.001
100 %		+50	1712 499 994	-3.2	0.000 000	-0.002
Batt. Endpoint	3.400	+20	1712 499 994	-3.8	0.000 000	-0.002

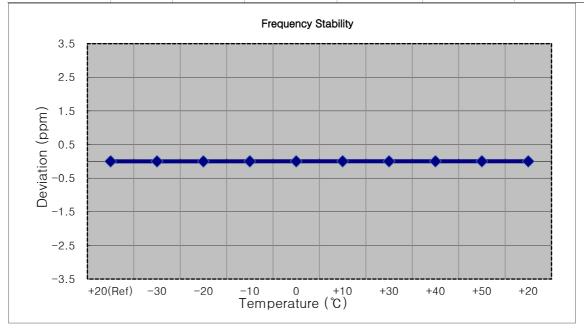


F-TP22-03 (Rev. 05)



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)	1714 999 998	0.0	0.000 000	0.000
100 %		-30	1714 999 996	-1.1	0.000 000	-0.001
100 %		-20	1714 999 996	-1.8	0.000 000	-0.001
100 %		-10	1715 000 000	2.4	0.000 000	0.001
100 %	3.850	0	1715 000 000	2.5	0.000 000	0.001
100 %		+10	1715 000 000	2.9	0.000 000	0.002
100 %		+30	1715 000 001	3.1	0.000 000	0.002
100 %		+40	1714 999 999	1.9	0.000 000	0.001
100 %		+50	1715 000 001	3.2	0.000 000	0.002
Batt. Endpoint	3.400	+20	1715 000 000	2.4	0.000 000	0.001



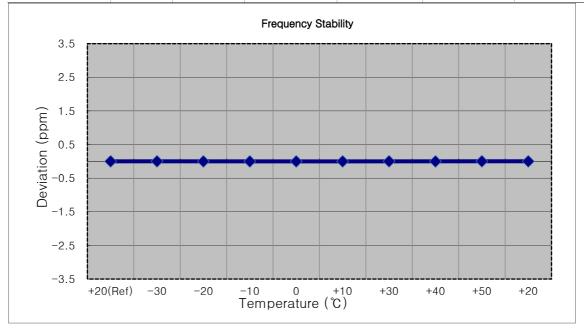
F-TP22-03 (Rev. 05)

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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	ppm
(%)	(VDC)	(°C)	(Hz)	Error (Hz)	(%)	
100 %	3.850	+20(Ref)	1717 499 997	0.0	0.000 000	0.000
100 %		-30	1717 499 998	1.5	0.000 000	0.001
100 %		-20	1717 499 994	-2.5	0.000 000	-0.001
100 %		-10	1717 499 995	-2.1	0.000 000	-0.001
100 %		0	1717 499 995	-2.1	0.000 000	-0.001
100 %		+10	1717 499 994	-2.5	0.000 000	-0.001
100 %		+30	1717 500 000	3.2	0.000 000	0.002
100 %		+40	1717 499 993	-3.7	0.000 000	-0.002
100 %		+50	1717 500 000	3.2	0.000 000	0.002
Batt. Endpoint	3.400	+20	1717 499 999	2.4	0.000 000	0.001

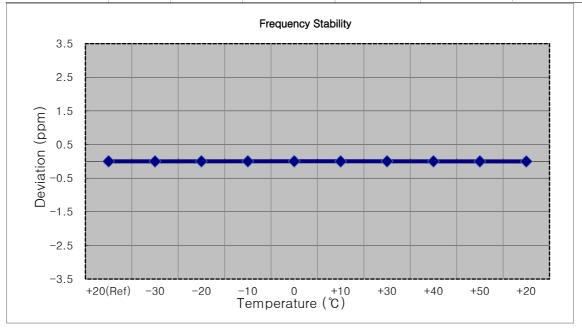


F-TP22-03 (Rev. 05)



MODE:	LTE 66/4
OPERATING FREQUENCY:	1720,000,000 Hz
CHANNEL:	132072 (20 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)	1720 000 003	0.0	0.000 000	0.000
100 %		-30	1720 000 001	-2.1	0.000 000	-0.001
100 %		-20	1720 000 005	1.6	0.000 000	0.001
100 %		-10	1720 000 005	2.1	0.000 000	0.001
100 %	3.850	0	1720 000 006	2.7	0.000 000	0.002
100 %		+10	1720 000 001	-1.8	0.000 000	-0.001
100 %		+30	1720 000 006	2.9	0.000 000	0.002
100 %		+40	1720 000 005	2.4	0.000 000	0.001
100 %		+50	1720 000 001	-2.4	0.000 000	-0.001
Batt. Endpoint	3.400	+20	1720 000 000	-3.3	0.000 000	-0.002

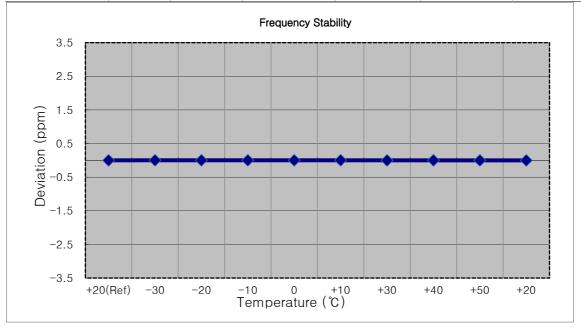


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MODE:	LTE 66/4
OPERATING FREQUENCY:	1745,000,000 Hz
CHANNEL:	<u>132322 (1.4 MHz)</u>
REFERENCE VOLTAGE:	3.850 VDC
DEVIATION LIMIT:	Emission must remain in band

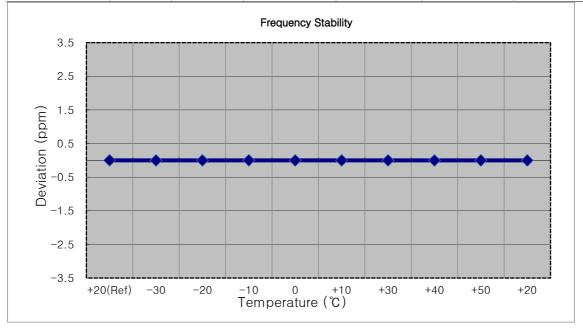
Voltage	Power	Temp.	Frequency	Frequency	Deviation	
(%)	(VDC)	(°C)	(Hz)	Error (Hz)	(%)	ppm
100 %		+20(Ref)	1745 000 004	0.0	0.000 000	0.000
100 %		-30	1745 000 008	3.8	0.000 000	0.002
100 %	-	-20	1745 000 006	1.8	0.000 000	0.001
100 %		-10	1745 000 006	1.9	0.000 000	0.001
100 %	3.850	0	1745 000 006	2.1	0.000 000	0.001
100 %		+10	1745 000 007	2.8	0.000 000	0.002
100 %	-	+30	1745 000 001	-2.9	0.000 000	-0.002
100 %		+40	1745 000 006	2.5	0.000 000	0.001
100 %		+50	1745 000 002	-2.1	0.000 000	-0.001
Batt. Endpoint	3.400	+20	1745 000 001	-2.7	0.000 000	-0.002





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

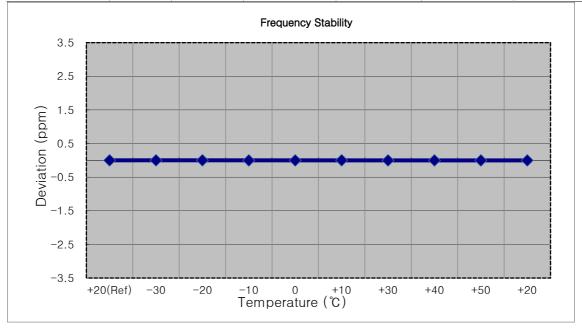
Voltage	Power	Temp.	Frequency	Frequency	Deviation	
(%)	(VDC)	(°C)	(Hz)	Error (Hz)	(%)	ppm
100 %		+20(Ref)	1744 999 997	0.0	0.000 000	0.000
100 %		-30	1744 999 995	-2.5	0.000 000	-0.001
100 %		-20	1744 999 994	-2.9	0.000 000	-0.002
100 %		-10	1745 000 001	3.4	0.000 000	0.002
100 %	3.850	0	1744 999 994	-3.0	0.000 000	-0.002
100 %		+10	1744 999 995	-2.4	0.000 000	-0.001
100 %		+30	1744 999 995	-2.7	0.000 000	-0.002
100 %		+40	1744 999 994	-3.3	0.000 000	-0.002
100 %		+50	1744 999 995	-2.7	0.000 000	-0.002
Batt. Endpoint	3.400	+20	1744 999 994	-2.8	0.000 000	-0.002





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

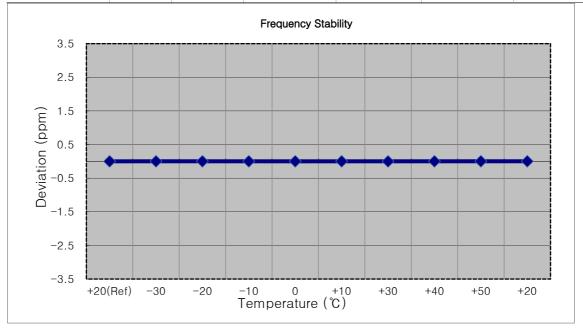
Voltage	Power	Temp.	Frequency	Frequency	Deviation	
(%)	(VDC)	(°C)	(Hz)	Error (Hz)	(%)	- ppm
100 %		+20(Ref)	1745 000 003	0.0	0.000 000	0.000
100 %		-30	1745 000 006	2.5	0.000 000	0.001
100 %		-20	1745 000 006	3.0	0.000 000	0.002
100 %		-10	1745 000 000	-2.8	0.000 000	-0.002
100 %	3.850	0	1745 000 000	-2.9	0.000 000	-0.002
100 %		+10	1745 000 007	3.8	0.000 000	0.002
100 %	-	+30	1745 000 001	-2.6	0.000 000	-0.001
100 %	-	+40	1745 000 000	-2.8	0.000 000	-0.002
100 %		+50	1745 000 000	-3.3	0.000 000	-0.002
Batt. Endpoint	3.400	+20	1745 000 000	-2.7	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

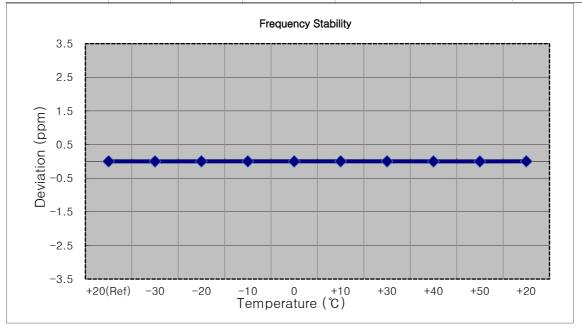
Voltage	Power	Temp.	Frequency	Frequency	Deviation	
(%)	(VDC)	(°C)	(Hz)	Error (Hz)	(%)	ppm
100 %		+20(Ref)	1745 000 003	0.0	0.000 000	0.000
100 %		-30	1745 000 005	2.1	0.000 000	0.001
100 %	-	-20	1745 000 004	1.9	0.000 000	0.001
100 %		-10	1745 000 005	2.3	0.000 000	0.001
100 %	3.850	0	1745 000 005	2.1	0.000 000	0.001
100 %		+10	1745 000 004	1.6	0.000 000	0.001
100 %	-	+30	1745 000 000	-2.6	0.000 000	-0.001
100 %		+40	1745 000 005	2.4	0.000 000	0.001
100 %		+50	1745 000 006	3.7	0.000 000	0.002
Batt. Endpoint	3.400	+20	1745 000 006	3.0	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 000 002	0.0	0.000 000	0.000
100 %		-30	1745 000 000	-2.7	0.000 000	-0.002
100 %		-20	1745 000 004	1.9	0.000 000	0.001
100 %		-10	1745 000 004	2.2	0.000 000	0.001
100 %	3.850	0	1745 000 001	-1.7	0.000 000	-0.001
100 %		+10	1745 000 004	2.0	0.000 000	0.001
100 %		+30	1745 000 004	2.1	0.000 000	0.001
100 %		+40	1745 000 000	-2.3	0.000 000	-0.001
100 %		+50	1744 999 999	-3.2	0.000 000	-0.002
Batt. Endpoint	3.400	+20	1745 000 004	1.5	0.000 000	0.001

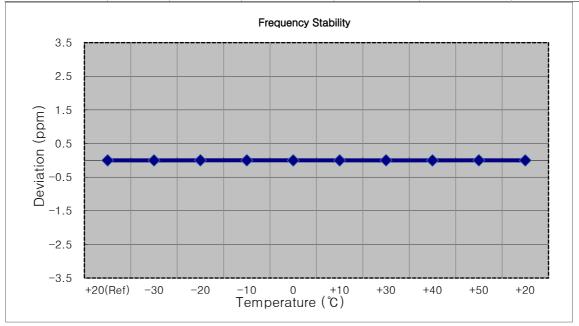


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MODE:	LTE 66/4
OPERATING FREQUENCY:	1745,000,000 Hz
CHANNEL:	<u>132322 (20 MHz)</u>
REFERENCE VOLTAGE:	3.850 VDC
DEVIATION LIMIT:	Emission must remain in band

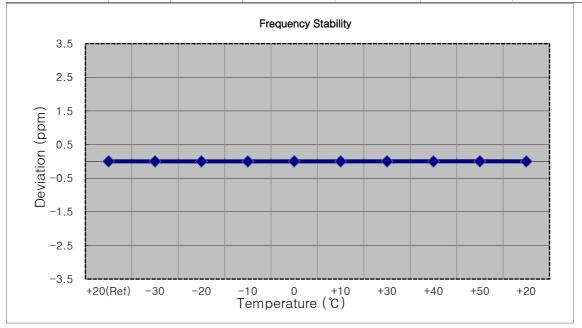
Voltage	Power	Temp.	Frequency	Frequency	Deviation	
(%)	(VDC)	(°C)	(Hz)	Error (Hz)	(%)	ppm
100 %		+20(Ref)	1745 000 002	0.0	0.000 000	0.000
100 %		-30	1744 999 999	-2.8	0.000 000	-0.002
100 %		-20	1745 000 004	2.0	0.000 000	0.001
100 %		-10	1745 000 004	2.2	0.000 000	0.001
100 %	3.850	0	1744 999 999	-2.8	0.000 000	-0.002
100 %		+10	1745 000 000	-1.9	0.000 000	-0.001
100 %	-	+30	1745 000 005	3.4	0.000 000	0.002
100 %		+40	1744 999 998	-3.9	0.000 000	-0.002
100 %		+50	1745 000 004	1.7	0.000 000	0.001
Batt. Endpoint	3.400	+20	1745 000 001	-1.5	0.000 000	-0.001





MODE:	LTE 66/4
OPERATING FREQUENCY:	1779,300,000 Hz
CHANNEL:	132665 (1.4 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)	1779 299 998	0.0	0.000 000	0.000
100 %		-30	1779 299 995	-2.6	0.000 000	-0.001
100 %		-20	1779 299 993	-5.0	0.000 000	-0.003
100 %		-10	1779 299 995	-3.2	0.000 000	-0.002
100 %	3.850	0	1779 300 001	2.6	0.000 000	0.001
100 %		+10	1779 299 995	-3.5	0.000 000	-0.002
100 %		+30	1779 300 001	2.5	0.000 000	0.001
100 %		+40	1779 299 995	-3.3	0.000 000	-0.002
100 %		+50	1779 300 001	3.3	0.000 000	0.002
Batt. Endpoint	3.400	+20	1779 299 996	-2.3	0.000 000	-0.001

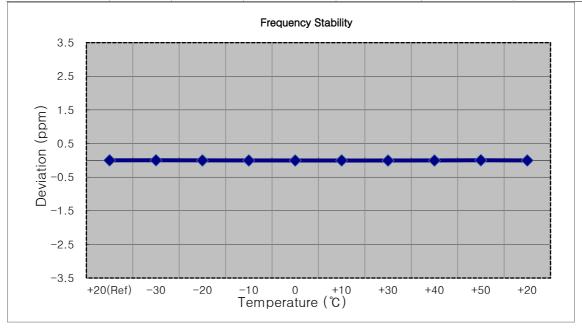


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MODE:	LTE 66/4
OPERATING FREQUENCY:	1778,500,000 Hz
CHANNEL:	<u>132657 (3 MHz)</u>
REFERENCE VOLTAGE:	3.850 VDC
DEVIATION LIMIT:	Emission must remain in band

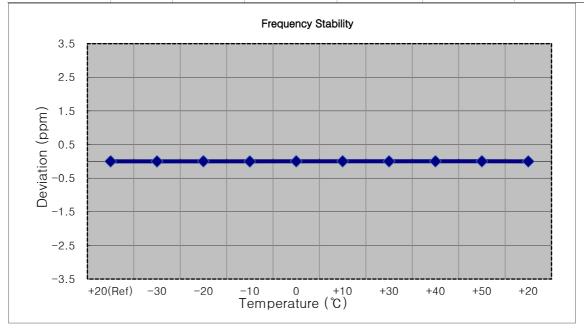
Voltage	Power	Temp.	Frequency	Frequency	Deviation	
(%)	(VDC)	(°C)	(Hz)	Error (Hz)	(%)	ppm
100 %		+20(Ref)	1778 499 991	0.0	0.000 000	0.000
100 %		-30	1778 499 995	4.5	0.000 000	0.003
100 %	-	-20	1778 499 985	-5.4	0.000 000	-0.003
100 %		-10	1778 499 985	-6.2	0.000 000	-0.003
100 %	3.850	0	1778 499 983	-7.7	0.000 000	-0.004
100 %		+10	1778 499 986	-5.2	0.000 000	-0.003
100 %	-	+30	1778 499 982	-8.8	0.000 000	-0.005
100 %	-	+40	1778 499 982	-8.8	0.000 000	-0.005
100 %		+50	1778 499 996	5.0	0.000 000	0.003
Batt. Endpoint	3.400	+20	1778 499 985	-5.7	0.000 000	-0.003





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

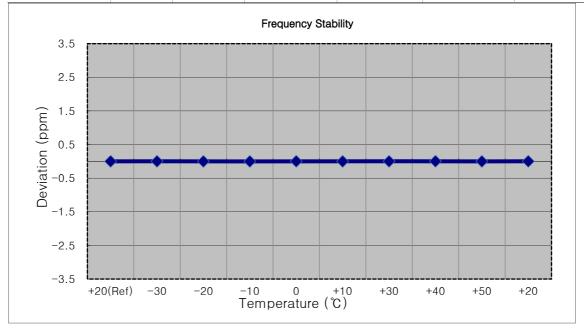
Voltage	Power	Temp.	Frequency	Frequency	Deviation	
(%)	(VDC)	(°C)	(Hz)	Error (Hz)	(%)	ppm
100 %		+20(Ref)	1777 499 997	0.0	0.000 000	0.000
100 %		-30	1777 499 995	-2.3	0.000 000	-0.001
100 %	-	-20	1777 500 001	4.3	0.000 000	0.002
100 %		-10	1777 499 994	-3.2	0.000 000	-0.002
100 %	3.850	0	1777 500 001	3.5	0.000 000	0.002
100 %		+10	1777 500 000	3.0	0.000 000	0.002
100 %		+30	1777 499 999	2.0	0.000 000	0.001
100 %		+40	1777 499 999	2.4	0.000 000	0.001
100 %		+50	1777 500 001	3.8	0.000 000	0.002
Batt. Endpoint	3.400	+20	1777 499 995	-2.3	0.000 000	-0.001





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

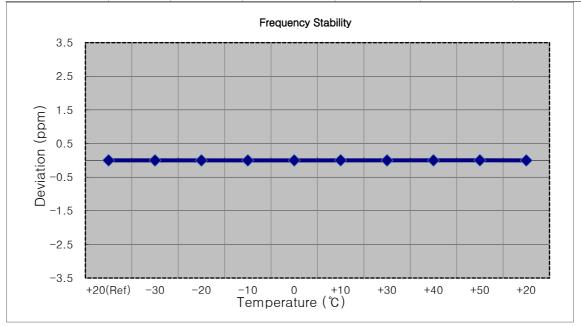
Voltage	Power	Temp.	Frequency	Frequency	Deviation	
(%)	(VDC)	(°C)	(Hz)	Error (Hz)	(%)	- ppm
100 %		+20(Ref)	1775 000 003	0.0	0.000 000	0.000
100 %		-30	1775 000 006	2.6	0.000 000	0.001
100 %		-20	1775 000 001	-2.6	0.000 000	-0.001
100 %		-10	1775 000 001	-2.4	0.000 000	-0.001
100 %	3.850	0	1775 000 006	3.2	0.000 000	0.002
100 %		+10	1775 000 000	-2.9	0.000 000	-0.002
100 %	-	+30	1775 000 006	2.5	0.000 000	0.001
100 %		+40	1775 000 008	4.3	0.000 000	0.002
100 %		+50	1775 000 001	-2.6	0.000 000	-0.001
Batt. Endpoint	3.400	+20	1775 000 006	3.1	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

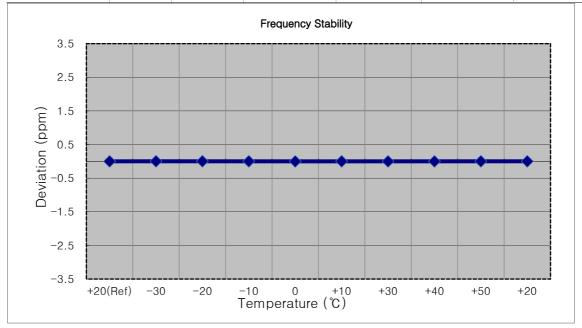
Voltage	Power	Temp.	Frequency	Frequency	Deviation	
(%)	(VDC)	(°C)	(Hz)	Error (Hz)	(%)	ppm
100 %		+20(Ref)	1772 499 998	0.0	0.000 000	0.000
100 %		-30	1772 499 996	-2.2	0.000 000	-0.001
100 %	-	-20	1772 499 995	-3.2	0.000 000	-0.002
100 %		-10	1772 499 995	-2.7	0.000 000	-0.002
100 %	3.850	0	1772 499 996	-2.2	0.000 000	-0.001
100 %		+10	1772 500 001	3.0	0.000 000	0.002
100 %	-	+30	1772 499 995	-3.0	0.000 000	-0.002
100 %		+40	1772 499 997	-1.5	0.000 000	-0.001
100 %		+50	1772 500 001	3.0	0.000 000	0.002
Batt. Endpoint	3.400	+20	1772 499 996	-1.8	0.000 000	-0.001





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	
(%)	(VDC)	(°C)	(Hz)	Error (Hz)	(%)	ppm
100 %		+20(Ref)	1769 999 996	0.0	0.000 000	0.000
100 %		-30	1769 999 999	2.7	0.000 000	0.002
100 %	_	-20	1769 999 999	2.8	0.000 000	0.002
100 %		-10	1770 000 000	3.4	0.000 000	0.002
100 %	3.850	0	1769 999 993	-3.6	0.000 000	-0.002
100 %		+10	1769 999 999	2.4	0.000 000	0.001
100 %		+30	1769 999 994	-2.3	0.000 000	-0.001
100 %	-	+40	1769 999 994	-1.9	0.000 000	-0.001
100 %		+50	1769 999 998	2.0	0.000 000	0.001
Batt. Endpoint	3.400	+20	1769 999 998	1.6	0.000 000	0.001





Report No. HCT-RF-2402-FC010-R1

9. TEST PLOTS



					trum Analyzer - Swept SA						
Frequency	06:46:33 PM Jan 23, 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	0 GHz PNO: Wide	RF 50 Ω AC req 1.71000000	enter F					
Auto Tun	1.709 996 GHz -28.650 dBm	Mkr1	#Atten: 20 dB	IFGain:Low	Ref Offset 27 dB 0 dB/div Ref 27.00 dBm						
Center Fre 1.710000000 GH						17.0					
Start Fre 1.708000000 GH		internalistant and a second statements	putrum			3,00					
Stop Fre 1.712000000 GF	-13.00 dBm					3.0					
CF Ste 400.000 kF Auto Ma	RMS			and an area for a start and a start and	and the second	3.0					
Freq Offs 0 F						i3.0					
	Span 4.000 MHz 1.000 s (1001 pts)	#Sweep	17 kHz	#VBW 4	710000 GHz 15 kHz	enter 1.7					
		STATUS				SG					

BW1.4 M_BandEdge_Lowest Channel_QPSK_FullRB(1)



RL	enter Freq 1.708500000 GHz							
10 dB/div	Ref Offset 27 Ref 30.00 d							
- og 20.0 10.0						Center Fre 1.708500000 GH		
0.00.								
					~~~~			
						CF Ste		
enter 1.709 GHz es BW 39 kHz			VBW 390 ki	Hz	Span 4 MHz Sweep   3.2 ms	400.000 kH		
Channel Power			Power	Power Spectral Density				
-2	5.73 dBr	n / 1 MHz	_	85.73 dBm	/Hz			
G				STATU	s			

#### BW1.4 M_BandEdge_Lowest Channel_QPSK_FullRB(2)



						trum Analyzer - Swept SA				
Frequency	06:51:24 PM Jan 23, 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	de 🛶 Trig: Fr	00000 GHz PNO: Wide	RF 50Ω AC req 1.78000000	Center F			
Auto Tune	780 000 GHz -27.522 dBm	Mkr1	: 20 dB	ow #Atten:	Ref Offset 27 dB 0 dB/div Ref 27.00 dBm					
Center Fred 1.780000000 GHz							17.0			
Start Free 1.778000000 GH				monanapaty	an fly internal and a stand of the stand of	- Andrews	3.00			
Stop Fred 1.782000000 GH:	-13.00 dBm		1				13.0			
CF Ster 400.000 kH Auto Mai	RMS	hope and some and a property of a	and an				33,0 43.0			
Freq Offse 0 H	and the second s						53.0			
	Span 4.000 MHz 000 s (1001 pts)	#Sweep	7	VBW 47 kHz	#VBW	780000 GHz 15 kHz	Center 1.7			
		STATUS					ISG			

# BW1.4 M_BandEdge_Highest Channel_QPSK_FullRB(1)



RL	um Analyzer - Channel RF 50 Q 4	C	SENSE:INT	ALIGN AUTO	06:51:33 PM Jan 23, 2024	
Center Fre	eq 1.7815000		Trig: Free Run Avg Hold: 300/300		Radio Std: None Radio Device: BTS	Frequency
0 dB/div	Ref Offset 27 Ref 30.00 d	dB Bm				
20.0 10.0						Center Fre 1.781500000 GH
00,						
0.0	-					
0.0						
enter 1.7	82 GHz				Span 4 MHz	CF Ste 400.000 kH Auto Ma
es BW 39			VBW 390 kH	lz	Sweep 3.2 ms	
Chann	Channel Power		Power	Freq Offse 0 H		
-2	5.64 dBr	n / 1 MHz	-	85.64 dBm	/Hz	
G				STATU	5	

# BW1.4 M_BandEdge_Highest Channel_QPSK_FullRB(2)



- 6 🗙				um Analyzer - Swept SA	
Frequency	06:47:07 PM Jan 23, 2024 TRACE 2 3 4 5 6 TYPE A WWWW DET A A A A A A	g Type: RMS	SENSE:INT	RF 50 Ω AC eq 1.710000000 GHz PNO: Wide ↔	Center Fr
Auto Tune	1.710 000 GHz -24.858 dBm	Mkr1	#Atten: 20 dB	IFGain:Low Ref Offset 27 dB Ref 27.00 dBm	10 dB/div
Center Fred 1.710000000 GHz			~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		17.0
Start Free 1.708000000 GH					7.00 3.00
Stop Free 1.712000000 GH	-13.00 dBm		{1		13.0
CF Stej 400.000 kH Auto Ma		Mark and	and the second s		33,0
Freq Offse 0 H	RMS			and the former and a second	53.0
	Span 4.000 MHz 1.000 s (1001 pts)	#Sween	47 kHz	10000 GHz 5 kHz #VBW	Center 1.7 #Res BW
		STATUS			ISG

### BW1.4 M_BandEdge_Lowest Channel_QPSK_1RB



				rum Analyzer - Swept SA				
Frequency	06:52:02 PM Jan 23, 2024 TRACE 1 2 3 4 5 0 TYPE A WWWW DET A A A A A A	ALIGN AUTO	SENSE:INT Trig: Free Run #Atten: 20 dB	RF 50 Ω AC eq 1.780000000 GHz PNO: Wide ↔ IFGain:Low	Center F			
Auto Tune	1.780 004 GHz -24.536 dBm	Mkr1	Writen: 20 ab	Ref Offset 27 dB Ref 27.00 dBm	Ref Offset 27 dB			
Center Fred 1.780000000 GHz			hund		17.0			
Start Fred 1.778000000 GHz					7.00 -3.00			
Stop Fred 1.782000000 GH2	-13.00 dBm		t		-13.0			
CF Step 400.000 kHz Auto Mar				and a second	-33,0			
Freq Offse 0 H:	RMS	and a second and a s		water and the second	-53.0			
	Span 4.000 MHz 1.000 s (1001 pts)	#Sweep	47 kHz	80000 GHz 15 kHz #VBW	Center 1.			
		STATUS			ASG			

### BW1.4 M_BandEdge_Highest Channel_QPSK_1RB



Agilent Spectrum Analyzer - Swept SA					- 6 ×		
RL RF 50 Q AC Center Freq 1.71000000	DO GHz PNO: Wide	SENSE:INT	#Avg Type: RMS	06:53:59 PM Jan 23, 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	IFGain:Low	#Atten: 20 dB	Mkr1	1.710 000 GHz -24.390 dBm	Auto Tune		
17.0					Center Fred 1.710000000 GH		
3.00		- F		RMS	Start Free 1.708000000 GH		
23.0		1		-13.00 dBm	Stop Free 1.712000000 GH		
33.0 43.0	land and a start of the start o				CF Step 400.000 kH Auto Mar		
53.0					Freq Offse 0 H		
-63.0 Center 1.710000 GHz #Res BW 30 kHz	#VBW	91 kHz	#Sweep	Span 4.000 MHz 1.000 s (1001 pts)			
NSG			STATUS				

#### BW3 M_BandEdge_Lowest Channel_QPSK_FullRB(1)



	RF 50 Q AC	er	SENSE:INT	ALIGN AUTO		- 6		
Center Fre	eq 1.708500000 GHz Center Freq: 1.708500000 GHz Radio Std: Nor Trig: Free Run Avg Hold: 300/300		06:54:08 PM Jan 23, 2024 Radio Std: None Radio Device: BTS	Frequency				
0 dB/div	Ref Offset 27 dB Ref 30.00 dBr							
.og 20.0						Center Fre 1.708500000 GH		
0.00								
0.0					- mark			
ia.a ia.a ia.a								
enter 1.7					Span 4 MHz	CF Ste 400.000 kH Auto Ma		
es BW 3			VBW 390 kHz	and a state of the	Sweep 3.2 ms	Freq Offs		
	el Power			Power Spectral Density -85.96 dBm /Hz				
-2	5.96 dBm	/ 1 MHz	-8					
G				STATU	S			

### BW3 M_BandEdge_Lowest Channel_QPSK_FullRB(2)



						ctrum Analyzer - Swept SA			
Frequency	06:58:36 PM Jan 23, 2024 TRACE 2 3 4 5 0 TYPE A WWWW DET A A A A A A	ALIGN AUTO	Run	Trig: Free		RL RF 50.0 AC enter Freq 1.780000000 GHz PNO: Wide ↔			
Auto Tune	1.780 004 GHz -23.964 dBm	Mkr1	dB	#Atten: 20	IFGain:Low	IFGain:L Ref Offset 27 dB 10 dB/div Ref 27.00 dBm			
Center Free 1.780000000 GH							-og		
Start Fre 1.778000000 GH					ere all a constants and	alah-manjandistah-manjanang manjamaka-ma	7.00 		
Stop Fre 1.782000000 GH	-13.00 dBm		1				23.0		
CF Ste 400.000 kł Auto Ma	RMS	Harris and the state of the					13,0.		
Freq Offs 0 H							3.0		
	Span 4.000 MHz 1.000 s (1001 pts)	#Sweep		91 kHz	#VBW	780000 GHz 30 kHz	center 1. Res BW		
		STATUS					ISG		

### BW3 M_BandEdge_Highest Channel_QPSK_FullRB(1)



XI RL	m Analyzer - Channe RF 50 Ω 29 1.781500	AC 000 GHz	- <u>-</u>	SENSE Center Freq Trig: Free R	: 1.7815000 un		ALIGN AUTO 300/300	Radio Std:		Fr	equency
	Ref Offset 27		:Low	#Atten: 20 d	B			Radio Devi	ice: BTS		
0 dB/div 0 g 20.0 10.0 20.0 20.0 20.0 40.0	Ref 30.00 (										<b>Center Fre</b> 1500000 GH
50.0 50.0 Center 1.7% Res BW 39				VBW	390 kHz			Sp: Swee	an 4 MHz p 3.2 ms	Auto	CF Stej 400.000 kH Ma
Channel Power -26.49 dBm / 1 MHz			Hz	Power Spectral Density -86.49 dBm /Hz					Freq Offsel 0 Hz		
SG							STATUS	5			

# BW3 M_BandEdge_Highest Channel_QPSK_FullRB(2)



Agilent Spectrum Analyzer - Swept SA							
RL RF 50 Q AC	0 GHz	SENSE:INT	#Avg Ty	ALIGN AUTO	06:54:34 PM Jan TRACE 1 2 TYPE A 4	2457	Frequency
	PNO: Wide	#Atten: 20 dB		_			A
Ref Offset 27 dB 0 dB/div Ref 27.00 dBm				Mkr1	1.710 000 -19.904 (	GHz dBm	Auto Tune
17.0		~	٦			1	Center Fred
3.00						1	Start Free 708000000 GH:
23.0		1				<u>3.00 dBm</u>	Stop Fred 712000000 GH:
43.0			June 1	and all and a second		Aut	CF Step 400.000 kH o Mar
53.0	and a second				manual land	RMS	Freq Offse 0 H
83.0 Center 1.710000 GHz					Span 4.000	MHz	
Res BW 30 kHz	#VBW	91 kHz		#Sweep	1.000 s (100	1 pts)	

### BW3 M_BandEdge_Lowest Channel_QPSK_1RB



Agilent Spectrum Analyzer - Swept SA					- 6 ×
RL RF 50 Ω AC Center Freq 1.78000000	00 GHz PNO: Wide	SENSE:INT	#Avg Type: RMS	06:59:14 PM Jan 23, 2024 TRACE 1 2 3 4 5 0 TYPE A WWWW	Frequency
Ref Offset 27 dB 10 dB/div Ref 27.00 dBm	IFGain:Low	#Atten: 20 dB	Mkr1	1.780 000 GHz -19.642 dBm	Auto Tune
17.0		<u></u>			Center Fred 1.780000000 GH:
3.00					Start Free 1.778000000 GH
23.0				-13.00 dBm	Stop Fre 1.782000000 GH
43.0					CF Stej 400.000 kH <u>Auto</u> Ma
53.0			and the second s	RMS	Freq Offse 0 H
63.0 Center 1.780000 GHz #Res BW 30 kHz	#VBW	91 kHz	#Sweep	Span 4.000 MHz 1.000 s (1001 pts)	
ISG			STATUS		

### BW3 M_BandEdge_Highest Channel_QPSK_1RB



Agilent Spectrum Analyzer - Swept SA					- 6 ×
RL RF 50 Q AC Center Freq 1.7100000	00 GHz PNO: Wide	SENSE:INT	#Avg Type: RMS	07:00:58 PM Jan 23, 2024 TRACE 1 2 3 4 5 0 TYPE A WWWWW DET A A A A A A	Frequency
Ref Offset 27 dB 10 dB/div Ref 27.00 dBn	IFGain:Low	#Atten: 20 dB	Mkr1	1.709 996 GHz -24.369 dBm	
17.0					Center Fred 1.710000000 GH
3.00		ſ		RMS	Start Free 1.708000000 GH
13.0		Ind		-13.00 dĐm	Stop Fre 1.712000000 GH
43.0	Manager and the second s				CF Ste 400.000 kH Auto Ma
53.0					Freq Offse 0 ⊢
©3.0 Center 1.710000 GHz Res BW 51 kHz	#VBW	160 kHz	#Sweep	Span 4.000 MHz 1.000 s (1001 pts)	
ISG			STATUS		

#### BW5 M_BandEdge_Lowest Channel_QPSK_FullRB(1)



	um Analyzer - Channel Pow	er				- 6 -
Center Fre	RF 50 Q AC eq 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	07:01:07 PM Jan 23, 2024 Radio Std: None Radio Device: BTS	Frequency
0 dB/div	Ref Offset 27 dB Ref 30.00 dBr					
- <b>og</b> 20.0						Center Fre 1.708500000 GH
0.0						
10.0 10.0					m	
0.0 0.0 Center 1.7					Span 4 MHz	CF Ste 400.000 kH
es BW 39			VBW 390 kHz	en por	Sweep 3.2 ms	<u>Auto</u> Ma
Channe	el Power		Power	Spectral Dens	sity	Freq Offso 0 H
-2	7.76 dBm	/ 1 MHz	-8	7.76 dBm	/Hz	
G				STATU	s	

# BW5 M_BandEdge_Lowest Channel_QPSK_FullRB(2)



				trum Analyzer - Swept SA	
Frequency	07:05:37 PM Jan 23, 2024 TRACE 1 2 3 4 5 0 TYPE A WWWWW 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 F
Auto Tuno	1.780 000 GHz -24.753 dBm	Mkr1	#Atten: 20 db	Ref Offset 27 dB Ref 27.00 dBm	10 dB/div
Center Fred 1.780000000 GH					-og
Start Free 1.778000000 GH					3,00
Stop Fre 1.782000000 GH	-13.00 dBm		1		13.0
<b>CF St</b> e 400.000 kH <u>Auto</u> Ma	RMS	and the second sec	No have a second		33.0 43.0
Freq Offse 0 H					53.0
	Span 4.000 MHz 1.000 s (1001 pts)	#Sweep	160 kHz	780000 GHz 51 kHz #VBW	Center 1.7
		STATUS			ISG

### BW5 M_BandEdge_Highest Channel_QPSK_FullRB(1)



Agilent Spectrum Analyzer - Channel Power RL RF 50 92 AC Center Freq 1.7815000000 GHz	SENSE:INT ALIGN AU	TO 07:05:47 PM Jan 23, 2024 Radio Std: None	Frequency
#IFGain:Low	Trig: Free Run Avg Hold: 300/300 #Atten: 20 dB	) Radio Device: BTS	
Ref Offset 27 dB 10 dB/div Ref 30.00 dBm			
20.0			Center Fred 1.781500000 GH:
0.00			
-20.0			
60.0			CF Ster 400.000 kH
Center 1.782 GHz Res BW 39 kHz	VBW 390 kHz	Span 4 MHz Sweep 3.2 ms	Auto Mar
Channel Power	Power Spectral De	nsity	Freq Offse 0 Ha
-28.42 dBm / 1 MHz	-88.42 dBr	n /Hz	
SG	ST	ATUS	

# BW5 M_BandEdge_Highest Channel_QPSK_FullRB(2)



Agilent Spectrum Analyzer - Swept SA				the state of the second	- 6 ×
X RL RF 50Ω AC Center Freq 1.71000000	00 GHz	SENSE:INT	#Avg Type: RMS	07:01:38 PM Jan 23, 2024 TRACE 1 2 3 4 5 6 TYPE A WWWW DET A A A A A A	Frequency
	PNO: Wide ++ IFGain:Low	. Trig: Free Run #Atten: 20 dB		DET A A A A A A	
Ref Offset 27 dB 10 dB/div Ref 27.00 dBm			Mkr1	1.710 000 GHz -21.360 dBm	Auto Tune
17.0					Center Fred 1.710000000 GH;
3.00					Start Fred 1.708000000 GH:
13.0		1		-13.00 dBm	Stop Fred 1.712000000 GH:
43.0				RMS	CF Step 400.000 kH <u>Auto</u> Mar
53.0					Freq Offse 0 H
63.0 Center 1.710000 GHz #Res BW 51 kHz	#VBW	160 kHz	#Sweep	Span 4.000 MHz 1.000 s (1001 pts)	
ISG			STATUS		

### BW5 M_BandEdge_Lowest Channel_QPSK_1RB



Agilent Spectrum Analyzer - Swept SA					- 6 ×
RL RF 50 Q AC Center Freq 1.780000000	0 GHz PNO: Wide	SENSE:INT	#Avg Type: RMS	07:06:15 PM Jan 23, 2024 TRACE 1 2 3 4 5 0 TYPE A *******	Frequency
Ref Offset 27 dB 10 dB/div Ref 27.00 dBm	IFGain:Low	#Atten: 20 dB	Mkr1	1.780 000 GHz -21.021 dBm	Auto Tune
17.0	(				Center Fred 1.780000000 GHz
3.00					Start Free 1.778000000 GH:
-13.0		1		-13.00 dBm	Stop Fred 1.782000000 GH:
43.0		- my		RMS	CF Step 400.000 kH Auto Mar
53.0					Freq Offse 0 H
-63.0 Center 1.780000 GHz #Res BW 51 kHz	#VBW	160 kHz	#Sweep	Span 4.000 MHz 1.000 s (1001 pts)	
ISG			STATUS		

### BW5 M_BandEdge_Highest Channel_QPSK_1RB



- 6 🐱					Agilent Spectrum Analyzer - Swept SA
Frequency	07:08:08 PM Jan 23, 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		2 RL RF 50 Q AC Center Freq 1.710000000
Auto Tune	1.709 992 GHz -27.885 dBm	Mkr1		dB	Ref Offset 27 dB 10 dB/div Ref 27.00 dBm
Center Free 1.710000000 GH					17.0
Start Fre 1.708000000 GH	RMS				3.00
Stop Fre 1.712000000 GH	-13.00 dBm		1-00		23.0
CF Ste 400.000 k⊦ <u>Auto</u> Ma			and the second s	and and a second a second and a second as a second as	13.0
Freq Offse 0 H					53.0
	Span 4.000 MHz 1.000 s (1001 pts)	#Sweep	300 kHz	#VBW	63.0 Center 1.710000 GHz #Res BW 100 kHz
		STATUS			ISG

#### BW10 M_BandEdge_Lowest Channel_QPSK_FullRB(1)



XI RL	rum Analyzer - Channel Power RF 50 Ω AC eq 1.7085000000 GHz	SENSE:INT Center Freq: 1.708500000 GHz	ALIGN AUTO	07:08:18 PM Jan 23, 2024 Radio Std: None	Frequency
	+ #IFGain:Low	#Atten: 20 dB	510: 300/300	Radio Device: BTS	
10 dB/div	Ref Offset 27 dB Ref 30.00 dBm				
- <b>og</b> 20.0					Center Free 1.708500000 GH
40.0 50.0 60.0 Center 1.7 Res BW 3		VBW 390 kHz		Span 4 MHz Sweep 3.2 ms	С <b>F Ste</b> 400.000 кн <u>Auto</u> Ма
	el Power 7.92 dBm / 1 мнz	Power Spec	tral Dens 2 dBm		Freq Offse 0 H
ISG			STATU	s	

#### BW10 M_BandEdge_Lowest Channel_QPSK_FullRB(2)



					trum Analyzer - Swept SA	
Frequency	07:13:09 PM Jan 23, 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	GHz PNO: Wide ↔ IFGain:Low	RF 50 Q AC req 1.780000000	Center F
Auto Tune	1.780 000 GHz -29.412 dBm	Mkr1		I GUILLOW	Ref Offset 27 dB Ref 27.00 dBm	10 dB/div
Center Fred 1.780000000 GHz						17.0
Start Free 1.778000000 GH:						7.00 3.00
Stop Free 1.782000000 GH:	-13.00 dBm					13.0
CF Ster 400.000 kH <u>Auto</u> Mar	RMS	the growth and the second s	and a second sec			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)



	m Analyzer - Channel Powe	er -			the second second	- 6 ×
X RL Center Fre	RF 50 Ω AC cq 1.781500000	GHz #IFGain:Low	SENSE:INT Center Freq: 1.7815000 Trig: Free Run #Atten: 20 dB	ALIGN AUTO 000 GHz Avg Hold: 300/300	07:13:18 PM Jan 23, 2024 Radio Std: None Radio Device: BTS	Frequency
10 dB/div	Ref Offset 27 dB Ref 30.00 dBn	1				
- <b>og</b> 20.0						Center Free 1.781500000 GH
20.0						
40.0	human					
Center 1.73 Res BW 39			VBW 390 kHz		Span 4 MHz Sweep 3.2 ms	CF Ste 400.000 kH <u>Auto</u> Ma
	el Power			Spectral Dens		Freq Offse 0 H
-31	1.50 dBm	/ 1 MHz	-9	1.50 dBm	/Hz	
SG				STATU	s	

# BW10 M_BandEdge_Highest Channel_QPSK_FullRB(2)



Agilent Spectrum Analyzer - Swept SA					- 6 ×
RL RF 50 Q AV Center Freq 1.7100000	00 GHz	SENSE:INT	#Avg Type: RMS	07:08:42 PM Jan 23, 2024 TRACE 1 2 3 4 5 6 TYPE A WWWW DET A A A A A A	Frequency
	PNO: Wide ++ IFGain:Low	#Atten: 20 dB			
Ref Offset 27 dB			Mkr1	1.710 000 GHz -30.529 dBm	Auto Tune
17.0			$\square$		Center Fred 1.710000000 GH
3.00					Start Fre 1.708000000 GH
13.0				-13.00 dBm	Stop Fre 1.712000000 GH
43.0				FIMS	CF Ste 400.000 kH <u>Auto</u> Ma
53.0					Freq Offse 0 H
63,0 Center 1.710000 GHz				Span 4.000 MHz	
Res BW 100 kHz	#VBW	300 kHz	#Sweep	1.000 s (1001 pts)	
ISG			STATUS	6	

### BW10 M_BandEdge_Lowest Channel_QPSK_1RB



Agilent Spectrum Analyzer - Swept SA				- 6 💌
X RL RF 50 Ω AC Center Freq 1.780000000 GHz PNO: Wide ↔	SENSE:INT	#Avg Type: RMS	07:13:47 PM Jan 23, 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	#Atten: 20 dB	Mkr1	1.780 000 GHz -30.511 dBm	
17.0				Center Fred 1.780000000 GHz
3.00				Start Free 1.778000000 GH
23.0			-13.00 dBm	Stop Free 1.782000000 GH
43.0			RidS	CF Stej 400.000 kH <u>Auto</u> Ma
53.0				Freq Offse 0 H
©3.0 Center 1.780000 GHz #Res BW 100 kHz #VBV	V 300 kHz	#Sweep	Span 4.000 MHz 1.000 s (1001 pts)	
	V 300 kHz	#Sweep	1.000 s (1001 pts)	

# BW10 M_BandEdge_Highest Channel_QPSK_1RB



				ctrum Analyzer - Swept SA	
Frequency	07:15:38 PM Jan 23, 2024 TRACE 1 2 3 4 5 0 TYPE A WWWWW DET A A A A A A	ALIGN AUTO #Avg Type: RMS	Trig: Free Run #Atten: 20 dB	RF 50 Ω AC req 1.710000000 GHz PNO: Wide ↔	Center Fi
Auto Tune	1.709 992 GHz -29.291 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 GH;	RMS				3,00
Stop Fred 1.712000000 GH;	-13.00 dBm		1		-13.0
CF Step 400.000 kHz Auto Mar				an fa f an	-33,0
Freq Offse 0 H:					-63.0
	Span 4.000 MHz 1.000 s (1001 pts)	#Sweep	470 kHz	710000 GHz 150 kHz #VBM	Center 1.7
		STATUS			MSG

### BW15 M_BandEdge_Lowest Channel_QPSK_FullRB(1)



X RL	rum Analyzer - Channel Pov RF 50 Ω AC		SENSE:INT	ALIGN AUTO	07:15:48 PM Jan 23, 2024	Frequency
Center Fre	eq 1.70850000	0 GHz #IFGain:Low	Center Freq: 1.7085 Trig: Free Run #Atten: 20 dB	00000 GHz Avg Hold: 300/300	Radio Std: None Radio Device: BTS	Frequency
10 dB/div	Ref Offset 27 dE Ref 30.00 dB					
20.0 10.0 0.00						Center Fred 1.708500000 GH
10.0 20.0 30.0 40.0						
50.0 50.0 Center 1.7					Span 4 MHz	CF Stej 400.000 kH <u>Auto</u> Mai
Chann	9 kHz el Power		VBW 390 k Power	^{Hz} r Spectral Dens	Sweep 3.2 ms	Freq Offse
-2	6.99 dBm	/ 1 MHz		-86.99 dBm	/Hz	
SG				STATU	JS	

### BW15 M_BandEdge_Lowest Channel_QPSK_FullRB(2)



Agilent Spectrum Analyzer - Swept SA				with the second second	- 6 ×
RL RF 50 Q AC Center Freq 1.78000000	PNO: Wide	SENSE:INT	#Avg Type: RMS	07:20:28 PM Jan 23, 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	IFGain:Low	#Atten: 20 dB	Mkr1	1.780 000 GHz -32.812 dBm	
17,0					Center Fred 1.780000000 GH:
3.00	-				Start Free 1.778000000 GH
13.0				-13.00 dBm	Stop Fre 1.782000000 GH
13.0		Mark of a start		RMS	CF Ste 400.000 kH <u>Auto</u> Ma
i3 0					Freq Offse 0 H
©3.0 Center 1.780000 GHz Res BW 150 kHz	#VBW	470 kHz	#Sweep	Span 4.000 MHz 1.000 s (1001 pts)	
ISG			STATUS		

# BW15 M_BandEdge_Highest Channel_QPSK_FullRB(1)



Agilent Spectru	um Analyzer - Channel Pow RF 50 Q AC	er	SENSE:INT	ALIGN AUTO	07:20:37 PM Jan 23, 2024	
11.4	eq 1.78150000	O GHz #IFGain:Low	Center Freq: 1.78150		Radio Device: BTS	Frequency
10 dB/div	Ref Offset 27 dB Ref 30.00 dB					
20.0 10.0						Center Fred 1.781500000 GH
0.00. 10.0						
30.0	mmmmm					
50.0		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~				
Center 1.7 Res BW 39			VBW 390 ki	Hz	Span 4 MHz Sweep 3.2 ms	CF Step 400.000 kH Auto Mar
Channe	el Power		Power	Spectral Dens	sity	Freq Offse 0 H
-3:	3.88 dBm	/ 1 MHz		93.88 dBm	/Hz	
SG				STATU	IS	

# BW15 M_BandEdge_Highest Channel_QPSK_FullRB(2)



Agilent Spectrum Analyzer - Swept SA					- 6 ×
RL RF 50 Q AC Center Freq 1.71000000	PNO: Wide	SENSE:INT	#Avg Type: RMS	07:16:13 PM Jan 23, 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	IFGain:Low	#Atten: 20 dB	Mkr1	1.709 996 GHz -24.025 dBm	Auto Tune
17,0					Center Fred 1.710000000 GHz
3.00					Start Free 1.708000000 GH:
13.0		2		-13.00 dBm	Stop Free 1.712000000 GH
43.0					CF Stej 400.000 kH <u>Auto</u> Ma
53.0					Freq Offse 0 H
© 0 Center 1.710000 GHz Res BW 150 kHz	#VBW	470 kHz	#Sweep	Span 4.000 MHz 1.000 s (1001 pts)	
ISG			STATUS		

### BW15 M_BandEdge_Lowest Channel_QPSK_1RB



Agilent Spectrum Analyzer - Swept SA					
RL RF 50 Q AC Center Freq 1.780000000	PNO: Wide +++	SENSE:INT	#Avg Type: RMS	07:21:06 PM Jan 23, 2024 TRACE 1 2 3 4 5 6 TYPE A WWWW DET A A A A A A	Frequency
Ref Offset 27 dB	IFGain:Low	#Atten: 20 dB	Mkr1	1.780 004 GHz -23.935 dBm	Carlos and C
-og					Center Fred 1.780000000 GH;
3.00					Start Free 1.778000000 GH
23.0		1		-13.00 dBm	Stop Free 1.782000000 GH
33,0				RMS	CF Ste 400.000 kH <u>Auto</u> Ma
53.0					Freq Offse 0 H
^{63,0} Center 1.780000 GHz ≉Res BW 150 kHz	#VBW	470 kHz	#Sweep	Span 4.000 MHz 1.000 s (1001 pts)	
ISG			STATUS		

# BW15 M_BandEdge_Highest Channel_QPSK_1RB



				trum Analyzer - Swept SA	
Frequency	07:23:02 PM Jan 23, 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	Center F
Auto Tune	1.709 992 GHz -29.996 dBm	Mkr1	WY KIET. 20 GB	Ref Offset 27 dB Ref 27.00 dBm	10 dB/div
Center Fred 1.710000000 GHz					17.0
Start Free 1.708000000 GH:	RMS				3,00
Stop Free 1.712000000 GH:	-13.00 dBm				-13.0
CF Stej 400.000 kH <u>Auto</u> Mai					33.0
Freq Offse 0 H					63.0
	Span 4.000 MHz 1.000 s (1001 pts)	#Sweep	620 kHz	710000 GHz 200 kHz #VBW	Center 1.7
	-	STATUS			ASG

### BW20 M_BandEdge_Lowest Channel_QPSK_FullRB(1)



RL	um Analyzer - Chan RF 50 Q eq 1.70850	AC	Trig: Free R	: 1.708500000 GH	ALIGN AUTO Hz Hold: 300/300	07:23:12 PM Jan 23, 2024 Radio Std: None	Frequency
		#IFGain:Lo	w #Atten: 20 c	В	Sec. An and	Radio Device: BTS	
0 dB/div	Ref Offset 2 Ref 30.00						
- <b>og</b> 20.0							Center Fre 1.708500000 GH
20.0							
40.0		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~					
0.0							CF Ste 400.000 k⊦
enter 1.7 es BW 39			VBW	390 kHz		Span 4 MHz Sweep 3.2 ms	<u>Auto</u> Ma
Chann	el Power		F	ower Spe	ctral Dens	sity	Freq Offse 0 H
-2	6.62 dE	Sm / 1 MH	z	-86.6	62 dBm	/Hz	
G					STATU	s	

### BW20 M_BandEdge_Lowest Channel_QPSK_FullRB(2)



Agilent Spectrum Analyzer - Swept SA				and an and a stream of	- 6 ×
RL RF 50 Q AC enter Freq 1.780000000	GHz PNO: Wide	Trig: Free Run #Atten: 20 dB	ALIGN AUTO #Avg Type: RMS	07:28:18 PM Jan 23, 2024 TRACE 1 2 3 4 5 6 TYPE A WWWW DET A A A A A A	Frequency
Ref Offset 27 dB dB/div Ref 27.00 dBm	I Guin.cow		Mkr1	1.780 032 GHz -35.108 dBm	Auto Tune
9 .0					Center Fred 1.780000000 GHz
00	\				Start Free 1.778000000 GH:
0 0				-13.00 dBm	Stop Free 1.782000000 GH:
.0	TrailwaytryTory	1		FMS	CF Stej 400.000 kH <u>Auto</u> Ma
.0					Freq Offse 0 H
enter 1.780000 GHz es BW 200 kHz	#VBW	620 kHz	#Sweep	Span 4.000 MHz 1.000 s (1001 pts)	
1			STATUS		

# BW20 M_BandEdge_Highest Channel_QPSK_FullRB(1)



Agilent Spectru	RF 50 Q AC	Т	SENSE:INT	ALIGN AUTO	07:28:27 PM Jan 23, 2024	- 6 ×
Center Fre	eq 1.781500000 (	Hz #FGain:Low	Center Freq: 1.78150		Radio Std: None Radio Device: BTS	Frequency
10 dB/div	Ref Offset 27 dB Ref 30.00 dBm					
20.0 10.0						Center Fred 1.781500000 GHz
0.00						
20.0 -30.0						
50.0			······			
Center 1.7 Res BW 39			VBW 390 ki	Hz	Span 4 MHz Sweep 3.2 ms	CF Ster 400.000 kH Auto Mar
	el Power		and the second	Spectral Den		Freq Offse 0 H
-34	4.61 dBm /	1 MHz	-	94.61 dBm	/Hz	
ISG				STAT	15	

# BW20 M_BandEdge_Highest Channel_QPSK_FullRB(2)



Agilent Spectrum Analyzer - Swept SA				La Concercio de la Concercio de la Concercio de la Concerció de la Concerció de la Concerció de la Concerció de	- 6 ×
Center Freq 1.7100000		SENSE:INT	#Avg Type: RMS	07:23:37 PM Jan 23, 2024 TRACE 1 2 3 4 5 0 TYPE A WWWW DET A A A A A A	Frequency
Ref Offset 27 dB	IFGain:Low	#Atten: 20 dB	Mkr1	1.709 996 GHz -33.375 dBm	Auto Tune
17,0					Center Fred 1.710000000 GH
3,00					Start Free 1.708000000 GH
13.0				-13.00 dBm	Stop Fre 1.712000000 GH
13.0		11			CF Ste 400.000 k⊦ <u>Auto</u> Ma
30					Freq Offso 0 H
©enter 1.710000 GHz Res BW 200 kHz	#VBW	620 kHz	#Sweep	Span 4.000 MHz 1.000 s (1001 pts)	
sg			STATU		

### BW20 M_BandEdge_Lowest Channel_QPSK_1RB



GHz PNO: Wide ++	SENSE:INT	#Avg Type: RMS	07:28:55 PM Jan 23, 2024 TRACE 1 2 3 4 5 0	Frequency
IFGain:Low	#Atten: 20 dB			
	#Atten: 20 db	1.780 004 GHz -33.349 dBm	Auto Tune	
				Center Free 1.780000000 GH:
				Start Free 1.778000000 GH
- And			-13.00 dBm	Stop Free 1.782000000 GH
			RMS	CF Stej 400.000 kH <u>Auto</u> Ma
				Freq Offse 0 H
#VBW	620 kHz	#Sweep	Span 4.000 MHz 1.000 s (1001 pts)	
	#VBW	#VBW 620 kHz		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1

# BW20 M_BandEdge_Highest Channel_QPSK_1RB



X RL	um Analyzer - Occupied BW RF 50 Ω AC eq 1.745000000	+	Center Fr Trig: Free			ALIGN AUTO	Radio Sto		Fr	equency
10 dB/div	Ref Offset 27 dB Ref 40.00 dBm	#IFGain:Low	#Atten: 2	0 dB			Radio De	vice: BTS		
30.0 20.0										enter Fred
10.0		f man	r.m.m	wwww	mm					
-10.0						WWW				
-30.0 Mmm	www.www.w						Mr. Al Mr.	vmmun		
50.0										CF Stej 280.000 kH
Center 1.7 Res BW 27			#VE	W 110 k	Hz			in 2.8 MHz 3.667 ms	<u>Auto</u>	Ma
Occup	ied Bandwidtl 1.(	n 0970 Mi	Hz	Total P	ower	31.0	) dBm		1	Freq Offse 0 H
	it Freq Error Indwidth	3.228 H 1.336 M		OBW P x dB	ower		9.00 % 00 dB			
ISG						STATU	s			

### BW1.4 M_OBW_Middle Channel_QPSK_FullRB



RL	rum Analyzer - Occupied BW RF 50 Ω AC eq 1.745000000	CH ₇ Cer	SENSE:INT	ALIGN AUTO	06:48:24 PM Jan 23, 2024 Radio Std: None	Frequency
PASS	eq 1.745000000	Trig		old: 500/500	Radio Device: BTS	
10 dB/div	Ref Offset 27 dB Ref 40.00 dBm					
30.0 20.0						Center Free 1.745000000 GH
10.0		how	monom	$\gamma$		
10.00		/		hong		
20.0	mmmmm			- A	mmmmm	
-40.0						
50.0						CF Ster 280.000 kH
Center 1.7 Res BW 2			#VBW 110 kHz		Span 2.8 MHz Sweep 3.667 ms	<u>Auto</u> Ma
Occup	ied Bandwidtl 1.(	י 0996 MHz	Total Power	30.3	dBm	Freq Offse 0 H
Transm	nit Freq Error	5.060 kHz	<b>OBW Power</b>	99.	00 %	
x dB Ba	andwidth	1.341 MHz	x dB	-26.0	0 dB	
ISG				STATUS		

#### BW1.4 M_OBW_Middle Channel_16QAM_FullRB



K RL	m Analyzer - Occupied BW RF 50 Q AC q 1.745000000	GHz #FGain:Low	SENSE:INT Center Freq: 1.745 Trig: Free Run #Atten: 20 dB		ALIGN AUTO	06:48:55 Radio Std Radio Dev		Freq	uency
10 dB/div	Ref Offset 27 dB Ref 40.00 dBm								
30.0 20.0									nter Fred
10.0		mm	mongener	rown					
-10.0		كمرير			J. J.				
-20.0 -30.0 mmm	when he was				~~~	When	mmm		
-40.0									
-50.0								28	CF Step
Center 1.74 Res BW 27			#VBW 110	kHz			n 2.8 MHz 3.667 ms	Auto	Mar
Occupi	ed Bandwidtl 1.(	ո )979 MH		Power	29.3	3 dBm		Fre	e <b>q Offsel</b> 0 Hz
Transmi	t Freq Error	1.053 kł	iz OBW	Power	99	9.00 %			
x dB Bar	ndwidth	1.310 MH	lz x dB		-26.	.00 dB			
ISG					STATU	s			_

#### BW1.4 M_OBW_Middle Channel_64QAM_FullRB



Agilent Spectrum Analyzer - Occ RL RF 50 S Center Freq 1.7450	2 AC 00000 GHz			ALIGN AU 00 GHz Avg Hold: 500/500	Radio Std:		Frequen	
Ref Offset 10 dB/div Ref 40.0								
30.0 20.0							Center 1.74500000	
0.00	- James	man man	hann	m				
-10.0 -20.0 -30.0 pm Man homem	port			how how here here here here here here here her	muhurun	unama		
40.0							CF	Step
Center 1.745 GHz Res BW 27 kHz		#V	BW 110 KH	z	Span Sweep	2.8 MHz 3.667 ms	280.00	
Occupied Band	lwidth 1.0976 M	Hz	Total Pov	ver 2	7.2 dBm		Freq	Offsel 0 Hz
Transmit Freq Er			OBW Pov		99.00 %			
x dB Bandwidth	1.317	MHz	x dB	-2	26.00 dB			
NSG				ST	ATUS			

#### BW1.4 M_OBW_Middle Channel_256QAM_FullRB



Agilent Spectru	um Analyzer - Occupied BW							_	
11.0	RF 50 Ω AC eq 1.745000000	GHz #IFGain:Low	SENSE:INT Center Freq: 1.74500 Trig: Free Run #Atten: 20 dB		IGN AUTO	Radio Std		Fr	equency
0 dB/div	Ref Offset 27 dB Ref 40.00 dBm								
30.0 20.0									enter Fre
10.0		mmm	mmm	mann	N.				
10.0					h				
20.0 50.0	manna				- N	mont	manna		
10.0 50.0									CF Ste
Center 1.7 Res BW 6			#VBW 2401	(Hz			an 6 MHz 1.533 ms	<u>Auto</u>	600.000 kH Ma
Occupi	ied Bandwidtl		Total P	ower	31.2	dBm		1	Freq Offse
	2.	7169 MH	Z						
Transmi	it Freq Error	7.658 kH	Z OBW P	ower	99	.00 %			
x dB Ba	ndwidth	3.153 MH	lz x dB		-26.	00 dB			
					STATUS				

# BW3 M_OBW_Middle Channel_QPSK_FullRB



RL	RF 50 Q AC			NSE:INT		ALIGN AUTO	the second se	PM Jan 23, 2024	E.	equency
Center Fre	eq 1.74500000	0 GHz #IFGain:Low	Trig: Free	Center Freq: 1.745000000 GHz Trig: Free Run Avg Hold: 500/500 #Atten: 20 dB			Radio Std Radio Dev			equeircy
0 dB/div	Ref Offset 27 dE Ref 40.00 dB									
30.0 20.0										Center Fre 5000000 GH
10.0		mm	mmm	·····	mm	m				
						2				
n.n.	whenh					<u>}_</u>	then all a a			
0.0	We want a						~~ ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		
0.0										CF Ste
enter 1.7 Res BW			#VE	3W 2401	kHz			an 6 MHz 1.533 ms	<u>Auto</u>	600.000 kH Ma
Occup	ied Bandwid	th		Total P	ower	30.2	2 dBm		118	Freq Offse
	2	.7293 M	Hz							0 H
	it Freq Error	2.244	kHz	OBW P	ower	99	.00 %			
x dB Ba	ndwidth	3.114 M	ЛНz	x dB		-26.	00 dB			
						STATU				

#### BW3 M_OBW_Middle Channel_16QAM_FullRB



Center Freq 1	50 Q AC	GHz #IFGain:Low	. Trig: F	SENSE:INT Freq: 1.74500 Free Run 1: 20 dB		GN AUTO	06:56:16 Radio Std Radio Dev		Fre	equency
10 dB/div R	ef Offset 27 dB ef 40.00 dBm									
- <b>og</b> 30.0 20.0										enter Fred
10.0		m	mm	min	m m m	1				
-10.0						1 de la como de la com				
20.0 30.0 mm/m/	mmm					للم	mahana	mhh		
-40.0										
Center 1.745 0	244						- Cn	an 6 MHz		CF Step 600.000 kHz
#Res BW 62 k			#	VBW 240 H	kHz			1.533 ms	Auto	Man
Occupied	Bandwidth 2.7	066 MI	Ηz	Total P	ower	29.5	5 dBm		C.	req Offset 0 Hz
Transmit F	req Error	7.542	Hz	OBW P	ower	99	.00 %			
x dB Bandy	width	3.080 N	IHz	x dB		-26.	00 dB			
ASG						STATU	6			

### BW3 M_OBW_Middle Channel_64QAM_FullRB



Agilent Spectru	RF 50 Q AC		SENSE:INT		ALIGN AUTO	06:20:21	PM Jan 24, 2024	_	- 6 ×
	eq 1.74500000	0 GHz #IFGain:Low	Center Freq: 1.745000000 GHz Trig: Free Run Avg Hold: 500/500 #Atten: 20 dB			Radio Std: None			requency
0 dB/div	Ref Offset 27 dB Ref 40.00 dBi								
30.0 20.0									Center Free 5000000 GH
10.0 0.00		p	m man market	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~					
20.0 30.0	mmmmh				- A	Mum	www.		
enter 1.7							oan 6 MHz	Auto	CF Ste 600.000 kH Ma
Res BW 6			#VBW 240				1.533 ms		
Occupi	ied Bandwid 2.	th .7145 MF	Total F	ower	27.1	dBm			Freq Offse 0 H
Transm	it Freq Error	5.672 k	Hz OBW F	Power	99	.00 %			
x dB Ba	ndwidth	3.117 M	Hz x dB		-26.	00 dB			

#### BW3 M_OBW_Middle Channel_256QAM_FullRB



Agilent Spectrum Analyzer - Occupied							- 6 🛋
RL RF 50 Ω A Center Freq 1.7450000 ASS			Center Freq: 1.745000000 GHz Trig: Free Run Avg Hold: 500/500			M Jan 23, 2024 None ce: BTS	Frequency
Ref Offset 27							
30.0 20.0							Center Free 1.745000000 GH
10.0	Januar		mm	- M			
10.0	pol			- My			
20.0 30.0 mm Mm					hunder	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	
40.0							
Center 1.745 GHz					Spar	10 MHz	CF Stej 1.000000 MH Auto Ma
Res BW 100 kHz		#VBW 3	90 kHz		Swe	ep 1 ms	-
Occupied Bandwi	dth 4.5473 M		al Power	31.1	dBm		Freq Offse 0 H
					00.04		
Transmit Freq Error			N Power		.00 %		
x dB Bandwidth	5.375	MHz x di	3	-26.	00 dB		
SG				STATUS	1		

# BW5 M_OBW_Middle Channel_QPSK_FullRB



RL	rum Analyzer - Occupied RF 50 Ω A eq 1.7450000	c 000 GHz	Trig:	SENSE:INT ALIGN AUTO Center Freq: 1.745000000 GHz Trig: Free Run Avg Hold: 500/500 #Atten: 20 dB			Radio Std: None		Frequency
10 dB/div	Ref Offset 27 <b>Ref 40.00 d</b>								
30.0 20.0									Center Fred 1.745000000 GHz
10.0		Junio	m	mana	m	$\sim$			
10.00		N .				h			
-20.0	mann					- Man	how	man na	
-40.0									
50.0 Center 1.7	245 GHz						Spa	n 10 MHz	CF Step 1.000000 MH Auto Mar
#Res BW			#	VBW 390 ki	Ηz		Swe	ep 1 ms	
Occup	ied Bandwi	dth 4.5449 N	IHz	Total Po	wer	30.4	dBm		Freq Offset 0 Ha
Transm	it Freq Error			OBW Po	wer	99	0.00 %		
x dB Ba	Indwidth	5.391	MHz	x dB		-26.	00 dB		
MSG						STATU	9		

### BW5 M_OBW_Middle Channel_16QAM_FullRB



Agilent Spectrum Analyzer - Occup					
RL         RF         50 Ω           Center Freq 1.745000         PASS		SENSE:INT Center Freq: 1.7450000 Trig: Free Run #Atten: 20 dB	ALIGN AUTO 100 GHz Avg Hold: 500/500	07:03:19 PM Jan 23, 2024 Radio Std: None Radio Device: BTS	Frequency
Ref Offset 2 10 dB/div Ref 40.00		_			
30.0 20.0					Center Fre 1.745000000 GH
10.0	mmm	mm www.	many		
0.00	North				
20.0 30.0 wawhah Manh M	M		^	montenan	
40.0				and the second s	
50.0					CF Ste 1.000000 MH
Center 1.745 GHz Res BW 100 kHz		#VBW 390 kH	z	Span 10 MHz Sweep 1 ms	Auto Ma
Occupied Bandv	vidth 4.5307 M	Total Po Hz	wer 29.3	2 dBm	Freq Offse 0 H
Transmit Freq Erro			wer 99	9.00 %	
x dB Bandwidth	5.327	MHz x dB	-26	.00 dB	
SG			STATU		

#### BW5 M_OBW_Middle Channel_64QAM_FullRB



Agilent Spectru	RF 50 Q			SENSE:INT		ALIGN AUTO	06:21:421	PM Jan 24, 2024	- 6 2	
	eq 1.745000		Trig:	Center Freq: 1.745000000 GHz			Radio Std: Radio Dev	None	Frequency	
0 dB/div	Ref Offset 2 Ref 40.00									
30.0 20.0									Center Fre 1.745000000 GH	
10.0 0.00		June		um and mark	hamman	m				
10.0						- Mark	hum			
40.0										
Center 1.7			#	VBW 3901	KHZ			n 10 MHz ep 1 ms	CF Ste 1.000000 MH <u>Auto</u> Ma	
	ied Bandy	width 4.5089		Total P		27.4	4 dBm		Freq Offse 0 H	
	it Freq Erro ndwidth	or 9.3	80 kHz 34 MHz	OBW P x dB	ower		9.00 % .00 dB			
SG						STATU	s			

#### BW5 M_OBW_Middle Channel_256QAM_FullRB



XI RL	um Analyzer - Occupied RF 50 Q A 29 1.7450000	AC	Cente	SENSE:INT	0000 GHz	ALIGN AUTO	07:11:19 Radio Sto	PM Jan 23, 2024	Frequency
PASS	eq 1.7450000		Trig: F	Free Run 1: 20 dB		1: 500/500	Radio De		
10 dB/div	Ref Offset 27 Ref 40.00 d								
- <b>og</b> 30.0 20.0									Center Fre 1.745000000 GH
10.0		provenuer	mound	manner	Monte	my			
0.00 10.0		N				1 M			
20.0	muchanyour	^{///·}				- M	a Word y Augur	. Ale monometer	
40.0									
50.0									CF Ste 2.000000 MH
Res BW			#	VBW 820 k	Hz		Spa Sw	an 20 MHz eep 1 ms	<u>Auto</u> Ma
Occup	ied Bandwi			Total P	ower	31.1	l dBm		Freq Offse
		9.0364 N	IHZ						
Transm	it Freq Error	21.29	0 kHz	OBW P	ower	99	9.00 %		
x dB Ba	ndwidth	10.30	MHz	x dB		-26.	00 dB		
ISG						STATU	c		

#### BW10 M_OBW_Middle Channel_QPSK_FullRB



RL R	Analyzer - Occupied BW ☞ 50 Ω AC   1.745000000		Center F	inse:INT Freq: 1.7450 Re Run 20 dB	00000 GHz Avg Hold	ALIGN AUTO	07:10:25 Radio Sto Radio De		Frequency
0 dB/div	Ref Offset 27 dB Ref 40.00 dBn		_			_			
- <b>0 g</b> 30.0									Center Free 1.745000000 GH
10.0		NAMANAMAN	iyManunanan	monorm	mmmm	l			
10.0						1 Cray			
20.0 30.0 amburtud	historitan					, n	the Manuta	minum	
40.0									
Senter 1.745							- Cn	20 MHz	CF Ster 2.000000 MH
Res BW 20			#V	BW 820	kHz			an 20 MHz eep 1 ms	<u>Auto</u> Mar
Occupie	d Bandwidt 9.	th 0008 M	Hz	Total F	Power	30.	3 dBm		Freq Offse 0 Ha
Transmit	Freq Error	13.217	kHz	OBW F	ower	9	9.00 %		
x dB Band	lwidth	10.46	MHz	x dB		-26	.00 dB		
ISG						STAT	US		

#### BW10 M_OBW_Middle Channel_16QAM_FullRB



RL	um Analyzer - Occupied BW RF 50 Q AC eq 1.745000000		SENSE:INT Center Freq: 1.745000000 G Trig: Free Run Avg #Atten: 20 dB	ALIGN AUTO Hz Hold: 500/500	07:10:48 PM Jan 23, 2024 Radio Std: None Radio Device: BTS	Frequency
10 dB/div	Ref Offset 27 dB Ref 40.00 dBm					
- <b>og</b> 30.0						Center Free 1.745000000 GH
10.0.		monorm	un many with more	man		
0.00 10.0	d					
20.0 30.0 <mark>~~~~</mark> ~~//	unmind Mansa				han man hanger and	
40.0 50.0						CF Ste
Center 1.7 Res BW 2			#VBW 820 kHz		Span 20 MHz Sweep 1 ms	2.000000 MH <u>Auto</u> Ma
Occupi	ied Bandwidtl 9.(	h 0158 MH:	Total Power	29.2	2 dBm	Freq Offse 0 H
Transm	it Freq Error	19.356 kH		99	0.00 %	
x dB Ba	ndwidth	10.59 MH	z xdB	-26.	00 dB	
ISG				STATU	s	

# BW10 M_OBW_Middle Channel_64QAM_FullRB



RL RF 50 Ω AC Center Freq 1.74500000 PASS		Tains France F	1.745000000 ( Run Avg	ALIGN AU 3Hz 1 Hold: 500/500	Radio Sto		Frequency
Ref Offset 27 d Ref 40.00 dE		_					
• <b>0</b> g 30.0 							Center Fred 1.745000000 GHz
0.00	A	mm	handennom	man			
10.0 20.0 30.0 pmr.ml. My m.m. h. M.					munnuhun	mana	
0.0							CF Step 2.000000 MH
Center 1.745 GHz Res BW 200 kHz		#VBV	V 820 kHz		Spa Sw	an 20 MHz eep 1 ms	
Occupied Bandwic	ith .0008 MI		otal Powe	r 2	7.2 dBm		Freq Offset 0 Ha
Transmit Freq Error x dB Bandwidth	15.626 I 10.34 N		DBW Powe dB		99.00 % 26.00 dB		
SG				ST	ATUS		

#### BW10 M_OBW_Middle Channel_256QAM_FullRB



Agilent Spectrum Analy	zer - Occupied BW	1	SENSE:INT		ALIGN AUTO	07:19:24	PM Jan 23, 2024	- 6 💌	
Center Freq 1.7 PASS	45000000	GHz #FGain:Low	Center Freq: 1.745000000 GHz Radio Std: Trig: Free Run Avg Hold: 500/500 #Atten: 20 dB Radio Devi				d: None Frequenc		
	Offset 27 dB 40.00 dBm			_					
30.0 20.0								Center Fre 1.745000000 GH	
10.0		mantena	mannan	when have	Len				
0.00	, ph				h.				
20.0 30.0 whelle katel alter	moule					University	Maurian		
40.0									
Center 1.745 GH	7					Sna	n 30 MHz	CF Ster 3.000000 MH Auto Ma	
Res BW 300 kl			#VBW 1.2	MHz			ep 1 ms	Adto Ma	
Occupied E		471 MH		Power	31.2	2 dBm		Freq Offse 0 H	
Transmit Fre	q Error	29.502 k	Hz OBW	Power	99	.00 %			
x dB Bandwi	dth	15.11 M	Hz x dB		-26.	00 dB			
SG					STATUS	5			

### BW15 M_OBW_Middle Channel_QPSK_FullRB



RL	RF 50 Q AC	the second second	SENSE:INT		ALIGN AUTO	07:17:40 PM Jan 23, 202	Frequency
Center Fre	eq 1.74500000		Center Freq: 1.745000000 GHz Trig: Free Run Avg Hold: 500/500 #Atten: 20 dB			Radio Std: None Radio Device: BTS	requency
I0 dB/div	Ref Offset 27 dB Ref 40.00 dBi						
- <b>og</b> 30.0 20.0							Center Fre 1.745000000 GH
10.0		morning	nonanan	n man the server all have	m		
0.00 10.0		7					
20.0	1				- Hong	Anthone labor 1	
30.0 <b>////////</b> 40.0	when a way that the start of the					a of made into the fight of the set	
i0.0							CF Ste
enter 1.7 Res BW			#VBW 1	.2 MHz		Span 30 MH Sweep 1 ms	
	ied Bandwid	th		al Power	30.1	dBm	Freq Offse
	1	3.477 MI	lz				OH
	it Freq Error	28.763	Hz OB	W Power	99	.00 %	
x dB Ba	indwidth	15.11 N	Hz x di	B	-26.	00 dB	
					STATU		

### BW15 M_OBW_Middle Channel_16QAM_FullRB



Center Fre	RF 50 Ω AC eq 1.745000000	) GHz #IFGain:Low	Center F		00000 GHz Avg Hold	ALIGN AUTO	07:18:03 Radio Sto Radio Der		Frequency	
10 dB/div	Ref Offset 27 dB Ref 40.00 dBr									
- <b>og</b> 30.0 20.0									Cent 1.745000	er Free
10.0.		-ellonegal golo Ma	บงา <i>ม</i> ๆระสาท <del>เ</del> สง	ommore	war where	mod				
0.00		/				L L				
20.0 30.0 mm.~~	Mar Mar Alman					MA. JI	ulation where the	human		
40.0										
Senter 1.7							- Cn	20 Milia	3.000	F Ster
Res BW			#V	BW 1.2 M	ИHz			an 30 MHz eep 1 ms	Auto	Ma
Occup	ied Bandwid	th 3.482 MI	Hz	Total F	Power	29.2	2 dBm		Free	Offse 0 H
Transm	nit Freq Error	28.071	kHz	OBW F	ower	99	.00 %			
x dB Ba	andwidth	15.20 N	lHz	x dB		-26.	00 dB			
SG						STATU	-			_

### BW15 M_OBW_Middle Channel_64QAM_FullRB



X RL	m Analyzer - Occupied BW RF 50 Ω AC <b>q 1.745000000</b>		- Trig: F	SENSE:INT r Freq: 1.7450 Free Run h: 20 dB	00000 GHz Avg Hold	ALIGN AUTO	06:36:17 Radio Std Radio Dev		Frequency
10 dB/div	Ref Offset 27 dB Ref 40.00 dBi								
20.0									Center Fred 1.745000000 GH:
10.0		perminant	nt gortmann	wath	man	~			
10.0		ſ				- No			
20.0 30.0 uh/Munhaha	and more align at					<b>V</b>	bulanwan	mannon	
40.0 50.0									CF Step
Center 1.74 Res BW 3			#	VBW 1.2 M	ЛНz		Spa Swo	n 30 MHz eep 1 ms	3.000000 MH: <u>Auto</u> Mar
Occupi	ed Bandwid 1	th 3.440 M	Hz	Total F	ower	27.3	3 dBm		Freq Offse 0 H;
Transmit	t Freq Error	34.324	kHz	OBW P	ower	99	9.00 %		
x dB Bar	ndwidth	15.31	ИHz	x dB		-26	.00 dB		
ISG						STATU	s	_	

#### BW15 M_OBW_Middle Channel_256QAM_FullRB



Agilent Spectrum Analyz		1	1		1. A.L.				- 6	
Center Freq 1.7	50 Q AC	GHz #IFGain:Low	Tales Free P	1.745000000 un Ave		O/500	07:26:18 PM Jan 23, 2024 Radio Std: None Radio Device: BTS		Frequency	
	Offset 27 dB 40.00 dBm									
30.0 20.0									Center Fre 1.745000000 GH	
10.0		whenmin	Norman	munum	muchum					
10.0										
20.0	mund					Hay		Manahoontaala		
40.0									CF Ste 4.000000 M⊦	
Center 1.745 GH Res BW 390 kH			#VBW	1.6 MHz				an 40 MHz eep 1 ms		
Occupied E		.915 MI		otal Powe	r	31.3	dBm		Freq Offso 0 H	
Transmit Fre	q Error	33.611	(Hz O	BW Powe	r	99	.00 %			
x dB Bandwi	dth	19.87 N	Hz x	dB		-26.	00 dB			
SG						STATU	5			

### BW20 M_OBW_Middle Channel_QPSK_FullRB



and the second se	um Analyzer - Occupied BV	//w				· · · · · · · · · · · ·			- 6
Center Fre	RF 50 Q AC	) GHz #IFGain:Low	Center Trig: F	SENSE:INT Freq: 1.74500 ree Run : 20 dB		ALIGN AUTO	Radio Std		Frequency
0 dB/div	Ref Offset 27 dB Ref 40.00 dBi		_	_					
. <b>og</b> 30.0 20.0									Center F 1.745000000 (
10.0		manin	mmonenter	monum	himpolocuman	h			
0.00		1							
20.0	manenerer					hu	mannum	Annalman	
40.0									
50.0									CF S 4.000000 M
Res BW			#	VBW 1.6 N	٨Hz			an 40 MHz eep 1 ms	<u>Auto</u> I
Occupi	ied Bandwid	th 7.88 <b>9 M</b>	H7	Total P	ower	30.	2 dBm		Freq Off
Transm	it Freq Error	25.947		OBW P	ower	9	9.00 %		
	ndwidth	19.58	MHz	x dB		-26	.00 dB		
SG						STATU	s		

#### BW20 M_OBW_Middle Channel_16QAM_FullRB



A REAL PROPERTY AND A REAL	n Analyzer - Occupied BW	()ee							
				SENSE:INT ALIGN AUTO enter Freq: 1.745000000 GHz rig: Free Run Avg Hold: 500/500 Atten: 20 dB			07:25:47 PM Jan 23, 2024 Radio Std: None Radio Device: BTS		Frequency
I0 dB/div	Ref Offset 27 dB Ref 40.00 dBn								
- <b>0g</b> 30.0 20.0									Center Fre 1.745000000 GH
10.0		permanana and	en falsananana	so-wangewelig	wahaman	m			
0.00 10.0		/				h h			
20.0 30.0 mar J. A. Mar	for a stranger of					- And	munumulul	Monterior	
40.0									
50.0								n 40 MHz	CF Ste 4.000000 MH
Center 1.745 GHz #Res BW 390 kHz #				VBW 1.6 MHz				ep 1 ms	<u>Auto</u> Ma
Occupied Bandwidth 17.919 MHz				Total Power 29.			dBm		Freq Offs 0 H
Transmit Freq Error48.281 kHx dB Bandwidth19.87 MH				Hz OBW Power			.00 %		
			MHz				00 dB		
SG						STATUS	í.		

## BW20 M_OBW_Middle Channel_64QAM_FullRB

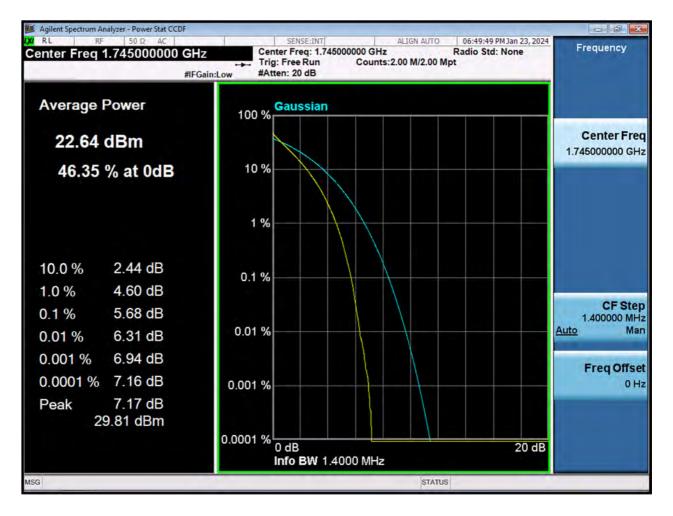


X RL	enter Freq 1.745000000 GHz			SENSE:INT ALIGN AUTO Center Freq: 1.745000000 GHz Trig: Free Run Avg Hold: 500/500 #Atten: 20 dB				06:38:50 PM Jan 24, 2024 Radio Std: None Radio Device: BTS		Frequency
10 dB/div										
30.0 20.0									Center I 1.745000000	
10.0.		pin man And	L/DQ_mAAIIImya	manzharingen	mlannon	60910 1				
-10.0	5	/								
-20.0 -30.0	-hatenstron - Ander					- ⁷ ~	houshalling	himan		
-40.0									CFS	Ster
Center 1.745 GHz Span 40 MHz Sweep 1 ms										4.000000 MHi Mar
Occupied Bandwidth Total Power 27.3 dBm 17.940 MHz							Freq Of	ffsel 0 Hz		
Transmit Freq Error 42.928				9	9.00 %					
x dB Bandwidth 19.73			MHz x dB			-26.00 dB				
MSG						STATU	IS			-

# BW20 M_OBW_Middle Channel_256QAM_FullRB





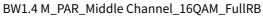


## BW1.4 M_PAR_Middle Channel_QPSK_FullRB











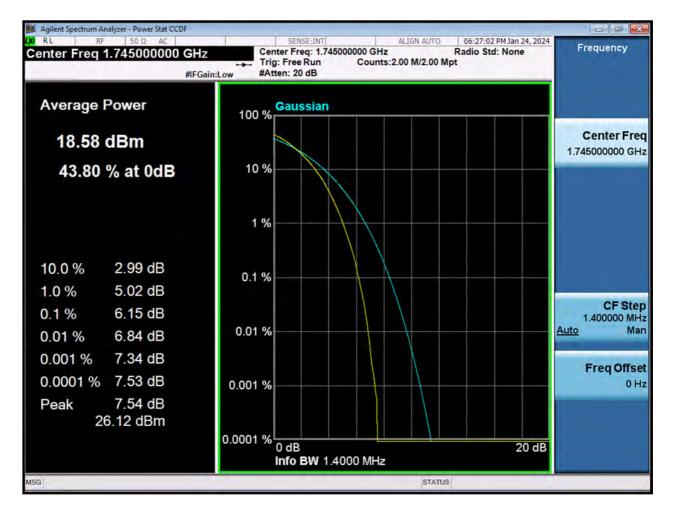




## BW1.4 M_PAR_Middle Channel_64QAM_FullRB















## BW3 M_PAR_Middle Channel_QPSK_FullRB



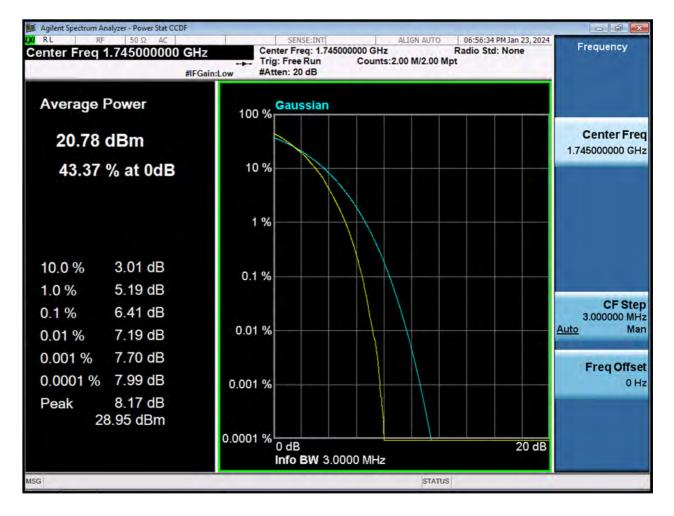




## BW3 M_PAR_Middle Channel_16QAM_FullRB







## BW3 M_PAR_Middle Channel_64QAM_FullRB



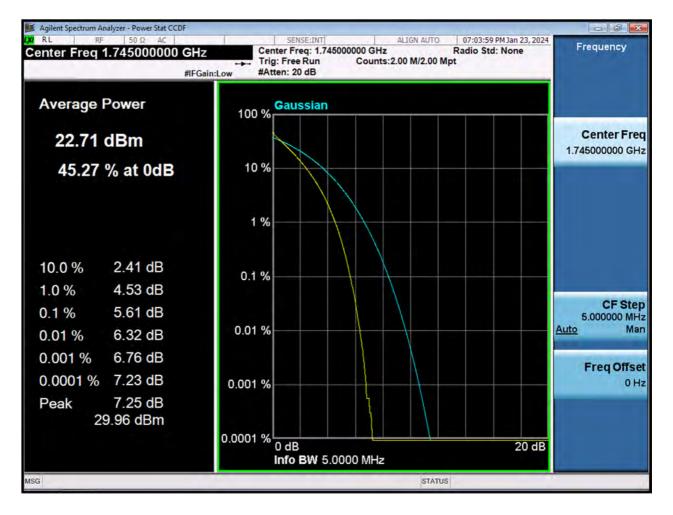




## BW3 M_PAR_Middle Channel_256QAM_FullRB







## BW5 M_PAR_Middle Channel_QPSK_FullRB







## BW5 M_PAR_Middle Channel_16QAM_FullRB