



Issued Date : Jun.04, 2013



FCC Part 22 , Part 24 & IC RSS-133 , RSS-132
Test Report
For
Rugged Tablet PC

Applicant : Handheld Group AB

Address : Kinnegatan 17, 53133, Lidköping, Sweden

Equipment : Rugged Tablet PC

Model No. : ALGIZ 10X

Trade Name : Handheld

This report applied to above tested sample only. This report shall not be reproduced in part without written approval of EMC & Radio Equipment Testing Lab, Chungwha Telecom Co. Ltd.



CERTIFICATE

Applicant	Handheld Group AB
Address	Kinnegatan 17, 53133, Lidköping, Sweden
Equipment	Rugged Tablet PC
Model No.	ALGIZ 10X
Trade Name	Handheld
Manufacturer	WINMATE Communication INC.
Address of Manufacturer	9F, No.111-6, Shing-De Rd., San-Chung District, New Taipei City, Taiwan

I HEREBY CERTIFY THAT :

The measurements shown in this test report were made in accordance with the procedures given in **FCC 47 CFR Part 22 Subpart H & Part 24 Subpart E** ,

Industry Canada RSS-132 、 Industry Canada RSS-133

The device described above was tested by EMC & Radio Equipment Testing Lab, Chungwha Telecom Co. Ltd. The test data, data evaluation, test procedures and equipment configurations shown in this report were made in accordance with the procedures given in **TIA/EIA 603-C**. The energy emitted by EUT is tested as described in this report is in compliance with conducted and radiated emission limits of **FCC Rule Part 22 Subpart H & Part 24 Subpart E** and **IC RSS-132 、 RSS-133**

Date of Issue : Jun. 04 , 2013

Date of Test : May. 20 , 2013

Tester by : Chen-Yu Chang *Chen-Yu Chang*

Approved by : Ming-Hong Ko *Ko Ming Hong*

Technical Manager

Test results given in this report apply only to the specific sample(s) tested under stated test conditions. This report shall not be reproduced in part without written approval of EMC & Radio Equipment Testing Lab, Chungwha Telecom Co. Ltd.



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1. GENERAL INFORMATION

1.1 Applicant description

Applicant	Handheld Group AB
Address:	Kinnegatan 17, 53133, Lidköping, Sweden

1.2 EUT description

Applicant	Handheld Group AB
Product	Rugged Tab PC
Brand Name	Handheld
Model No	ALGIZ 10X
FCC ID	YY3-ALGIZ10X
Frequency Range	WCDMA/HSDPA/HSUPA Band II : 1852.4~1907.6MHz WCDMA/HSDPA/HSUPA Band V : 826.4~846.6MHz CDMA2000 BC0 : 824.7~848.31MHz CDMA2000 BC1 : 1851.25~1908.75MHz
Max. Output Power:	WCDMA Band II : 24.7dBm WCDMA/HSDPA Band II : 24.93dBm WCDMA/HSUPA Band II : 24.77dBm WCDMA Band V : 24.83dBm WCDMA/HSDPA Band V : 24.72dBm WCDMA/HSUPA Band V : 24.5dBm CDMA2000/1X BC0 : 23.71dBm CDMA2000 /1X BC1 : 23.84dBm CDMA2000/EVDO BC0 : 23.59dBm CDMA2000/EVDO BC1 : 23.72dBm
Antenna Type:	Patch Antenna
Power supply	12Vdc from AC/DC Adapter
Manufacture	WINMATE Communication INC.

1.3 Operating Condition of EUT

Test mode : Normal Operation



1.4 Test Conditions

Temperature : 24 ±2°C

Humidity : 53 ±3 % R.H.

2. Summary of Test Results

Section in FCC CFR 47 Part 22 & PART 24	Name of test	Section	Result
§2.1046 , §22.913(a) FCC 24.232 (b)	RF output power	4.1	PASS
§2.1049	Occupied Bandwidth	4.2	PASS
§2.1051	Out of Band Emissions Band Edge Measurement	4.3	PASS
§2.1053	Field Strength of Spurious Radiation	4.4	PASS
§2.1055 , §22.355 , §24.235	Frequency Stability (Temperature Variation)	4.5	PASS
§2.1055 , §22.355 , §24.235	Frequency Stability (Voltage Variation)	4.6	PASS

3. 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.

3.1 Equipment Used during Test

Manufacturer	Description	Model	Calibration Date	Calibration Due Date
EMI Receiver	R&S	ESIB 40	2013.05.17	1 year
Preamplifier	EMC	051845	2012.11.02	1 year
Communication Test Set	Agilent	8960	2013.05.11	1 year
Spectrum Analyzer	Agilent	E4407B	2013.05.21	1 year
BiLog Antenna	SUNOL	JB3	2012.07.03	1 year
Horn Antenna	EMCO	3115	2012.06.08	1 year
Horn Antenna	EMCO	3116	2013.05.14	1 year
Broadband Antenna	EMCO	3142B	2013.05.22	1 year
Power meter	HP	437B	2013.05.21	1 year
Temperature chamber	WEISS	WK1-340/40	2012.09.20	1 year
Splitter	HP	11636A	2013.05.10	1 year

4 Measurements

4.1. Conducted RF output power

4.1.1. Required and Limits

FCC 2.1046 Measurements required: RF power output

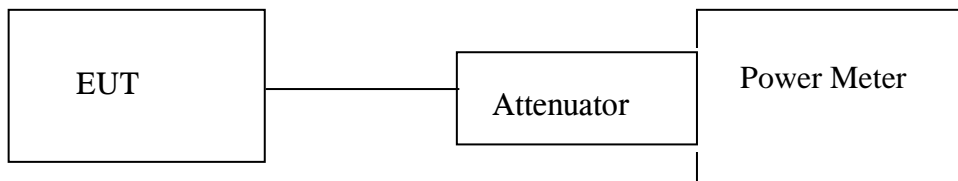
FCC 22.913 (a) Effective radiated power limits.

The effective radiated power (ERP) of mobile transmitters must not exceed 7 Watts

FCC 24.232 (b) Power limits.

Mobile/portable stations are limited to 2 Watts effective isotropic radiated power (EIRP).

4.1.2. Conducted Test Configuration and Procedure



1. Connect the equipment as shown in the above diagram.
2. Adjust the settings of the Tester to set the EUT to its maximum power at the required channel.
3. Record the output power level measured by the Tester.
4. Correct the measured level for all losses in the RF path.
5. Measurements are to be performed with the EUT set to the low, middle and high channel of each frequency band.

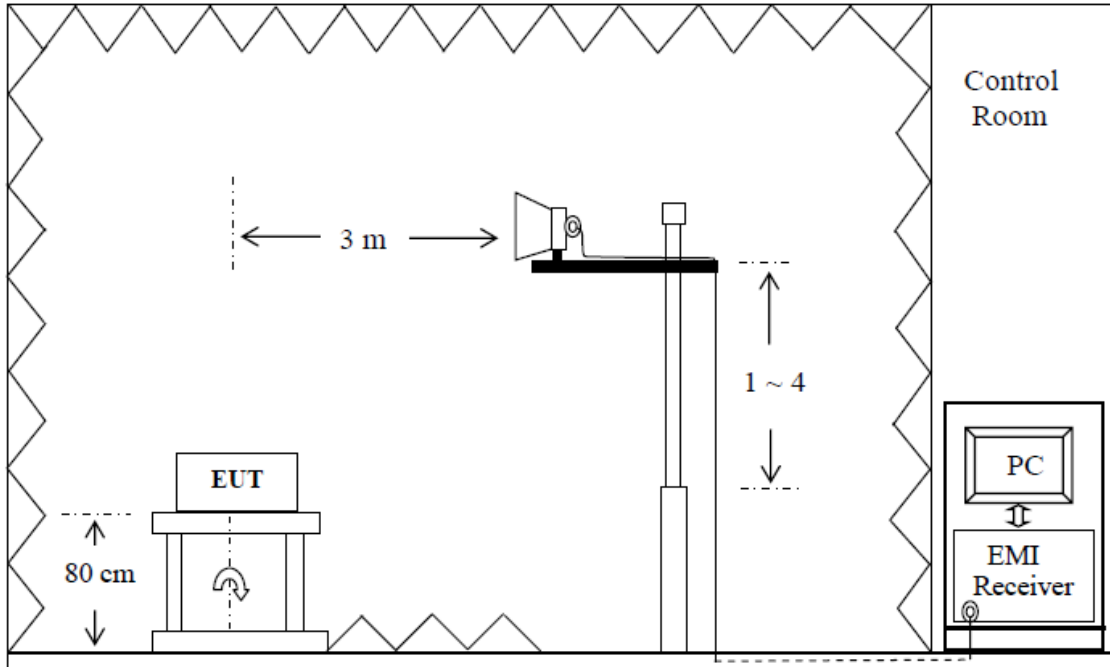
4.1.3. Test Results

Test Mode	CH	Frequency (MHz)	Output Power (dBm)	Output Power (W)
WCDMA (Band II)	9262	1852.40	24.07	0.255
	9400	1880.00	24.70	0.295
	9538	1907.60	24.40	0.275
WCDMA (Band V)	4132	826.40	24.83	0.304
	4182	836.40	24.74	0.298
	4233	846.60	24.52	0.283
WCDMA/ HSDPA (Band II)	9262	1852.40	24.03	0.253
	9400	1880.00	24.93	0,311
	9538	1907.60	24.45	0,279
WCDMA/ HSDPA (Band V)	4132	826.40	24.56	0.286
	4182	836.40	24.72	0.296
	4233	846.60	24.40	0.275
WCDMA/ HSUPA (Band II)	9262	1852.40	24.13	0.259
	9400	1880.00	24.77	0.3
	9538	1907.60	24.49	0.281
WCDMA/ HSUPA (Band V)	4132	826.40	24.43	0.277
	4182	836.40	24.23	0.265
	4233	846.60	24.50	0.282



Test Mode	CH	Frequency (MHz)	Output Power (dBm)	Output Power (W)
CDMA2000/1X BC0	1013	824.7	23.32	0.215
	384	836.52	23.48	0.223
	777	848.31	23.71	0.235
CDMA2000/1X BC1	25	1851.25	23.64	0.231
	600	1880	23.84	0.242
	1175	1908.75	23.52	0.225
CDMA2000/EVDO BC0	1013	824.7	23.50	0.224
	384	836.52	23.49	0.223
	777	848.31	23.59	0.229
CDMA2000/EVDO BC1	25	1851.25	23.58	0.228
	600	1880	23.72	0.236
	1175	1908.75	23.50	0.224

4.1.4. ERP & EIRP Test Configuration and Procedure



The EUT was placed on a turntable just above ground. The turntable rotates 360 degrees to determine the position of the maximum emission level. EUT was set 3 meters away from the receiving antenna, which were mounted on an antenna tower. The antenna can move up and down between 1 meter and 4 meter to find out the maximum emission level. Broadband antenna was used as receiving antenna. Both horizontal and vertical polarization of the antenna was set on measurement.

$$E = \frac{\sqrt{30 \times P \times G}}{D}$$

E : Field Strength (V/m)

G : Antenna Gain

$$PG(EIRP) = \frac{(E \times D)^2}{30}$$

PG : Equivalent Isotropic Radiated Power (W)

D : distance (3m)

$$ERP = EIRP - 2.15$$

4.1.5. Test Results

WCDMA Test Data (Band II)

Channel	Frequency (MHZ)	Antenna Polarity (H/V)	Reading Value (dB μ V)	Calibration Factor (dB)	Emission Level (dB μ V/m)	EIRP (dBm)	Limit (dBm)
9262	1852.4	V	76.4	31.4	107.8	12.6	33
	1852.4	H	73.2	31.4	104.6	9.4	33
9400	1880.0	V	78.5	31.6	110.1	14.9	33
	1880.0	H	72.9	31.6	104.5	9.3	33
9538	1907.6	V	78.3	31.7	110.1	14.8	33
	1907.6	H	72.5	31.7	104.2	9.0	33

WCDMA Test Data (Band V)

Channel	Frequency (MHZ)	Antenna Polarity (H/V)	Reading Value (dB μ V)	Calibration Factor (dB)	Emission Level (dB μ V/m)	ERP (dBm)	Limit (dBm)
4132	826.4	V	74.5	24.7	99.2	1.9	38.45
	826.4	H	77.3	24.7	102.0	4.7	38.45
4182	836.4	V	75.2	24.8	100.0	2.6	38.45
	836.4	H	75.9	24.8	100.7	3.3	38.45
4233	846.6	V	74.1	25.0	99.1	1.8	38.45
	846.6	H	73.9	25.0	98.9	1.5	38.45

Remark: 1. Calibration Factor = Antenna Factor + Cable Loss

2. Emission Level = Reading Value + Calibration Factor

WCDMA Test Data (Band II)

WCDMA/ HSDPA Test Data (Band II)Channel 1	Frequency (MHZ)	Antenna Polarity (H/V)	Reading Value (dBμV)	Calibration Factor (dB)	Emission Level (dBμV/m)	EIRP (dBm)	Limit (dBm)
9262	1852.4	V	77.0	31.4	108.4	13.2	33
	1852.4	H	73.6	31.4	105.0	9.8	33
9400	1880.0	V	72.7	31.6	104.3	9.1	33
	1880.0	H	72.6	31.6	104.2	9.0	33
9538	1907.6	V	76.8	31.7	108.5	13.3	33
	1907.6	H	71.9	31.7	103.6	8.4	33

WCDMA/HSDPA Test Data (Band V)

Channel	Frequency (MHZ)	Antenna Polarity (H/V)	Reading Value (dBμV)	Calibration Factor (dB)	Emission Level (dBμV/m)	ERP (dBm)	Limit (dBm)
4132	826.4	V	75.3	24.7	100.0	2.6	38.45
	826.4	H	77.2	24.7	101.9	4.5	38.45
4182	836.4	V	75.8	24.8	100.6	3.2	38.45
	836.4	H	75.8	24.8	100.6	3.3	38.45
4233	846.6	V	74.2	25.0	99.2	1.8	38.45
	846.6	H	73.9	25.0	98.9	1.5	38.45

Remark: 1. Calibration Factor = Antenna Factor + Cable Loss

2. Emission Level = Reading Value + Calibration Factor

WCDMA/HSUPA Test Data (Band II)

Channel	Frequency (MHZ)	Antenna Polarity (H/V)	Reading Value (dB μ V)	Calibration Factor (dB)	Emission Level (dB μ V/m)	EIRP (dBm)	Limit (dBm)
9262	1852.4	V	76.3	31.4	107.7	12.5	33
	1852.4	H	72.8	31.4	104.2	9.0	33
9400	1880.0	V	78.3	31.6	109.9	14.7	33
	1880.0	H	72.6	31.6	104.2	9.0	33
9538	1907.6	V	77.6	31.7	109.3	14.1	33
	1907.6	H	71.9	31.7	103.6	8.4	33

WCDMA/HSUPA Test Data (Band V)

Channel	Frequency (MHZ)	Antenna Polarity (H/V)	Reading Value (dB μ V)	Calibration Factor (dB)	Emission Level (dB μ V/m)	ERP (dBm)	Limit (dBm)
4132	826.4	V	75.2	24.7	99.9	2.5	38.45
	826.4	H	74.2	24.7	98.9	1.5	38.45
4182	836.4	V	75.2	24.8	100.0	1.7	38.45
	836.4	H	75.7	24.8	100.5	3.2	38.45
4233	846.6	V	74.2	25.0	99.2	1.8	38.45
	846.6	H	73.9	25.0	98.9	1.5	38.45

Remark: 1. Calibration Factor = Antenna Factor + Cable Loss
2. Emission Level = Reading Value + Calibration Factor

CDMA2000/1X Test Data (BC0)

Channel	Frequency (MHZ)	Antenna Polarity (H/V)	Reading Value (dB μ V)	Calibration Factor (dB)	Emission Level (dB μ V/m)	ERP (dBm)	Limit (dBm)
1013	824.7	V	91.1	24.7	115.8	18.5	38.45
	824.7	H	87.3	24.7	112.0	14.6	38.45
384	836.52	V	90.1	24.8	114.9	17.6	38.45
	836.52	H	90.2	24.8	115.0	17.7	38.45
777	848.31	V	92.3	25.0	117.3	20.0	38.45
	848.31	H	92.3	25.0	117.3	19.9	38.45

CDMA2000/1X Test Data (BC1)

Channel	Frequency (MHZ)	Antenna Polarity (H/V)	Reading Value (dB μ V)	Calibration Factor (dB)	Emission Level (dB μ V/m)	EIRP (dBm)	Limit (dBm)
25	1851.25	V	92.0	31.4	123.4	28.2	33
	1851.25	H	91.7	31.4	123.1	27.9	33
600	1880	V	89.2	31.6	120.8	25.6	33
	1880	H	89.2	31.6	120.8	25.6	33
1175	1908.75	V	87.5	31.7	119.2	24.0	33
	1908.75	H	87.6	31.7	119.3	24.1	33

Remark: 1. Calibration Factor = Antenna Factor + Cable Loss

2. Emission Level = Reading Value + Calibration Factor

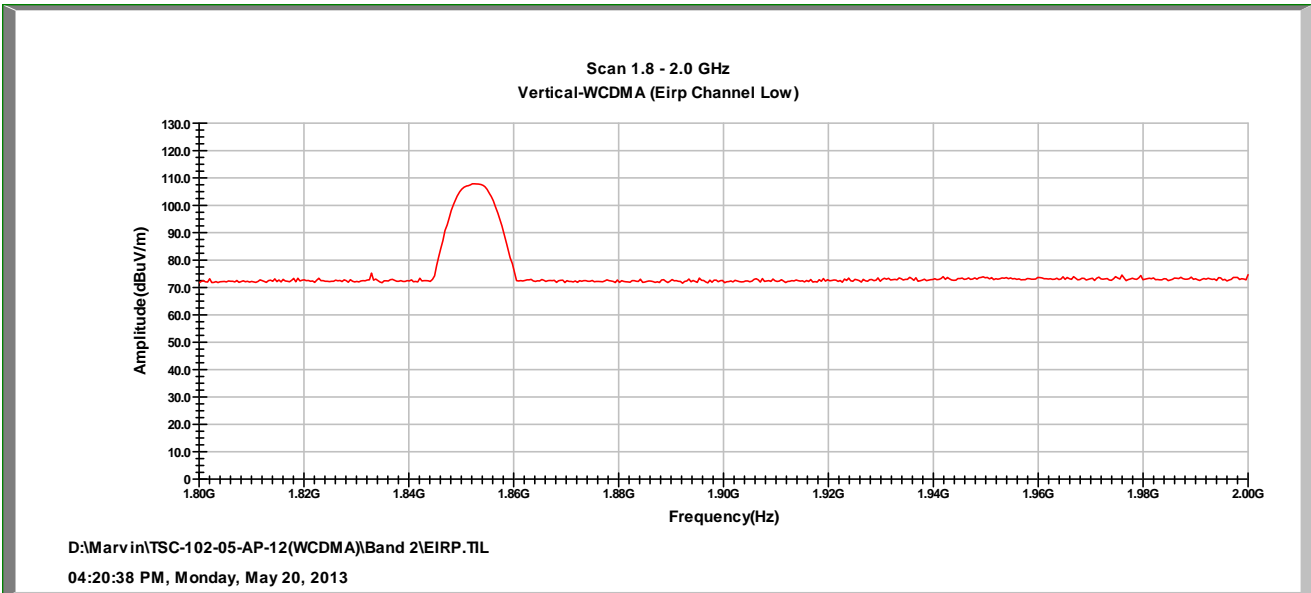
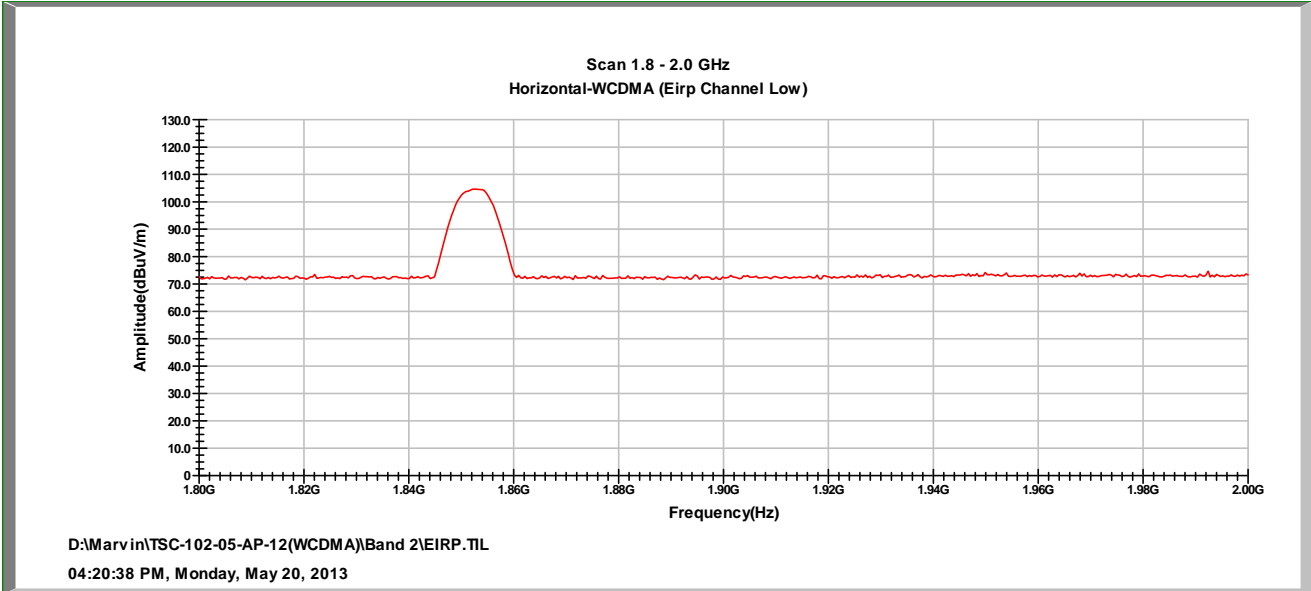
CDMA2000/EVDO Test Data (BC0)

Channel	Frequency (MHZ)	Antenna Polarity (H/V)	Reading Value (dB μ V)	Calibration Factor (dB)	Emission Level (dB μ V/m)	ERP (dBm)	Limit (dBm)
1013	824.7	V	91.7	24.7	116.4	19.1	38.45
	824.7	H	87.3	24.7	112.0	14.6	38.45
384	836.52	V	90.2	24.8	115.0	17.6	38.45
	836.52	H	90.2	24.8	115.0	17.6	38.45
777	848.31	V	92.2	25.0	117.2	19.9	38.45
	848.31	H	92.2	25.0	117.2	19.9	38.45

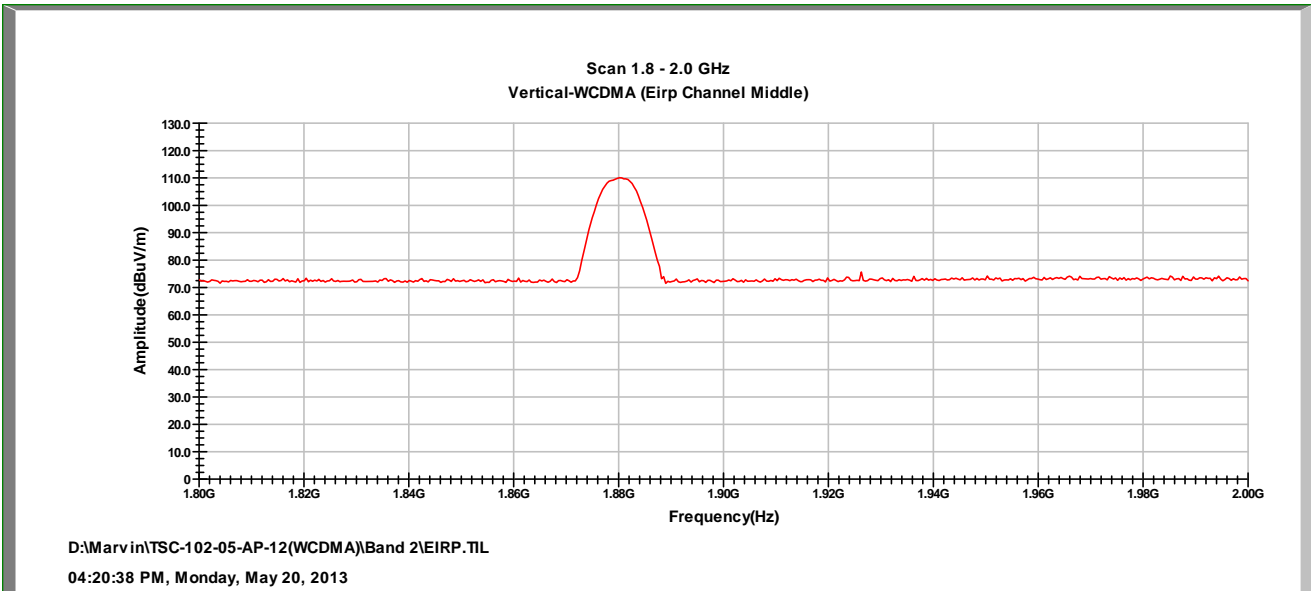
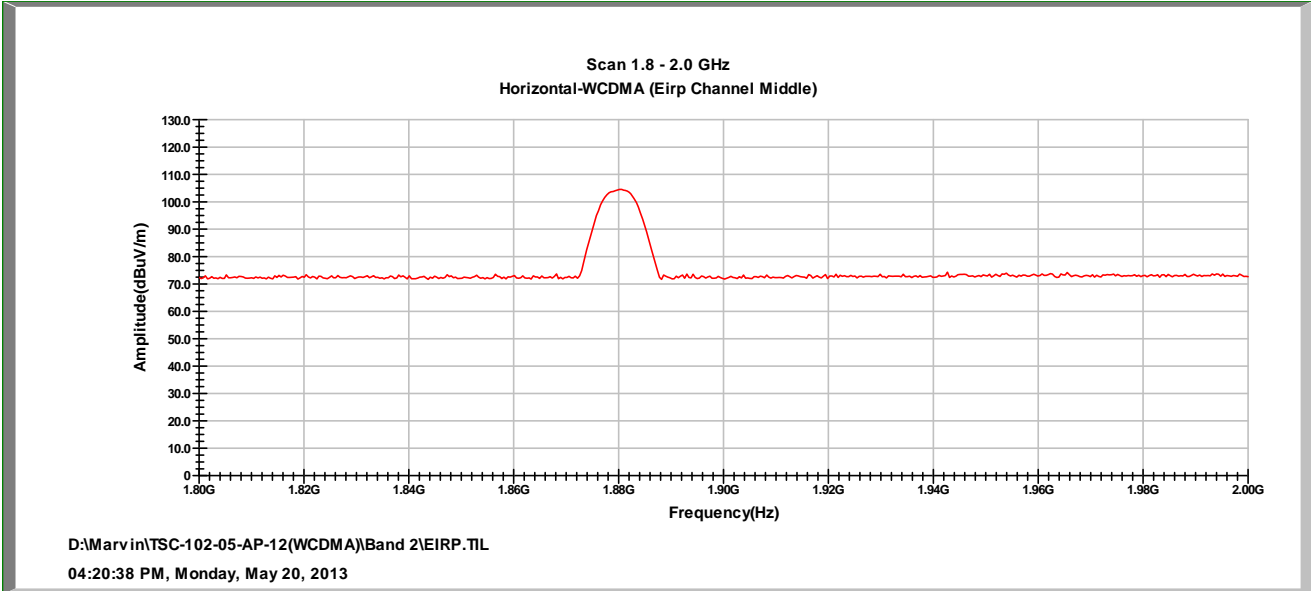
CDMA2000/EVDO Test Data (BC1)

Channel	Frequency (MHZ)	Antenna Polarity (H/V)	Reading Value (dB μ V)	Calibration Factor (dB)	Emission Level (dB μ V/m)	EIRP (dBm)	Limit (dBm)
25	1851.25	V	91.6	31.4	123.0	27.8	33
	1851.25	H	87.8	31.4	119.2	24.0	33
600	1880	V	89.4	31.6	121.0	25.8	33
	1880	H	89.4	31.6	121.0	25.8	33
1175	1908.75	V	87.5	31.7	119.2	24.0	33
	1908.75	H	87.7	31.7	119.4	24.0	33

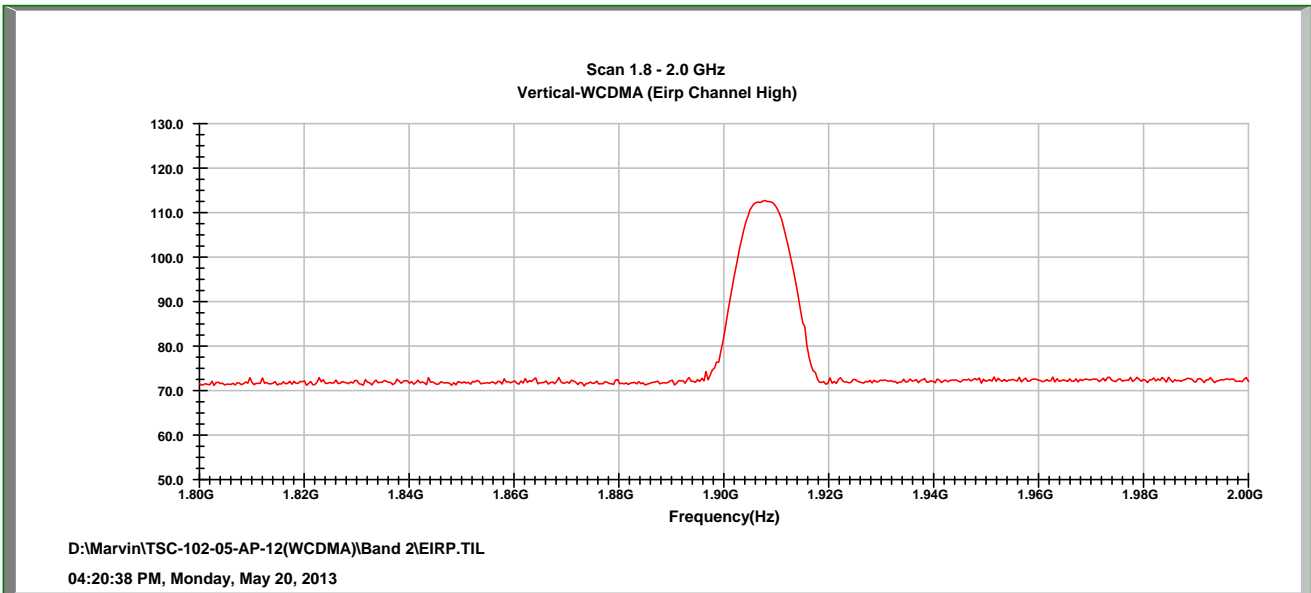
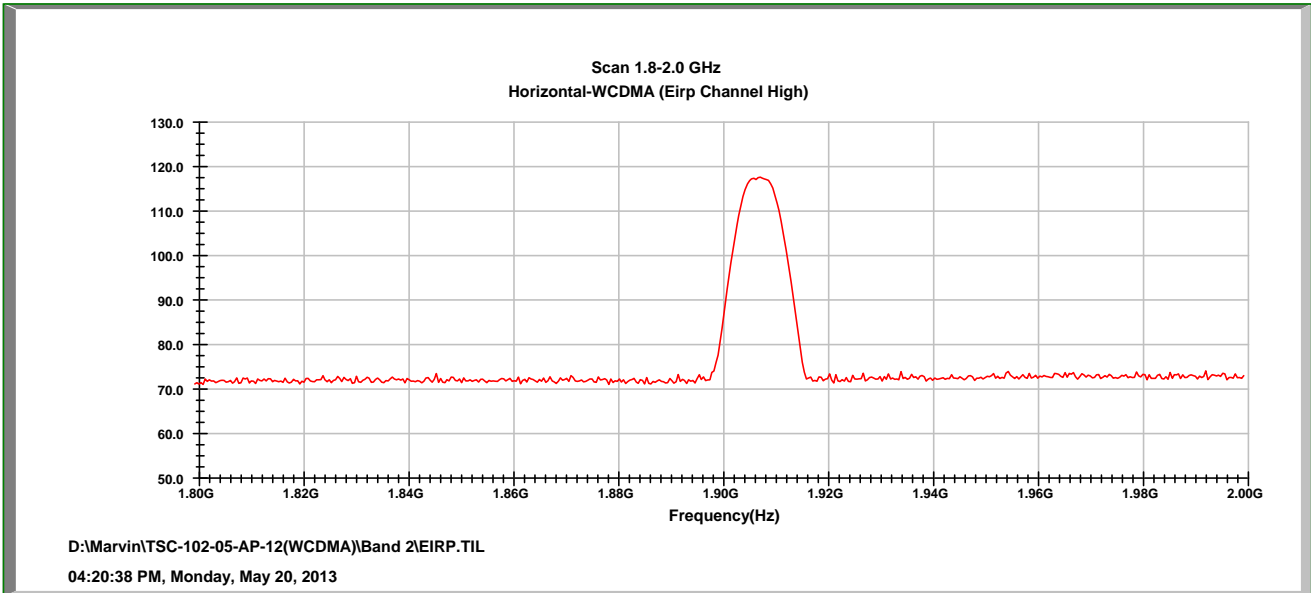
Remark: 1. Calibration Factor = Antenna Factor + Cable Loss
2. Emission Level = Reading Value + Calibration Factor



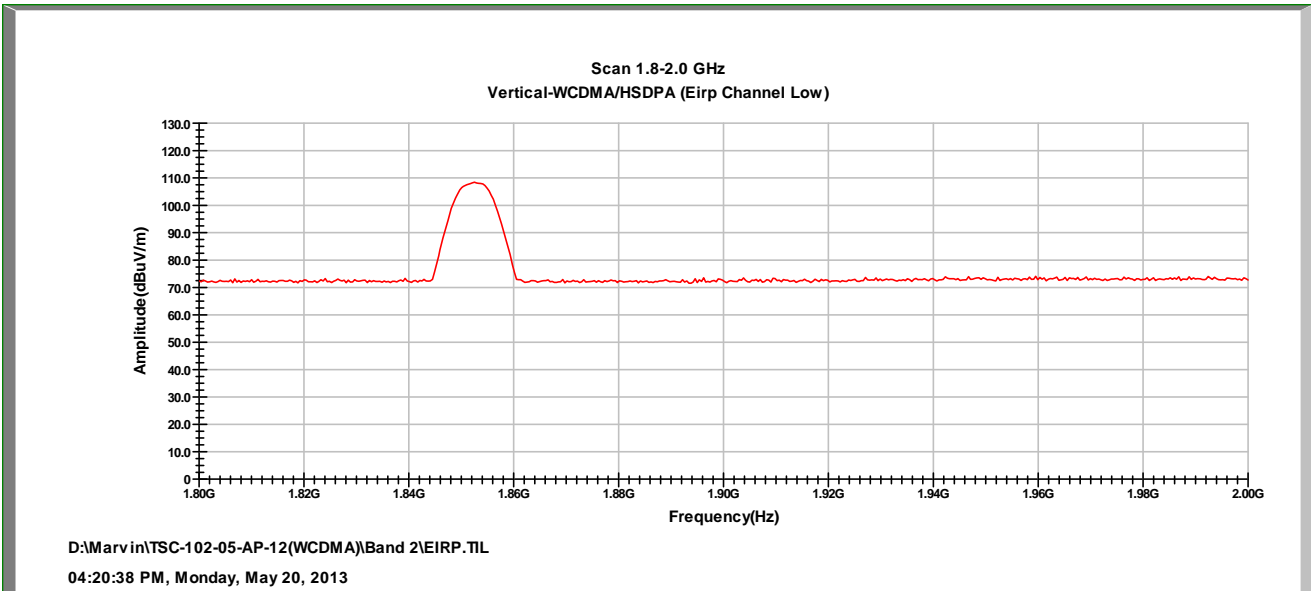
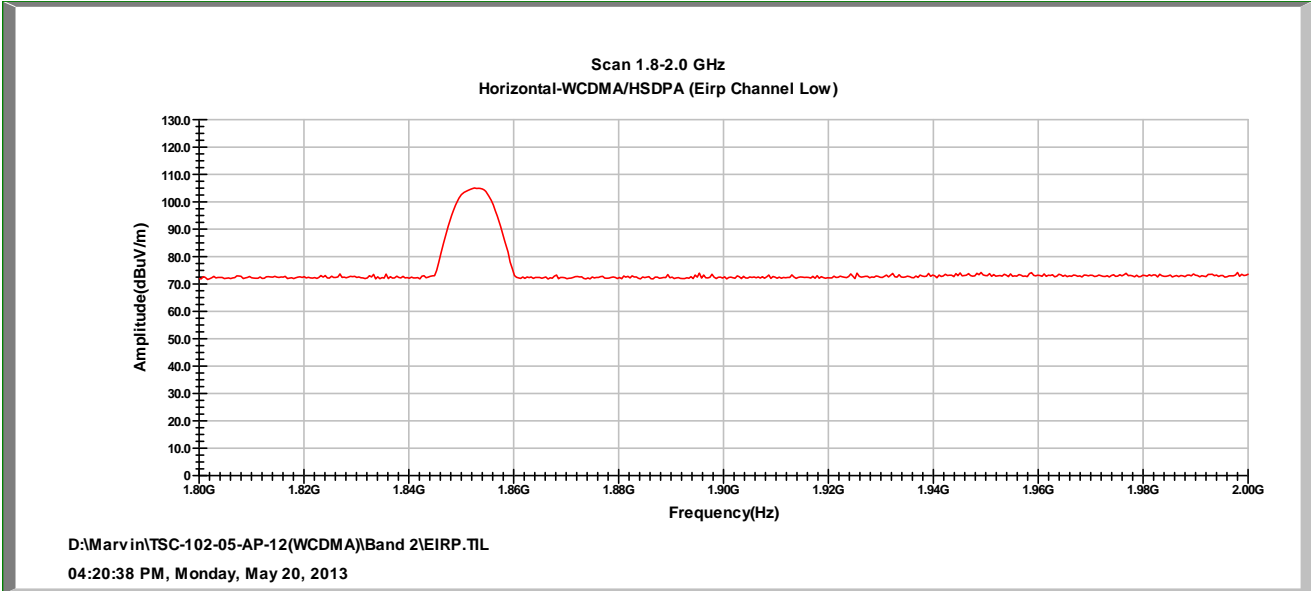
WCDMA Test Data (Band II) CH Low



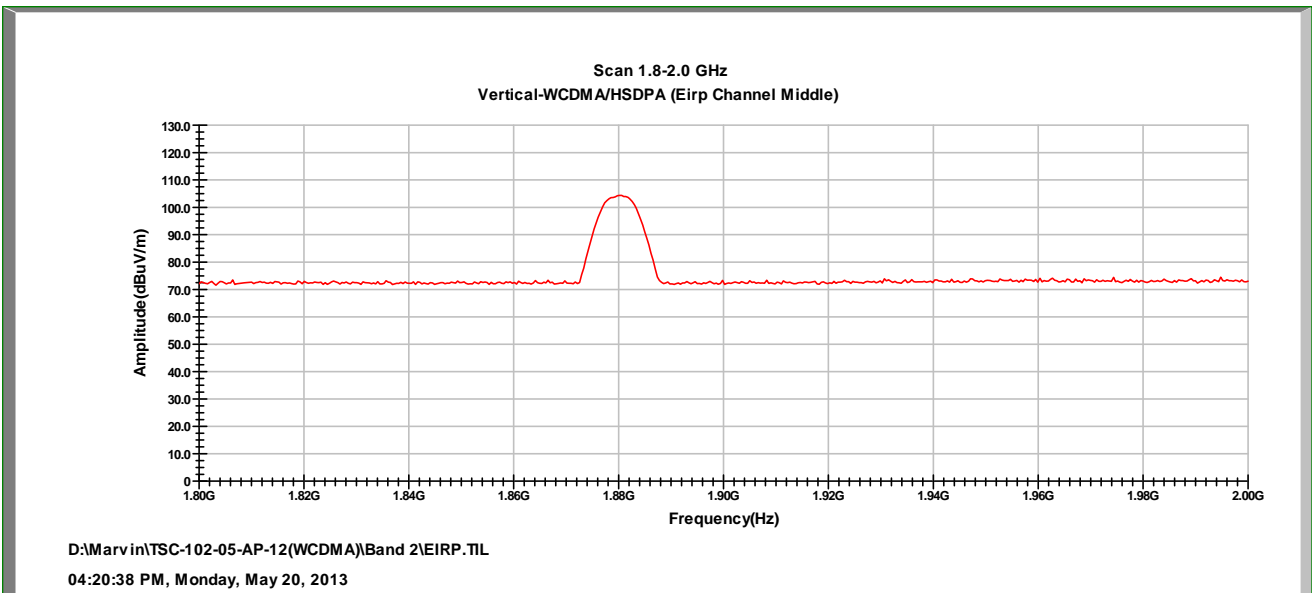
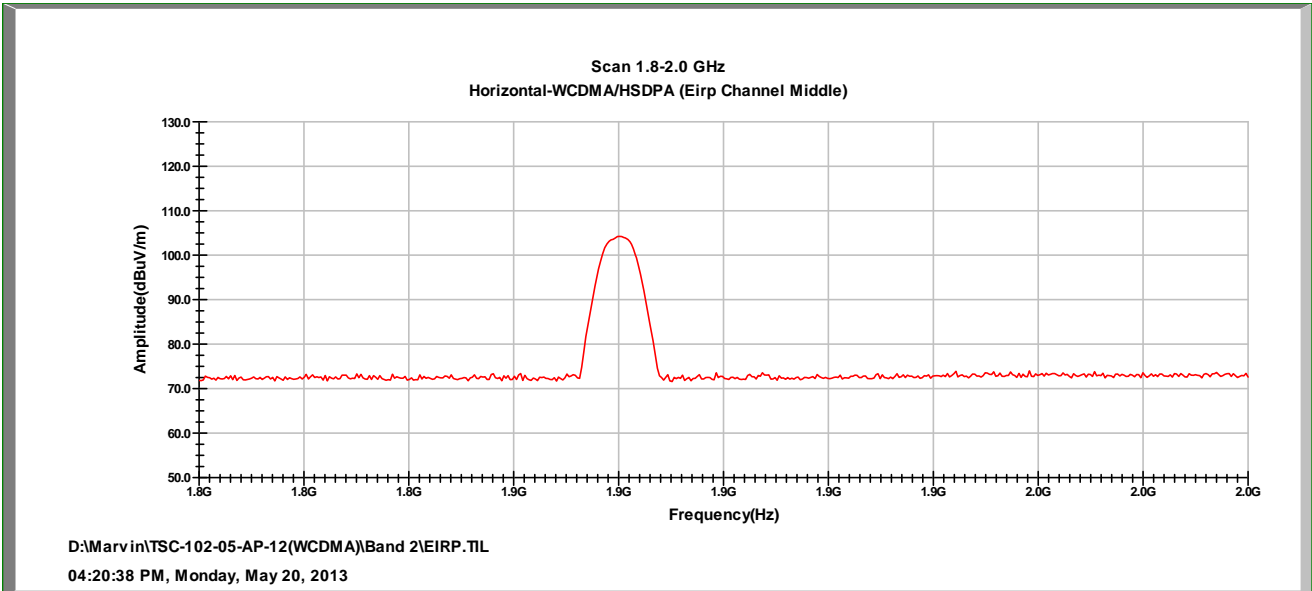
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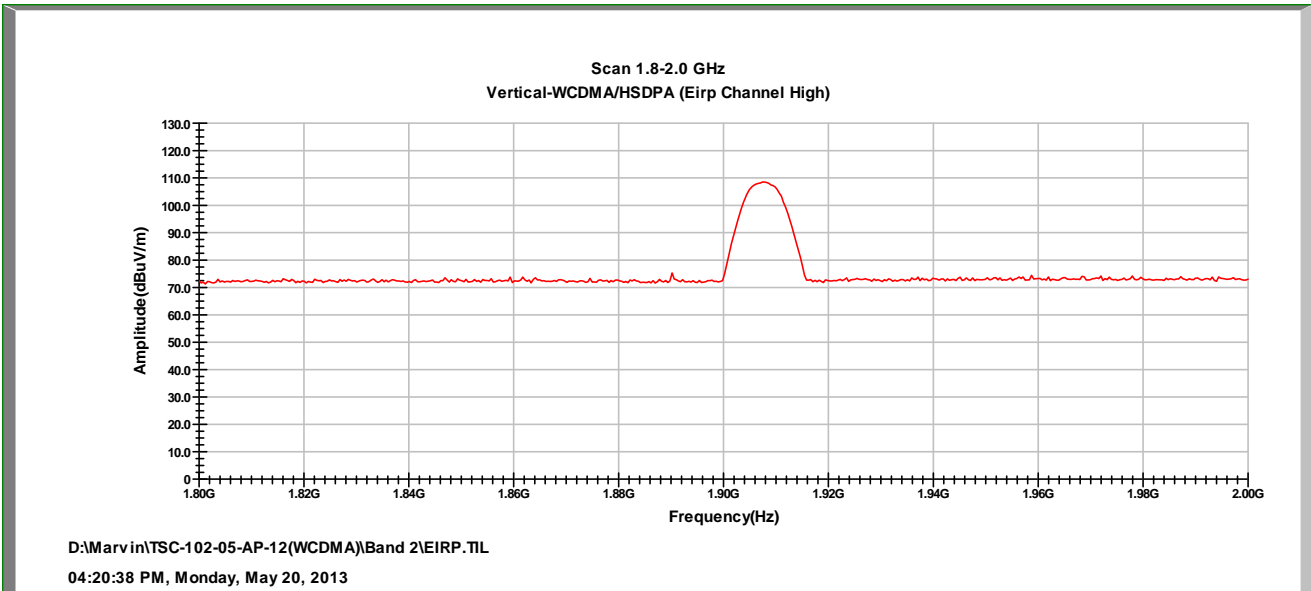
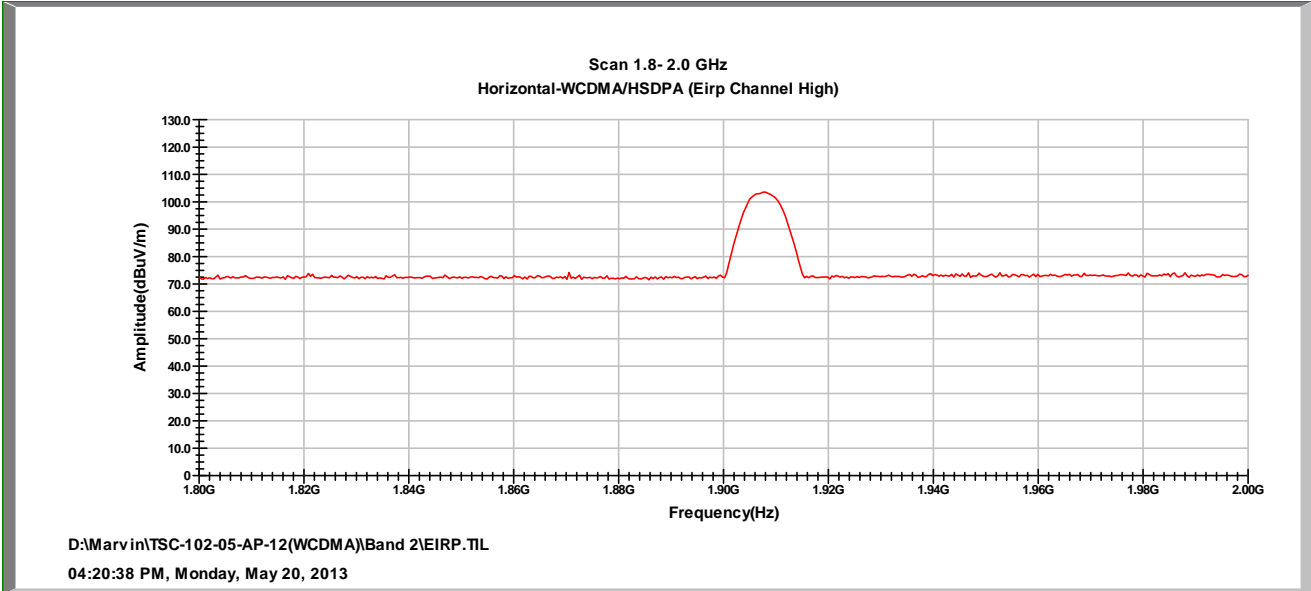
WCDMA Test Data(Band II) CH High



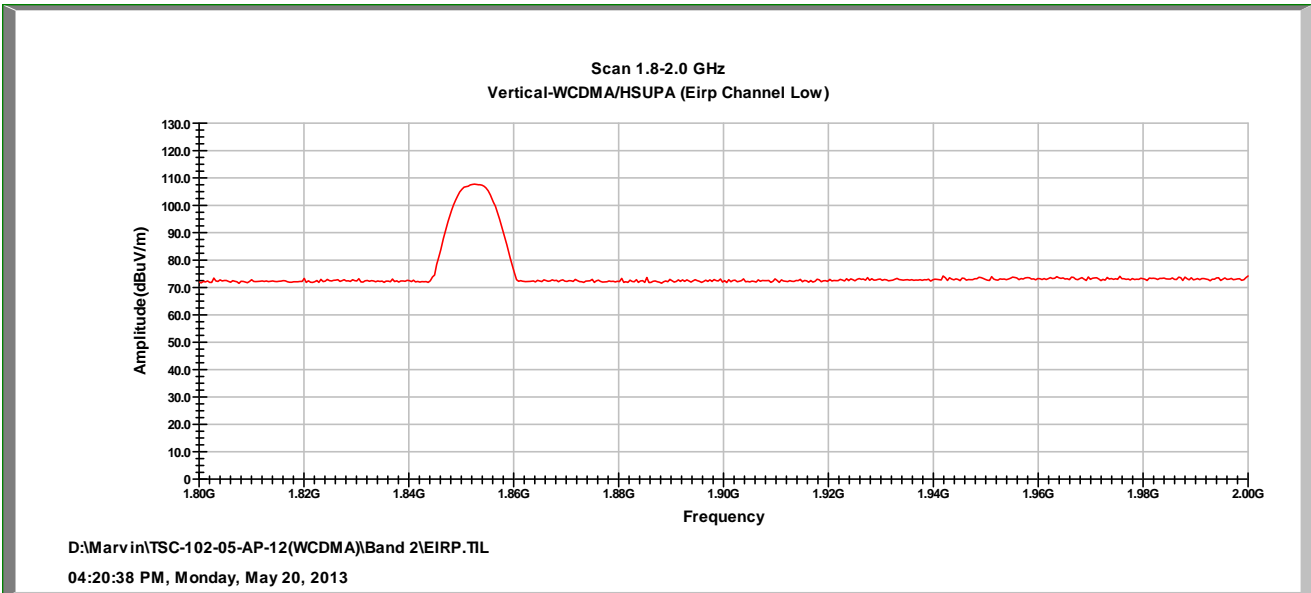
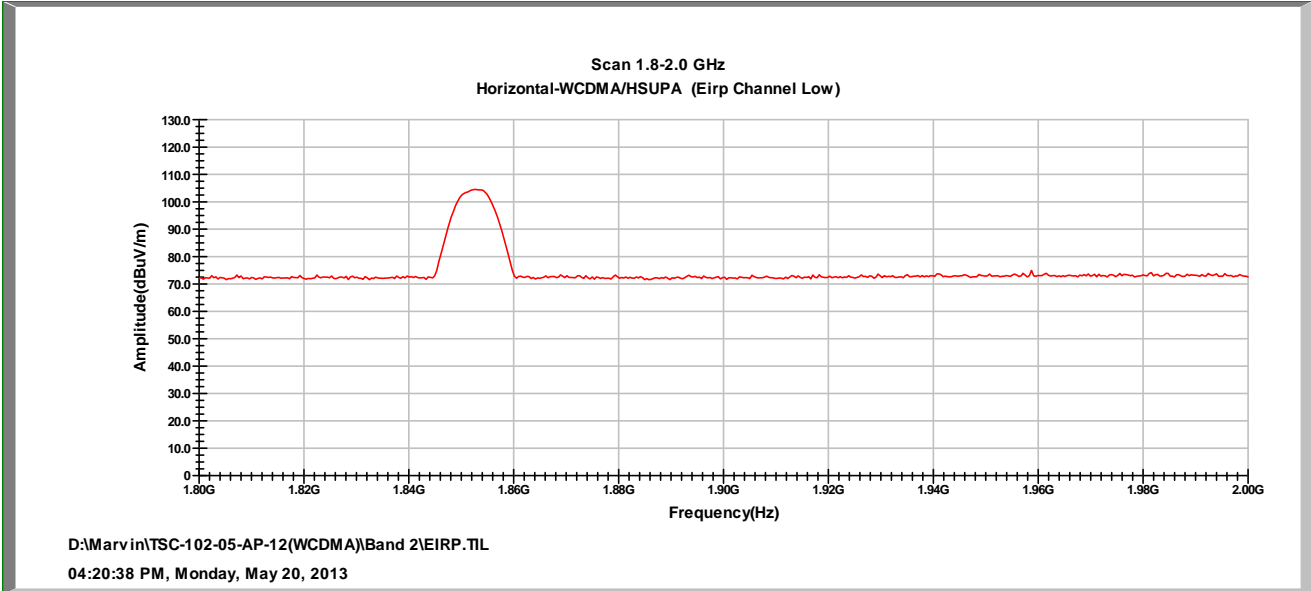
WCDMA/HSDPA Test Data (Band II) CH Low



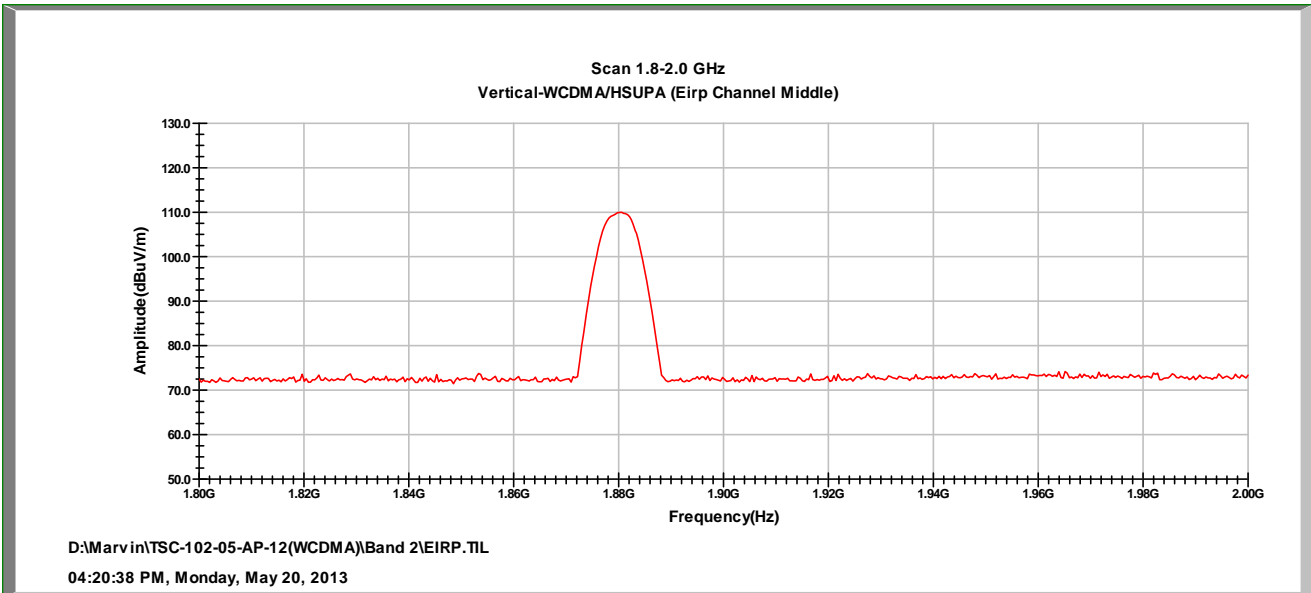
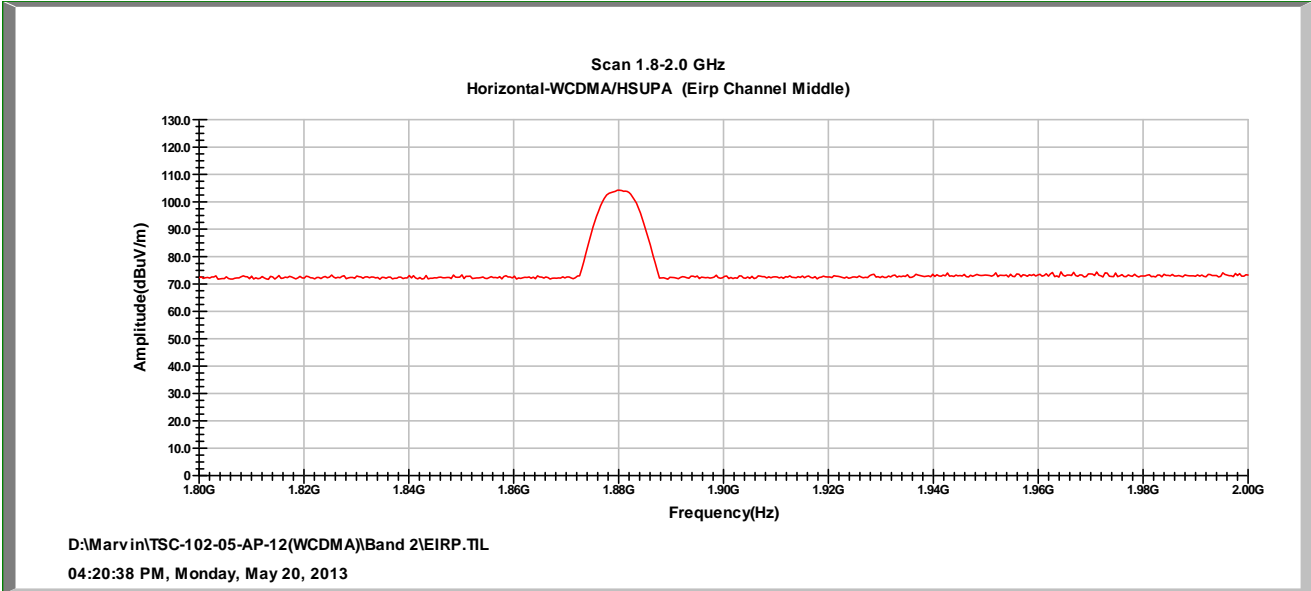
WCDMA/HSDPA Test Data(Band II) CH Mid



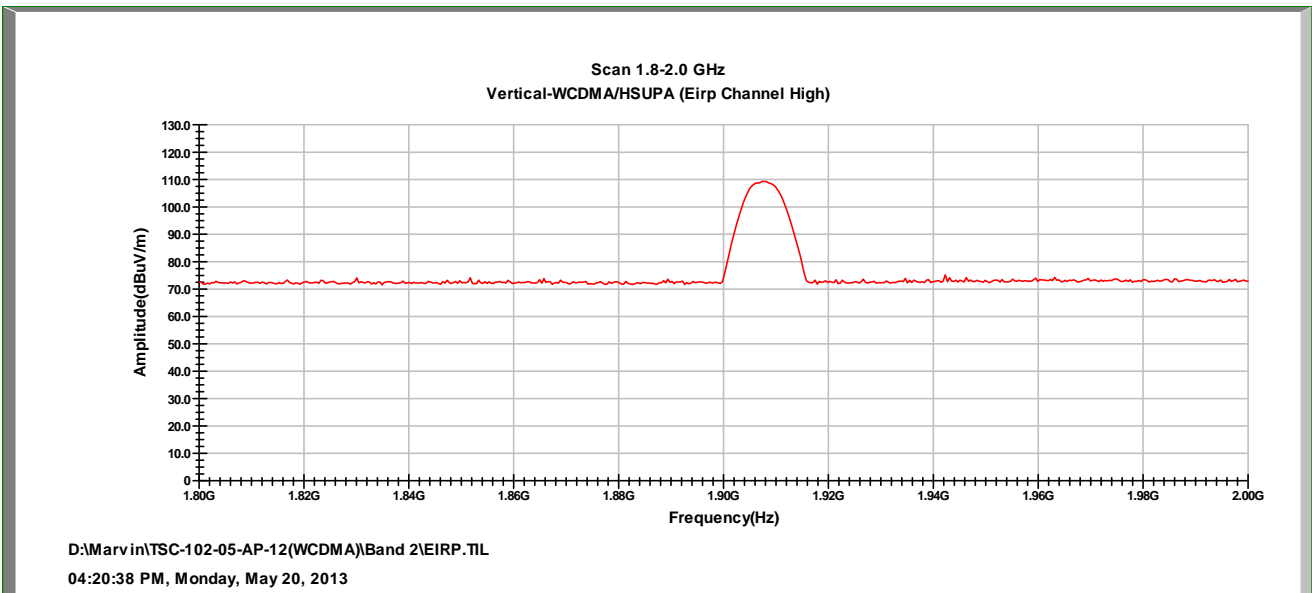
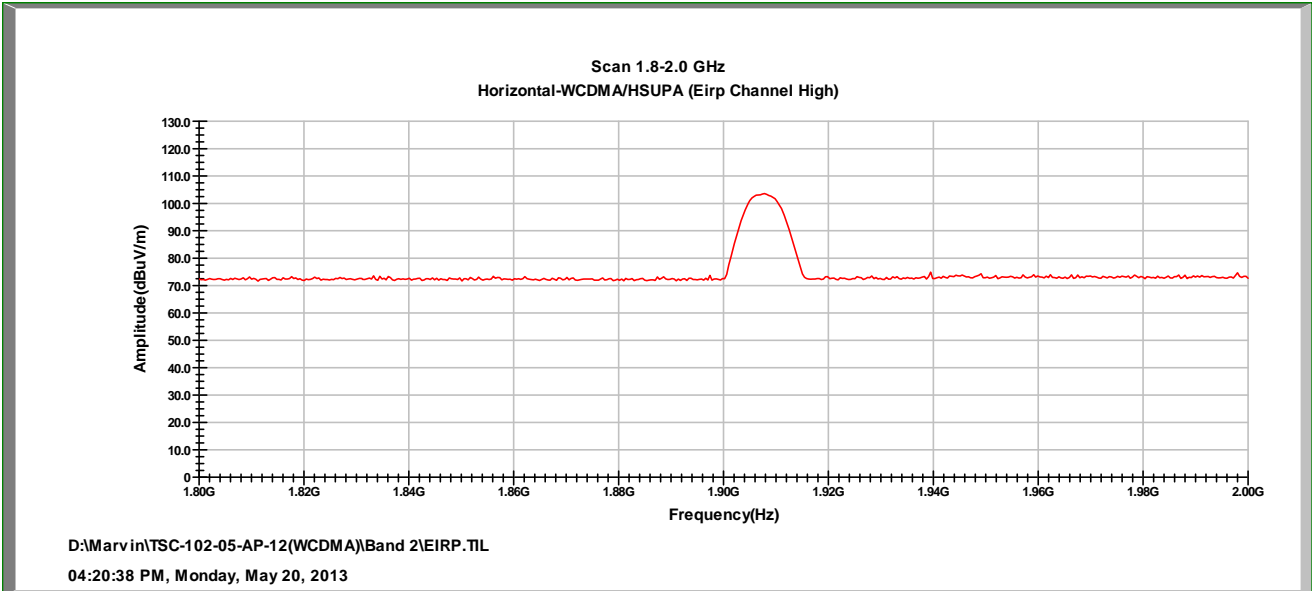
WCDMA/HSDPA Test Data(Band II) CH High



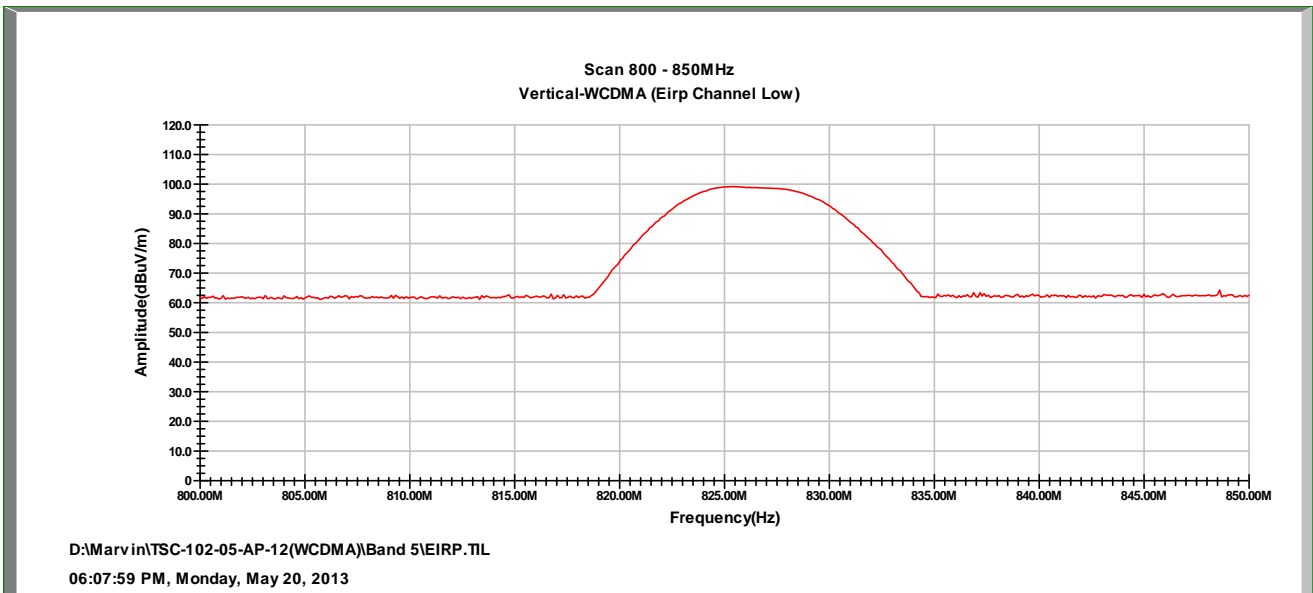
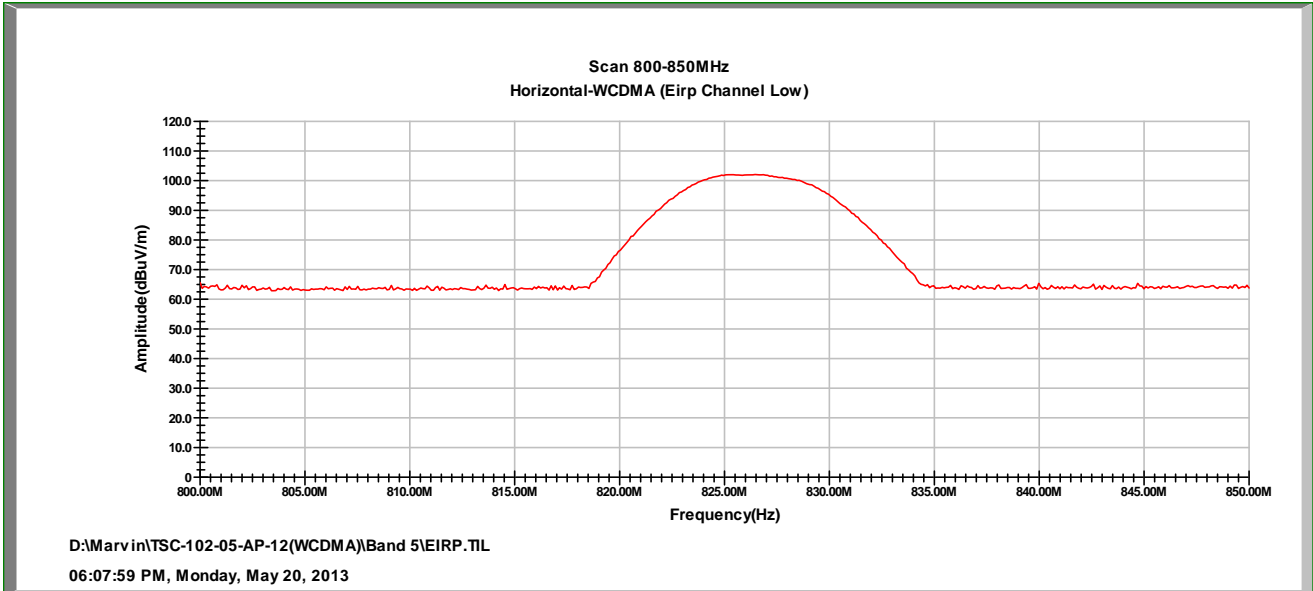
WCDMA/HSUPA Test Data(Band II) CH Low



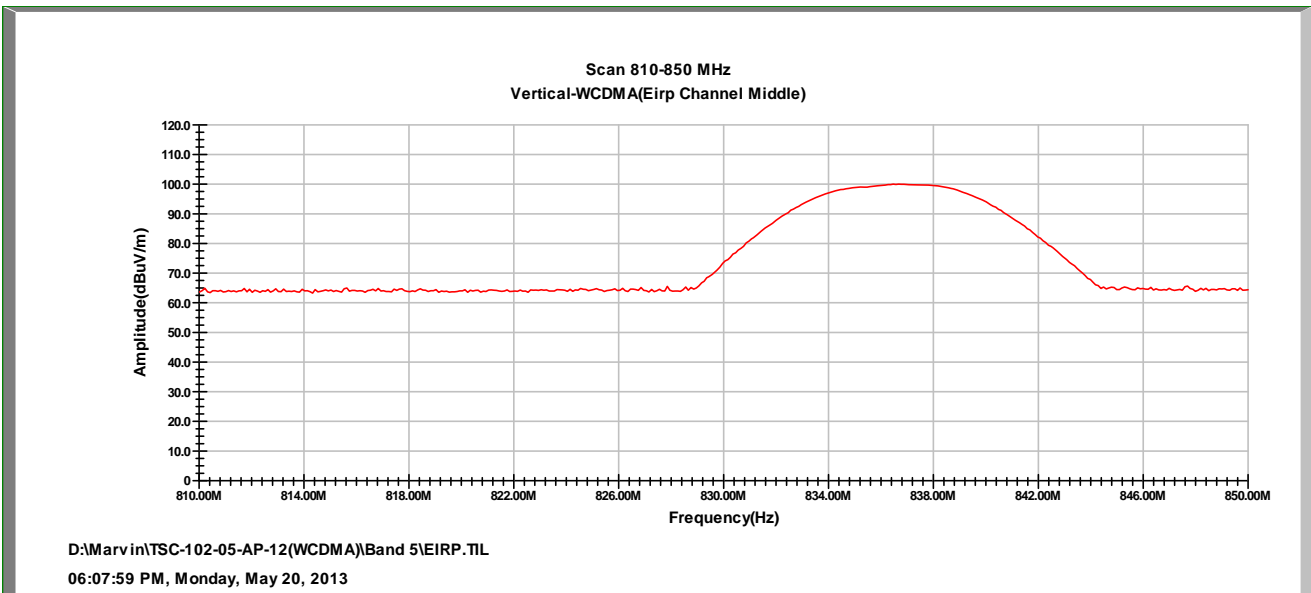
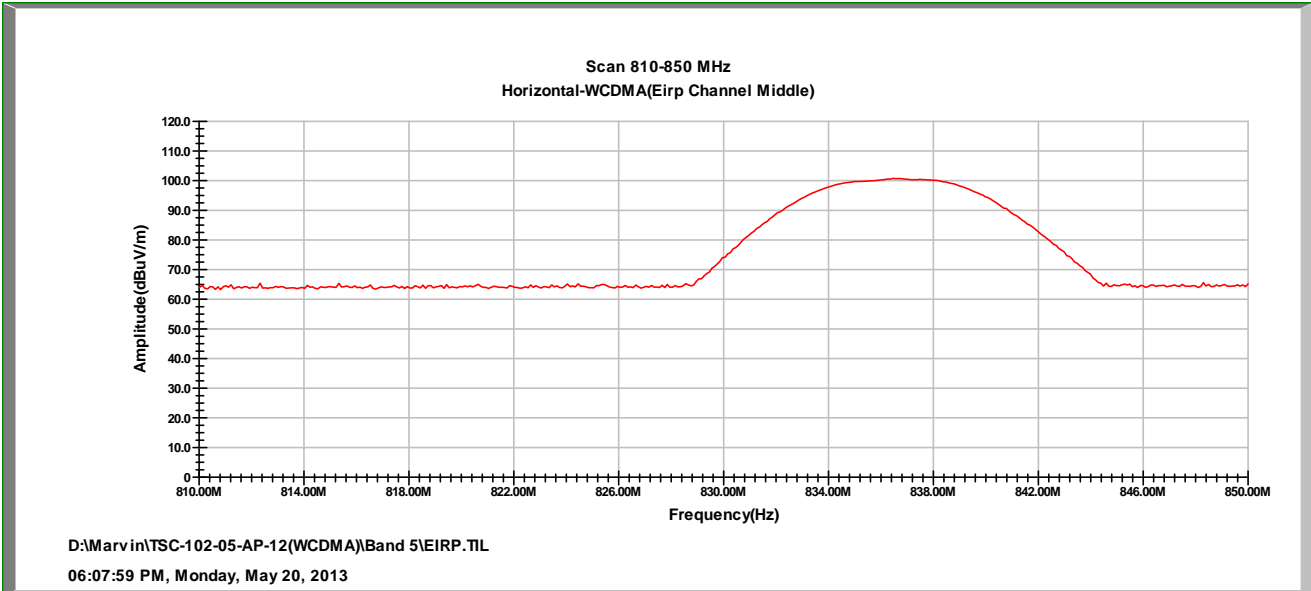
WCDMA/HSUPA Test Data(Band II) CH Mid



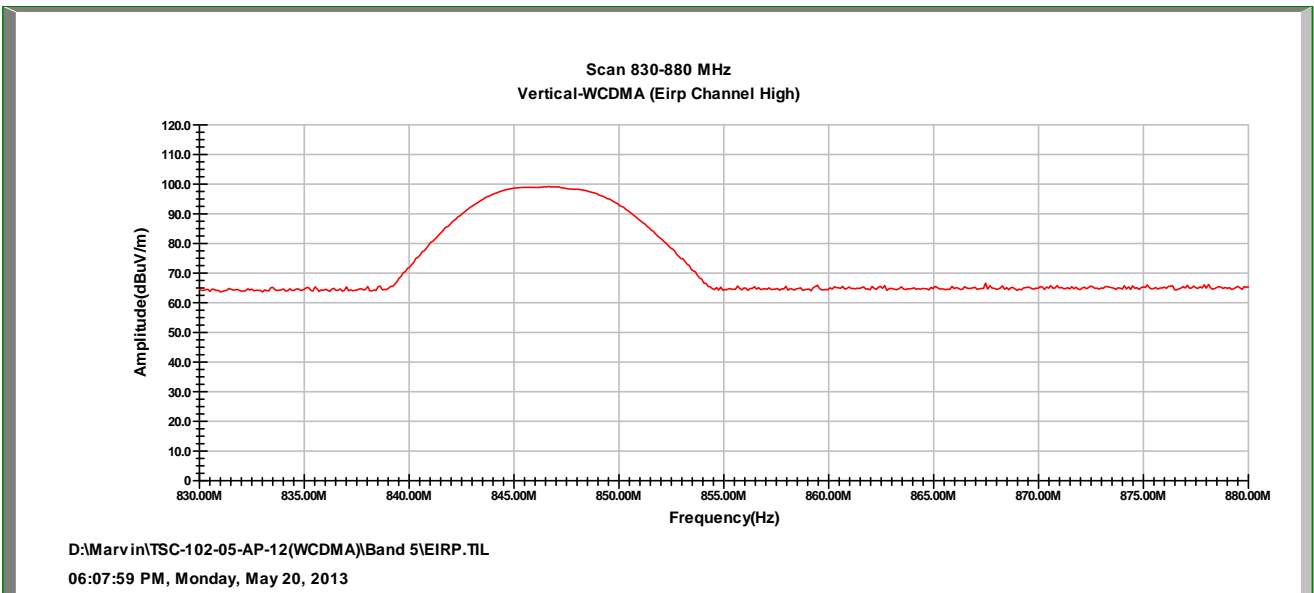
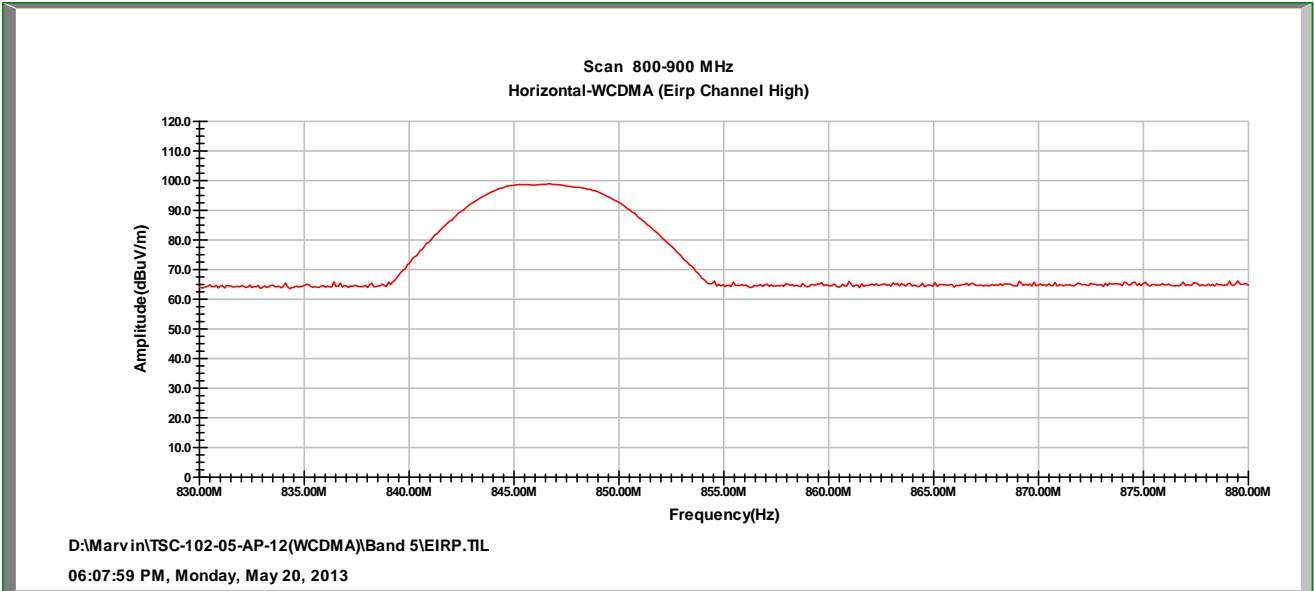
WCDMA/HSUPA Test Data(Band II) CH High



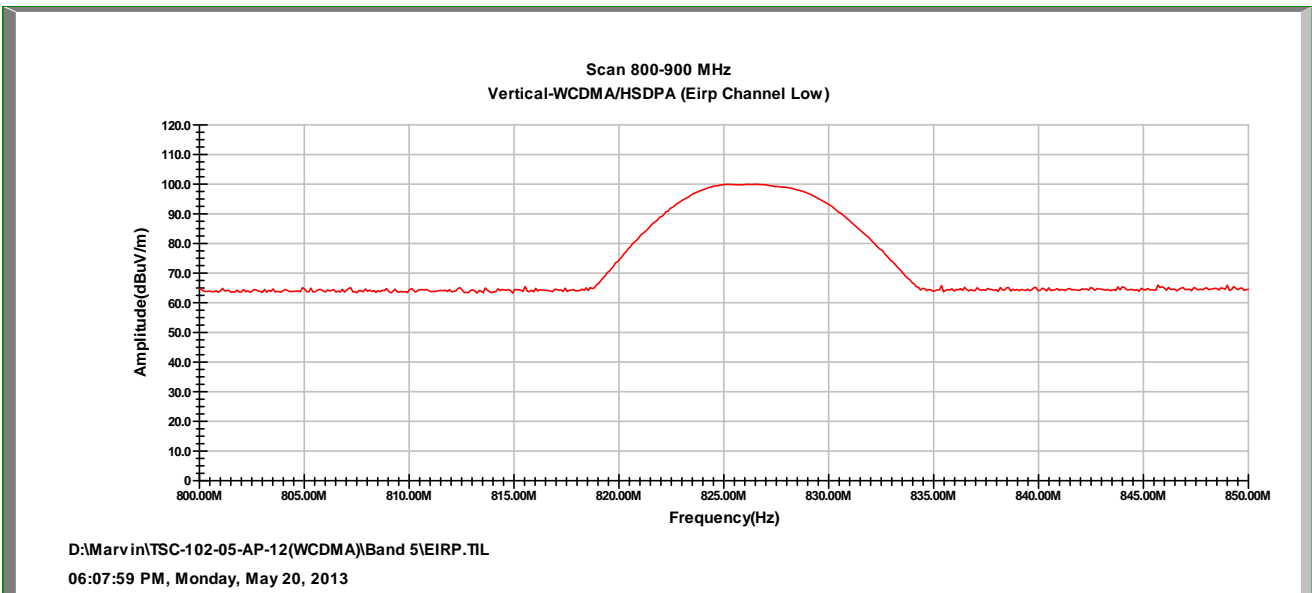
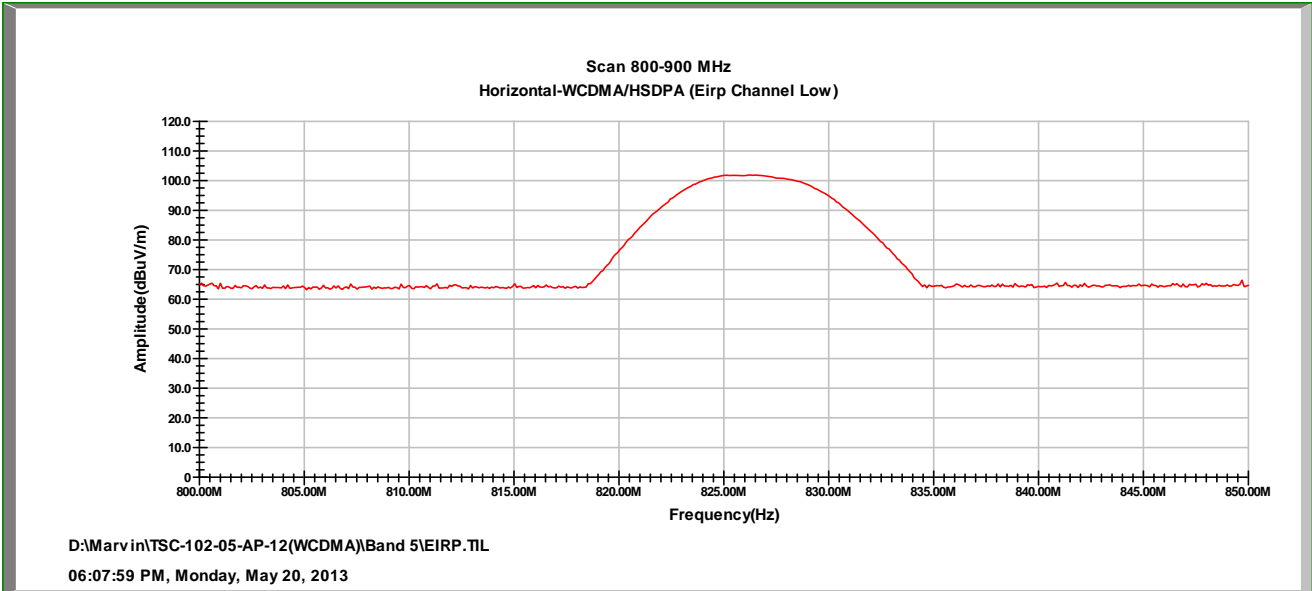
WCDMA Test Data(Band V) CH Low



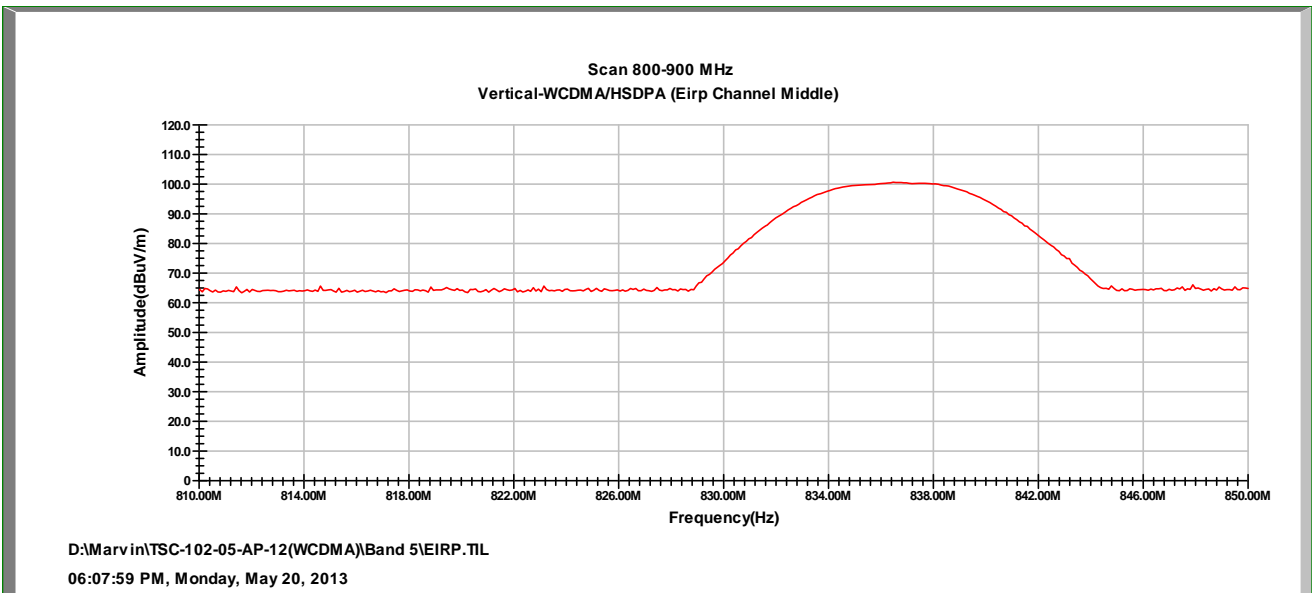
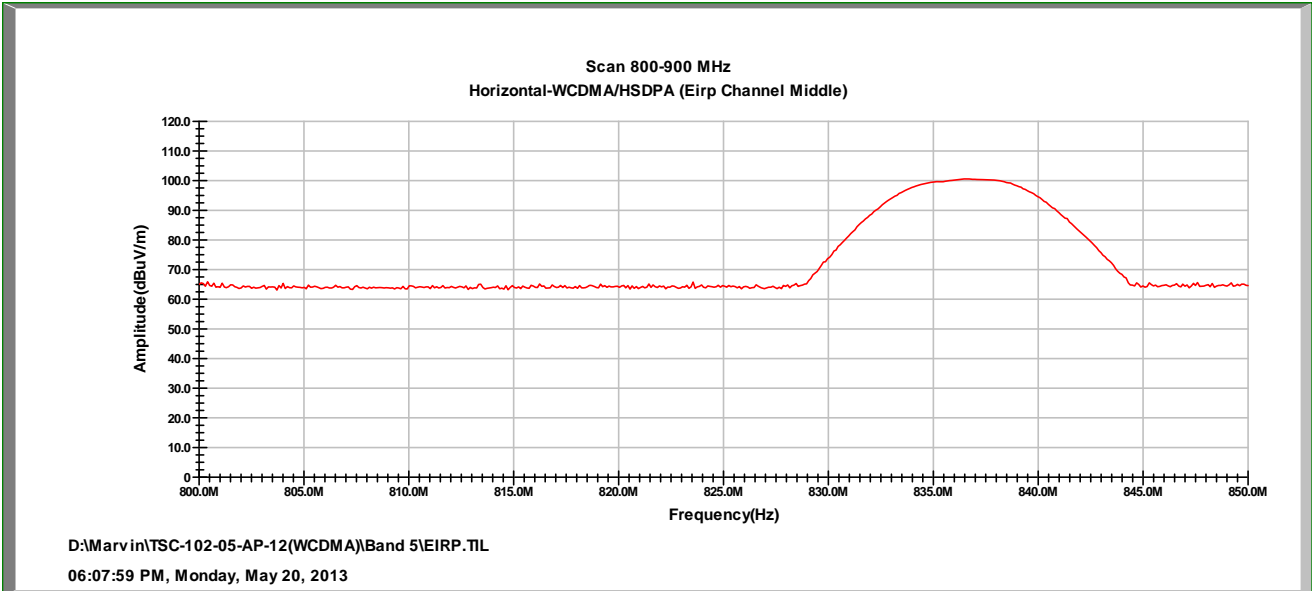
WCDMA Test Data(Band V) CH Mid



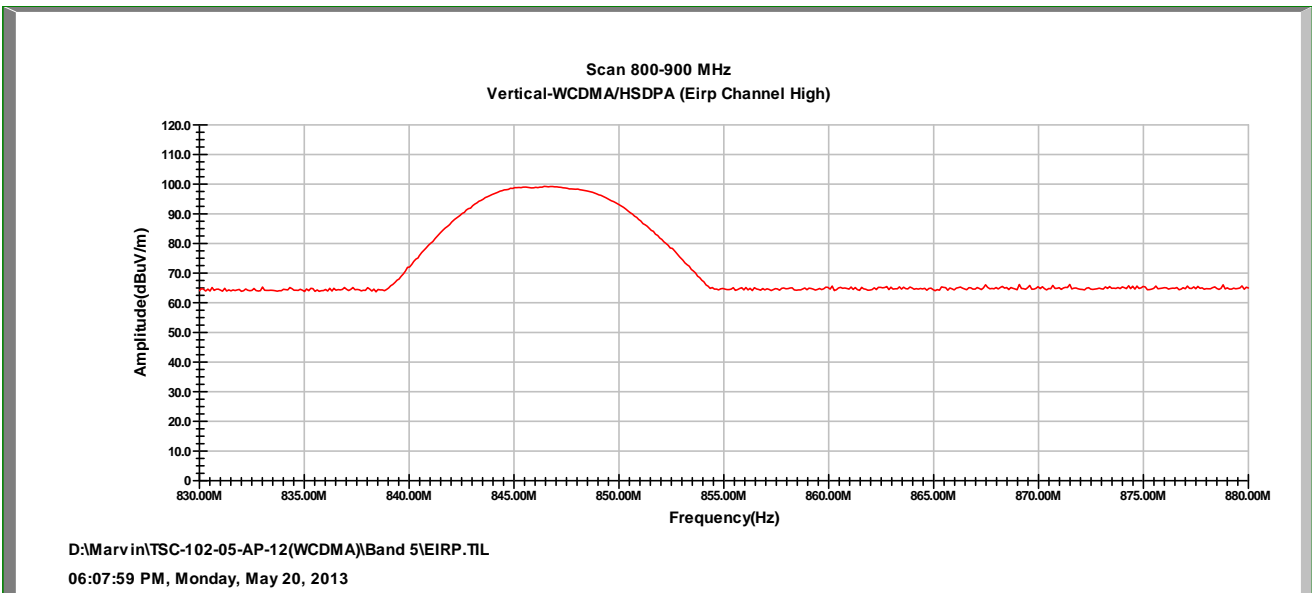
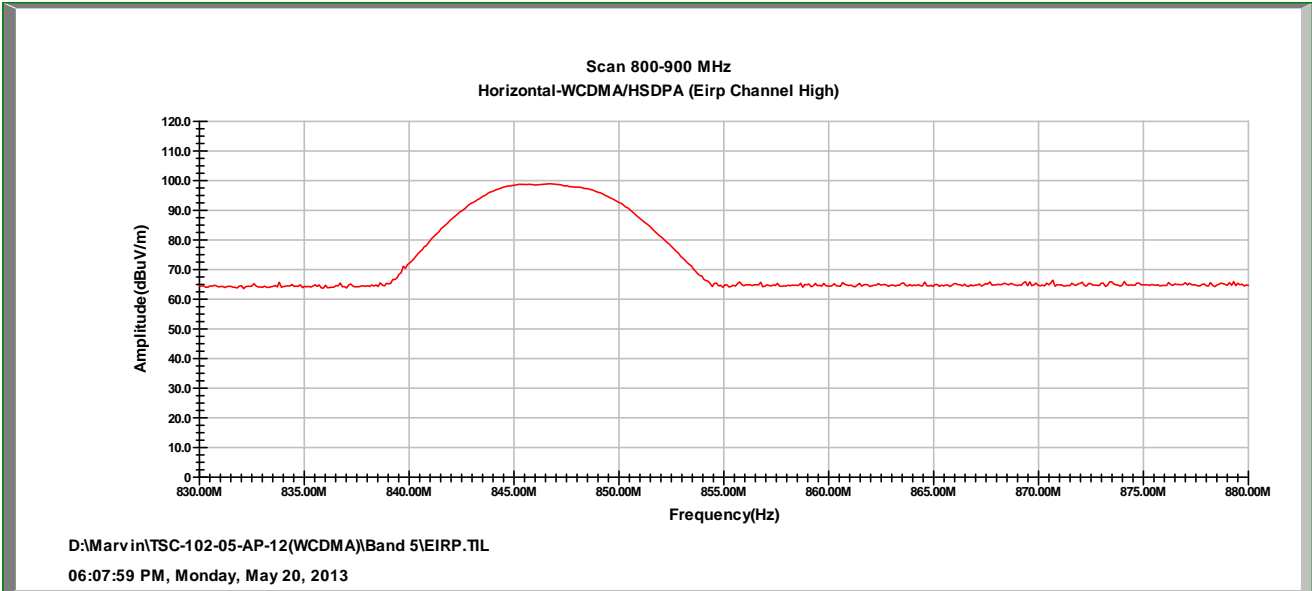
WCDMA Test Data(Band V) CH High



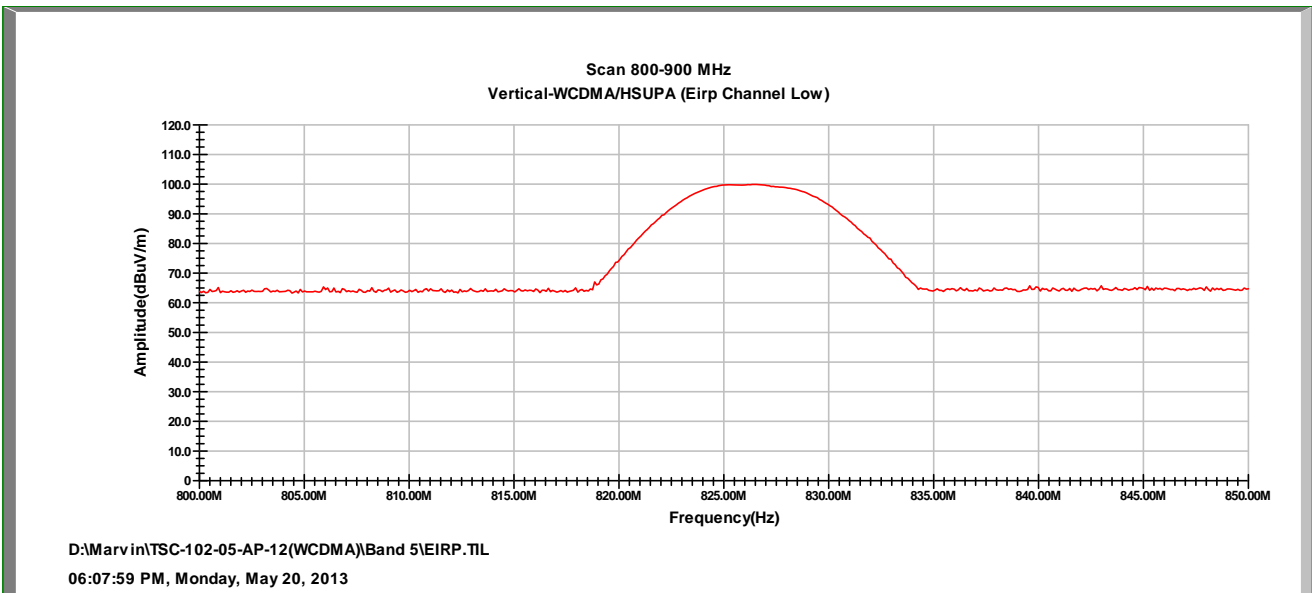
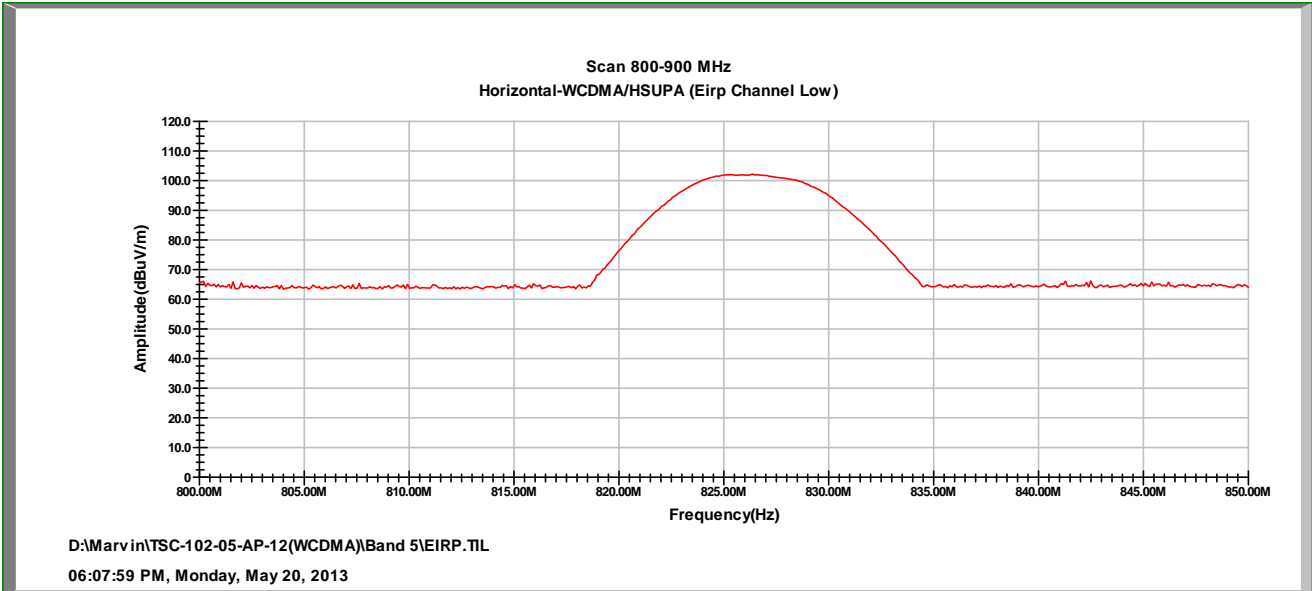
WCDMA/HSDPA Test Data(Band V) CH Low



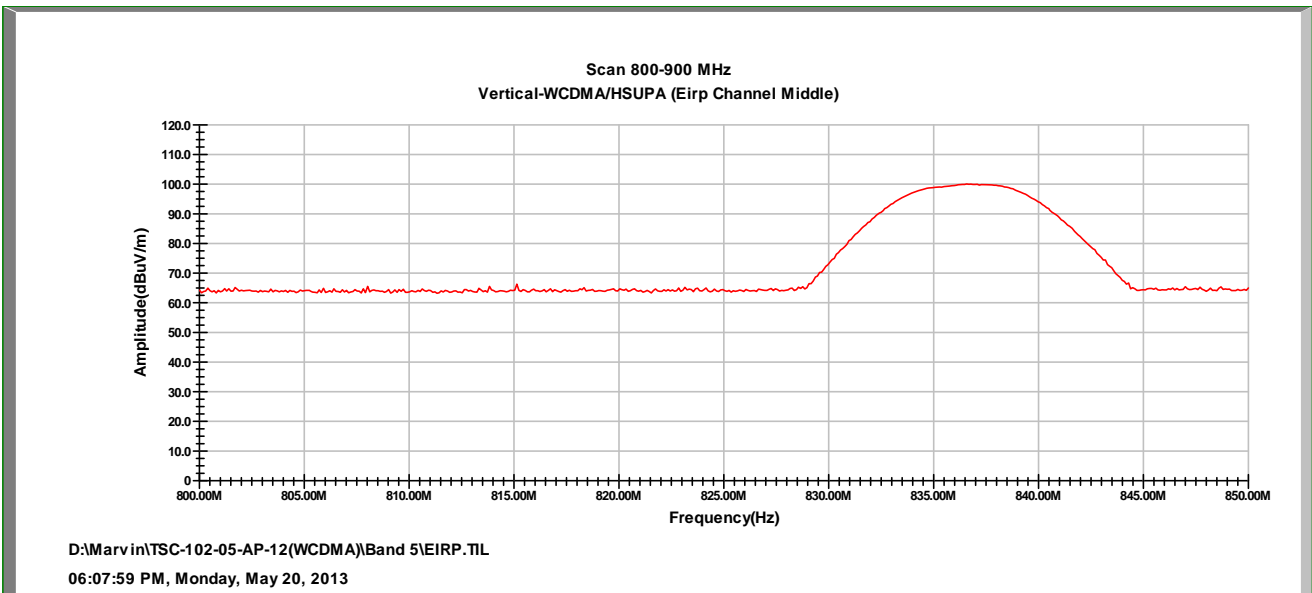
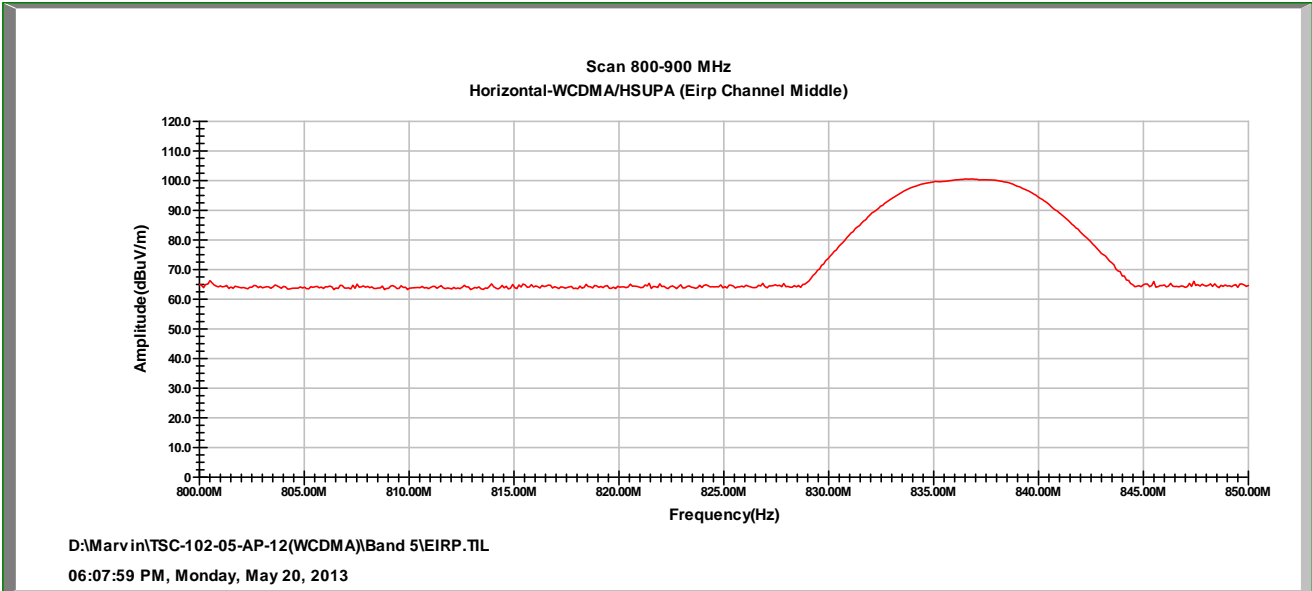
WCDMA/HSDPA Test Data(Band V) CH Mid



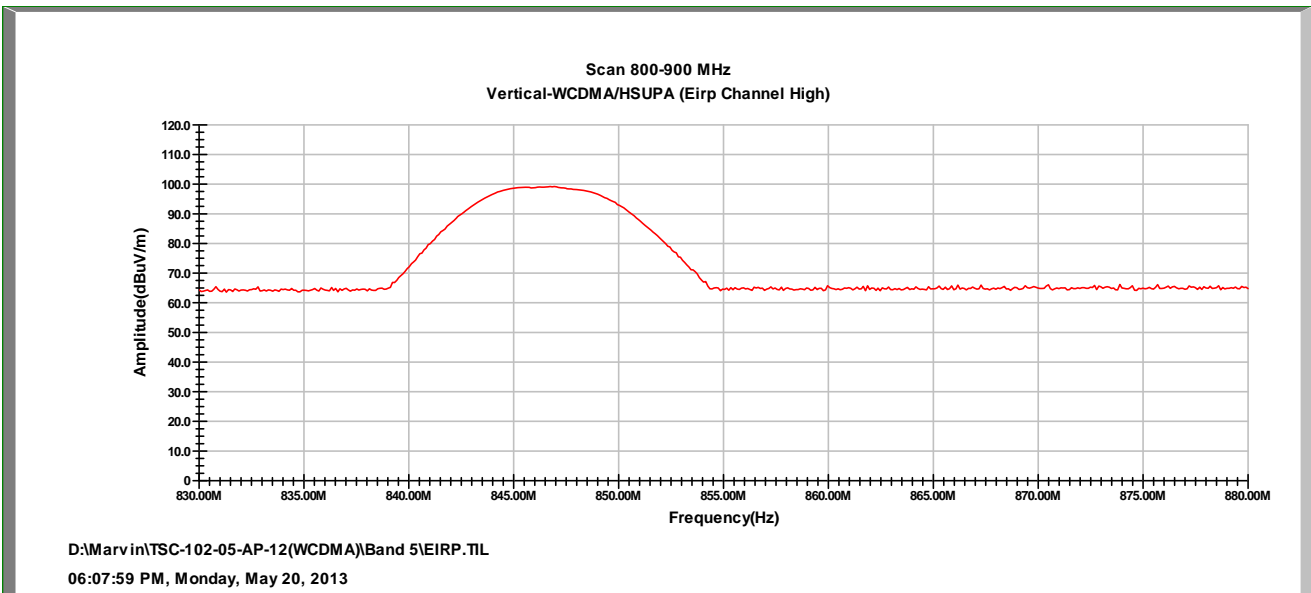
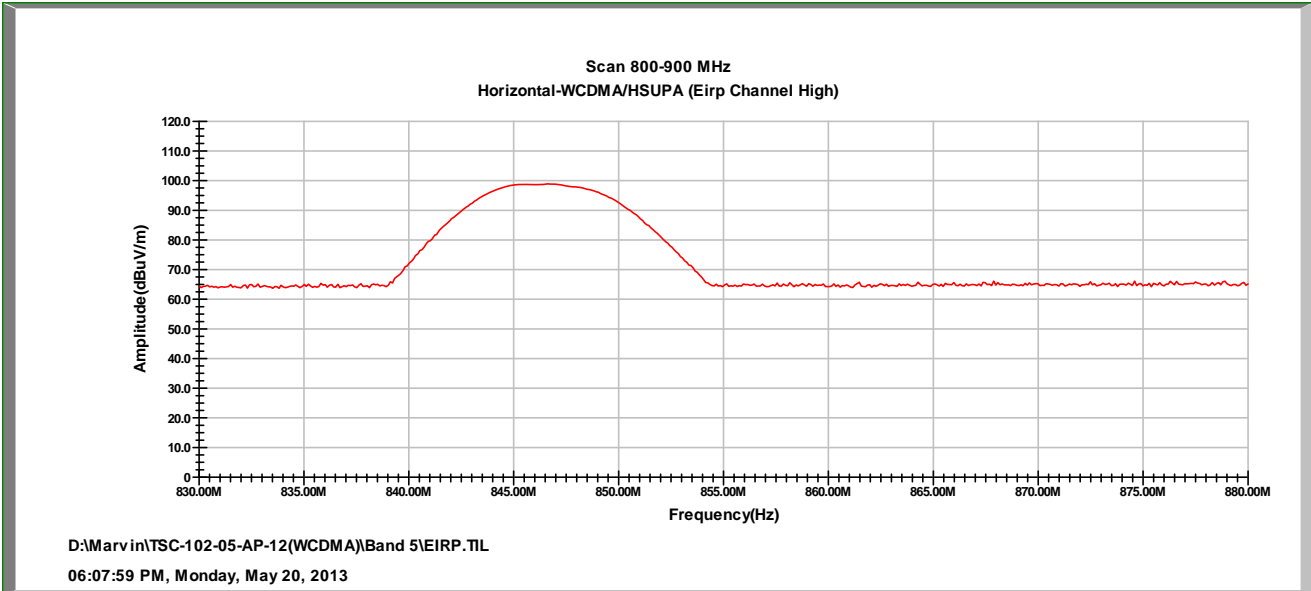
WCDMA/HSDPA Test Data(Band V) CH High



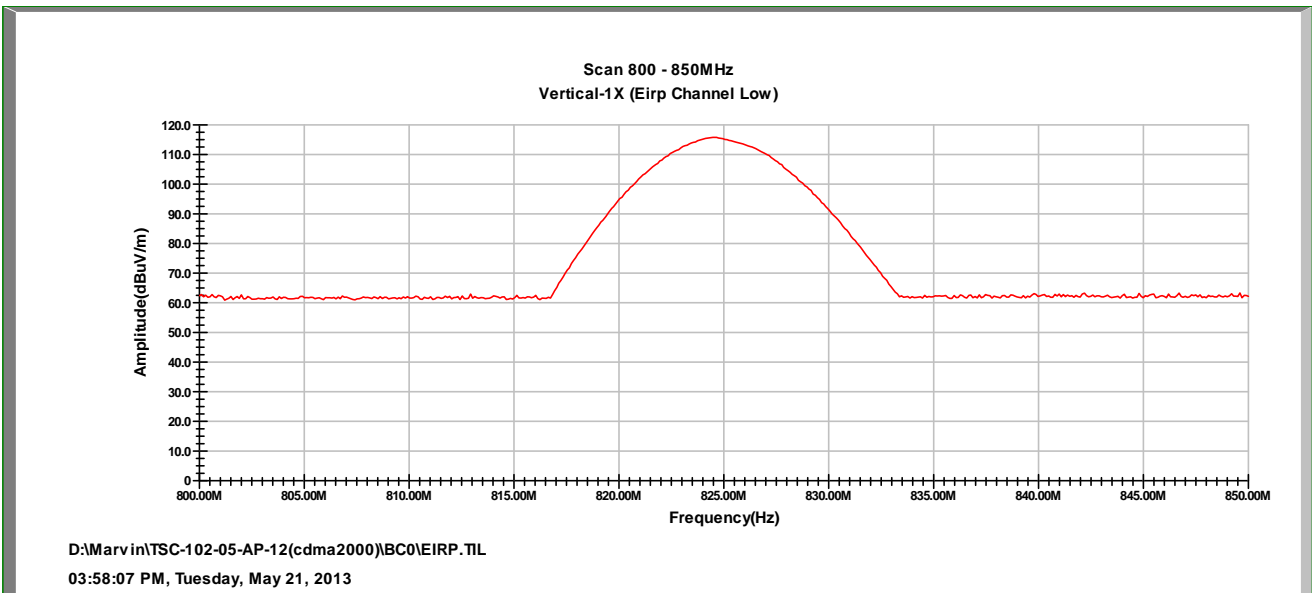
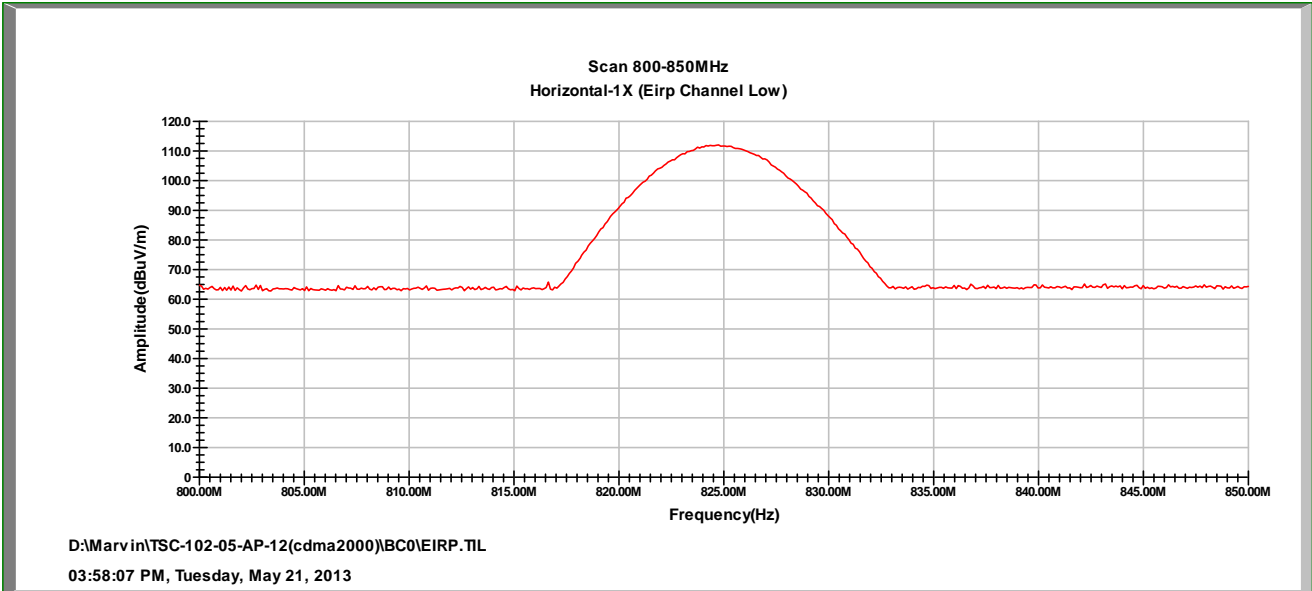
WCDMA/HSUPA Test Data(Band V) CH Low



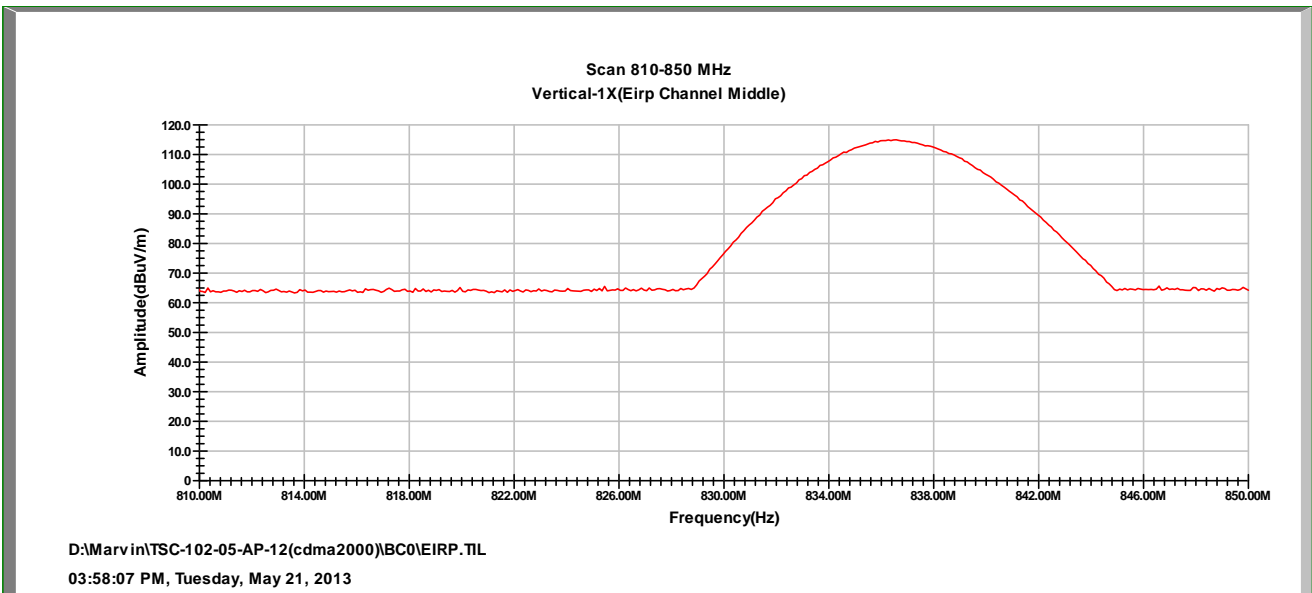
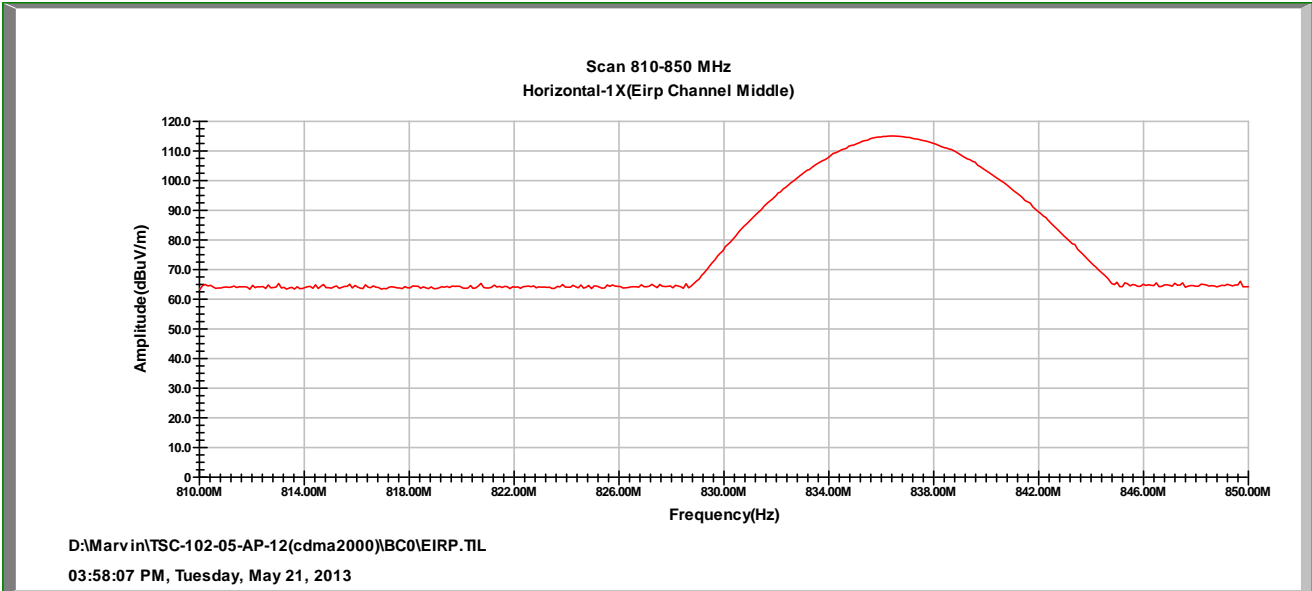
WCDMA/HSUPA Test Data(Band V) CH Mid



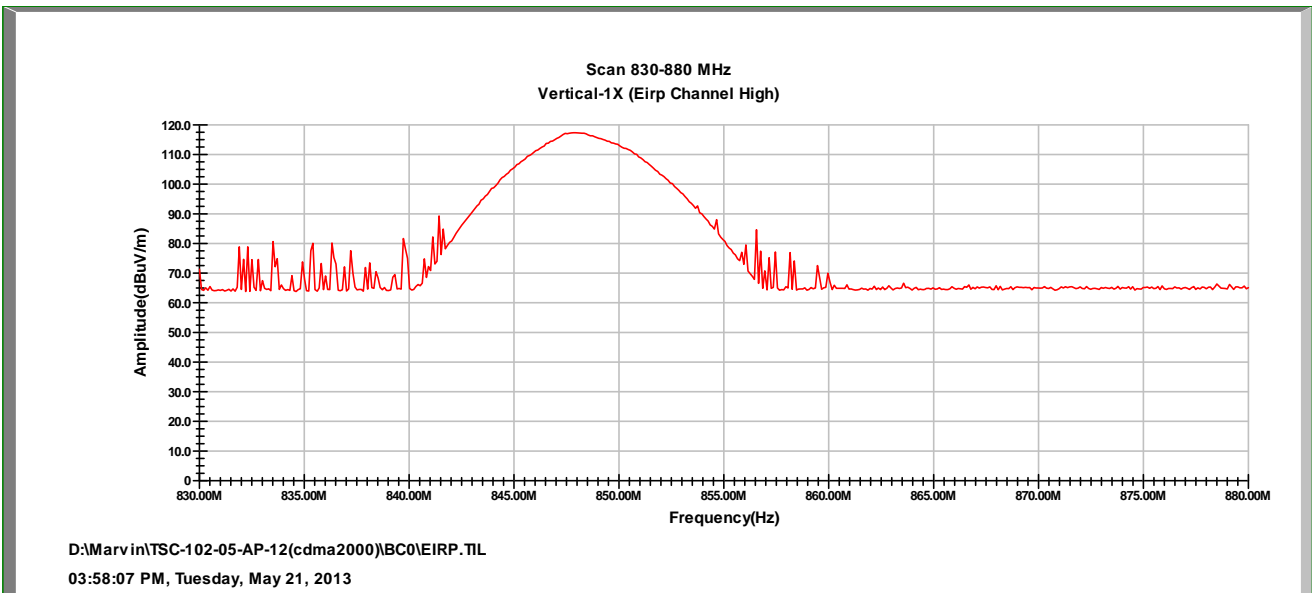
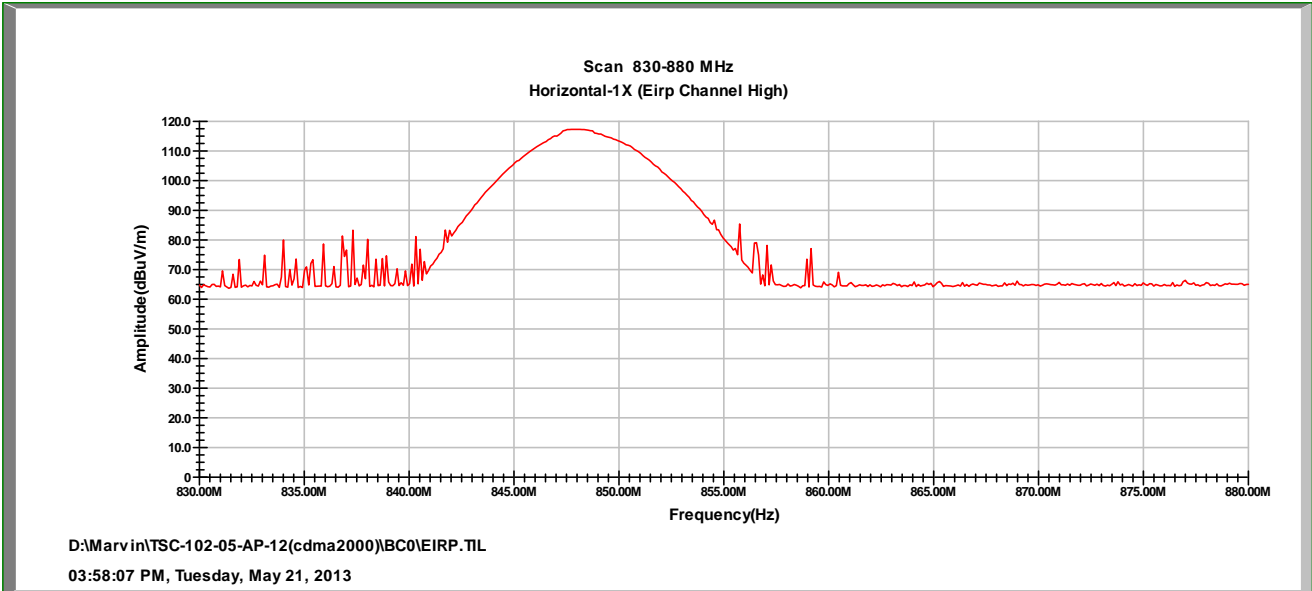
WCDMA/HSUPA Test Data(Band V) CH High



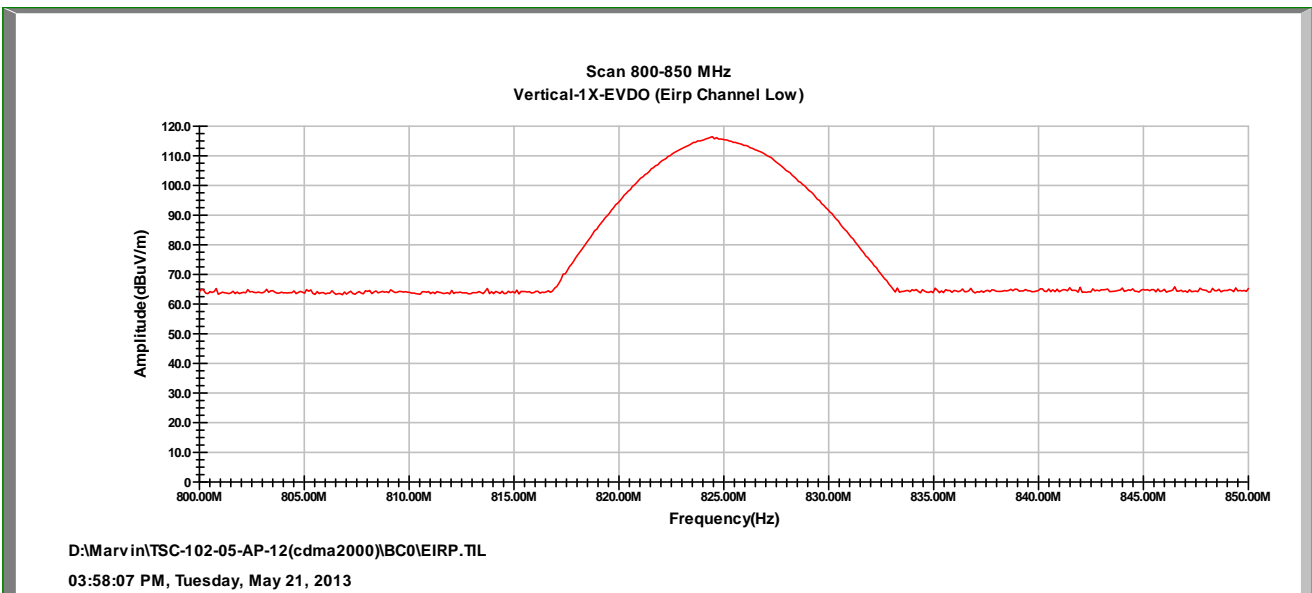
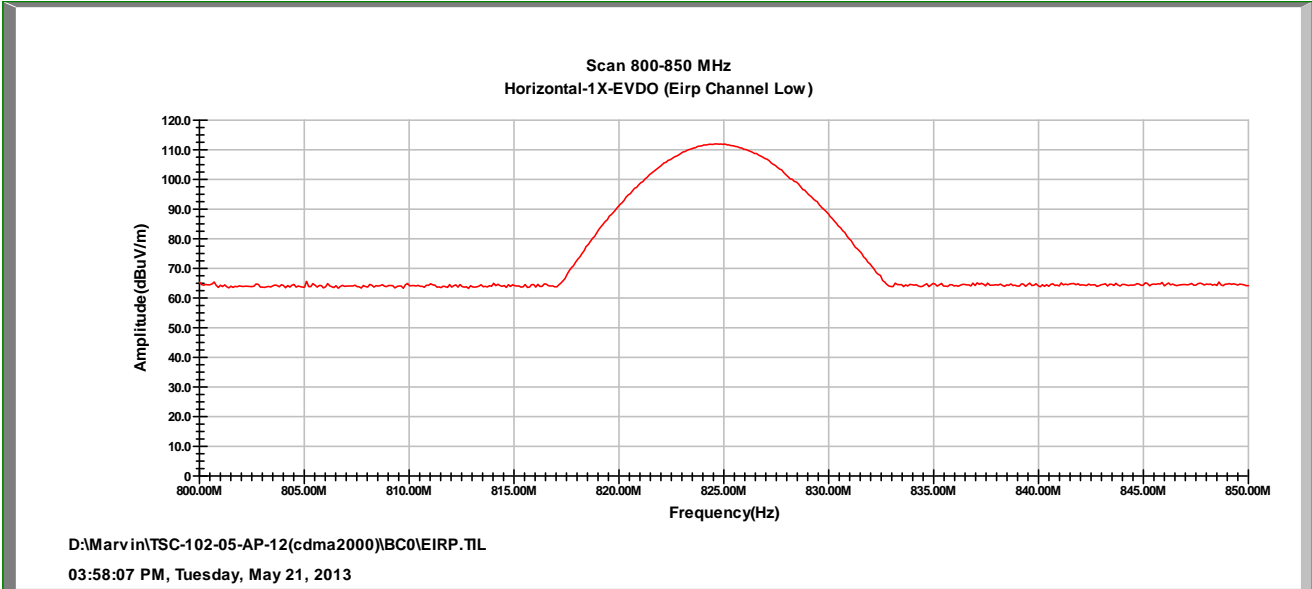
CDMA2000/1X Test Data (BC0) CH Low



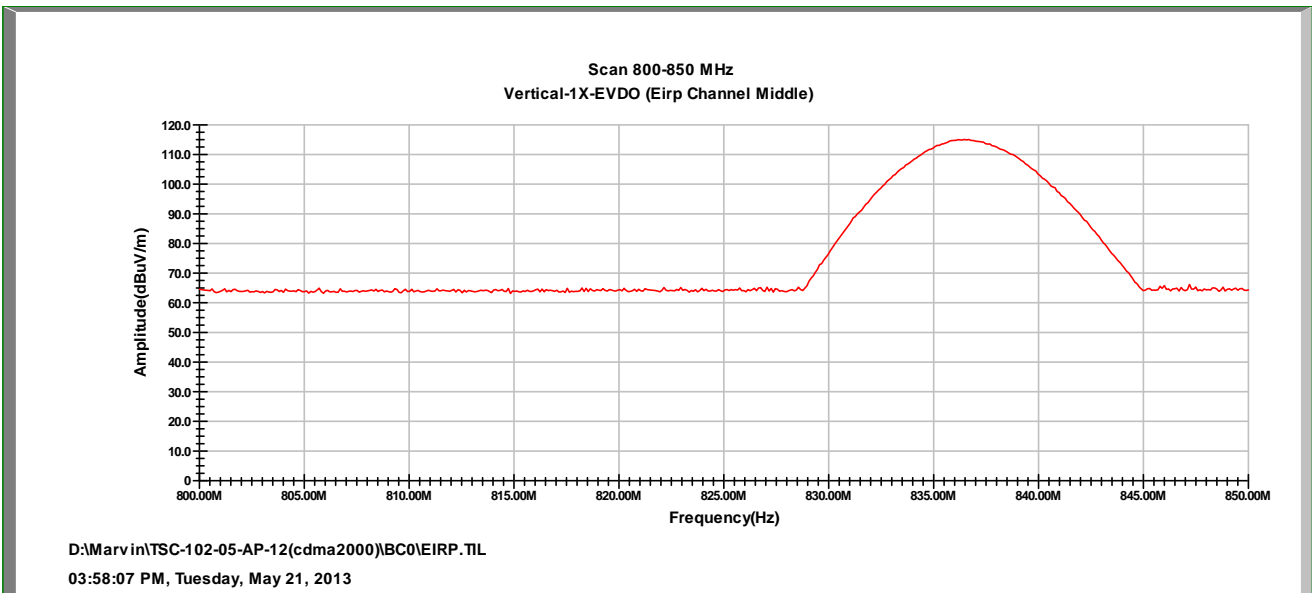
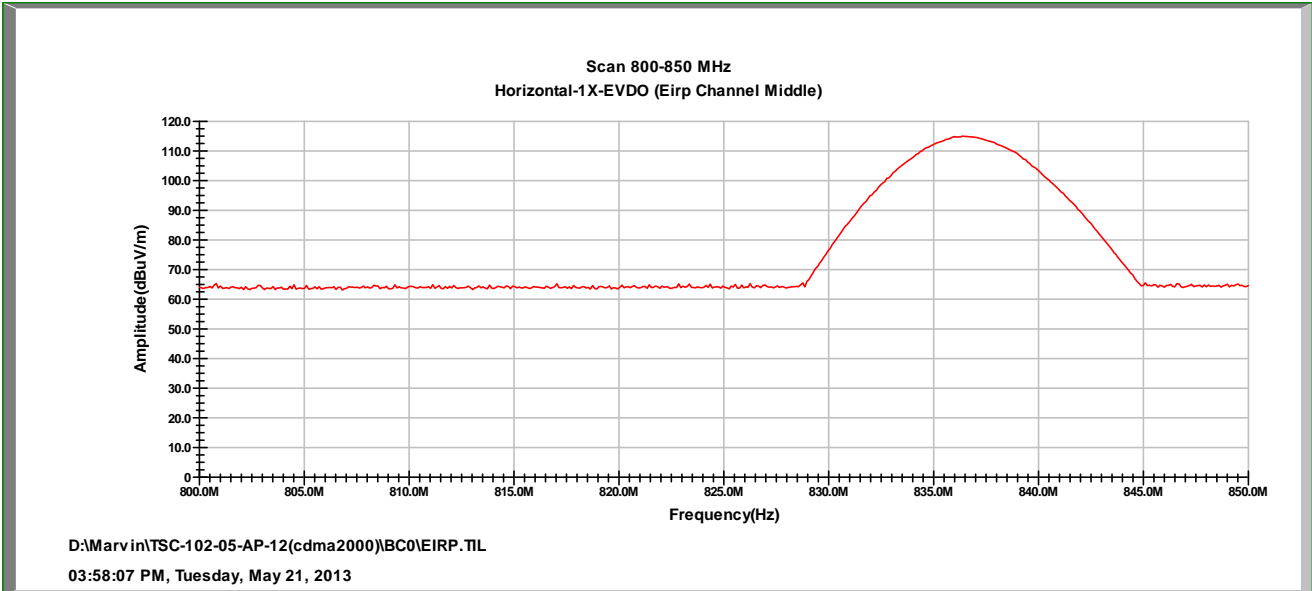
CDMA2000/1X Test Data(BC0) CH Mid



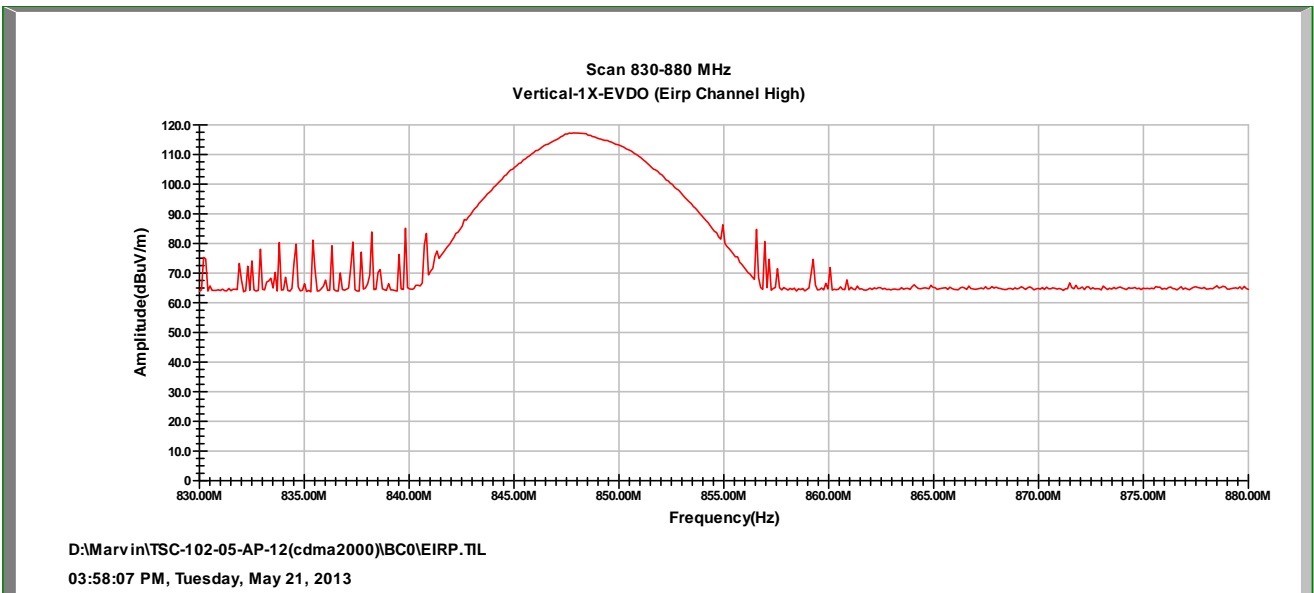
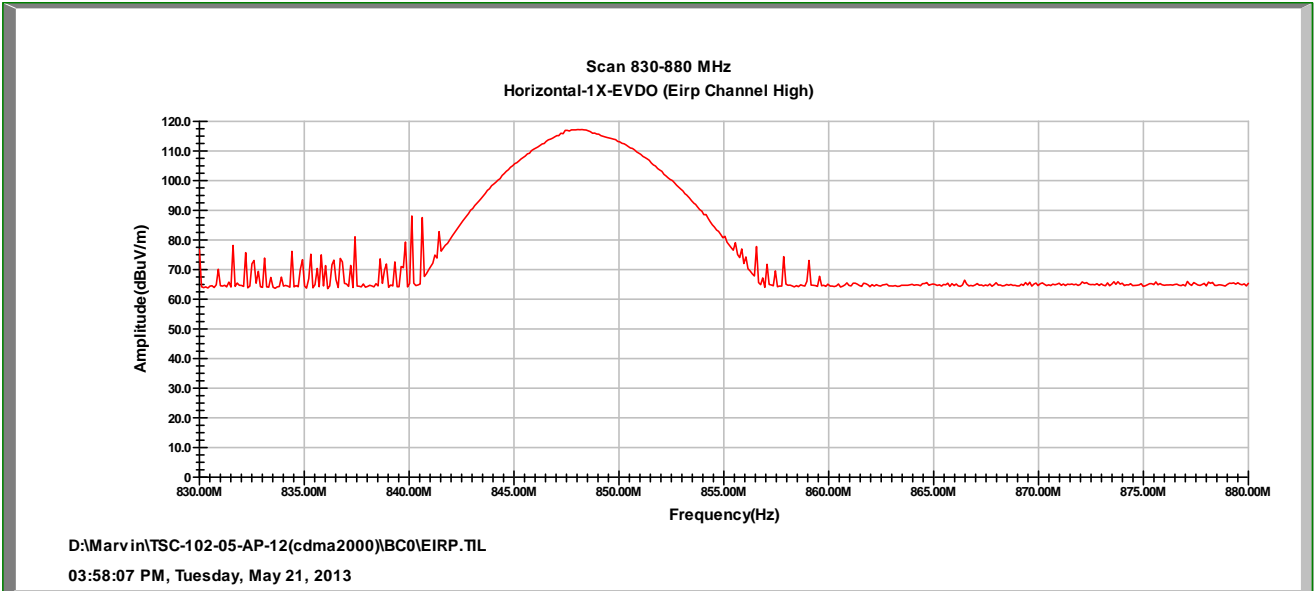
CDMA2000/1X Test Data(BC0) CH High



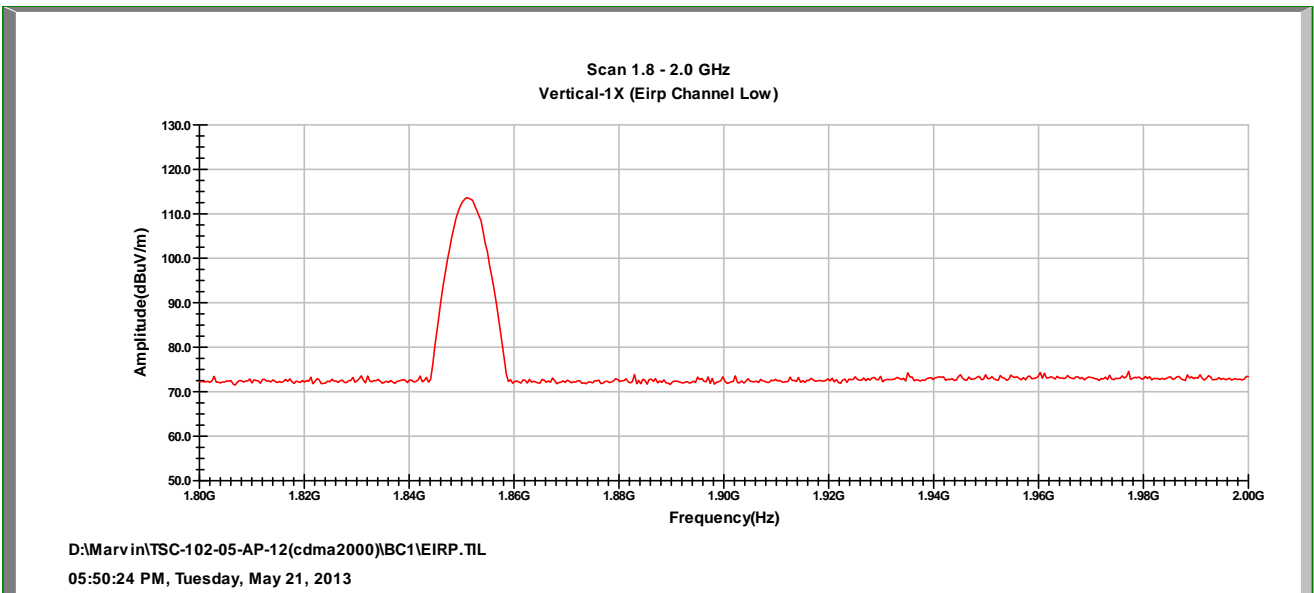
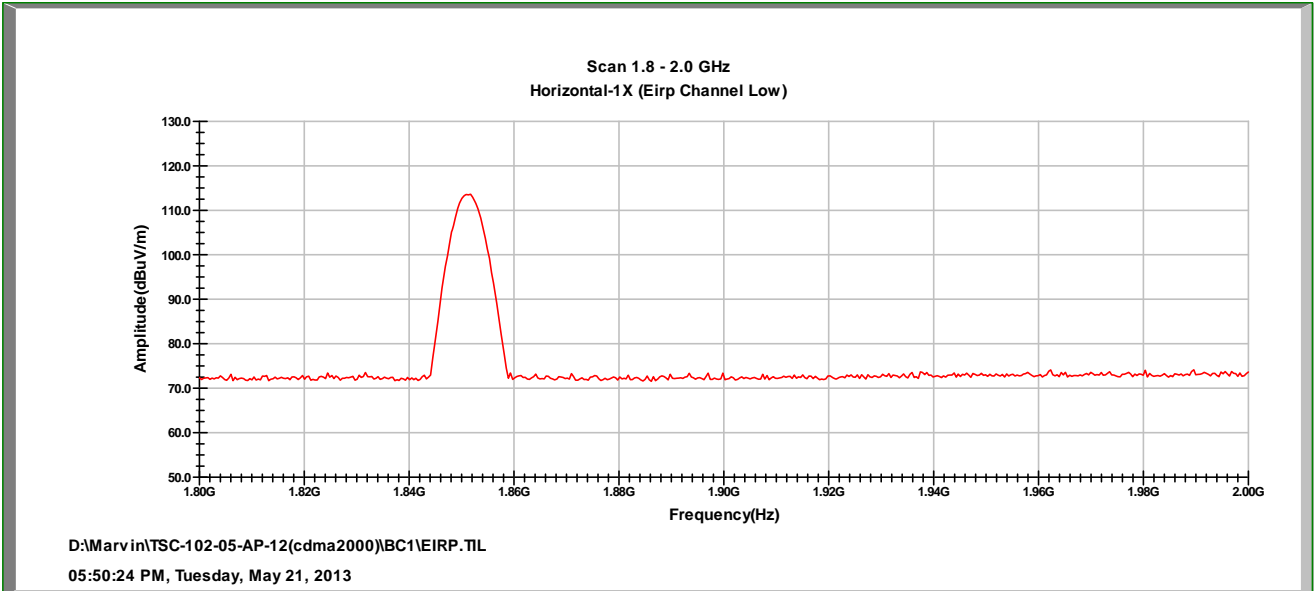
CDMA2000/EVDO Test Data(BC0) CH Low



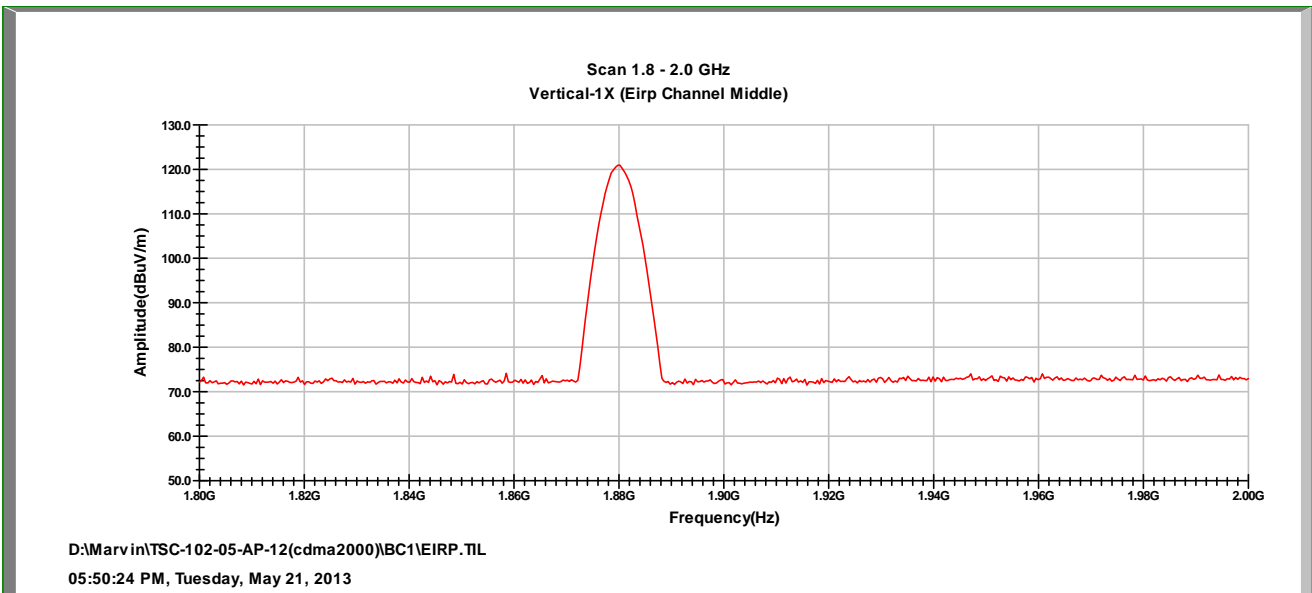
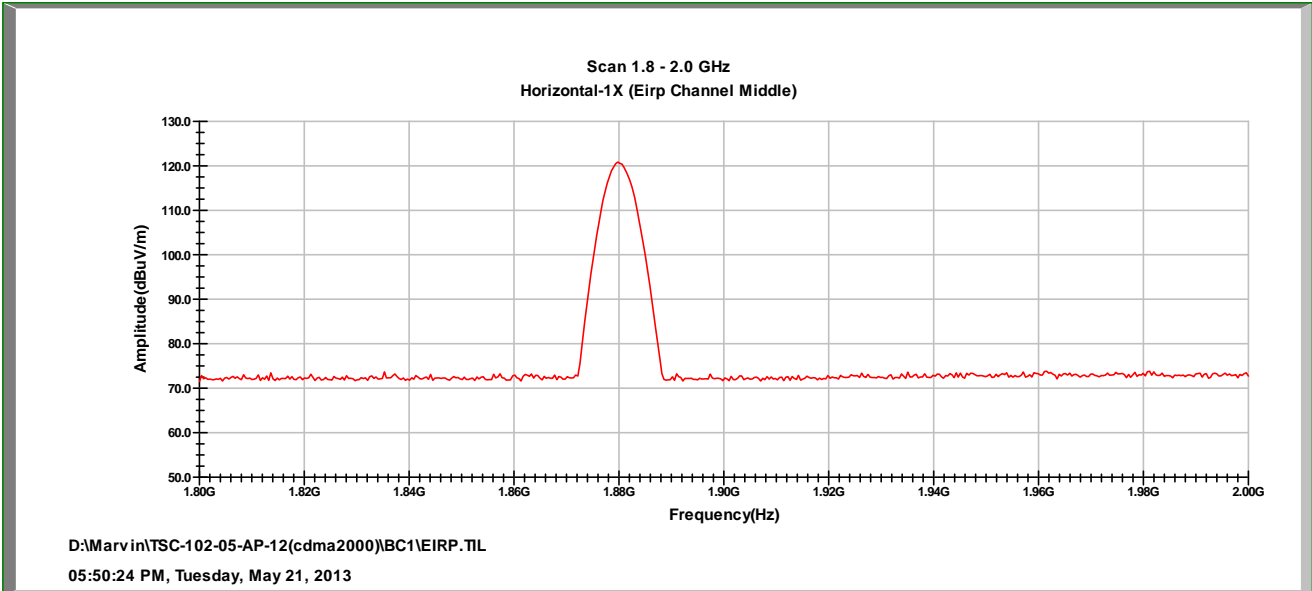
CDMA2000/EVDO Test Data(BC0) CH Mid



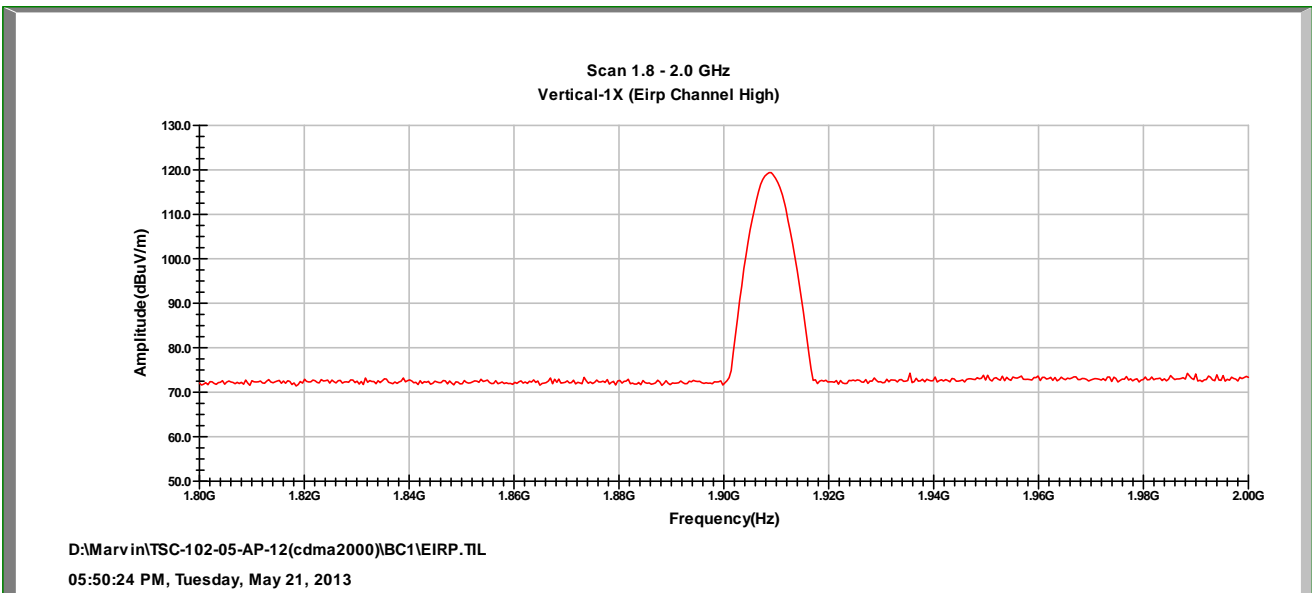
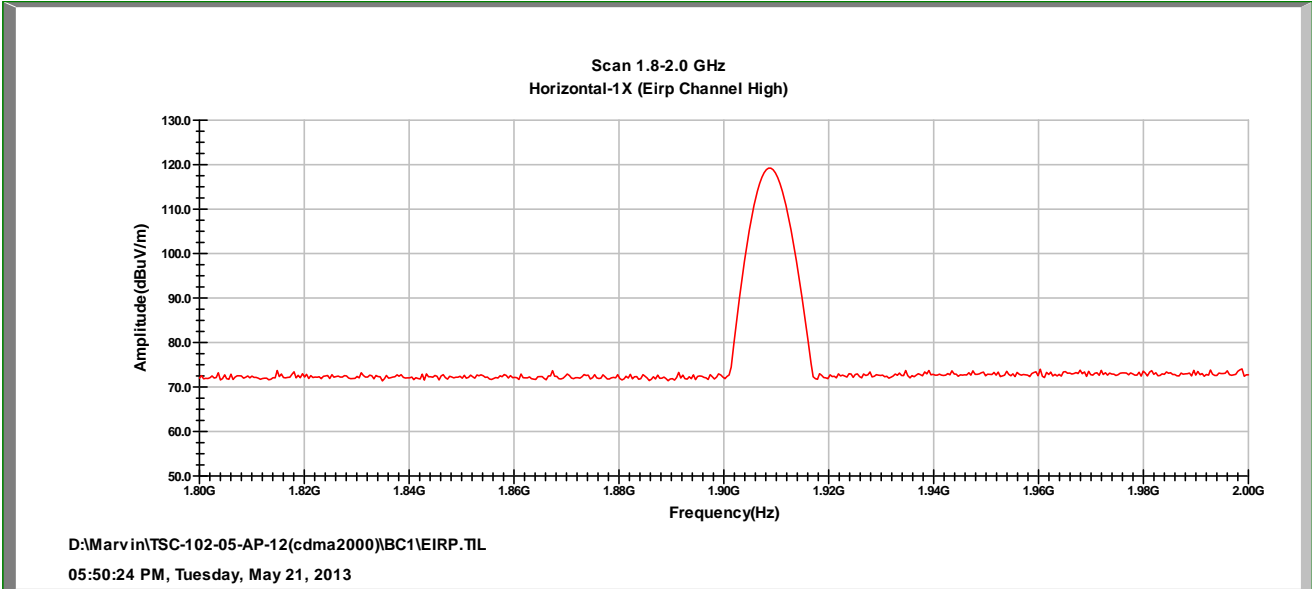
CDMA2000/EVDO Test Data(BC0) CH High



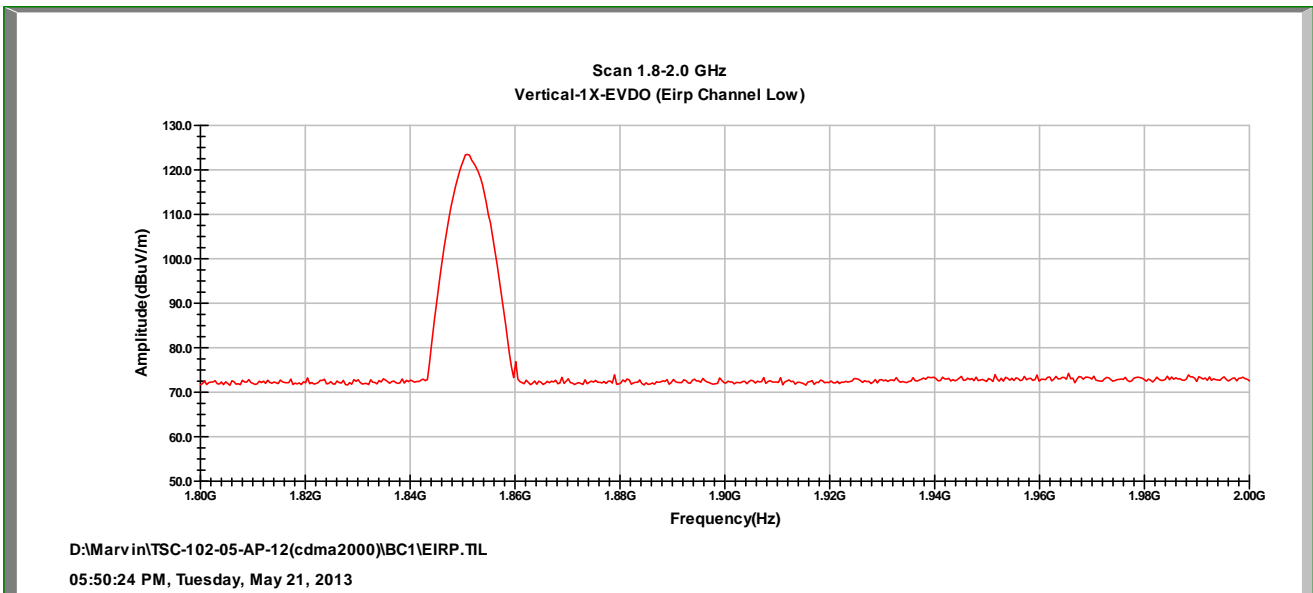
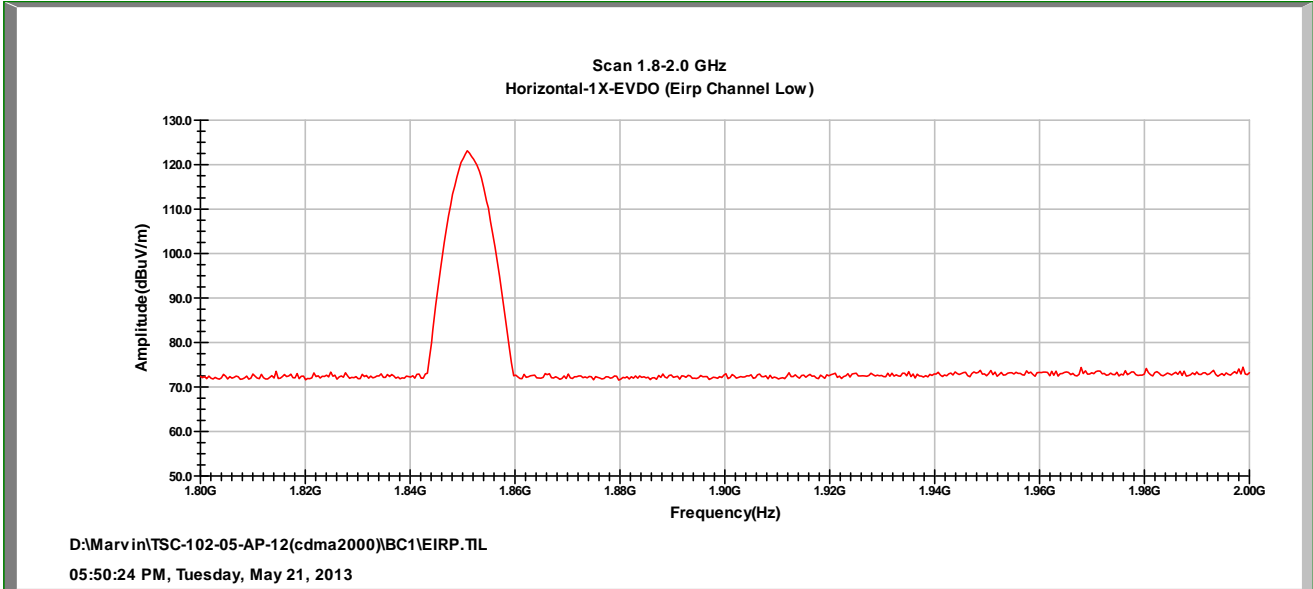
CDMA2000/1X Test Data(BC1) CH Low



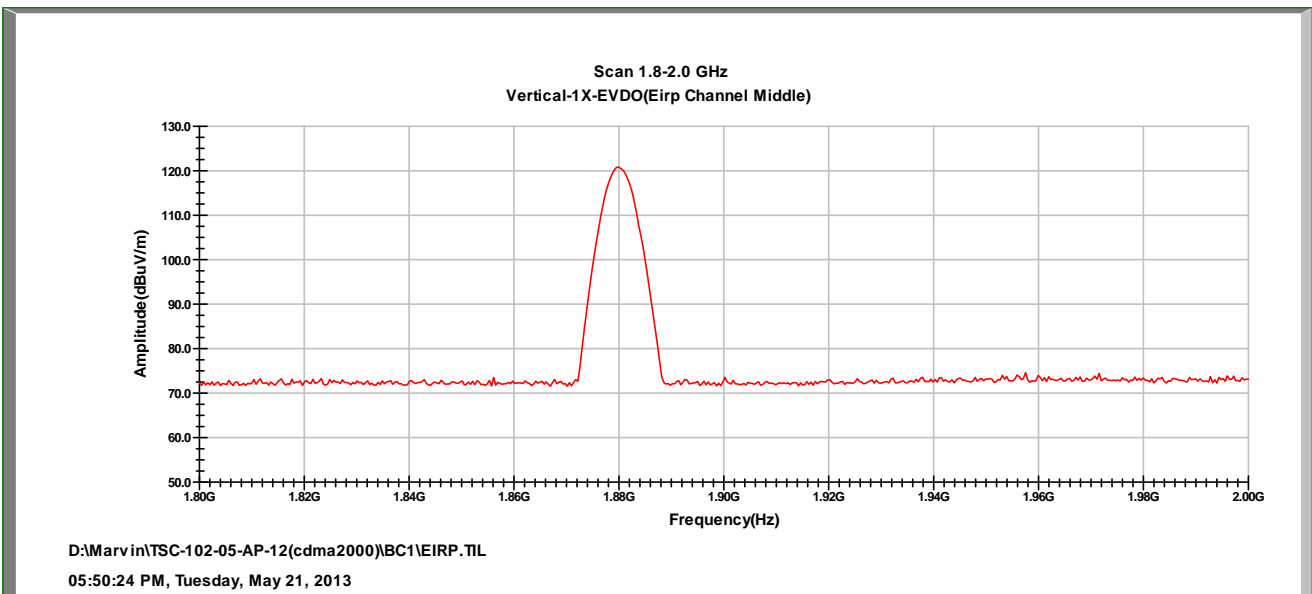
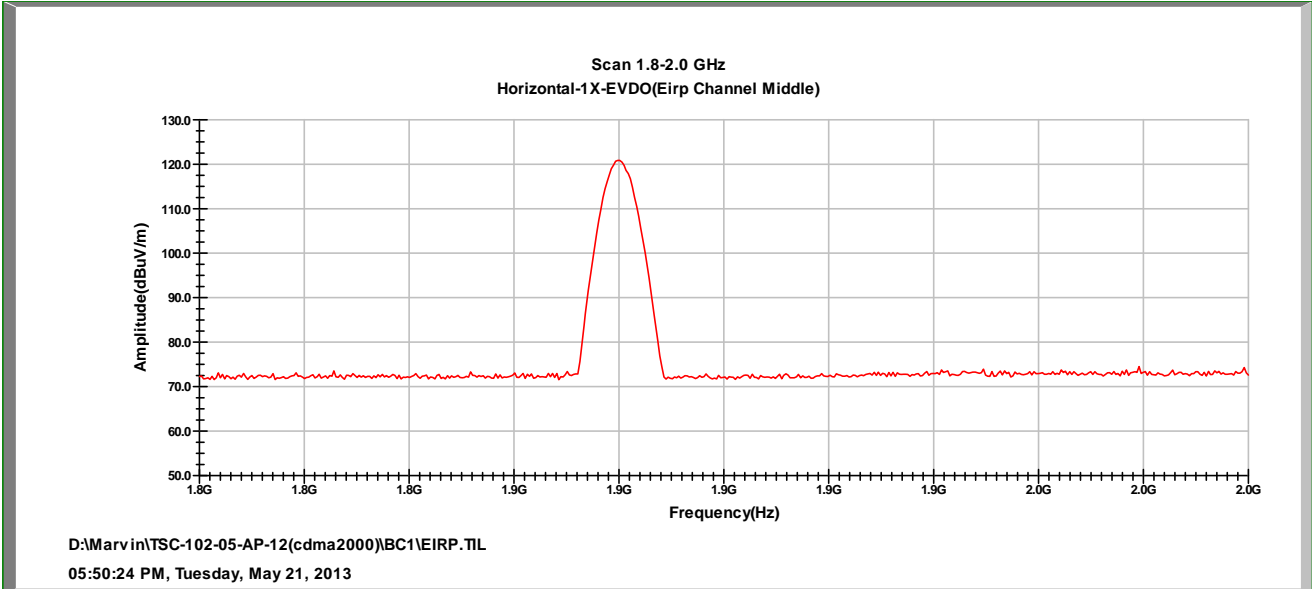
CDMA2000/1X Test Data(BC1) CH Mid



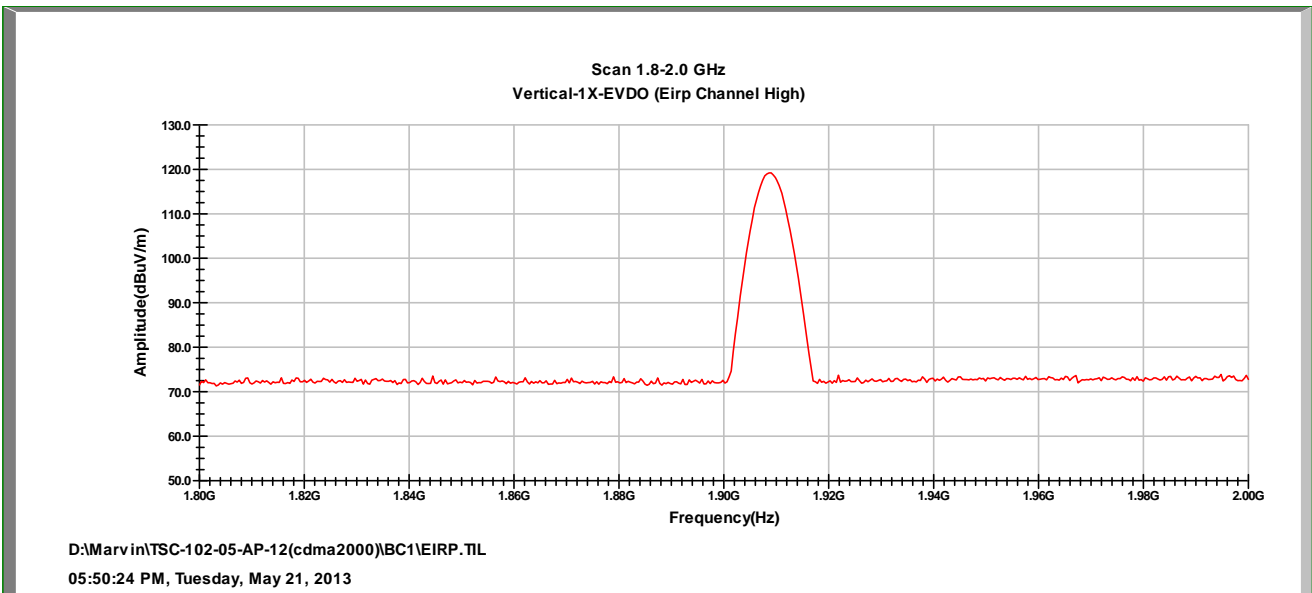
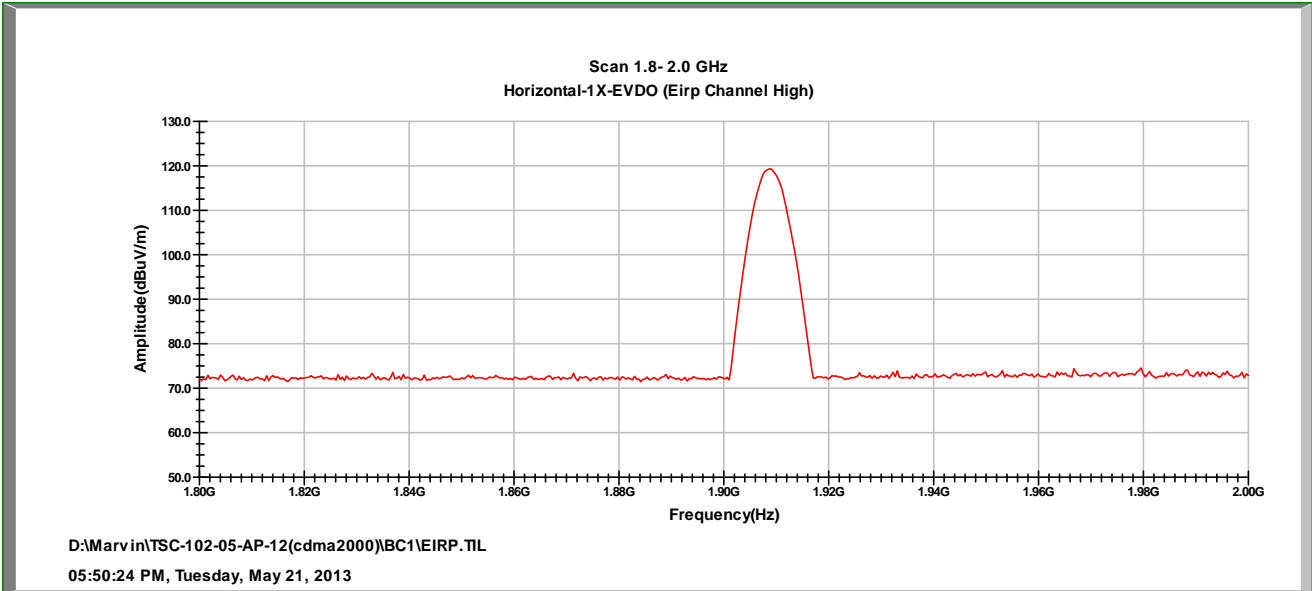
CDMA2000/1X Test Data(BC1) CH High



CDMA2000/EVDO Test Data(BC1) CH Low



CDMA2000/EVDO Test Data(BC1) CH Mid



CDMA2000/EVDO Test Data(BC1) CH High



4.2. Occupied Bandwidth

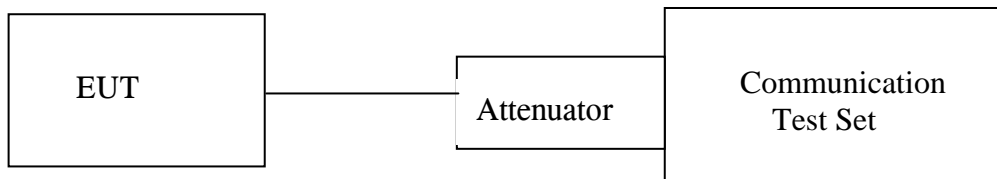
4.2.1 Required and Limits

FCC 2.1049 Measurements required: Occupied bandwidth

The occupied bandwidth, that is the frequency bandwidth such that below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission shall be measured under the following conditions as applicable.

(h) Transmitters employing digital modulation techniques-when modulated by an input signal such that its amplitude and symbol rate represent the maximum rated conditions under which the equipment will be operated.

4.2.2 Test Configuration and Procedure



1. The EUT was connected to Communication Test Set.
2. The 99% occupied bandwidth of low channel 、 middle channel 、 high channel were measured.



4.2.3 Test Results

Test Mode	Frequency (MHz)	99%Bandwidth (MHz)	Ref. Fig
WCDMA (Band II)	1852.40	4.146	Fig 4.3-1
	1880.00	4.157	Fig 4.3-2
	1907.60	4.163	Fig 4.3-3
WCDMA (Band V)	826.40	4.156	Fig 4.3-4
	836.40	4.151	Fig 4.3-5
	846.60	4.155	Fig 4.3-6
WCDMA/HSDPA (Band II)	1852.40	4.144	Fig 4.3-7
	1880.00	4.159	Fig 4.3-8
	1907.60	4.160	Fig 4.3-9
WCDMA/HSDPA (Band V)	826.40	4.155	Fig 4.3-10
	836.40	4.152	Fig 4.3-11
	846.60	4.153	Fig 4.3-12
WCDMA/HSUPA (Band II)	1852.40	4.140	Fig 4.3-13
	1880.00	4.162	Fig 4.3-14
	1907.60	4.162	Fig 4.3-15
WCDMA/HSUPA (Band II)	826.40	4.156	Fig 4.3-16
	836.40	4.150	Fig 4.3-17
	846.60	4.158	Fig 4.3-18



Test Mode	Frequency (MHz)	99%Bandwidth (MHz)	Ref. Fig
CDMA2000/1X (BC0)	824.7	1.274	Fig 4.3-19
	836.52	1.274	Fig 4.3-20
	848.31	1.262	Fig 4.3-21
CDMA2000/EVDO (BC0)	824.7	1.277	Fig 4.3-22
	836.52	1.260	Fig 4.3-23
	848.31	1.270	Fig 4.3-24
CDMA2000/1X (BC1)	1851.25	1.277	Fig 4.3-25
	1880.00	1.274	Fig 4.3-26
	1908.75	1.266	Fig 4.3-27
CDMA2000/EVDO (BC1)	1851.25	1.277	Fig 4.3-28
	1880.00	1.262	Fig 4.3-29
	1908.75	1.272	Fig 4.3-30

Measurement/Instrument Screen									
Control		Occupied Bandwidth					UARFCN Parms		
Occupied BU Setup ▾		<p style="text-align: center;"> Occupied Bandwidth 4.146 MHz Lower Frequency: 1850.34 MHz Upper Frequency: 1854.48 MHz Continuous </p>					DL Channel		
							9662		
Calibrate Measurements							Uplink Channel		
							9262		
Swap Window Positions							Band Arbitrator		
							Band UI		
							Freq Band Ind		
							On		
							Transmit SIB5bis		
							Std Bands		
							Return		
		Background		Active Cell		Sys Type: UTRA FDD			
				Connected					
1 of 2				IntRef					

Fig 4.3-1

Measurement/Instrument Screen									
Handovers		Occupied Bandwidth						UARFCN Parms	
Physical Chan Reconfig ▾		<p style="text-align: center;"> Occupied Bandwidth 4.157 MHz Lower Frequency:1877.92 MHz Upper Frequency:1882.08 MHz </p> <p style="text-align: right;">Continuous</p>						DL Channel	
								9800	
Transport Chan Reconfig ▾								Uplink Channel	
								9400	
System Handover ▾								Band Arbitrator	
		Band UI							
		Freq Band Ind							
		On							
Radio Bearer Reconfig ▾		Transmit SIB5bis							
		Std Bands							
Return		Return							
Background		Active Cell Connected			Sys Type: UTRA FDD				
		IntRef							

Fig 4.3-2

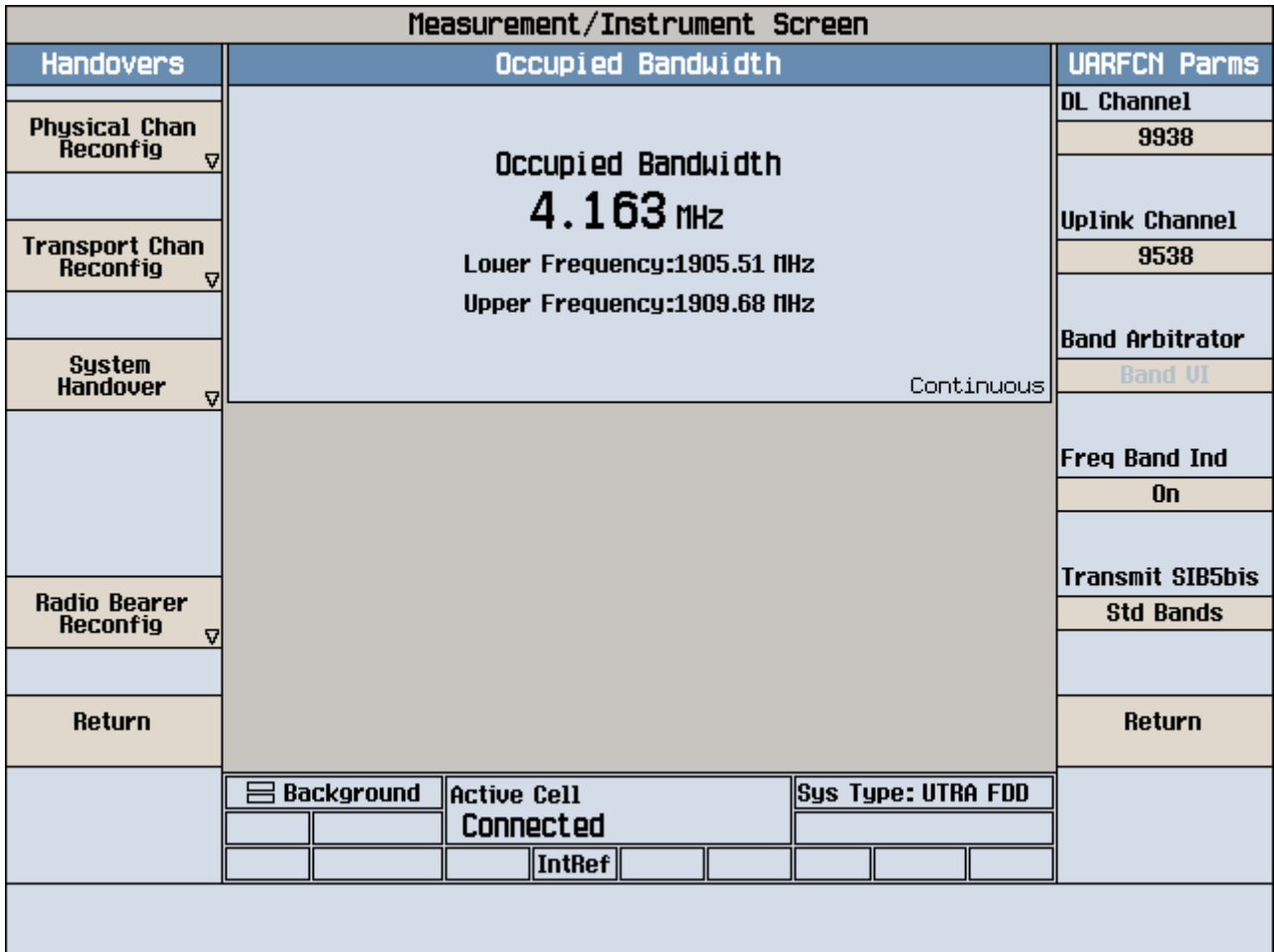


Fig 4.3-3

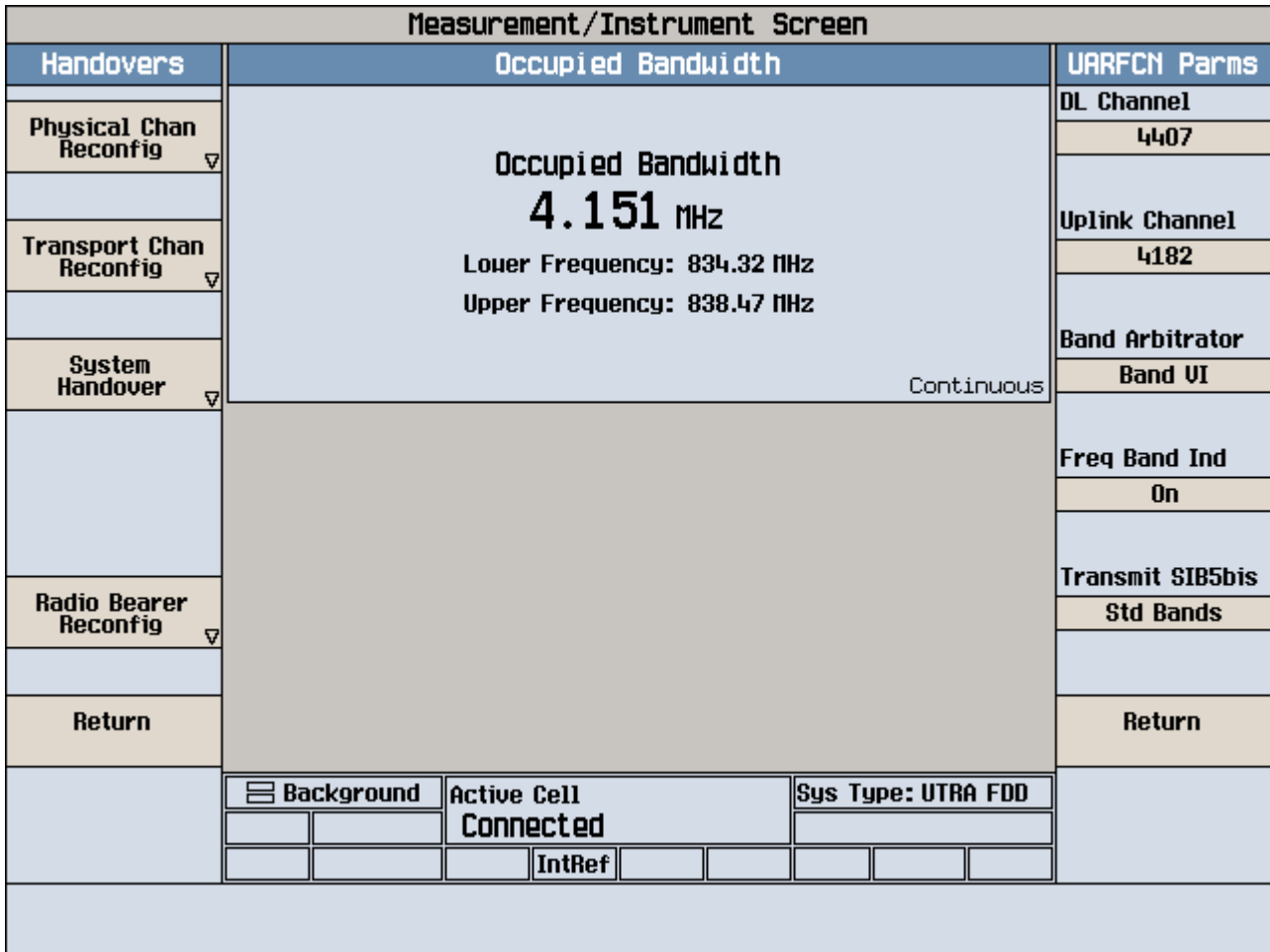


Fig 4.3-5

Measurement/Instrument Screen				
Handovers	Occupied Bandwidth			UARFCN Parms
Physical Chan Reconfig ▾	Occupied Bandwidth 4.155 MHz Lower Frequency: 844.52 MHz Upper Frequency: 848.67 MHz Continuous			DL Channel
Transport Chan Reconfig ▾				4458
System Handover ▾				Uplink Channel
Radio Bearer Reconfig ▾				4233
Return				Band Arbitrator
Background				Band UI
	Freq Band Ind			On
	Transmit SIB5bis			Std Bands
	Return			Return
	Active Cell		Sys Type: UTRA FDD	
	Connected			
	IntRef			

Fig 4.3-6

Measurement/Instrument Screen									
Control		Occupied Bandwidth					UARFCN Parms		
Occupied BU Setup ▾		<p style="text-align: center;"> Occupied Bandwidth 4.144 MHz Lower Frequency:1850.34 MHz Upper Frequency:1854.48 MHz Continuous </p>					DL Channel		
							9662		
							Uplink Channel		
							9262		
							Band Arbitrator		
							Band UI		
Calibrate Measurements							Freq Band Ind		
							On		
Swap Window Positions							Transmit SIB5bis		
							Std Bands		
							Return		
		Background	Active Cell		Sys Type: UTRA FDD				
			Connected						
1 of 2			IntRef						

Fig 4.3-7

Measurement/Instrument Screen			
Handovers	Occupied Bandwidth		UARFCN Parms
Physical Chan Reconfig ▾	Occupied Bandwidth 4.159 MHz Lower Frequency:1877.92 MHz Upper Frequency:1882.08 MHz Continuous		DL Channel
Transport Chan Reconfig ▾			9800
System Handover ▾			Uplink Channel
Radio Bearer Reconfig ▾			9400
Return			Band Arbitrator
Background			Band UI
Active Cell Connected	Sys Type: UTRA FDD	Freq Band Ind	
IntRef		On	
		Transmit SIB5bis	
		Std Bands	
		Return	

Fig 4.3-8

Measurement/Instrument Screen				
Handovers	Occupied Bandwidth			UARFCN Parms
Physical Chan Reconfig ▾	Occupied Bandwidth 4.155 MHz Lower Frequency: 824.32 MHz Upper Frequency: 828.47 MHz Continuous			DL Channel
Transport Chan Reconfig ▾				4357
System Handover ▾				Uplink Channel
Radio Bearer Reconfig ▾				4132
Return				Band Arbitrator
				Band UI
				Freq Band Ind
				On
				Transmit SIB5bis
				Std Bands
				Return
		<input type="checkbox"/> Background	Active Cell Connected	Sys Type: UTRA FDD
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	IntRef	<input type="checkbox"/>

Fig 4.3-10

Measurement/Instrument Screen				
Handovers	Occupied Bandwidth			UARFCN Parms
Physical Chan Reconfig ▾	Occupied Bandwidth 4.152 MHz Lower Frequency: 834.32 MHz Upper Frequency: 838.47 MHz Continuous			DL Channel
Transport Chan Reconfig ▾				4407
System Handover ▾				Uplink Channel
Radio Bearer Reconfig ▾				4182
Return				Band Arbitrator
Background				Band VI
Active Cell Connected	Freq Band Ind		On	
IntRef	Transmit SIB5bis		Std Bands	
Sys Type: UTRA FDD	Return			

Fig 4.3-11

Measurement/Instrument Screen				
Handovers	Occupied Bandwidth			UARFCN Parms
Physical Chan Reconfig ▾	Occupied Bandwidth 4.153 MHz Lower Frequency: 844.52 MHz Upper Frequency: 848.68 MHz Continuous			DL Channel
Transport Chan Reconfig ▾				4458
System Handover ▾				Uplink Channel
Radio Bearer Reconfig ▾				4233
Return				Band Arbitrator
				Band UI
				Freq Band Ind
				On
				Transmit SIB5bis
				Std Bands
				Return
		<input type="checkbox"/> Background	Active Cell Connected	Sys Type: UTRA FDD
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	IntRef	<input type="checkbox"/>

Fig 4.3-12

Measurement/Instrument Screen									
Control		Occupied Bandwidth					UARFCN Parms		
Occupied BU Setup ▾		<p style="text-align: center;"> Occupied Bandwidth 4.140 MHz Lower Frequency: 1850.34 MHz Upper Frequency: 1854.48 MHz Continuous </p>					DL Channel		
							9662		
Calibrate Measurements							Uplink Channel		
							9262		
Swap Window Positions							Band Arbitrator		
							Band UI		
							Freq Band Ind		
							On		
							Transmit SIB5bis		
							Std Bands		
							Return		
		Background		Active Cell		Sys Type: UTRA FDD			
				Connected					
1 of 2				IntRef					

Fig 4.3-13

Measurement/Instrument Screen			
Handovers	Occupied Bandwidth		UARFCN Parms
Physical Chan Reconfig ▾	Occupied Bandwidth 4.162 MHz Lower Frequency:1877.92 MHz Upper Frequency:1882.08 MHz Continuous		DL Channel
Transport Chan Reconfig ▾			9800
System Handover ▾			Uplink Channel
Radio Bearer Reconfig ▾			9400
Return			Band Arbitrator
			Band UI
			Freq Band Ind
			On
			Transmit SIB5bis
			Std Bands
			Return
	Background	Active Cell Connected	Sys Type: UTRA FDD
		IntRef	

Fig 4.3-14

Measurement/Instrument Screen				
Handovers	Occupied Bandwidth			UARFCN Parms
Physical Chan Reconfig ▾	Occupied Bandwidth 4.162 MHz Lower Frequency:1905.51 MHz Upper Frequency:1909.68 MHz Continuous			DL Channel
Transport Chan Reconfig ▾				9938
System Handover ▾				Uplink Channel
Radio Bearer Reconfig ▾				9538
Return				Band Arbitrator
Background				Band UI
Active Cell Connected	Freq Band Ind		On	
IntRef	Transmit SIB5bis		Std Bands	
Sys Type: UTRA FDD	Return		Return	

Fig 4.3-15

Measurement/Instrument Screen				
Handovers	Occupied Bandwidth			UARFCN Parms
Physical Chan Reconfig ▾	Occupied Bandwidth 4.156 MHz Lower Frequency: 824.32 MHz Upper Frequency: 828.47 MHz Continuous			DL Channel
Transport Chan Reconfig ▾				4357
System Handover ▾				Uplink Channel
Radio Bearer Reconfig ▾				4132
Return				Band Arbitrator
Background				Band UI
Active Cell Connected	Freq Band Ind		On	
IntRef	Transmit SIB5bis		Std Bands	
Sys Type: UTRA FDD	Return		Return	

Fig 4.3-16

Measurement/Instrument Screen				
Handovers	Occupied Bandwidth			UARFCN Parms
Physical Chan Reconfig ▾	Occupied Bandwidth 4.150 MHz Lower Frequency: 834.33 MHz Upper Frequency: 838.48 MHz Continuous			DL Channel
Transport Chan Reconfig ▾				4407
System Handover ▾				Uplink Channel
Radio Bearer Reconfig ▾				4182
Return				Band Arbitrator
Background				Band VI
Active Cell Connected	Freq Band Ind			
IntRef	On			
Sys Type: UTRA FDD	Transmit SIB5bis			
	Std Bands			
	Return			

Fig 4.3-17

Measurement/Instrument Screen			
Handovers	Occupied Bandwidth		UARFCN Parms
Physical Chan Reconfig ▾	Occupied Bandwidth 4.158 MHz Lower Frequency: 844.52 MHz Upper Frequency: 848.68 MHz Continuous		DL Channel
Transport Chan Reconfig ▾			4458
System Handover ▾			Uplink Channel
Radio Bearer Reconfig ▾			4233
Return			Band Arbitrator
			Band UI
		Freq Band Ind	
		On	
		Transmit SIB5bis	
		Std Bands	
		Return	
	Background	Active Cell	Sys Type: UTRA FDD
		Connected	
		IntRef	

Fig 4.3-18

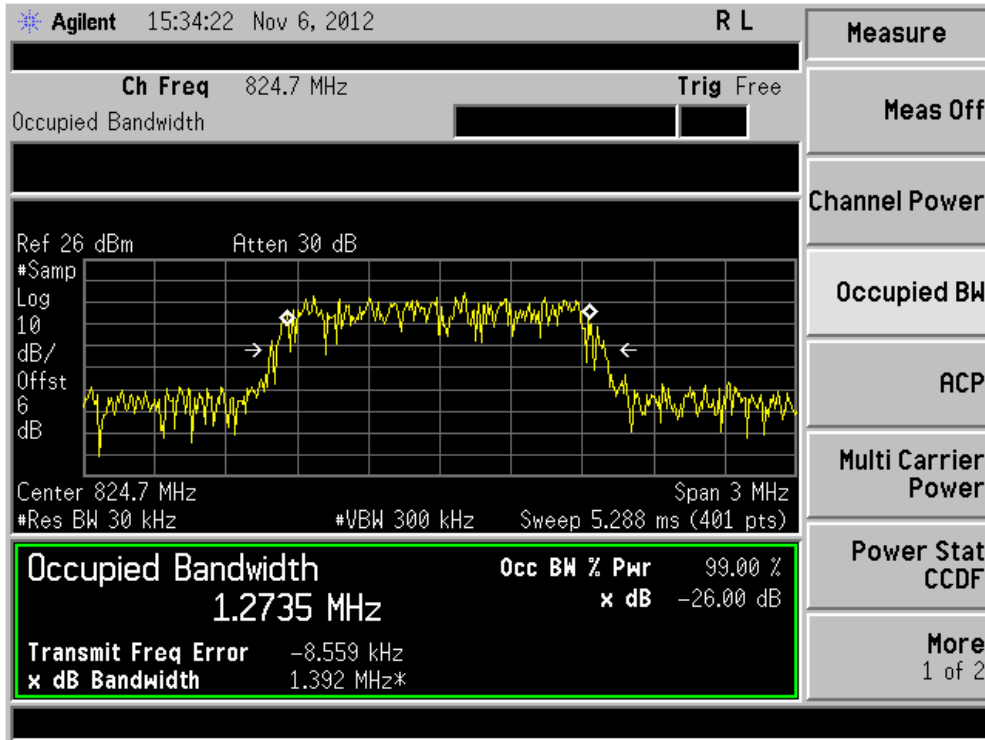


Fig 4.3-19

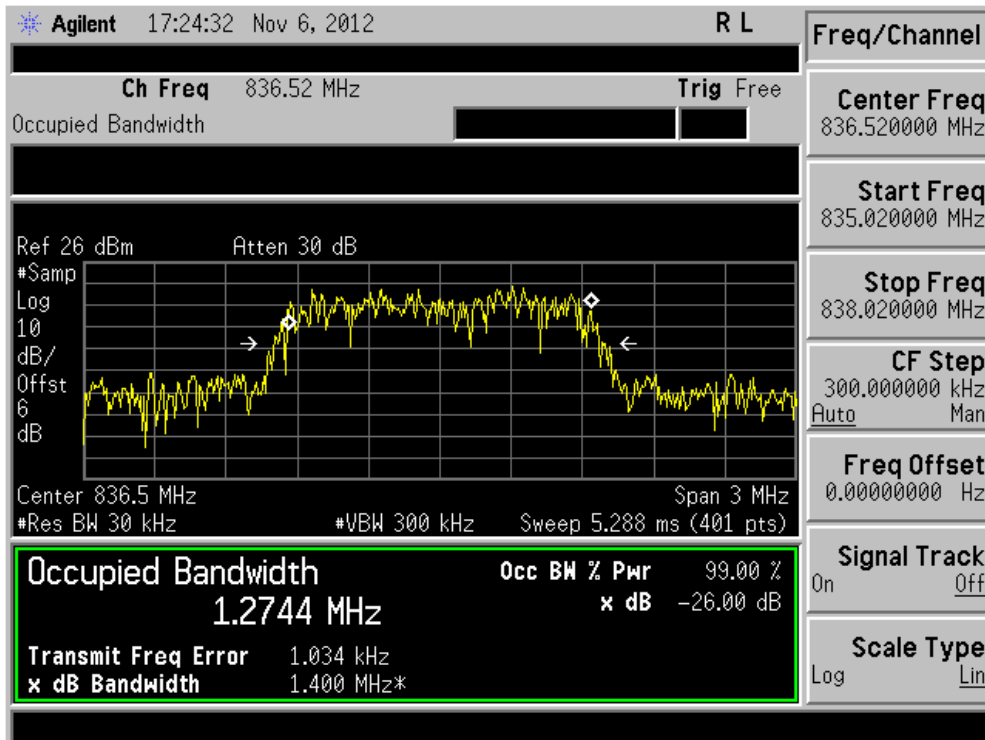


Fig 4.3-20

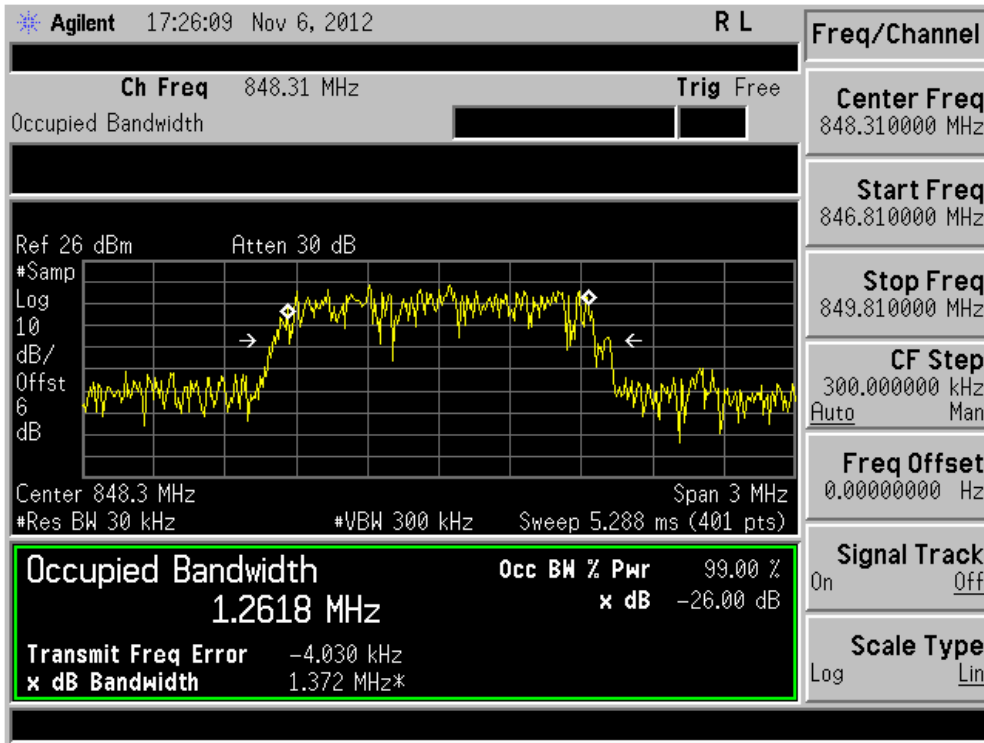


Fig 4.3-21

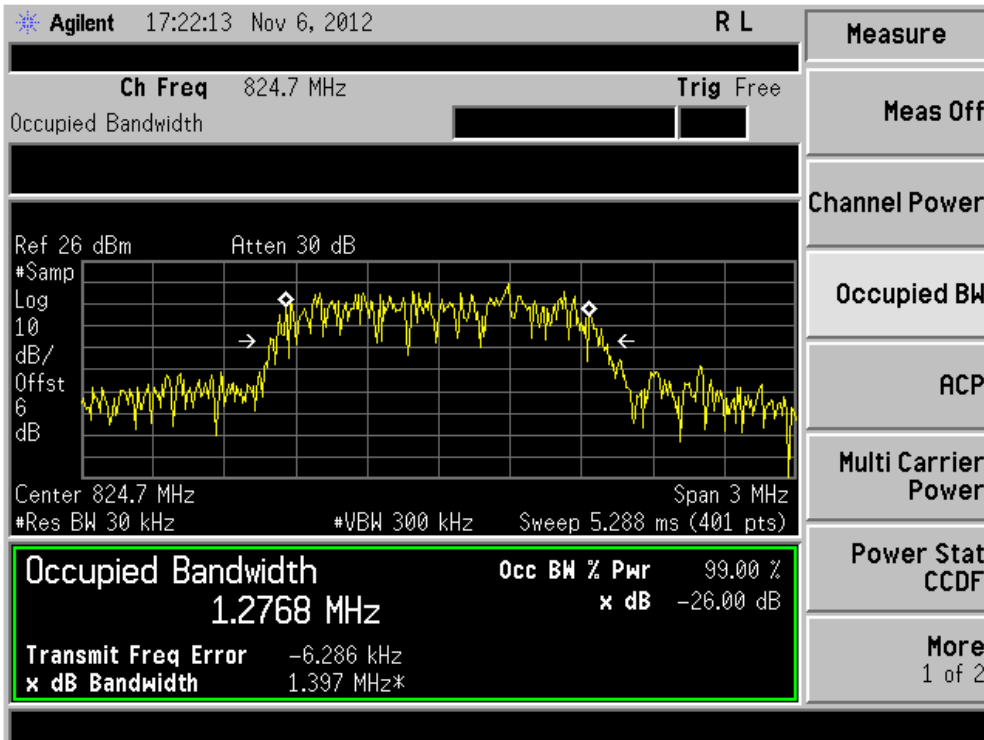


Fig 4.3-22

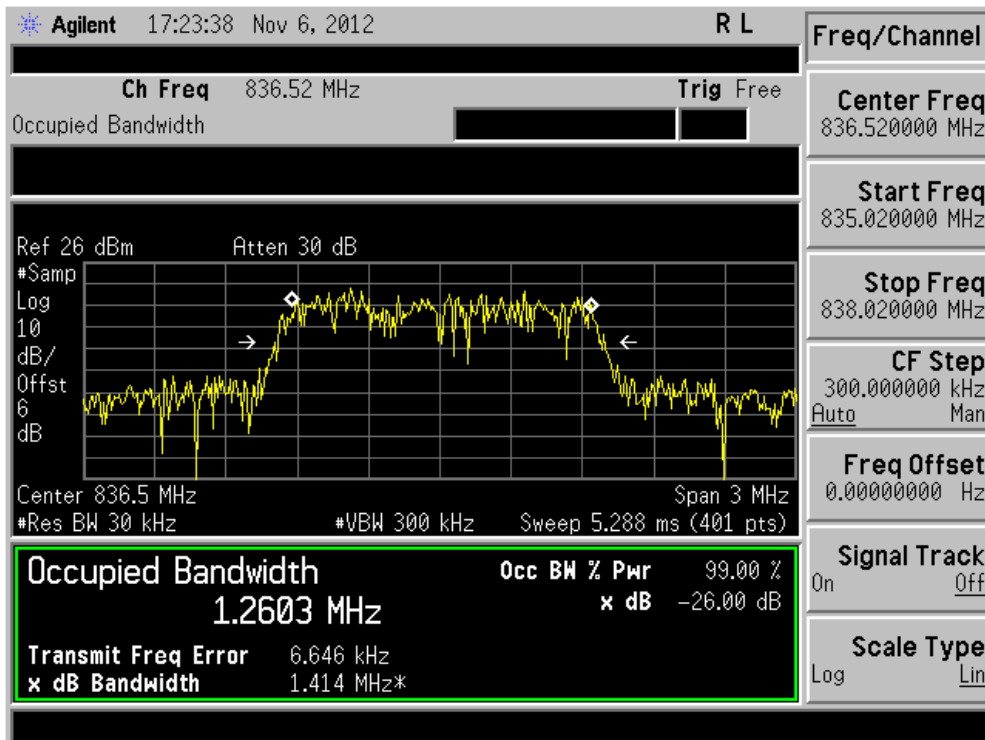


Fig 4.3-23

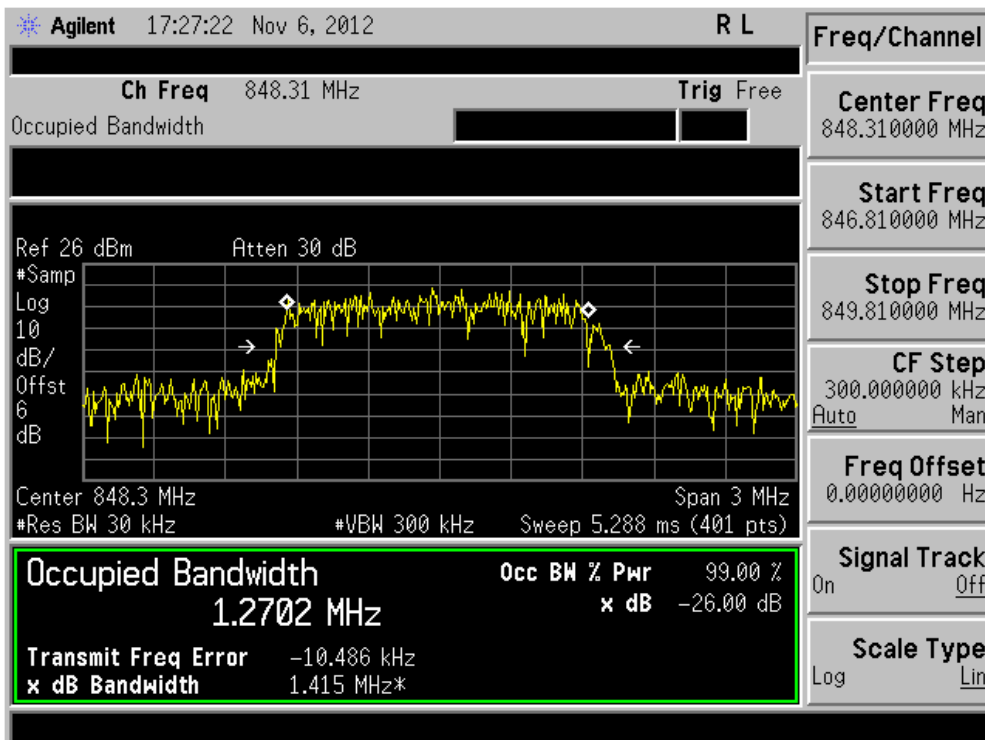


Fig 4.3-24

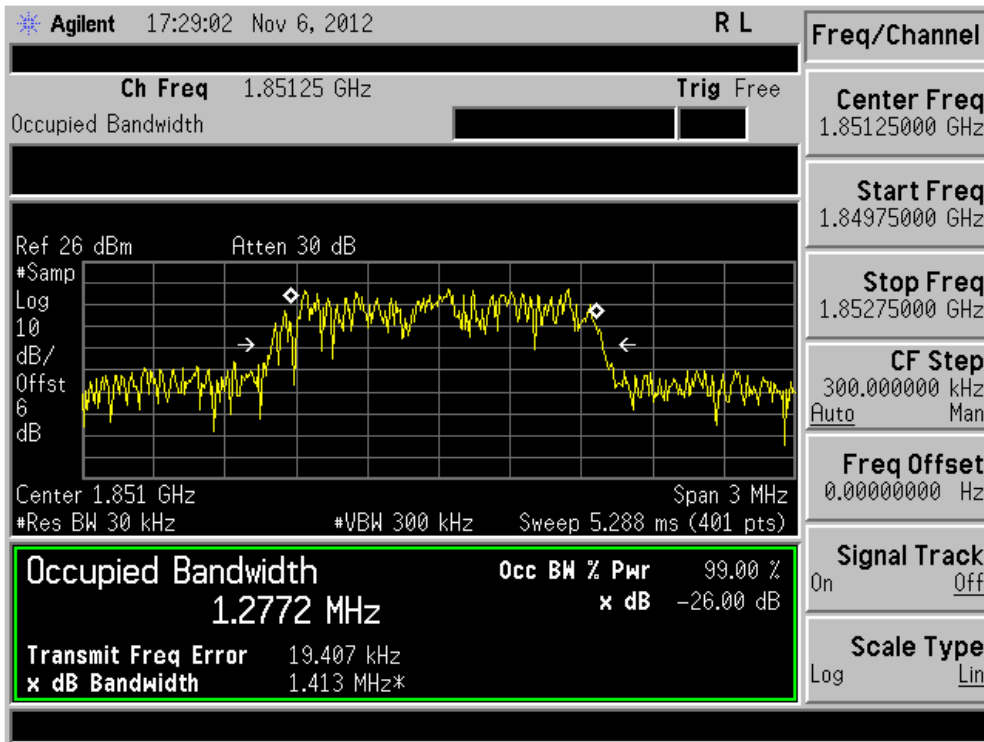


Fig 4.3-25

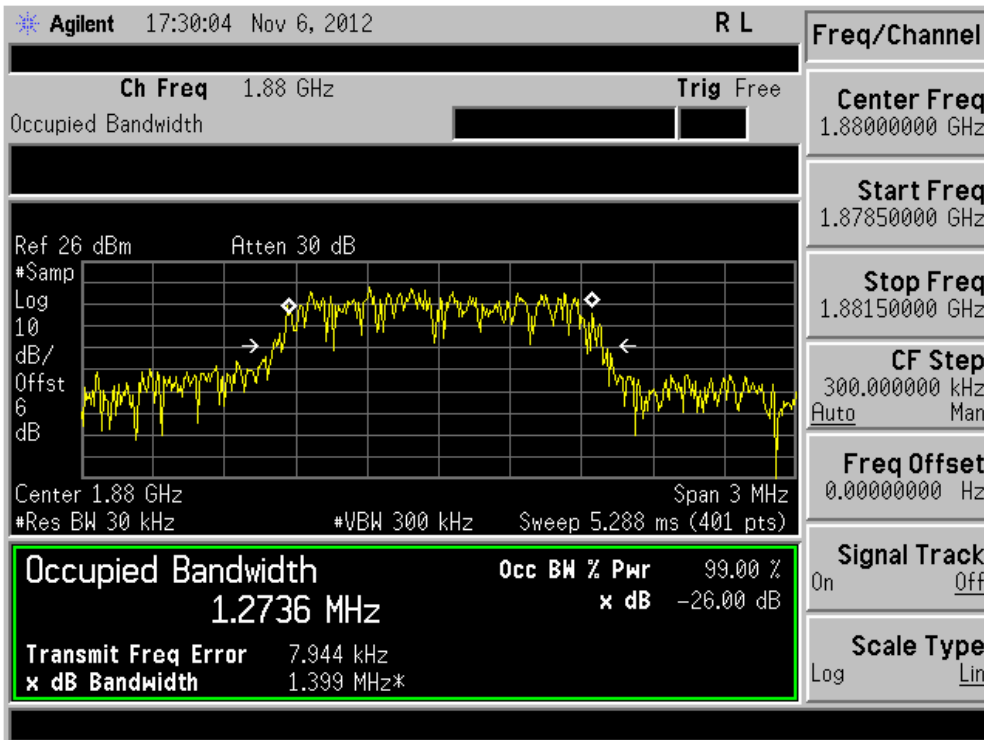


Fig 4.3-26

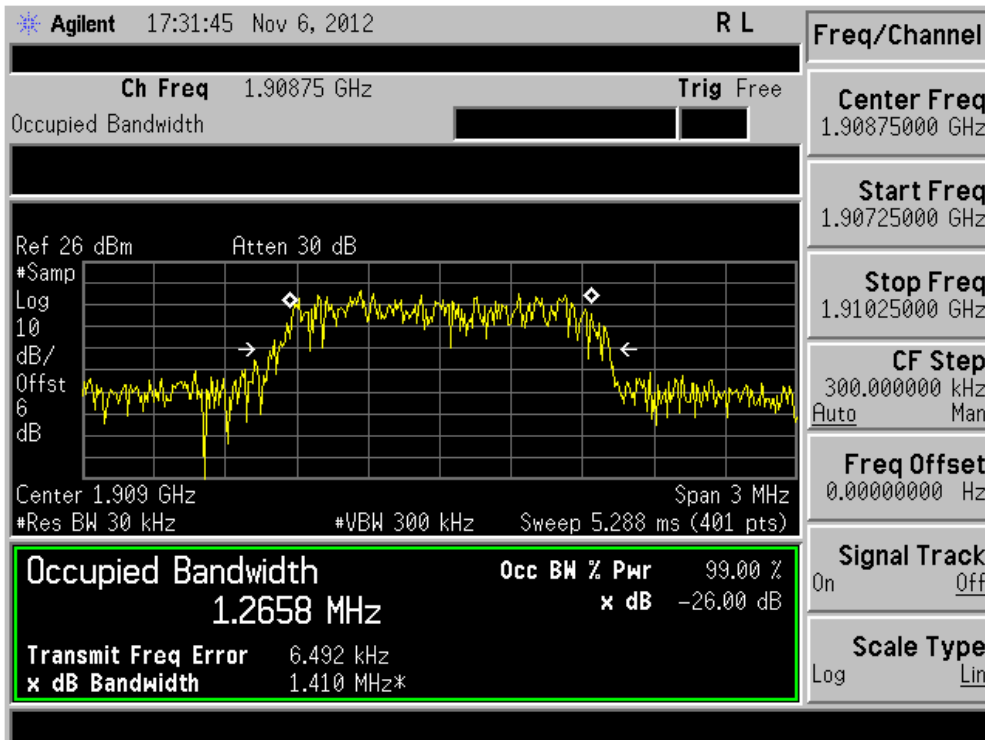


Fig 4.3-27

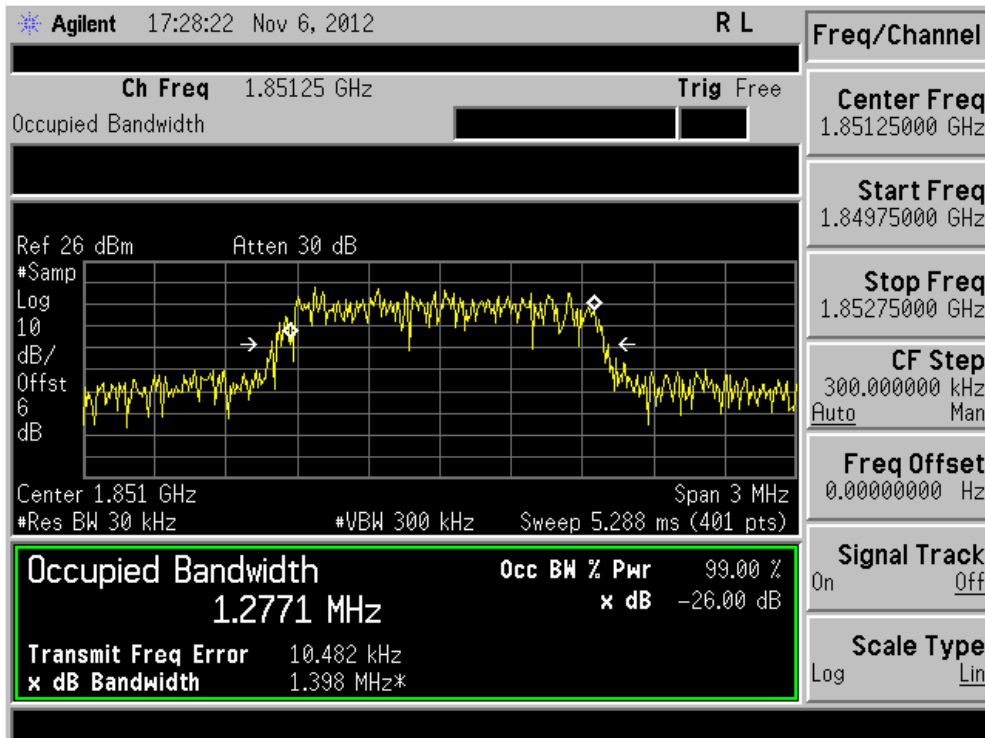


Fig 4.3-28

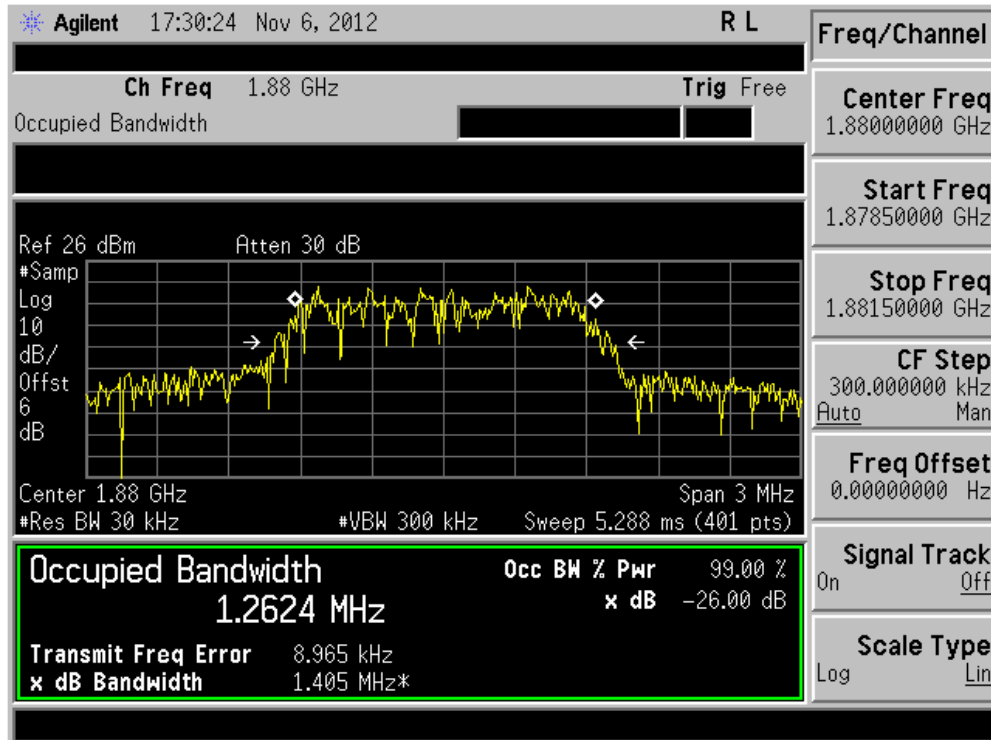


Fig 4.3-29

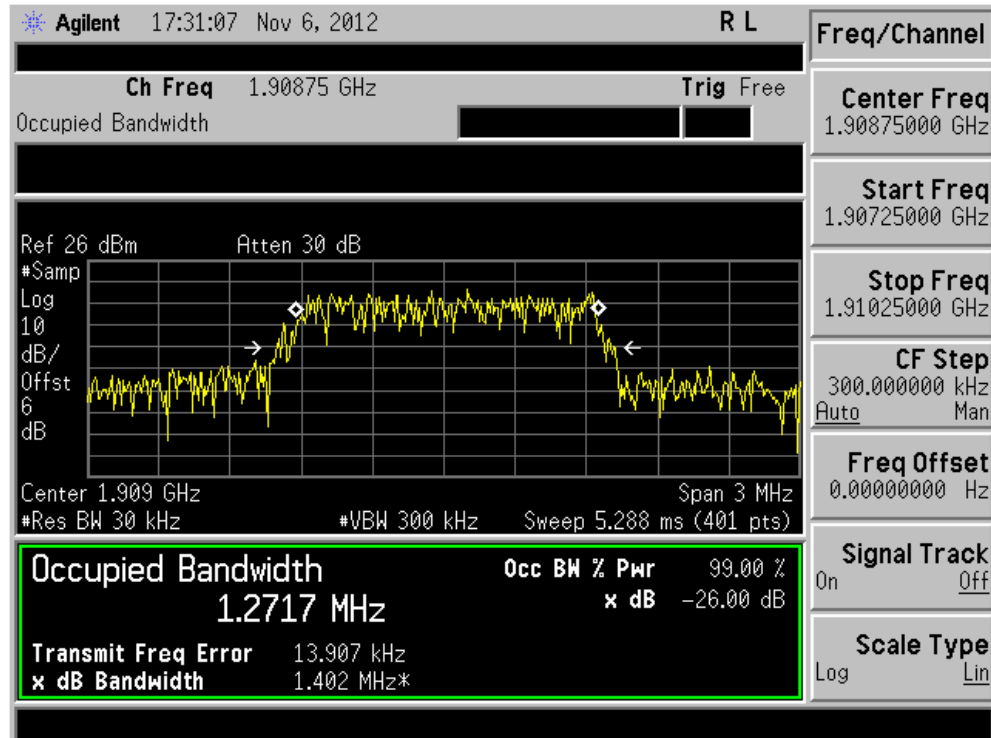


Fig 4.3-30

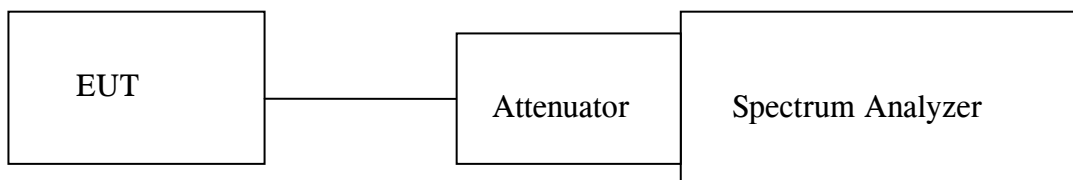
4.3 Out of Band Emissions

4.3.1. Required and Limits:

According to FCC 22.917(a).

The mean power of emission must be attenuated below the mean power of the non-modulated Carrier (P) on any frequency twice or more than twice the fundamental frequency by at least $43 + 10 \log (P)$ dB.

4.3.2. Test Configuration and Procedure



1. The RF output of transceiver was connected to a spectrum analyzer through appropriate attenuation.
2. The resolution bandwidth of spectrum analyzer was set at 1 MHz sufficient scans were taken to show the out of band emissions if any up to 10th harmonic.

For the out of band : Set the RBW , VBW=1MHz , Start=30MHz , Stop=10th harmonic.

Limit=-13dBm.



4.3.3. Test Results

Mode	Channel	Description	Ref . Fig
WCDMA Band II	9262	Out of Band Emissions	Fig 4.3-1
	9400	Out of Band Emissions	Fig 4.3-2
	9538	Out of Band Emissions	Fig 4.3-3
WCDMA Band V	4132	Out of Band Emissions	Fig 4.3-4
	4182	Out of Band Emissions	Fig 4.3-5
	4233	Out of Band Emissions	Fig 4.4-6
WCDMA /HSDPA Band II	9262	Out of Band Emissions	Fig 4.3-7
	9400	Out of Band Emissions	Fig 4.3-8
	9538	Out of Band Emissions	Fig 4.3-9
WCDMA /HSDPA Band V	4132	Out of Band Emissions	Fig 4.4-10
	4182	Out of Band Emissions	Fig 4.4-11
	4233	Out of Band Emissions	Fig 4.4-12
WCDMA /HSUPA Band II	9262	Out of Band Emissions	Fig 4.3-13
	9400	Out of Band Emissions	Fig 4.3-14
	9538	Out of Band Emissions	Fig 4.3-15
WCDMA /HSUPA Band V	4132	Out of Band Emissions	Fig 4.3-16
	4182	Out of Band Emissions	Fig 4.3-17
	4233	Out of Band Emissions	Fig 4.3-18

Mode	Channel	Description	Ref . Fig
WCDMA Band II	9262	Band Edge Emissions	Fig 4.3-19
	9538	Band Edge Emissions	Fig 4.3-20
WCDMA Band V	4132	Band Edge Emissions	Fig 4.3-21
	4233	Band Edge Emissions	Fig 4.3-22
WCDMA /HSDPA Band II	9262	Band Edge Emissions	Fig 4.3-23
	9538	Band Edge Emissions	Fig 4.3-24
WCDMA /HSDPA Band V	4132	Band Edge Emissions	Fig 4.3-25
	4233	Band Edge Emissions	Fig 4.3-26
WCDMA /HSUPA Band II	9262	Band Edge Emissions	Fig 4.3-27
	9538	Band Edge Emissions	Fig 4.3-28
WCDMA /HSUPA Band V	4132	Band Edge Emissions	Fig 4.3-29
	4233	Band Edge Emissions	Fig 4.3-30



Mode	Channel	Description	Ref . Fig
CDMA2000/1X BC0	1013	Out of Band Emissions	Fig 4.3-31, Fig 4.3-32
	384	Out of Band Emissions	Fig 4.3-33, Fig 4.3-34
	777	Out of Band Emissions	Fig 4.3-35, Fig 4.3-36
CDMA2000/EVDO BC0	1013	Out of Band Emissions	Fig 4.3-37, Fig 4.3-38
	384	Out of Band Emissions	Fig 4.3-39, Fig 4.3-40
	777	Out of Band Emissions	Fig 4.3-41, Fig 4.3-42
CDMA2000/1X BC1	1013	Out of Band Emissions	Fig 4.3-43, Fig 4.3-44
	384	Out of Band Emissions	Fig 4.3-45, Fig 4.3-46
	777	Out of Band Emissions	Fig 4.3-47, Fig 4.3-48
CDMA2000/EVDO BC1	1013	Out of Band Emissions	Fig 4.3-49, Fig 4.3-50
	384	Out of Band Emissions	Fig 4.3-51, Fig 4.3-52
	777	Out of Band Emissions	Fig 4.3-53, Fig 4.3-54

Mode	Channel	Description	Ref . Fig
CDMA2000/1X BC0	1013	Band Edge Emissions	Fig 4.3-55
	777	Band Edge Emissions	Fig 4.3-56
CDMA2000/EVDO BC0	25	Band Edge Emissions	Fig 4.3-57
	1175	Band Edge Emissions	Fig 4.3-58
CDMA2000/1X BC1	1013	Band Edge Emissions	Fig 4.3-59
	777	Band Edge Emissions	Fig 4.3-60
CDMA2000/EVDO BC1	25	Band Edge Emissions	Fig 4.3-61
	1175	Band Edge Emissions	Fig 4.3-62

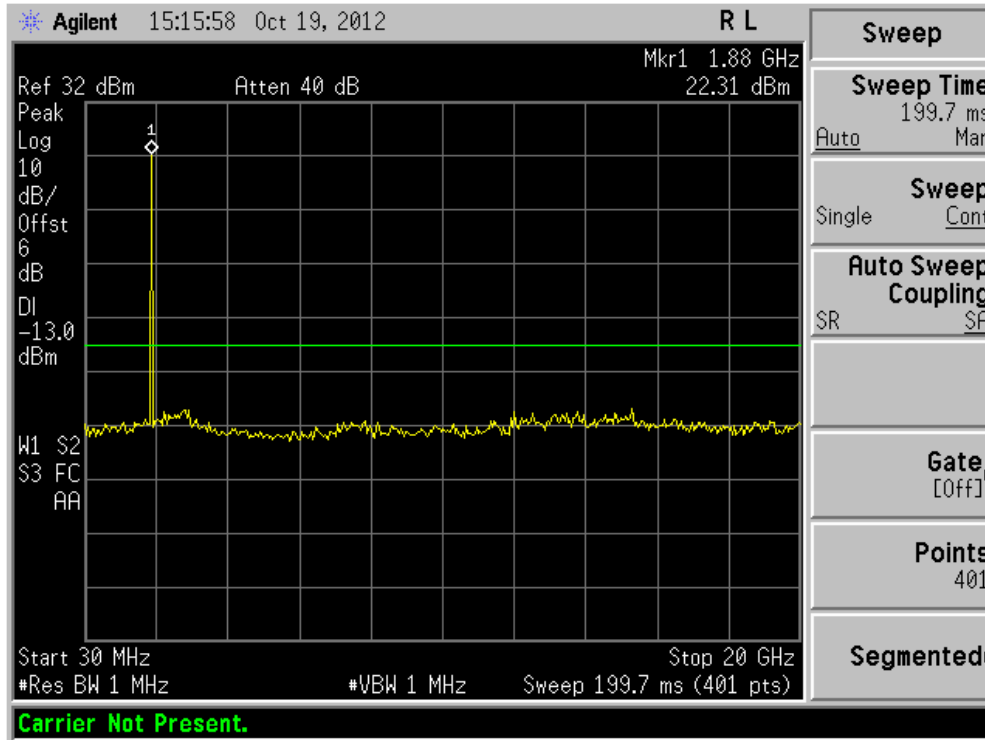


Fig 4.3-1

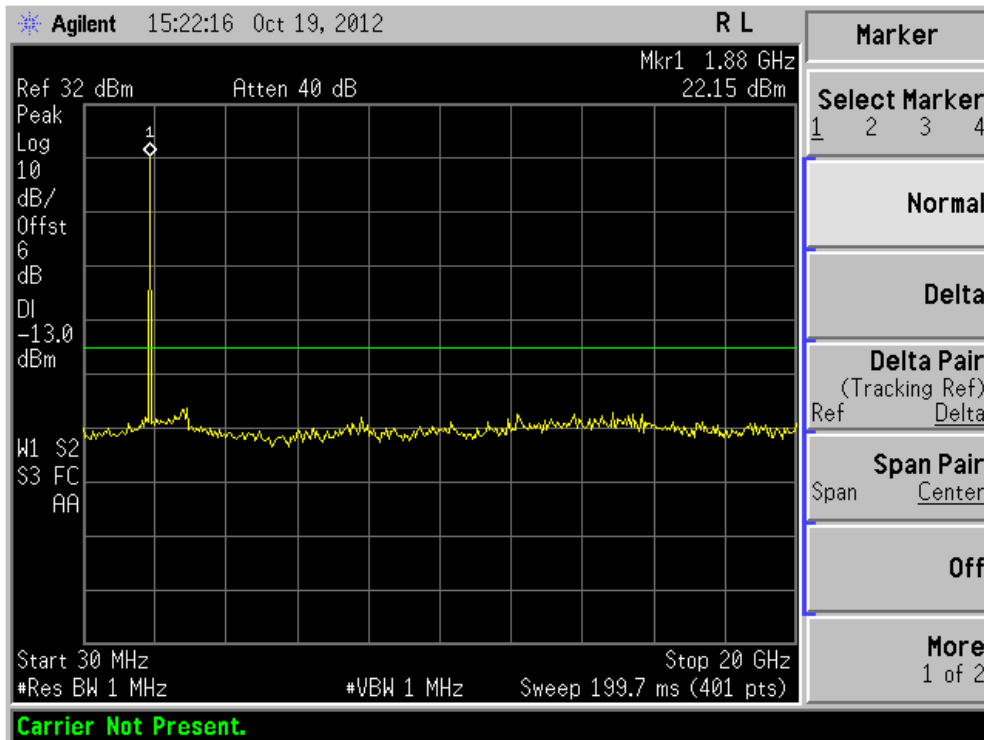


Fig 4.3-2

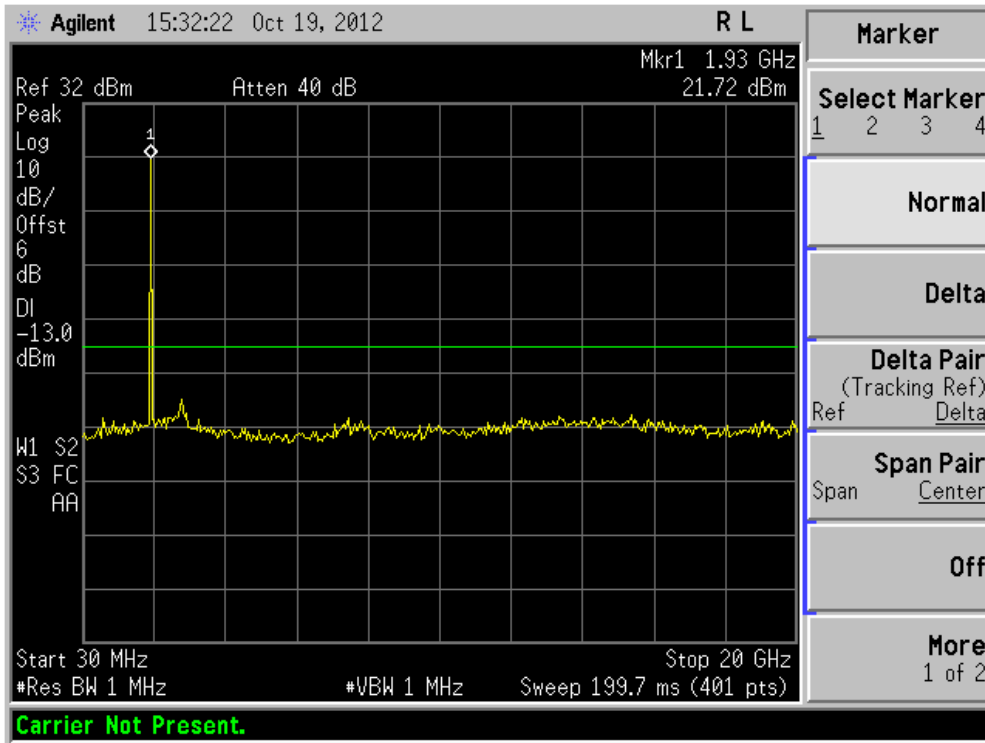


Fig 4.3-3

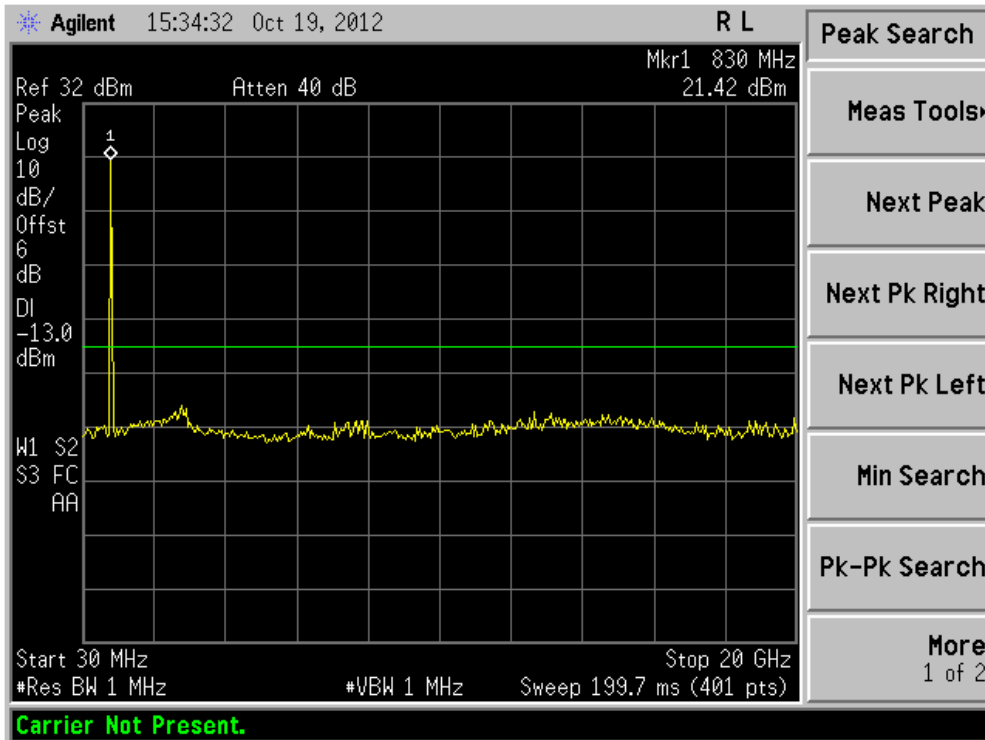


Fig 4.3-4

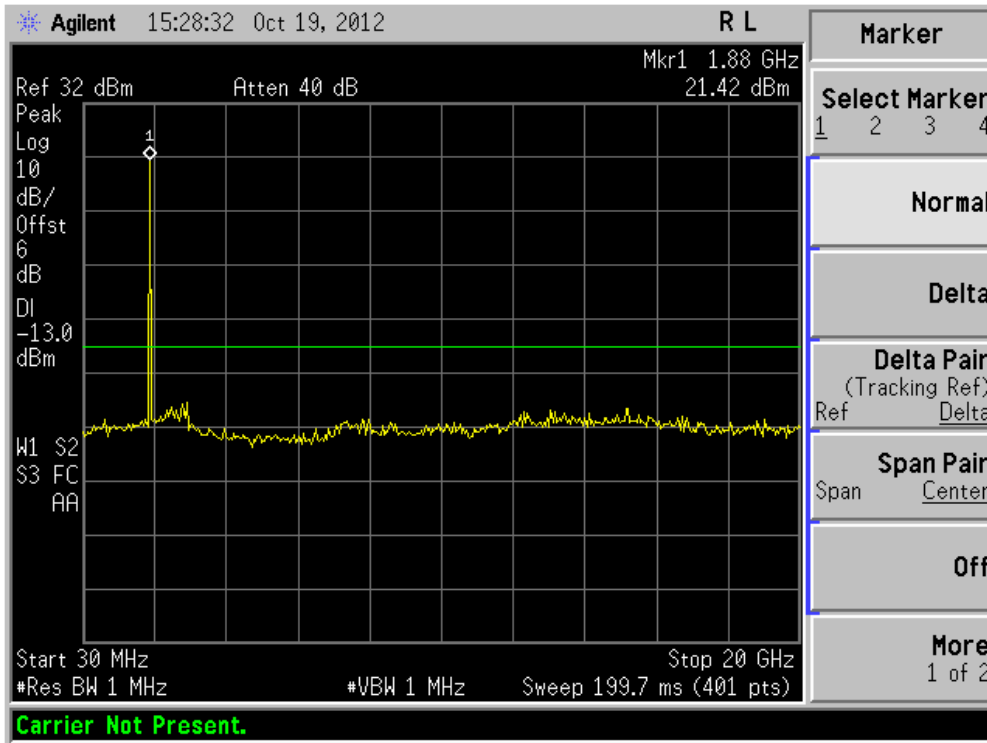


Fig 4.3-7

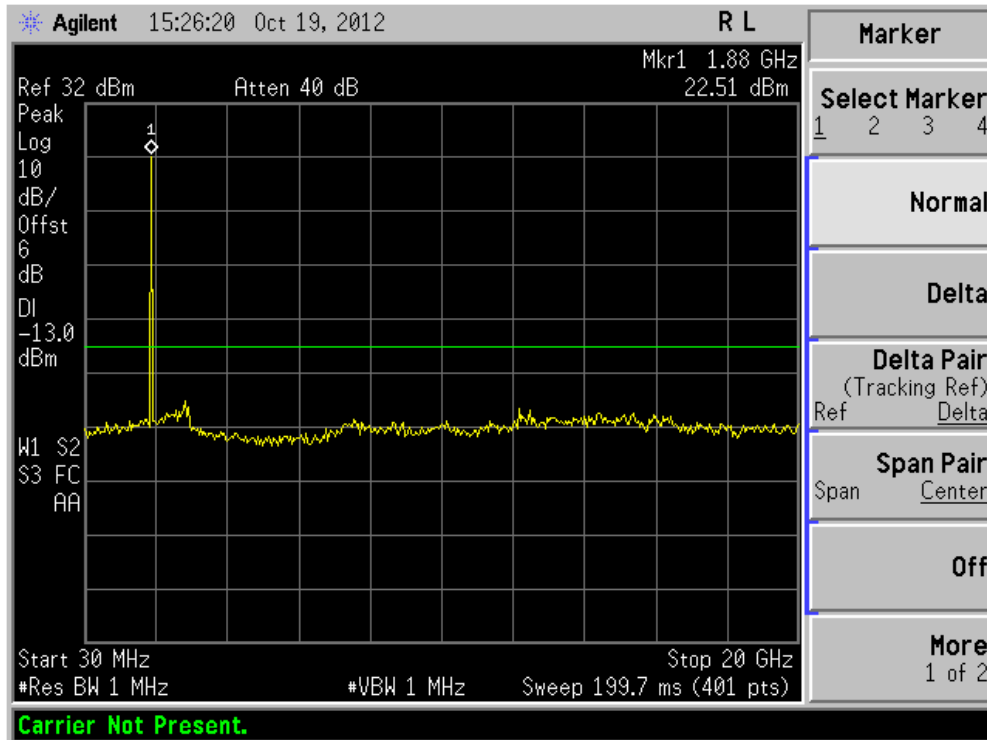


Fig 4.3-8

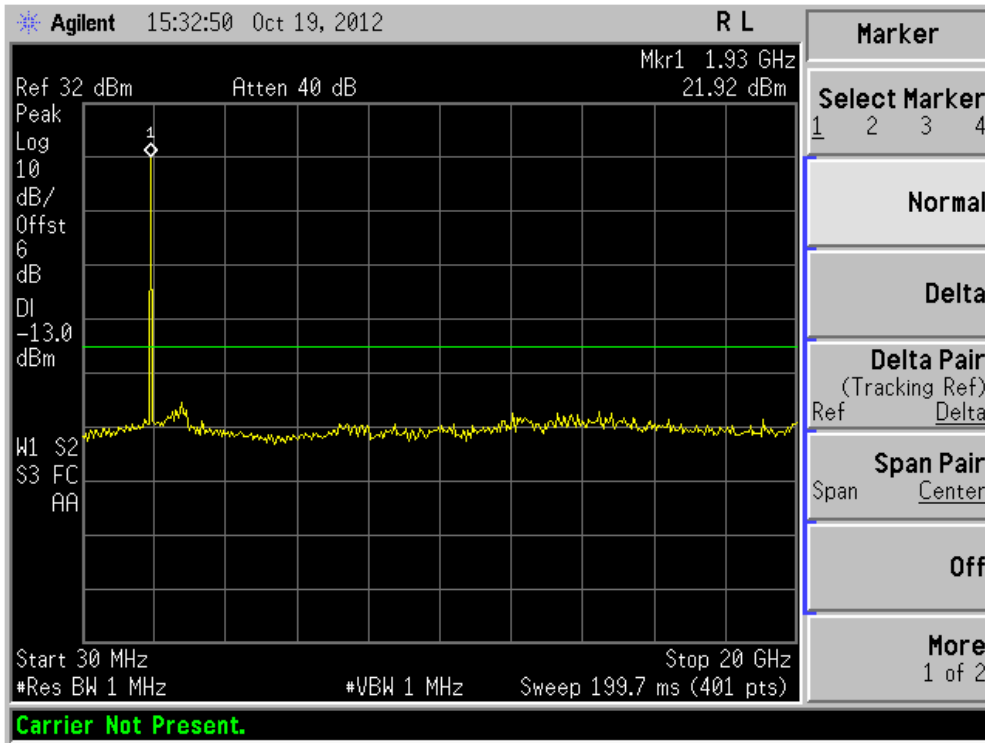


Fig 4.3-9

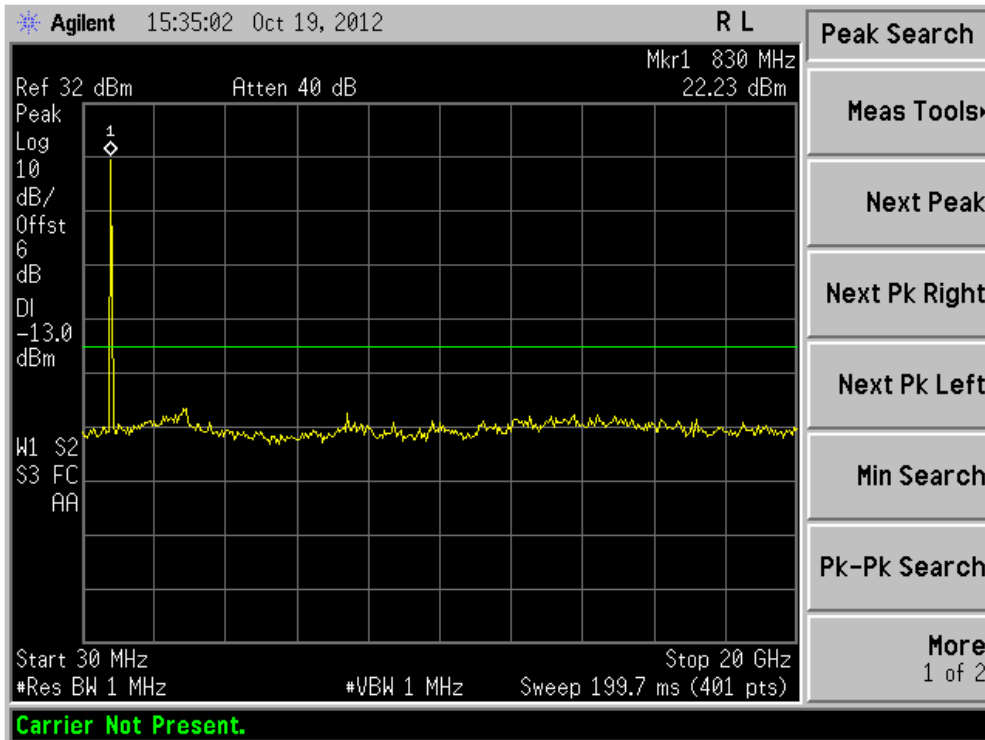


Fig 4.3-10

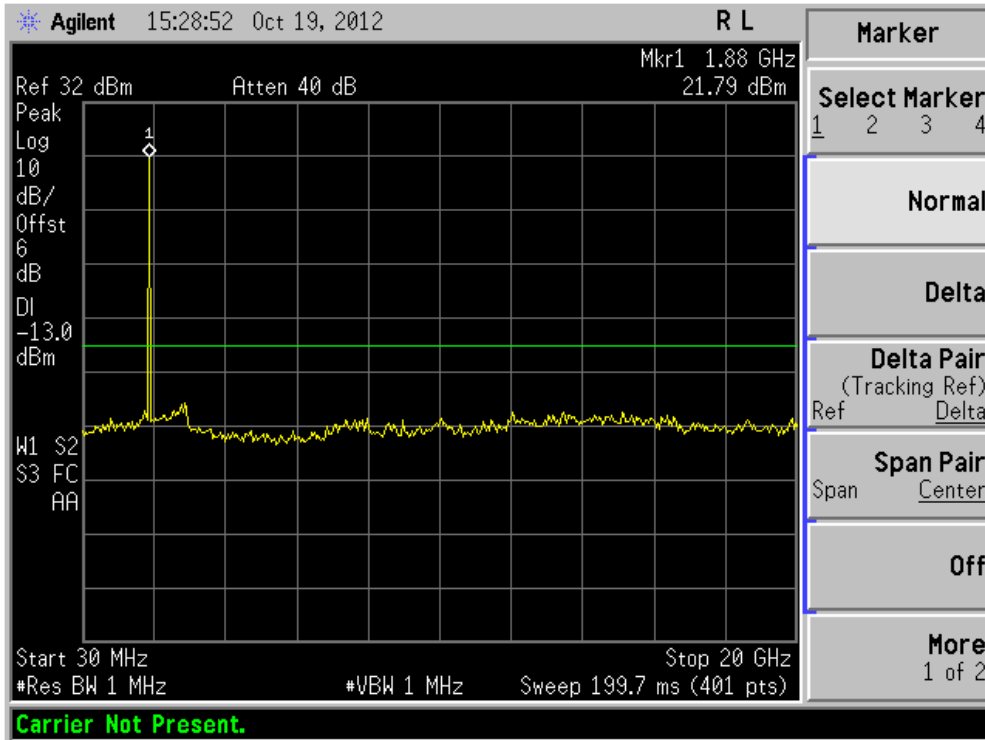


Fig 4.3-13

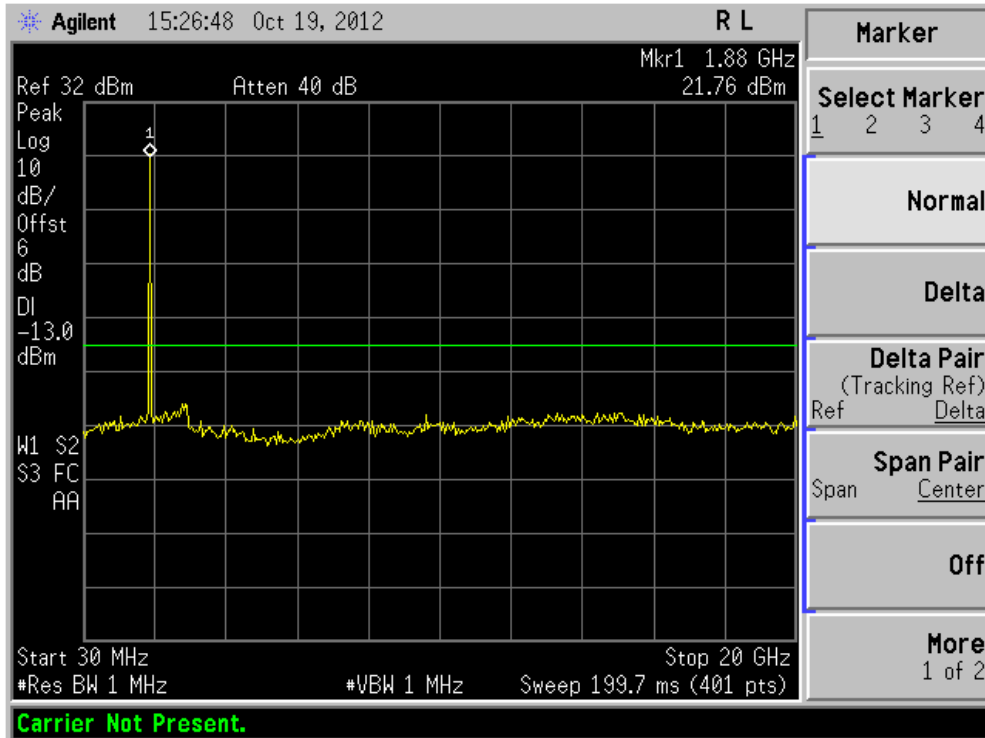


Fig 4.3-14

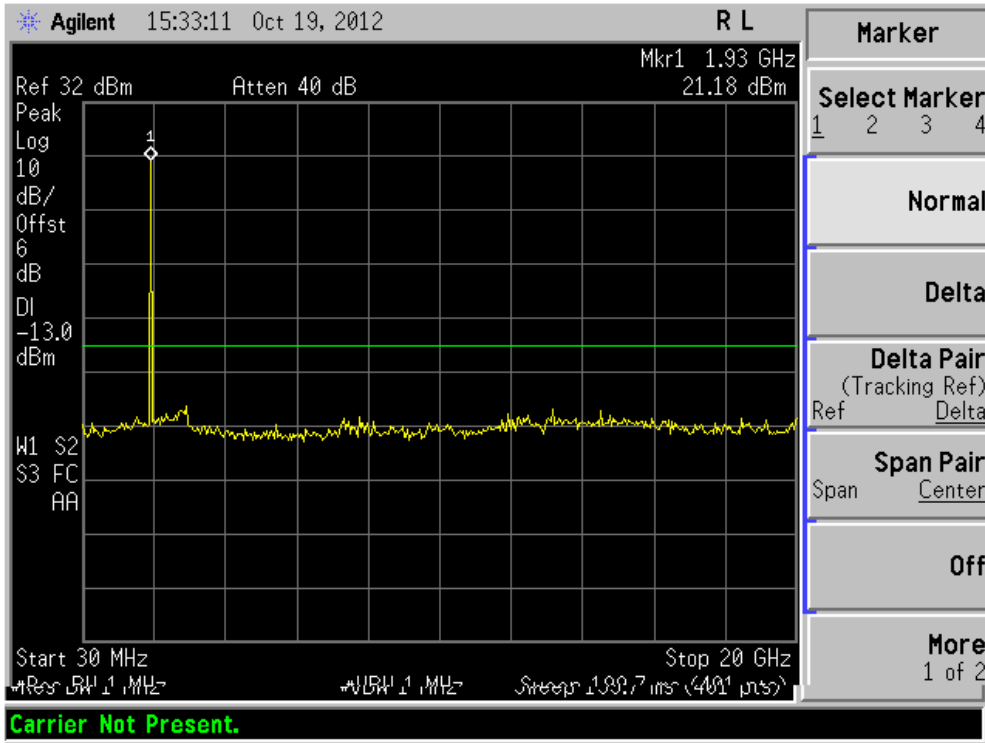


Fig 4.3-15

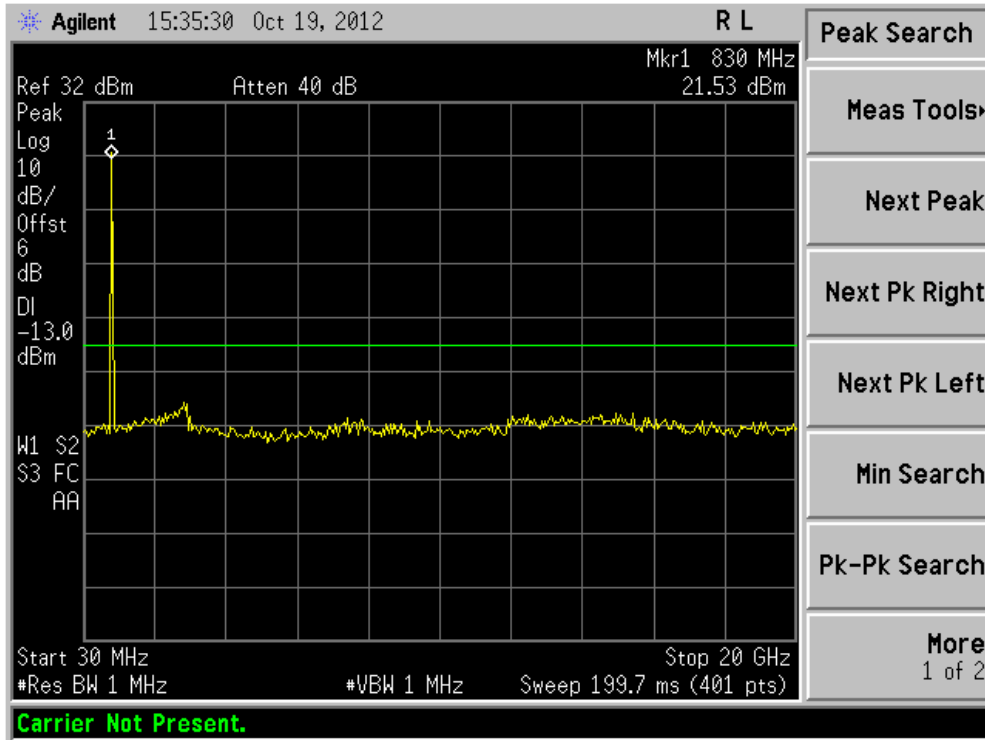


Fig 4.3-16

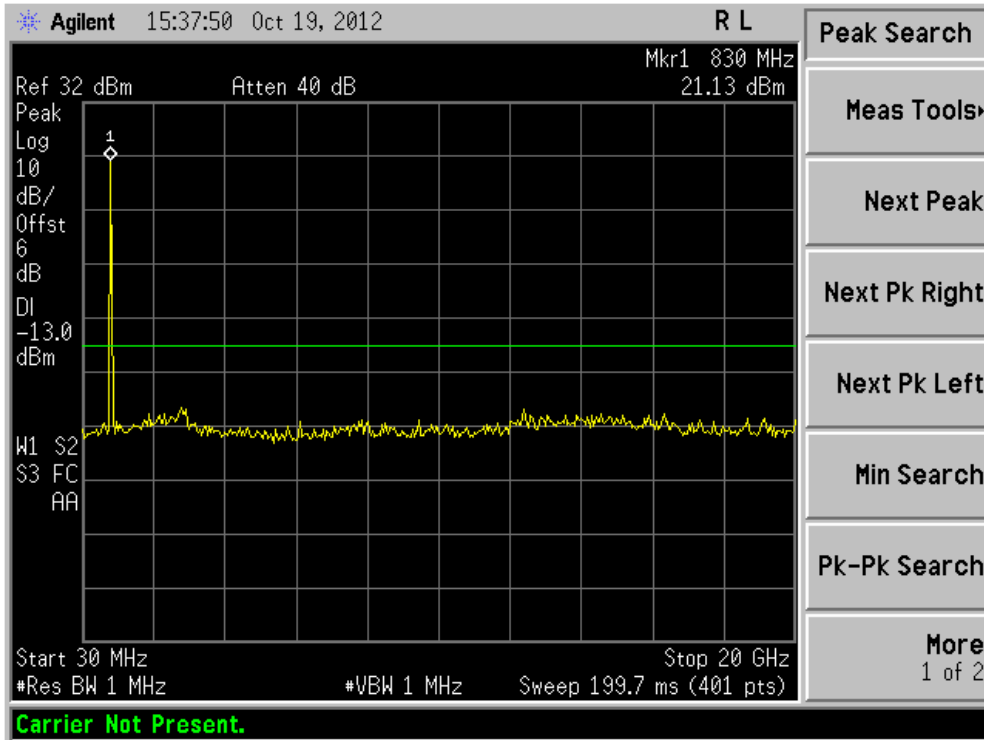


Fig 4.3-17

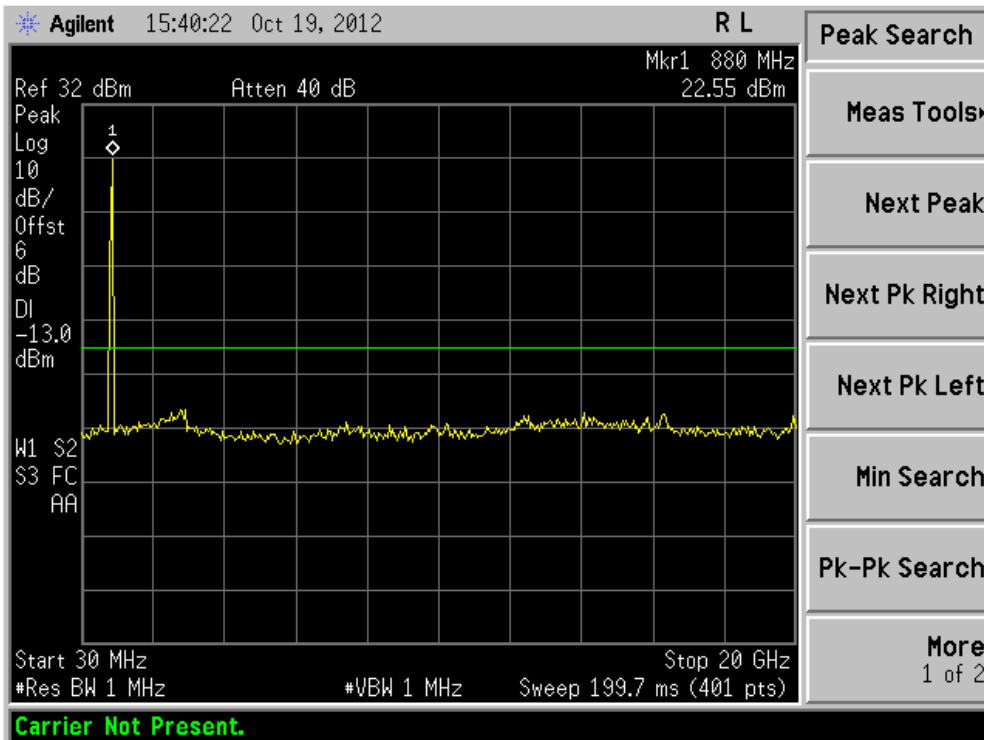


Fig 4.3-18

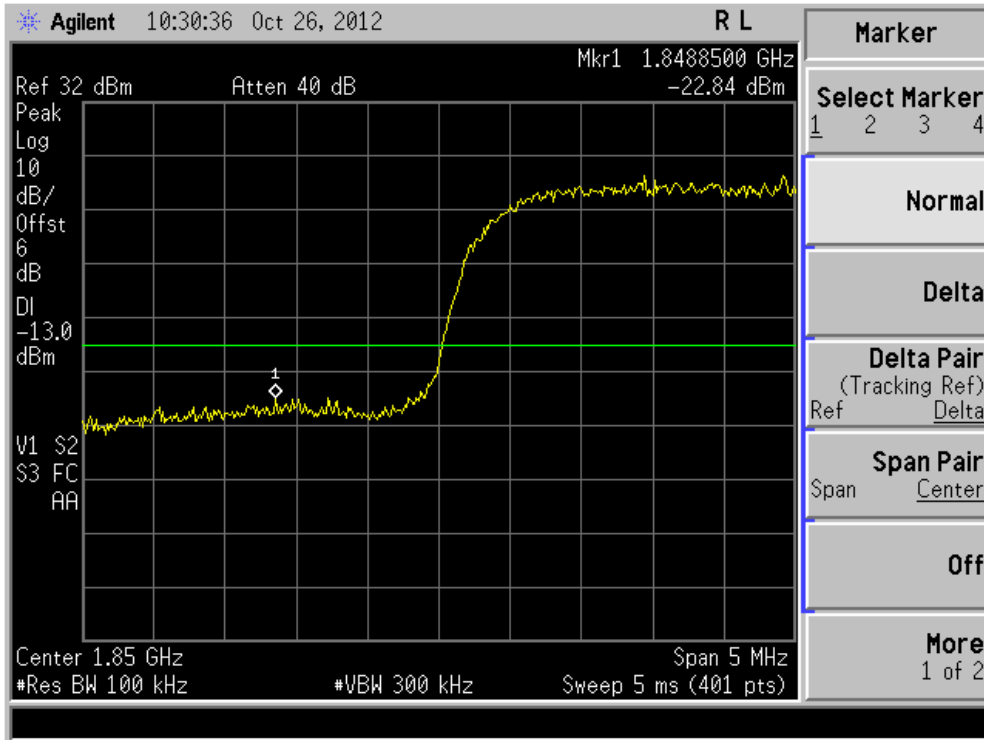


Fig 4.3-19

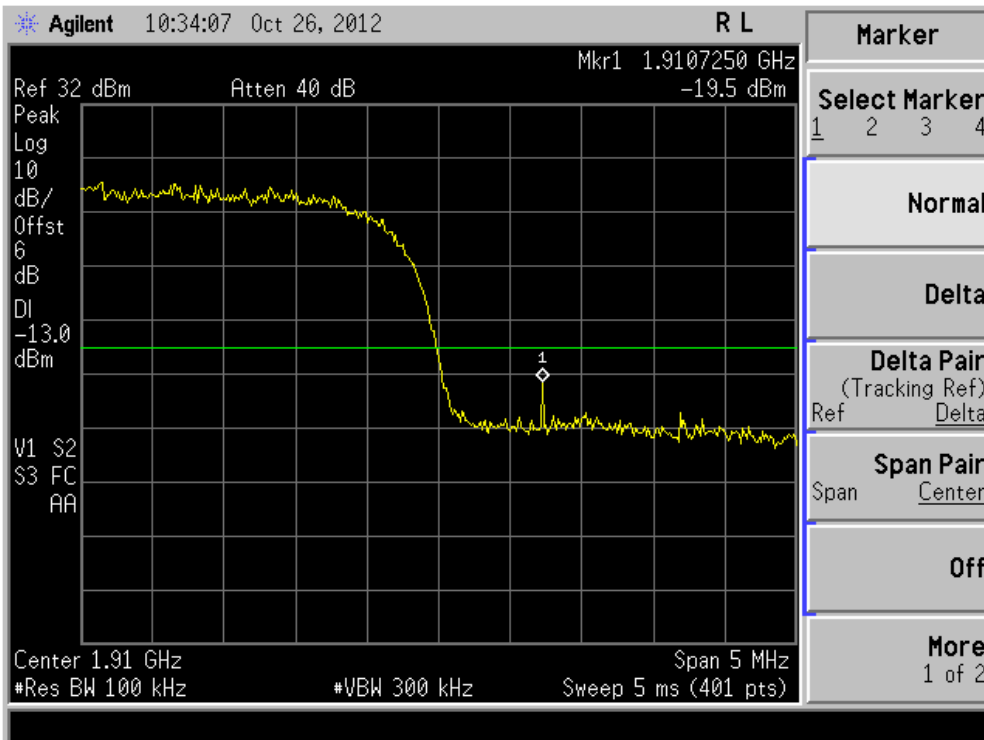


Fig 4.3-20

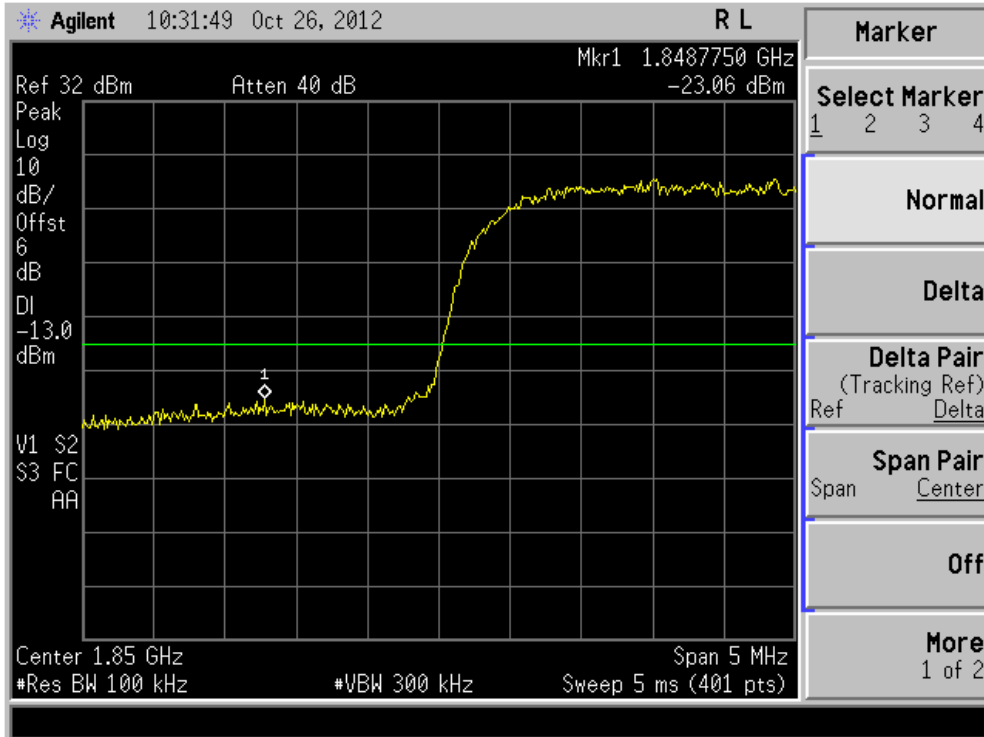


Fig 4.3-23

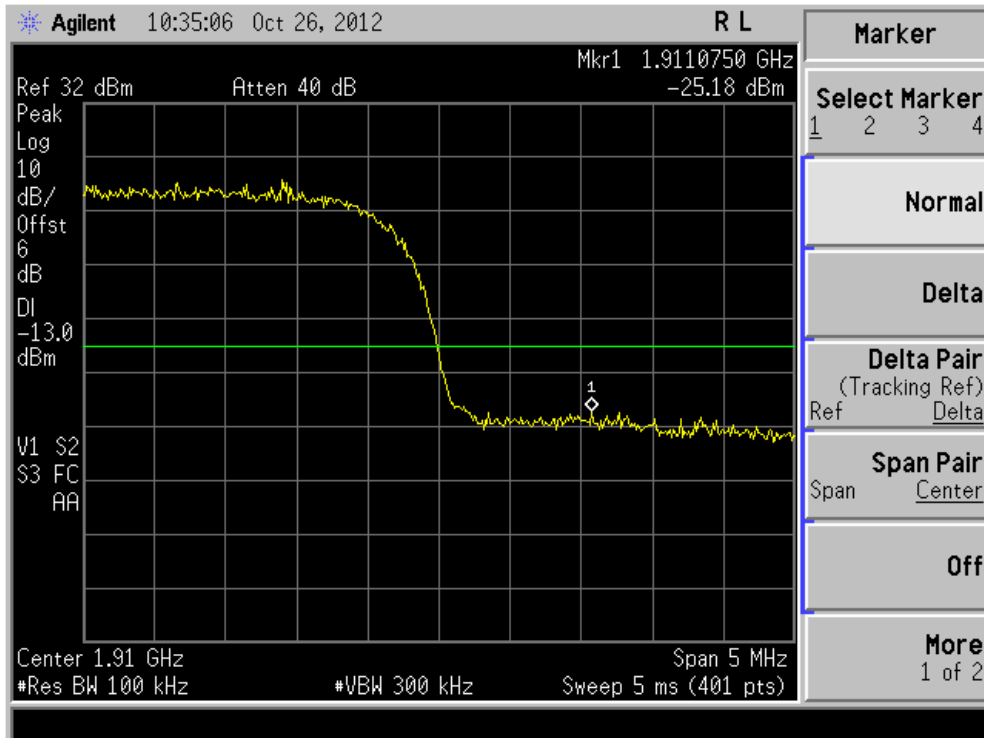


Fig 4.3-24

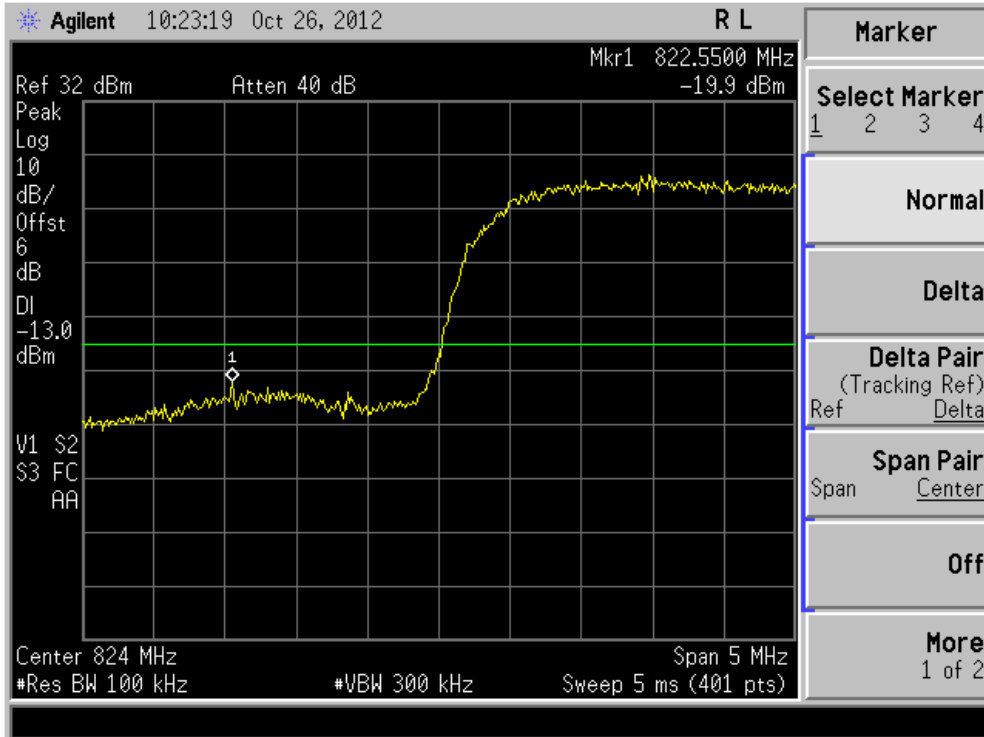


Fig 4.3-25

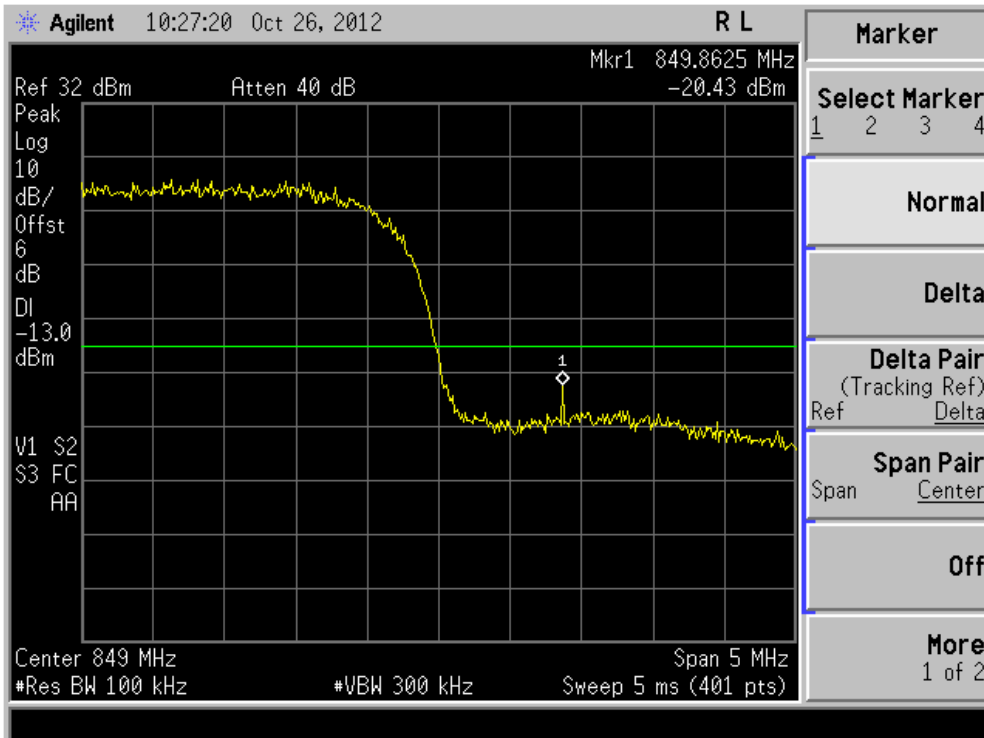


Fig 4.3-26

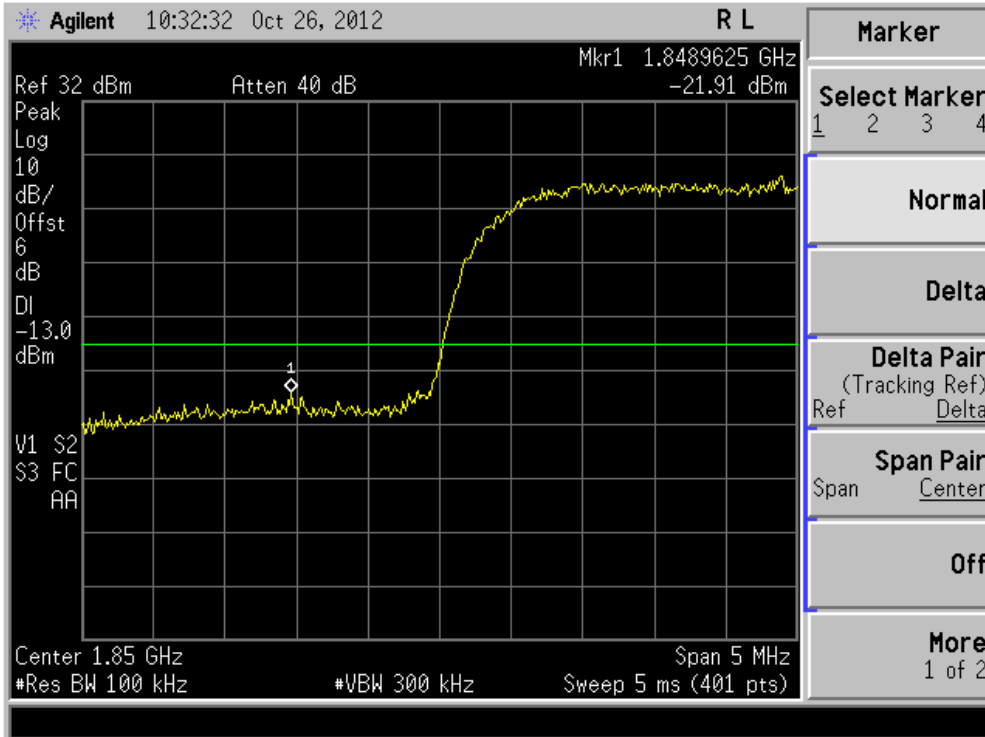


Fig 4.3-27

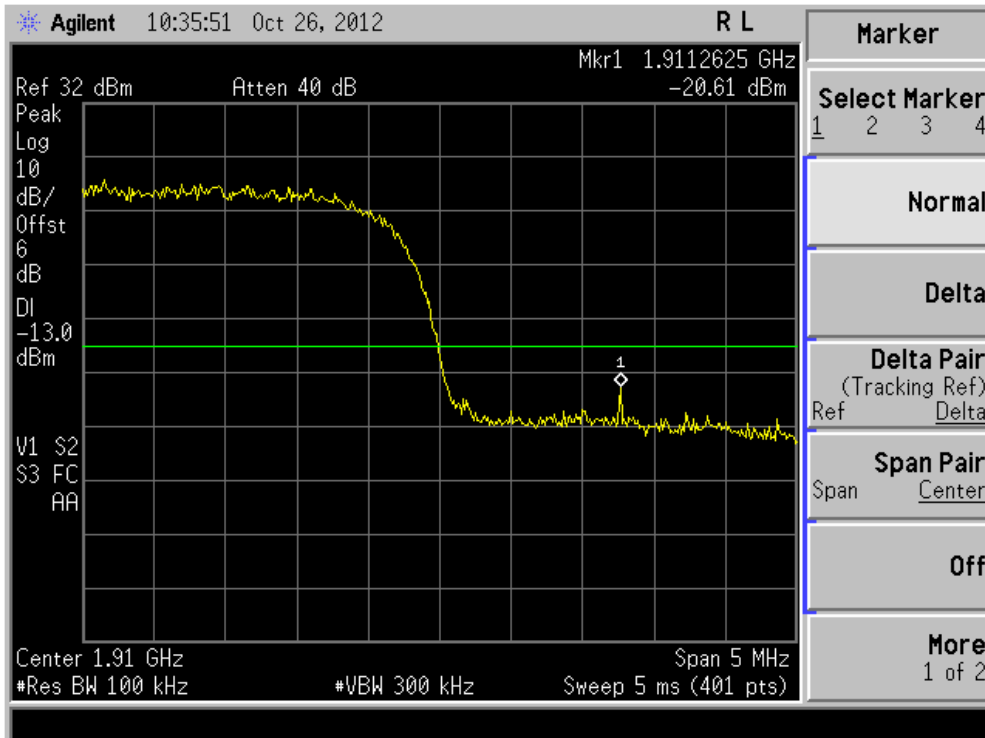


Fig 4.3-28

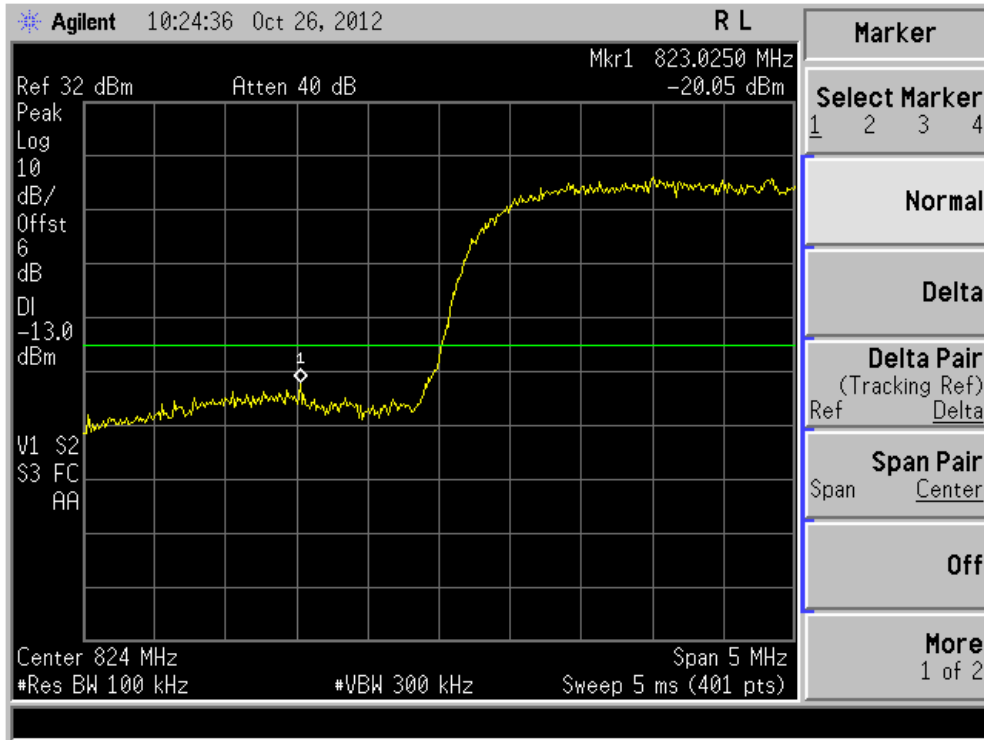


Fig 4.3-29

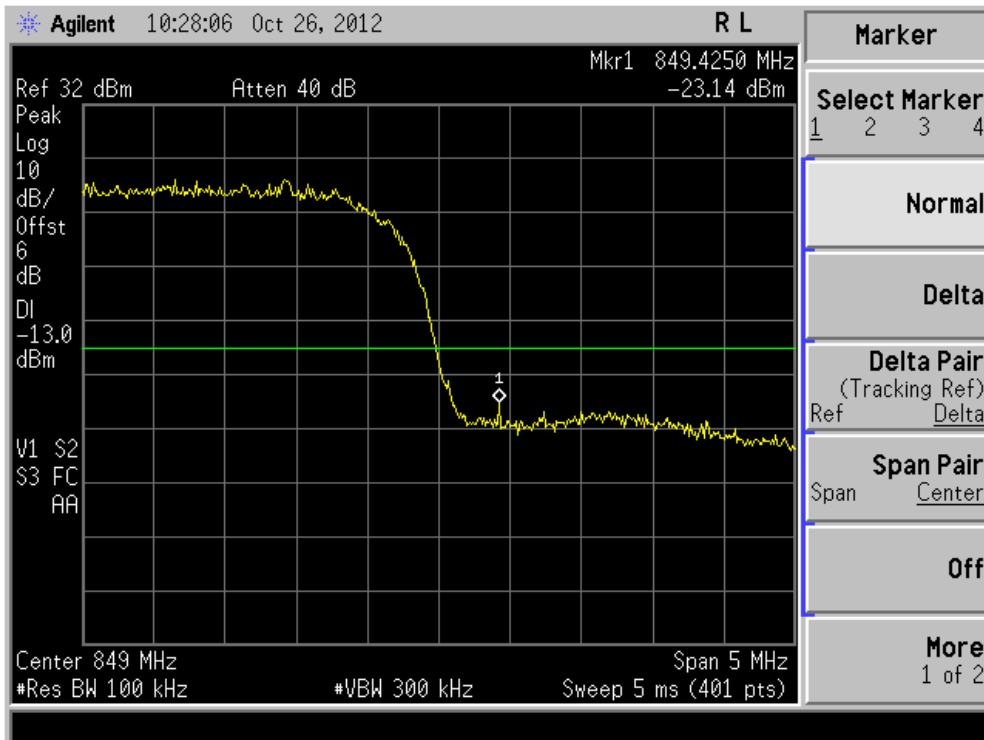


Fig 4.3-30

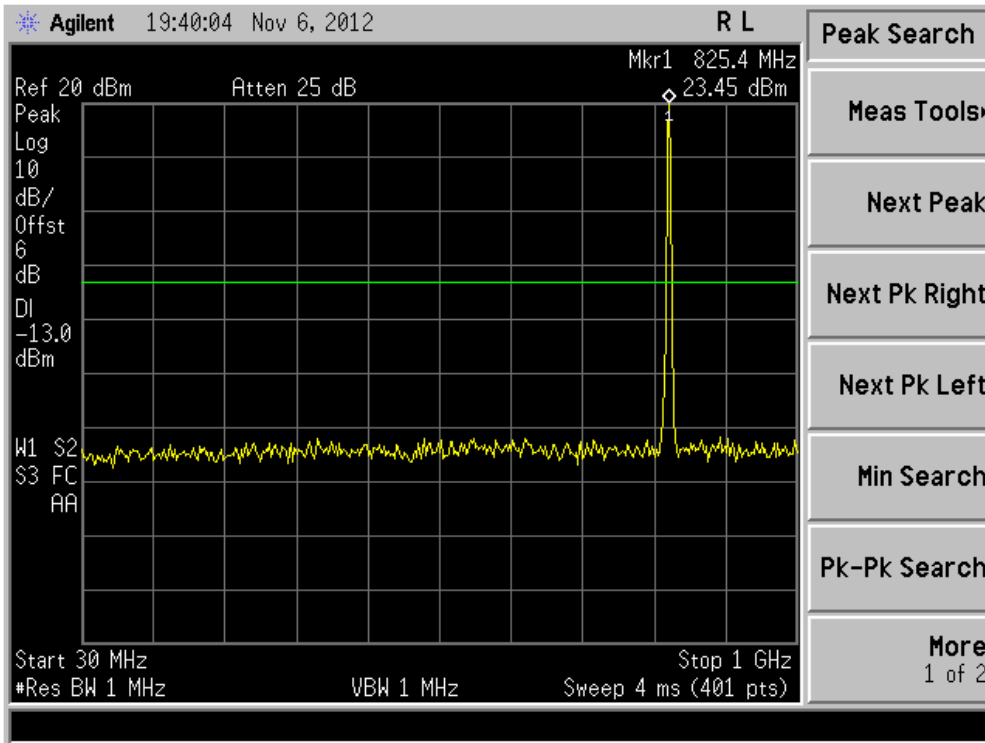


Fig 4.3-31

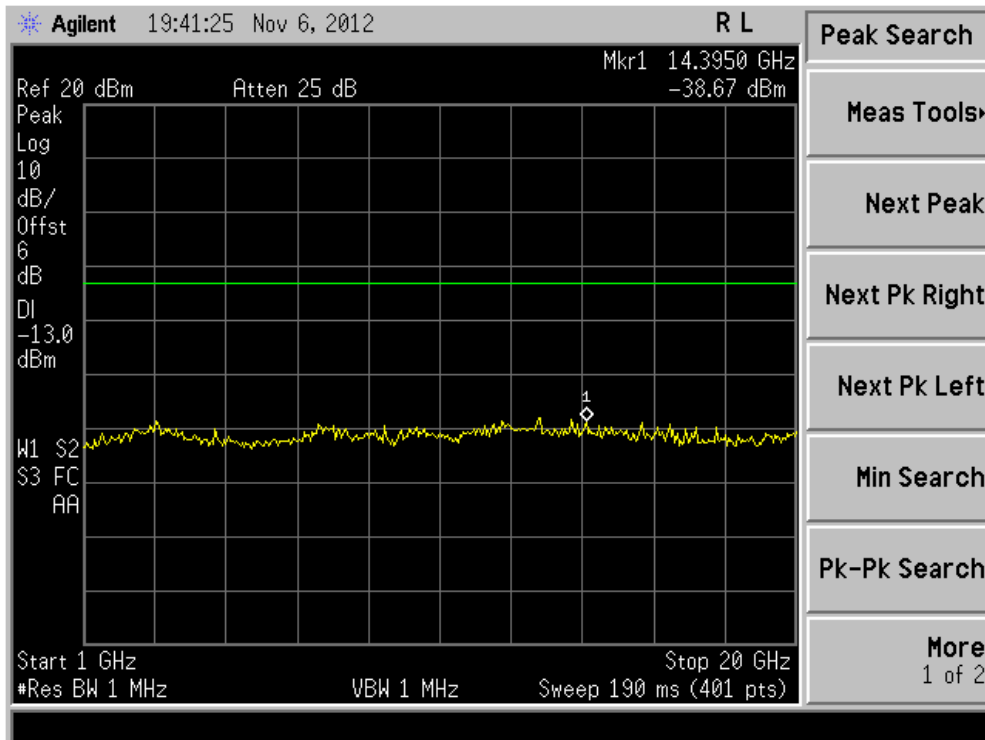


Fig 4.3-32

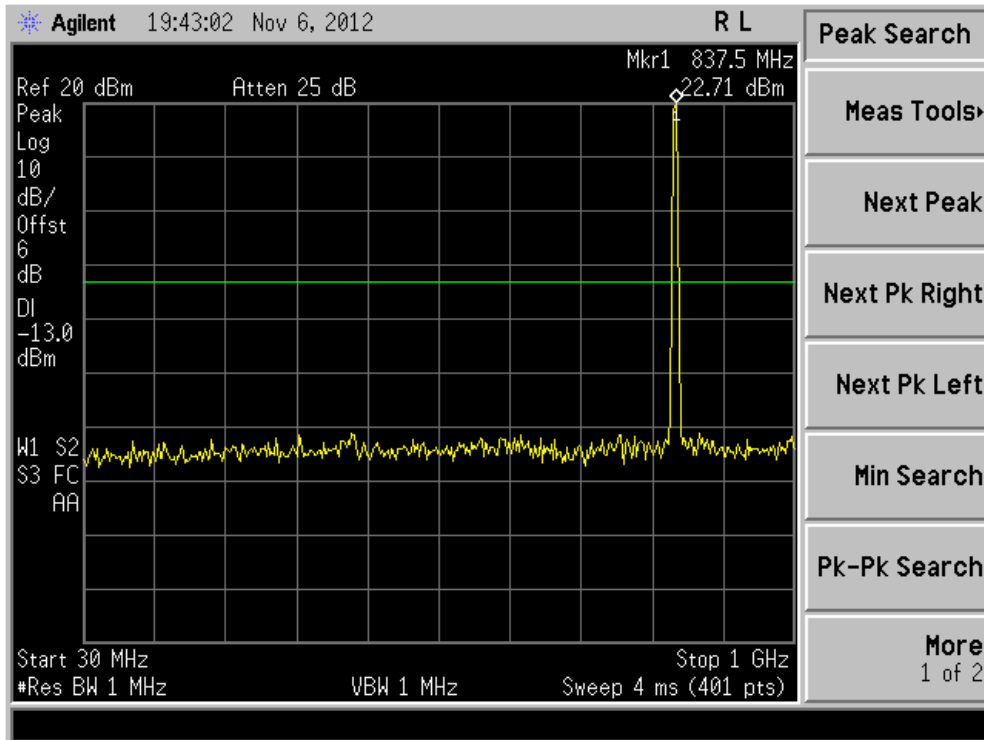


Fig 4.3-33

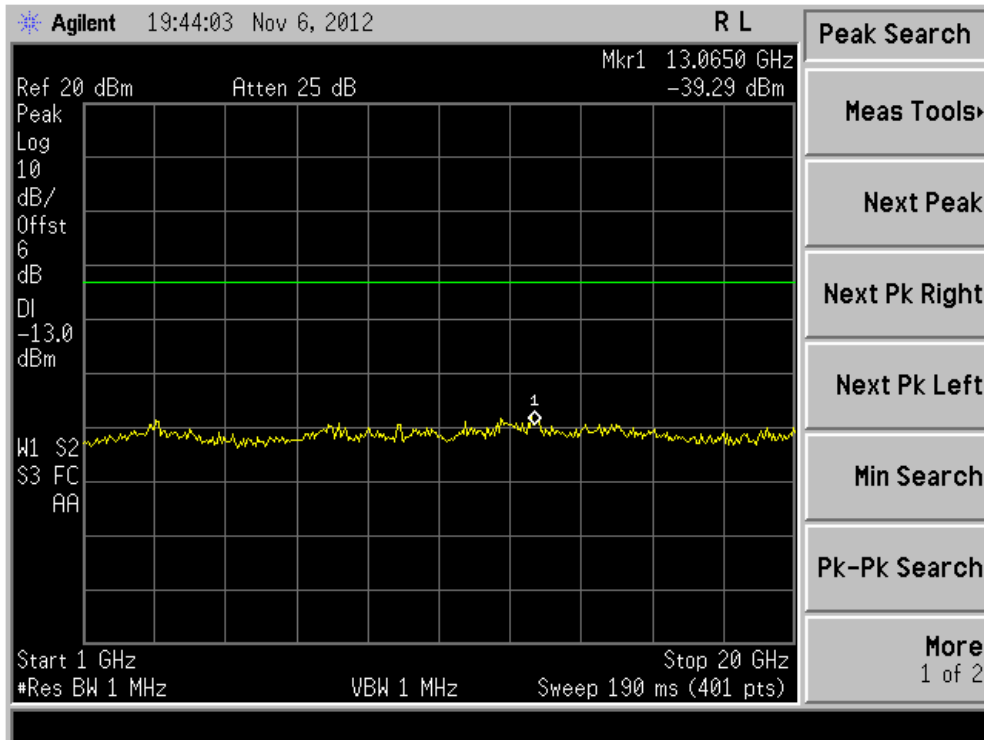


Fig 4.3-34

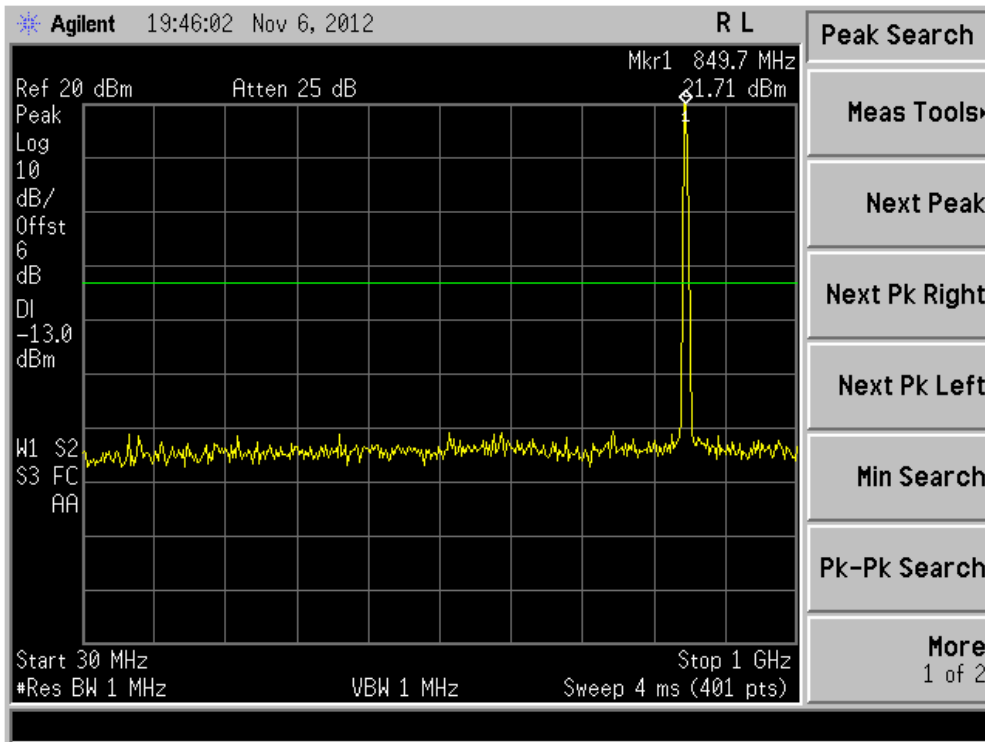


Fig 4.3-35

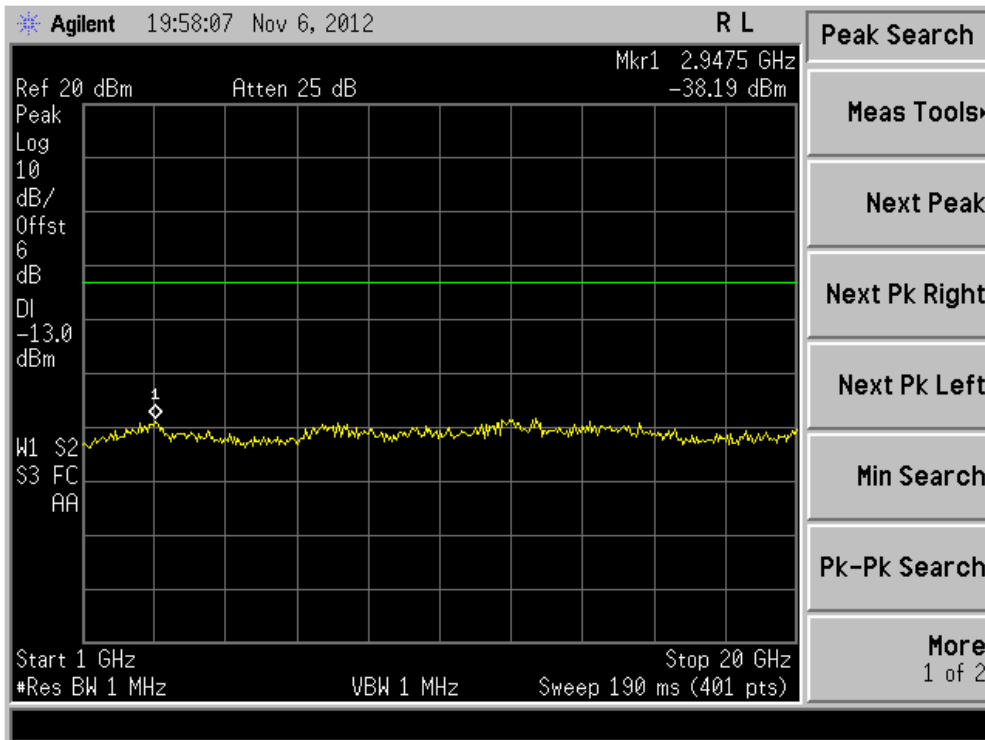


Fig 4.3-36

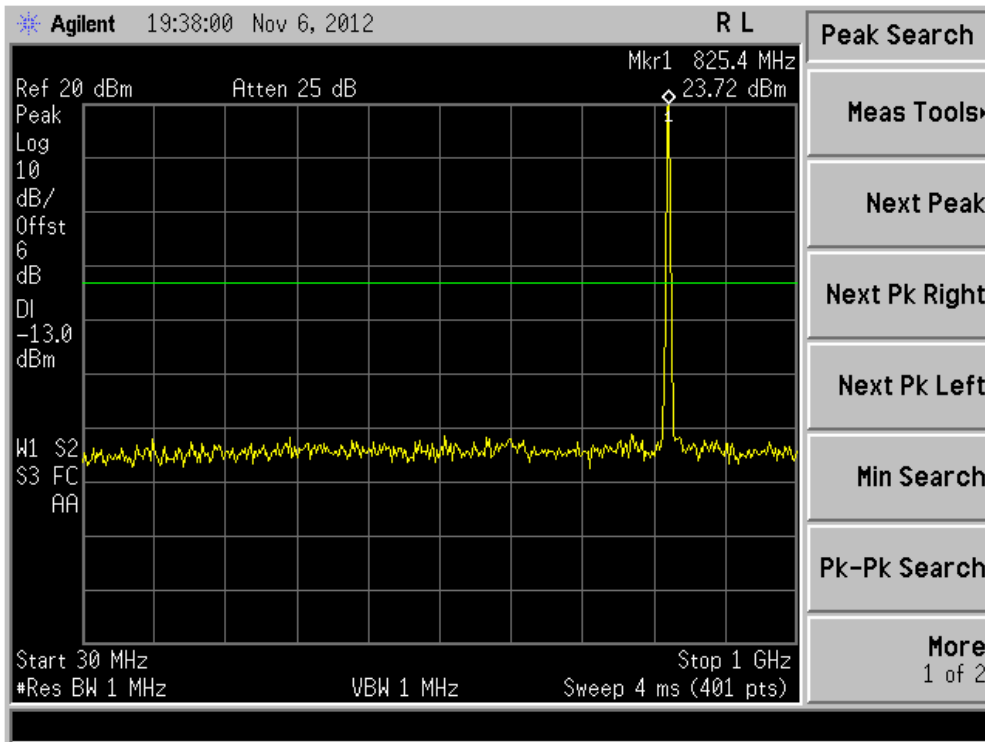


Fig 4.3-37

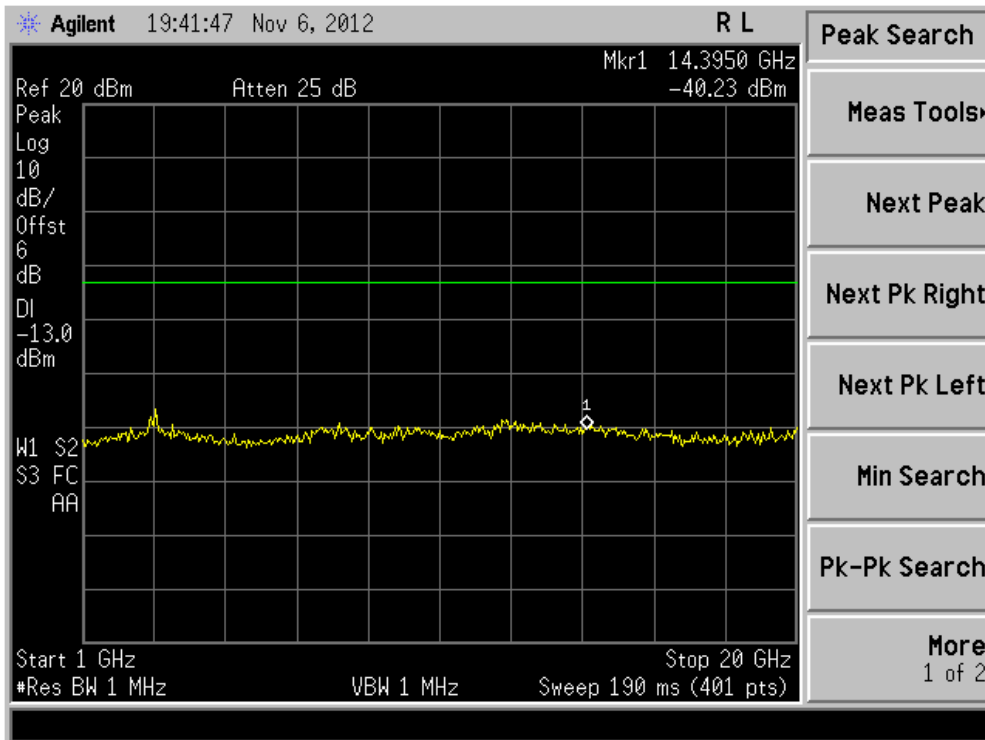


Fig 4.3-38

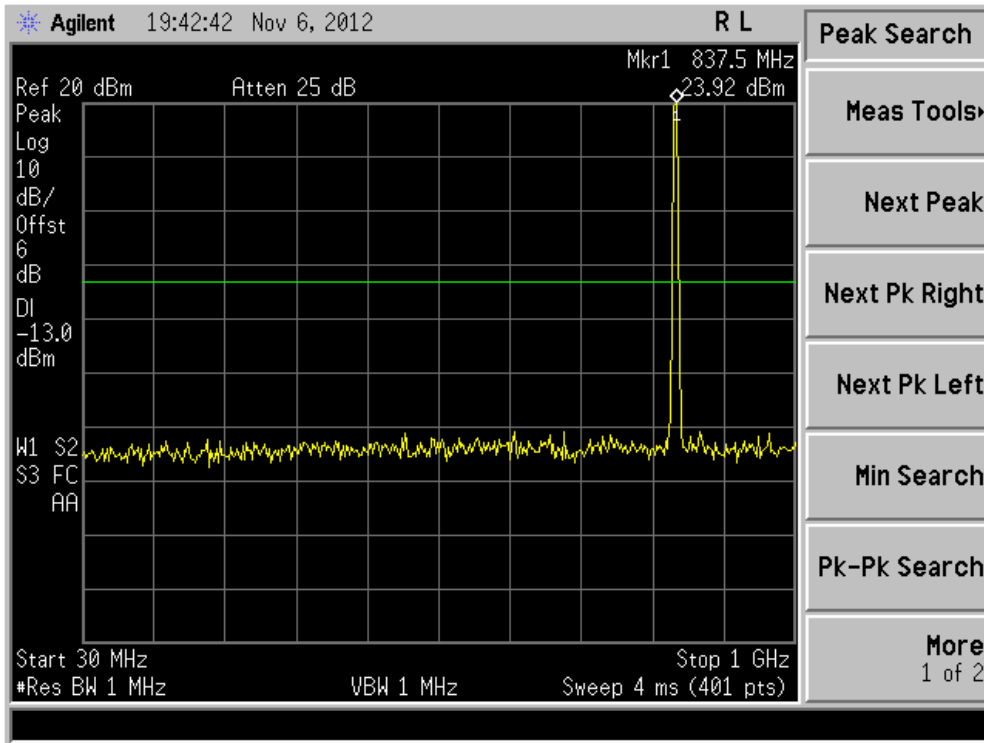


Fig 4.3-39

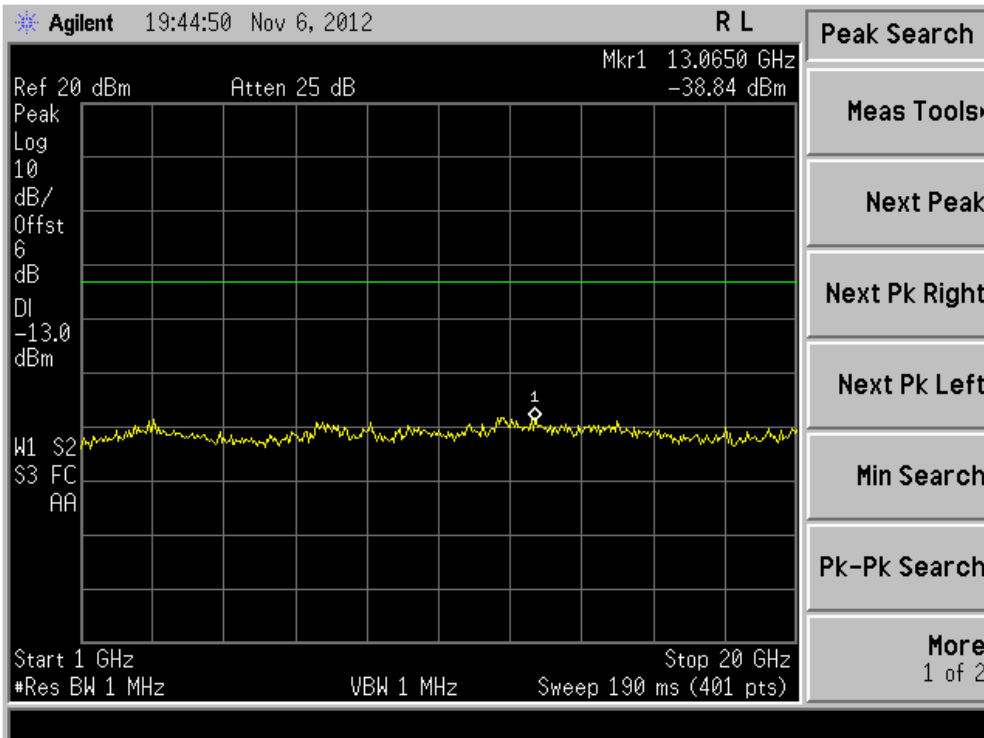


Fig 4.3-40

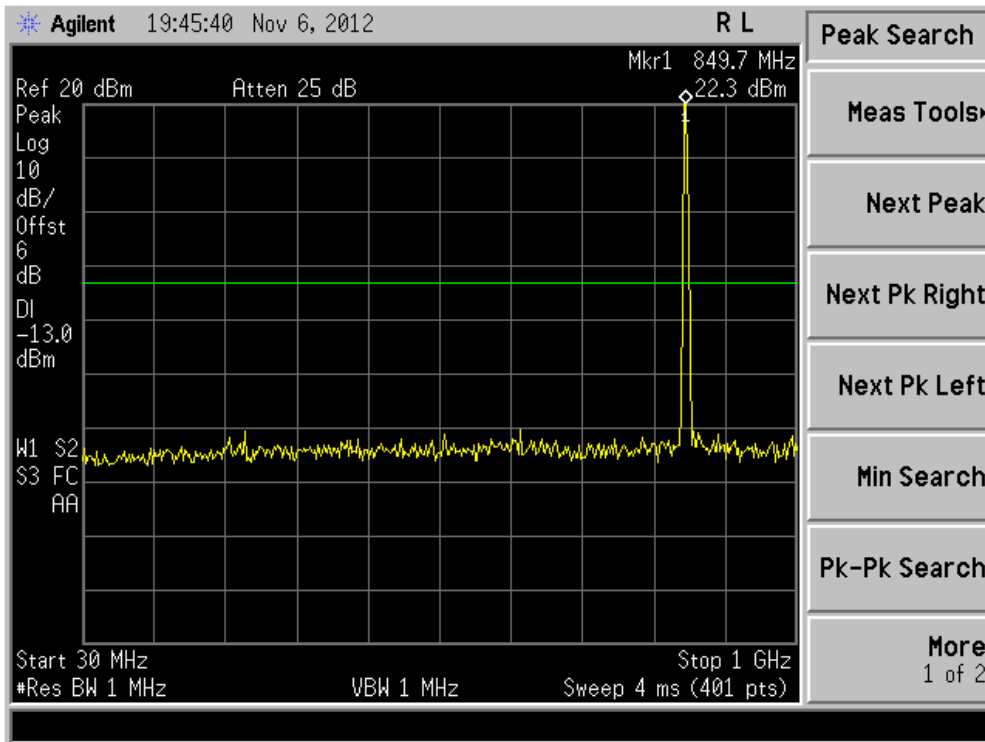


Fig 4.3-41

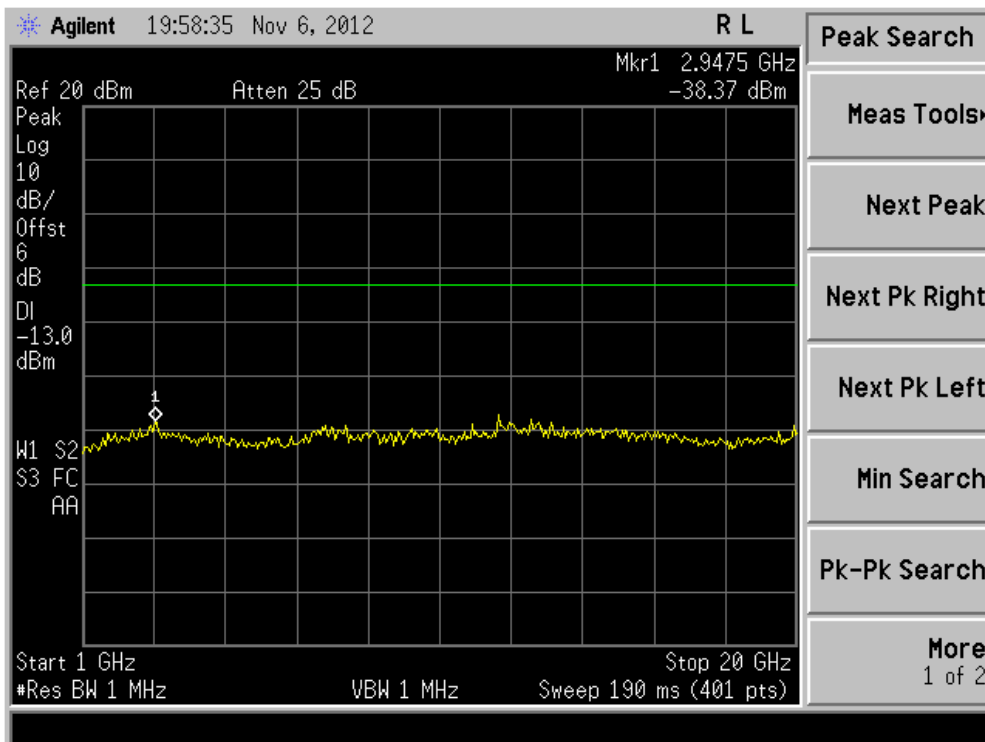


Fig 4.3-42

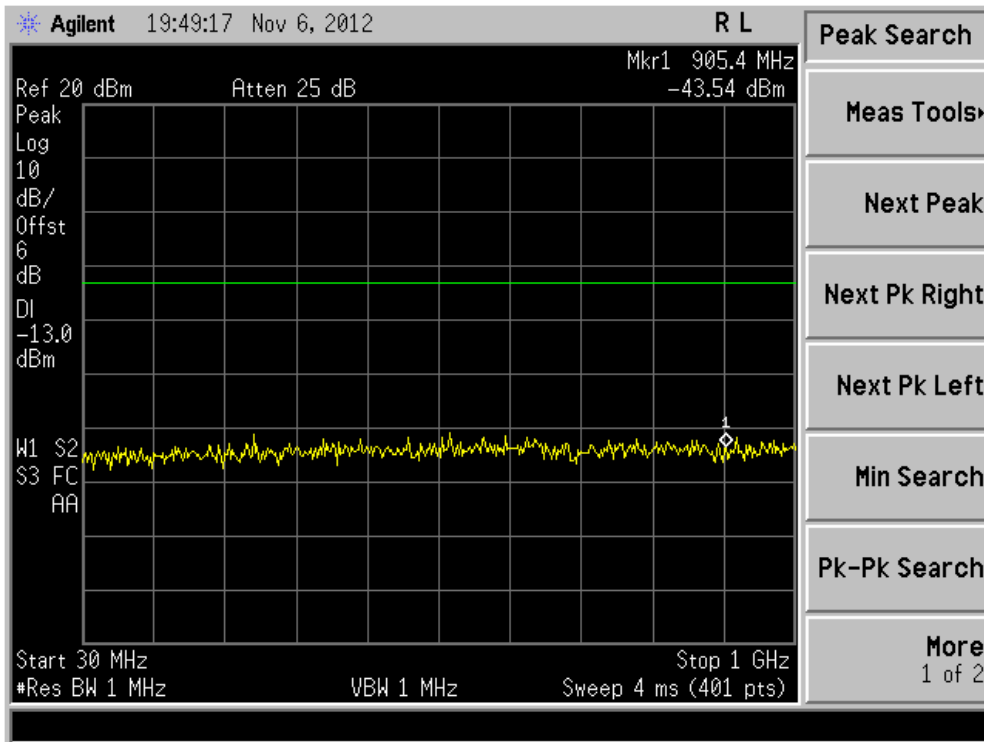


Fig 4.3-43

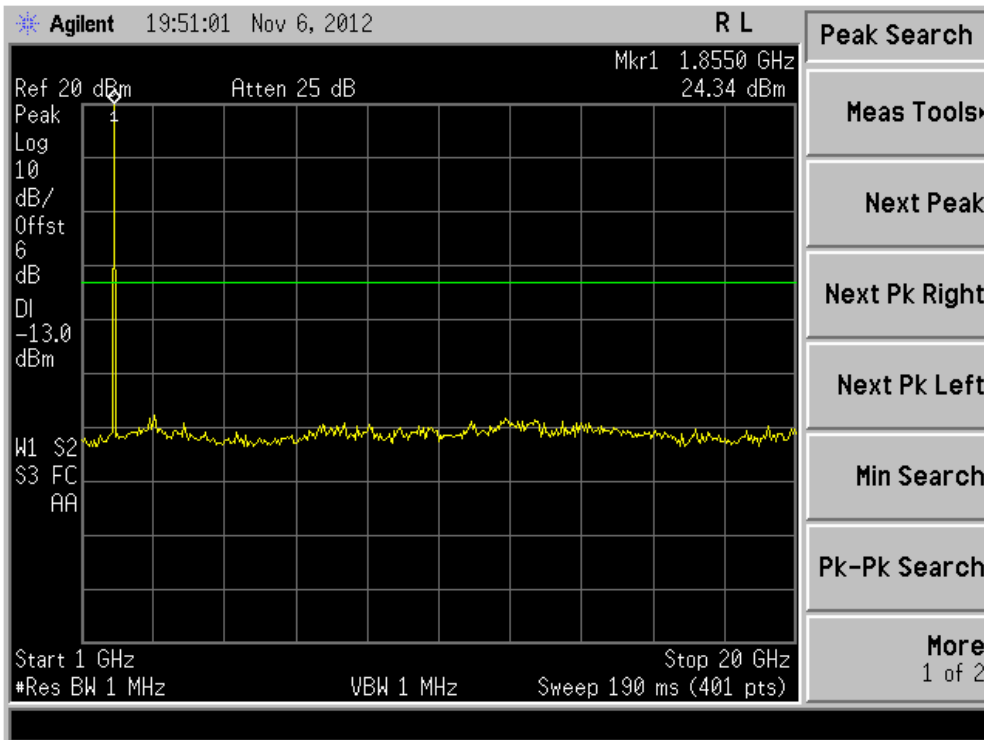


Fig 4.3-44

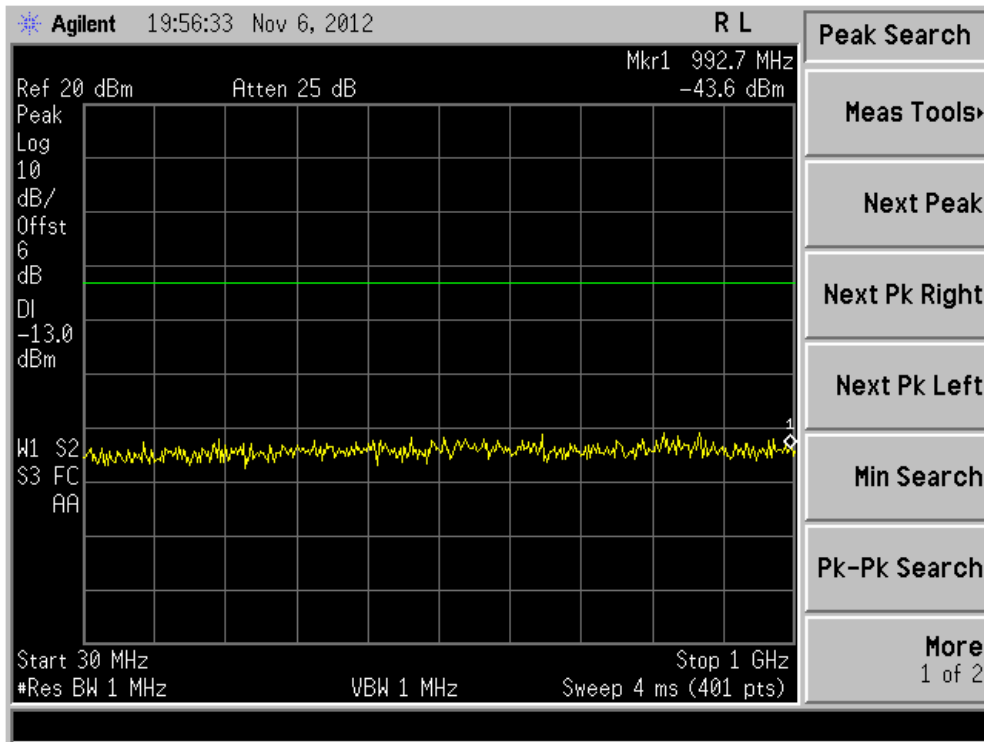


Fig 4.3-45

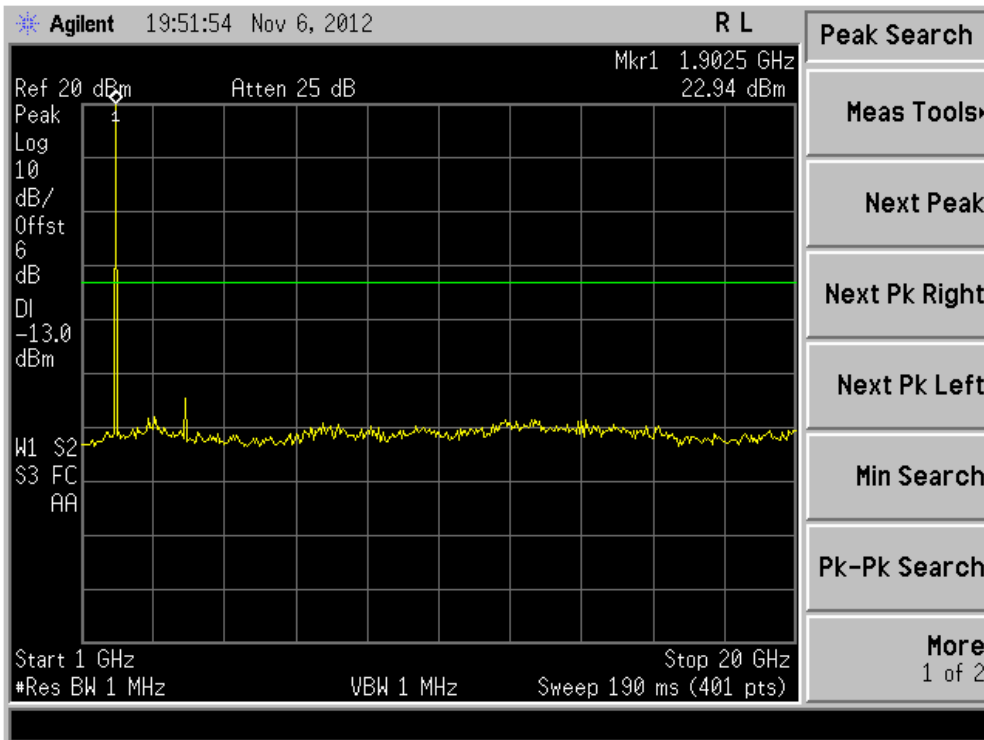


Fig 4.3-46

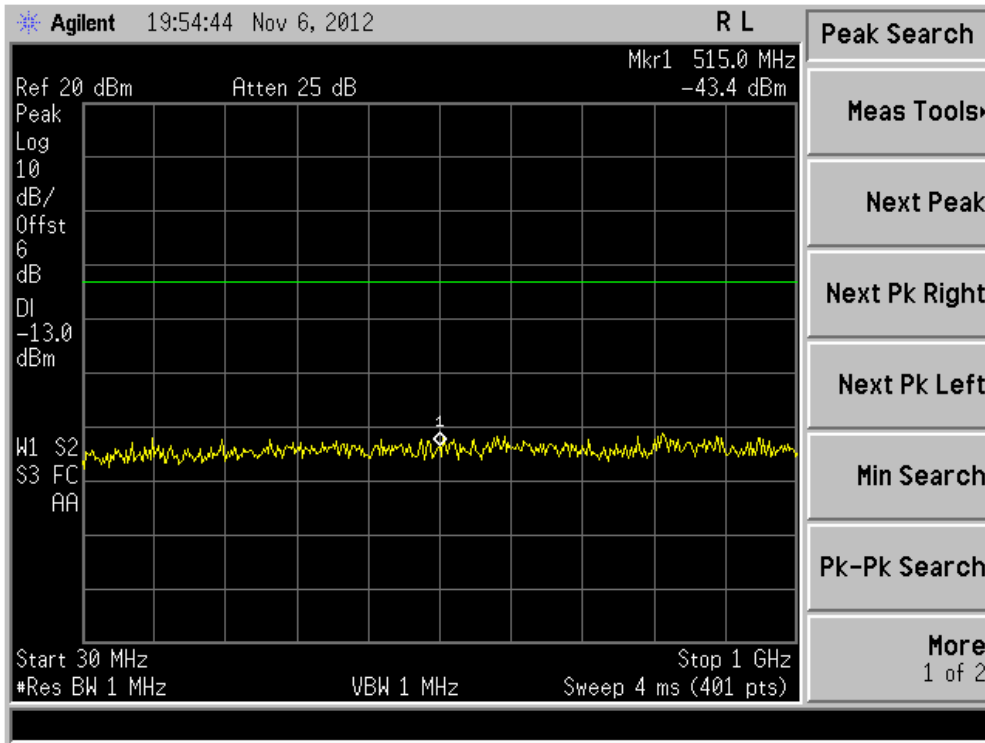


Fig 4.3-47

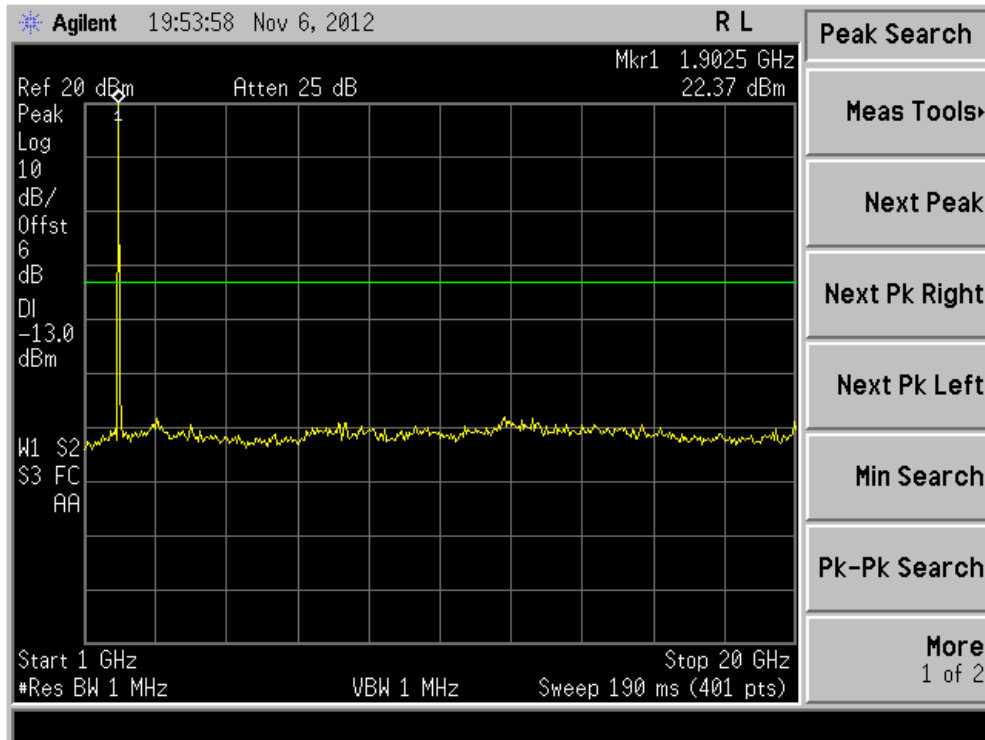


Fig 4.3-48

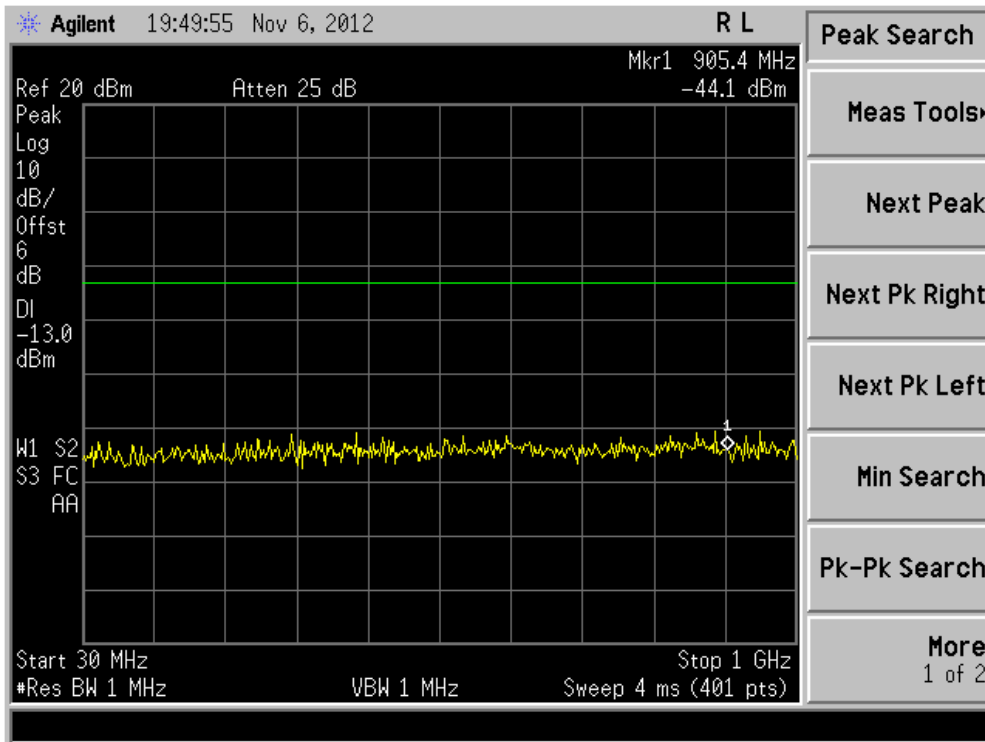


Fig 4.3-49

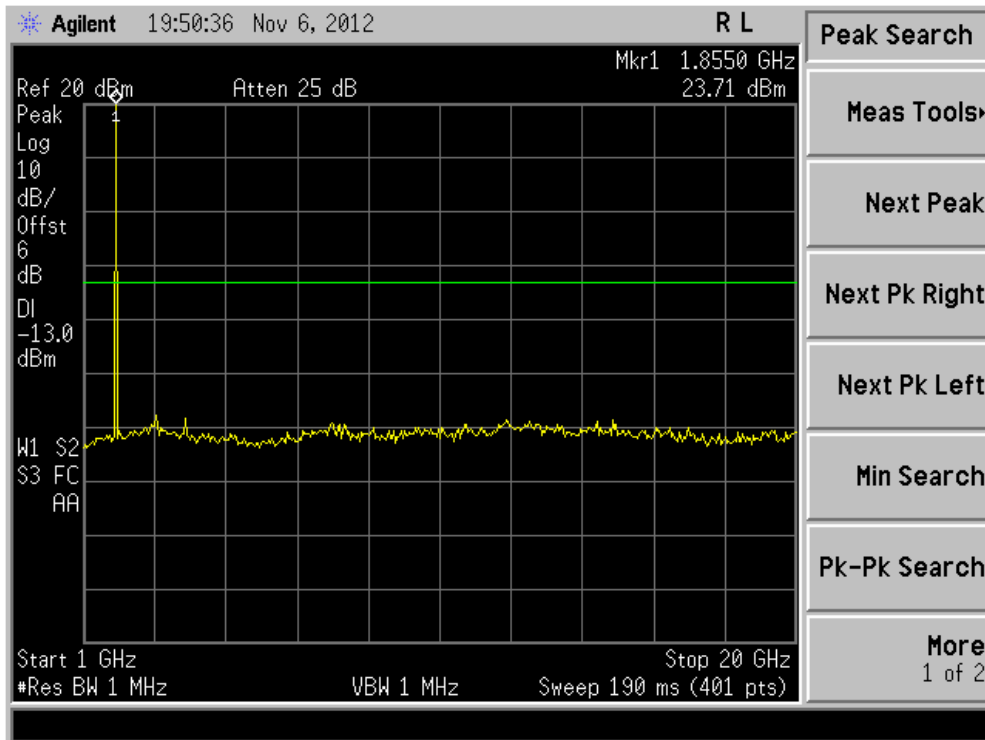


Fig 4.3-50

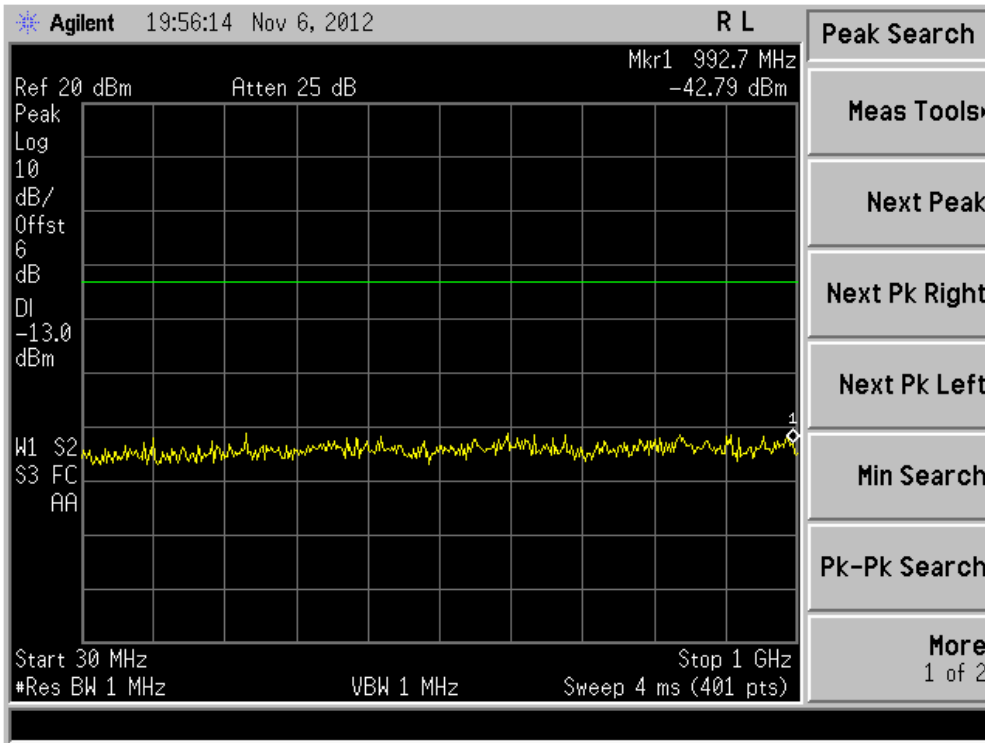


Fig 4.3-51

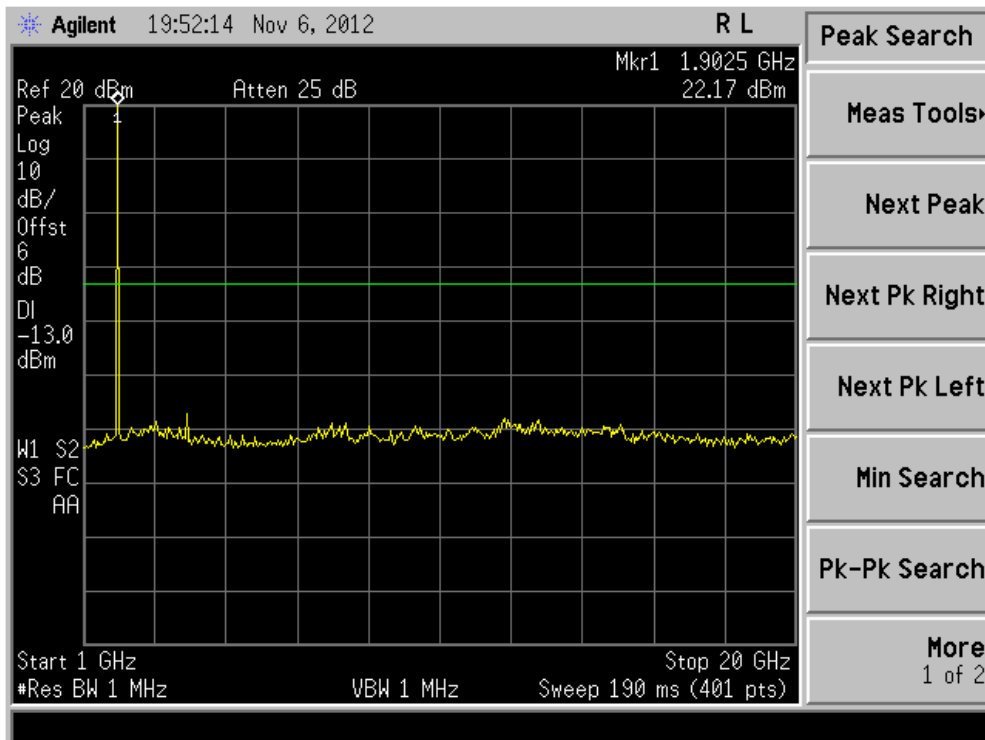


Fig 4.3-52

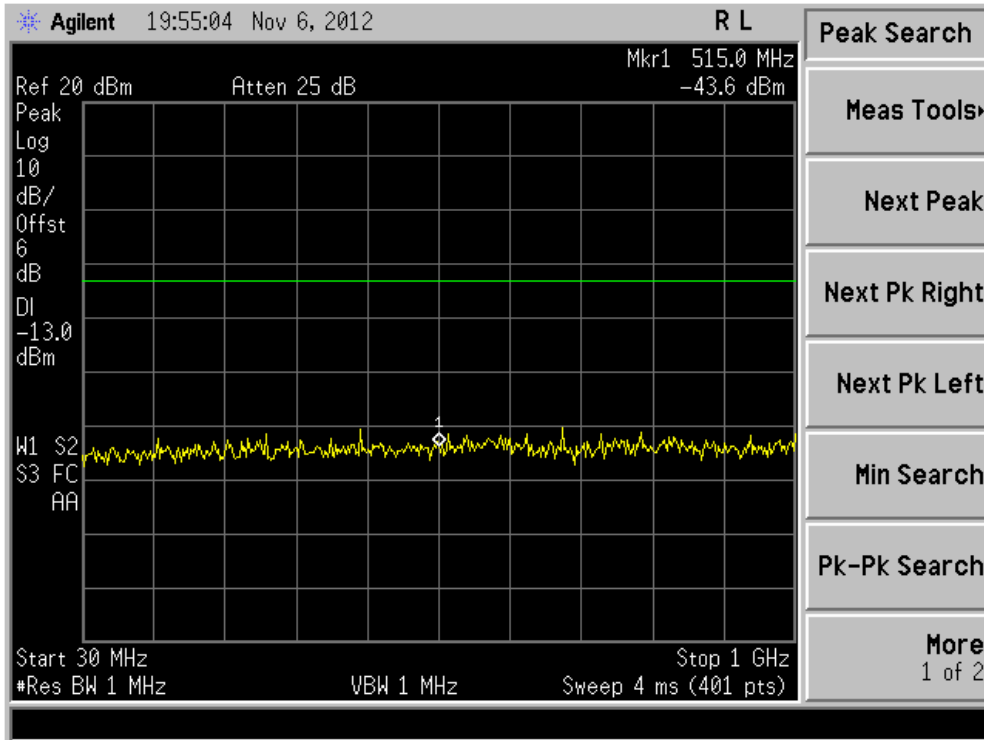


Fig 4.3-53

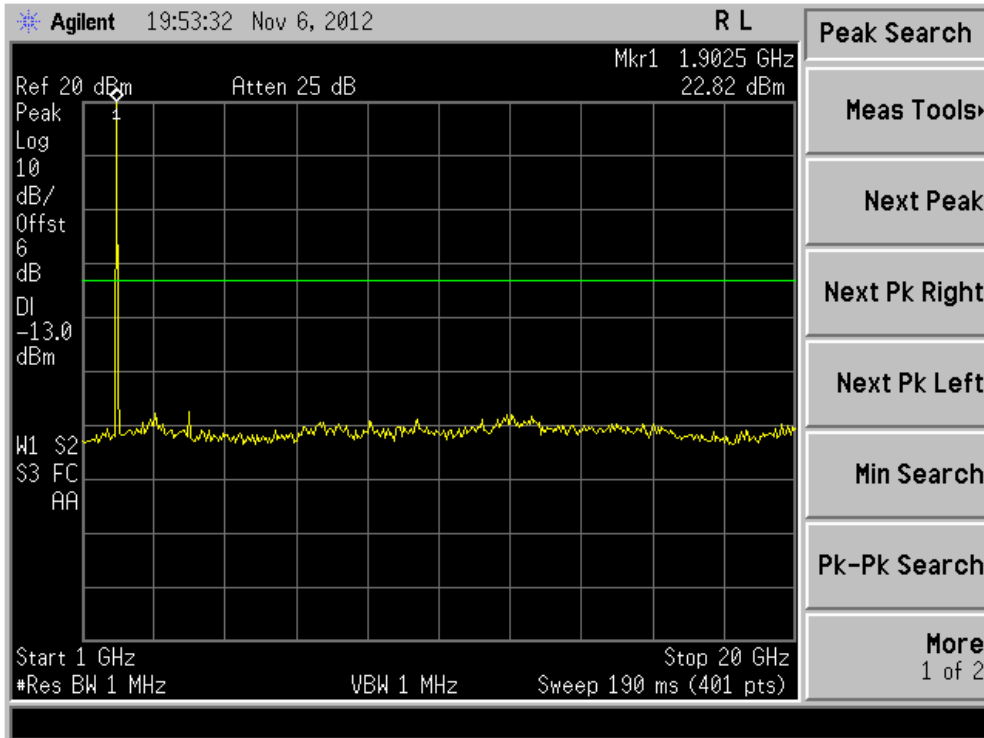


Fig 4.3-54

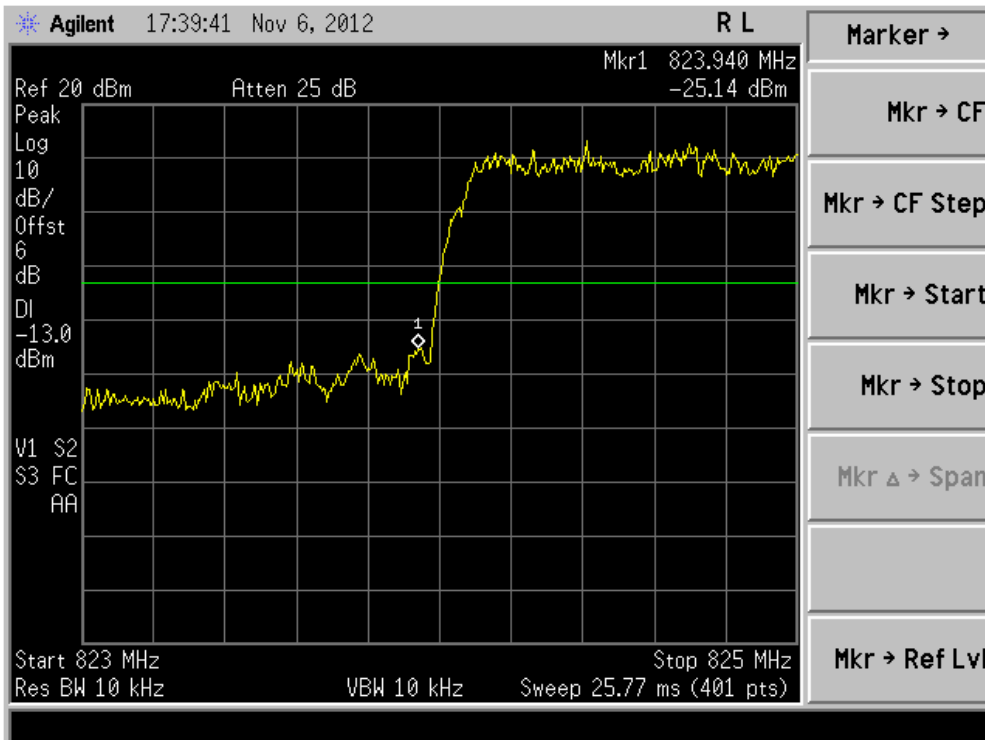


Fig 4.3-55

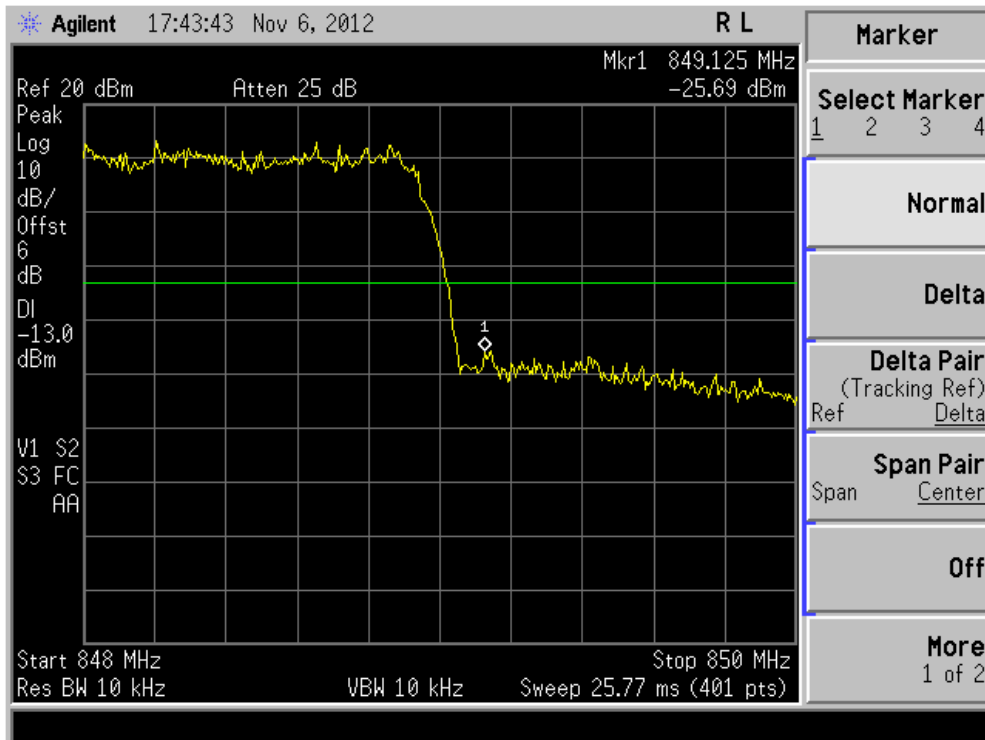


Fig 4.3-56

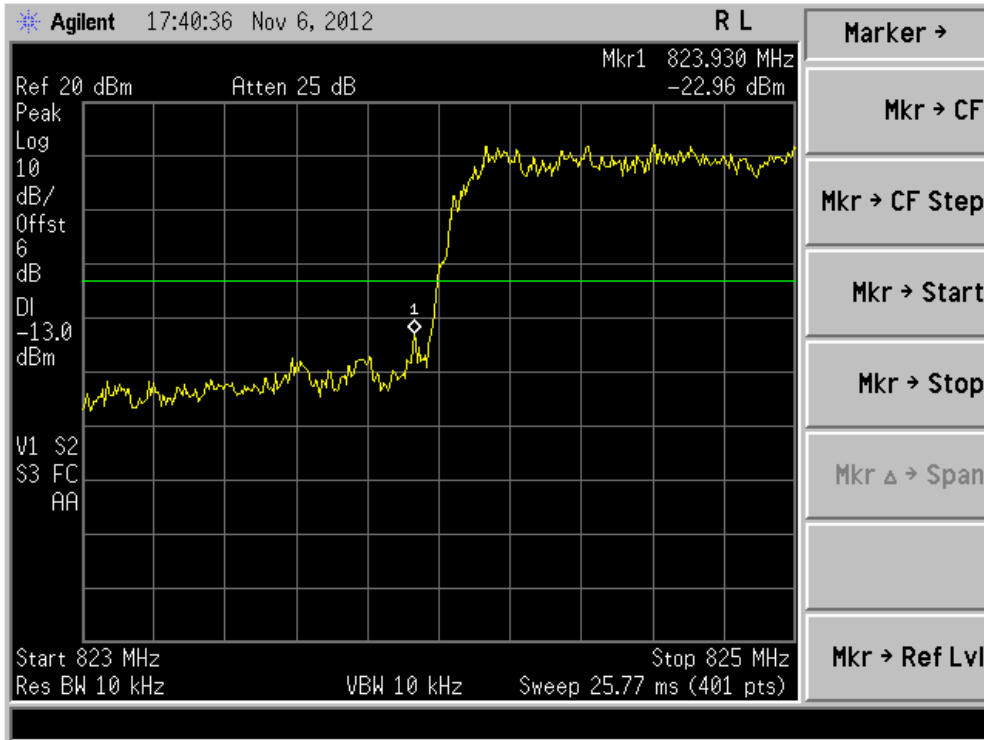


Fig 4.3-57

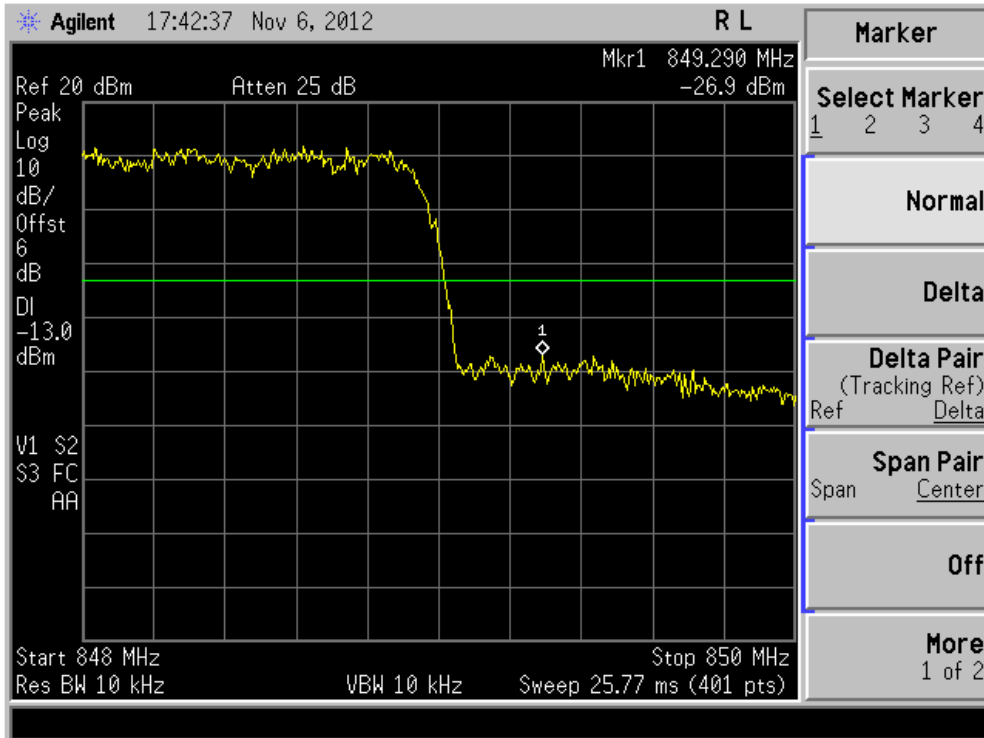


Fig 4.3-58

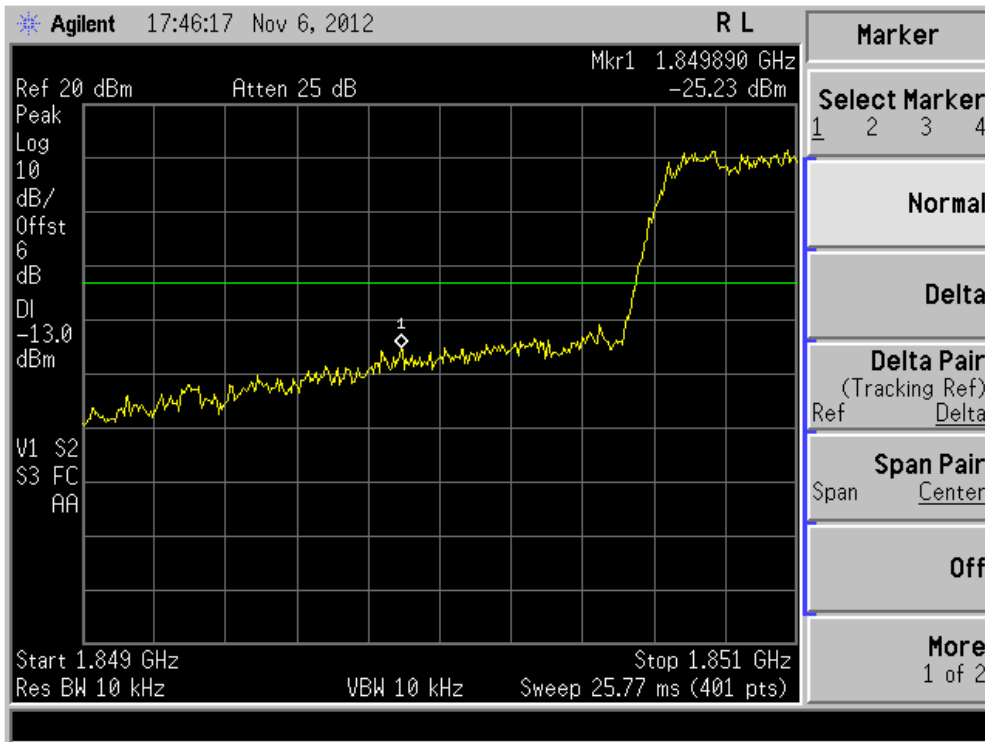


Fig 4.3-59

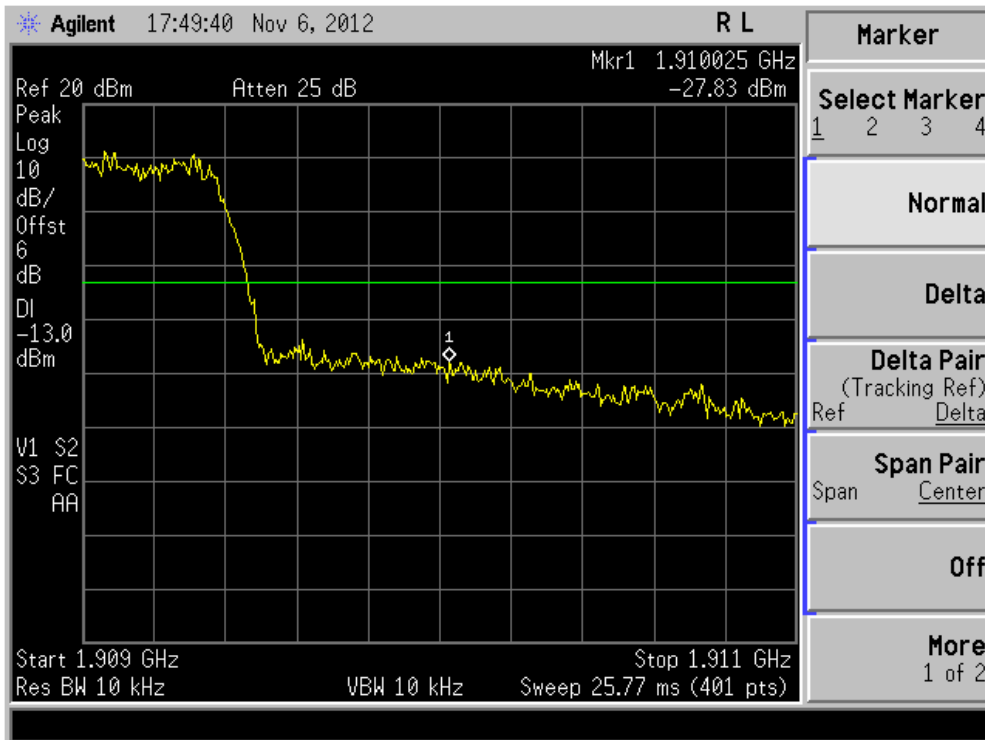


Fig 4.3-60

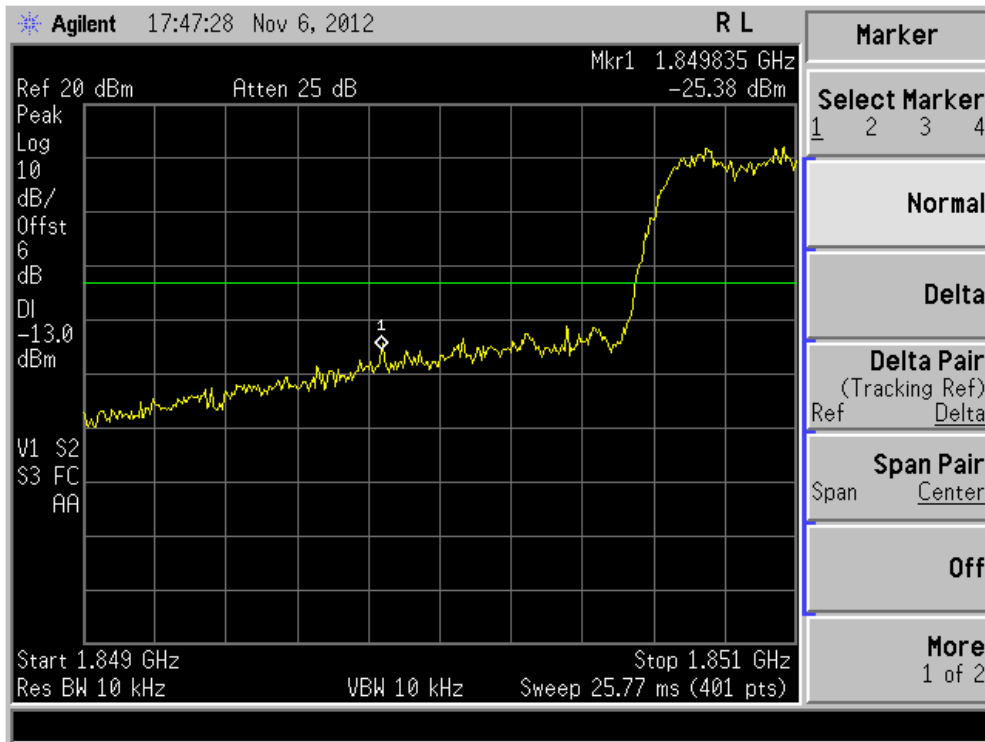


Fig 4.3-61

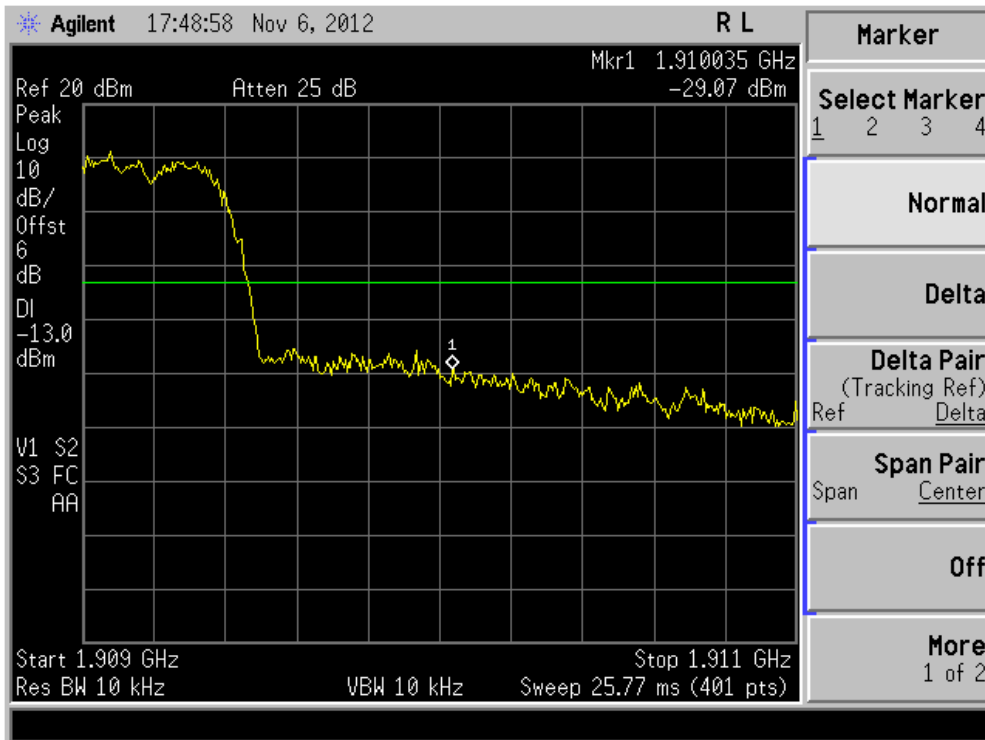


Fig 4.3-62

4.4. Field Strength of Spurious Radiation

4.4.1. Required and Limits

FCC 2.1053 Measurements required: Field strength of spurious radiation.

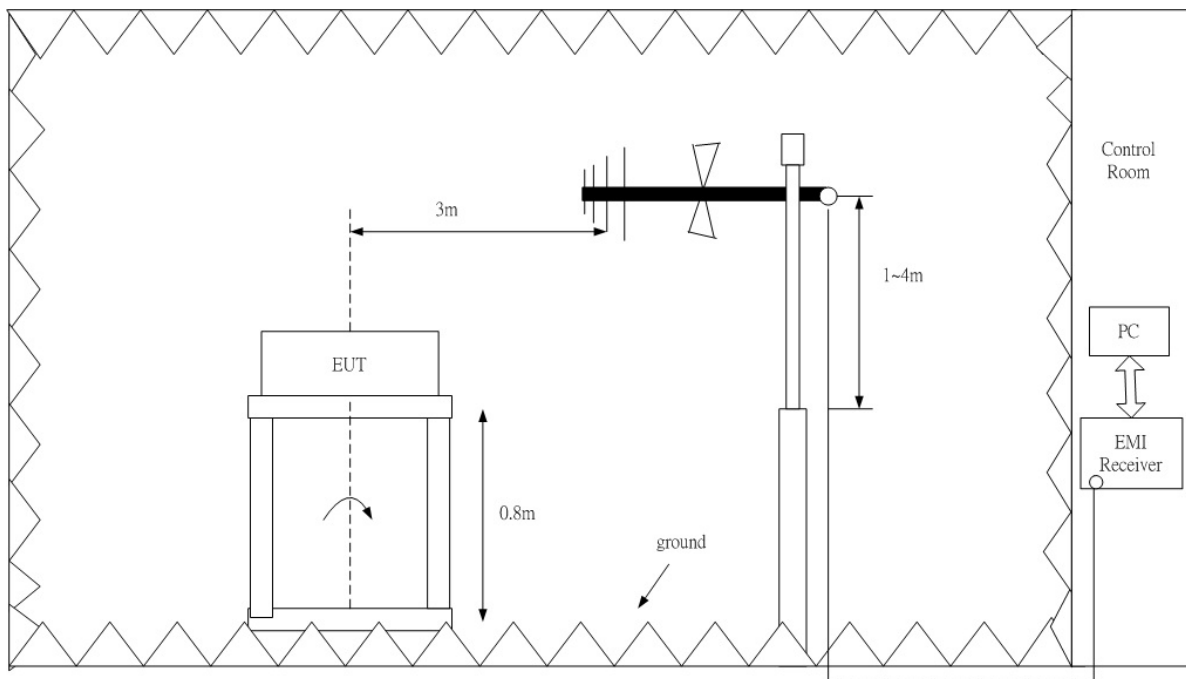
Measurements shall be made to detect spurious emissions that may be radiated directly from the cabinet, control circuits, power leads or intermediate circuit elements under normal conditions of installation and operation. Curves or equivalent data shall be supplied showing the magnitude of each harmonic and other spurious emission.

FCC 22.917 Emission limitations for cellular equipment.

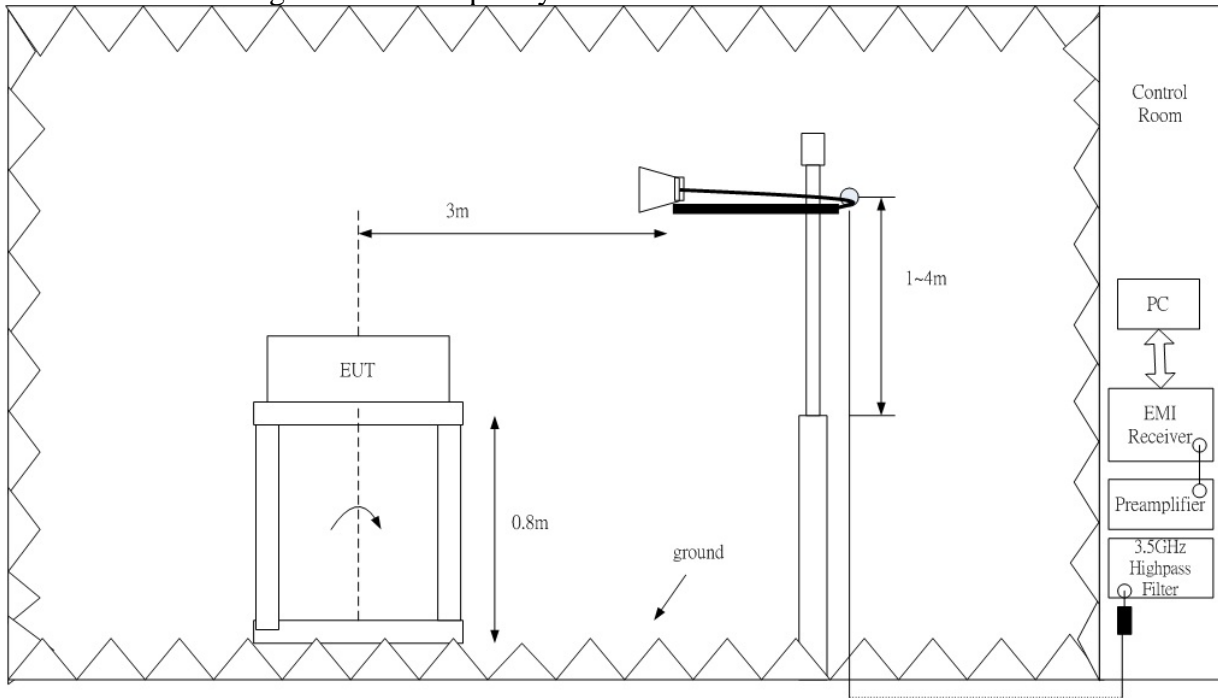
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log (P)$ dB.

4.4.2. Test Configuration and Procedure

Measurement configuration in frequency 30-1000MHz



Measurement configuration in frequency above 1 GHz



The EUT was placed on a turntable just above ground. The turntable rotates 360 degrees to determine the position of the maximum emission level. EUT was set 3 meters away from the receiving antenna, which were mounted on an antenna tower. The antenna can move up and down between 1 meter and 4 meter to find out the maximum emission level. Broadband antenna was used as receiving antenna. Both horizontal and vertical polarization of the antenna was set on measurement. In order to find the maximum emission, all of the interface cables were manipulated according to TIA-603-C-2004 on radiated measurement.

The frequency range from 30MHz to 20GHz was checked.

$$E = \frac{\sqrt{30 \times P \times G}}{D}$$

E : Field Strength (V/m)

G : Antenna Gain

$$PG(EIRP) = \frac{(E \times D)^2}{30}$$

PG : Equivalent Isotropic Radiated Power (W)

D : distance (3m)

4.4.3. Test Results

WCDMA Band II CH Low

Polarity : Horizontal

Frequency (MHz)	Reading Vaule (dB μ V)	Calibration Factor (dB)	Emission Level (dB μ V/m)	EIRP (dBm)	Limit (dBm)	Margin (dB)
249.7	23.6	13.8	37.4	-57.8	-13	-44.8
286.6	32.9	14.7	47.6	-47.6	-13	-34.6
399.3	22.0	18.2	40.2	-55	-13	-42
665.7	16.3	23.2	39.5	-55.7	-13	-42.7
797.8	17.8	24.3	42.1	-53.1	-13	-40.1
982.5	14.9	26.3	41.2	-54.0	-13	-41.0
1726.5	23.7	30.7	54.4	-40.8	-13	-27.8
2202.4	23.8	32.8	56.6	-38.6	-13	-25.6
2863.7	24.4	35.2	59.6	-35.6	-13	-22.6
3364.7	24.6	35.5	60.1	-35.1	-13	-22.1
Measurement uncertainty : ± 4.3 dB						

Polarity : Vertical

Frequency (MHz)	Reading Vaule (dB μ V)	Calibration Factor (dB)	Emission Level (dB μ V/m)	EIRP (dBm)	Limit (dBm)	Margin (dB)
30.0	32.9	20.9	53.8	-41.4	-13	-28.4
284.6	46.9	14.6	61.5	-33.7	-13	-20.7
401.3	40	18.2	58.2	-37.0	-13	-24.0
663.7	38.7	23.2	61.9	-33.3	-13	-20.3
797.8	43	24.3	67.3	-27.9	-13	-14.9
990.3	41.7	26.3	68.0	-27.2	-13	-14.2
1596.1	24.8	30.0	54.8	-40.4	-13	-27.4
2242.4	23.4	33.0	56.4	-38.8	-13	-25.8
3039.0	24.8	35.0	59.8	-35.4	-13	-22.4
18000	52.9	9.6	62.5	-32.7	-13	-19.7
Measurement uncertainty : ± 4.3 dB						

- Remark: 1. Calibration Factor = Antenna Factor + Cable Loss (below 3.5GHz)
2. Calibration Factor = Antenna Factor + Cable Loss – Preamplifier Gain (above 3.5GHz)
3. Emission Level = Reading Value + Calibration Factor

4. Margin = EIRP – Limit

WCDMA Band II CH Mid

Polarity : Horizontal

Frequency (MHz)	Reading Vaule (dB μ V)	Calibration Factor (dB)	Emission Level (dB μ V/m)	EIRP (dBm)	Limit (dBm)	Margin (dB)
286.6	32.3	14.7	47	-48.2	-13	-35.2
399.3	24.6	18.2	42.8	-52.4	-13	-39.4
663.7	16.6	23.2	39.8	-55.4	-13	-42.4
799.8	19.1	24.3	43.4	-51.8	-13	-38.8
821.2	15.7	24.6	40.3	-54.9	-13	-41.9
963.1	32.3	26.2	41.4	-53.8	-13	-40.8
1936.9	24.3	31.9	56.2	-39.0	-13	-26.0
2743.5	24.2	34.7	58.9	-36.3	-13	-23.3
2763.5	24.3	34.8	59.1	-36.1	-13	-23.1
3269.5	25.0	35.0	60.0	-35.2	-13	-22.2
Measurement uncertainty : \pm 4.3dB						

Polarity : Vertical

Frequency (MHz)	Reading Vaule (dB μ V)	Calibration Factor (dB)	Emission Level (dB μ V/m)	EIRP (dBm)	Limit (dBm)	Margin (dB)
282.7	32.8	14.6	47.4	-47.8	-13	-34.8
399.3	25.9	18.2	44.1	-51.1	-13	-38.1
624.8	15.1	22.7	37.8	-57.4	-13	-44.4
665.7	16.2	23.2	39.4	-55.8	-13	-42.8
797.8	19.0	24.3	43.3	-51.9	-13	-38.9
933.9	17.2	26.0	43.2	-52.0	-13	-39.0
1596.2	23.6	30.0	53.6	-41.6	-13	-28.6
2202.4	24.0	32.8	56.8	-38.4	-13	-25.4
3289.5	25.1	35.0	60.1	-35.1	-13	-22.1
Measurement uncertainty : \pm 4.3dB						

- Remark: 1. Calibration Factor = Antenna Factor + Cable Loss (below 3.5GHz)
2. Calibration Factor = Antenna Factor + Cable Loss – Preamplifier Gain (above 3.5GHz)
3. Emission Level = Reading Value + Calibration Factor
4. Margin = EIRP – Limit

WCDMA Band II CH High

Polarity : Horizontal

Frequency (MHz)	Reading Vaule (dB μ V)	Calibration Factor (dB)	Emission Level (dB μ V/m)	EIRP (dBm)	Limit (dBm)	Margin (dB)
286.6	32.5	14.7	47.2	-48.0	-13.0	-35.0
335.2	18.9	16.1	35.0	-60.2	-13	-47.2
399.3	22.8	18.2	41.0	-54.2	-13	-41.2
665.7	16.4	23.2	39.6	-55.6	-13	-42.6
799.8	18.3	24.3	42.6	-52.6	-13	-39.6
990.3	15.6	26.3	41.9	-53.3	-13	-40.3
1460.9	26.2	29.3	55.5	-39.7	-13	-26.7
1536.1	23.1	29.7	52.8	-42.4	-13	-29.4
1596.2	27.1	30.0	57.1	-38.1	-13	-25.1
2292.6	24.1	33.1	57.2	-38.0	-13	-26.0
2377.8	24.1	33.4	57.5	-37.7	-13	-26.7
Measurement uncertainty : ± 4.3 dB						

Polarity : Vertical

Frequency (MHz)	Reading Vaule (dB μ V)	Calibration Factor (dB)	Emission Level (dB μ V/m)	EIRP (dBm)	Limit (dBm)	Margin (dB)
249.7	23.4	13.8	37.2	-58.0	-13	-45.0
286.6	31.9	14.7	46.6	-48.6	-13	-35.6
401.3	20.5	18.2	38.7	-56.5	-13	-43.5
665.7	16.3	23.2	39.5	-55.7	-13	-42.7
799.8	18.8	24.3	43.1	-52.1	-13	-39.1
963.1	15.1	26.2	41.3	-53.9	-13	-40.9
1851.7	23.8	31.4	55.2	-40.0	-13	-27.0
1987.0	24.0	32.1	56.1	-39.1	-13	-26.1
2638.3	25.1	34.3	59.4	-35.8	-13	-22.8
2813.6	25.1	35.0	60.1	-35.1	-13	-23.1
Measurement uncertainty : ± 4.3 dB						

- Remark: 1. Calibration Factor = Antenna Factor + Cable Loss (below 3.5GHz)
2. Calibration Factor = Antenna Factor + Cable Loss – Preamplifier Gain (above 3.5GHz)
3. Emission Level = Reading Value + Calibration Factor
4. Margin = EIRP – Limit



WCDMA Band V CH Low

Polarity : Horizontal

Frequency (MHz)	Reading Vaule (dB μ V)	Calibration Factor (dB)	Emission Level (dB μ V/m)	EIRP (dBm)	Limit (dBm)	Margin (dB)
284.6	27.8	14.6	42.4	-52.8	-13	-39.8
663.7	17.4	23.2	40.6	-54.6	-13	-41.6
801.7	20.6	24.3	44.9	-50.3	-13	-37.3
828.9	19.6	24.7	44.3	-50.9	-13	-37.9
933.9	15.9	26.0	41.9	-53.3	-13	-40.3
Measurement uncertainty : \pm 4.3dB						

Polarity : Vertical

Frequency (MHz)	Reading Vaule (dB μ V)	Calibration Factor (dB)	Emission Level (dB μ V/m)	EIRP (dBm)	Limit (dBm)	Margin (dB)
288.5	10.8	32.3	43.1	-52.1	-13	-39.1
663.7	18	23.8	41.8	-53.4	-13	-40.4
799.8	20.5	22.7	43.2	-52	-13	-39
873.6	21.5	21.6	43.1	-52.1	-13	-39.1
978.6	12.5	28.7	41.2	-54	-13	-41
Measurement uncertainty : \pm 4.3dB						

- Remark: 1. Calibration Factor = Antenna Factor + Cable Loss (below 3.5GHz)
 2. Calibration Factor = Antenna Factor + Cable Loss – Preamplifier Gain (above 3.5GHz)
 3. Emission Level = Reading Value + Calibration Factor
 4. Margin = EIRP – Limit

WCDMA Band V CH Mid

Polarity : Horizontal

Frequency (MHz)	Reading Vaule (dB μ V)	Calibration Factor (dB)	Emission Level (dB μ V/m)	EIRP (dBm)	Limit (dBm)	Margin (dB)
288.5	28.5	14.7	43.2	-52	-13	-39
401.3	22.4	18.2	40.6	-54.6	-13	-41.6
799.8	20.1	24.3	44.4	-50.8	-13	-37.8
883.4	21.6	25.5	47.1	-48.1	-13	-35.1
932.0	15.9	26.0	41.9	-53.3	-13	-40.3
Measurement uncertainty : \pm 4.3dB						

Polarity : Vertical

Frequency (MHz)	Reading Vaule (dB μ V)	Calibration Factor (dB)	Emission Level (dB μ V/m)	EIRP (dBm)	Limit (dBm)	Margin (dB)
284.6	28.2	14.6	42.9	-52.3	-13	-39.3
399.3	23.9	18.2	42.1	-53.1	-13	-40.1
797.8	20.5	24.3	44.8	-50.4	-13	-37.4
883.4	18.0	25.5	43.5	-51.7	-13	-38.7
924.2	16.1	25.9	42.1	-53.1	-13	-40.1
Measurement uncertainty : \pm 4.3dB						

- Remark: 1. Calibration Factor = Antenna Factor + Cable Loss (below 3.5GHz)
2. Calibration Factor = Antenna Factor + Cable Loss – Preamplifier Gain (above 3.5GHz)
3. Emission Level = Reading Value + Calibration Factor
4. Margin = EIRP – Limit

WCDMA Band V CH High

Polarity : Horizontal

Frequency (MHz)	Reading Vaule (dB μ V)	Calibration Factor (dB)	Emission Level (dB μ V/m)	EIRP (dBm)	Limit (dBm)	Margin (dB)
286.6	28.4	14.7	43.1	-52.1	-13	-39.1
799.8	20.5	24.3	44.8	-50.4	-13	-37.4
891.1	18.1	25.7	43.8	-51.4	-13	-38.4
928.1	16.1	26	42.1	-53.1	-13	-40.1
986.4	15.3	26.3	41.6	-53.6	-13	-40.6
Measurement uncertainty : ± 4.3 dB						

Polarity : Vertical

Frequency (MHz)	Reading Vaule (dB μ V)	Calibration Factor (dB)	Emission Level (dB μ V/m)	EIRP (dBm)	Limit (dBm)	Margin (dB)
284.6	28.4	14.6	43	-52.2	-13	-39.2
665.7	17.5	23.2	40.7	-54.5	-13	-41.5
797.8	15.2	24.3	39.5	-55.7	-13	-42.7
893.1	17.7	25.7	43.4	-51.8	-13	-38.8
933.9	15.5	26	41.5	-53.7	-13	-40.7
Measurement uncertainty : ± 4.3 dB						

- Remark: 1. Calibration Factor = Antenna Factor + Cable Loss (below 3.5GHz)
2. Calibration Factor = Antenna Factor + Cable Loss – Preamplifier Gain (above 3.5GHz)
3. Emission Level = Reading Value + Calibration Factor
4. Margin = EIRP – Limit

CDMA2000 BC0 CH Low

Polarity : Horizontal

Frequency (MHz)	Reading Vaule (dB μ V)	Calibration Factor (dB)	Emission Level (dB μ V/m)	EIRP (dBm)	Limit (dBm)	Margin (dB)
797.8	16.0	24.3	40.3	-54.9	-13	-41.9
869.8	16.1	25.3	41.4	-53.8	-13	-40.8
910.6	16.1	25.9	42.0	-53.2	-13	-40.2
933.9	20.5	26.0	46.5	-48.7	-13	-35.7
947.5	16.2	26.1	42.3	-52.9	-13	-39.9
Measurement uncertainty : \pm 4.3dB						

Polarity : Vertical

Frequency (MHz)	Reading Vaule (dB μ V)	Calibration Factor (dB)	Emission Level (dB μ V/m)	EIRP (dBm)	Limit (dBm)	Margin (dB)
399.3	24.0	18.2	42.2	-53.0	-13	-40.0
533.5	19.1	20.9	40.0	-55.2	-13	-42.2
799.8	16.7	24.3	41.0	-54.2	-13	-41.2
922.2	17.4	25.9	43.3	-51.9	-13	-38.9
932.0	19.8	26.0	45.8	-49.4	-13	-36.4
Measurement uncertainty : \pm 4.3dB						

- Remark: 1. Calibration Factor = Antenna Factor + Cable Loss (below 3.5GHz)
2. Calibration Factor = Antenna Factor + Cable Loss – Preamplifier Gain (above 3.5GHz)
3. Emission Level = Reading Value + Calibration Factor
4. Margin = EIRP – Limit



CDMA2000 BC0 CH Mid

Polarity : Horizontal

Frequency (MHz)	Reading Vaule (dB μ V)	Calibration Factor (dB)	Emission Level (dB μ V/m)	EIRP (dBm)	Limit (dBm)	Margin (dB)
282.7	29.3	14.6	43.9	-51.3	-13	-38.3
399.3	19.7	18.2	37.9	-57.3	-13	-44.3
665.7	16.0	23.2	39.2	-56.0	-13	-43.0
801.7	17.0	24.3	41.3	-53.9	-13	-40.9
970.8	14.5	26.2	40.7	-54.5	-13	-41.5
Measurement uncertainty : \pm 4.3dB						

Polarity : Vertical

Frequency (MHz)	Reading Vaule (dB μ V)	Calibration Factor (dB)	Emission Level (dB μ V/m)	EIRP (dBm)	Limit (dBm)	Margin (dB)
282.7	30.8	14.6	45.4	-49.8	-13	-36.8
399.3	19.4	18.2	37.6	-57.6	-13	-44.6
665.7	15.2	23.2	38.4	-56.8	-13	-43.8
797.8	17.0	24.3	41.3	-53.9	-13	-40.9
994.2	14.9	26.4	41.3	-53.9	-13	-40.9
Measurement uncertainty : \pm 4.3dB						

- Remark: 1. Calibration Factor = Antenna Factor + Cable Loss (below 3.5GHz)
 2. Calibration Factor = Antenna Factor + Cable Loss – Preamplifier Gain (above 3.5GHz)
 3. Emission Level = Reading Value + Calibration Factor
 4. Margin = EIRP – Limit

CDMA2000 BC0 CH High

Polarity : Horizontal

Frequency (MHz)	Reading Vaule (dB μ V)	Calibration Factor (dB)	Emission Level (dB μ V/m)	EIRP (dBm)	Limit (dBm)	Margin (dB)
284.6	30.2	14.6	44.8	-50.4	-13	-37.4
399.3	20.6	18.2	38.8	-56.4	-13	-43.4
665.7	14.9	23.2	38.1	-57.1	-13	-44.1
799.8	17.0	24.3	41.3	-53.9	-13	-40.9
974.7	15.0	26.2	41.2	-54.0	-13	-41.0
Measurement uncertainty : \pm 4.3dB						

Polarity : Vertical

Frequency (MHz)	Reading Vaule (dB μ V)	Calibration Factor (dB)	Emission Level (dB μ V/m)	EIRP (dBm)	Limit (dBm)	Margin (dB)
286.6	29.9	14.7	44.6	-50.6	-13	-37.6
399.3	20.9	18.2	39.1	-56.1	-13	-43.1
533.5	16.3	20.9	37.2	-58.0	-13	-45.0
801.7	15.7	24.3	40	-55.2	-13	-42.2
955.3	15.3	26.1	41.4	-53.8	-13	-40.8
Measurement uncertainty : \pm 4.3dB						

- Remark: 1. Calibration Factor = Antenna Factor + Cable Loss (below 3.5GHz)
2. Calibration Factor = Antenna Factor + Cable Loss – Preamplifier Gain (above 3.5GHz)
3. Emission Level = Reading Value + Calibration Factor
4. Margin = EIRP – Limit



CDMA2000 BC1 CH Low

Polarity : Horizontal

Frequency (MHz)	Reading Vaule (dB μ V)	Calibration Factor (dB)	Emission Level (dB μ V/m)	EIRP (dBm)	Limit (dBm)	Margin (dB)
514.0	20.1	20.4	40.5	-54.7	-13	-41.7
531.5	21.5	20.8	42.3	-52.9	-13	-39.9
799.8	16.0	24.3	40.3	-54.9	-13	-41.9
910.6	16.6	25.9	42.5	-52.7	-13	-39.7
928.1	20.2	26.0	46.2	-49.0	-13	-36.0
996.1	15.3	26.4	41.7	-53.5	-13	-40.5
1160.3	23.5	27.4	50.9	-44.3	-13	-31.3
1300.6	22.8	28.3	51.1	-44.1	-13	-31.1
Measurement uncertainty : \pm 4.3dB						

Polarity : Vertical

Frequency (MHz)	Reading Vaule (dB μ V)	Calibration Factor (dB)	Emission Level (dB μ V/m)	EIRP (dBm)	Limit (dBm)	Margin (dB)
514.0	20.3	20.4	40.7	-54.5	-13	-41.5
533.5	19.9	20.9	40.8	-54.4	-13	-41.4
902.8	16.8	25.8	42.6	-52.6	-13	-39.6
916.4	19.0	25.9	44.9	-50.3	-13	-37.3
932.0	20.0	26.0	46.0	-49.2	-13	-36.2
943.6	17.5	26.1	43.6	-51.6	-13	-38.6
1596.9	27.5	30.0	57.5	-37.7	-13	-24.7
Measurement uncertainty : \pm 4.3dB						

- Remark: 1. Calibration Factor = Antenna Factor + Cable Loss (below 3.5GHz)
 2. Calibration Factor = Antenna Factor + Cable Loss – Preamplifier Gain (above 3.5GHz)
 3. Emission Level = Reading Value + Calibration Factor
 4. Margin = EIRP – Limit

CDMA2000 BC1 CH Mid

Polarity : Horizontal

Frequency (MHz)	Reading Vaule (dB μ V)	Calibration Factor (dB)	Emission Level (dB μ V/m)	EIRP (dBm)	Limit (dBm)	Margin (dB)
214.7	26.2	12.3	38.5	-56.7	-13	-43.7
284.6	31.1	14.6	45.7	-49.5	-13	-36.5
531.5	17.7	20.8	38.5	-56.7	-13	-43.7
690.9	15.6	23.6	39.2	-56.0	-13	-43.0
702.6	14.6	23.7	38.3	-56.9	-13	-43.9
933.9	15.7	26.0	41.7	-53.5	-13	-40.5
1250.5	23.7	27.9	51.6	-43.6	-13	-30.6
Measurement uncertainty : ± 4.3 dB						

Polarity : Vertical

Frequency (MHz)	Reading Vaule (dB μ V)	Calibration Factor (dB)	Emission Level (dB μ V/m)	EIRP (dBm)	Limit (dBm)	Margin (dB)
218.6	26.2	12.5	38.7	-56.5	-13	-43.5
282.7	30.9	14.6	45.5	-49.7	-13	-36.7
399.3	21.0	18.2	39.2	-56.0	-13	-43.0
665.7	16.0	23.2	39.2	-56.0	-13	-43.0
801.7	17.1	24.3	41.4	-53.8	-13	-40.8
932.0	16.0	26.0	42	-53.2	-13	-40.2
1460.9	23.0	29.3	52.3	-42.9	-13	-29.9
Measurement uncertainty : ± 4.3 dB						

- Remark: 1. Calibration Factor = Antenna Factor + Cable Loss (below 3.5GHz)
2. Calibration Factor = Antenna Factor + Cable Loss – Preamplifier Gain (above 3.5GHz)
3. Emission Level = Reading Value + Calibration Factor
4. Margin = EIRP – Limit

CDMA2000 BC1 CH High

Polarity : Horizontal

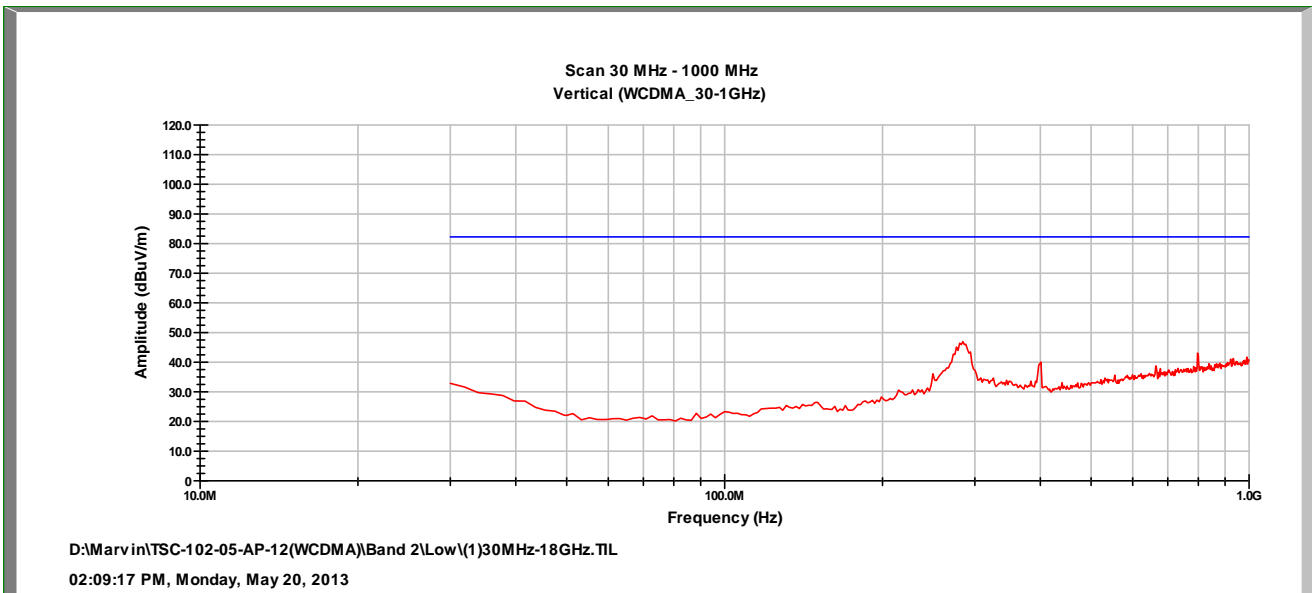
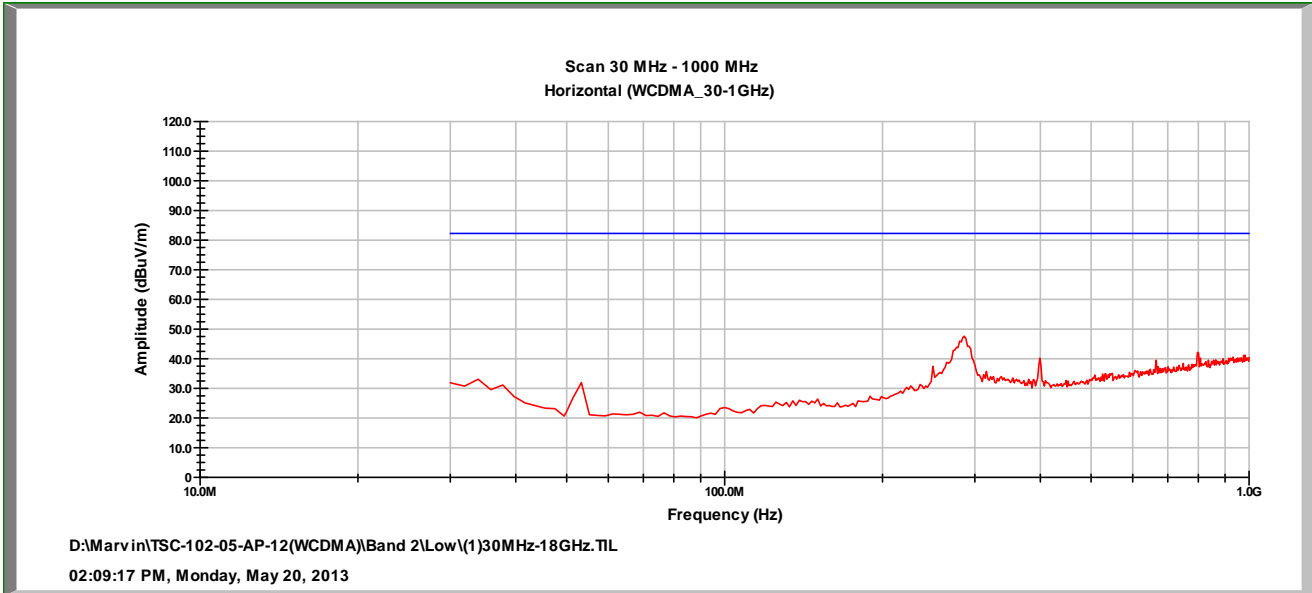
Frequency (MHz)	Reading Vaule (dB μ V)	Calibration Factor (dB)	Emission Level (dB μ V/m)	EIRP (dBm)	Limit (dBm)	Margin (dB)
212.7	19.8	12.2	32.0	-63.2	-13	-50.2
288.5	31.4	14.7	46.1	-49.1	-13	-36.1
399.3	20.5	18.2	38.7	-56.5	-13	-43.5
665.7	15.0	23.2	38.2	-57.0	-13	-44.0
799.8	17.2	24.3	41.5	-53.7	-13	-40.7
965.0	15.4	26.2	41.6	-53.6	-13	-40.6
1596.2	25.6	30.0	55.6	-39.6	-13	-26.6
1861.7	25.4	31.4	56.8	-38.4	-13	-25.4
Measurement uncertainty : \pm 4.3dB						

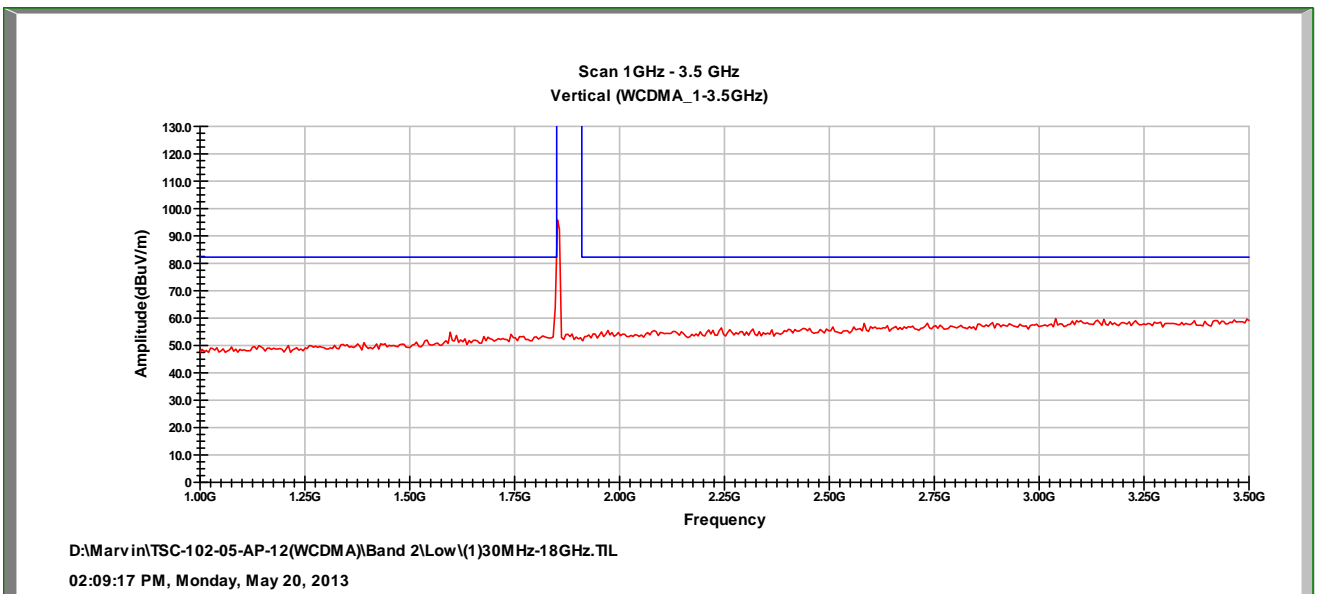
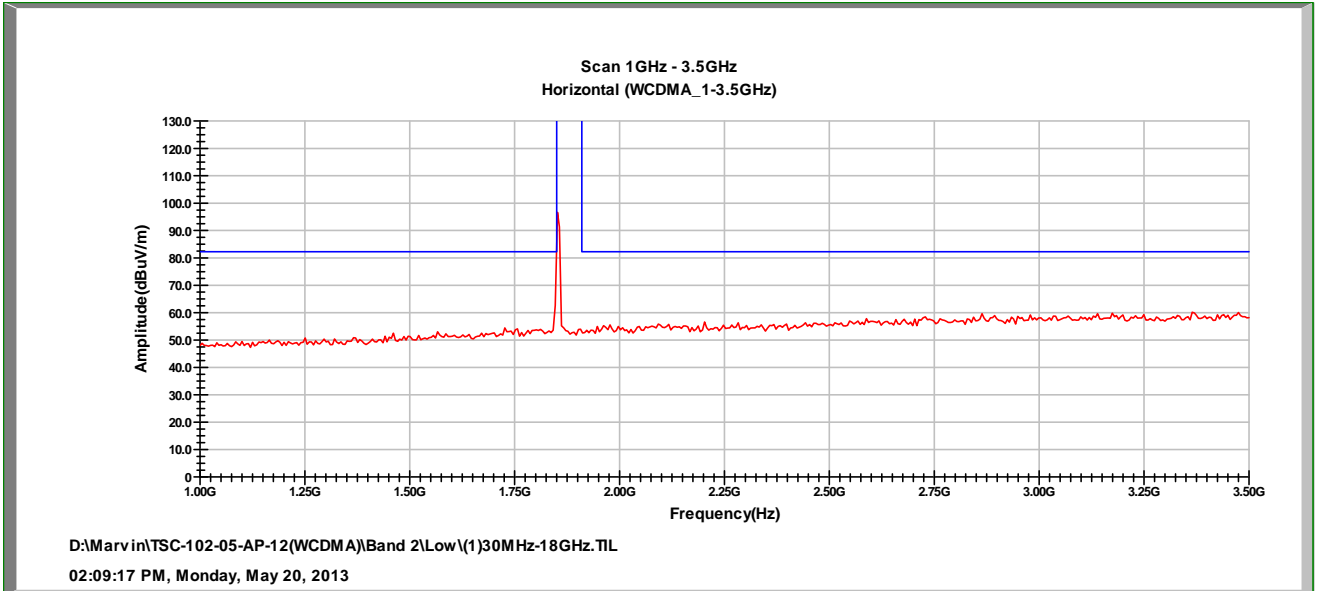
Polarity : Vertical

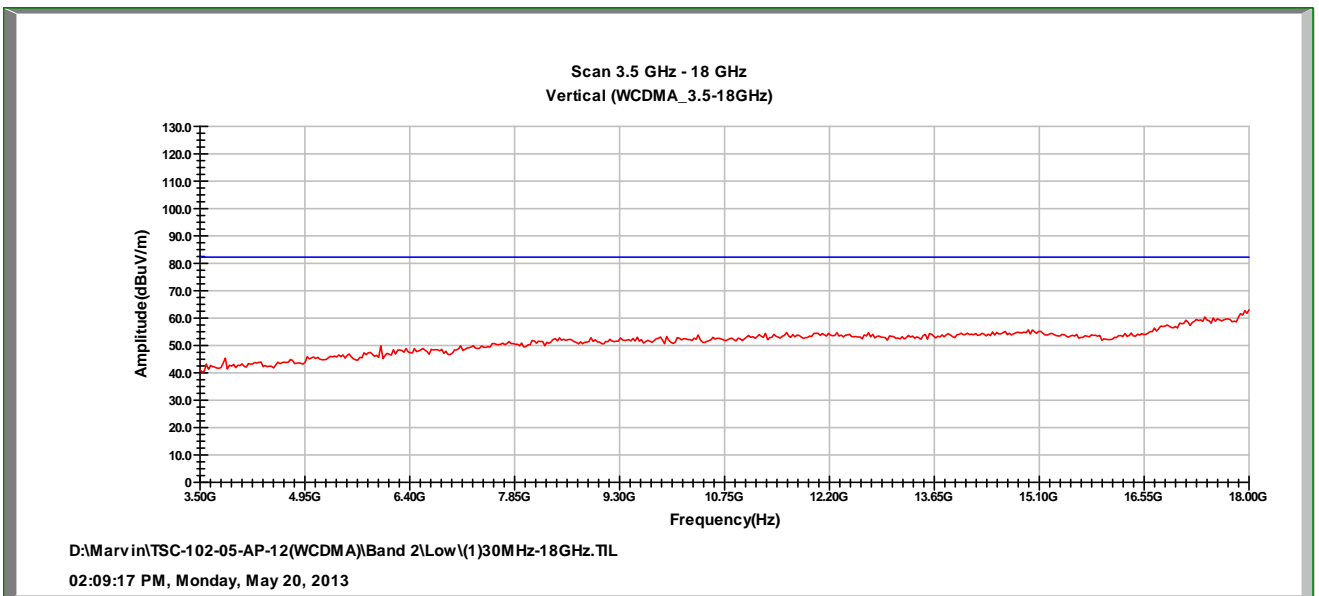
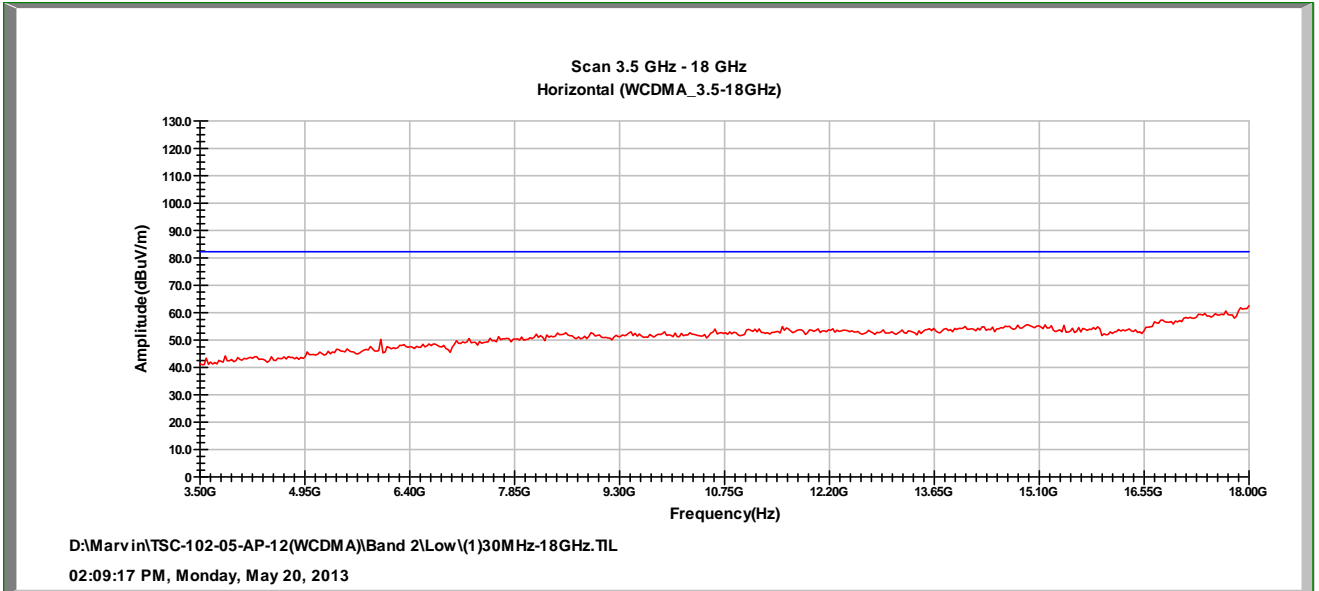
Frequency (MHz)	Reading Vaule (dB μ V)	Calibration Factor (dB)	Emission Level (dB μ V/m)	EIRP (dBm)	Limit (dBm)	Margin (dB)
533.5	19.7	20.9	40.6	-54.6	-13	-41.6
780.3	15.3	24.2	39.5	-55.7	-13	-42.7
799.8	16.7	24.3	41.0	-54.2	-13	-41.2
852.3	15.5	25.1	40.6	-54.6	-13	-41.6
918.4	17.7	25.9	43.6	-51.6	-13	-38.6
933.9	19.8	26.0	45.8	-49.4	-13	-36.4
1460.9	28.5	29.3	57.8	-37.4	-13	-24.4
2533.1	24.1	33.9	58.0	-37.2	-13	-24.2
Measurement uncertainty : \pm 4.3dB						

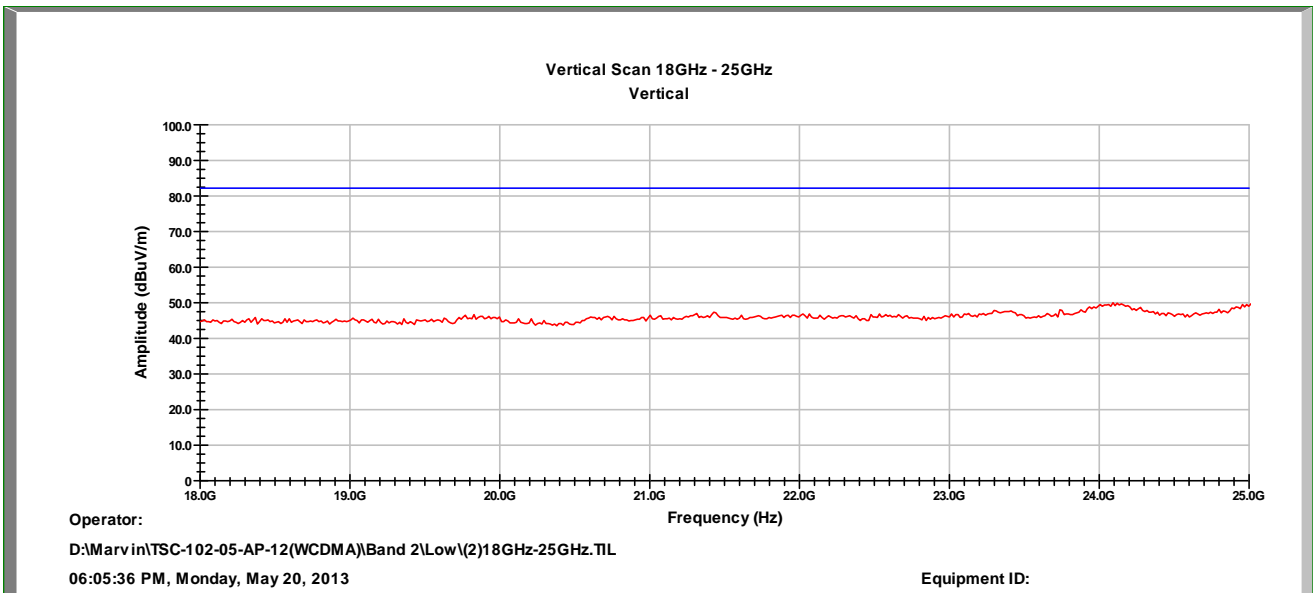
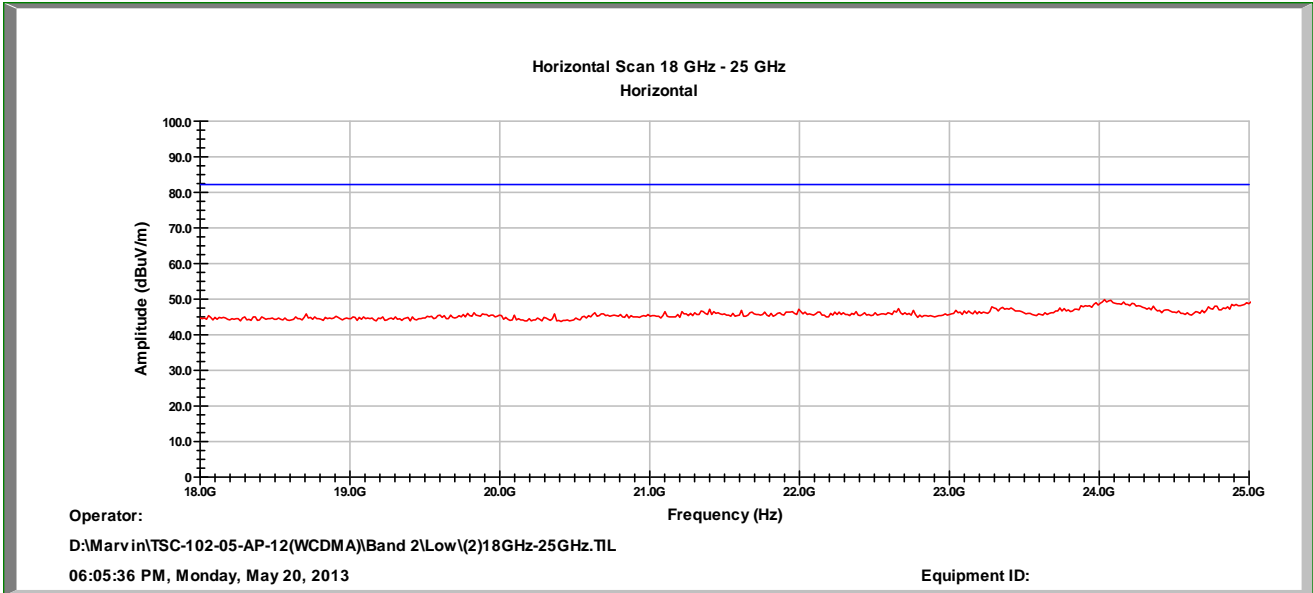
- Remark: 1. Calibration Factor = Antenna Factor + Cable Loss (below 3.5GHz)
2. Calibration Factor = Antenna Factor + Cable Loss – Preamplifier Gain (above 3.5GHz)
3. Emission Level = Reading Value + Calibration Factor
4. Margin = EIRP – Limit

WCDMA Band II CH Low

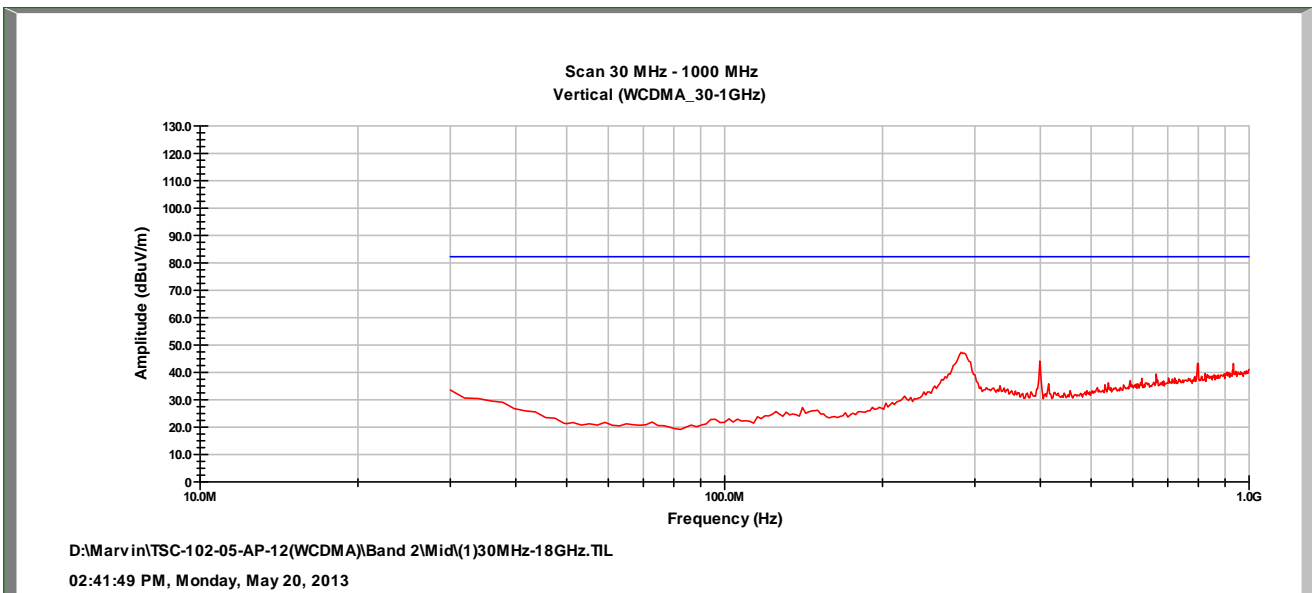
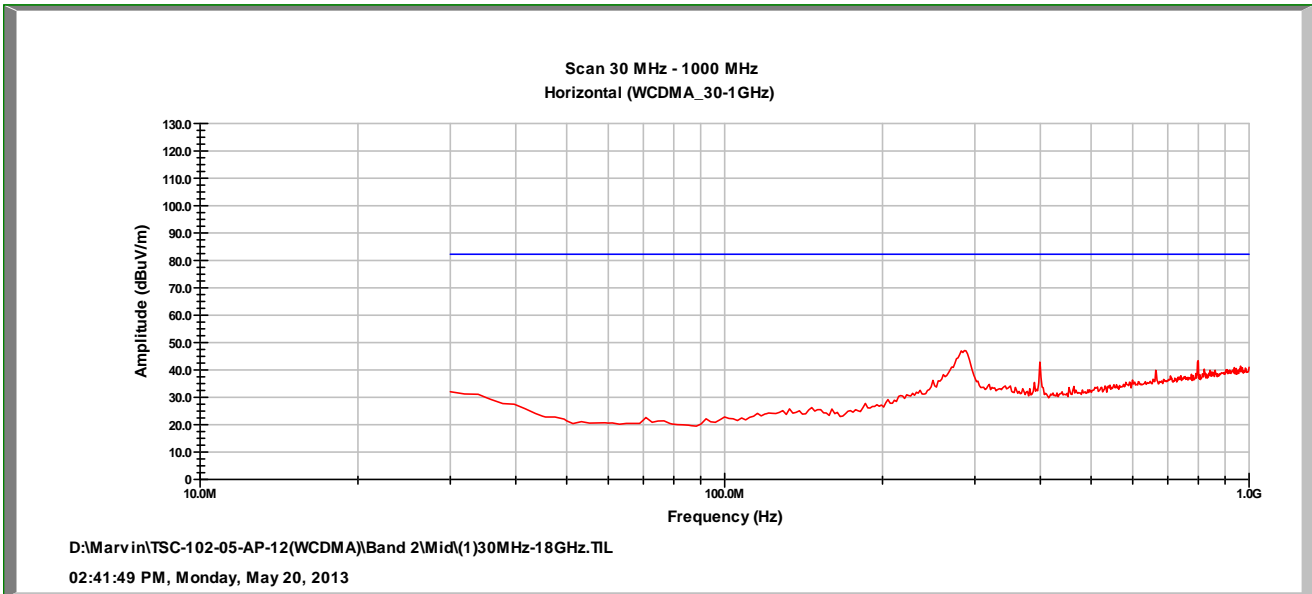


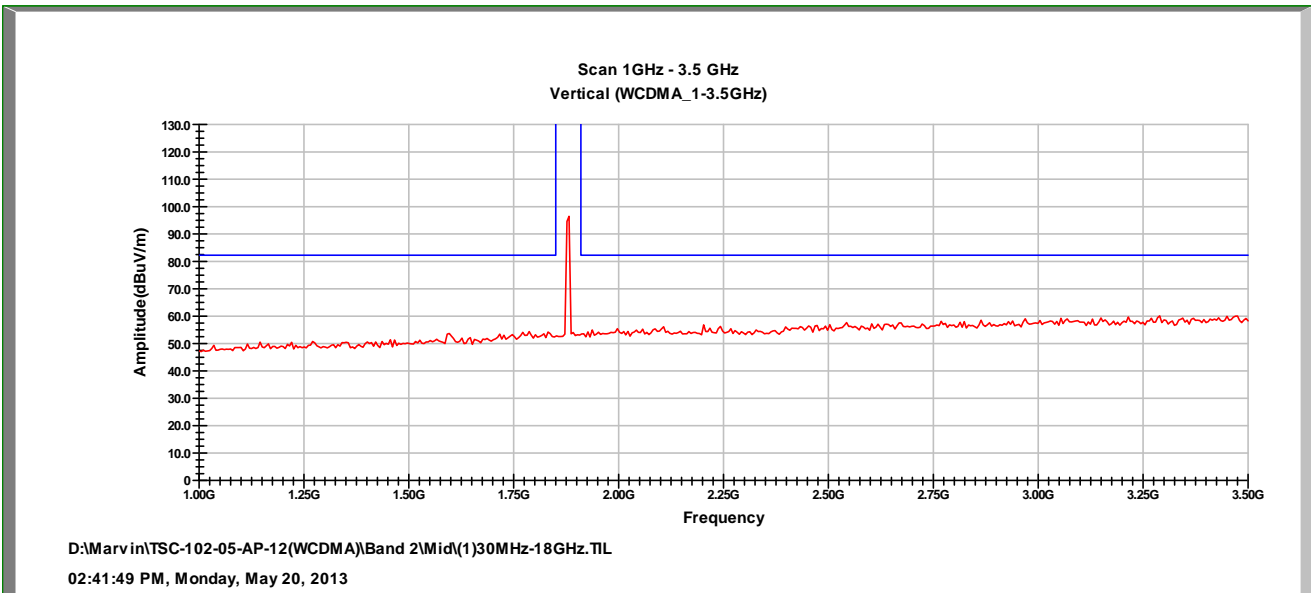
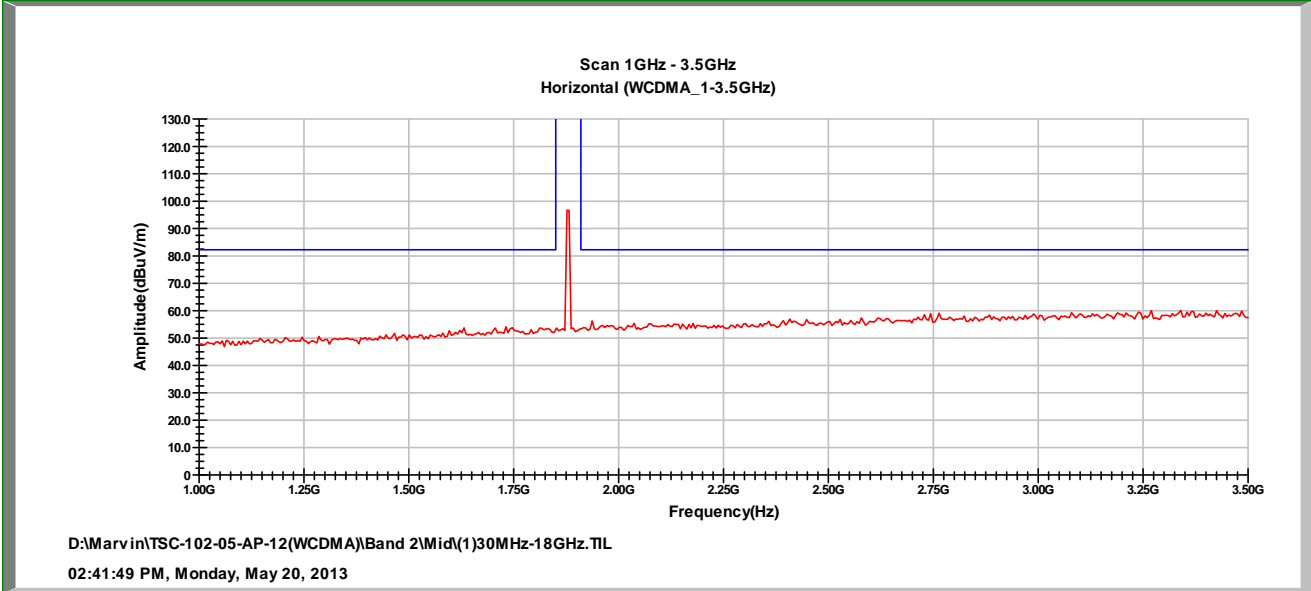


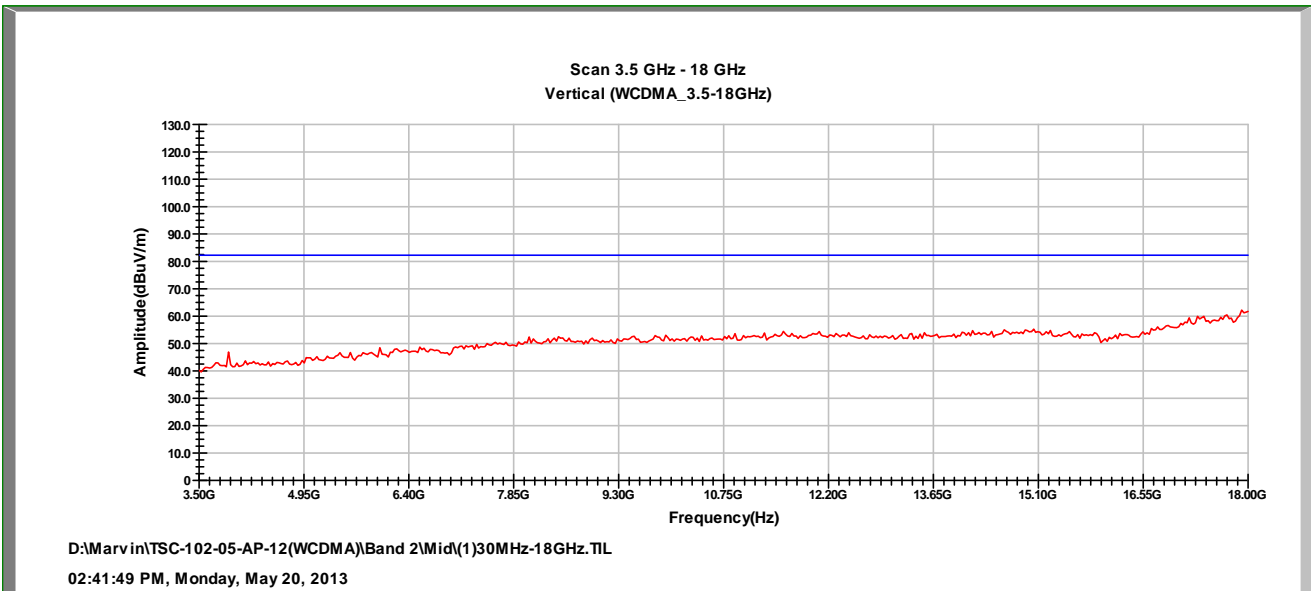
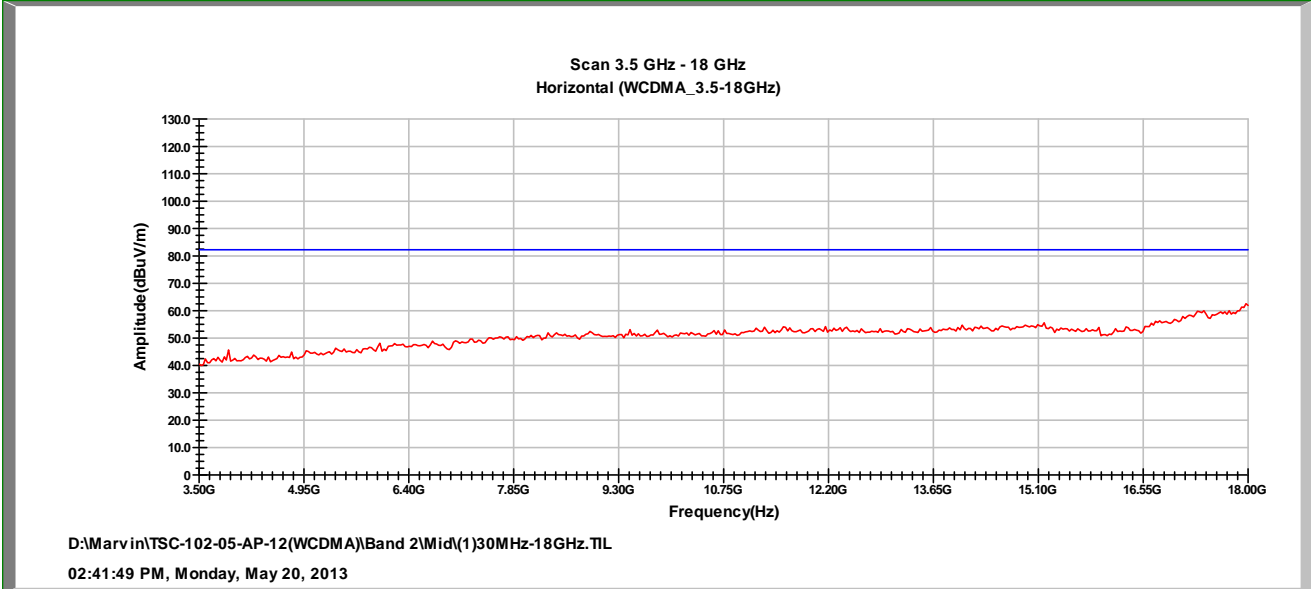


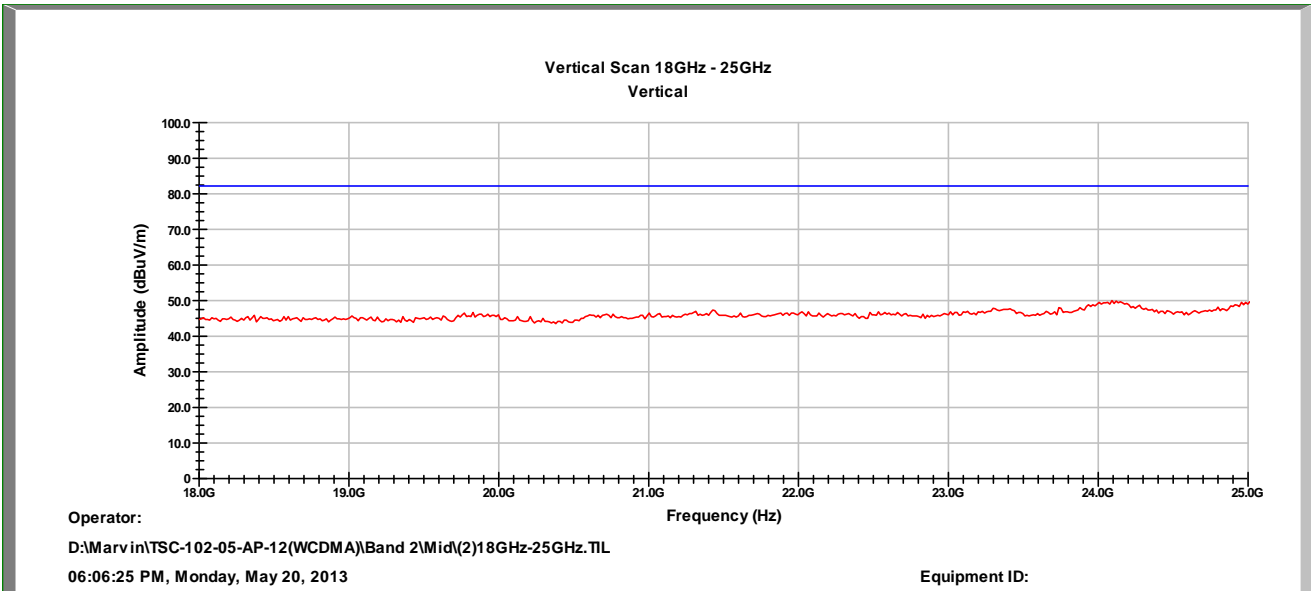
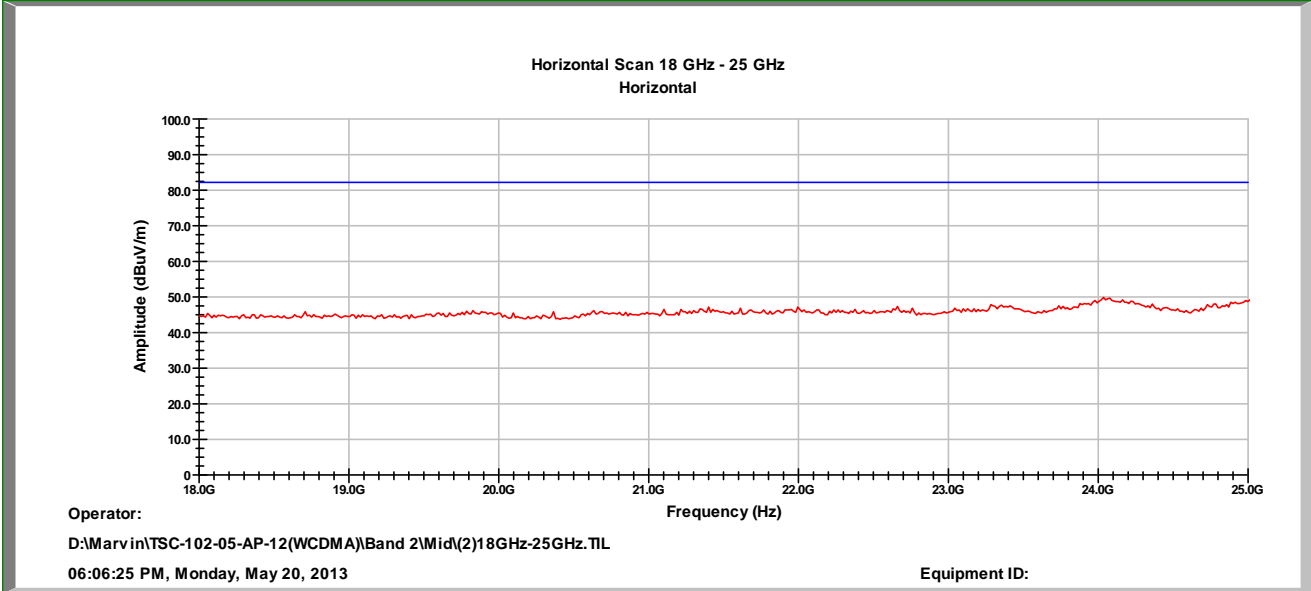


WCDMA Band II CH Mid

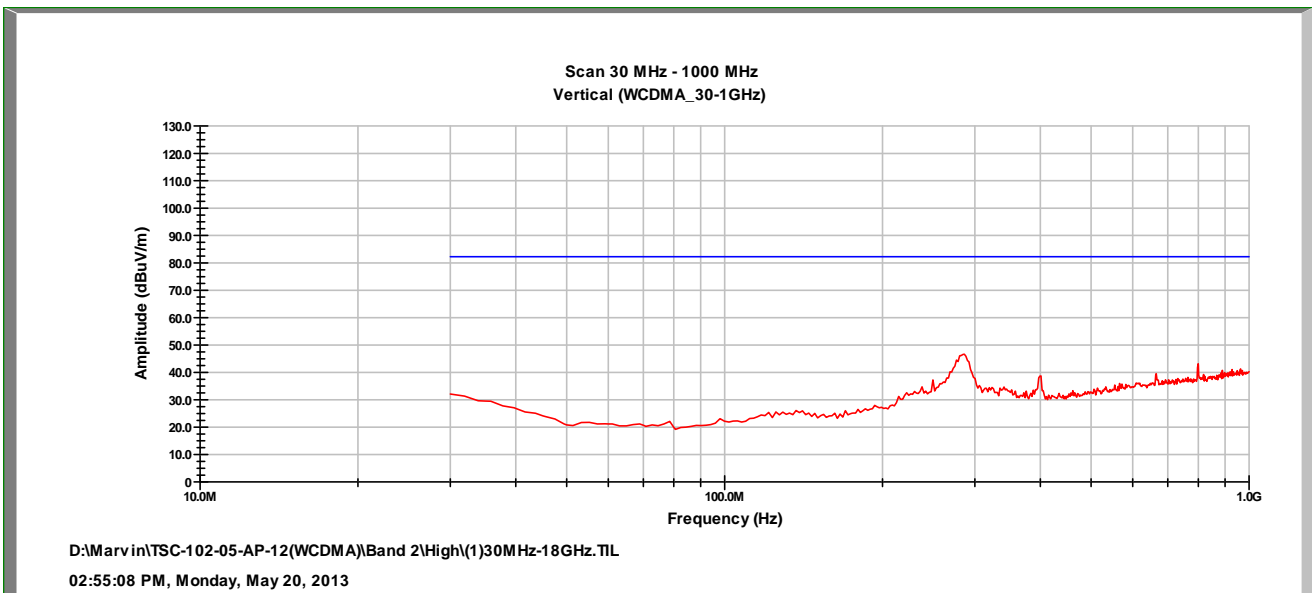
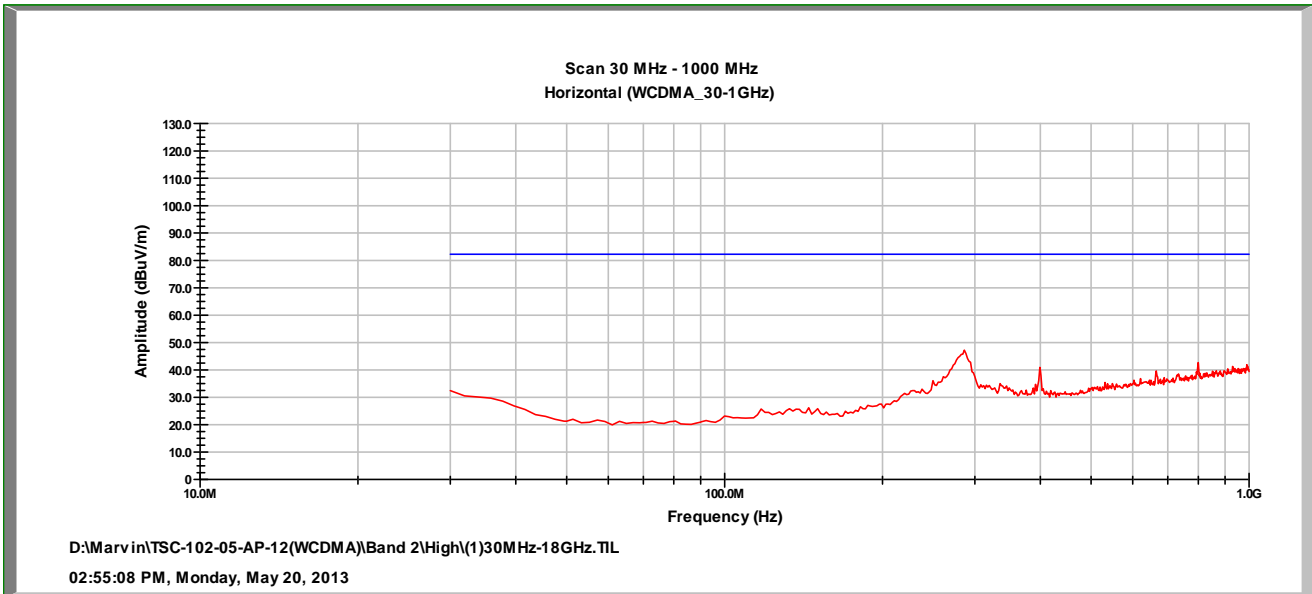


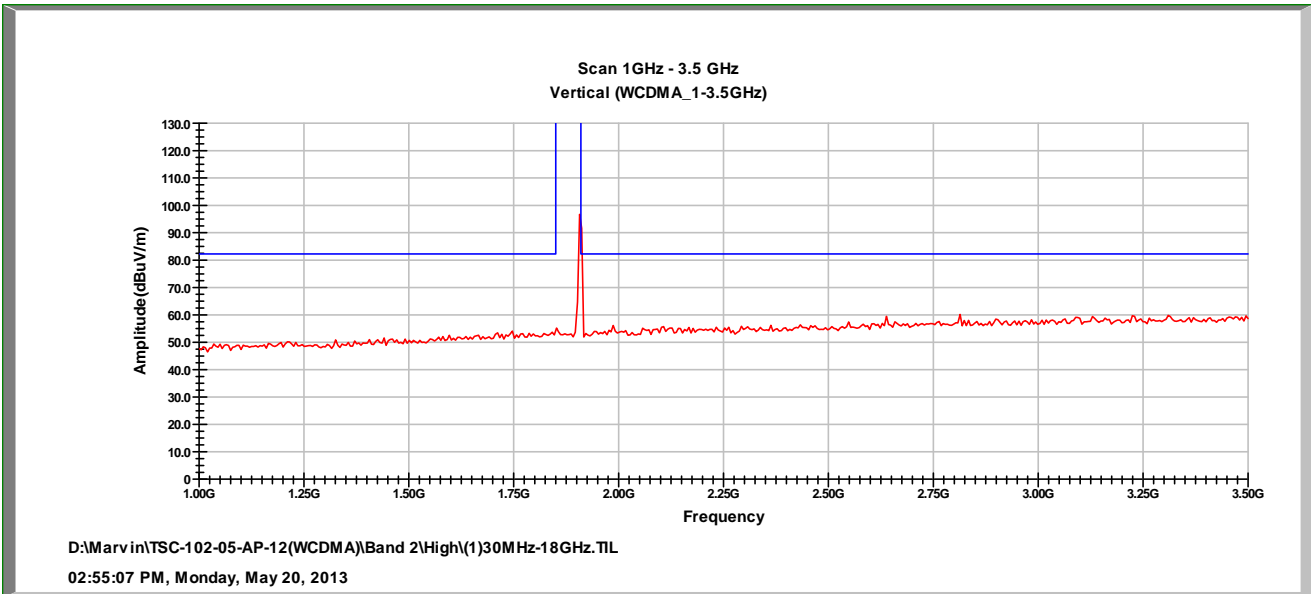
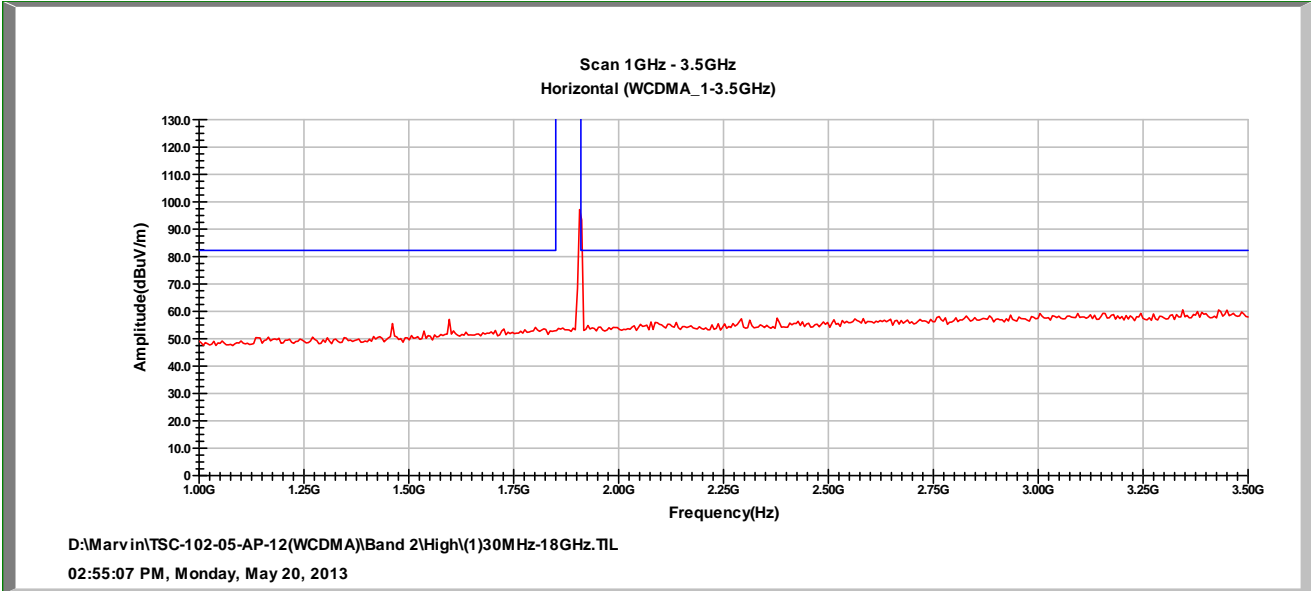


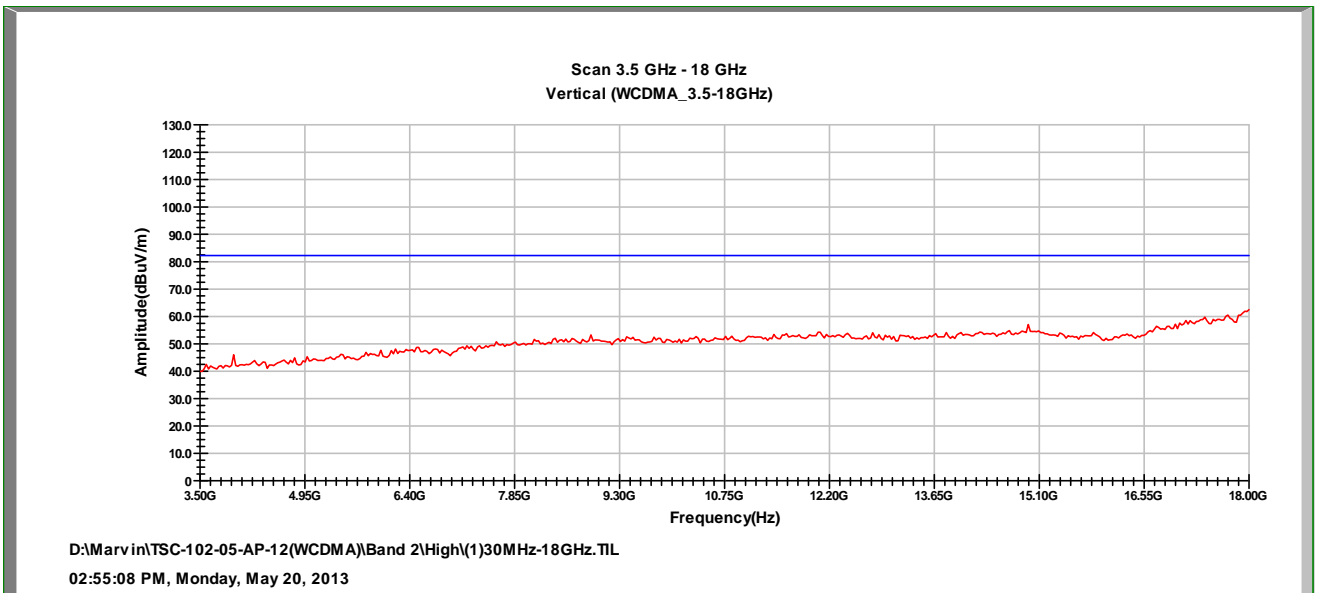
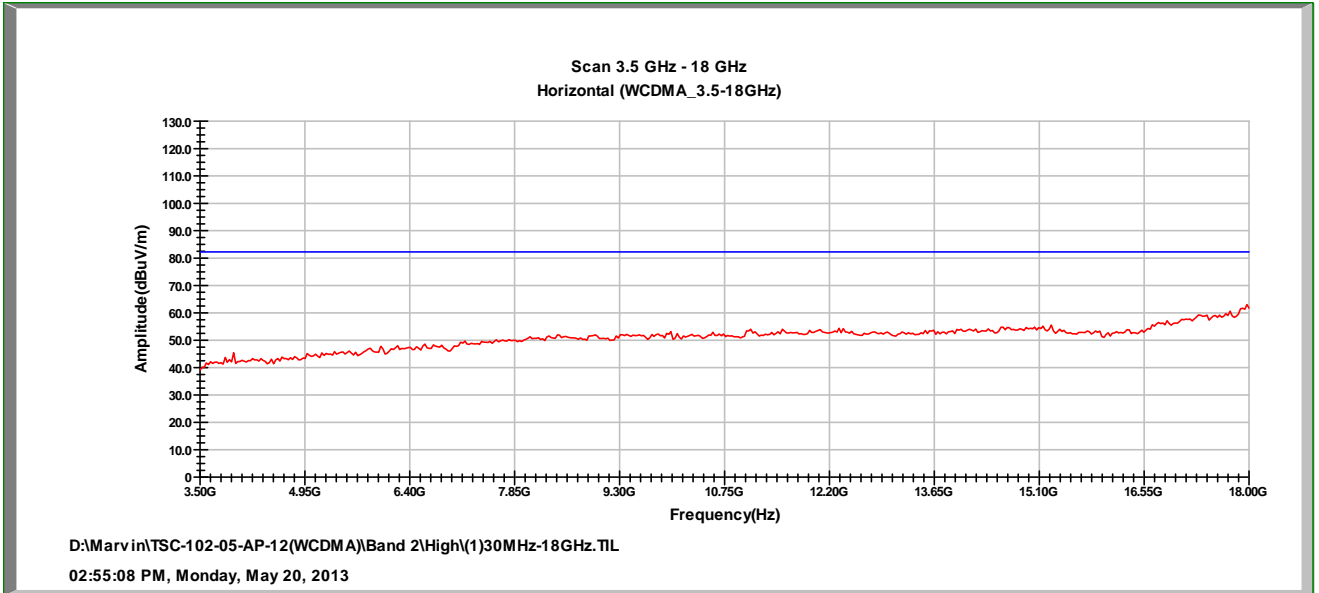


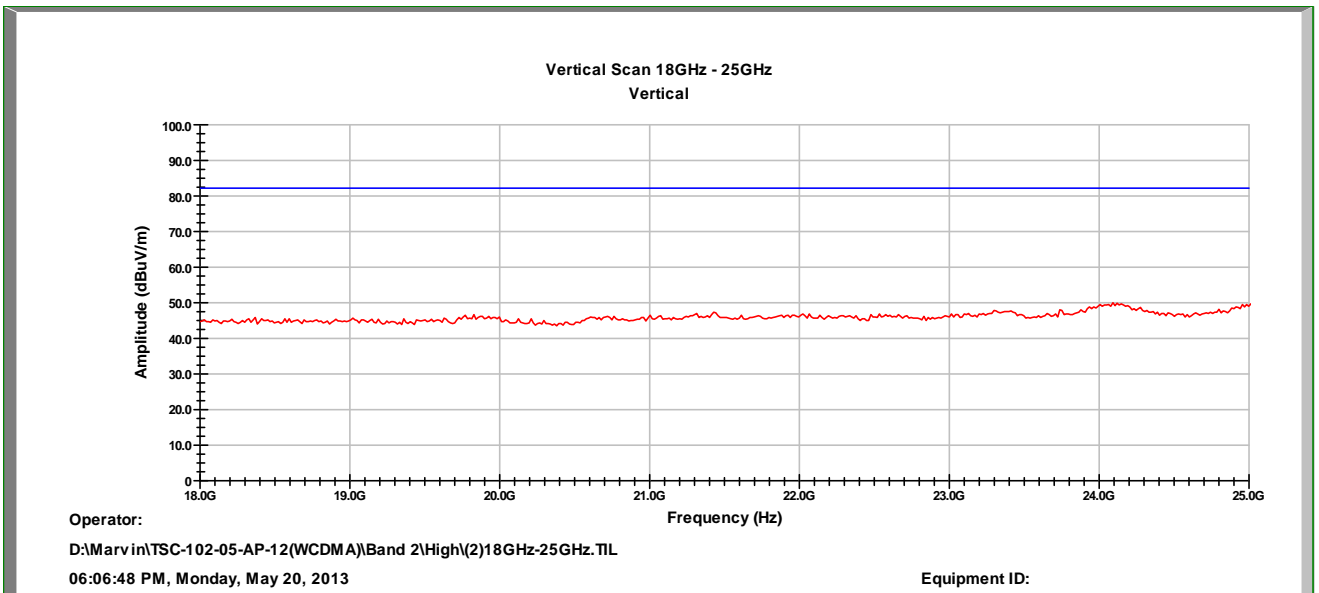
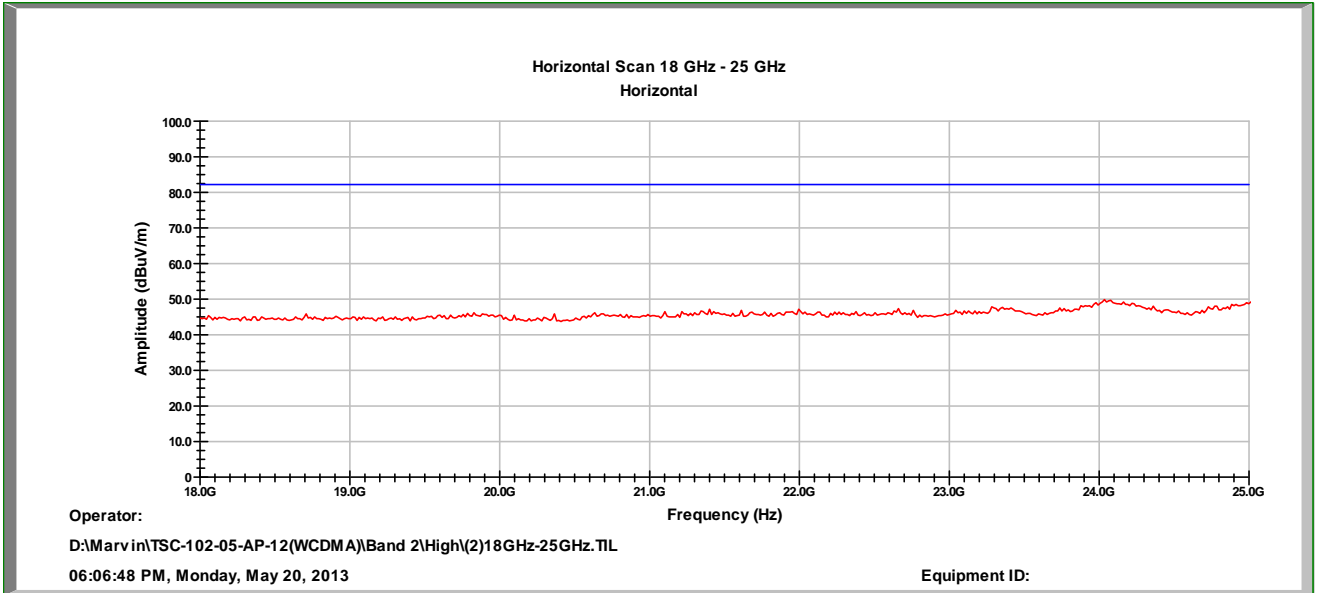


WCDMA Band II CH High

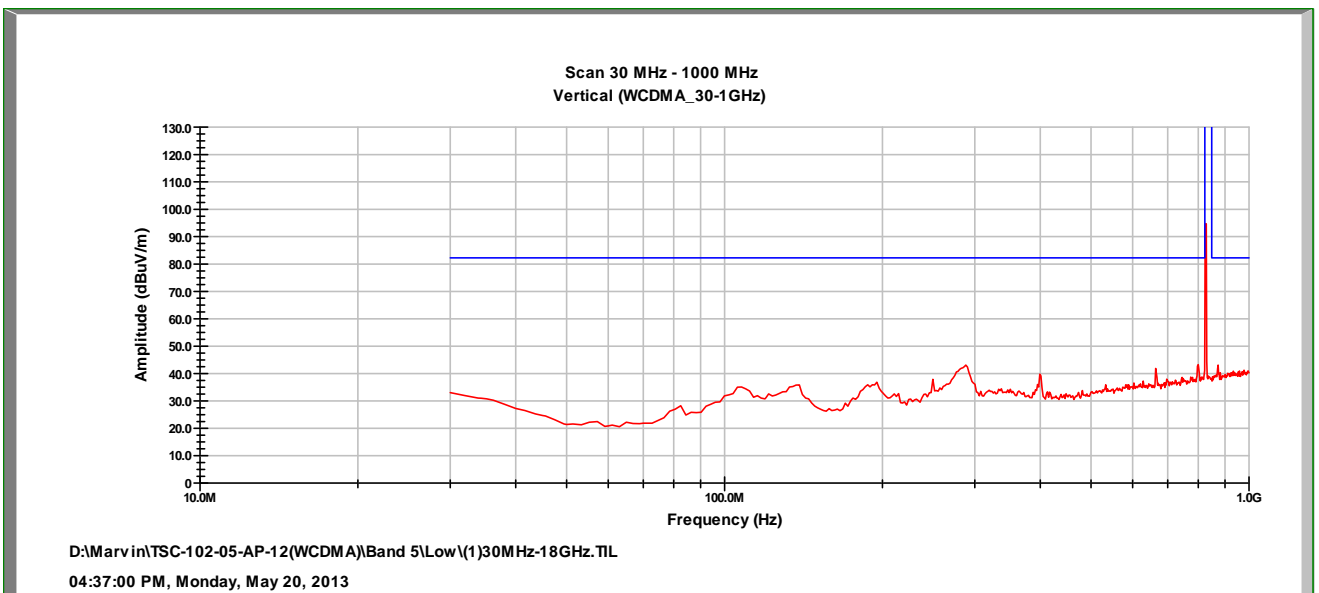
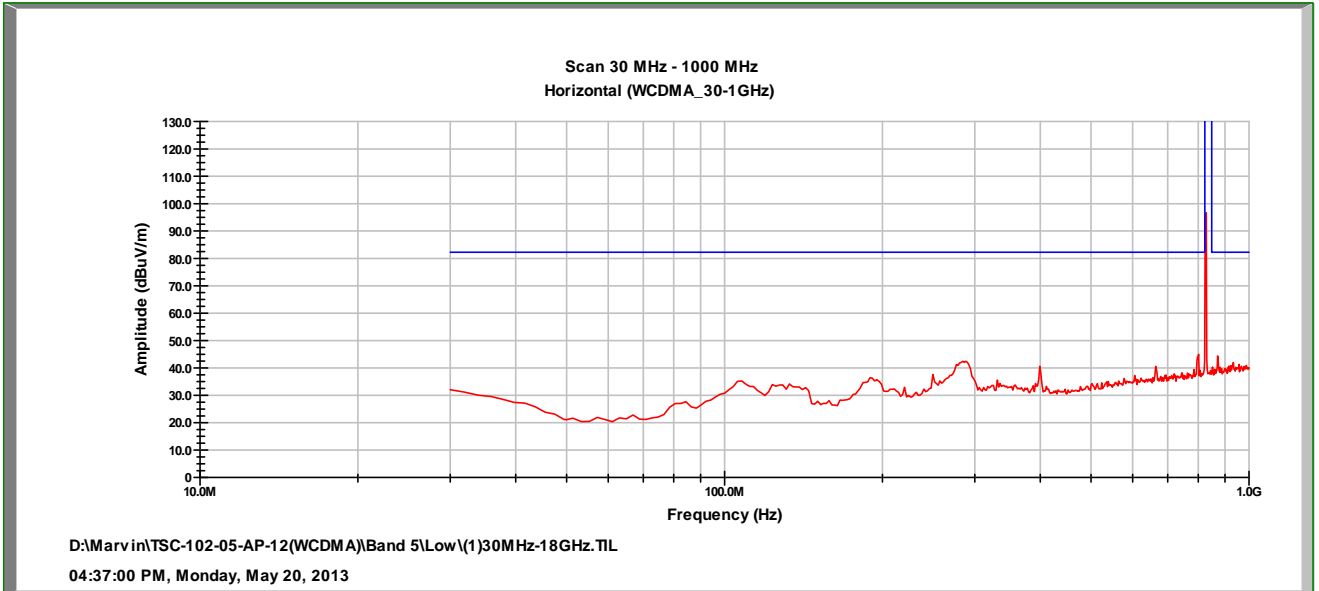


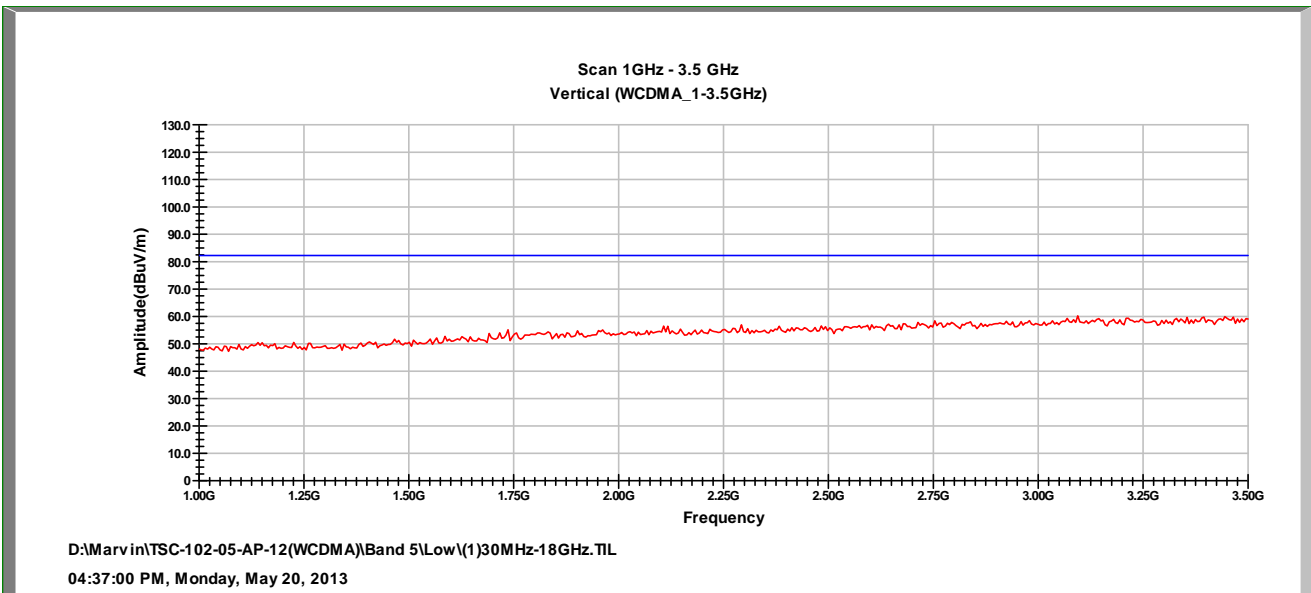
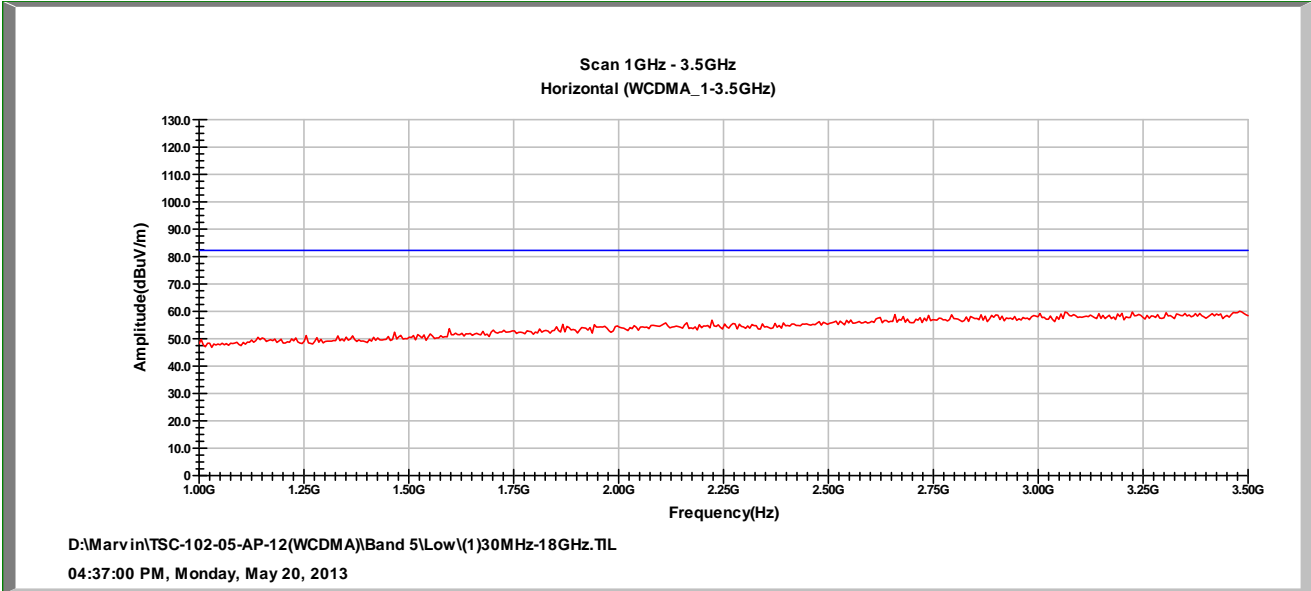


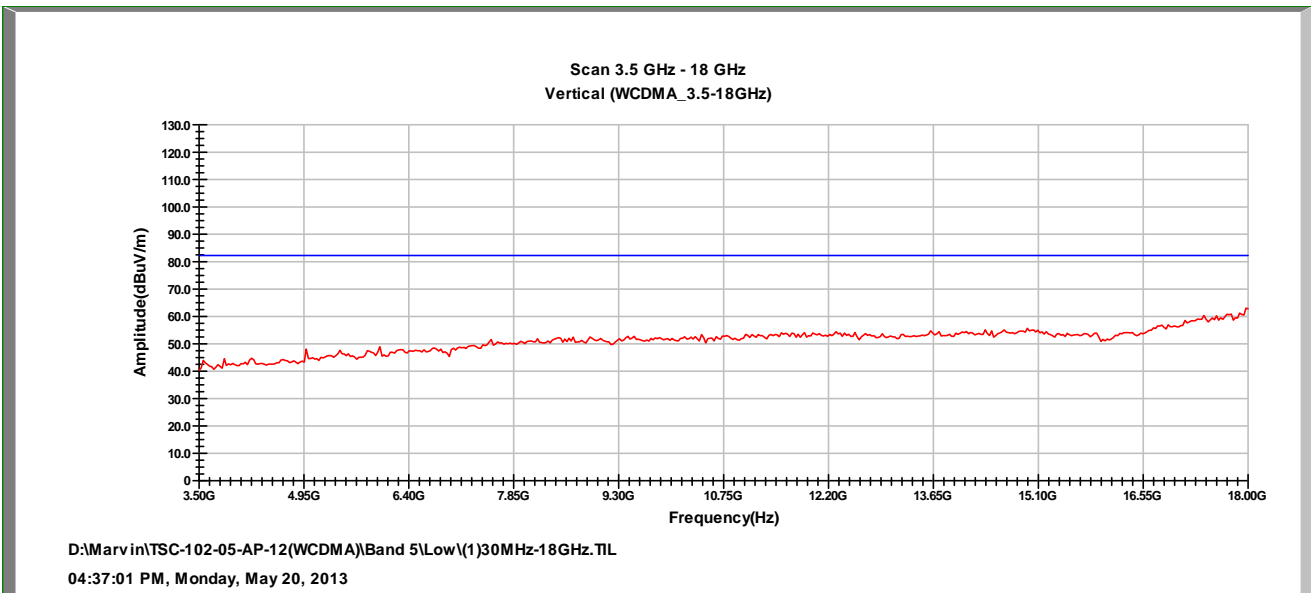
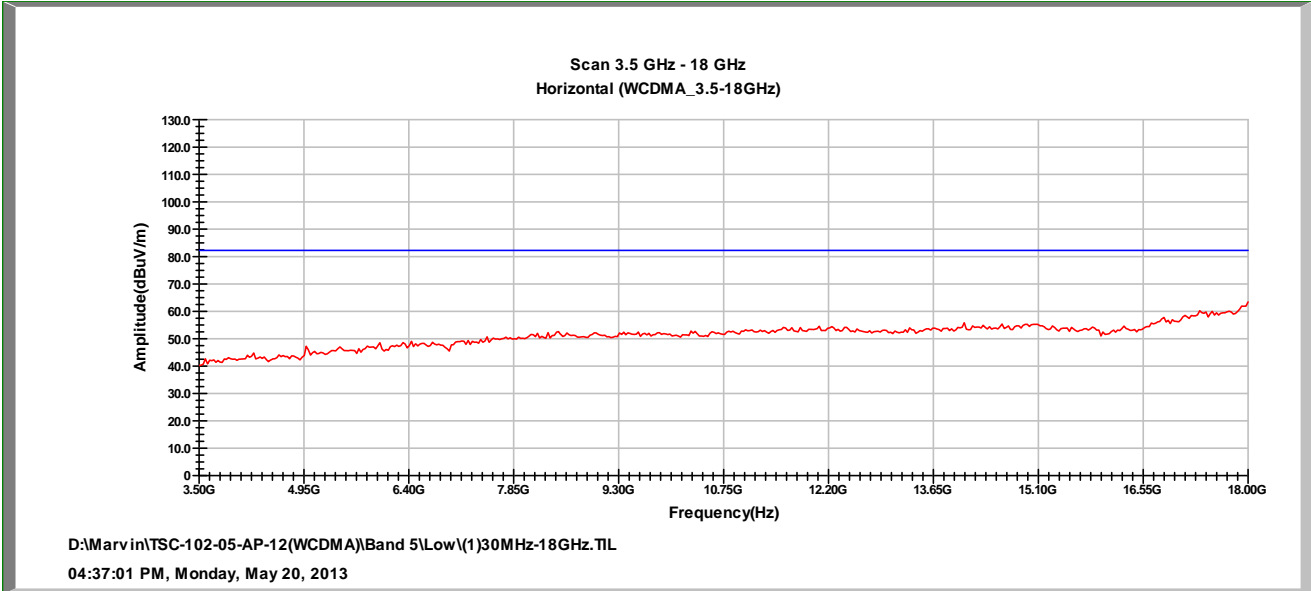




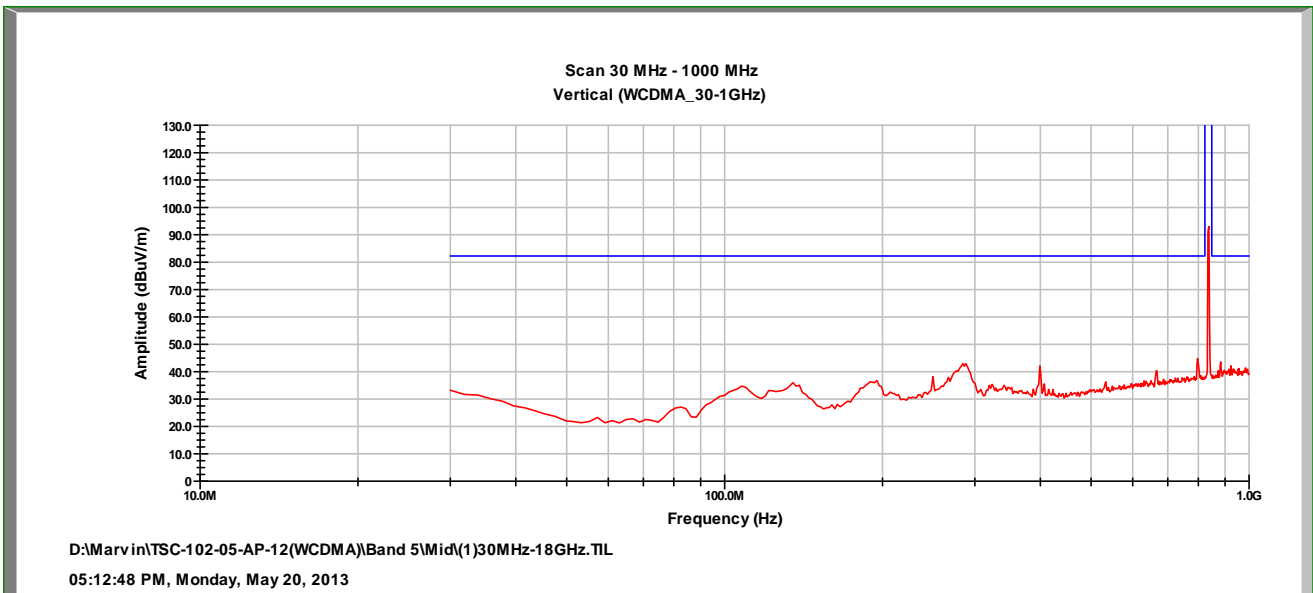
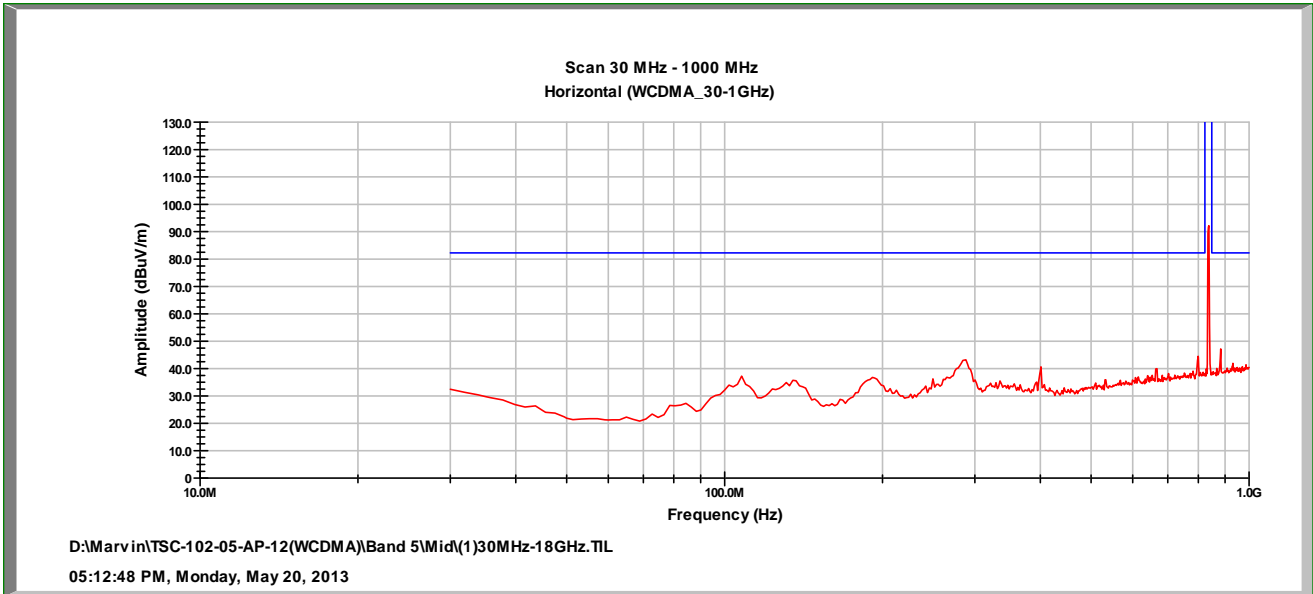
WCDMA Band V CH Low

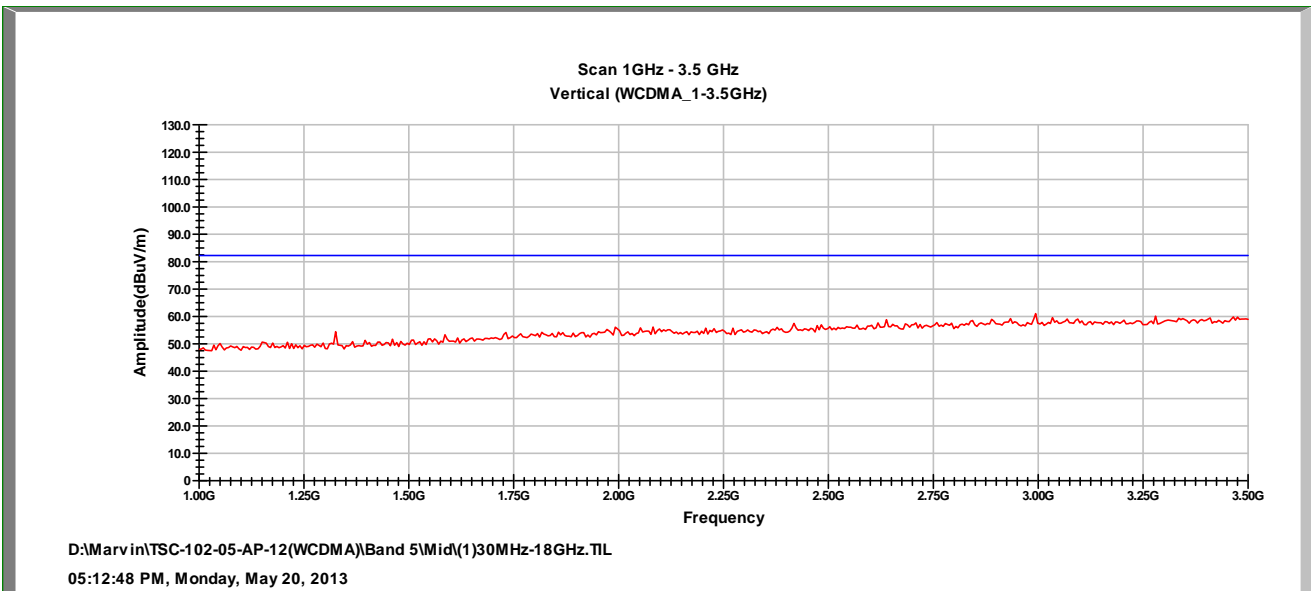
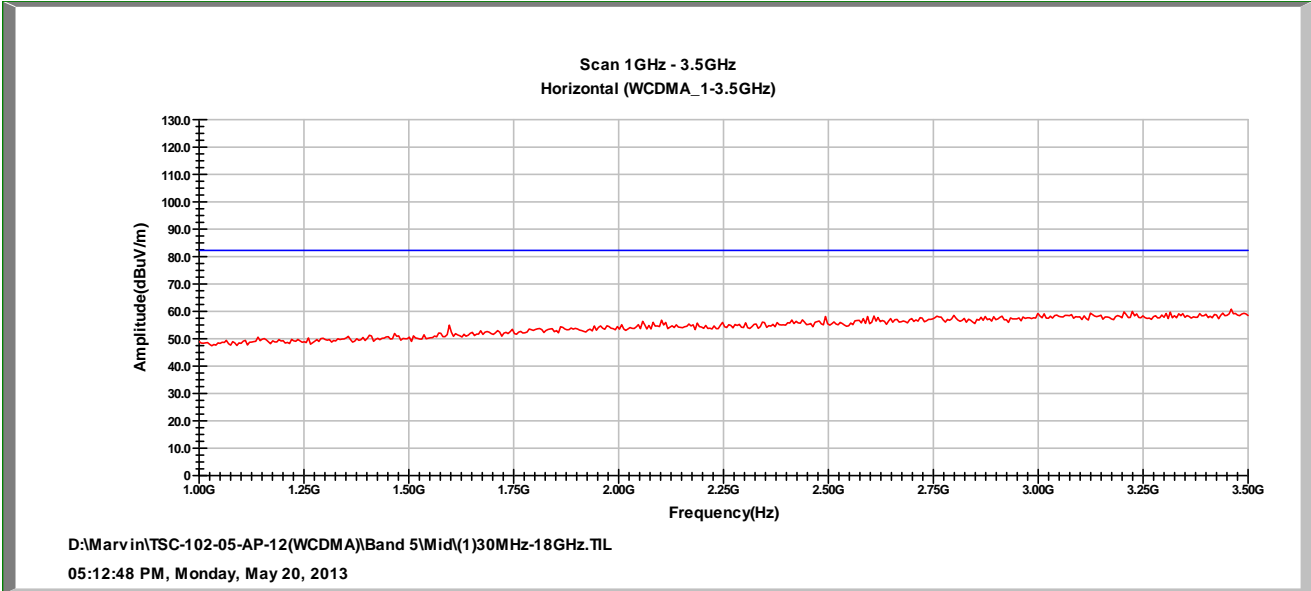


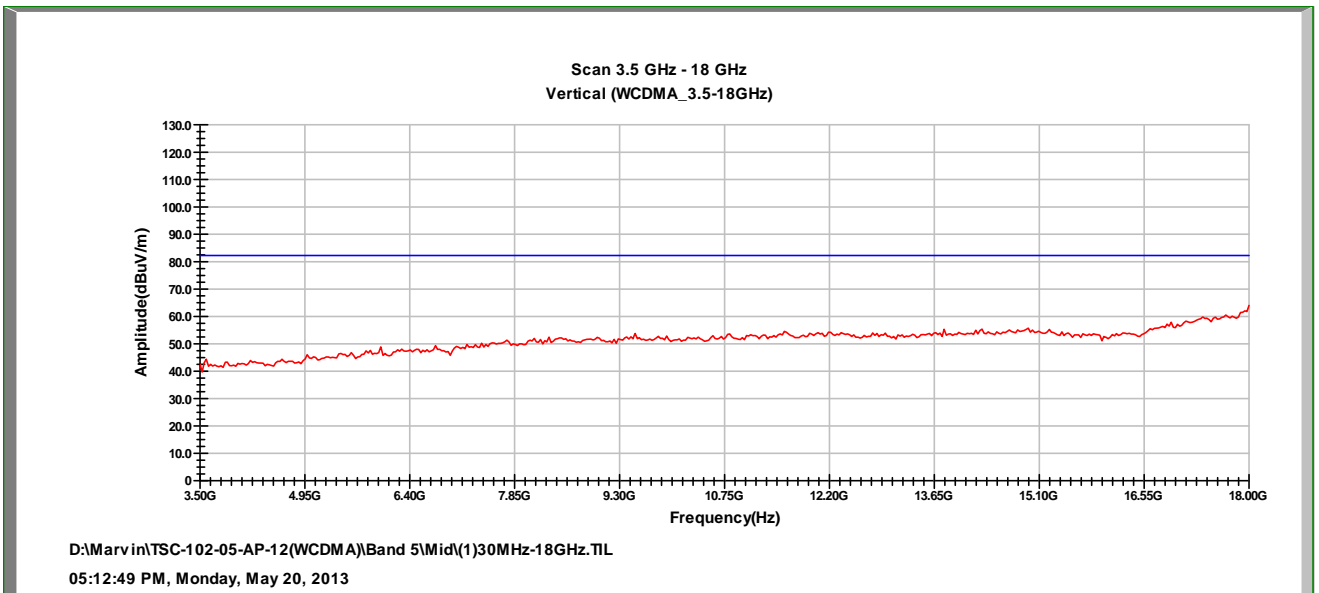
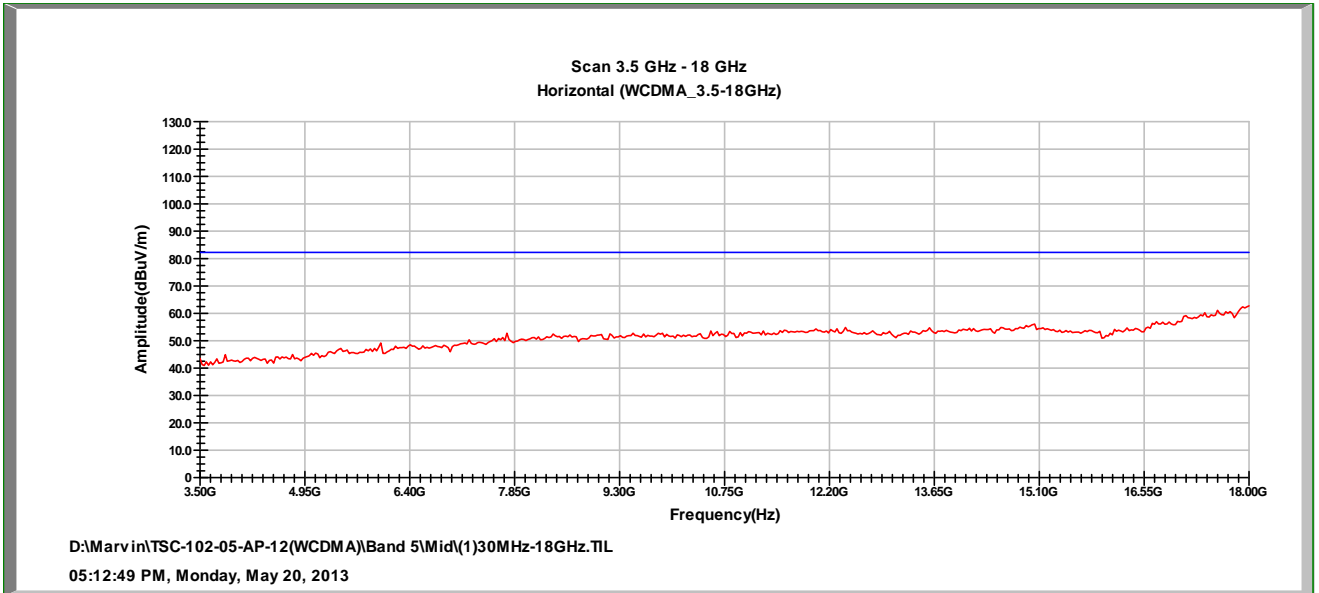




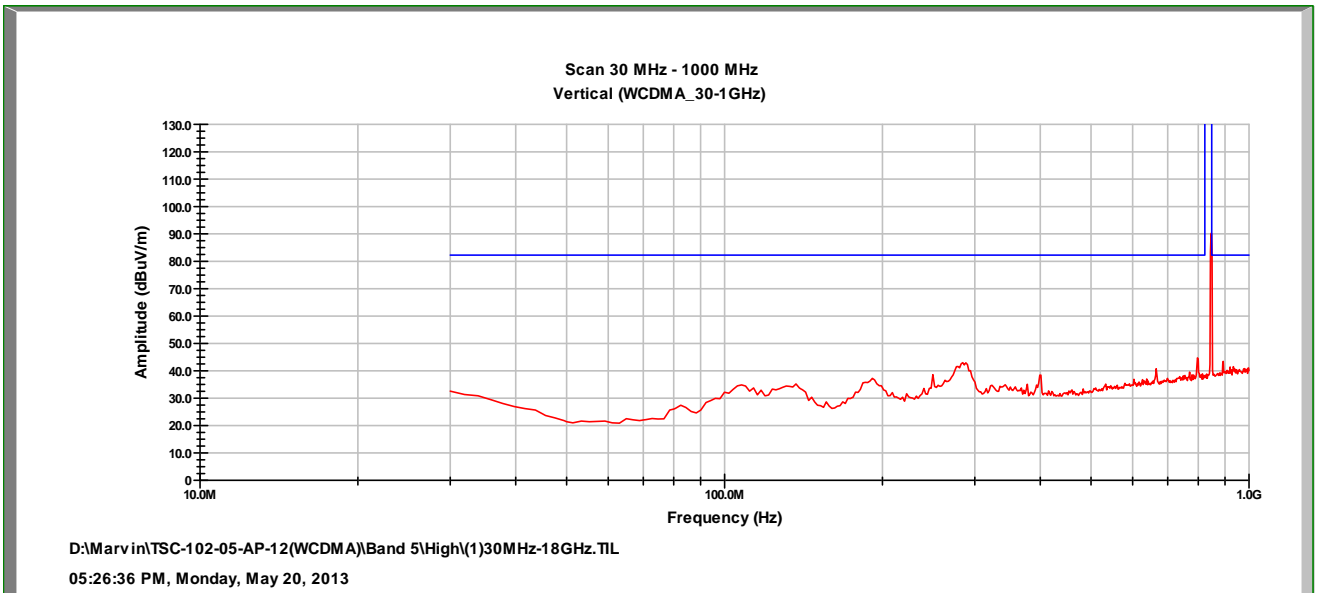
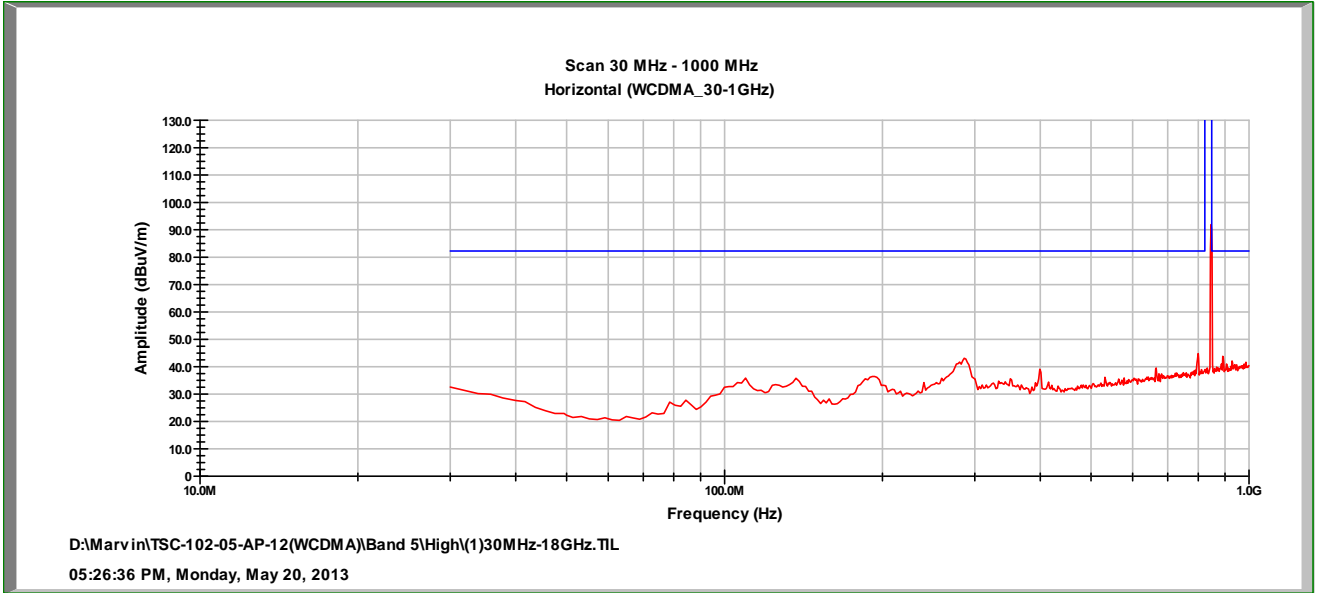
WCDMA Band V CH Mid

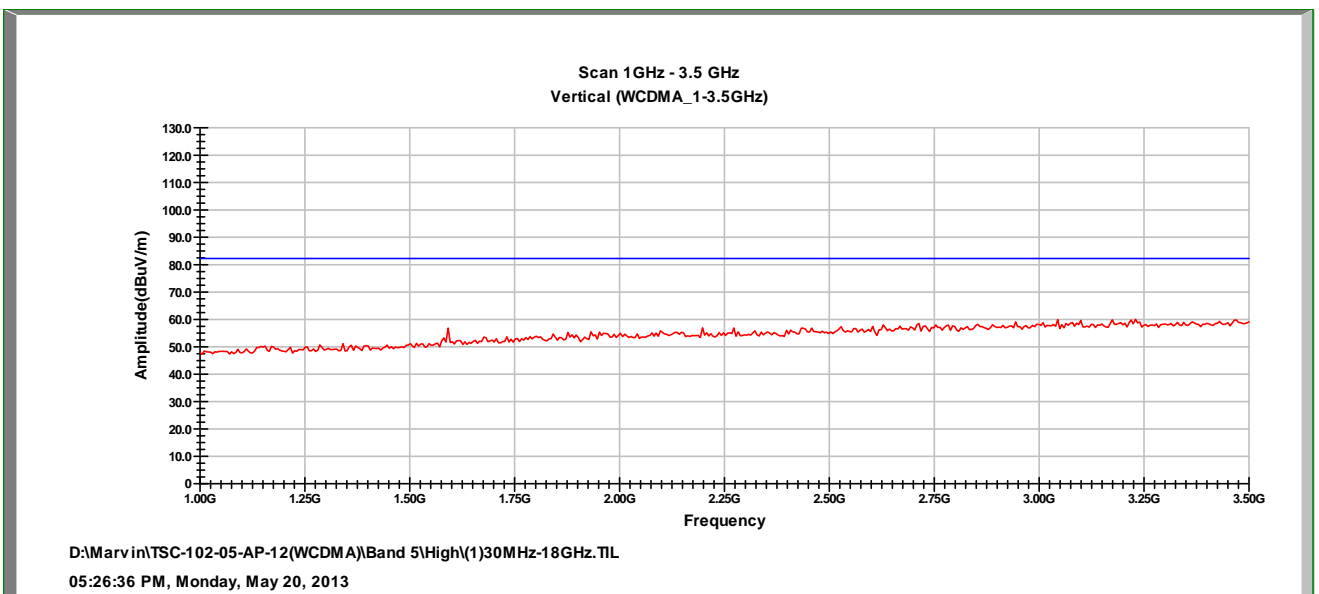
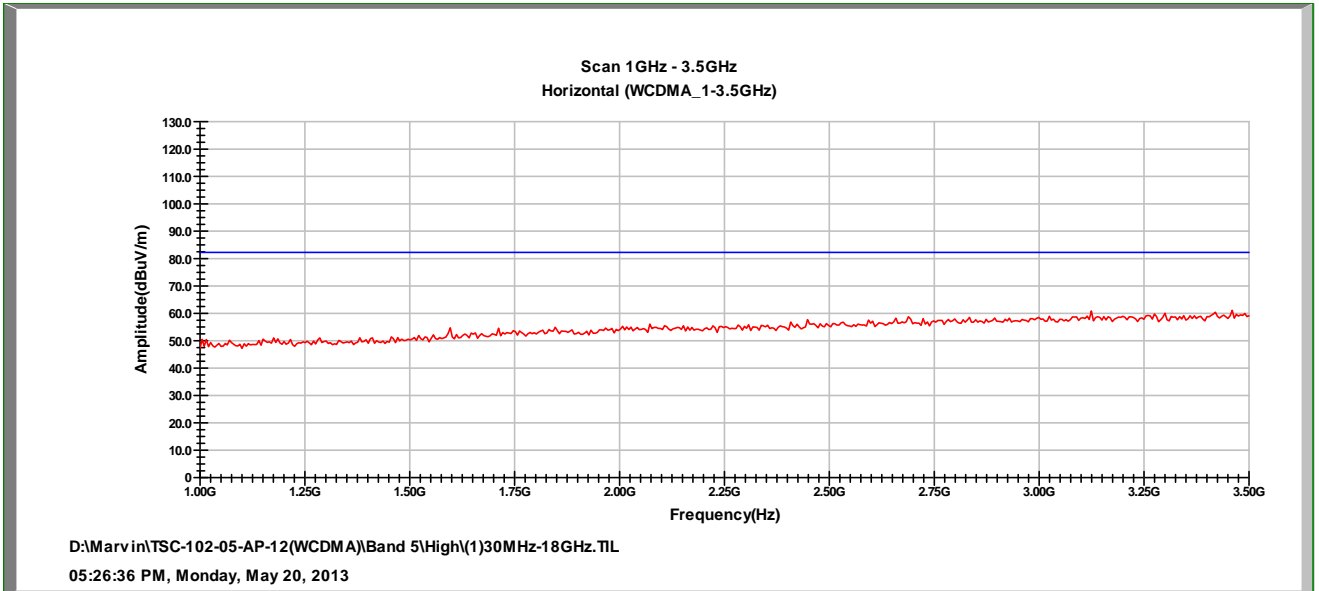


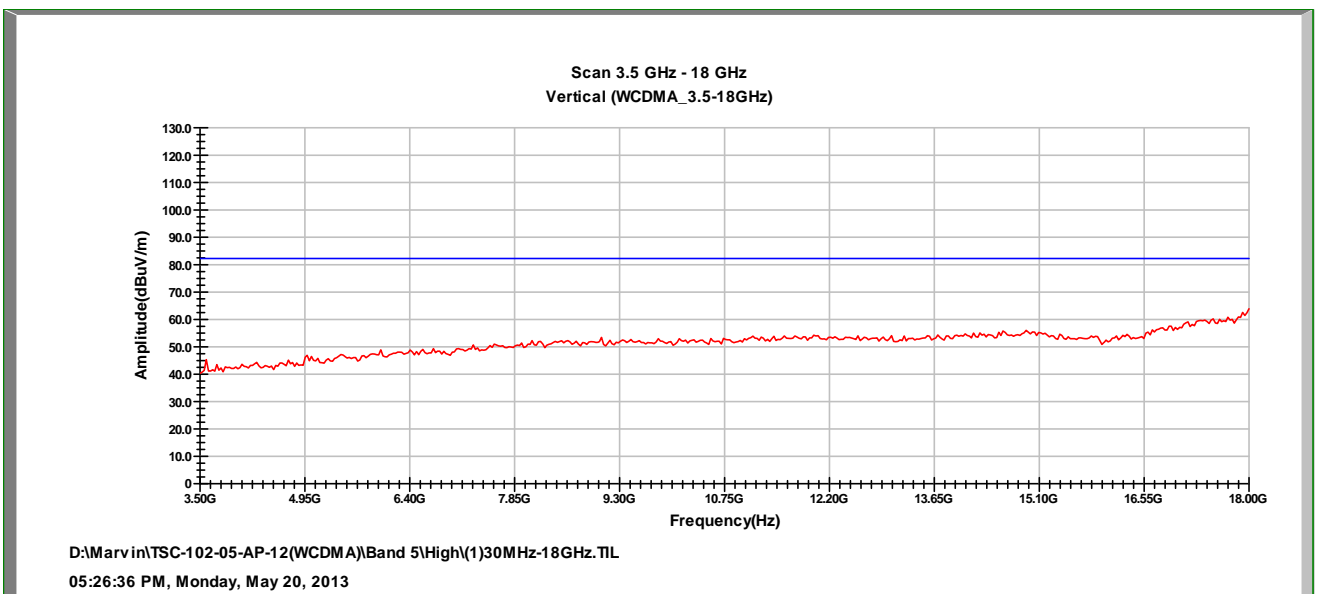
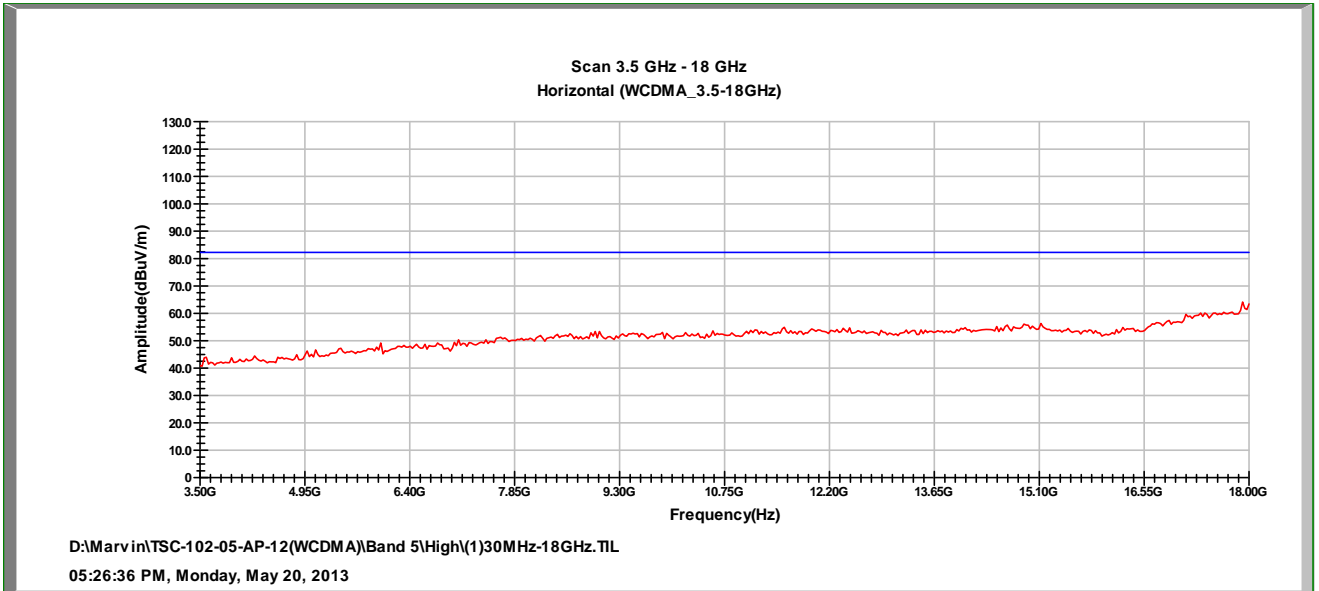




WCDMA Band V CH High

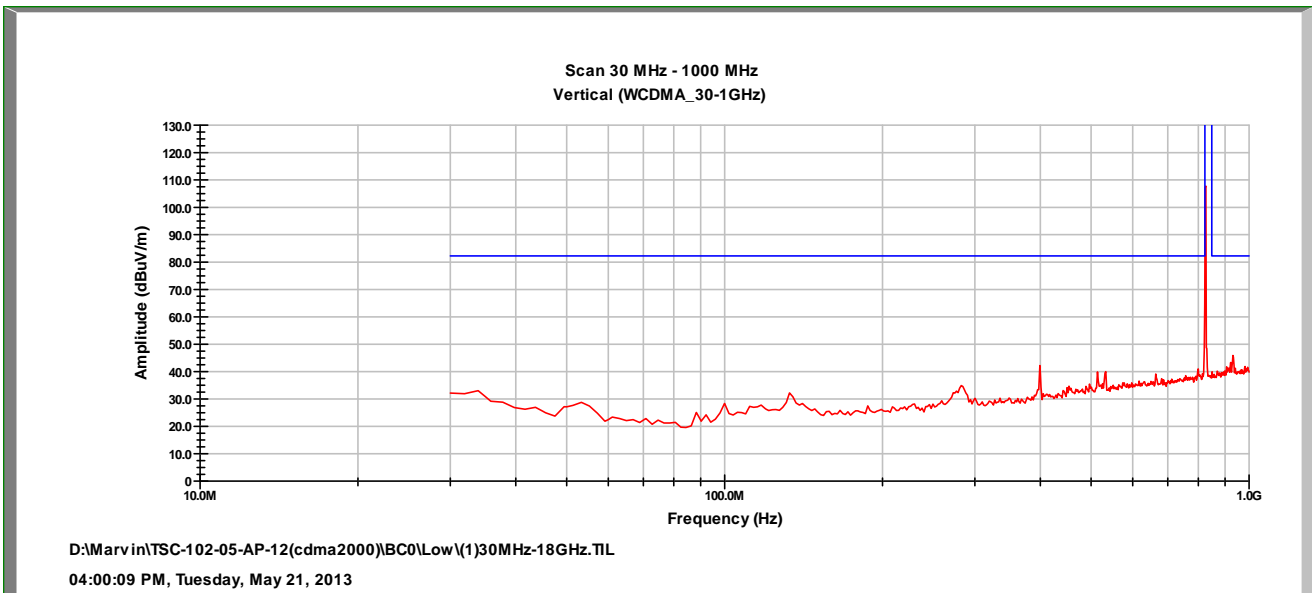
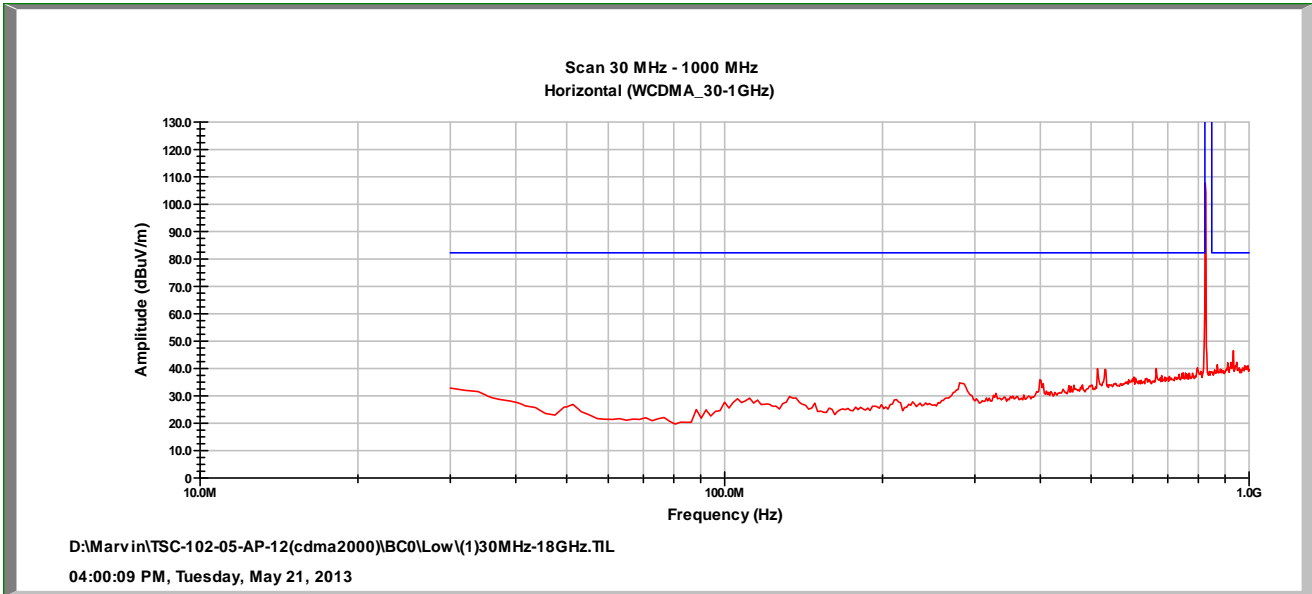


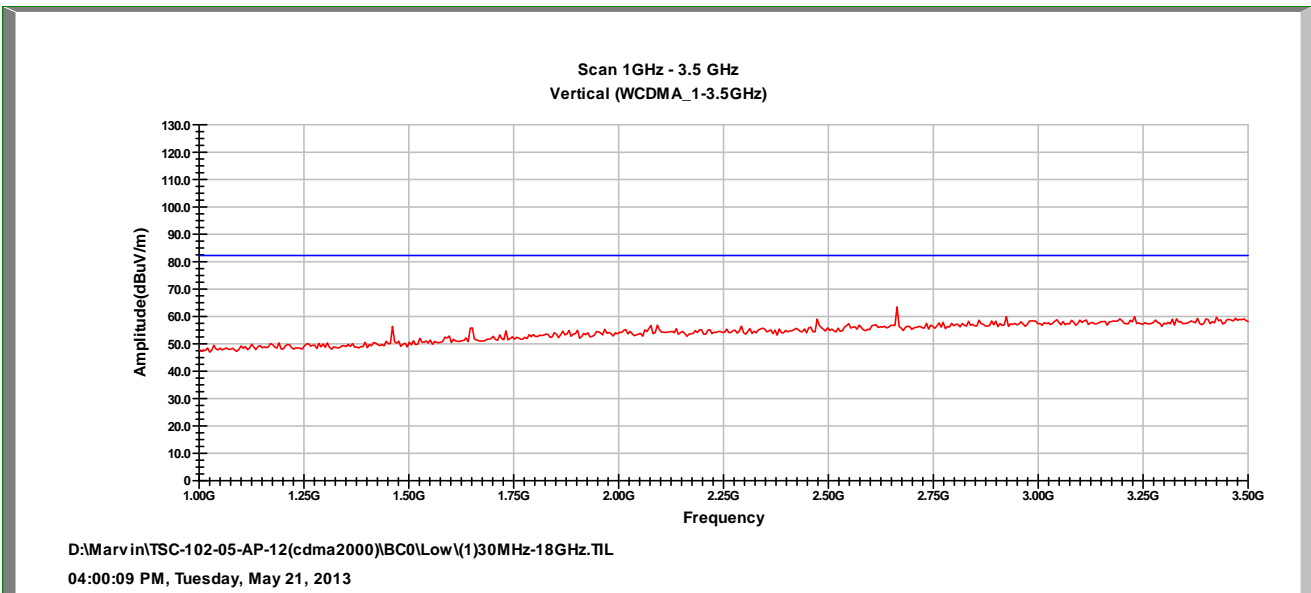
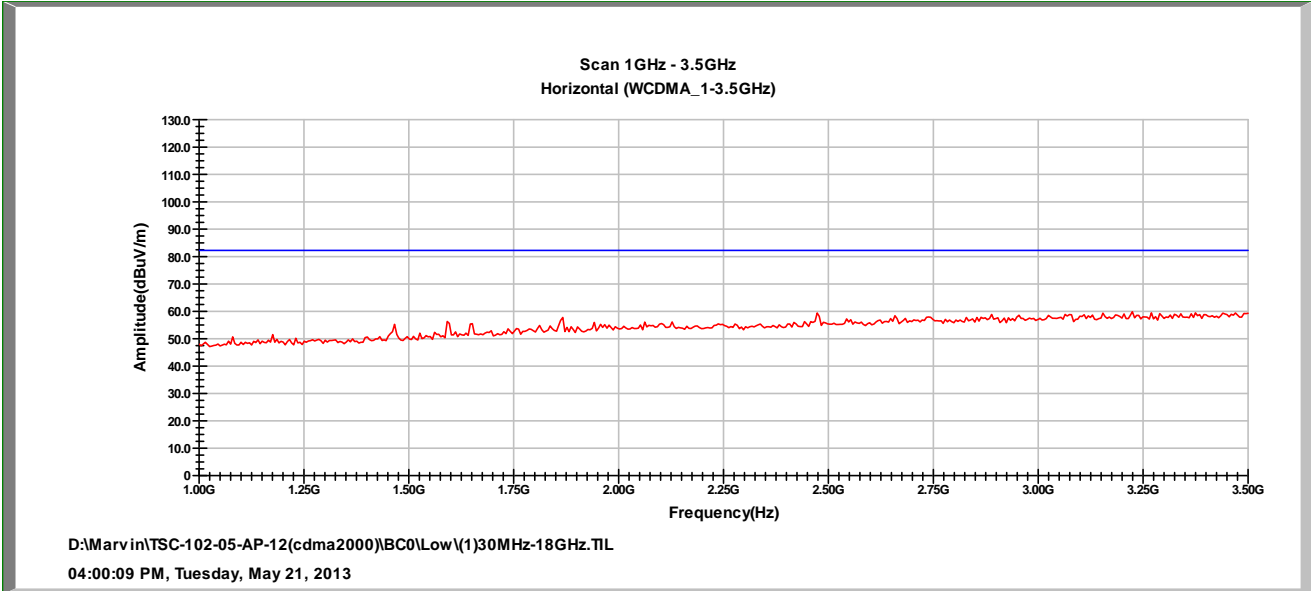


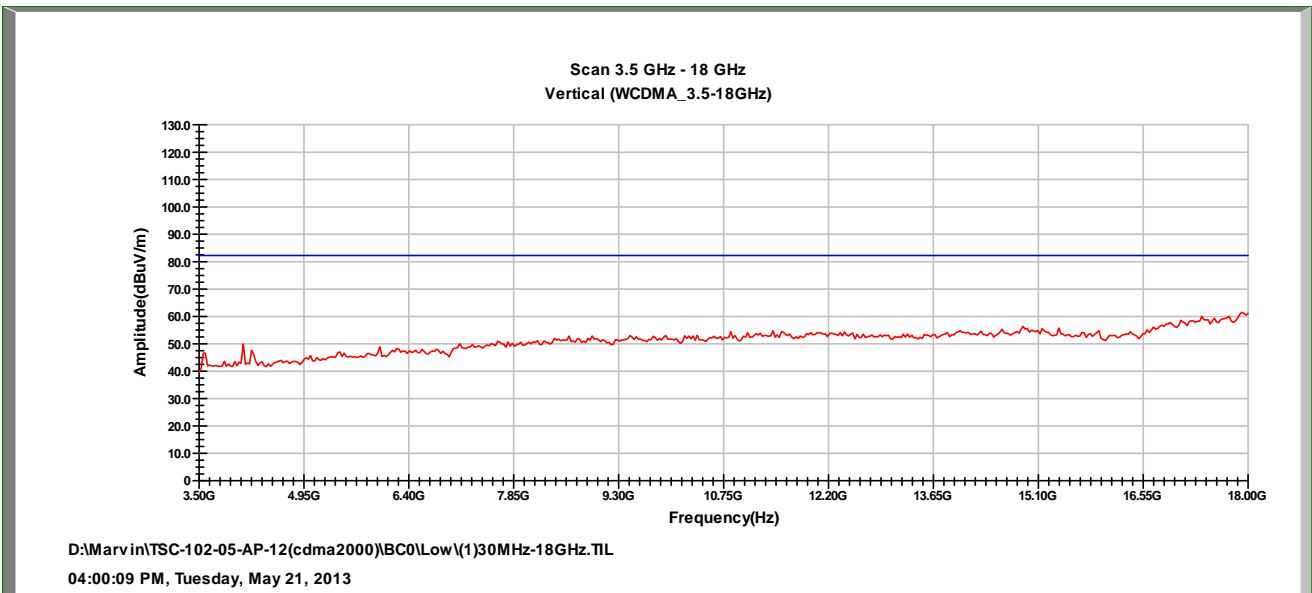
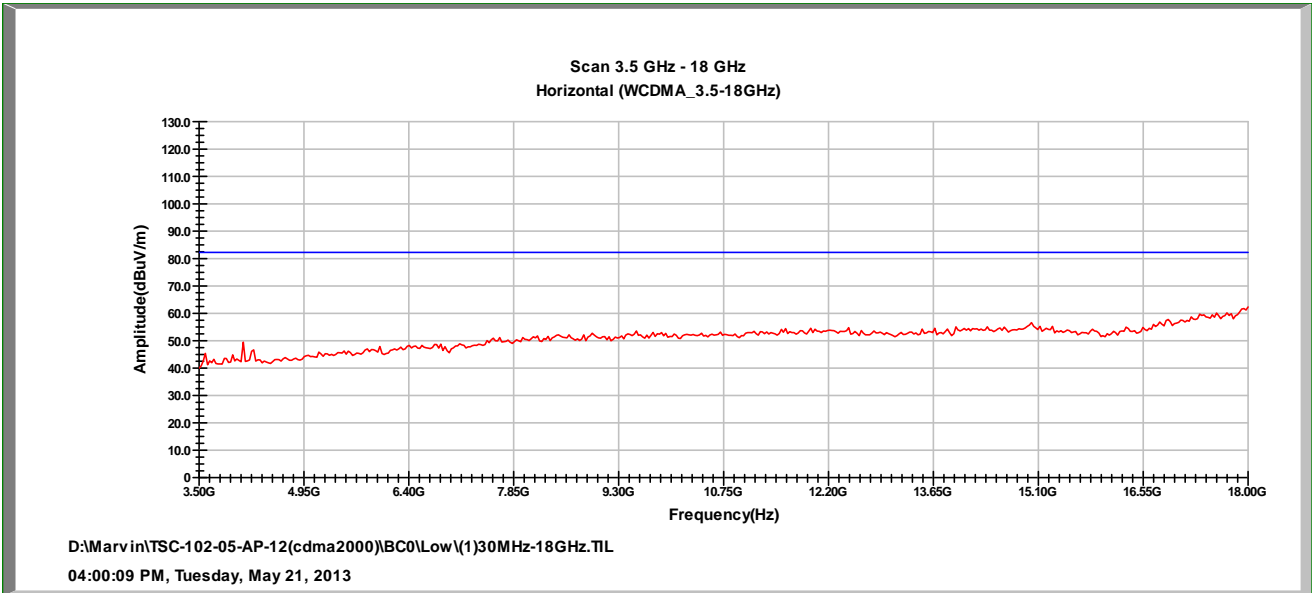




CDMA2000 BC0 CH Low

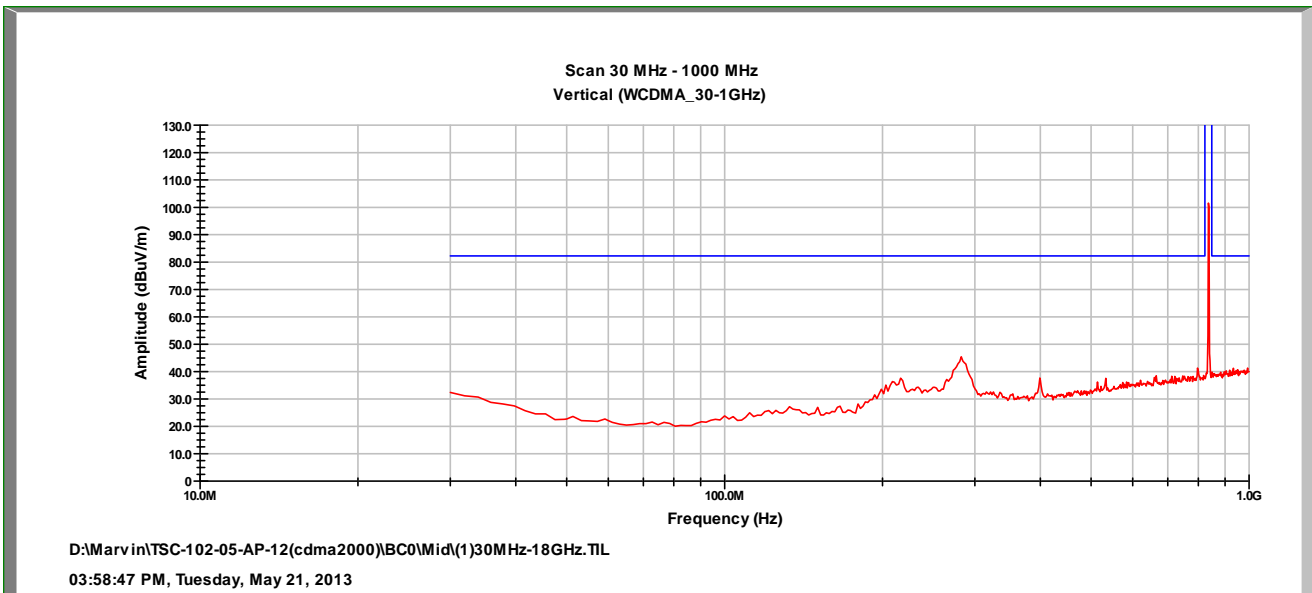
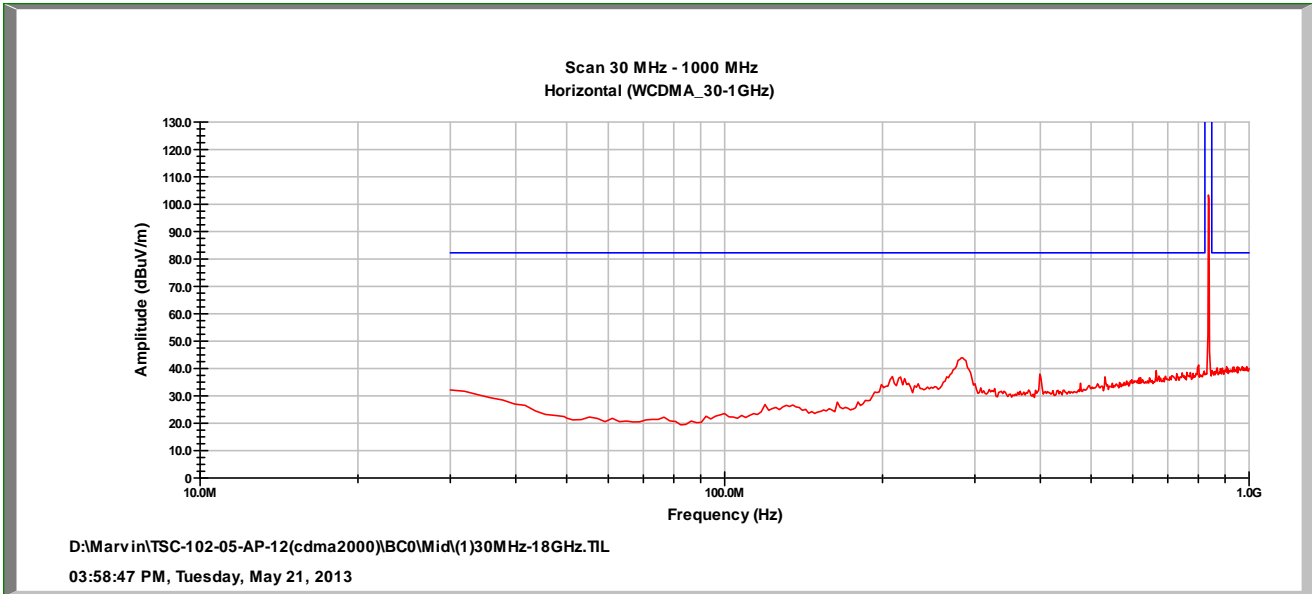


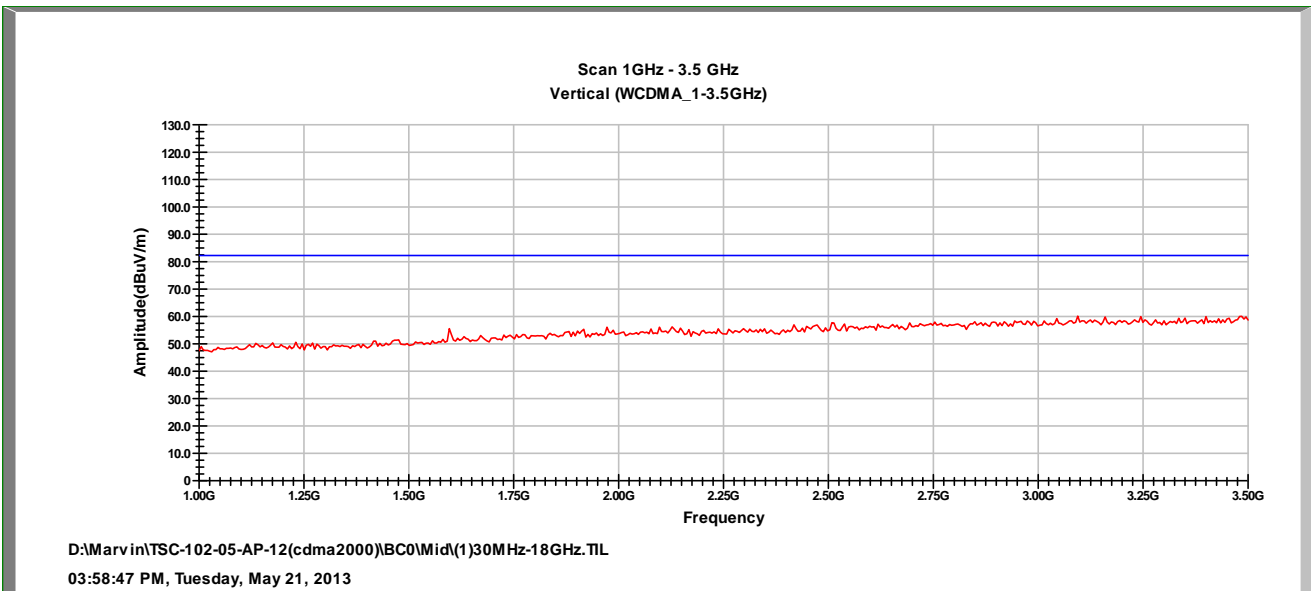
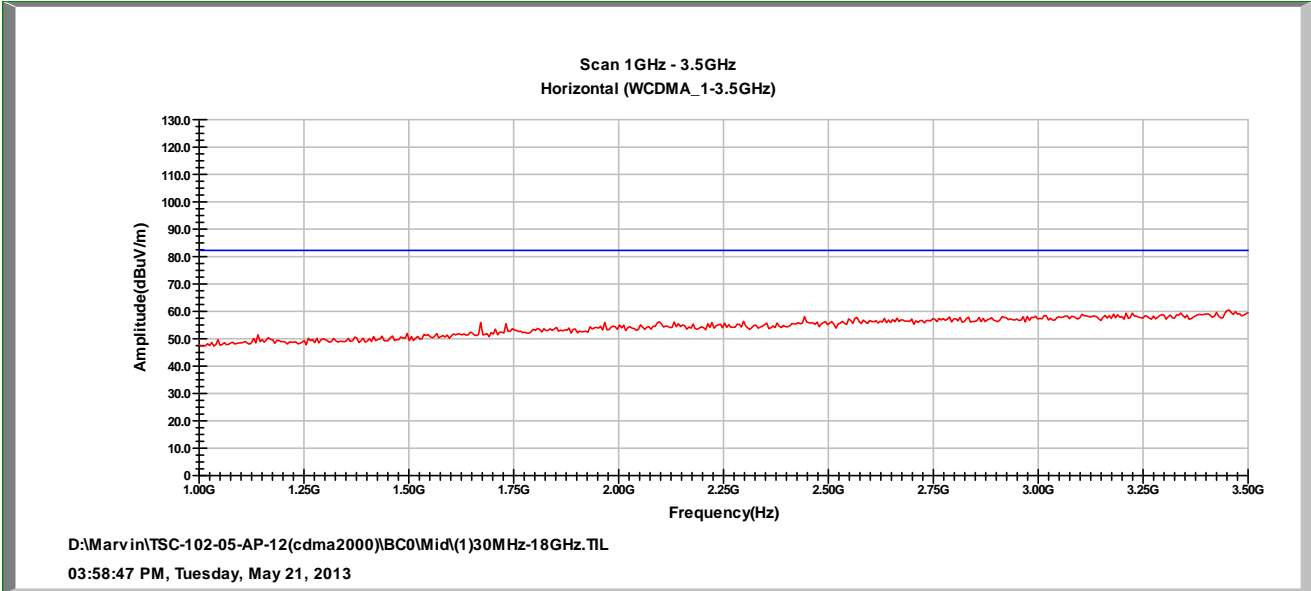


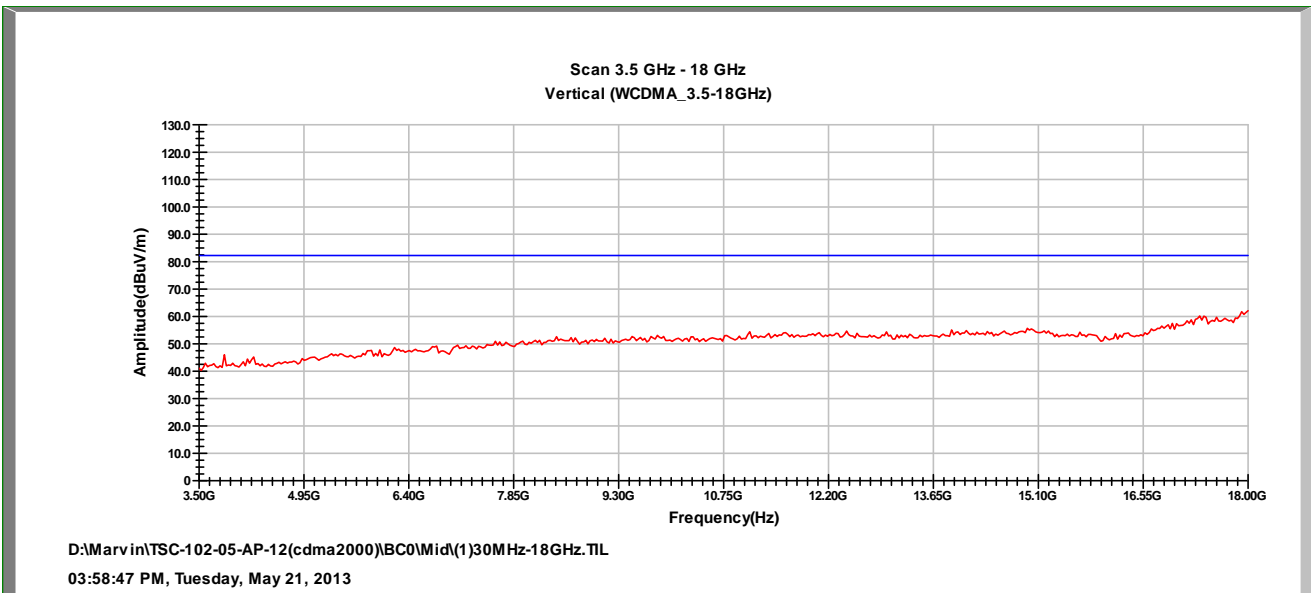
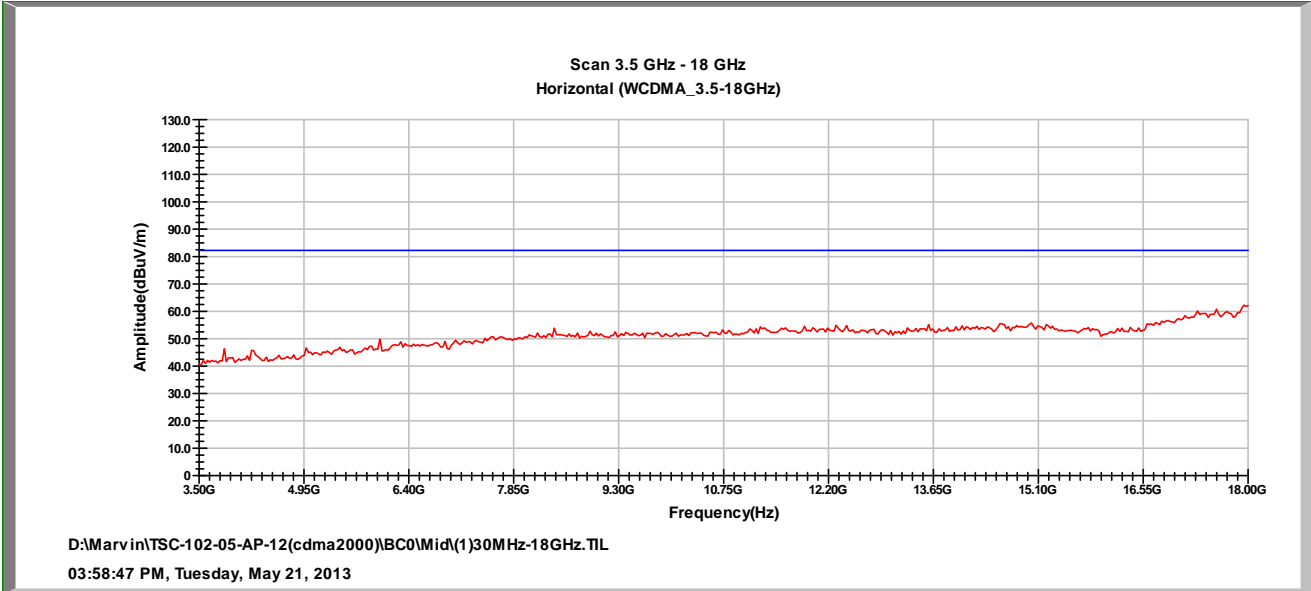




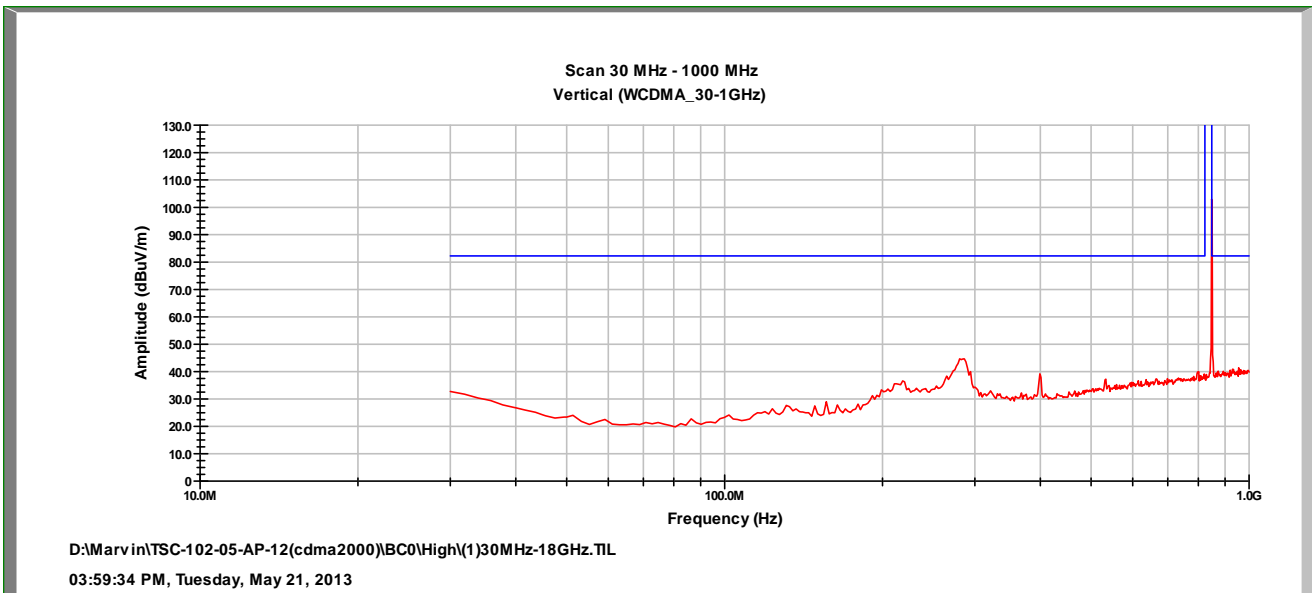
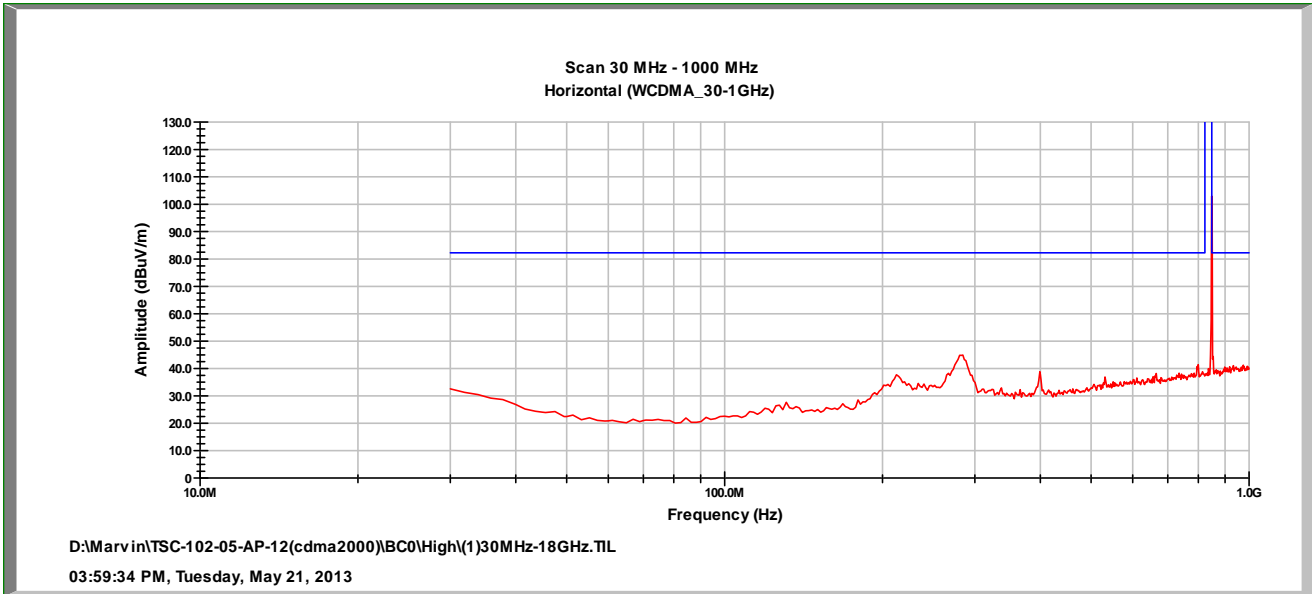
CDMA2000 BC0 CH Mid

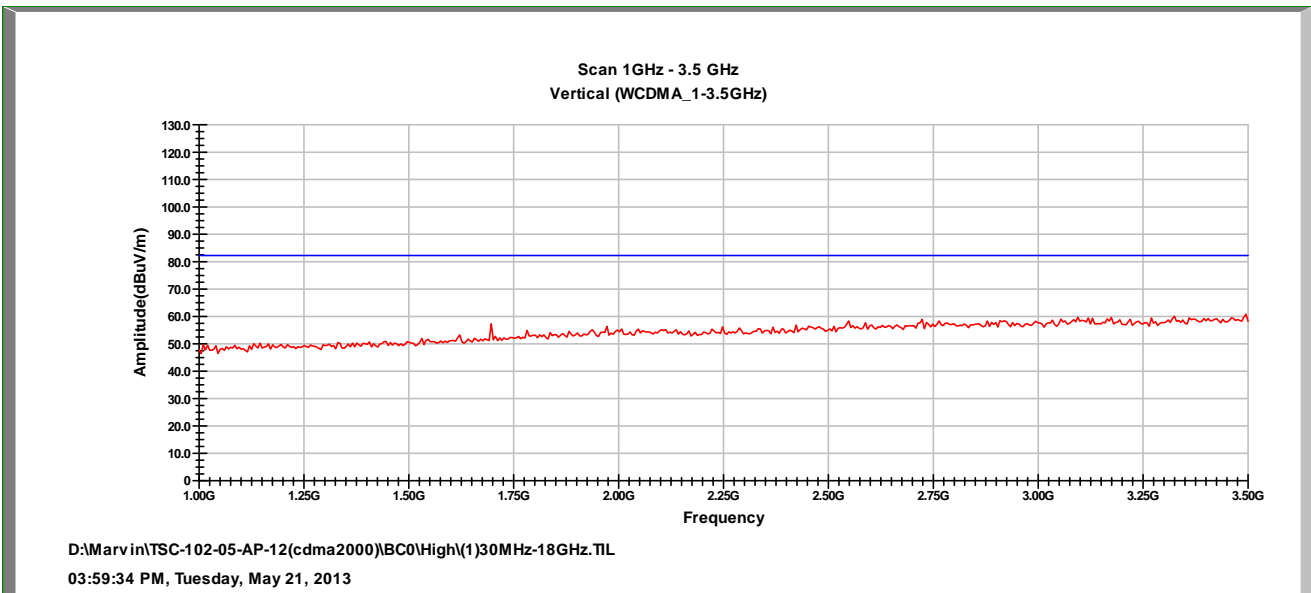
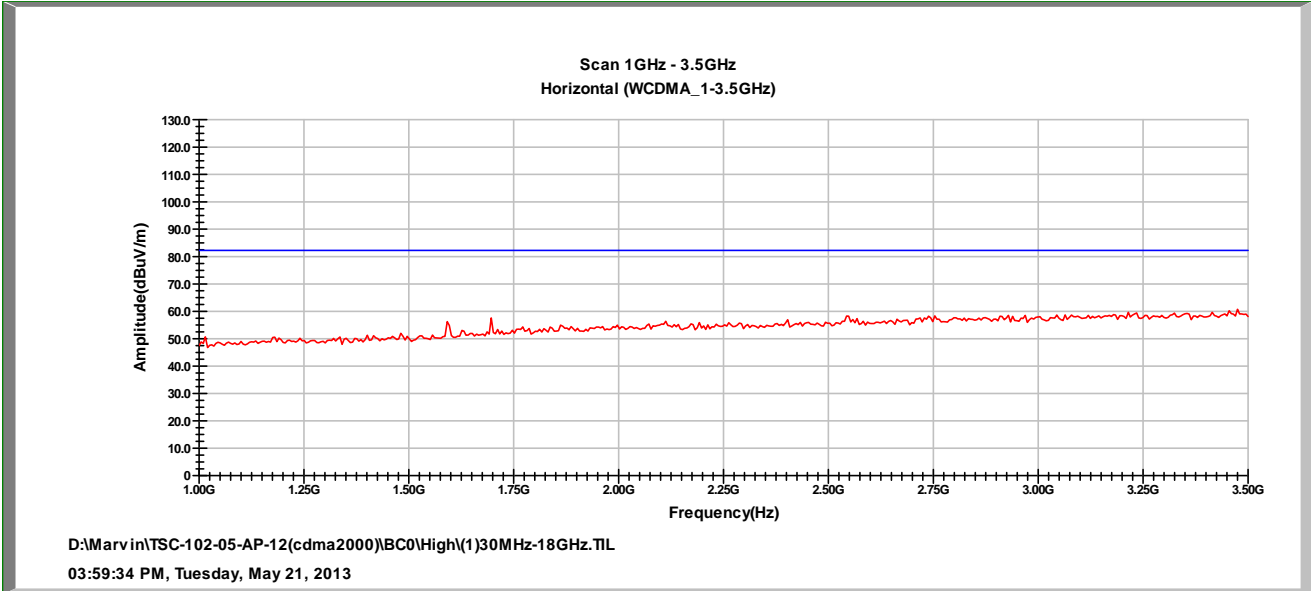


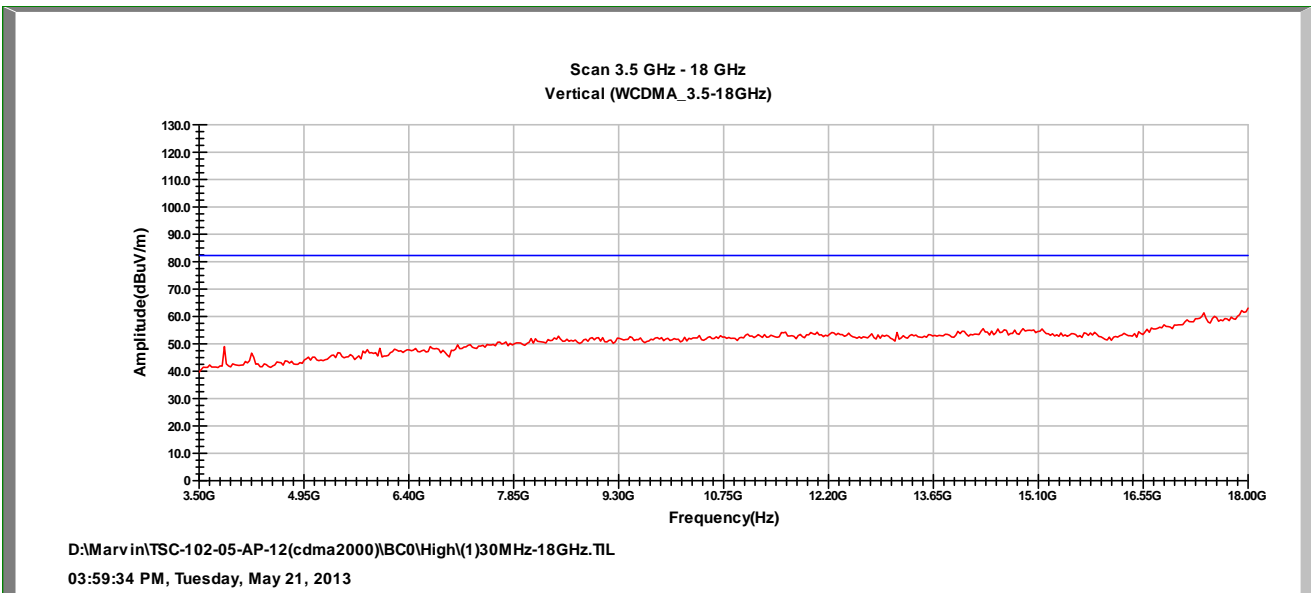
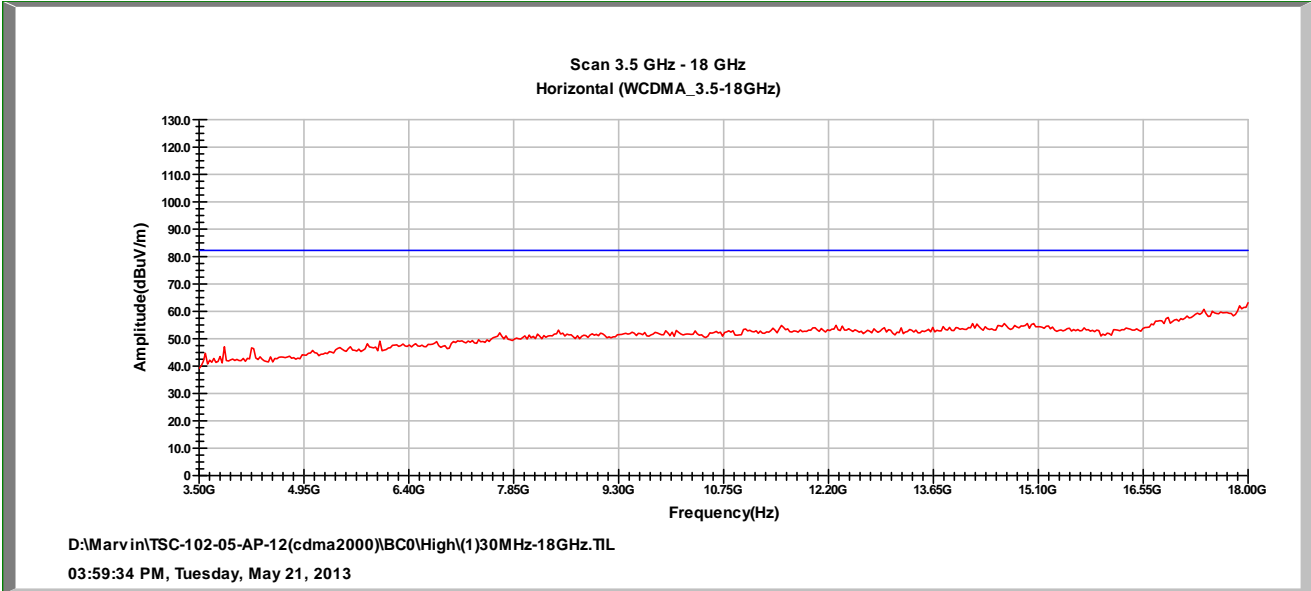




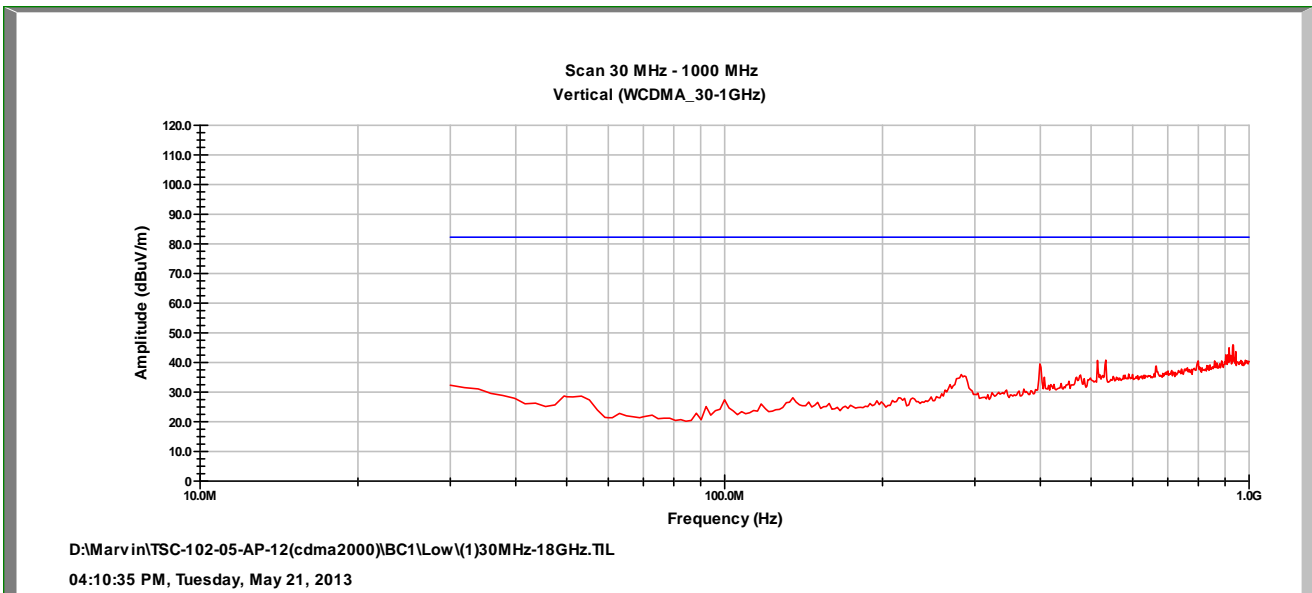
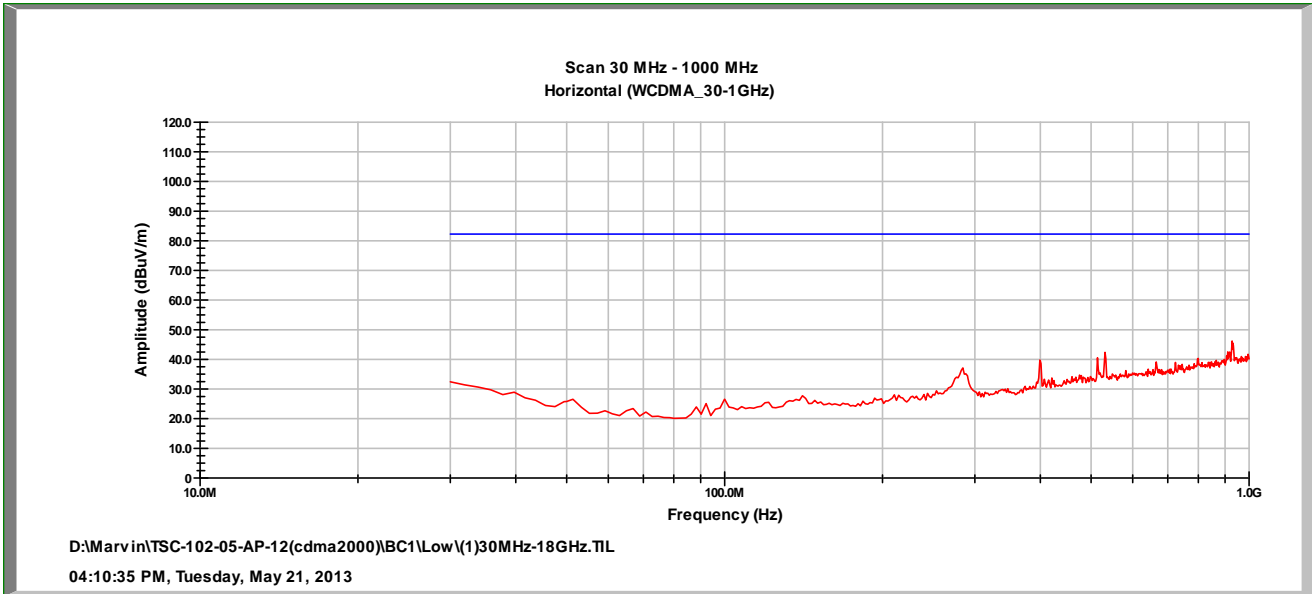
CDMA2000 BC0 CH High

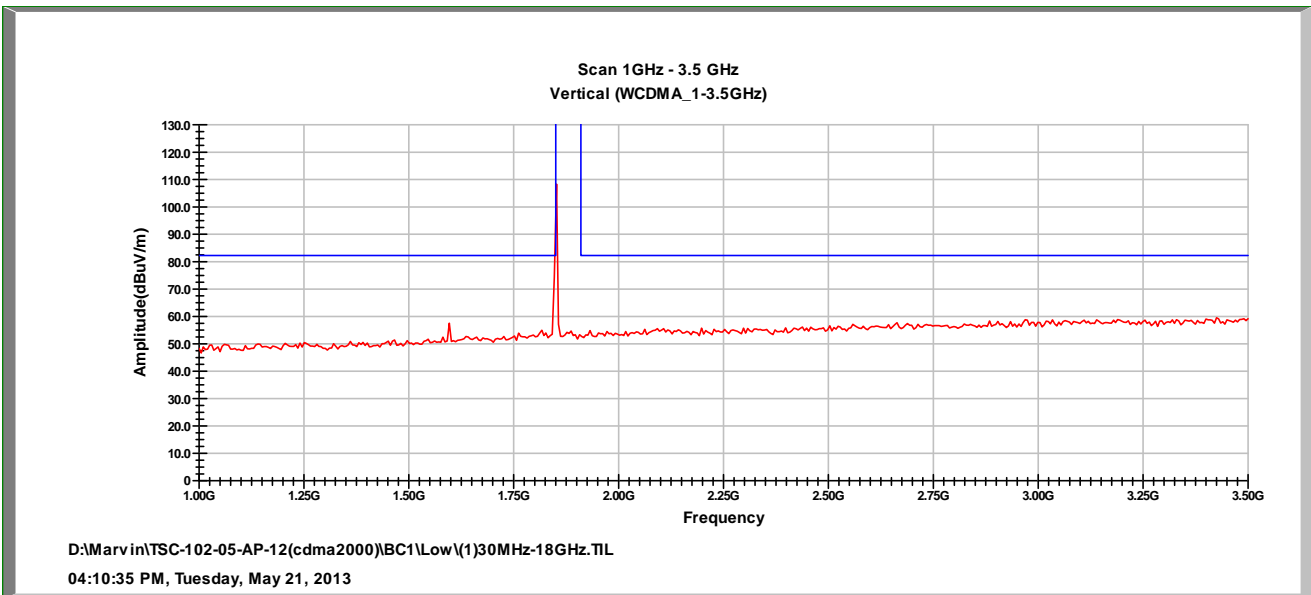
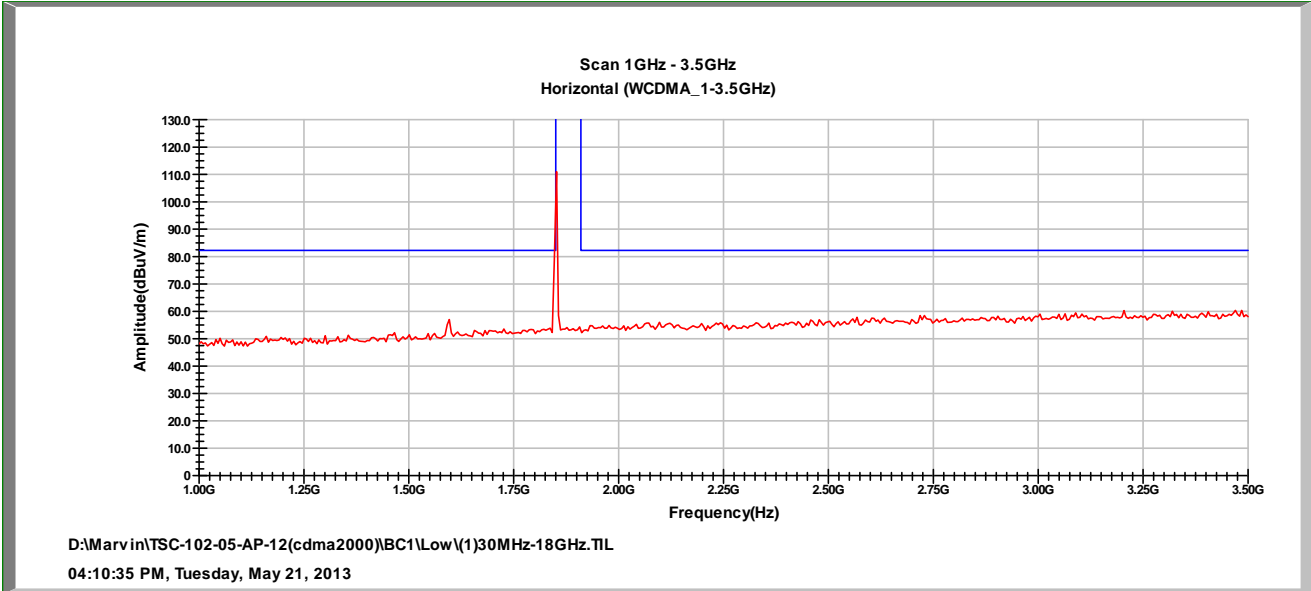


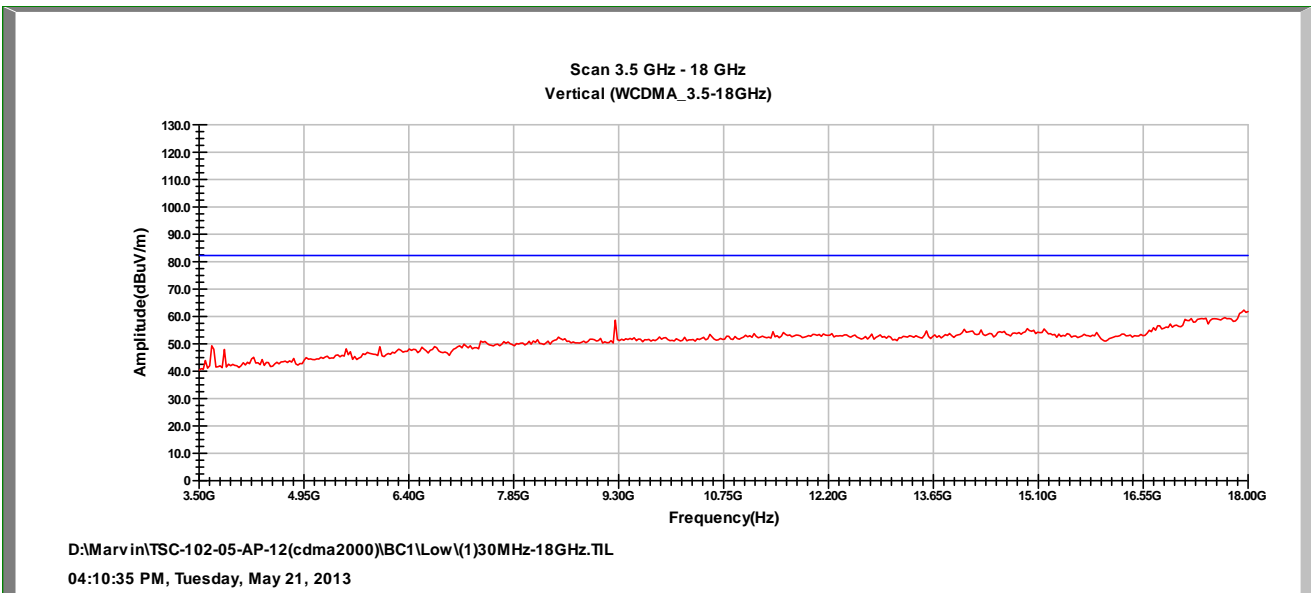
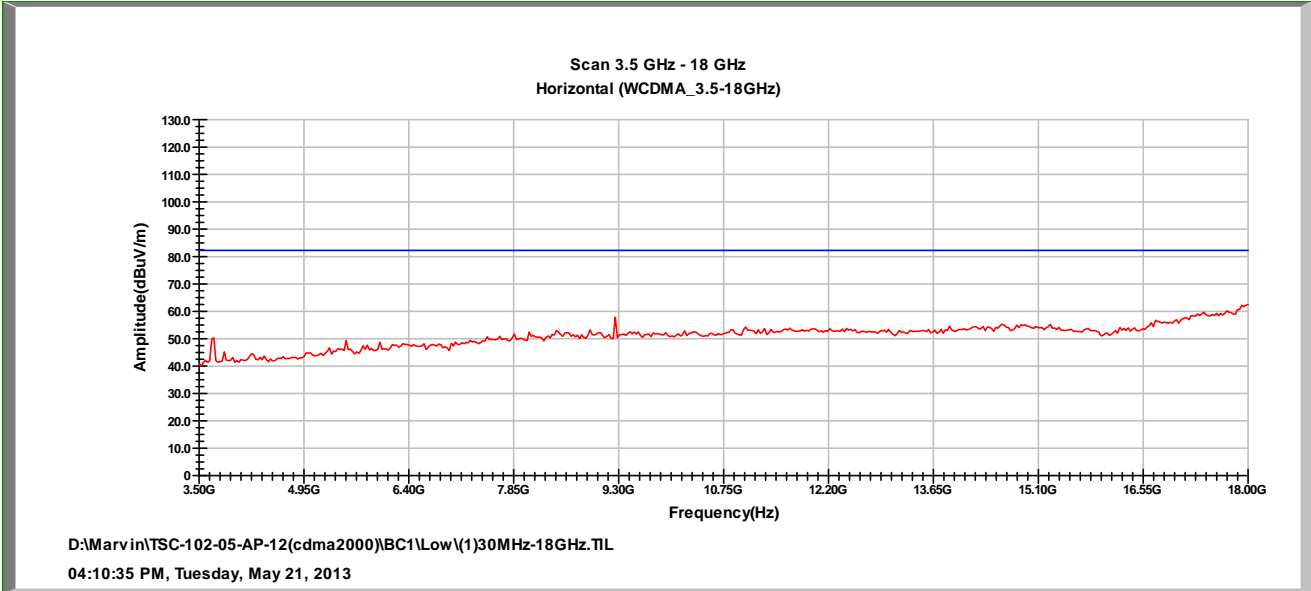


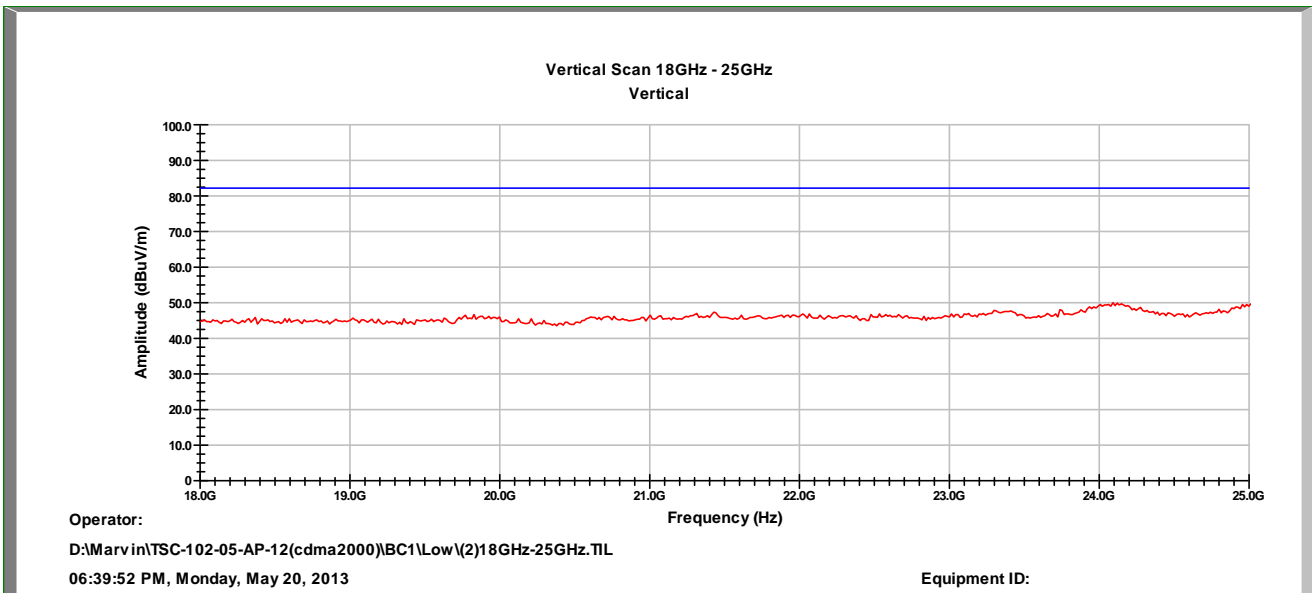
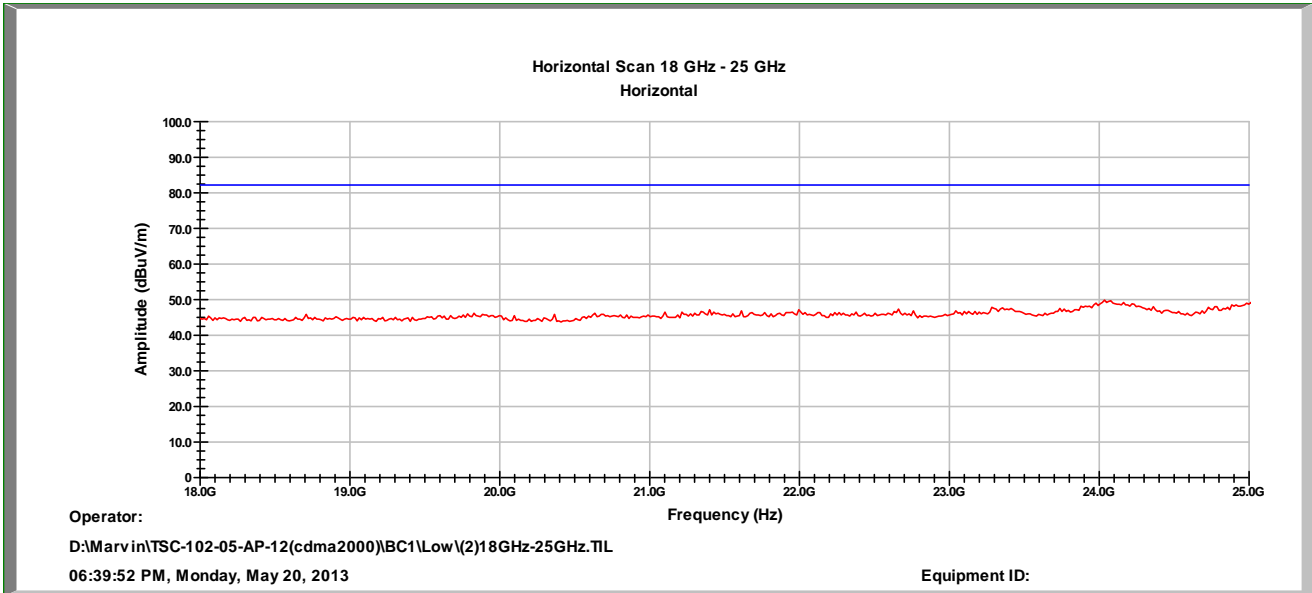


CDMA2000 BC1 CH Low

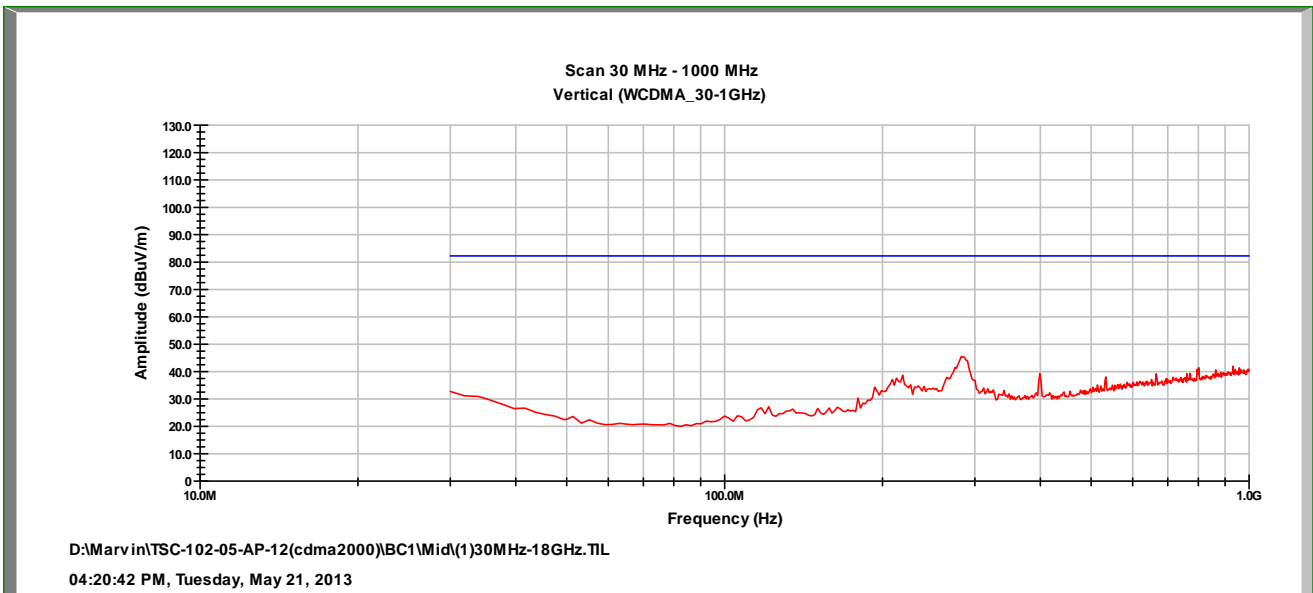
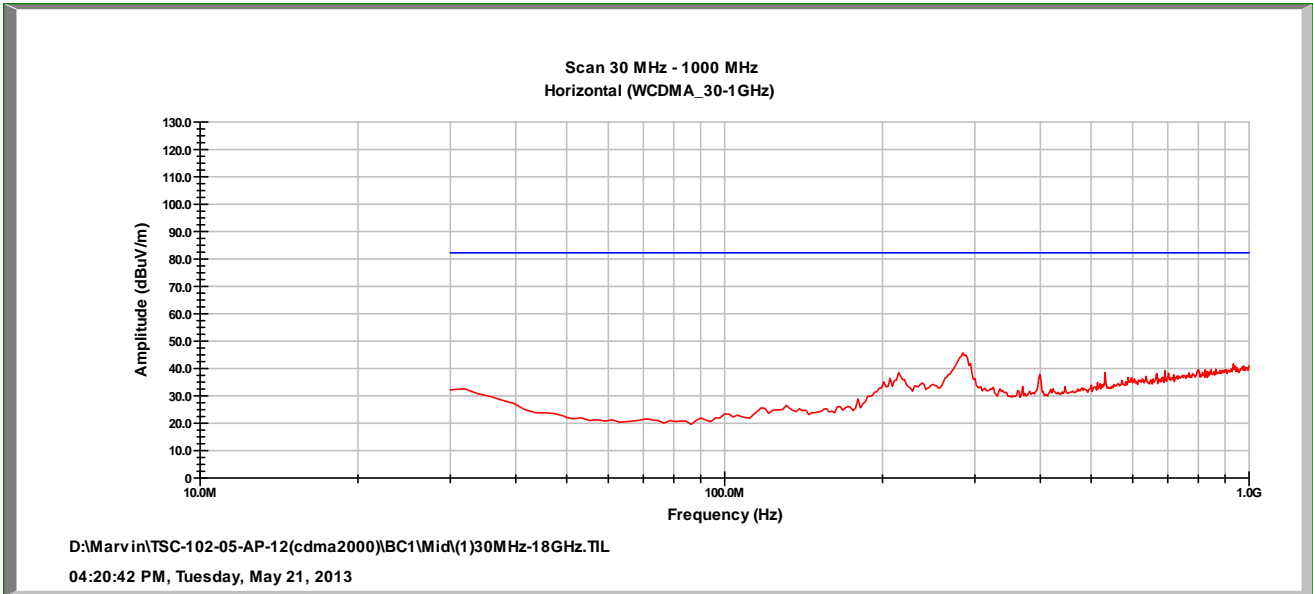


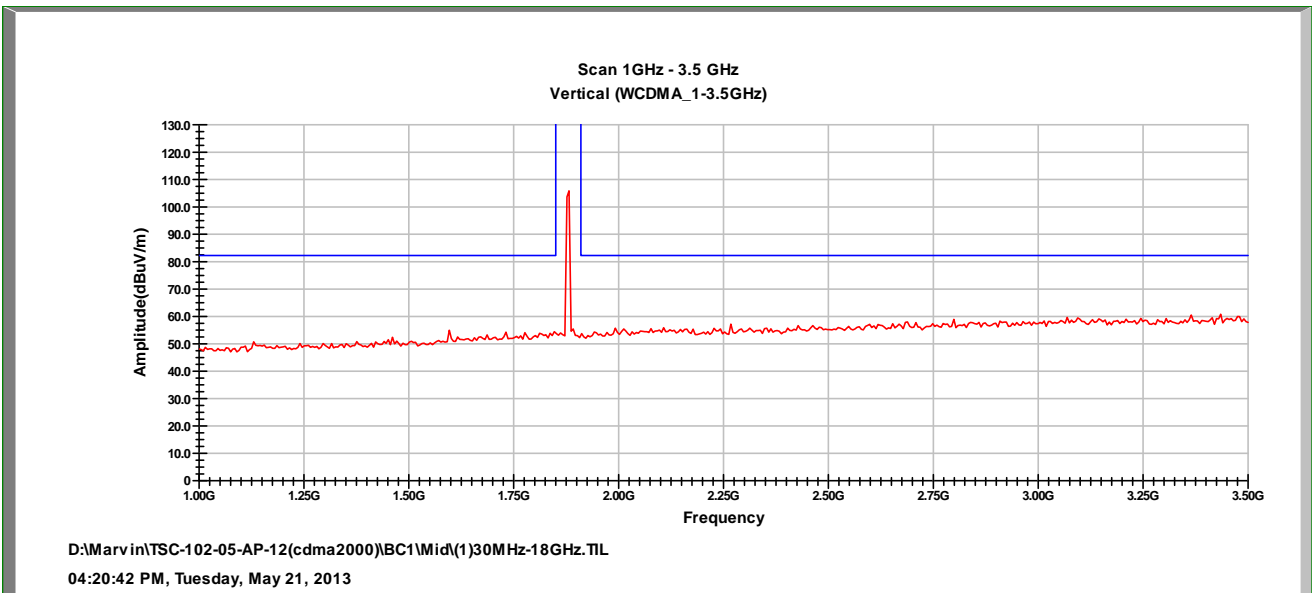
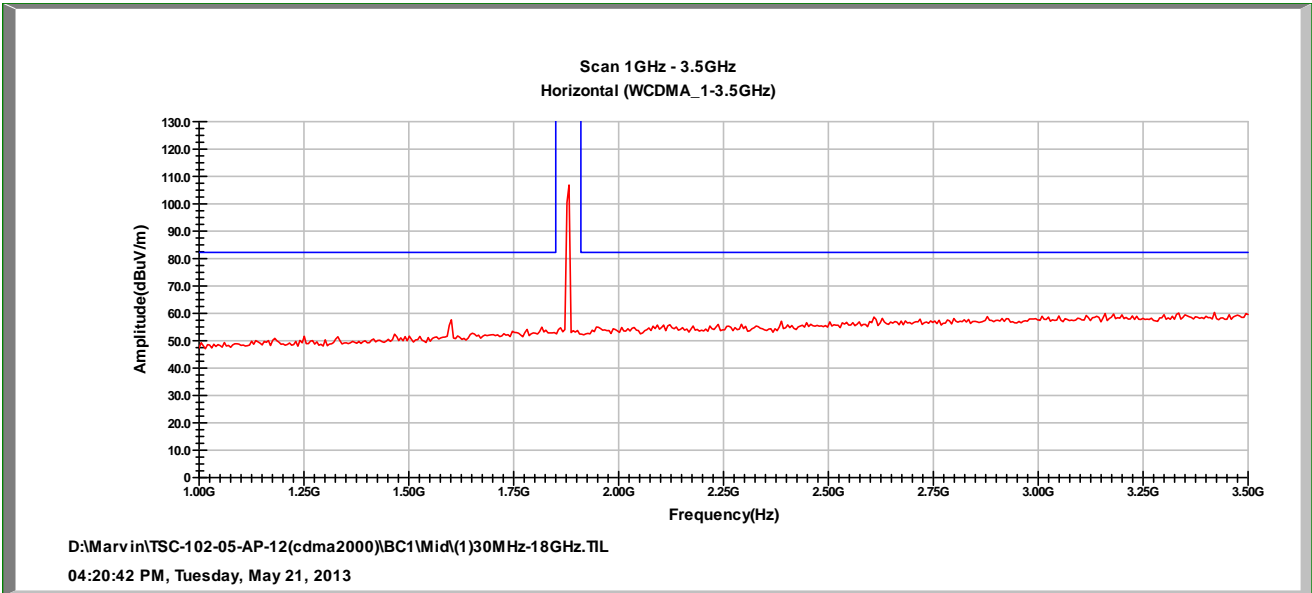


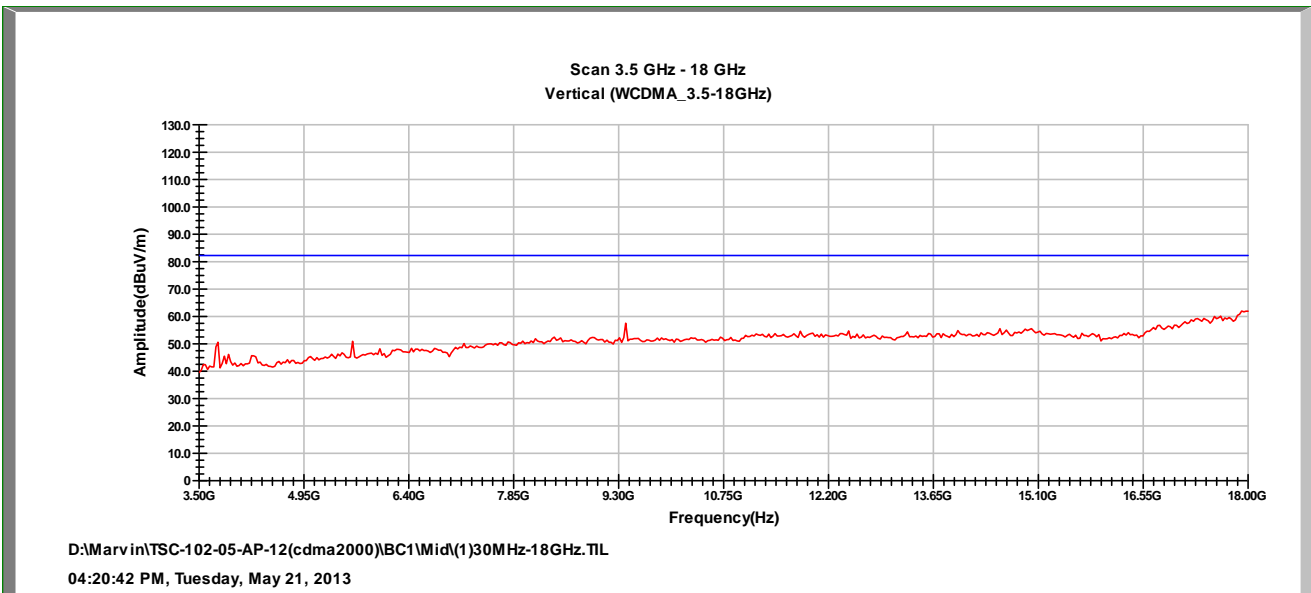
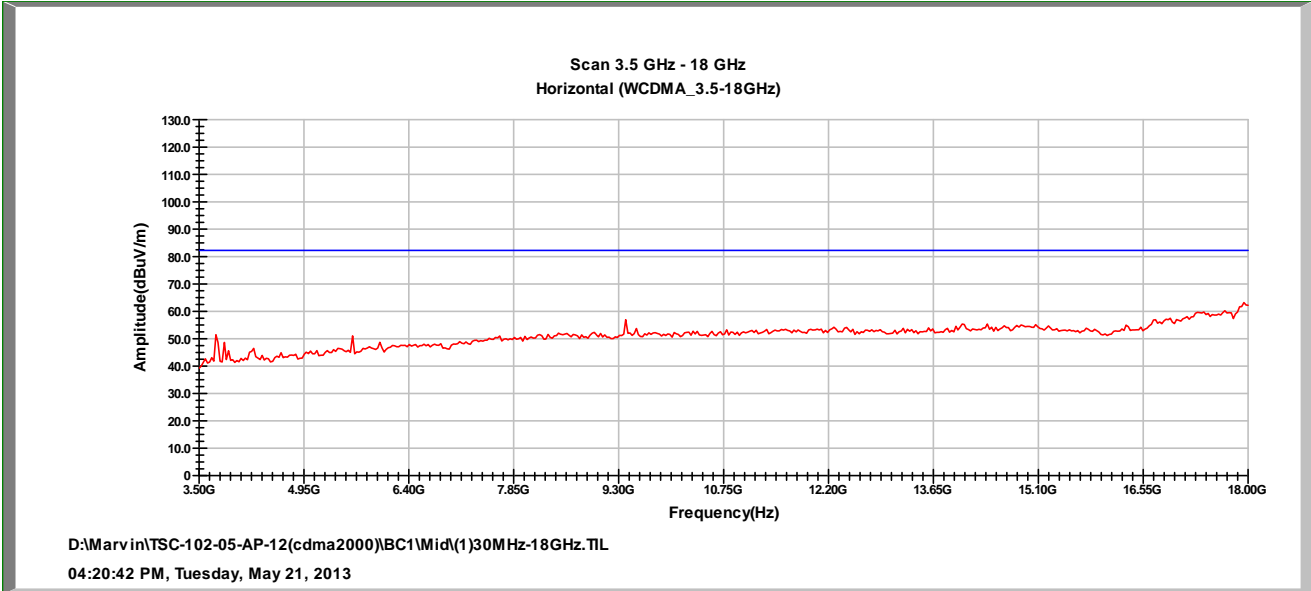


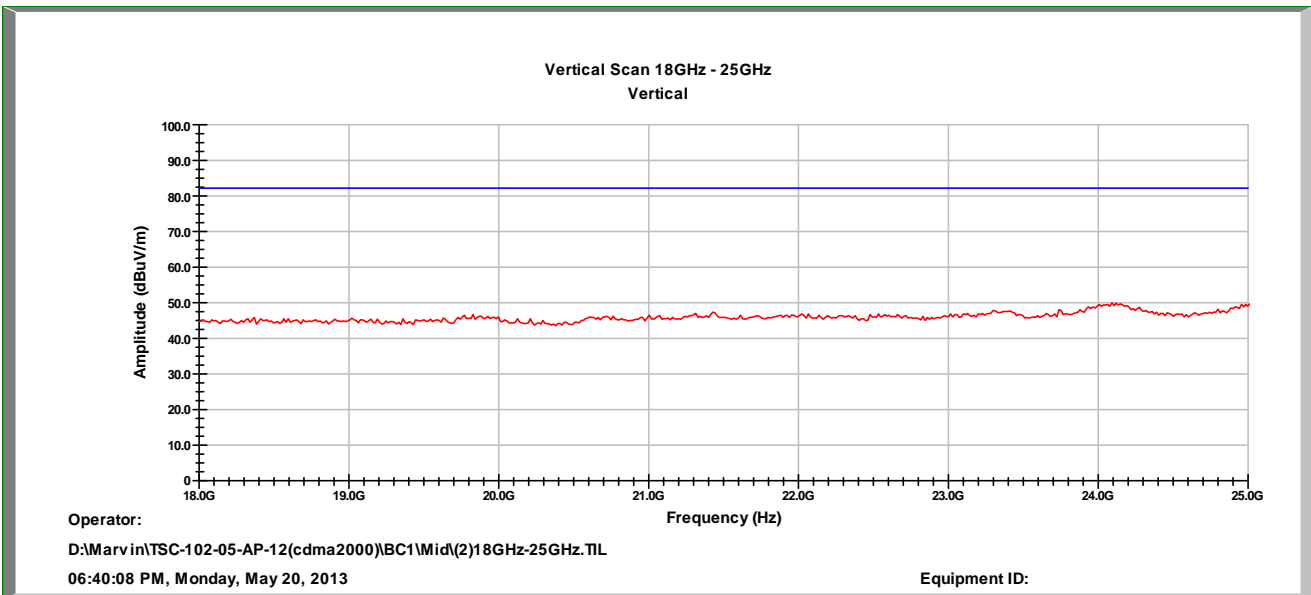
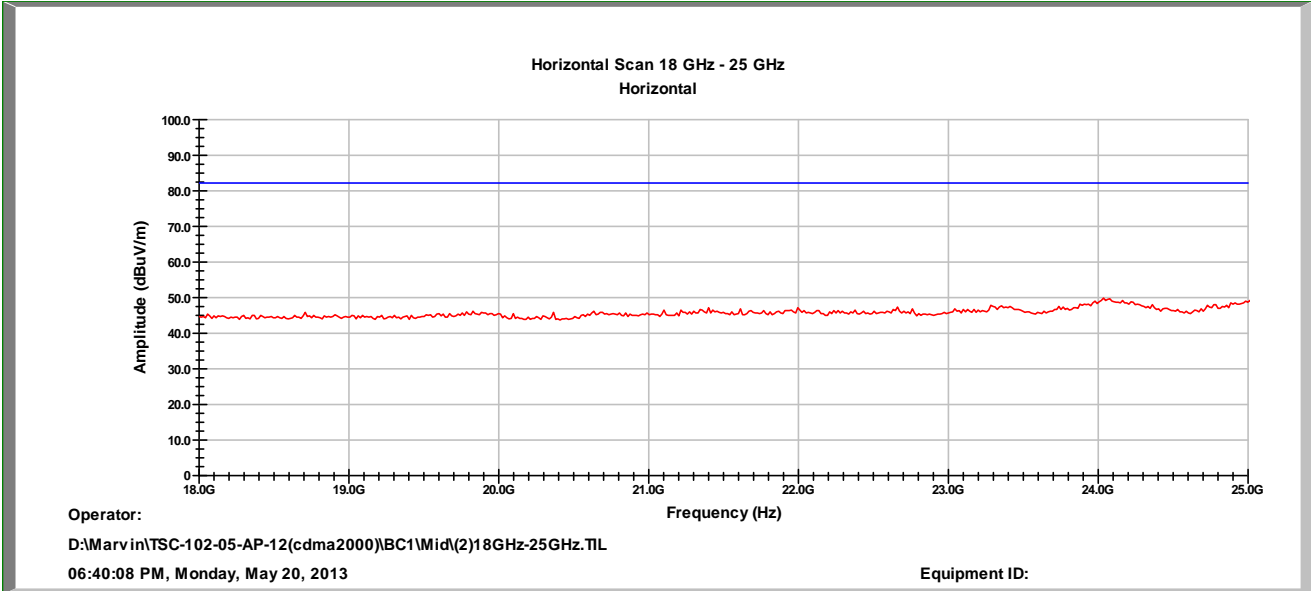


CDMA2000 BC1 CH Mid

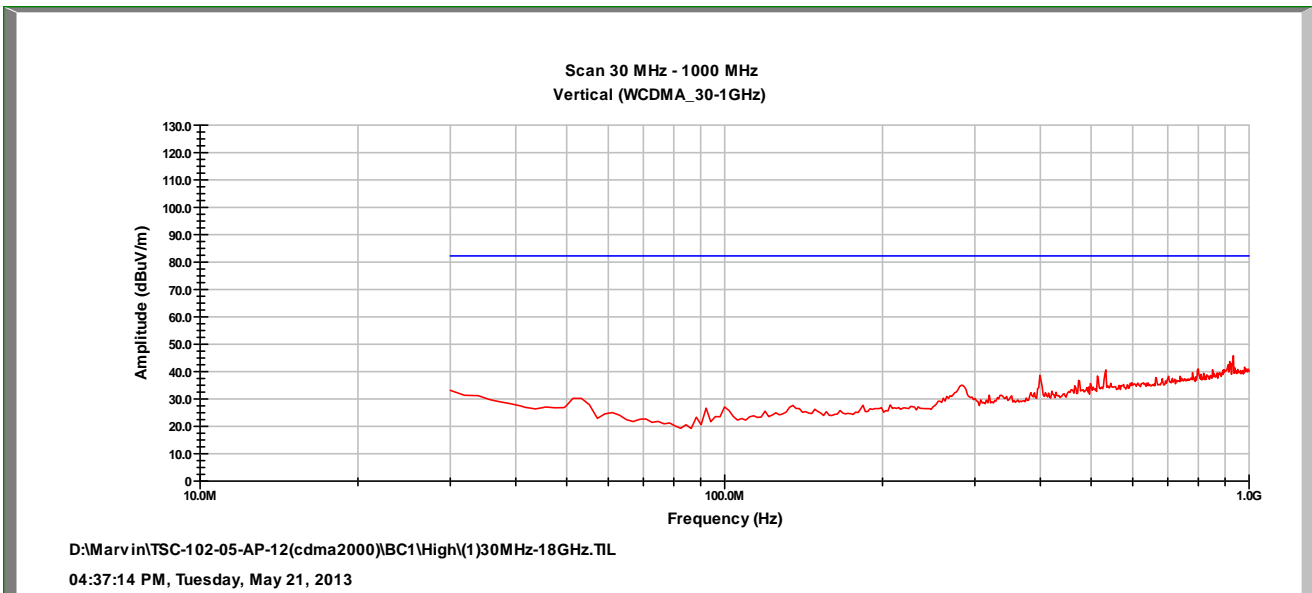
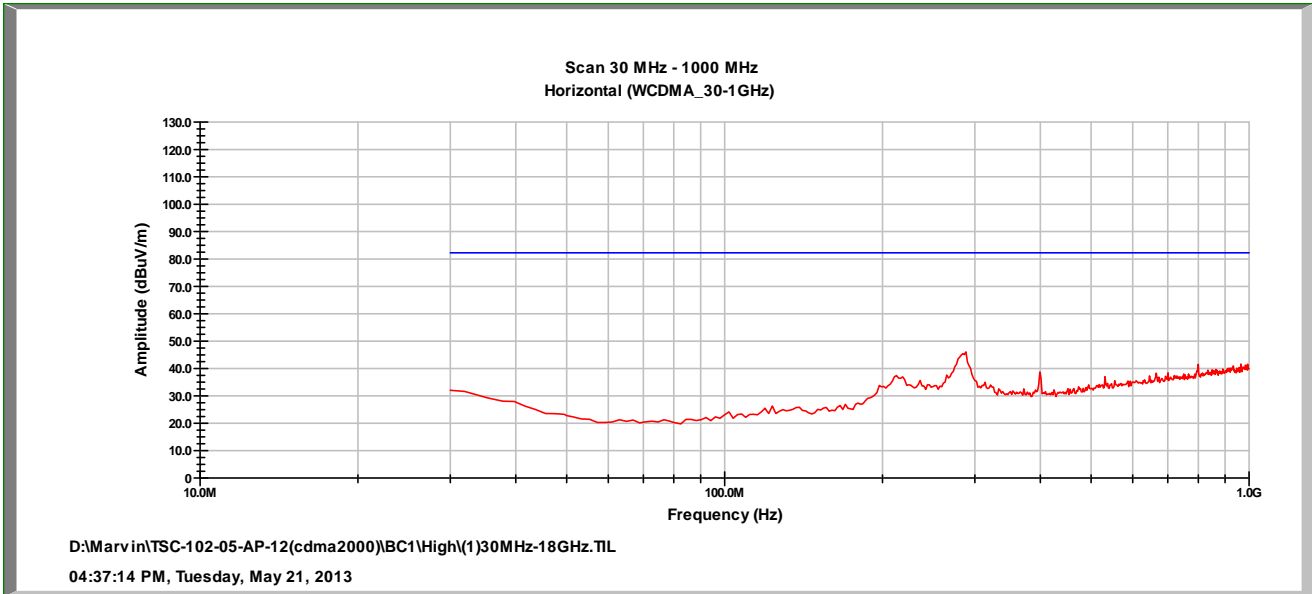


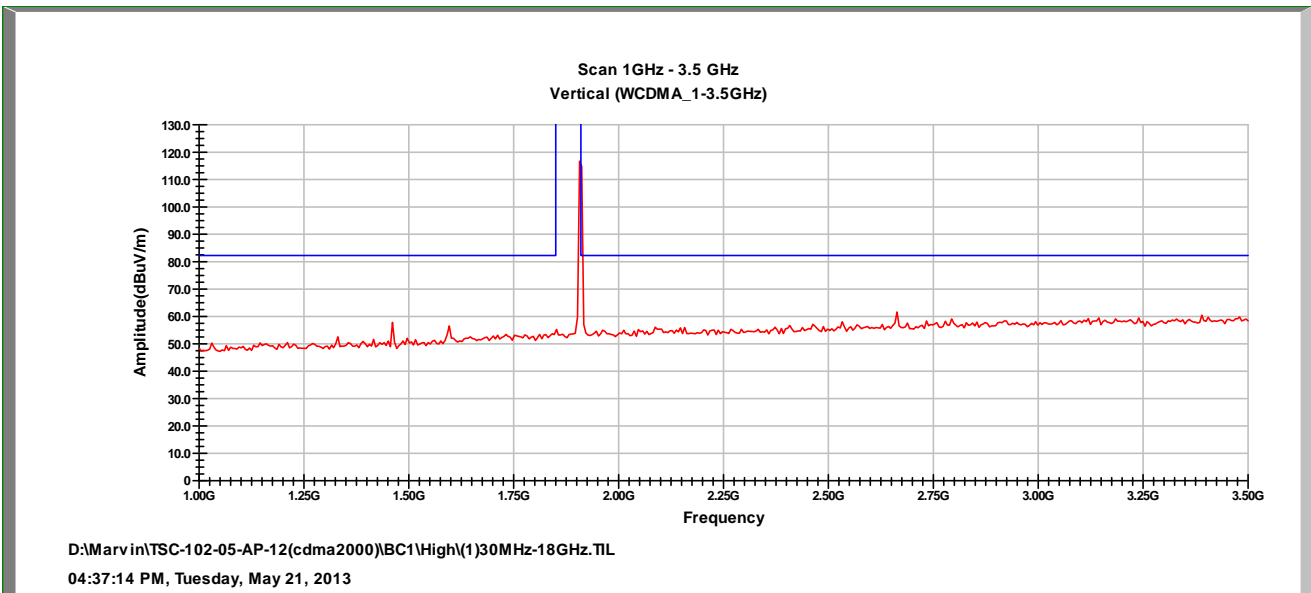
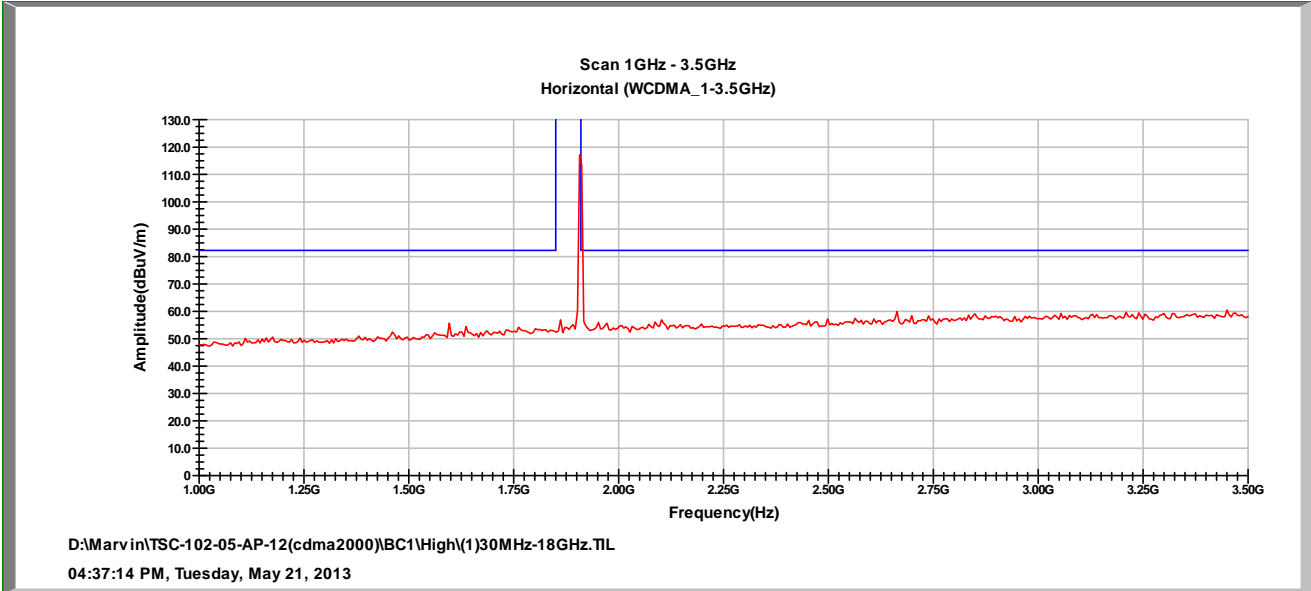


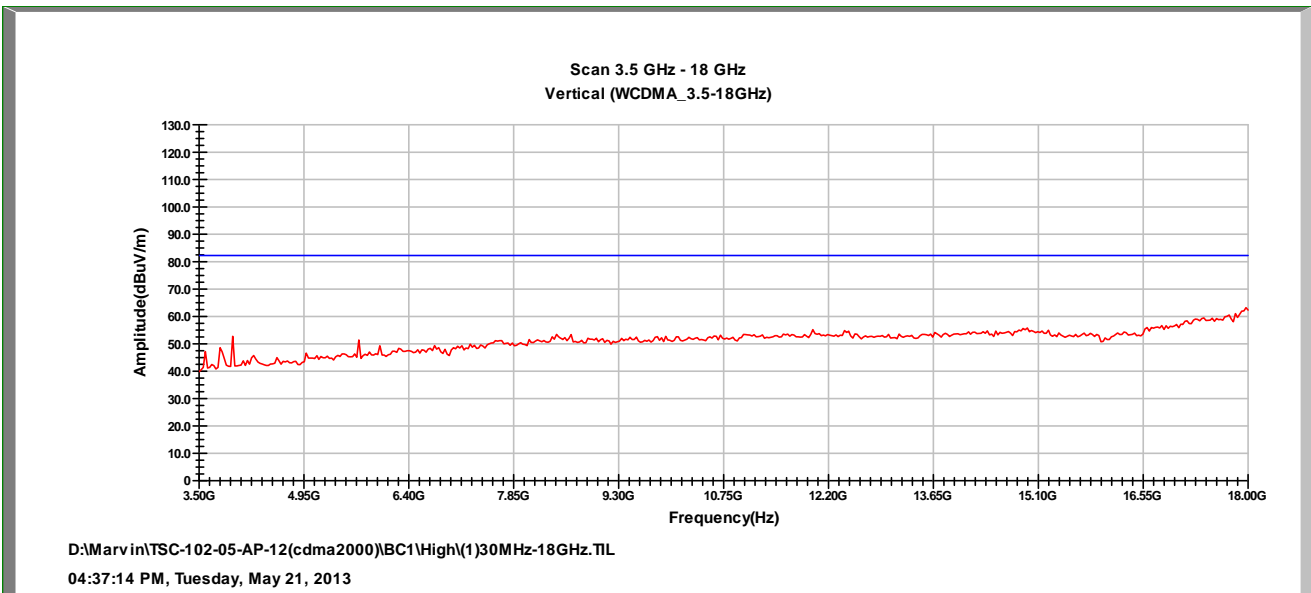
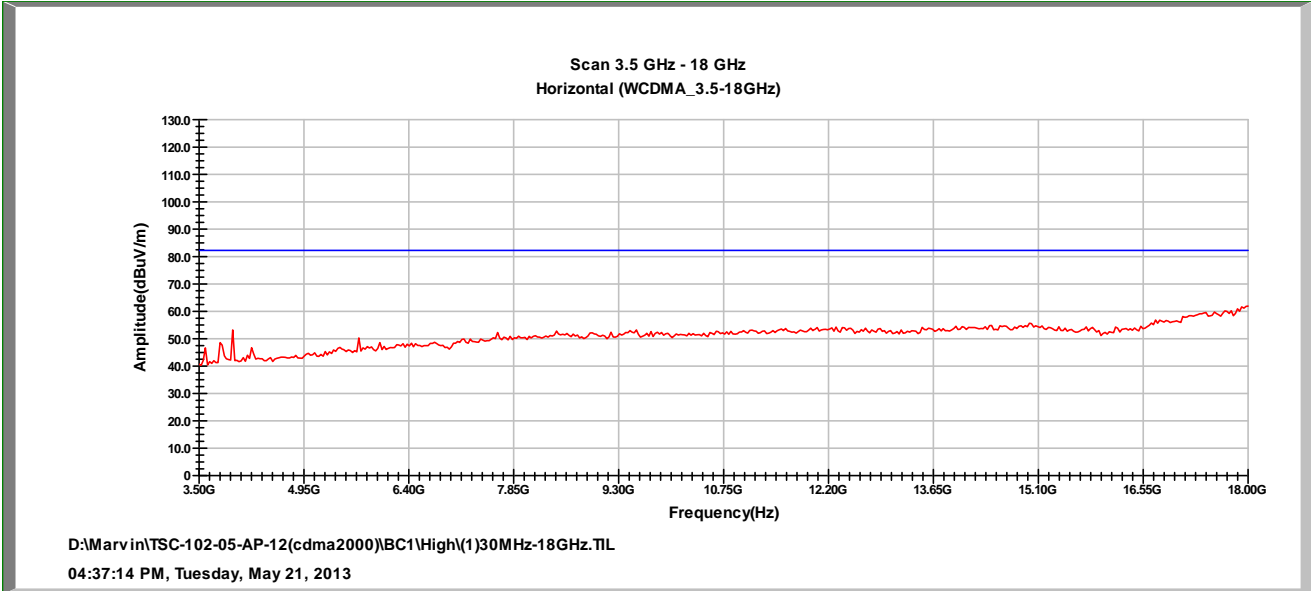


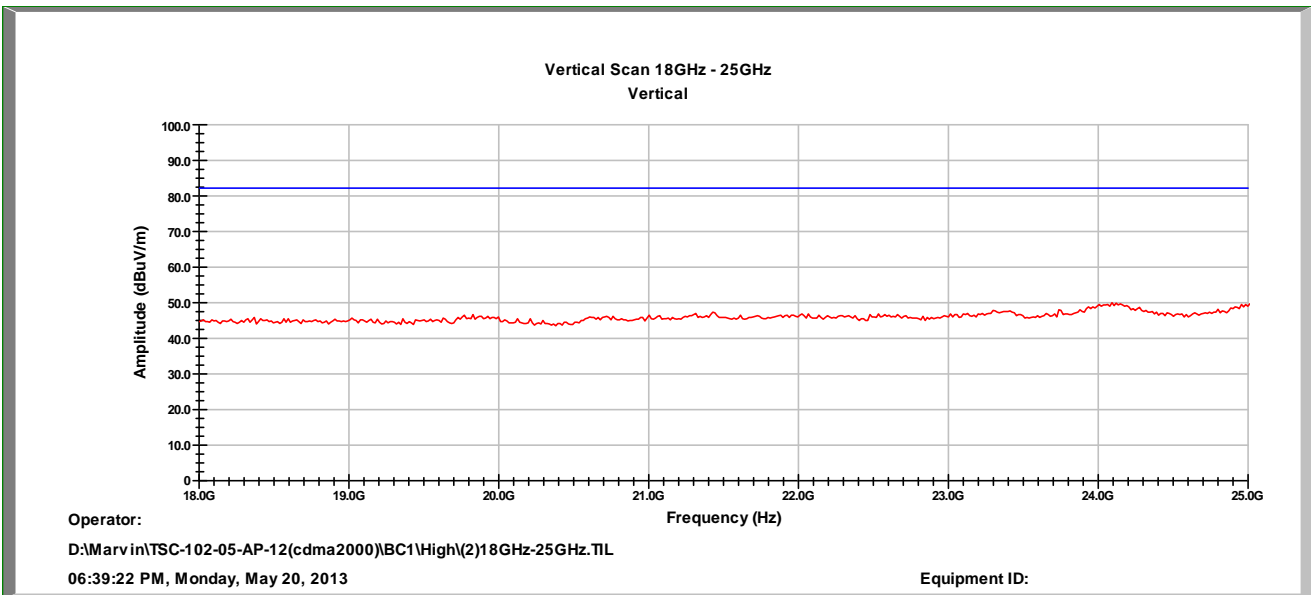
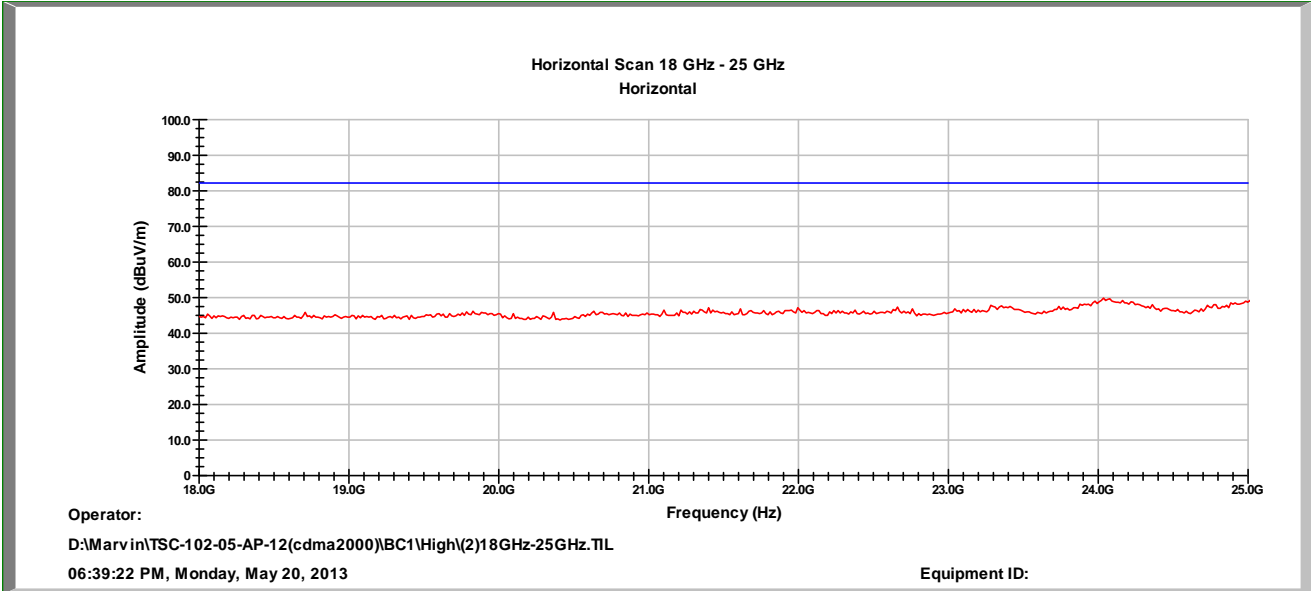


CDMA2000 BC1 CH High









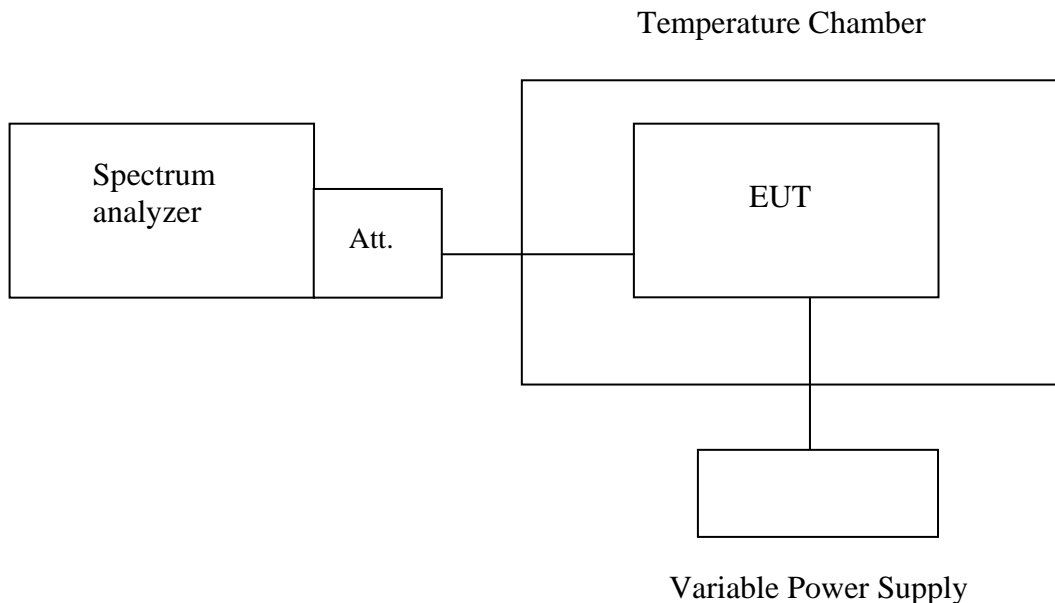
4.5. Frequency Stability (Temperature Variation)

4.5.1. Required and Limits

According to FCC §2.1055 , FCC §22.355 , FCC §24.235.

Frequency Tolerance : ± 2.5 ppm

4.5.2. Test Configuration and Procedure



The equipment under test was connected to an external AC or DC power supply and input rated voltage. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators. The EUT was placed inside the temperature chamber. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 20°C operating frequency as reference frequency. Turn EUT off and set the chamber temperature to -30°C. After the temperature stabilized for approximately 30minutes recorded the frequency. Repeat step measure with 10°C increased per stage until the highest temperature of +50°C reached.

4.5.3. Test Results

WCDMA Band II Mid Channel 1880MHz @ 20°C (Limit : 2.5ppm=4700Hz)				
Power supply Vdc	Temperature (°C)	Frequency(Hz)	Delta(Hz)	Limit(Hz)
3.7	50	1880017067	-2	4700
	40	1880017061	-8	
	30	1880017066	-3	
	20	1880017069	0	
	10	1880017063	-6	
	0	1880017062	-7	
	-10	1880017064	-5	
	-20	1880017066	-3	
	-30	1880017062	-7	

WCDMA Band V Mid Channel 836.4MHz @ 20°C (Limit : 2.5ppm=2090Hz)				
Power supply Vdc	Temperature (°C)	Frequency(Hz)	Delta(Hz)	Limit(Hz)
3.7	50	836416676	4	2090
	40	836416675	3	
	30	836416671	-1	
	20	836416672	0	
	10	836416669	-3	
	0	836416674	2	
	-10	836416675	3	
	-20	836416676	4	
	-30	836416677	5	



WCDMA/HSDPA Band II Mid Channel 1880MHz @ 20°C (Limit : 2.5ppm=4700Hz)				
Power supply Vdc	Temperature (°C)	Frequency(Hz)	Delta(Hz)	Limit(Hz)
3.7	50	1880016853	-6	4700
	40	1880016849	-10	
	30	1880016851	-8	
	20	1880016859	0	
	10	1880016861	2	
	0	1880016862	3	
	-10	1880016854	-5	
	-20	1880016856	-3	
	-30	1880016852	-7	

WCDMA/HSDPA Band V Mid Channel 836.4MHz @ 20°C (Limit : 2.5ppm=2090Hz)				
Power supply Vdc	Temperature (°C)	Frequency(Hz)	Delta(Hz)	Limit(Hz)
3.7	50	836417636	4	2090
	40	836417635	3	
	30	836417633	1	
	20	836417632	0	
	10	836417632	0	
	0	836417634	2	
	-10	836417635	3	
	-20	836417636	4	
	-30	836417634	2	



WCDMA/HSUPA Band II Mid Channel 1880MHz @ 20°C (Limit : 2.5ppm=4700Hz)				
Power supply Vdc	Temperature (°C)	Frequency(Hz)	Delta(Hz)	Limit(Hz)
3.7	50	1880017432	-6	4700
	40	1880017433	-5	
	30	1880017430	-8	
	20	1880017438	0	
	10	1880017432	-6	
	0	1880017427	-11	
	-10	1880017424	-14	
	-20	1880017430	-8	
	-30	1880017431	-7	

WCDMA/HSUPA Band V Mid Channel 836.4MHz @ 20°C (Limit : 2.5ppm=2090Hz)				
Power supply Vdc	Temperature (°C)	Frequency(Hz)	Delta(Hz)	Limit(Hz)
3.7	50	836417677	5	2090
	40	836417675	3	
	30	836417674	2	
	20	836417672	0	
	10	836417672	0	
	0	836417671	-1	
	-10	836417674	2	
	-20	836417669	-3	
	-30	836417670	-2	



CDMA2000/1X BC0 Mid Channel 836.52MHz @ 20°C (Limit : 2.5ppm=2091Hz)				
Power supply Vdc	Temperature (°C)	Frequency(Hz)	Delta(Hz)	Limit(Hz)
3.7	50	836517677	+5	2091
	40	836517675	+3	
	30	836517674	+2	
	20	836517672	0	
	10	836517672	0	
	0	836517671	-1	
	-10	836517674	-2	
	-20	836517669	-3	
	-30	836517670	-2	

CDMA2000/EVDO BC0 Mid Channel 836.52MHz @ 20°C (Limit : 2.5ppm=2091Hz)				
Power supply Vdc	Temperature (°C)	Frequency(Hz)	Delta(Hz)	Limit(Hz)
3.7	50	836516690	-9	2091
	40	836516696	-3	
	30	836516695	-4	
	20	836516699	0	
	10	836516692	-7	
	0	836516691	-8	
	-10	836516693	-6	
	-20	836516690	-9	
	-30	836516698	-1	



CDMA2000/1X BC1 Mid Channel1880MHz @ 20°C (Limit : 2.5ppm=4700Hz)				
Power supply Vdc	Temperature (°C)	Frequency(Hz)	Delta(Hz)	Limit(Hz)
3.7	50	1880016853	-5	4700
	40	1880016859	+1	
	30	1880016851	-7	
	20	1880016858	0	
	10	1880016861	+3	
	0	1880016862	+4	
	-10	1880016854	-4	
	-20	1880016856	-2	
	-30	1880016852	-6	

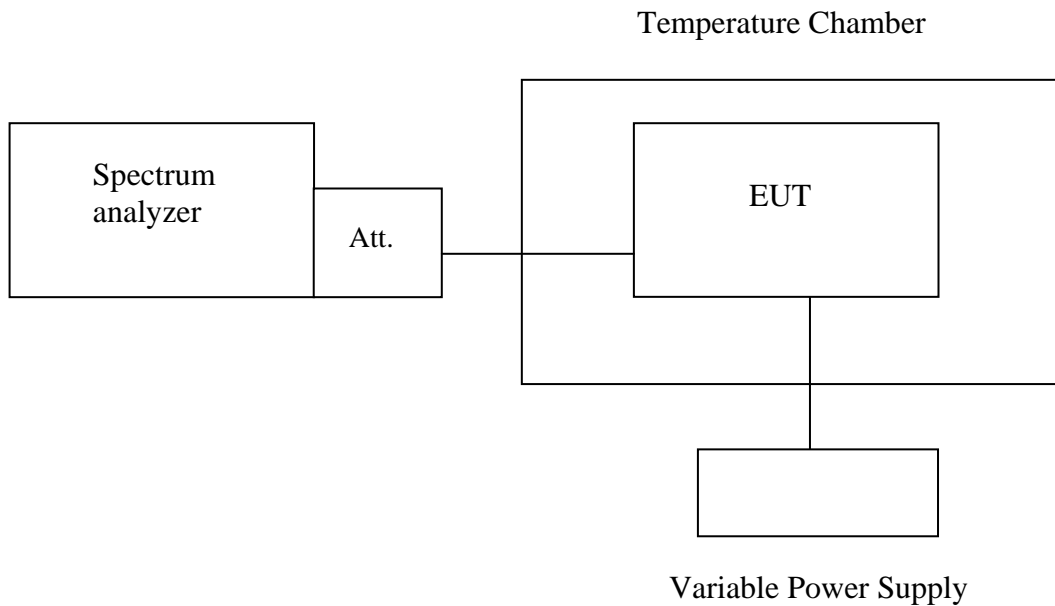
CDMA2000/EVDO BC1 Mid Channel1880MHz @ 20°C (Limit : 2.5ppm=4700Hz)				
Power supply Vdc	Temperature (°C)	Frequency(Hz)	Delta(Hz)	Limit(Hz)
3.7	50	1880016833	+1	4700
	40	1880016839	+7	
	30	1880016831	-1	
	20	1880016832	0	
	10	1880016831	-1	
	0	1880016832	0	
	-10	1880016834	+2	
	-20	1880016836	+4	
	-30	1880016832	0	

4.6. Frequency Stability (Voltage Variation)

4.6.1. Required and Limits

According to FCC §2.1055 , FCC §22.355 , FCC §24.235.

4.6.2. Test Configuration and Procedure



Set chamber temperature to 20 °C. Use a variable AC power supply/DC power source to power the EUT and set the voltage to rated voltage. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and recorded the frequency.

Reduce the input voltage to specify extreme voltage variation ($\pm 15\%$) and endpoint. Record the maximum frequency change.



4.6.3. Test Results

WCDMA Band II Mid Channel 1880MHz @ 20°C (Limit : 2.5ppm=4700Hz)				
Power supply Vdc	Temperature (°C)	Frequency(Hz)	Delta(Hz)	Limit(Hz)
4	20	1880017498	-2	4700
3.7		1880017500	0	
3.3		1880017501	1	
3.1		1880017520	20	

WCDMA Band V Mid Channel 836.4MHz @ 20°C (Limit : 2.5ppm=2090Hz)				
Power supply Vdc	Temperature (°C)	Frequency(Hz)	Delta(Hz)	Limit(Hz)
4	20	836417091	-6	2090
3.7		836417097	0	
3.3		836417094	-3	
3.1		836417109	12	

WCDMA/HSDPA Band II Mid Channel 1880MHz @ 20°C (Limit : 2.5ppm=4700Hz)				
Power supply Vdc	Temperature (°C)	Frequency(Hz)	Delta(Hz)	Limit(Hz)
4	20	1880017026	-6	4700
3.7		1880017032	0	
3.3		1880017035	3	
3.1		1880017063	31	

WCDMA/HSDPA Band V Mid Channel 836.4MHz @ 20°C (Limit : 2.5ppm=2090Hz)				
Power supply Vdc	Temperature (°C)	Frequency(Hz)	Delta(Hz)	Limit(Hz)
4	20	836417085	-3	2090
3.7		836417088	0	
3.3		836417093	5	
3.1		836417113	25	



WCDMA/HSUPA Band II Mid Channel 1880MHz @ 20°C (Limit : 2.5ppm=4700Hz)				
Power supply Vdc	Temperature (°C)	Frequency(Hz)	Delta(Hz)	Limit(Hz)
4	20	1880017094	-8	4700
3.7		1880017102	0	
3.3		1880017105	+3	
3.1		1880017142	+40	

WCDMA/HSUPA Band V Mid Channel 836.4MHz @ 20°C (Limit : 2.5ppm=2090Hz)				
Power supply Vdc	Temperature (°C)	Frequency(Hz)	Delta(Hz)	Limit(Hz)
4	20	836416996	-3	2090
3.7		836416999	0	
3.3		836417005	+6	
3.1		836417046	+47	

CDMA2000/1X BC0 Mid Channel 836.52MHz @ 20°C (Limit : 2.5ppm=2091Hz)				
Power supply Vdc	Temperature (°C)	Frequency(Hz)	Delta(Hz)	Limit(Hz)
4	20	836516983	-8	2091
3.7		836516989	0	
3.3		836517005	-16	
3.1		836517034	+45	

CDMA2000/EVDO BC0 Mid Channel 836.52MHz @ 20°C (Limit : 2.5ppm=2091Hz)				
Power supply Vdc	Temperature (°C)	Frequency(Hz)	Delta(Hz)	Limit(Hz)
4	20	836516993	-9	2091
3.7		836517002	0	
3.3		836517005	+3	
3.1		836517036	+34	



CDMA2000/1X BC1 Mid Channel 1880MHz @ 20°C (Limit : 2.5ppm=4700Hz)				
Power supply Vdc	Temperature (°C)	Frequency(Hz)	Delta(Hz)	Limit(Hz)
4	20	1880017098	-12	4700
3.7		1880017110	0	
3.3		1880017106	-4	
3.1		1880017142	+32	

CDMA2000/EVDO BC1 Mid Channel 1880MHz @ 20°C (Limit : 2.5ppm=4700Hz)				
Power supply Vdc	Temperature (°C)	Frequency(Hz)	Delta(Hz)	Limit(Hz)
4	20	1880017063	-3	4700
3.7		1880017066	0	
3.3		1880017073	+7	
3.1		1880017106	+40	

5.PHOTOGRAPHS

5.1 Photos of Radiated Measurement



5.2 Photos of EUT



Front view of EUT



Rear view of EUT



Side view of EUT



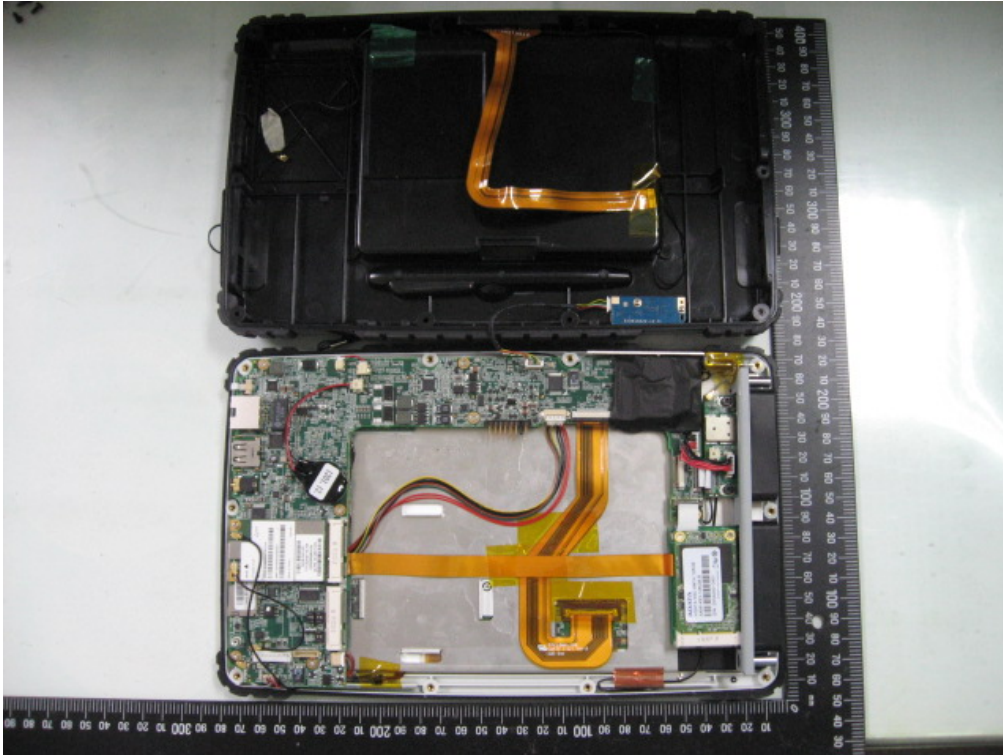
Side view of EUT



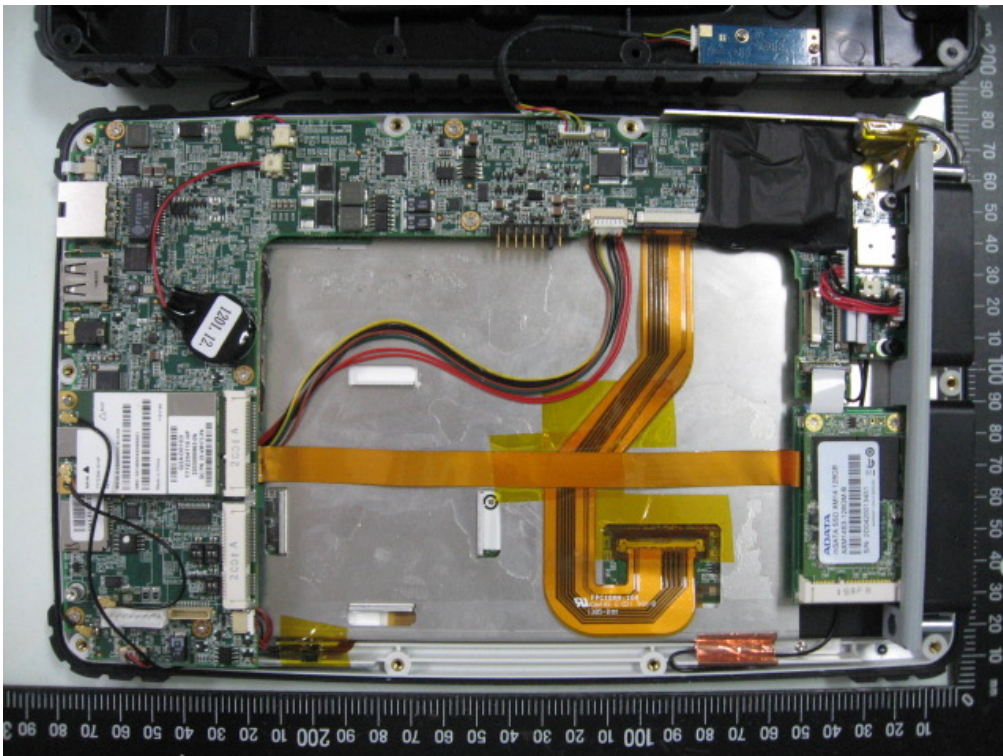
Side view of EUT



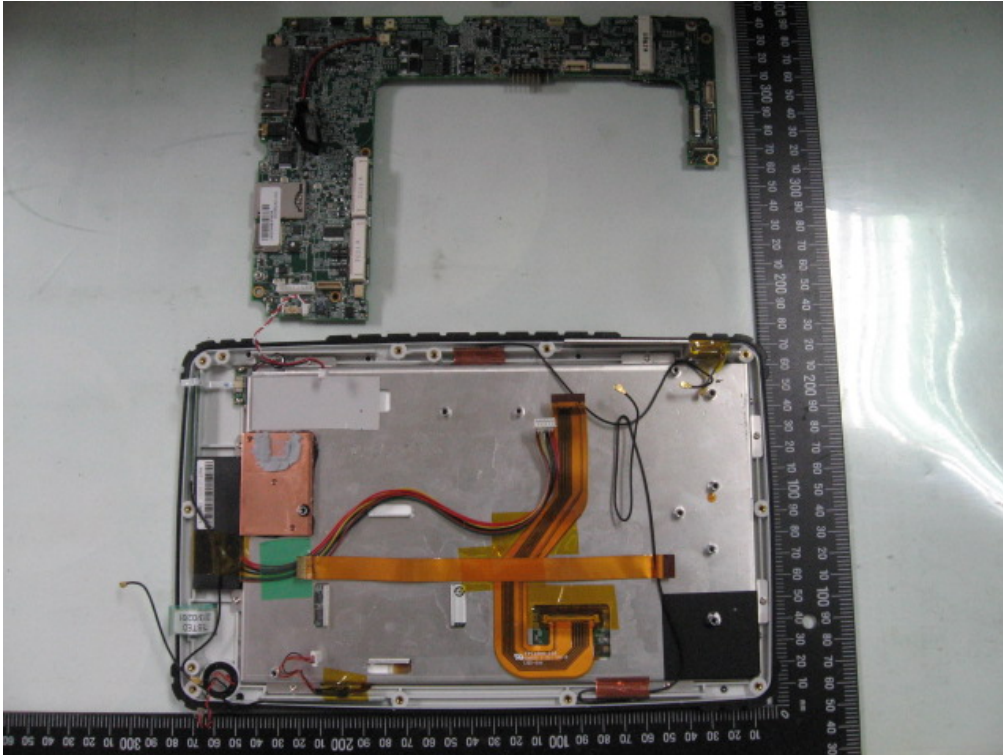
Side view of EUT



Inside view of EUT



Inside view of EUT



Inside view of EUT