

RED-Radio Test Report

Client Name : Jinan USR IOT Technology Limited

Address : Room 203, 205, 208. Floor 2, Wuzhou Scientific Research Building, No.1100 Shunfeng Street, Gaoxin District, Jinan, Shandong, 250101, China

Product Name : Industrial 4G Modem

Date : May 20, 2019

Shenzhen Anbotech Compliance Laboratory Limited

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TEST REPORT

Applicant : Jinan USR IOT Technology Limited
Manufacturer : Jinan USR IOT Technology Limited
Product Name : Industrial 4G Modem
Model No. : USR-G781, USR-G806, USR-G800 V2, USR-G808, USR-G809, USR-G810,
USR-G811, GW-R4513, GW-R5514, GW-R731
Trade Mark : 
Rating(s) : Input: DC 9-12V, 300mA Max

Test Standard(s) : ETSI EN301 908-1 V11.1.7 (2018-12)
ETSI EN301 908-2 V11.1.2 (2017-08)

The device described above is tested by Shenzhen Anbotech Compliance Laboratory Limited to determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. The measurement results are contained in this test report and Shenzhen Anbotech Compliance Laboratory Limited is assumed full of responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT (Equipment Under Test) is technically compliant with the ETSI EN301 908 requirements.

This report applies to above tested sample only and shall not be reproduced in part without written approval of Shenzhen Anbotech Compliance Laboratory Limited.

Date of Receipt

Apr. 02, 2019

Date of Test

Apr. 02~ May 16, 2019

Prepared By



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1. General Information

1.1. Client Information

Applicant	:	Jinan USR IOT Technology Limited
Address	:	Room 203, 205, 208. Floor 2, Wuzhou Scientific Research Building, No.1100 Shunfeng Street, Gaoxin District, Jinan, Shandong, 250101, China
Manufacturer	:	Jinan USR IOT Technology Limited
Address	:	Room 203, 205, 208. Floor 2, Wuzhou Scientific Research Building, No.1100 Shunfeng Street, Gaoxin District, Jinan, Shandong, 250101, China
Factory	:	Jinan USR IOT Technology Limited
Address	:	Room 203, 205, 208. Floor 2, Wuzhou Scientific Research Building, No.1100 Shunfeng Street, Gaoxin District, Jinan, Shandong, 250101, China

1.2. Description of Device (EUT)

Product Name	:	Industrial 4G Modem
Model No.	:	USR-G781, USR-G806, USR-G800 V2, USR-G808, USR-G809, USR-G810, USR-G811, GW-R4513, GW-R5514, GW-R731 (Note: All samples are the same except the name, so we prepare "USR-G781" for test only.)
Trade Mark	:	
Test Power Supply	:	AC 230V, 50Hz for adapter
Test Sample No.	:	1-2-1(Normal Sample), 1-2-2(Engineering Sample)
Product Description	:	Operation Frequency: 1920MHz-1980MHz for WCDMA2100 880MHz-915MHz for WCDMA900
	:	Radio Technology: WCDMA900/2100
	:	Modulation Type: WCDMA:QPSK; HSDPA:QPSK/16QAM; HSUPA: 16QAM
	:	Antenna Type: Sucker External Antenna
	:	Antenna Gain(Peak): WCDMA900: 1.74 dBi WCDMA2100: 3.82 dBi
	:	Power Class WCDMA:Class 3
Remark: 1) For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual. 2)This report is for WCDMA module.		

1.3. Auxiliary Equipment Used During Test

Adapter	:	P/N:DQS151-120100-16312B Model:DQS151-120100-VV Input: AC 100-240V 50/60Hz 0.4A Max Output: DC 12.0V, 1.0A
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2. Summary of Test Results

2.1. Test Standard Description

ETSI EN 301 908-1 V11.1.7 :IMT cellular networks; Harmonized EN covering the essential requirements of article 3.2 of the Directive 2014/53/EU; Part 1: Introduction and common requirements

ETSI EN 301 908-2V11.1.2: IMT cellular networks; Harmonised Standard covering the essential requirements of article 3.2 of the Directive 2014/53/EU; Part 2: CDMA Direct Spread (UTRA FDD) User Equipment(UE)

ETSI TS 134 121-1V12.1.0: Universal Mobile Telecommunications System(UMTS); User Equipment (UE) conformance specification; Radio transmission and reception(FDD); Part 1: Conformance specification (3GPP TS 34.121-1 version 12.1.0 Release 12).

2.2. Additional Information

N/A

2.3. Test Conditions

Temperature:	15-35 °C	
Relative humidity content:	Up to 75 %	
Details of power supply:	AC 230V	
- Extreme test conditions:	Vnom= 230 V	AC
	Vmin = 217 V	AC
	Vmax = 253 V	AC
- Extreme temperature:	-20°C / 60°C	
Vibration	Frequency	ASD
	5Hz-20Hz	0,96 m2/s3
	20 Hz to 500 Hz	0,96 m2/s3 at 20 Hz, thereafter -3 dB/Octave
Other parameter:	None	

General Test Conditions

WCDMA2100	LCH	MCH	HCH
	1922.6	1950	1977.4

WCDMA900	LCH	MCH	HCH
	882.6	897.6	912.4

VL	VN	VH	TL	TN	TH
Low voltage	Normal voltage	High voltage	Low temperature	Normal temperature	High temperature

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2.4. Measurement Uncertainty (95% confidence levels, k=2)

Maximum measurement uncertainty

Parameter	Uncertainty
Occupied Channel Bandwidth	±5 %
RF output power, conducted	±1,5 dB
Power Spectral Density, conducted	±3 dB
Unwanted Emissions, conducted	±3 dB
All emissions, radiated	±6 dB
Temperature	±1 °C
Humidity	±5 %
DC and low frequency voltages	±3 %
Time	±5 %
Duty Cycle	±5 %


2.5. Test Equipment List

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum Analysis	Agilent	E4407B	US39390582	Nov. 05, 2018	1 Year
2.	Preamplifier	SKET Electronic	BK1G18G30D	KD17503	Nov. 05, 2018	1 Year
3.	EMI Test Receiver	Rohde & Schwarz	ESPI3	101604	Nov. 05, 2018	1 Year
4.	Double Ridged Horn Antenna	Instruments corporation	GTH-0118	351600	Nov. 19, 2018	1 Year
5.	Bilog Broadband Antenna	Schwarzbeck	VULB9163	VULB 9163-289	Nov. 19, 2018	1 Year
6.	Pre-amplifier	SONOMA	310N	186860	Nov. 05, 2018	1 Year
7.	EMI Test Software EZ-EMC	SHURPLE	N/A	N/A	N/A	N/A
8.	MXA Spectrum Analysis	Agilent	N9020A	MY51170037	Nov. 05, 2018	1 Year
9.	MXG RF Vector Signal Generator	Agilent	N5182A	MY48180656	Nov. 05, 2018	1 Year
10.	DC Power Supply	LW	TPR-6420D	374470	Oct. 31, 2018	1 Year
11.	Constant Temperature Humidity Chamber	ZHONGJIAN	ZJ-KHWS80B	N/A	Nov. 01, 2018	1 Year
12.	Universal Radio Communication Tester	Rohde & Schwarz	CMU 200	117888	Nov. 05, 2018	1 Year
13.	Wideband Radio Communication Tester	Rohde & Schwarz	CMW 500	104209	Nov. 05, 2018	1 Year
14.	High-Pass Filter	CDKMV	ZHPF-BM1100-4000-0730	B2015094550	Nov. 08, 2018	1 Year
15.	High-Pass Filter	CDKMV	ZHPF-M3.5-18G-3834	1307006523	Nov. 05, 2018	1 Year
16.	4 Ch. Simultaneous Sampling 14 Bits 2 MS/s	Agilent	U2531A	TW54063507	Nov. 05, 2018	1 Year
17.	4 Ch. Simultaneous Sampling 14 Bits 2 MS/s	Agilent	U2531A	TW54063513	Nov. 05, 2018	1 Year

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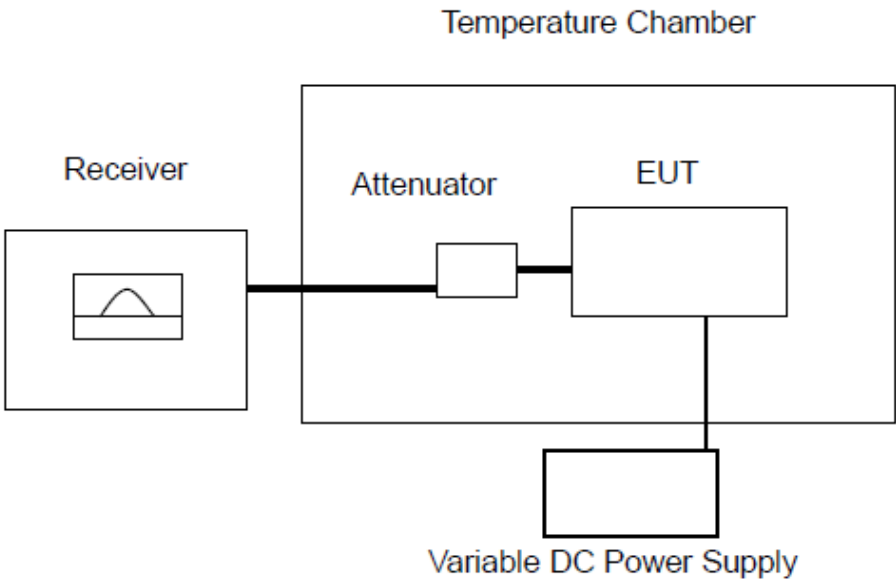
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3. Transmitter maximum output power

3.1. Test Limit

Please refer to ETSI EN 301 908-2 V11.1.2 clause 4.2.2.

3.2. Test Setup



3.3. Test Procedure

- 1) Set and send continuously Up power control commands to the UE.
- 2) Measure the mean power of the UE in a bandwidth of at least $(1 + \alpha)$ times the chip rate of the radio access mode. The mean power shall be averaged over at least one timeslot.

3.4. Test Result

Temperature:	25°C	Relative Humidity:	60 %
Pressure:	1012 hPa	Test Voltage:	AC 230V, 50Hz for adapter

WCDMA Mode:


Operating Band	Test Conditions	Test Channel	Measurement Data(dBm)	Limit(dBm)	Result
Band I	TNVN	LCH	23.31	24(+1.7/-3.7)	Pass
		MCH	23.65	24(+1.7/-3.7)	Pass
		HCH	24.04	24(+1.7/-3.7)	Pass
	TLVL	LCH	23.44	24(+1.7/-3.7)	Pass
		MCH	24.60	24(+1.7/-3.7)	Pass
		HCH	23.18	24(+1.7/-3.7)	Pass
	TLVH	LCH	22.72	24(+1.7/-3.7)	Pass
		MCH	23.80	24(+1.7/-3.7)	Pass
		HCH	23.17	24(+1.7/-3.7)	Pass
	THVL	LCH	24.12	24(+1.7/-3.7)	Pass
		MCH	23.98	24(+1.7/-3.7)	Pass
		HCH	23.49	24(+1.7/-3.7)	Pass
	THVH	LCH	23.38	24(+1.7/-3.7)	Pass
		MCH	22.40	24(+1.7/-3.7)	Pass
		HCH	23.21	24(+1.7/-3.7)	Pass

Operating Band	Test Conditions	Test Channel	Measurement Data(dBm)	Limit(dBm)	Result
Band VIII	TNVN	LCH	22.32	24(+1.7/-3.7)	Pass
		MCH	22.89	24(+1.7/-3.7)	Pass
		HCH	24.03	24(+1.7/-3.7)	Pass
	TLVL	LCH	23.20	24(+1.7/-3.7)	Pass
		MCH	22.37	24(+1.7/-3.7)	Pass
		HCH	22.29	24(+1.7/-3.7)	Pass
	TLVH	LCH	21.95	24(+1.7/-3.7)	Pass
		MCH	22.56	24(+1.7/-3.7)	Pass
		HCH	23.39	24(+1.7/-3.7)	Pass

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	THVL	LCH	22.56	24(+1.7/-3.7)	Pass
		MCH	23.51	24(+1.7/-3.7)	Pass
		HCH	22.72	24(+1.7/-3.7)	Pass
	THVH	LCH	23.59	24(+1.7/-3.7)	Pass
		MCH	24.18	24(+1.7/-3.7)	Pass
		HCH	23.10	24(+1.7/-3.7)	Pass

HSDPA Mode:

Operating Band	Test Conditions	Test Channel	Sub-test	Measurement Data(dBm)	Limit(dBm)	Result
Band I	TNVN	LCH	1	22.40	24(+1.7/-3.7)	Pass
			2	21.86	24(+1.7/-3.7)	Pass
			3	21.16	23.5(+2.2/-3.7)	Pass
			4	22.34	23.5(+2.2/-3.7)	Pass
		MCH	1	23.04	24(+1.7/-3.7)	Pass
			2	21.36	24(+1.7/-3.7)	Pass
			3	22.46	23.5(+2.2/-3.7)	Pass
			4	21.06	23.5(+2.2/-3.7)	Pass
		HCH	1	23.18	24(+1.7/-3.7)	Pass
			2	21.00	24(+1.7/-3.7)	Pass
			3	21.57	23.5(+2.2/-3.7)	Pass
			4	21.31	23.5(+2.2/-3.7)	Pass
	TLVL	LCH	1	22.80	24(+1.7/-3.7)	Pass
			2	22.39	24(+1.7/-3.7)	Pass
			3	22.52	23.5(+2.2/-3.7)	Pass
			4	21.78	23.5(+2.2/-3.7)	Pass
		MCH	1	23.16	24(+1.7/-3.7)	Pass
			2	22.34	24(+1.7/-3.7)	Pass
			3	21.04	23.5(+2.2/-3.7)	Pass
			4	21.34	23.5(+2.2/-3.7)	Pass

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		HCH	1	22.27	24(+1.7/-3.7)	Pass
			2	20.49	24(+1.7/-3.7)	Pass
			3	21.37	23.5(+2.2/-3.7)	Pass
			4	20.73	23.5(+2.2/-3.7)	Pass
	TLVH	LCH	1	23.35	24(+1.7/-3.7)	Pass
			2	20.94	24(+1.7/-3.7)	Pass
			3	22.12	23.5(+2.2/-3.7)	Pass
			4	21.72	23.5(+2.2/-3.7)	Pass
		MCH	1	23.04	24(+1.7/-3.7)	Pass
			2	22.69	24(+1.7/-3.7)	Pass
			3	21.68	23.5(+2.2/-3.7)	Pass
			4	21.75	23.5(+2.2/-3.7)	Pass
		HCH	1	22.57	24(+1.7/-3.7)	Pass
			2	21.50	24(+1.7/-3.7)	Pass
			3	21.46	23.5(+2.2/-3.7)	Pass
			4	22.34	23.5(+2.2/-3.7)	Pass
	THVL	LCH	1	22.61	24(+1.7/-3.7)	Pass
			2	22.32	24(+1.7/-3.7)	Pass
			3	21.75	23.5(+2.2/-3.7)	Pass
			4	20.97	23.5(+2.2/-3.7)	Pass
		MCH	1	23.58	24(+1.7/-3.7)	Pass
			2	22.61	24(+1.7/-3.7)	Pass
			3	21.83	23.5(+2.2/-3.7)	Pass
			4	21.37	23.5(+2.2/-3.7)	Pass
		HCH	1	22.34	24(+1.7/-3.7)	Pass
			2	22.41	24(+1.7/-3.7)	Pass
			3	22.10	23.5(+2.2/-3.7)	Pass
			4	21.54	23.5(+2.2/-3.7)	Pass
	THVH	LCH	1	22.29	24(+1.7/-3.7)	Pass

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			2	22.35	24(+1.7/-3.7)	Pass
			3	22.51	23.5(+2.2/-3.7)	Pass
			4	21.37	23.5(+2.2/-3.7)	Pass
		MCH	1	22.22	24(+1.7/-3.7)	Pass
			2	21.29	24(+1.7/-3.7)	Pass
			3	22.39	23.5(+2.2/-3.7)	Pass
			4	22.10	23.5(+2.2/-3.7)	Pass
		HCH	1	22.16	24(+1.7/-3.7)	Pass
			2	22.49	24(+1.7/-3.7)	Pass
			3	22.29	23.5(+2.2/-3.7)	Pass
			4	21.33	23.5(+2.2/-3.7)	Pass

Operating Band	Test Conditions	Test Channel	Sub-test	Measurement Data(dBm)	Limit(dBm)	Result
Band VIII	TNVN	LCH	1	21.89	24(+1.7/-3.7)	Pass
			2	21.29	24(+1.7/-3.7)	Pass
			3	20.94	23.5(+2.2/-3.7)	Pass
			4	21.06	23.5(+2.2/-3.7)	Pass
		MCH	1	22.70	24(+1.7/-3.7)	Pass
			2	20.30	24(+1.7/-3.7)	Pass
			3	20.23	23.5(+2.2/-3.7)	Pass
			4	20.79	23.5(+2.2/-3.7)	Pass
		HCH	1	22.89	24(+1.7/-3.7)	Pass
			2	19.89	24(+1.7/-3.7)	Pass
			3	21.39	23.5(+2.2/-3.7)	Pass
			4	21.93	23.5(+2.2/-3.7)	Pass
	TLVL	LCH	1	22.87	24(+1.7/-3.7)	Pass
			2	21.07	24(+1.7/-3.7)	Pass
			3	20.94	23.5(+2.2/-3.7)	Pass
			4	20.77	23.5(+2.2/-3.7)	Pass

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		MCH	1	21.52	24(+1.7/-3.7)	Pass
			2	20.73	24(+1.7/-3.7)	Pass
			3	21.66	23.5(+2.2/-3.7)	Pass
			4	20.78	23.5(+2.2/-3.7)	Pass
		HCH	1	21.67	24(+1.7/-3.7)	Pass
			2	21.69	24(+1.7/-3.7)	Pass
			3	20.41	23.5(+2.2/-3.7)	Pass
			4	20.79	23.5(+2.2/-3.7)	Pass
	TLVH	LCH	1	21.12	24(+1.7/-3.7)	Pass
			2	22.02	24(+1.7/-3.7)	Pass
			3	21.86	23.5(+2.2/-3.7)	Pass
			4	21.87	23.5(+2.2/-3.7)	Pass
		MCH	1	22.19	24(+1.7/-3.7)	Pass
			2	21.91	24(+1.7/-3.7)	Pass
			3	21.43	23.5(+2.2/-3.7)	Pass
			4	21.68	23.5(+2.2/-3.7)	Pass
		HCH	1	22.67	24(+1.7/-3.7)	Pass
			2	22.33	24(+1.7/-3.7)	Pass
			3	22.48	23.5(+2.2/-3.7)	Pass
			4	22.59	23.5(+2.2/-3.7)	Pass
	THVL	LCH	1	21.43	24(+1.7/-3.7)	Pass
			2	21.86	24(+1.7/-3.7)	Pass
			3	21.11	23.5(+2.2/-3.7)	Pass
			4	22.29	23.5(+2.2/-3.7)	Pass
		MCH	1	22.02	24(+1.7/-3.7)	Pass
			2	21.74	24(+1.7/-3.7)	Pass
			3	21.33	23.5(+2.2/-3.7)	Pass
			4	21.76	23.5(+2.2/-3.7)	Pass
		HCH	1	22.03	24(+1.7/-3.7)	Pass

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			2	21.69	24(+1.7/-3.7)	Pass
			3	21.67	23.5(+2.2/-3.7)	Pass
			4	22.35	23.5(+2.2/-3.7)	Pass
	THVH	LCH	1	22.74	24(+1.7/-3.7)	Pass
			2	22.49	24(+1.7/-3.7)	Pass
			3	21.12	23.5(+2.2/-3.7)	Pass
			4	21.72	23.5(+2.2/-3.7)	Pass
		MCH	1	23.02	24(+1.7/-3.7)	Pass
			2	21.43	24(+1.7/-3.7)	Pass
			3	22.90	23.5(+2.2/-3.7)	Pass
			4	21.82	23.5(+2.2/-3.7)	Pass
		HCH	1	22.11	24(+1.7/-3.7)	Pass
			2	21.85	24(+1.7/-3.7)	Pass
			3	22.15	23.5(+2.2/-3.7)	Pass
			4	21.69	23.5(+2.2/-3.7)	Pass

HSUPA Mode:

Operating Band	Test Condition	Test Channel	Sub-test	Measurement Data(dBm)	Limit(dBm)	Result
Band I	TNVN	LCH	1	20.44	+24(+1.7/-6.7)	Pass
			2	21.97	+22(+3.7/-5.2)	Pass
			3	20.75	+23(+2.7/-5.2)	Pass
			4	22.73	+22(+3.7/-5.2)	Pass
			5	20.92	+24(+1.7/-3.7)	Pass
		MCH	1	20.84	+24(+1.7/-6.7)	Pass
			2	22.36	+22(+3.7/-5.2)	Pass
			3	21.11	+23(+2.7/-5.2)	Pass
			4	21.97	+22(+3.7/-5.2)	Pass
			5	22.09	+24(+1.7/-3.7)	Pass
		HCH	1	22.37	+24(+1.7/-6.7)	Pass
			2	21.95	+22(+3.7/-5.2)	Pass

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			3	21.52	+23(+2.7/-5.2)	Pass	
			4	22.44	+22(+3.7/-5.2)	Pass	
			5	21.98	+24(+1.7/-3.7)	Pass	
	TLVL	LCH	1	21.98	+24(+1.7/-6.7)	Pass	
			2	21.85	+22(+3.7/-5.2)	Pass	
			3	20.22	+23(+2.7/-5.2)	Pass	
			4	22.34	+22(+3.7/-5.2)	Pass	
			5	21.53	+24(+1.7/-3.7)	Pass	
		MCH	1	22.45	+24(+1.7/-6.7)	Pass	
			2	21.53	+22(+3.7/-5.2)	Pass	
			3	20.78	+23(+2.7/-5.2)	Pass	
			4	21.78	+22(+3.7/-5.2)	Pass	
			5	21.13	+24(+1.7/-3.7)	Pass	
		HCH	1	21.33	+24(+1.7/-6.7)	Pass	
			2	22.89	+22(+3.7/-5.2)	Pass	
			3	21.81	+23(+2.7/-5.2)	Pass	
			4	22.67	+22(+3.7/-5.2)	Pass	
			5	21.52	+24(+1.7/-3.7)	Pass	
		TLVH	LCH	1	20.89	+24(+1.7/-6.7)	Pass
				2	21.13	+22(+3.7/-5.2)	Pass
				3	21.31	+23(+2.7/-5.2)	Pass
	4			21.54	+22(+3.7/-5.2)	Pass	
	5			21.82	+24(+1.7/-3.7)	Pass	
	MCH		1	22.04	+24(+1.7/-6.7)	Pass	
			2	21.22	+22(+3.7/-5.2)	Pass	
			3	22.38	+23(+2.7/-5.2)	Pass	
			4	21.02	+22(+3.7/-5.2)	Pass	
			5	21.55	+24(+1.7/-3.7)	Pass	
	HCH		1	21.77	+24(+1.7/-6.7)	Pass	

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			2	21.28	+22(+3.7/-5.2)	Pass
			3	21.29	+23(+2.7/-5.2)	Pass
			4	22.89	+22(+3.7/-5.2)	Pass
			5	21.23	+24(+1.7/-3.7)	Pass
	THVL	LCH	1	21.88	+24(+1.7/-6.7)	Pass
			2	22.21	+22(+3.7/-5.2)	Pass
			3	20.38	+23(+2.7/-5.2)	Pass
			4	22.39	+22(+3.7/-5.2)	Pass
			5	21.92	+24(+1.7/-3.7)	Pass
		MCH	1	22.22	+24(+1.7/-6.7)	Pass
			2	22.71	+22(+3.7/-5.2)	Pass
			3	21.31	+23(+2.7/-5.2)	Pass
			4	22.73	+22(+3.7/-5.2)	Pass
			5	21.52	+24(+1.7/-3.7)	Pass
		HCH	1	20.77	+24(+1.7/-6.7)	Pass
			2	22.20	+22(+3.7/-5.2)	Pass
			3	20.72	+23(+2.7/-5.2)	Pass
			4	20.74	+22(+3.7/-5.2)	Pass
			5	21.39	+24(+1.7/-3.7)	Pass
	THVH	LCH	1	22.76	+24(+1.7/-6.7)	Pass
			2	21.69	+22(+3.7/-5.2)	Pass
			3	21.21	+23(+2.7/-5.2)	Pass
			4	21.31	+22(+3.7/-5.2)	Pass
			5	22.56	+24(+1.7/-3.7)	Pass
		MCH	1	21.53	+24(+1.7/-6.7)	Pass
			2	22.01	+22(+3.7/-5.2)	Pass
			3	21.29	+23(+2.7/-5.2)	Pass
			4	21.31	+22(+3.7/-5.2)	Pass
			5	20.77	+24(+1.7/-3.7)	Pass

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		HCH	1	21.91	+24(+1.7/-6.7)	Pass
			2	21.56	+22(+3.7/-5.2)	Pass
			3	20.73	+23(+2.7/-5.2)	Pass
			4	22.01	+22(+3.7/-5.2)	Pass
			5	22.72	+24(+1.7/-3.7)	Pass

Operating	Test Condition	Test Channel	Sub-test	Measurement Data(dBm)	Limit(dBm)	Result
Band VIII	TNVN	LCH	1	22.48	+24(+1.7/-6.7)	Pass
			2	22.30	+22(+3.7/-5.2)	Pass
			3	20.84	+23(+2.7/-5.2)	Pass
			4	22.59	+22(+3.7/-5.2)	Pass
			5	22.44	+24(+1.7/-3.7)	Pass
		MCH	1	21.45	+24(+1.7/-6.7)	Pass
			2	21.77	+22(+3.7/-5.2)	Pass
			3	20.36	+23(+2.7/-5.2)	Pass
			4	22.12	+22(+3.7/-5.2)	Pass
			5	22.73	+24(+1.7/-3.7)	Pass
		HCH	1	21.84	+24(+1.7/-6.7)	Pass
			2	21.82	+22(+3.7/-5.2)	Pass
			3	21.00	+23(+2.7/-5.2)	Pass
			4	21.19	+22(+3.7/-5.2)	Pass
			5	21.47	+24(+1.7/-3.7)	Pass
	TLVL	LCH	1	22.30	+24(+1.7/-6.7)	Pass
			2	21.47	+22(+3.7/-5.2)	Pass
			3	20.04	+23(+2.7/-5.2)	Pass
			4	22.73	+22(+3.7/-5.2)	Pass
			5	21.56	+24(+1.7/-3.7)	Pass
		MCH	1	21.89	+24(+1.7/-6.7)	Pass
			2	21.96	+22(+3.7/-5.2)	Pass

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			3	21.11	+23(+2.7/-5.2)	Pass
			4	21.70	+22(+3.7/-5.2)	Pass
			5	21.71	+24(+1.7/-3.7)	Pass
		HCH	1	22.56	+24(+1.7/-6.7)	Pass
			2	21.57	+22(+3.7/-5.2)	Pass
			3	21.56	+23(+2.7/-5.2)	Pass
			4	22.48	+22(+3.7/-5.2)	Pass
			5	21.45	+24(+1.7/-3.7)	Pass
	TLVH	LCH	1	22.16	+24(+1.7/-6.7)	Pass
			2	23.00	+22(+3.7/-5.2)	Pass
			3	21.69	+23(+2.7/-5.2)	Pass
			4	23.17	+22(+3.7/-5.2)	Pass
			5	22.06	+24(+1.7/-3.7)	Pass
		MCH	1	21.80	+24(+1.7/-6.7)	Pass
			2	21.91	+22(+3.7/-5.2)	Pass
			3	21.42	+23(+2.7/-5.2)	Pass
			4	22.43	+22(+3.7/-5.2)	Pass
			5	21.67	+24(+1.7/-3.7)	Pass
		HCH	1	22.57	+24(+1.7/-6.7)	Pass
			2	21.43	+22(+3.7/-5.2)	Pass
			3	21.16	+23(+2.7/-5.2)	Pass
			4	22.48	+22(+3.7/-5.2)	Pass
			5	21.01	+24(+1.7/-3.7)	Pass
	THVL	LCH	1	22.14	+24(+1.7/-6.7)	Pass
			2	21.61	+22(+3.7/-5.2)	Pass
			3	21.10	+23(+2.7/-5.2)	Pass
			4	22.34	+22(+3.7/-5.2)	Pass
			5	21.19	+24(+1.7/-3.7)	Pass
		MCH	1	21.96	+24(+1.7/-6.7)	Pass

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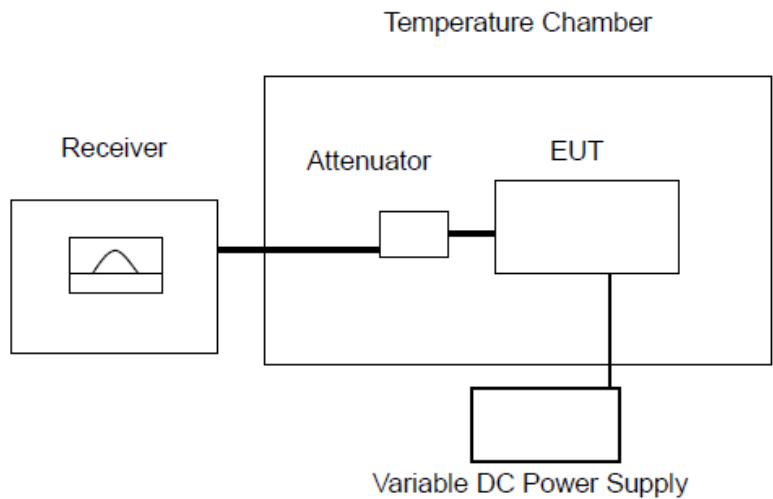
			2	22.93	+22(+3.7/-5.2)	Pass
			3	21.62	+23(+2.7/-5.2)	Pass
			4	21.80	+22(+3.7/-5.2)	Pass
			5	21.96	+24(+1.7/-3.7)	Pass
		HCH	1	22.53	+24(+1.7/-6.7)	Pass
			2	22.87	+22(+3.7/-5.2)	Pass
			3	21.39	+23(+2.7/-5.2)	Pass
			4	22.64	+22(+3.7/-5.2)	Pass
			5	22.03	+24(+1.7/-3.7)	Pass
		THVH	LCH	1	23.15	+24(+1.7/-6.7)
	2			22.13	+22(+3.7/-5.2)	Pass
	3			21.12	+23(+2.7/-5.2)	Pass
	4			22.78	+22(+3.7/-5.2)	Pass
	5			21.43	+24(+1.7/-3.7)	Pass
	MCH		1	23.48	+24(+1.7/-6.7)	Pass
			2	23.22	+22(+3.7/-5.2)	Pass
			3	21.10	+23(+2.7/-5.2)	Pass
			4	22.51	+22(+3.7/-5.2)	Pass
			5	21.41	+24(+1.7/-3.7)	Pass
	HCH		1	21.50	+24(+1.7/-6.7)	Pass
			2	21.94	+22(+3.7/-5.2)	Pass
			3	22.24	+23(+2.7/-5.2)	Pass
			4	22.51	+22(+3.7/-5.2)	Pass
		5	21.79	+24(+1.7/-3.7)	Pass	

4. Transmitter spectrum emission mask

4.1. Test Limit

Please refer to ETSI EN 301 908-2 V11.1.2 clause 4.2.3.

4.2. Test Setup



4.3. Test Procedure

1. Set and send continuously Up power control commands to the UE until the UE output power shall be at the maximum level.
2. Measure the power of the transmitted signal with a measurement filter of bandwidths according to table 4.2.3.2-1. Measurements with an offset from the carrier centre frequency between 2,515 MHz and 3,485 MHz shall use a 30 kHz measurement filter. Measurements with an offset from the carrier centre frequency between 4 MHz and 12 MHz shall use 1 MHz measurement bandwidth and the result may be calculated by integrating multiple 50 kHz or narrower filter measurements. The characteristic of the filter shall be approximately Gaussian (typical spectrum analyzer filter). The centre frequency of the filter shall be stepped in contiguous steps according to table 4.2.3.2-1. The measured power shall be recorded for each step.
3. Measure the RRC filtered mean power centred on the assigned channel frequency.
4. Calculate the ratio of the power 2) with respect to 3) in dBc.

4.4. Test Result

Temperature:	25°C	Relative Humidity:	60 %
Pressure:	1012 hPa	Test Voltage:	AC 230V, 50Hz for adapter

WCDMA Mode:

Operating Band	Test Conditions	Δf in MHz	Test Channel		
			LCH	MCH	HCH
Band I	TNVN	2.5-3.5	PASS	PASS	PASS
		3.5-7.5			
		7.5-8.5			
		8.5-12.5 MHz			
		3.5-7.5			
		7.5-8.5			
		8.5-12.5 MHz			

Operating Band	Test Conditions	Δf in MHz	Test Channel		
			LCH	MCH	HCH
Band VIII	TNVN	2.5-3.5	PASS	PASS	PASS
		3.5-7.5			
		7.5-8.5			
		8.5-12.5 MHz			
		3.5-7.5			
		7.5-8.5			
		8.5-12.5 MHz			

HSDPA Mode:

Operating Band	Test Conditions	Sub-test	Test Channel		
			LCH	MCH	HCH
Band I	TNVN	1	PASS	PASS	PASS
		2	PASS	PASS	PASS
		3	PASS	PASS	PASS
		4	PASS	PASS	PASS

Operating Band	Test Conditions	Sub-test	Test Channel		
			LCH	MCH	HCH
Band VIII	TNVN	1	PASS	PASS	PASS

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		2	PASS	PASS	PASS
		3	PASS	PASS	PASS
		4	PASS	PASS	PASS

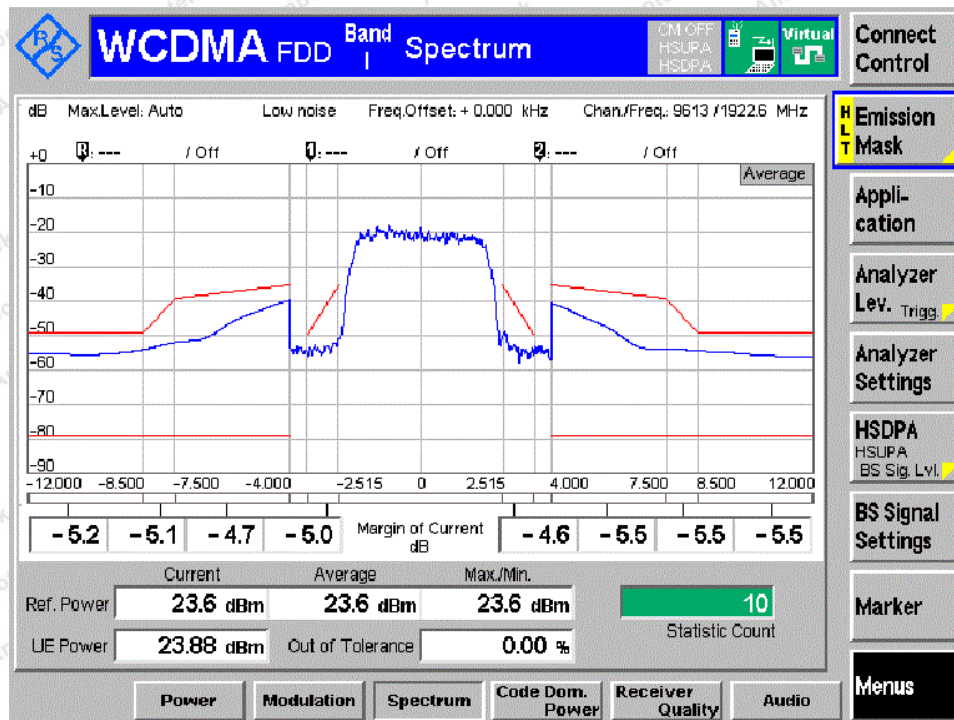
HSUPA Mode:

Operating Band	Test Conditions	Sub-test	Test Channel		
			LCH	MCH	HCH
Band I	TNVN	1	PASS	PASS	PASS
		2	PASS	PASS	PASS
		3	PASS	PASS	PASS
		4	PASS	PASS	PASS
		5	PASS	PASS	PASS

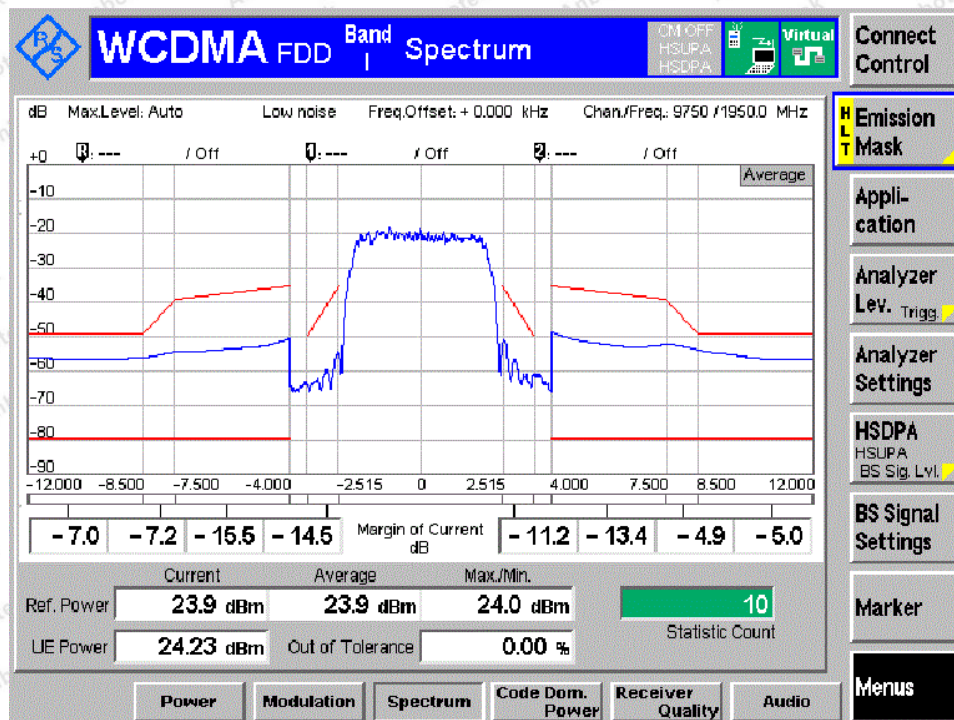
Operating Band	Test Conditions	Sub-test	Test Channel		
			LCH	MCH	HCH
Band VIII	TNVN	1	PASS	PASS	PASS
		2	PASS	PASS	PASS
		3	PASS	PASS	PASS
		4	PASS	PASS	PASS
		5	PASS	PASS	PASS

BAND I

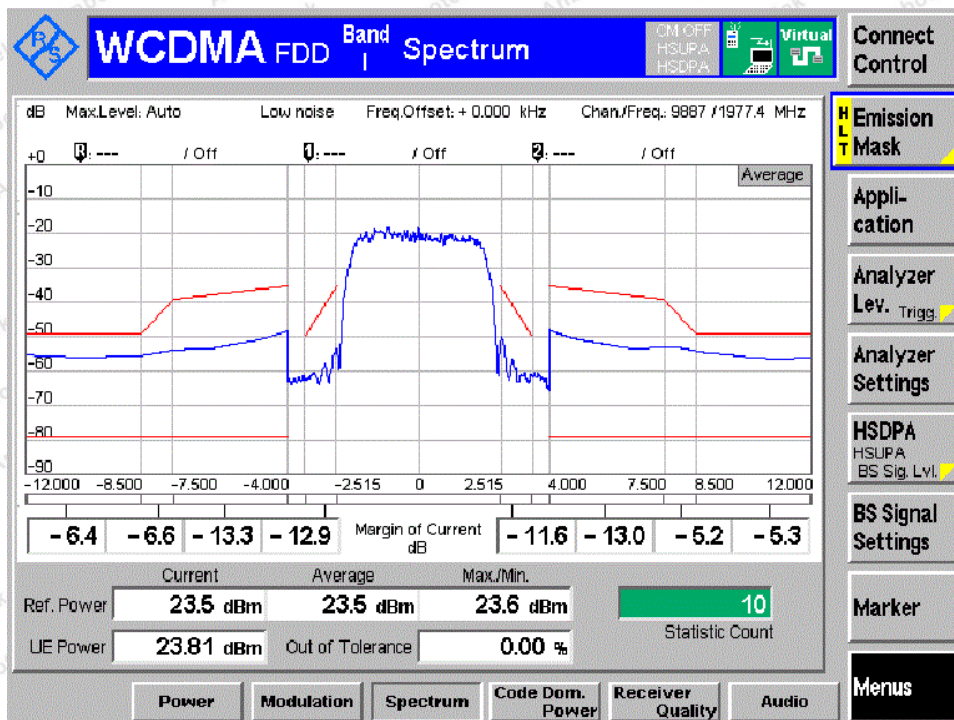
Channel LCH



Channel MCH

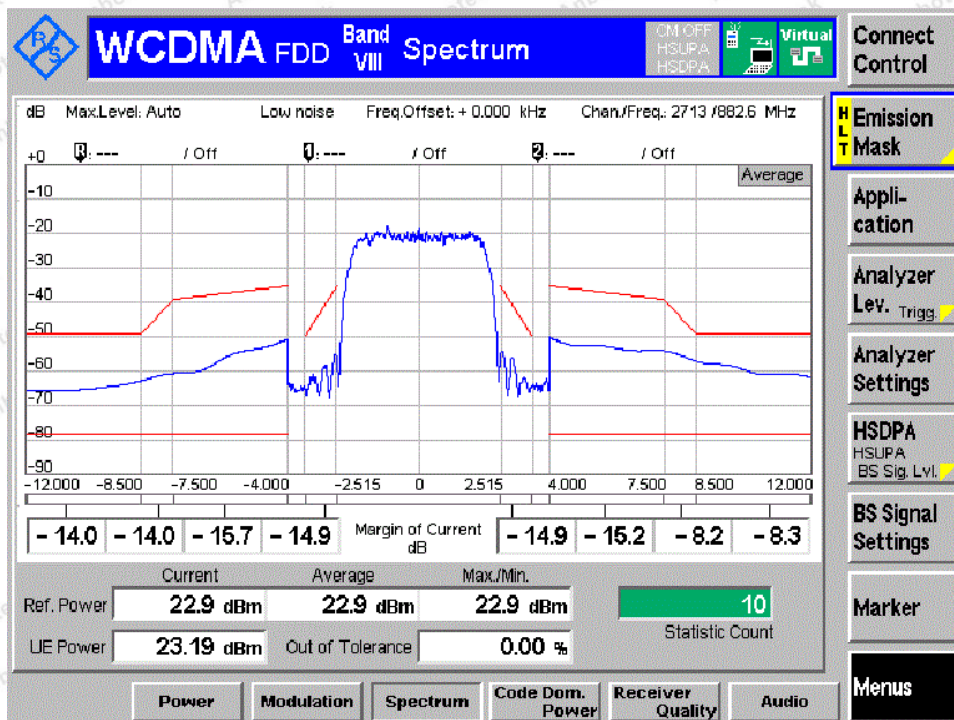


Channel HCH

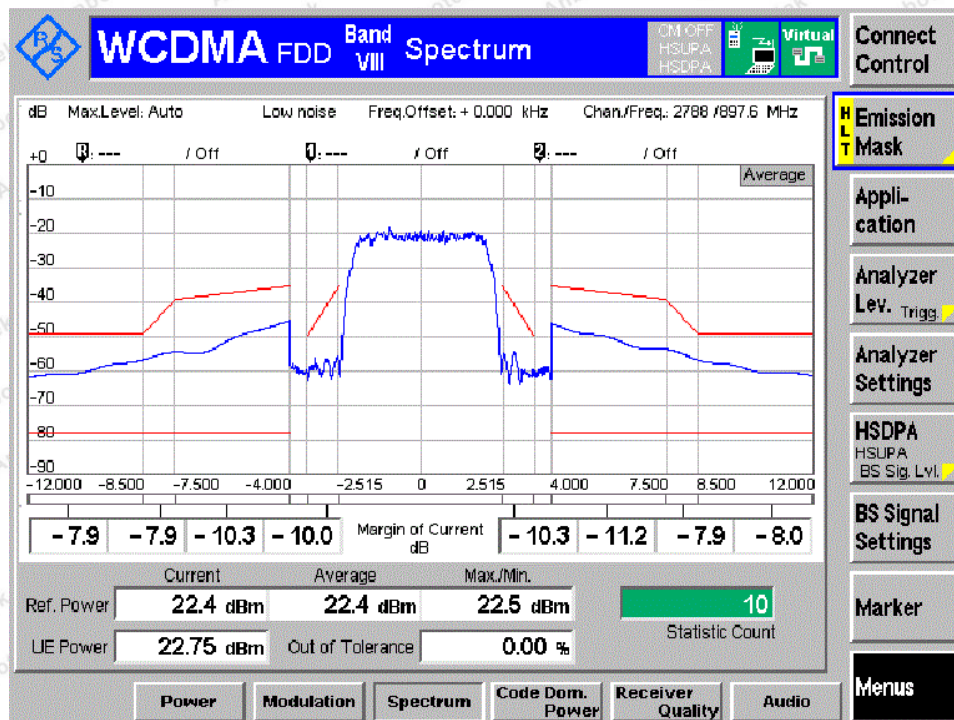


BAND VIII

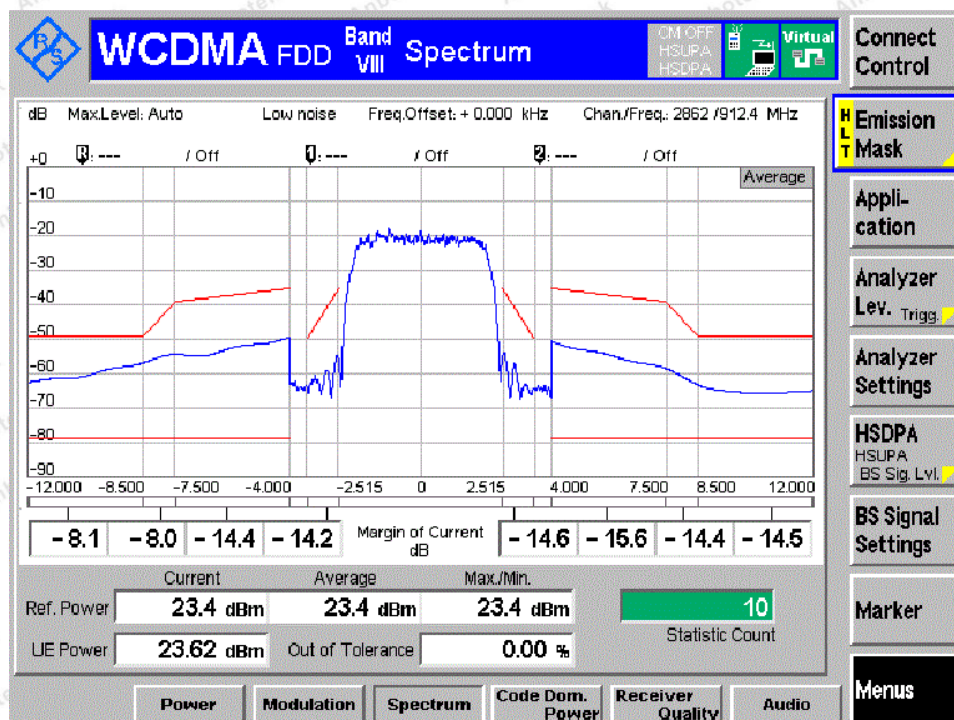
Channel LCH



Channel MCH



Channel HCH

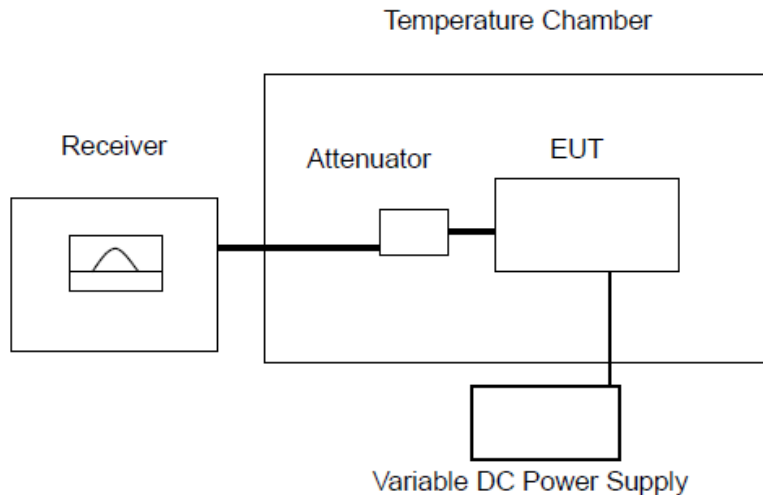


5. Transmitter spurious emissions

5.1. Test Limit

Please refer to ETSI EN 301 908-2 V11.1.2 clause 4.2.4

5.2. Test Setup



5.3. Test Procedure

1. Set and send continuously up power control commands to the UE until the UE output power shall be maximum level.
2. Sweep the spectrum analyser (or equivalent equipment) over a frequency range and measure the average power of spurious emission.

5.4. Test Result

Temperature:	25°C	Relative Humidity:	60 %
Pressure:	1012 hPa	Test Voltage:	AC 230V, 50Hz for adapter

Frequency	RBW	Max. Level	Test Band=Band I			Result
			Test Conditions=TNVN			
			Test Channel			
			LCH	MCH	HCH	
9 kHz ≤f < 150 kHz	1 kHz	-36 dBm	-70.91	-68.06	-68.07	Pass
150 kHz ≤f < 30 MHz	10 kHz	-36 dBm	-49.81	-40.26	-41.61	Pass
30 MHz ≤f < 1000 MHz	100 kHz	-36 dBm	-46.04	-46.83	-46.60	Pass
1 GHz ≤f < FL	1 MHz	-30 dBm	-40.97	-40.67	-41.07	Pass
FH ≤f < 12,75 GHz	1 MHz	-30 dBm	-40.94	-40.94	-41.81	Pass
791 MHz ≤f ≤821 MHz	3,84MHz	-60 dBm	-67.51	-67.82	-67.02	Pass
921 MHz ≤f < 925 MHz	100 kHz	-60 dBm	-71.58	-72.79	-72.70	Pass
925 MHz ≤f ≤935 MHz	100 kHz	-67 dBm	-78.31	-90.81	-79.81	Pass
935 MHz < f ≤960 MHz	100 kHz	-79 dBm	-81.61	-80.15	-80.49	Pass
1 805 MHz ≤f ≤1 880 MHz	100 kHz	-71 dBm	-73.18	-73.14	-73.18	Pass
2 110 MHz ≤f ≤2 170 MHz	3,84MHz	-60 dBm	-60.14	-61.76	-60.96	Pass
2 585 MHz ≤f ≤2 690 MHz	3,84MHz	-60 dBm	-62.73	-62.34	-60.58	Pass
Note: FL= The UE centre carrier frequency -12.5 MHz, FH= The UE centre carrier frequency +12.5 MHz,						

Frequency	RBW	Max. Level (dbm)	Test Band=Band VIII			Result
			Test Conditions=TNVN			
			Test Channel			
			LCH	MCH	HCH	
9 kHz ≤f < 150 kHz	1 kHz	-36	-69.14	-71.96	-70.22	Pass
150 kHz ≤f < 30 MHz	10 kHz	-36	-41.47	-42.66	-41.76	Pass
30 MHz ≤f < FL	100 kHz	-36	-38.64	-38.67	-38.48	Pass
FH ≤f < 1 000 MHz	100 kHz	-36	-37.86	-42.94	-39.91	Pass
1 GHz ≤f < 12,75 GHz	1 MHz	-30	-40.10	-40.27	-39.56	Pass
791 MHz ≤f ≤821 MHz	3,84 MHz	-60	-61.00	-61.68	-61.18	Pass
925MHz ≤f ≤935 MHz	100 kHz	-67	-72.61	-73.77	-73.49	Pass
	3.84 MHz	-60	-60.49	-61.82	-61.67	Pass
935MHz ≤f ≤960 MHz	100KHz	-79	-81.09	-80.49	-81.76	Pass
	3,84 MHz	-60	-60.13	-61.01	-61.79	Pass
1805MHz ≤f ≤1830 MHz	100KHz	-71	-73.46	-72.49	-73.05	Pass
	3,84 MHz	-60	-61.76	-60.94	-61.08	Pass
1830MHz ≤f ≤1880 MHz	100KHz	-71	-72.49	-73.46	-72.74	Pass
	3,84 MHz	-60	-61.76	-62.07	-61.71	Pass
2110MHz ≤f ≤2170MHz	3,84 MHz	-60	-62.64	-62.21	-61.97	Pass
2 585 MHz ≤f ≤2 640 MHz	3,84 MHz	-60	-61.74	-62.31	-61.86	Pass
2 640 MHz ≤f ≤2 690 MHz	3,84 MHz	-60	-62.82	-61.74	-62.09	Pass

Note: FL= The UE centre carrier frequency -12.5 MHz, FH= The UE centre carrier frequency +12.5 MHz,

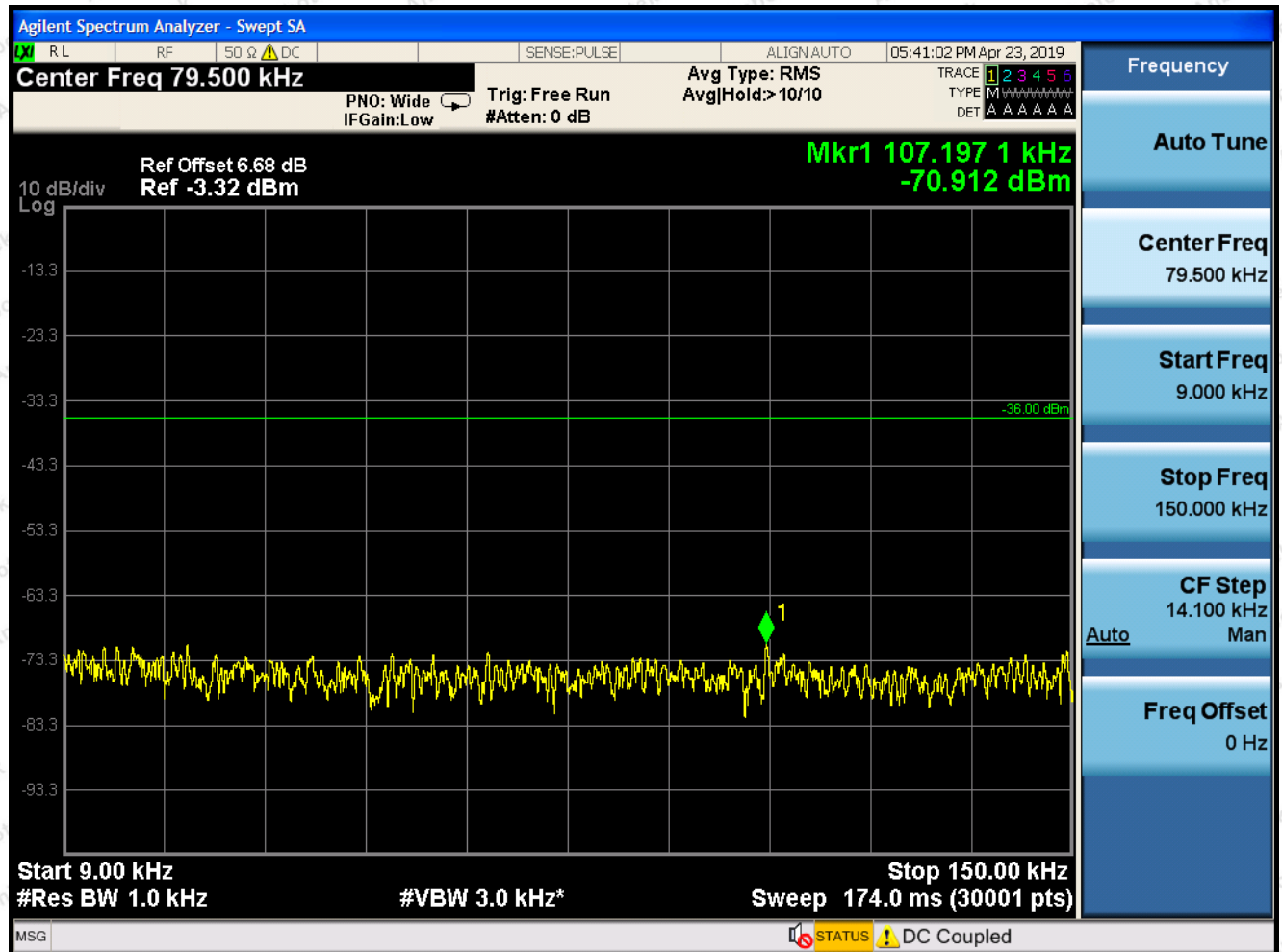
Report No.: SZAWW190402002-05W

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BAND I

Channel LCH

9KHZ~150KHZ



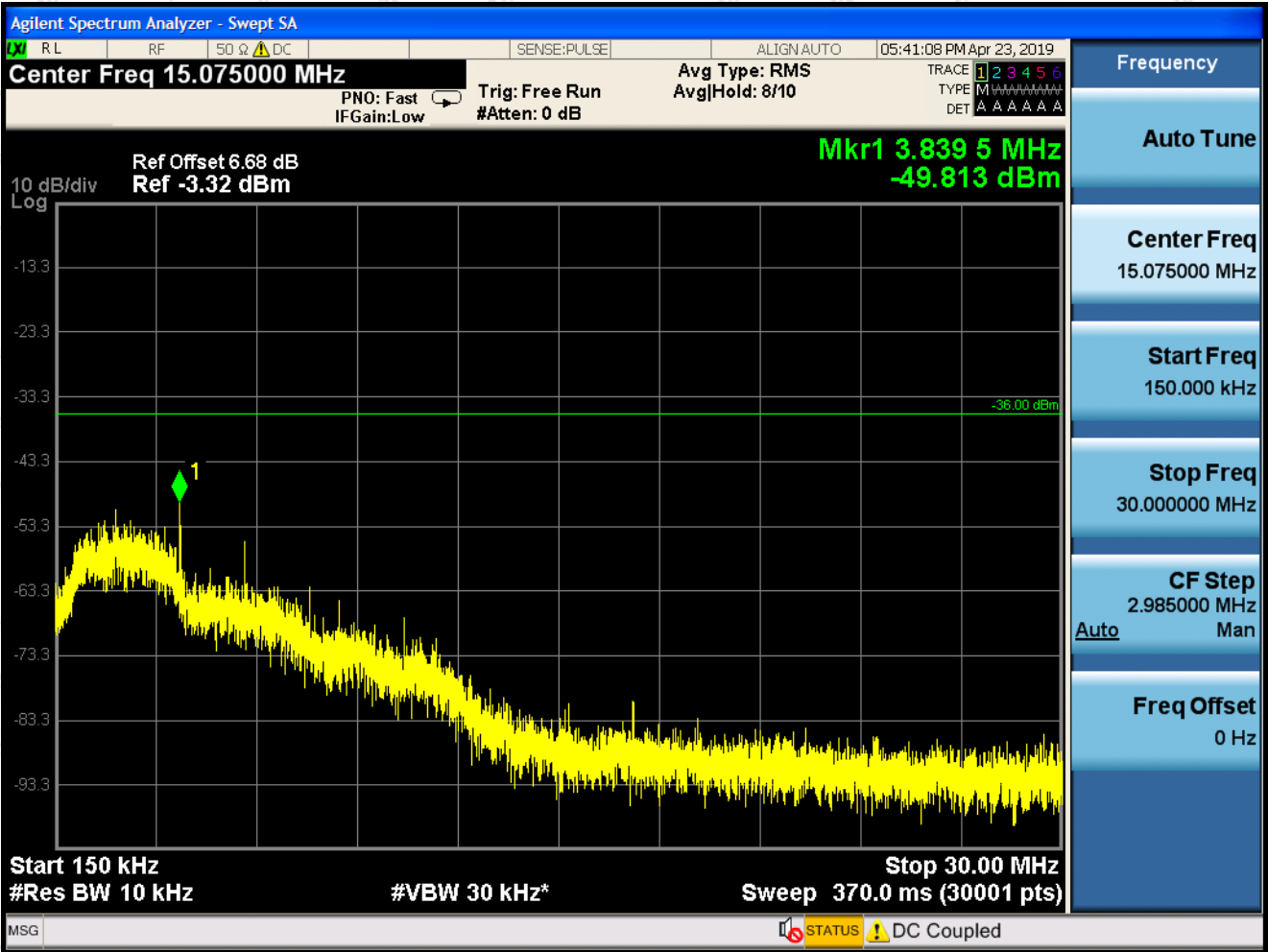
150KHZ~30MHZ

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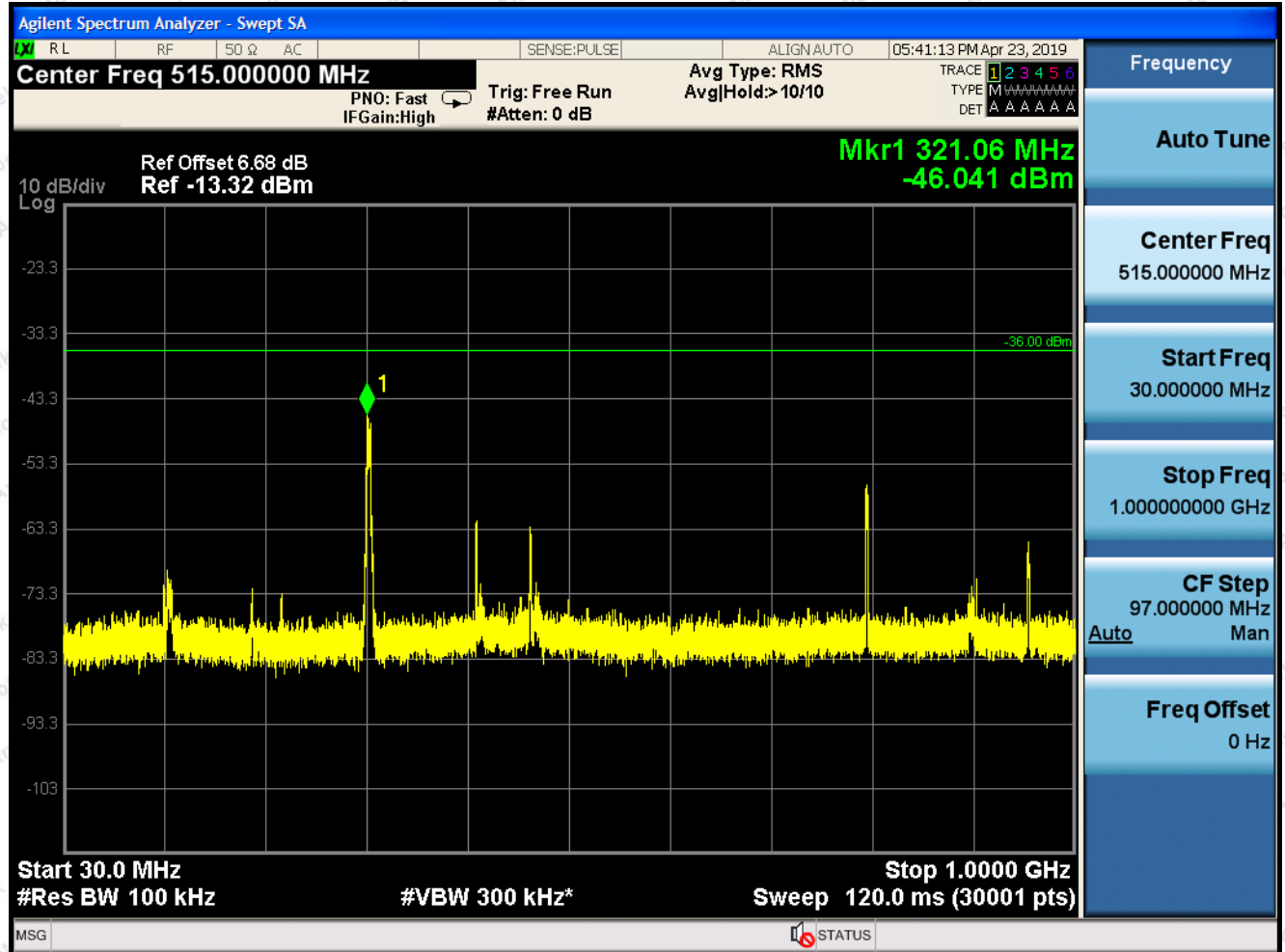
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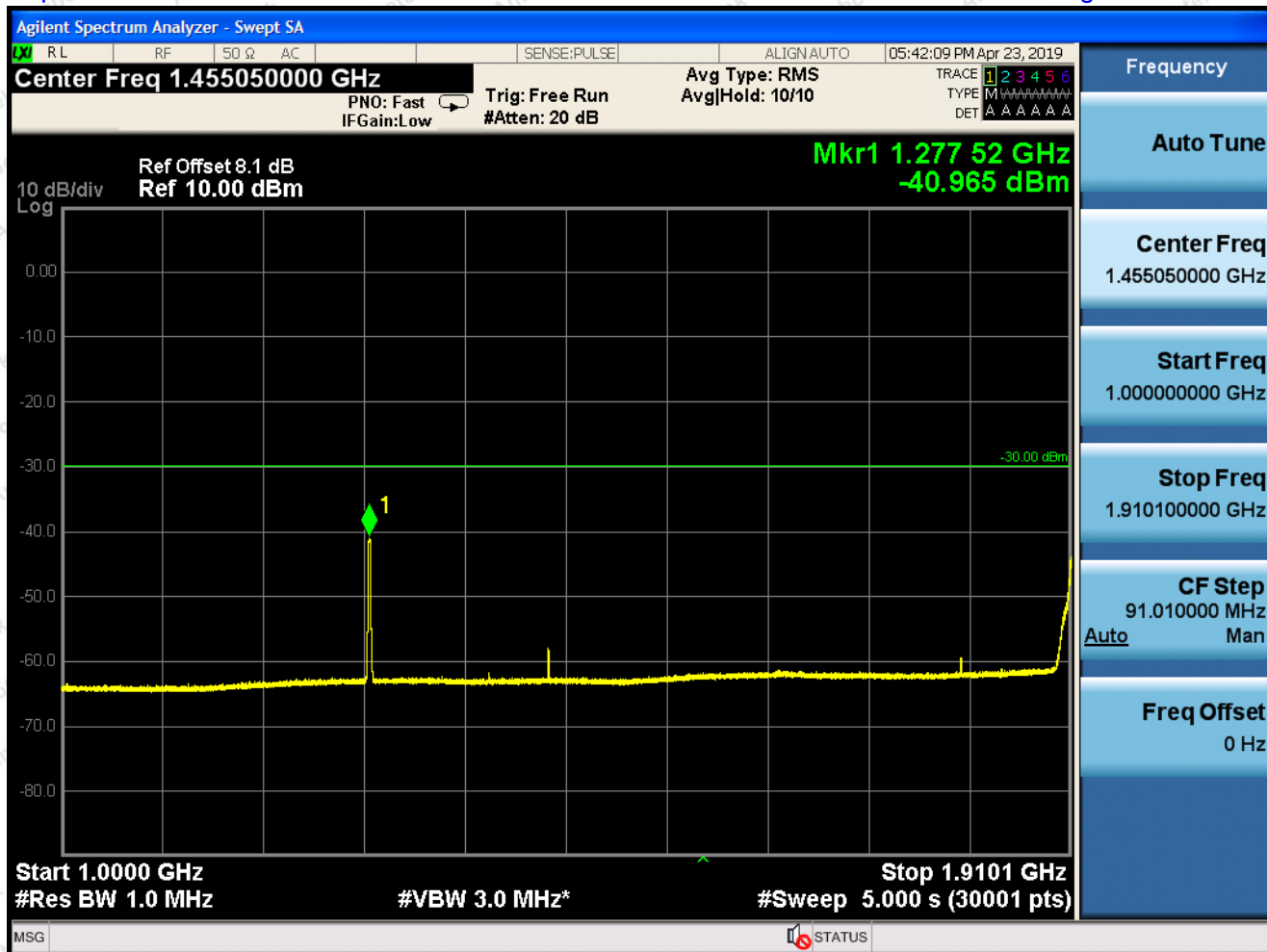
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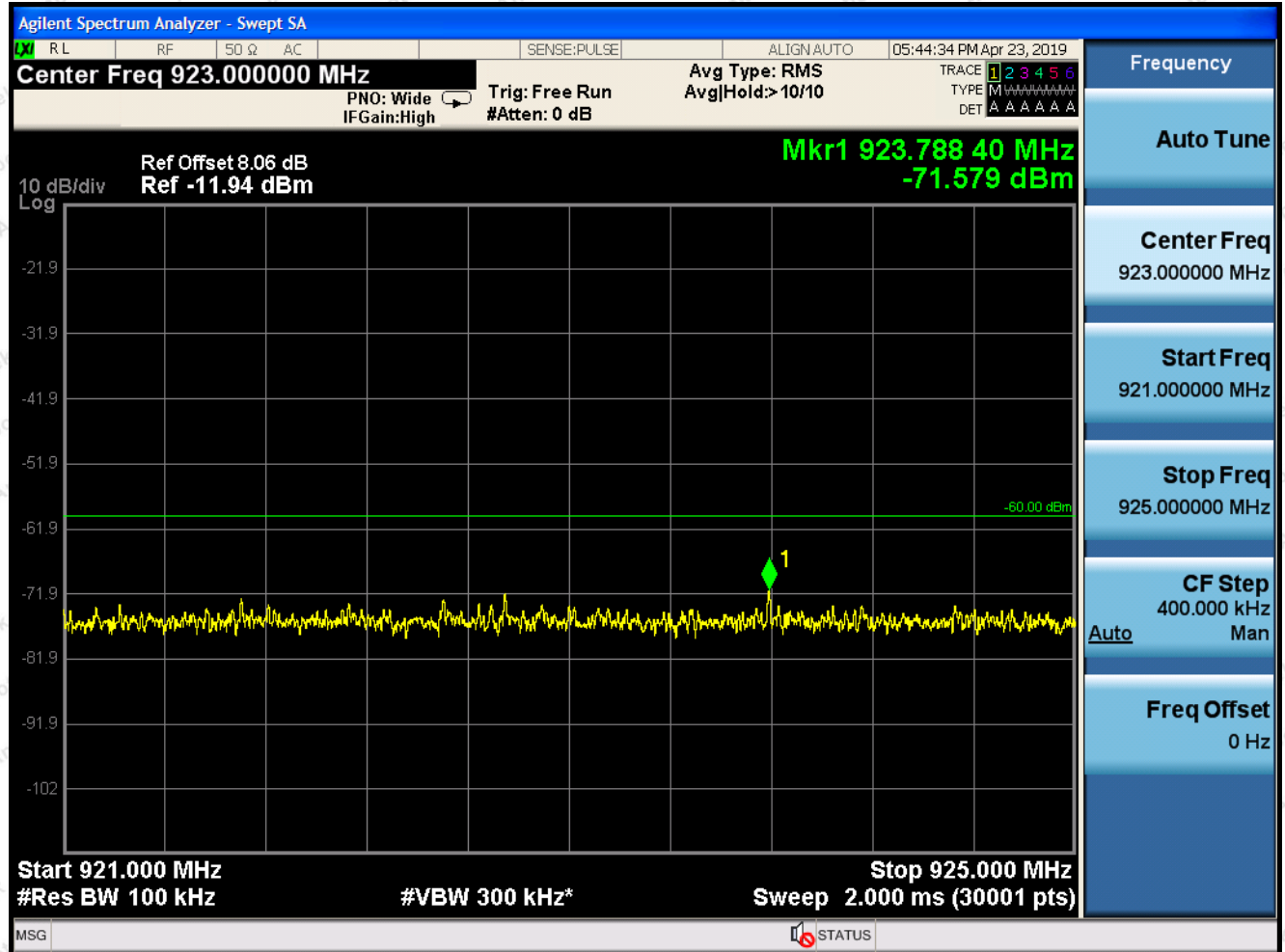
30MHz~1GHz



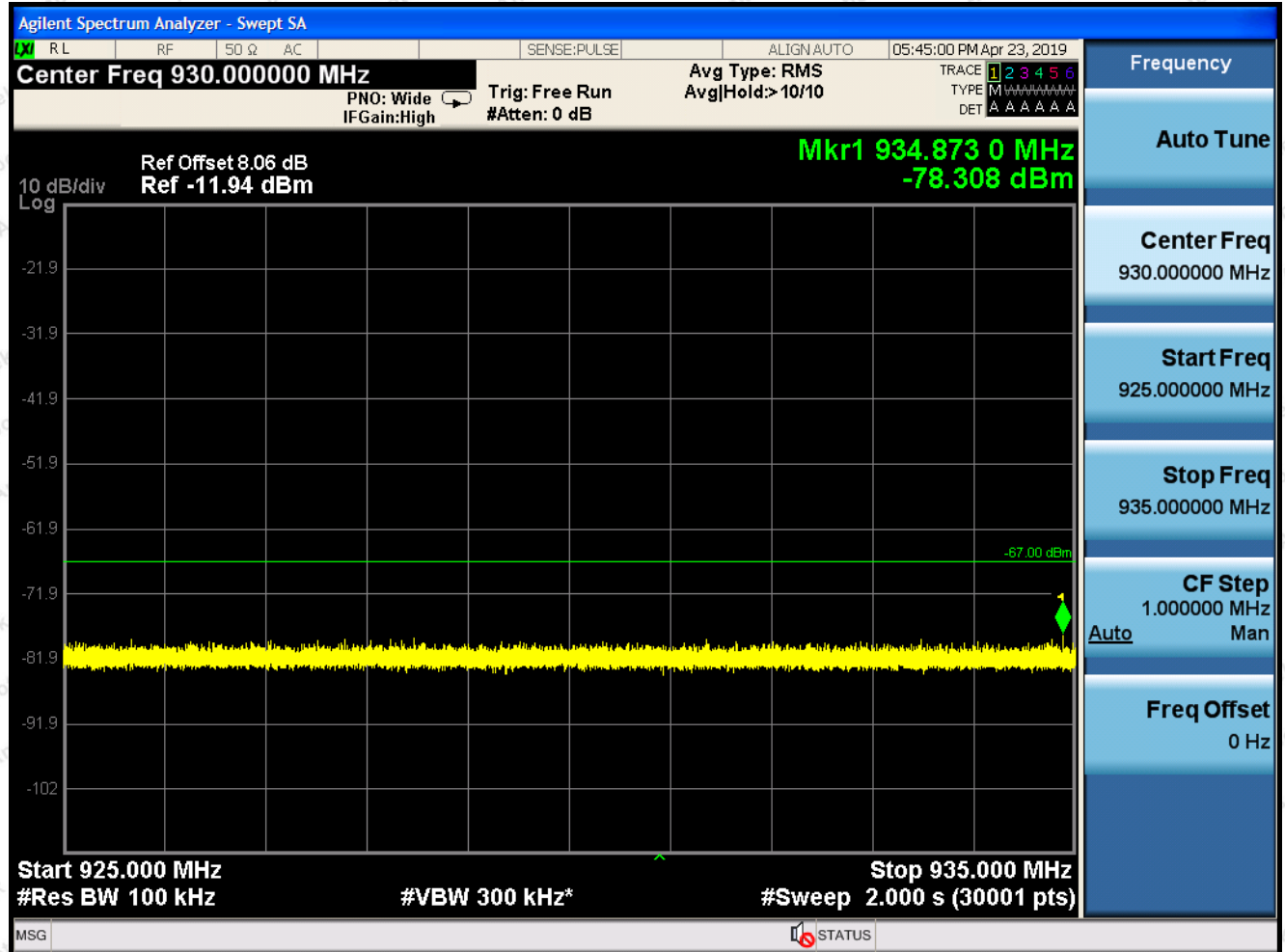
1GHZ~1910.1GHZ



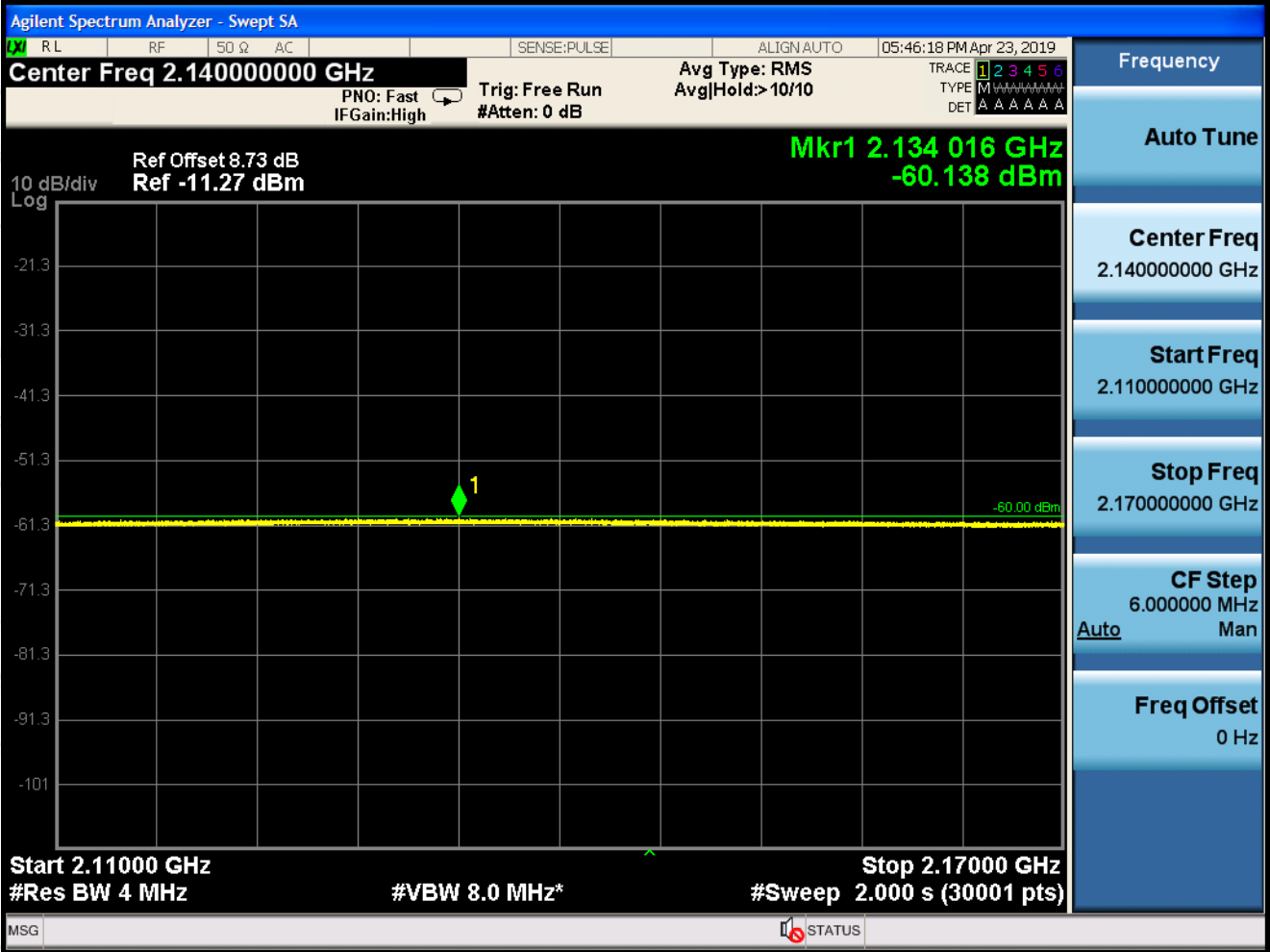
921MHZ~925MHZ



925MHZ~935MHZ



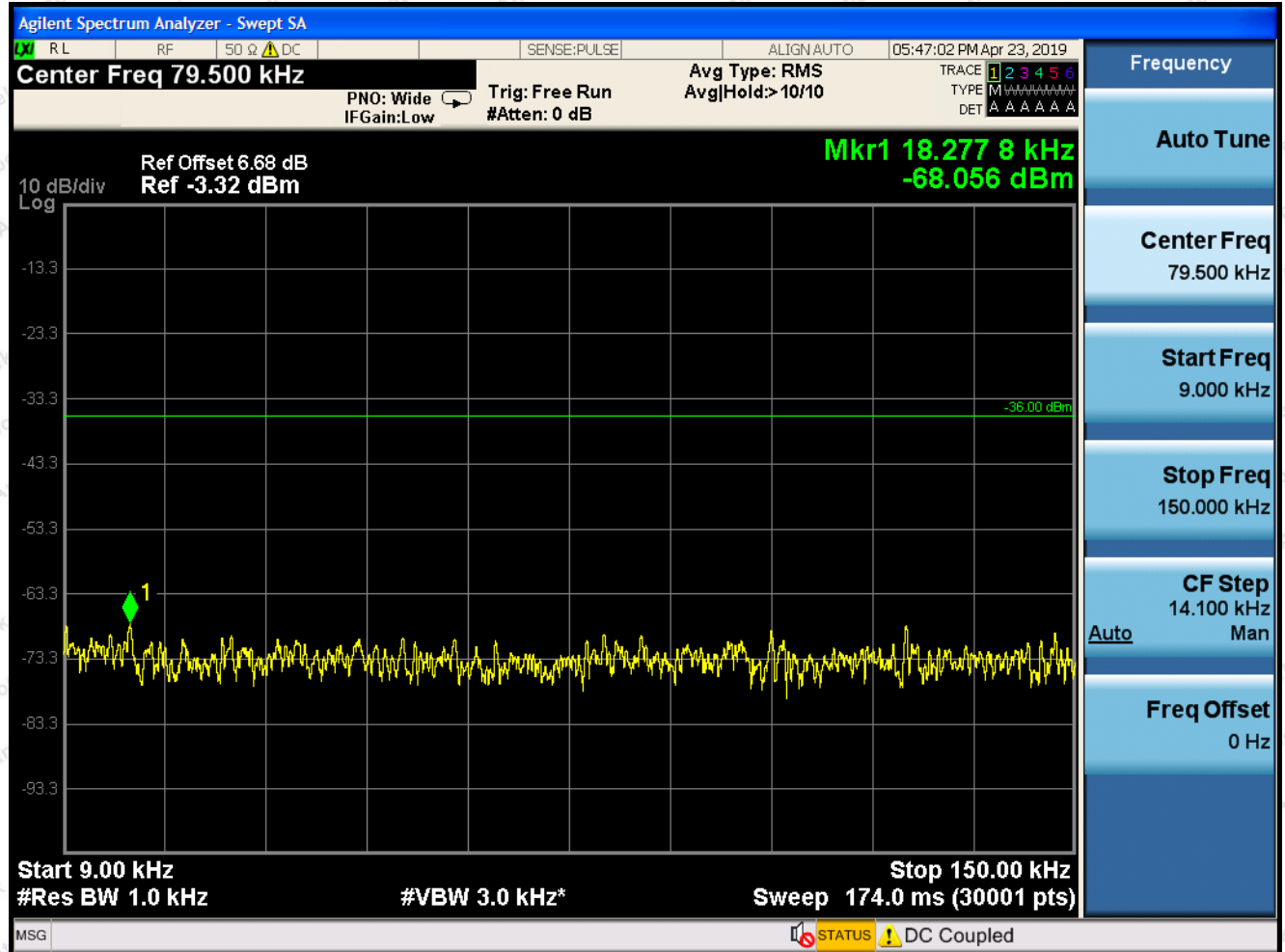
2110MHz~2170MHz



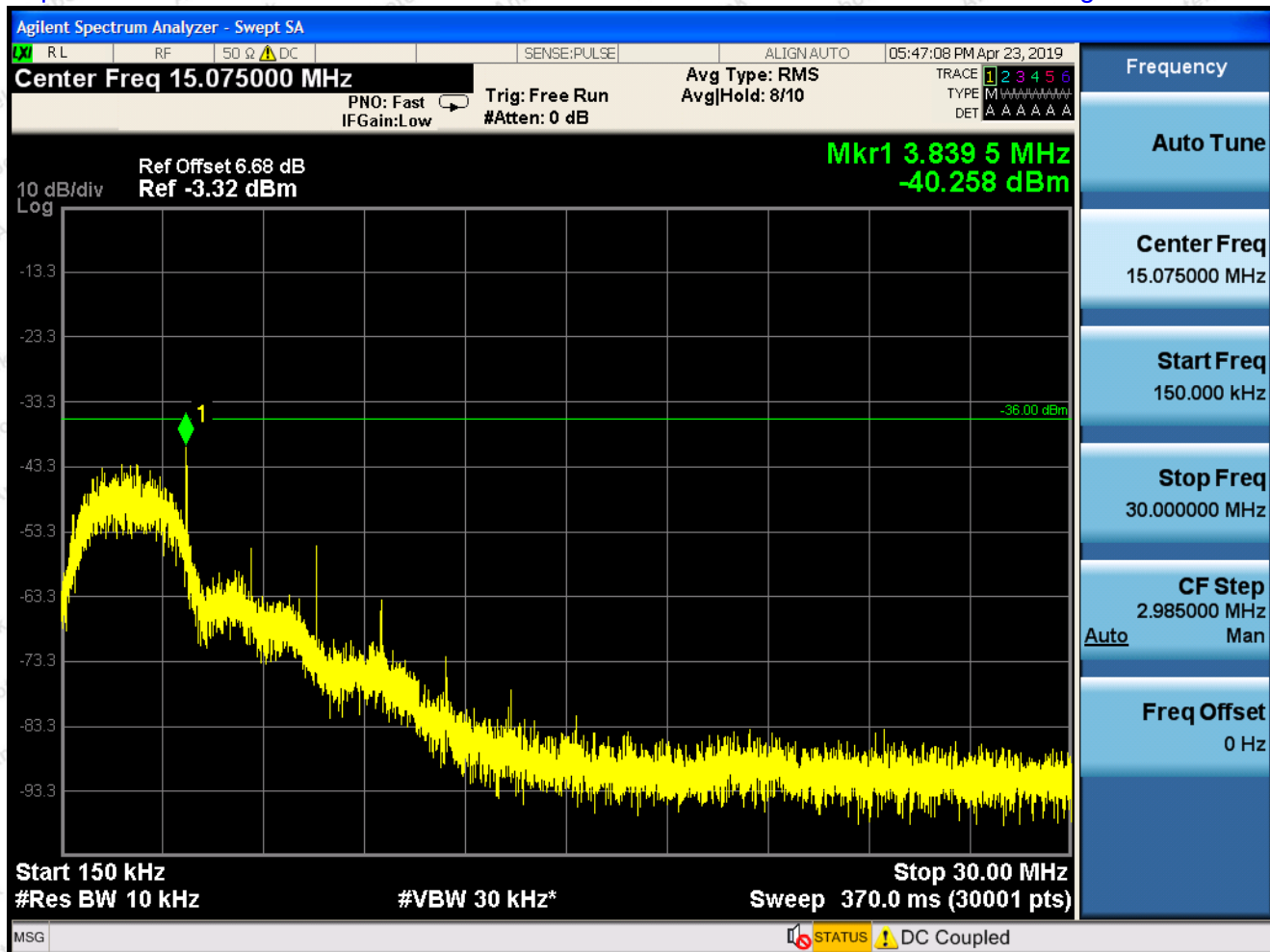
2585MHZ~2690MHZ



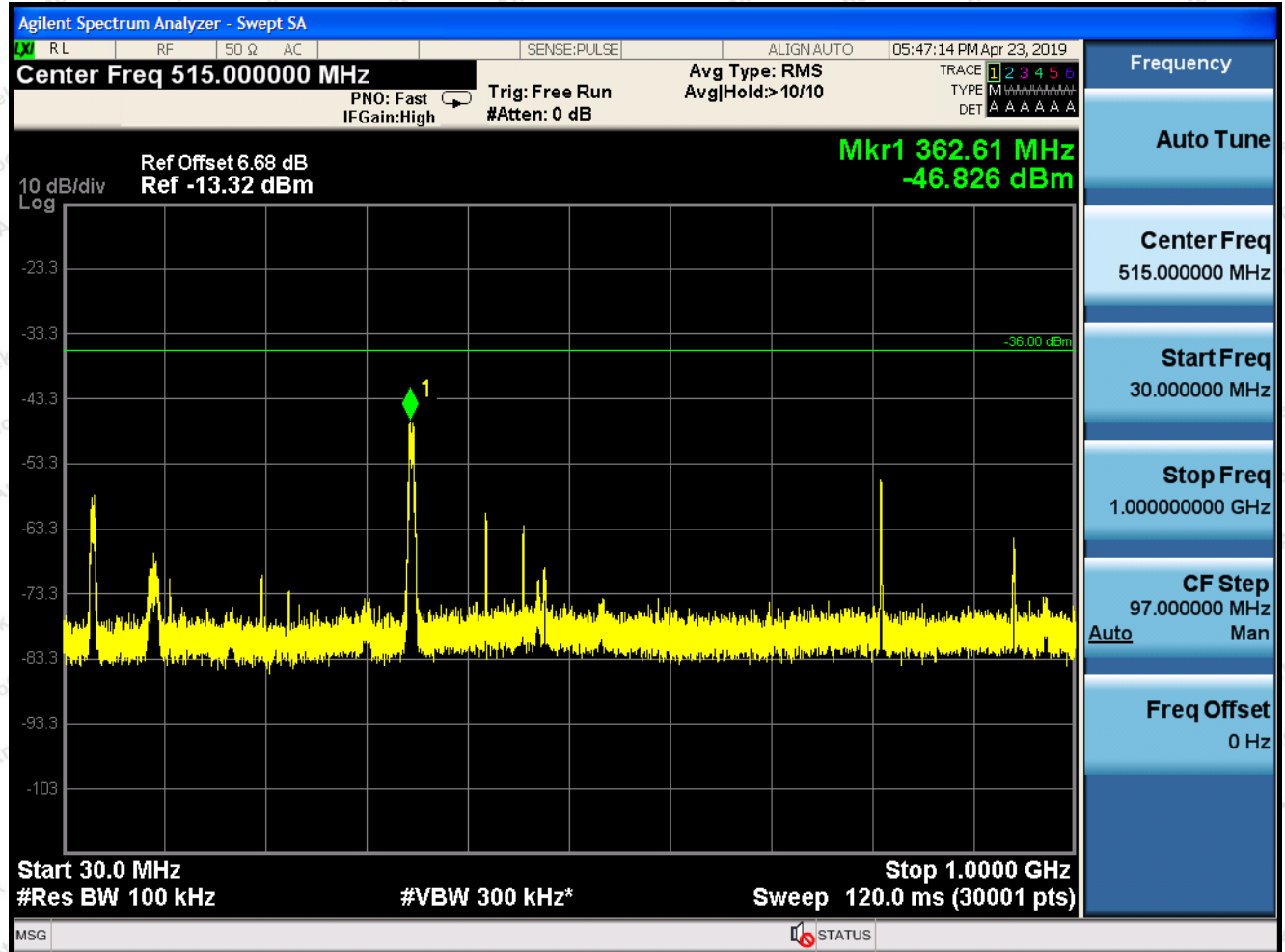
Channel MCH
9KHZ~150KHZ



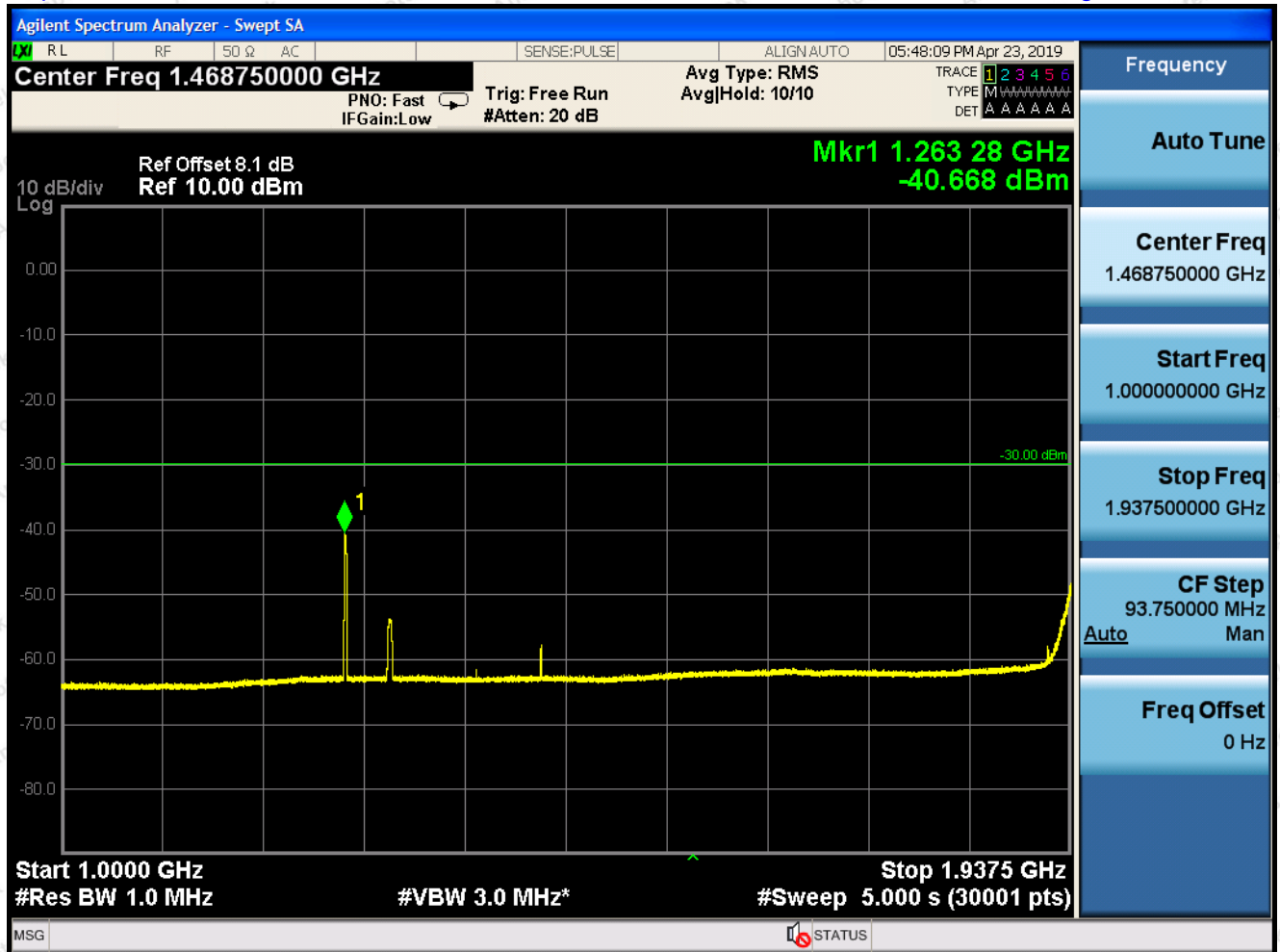
150KHZ~30MHZ



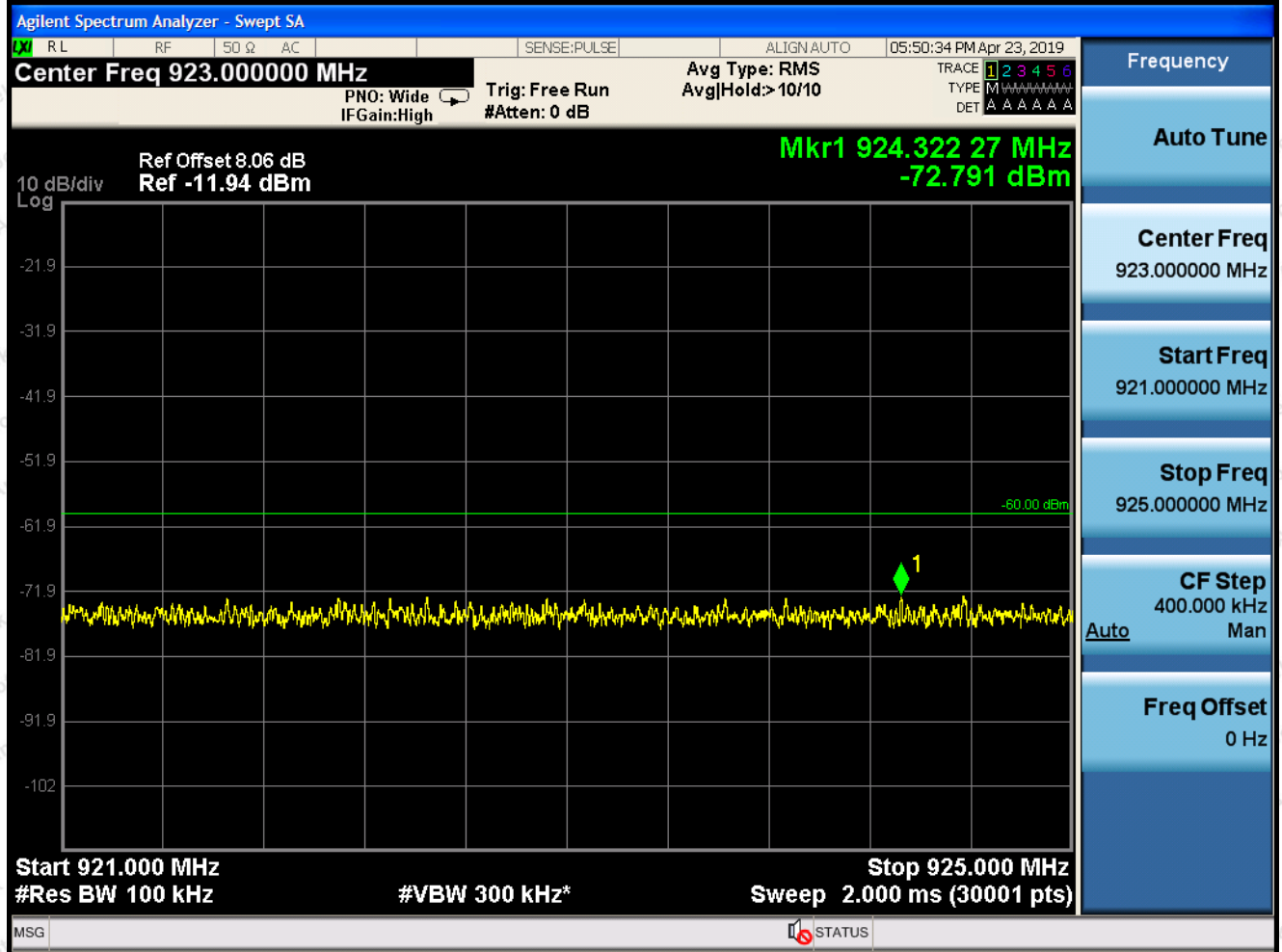
30MHz~1GHz



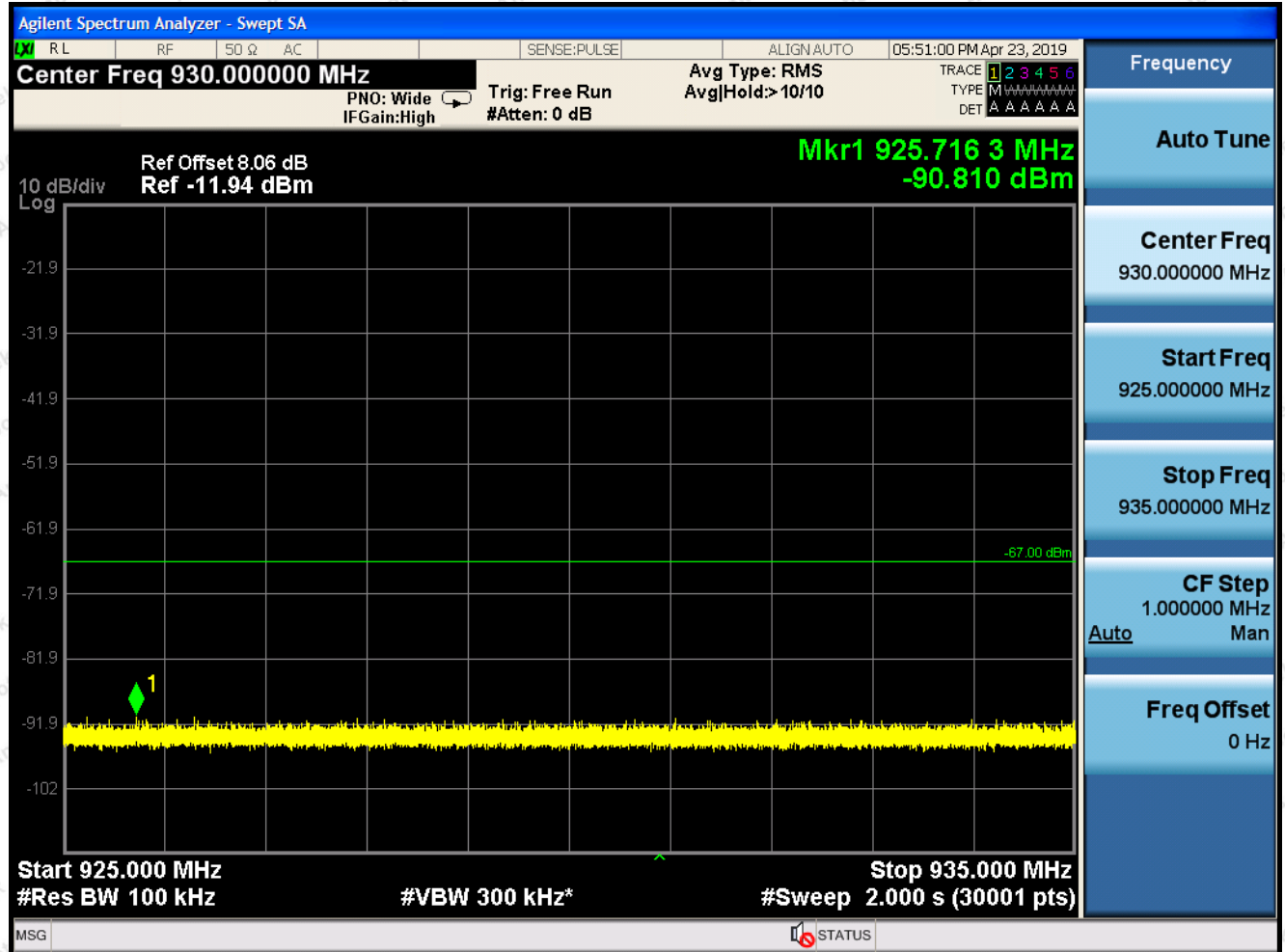
1GHZ~1937.5GHZ



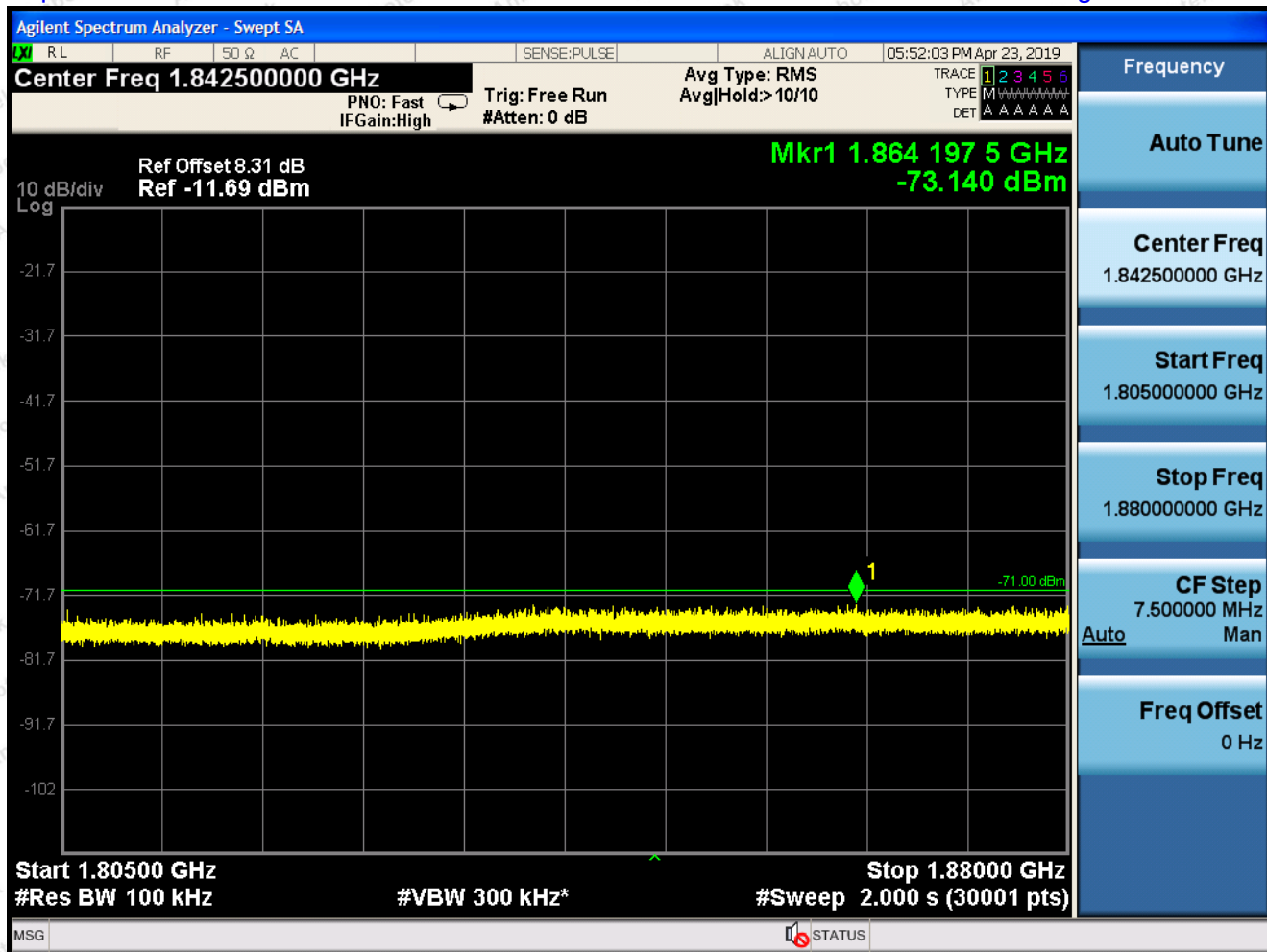
921MHZ~925MHZ



925MHZ~935MHZ



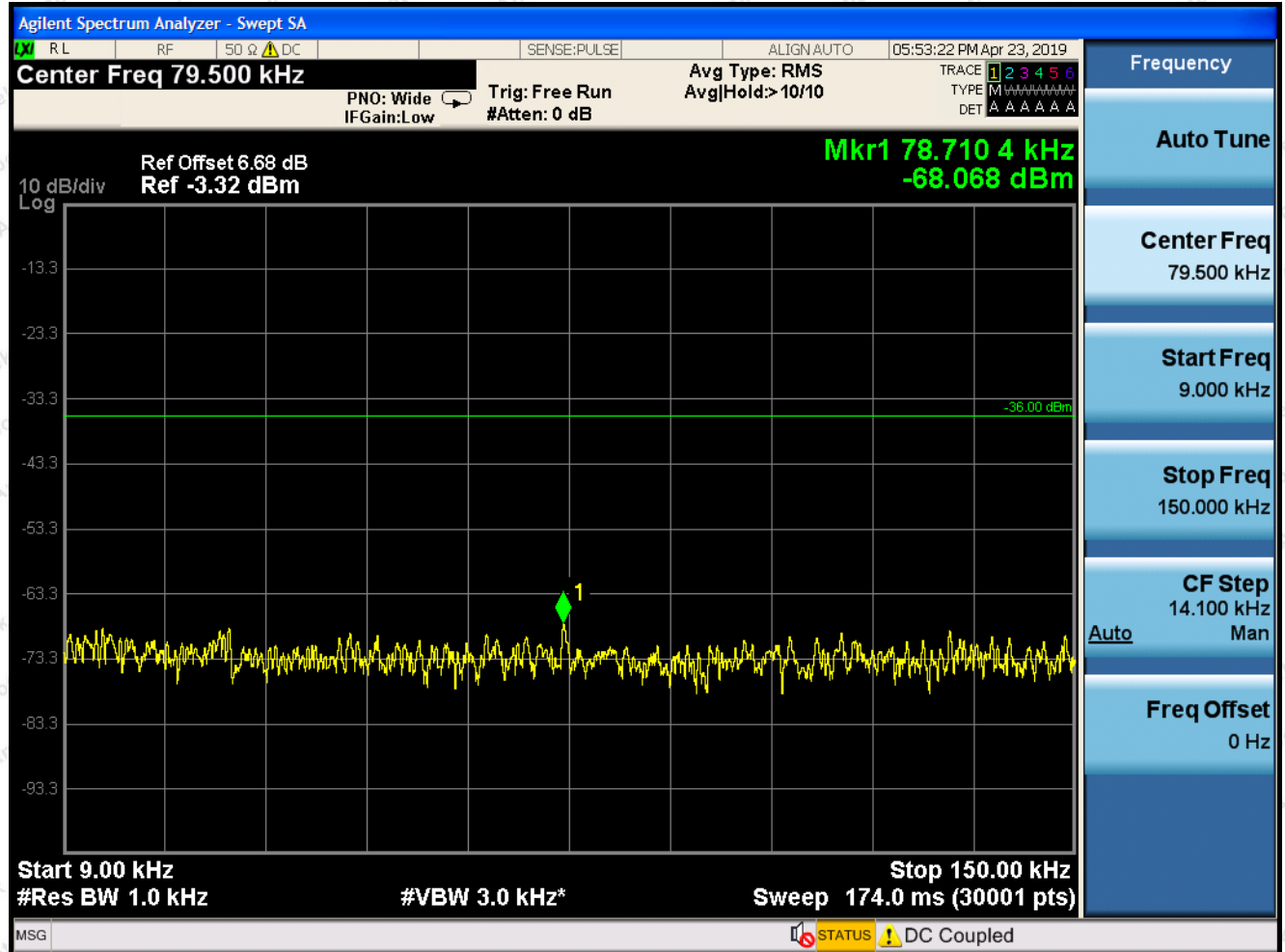
1805MHz~1880MHz



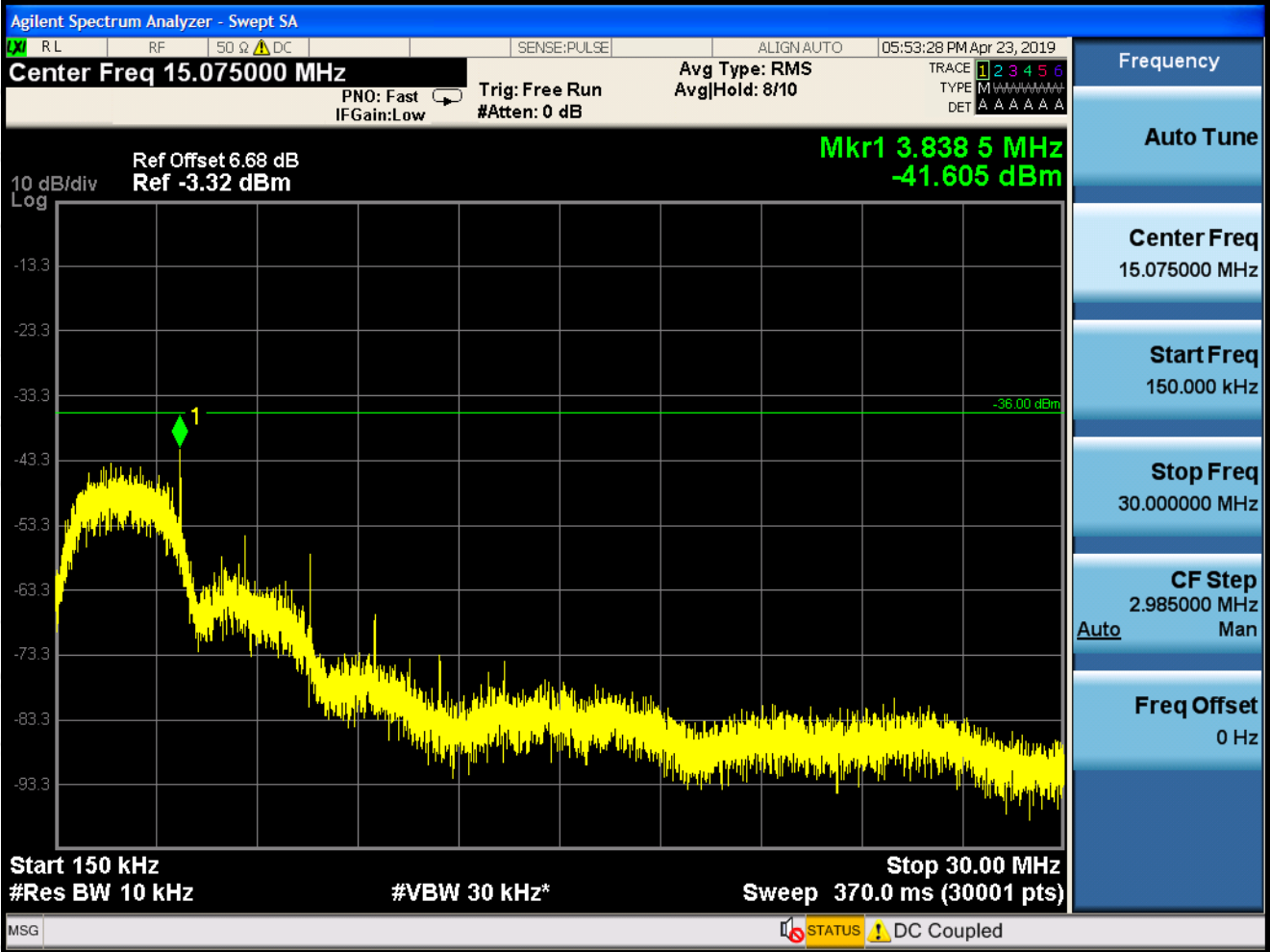
2585MHZ~2690MHZ



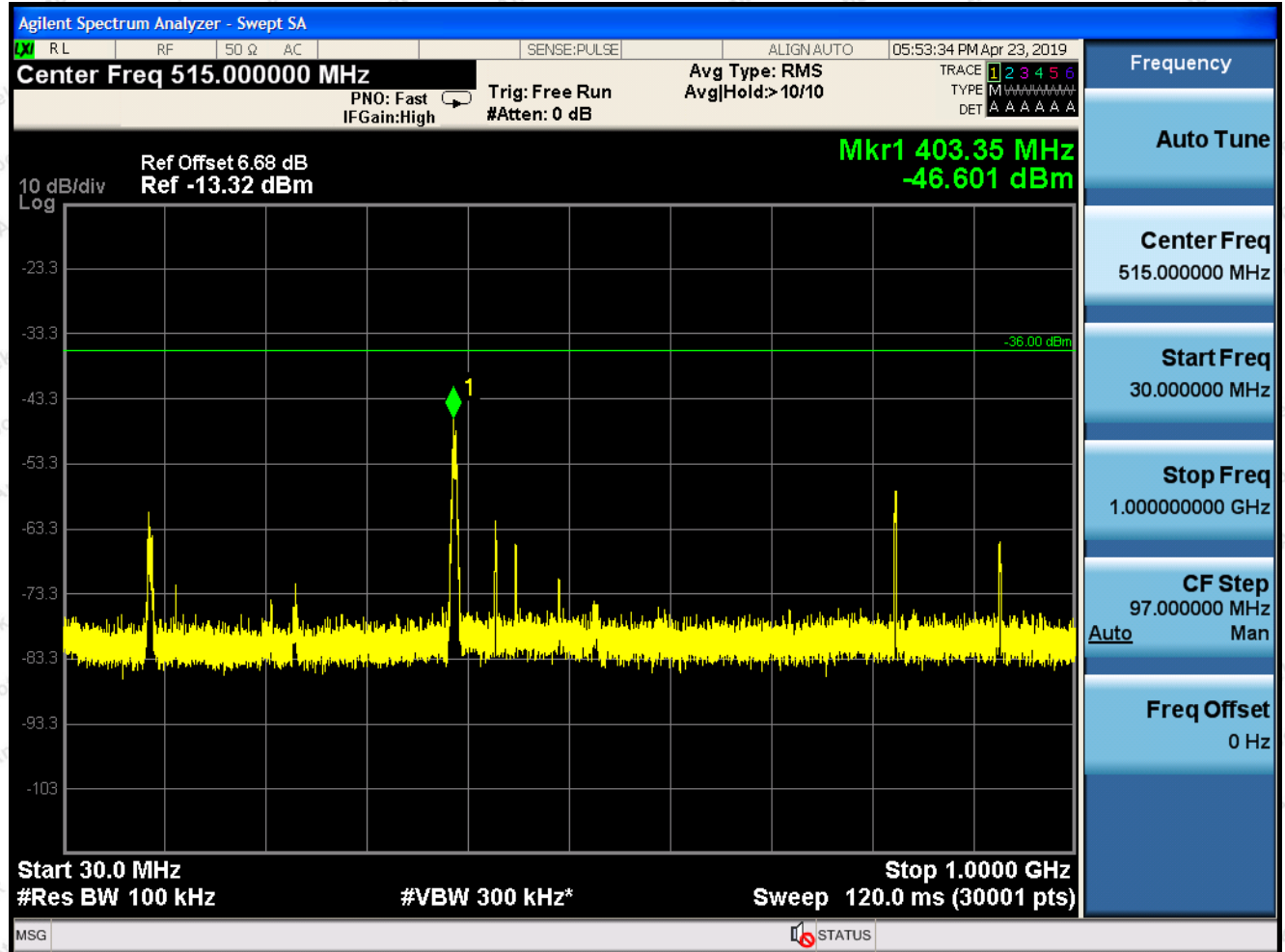
Channel HCH
9KHZ~150KHZ



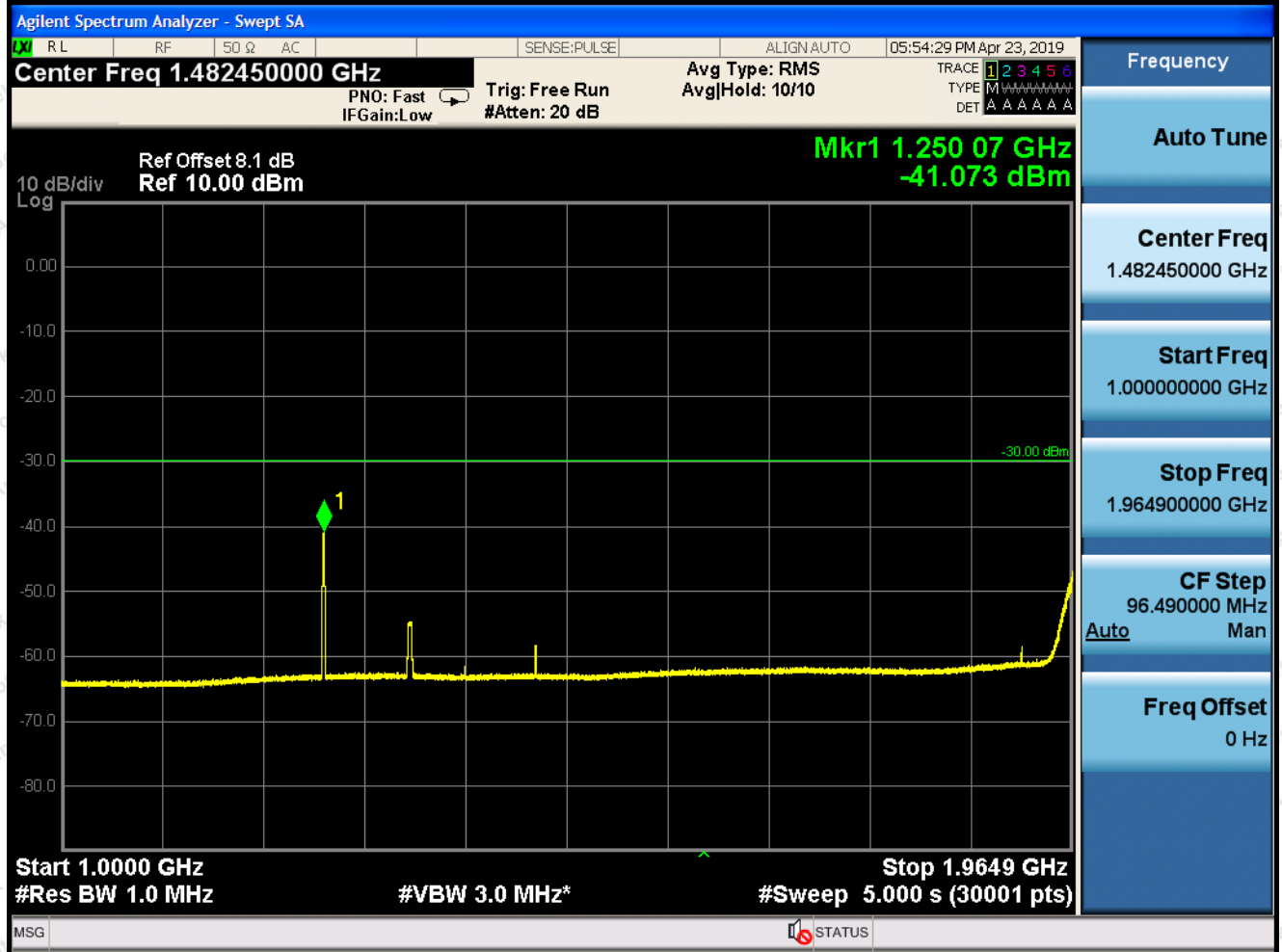
150KHZ~30MHZ



30MHz~1GHz



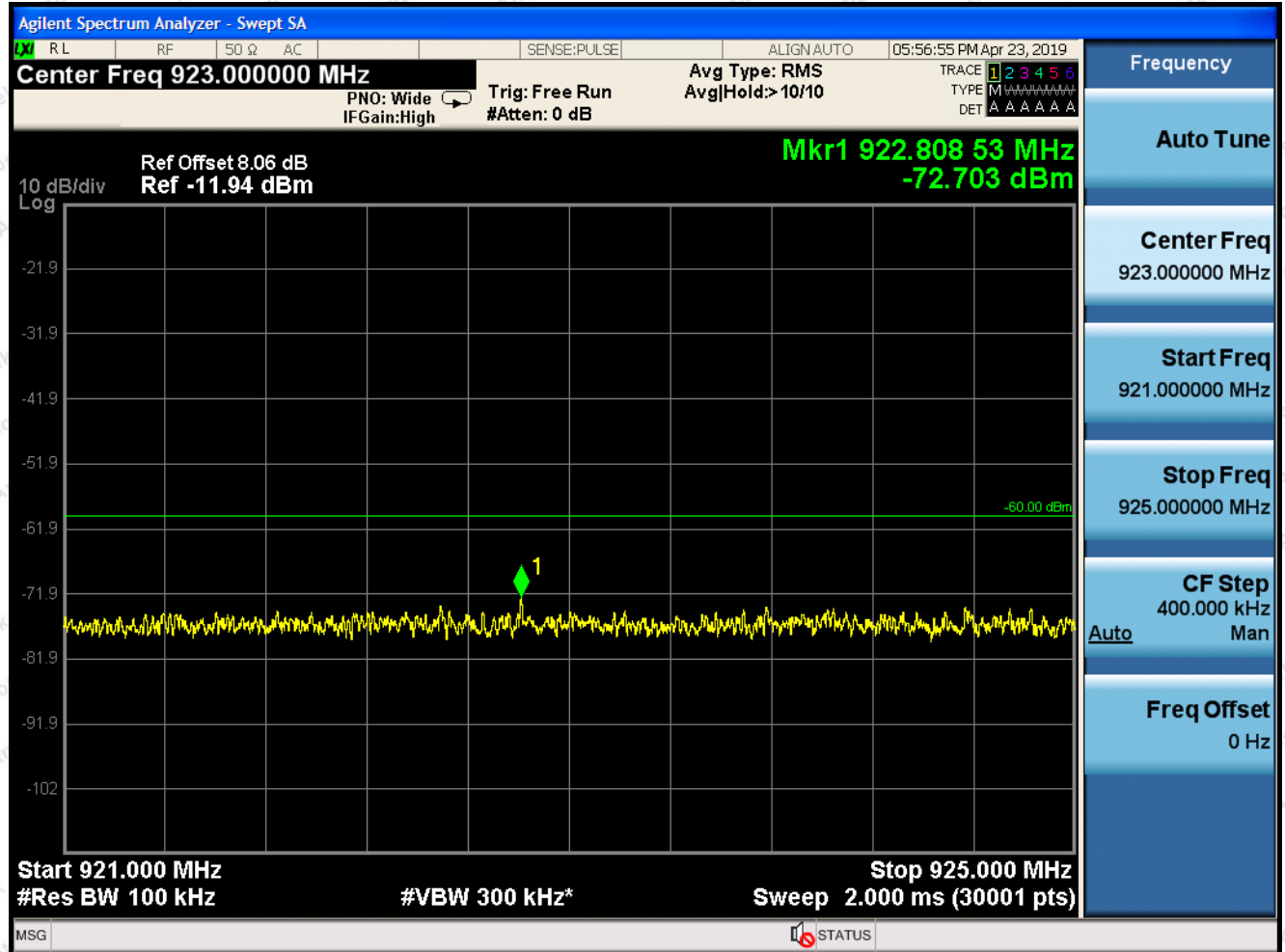
1GHZ~1964.9GHZ



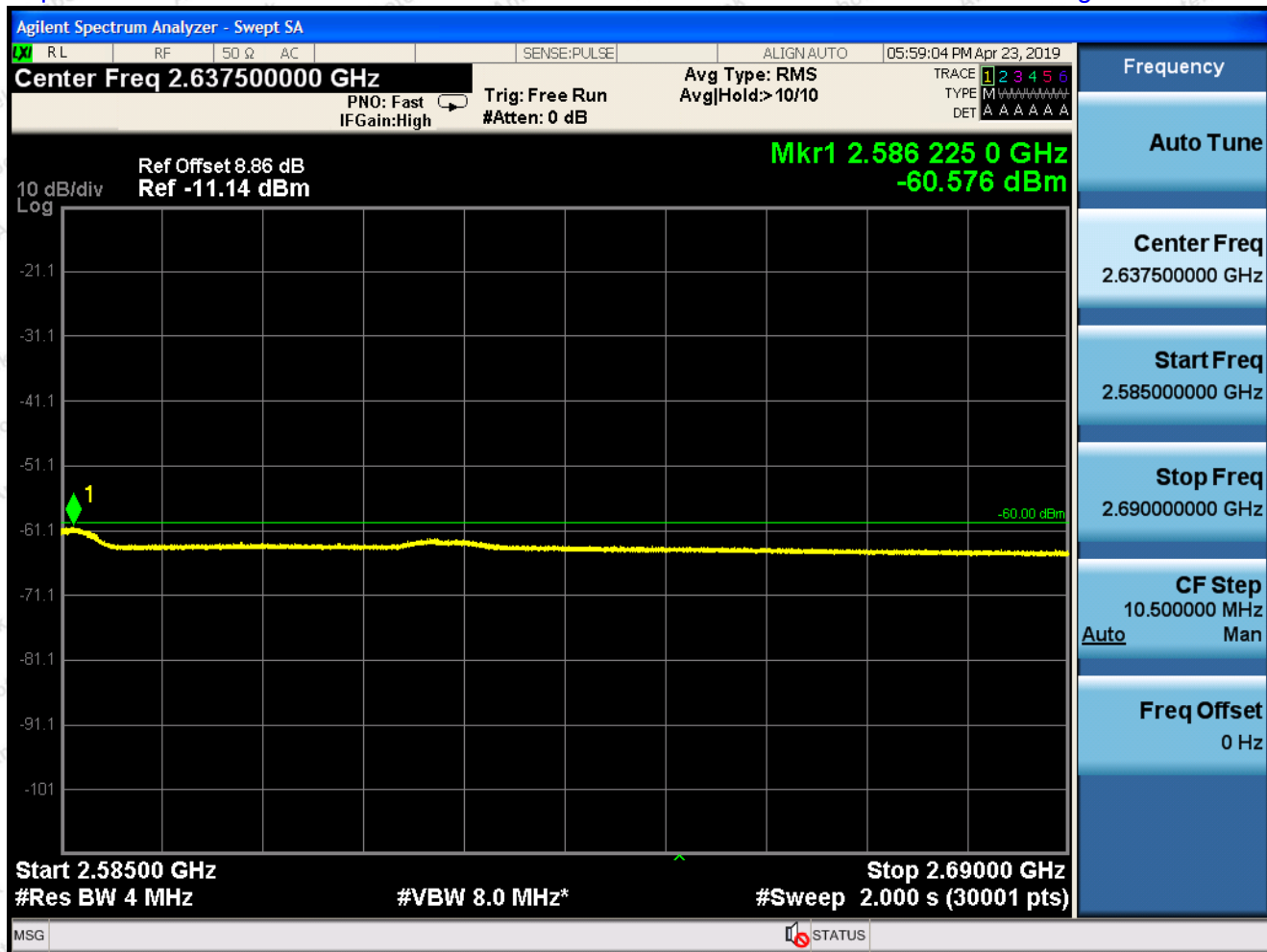
791MHZ~821MHZ



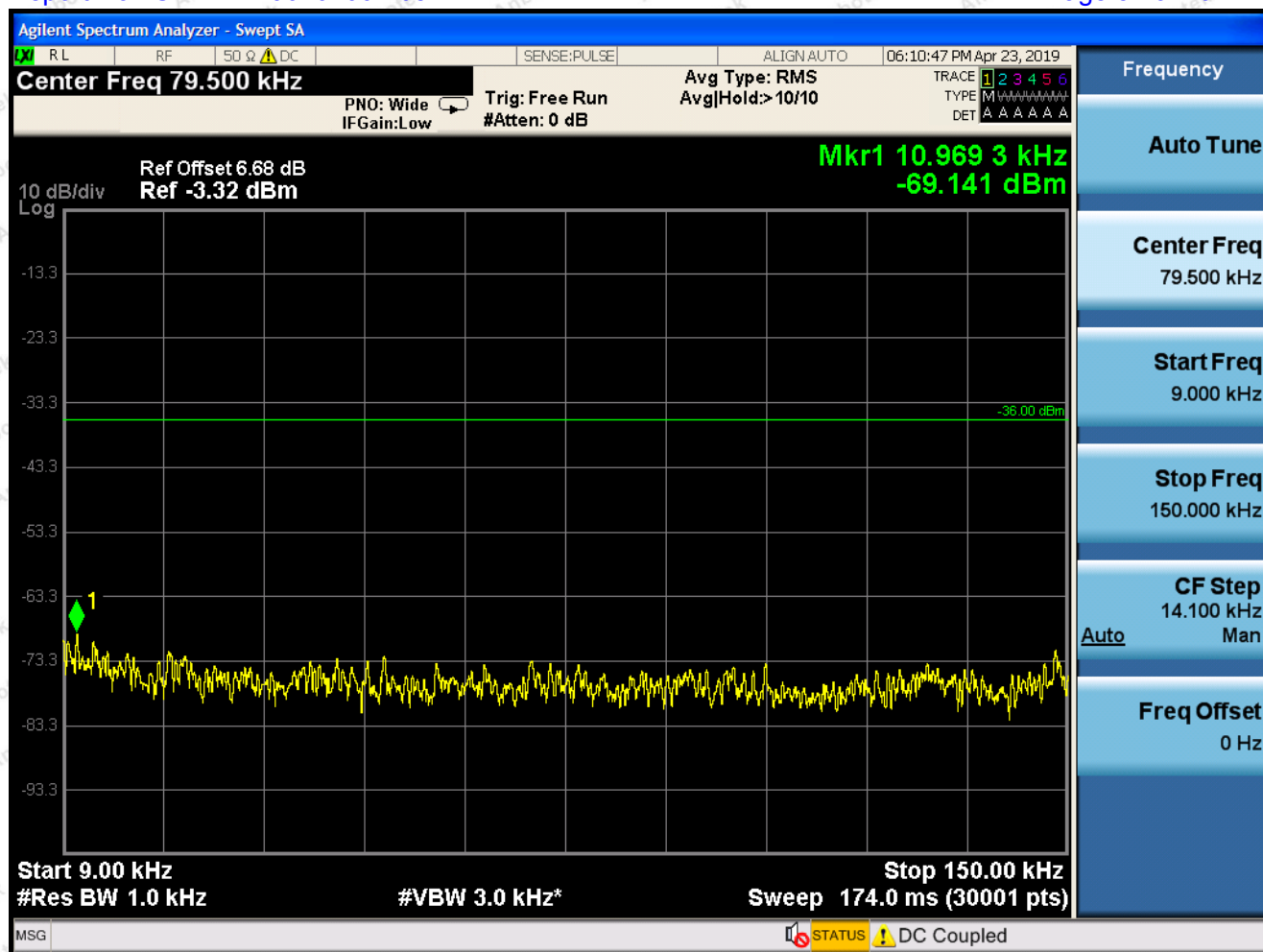
921MHz~925MHz



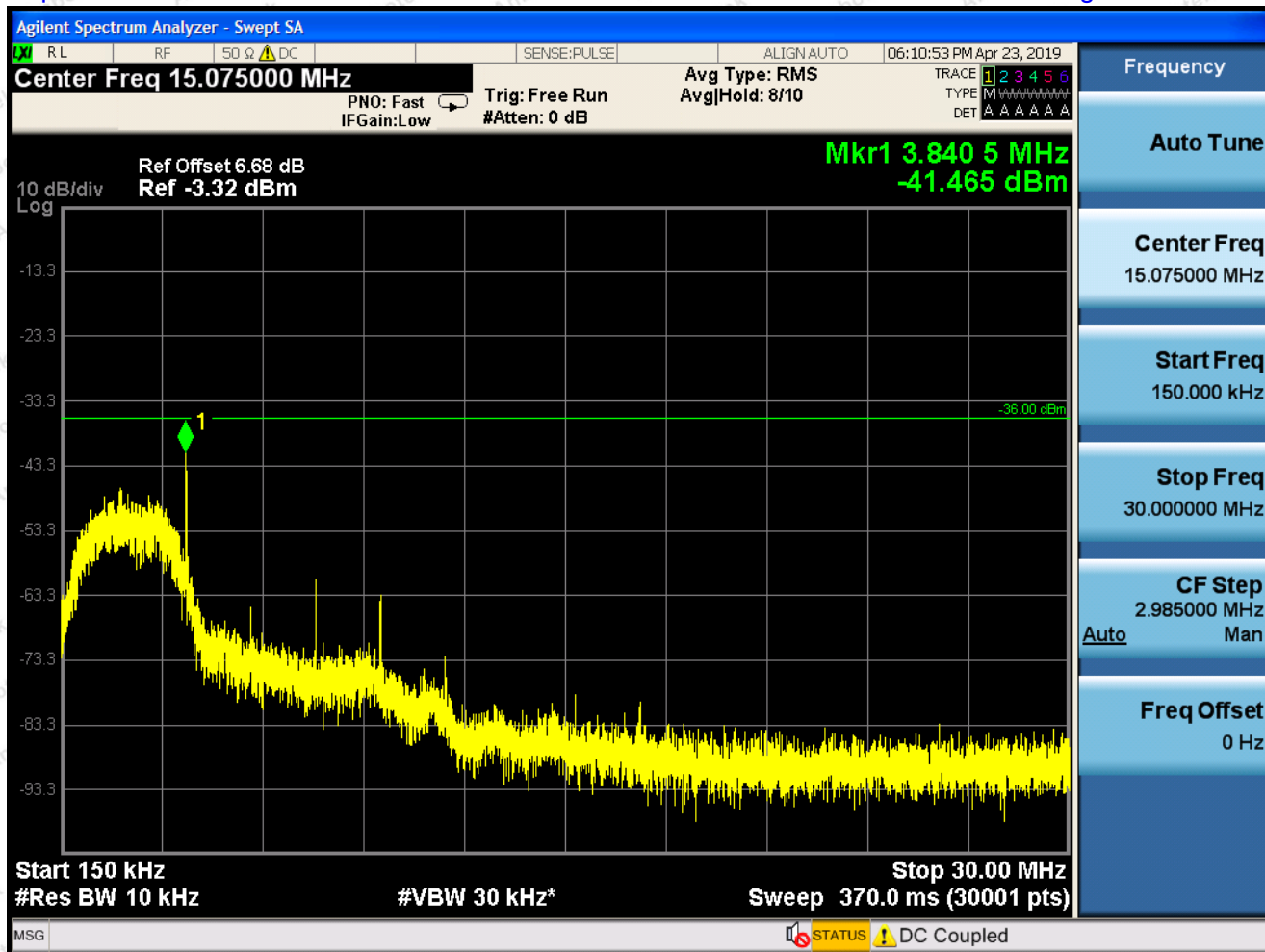
2585MHz~2690MHz



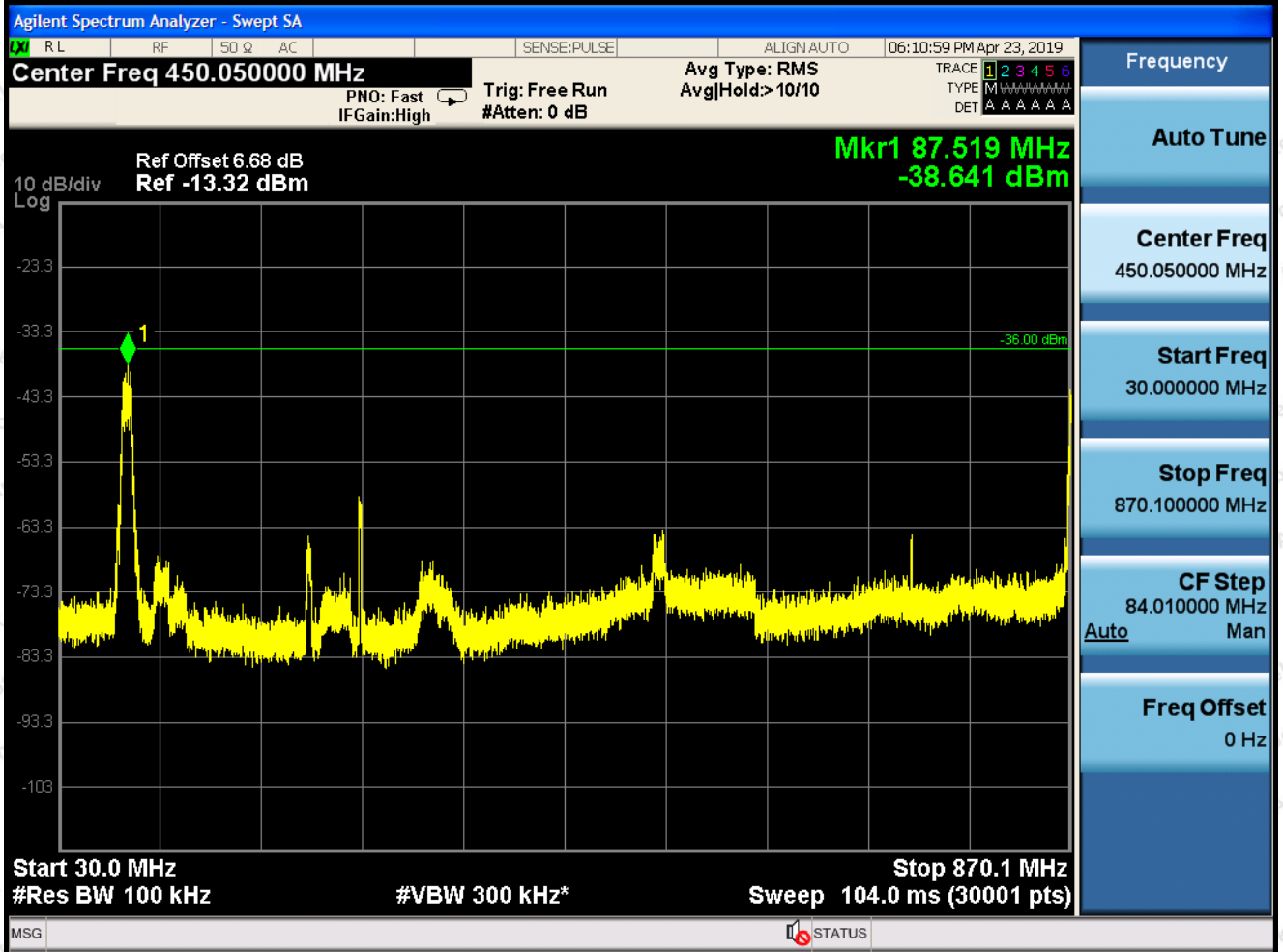
BAND VIII
Channel LCH
9KHZ~150KHZ



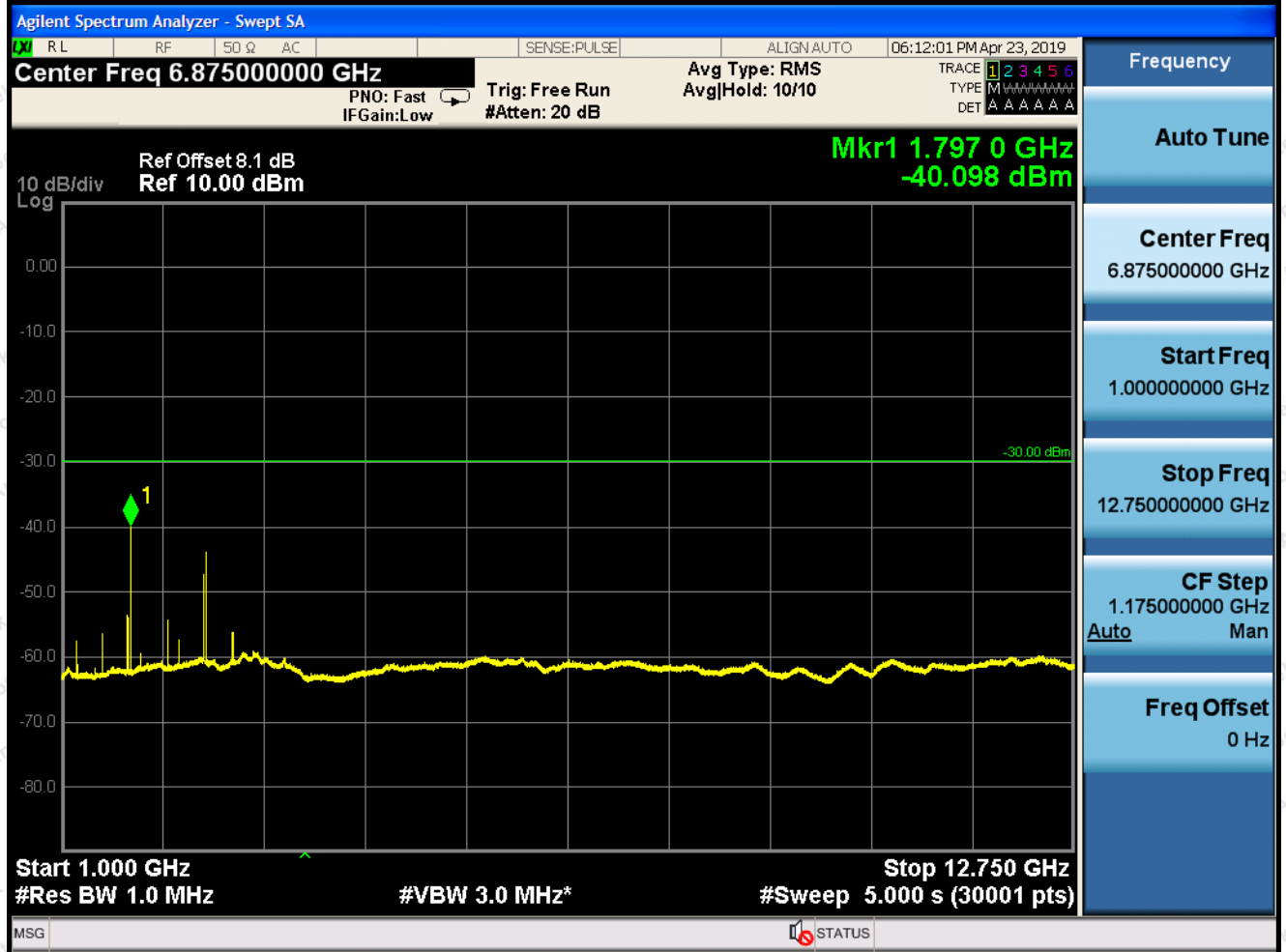
150KHZ~30MHZ



30MHz~870.1GHz



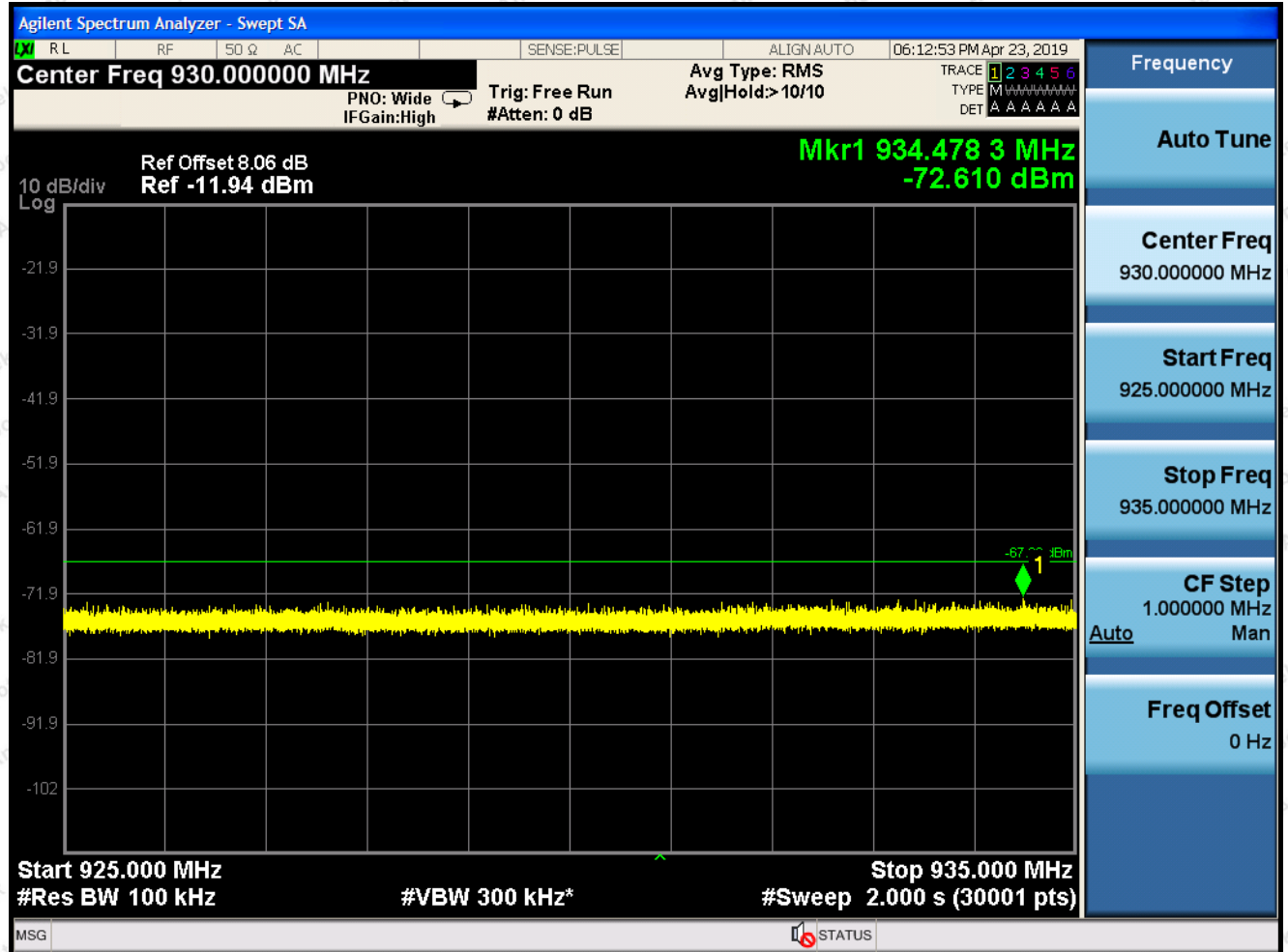
895.1MHz~1GHz



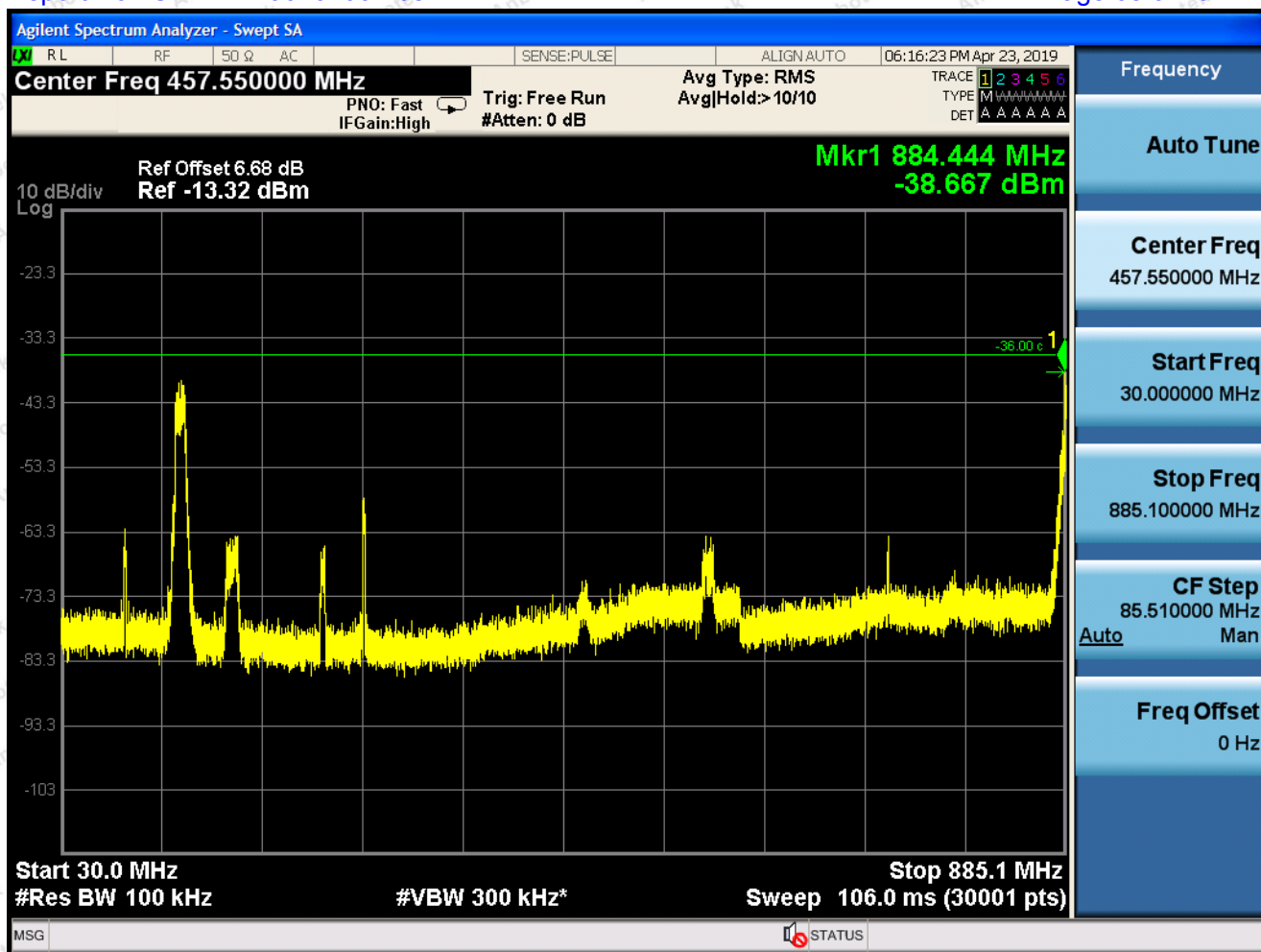
791MHZ~821MHZ



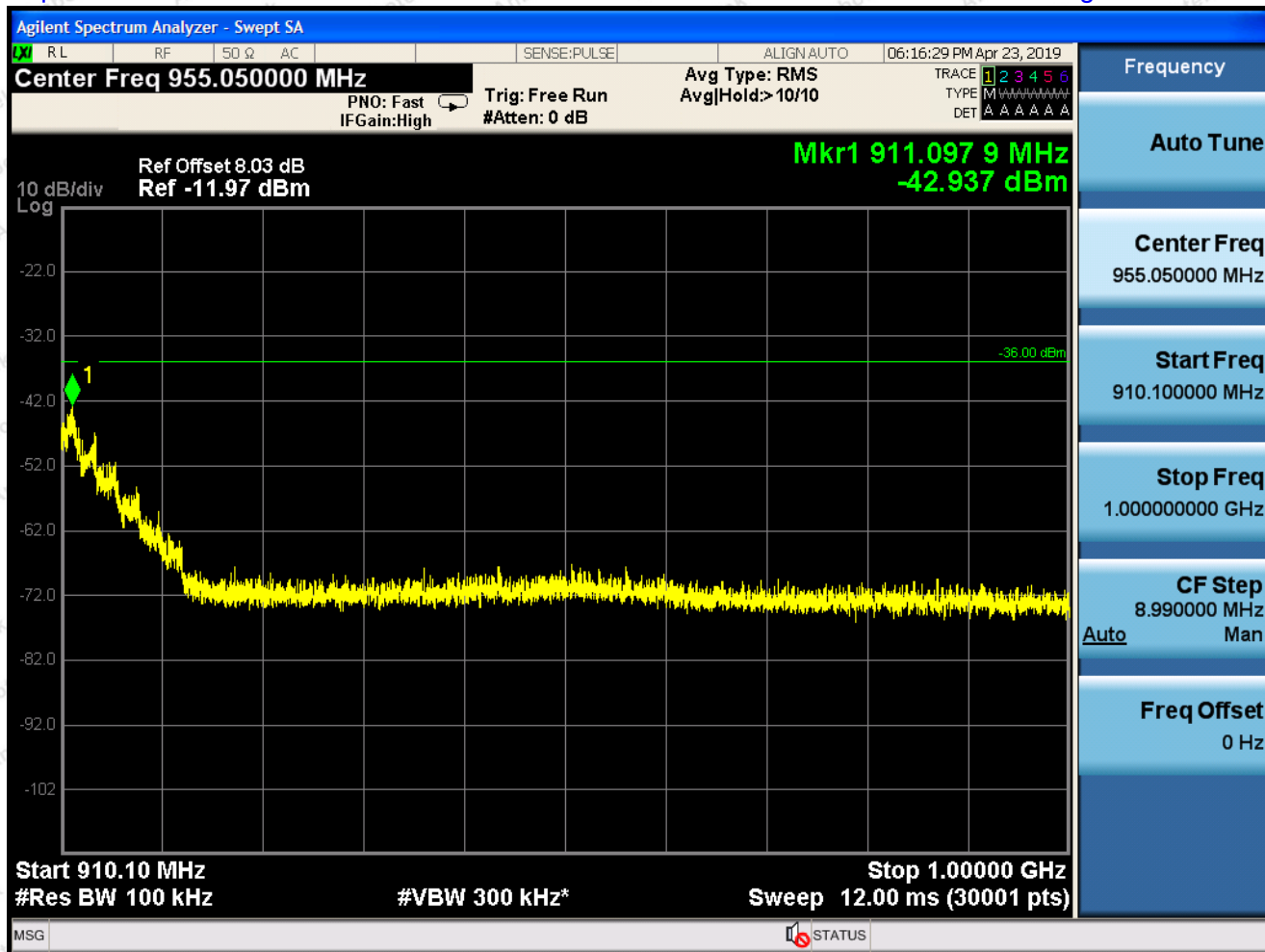
925MHZ~935MHZ



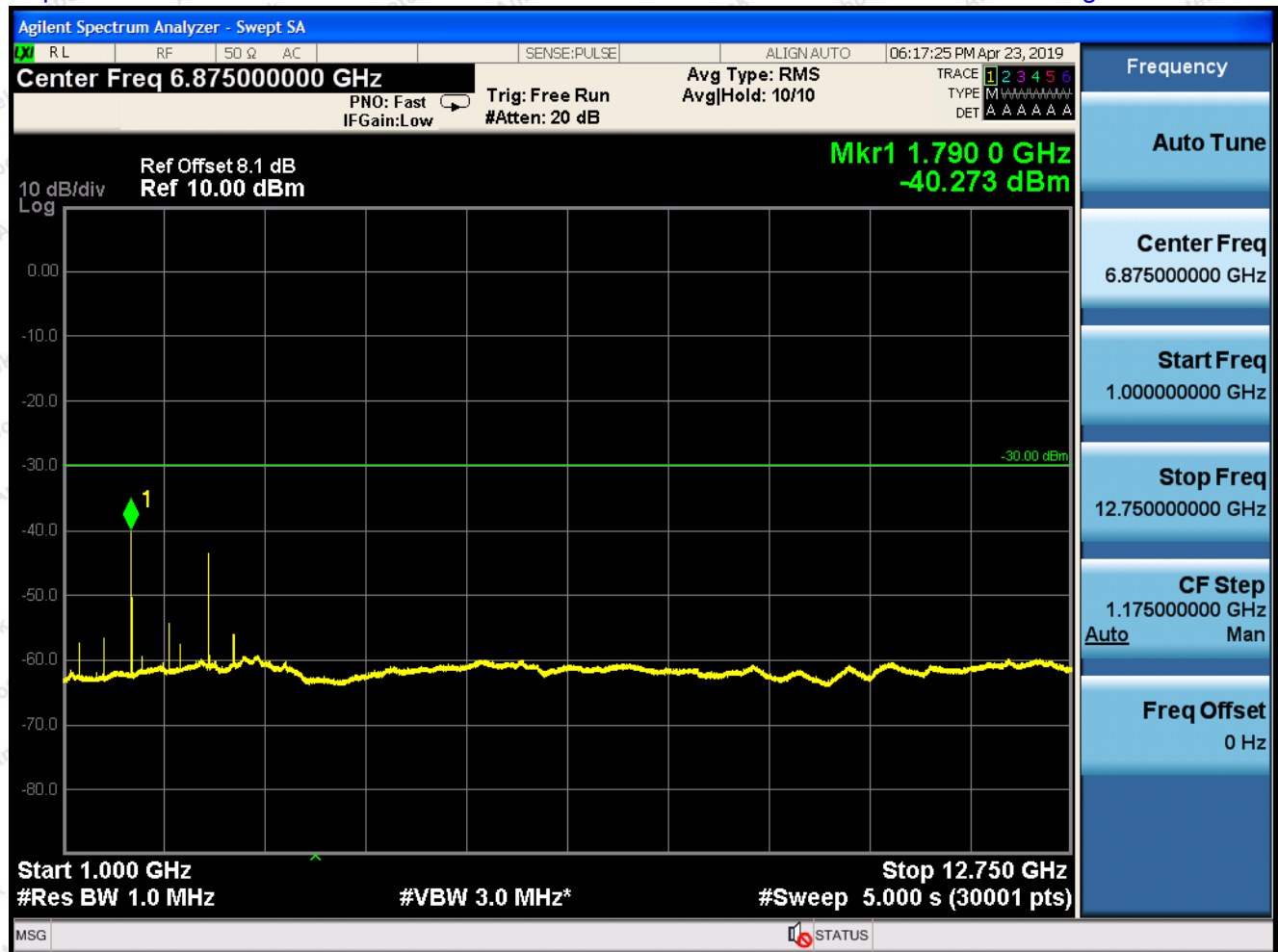
925MHZ~935MHZ



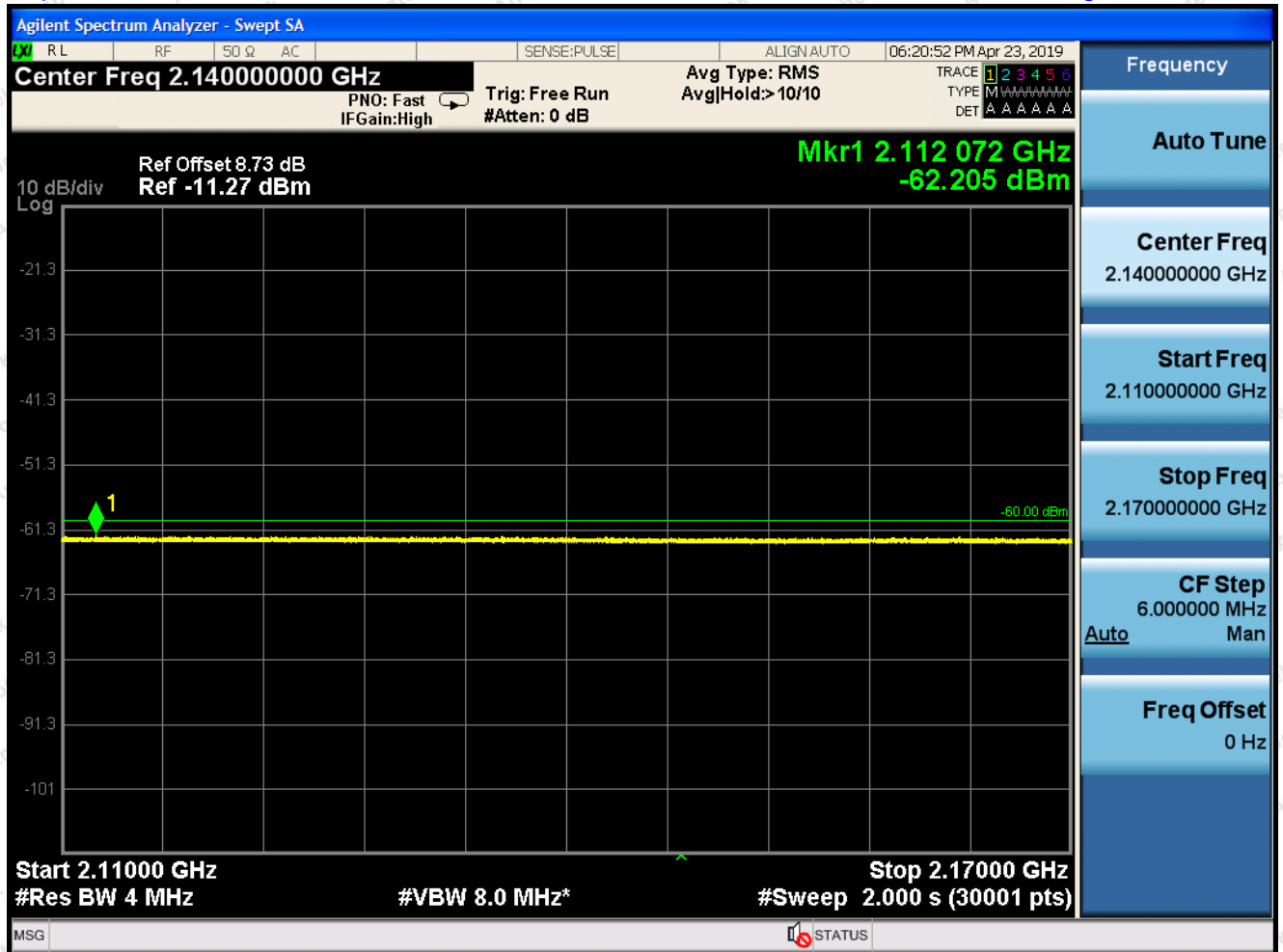
910.1 MHZ~1GHZ



1GHZ~12.75GHZ

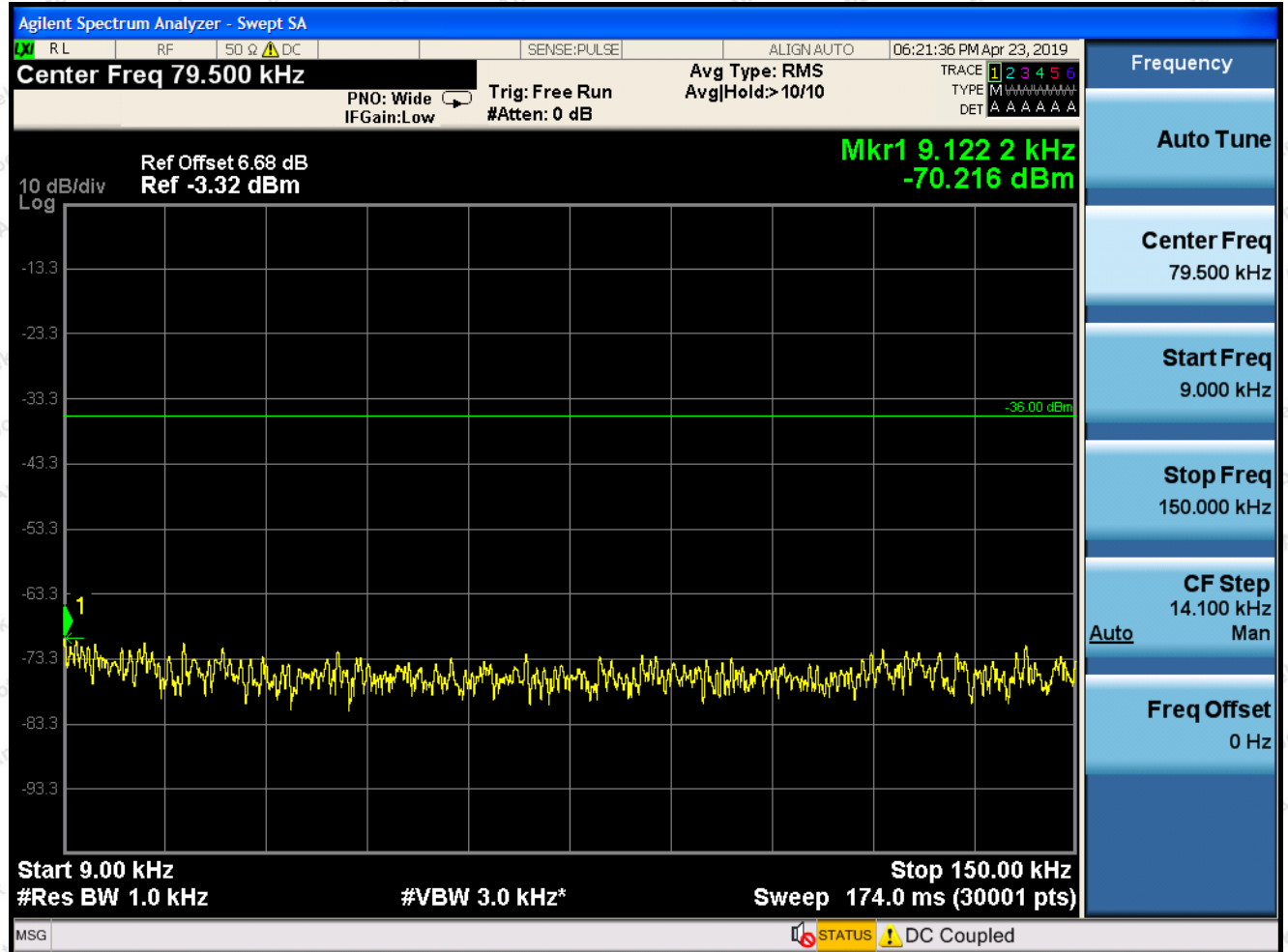


791MHZ~821MHZ

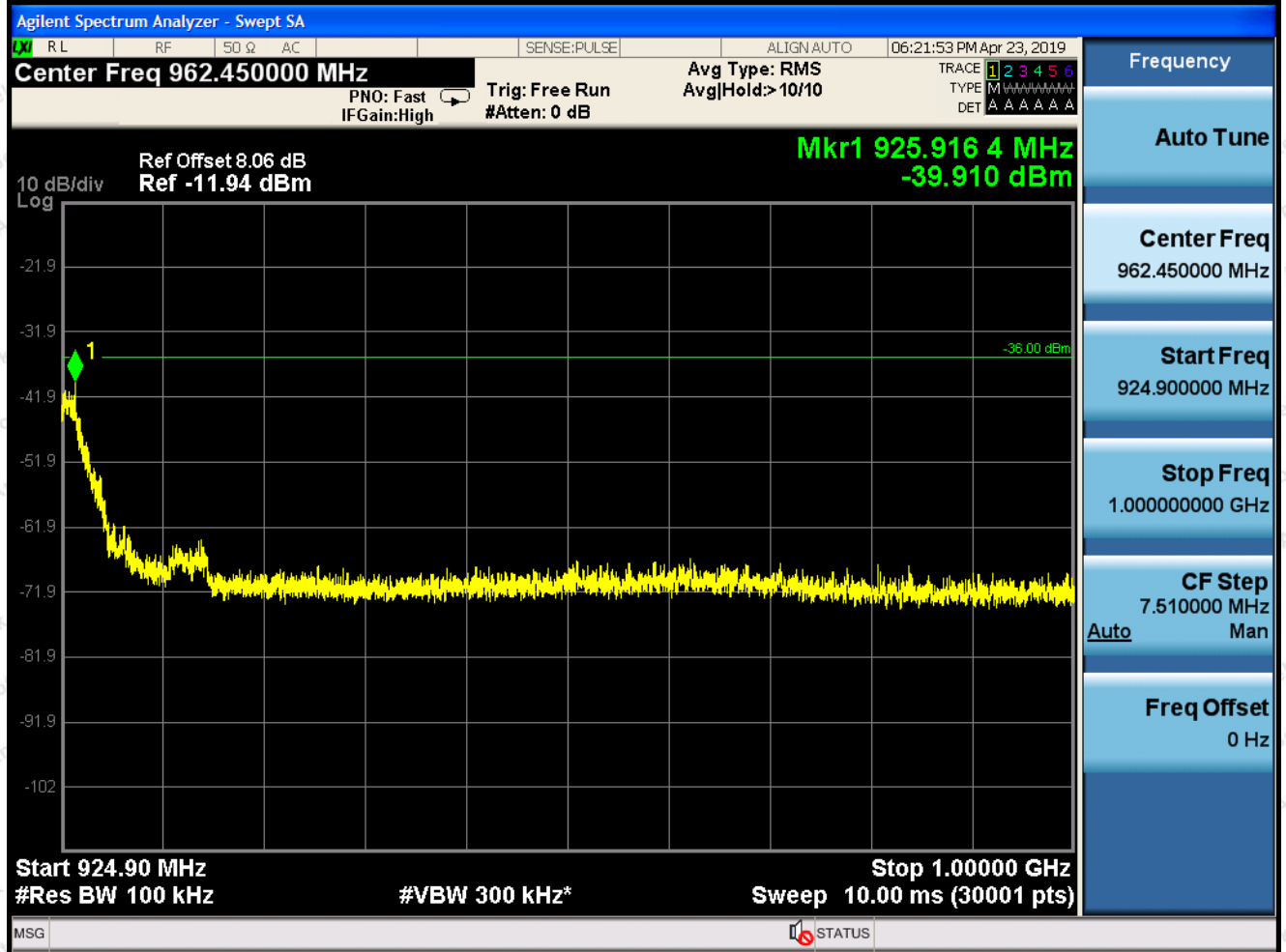


Channel HCH

9KHZ~150KHZ



150KHZ~30MHZ



1GHZ~12.75GHZ



2110MHz~2170MHz

6. Transmitter minimum output power

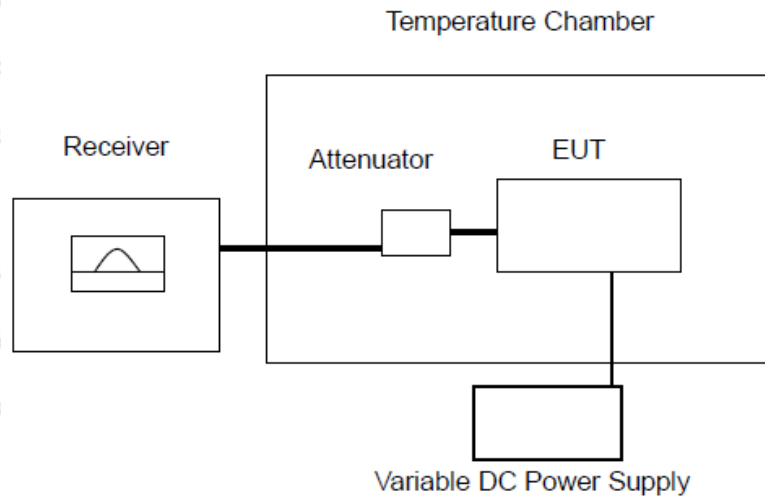
6.1. Test Limit

The minimum output power shall be less than -49 dBm.

6.2. Test Procedures

- 1) Set and send continuously Down power control commands to the UE.
- 2) Measure the mean power of the UE.

6.3. Test setup



6.4. Test Results

Operating Band	Test Conditions	Test Channel	Measurement Data(dBm)	Limit(dBm)	Result
Band I	TNVN	LCH	-55.58	-49	Pass
		MCH	-55.82	-49	Pass
		HCH	-56.75	-49	Pass
	TLVL	LCH	-54.72	-49	Pass
		MCH	-56.10	-49	Pass
		HCH	-54.77	-49	Pass
	TLVH	LCH	-56.41	-49	Pass

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		MCH	-55.90	-49	Pass
		HCH	-54.98	-49	Pass
		LCH	-56.82	-49	Pass
	THVL	MCH	-56.27	-49	Pass
		HCH	-56.17	-49	Pass
		LCH	-55.75	-49	Pass
	THVH	MCH	-56.11	-49	Pass
		HCH	-56.55	-49	Pass
		LCH	-56.82	-49	Pass

Operating Band	Test Conditions	Test Channel	Measurement Data(dBm)	Limit(dBm)	Result
Band VIII	TNVN	LCH	-57.11	-49	Pass
		MCH	-56.14	-49	Pass
		HCH	-55.87	-49	Pass
	TLVL	LCH	-56.73	-49	Pass
		MCH	-57.15	-49	Pass
		HCH	-56.48	-49	Pass
	TLVH	LCH	-56.76	-49	Pass
		MCH	-57.02	-49	Pass
		HCH	-56.77	-49	Pass
	THVL	LCH	-56.16	-49	Pass
		MCH	-57.83	-49	Pass
		HCH	-56.24	-49	Pass
	THVH	LCH	-56.87	-49	Pass
		MCH	-56.02	-49	Pass
		HCH	-56.88	-49	Pass

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7. Receiver Adjacent Channel Selectivity (ACS)

7.1. Test Limit

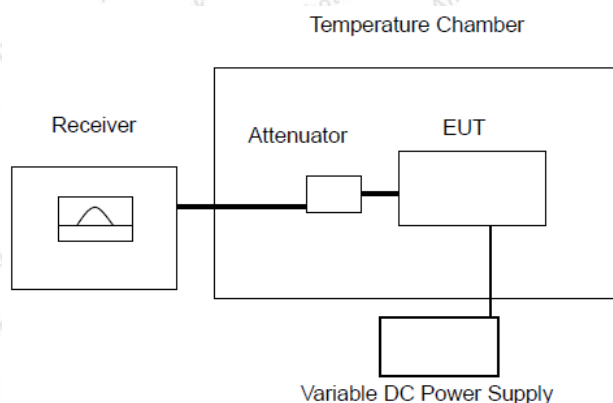
For the UE of power class 3 and 4, the BER shall not exceed 0,001 for the parameters specified in table 4.2.6.2-1. This test condition is equivalent to the ACS value 33 dB.

Test parameters for adjacent channel selectivity

Parameter	Unit	Case 1	Case 2
DPCH_Ec	dBm/3,84 MHz	<REFSENS> + 14 dB	<REFSENS> + 41 dB
I _{oac} or	dBm/3,84 MHz	<REF _I or > + 14 dB	<REF _I or > + 41 dB
I _{oac} mean power (modulated)	dBm	-52	-25
F _{uw} (offset)	MHz	+5 or -5	+5 or -5
UE transmitted mean power	dBm	20 (for Power class 3) 18 (for Power class 4)	20 (for Power class 3) 18 (for Power class 4)

NOTE 1: <REFSENS> and <REF_I or > as specified in ETSI TS 134 121-1 [1].
NOTE 2: The I_{oac} (modulated) signal consists of the common channels and the 16 dedicated data channels as specified in ETSI TS 125 101 [4].

7.2. Test Setup



7.3. Test Procedure

- 1) Set the parameters of the interference signal generator as shown in table 4.2.6.2-1 case 1.
- 2) Set the power level of UE according to the table 4.2.6.2-1 case 1 with ± 1 dB tolerance.
- 3) Measure the BER of DCH received from the UE at the SS.
- 4) Set the parameters of the interference signal generator as shown in table 4.2.6.2-1 case 2.
- 5) Set the power level of UE according to the table 4.2.6.2-1 case 2 with ± 1 dB tolerance.
- 6) Measure the BER of DCH received from the UE at the SS.


7.4. Test Result

Band	Channel	Frequency (MHz)	Case	Interfer Freq (MHz)	Interfer Level (dBm)	BER (%)	Limit (%)	Verdict
8	Low	882.6	Case1	-5	-52	0.00	0.1	PASS
8	Low	882.6	Case1	5	-52	0.00	0.1	PASS
8	Low	882.6	Case2	-5	-25	0.00	0.1	PASS
8	Low	882.6	Case2	5	-25	0.00	0.1	PASS
8	Middle	897.6	Case1	-5	-52	0.00	0.1	PASS
8	Middle	897.6	Case1	5	-52	0.00	0.1	PASS
8	Middle	897.6	Case2	-5	-25	0.00	0.1	PASS
8	Middle	897.6	Case2	5	-25	0.00	0.1	PASS
8	High	912.4	Case1	-5	-52	0.00	0.1	PASS
8	High	912.4	Case1	5	-52	0.00	0.1	PASS
8	High	912.4	Case2	-5	-25	0.00	0.1	PASS
8	High	912.4	Case2	5	-25	0.00	0.1	PASS
1	Low	1922.6	Case1	-5	-52	0.00	0.1	PASS
1	Low	1922.6	Case1	5	-52	0.00	0.1	PASS
1	Low	1922.6	Case2	-5	-25	0.00	0.1	PASS
1	Low	1922.6	Case2	5	-25	0.00	0.1	PASS
1	Middle	1950	Case1	-5	-52	0.00	0.1	PASS
1	Middle	1950	Case1	5	-52	0.00	0.1	PASS
1	Middle	1950	Case2	-5	-25	0.00	0.1	PASS
1	Middle	1950	Case2	5	-25	0.00	0.1	PASS
1	High	1977.4	Case1	-5	-52	0.00	0.1	PASS
1	High	1977.4	Case1	5	-52	0.00	0.1	PASS
1	High	1977.4	Case2	-5	-25	0.00	0.1	PASS
1	High	1977.4	Case2	5	-25	0.00	0.1	PASS

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8. Receiver blocking characteristics

8.1. Test Limit

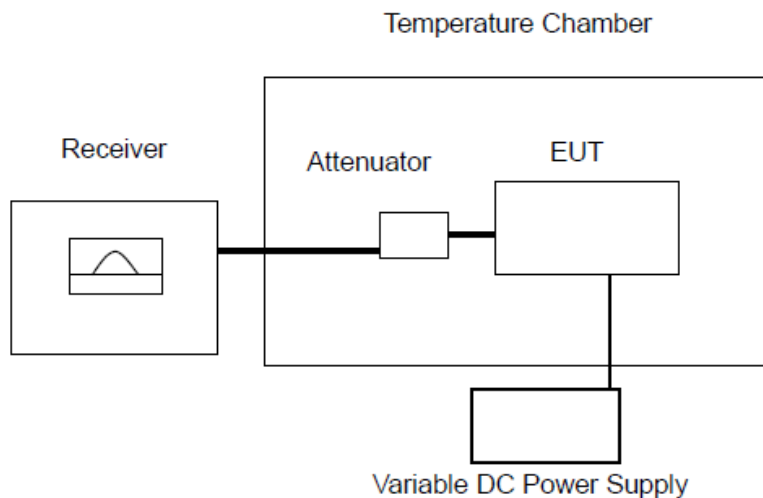
The BER shall not exceed 0,001 for the parameters specified in tables 4.2.7.2-1 and 4.2.7.2-2. For table 4.2.7.2-2 up to 24 exceptions are allowed for spurious response frequencies in each assigned frequency channel when measured using a 1 MHz step size.

The table please refer to ETSI EN 301 908-2 V11.1.2 clause 4.2.7.

8.2. Test Procedures

- 1) Set the parameters of the CW generator or the interference signal generator as shown in tables 4.2.7.2-1, 4.2.7.2-2 and 4.2.7.2-3. For table 4.2.7.2-2 the frequency step size is 1 MHz.
- 2) Set the power level of the UE according to tables 4.2.7.2-1, 4.2.7.2-2 and 4.2.7.2-3 with a ± 1 dB tolerance.
- 3) Measure the BER of DCH received from the UE at the SS.
- 4) For table 4.2.7.2-2, record the frequencies for which the BER exceeds the test requirements.

8.3. Test setup



8.4. Test Result

Pass

8.4.1.WCDMA Receiver blocking characteristics in-band

Band	Channel	UL Frequency (MHz)	DL Frequency (MHz)	Blocking Freq (MHz)	Blocking Level (dBm)	BER (%)	Limit (%)	Verdict
8	Middle	897.6	942.4	932.4	-56	0.00	0.1	PASS
8	Middle	897.6	942.4	952.4	-56	0.00	0.1	PASS
8	Middle	897.6	942.4	927.4	-44	0.00	0.1	PASS
8	Middle	897.6	942.4	957.4	-44	0.00	0.1	PASS
1	Middle	1950	2140	2130	-56	0.00	0.1	PASS
1	Middle	1950	2140	2150	-56	0.00	0.1	PASS
1	Middle	1950	2140	2125	-44	0.00	0.1	PASS
1	Middle	1950	2140	2155	-44	0.00	0.1	PASS

8.4.2.WCDMA Receiver blocking characteristics narrow band

Band	Channel	UL Frequency (MHz)	DL Frequency (MHz)	Range	Blocking Freq (MHz)	Blocking Level (dBm)	BER (%)	Limit (%)	Verdict
8	Middle	897.6	942.4		939.6	-56	0.00	0.1	PASS
8	Middle	897.6	942.4		945.2	-56	0.00	0.1	PASS
1	Middle	1950	2140		2137.2	-56	0.00	0.1	PASS
1	Middle	1950	2140		2142.8	-56	0.00	0.1	PASS

9. Receiver spurious response

9.1. Test Limit

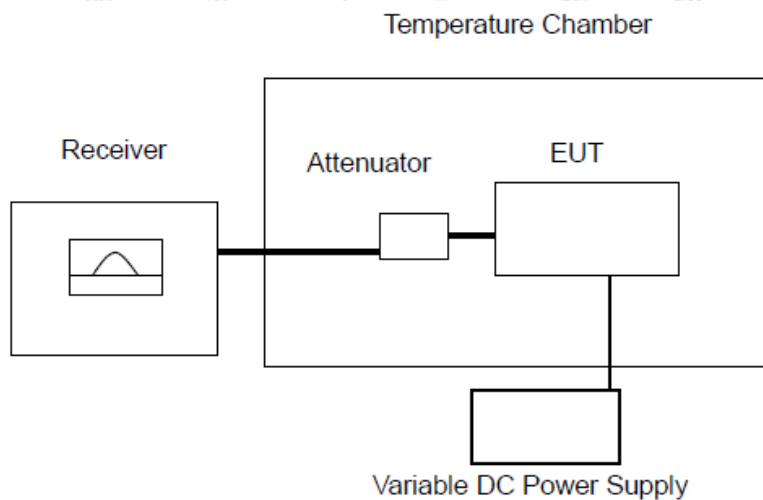
The BER shall not exceed 0,001 for the parameters specified in table

Test parameters for spurious response

Parameter	Level	Unit
DPOCH_Ec	<REFSENS> + 3 dB	dBm/3,84 MHz
\hat{I} or	<REF \hat{I} or > + 3 dB	dBm/3,84 MHz
I blocking (CW)	-44	dBm
F uw	Spurious response frequencies	MHz
UE transmitted mean power	20 (for Power class 3) 18 (for Power class 4) (note 2)	dBm

NOTE 1: <REFSENS> and <REF \hat{I} or > as specified in ETSI TS 134 121-1 [1].
NOTE 2: The UE transmitted mean power shall be reduced by 0,5 dB, for a UE operating in band XXII.

9.2. Test Setup



9.3. Test Procedure

- 1) Set the parameter of the CW generator as shown in table 4.2.8.2-1. The spurious response frequencies are determined in step 4) of clause 5.3.6.1.2.
- 2) Set the power level of the UE according to table 4.2.8.2-1 with a ± 1 dB tolerance.
- 3) Measure the BER of DCH received from the UE at the SS.

9.4. Test Result

WCDMA2100

Test Channel	Blocking (dBm)	UE transmitted mean power(dBm)	BER(%)	Limit(%)	Result
Low	-44	20	0.003	0.1	PASS
Middle			0.009		
High			0.008		

HSDPA2100

Test Channel	Blocking (dBm)	UE transmitted mean power(dBm)	BER(%)	Limit(%)	Result
Low	-44	20	0.008	0.1	PASS
Middle			0.009		
High			0.003		

HSUPA2100

Test Channel	Blocking (dBm)	UE transmitted mean power(dBm)	BER(%)	Limit(%)	Result
Low	-44	20	0.003	0.1	PASS
Middle			0.003		
High			0.004		

WCDMA900

Test Channel	Blocking (dBm)	UE transmitted mean power(dBm)	BER(%)	Limit(%)	Result
Low	-44	20	0.007	0.1	PASS
Middle			0.004		
High			0.002		

HSDPA900

Test Channel	Blocking (dBm)	UE transmitted mean power(dBm)	BER(%)	Limit(%)	Result
Low	-44	20	0.006	0.1	PASS
Middle			0.003		
High			0.005		

HSUPA900

Test Channel	Blocking (dBm)	UE transmitted mean power(dBm)	BER(%)	Limit(%)	Result
Low	-44	20	0.007	0.1	PASS
Middle			0.009		
High			0.003		

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10. Receiver intermodulation characteristics

10.1. Test Limit

The BER shall not exceed 0,001 for the parameters specified in table.
The table please refer to ETSI EN 301 908-2 V11.1.2 clause 4.2.9

10.2. Test Setup

Refer to clause 2.3

10.3. Test Procedure

1. Set the parameters of the CW generator and interference generator as shown in tables 4.2.9.2-1 and 4.2.9.2-2.
2. Set the power level of the UE according to tables 4.2.9.2-1 and 4.2.9.2-2 with a ± 1 dB tolerance.
3. Measure the BER of DCH received from the UE at the SS..

10.4. Test Result

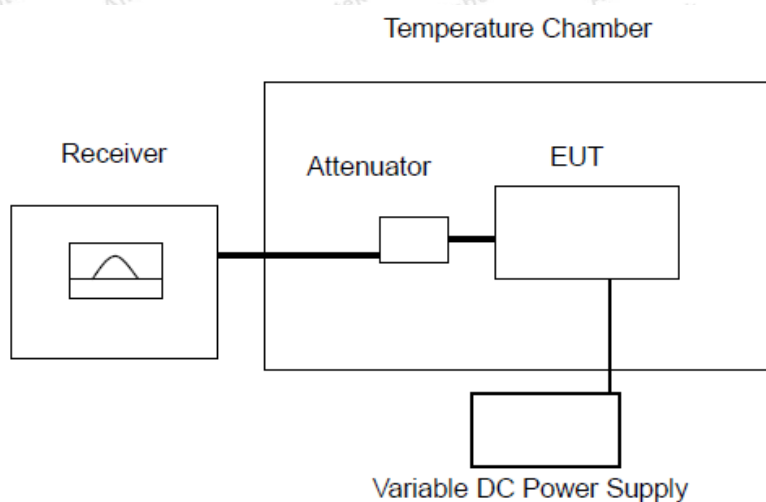
Band	Channel	UL Frequen cy (MHz)	DL Frequen cy (MHz)	Interfer1 Freq (MHz)	Interfer1 Level (dBm)	Interfer2 Freq (MHz)	Interfer2 Level (dBm)	BER (%)	Limit (%)	Verdi ct
8	Low	882.6	927.4	917.4	-46	907.4	-46	0.00	0.1	PASS
8	Low	882.6	927.4	937.4	-46	947.4	-46	0.00	0.1	PASS
8	Middle	897.6	942.4	932.4	-46	922.4	-46	0.00	0.1	PASS
8	Middle	897.6	942.4	952.4	-46	962.4	-46	0.00	0.1	PASS
8	High	912.4	957.6	947.6	-46	937.6	-46	0.00	0.1	PASS
8	High	912.4	957.6	967.6	-46	977.6	-46	0.00	0.1	PASS
1	Low	1922.6	2112.4	2102.4	-46	2092.4	-46	0.00	0.1	PASS
1	Low	1922.6	2112.4	2122.4	-46	2132.4	-46	0.00	0.1	PASS
1	Middle	1950	2140	2130	-46	2120	-46	0.00	0.1	PASS
1	Middle	1950	2140	2150	-46	2160	-46	0.00	0.1	PASS
1	High	1977.4	2167.6	2157.6	-46	2147.6	-46	0.00	0.1	PASS
1	High	1977.4	2167.6	2177.6	-46	2187.6	-46	0.00	0.1	PASS

11. Receiver spurious emissions

11.1. Test Limit

Please refer to ETSI EN 301 908-2 V11.1.2 clause 4.2.10.

11.2. Test Setup



11.3. Test Procedure

Sweep the spectrum analyser over a frequency range from 30 MHz to 12.75 GHz and measure the average power of the spurious emissions.

11.4. Test Result

Frequency	RBW	Max .Leve I	Test Band=Band I			Result
			Test Conditions=TNVN			
			Test Channel			
			LCH	MCH	HCH	
30 MHz ≤f < 1 GHz	100 kHz	-57	-63.36	-63.17	-60.06	Pass
1 GHz ≤f ≤12,75 GHz	1 MHz	-47	-51.42	-50.90	-51.34	Pass
791 MHz ≤f ≤821 MHz	3,84 MHz	-60	-67.40	-67.37	-66.66	Pass
921 MHz ≤f < 925 MHz	100 kHz	-60	-64.60	-64.68	-65.57	Pass
925 MHz ≤f ≤935 MHz	100 kHz	-67	-71.72	-68.73	-67.97	Pass
935 MHz < f ≤960 MHz	100 kHz	-79	-81.17	-81.96	-82.29	Pass
1805MHz ≤f ≤1880MHz	100 kHz	-60	-82.05	-82.32	-81.28	Pass
1920MHz ≤f ≤1980MHz	3,84 MHz	-60	-64.60	-65.14	-64.03	Pass
2 110 MHz ≤f ≤2 170 MHz	3,84 MHz	-60	-66.44	-65.94	-65.81	Pass
2 585 MHz ≤ f ≤ 2 690 MHz	3,84 MHz	-60	-64.03	-64.24	-64.26	Pass

Frequency	RBW	Max .Leve I	Test Band=Band VIII			Result
			Test Conditions=TNVN			
			Test Channel			
			LCH	MCH	HCH	
30 MHz ≤f < 1 GHz	100 kHz	-57	-60.79	-63.28	-63.23	Pass
1 GHz ≤f ≤12,75 GHz	1 MHz	-47	-51.63	-51.56	-50.94	Pass
791 MHz ≤f ≤821 MHz	3,84 MHz	-60	-67.13	-67.64	-67.68	Pass
880 MHz ≤f < 915 MHz	3,84 MHz	-60	-66.62	-66.75	-64.91	Pass
921 MHz ≤f ≤925 MHz	100 kHz	-60	-65.21	-65.02	-63.99	Pass
925 MHz ≤f ≤935 MHz	100 kHz	-67	-77.45	-78.08	-77.82	Pass
925 MHz ≤f ≤935 MHz	3,84 MHz	-60	-66.37	-67.03	-66.74	Pass
935 MHz < f ≤960 MHz	100 kHz	-79	-81.89	-82.06	-82.02	Pass
1805MHz ≤f ≤1880MHz	3,84 MHz	-60	-64.84	-64.52	-65.11	Pass

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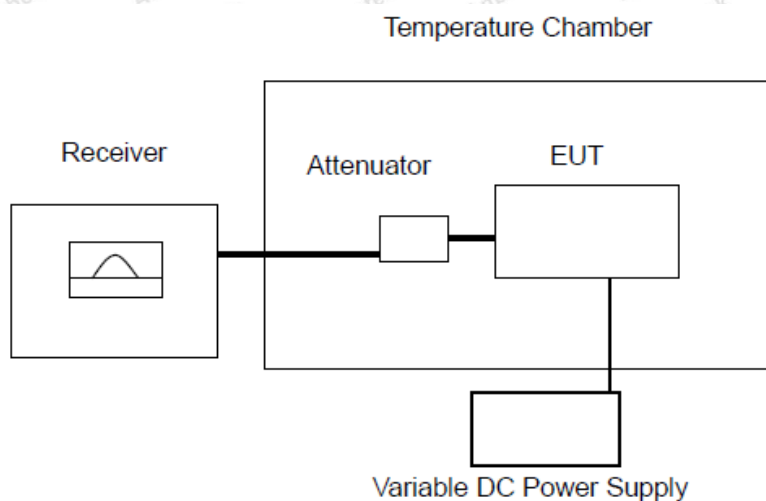
2110 MHz ≤ f ≤ 2170 MHz	3,84 MHz	-60	-65.74	-66.12	-65.79	Pass
2 585 MHz ≤ f ≤ 2 690 MHz	3,84 MHz	-60	-64.56	-63.86	-63.66	Pass

12. Out-of-synchronization handling of output power

12.1. Test Limit

Please refer to ETSI EN 301 908-2 V11.1.2 clause 4.2.11.

12.2. Test Setup



12.3. Test Procedure

- 1) The SS sends continuously up power control commands to the UE until the UE transmitter power reach maximum level.
- 2) The SS controls the DPCCH_Ec/Ior ratio level to -21,6 dB.
- 3) The SS controls the DPCCH_Ec/Ior ratio level to -28,4 dB. The SS waits 200 ms and then verifies that the UE transmitter has been switched off.
- 4) The SS monitors the UE transmitted power for 5 s and verifies that the UE transmitter is not switched on during this time.

12.4. Test Result

Band I			
Clause from figure 4.2.11.2-1	DPCCH Ec/Ior	Limit (dBm)	result
Before A	-26.78	-19.6	Pass
A to B	-32.42	-24.6	
After B	-42.66	-31.4	

Band VIII			
Clause from figure 4.2.11.2-1	DPCCH Ec/Ior	Limit (dBm)	result
Before A	-26.72	-19.6	Pass
A to B	-32.48	-24.6	
After B	-42.66	-31.4	

13. Transmitter Adjacent Channel Leakage power Ratio (ACLR)

13.1 Test Limit

UE ACLR

Power Class	Adjacent channel frequency relative to assigned channel frequency	ACLR limit
3	+5 MHz or -5 MHz	32,2 dB
3	+10 MHz or -10 MHz	42,2 dB
4	+5 MHz or -5 MHz	32,2 dB
4	+10 MHz or -10 MHz	42,2 dB
NOTE: The requirement shall still be met in the presence of switching transients.		

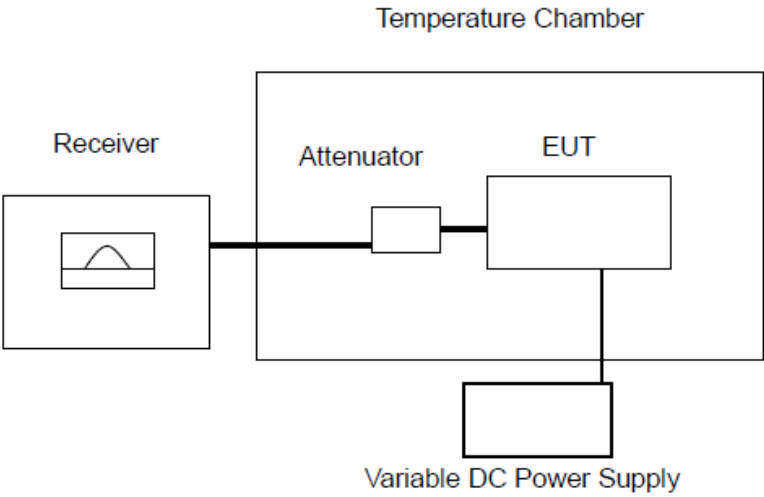
UE ACLR for DC-HSUPA

Power Class	Adjacent channel frequency relative to the center of two assigned channel frequencies	ACLR limit
3	+7,5 MHz or -7,5 MHz	32,2 dB
3	+12,5 MHz or -12,5 MHz	35,2 dB
4	+7,5 MHz or -7,5 MHz	32,2 dB
4	+12,5 MHz or -12,5 MHz	35,2 dB
NOTE: The requirement shall still be met in the presence of switching transients.		

13.2 Test Procedures

1. The SS sends continuously Up power control commands to the UE until the UE transmitter power reaches maximum level.
2. Measure the RRC filtered mean power.
3. Measure the RRC filtered mean power of the first adjacent channels and the second adjacent channels.
4. Calculate the ratio of the power between the values measured in 2) and 3) above.

13.3 Test Setup



13.4 Test Results

NT/NV Condition:

Operating Band	Test Conditions	Test Channel	UE Channel	Measurement Data(dBm)	Limit(dBm)	Result
Band I	TNVN	LCH	+5MHz	-38.04	-32.2	Pass
			-5 MHz	-36.72	-32.2	Pass
			-10 MHz	-49.58	-42.2	Pass
			+10 MHz	-49.78	-42.2	Pass
		MCH	+5MHz	-44.20	-32.2	Pass
			-5 MHz	-46.35	-32.2	Pass
			-10 MHz	-50.79	-42.2	Pass
			+10 MHz	-49.85	-42.2	Pass
		HCH	+5MHz	-44.28	-32.2	Pass
			-5 MHz	-44.41	-32.2	Pass
			-10 MHz	-50.41	-42.2	Pass
			+10 MHz	-50.09	-42.2	Pass

Band VIII	TNVN	LCH	+5MHz	-45.63	-32.2	Pass
			-5 MHz	-46.72	-32.2	Pass
			-10 MHz	-59.09	-42.2	Pass
			+10 MHz	-53.55	-42.2	Pass
		MCH	+5MHz	-42.32	-32.2	Pass
			-5 MHz	-41.49	-32.2	Pass
			-10 MHz	-53.41	-42.2	Pass
			+10 MHz	-53.33	-42.2	Pass
		HCH	+5MHz	-46.75	-32.2	Pass
			-5 MHz	-45.05	-32.2	Pass
			-10 MHz	-53.68	-42.2	Pass
			+10 MHz	-59.64	-42.2	Pass

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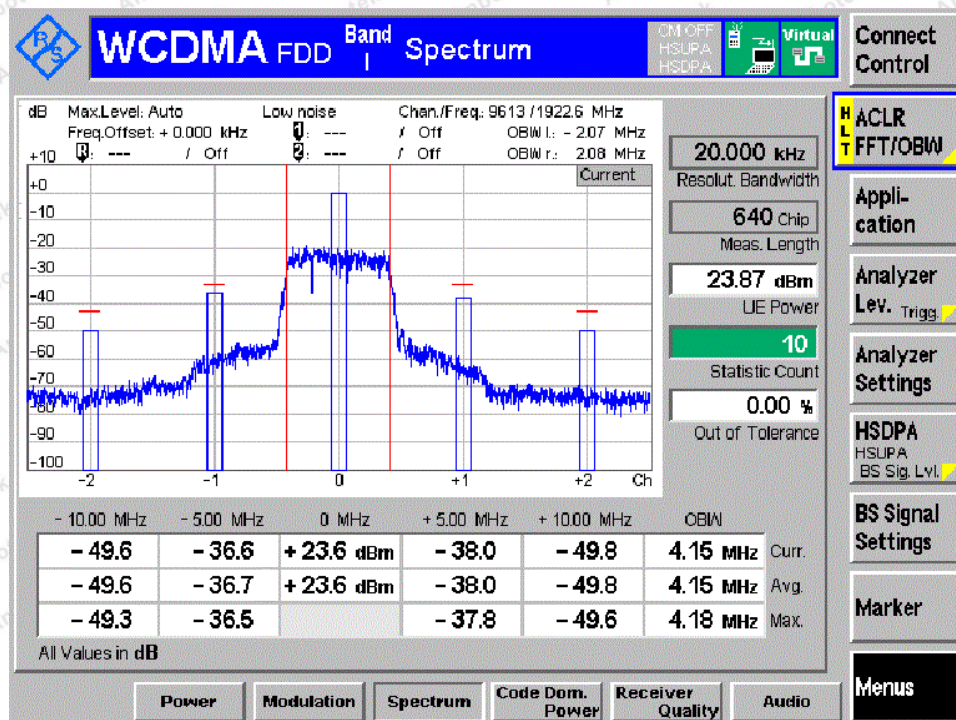
Address: 1/F, Building D, Sogood Science and Technology Park, Sanwei Community,
Hangcheng Street, Bao'an District, Shenzhen, Guangdong, China.
Tel:(86)755-26066440 Fax:(86)755-26014772 Email:service@anbotech.com

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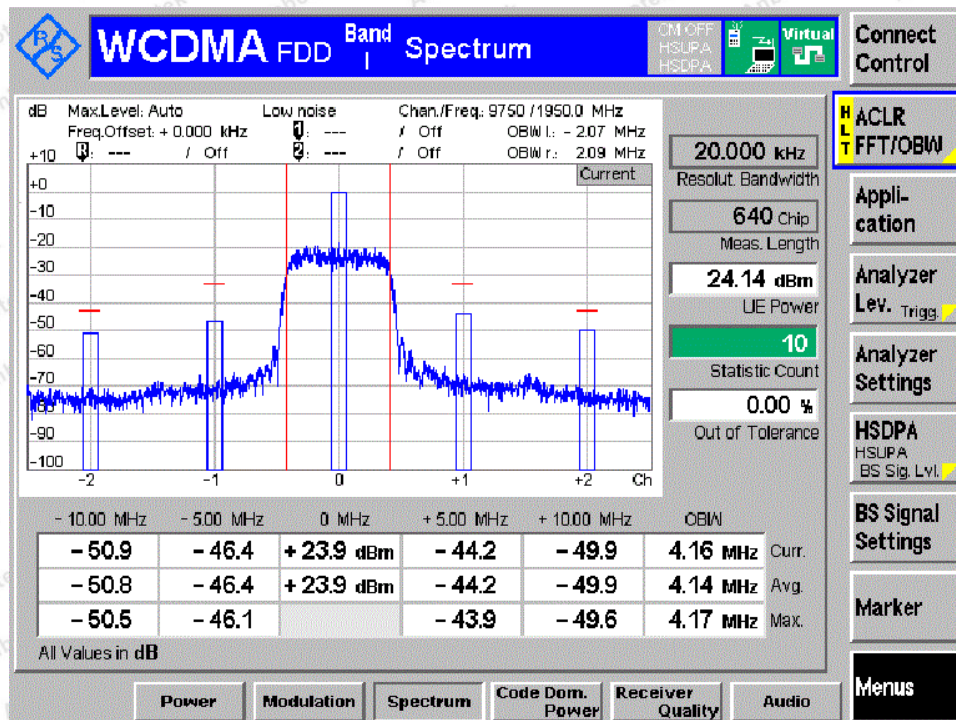
BAND I

TNVN

Channel LCH



Channel MCH



Channel HCH

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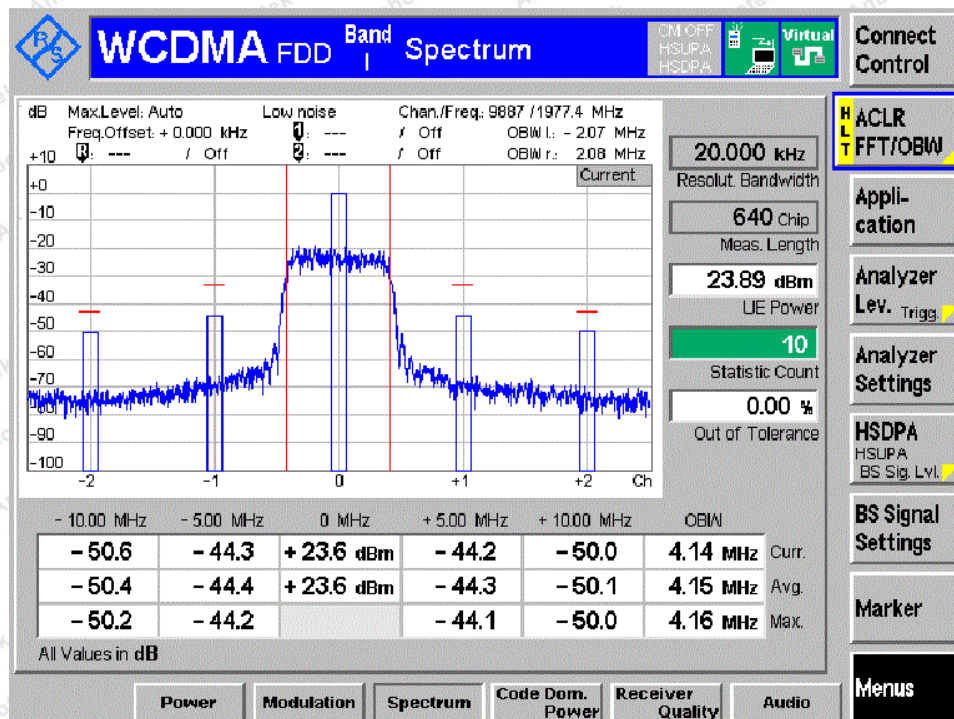
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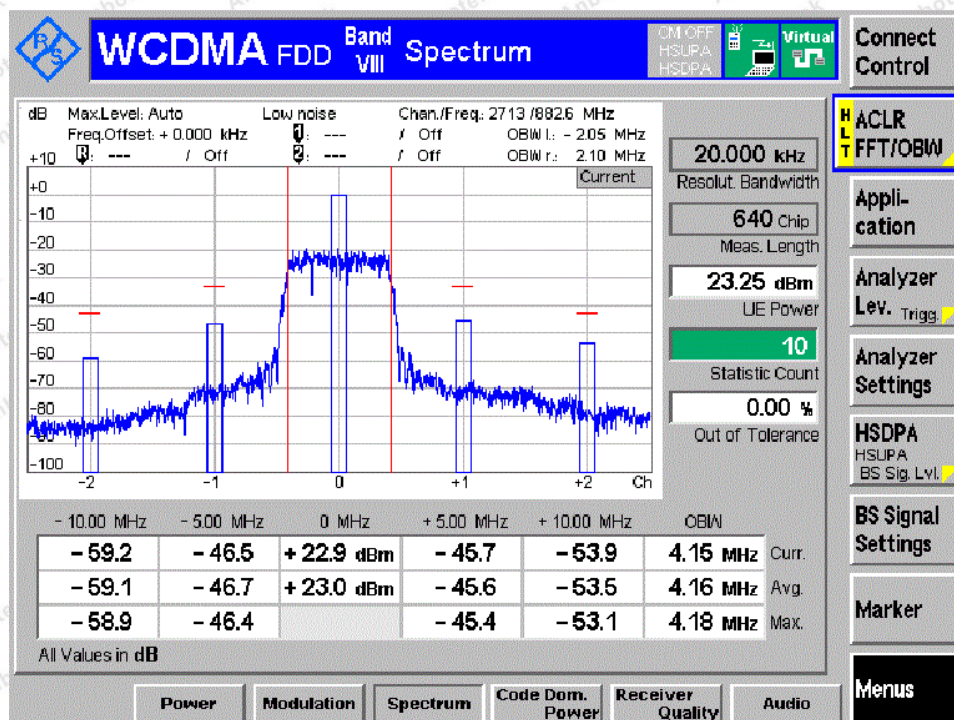
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BAND VIII

TNVN

Channel LCH



Channel MCH

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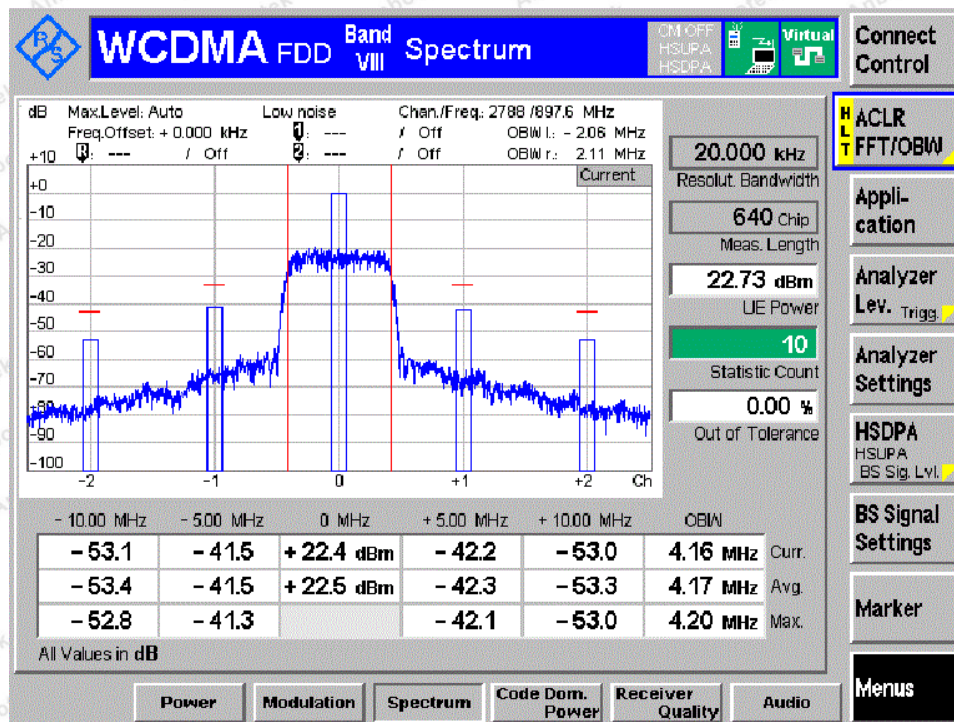
Tel: (86) 755-26066440 Fax: (86) 755-26014772 Email: service@anbotech.com



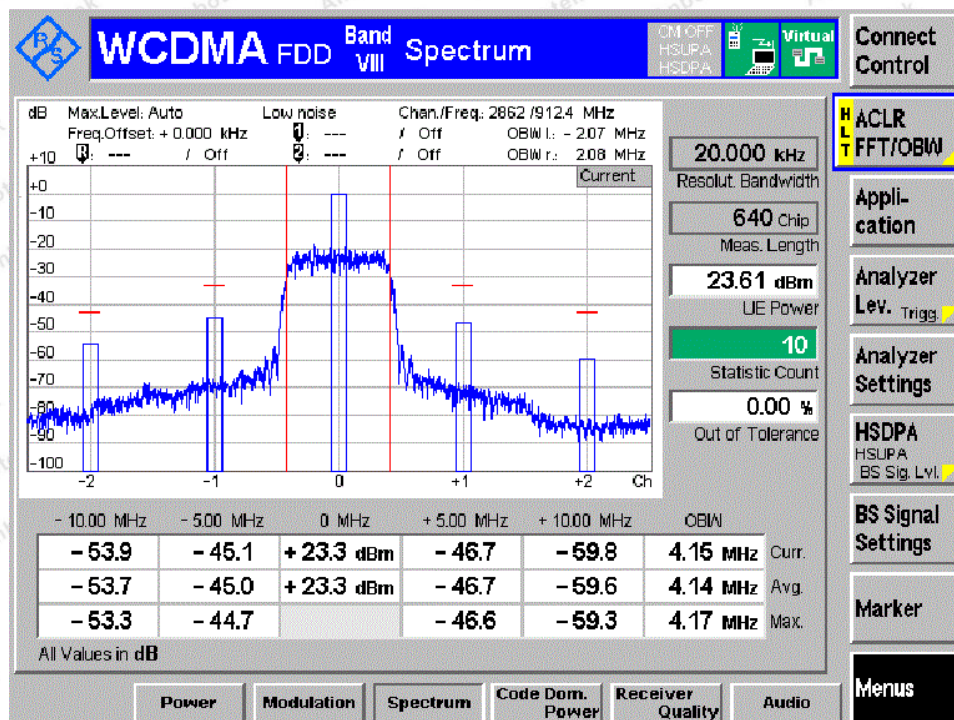
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Channel HCH



14. Receiver reference sensitivity level

14.1. Test Limit

The measured BER shall not exceed 0,001

Test parameters for Reference Sensitivity Level

Operating Band	Unit	DPCH_Ec <REFSENS>	<REFÎ or >
I	dBm/3,84 MHz	-116,3	-106
III	dBm/3,84 MHz	-113,3	-103
VII	dBm/3,84 MHz	-114,3	-104
VIII	dBm/3,84 MHz	-113,3	-103
XX	dBm/3,84 MHz	-113,3	-103
XXII	dBm/3,84 MHz	-113,3	-103

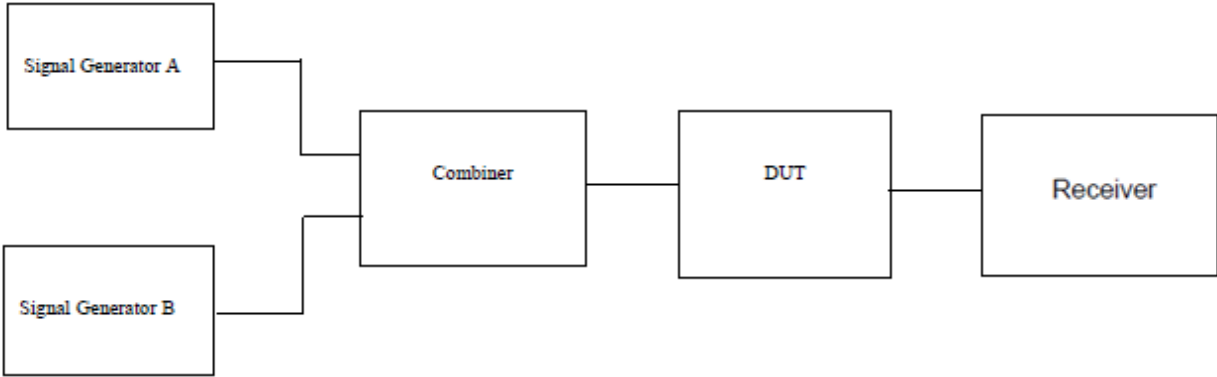
NOTE 1: For Power class 3 and 3bis this shall be at the maximum output power.

NOTE 2: For Power class 4 this shall be at the maximum output power.

14.2. Test Procedures

1. Connect the SS to the UE antenna connector.
2. A call is set up according to the Generic call setup procedure as per ETSI TS 134 108 [2], and RF parameters are set up according to table 4.2.13.2-1.
3. Enter the UE into loopback test mode and start the loopback test using the procedure defined in ETSI TS 134 109 [3].

14.3. Test Setup



14.4. Test Results

NT/NV Condition:

Band	Channel	Frequency(MHz)	Ref Sensitivity Level(dBm)	BER (%)	Limit (%)	Verdict
8	Low	882.6	-106	0.00	0.1	PASS
8	Middle	897.6	-106	0.00	0.1	PASS
8	High	912.4	-106	0.00	0.1	PASS
1	Low	1922.6	-106	0.00	0.1	PASS
1	Middle	1950	-106	0.06	0.1	PASS
1	High	1977.4	-106	0.00	0.1	PASS

LT/LV Condition:

Band	Channel	Frequency(MHz)	Ref Sensitivity Level(dBm)	BER (%)	Limit (%)	Verdict
8	Low	882.6	-106	0.00	0.1	PASS
8	Middle	897.6	-106	0.00	0.1	PASS
8	High	912.4	-106	0.00	0.1	PASS
1	Low	1922.6	-106	0.00	0.1	PASS
1	Middle	1950	-106	0.00	0.1	PASS
1	High	1977.4	-106	0.00	0.1	PASS

LT/HV Condition:

Band	Channel	Frequency(MHz)	Ref Sensitivity Level(dBm)	BER (%)	Limit (%)	Verdict
8	Low	882.6	-106	0.00	0.1	PASS
8	Middle	897.6	-106	0.00	0.1	PASS
8	High	912.4	-106	0.00	0.1	PASS
1	Low	1922.6	-106	0.00	0.1	PASS
1	Middle	1950	-106	0.00	0.1	PASS
1	High	1977.4	-106	0.00	0.1	PASS

HT/LV Condition:

Band	Channel	Frequency(MHz)	Ref Sensitivity Level(dBm)	BER (%)	Limit (%)	Verdict
8	Low	882.6	-106	0.00	0.1	PASS
8	Middle	897.6	-106	0.00	0.1	PASS
8	High	912.4	-106	0.00	0.1	PASS
1	Low	1922.6	-106	0.00	0.1	PASS
1	Middle	1950	-106	0.00	0.1	PASS
1	High	1977.4	-106	0.00	0.1	PASS

HT/HV Condition:

Band	Channel	Frequency(MHz)	Ref Sensitivity Level(dBm)	BER (%)	Limit (%)	Verdict
8	Low	882.6	-106	0.00	0.1	PASS
8	Middle	897.6	-106	0.00	0.1	PASS
8	High	912.4	-106	0.00	0.1	PASS
1	Low	1922.6	-106	0.00	0.1	PASS
1	Middle	1950	-106	0.00	0.1	PASS
1	High	1977.4	-106	0.00	0.1	PASS

15. Control and monitoring functions (UE)

15.1 Test Limit

The maximum measured power during the duration of the test shall not exceed -30 dBm.

15.2 Test Procedures

At the start of the test, the UE shall be switched off. The UE antenna connector shall be connected to a power

measuring equipment, with the following characteristics:

- the RF bandwidth shall exceed the total operating transmit frequency range of the UE for operation with an applicable part;
- the response time of the power measuring equipment shall be such that the measured power has reached within 1 dB of its steady state value within 100 μ s of a CW signal being applied;
- it shall record the maximum power measured.

NOTE: The equipment may include a video low pass filter to minimize its response to transients or Gaussian

noise peaks.

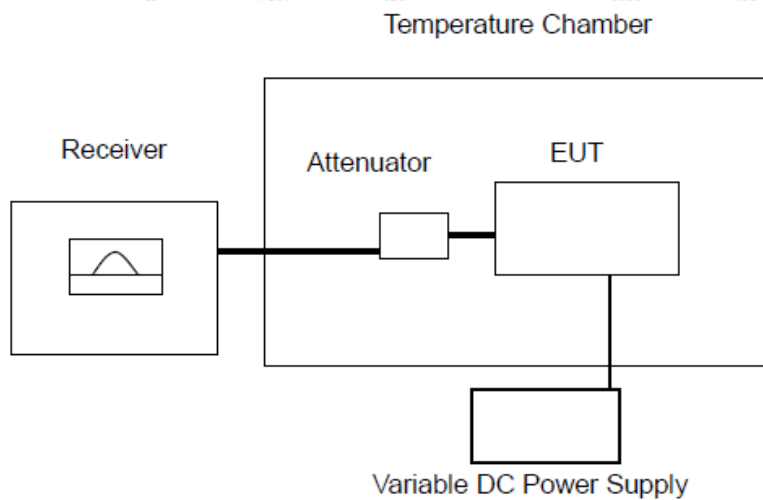
b) The UE shall be switched on for a period of approximately fifteen minutes, and then switched off.

c) The EUT shall remain switched off for a period of at least thirty seconds, and shall then be switched on for a period of approximately one minute.

d) The maximum power emitted from the UE throughout the duration of the test shall be recorded.

The results obtained shall be compared to the limits in clause 4.2.4.2 in order to prove compliance.

15.3 Test Setup



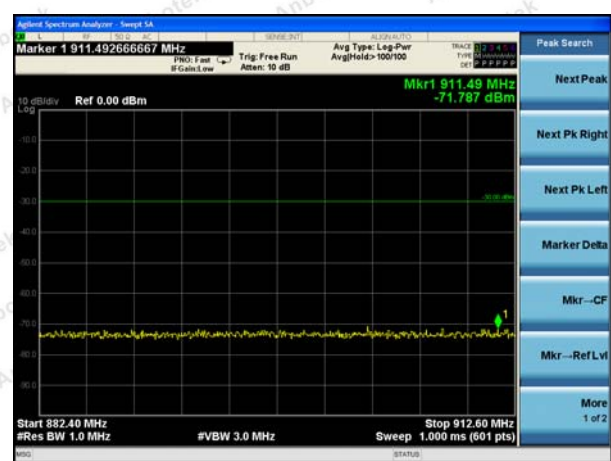
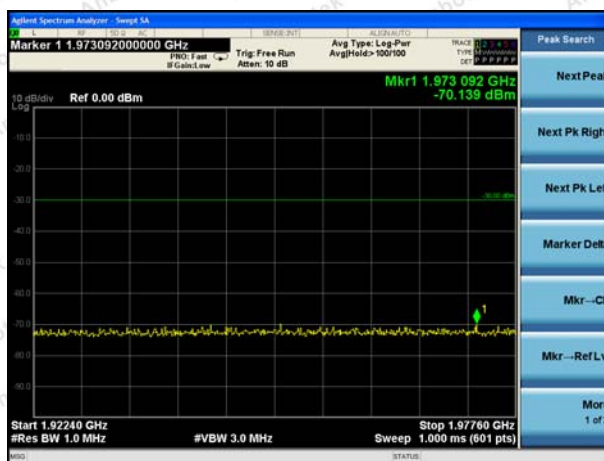
15.4 Test Results

Pass

Test slot

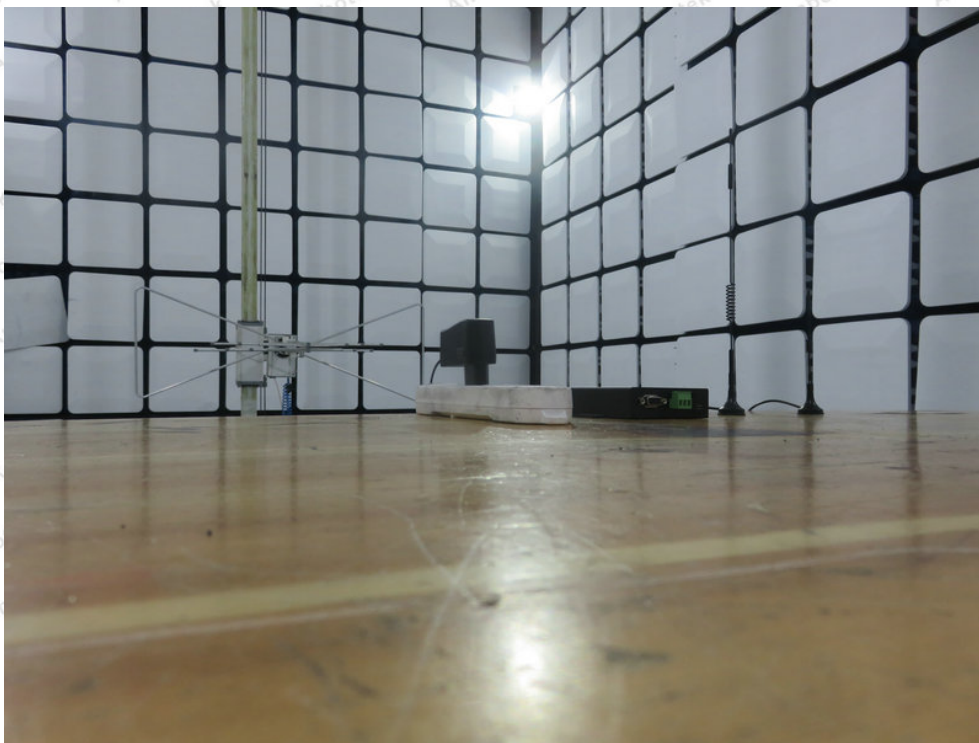
WCDMA 2100

WCDMA 900



16. Test setup photos


Photo of Radiation Emission Test



----- End of Report -----

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