Product : ThereGate
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmitter (802.11n MCS0 7.2Mbps 20M-BW)-ANT 1 -Channel 1

Fundamental Filed Strength

Antenna Pole	Frequency [MHz]	Correction Factor [dB/m]	Reading Level [dBuV]	Emission Level [dBuV/m]	Detector
Horizontal	2412	-0.175	111.687	111.512	Peak
Horizontal	2412	-0.175	99.096	98.921	Average
Vertical	2412	-0.175	99.696	99.521	Peak
Vertical	2412	-0.175	89.663	89.488	Average

Note: 1:Spectrum Analyzer setting:

Peak detector: RBW=1MHz, VBW=1MHz

Average detector: RBW=1MHz, VBW=10Hz

Band Edge Test Data

Antenna Pole	Test Frequency (MHz)	Fundamental (dBuV/m)	Δ (dB)	Band Edge Field Strength (dBuV/m)	Detector
Horizontal	2389.6	111.512	41.74	69.772	Peak
Horizontal	2390.0	98.921	47.51	51.411	Average
Vertical	2389.6	99.521	41.74	57.781	Peak
Vertical	2390.0	89.488	47.51	41.978	Average

Note:

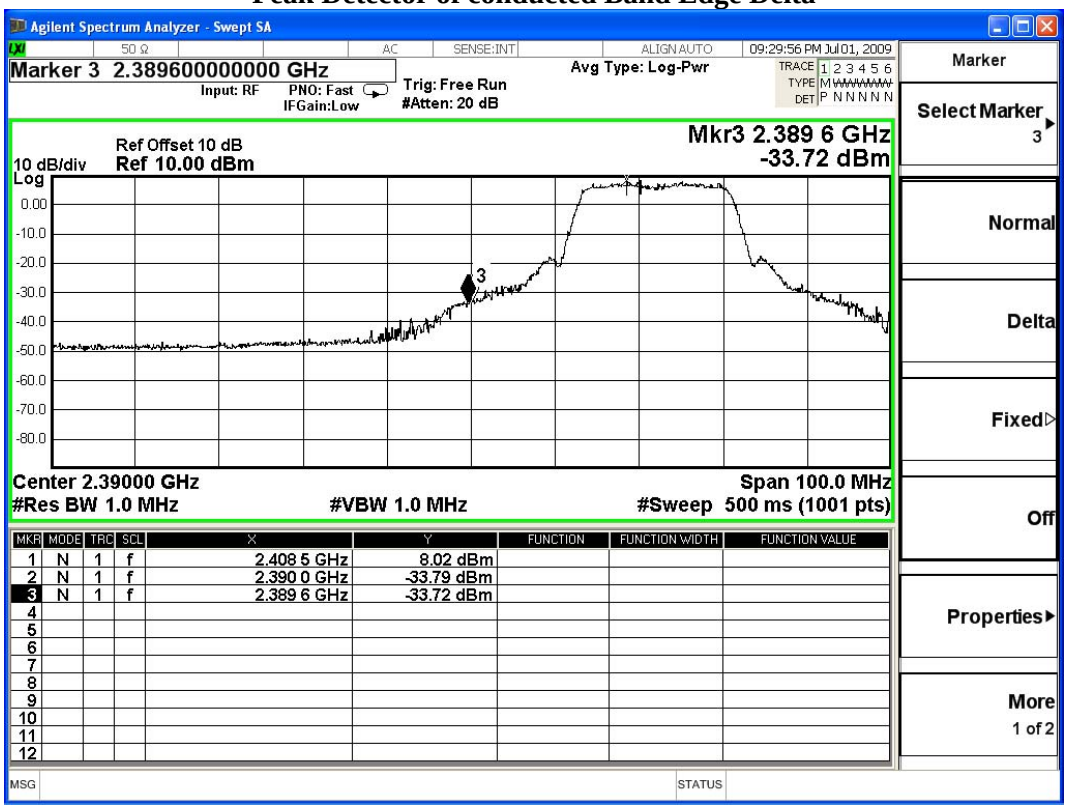
The Band Edge Field Strength was calculated using the Fundamental and Conducted Band Edge measurements per the Marker-Delta Method with the following formula:

Band Edge field Strength = F - Δ

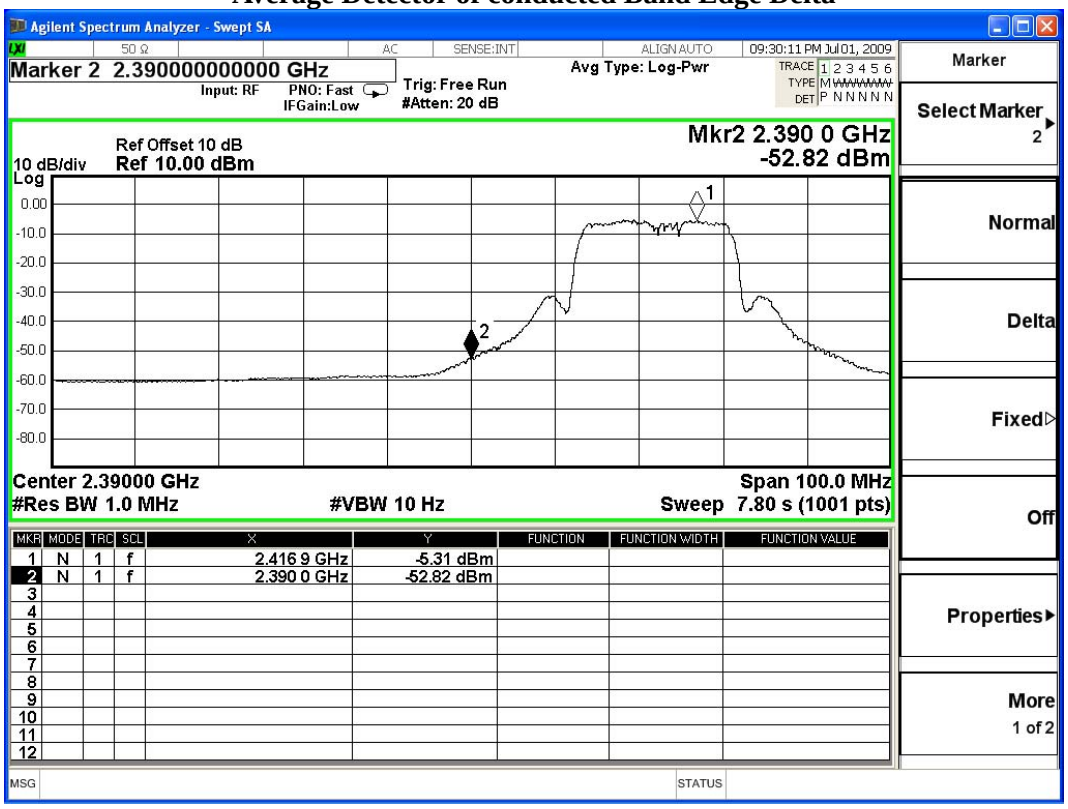
F = Fundamental field Strength (Peak or Average)

Δ = Conducted Band Edge Delta (Peak or Average)

Peak Detector of conducted Band Edge Delta



Average Detector of conducted Band Edge Delta



Product : ThereGate
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmitter (802.11n MCS0 7.2Mbps 20M-BW)-ANT 1 -Channel 11

Fundamental Filed Strength

Antenna Pole	Frequency [MHz]	Correction Factor [dB/m]	Reading Level [dB(uV)]	Emission Level [dB(uV/m)]	Detector
Horizontal	2462	0.040	111.603	111.643	Peak
Horizontal	2462	0.040	101.240	101.280	Average
Vertical	2462	0.040	99.147	99.187	Peak
Vertical	2462	0.040	88.999	89.039	Average

Note: 1:Spectrum Analyzer setting:

Peak detector: RBW=1MHz, VBW=1MHz

Average detector: RBW=1MHz, VBW=10Hz

Band Edge Test Data

Antenna Pole	Test Frequency (MHz)	Fundamental (dBuV/m)	Δ (dB)	Band Edge Field Strength (dBuV/m)	Detector
Horizontal	2483.9	111.643	42.69	68.953	Peak
Horizontal	2483.5	101.280	48.37	52.910	Average
Vertical	2483.9	99.187	42.69	56.497	Peak
Vertical	2483.5	89.039	48.37	40.669	Average

Note:

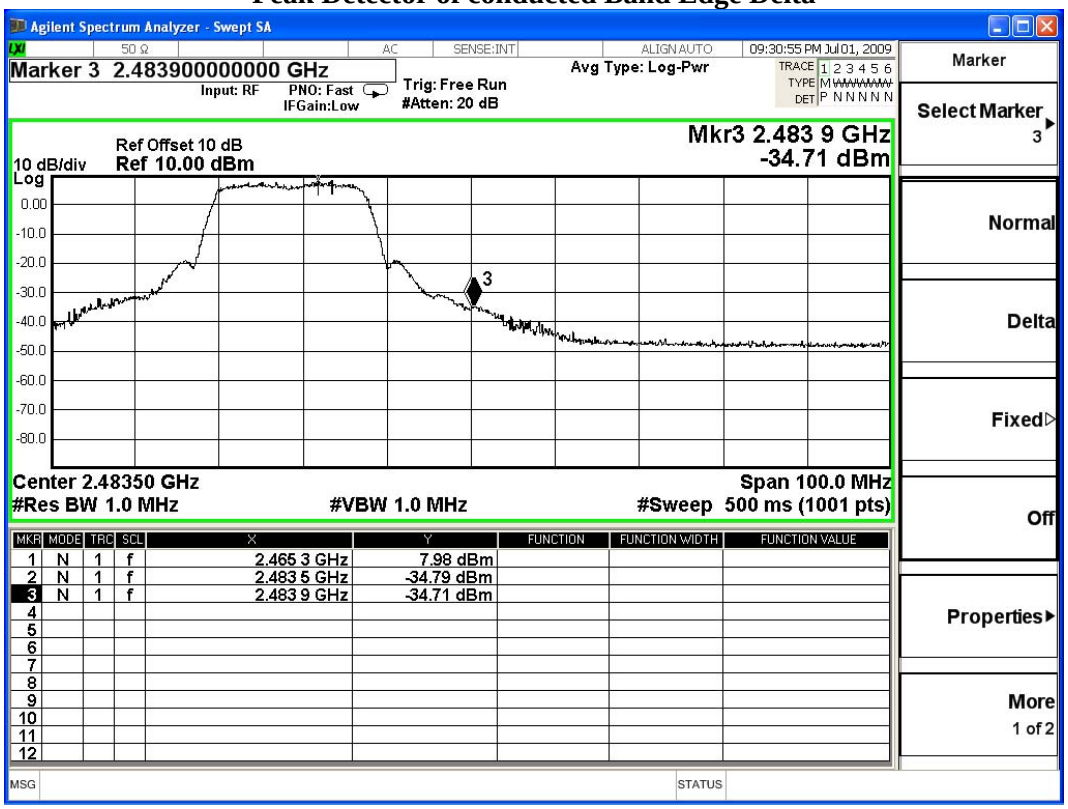
The Band Edge Field Strength was calculated using the Fundamental and Conducted Band Edge measurements per the Marker-Delta Method with the following formula:

Band Edge field Strength = F - Δ

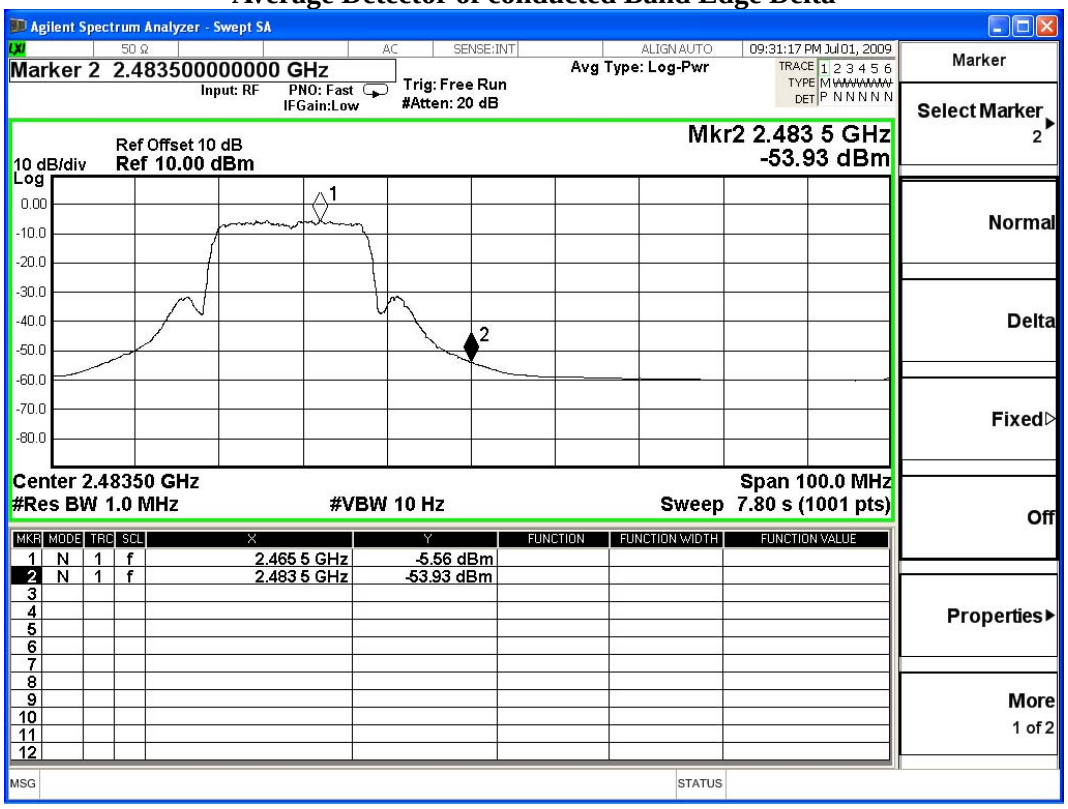
F = Fundamental field Strength (Peak or Average)

Δ = Conducted Band Edge Delta (Peak or Average)

Peak Detector of conducted Band Edge Delta



Average Detector of conducted Band Edge Delta



Product : ThereGate
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmitter (802.11n MCS8 14.4Mbps 20M-BW)-ANT 1+2 -Channel 1

Fundamental Filed Strength

Antenna Pole	Frequency [MHz]	Correction Factor [dB/m]	Reading Level [dBuV]	Emission Level [dBuV/m]	Detector
Horizontal	2412	-0.175	111.235	111.060	Peak
Horizontal	2412	-0.175	101.136	100.961	Average
Vertical	2412	-0.175	107.922	107.747	Peak
Vertical	2412	-0.175	97.325	97.150	Average

Note: 1:Spectrum Analyzer setting:

Peak detector: RBW=1MHz, VBW=1MHz

Average detector: RBW=1MHz, VBW=10Hz

Band Edge Test Data

Antenna Pole	Test Frequency (MHz)	Fundamental (dBuV/m)	Δ (dB)	Band Edge Field Strength (dBuV/m)	Detector
Horizontal	2390.0	111.060	39.42	71.64	Peak
Horizontal	2390.0	100.961	49.81	51.151	Average
Vertical	2390.0	107.747	39.42	68.327	Peak
Vertical	2390.0	97.150	49.81	47.34	Average

Note:

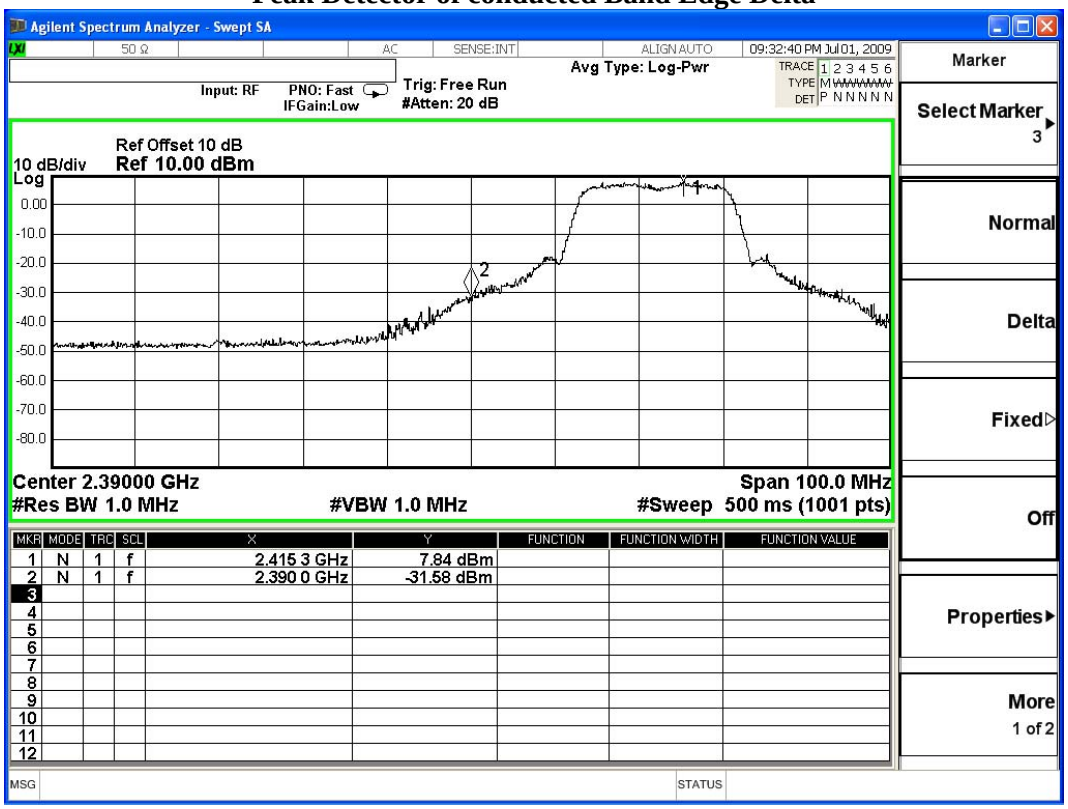
The Band Edge Field Strength was calculated using the Fundamental and Conducted Band Edge measurements per the Marker-Delta Method with the following formula:

Band Edge field Strength = F - Δ

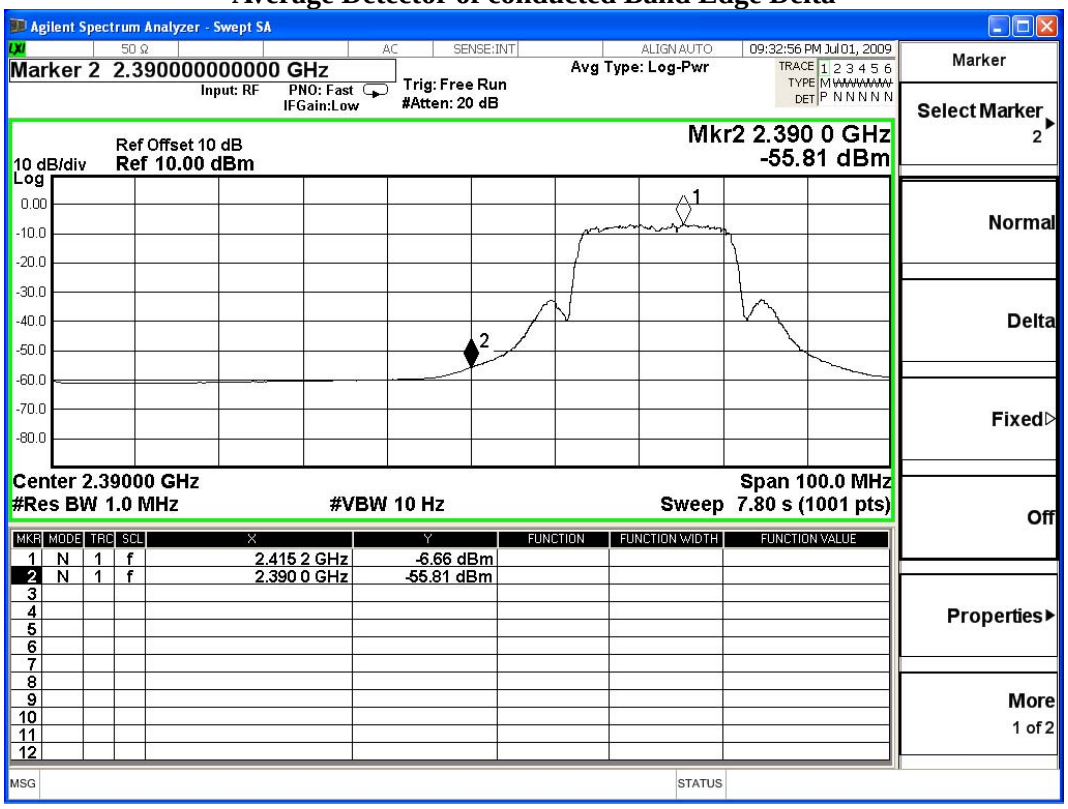
F = Fundamental field Strength (Peak or Average)

Δ = Conducted Band Edge Delta (Peak or Average)

Peak Detector of conducted Band Edge Delta



Average Detector of conducted Band Edge Delta



Product : ThereGate
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmitter (802.11n MCS8 14.4Mbps 20M-BW)-ANT 1+2 -Channel 11

Fundamental Filed Strength

Antenna Pole	Frequency [MHz]	Correction Factor [dB/m]	Reading Level [dB(uV)]	Emission Level [dB(uV/m)]	Detector
Horizontal	2462	0.040	102.648	102.688	Peak
Horizontal	2462	0.040	94.993	95.033	Average
Vertical	2462	0.040	98.975	99.015	Peak
Vertical	2462	0.040	91.747	91.787	Average

Note: 1:Spectrum Analyzer setting:

Peak detector: RBW=1MHz, VBW=1MHz

Average detector: RBW=1MHz, VBW=10Hz

Band Edge Test Data

Antenna Pole	Test Frequency (MHz)	Fundamental (dBuV/m)	Δ (dB)	Band Edge Field Strength (dBuV/m)	Detector
Horizontal	2484.2	102.688	39.71	62.978	Peak
Horizontal	2483.5	95.033	46.11	48.923	Average
Vertical	2484.2	99.015	39.71	59.305	Peak
Vertical	2483.5	91.787	46.11	45.677	Average

Note:

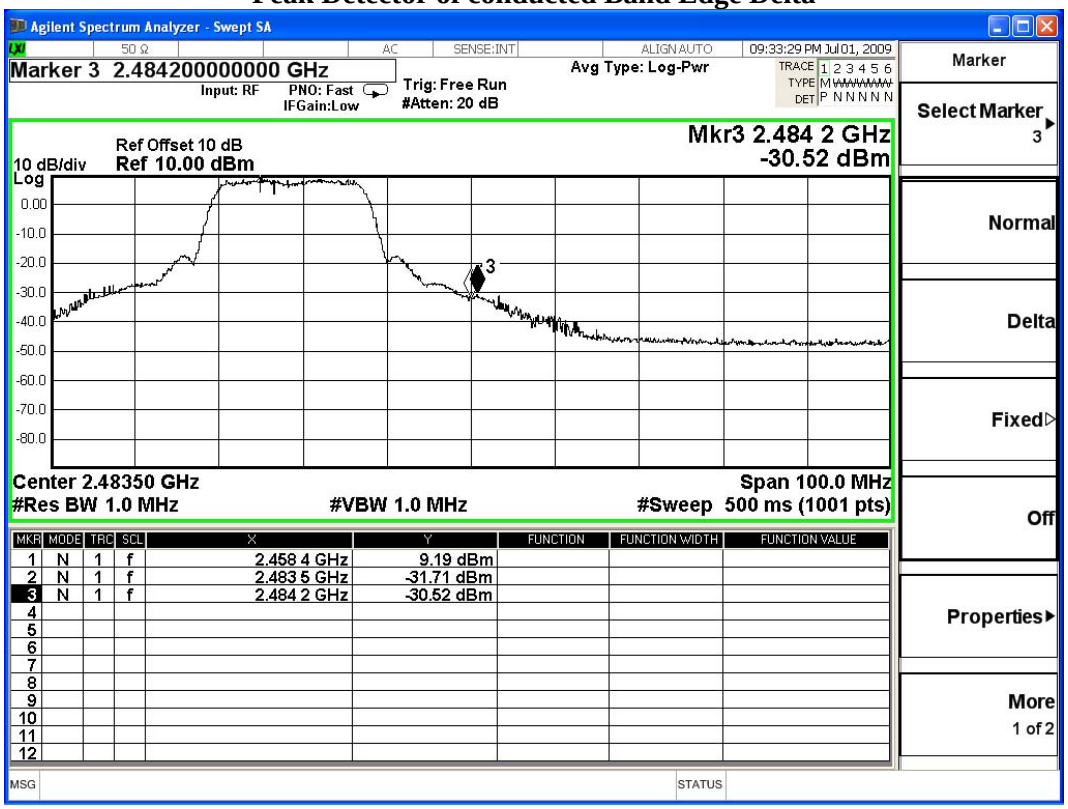
The Band Edge Field Strength was calculated using the Fundamental and Conducted Band Edge measurements per the Marker-Delta Method with the following formula:

Band Edge field Strength = F - Δ

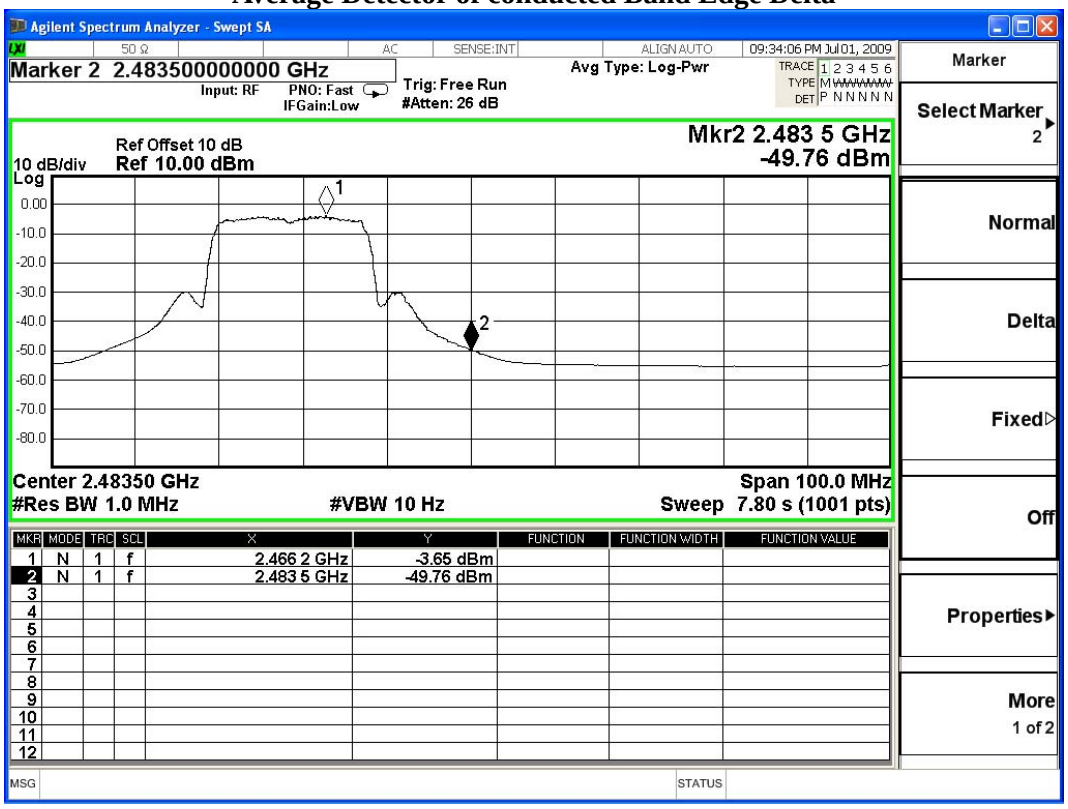
F = Fundamental field Strength (Peak or Average)

Δ = Conducted Band Edge Delta (Peak or Average)

Peak Detector of conducted Band Edge Delta



Average Detector of conducted Band Edge Delta



Product : ThereGate
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 5: Transmitter (802.11n MCS0 15Mbps 40M-BW)-ANT 1 -Channel 1

Fundamental Filed Strength

Antenna Pole	Frequency [MHz]	Correction Factor [dB/m]	Reading Level [dBuV]	Emission Level [dBuV/m]	Detector
Horizontal	2422	-0.128	102.565	102.437	Peak
Horizontal	2422	-0.128	96.601	96.473	Average
Vertical	2422	-0.128	97.068	96.940	Peak
Vertical	2422	-0.128	90.808	90.680	Average

Note: 1:Spectrum Analyzer setting:

Peak detector: RBW=1MHz, VBW=1MHz

Average detector: RBW=1MHz, VBW=10Hz

Band Edge Test Data

Antenna Pole	Test Frequency (MHz)	Fundamental (dBuV/m)	Δ (dB)	Band Edge Field Strength (dBuV/m)	Detector
Horizontal	2388.1	102.437	36.67	65.767	Peak
Horizontal	2390.0	96.473	48.387	48.086	Average
Vertical	2388.1	96.940	36.67	60.27	Peak
Vertical	2390.0	90.680	48.387	42.293	Average

Note:

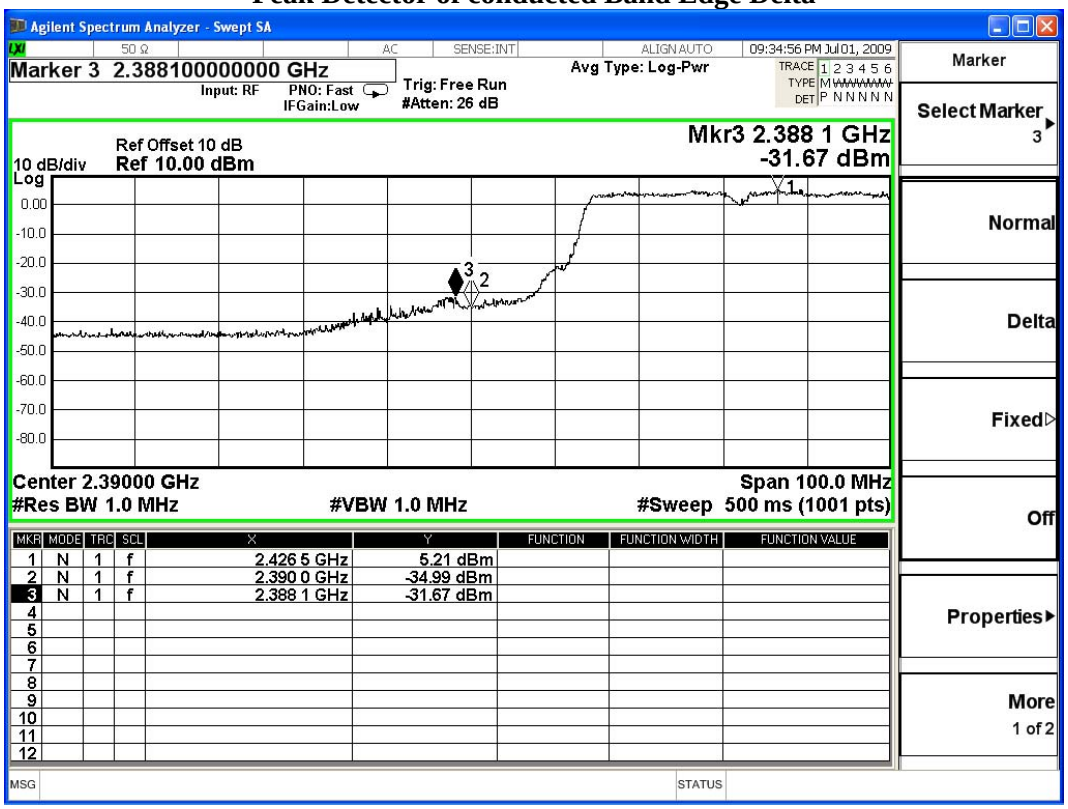
The Band Edge Field Strength was calculated using the Fundamental and Conducted Band Edge measurements per the Marker-Delta Method with the following formula:

Band Edge field Strength = F - Δ

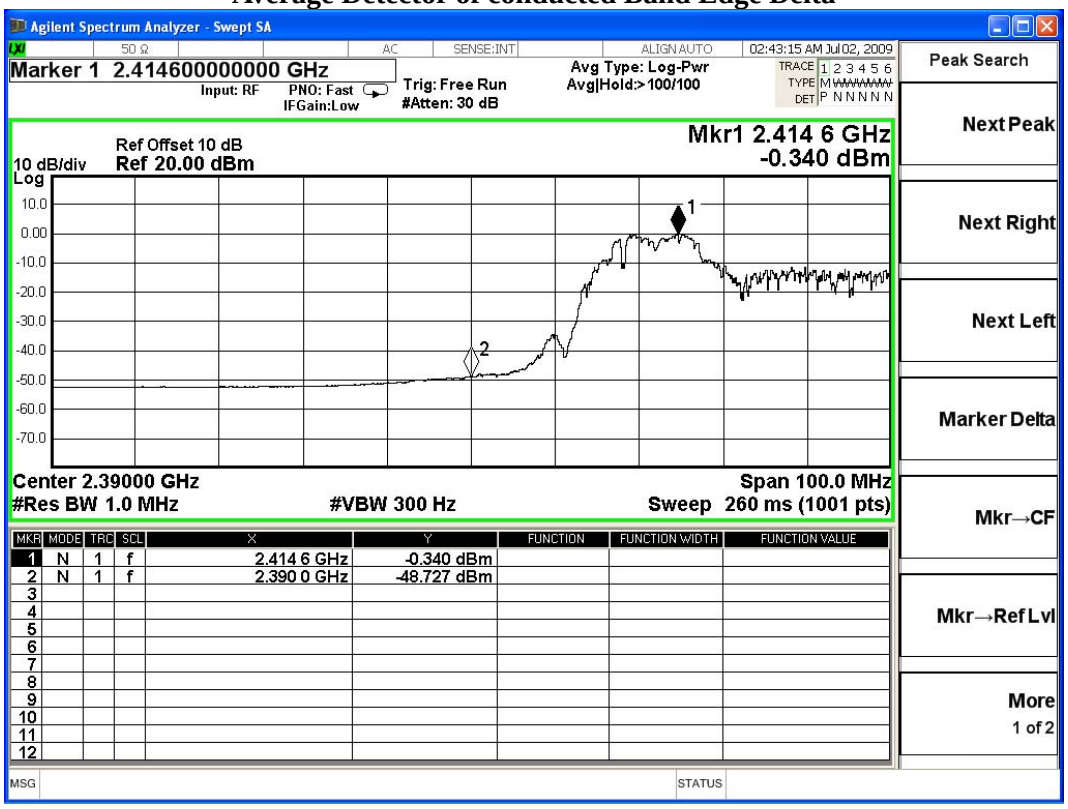
F = Fundamental field Strength (Peak or Average)

Δ = Conducted Band Edge Delta (Peak or Average)

Peak Detector of conducted Band Edge Delta



Average Detector of conducted Band Edge Delta



Product : ThereGate
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmitter (802.11n MCS8 14.4Mbps 20M-BW)-ANT 1+2 -Channel 7

Fundamental Filed Strength

Antenna Pole	Frequency [MHz]	Correction Factor [dB/m]	Reading Level [dB(uV)]	Emission Level [dB(uV/m)]	Detector
Horizontal	2452	-0.001	102.022	102.021	Peak
Horizontal	2452	-0.001	96.831	96.830	Average
Vertical	2452	-0.001	95.563	95.562	Peak
Vertical	2452	-0.001	90.536	90.535	Average

Note: 1:Spectrum Analyzer setting:

Peak detector: RBW=1MHz, VBW=1MHz

Average detector: RBW=1MHz, VBW=10Hz

Band Edge Test Data

Antenna Pole	Test Frequency (MHz)	Fundamental (dBuV/m)	Δ (dB)	Band Edge Field Strength (dBuV/m)	Detector
Horizontal	2484.2	102.021	41.305	60.716	Peak
Horizontal	2483.5	96.830	49.626	47.204	Average
Vertical	2484.2	95.562	41.305	54.257	Peak
Vertical	2483.5	90.535	49.626	40.909	Average

Note:

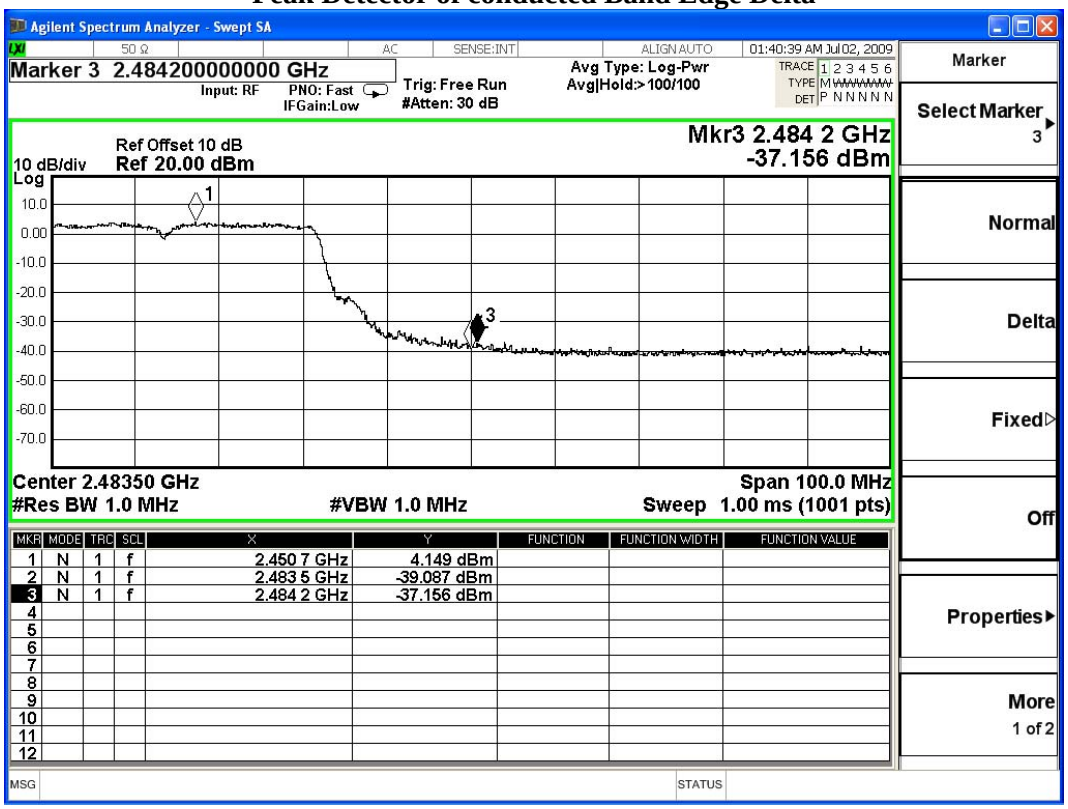
The Band Edge Field Strength was calculated using the Fundamental and Conducted Band Edge measurements per the Marker-Delta Method with the following formula:

Band Edge field Strength = F - Δ

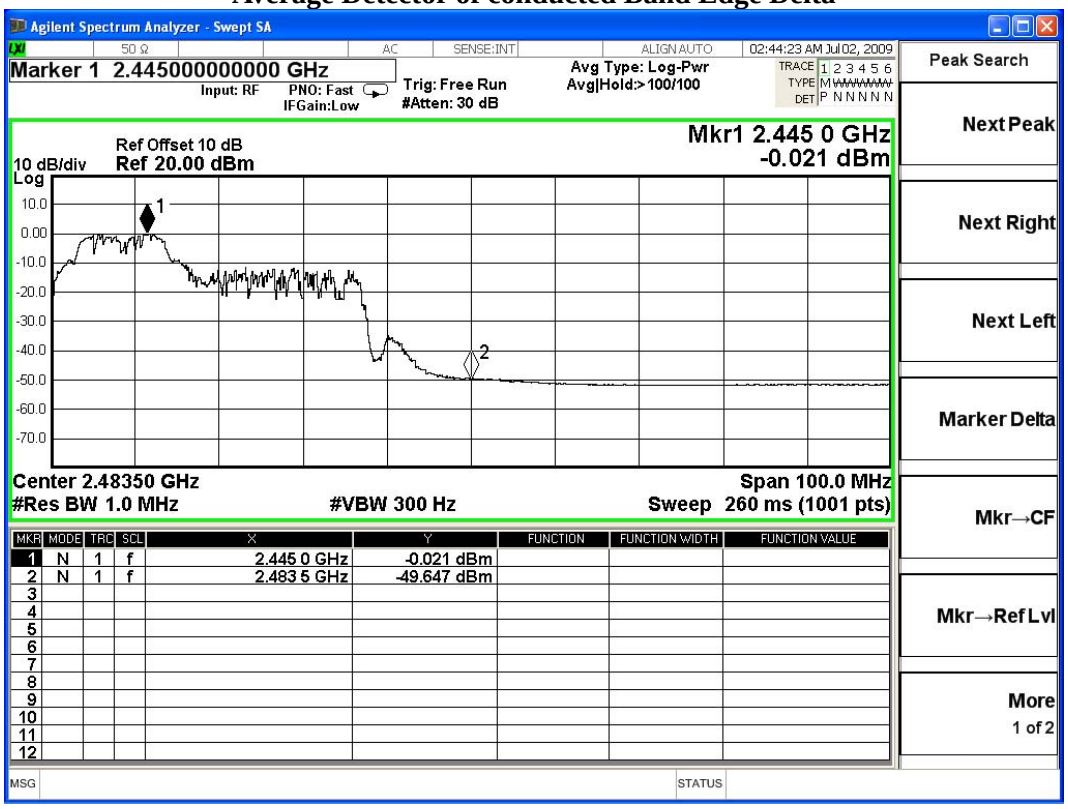
F = Fundamental field Strength (Peak or Average)

Δ = Conducted Band Edge Delta (Peak or Average)

Peak Detector of conducted Band Edge Delta



Average Detector of conducted Band Edge Delta



Product : ThereGate
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 6: Transmitter (802.11n MCS8 30Mbps 40M-BW)-ANT 1+2 -Channel 1

Fundamental Filed Strength

Antenna Pole	Frequency [MHz]	Correction Factor [dB/m]	Reading Level [dBuV]	Emission Level [dBuV/m]	Detector
Horizontal	2422	-0.128	103.371	103.243	Peak
Horizontal	2422	-0.128	97.232	97.104	Average
Vertical	2422	-0.128	107.160	107.032	Peak
Vertical	2422	-0.128	89.551	89.423	Average

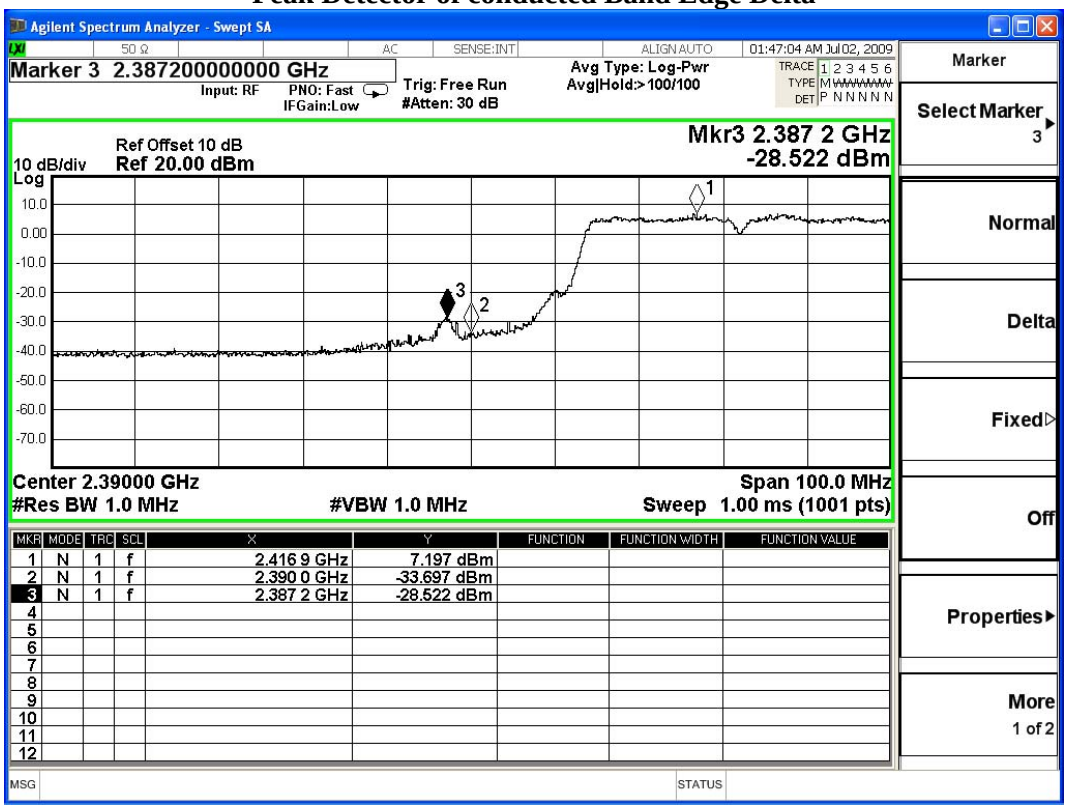
Note: 1:Spectrum Analyzer setting:
Peak detector: RBW=1MHz, VBW=1MHz
Average detector: RBW=1MHz, VBW=10Hz

Band Edge Test Data

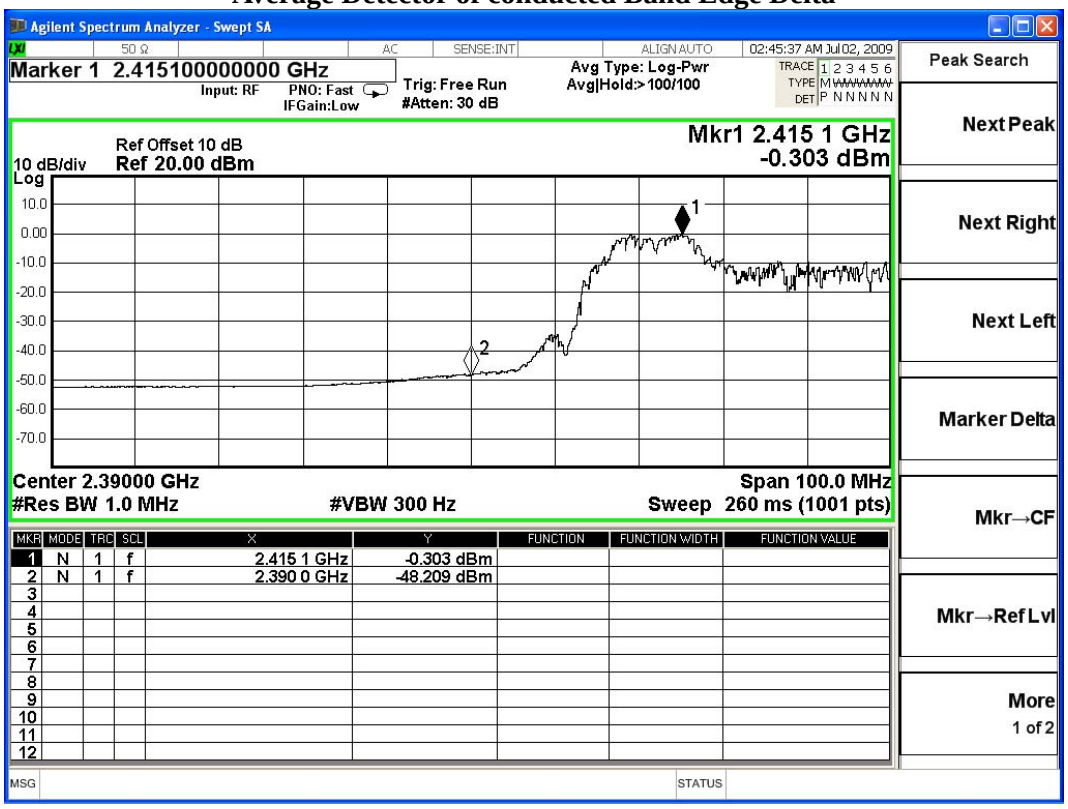
Antenna Pole	Test Frequency (MHz)	Fundamental (dBuV/m)	Δ (dB)	Band Edge Field Strength (dBuV/m)	Detector
Horizontal	2387.2	103.243	35.719	67.524	Peak
Horizontal	2390.0	97.104	47.906	49.198	Average
Vertical	2387.2	107.032	35.719	71.313	Peak
Vertical	2390.0	89.423	47.906	41.517	Average

Note:
The Band Edge Field Strength was calculated using the Fundamental and Conducted Band Edge measurements per the Marker-Delta Method with the following formula:
Band Edge field Strength = F - Δ
F = Fundamental field Strength (Peak or Average)
Δ = Conducted Band Edge Delta (Peak or Average)

Peak Detector of conducted Band Edge Delta



Average Detector of conducted Band Edge Delta



Product : ThereGate
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 6: Transmitter (802.11n MCS8 30Mbps 40M-BW)-ANT 1+2 -Channel 7

Fundamental Filed Strength

Antenna Pole	Frequency [MHz]	Correction Factor [dB/m]	Reading Level [dB(uV)]	Emission Level [dB(uV/m)]	Detector
Horizontal	2452	-0.001	103.147	103.146	Peak
Horizontal	2452	-0.001	94.740	94.739	Average
Vertical	2452	-0.001	107.313	107.312	Peak
Vertical	2452	-0.001	83.389	83.388	Average

Note: 1:Spectrum Analyzer setting:

Peak detector: RBW=1MHz, VBW=1MHz

Average detector: RBW=1MHz, VBW=10Hz

Band Edge Test Data

Antenna Pole	Test Frequency (MHz)	Fundamental (dBuV/m)	Δ (dB)	Band Edge Field Strength (dBuV/m)	Detector
Horizontal	2484.8	103.146	39.895	63.251	Peak
Horizontal	2483.5	94.739	47.812	46.927	Average
Vertical	2484.8	107.312	39.895	67.417	Peak
Vertical	2483.5	73.388	47.812	25.576	Average

Note:

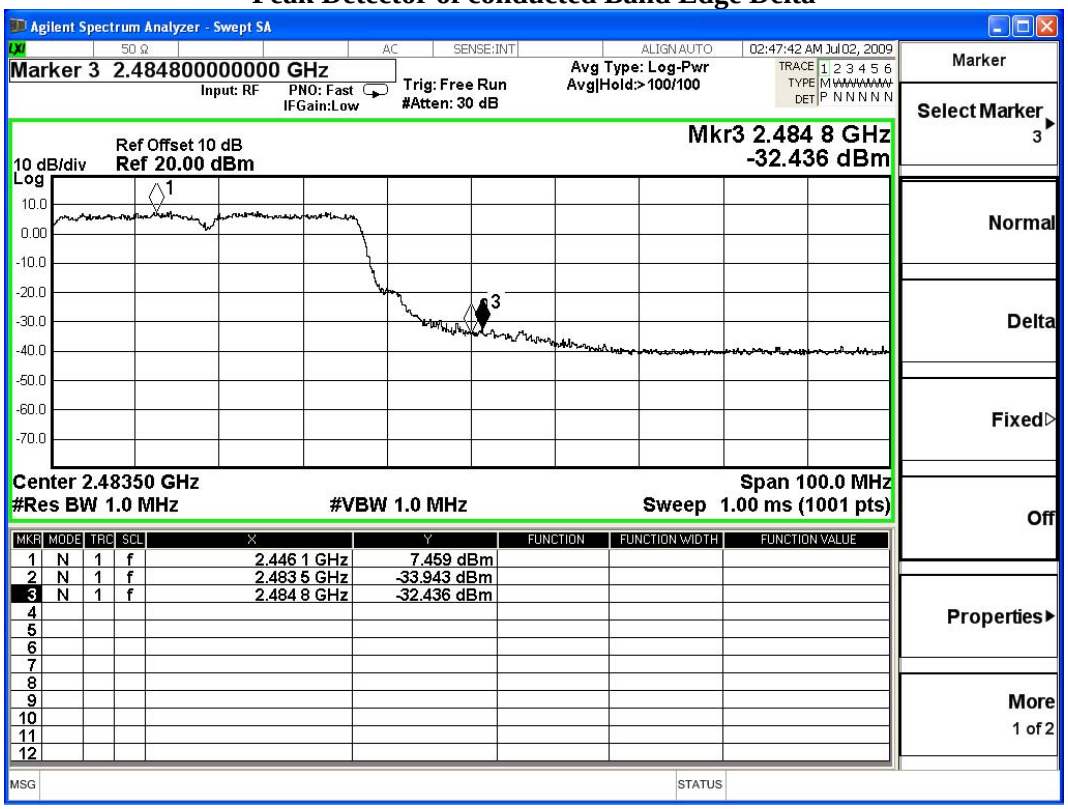
The Band Edge Field Strength was calculated using the Fundamental and Conducted Band Edge measurements per the Marker-Delta Method with the following formula:

Band Edge field Strength = F - Δ

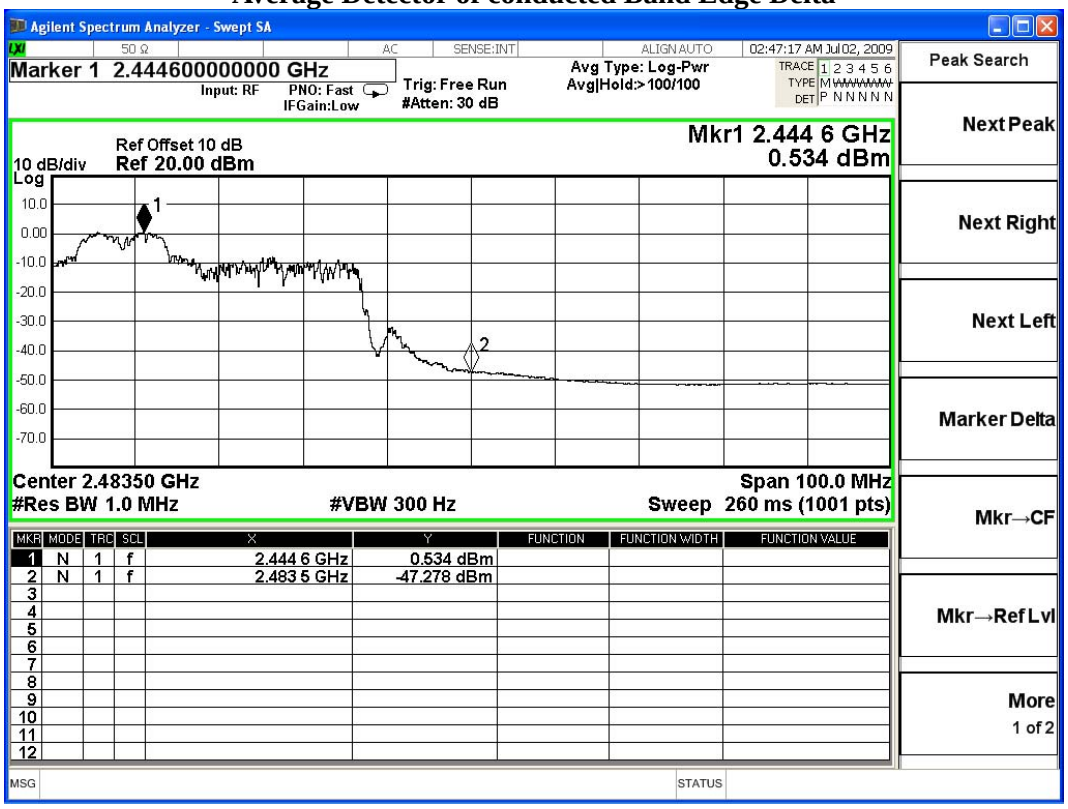
F = Fundamental field Strength (Peak or Average)

Δ = Conducted Band Edge Delta (Peak or Average)

Peak Detector of conducted Band Edge Delta



Average Detector of conducted Band Edge Delta



7. Occupied Bandwidth

7.1. Test Equipment

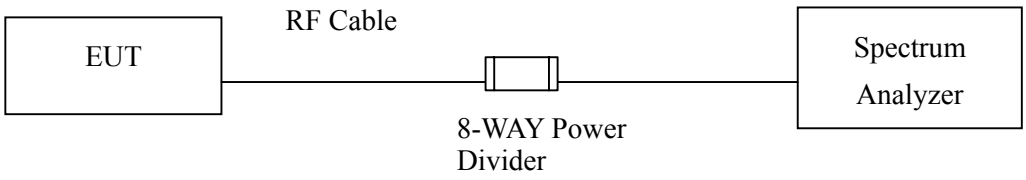
The following test equipments are used during the radiated emission tests:

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr, 2009
X	8-WAY Power	JFW	50PD-647 / 526770 0916	Apr., 2009

Note:

1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
2. The test instruments marked with "X" are used to measure the final test results.
3. The power combiner is used for measure 11n mode.

7.2. Test Setup



7.3. Limits

The minimum bandwidth shall be at least 500 kHz.

7.4. Test Procedure

The EUT was setup according to ANSI C63.4, 2003; tested according to DTS test procedure of Mar. 2005 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

Set RBW = 100 kHz, Span greater than RBW.

7.5. Uncertainty

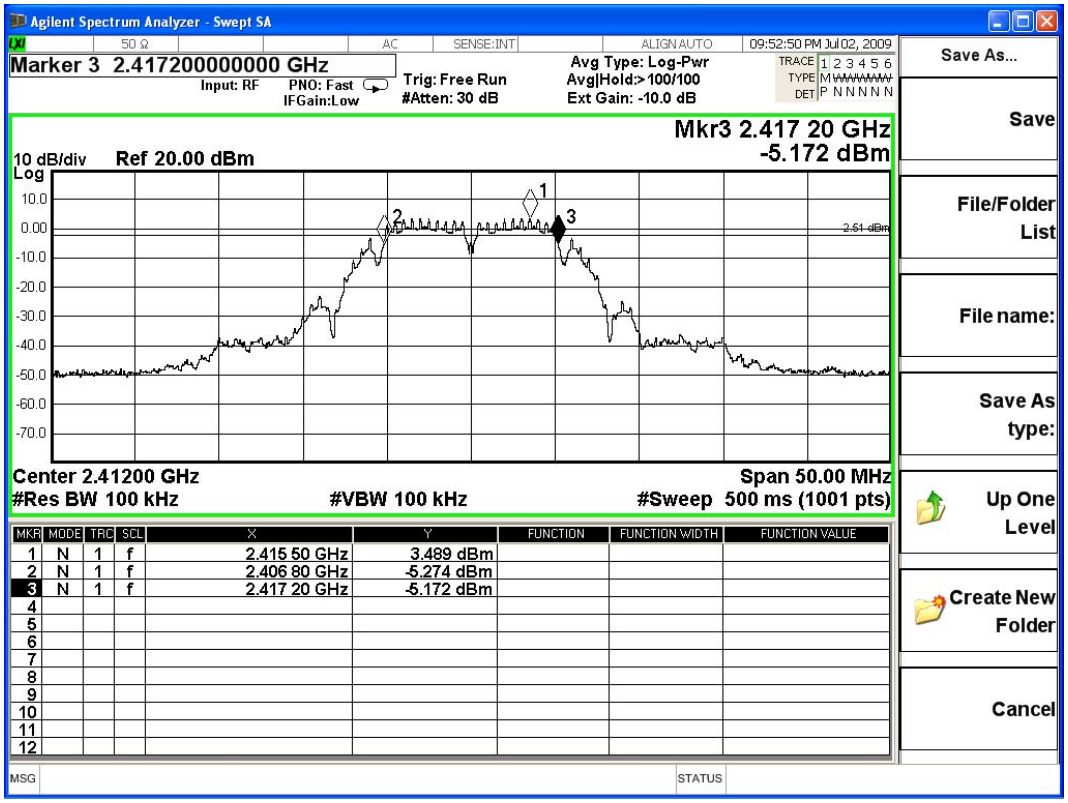
± 150Hz

7.6. Test Result of Occupied Bandwidth

Product : ThereGate
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmitter (802.11b 1Mbps) (2412MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
1	2412.00	10400	>500	Pass

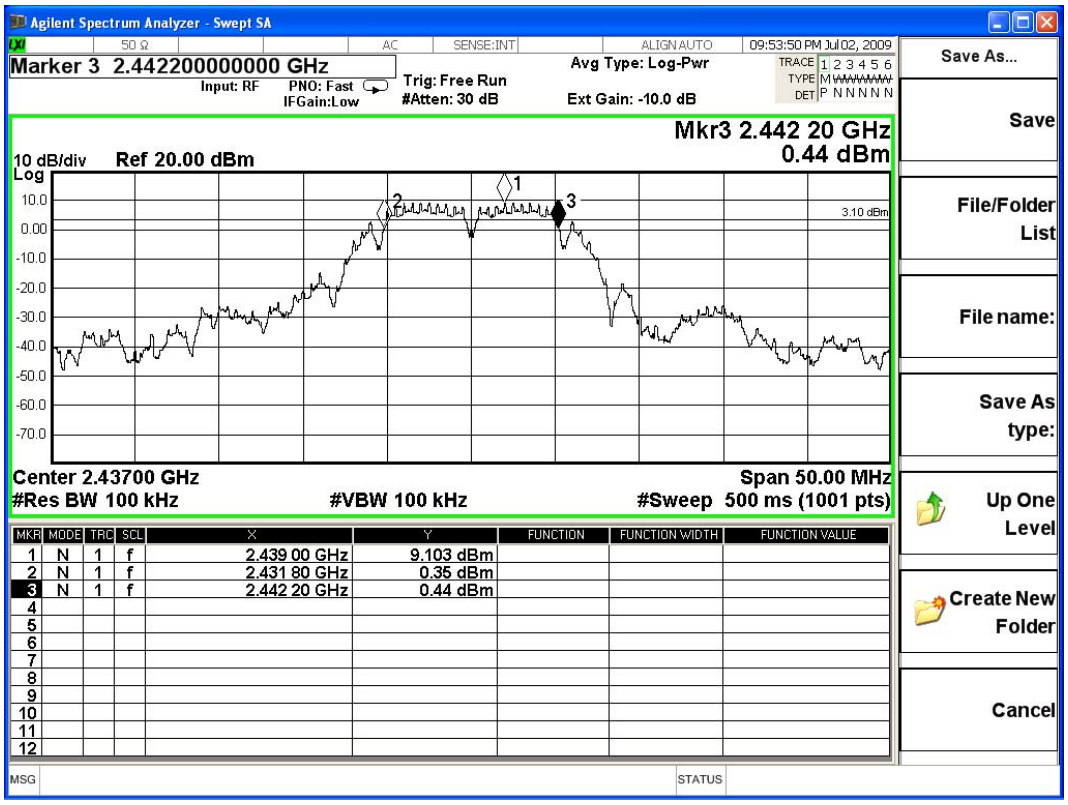
Figure Channel 1:



Product : ThereGate
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmitter (802.11b 1Mbps) (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
6	2437.00	10400	>500	Pass

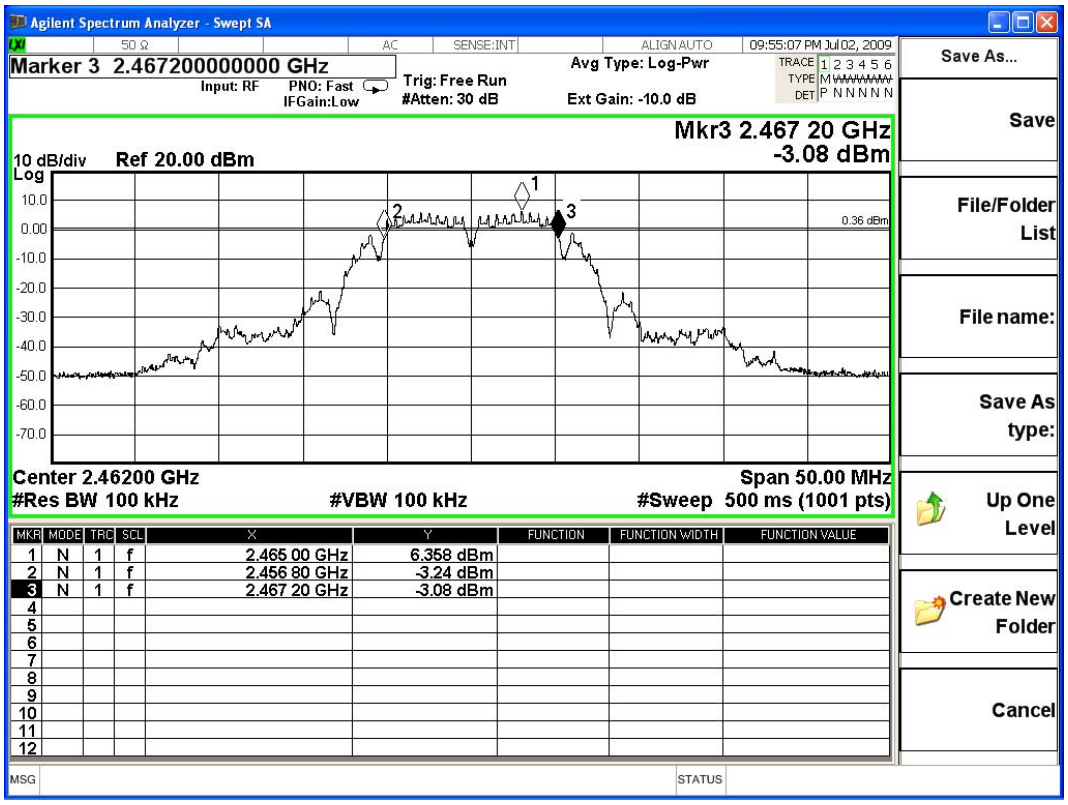
Figure Channel 6:



Product : ThereGate
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmitter (802.11b 1Mbps) (2462MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
11	2462.00	10400	>500	Pass

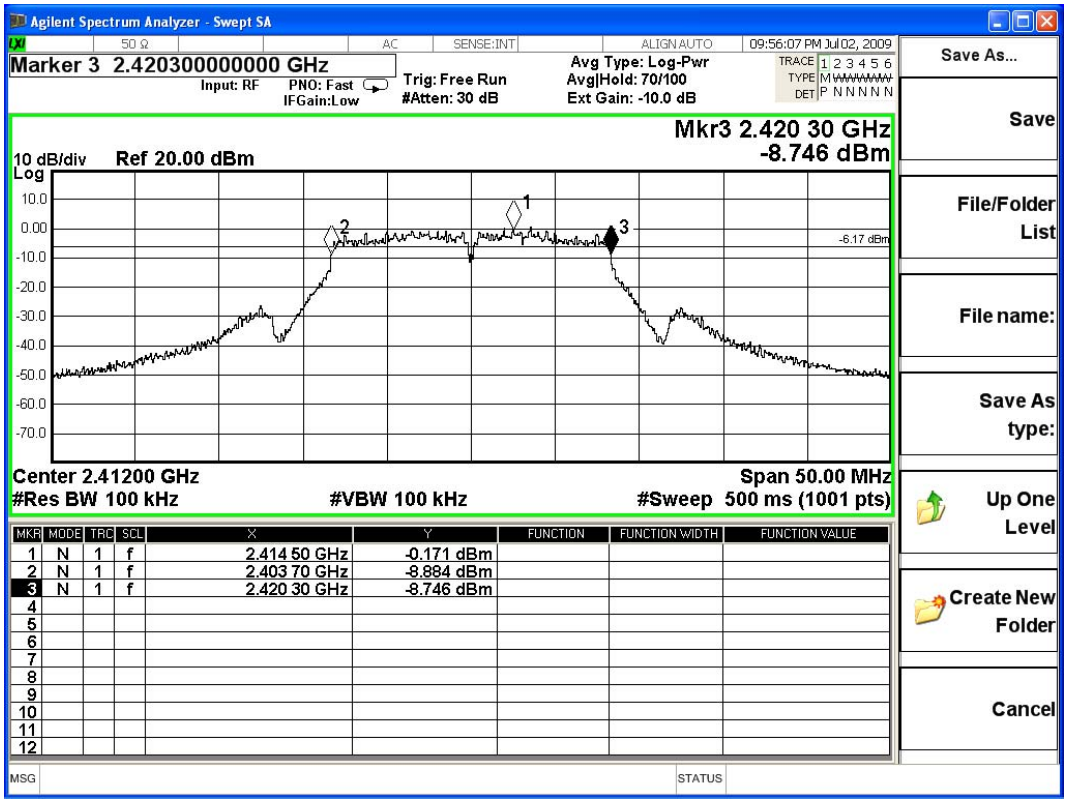
Figure Channel 11:



Product : ThereGate
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmitter (802.11g 6Mbps) (2412MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
1	2412.00	16600	>500	Pass

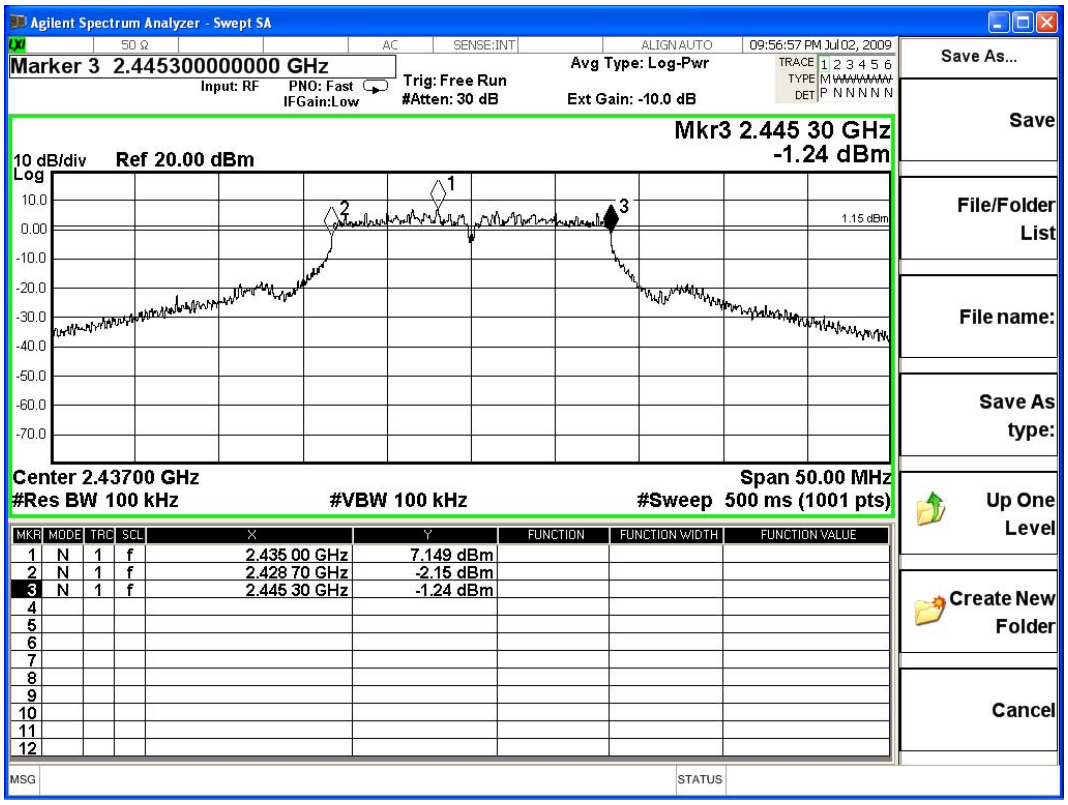
Figure Channel 1:



Product : ThereGate
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmitter (802.11g 6Mbps) (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
6	2437.00	16600	>500	Pass

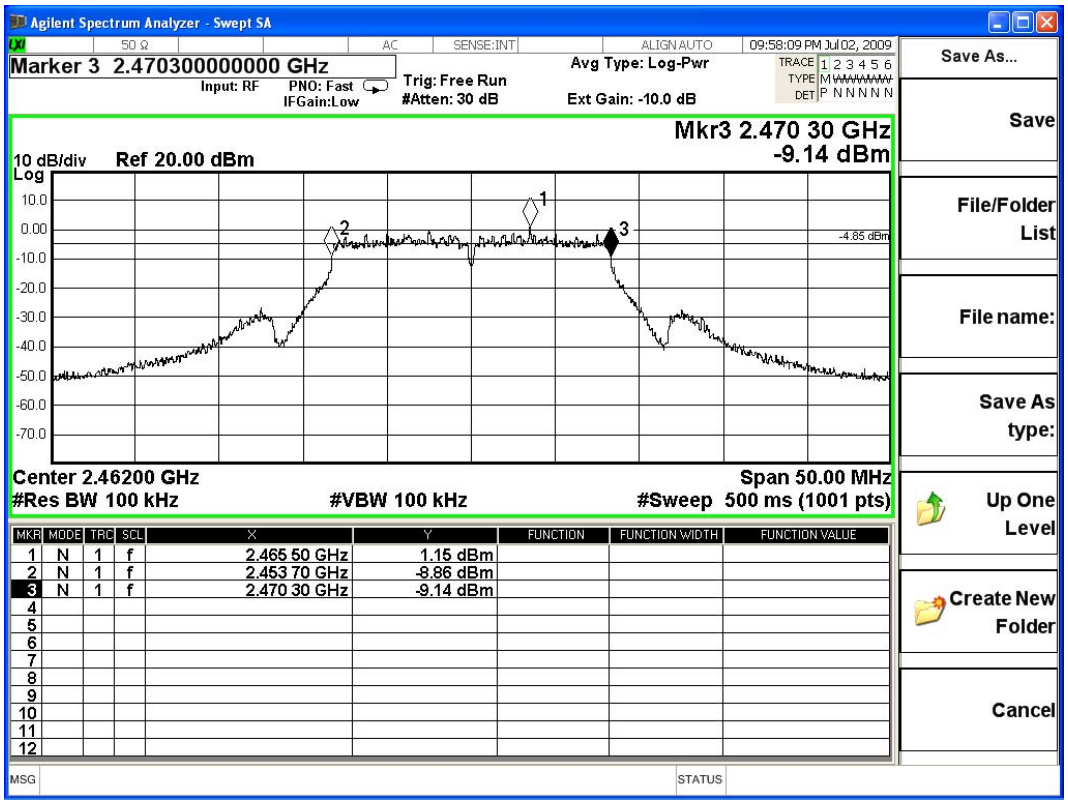
Figure Channel 6:



Product : ThereGate
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmitter (802.11g 6Mbps) (2462MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
11	2462.00	16600	>500	Pass

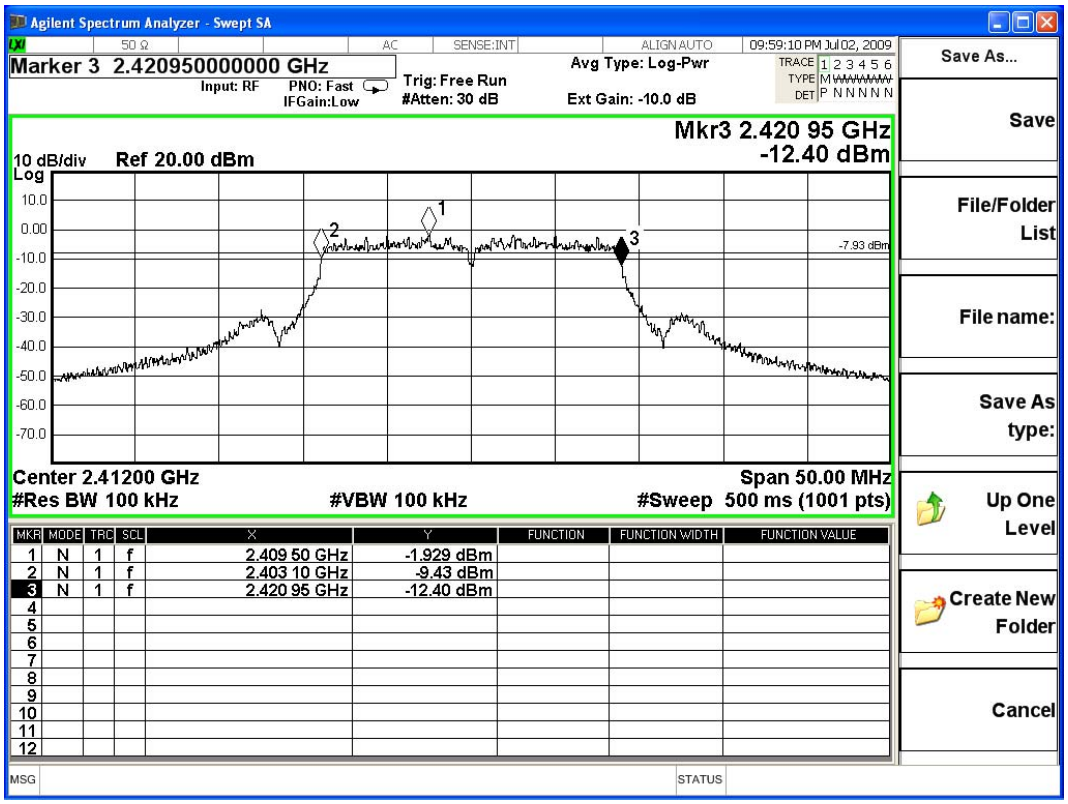
Figure Channel 11:



Product : ThereGate
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmitter (802.11n MCS0 7.2Mbps 20M-BW)-ANT 1 (2412MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
1	2412.00	17850	>500	Pass

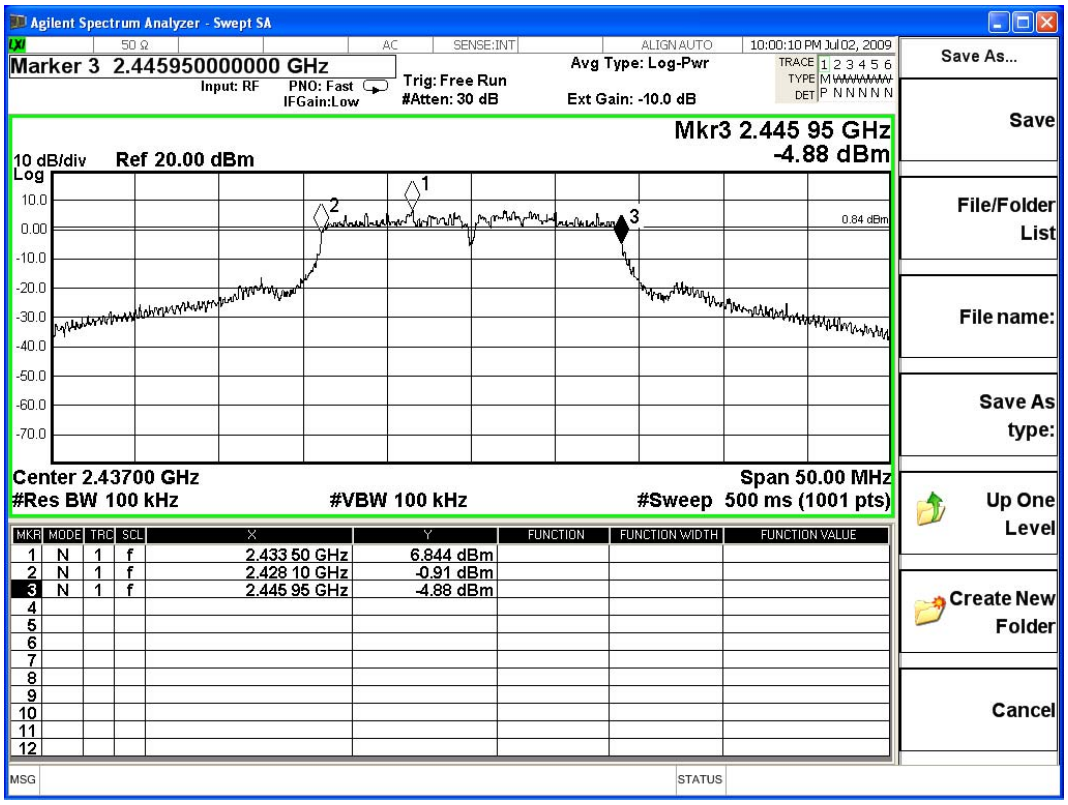
Figure Channel 1:



Product : ThereGate
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmitter (802.11n MCS0 7.2Mbps 20M-BW)-ANT 1 (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
6	2437.00	17850	>500	Pass

Figure Channel 6:



Product : ThereGate
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmitter (802.11n MCS0 7.2Mbps 20M-BW)-ANT 1 (2462MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
11	2462.00	17900	>500	Pass

Figure Channel 11: