

TEST REPORT

FCC 2G3G Test for SC-54E Certification

APPLICANT SAMSUNG Electronics Co., Ltd.

REPORT NO. HCT-RF-2405-FC032

DATE OF ISSUE May 24, 2024

> **Tested by** Jae Mun Do

Zamez.

Technical Manager Jong Seok Lee

HCT CO., LTD. Bongjai Huh Bongjai Huh 7 CEO

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HCT CO.,LTD.

2-6, 73, 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, 17383 KOREA Tel. +82 31 645 6300 Fax. +82 31 645 6401

T E S T R E P O R T	REPORT NO. HCT-RF-2405-FC032 DATE OF ISSUE May 24, 2024 Additional Model SCG29
Applicant	SAMSUNG Electronics Co., Ltd. 129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Rep. of Korea
Product Name Model Name	
Date of Test	May 07, 2024 ~ May 22, 2024
Location of Test	■ Permanent Testing Lab □ On Site Testing (Address: 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi- do, 17383 Republic of Korea)
FCC ID	A3LSMF741JPN
FCC Classification	PCS Licensed Transmitter Held to Ear (PCE)
Test Standard Used	FCC Rule Part(s) : § 22, § 24, § 27
Test Results	PASS



REVISION HISTORY

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

Revision No.	Date of Issue	Description
0	May 24, 2024	Initial Release

Notice

Content

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

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

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

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

The laboratory is not accredited for the test results marked *.

Information provided by the applicant is marked **.

Test results provided by external providers are marked ***.

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

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



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MEASUREMENT REPORT

1. GENERAL INFORMATION

Applicant Name:	SAMSUNG Electronics Co., Ltd.
Address:	129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Rep. of Korea
FCC ID:	A3LSMF741JPN
Application Type:	Certification
FCC Classification:	PCS Licensed Transmitter Held to Ear (PCE)
FCC Rule Part(s):	§ 22, § 24, § 27
EUT Type:	Mobile Phone
Model(s):	SC-54E
Additional Model(s)	SCG29
	824.20 - 848.80 MHz (GSM850)
Tx Frequency:	826.40 - 846.60 MHz (WCDMA850)
	1 850.20 - 1 909.80 MHz (GSM1900)
	869.20 - 893.80 MHz (GSM850)
Rx Frequency:	871.40 - 891.60 MHz (WCDMA850)
	1 930.20 - 1 989.80 MHz (GSM1900)
Date(s) of Tests:	May 07, 2024 ~ May 22, 2024
	Radiated : R3CX30L0NDB(GSM850, WCDMA850),
Serial number:	R3CX30L0LBW(GSM1900)
	Conducted : R3CX30L0KYR



1.1. MAXIMUM OUTPUT POWER

	Tx Frequency	Rx Frequency	Emission	ERP	
Mode	(MHz)	(MHz)	Designator	Max. Power (W)	Max. Power (dBm)
GSM850	024.2 040.0		245KGXW	0.391	25.92
GSM850 EDGE	824.2 - 848.8	869.2 – 893.8	254KG7W	0.180	22.56
WCDMA850	826.4 - 846.6	871.4 - 891.6	4M16F9W	0.091	19.58

	Tx Frequency Rx Frequency Emission		EIRP		
Mode	(MHz)	(MHz)	Designator	Max. Power (W)	Max. Power (dBm)
GSM1900	1050 2 1000 0	1020.2 1000.0	246KGXW	0.741	28.70
GSM1900 EDGE	1850.2 – 1909.8	1930.2 – 1989.8 -	244KG7W	0.228	23.58





2. INTRODUCTION

2.1. DESCRIPTION OF EUT

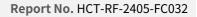
The EUT was a Mobile Phone with GSM/GPRS/EGPRS/UMTS and LTE, Sub 6. It also supports IEEE 802.11 a/b/g/n/ac/ax (20/40/80/160 MHz), Bluetooth(iPA, ePA), BT LE(iPA, ePA), NFC, WPT, WIFI 6E.

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
Peak- to- Average Ratio	- KDB 971168 D01 v03r01 – Section 5.7 - ANSI C63.26-2015 – Section 5.2.3.4 - ANSI C63.26-2015 – Section 5.2.6(only GSM)
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 C63.26-2015 – Section 5.2 - 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 $_{\rm d}$ is the dipole equivalent power and P $_{\rm g}$ 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

- 1. Measurements value show only up to 3 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20 dB from the applicable limit) and considered that's already beyond the background noise floor.
- 2. The EUT was tested in three orthogonal planes(X, Y, Z) and in all possible test configurations and positioning.

The worst case emissions are reported with the EUT positioning, modulations, RB sizes and offsets, and channel bandwidth configurations shown in the test dat

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;

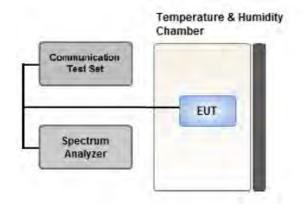
Result (dBm) = P g (dBm) - cable loss (dB) + antenna gain (dBi)

Where: : P $_{\rm g}\,$ is the generator output power into the substitution antenna.

If the fundamental frequency is below 1GHz, RF output power has been converted to EIRP. EIRP $_{(dBm)}$ = ERP $_{(dBm)}$ + 2.15 dB



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 %.
- 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 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)



Test Settings(Peak Power)

The measurement instrument must have a RBW that is greater than or equal to the OBW of the signal to be measured and a VBW \geq 3 × RBW.

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

8. Use the peak marker function to determine the peak amplitude level.

Test Settings(Average Power)

- 1. Set span to 2 × 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 × span / RBW.
- 5. Sweep time:

Set \geq [10 × (number of points in sweep) × (transmission period)] for single sweep (automation-compatible) measurement. The transmission period is the (on + off) time.

- 6. Detector = power averaging (rms).
- 7. Set sweep trigger to "free run."
- 8. Trace average at least 100 traces in power averaging (rms) mode if sweep is set to auto-couple. (To accurately determine the average power over the on and off period of the transmitter, it can be necessary to increase the number of traces to be averaged above 100 or, if using a manually configured sweep time, increase the sweep time.)

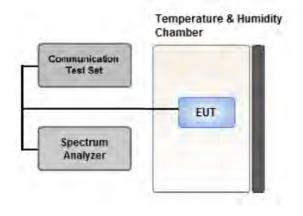
9. Use the peak marker function to determine the maximum amplitude level.

10. Add [10 x log (1/duty cycle)] to the measured maximum power level to compute the average power

during continuous transmission. For example, add $[10 \times \log (1/0.25)] = 6 \text{ dB}$ 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.

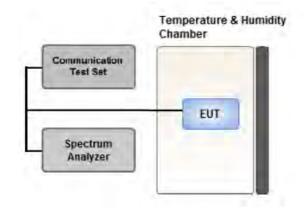
The conducted occupied bandwidth used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.

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





3.6 SPURIOUS AND HARMONIC EMISSIONS AT ANTENNA TERMINAL



Test Overview

The level of the carrier and the various conducted spurious and harmonic frequencies is measured by means of a calibrated spectrum analyzer. The spectrum is scanned from the lowest frequency generated in the equipment up to a frequency including its 10th harmonic. All out of band emissions are measured with a spectrum analyzer connected to the antenna terminal of the EUT while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies. All data rates were investigated to determine the worst case configuration. All modes of operation were investigated and the worst case configuration results are reported in this section.

Test Settings(GSM)

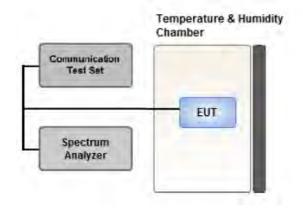
- 1. RBW = 1 MHz
- 2. VBW \geq 3 MHz
- 3. Detector = Peak
- 4. Trace Mode = max hold
- 5. Sweep time = auto
- 6. Number of points in sweep \geq 2 x Span / RBW

Test Settings(WCDMA)

- 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 x Span / RBW



3.7 BAND EDGE



Test setup

Test Overview

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

Test Settings

1. Start and stop frequency were set such that the band edge would be placed in the center of the plot

- 2. Span was set large enough so as to capture all out of band emissions near the band edge
- 3. RBW > 1 % of the emission bandwidth
- 4. VBW > $3 \times RBW$
- 5. Detector = RMS
- 6. Number of sweep points \geq 2 x Span/RBW
- 7. Trace mode = trace average
- 8. Sweep time = auto couple
- 9. The trace was allowed to stabilize



Test Notes

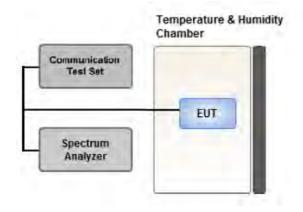
According to FCC 22.917, 24.238, 27.53 specified that power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 x log(P) dB. In the 1 MHz bands immediately outside and adjacent to the frequency block 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(CONDUCTED TEST)

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

- SC-54E & additional models were tested and the worst case results are reported.

(Worst case : SC-54E)

[Worst case]					
Test Description	Modulation	Test Channel			
Occupied Bandwidth	GSM : Voice & EDGE(1 TX Slot) WCDMA : QPSK(RMC)	Low, Mid, High			
Band Edge	GSM : Voice & EDGE(1 TX Slot) WCDMA : QPSK(RMC)	Low, High			
Peak-To-Average Ratio	GSM : Voice & EDGE(1 TX Slot) WCDMA : QPSK(RMC)	Mid			
Spurious and Harmonic Emissions at Antenna Terminal	GSM : Voice WCDMA : QPSK(RMC)	Low, Mid, High			

	[]	「est Channel]			
	Uplink Channel				
	2G	2G 2G 3G			
	(GSM850)	(GSM1900)	(WCDMA B5)		
Low	128	512	4132		
Mid	190	661	4183		
High	251	810	4233		



3.10 WORST CASE(RADIATED TEST)

- The EUT was tested in three orthogonal planes(X, Y, Z) and in all possible test configurations and positioning.
- The EUT was tested in three modes(Open, Half-open, Closed), the worst case configuration results are reported.

Worst case: GSM850&WCDMA850: Open mode, GSM1900: Half-open mode.

- 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 : GSM850 RSE : With Cover, Other mode : Stand alone.
- We were performed the RSE test in condition of co-location. Mode : Stand alone, Simultaneous transmission scenarios Worst case : Stand alone
- The worst case is reported with the EUT positioning, modulations, and paging service configurations shown in the test data.
- Please refer to the table below.
- SC-54E & additional models were tested and the worst case results are reported. (Worst case : SC-54E)

[Worst case_3G]					
Test Description	Modulation	Paging Service	Axis	Test Channel	
Effective Radiated Power, Effective Isotropic Radiated Power	QPSK (WCDMA)	12.2 kbps RMC	WCDMA B5 : X	Low, Mid, High	
Radiated Spurious and Harmonic Emissions	QPSK (WCDMA)	12.2 kbps RMC	WCDMA B5 : X	Low, Mid, High	

[Worst case_2G	1	
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[· · · · · · · · · · · · · · · · · · ·				
Test Description	Mod	Axis	Test Channel	
	Voice	GSM850 : X	Low Mid Lligh	
Effective Radiated Power,		GSM1900 : X	Low, Mid, High	
Effective Isotropic Radiated Power	EDGE(1 TX Slot)	GSM850:X	GSM 850 : High	
		GSM1900:X	GSM1900 : Mid	
Radiated Spurious and Harmonic Emissions	Vaiaa	GSM850:X	Low Mid High	
Radiated Spurious and Harmonic Emissions	Voice	GSM1900:Y	Low, Mid, High	

	[Test Channel]									
		Uplink Channel								
	2G (GSM850)	2G (GSM1900)	3G (WCDMA B5)							
Low	128	512	4132							
Mid	190	661	4183							
High	251	810	4233							



Equipment	Model	Manufacturer	Serial No.	Due to Calibration	Calibratior 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	04/17/2025	Annual
DC Power Supply	E3632A	Agilent	MY40010147	06/23/2024	Annual
Dipole Antenna	UHAP	Schwarzbeck	557	03/09/2025	Biennial
Dipole Antenna	UHAP	Schwarzbeck	558	03/09/2025	Biennial
Chamber	SU-642	ESPEC	93008124	02/19/2025	Annual
Horn Antenna(1 ~ 18 GHz)	BBHA 9120D	Schwarzbeck	147	08/17/2025	Biennial
Horn Antenna(1 ~ 18 GHz)	BBHA 9120D	Schwarzbeck	9120D-1298	09/11/2025	Biennial
Horn Antenna(15 ~ 40 GHz)	BBHA 9170	Schwarzbeck BBHA9170342		09/29/2024	Biennial
Horn Antenna(15 ~ 40 GHz)	BBHA 9170	Schwarzbeck	BBHA9170124	03/28/2025	Biennial
Signal Analyzer(10 Hz ~ 26.5 GHz)	N9020A	Agilent	MY52090906	04/19/2025	Annual
ATTENUATOR(20 dB)	8493C	Hewlett Packard	17280	04/17/2025	Annual
Spectrum Analyzer(10 Hz ~ 40 GHz)	FSV40	REOHDE & SCHWARZ	100931	08/17/2024	Annual
Base Station	8960 (E5515C)	Agilent	MY48360800	08/10/2024	Annual
Loop Antenna(9 kHz ~ 30 MHz)	FMZB1513	Schwarzbeck	1513-333	03/07/2026	Biennial
Trilog Broadband Antenna	VULB9168	Schwarzbeck	895	09/16/2024	Biennial
Trilog Broadband Antenna	VULB9168	Schwarzbeck	1135	09/16/2024	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	05/17/2025	Annual
FCC LTE Mobile Conducted RF Automation Test Software	-	HCT CO., LTD.,	-	-	-

Note:

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

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



5. MEASUREMENT UNCERTAINTY

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

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

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



6. SUMMARY OF TEST RESULTS

6.1 Test Condition: Conducted Test

Test Description	FCC Part Section(s)	Test Limit	Test Result
Occupied Bandwidth	§ 2.1049	N/A	PASS
Band Edge / Spurious and Harmonic Emissions at Antenna Terminal.	§ 2.1051, § 22.917(a), § 24.238(a), § 27.53(h)	< 43 + 10 x log10 (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	§ 22.913(d), § 24.232(d), § 27.50(d)(5)	< 13 dB	PASS
Frequency stability / variation	§ 2.1055, § 22.355	< 2.5 ppm	PASS
of ambient temperature	§ 24.235, § 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
Effective Radiated Power	§ 22.913(a)(5)	< 7 Watts max. ERP	PASS
Equivalent Isotropic Radiated	§24.232(c),	< 2 Watts max. EIRP	DACC
Power	§ 27.50(d)(4)	< 1 Watts max. EIRP	PASS
	§ 2.1053,		
Radiated Spurious and	§22.917(a),	<43 + 10 x log10 (P[Watts]) for	PASS
Harmonic Emissions	§24.238(a),	all out-of band emissions	rajj
	§ 27.53(h)		



7. SAMPLE CALCULATION

7.1 ERP Sample Calculation

Ch.	Ch./ Freq.				Substitute Ant. Gain		<u> </u>	Pol.	ERP	
channel	Freq.(MHz)	Hz) Level (dBm) Level (dB	Level (dBm)	(dBd)	C.L	POI.	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	<u> </u>	Pol.	EI	RP
channel	Freq.(MHz)	Level (dBm)	(dBm) Level (dBm)		C.L	POI.	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

QAM Modulation

Emission Designator = 4M48W7D

LTE BW = 4.48 MHz

W = Amplitude/Angle Modulated

7 = Quantized/Digital Info

D = Data transmission; telemetry; telecommand



8. TEST DATA

8.1 EFFECTIVE RADIATED POWER

	Ch./ Freq.		Measured					Limit	EF	RP
Mode	channel	Freq.(MHz)	Level (dBm)	LEVEL (dBm)	Gain (dBd)	C.L	Pol.	w	w	dBm
	128	824.2	-25.49	35.41	-10.05	1.38	н		0.250	23.98
GSM850	190	836.6	-25.16	36.13	-10.05	1.40	Н	. 7 00	0.294	24.68
	251	848.8	-24.20	37.38	-10.05	1.41	Н	< 7.00	0.391	25.92
EDGE	251	848.8	-27.56	34.02	-10.05	1.41	Н		0.180	22.56

Mode	Ch./ Freq.		Measured Substitute		Ant.		_	Limit	EF	RP
	channel	Freq.(MHz)	Level (dBm)	LEVEL (dBm)	Gain (dBd)	C.L	Pol.	w	w	dBm
	4132	826.4	-32.16	28.76	-10.05	1.39	V		0.054	17.32
WCDMA850	4183	836.6	-31.48	29.81	-10.05	1.40	V	< 7.00	0.069	18.36
	4233	846.6	-30.60	31.04	-10.05	1.41	V		0.091	19.58



8.2 EQUIVALENT ISOTROPIC RADIATED POWER

	Ch.	Ch./ Freq.		Substitute	Ant.	<u></u>	_	Limit	EI	RP
Mode	channel	Freq.(MHz)	Level (dBm)	LEVEL (dBm)	Gain (dBi)	C.L	Pol.	W	w	dBm
	512	1850.2	-13.31	20.51	10.31	2.23	Н		0.722	28.59
GSM1900	661	1880.0	-14.02	20.68	10.35	2.33	Н	- 2.00	0.741	28.70
	810	1909.8	-14.05	19.99	10.40	2.29	Н	- <2.00	0.646	28.10
EDGE	661	1880.0	-19.14	15.56	10.35	2.33	Н		0.228	23.58



8.3 RADIATED SPURIOUS EMISSIONS

MODULATION SIGNAL:

DISTANCE:

<u>GSM850</u> 3 meters

Ch.	Freq.(MHz)	<u>Measured</u> <u>Level</u> [dBm]	Ant. Gain (dBi)	<u>Substitute</u> <u>Level</u> [dBm]	C.L	Pol.	Result (dBm)	Limit
	1 648.40	-58.60	9.20	-67.59	2.02	V	-60.41	-13.00
	2 472.60	-60.28	10.20	-64.42	2.49	V	-56.71	-13.00
128 (824.2)	3 296.80	-60.79	10.90	-63.01	2.92	V	-55.03	-13.00
(02)	4 121.00	-59.94	11.30	-59.23	3.22	V	-51.15	-13.00
	4 945.20	-62.90	11.00	-58.42	3.60	V	-51.02	-13.00
	1 673.20	-57.15	9.20	-66.29	2.04	V	-59.13	-13.00
	2 509.80	-60.34	10.30	-64.87	2.50	V	-57.07	-13.00
190 (836.6)	3 346.40	-60.50	11.00	-63.41	2.89	V	-55.30	-13.00
(00010)	4 183.00	-61.29	11.30	-60.95	3.29	V	-52.94	-13.00
	5 019.60	-63.34	10.70	-58.28	3.55	V	-51.13	-13.00
	1 697.60	-58.78	9.60	-67.53	1.99	V	-59.92	-13.00
	2 546.40	-60.19	10.20	-64.81	2.55	V	-57.16	-13.00
251 (848.8)	3 395.20	-61.56	11.05	-64.47	2.93	V	-56.34	-13.00
(0.0.0)	4 244.00	-61.11	11.20	-60.67	3.31	V	-52.77	-13.00
	5 092.80	-62.71	10.70	-57.73	3.64	V	-50.67	-13.00



<u>GSM1900</u>

DISTANCE:

MODULATION SIGNAL:

3 meters

Ch.	Freq.(MHz)	<u>Measured</u> <u>Level</u> [dBm]	Ant. Gain (dBi)	<u>Substitute</u> <u>Level</u> [dBm]	C.L	Pol.	Result (dBm)	Limit
	3 700.40	-54.57	12.29	-59.61	3.13	Н	-50.45	-13.00
512 (1850.2)	5 550.60	-56.66	13.03	-54.96	3.98	V	-45.91	-13.00
· · ·	7 400.80	-57.15	10.80	-46.93	4.68	Н	-40.81	-13.00
	3 760.00	-55.35	12.22	-59.98	3.27	Н	-51.03	-13.00
661 (1880.0)	5 640.00	-56.72	13.12	-54.59	4.07	Н	-45.54	-13.00
(1000.0)	7 520.00	-57.71	10.82	-46.90	4.71	Н	-40.79	-13.00
	3 819.60	-53.72	12.16	-58.38	3.26	Н	-49.48	-13.00
810 (1909.8)	5 729.40	-57.56	13.04	-55.16	4.12	V	-46.24	-13.00
. ,	7 639.20	-57.61	11.21	-47.46	4.73	Н	-40.98	-13.00



MODULATION SIGNAL:

WCDMA850

DISTANCE:

3 meters

Ch.	Freq.(MHz)	<u>Measured</u> <u>Level</u> [dBm]	Ant. Gain (dBi)	<u>Substitute</u> <u>Level</u> [dBm]	C.L	Pol.	Result (dBm)	Limit
	1 652.80	-58.10	9.20	-67.09	2.02	V	-59.91	-13.00
	2 479.20	-59.17	10.20	-62.42	2.45	V	-54.67	-13.00
4 132 (826.4)	3 305.60	-61.44	10.90	-63.48	2.92	V	-55.50	-13.00
, , , , , , , , , , , , , , , , , , ,	4 132.00	-61.45	11.30	-61.33	3.25	V	-53.28	-13.00
	4 958.40	-61.81	10.90	-57.52	3.58	V	-50.20	-13.00
	1 673.20	-58.53	9.20	-67.67	2.04	V	-60.51	-13.00
	2 509.80	-60.26	10.30	-64.79	2.50	V	-56.99	-13.00
4 183 (836.6)	3 346.40	-61.30	10.95	-64.19	2.89	V	-56.13	-13.00
, , , , , , , , , , , , , , , , , , ,	4 183.00	-62.18	11.30	-61.84	3.29	V	-53.83	-13.00
	5 019.60	-62.09	10.70	-57.03	3.55	V	-49.88	-13.00
	1 693.20	-56.41	9.20	-64.90	2.00	V	-57.70	-13.00
	2 539.80	-60.73	10.30	-65.56	2.52	V	-57.78	-13.00
4 233 (846.6)	3 386.40	-60.89	11.00	-63.60	2.94	V	-55.54	-13.00
(0+0.0)	4 233.00	-61.52	11.20	-60.25	3.27	V	-52.32	-13.00
	5 079.60	-61.99	10.70	-56.83	3.61	V	-49.74	-13.00



8.4 PEAK-TO-AVERAGE RATIO

	Ch.	Measured	Measured	Pav	g (Duty Cy	cle)	P.A.R. = P _{Pk} -	Limit	Pass
Band		P _{Pk} (dBm)	P _{Avg} (dBm)	Тх _{тоtal} (ms)	Tx _{on} (ms)	Factor (dB)	P _{Avg} (dB)	(dB)	/ Fail
GSM1900	661	28.748	18.67	4.6160	0.5475	9.26	0.82		
GSM1900 EDGE	661	26.858	13.60	4.6160	0.5475	9.26	4.00		
GSM850	190							13	Pass
GSM850 EDGE	190		CCDF Procedure				5.82	-	
WCDMA850	4408						2.74		

Note:

- 1. Plots of the EUT's Peak- to- Average Ratio are shown Page 50 ~ 58.
- 2. Only GSM(include EDGE) Mode was tested by alternate procedure for PAPR

 $\begin{aligned} \text{P.A.R}_{(dB)} &= \text{P}_{\text{Pk}(dBm)} - \text{P}_{\text{Avg}(dBm)} \left(\text{P}_{\text{Avg}} = \text{Average Power + Duty cycle Factor} \right) \\ \text{Duty cycle Factor} &= 10 \times \log \left(1/X \right), X = \text{Tx}_{\text{On}} / \text{Tx}_{\text{Total}} \end{aligned}$



8.5 OCCUPIED BANDWIDTH

Band	Channel	Frequency(MHz)	Data (GSM: kHz / WCDMA : MHz)
	128	824.20	244.87
GSM850	190	836.60	244.40
	251	848.80	244.01
	128	824.20	254.08
GSM850 EDGE	190	836.60	241.40
	251	848.80	244.36
	512	1,850.20	242.55
GSM1900	661	1,880.00	244.01
	810	1,909.80	246.42
	512	1,850.20	241.14
GSM1900 EDGE	661	1,880.00	243.74
	810	1,909.80	241.64
	4132	826.40	4.1570
WCDMA850	4183	836.60	4.1578
	4233	846.60	4.1563

Note:

1. Plots of the EUT's Occupied Bandwidth are shown Page 39 ~ 49.



Band	Channel	Frequency of Maximum Harmonic (GHz)	Factor (dB)	Measurement Maximum Data (dBm)	Result	(dBm)
	128	3.1676	27.976	-57.502	-29.526	
GSM850	190	6.5334	28.591	-57.682	-29.091	
	251	3.1825	27.976	-57.311	-29.335	
	512	18.88272	29.489	-52.823	-23.334	
GSM1900	661	18.93547	29.489	-52.181	-22.692	-13.00
	810	18.91697	29.489	-52.924	-23.435	
	4132	3.7104	27.976	-77.307	-49.331	
WCDMA850	4183	3.6945	27.976	-76.993	-49.017	
	4233	2.5409	27.976	-76.866	-48.890	

8.6 CONDUCTED SPURIOUS EMISSIONS

Note:

1. Plots of the EUT's Conducted Spurious Emissions are shown Page 87 ~ 98.

2. Result (dBm) = Measurement Maximum Data (dBm) + Factor (dB)

3. 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

8.7 BAND EDGE

- Plots of the EUT's Band Edge are shown Page 59 ~ 86.



8.8 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE

MODE:

GSM850

OPERATING FREQUENCY	í :
---------------------	------------

CHANNEL:

REFERENCE VOLTAGE:

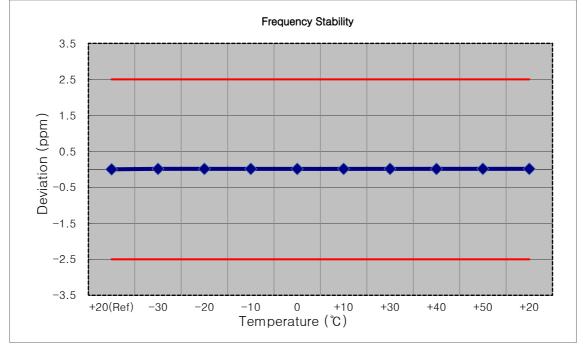
<u>190</u> 3.880 VDC

836,600,000 Hz

DEVIATION LIMIT:

 \pm 0.000 25 % or 2.5 ppm

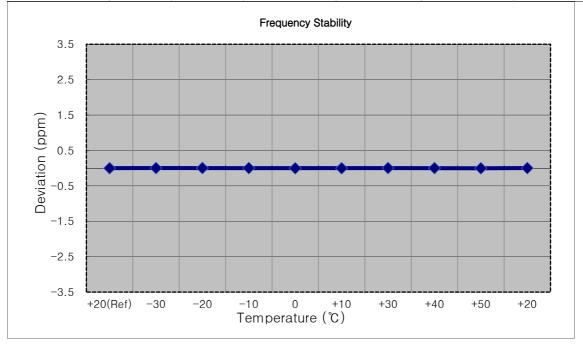
Voltage	Power	Temp.	Frequency	Frequency	Deviation	
(%)	(VDC)	(°C)	(Hz)	Error (Hz)	(%)	ppm
100 %		+20(Ref)	836 600 012	0.0	0.000 000	0.0000
100 %		-30	836 600 023	10.9	0.000 001	0.0131
100 %		-20	836 600 022	10.1	0.000 001	0.0121
100 %		-10	836 600 022	10.1	0.000 001	0.0121
100 %	3.880	0	836 600 022	9.8	0.000 001	0.0117
100 %		+10	836 600 022	10.3	0.000 001	0.0123
100 %		+30	836 600 023	10.9	0.000 001	0.0130
100 %		+40	836 600 022	9.7	0.000 001	0.0116
100 %		+50	836 600 024	11.7	0.000 001	0.0140
Batt. Endpoint	3.300	+20	836 600 023	11.1	0.000 001	0.0132





<u>GSM1900</u>
1850,200,000 Hz
<u>512</u>
3.880 VDC
Emission must remain in band

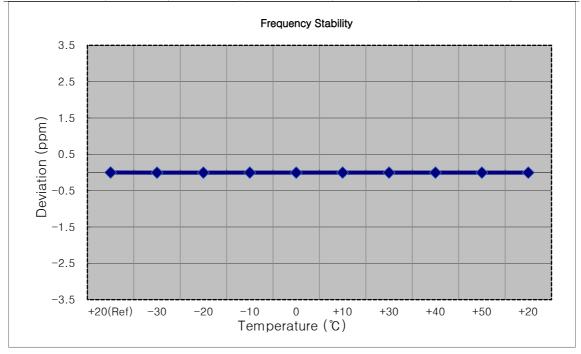
Voltage	Power	Temp.	Frequency	Frequency	Deviation	
(%)	(VDC)	(°C)	(Hz)	Error (Hz)	(%)	- ppm
100 %		+20(Ref)	1850 200 006	0.0	0.000 000	0.0000
100 %		-30	1850 200 012	5.7	0.000 000	0.0031
100 %		-20	1850 200 013	6.8	0.000 000	0.0037
100 %		-10	1850 200 012	5.6	0.000 000	0.0030
100 %	3.880	0	1850 200 002	-4.4	0.000 000	-0.0024
100 %		+10	1850 200 002	-4.3	0.000 000	-0.0023
100 %		+30	1850 200 013	7.0	0.000 000	0.0038
100 %		+40	1850 200 011	4.5	0.000 000	0.0024
100 %		+50	1850 200 001	-5.5	0.000 000	-0.0030
Batt. Endpoint	3.300	+20	1850 200 012	5.7	0.000 000	0.0031





Mode:	<u>GSM1900</u>
OPERATING FREQUENCY:	1880,000,000 Hz
CHANNEL:	<u>661</u>
REFERENCE VOLTAGE:	3.880 VDC
DEVIATION LIMIT:	Emission must remain in band

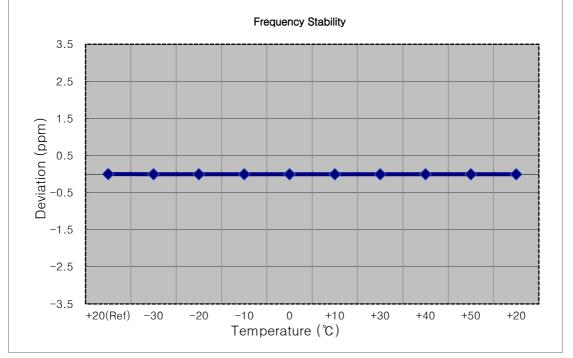
Voltage	Power	Temp.	Frequency	Frequency	Deviation	ppm
(%)	(VDC)	(°C)	(Hz)	Error (Hz)	(%)	
100 %	3.880	+20(Ref)	1879 999 992	0.0	0.000 000	0.000
100 %		-30	1879 999 985	-7.4	0.000 000	-0.004
100 %		-20	1879 999 985	-7.1	0.000 000	-0.004
100 %		-10	1879 999 986	-6.6	0.000 000	-0.003
100 %		0	1879 999 986	-6.7	0.000 000	-0.004
100 %		+10	1879 999 986	-6.4	0.000 000	-0.003
100 %		+30	1879 999 987	-5.7	0.000 000	-0.003
100 %		+40	1879 999 987	-5.8	0.000 000	-0.003
100 %		+50	1879 999 985	-7.0	0.000 000	-0.004
Batt. Endpoint	3.300	+20	1879 999 985	-7.3	0.000 000	-0.004





Mode:	<u>GSM1900</u>
OPERATING FREQUENCY:	1909,800,000 Hz
CHANNEL:	<u>810</u>
REFERENCE VOLTAGE:	3.880 VDC
DEVIATION LIMIT:	Emission must remain in band

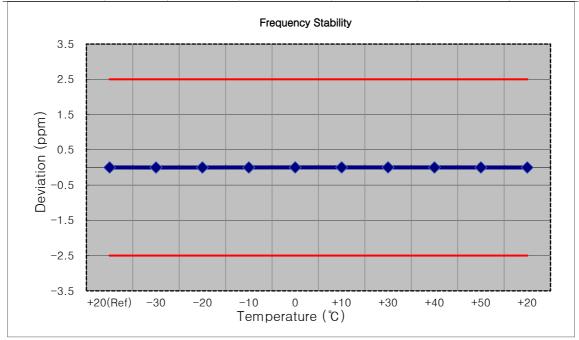
Voltage	Power	Temp.	Frequency	Frequency	Deviation	ppm
(%)	(VDC)	(°C)	(Hz)	Error (Hz)	(%)	
100 %	3.880	+20(Ref)	1909 799 992	0.0	0.000 000	0.000
100 %		-30	1909 799 984	-7.8	0.000 000	-0.004
100 %		-20	1909 799 984	-8.2	0.000 000	-0.004
100 %		-10	1909 799 983	-8.5	0.000 000	-0.004
100 %		0	1909 799 984	-8.2	0.000 000	-0.004
100 %		+10	1909 799 984	-8.2	0.000 000	-0.004
100 %		+30	1909 799 981	-10.4	-0.000 001	-0.005
100 %		+40	1909 799 983	-8.4	0.000 000	-0.004
100 %		+50	1909 799 984	-8.1	0.000 000	-0.004
Batt. Endpoint	3.300	+20	1909 799 982	-10.2	-0.000 001	-0.005





Mode:	WCDMA850
OPERATING FREQUENCY:	836,600,000 Hz
CHANNEL:	4183
REFERENCE VOLTAGE:	3.880 VDC
DEVIATION LIMIT:	\pm 0.000 25 % or 2.5 ppm

Voltage	Power	Temp.	Frequency	Frequency	Deviation	
(%)	(VDC)	(°C)	(Hz)	Error (Hz)	(%)	- ppm
100 %		+20(Ref)	836 600 001	0.0	0.000 000	0.0000
100 %		-30	836 599 999	-1.7	0.000 000	-0.0021
100 %		-20	836 600 000	-1.0	0.000 000	-0.0012
100 %		-10	836 600 001	-0.5	0.000 000	-0.0006
100 %	3.880	0	836 600 002	0.9	0.000 000	0.0010
100 %		+10	836 600 002	0.9	0.000 000	0.0011
100 %		+30	836 600 003	1.4	0.000 000	0.0017
100 %		+40	836 600 000	-1.2	0.000 000	-0.0014
100 %		+50	836 600 001	-0.6	0.000 000	-0.0007
Batt. Endpoint	3.300	+20	836 600 000	-1.0	0.000 000	-0.0012





Report No. HCT-RF-2405-FC032

9. TEST PLOTS



Agilent Spectrum	m Analyzer - Occupied BW		anautri aanti			
	RF 50Ω AC q 824.200000 M	Trig:	SENSE:INT Freq: 824.200000 MHz Free Run Avg[Hold n: 20 dB	Radio Ste d: 100/100	PM May 08, 2024 d: None vice: BTS	Frequency
10 dB/div	Ref Offset 26.6 dE Ref 40.00 dBm					
30,0 20.0 10.0		Marched	m from my			Center Free 824.200000 MH:
0.00		a na server and a server and a server and a server a se		Au		
20.0 30.0 40.0	and the second of the second			way the way the		
^{50.0} <mark>₩₩₩₩</mark> Center 824.	.2 MHz			S	pan 1 MHz	CF Stej 100.000 kH Auto Mai
Res BW 3.	.9 kHz	#	#VBW 12 kHz	Sweep	62.73 ms	
Occupie	ed Bandwidtl 24	^h 44.87 kHz	Total Power	35.8 dBm		Freq Offse 0 H
Transmit x dB Ban	t Freq Error ndwidth	807 Hz 314.4 kHz	OBW Power x dB	99.00 % -26.00 dB		
ISG				STATUS		

■ GSM850 MODE (128 CH.) Occupied Bandwidth



Agilent Spectrum Analyzer - Occupied BW			12.000		
RL RF 50 Ω AC Center Freq 836.600000 M PASS 1 <th1< th=""> <th1< th=""> <th1< th=""> <!--</th--><th>Trig: I</th><th>SENSE:INT r Freq: 836.600000 MHz Free Run Avg Hold h: 20 dB</th><th>Radio Std</th><th></th><th>Frequency</th></th1<></th1<></th1<>	Trig: I	SENSE:INT r Freq: 836.600000 MHz Free Run Avg Hold h: 20 dB	Radio Std		Frequency
Ref Offset 26.6 dE					
- og 30.0 20.0	and Allerola	and white the second second			Center Free 836.600000 MH
0.00 10.0 20.0	valler	- AND	und		
30.0 40.0 50.0			willing with the way of the second se	WU ya daba	
Center 836.6 MHz Res BW 3.9 kHz	#	VBW 12 kHz		oan 1 MHz 62.73 ms	CF Ste 100.000 kH Auto Ma
Occupied Bandwidt	^h 44.40 kHz	Total Power	35.7 dBm		Freq Offse 0 H
Transmit Freq Error x dB Bandwidth	901 Hz 310.4 kHz	OBW Power x dB	99.00 % -26.00 dB		
ISG			STATUS		

■ GSM850 MODE (190 CH.) Occupied Bandwidth



Agilent Spectrum Analyzer - Occupied BW	1	SENSE:INT	ALIGN AUTO 01:24:26 PM May	08.2024
Center Freq 848.800000 I PASS	Trig: I	r Freq: 848.800000 MHz Free Run Avg Hold h: 20 dB	Radio Std: Non	Frequency
Ref Offset 26.6 df 10 dB/div Ref 40.00 dBn				
30.0	www	Margaly and the state of the st		Center Fred 848.800000 MH:
10.0 0.00 10.0	1 Mint	- When we have		
20.0 30.0 40.0		h	Man Marken	
Center 848.8 MHz Res BW 3.9 kHz		VBW 12 kHz		CF Step 100.000 kH Auto Mai
Occupied Bandwidt		Total Power	Sweep 62.7 35.8 dBm	Freq Offse
Transmit Freq Error x dB Bandwidth	527 Hz 310.1 kHz	OBW Power x dB	99.00 % -26.00 dB	
ISG			STATUS	

■ GSM850 MODE (251 CH.) Occupied Bandwidth



Agilent Spectrum Analyzer - Occupied BW				0 0	X
RL RF 50 Ω AC Center Freq 824.200000 M PASS	Trig:	sen Freq: 824.200000 MHz Free Run Avg Hold en: 20 dB	ALIGN AUTO 03:11:51 PM Radio Std: d: 100/100 Radio Devie		y
Ref Offset 26.6 dE 10 dB/div Ref 40.00 dBm Log					
30,0 20.0	.04	1 Allandran .		Center 824.200000	
10.0	www.www.	and and a contraction of the second sec			
20.0	. M.	- Ny			
40 0 50 0 50 0		h	a haman work work	eller,	
Center 824.2 MHz Res BW 3.9 kHz		#VBW 12 kHz	Spa Sweep (CF 5 5.000000 Auto 52.73 ms	Ste MH Ma
Occupied Bandwidt	^h 54.08 kHz	Total Power	31.6 dBm	Freq O	offse 0 H
Transmit Freq Error	2.496 kHz	OBW Power	99.00 %		
x dB Bandwidth	313.5 kHz	x dB	-26.00 dB	t	
SG			STATUS		

■ GSM850 EDGE (128 CH.) Occupied Bandwidth



and the second se	n Analyzer - Occupied BW		annuar same			1		
	RF 50 Ω AC q 1.850200000) GHz #IFGain:Low	SENSE:INT Center Freq: 1.8 Trig: Free Run #Atten: 20 dB		ALIGN AUTO	Radio Std		Frequency
10 dB/div	Ref Offset 27.2 d Ref 40.00 dBr							
30.0 20.0			a parantitan	M _n				Center Freq 1.850200000 GHz
10.0		North	ah ak	- And - Mart				
-20.0	and M	and the second			WWW WWW			
-40.0	monmontant					harmon	Annaly	CF Step 100.000 kHz
Center 1.85 #Res BW 3.9			#VBW 12	2 kHz			an 1 MHz 62.73 ms	Auto Mar
Occupie	ed Bandwidt 2	th 42.55 kH		I Power	33.7	dBm		Freq Offset 0 Hz
Transmit x dB Ban	Freq Error dwidth	1.876 kł 305.8 kł		V Power		.00 % 00 dB		
ISG					STATUS			

■ GSM1900 MODE (512 CH.) Occupied Bandwidth



Agilent Spectrum Analyzer - Occupied BW	1 1	SENSE:INT	ALIGN AUTO 01:31:57 PM May 08.	2024
Center Freq 1.880000000 PASS	Trig:	r Freq: 1.880000000 GHz Free Run Avg Hold n: 20 dB	Radio Std: None	Frequency
Ref Offset 27.2 dB 10 dB/div Ref 40.00 dBm Log				
30.0 20.0		x Man สโตโนโ		Center Freq 1.880000000 GHz
0.00	AWAY Y	Am a falfa		
-10.0	fam for the second s	- Vin	fuller .	
-30.0 -40.0			Mhoh do	
Center 1.88 GHz			Span 1 M	
#Res BW 3.9 kHz		VBW 12 kHz	Sweep 62.73	and the second second second
Occupied Bandwidth 24	1 44.01 kHz	Total Power	34.0 dBm	Freq Offset 0 Hz
Transmit Freq Error	3.129 kHz	OBW Power	99.00 %	
x dB Bandwidth	316.1 kHz	x dB	-26.00 dB	
ISG			STATUS	

■ GSM1900 MODE (661 CH.) Occupied Bandwidth



RL RF Center Freq 1.9 PASS		Trig:	SENSE:INT er Freq: 1.909800000 GHz Free Run Avg Hold en: 20 dB	ALIGN AUTO 01:33:09 PM Radio Std: N I: 100/100 Radio Devic	lone	Frequency
10 dB/div Re	f Offset 27.2 dB f 40.00 dBm					
30,0 20.0		. n. MA	No many month			Center Freq 1.909800000 GHz
10,0		Martin	- Horn			
20.0	MINNER	May	<u>سرر</u>	KWMWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWW		
40.0 50.0 prystry paper				when we	Mangoally	CF Step 100.000 kH;
Center 1.91 GH Res BW 3.9 kH			#VBW 12 kHz	Spa Sweep 6	n 1 MHz 2.73 ms	<u>uto</u> Mar
Occupied I		6.42 kHz	Total Power	33.8 dBm		Freq Offset 0 Hz
Transmit Fre x dB Bandwi		2.988 kHz 321.7 kHz	OBW Power x dB	99.00 % -26.00 dB		
	luun	521.1 KI12		20.00 40		
SG				STATUS		

■ GSM1900 MODE (810 CH.) Occupied Bandwidth



Agilent Spectrum Analyzer - Occupied RL RF 50 Q AU Center Freq 1.88000000 PASS	00 GHz	SENSE:INT enter Freq: 1.880000000 GHz ig: Free Run Avg Hold ttten: 20 dB	ALIGN AUTO 02:06:11 PM Radio Std: N d: 100/100 Radio Devic	lone Frequency
Ref Offset 27.2 10 dB/div Ref 40.00 d				
20.0				Center Freq 1.880000000 GHz
10.0	Manural	annoline and		
-10,0	work of		Men	
-30.0 -40.0 -50.0	A ^N 4		a water with a militaria	р.)
Center 1.88 GHz #Res BW 3.9 kHz		#VBW 12 kHz	Spa Sweep 6	n 1 MHz 2.73 ms
Occupied Bandwi	_{dth} 243.74 kHz	Total Power	29.1 dBm	Freq Offset 0 Hz
Transmit Freq Error x dB Bandwidth	-958 Hz 313.8 kHz		99.00 % -26.00 dB	
MSG			STATUS	

■ GSM1900 EDGE (661.) Occupied Bandwidth



Agilent Spectrum Analyzer - Occu					
RL RF 50 Ω Center Freq 826.400 PASS		SENSE:INT Center Freq: 826.400000 MH Trig: Free Run Avg #Atten: 10 dB	ALIGN AUTO Iz Hold: 500/500	03:24:07 PM May 08, 2024 Radio Std: None Radio Device: BTS	Frequency
Ref Offset 10 dB/div Ref 40.00					
- 09 30,0 20,0					Center Free 826.400000 MH
10.0		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	my		
10,0					
20.0	\sim		h	1	
30 0 40 0				Warman	
50.0					CF Ster 1.000000 MH
enter 826.4 MHz Res BW 100 kHz		#VBW 390 kHz		Span 10 MHz Sweep 1 ms	<u>Auto</u> Mai
Occupied Band	width 4.1570 M	Total Power	31.6	6 dBm	Freq Offse 0 Ha
Transmit Freq Err			99	9.00 %	
x dB Bandwidth	4.727	MHz x dB	-26.	00 dB	
ISG			STATU	q.	

■ WCDMA850 MODE (4132 CH.) Occupied Bandwidth



Agilent Spectrum Analyzer - Occupied BW	-	I manufactured			- 8 ×
RL RF 50 Ω AC Center Freq 836.600000 Μ PASS		SENSE:INT Center Freq: 836.600000 M Frig: Free Run Avg Atten: 10 dB	ALIGN AUTO Hz]Hold: 500/500	03:25:11 PM May 08, 2024 Radio Std: None Radio Device: BTS	Frequency
Ref Offset 26.6 dE 10 dB/div Ref 40.00 dBm					
-og 30.0 20.0					Center Free 836.600000 MH
10.0	former	man	m		
10.0					
20.0 30.0 mm			- hr	······································	
40 0 50 0					CF Step 1.000000 MH
Center 836.6 MHz #Res BW 100 kHz		#VBW 390 kHz		Span 10 MHz Sweep 1 ms	<u>Auto</u> Mar
Occupied Bandwidth 4.1578 MH		d Bandwidth Total Power 4.1578 MHz		7 dBm	Freq Offse 0 H
Transmit Freq Error	4.715 kHz	OBW Powe	r 9!	9.00 %	
x dB Bandwidth	4.721 MH	z xdB	-26	00 dB	
ISG			STATU	S	

■ WCDMA850 MODE (4183 CH.) Occupied Bandwidth



Agilent Spectrum Analyzer - Occupied BW	1	1 - second		1		
RL RF 50 Ω AC Center Freq 846.600000 PASS	MHz #IFGain:Low	SENSE:INT Center Freq: 846.60 Trig: Free Run #Atten: 10 dB	00000 MHz	500/500 Ra	13:25:47 PM May 08, 2024 Idio Std: None Idio Device: BTS	Frequency
Ref Offset 26.6 d 10 dB/div Ref 40.00 dBr						
30,0 20,0						Center Free 846.600000 MH
10.0	former	mmmmm	many			
10,0	/					
20.0 30.9	/			han	monter	
40.0					- Mu	
Center 846.6 MHz					Span 10 MHz	CF Step 1.000000 MH Auto Ma
Res BW 100 kHz		#VBW 390	kHz		Sweep 1 ms	Auto Ma
Occupied Bandwidt	th 1563 MF		Power	31.7 dl	Зm	Freq Offse 0 H
Transmit Freq Error	1.264 k		Power	99.00) %	
x dB Bandwidth	4.739 M	Hz x dB		-26.00	dB	
ISG				STATUS		

■ WCDMA850MODE (4233 CH.) Occupied Bandwidth



- 5 ×				um Analyzer - Swept SA	
Frequency	01:32:07 PM May 08, 2024 TRACE 1 2 3 4 5 0 TYPE MWWWWW DET P P P P P P	ALIGN AUTO #Avg Type: RMS	SENSE:INT Trig: Free Run #Atten: 20 dB	RF 50 Ω AC eq 1.880000000 GHz PNO: Fast ↔ IEGain:Low	Center Fr
Auto Tune	1.880 070 GHz 28.748 dBm	Mkr1		Ref Offset 27.2 dB Ref 37.20 dBm	10 dB/div
Center Freq 1.880000000 GHz	PEAN		∮ ¹		27.2
Start Freq 1.879000000 GHz					7,20
Stop Freq 1.881000000 GHz					-2,80
CF Step 200.000 kHz Auto Mar					-22.8
Freq Offsel 0 Ha					-42.8
	Span 2.000 MHz .000 ms (1001 pts)	Sween 1	3.0 MHz	80000 GHz #\/B\A	Center 1.8
		STATUS	5.0 WI12	.0 WHZ #VBV	ISG DIV

■ GSM1900 MODE (661 CH.) Peak-to-Average Ratio P_{Pk}



Agilent Spectrum Analyzer - Swept SA					- 5 ×
RL RF 50 Q AC Center Freq 1.880000000	OGHZ PNO: Fast ↔ IFGain:Low	Trig: Free Run #Atten: 20 dB	ALIGN AUTO #Avg Type: RMS	02:06:21 PM May 08, 2024 TRACE 1 2 3 4 5 0 TYPE MWWWW DET P P P P P P	Frequency
Ref Offset 27.2 dB 10 dB/div Ref 37.20 dBm	IFGain:Low	#Atten: 20 0D	Mkr1	1.880 006 GHz 26.858 dBm	Auto Tune
27.2		1			Center Freq 1.88000000 GHz
7.20				PEAR	Start Freq 1.879000000 GHz
-2.80					Stop Freq 1.881000000 GHz
32.8					CF Step 200.000 kH: Auto Mar
42.8					Freq Offset 0 Hz
Center 1.880000 GHz #Res BW 1.0 MHz	#\(P)	/ 3.0 MHz	Sweep	Span 2.000 MHz .000 ms (1001 pts)	
MSG		-Sto WITZ	STATUS		

■ GSM1900 MODE (661 CH.) Peak-to-Average Ratio P_{Avg}



Agilent Spectrum Analyzer - Swept SA RF 50 Q AC		SENSE:INT	ALIGN AUTO	11:09:17 AM Jan 13, 2017	
nter Freq 1.88000000	PNO: Fast		#Avg Type: RMS	TRACE 1 2 3 4 5 6 TYPE WWWWWW DET P NNNNN	Frequency
Ref Offset 27.6 dB dB/div Ref 37.60 dBm			Δ	Mkr3 4.616 ms 0.01 dB	Auto Tur
X a .6			●3∆4		Center Fr 1.880000000 G
4					Start Fr 1.880000000 G
4 Historia and Milli Alternation for the	nskrak svytana ve v jezdalnih v pred H	kana dati yanti dahisi da dati kapi jipi dahisi da	na dalaman tanàn	<mark>ar uitenikaisen k</mark> inder an openetaisen allen	Lange and the second second
4 4 4 4 100 100 100 100 100 100 100 100	neder)aud allelaupeli #∨BW	in della al della del I 3.0 MHz		99999999999999999999999999999999999999	1.880000000 G CF Sto 1.000000 M
4 1.880000000 GHz enter 1.880000000 GHz es BW 1.0 MHz R MODE TRC SCL F 1 t Δ4 1 t (Δ) F 1 t	#VBW 547.5 μs (Δ) 2.222 ms 4.616 ms (Δ) 2.222 ms		Sweep 10.	Span 0 Hz 00 ms (20000 pts) Function value	1.88000000 G CF Str 1.000000 M <u>Auto</u> M Freq Offs
$ \begin{array}{c c c c c c } & & & & & & & & & & & & & & & & & & &$	547.5 μs (Δ) 2.222 ms 4.616 ms (Δ)	Y FI -2.31 dB 29.90 dBm 0.01 dB		00 ms (20000 pts)	Stop Fro 1.880000000 GI CF Sta 1.000000 MI Auto M Freq Offs 01

■ GSM1900 MODE (661 CH.) Peak-to-Average Ratio Duty



			0 0 1
RF 50 Ω AC enter Freq 1.880000000	O CHZ PNO: Fast Trig: Free Run IFGain:Low Atten: 20 dB	ALIGN AUTO 11:21:55 AM Jan 13, 2017 #Avg Type: RMS TRACE 2 34 5 6 TYPE DET PLANNIN	Frequency
Ref Offset 27.6 dB dB/div Ref 37.60 dBm		ΔMkr3 4.616 ms 0.23 dB	Auto Tun
16	Δ2	304	Center Fre 1.880000000 GH
4			Start Fre 1.880000000 GH
4 4 Deputer et det de tite 4 pholographie de tite	alter for all a provide a second a set before a positive data as a second a set of the second as a second as a Hand by the grave the applied for all the grave and a set of the second as a second as a second as a second as a	and alterative to be present to an alternative and the second of the sec	Stop Fre 1.880000000 GH
enter 1.880000000 GHz es BW 1.0 MHz	#VBW 3.0 MHz	Span 0 Hz Sweep 10.00 ms (20000 pts)	CF Ste 1.000000 MH Auto Ma
		Span 0 Hz Sweep 10.00 ms (20000 pts)	1.000000 MH

■ GSM1900 EDGE (661 CH.) Peak-to-Average Ratio Duty



Agilent Spectrum Analyzer - Channel Power		
Center Freq 1.880000000 GHz #IFGain:	Center Freq: 1.88000000 GHz Trig: Free Run Avg Hold: 300/3 #Atten: 20 dB	Radio Std: None Frequency
Ref Offset 27.2 dB 10 dB/div Ref 30.00 dBm Log		
20.0		Center Free 1.880000000 GH
000 -10 0 -20 0		
30.0		
50.0		CF Ste
Center 1.88 GHz #Res BW 10 kHz	#VBW 30 kHz	Span 500 kHz Sweep 6.2 ms
Channel Power	Power Spectral D	ensity Freq Offse
18.67 dBm / 244	кнz -35.21 dE	Sm /Hz
SG		STATUS

■ GSM1900 EDGE (661 CH.) Peak-to-Average Ratio P_{Pk}



enter Fre	RF 50Ω AC eq 1.88000000	00 GHz #IFGain:Low	SENSE:INT Center Freq: 1.8800 Trig: Free Run #Atten: 20 dB	ALIGN AUT 000000 GHz Avg Hold: 300/300	Radio Std: None	Frequenc
dB/div	Ref Offset 27.2 Ref 30.00 dE					
g 						Center 1.880000000
00 .0				m		
	\sim					
nter 1.8	8 GH7				Span 500 kHz	CF 50.00
es BW 1			#VBW 30 k	Hz	Sweep 6.2 ms	
	el Power			r Spectral De		FreqO
1.	3.60 dBm	i / 243.7 kH	z	-40.27 dBr	n /Hz	
				ST/	ATUS	

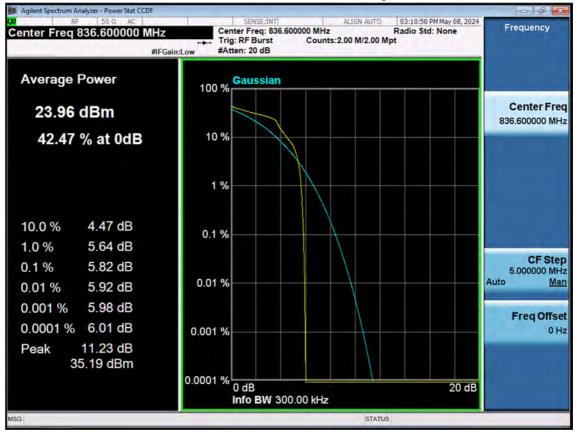
■ GSM1900 EDGE (661 CH.) Peak-to-Average Ratio P_{Avg}





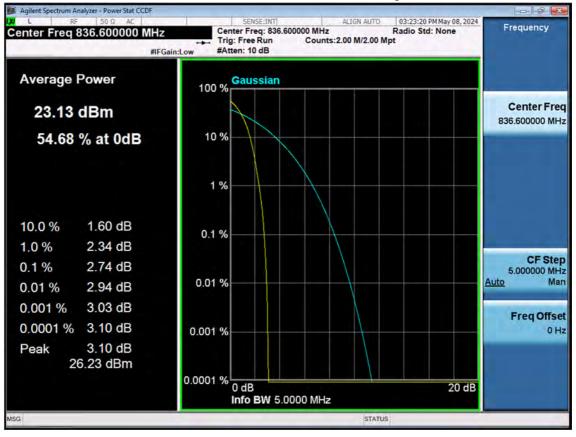
GSM850 MODE (190 CH.) Peak-to-Average Ratio





GSM850 EDGE (190 CH.) Peak-to-Average Ratio





■ WCDMA850 MODE (4408 CH.) Peak-to-Average Ratio



Agilent Spectrum Analyzer - Swept SA			the second second	
Center Freq 824.000000 ₪	PNO: Wide Trig: Free Run	ALIGN AUTO #Avg Type: RMS	01:22:25 PM May 08, 2024 TRACE 1 2 3 4 5 0 TYPE M WWWW DET A A A A A A A	Frequency
Ref Offset 26.6 dB 10 dB/div Ref 26.60 dBm	IFGain:Low #Atten: 20 dB		DET A A A A A A	Auto Tune
16.6		Male and the plan .		Center Fred 824.000000 MHz
3.40		pul . Ph	HU HA	Start Free 823.500000 MH:
13.4	- mal		-13.00 dBm	Stop Fred 824.500000 MH:
33.4	. And May 1		nu have	CF Step 100.000 kH: Auto Mar
53.4	eapprished and a second			Freq Offse 0 H:
-63.4 WARAA TOWAR 217P	#VBW 12 kHz	#Sween	Span 1.000 MHz 1.000 s (1001 pts)	
MSG		STATUS	1.000 5 (100 1 pts)	

■ GSM850 MODE (128 CH.) Block Edge 1



						trum Analyzer - Swep	
Frequency	01:22:53 PM May 08, 2024 TRACE 1 2 3 4 5 0 TYPE M	ALIGN AUTO #Avg Type: RMS		de 🛶 Trig: Fre	0000 MHz	RF 50 Ω req 823.500	Center F
Auto Tune	1 823.998 MHz -17.110 dBm	Mki			.6 dB JBm	Ref Offset 26 Ref 26.60 c	0 dB/div
Center Free 823.500000 MH							16.6
Start Free 823.000000 MH							6.60 3.40
Stop Free 824.000000 MH	-13.00 c 1						-13.4
CF Step 100.000 kH Auto Mar	Mark Market						-33.4
Freq Offse 0 H	here all on	an Laborarda (1991)					-43.4
	Span 1.000 MHz			spil-drappy and alled	hittelen in familie	3.5000 MHz	Center 8
	1.000 s (1001 pts)	#Sweep	Z	VBW 12 kHz		3.9 KHZ	#Res BW

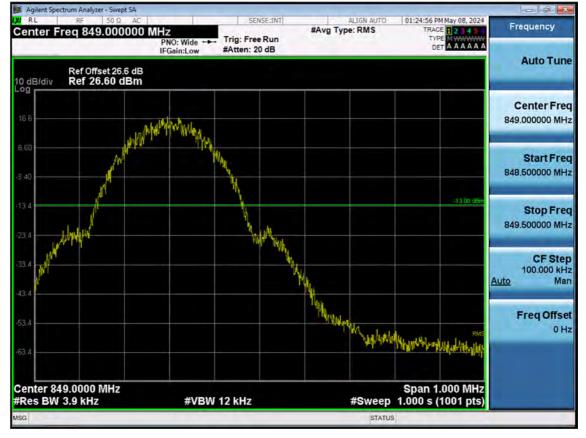
■ GSM850 MODE (128 CH.) Block Edge 2



- 6 ×						trum Analyzer - Swept SA	
Frequency	01:23:20 PM May 08, 2024 TRACE 2 3 4 5 6 TYPE MUNICIPAL OF A A A A A A	ALIGN AUTO	#Avg Ty	SENSE:IN Trig: Free Run #Atten: 20 dB	NHZ PNO: Wide ↔ IFGain:Low	RF 50 Ω AC req 821.000000 M	Center F
Auto Tune	1 821.900 MHz -45.87 dBm	Mkr				Ref Offset 26.6 dB Ref 10.00 dBm	10 dB/div
Center Free 821.000000 MH							0.00
Start Free 819.000000 MH	-13.00 dēm						-10.0
Stop Fre 823.000000 MH		1					-40.0
CF Stej 400.000 kH Auto Ma	eden seguesta da la seguesta de se	a ann	barry tar samely	allennarennlafen	yyoyy Massan Ang Malanar	meleter of the synaphy search of the synamical states	-50.0
Freq Offse 0 H							.70.0
	Span 4.000 MHz 1.000 s (1001 pts)	#Sweep		300 kHz	#VBW	21.000 MHz 100 kHz	Center 82
		STATUS					ISG

■ GSM850 MODE (128 CH.) Block Edge 3





GSM850 MODE (251 CH.) Block Edge 1



	ctrum Analyzer - Swept SA								-	0 8 8
Center F	RF 50 Ω AC req 849.500000	MHZ PNO: Wide			#Avg Type	ALIGN AUTO	TRAC	M May 08, 2024 DE 1 2 3 4 5 6 DE M WWWWWWW ET A A A A A A	F	requency
0 dB/div	Ref Offset 26.6 dB Ref 26.60 dBm					Mki	1 849.0 -19.7	21 MHz 03 dBm		Auto Tune
16.6		-								Center Free 9.500000 MH
6.60 3.40									84	Start Free 9.000000 MH
								-13.00 dBm	85	Stop Fre 0.000000 MH
33.4	hite and the second sec								Auto	CF Ste 100.000 kH Ma
53.4 63.4	Wyshow	hojentihiqt _{hill} ruhtenses	lan when the state	Labajak, synauses	Winner	walkeleneer sole	Million	rms Intellulation		Freq Offse 0 H
Center 84 Res BW	9.5000 MHz 3.9 kHz	#VBW	12 kHz				Span 1	.000 MHz 1001 pts)		
ISG		The second second				STATUS				

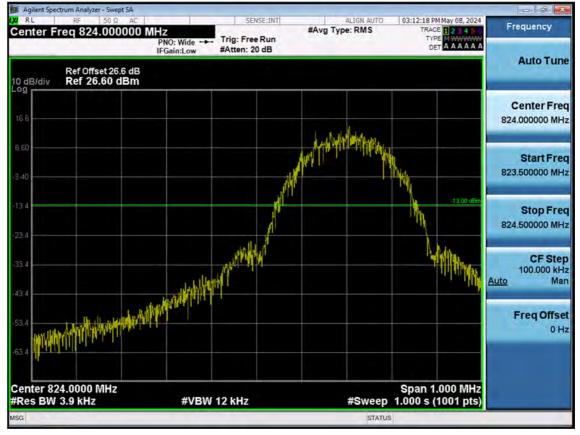
■ GSM850 MODE (251 CH.) Block Edge 2



Agilent Spectrum Analyzer - Swept SA					0 0 8
x RL RF 50 Ω AC Center Freq 852.000000	PNO: Wide	SENSE:INT Trig: Free Run #Atten: 20 dB	ALIGN AUTO #Avg Type: RMS	01:25:57 PM May 08, 2024 TRACE 1 2 3 4 5 0 TYPE MWWWWW DET A A A A A A	Frequency
Ref Offset 26.6 dB			Mk	r1 851.088 MHz -46.771 dBm	Auto Tune
0.00	-				Center Free 852.000000 MH
20.0				-13.00 dBm	Start Free 850.000000 MH
30.0					Stop Free 854.000000 MH:
-50.0	and the second second	angerten Marriagerielanen	nin internetienten anderen son	RMS	CF Step 400.000 kH Auto Mar
70.0					Freq Offse 0 H
Center 852.000 MHz #Res BW 100 kHz	#VBW	300 kHz	#Sweep	Span 4.000 MHz 1.000 s (1001 pts)	
ASG			STATUS		

■ GSM850 MODE (251 CH.) Block Edge 3





EDGE MODE (128 CH.) Block Edge 1



0.0	03:12:45 PM May 08, 2024	ALIGN AUTO	SENSE:INT	trum Analyzer - Swept SA RF 50 Q AC
Frequency Auto Tune	TRACE 1 2 3 4 5 0 TYPE MWWWWW DET A A A A A A	#Avg Type: RMS		req 823.500000 MHz PNO: Wide ↔ IFGain:Low
	1 823.991 MHz -24.82 dBm	Mkı		Ref Offset 26.6 dB Ref 26.60 dBm
Center Free 823.500000 MH				
Start Free 823.000000 MH				
Stop Fre 824.000000 MH	-13.00 dBm			
CF Stej 100.000 kH Auto Ma	haddely with			
Freq Offse 0 H	Addan -	pertry aparts have not self	vela fler ring water a light	
	Span 1.000 MHz 1.000 s (1001 pts)		12 kHz	3.5000 MHz
		STATUS		

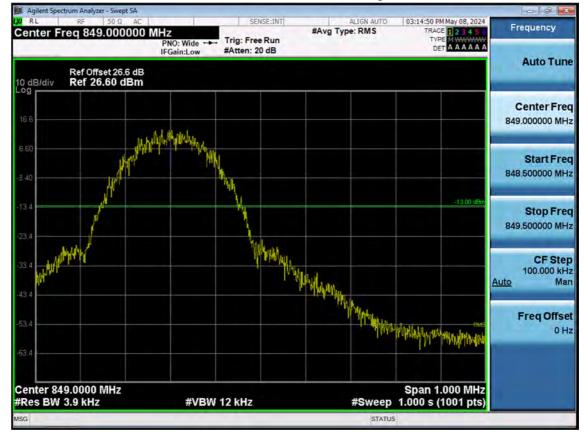
■ EDGE MODE (128 CH.) Block Edge 2



0 8 -				trum Analyzer - Swept SA	
Frequency	03:13:14 PM May 08, 2024 TRACE 1 2 3 4 5 0 TYPE MUNANNA DET A A A A A A	#Avg Type: RMS	SENSE:INT Trig: Free Run #Atten: 20 dB	RF 50 Ω AC req 821.000000 MHz PNO: Wide → IFGain:Low	Center Fi
Auto Tun	1 822.760 MHz -50.944 dBm	Mki		Ref Offset 26.6 dB Ref 10.00 dBm	0 dB/div
Center Fre 821.000000 MH					0.00
Start Fre 819.000000 MH	-13.00 dBm				10.0 20.0
Stop Fre 823.000000 MH					30.0 40.0
CF Ste 400.000 kH Auto Ma	1 Lungangan Jawa Jawa Manana B	n	ap	an gana ay an ang ang ang ang ang ang ang ang ang	50.0
Freq Offs 0 F					70.0
	Span 4.000 MHz 1.000 s (1001 pts)	#Sweep	300 kHz	1.000 MHz 100 kHz #VBW	Center 82
-		STATUS			ISG

■ EDGE MODE (128 CH.) Block Edge 3





EDGE MODE (251 CH.) Block Edge 1



	SENSE:INT Trig: Free Run #Atten: 20 dB	#Avg Typ	and states of	TRACI TYP DE 1 849.0	1May 08, 2024 2 3 4 5 6 M 4 4 4 5 6 1 4 A A A A A A 01 MHz 80 dBm		Auto Tune
			Mkı	1 849.0 -25.88	01 MHz 30 dBm		Auto Tune
							Center Fred 9.500000 MH:
						849	Start Fred
					-13.00 dBm	850	Stop Free
						Auto	CF Step 100.000 kH: Mar
Webberghallowleader	llaplateritite of states and	Map of the later of a	And the principal states	4 1 	RMS		Freq Offse 0 H:
#VBW 1	2 kHz		#Sweep	Span 1. 1.000 s (*	000 MHz 1001 pts)		
	#VBW 1	#VBW 12 kHz	Home Hand Hand Hand Hand Hand Hand Hand Hand		#VBW 12 kHz \$	۲۸۸۵ ۲۰۸۵ ۲۰۰۵ ۲۰۰۵	Auto Span 1.000 MHz #VBW 12 kHz #Sweep 1.000 s (1001 pts)

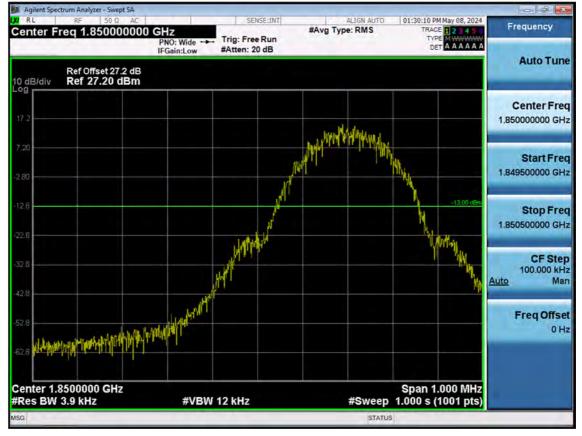
■ EDGE MODE (251 CH.) Block Edge 2



0 0 0				ctrum Analyzer - Swept SA	
Frequency	03:15:52 PM May 08, 2024 TRACE 1 2 3 4 5 0 TYPE	#Avg Type: RMS	SENSE:INT	RF 50 Ω AC req 852.000000 MHz PNO: Wide +++	Center Fre
Auto Tun	1 850.312 MHz -50.900 dBm	Mkı	#Atten: 20 dB	Ref Offset 26.6 dB Ref 10.00 dBm	0 dB/div
Center Free 852.000000 MH					0.00
Start Fre 850.000000 MH	-13.00 dBm				20.0
Stop Fre 854.000000 MH					40.0
CF Ste 400.000 kF Auto Ma	RMS	ารูปต่ ^า กระว่าง ซากปล้างประกูป-สุราชการ์แปลงรูปแกร์แกรง	ala daga ang ang ang ang ang ang ang ang ang	*1 ***********************************	50.0
Freq Offs 0 H					70.0
	Span 4.000 MHz 1.000 s (1001 pts)	#Sweep	300 kHz	52.000 MHz 100 kHz #VBW	Center 852.
		STATUS			ISG

■ EDGE MODE (251 CH.) Block Edge 3





GSM1900 MODE (512 CH.) Block Edge 1



				trum Analyzer - Swept SA	
Frequency	01:30:38 PM May 08, 2024 TRACE 2 3 4 5 0 TYPE MUMANANA DET A A A A A A	ALIGN AUTO #Avg Type: RMS	- Trig: Free Run #Atten: 20 dB	RF 50 Ω AC req 1.849500000 GHz PNO: Wide ↔ IFGain:Low	Center Fi
Auto Tun	1.849 988 GHz -22.562 dBm	Mkr1		Ref Offset 27.2 dB Ref 27.20 dBm	0 dB/div
Center Fre 1.849500000 GH					17.2
Start Fre 1.849000000 GH					7,20
Stop Fre 1.85000000 GF	-13,00 dBm				12.8
CF Ste 100.000 kH Auto Ma	Martin Marca				32.8
Freq Offso 0 H	1910-104 Martin	hearten ad a later of a shall	adheetneedearrenth	anlati alta di saliti ana da sada sa	52.8
	Span 1.000 MHz 1.000 s (1001 pts)		12 kHz	4495000 GHz	Center 1.8
		STATUS			SG

■ GSM1900 MODE (512 CH.) Block Edge 2



Agilent Spectrum Analyzer - Swept SA		1			0 8 8
RL RF 50 Q AC Center Freq 1.847000000	PNO: Wide	SENSE:INT Trig: Free Run #Atten: 20 dB	ALIGN AUTO #Avg Type: RMS	01:31:05 PM May 08, 2024 TRACE 1 2 3 4 5 0 TYPE M MAY 100 DET A A A A A A	Frequency
Ref Offset 27.2 dB 0 dB/div Ref 10.00 dBm			Mkr1	1.848 912 GHz -44.68 dBm	Auto Tune
0 00					Center Fre 1.847000000 GH
20.0				-23.00 dBm	Start Fre 1.845000000 GH
40,0				1	Stop Fre 1.849000000 GH
50.0	-s-al-balderalayafark	and the second	IJţĊĸŢŢġĊĸĨĊĸŦŎĊŎĬĊŎŎŎŎŎŎŎŎŎŎŎŎŎŎŎŎŎŎŎŎŎŎŎŎŎŎŎŎŎŎŎŎ	an an an an an and the for the	CF Ste 400.000 kH Auto Ma
70.0					Freq Offso 0 H
200 Center 1.847000 GHz Res BW 100 kHz	#\/B\//	300 kHz	#Sweep	Span 4.000 MHz 1.000 s (1001 pts)	
SG	7 C 2 V V		STATU		

GSM1900 MODE (512 CH.) Block Edge 3

Note : We used a narrower RBW in order to increase accuracy.

Calculation = Reading Value + $10 \times \log(1 \text{ MHz}/100 \text{ kHz}) \text{ dB} = -44.68 \text{ dBm} + 10 \text{ dB} = -34.68 \text{ dBm}$





GSM1900 MODE (810 CH.) Block Edge 1



								Contraction of the local division of the loc	Analyzer - Swept	
Frequency	1 May 08, 2024 1 2 3 4 5 M M M M M M M M M M M M M M M M M M M	TRAC	ALIGN AUTO	#Avg Type			Z NO: Wide +++ Gain:Low	PN	RF 50 Ω 1.910500	nter Fre
Auto Tun	25 GHz 66 dBm	1.910 0 -21.4	Mkr1						ef Offset 27.2 ef 27.20 dE	
Center Fre 1.910500000 GH										2
Start Fre 1.910000000 GH										0
Stop Fre 1.911000000 GF	-13.00 dBm									
CF Ste 100.000 kH Auto Ma									N.,	1* **W
Freq Offse 0 F		electronic	alista farras	st.Wintpassion	keizhi k tolog	HUMANIAN MAN	na p iyadhaa	aruin Hereliya	The topology	8
	000 MHz	Span 1	#Sweep			12 kHz	#VBW		5000 GHz kHz	nter 1.9 es BW 3
			STATUS							

■ GSM1900 MODE (810 CH.) Block Edge 2



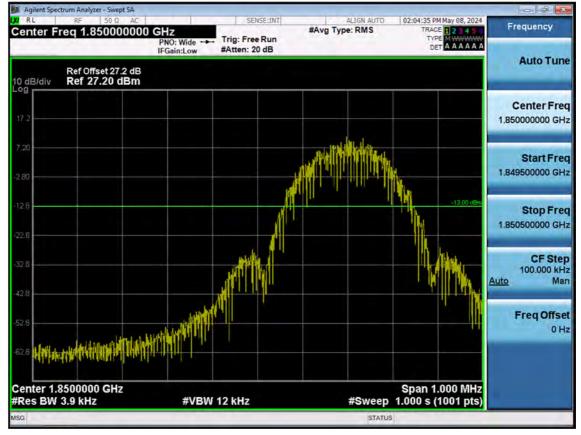
0 0 8				trum Analyzer - Swept SA	
Frequency	01:34:40 PM May 08, 2024 TRACE 1 2 3 4 5 0 TYPE MUMANN DET A A A A A A	ALIGN AUTO #Avg Type: RMS	SENSE:INT Trig: Free Run #Atten: 20 dB	RF 50 Ω AC req 1.913000000 GHz PNO: Wide ↔ IFGain:Low	Center Fr
Auto Tune	1.911 312 GHz -45.198 dBm	Mkr1		Ref Offset 27.2 dB Ref 10.00 dBm	0 dB/div
Center Free 1.913000000 GH					0.00
Start Free 1.911000000 GH	-23.00 dBm				10.0
Stop Free 1.915000000 GH				×1	30.0 40.0
CF Stej 400.000 kH Auto Ma	HMS	an the second	and and a start of the start of	and a grant of a star of a	50.0 Maragana 60.0
Freq Offse 0 H					70.0
	Span 4.000 MHz 1.000 s (1001 pts)	#Sweep	300 kHz	913000 GHz 100 kHz #VBW	Center 1.9 #Res BW
		STATUS			ISG

■ GSM1900 MODE (810 CH.) Block Edge 3

Note : We used a narrower RBW in order to increase accuracy.

Calculation = Reading Value + $10 \times \log(1 \text{ MHz}/100 \text{ kHz}) \text{ dB} = -45.198 \text{ dBm} + 10 \text{ dB} = -35.198 \text{ dBm}$





EDGE MODE (512 CH.) Block Edge 1



SENSE: Wide → Trig: Free Ru #Atten: 20 dB	#Avg Ty	/pe: RMS	02:05:02 PMMay 08, 202 TRACE 12 34 5 TYPE AAAAA .849 996 GH -26.77 dBr	Auto Tune Auto Tune Center Free 1.849500000 GHz Start Free 1.849000000 GHz
		Mkr1 1	-26.77 dBr	Center Fred 1.849500000 GH2 Start Fred 1.849000000 GH2
			-13.00 eB	1.849500000 GH Start Free 1.849000000 GH
			-13 <i>0</i> 0 dB	1.849000000 GH
			-13,00 dB	Stop Fre
				1.85000000 GH
			J. Wall	CF Ste 100.000 kH Auto Ma
and a subserved	ns a canabilited.	Untre propratiti	hely fall marker	Freq Offse 0 H
#VBW 12 kHz	an Mallanda an Anglanda an Anglanda an		Span 1.000 MH	Z
			#VBW 12 kHz #Sweep 1	Span 1.000 MH

■ EDGE MODE (512 CH.) Block Edge 2



0 0 8				trum Analyzer - Swept SA	
Frequency	02:05:29 PM May 08, 2024 TRACE 1 2 3 4 5 0 TYPE M WWWWWW 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 1.847000000 GHz PNO: Wide → IFGain:Low	Center Fr
Auto Tune	1.848 756 GHz -51.72 dBm	Mkr1		Ref Offset 27.2 dB Ref 10.00 dBm	0 dB/div
Center Fred 1.847000000 GH					0.00
Start Fre 1.845000000 GH	-23.00 dBm				20.0
Stop Fre 1.849000000 GH					30.0 40.0
CF Stej 400.000 kH Auto Ma		alge-g-ge-ge-gegenenis-se-se-sel-gegenenis	apan da juli palapan pangka da baha ing pangka da	ana, ga ya na isa ng mana ang ang ang ang ang ang ang ang ang	50.0
Freq Offse 0 H					70.0
	Span 4.000 MHz 1.000 s (1001 pts)	#Sween	300 kHz	847000 GHz 100 kHz #VBW	Center 1.8 #Res BW
-		STATUS			ISG

EDGE MODE (512 CH.) Block Edge 3

Note : We used a narrower RBW in order to increase accuracy.

Calculation = Reading Value + $10 \times \log(1 \text{ MHz}/100 \text{ kHz}) \text{ dB} = -51.72 \text{ dBm} + 10 \text{ dB} = -41.72 \text{ dBm}$





EDGE MODE (810 CH.) Block Edge 1



Agilent Spect	RF 50 Q	AC AC	-		NSE:INT		ALIGN AUTO	02:08:22.0	M May 08, 2024	_	0 0 2
	eq 1.91050	0000 GH	Z NO: Wide ↔ Gain:Low		e Run	#Avg Typ		TRAC		F	requency
10 dB/div	Ref Offset 27. Ref 27.20 d	2 dB IBm					Mkr1	1.910 (-26.3)19 GHz 09 dBm		Auto Tun
17.2										1.	Center Fre 0500000 GH
7,20										1.91	Start Fre
12.8 22.8 - <mark>_1</mark>									-13,00 dBm	1.91	Stop Fre
42.8	14.									Auto	CF Ste 100.000 kH Ma
52.8 62.8		(MARQUAR)	henderligter	the second second	Net al feating	halladijing Prant	northence	ฉานส่งใหม่หม	RMS		Freq Offs 0 H
Center 1.9	105000 GHz 3.9 kHz	2		12 kHz				Span 1	.000 MHz (1001 pts)		
SG							STATUS				

■ EDGE MODE (810 CH.) Block Edge 2



Agilent Spectrum Analyzer - Swept SA					
Center Freq 1.913000000	PNO: Wide Tr	ig: Free Run	ALIGN AUTO #Avg Type: RMS	02:08:53 PM May 08, 2024 TRACE 1 2 3 4 5 0 TYPE MUMAN	Frequency
Ref Offset 27.2 dB 0 dB/div Ref 10.00 dBm	I GUILLON		Mkr1	1.911 260 GHz -51.256 dBm	Auto Tune
0.00					Center Free 1.913000000 GH
20.0				-23.00 dBm	Start Free 1.911000000 GH
30.0					Stop Free 1.915000000 GH
50.0	9857474 5247844 54474 5448 5447 444 444 444 444 444 444 444 444 44	าสใจราศฉารากร่างครับแกลมุลรูปหูร	and an and a second sec	RMS	CF Stej 400.000 kH Auto Ma
70.0					Freq Offse 0 H
©00 Center 1.913000 GHz #Res BW 100 kHz	#VBW 30	0 kHz	#Sweep	Span 4.000 MHz 1.000 s (1001 pts)	
ISG			STATU	5	

EDGE MODE (810 CH.) Block Edge 3

Note : We used a narrower RBW in order to increase accuracy.

Calculation = Reading Value + $10 \times \log(1 \text{ MHz}/100 \text{ kHz}) \text{ dB} = -51.256 \text{ dBm} + 10 \text{ dB} = -41.256 \text{ dBm}$



	03:24:26 PM May 08, 2024	ALIGN AUTO	SENSE:INT	ent Spectrum Analyzer - Swept SA RF 50 Q AC
Frequency	TRACE 2 3 4 5 0 TYPE A WWWWW DET A A A A A A	#Avg Type: RMS		er Freq 824.000000 MHz PNO: Wide ↔ IFGain:Low
Auto Tun	1 824.000 MHz -25.993 dBm	Mk		Ref Offset 26.6 dB div Ref 26.60 dBm
Center Fre 824.000000 MH				
Start Fre 820.500000 MH	RMS		- /	
Stop Fre 827.500000 MH	-13.00 dBm		1	
CF Ste 700.000 kH Auto Ma			\sim	
Freq Offse 0 H				
	Span 7.000 MHz 1.000 s (1001 pts)	#Sweep	160 kHz	er 824.000 MHz BW 51 kHz #VBW
		STATUS		

■ WCDMA850 MODE (4132 CH.) Block Edge



0 8 2				Agilent Spectrum Analyzer - Swept SA
Frequency	03:24:44 PM May 08, 2024 TRACE 1 2 3 4 5 0 TYPE A ***********************************	ALIGN AUTO #Avg Type: RMS	SENSE:INT Wide ↔ Trig: Free Run Low #Atten: 10 dB	Center Freq 821.000000 MHz PNO: Wi IFGain:Li
Auto Tun	1 822.844 MHz -36.370 dBm	Mkr		Ref Offset 26.6 dB 0 dB/div Ref 26.60 dBm
Center Fre 821.000000 MH				16.6
Start Fre 819.000000 MH				3.40
Stop Fre 823.000000 MH	-13 00 6Bm			13.4
CF Ste 400.000 kF Auto Ma	1 RMS			43.4
Freq Offs 0 F				3.4
	Span 4.000 MHz 1.000 s (1001 pts)	#Sweep	#VBW 300 kHz	©34 Center 821.000 MHz Res BW 100 kHz #
_		STATUS		SG

■ WCDMA850 MODE (4132 CH.) – 4 MHz Span



	03:26:05 PM May 08, 2024	ALIGN AUTO	SENSE:INT		RF 50 Q AC	Agilent Spee
Frequency	TRACE 2 3 4 5 0 TYPE A WWWWW DET A A A A A A	#Avg Type: RMS	Trig: Free Run #Atten: 10 dB	PNO: Wide	req 849.000000 N	
Auto Tun	1 849.000 MHz -25.012 dBm	Mki			Ref Offset 26.6 dB Ref 26.60 dBm	10 dB/div
Center Fre 849.000000 MF						16.6
Start Fre 845.500000 MH						5,60 3,40
Stop Fre 852.500000 MH	-13 00 dBm		1			23.4
CF Ste 700.000 kF Auto Ma		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	M			13.4
Freq Offs 0 F	RMS					i3.4
	Span 7.000 MHz 1.000 s (1001 pts)	#Du/440	160 kHz	#\/D\AL	9.000 MHz	63.4 Center 84 Res BW
	1.000 s (1001 pts)	#Sweep		#VDVV	51 M12	ISG

■ WCDMA850MODE (4233 CH.) Block Edge



Agilent Spectrum Analyzer - Swept SA				×		
Center Freq 852.000000	PNO: Wide	ALIGN AUTO #Avg Type: RMS	03:26:23 PM May 08, 2024 TRACE 2 3 4 5 6 TYPE A WWWWW DET A A A A A A	Frequency		
Ref Offset 26.6 dB 0 dB/div Ref 26.60 dBm		Mkr1 850.184 MHz -35.408 dBm				
16.6				Center Free 852.000000 MH		
3.40				Start Free 850.000000 MH		
13.4			-13 00 dBm	Stop Fre 854.000000 MH		
33.4				CF Ste 400.000 kH Auto Ma		
53.4			RMS	Freq Offse 0 H		
Center 852.000 MHz #Res BW 100 kHz	#VBW 300 kHz	#Sweep	Span 4.000 MHz 1.000 s (1001 pts)			
SG		STATU	S			

■ WCDMA850MODE (4233 CH.) – 4 MHz Span



	um Analyzer - Swept SA								
enter Fre	RF 50 Ω AC eq 5.015000000	GHz PNO: Fast → IFGain:Low			#Avg Typ	ALIGN AUTO	TRA	MMay 08, 2024 CE 1 2 3 4 5 6 PE M 444 ET P P P P P P	Frequency
	Ref 10.00 dBm	I Guineon				Mk	(r1 3.16 -57.5	76 GHz 02 dBm	Auto Tun
og 0.00 10.0 20.0	√2								Center Fre 5.015000000 GH
30.0 40.0 50.0		1							Start Fre 30.000000 MH
50.0 70.0 80.0									Stop Fre 10.000000000 GF
tart 30 MH Res BW 1	.0 MHz	#VBV	V 3.0 MHz	L CHING		weep 17	.33 ms (2	0000 GHz 0001 pts)	CF Ste 997.000000 MH Auto Ma
1 N 1 2 N 1 3 4 5 5 6 7 7 8 9 10	f 3.	167 6 GHz 825.1 MHz	-57.502 dBi 4.018 dB	m	TUN FU		FUNCI	E	Freq Offse 0 H
sg			ш			STATUS			

■ GSM850 MODE (128 CH.) Conducted Spurious Emissions



RL	RF 50		1	SENS	SE:INT		ALIGN AUTO	01:24:00 F	M May 08, 2024	
enter Fi	req 5.0150	F	NO: Fast ↔ Gain:Low		Run	#Avg Typ	e: RMS	TRA	CE 1 2 3 4 5 6 PE MWWWWW ET P P P P P P	
dB/div	Ref 10.00	dBm					M	r1 6.53 -57.6	3 4 GHz 82 dBm	Auto Tur
99 0.00 0.0	♥2									Center Fre 5.015000000 GH
0.0						1-				Start Fre 30.000000 Mi
0.0						And the state			PEAK	Stop Fre
0.0										
tart 30 M Res BW	MHz 1.0 MHz		#VB\	W 3.0 MHz				.33 ms (2	0000 GHz	10.00000000 GF CF Ste 997.000000 MH
tart 30 N Res BW	MHz 1.0 MHz RC SCL f		#VB\ 4 GHz .1 MHz	V 3.0 MHz -57.682 dB 3.737 dB	m		weep 17	.33 ms (2		10.00000000 Gi CF Ste 997.000000 Mi <u>Auto</u> Mi Freq Offs
tart 30 M Res BW KR MODE TR 1 N 1 2 N 1 3 4 5	MHz 1.0 MHz RC SCL f	6.533	4 GHz	-57.682 dB	m			.33 ms (2	0001 pts)	10.00000000 GF CF Ste 997.000000 MH

■ GSM850 MODE (190 CH.) Conducted Spurious Emissions



Agilent Spec	ctrum Analyzer - Swept SA RF 50 Ω AC	r - 1	SENSE:		ALIGN AUTO	01:26:10 PM May 08,	
	req 5.01500000	0 GHz PNO: Fast H IFGain:Low		#Avg Ty	ype: RMS	TRACE 2 3 TYPE MWW DET P P P	Frequency
0 dB/div	Ref 10.00 dBm				Mk	r1 3.182 5 G -57.311 dE	Hz Auto Tun Sm
0.00 10.0	♥2						Center Fre 5.015000000 GH
50.0 40.0 50.0		1					Start Fre 30.000000 MH
50.0 70.0							Stop Fre 10.000000000 GF
Res BW	1.0 MHz		W 3.0 MHz		Sweep 17	Stop 10.000 G .33 ms (20001 p	997.000000 Mi
1 N 1		3.182 5 GHz 849.5 MHz	-57.311 dBm 3.763 dBm	PORCHON		FORCHON VALUE	Freq Offs
8 9 10 11			ш				
SG					STATUS		

■ GSM850 MODE (251 CH.) Conducted Spurious Emissions



	RF 50 Ω AC		SENSE:INT	ALIGN AUTO	01:31:17 PM May 08, 2024	Francisco
enter Freq	a 5.01500000	O GHZ PNO: Fast ↔ IFGain:Low	Trig: Free Run #Atten: 20 dB	#Avg Type: RMS	TRACE 2 3 4 5 6 TYPE M WWWWW DET P P P P P P	Frequency
0 dB/div R	tef 10.00 dBm			М	kr1 3.702 4 GHz -57.654 dBm	Auto Tur
og 0.00 10.0	\$2					Center Fre 5.015000000 GH
50.0 40.0 50.0			1			Start Fre 30.000000 Mi
50.0 70.0 50.0						Stop Fre 10.000000000 G
tart 30 MHz Res BW 1.0		#VB	W 3.0 MHz		Stop 10.000 GHz 7.33 ms (20001 pts)	CF Sto 997,000000 M Auto M
	CL X	The second se	Y	FUNCTION FUNCTION WIDTH		
N 1	f	3.702 4 GHz 1.851 0 GHz	-57.654 dBm 1.701 dBm	FUNCTION FUNCTION WDTH	FORCTION VALUE	
N 1	f	3.702 4 GHz	-57.654 dBm	FUNCTION FUNCTION WIDTH		Freq Offs 01

■ GSM1900 MODE (512 CH.) Conducted Spurious Emissions1



Agilent Spectrum Analyzer - Swept SA				and the second se	
RL RF 50 Ω AC Center Freq 15.00000000	PNO: Fast +++	SENSE:INT Trig: Free Run #Atten: 20 dB	ALIGN AUTO #Avg Type: RMS	01:31:30 PM May 08, 2024 TRACE 1 2 3 4 5 0 TVPE MWWWW DET P P P P P P	Frequency
10 dB/div Ref 10.00 dBm	IFGain:Low	#Atten: 20 dB	Mkr1	18.882 72 GHz -52.823 dBm	Auto Tune
0.00					Center Freq 15.000000000 GHz
-20.0					Start Freq 10.000000000 GHz
-30.0					Stop Freq 20.000000000 GHz
-50.0	distance to general literation	والمتعادلة المراجع والمراجع والمراجع			CF Step 1.000000000 GHz Auto Man
a stand for the stand shows a stand	Al is one application with the pro-	A shine of a local division of the second seco	a nyaén ata tertena ata ing palan nerakarak		Freq Offset 0 Hz
80.0 Start 10.000 GHz #Res BW 1.0 MHz	#VBW 3	2.0 MHz	Swaap 26	Stop 20.000 GHz 5.67 ms (40000 pts)	
MSG	#VDVV \	540 WITE	SWEED 20		

■ GSM1900 MODE (512 CH.) Conducted Spurious Emissions2



Agilent Spectrum Analyzer - Swept SA		SENSE:IN	ri i	ALIGN AUTO	01:32:29 PM May	08.2024	- 6 🐱
enter Freq 5.01500000	PNO: Fast → IFGain:Low		#Avg T	ype: RMS	TRACE		Frequency
0 dB/div Ref 10.00 dBm				Mk	r1 3.080 3 -57.574	GHz dBm	Auto Tur
•9							Center Fre 5.015000000 GH
00	1						Start Fre
50.0 70.0 90.0						PEAK 1	Stop Fre
tart 30 MHz Res BW 1.0 MHz	#VB\	V 3.0 MHz		Sweep 17	Stop 10.000 .33 ms (2000	1 pts)	CF Ste 997.000000 Mi to M
1 N 1 f 3	0.080 3 GHz 1.880 4 GHz	-57.574 dBm 1.451 dBm				E	Freq Offs 01
8							

■ GSM1900 MODE (661 CH) Conducted Spurious Emissions1



- @ ×			and the second		rum Analyzer - Swept SA	
Frequency	01:32:42 PM May 08, 2024 TRACE 1 2 3 4 5 6 TYPE M WWWW DET P P P P P P	ALIGN AUTO #Avg Type: RMS	sense:INT	PNO: Fast TI	RF 50 Ω AC eq 15.000000000	Center Fr
Auto Tune	18.935 47 GHz -52.181 dBm	Mkr1		IFGail.LOW W	Ref 10.00 dBm	10 dB/div
Center Freq 15.000000000 GHz						0.00
Start Fred 10.000000000 GHz						-10.0
Stop Fred 20.000000000 GHz						30.0
CF Step 1.000000000 GHz Auto Mar	1 PEAK	part of the second s	Lite Attack of the second second	in the life of the second	t. r. has out	50.0
Freq Offse 0 H:		an a	and the second		and the second se	-60.0 <mark>epotetiene</mark> -70.0
	Stop 20.000 GHz .67 ms (40000 pts)	Sween 26		#VBW 3.0		-80.0 Start 10.00 #Res BW 1
		Sweep 20		WEAK 3.		ISG

■ GSM1900 MODE (661 CH.) Conducted Spurious Emissions2



RL RF 50 Ω	ept SA	SENSE:INT	ALIGN AUTO	01:34:52 PM May 08, 2024	
enter Freq 5.01500	00000 GHz PNO: Fast IFGain:Low		#Avg Type: RMS	TRACE 1 2 3 4 5 6 TYPE M	Frequency
dB/div Ref 10.00			Mk	r1 6.561 3 GHz -56.825 dBm	Auto Tun
0.00)2 				Center Fre 5.015000000 GH
0.0 0.0 0.0			1		Start Fre 30.000000 MH
0.0 0.0 0.0				PEAK	Stop Fre 10.000000000 GF
tart 30 MHz Res BW 1.0 MHz	#V	BW 3.0 MHz	Sweep 17	Stop 10.000 GHz 33 ms (20001 pts)	CF Ste 997.000000 MH Auto Ma
KRI MODE TRCI SCL		FO DOF ID		the second se	
N 1 f 1 N 1 f 2 N 1 f 3	6.561 3 GHz 1.910 3 GHz	-56.825 dBm 1.582 dBm		Ē	Freq Offs 0 H

■ GSM1900 MODE (810 CH.) Conducted Spurious Emissions1



- @ ×			-		trum Analyzer - Swept SA	
Frequency	01:35:06 PM May 08, 2024 TRACE 1 2 3 4 5 6 TYPE M WWWWW DET P P P P P P	#Avg Type: RMS	SENSE:INT Trig: Free Run #Atten: 20 dB	PNO: Fast	RF 50 Ω AC req 15.000000000	Center F
Auto Tune	18.916 97 GHz -52.924 dBm	Mkr1	WAITER 20 0D	IFGain:Low	Ref 10.00 dBm	10 dB/div
Center Freq 15.000000000 GHz						0.00
Start Fred 10.000000000 GHz						-10.0
Stop Fred 20.000000000 GH2						-30.0
CF Step 1.000000000 GHz Auto Mar	1 PEAK Viberally Mental Allan Britady	and second particular in a second	ad an income of the standards	Le this action statistics	ter af beste statistics film between the	-50.0
Freq Offset 0 Hz			and and the South of S		and a second	-70.0
	Stop 20.000 GHz 5.67 ms (40000 pts)	Sweep 26	3.0 MHz	#VBW:		-80.0 Start 10.0 #Res BW
		STATU				ISG

GSM1900 MODE (810 CH.) Conducted Spurious Emissions2



the set of the second se	n Analyzer - Swept SA RF 50 Ω AC		SENSE:INT	ALIGN AUTO	03:24:57 PM May 08, 2024	×
	q 5.015000000	GHz PNO: Fast -		#Avg Type: RMS	TRACE 1 2 3 4 5 6 TYPE A WWWWW DET A A A A A A	Frequency
0 dB/div	tef 0.00 dBm			M	(r1 3.710 4 GHz -77.307 dBm	Auto Tun
20.0	2					Center Fre 5.015000000 GH
40.0						Start Fre 30.000000 MH
70.0 80.0 90.0					RMS	Stop Fre 10.000000000 GF
tart 30 MH Res BW 1.0	0 MHz	#VB	№ 3.0 MHz		Stop 10.000 GHz 7.33 ms (20001 pts)	CF Ste 997.000000 MH Auto Ma
MKR MODE TRC S 1 N 1 2 N 1 3 4 5 6 7	f 3.	710 4 GHz 827.6 MHz	Y FL -77.307 dBm -8.943 dBm	INCTION FUNCTION WIDTH	FUNCTION VALUE	Freq Offs 0 F
8 9 10 11			m			
SG				STATU	S	Y

■ WCDMA850 MODE (4132 CH.) Conducted Spurious Emissions



RL	trum Analyzer - Swept S RF 50 Ω	AC	SENSE:INT	ALIGN AUTO	03:25:24 PM May 08, 2024	
enter Fi	req 5.015000	000 GHz PNO: Fast - IFGain:Low	Trig: Free Run #Atten: 10 dB	#Avg Type: RMS	TRACE 123450 TYPE A WWWWW DET A A A A A A	Frequency
0 dB/div	Ref 0.00 dBn	n		MI	kr1 3.694 5 GHz -76.993 dBm	Auto Tun
20.0	⊘ 2					Center Fre 5.015000000 GH
40.0 50.0 60.0						Start Fre 30.000000 MH
70.0 80.0 90.0	and an		1		RMS	Stop Fre 10.000000000 GF
	1.0 MHz		W 3.0 MHz		Stop 10.000 GHz 7.33 ms (20001 pts)	CF Ste 997.000000 MH Auto Ma
KR MODE TF 1 N 1 2 N 1 3 4 5 6	f	× 3.694 5 GHz 838.1 MHz	Y F -76,993 dBm -8,759 dBm	UNCTION FUNCTION WIDTH	FUNCTION VALUE	Freq Offs 0 I
7 8 9 10 11			m		*	
				STATU	1	

■ WCDMA850 MODE (4183 CH.) Conducted Spurious Emissions



Agilent Spectrum Analyzer - Swept SA RL RF 50 Ω AC	SE	NSE:INT ALIGN AUT	0 03:26:37 PM May 08, 2024	
enter Freq 5.01500000	PNO: Fast Trig: Fre IFGain:Low #Atten: 1		TRACE 1 2 3 4 5 6 TYPE A DET A A A A A A	Frequency
0 dB/div Ref 0.00 dBm		Ν	/kr1 2.540 9 GHz -76.866 dBm	Auto Tun
•9				Center Fre 5.015000000 GH
40.0 50.0 50.0				Start Fre 30.000000 MH
70.0 30.0 90.0			RMS	Stop Fre 10.000000000 GF
tart 30 MHz Res BW 1.0 MHz	#VBW 3.0 MHz		Stop 10.000 GHz 17.33 ms (20001 pts)	CF Ste 997.000000 MH Auto Ma
2 N 1 f 3 4 5 5 6 8 8 7 7 8 8 8 8	.540 9 GHz -76.866 d 846.5 MHz -8.259 d		TH FUNCTION VALUE	Freq Offs 0 H
8 11 9 11 10 11 11 11				

■ WCDMA850MODE (4233 CH.) Conducted Spurious Emissions



10. ANNEX A_ TEST SETUP PHOTO

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

No.	Description
1	HCT-RF-2405-FC032