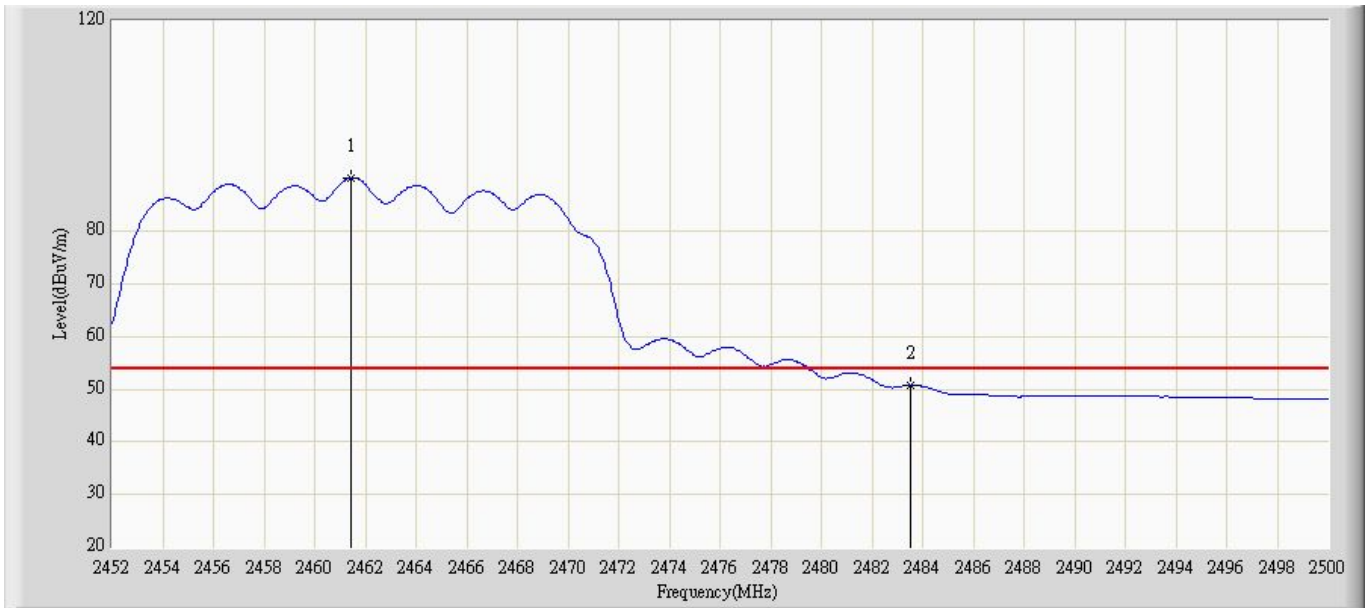
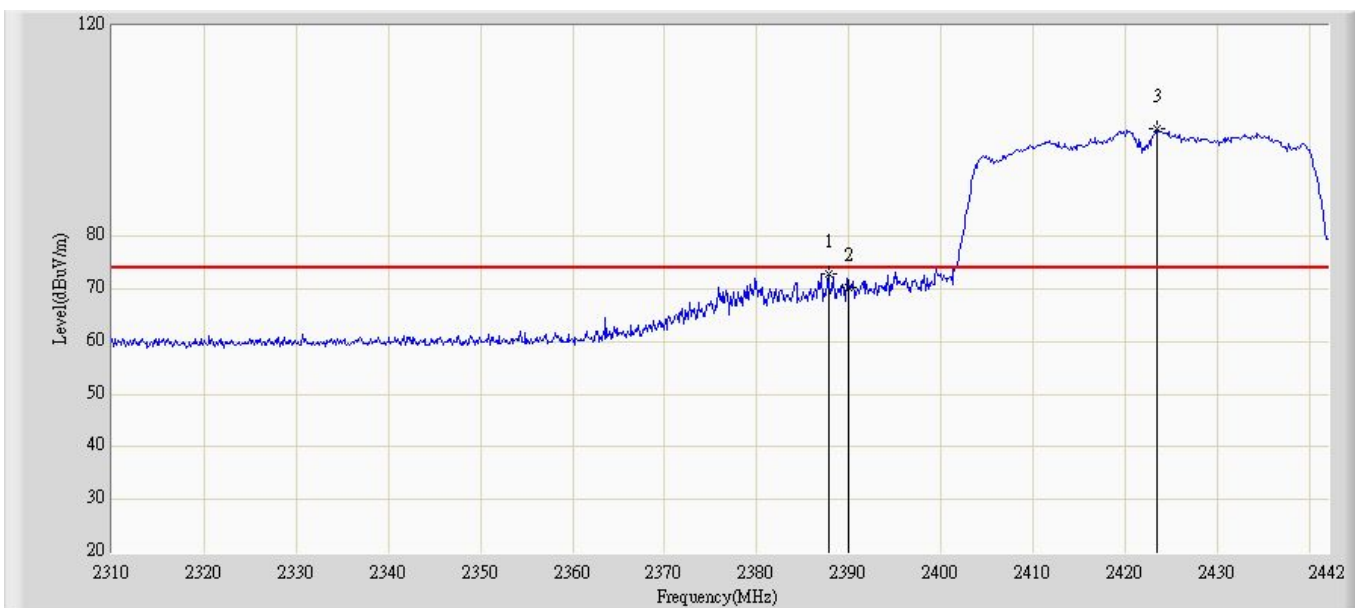


Engineer: Toms	
Site: AC5	Time: 2012/07/02 - 21:12
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT:IP-STB	Power: DC 5V
Note: Mode3: Transmit at channel 2462 MHz by 802.11n20 ant 0+1	



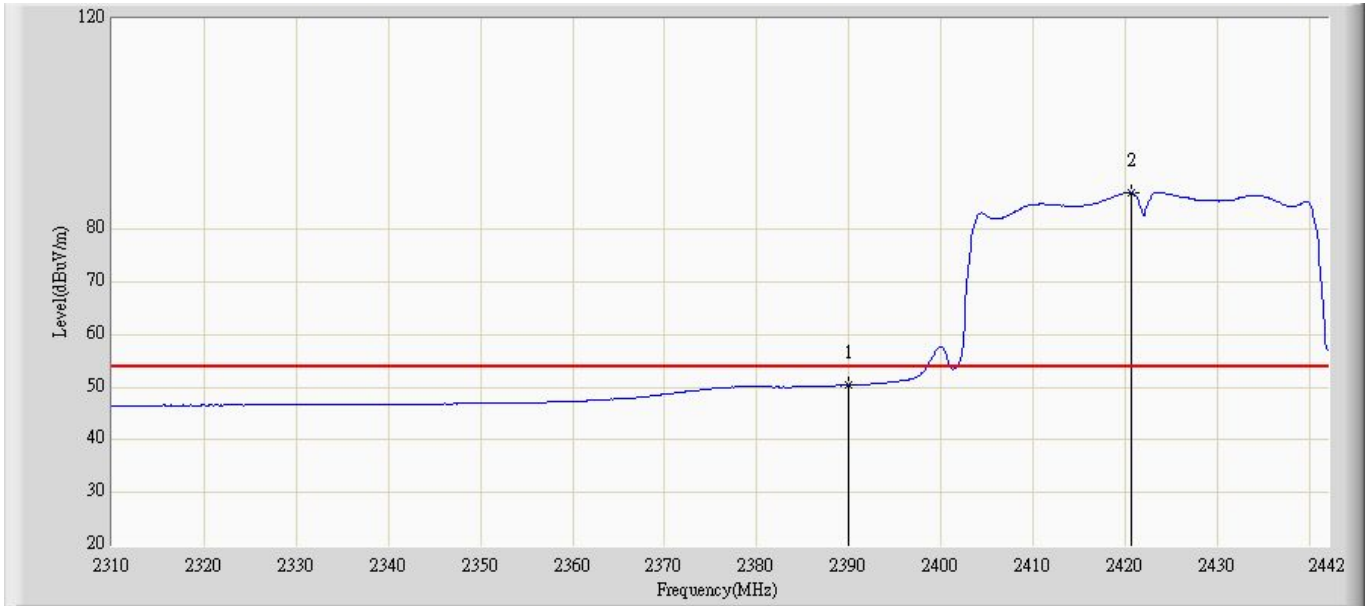
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2461.456	90.118	59.585	N/A	N/A	30.533	AV
2			2483.500	50.843	20.251	-3.157	54.000	30.592	AV

Engineer: Toms	
Site: AC5	Time: 2012/07/02 - 21:14
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT:IP-STB	Power: DC 5V
Note: Mode3: Transmit at channel 2422 MHz by 802.11n40 ant 0	



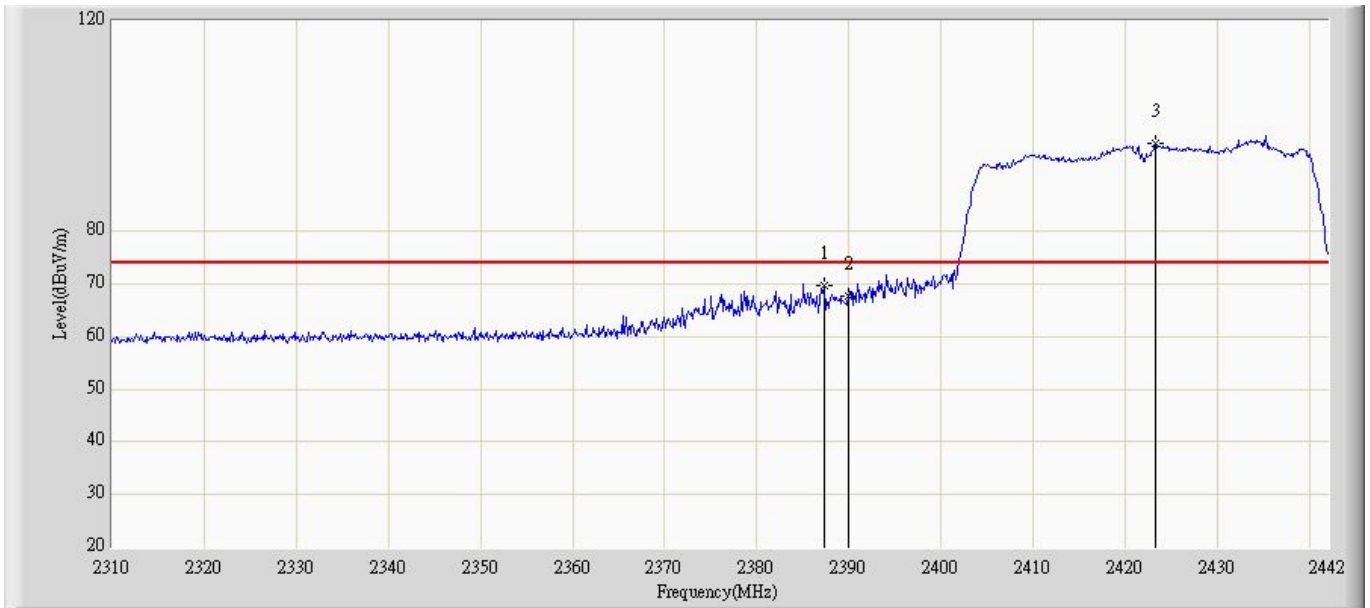
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2387.748	72.983	42.640	-1.017	74.000	30.343	PK
2			2390.000	70.306	39.956	-3.694	74.000	30.350	PK
3		*	2423.388	100.337	69.903	N/A	N/A	30.434	PK

Engineer: Toms	
Site: AC5	Time: 2012/07/02 - 21:16
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT:IP-STB	Power: DC 5V
Note: Mode3: Transmit at channel 2422 MHz by 802.11n40 ant 0	



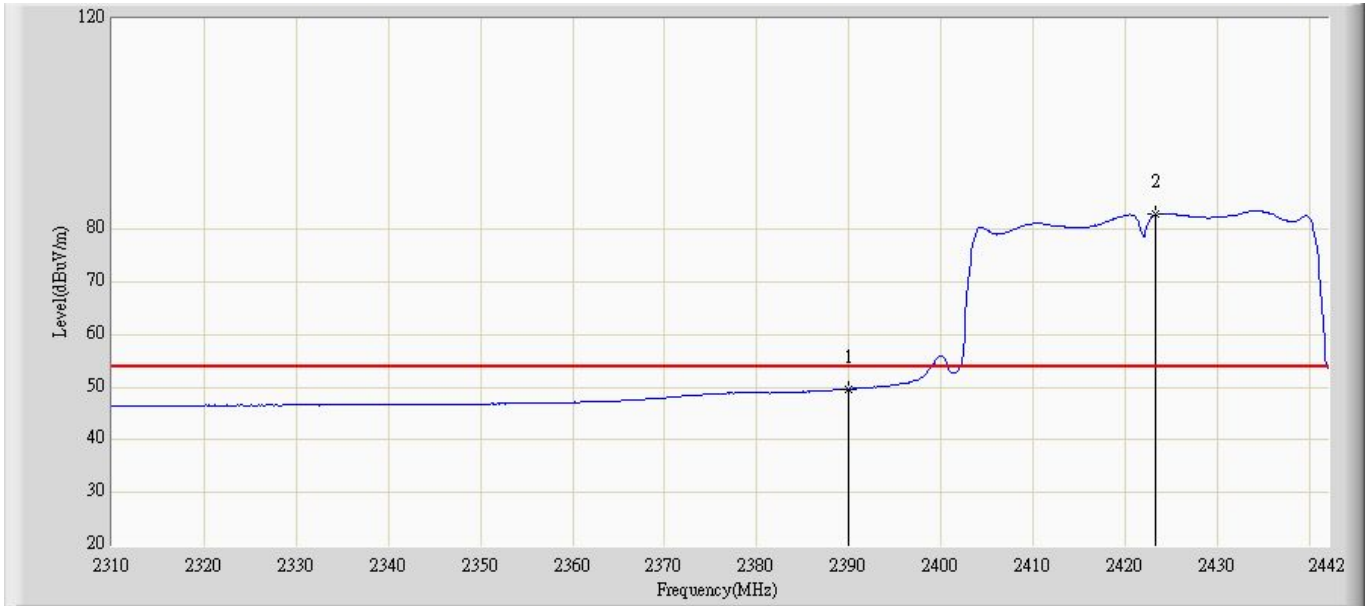
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	50.436	20.086	-3.564	54.000	30.350	AV
2		*	2420.616	87.054	56.628	N/A	N/A	30.426	AV

Engineer: Toms	
Site: AC5	Time: 2012/07/02 - 21:17
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT:IP-STB	Power: DC 5V
Note: Mode3: Transmit at channel 2422 MHz by 802.11n40 ant 0	



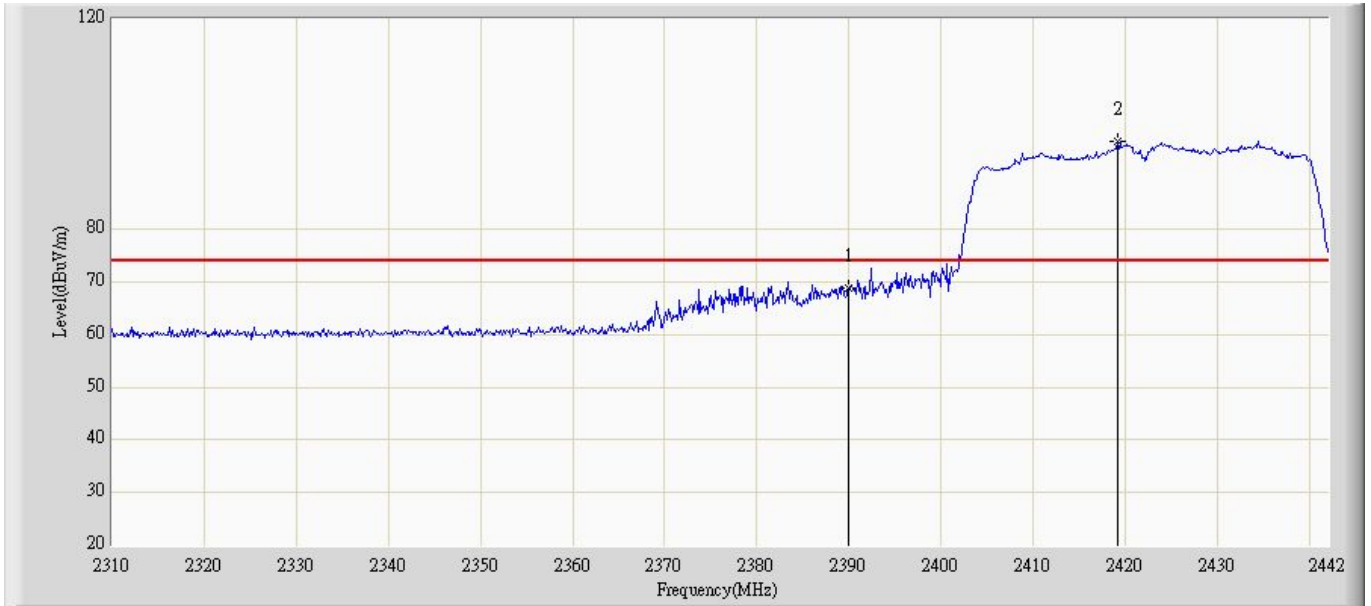
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2387.352	69.636	39.294	-4.364	74.000	30.341	PK
2			2390.000	67.683	37.333	-6.317	74.000	30.350	PK
3		*	2423.256	96.780	66.347	N/A	N/A	30.434	PK

Engineer: Toms	
Site: AC5	Time: 2012/07/02 - 21:18
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT:IP-STB	Power: DC 5V
Note: Mode3: Transmit at channel 2422 MHz by 802.11n40 ant 0	



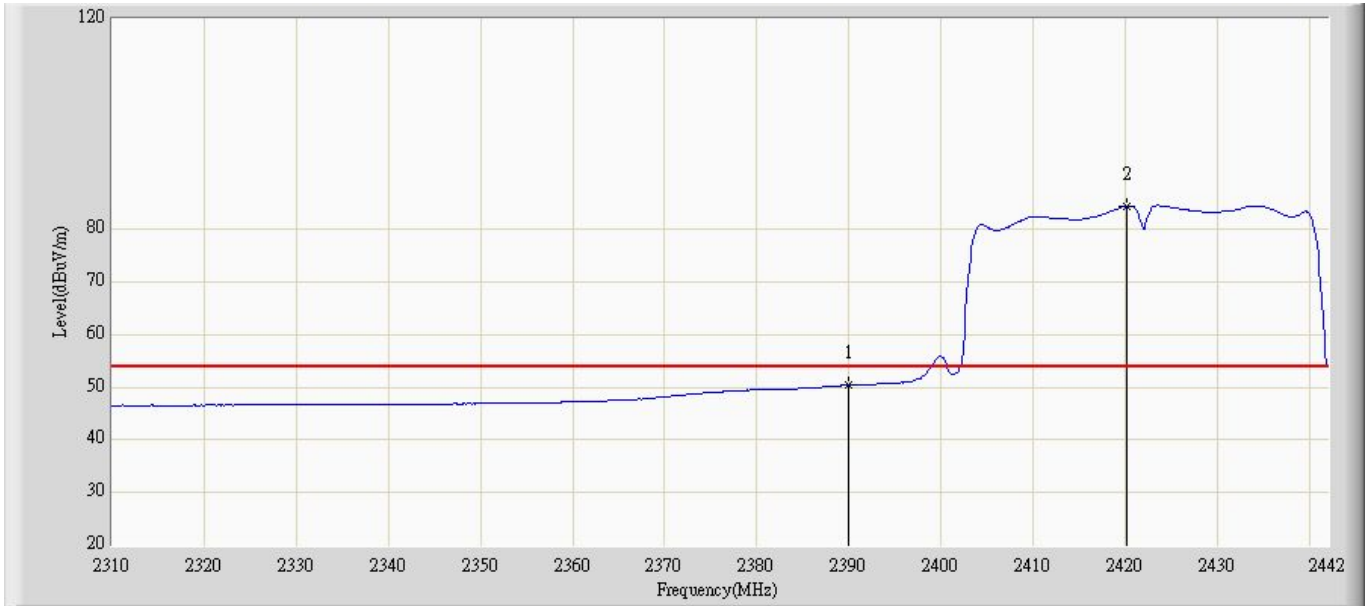
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	49.659	19.309	-4.341	54.000	30.350	AV
2		*	2423.256	82.915	52.482	N/A	N/A	30.434	AV

Engineer: Toms	
Site: AC5	Time: 2012/07/02 - 21:19
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT:IP-STB	Power: DC 5V
Note: Mode3: Transmit at channel 2422 MHz by 802.11n40 ant 1	



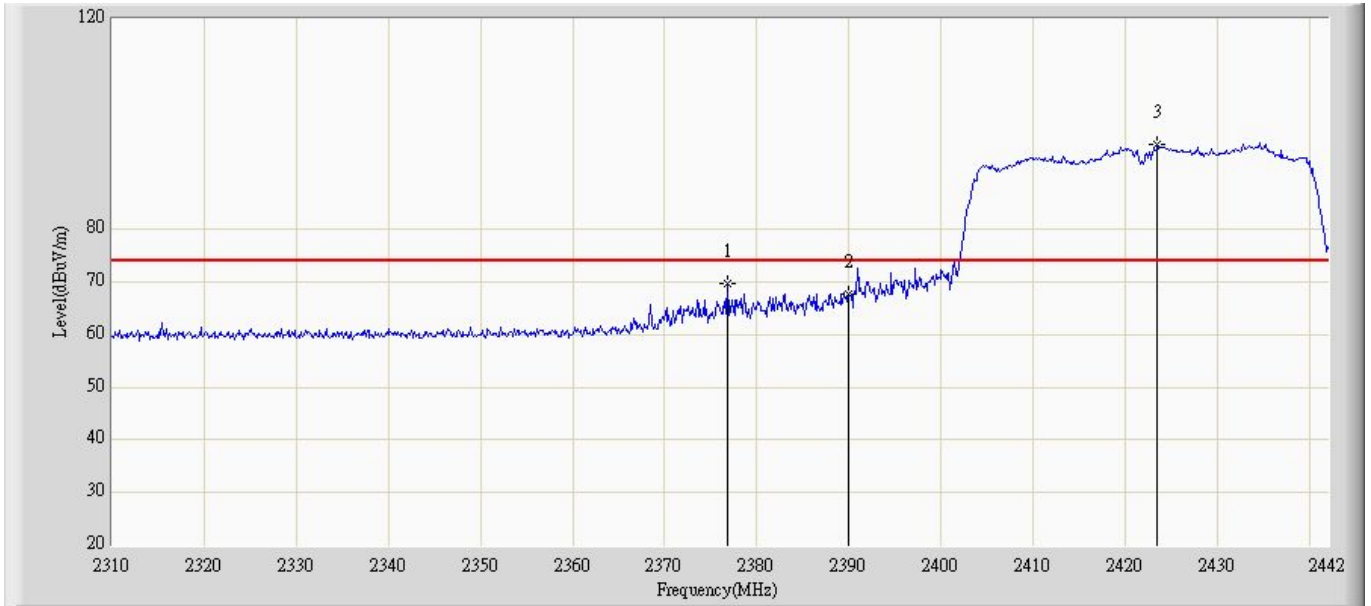
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	68.954	38.604	-5.046	74.000	30.350	PK
2		*	2419.164	96.603	66.181	N/A	N/A	30.422	PK

Engineer: Toms	
Site: AC5	Time: 2012/07/02 - 21:23
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT:IP-STB	Power: DC 5V
Note: Mode3: Transmit at channel 2422 MHz by 802.11n40 ant 1	



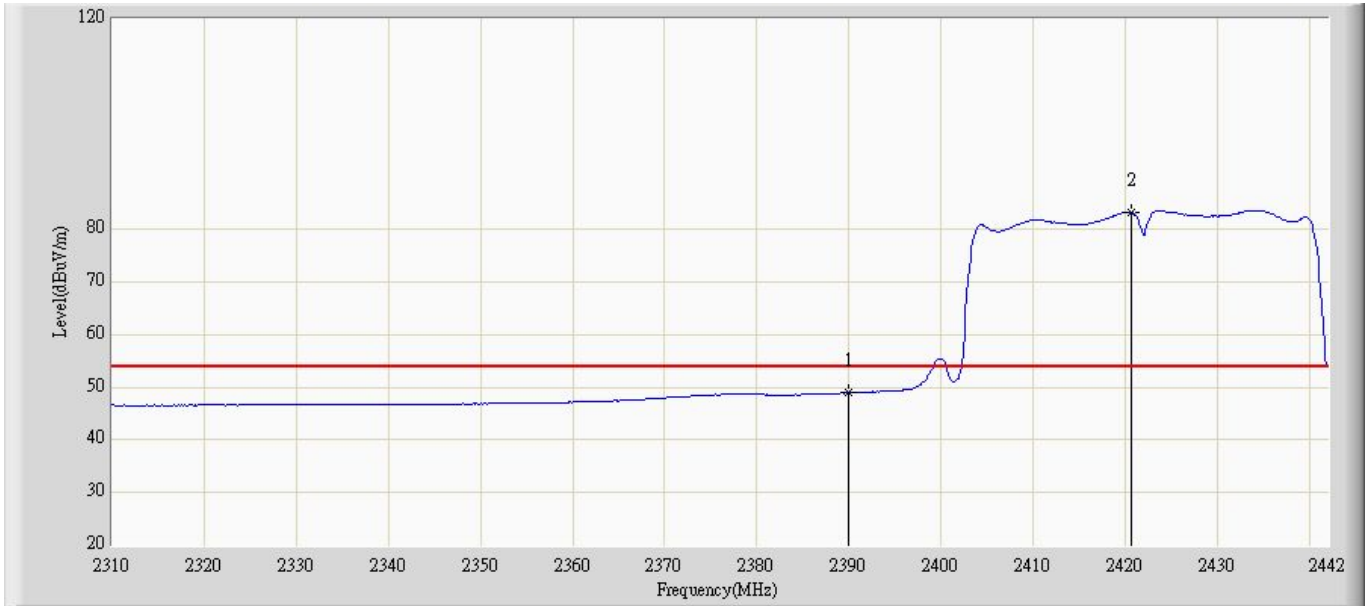
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	50.351	20.001	-3.649	54.000	30.350	AV
2		*	2420.220	84.456	54.031	N/A	N/A	30.425	AV

Engineer: Toms	
Site: AC5	Time: 2012/07/02 - 21:23
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT:IP-STB	Power: DC 5V
Note: Mode3: Transmit at channel 2422 MHz by 802.11n40 ant 1	



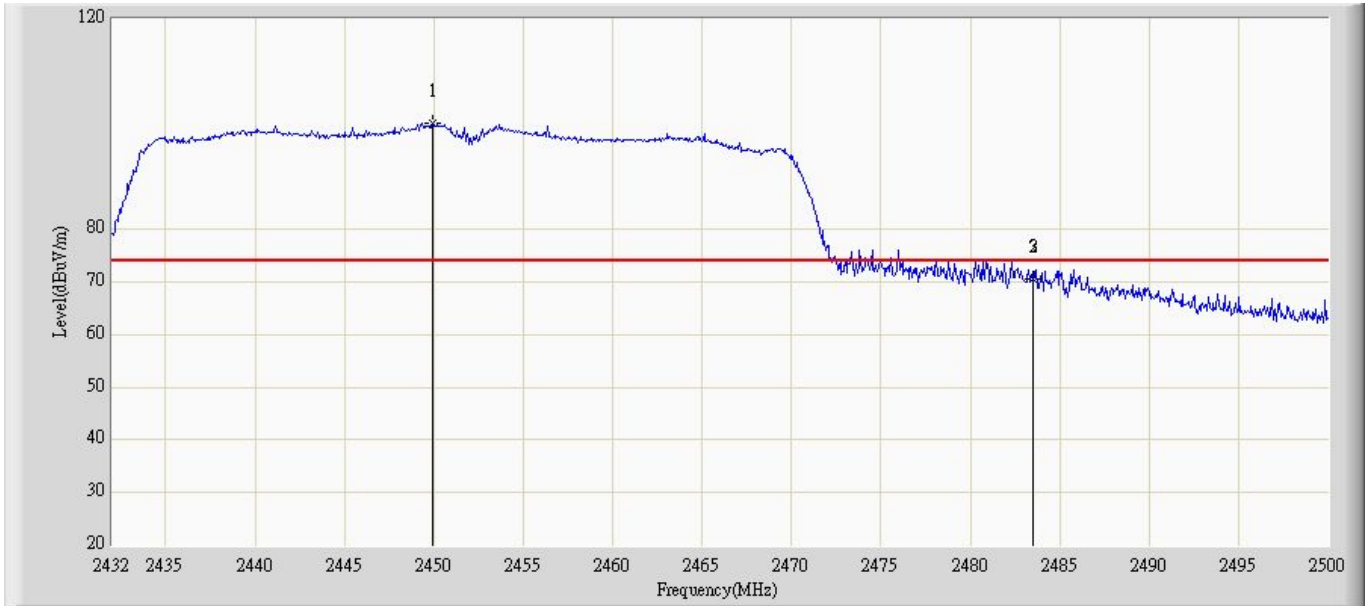
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2376.792	69.748	39.438	-4.252	74.000	30.310	PK
2			2390.000	67.713	37.363	-6.287	74.000	30.350	PK
3		*	2423.520	96.023	65.589	N/A	N/A	30.434	PK

Engineer: Toms	
Site: AC5	Time: 2012/07/02 - 21:25
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT:IP-STB	Power: DC 5V
Note: Mode3: Transmit at channel 2422 MHz by 802.11n40 ant 1	



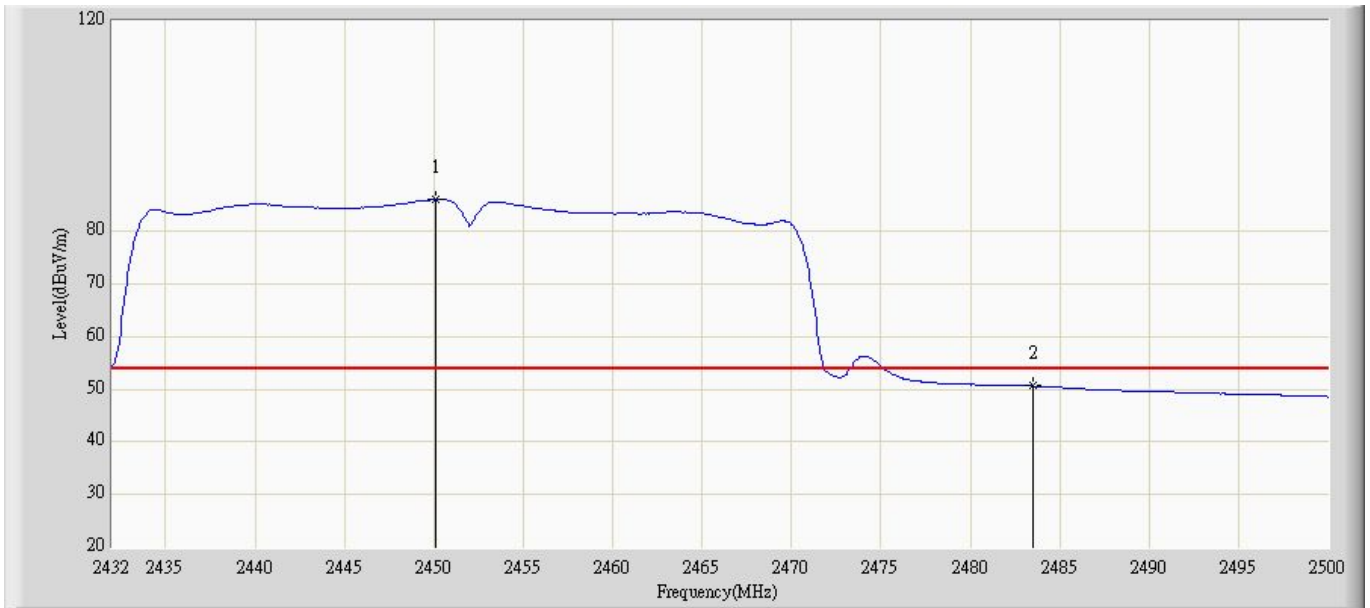
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	48.927	18.577	-5.073	54.000	30.350	AV
2		*	2420.616	83.314	52.888	N/A	N/A	30.426	AV

Engineer: Toms	
Site: AC5	Time: 2012/07/02 - 21:29
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT:IP-STB	Power: DC 5V
Note: Mode3: Transmit at channel 2452 MHz by 802.11n40 ant 0	



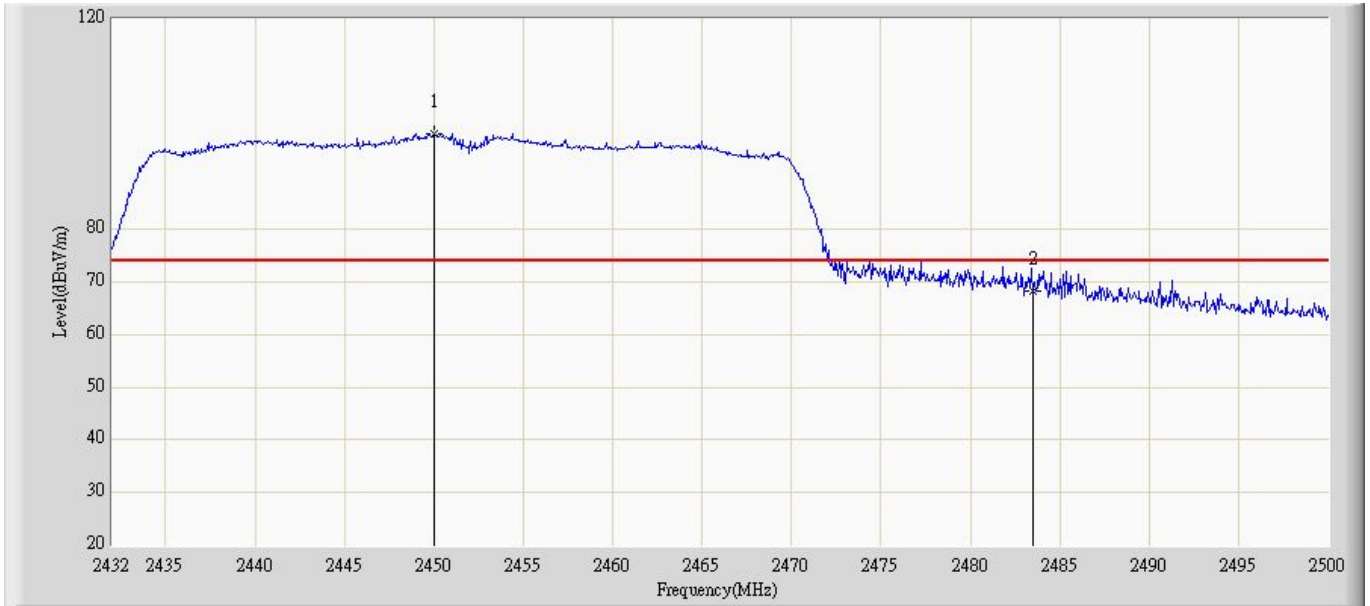
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2449.952	100.053	69.157	26.053	74.000	30.896	PK
2			2483.500	70.510	39.918	-3.490	74.000	30.592	PK
3			2483.500	70.510	39.918	-3.490	74.000	30.592	PK

Engineer: Toms	
Site: AC5	Time: 2012/07/02 - 21:31
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT:IP-STB	Power: DC 5V
Note: Mode3: Transmit at channel 2452 MHz by 802.11n40 ant 0	



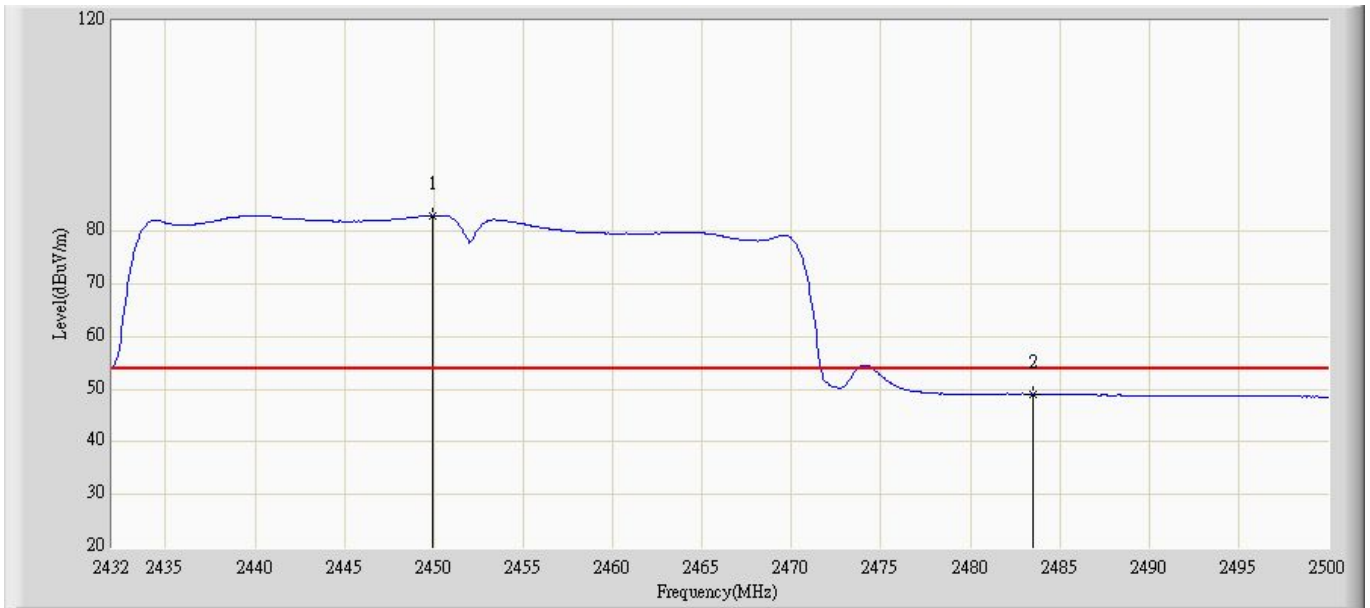
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2450.088	86.104	55.603	N/A	N/A	30.500	AV
2			2483.500	50.634	20.042	-3.366	54.000	30.592	AV

Engineer: Toms	
Site: AC5	Time: 2012/07/02 - 21:33
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT:IP-STB	Power: DC 5V
Note: Mode3: Transmit at channel 2452 MHz by 802.11n40 ant 0	



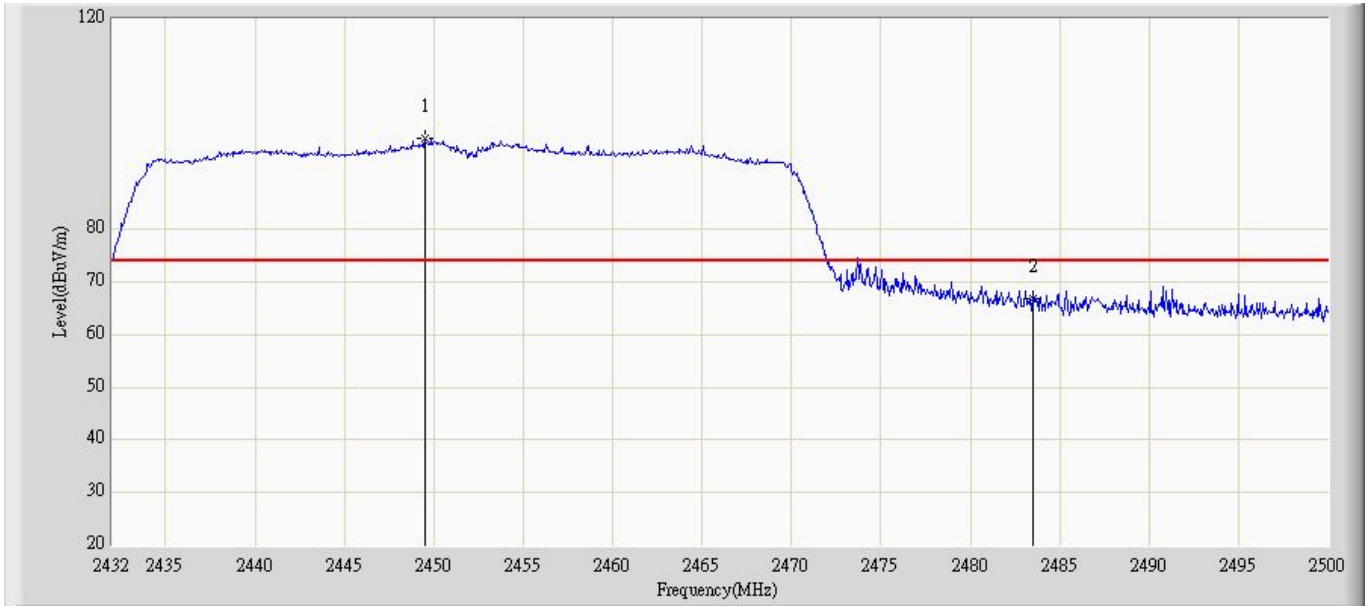
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2450.020	98.158	67.658	N/A	N/A	30.500	PK
2			2483.500	68.164	37.572	-5.836	74.000	30.592	PK

Engineer: Toms	
Site: AC5	Time: 2012/07/02 - 21:34
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT:IP-STB	Power: DC 5V
Note: Mode4: Transmit at channel 2452 MHz by 802.11n40 ant 0	



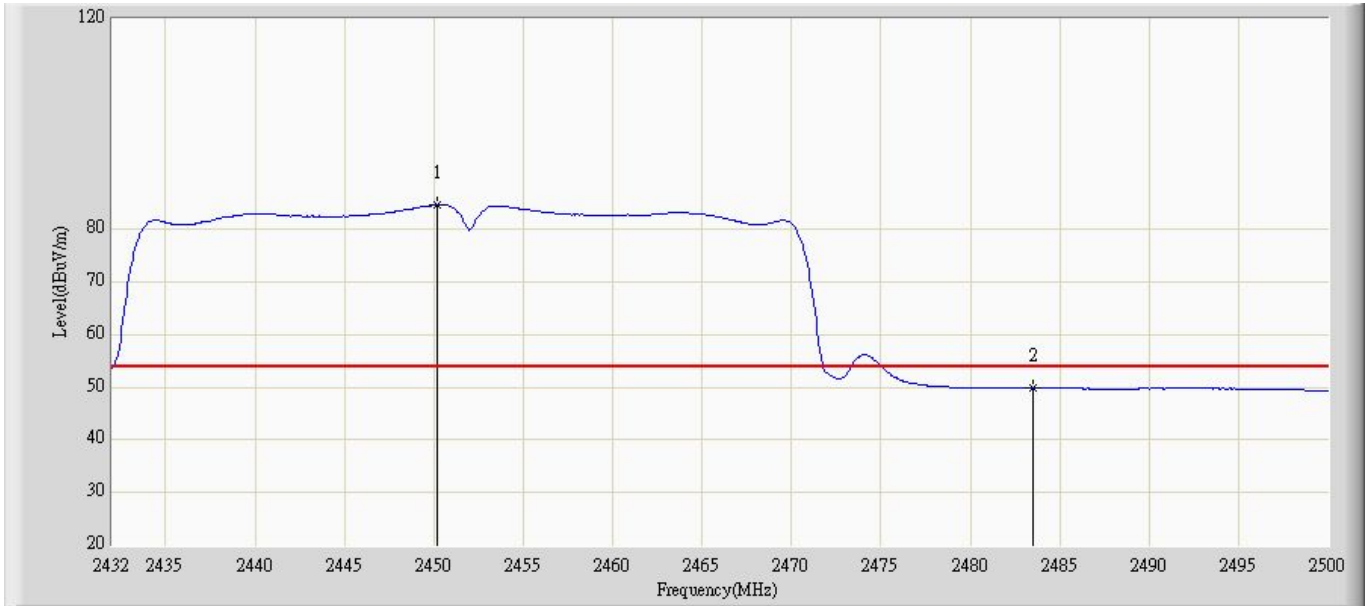
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2449.952	83.045	52.545	N/A	N/A	30.500	AV
2			2483.500	49.155	18.563	-4.845	54.000	30.592	AV

Engineer: Toms	
Site: AC5	Time: 2012/07/02 - 21:35
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT:IP-STB	Power: DC 5V
Note: Mode4: Transmit at channel 2452 MHz by 802.11n40 ant 1	



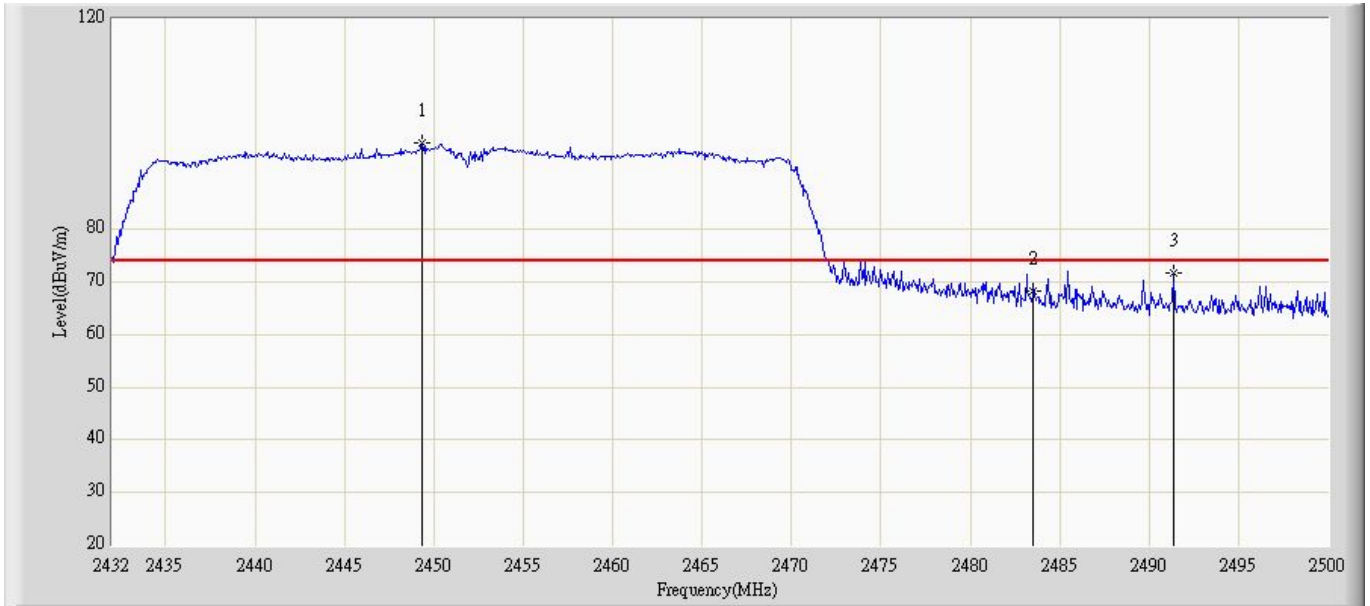
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2449.476	97.298	66.799	N/A	N/A	30.499	PK
2			2483.500	66.750	36.158	-7.250	74.000	30.592	PK

Engineer: Toms	
Site: AC5	Time: 2012/07/02 - 21:38
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT:IP-STB	Power: DC 5V
Note: Mode4: Transmit at channel 2452 MHz by 802.11n40 ant 1	



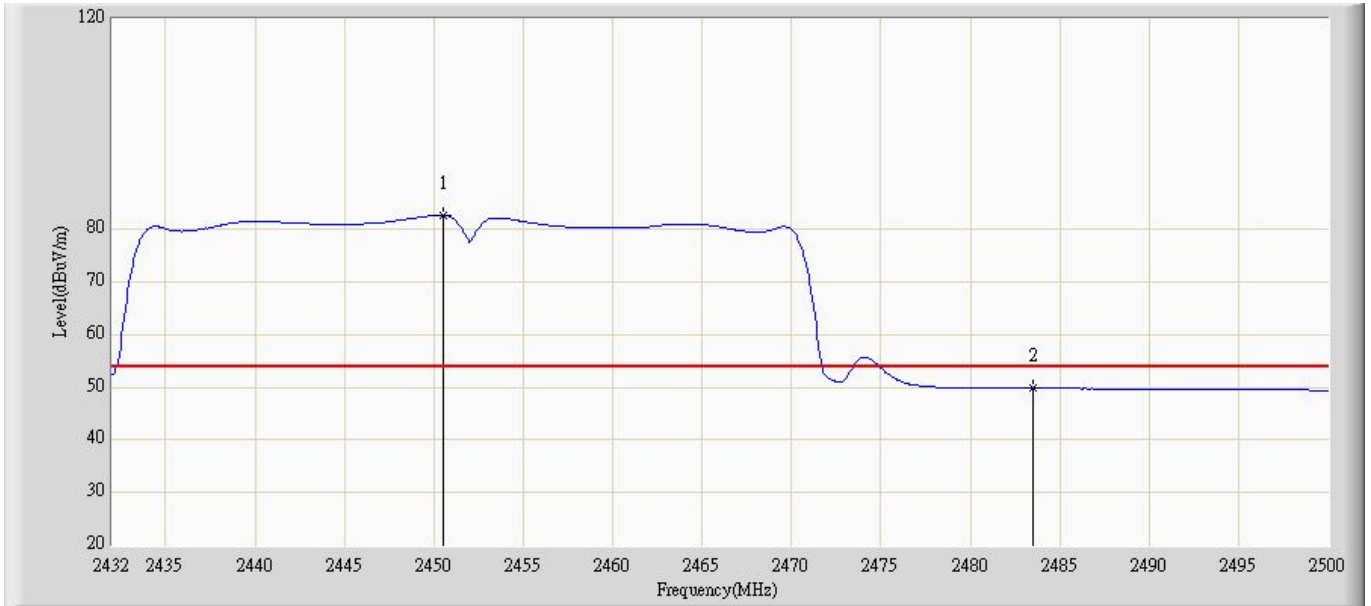
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2450.156	84.618	54.117	N/A	N/A	30.500	AV
2			2483.500	49.926	19.334	-4.074	54.000	30.592	AV

Engineer: Toms	
Site: AC5	Time: 2012/07/02 - 21:39
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT:IP-STB	Power: DC 5V
Note: Mode4: Transmit at channel 2452 MHz by 802.11n40 ant 1	



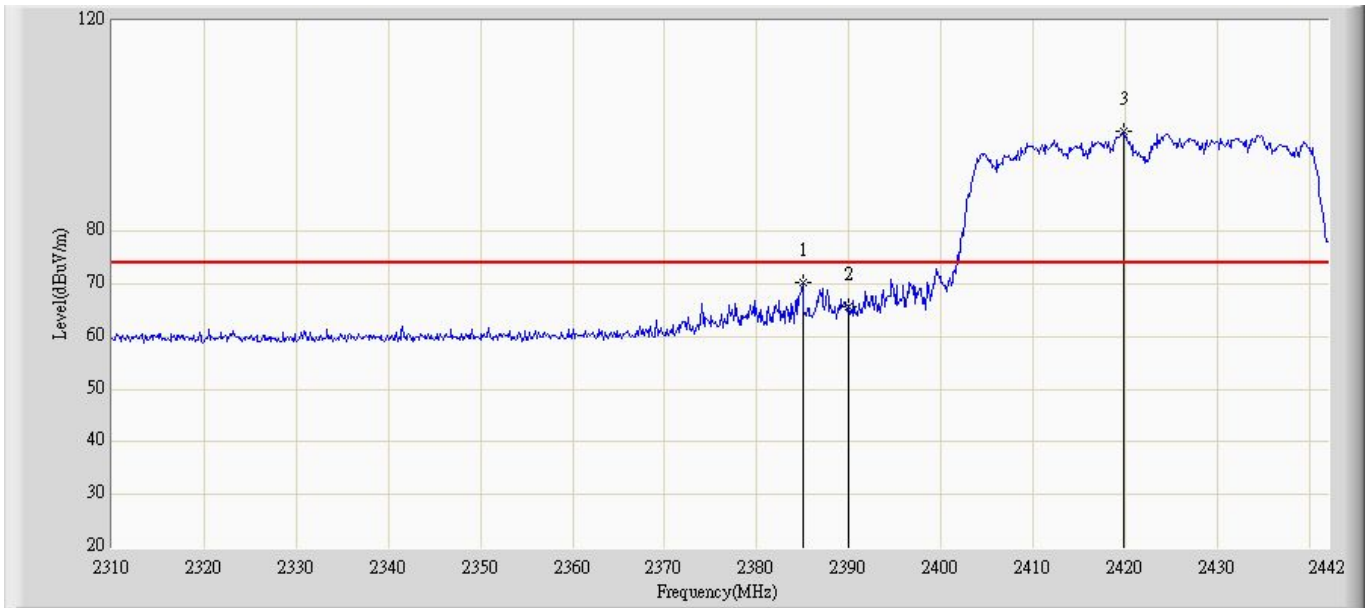
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2449.340	96.460	65.961	N/A	N/A	30.499	PK
2			2483.500	68.240	37.648	-5.760	74.000	30.592	PK
3			2491.364	71.855	41.239	-2.145	74.000	30.616	PK

Engineer: Toms	
Site: AC5	Time: 2012/07/02 - 21:40
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT:IP-STB	Power: DC 5V
Note: Mode4: Transmit at channel 2452 MHz by 802.11n40 ant 1	



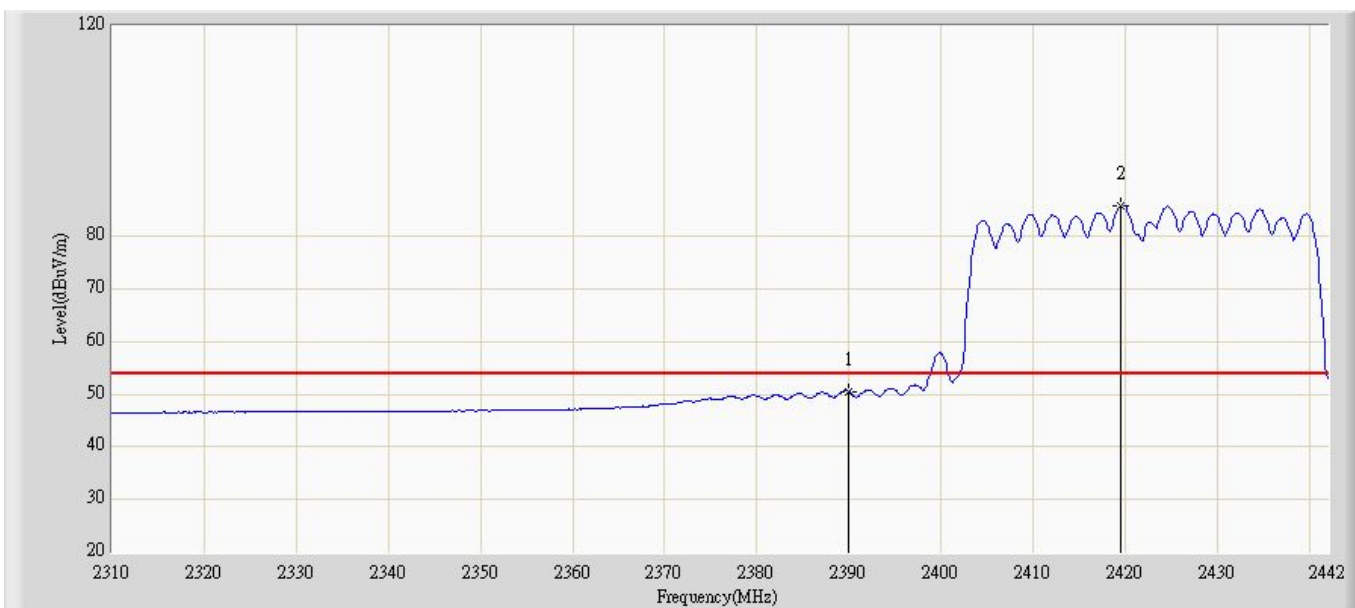
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2450.564	82.619	52.117	N/A	N/A	30.502	AV
2			2483.500	49.945	19.353	-4.055	54.000	30.592	AV

Engineer: Toms	
Site: AC5	Time: 2012/07/02 - 21:42
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT:IP-STB	Power: DC 5V
Note: Mode4: Transmit at channel 2422 MHz by 802.11n40 ant 0+1	



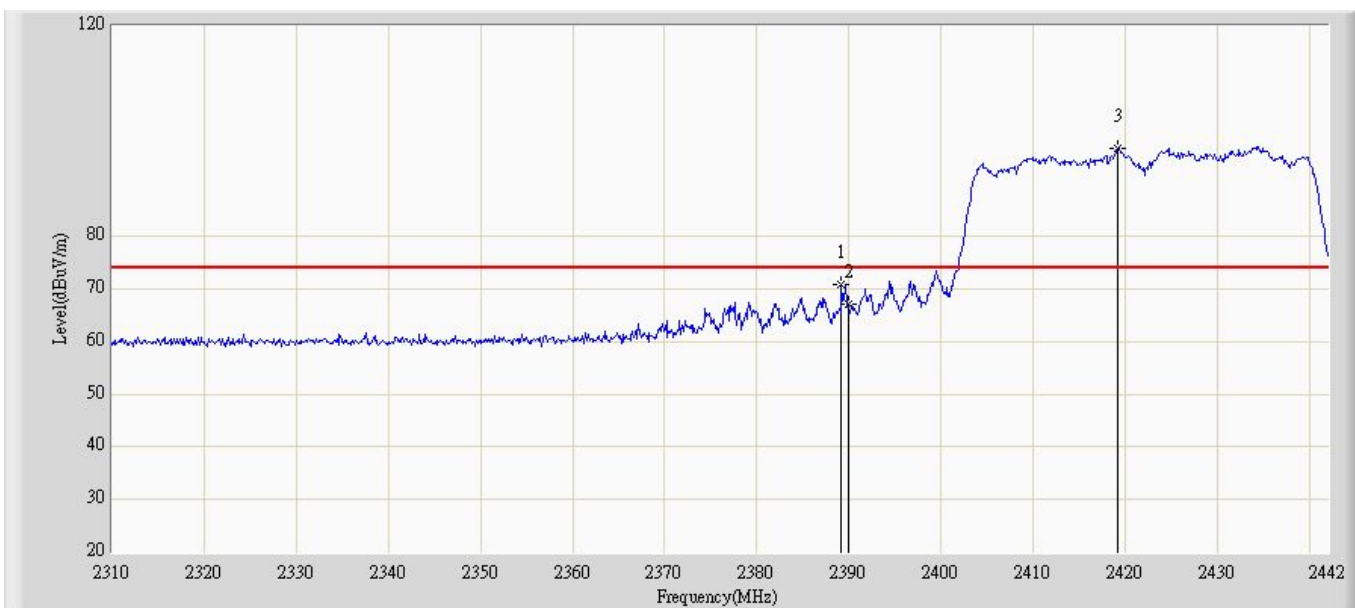
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2384.976	70.205	39.871	-3.795	74.000	30.334	PK
2			2390.000	65.824	35.474	-8.176	74.000	30.350	PK
3		*	2419.824	99.014	68.590	N/A	N/A	30.424	PK

Engineer: Toms	
Site: AC5	Time: 2012/07/02 - 21:43
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT:IP-STB	Power: DC 5V
Note: Mode4: Transmit at channel 2422 MHz by 802.11n40 ant 0+1	



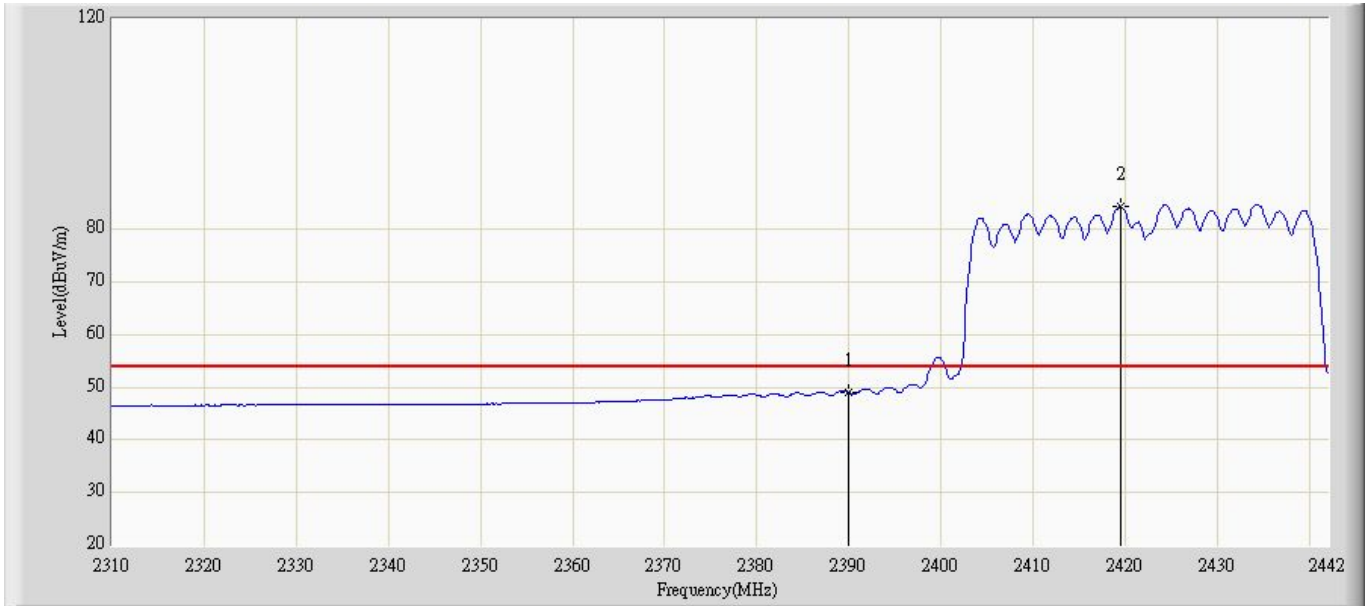
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	50.473	20.123	-3.527	54.000	30.350	AV
2		*	2419.428	85.763	55.340	N/A	N/A	30.423	AV

Engineer: Toms	
Site: AC5	Time: 2012/07/02 - 21:44
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT:IP-STB	Power: DC 5V
Note: Mode4: Transmit at channel 2422 MHz by 802.11n40 ant 0+1	



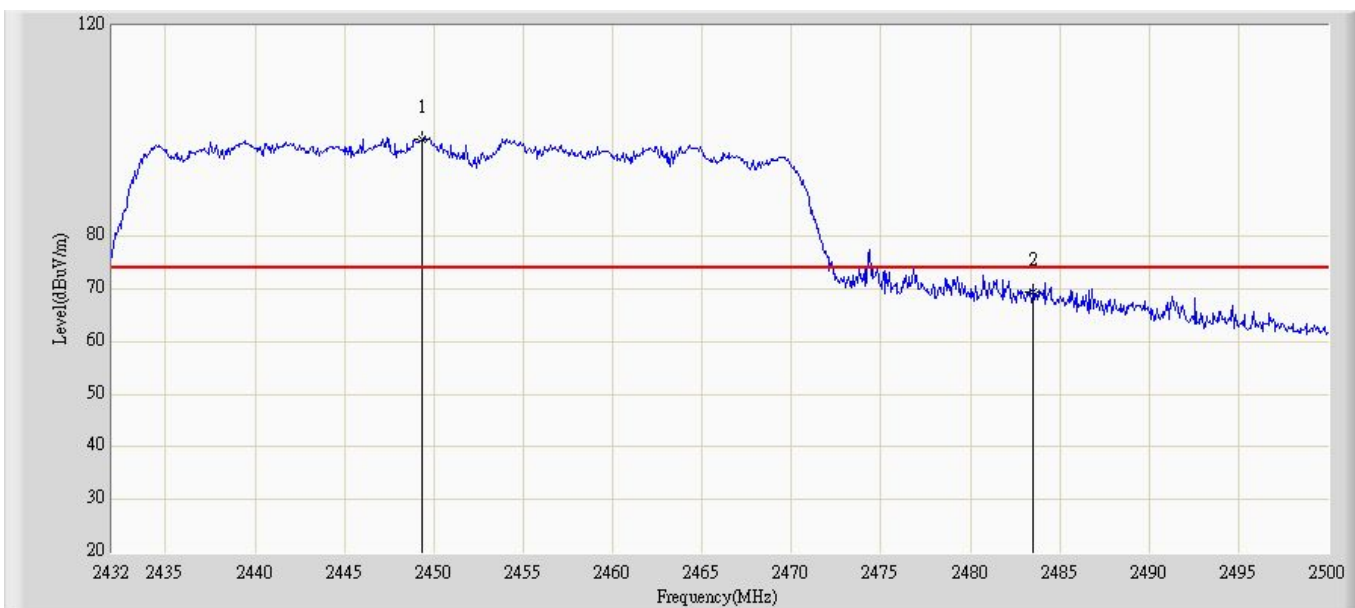
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2389.200	70.890	40.543	-3.110	74.000	30.348	PK
2			2390.000	67.043	36.693	-6.957	74.000	30.350	PK
3		*	2419.164	96.822	66.400	N/A	N/A	30.422	PK

Engineer: Toms	
Site: AC5	Time: 2012/07/02 - 21:45
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT:IP-STB	Power: DC 5V
Note: Mode4: Transmit at channel 2422 MHz by 802.11n40 ant 0+1	



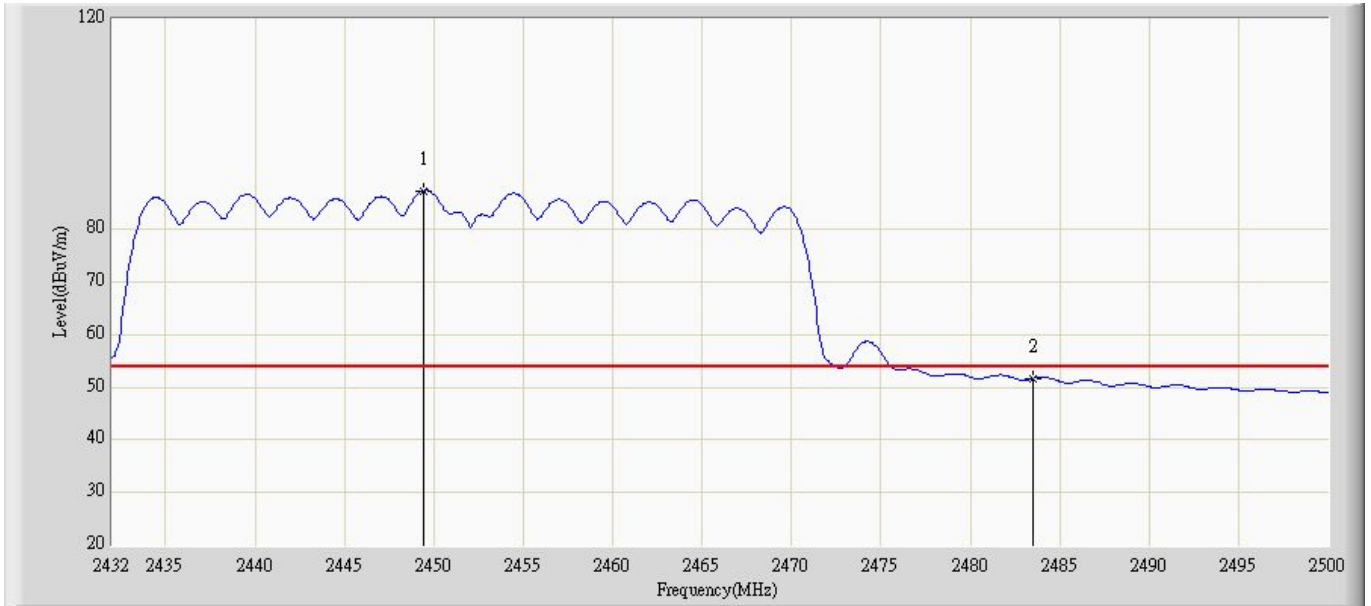
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	49.009	18.659	-4.991	54.000	30.350	AV
2		*	2419.428	84.307	53.884	N/A	N/A	30.423	AV

Engineer: Toms	
Site: AC5	Time: 2012/07/02 - 21:47
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT:IP-STB	Power: DC 5V
Note: Mode4: Transmit at channel 2452 MHz by 802.11n40 ant 0+1	



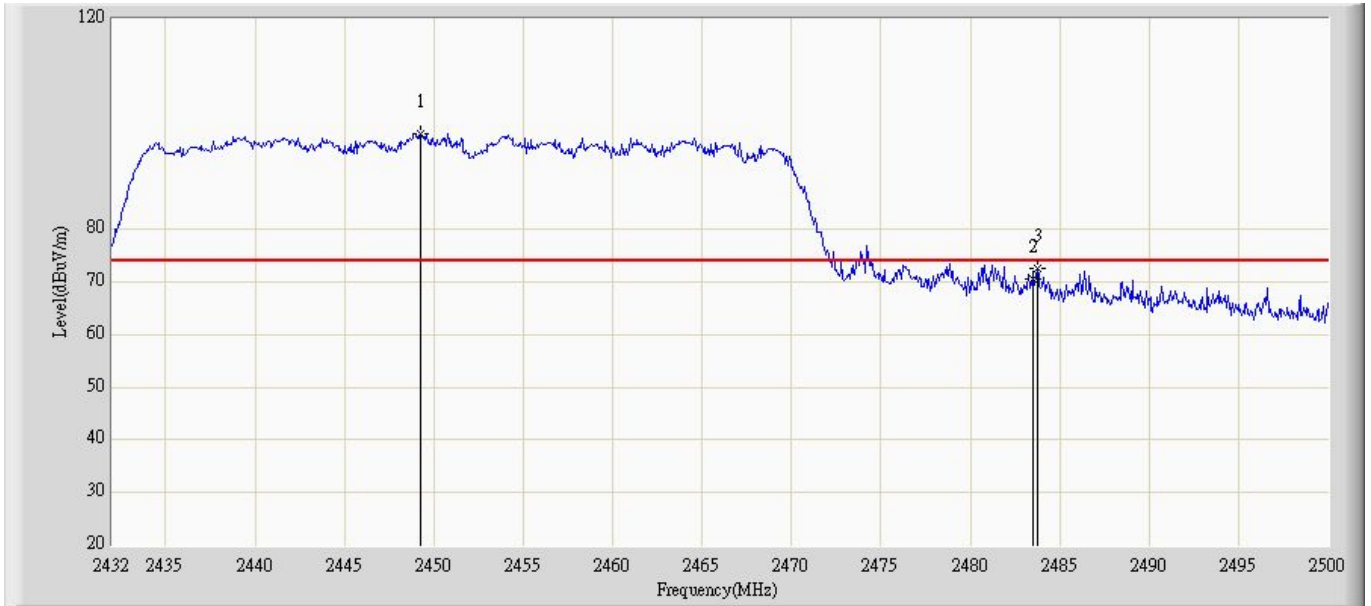
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2449.340	98.415	67.916	N/A	N/A	30.499	PK
2			2483.500	69.325	38.733	-4.675	74.000	30.592	PK

Engineer: Toms	
Site: AC5	Time: 2012/07/02 - 21:49
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT:IP-STB	Power: DC 5V
Note: Mode4: Transmit at channel 2452 MHz by 802.11n40 ant 0+1	



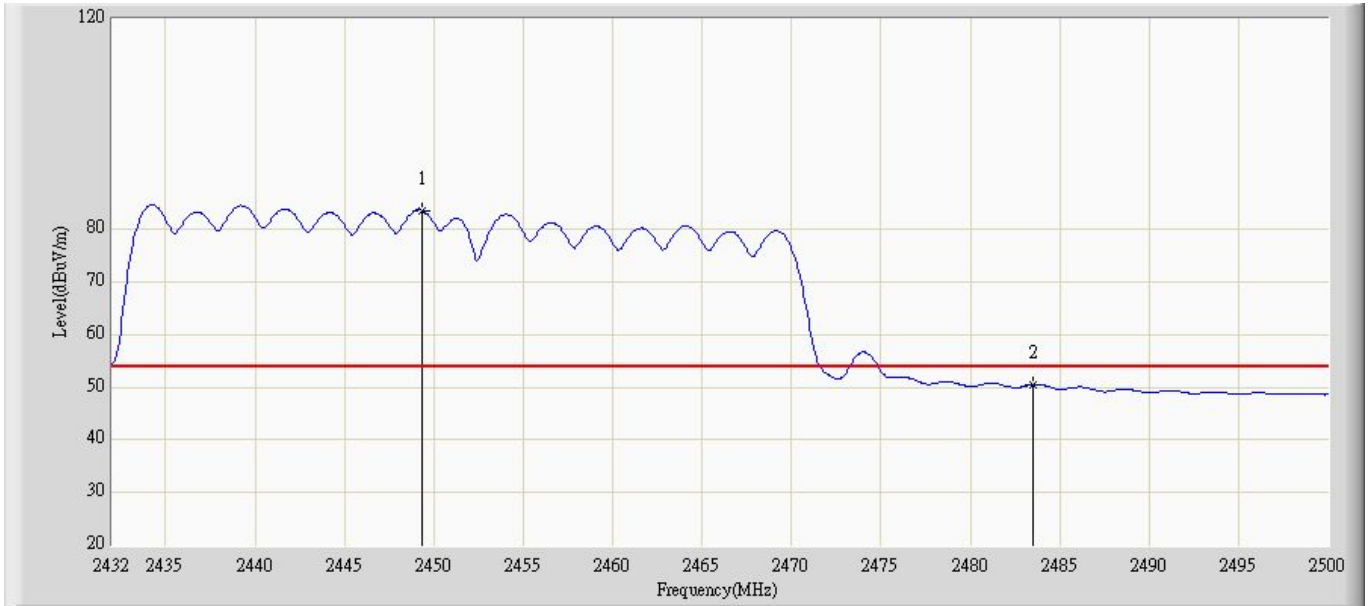
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2449.408	87.306	56.807	N/A	N/A	30.499	AV
2			2483.500	51.656	21.064	-2.344	54.000	30.592	AV

Engineer: Toms	
Site: AC5	Time: 2012/07/02 - 21:50
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT:IP-STB	Power: DC 5V
Note: Mode4: Transmit at channel 2452 MHz by 802.11n40 ant 0+1	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2449.272	98.217	67.719	N/A	N/A	30.499	PK
2			2483.500	70.684	40.092	-3.316	74.000	30.592	PK
3			2483.748	72.461	41.868	-1.539	74.000	30.593	PK

Engineer: Toms	
Site: AC5	Time: 2012/07/02 - 21:51
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT:IP-STB	Power: DC 5V
Note: Mode4: Transmit at channel 2452 MHz by 802.11n40 ant 0+1	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2449.340	83.642	53.143	N/A	N/A	30.499	AV
2			2483.500	50.525	19.933	-3.475	54.000	30.592	AV

7. Operation Frequency Range of 20dB Bandwidth

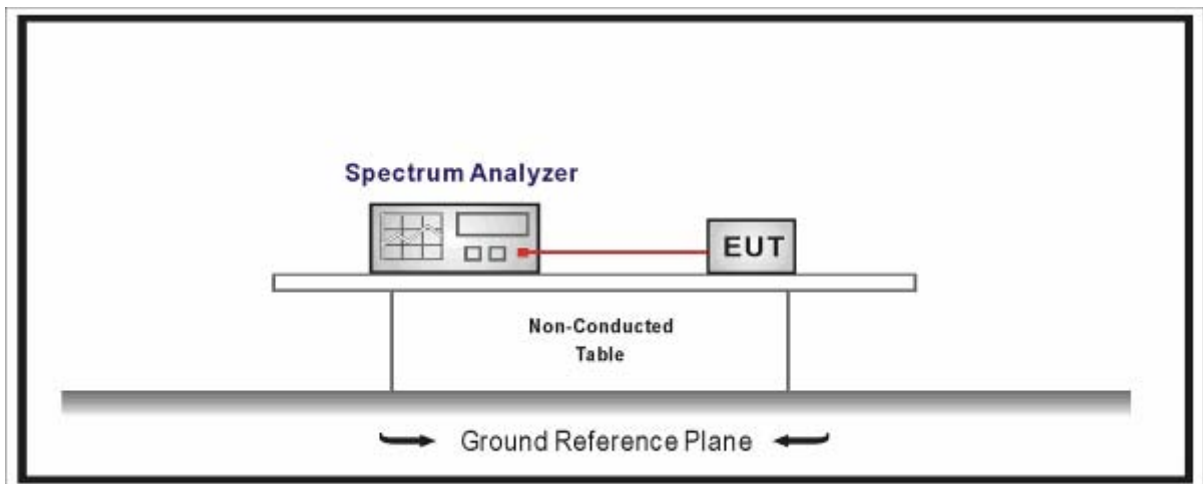
7.1. Test Equipment

Operation Frequency Range of 20dB Bandwidth / TR-8

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2013.04.18
Temperature/Humidity Meter	zhicheng	ZC1-2	TR8-TH	2013.05.07

Note: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

7.2. Test Setup



7.3. Limit

20 dB bandwidth of the emission is contained within the operation frequency band.

7.4. Test Procedure

The EUT was tested according to ANSI C63.10: 2009 and KDB 558074 for compliance to FCC 47CFR 15.247 requirements.

Set RBW = 100 kHz, Span greater than RBW.

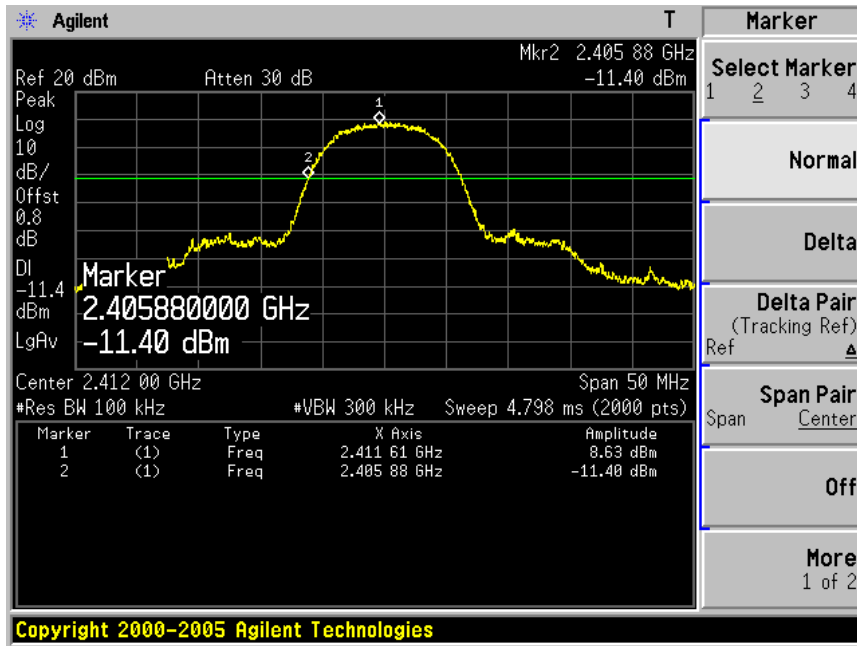
7.5. Uncertainty

The measurement uncertainty is defined as ± 1 kHz

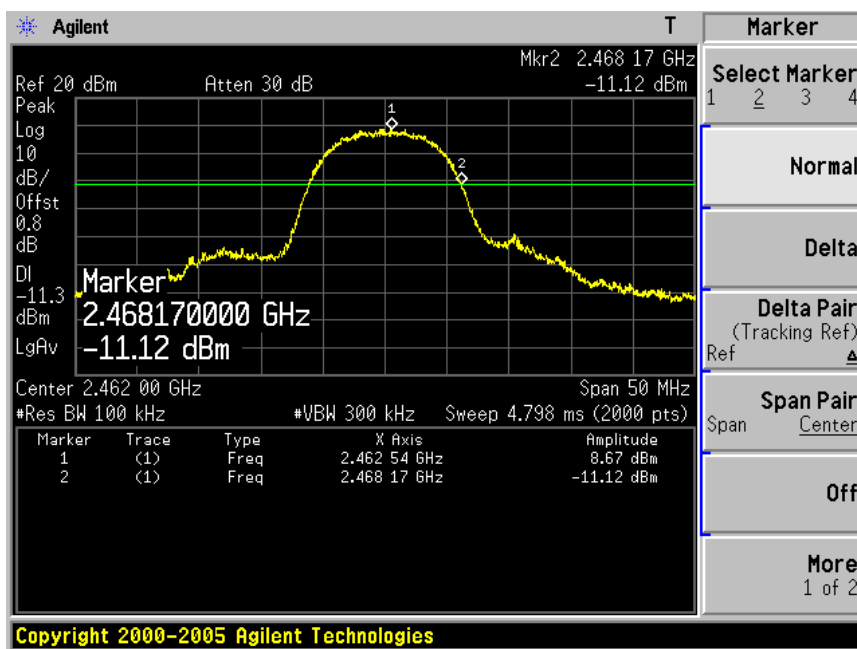
7.6. Test Result

Product	:	IP-STB
Test Item	:	Operation Frequency Range of 20dB Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 1: Transmit by 802.11b (Chain 0)

Channel 01 (2412MHz)

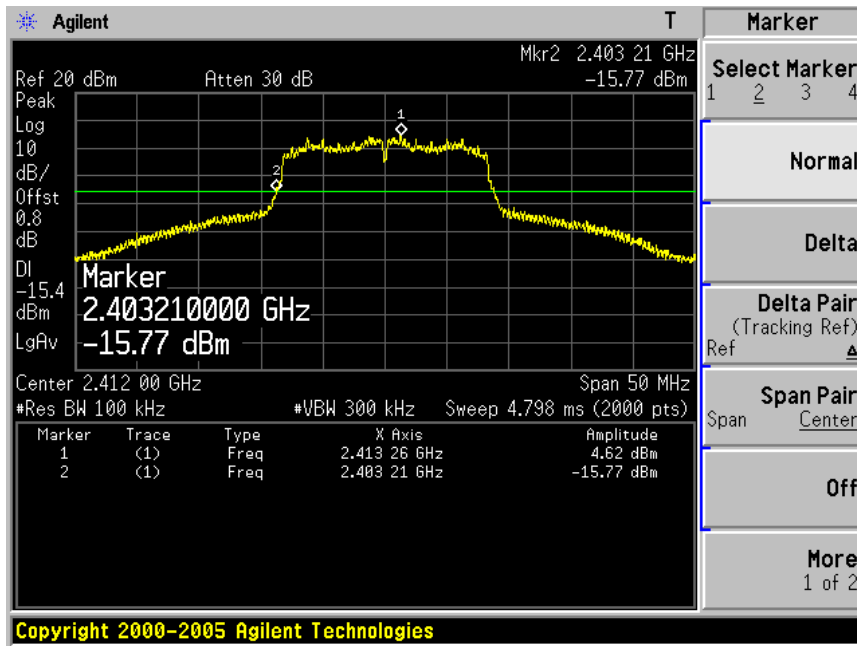


Channel 11 (2462MHz)

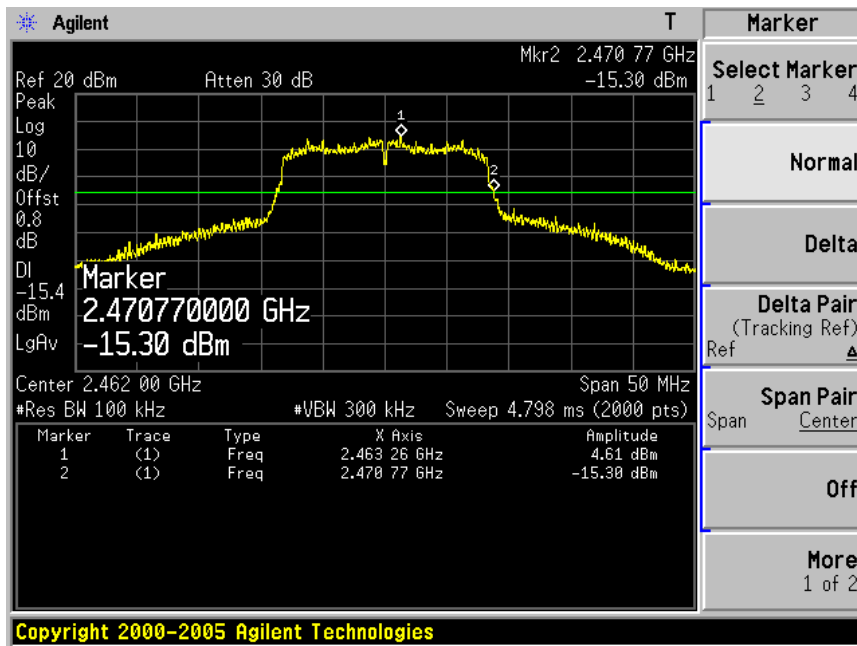


Product	: IP-STB
Test Item	: Operation Frequency Range of 20dB Bandwidth
Test Site	: TR-8
Test Mode	: Mode 2: Transmit by 802.11g (Chain 0)

Channel 01 (2412MHz)

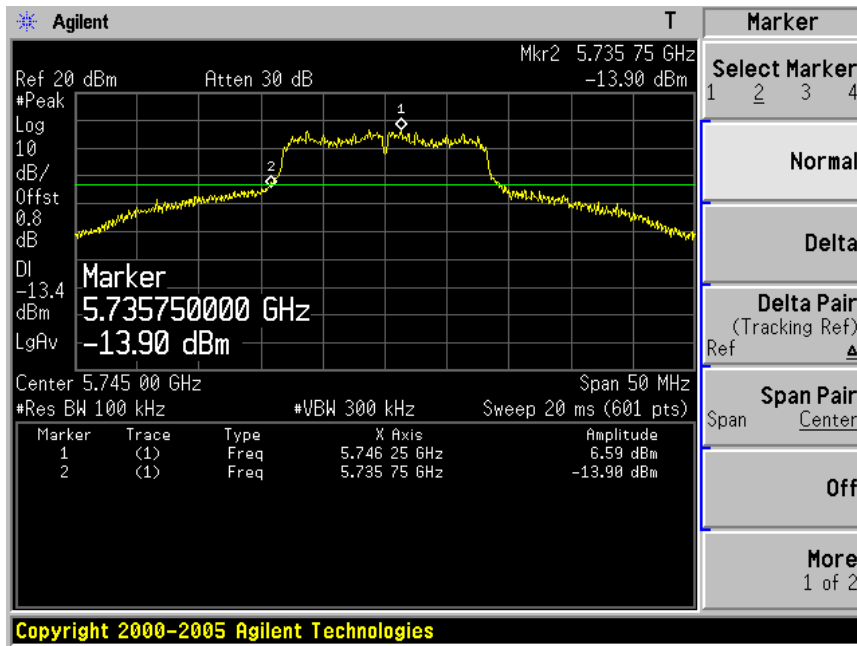


Channel 11 (2462MHz)

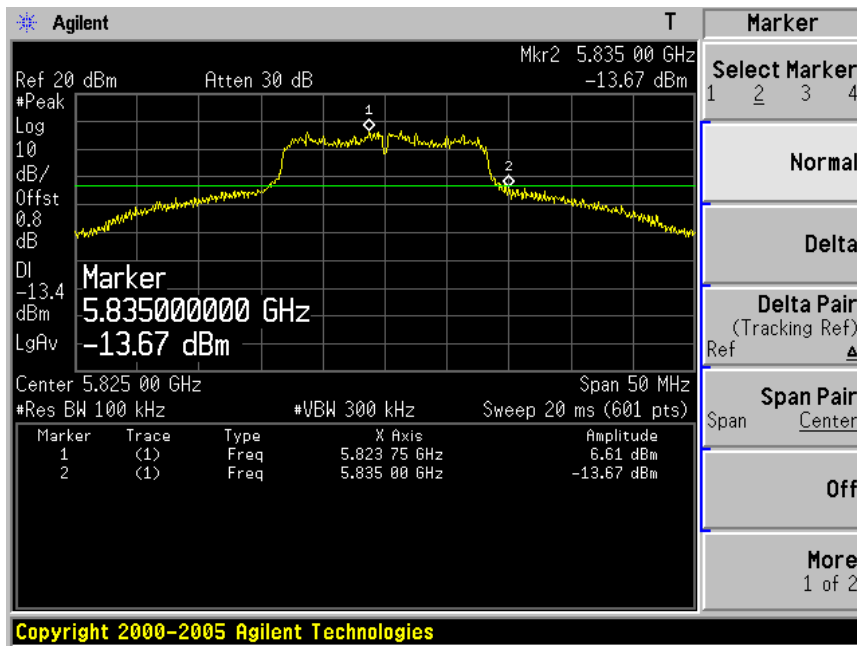


Product	: IP-STB
Test Item	: Operation Frequency Range of 20dB Bandwidth
Test Site	: TR-8
Test Mode	: Mode 3: Transmit by 802.11a (Chain 0)

Channel 149 (5745MHz)

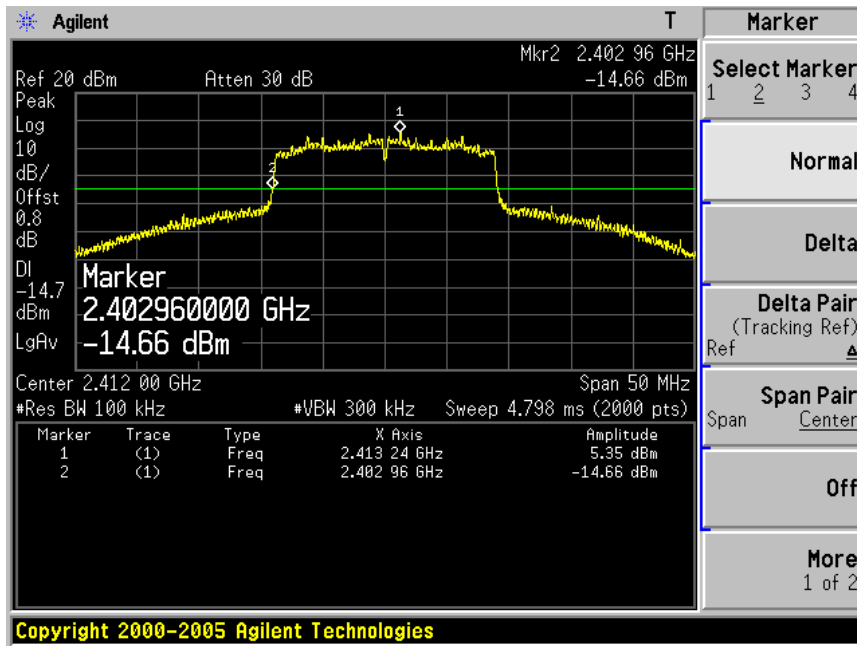


Channel 165 (5825MHz)

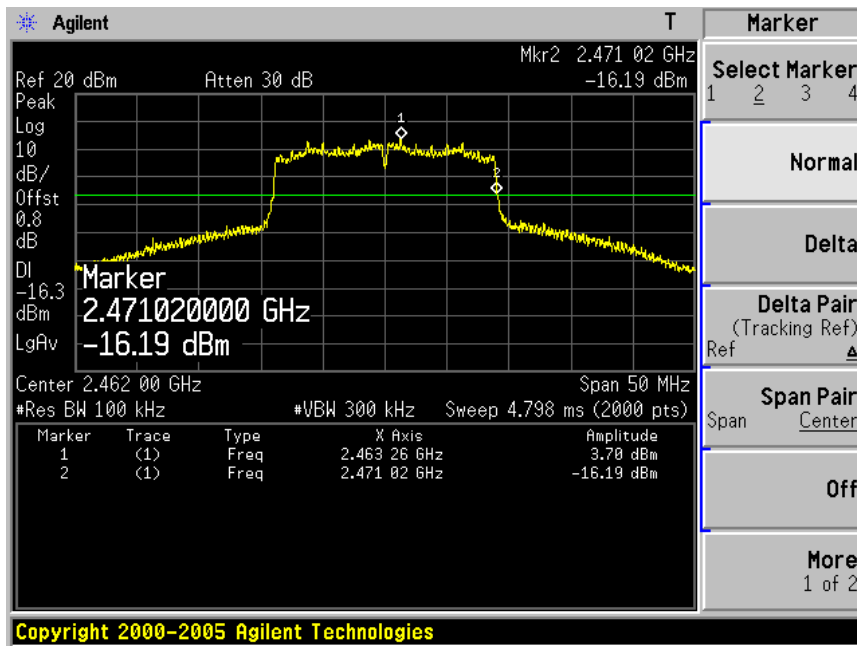


Product	: IP-STB
Test Item	: Operation Frequency Range of 20dB Bandwidth
Test Site	: TR-8
Test Mode	: Mode 4: Transmit by 802.11n (20MHz) (Chain 0)

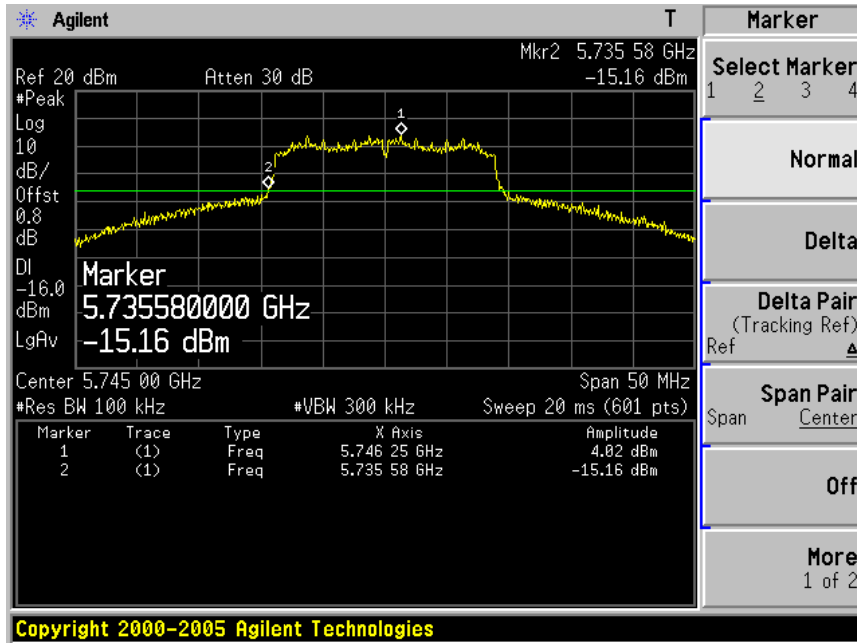
Channel 01 (2412MHz)



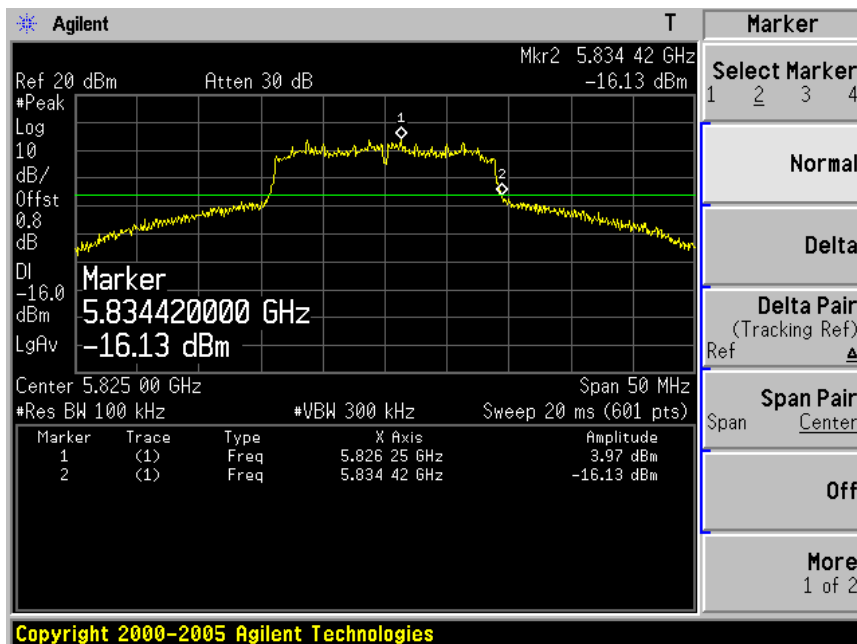
Channel 11 (2462MHz)



Channel 149 (5745MHz)

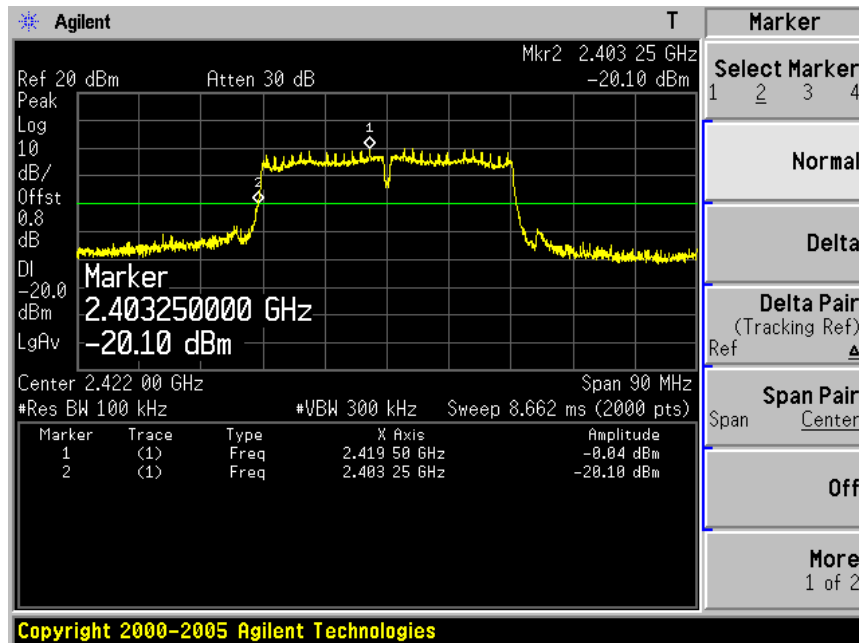


Channel 165 (5825MHz)

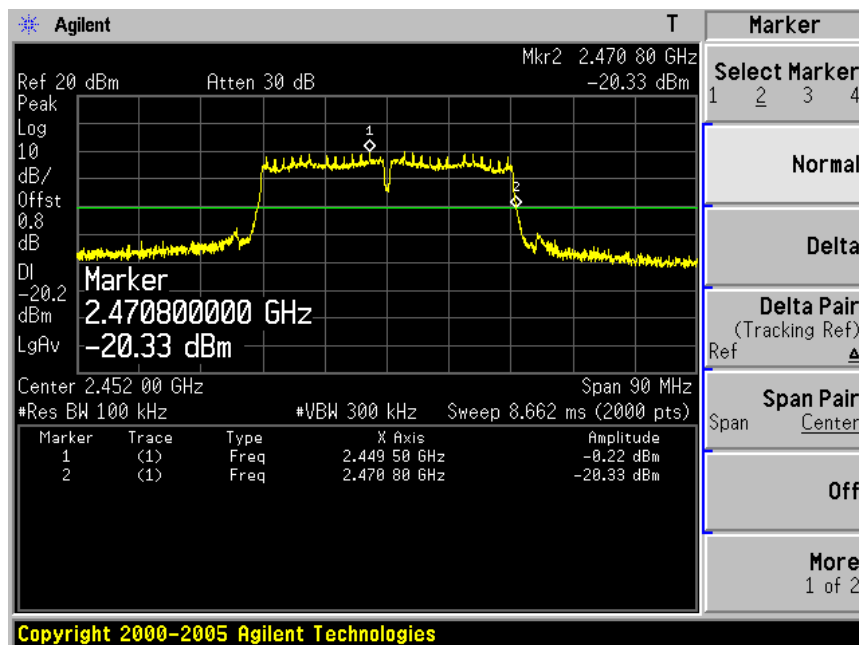


Product	: IP-STB
Test Item	: Operation Frequency Range of 20dB Bandwidth
Test Site	: TR-8
Test Mode	: Mode 5: Transmit by 802.11n (40MHz) (Chain 0)

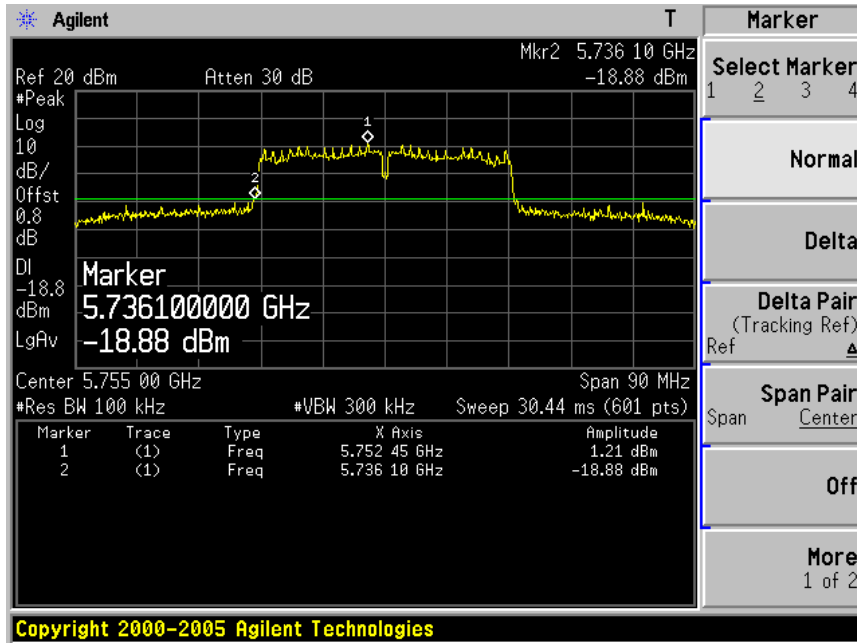
Channel 03 (2422MHz)



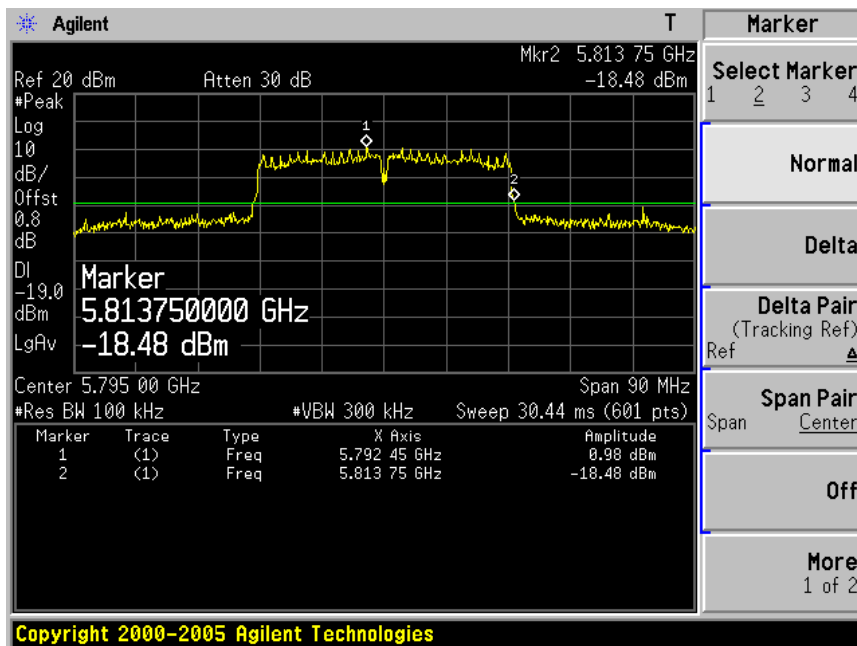
Channel 09 (2452MHz)



Channel 151 (5755MHz)

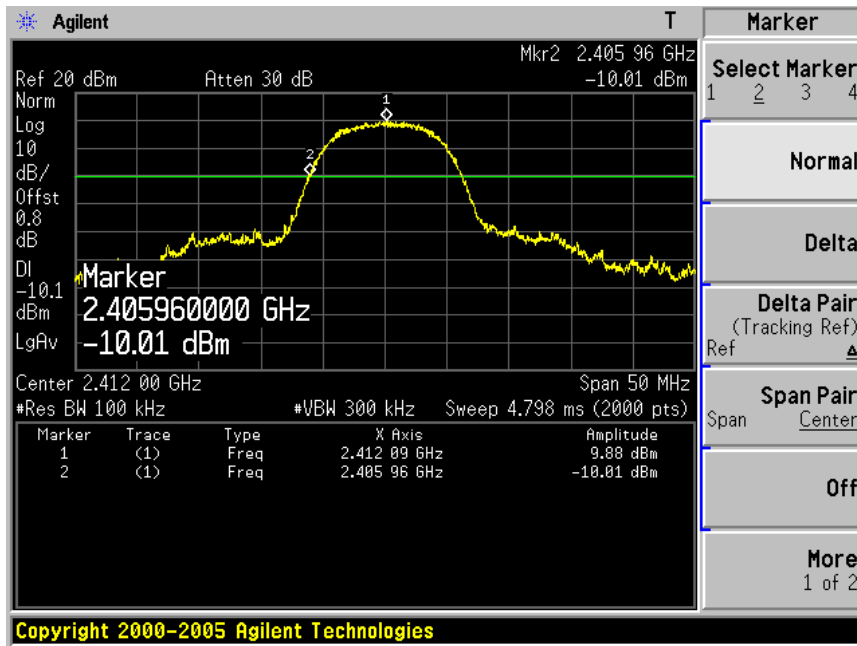


Channel 159 (5795MHz)

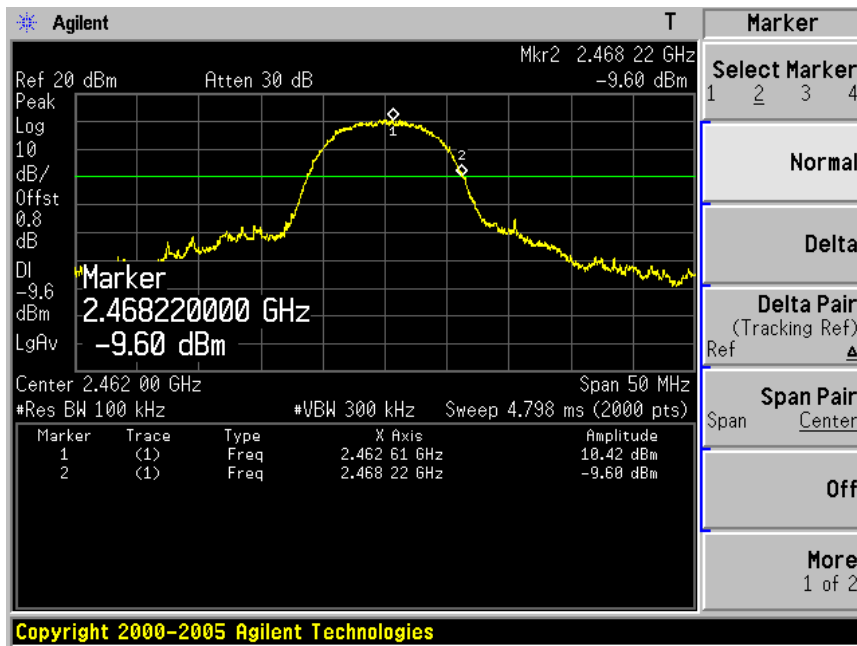


Product	: IP-STB
Test Item	: Operation Frequency Range of 20dB Bandwidth
Test Site	: TR-8
Test Mode	: Mode 1: Transmit by 802.11b (Chain 1)

Channel 01 (2412MHz)

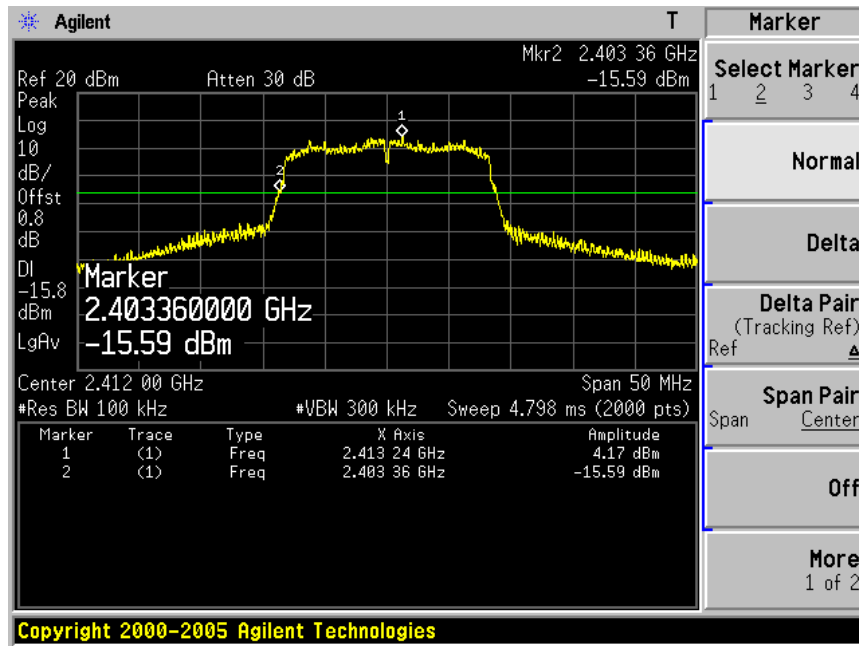


Channel 11 (2462MHz)

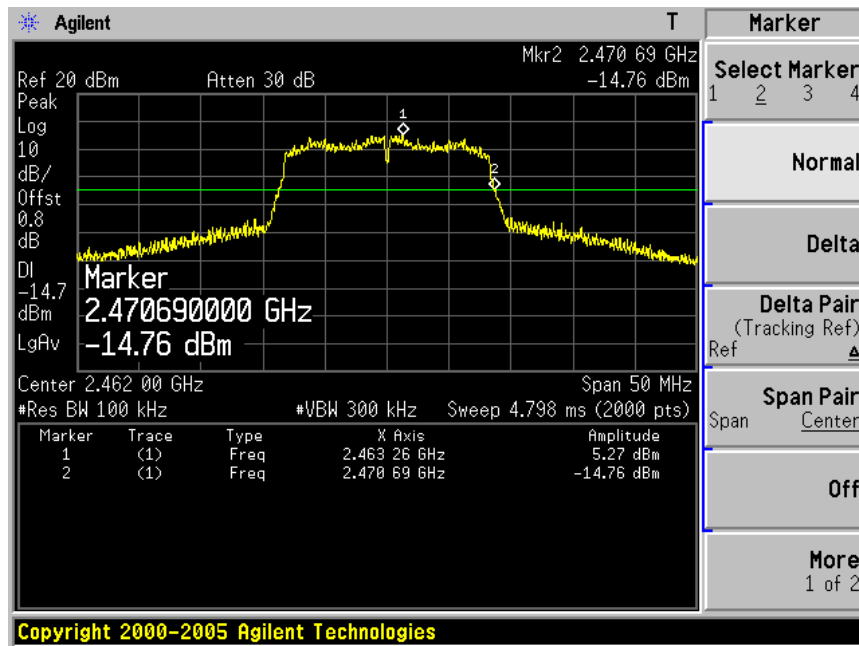


Product	: IP-STB
Test Item	: Operation Frequency Range of 20dB Bandwidth
Test Site	: TR-8
Test Mode	: Mode 2: Transmit by 802.11g (Chain 1)

Channel 01 (2412MHz)

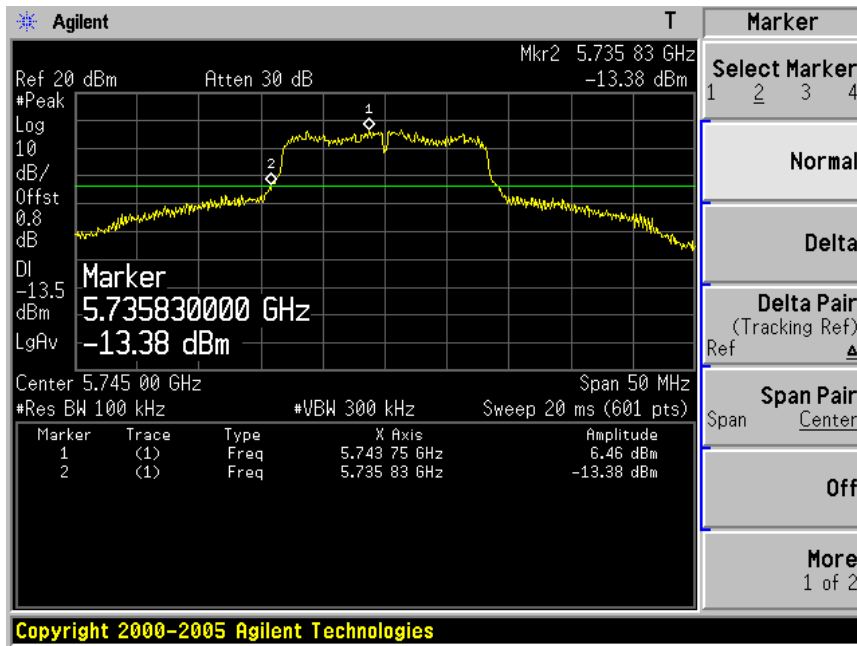


Channel 11 (2462MHz)

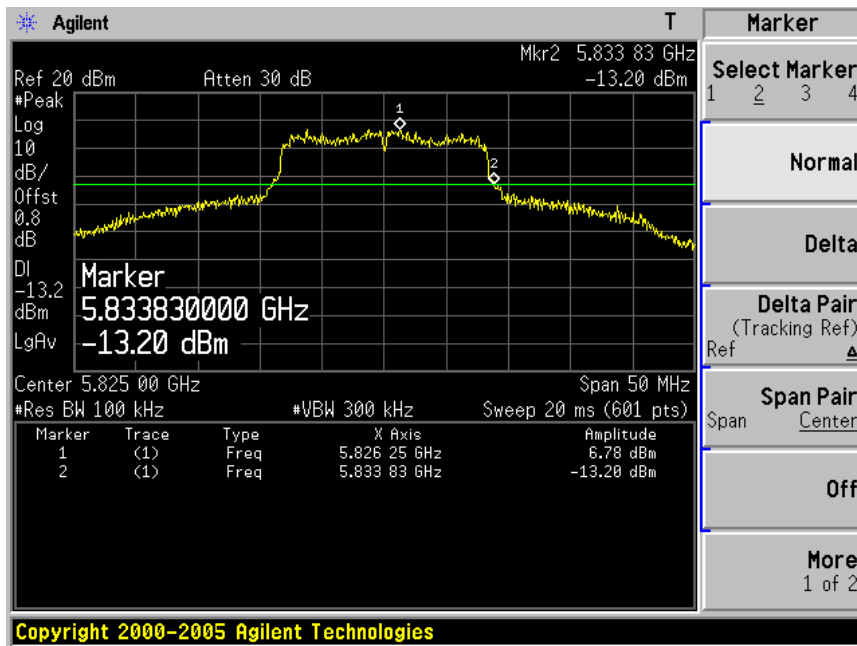


Product	: IP-STB
Test Item	: Operation Frequency Range of 20dB Bandwidth
Test Site	: TR-8
Test Mode	: Mode 3: Transmit by 802.11a (Chain 1)

Channel 149 (5745MHz)

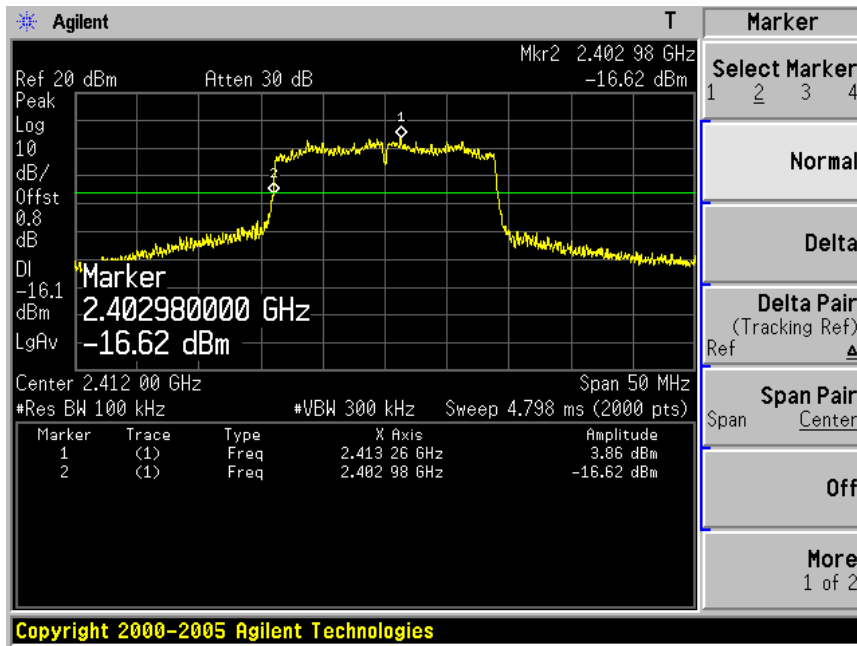


Channel 165 (5825MHz)

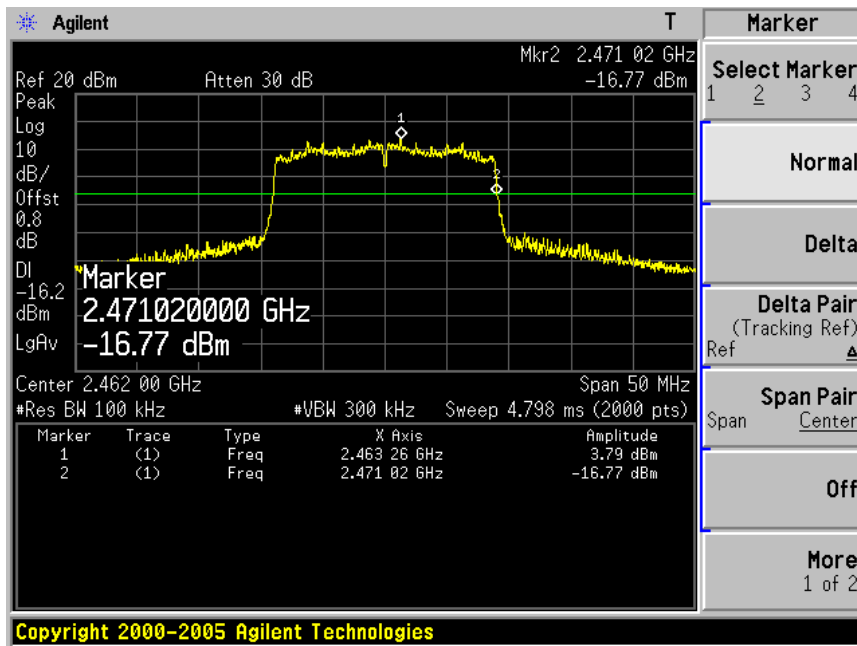


Product	: IP-STB
Test Item	: Operation Frequency Range of 20dB Bandwidth
Test Site	: TR-8
Test Mode	: Mode 4: Transmit by 802.11n (20MHz) (Chain 1)

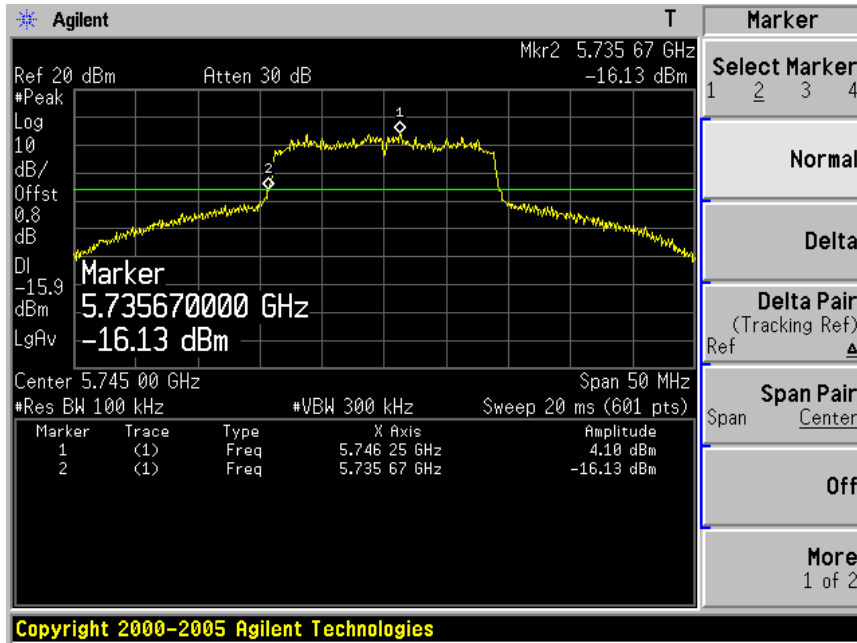
Channel 01 (2412MHz)



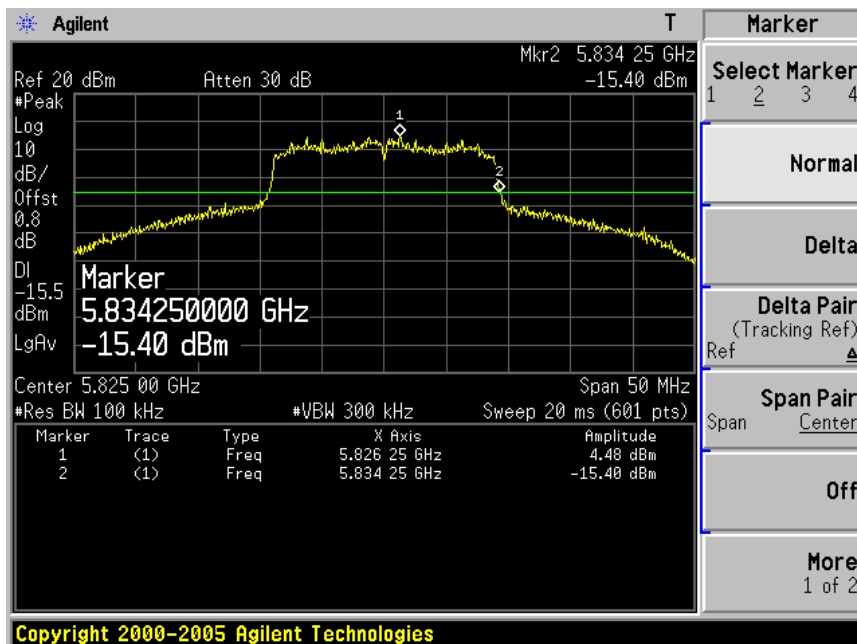
Channel 11 (2462MHz)



Channel 149 (5745MHz)

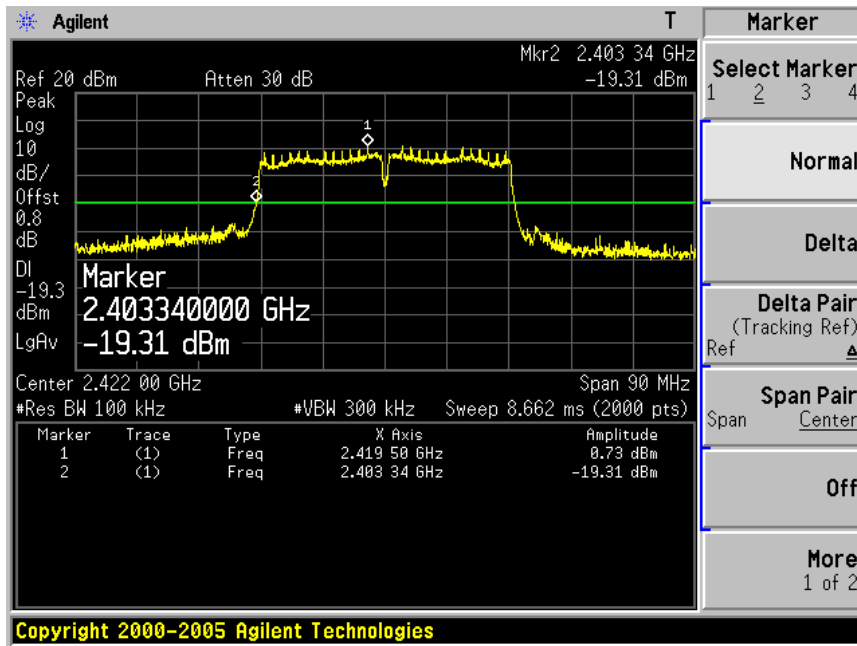


Channel 165 (5825MHz)

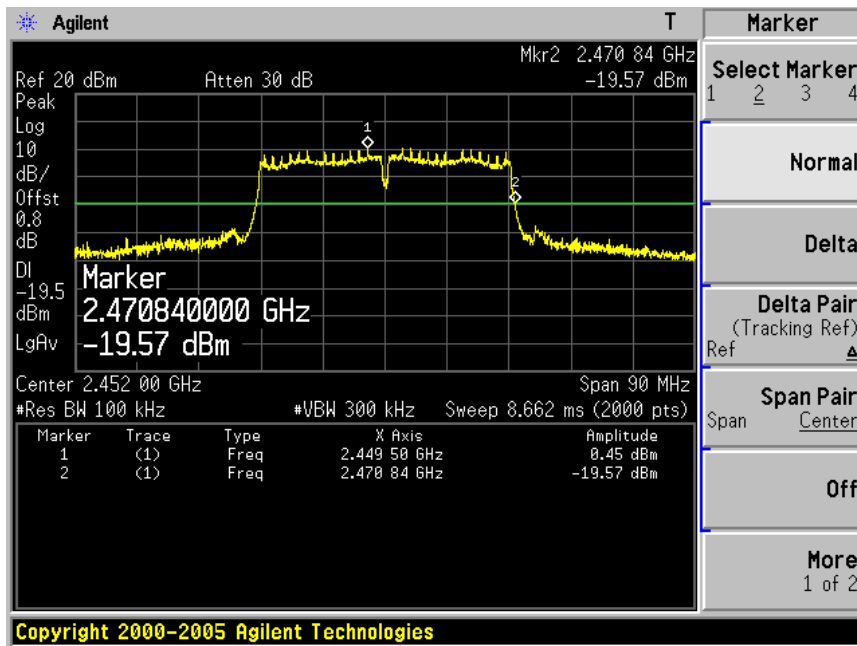


Product	: IP-STB
Test Item	: Operation Frequency Range of 20dB Bandwidth
Test Site	: TR-8
Test Mode	: Mode 5: Transmit by 802.11n (40MHz) (Chain 1)

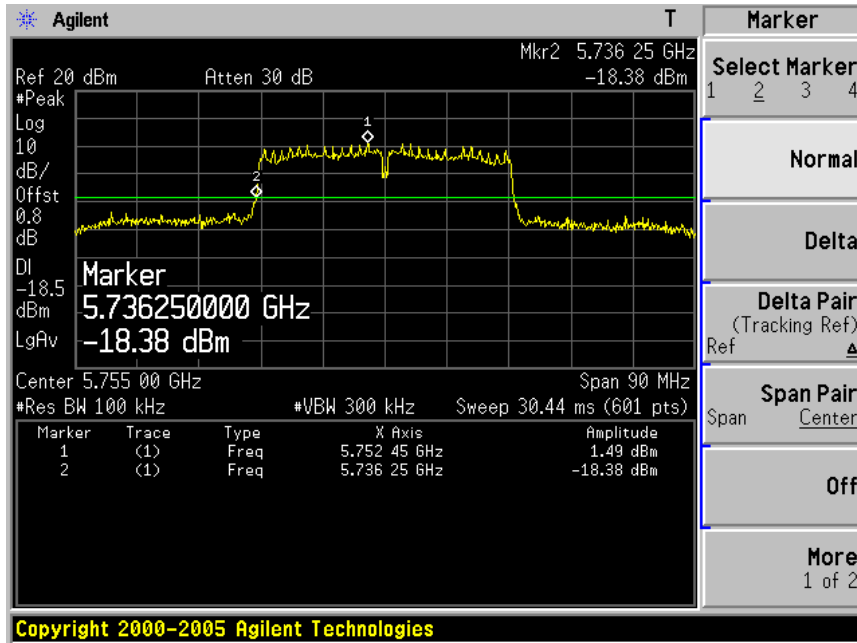
Channel 03 (2422MHz)



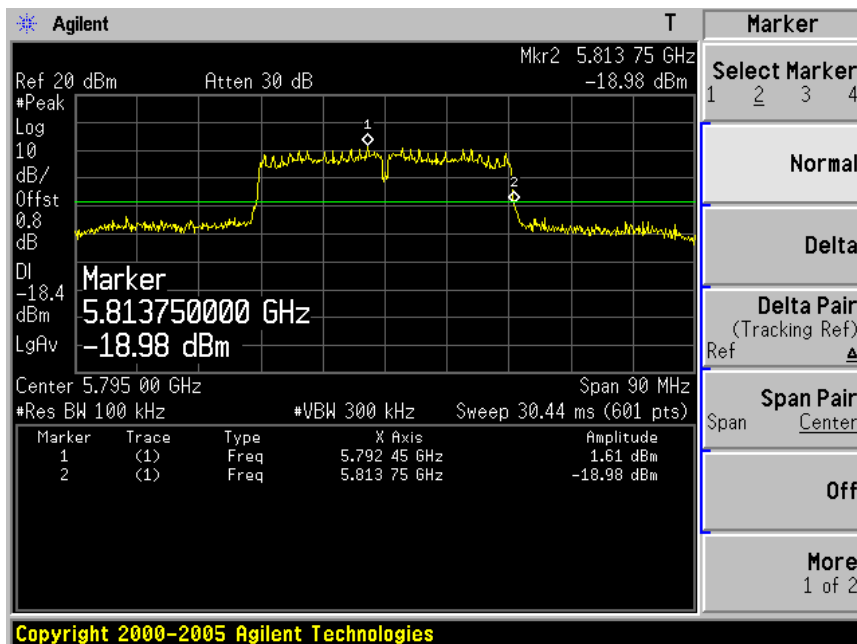
Channel 09 (2452MHz)



Channel 151 (5755MHz)



Channel 159 (5795MHz)



8. Occupied Bandwidth

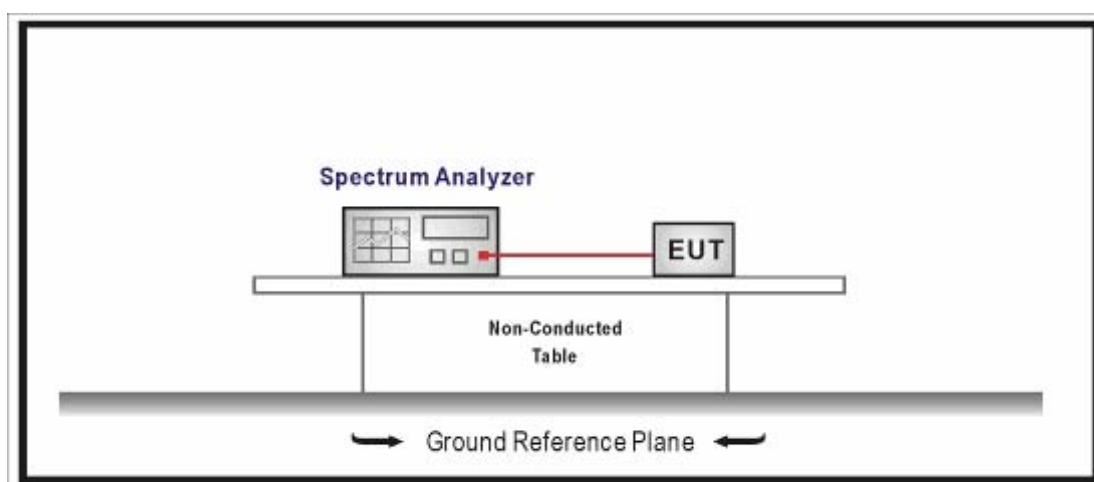
8.1. Test Equipment

Occupied Bandwidth / TR-8

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2013.04.18
Temperature/Humidity Meter	zhicheng	ZC1-2	TR8-TH	2013.05.07

Note: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

8.2. Test Setup



8.3. Limit

The minimum 6 dB bandwidth shall be at least 500 kHz.

8.4. Test Procedure

The EUT was tested according to ANSI C63.10: 2009 and KDB 558074 for compliance to FCC 47CFR 15.247 requirements.

Set RBW = 100 kHz, Span greater than RBW.

8.5. Uncertainty

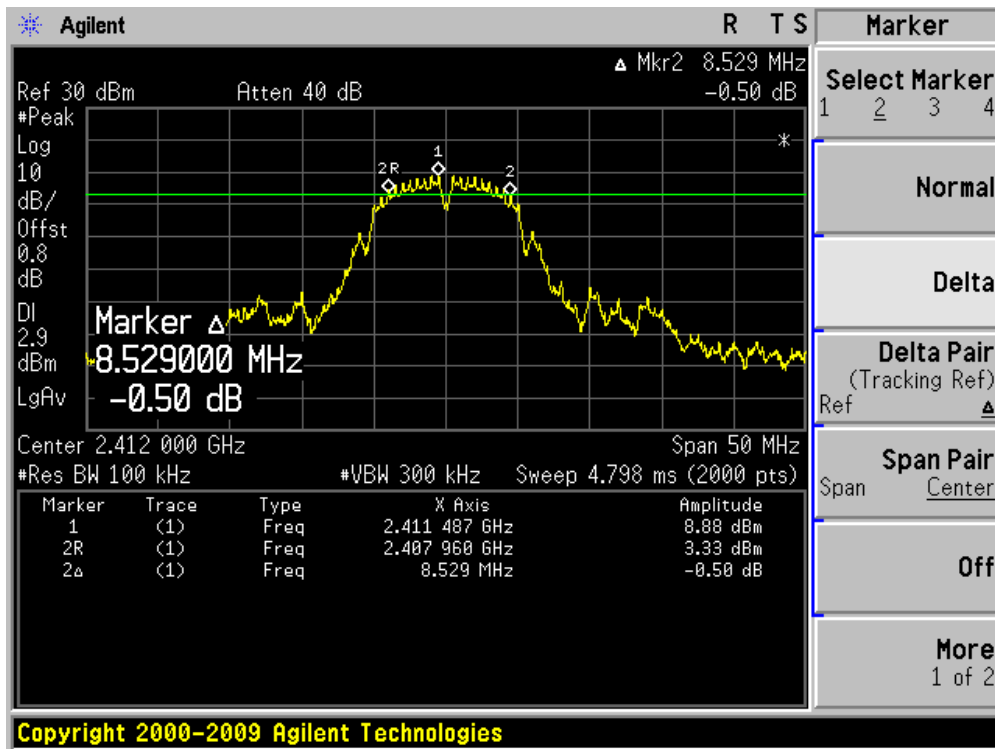
The measurement uncertainty is defined as ± 1 kHz

8.6. Test Result

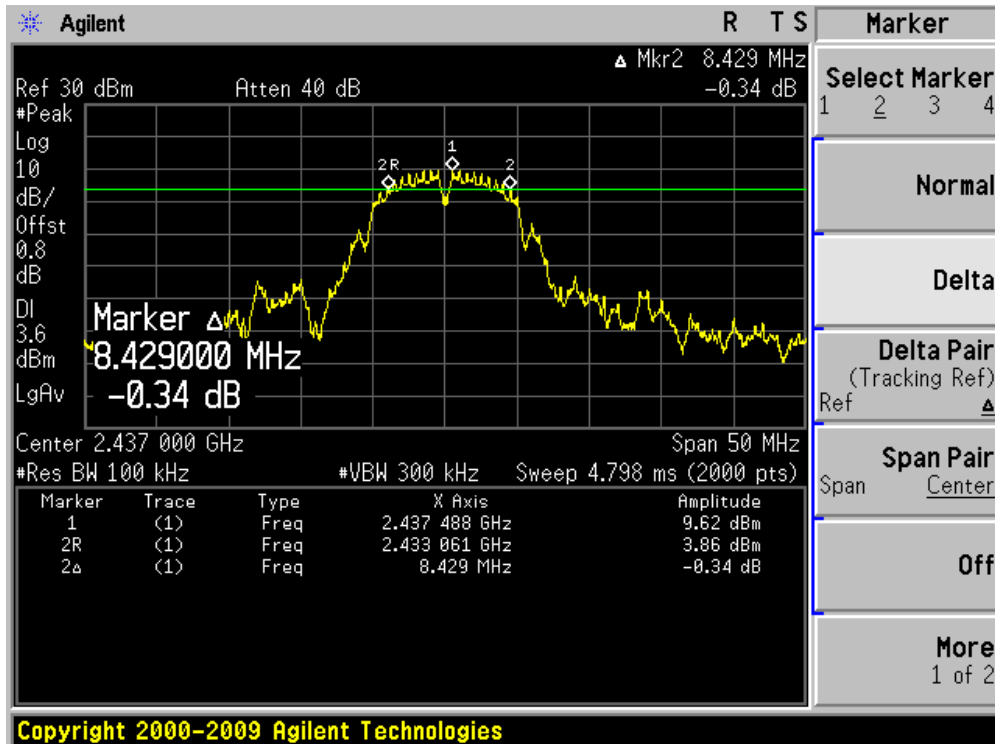
Product	:	IP-STB
Test Item	:	6dB Occupied Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 1: Transmit by 802.11b (Chain 0)

Channel No.	Frequency (MHz)	Occupied Bandwidth (kHz)	Limit (kHz)	Result
01	2412	8529	500	Pass
06	2437	8429	500	Pass
11	2462	8554	500	Pass

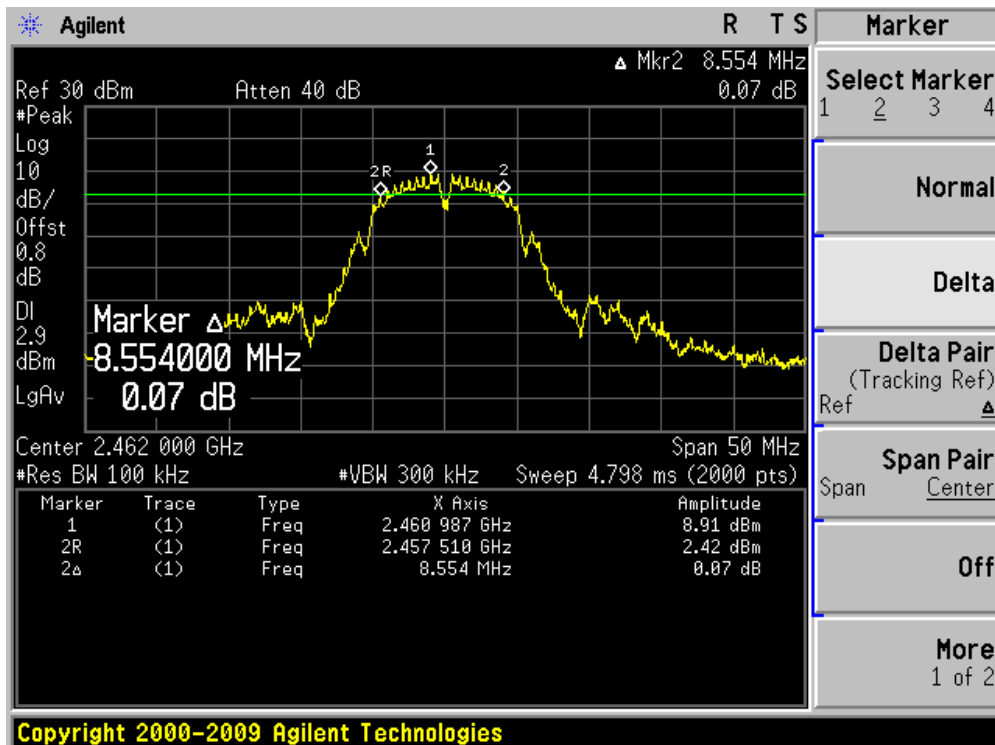
Channel 01 (2412MHz)



Channel 06 (2437MHz)



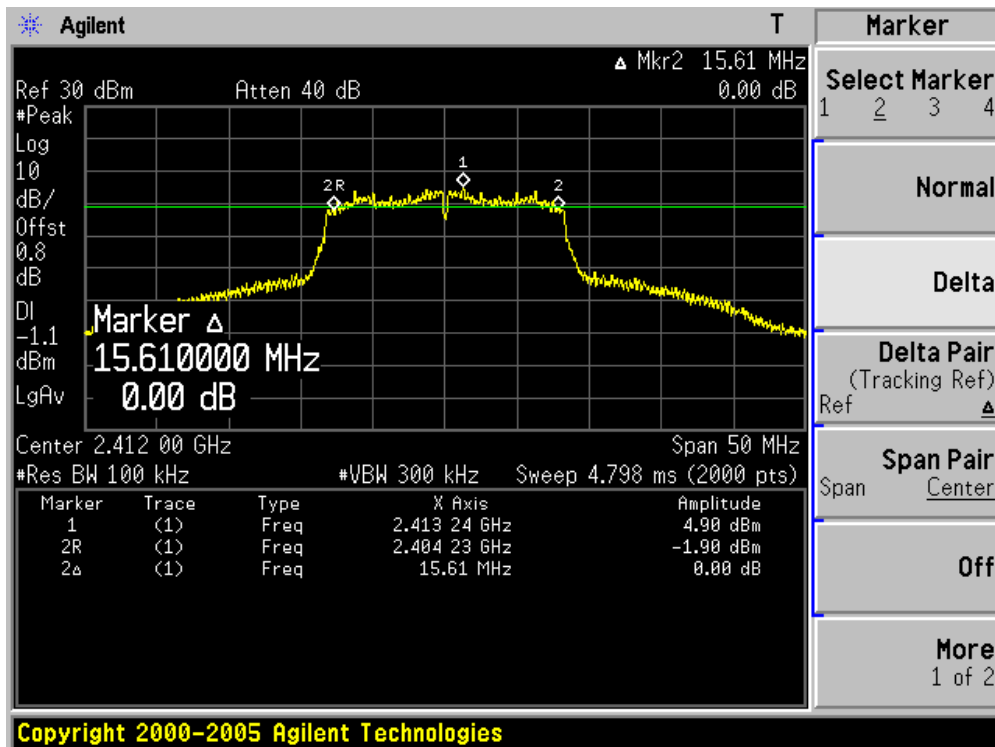
Channel 11 (2462MHz)



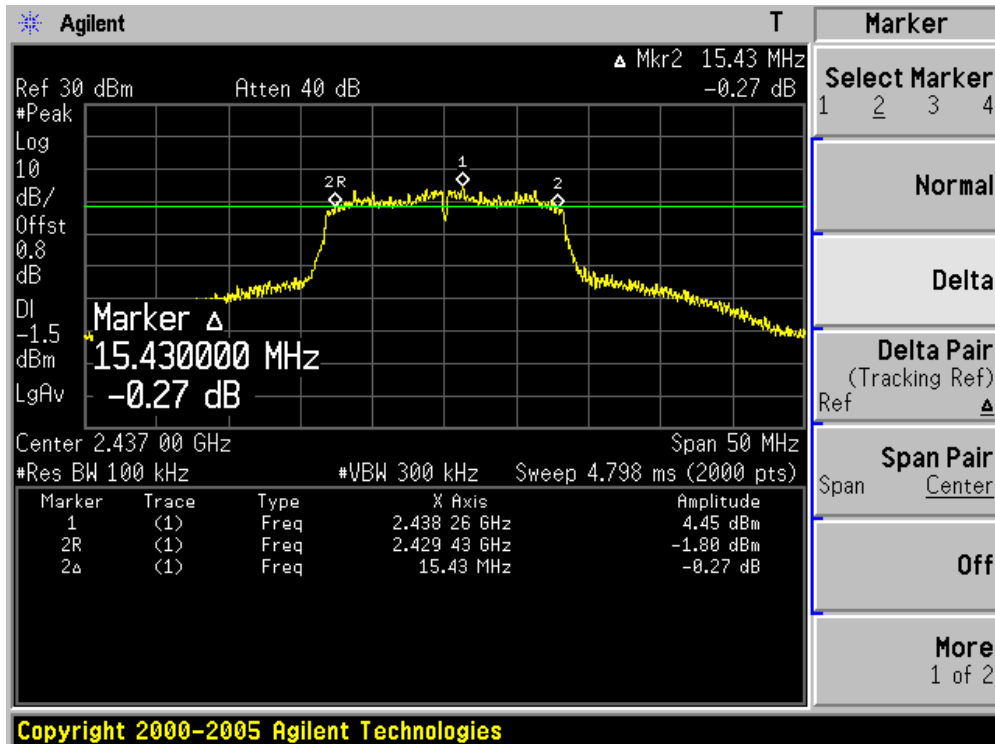
Product	: IP-STB
Test Item	: 6dB Occupied Bandwidth
Test Site	: TR-8
Test Mode	: Mode 2: Transmit by 802.11g (Chain 0)

Channel No.	Frequency (MHz)	Occupied Bandwidth (kHz)	Limit (kHz)	Result
01	2412	15610	500	Pass
06	2437	15430	500	Pass
11	2462	15710	500	Pass

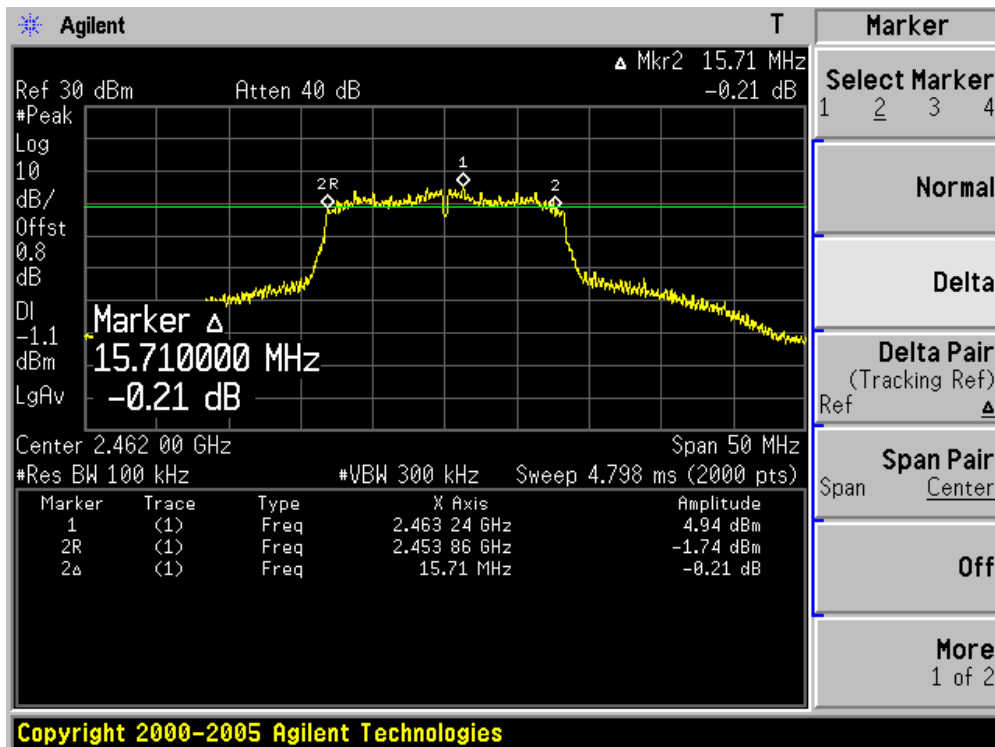
Channel 01 (2412MHz)



Channel 06 (2437MHz)



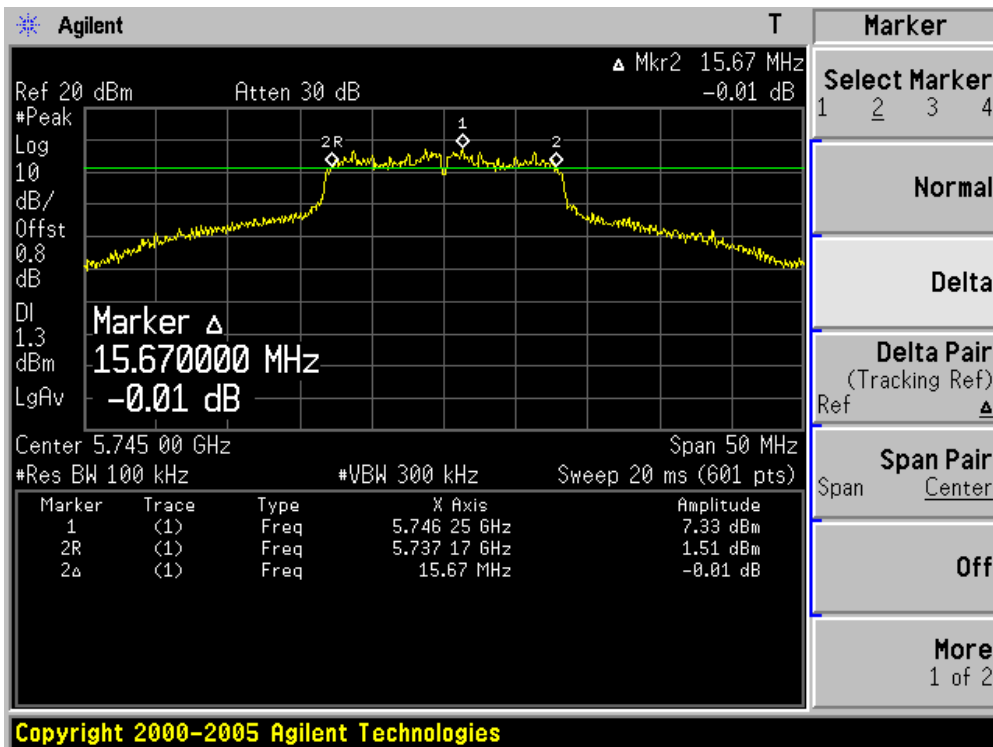
Channel 11 (2462MHz)



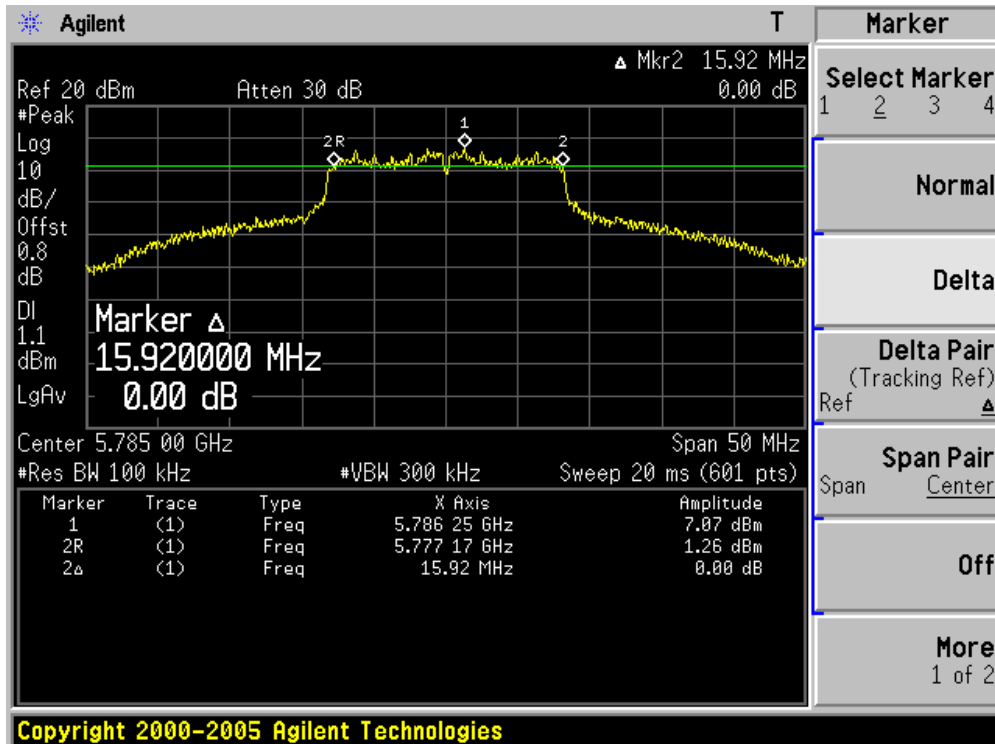
Product	: IP-STB
Test Item	: 6dB Occupied Bandwidth
Test Site	: TR-8
Test Mode	: Mode 3: Transmit by 802.11a (Chain 0)

Channel No.	Frequency (MHz)	Occupied Bandwidth (kHz)	Limit (kHz)	Result
149	5745	15670	500	Pass
157	5785	15920	500	Pass
165	5825	15670	500	Pass

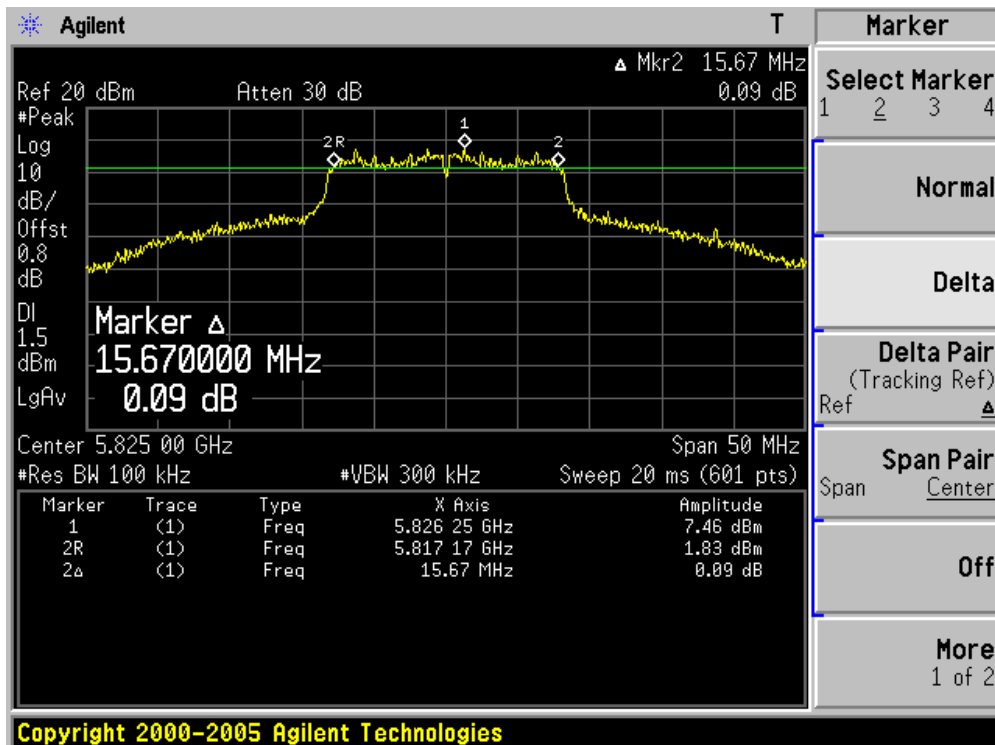
Channel 149 (5745MHz)



Channel 157 (5785MHz)



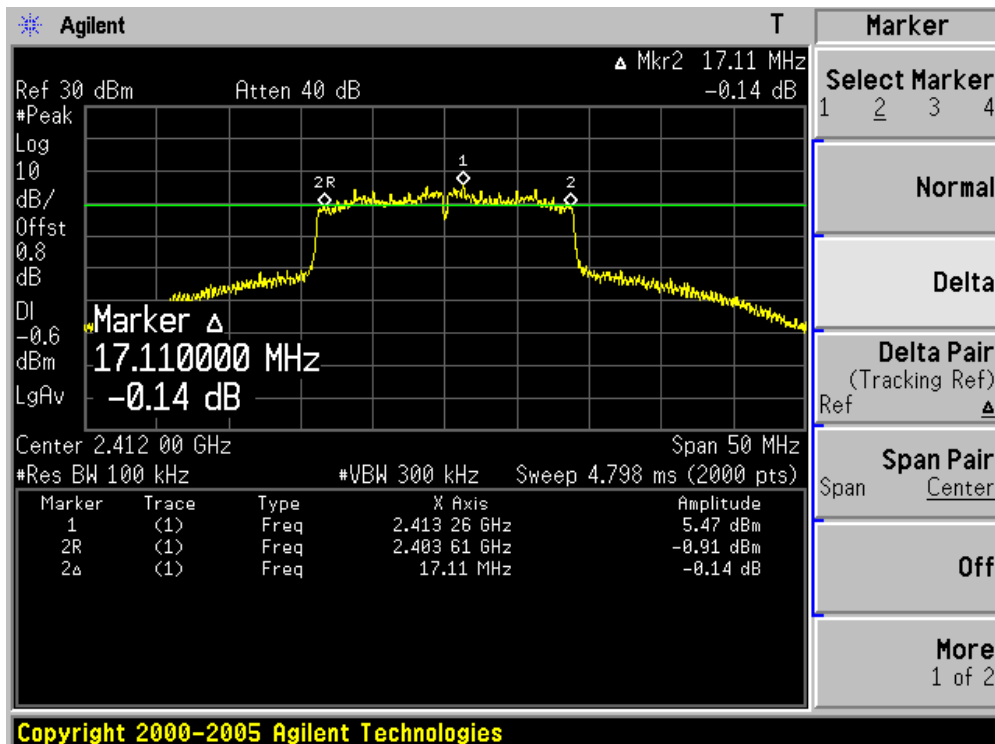
Channel 165 (5825MHz)



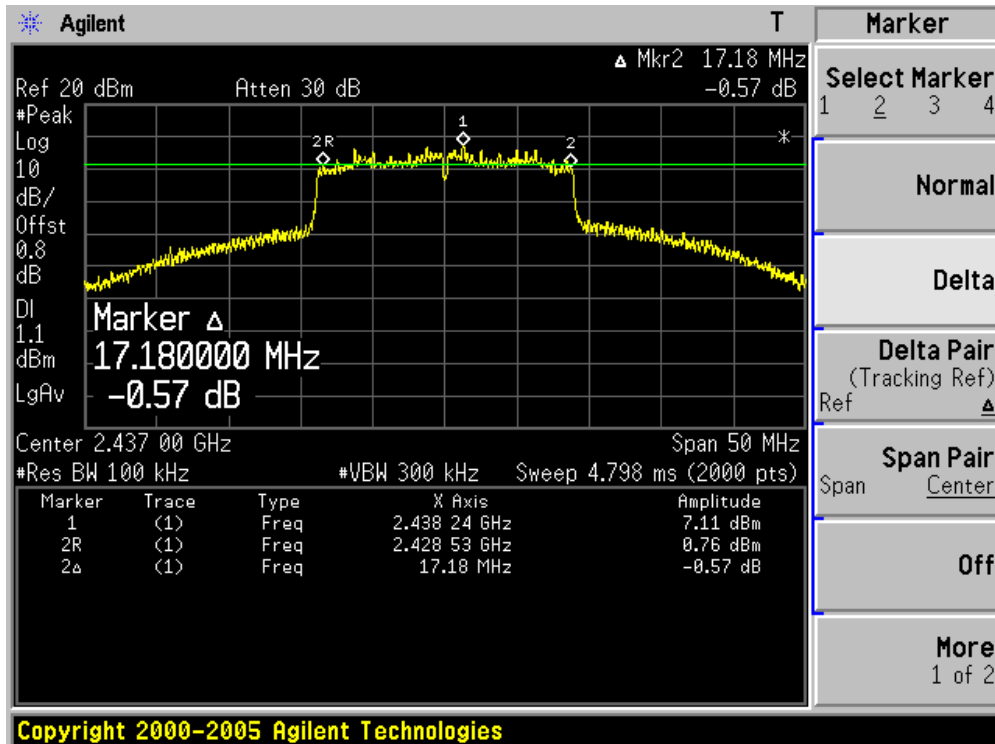
Product	: IP-STB
Test Item	: 6dB Occupied Bandwidth
Test Site	: TR-8
Test Mode	: Mode 4: Transmit by 802.11n (20MHz) (Chain 0)

Channel No.	Frequency (MHz)	Occupied Bandwidth (kHz)	Limit (kHz)	Result
01	2412	17110	500	Pass
06	2437	17180	500	Pass
11	2462	17180	500	Pass
149	5745	17420	500	Pass
157	5785	17500	500	Pass
165	5825	17500	500	Pass

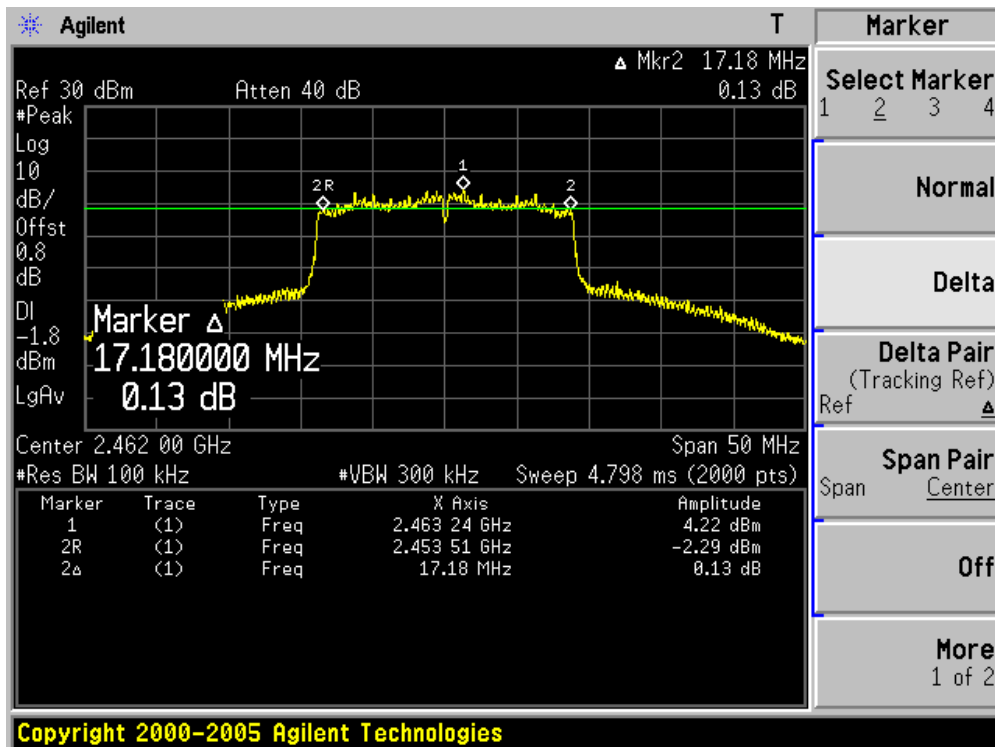
Channel 01 (2412MHz)



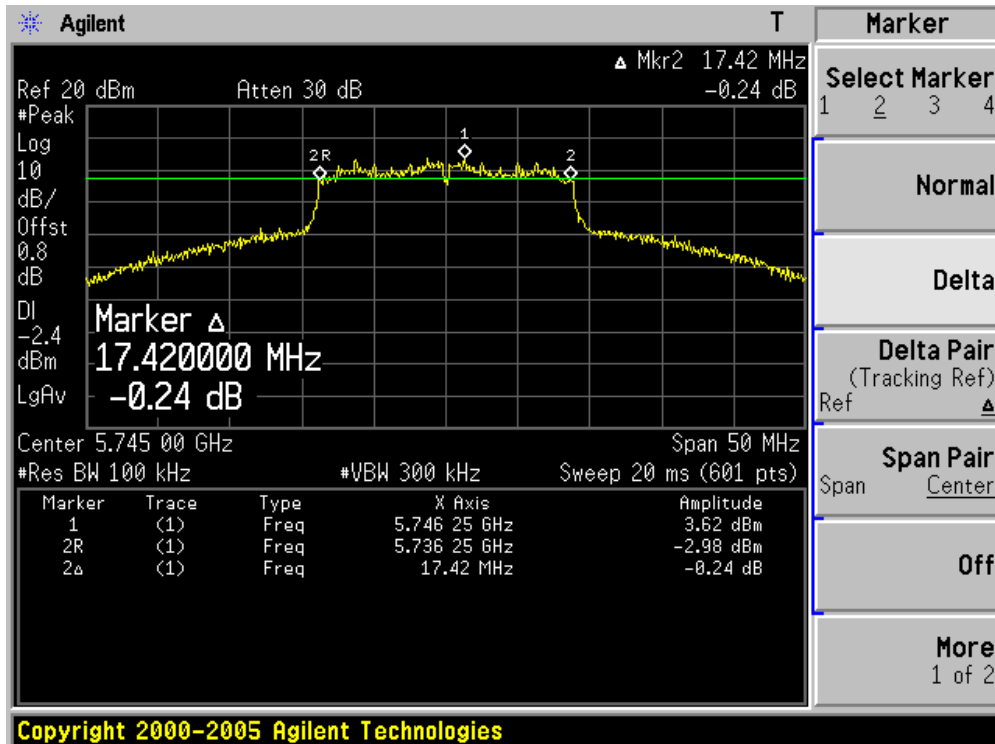
Channel 06 (2437MHz)



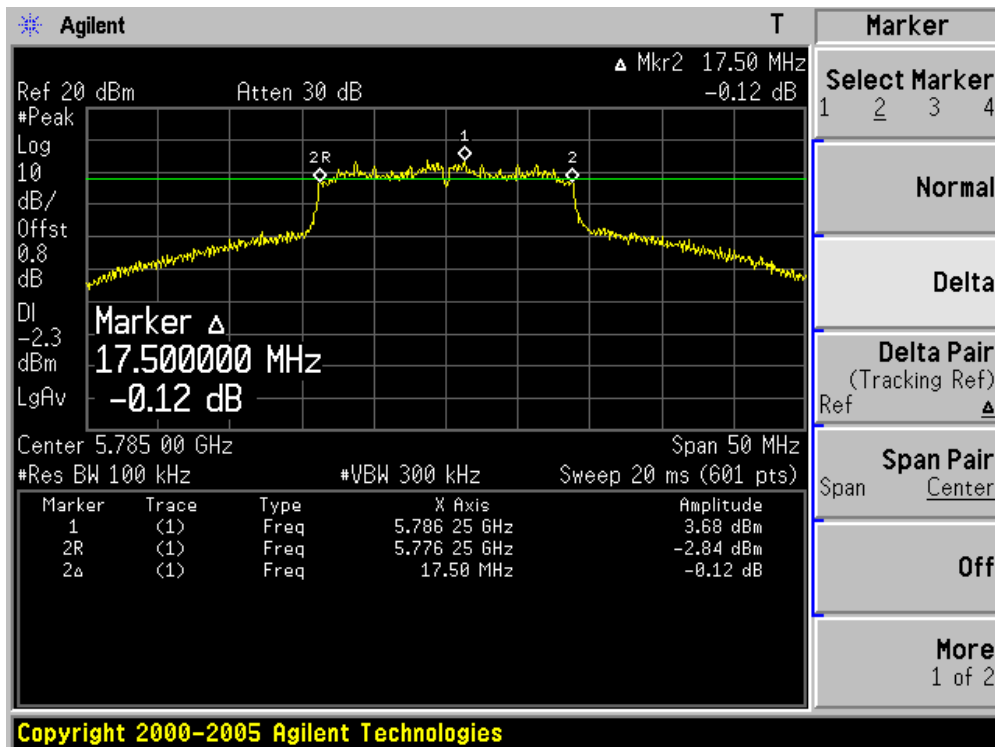
Channel 11 (2462MHz)



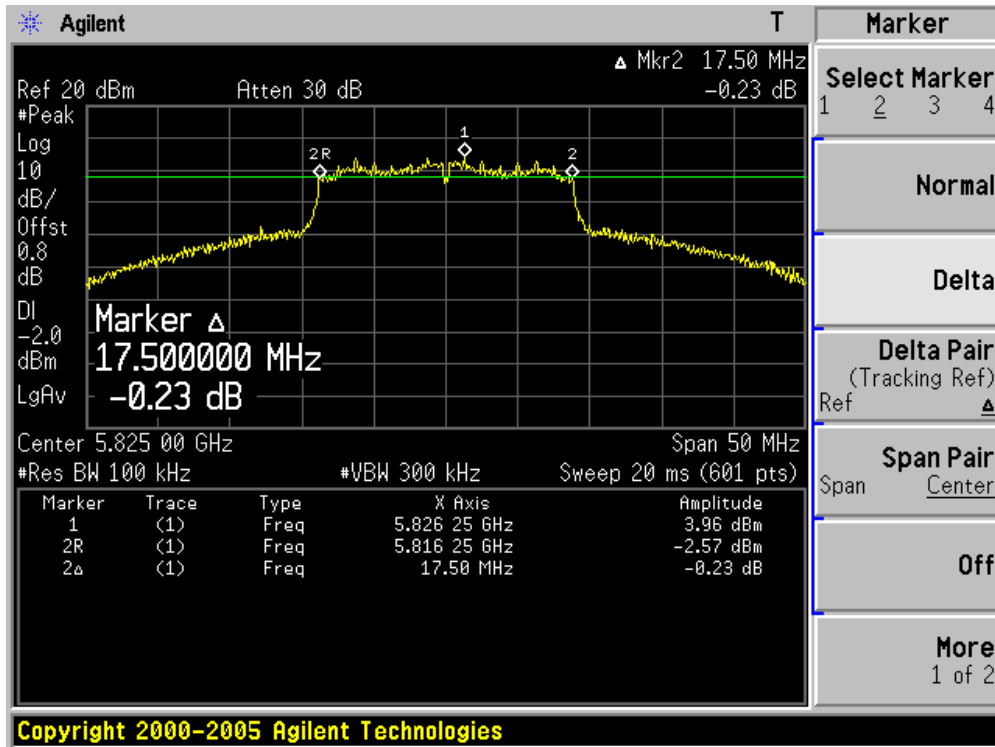
Channel 149 (5745MHz)



Channel 157 (5785MHz)



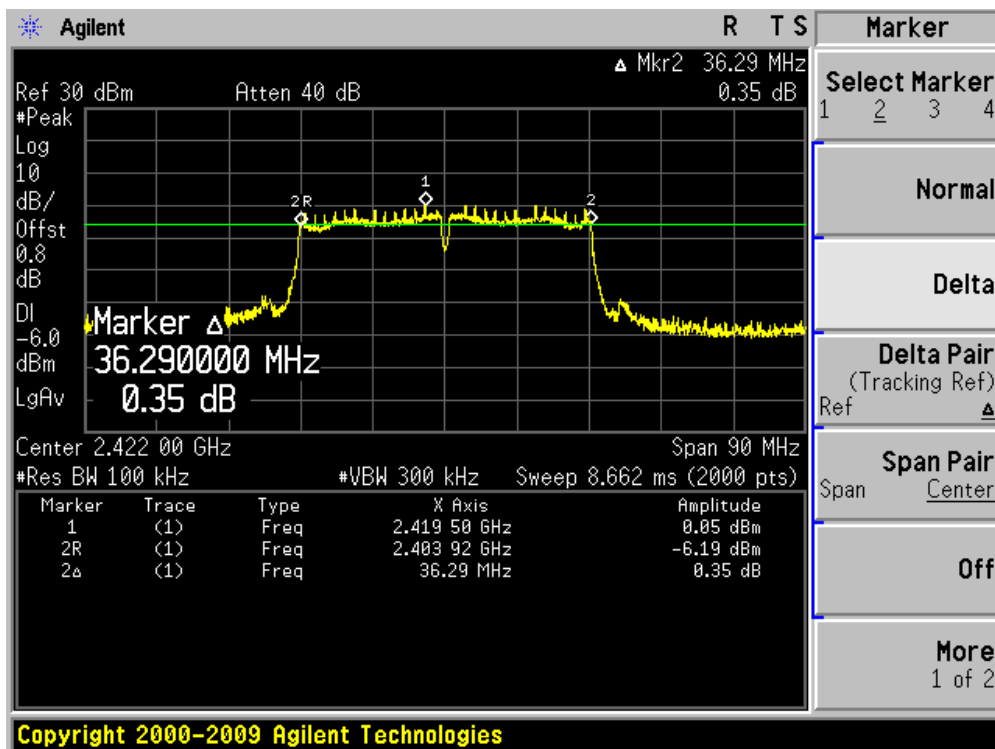
Channel 165 (5825MHz)



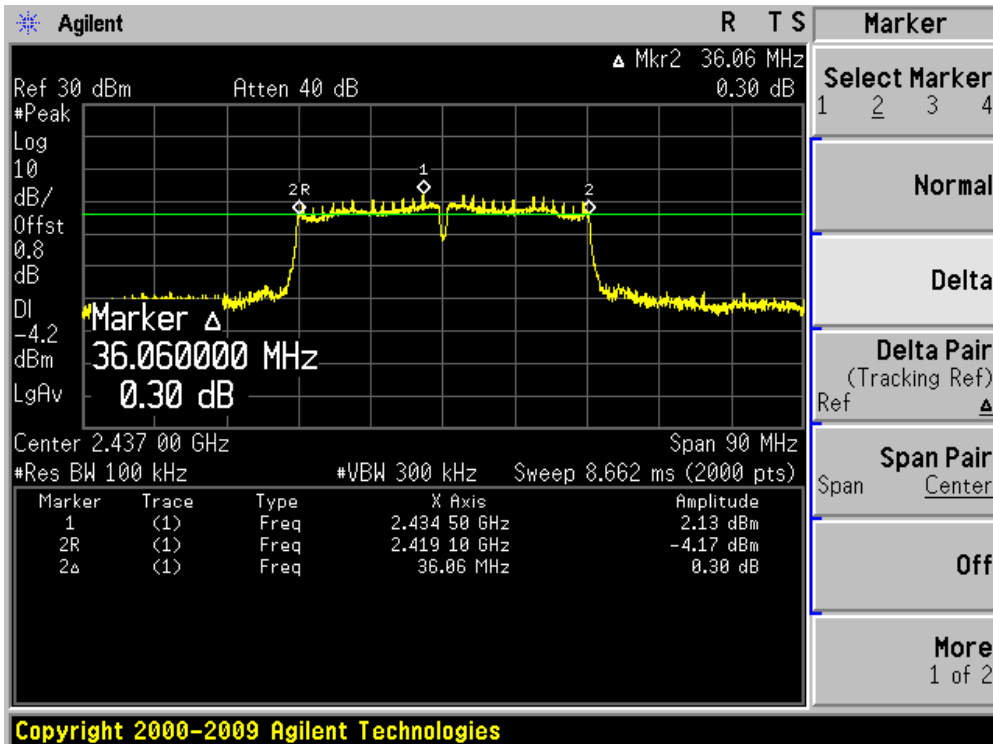
Product	: IP-STB
Test Item	: 6dB Occupied Bandwidth
Test Site	: TR-8
Test Mode	: Mode 5: Transmit by 802.11n (40MHz) (Chain 0)

Channel No.	Frequency (MHz)	Occupied Bandwidth (kHz)	Limit (kHz)	Result
03	2422	36290	500	Pass
06	2437	36060	500	Pass
09	2452	36240	500	Pass
151	5755	36150	500	Pass
159	5795	36300	500	Pass

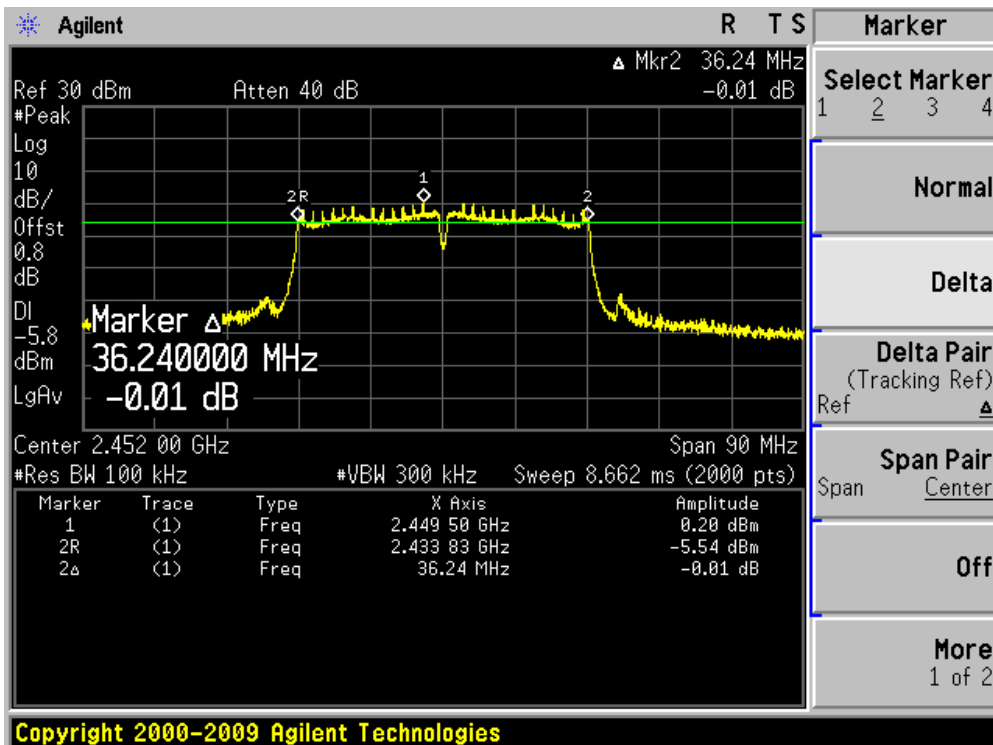
Channel 03 (2422MHz)



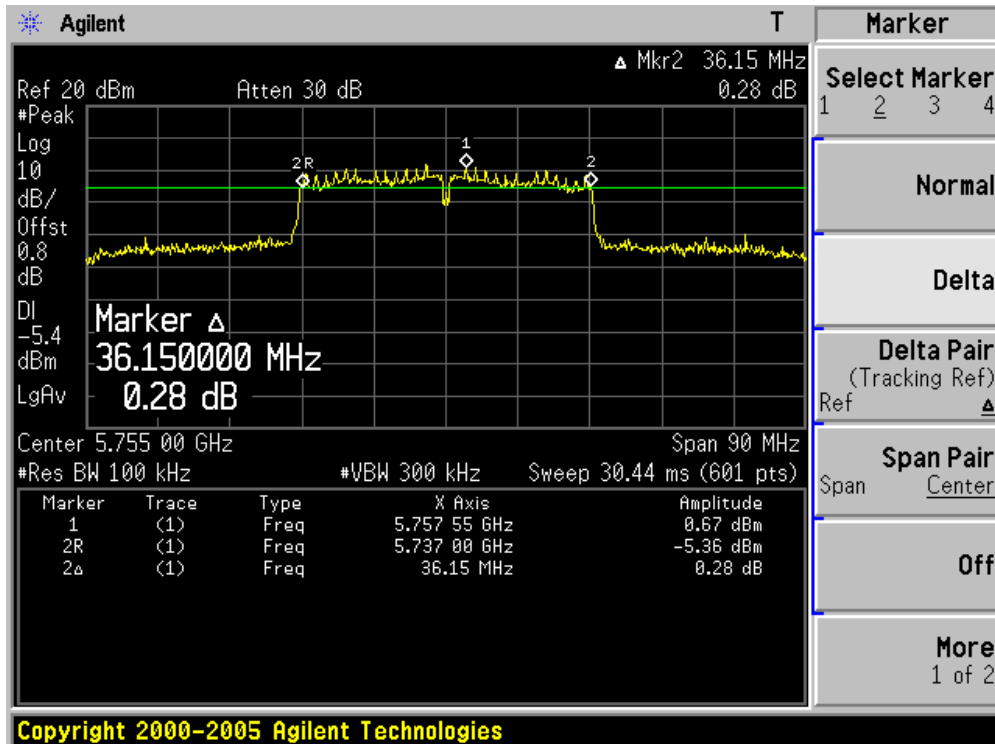
Channel 06 (2437MHz)



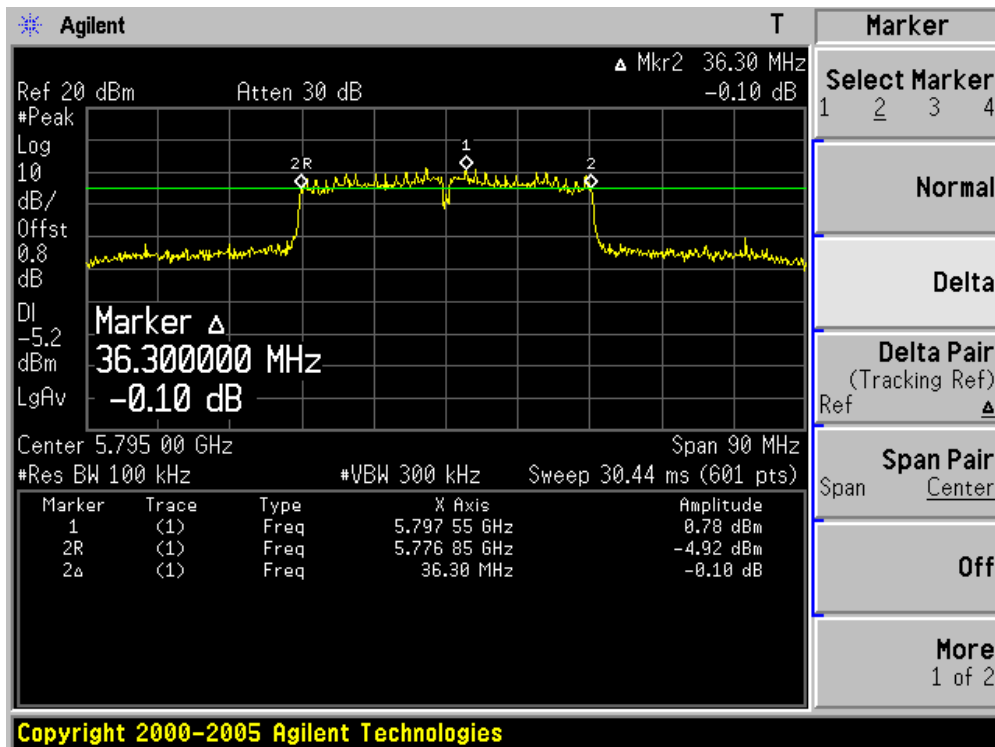
Channel 09 (2452MHz)



Channel 151 (5755MHz)



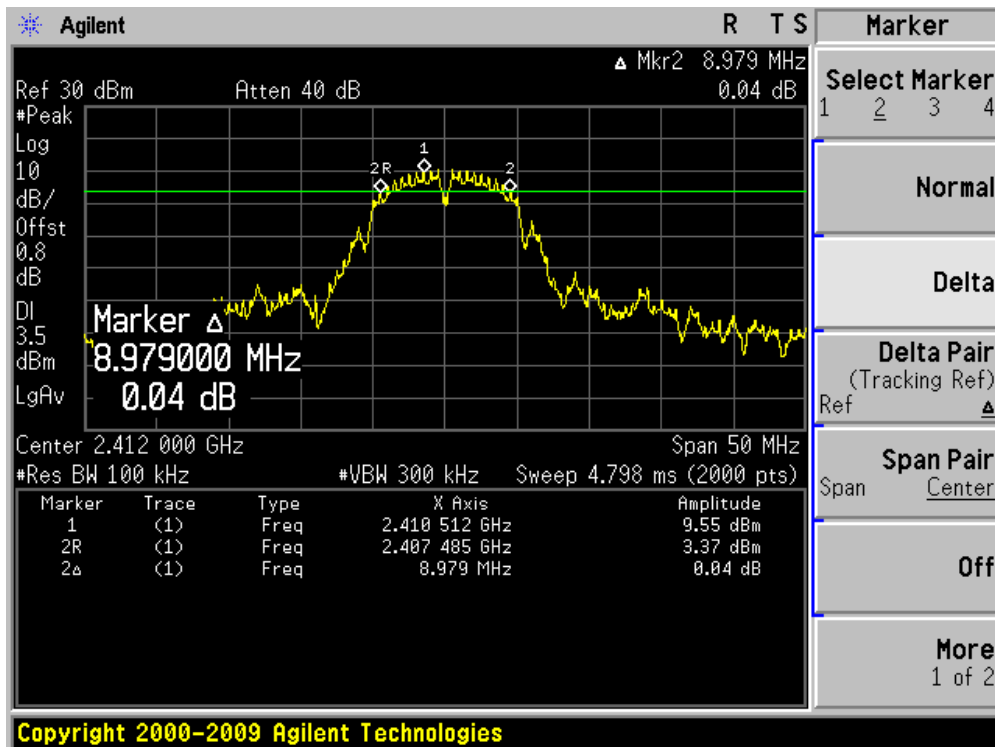
Channel 159 (5795MHz)



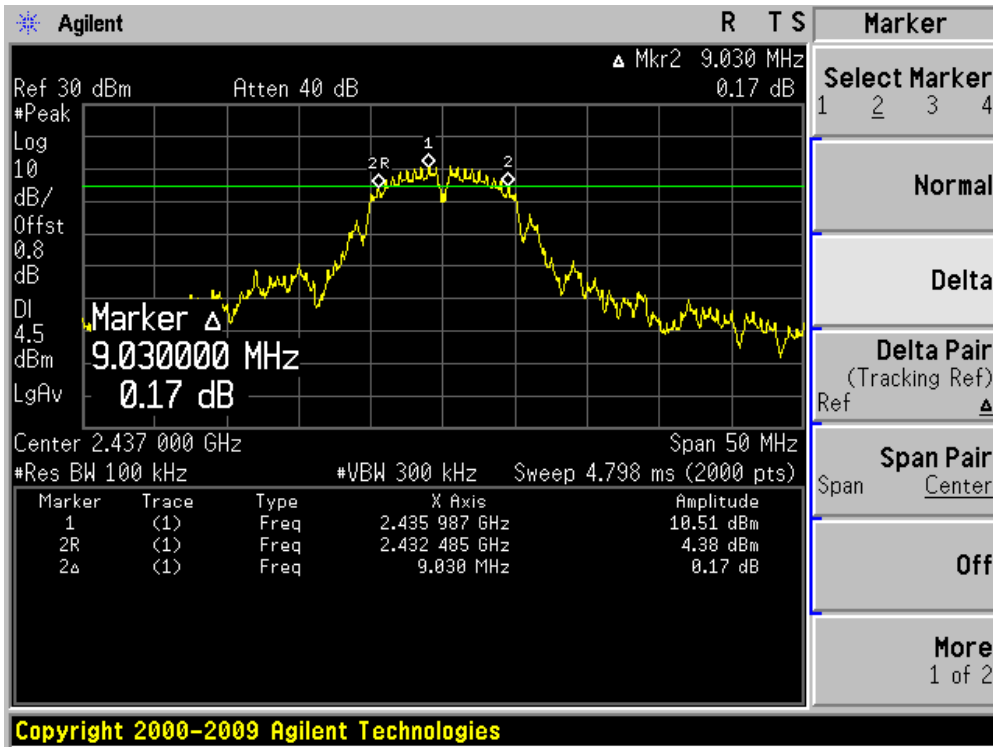
Product	: IP-STB
Test Item	: 6dB Occupied Bandwidth
Test Site	: TR-8
Test Mode	: Mode 1: Transmit by 802.11b (Chain 1)

Channel No.	Frequency (MHz)	Occupied Bandwidth (kHz)	Limit (kHz)	Result
01	2412	8979	500	Pass
06	2437	9030	500	Pass
11	2462	8454	500	Pass

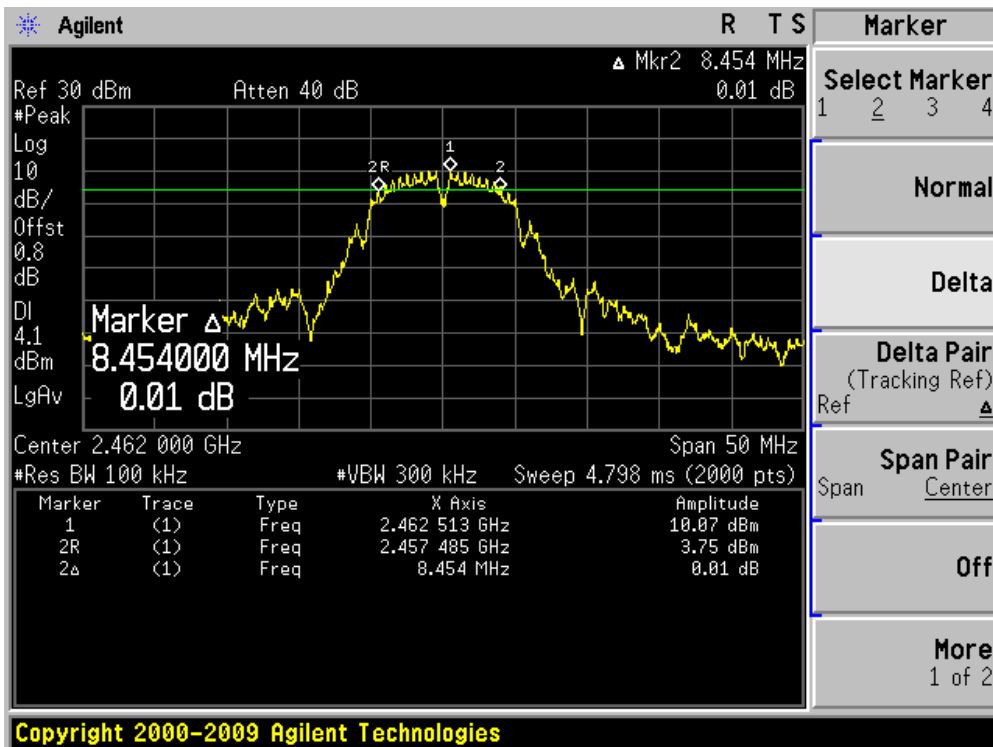
Channel 01 (2412MHz)



Channel 06 (2437MHz)



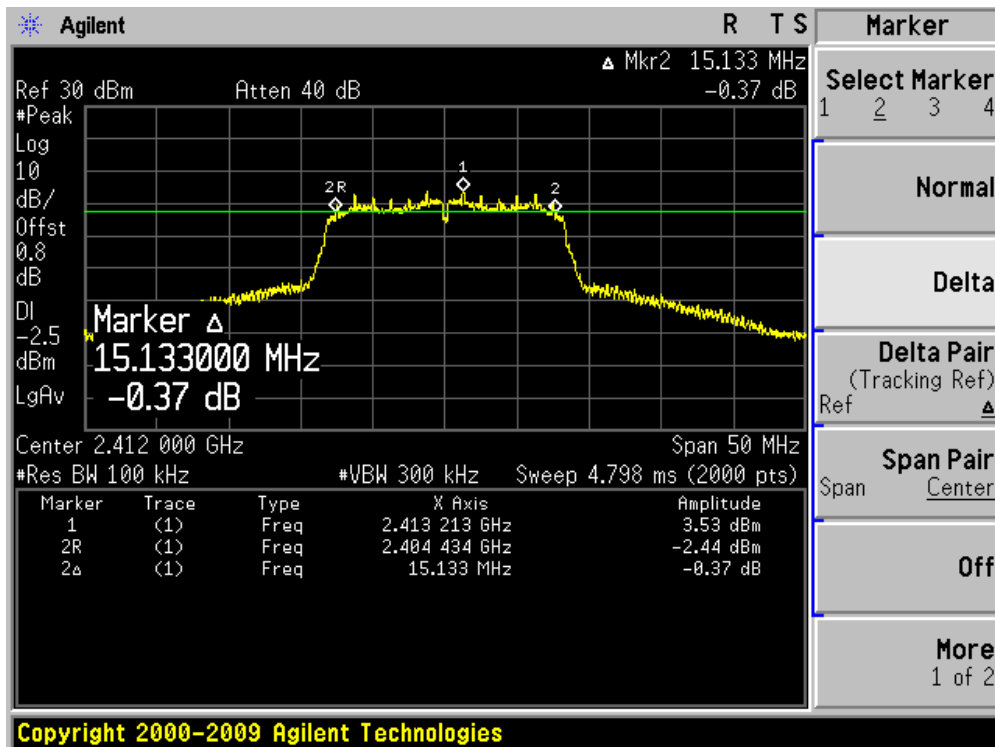
Channel 11 (2462MHz)



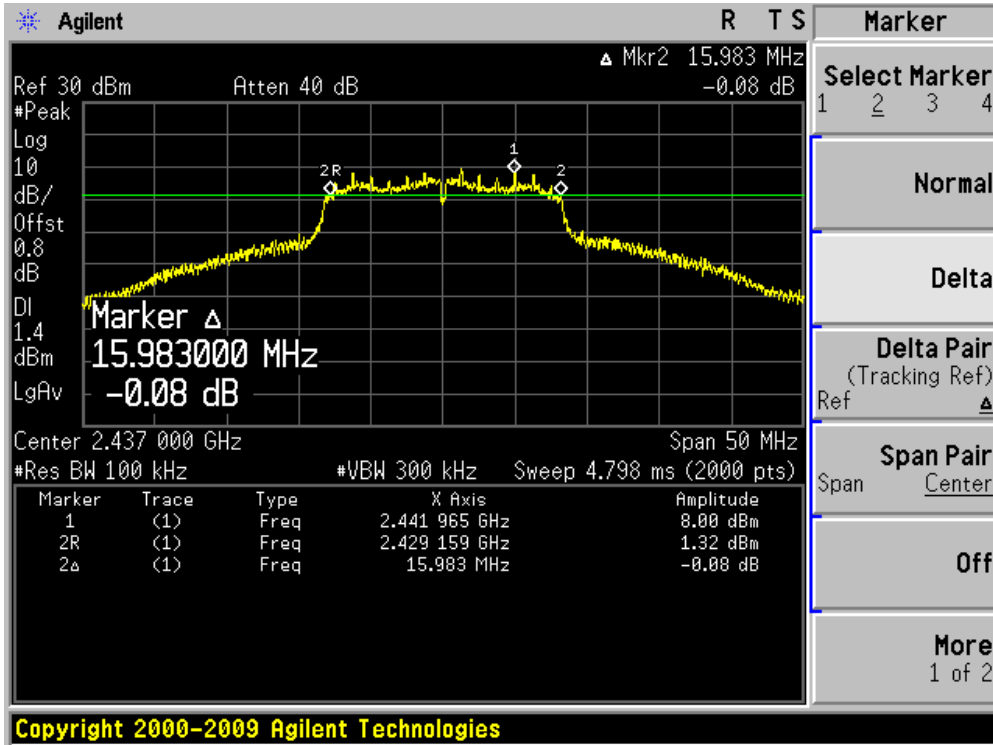
Product	: IP-STB
Test Item	: 6dB Occupied Bandwidth
Test Site	: TR-8
Test Mode	: Mode 2: Transmit by 802.11g (Chain 1)

Channel No.	Frequency (MHz)	Occupied Bandwidth (kHz)	Limit (kHz)	Result
01	2412	15133	500	Pass
06	2437	15983	500	Pass
11	2462	15108	500	Pass

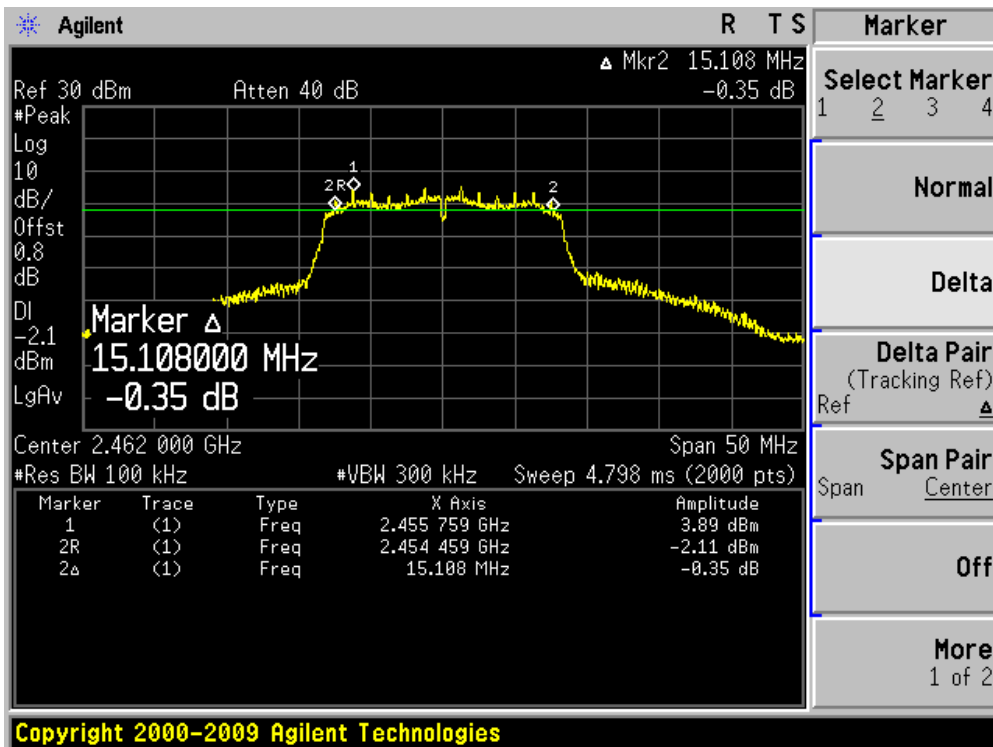
Channel 01 (2412MHz)



Channel 06 (2437MHz)



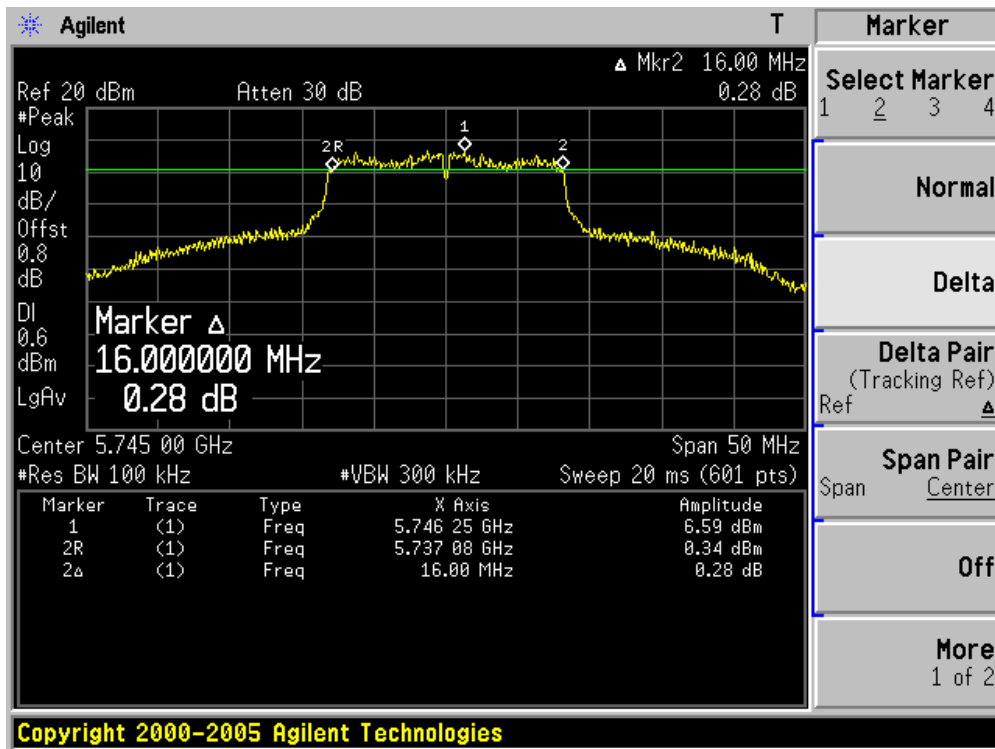
Channel 11 (2462MHz)



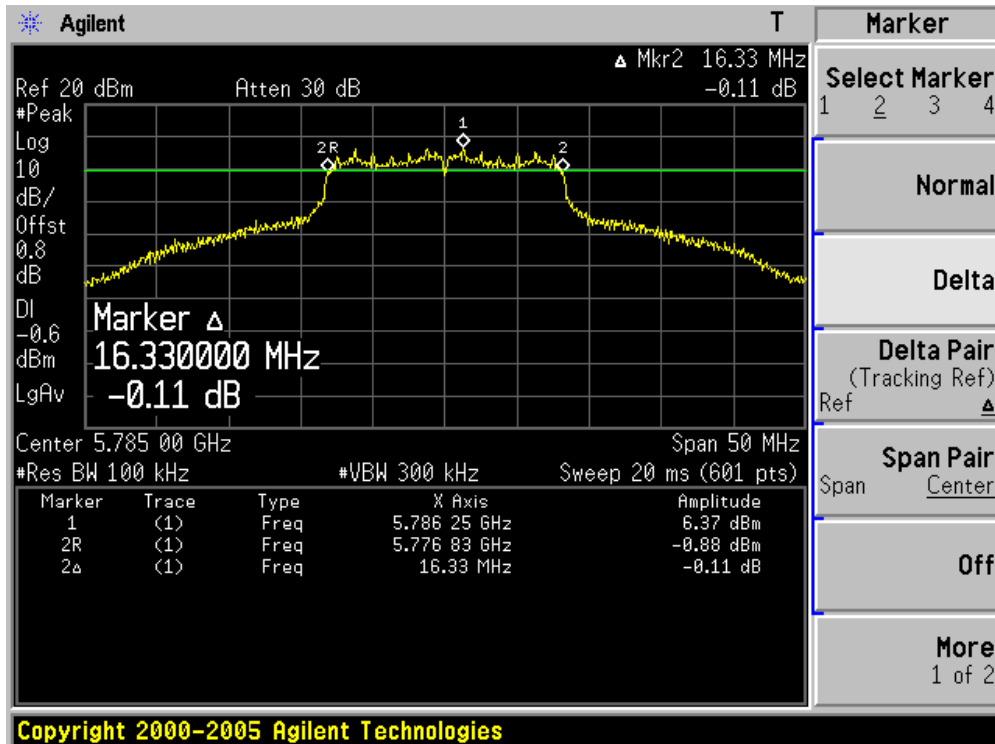
Product	: IP-STB
Test Item	: 6dB Occupied Bandwidth
Test Site	: TR-8
Test Mode	: Mode 3: Transmit by 802.11a (Chain 1)

Channel No.	Frequency (MHz)	Occupied Bandwidth (kHz)	Limit (kHz)	Result
149	5745	16000	500	Pass
157	5785	16330	500	Pass
165	5825	16250	500	Pass

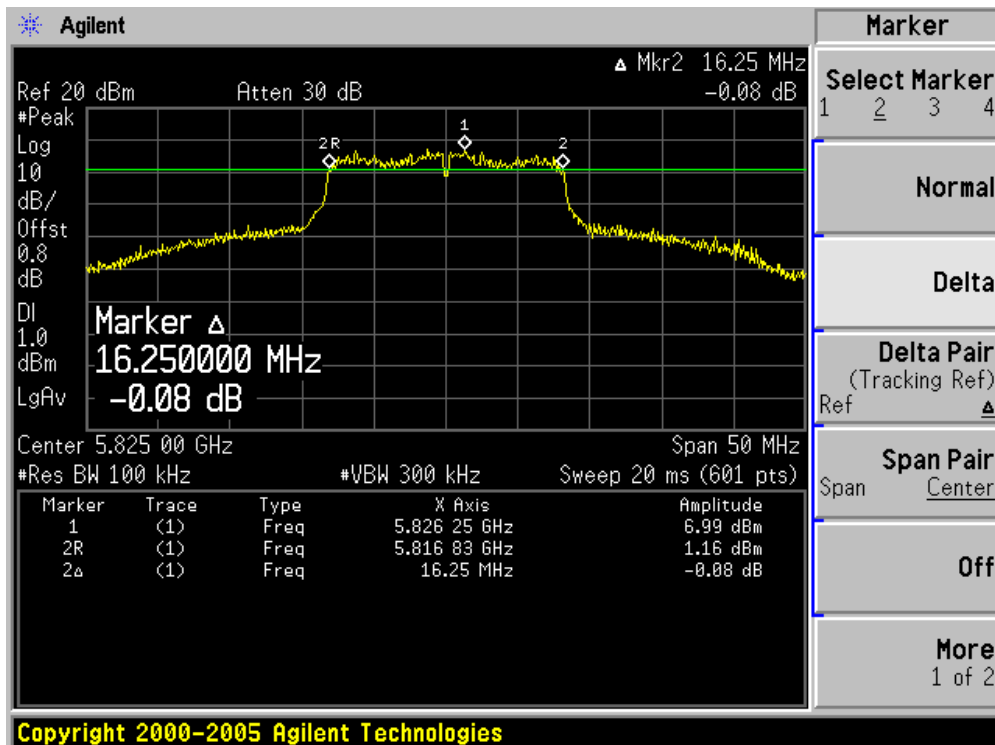
Channel 149 (5745MHz)



Channel 157 (5785MHz)



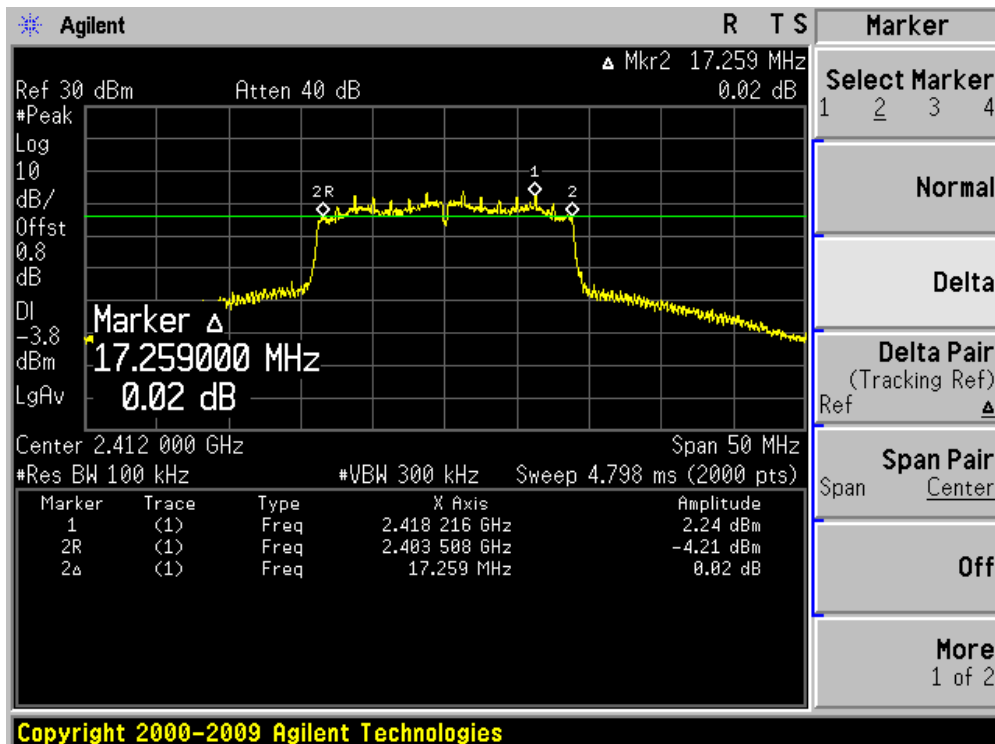
Channel 165 (5825MHz)



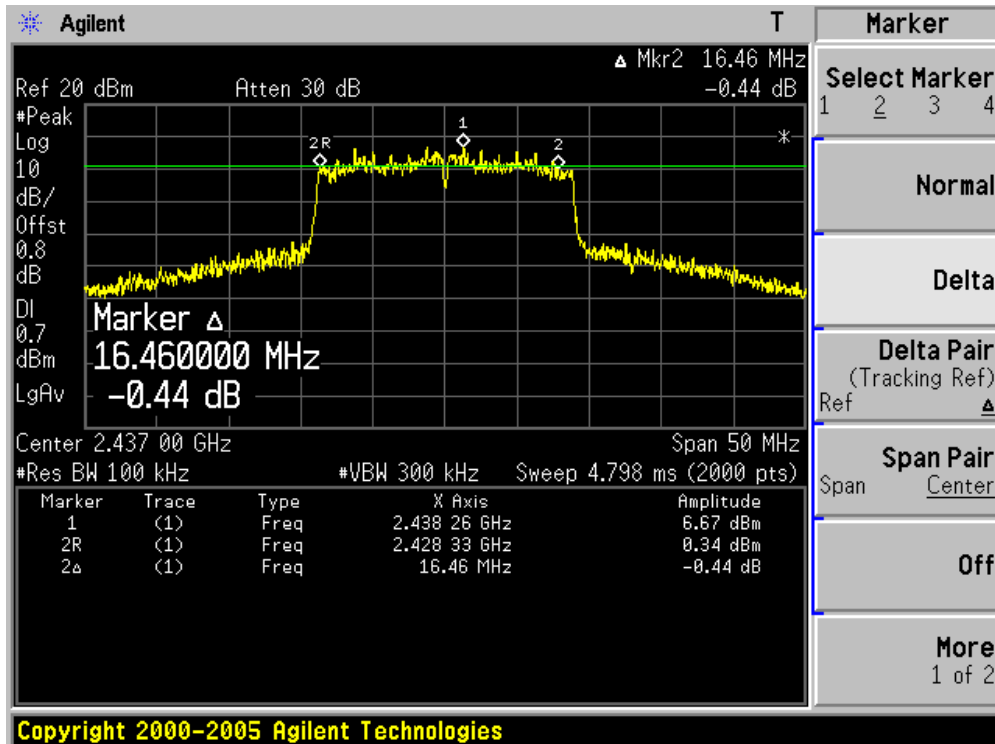
Product	: IP-STB
Test Item	: 6dB Occupied Bandwidth
Test Site	: TR-8
Test Mode	: Mode 4: Transmit by 802.11n (20MHz) (Chain 1)

Channel No.	Frequency (MHz)	Occupied Bandwidth (kHz)	Limit (kHz)	Result
01	2412	17259	500	Pass
06	2437	16460	500	Pass
11	2462	17034	500	Pass
149	5745	17500	500	Pass
157	5785	17580	500	Pass
165	5825	17500	500	Pass

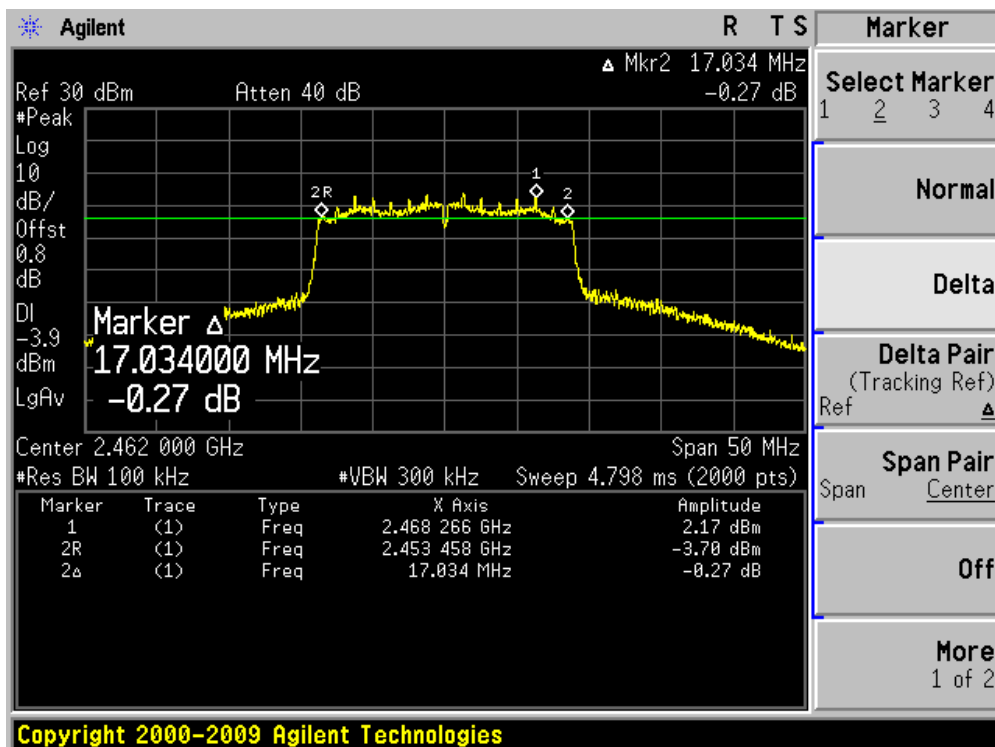
Channel 01 (2412MHz)



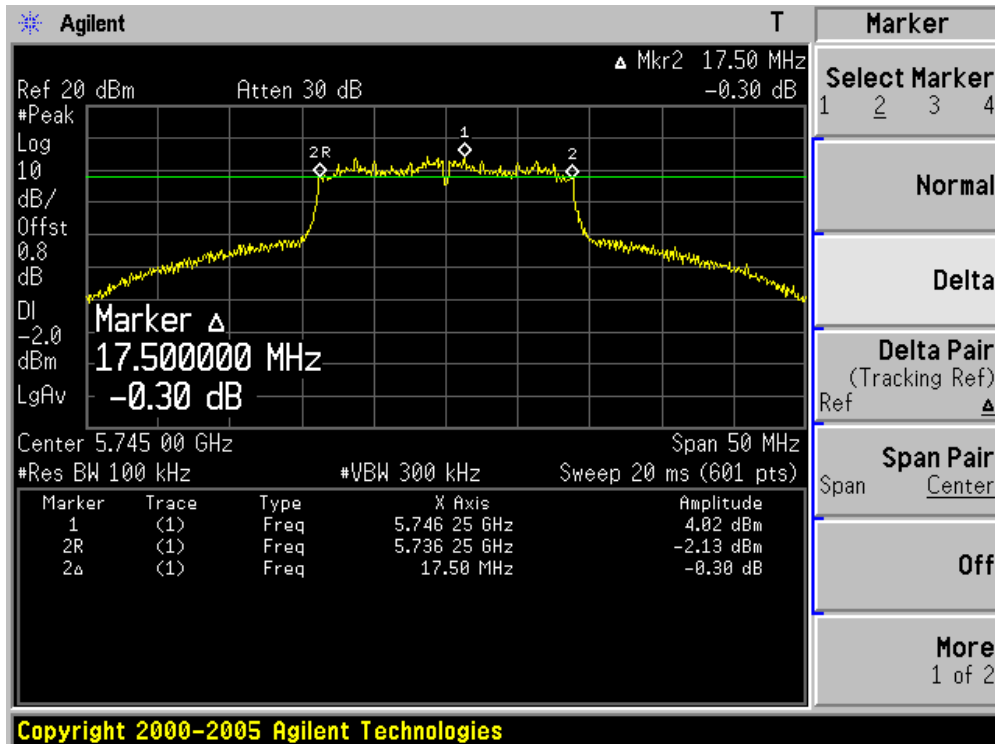
Channel 06 (2437MHz)



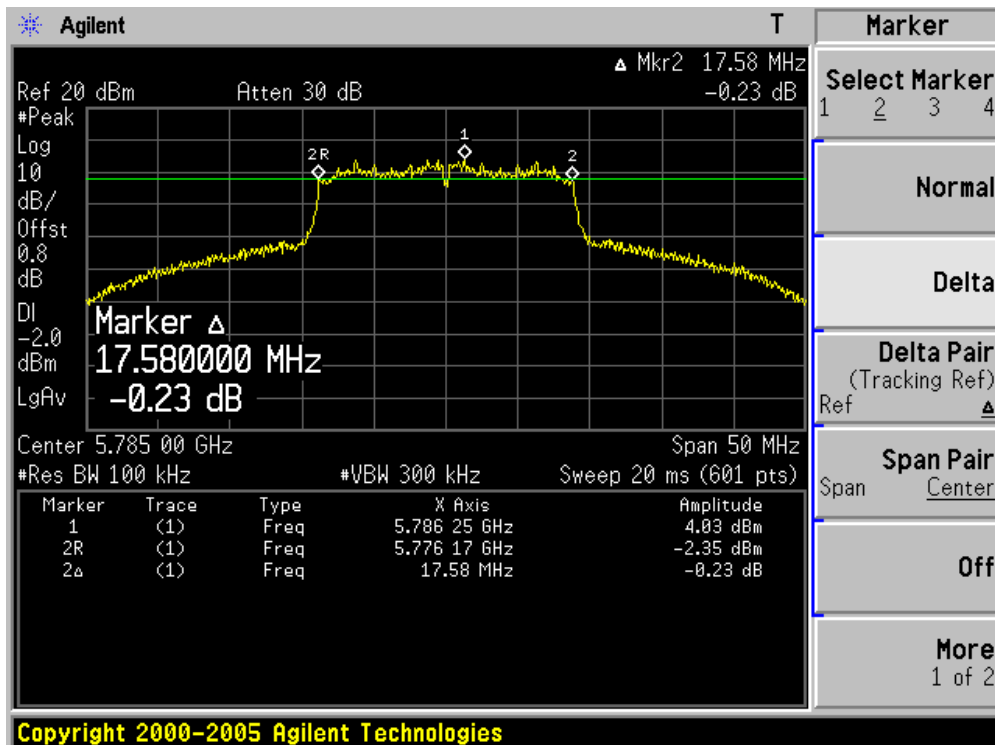
Channel 11 (2462MHz)



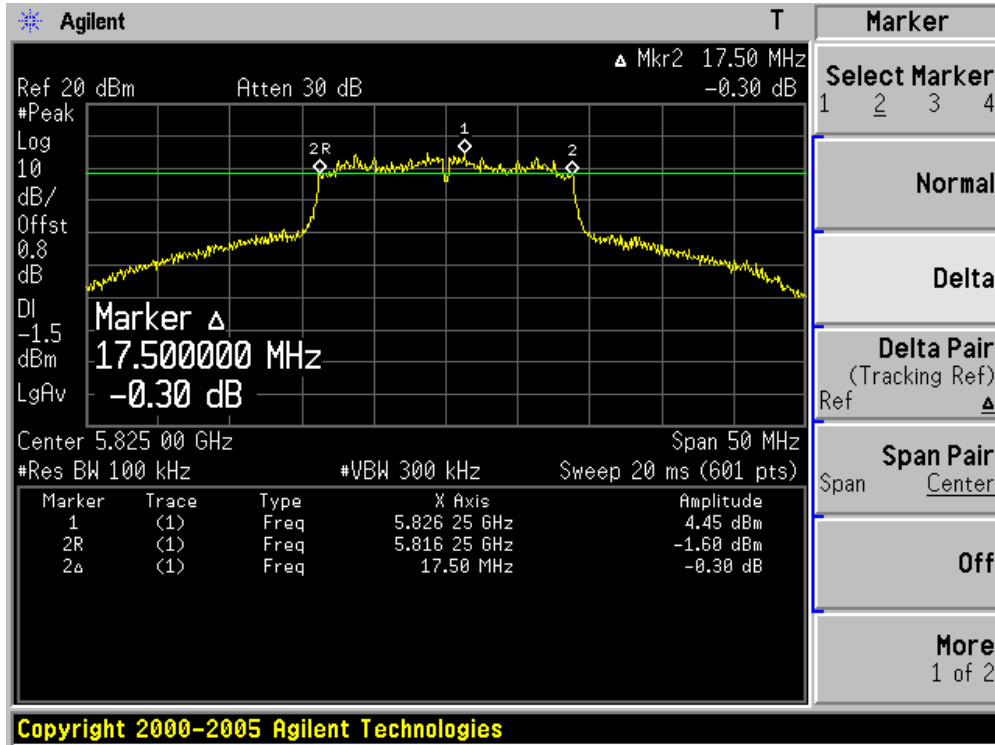
Channel 149 (5745MHz)



Channel 157 (5785MHz)



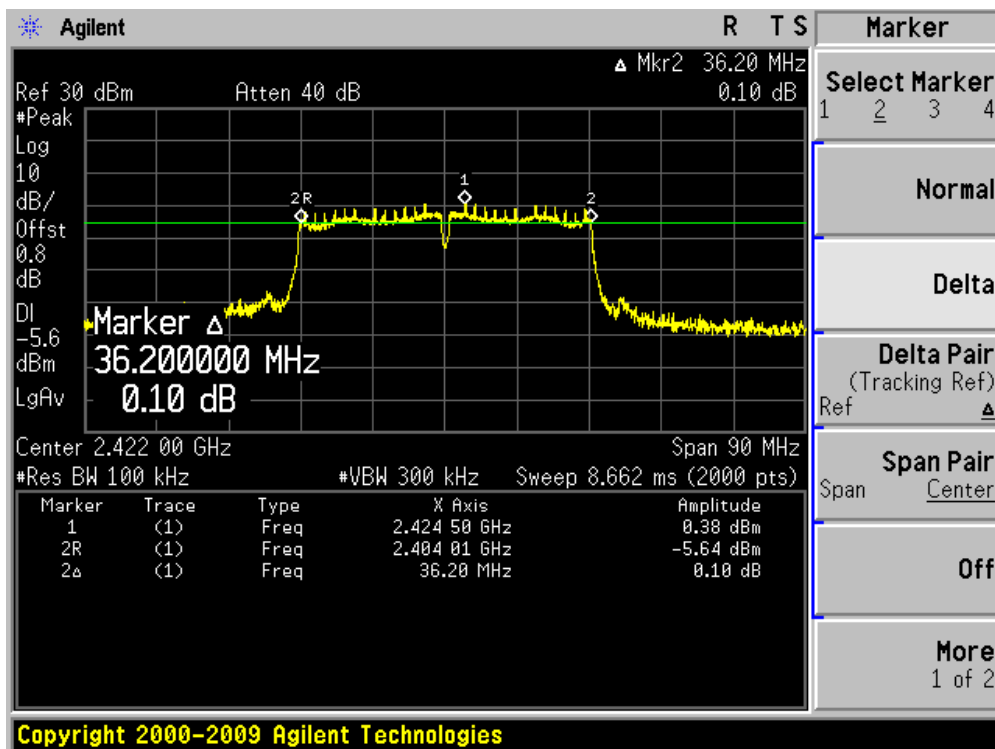
Channel 165 (5825MHz)



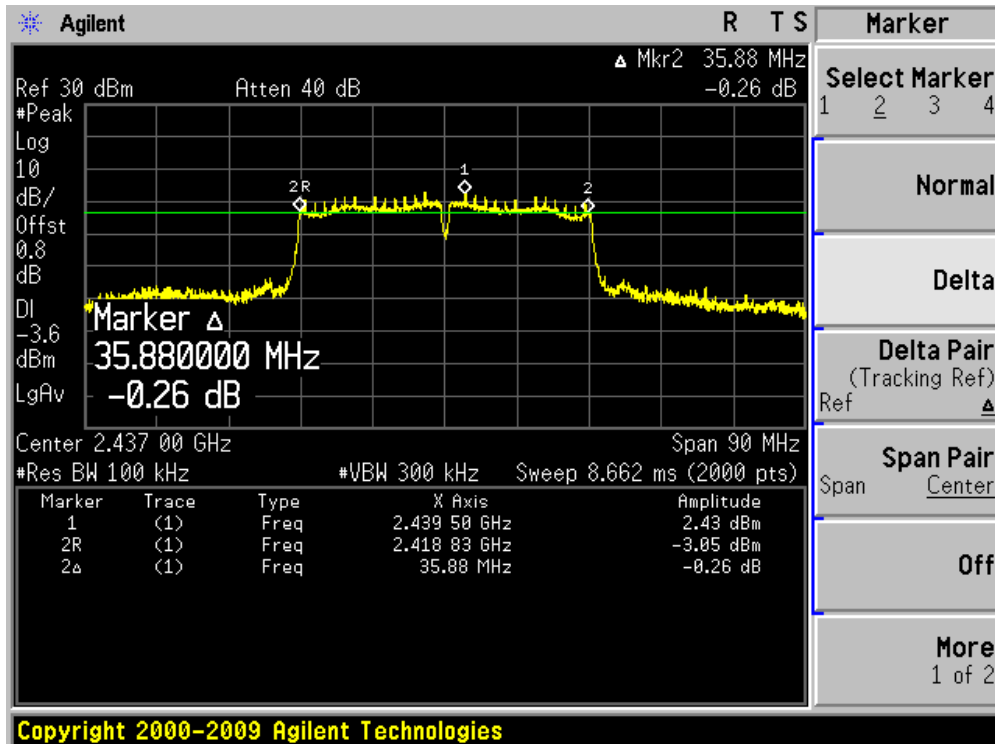
Product	: IP-STB
Test Item	: 6dB Occupied Bandwidth
Test Site	: TR-8
Test Mode	: Mode 5: Transmit by 802.11n (40MHz) (Chain 1)

Channel No.	Frequency (MHz)	Occupied Bandwidth (kHz)	Limit (kHz)	Result
03	2422	36200	500	Pass
06	2437	35880	500	Pass
09	2452	36150	500	Pass
151	5755	36150	500	Pass
159	5795	36300	500	Pass

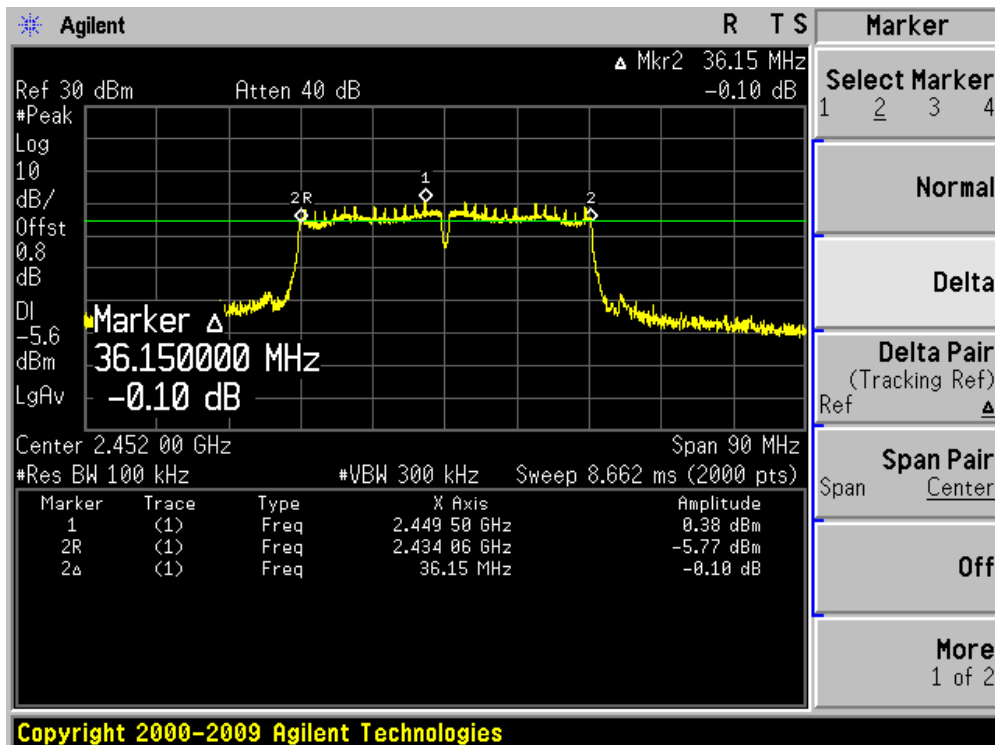
Channel 03 (2422MHz)



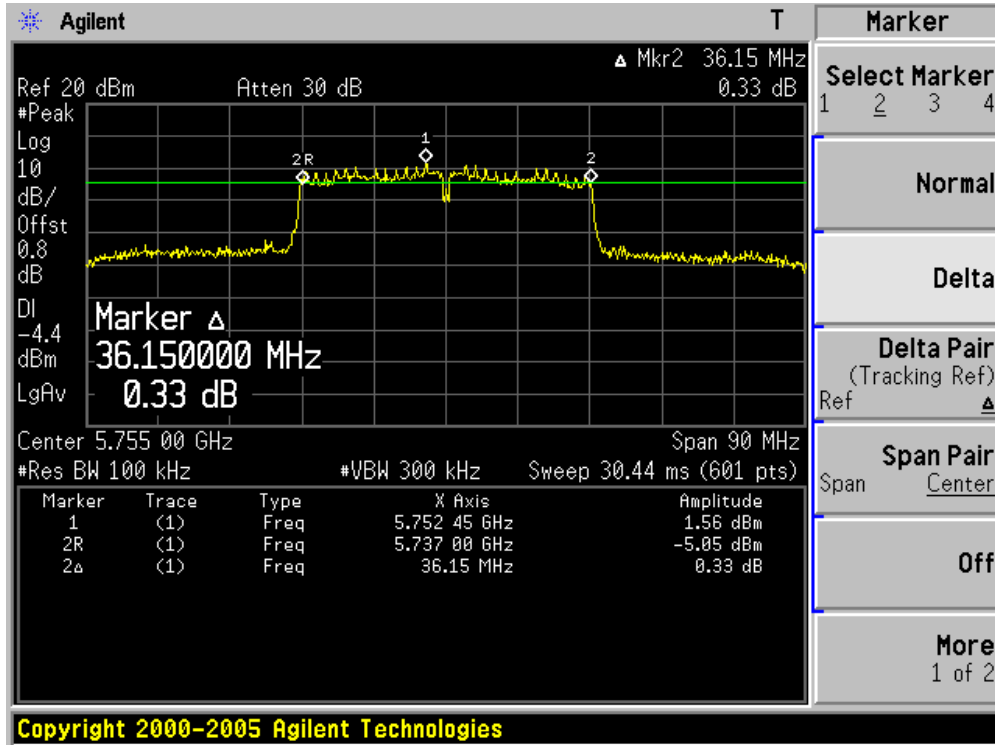
Channel 06 (2437MHz)



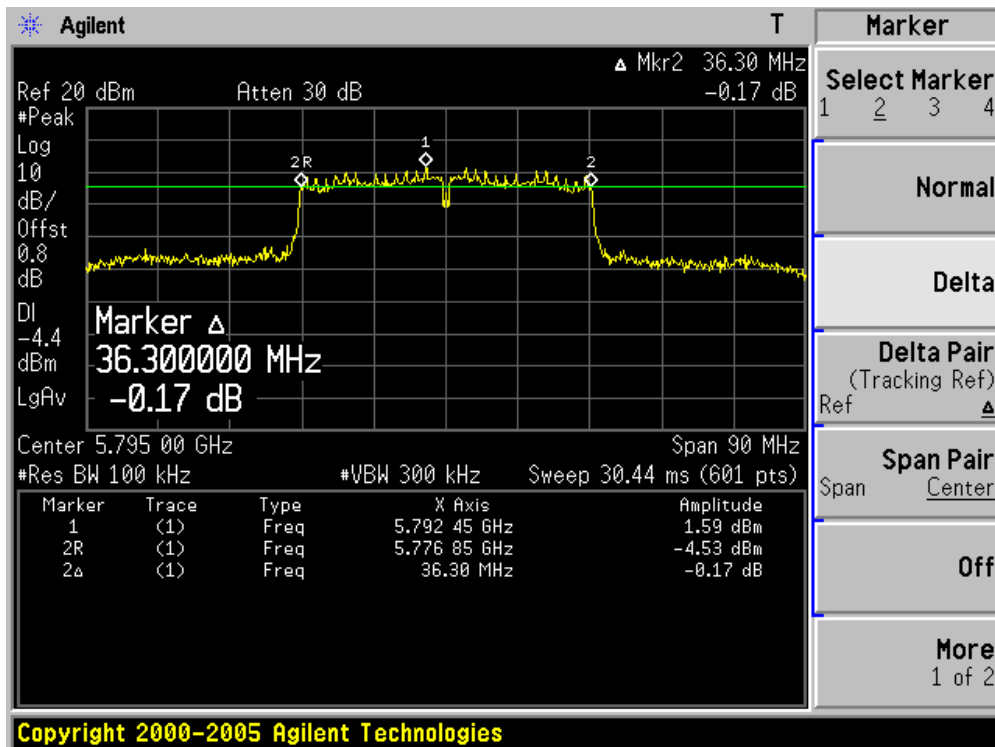
Channel 09 (2452MHz)



Channel 151 (5755MHz)



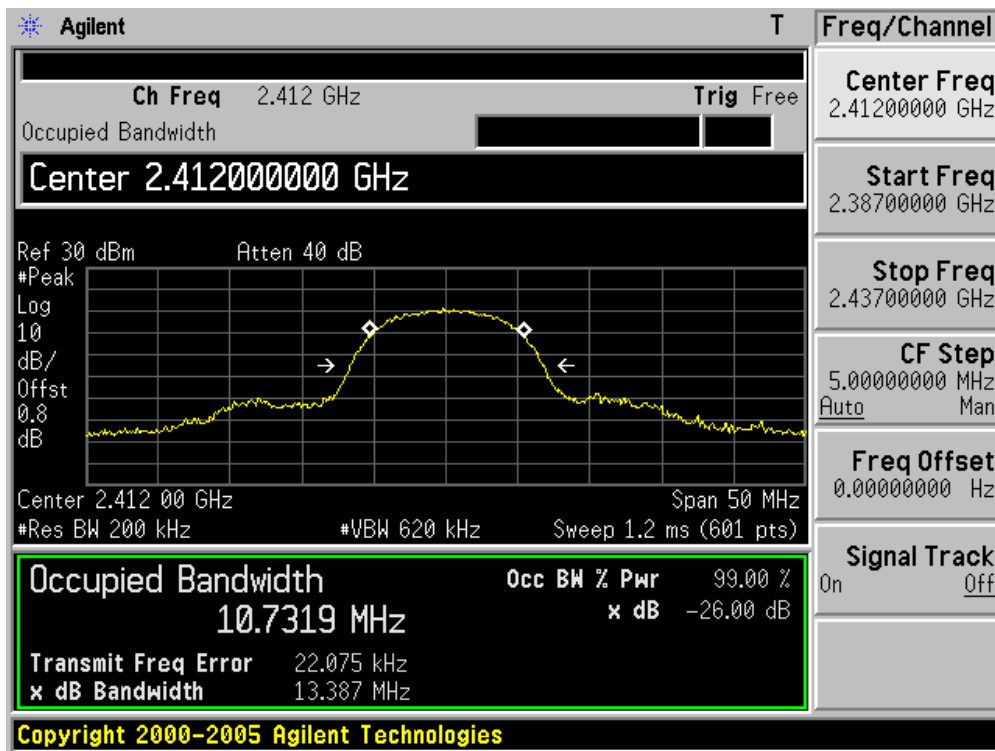
Channel 159 (5795MHz)



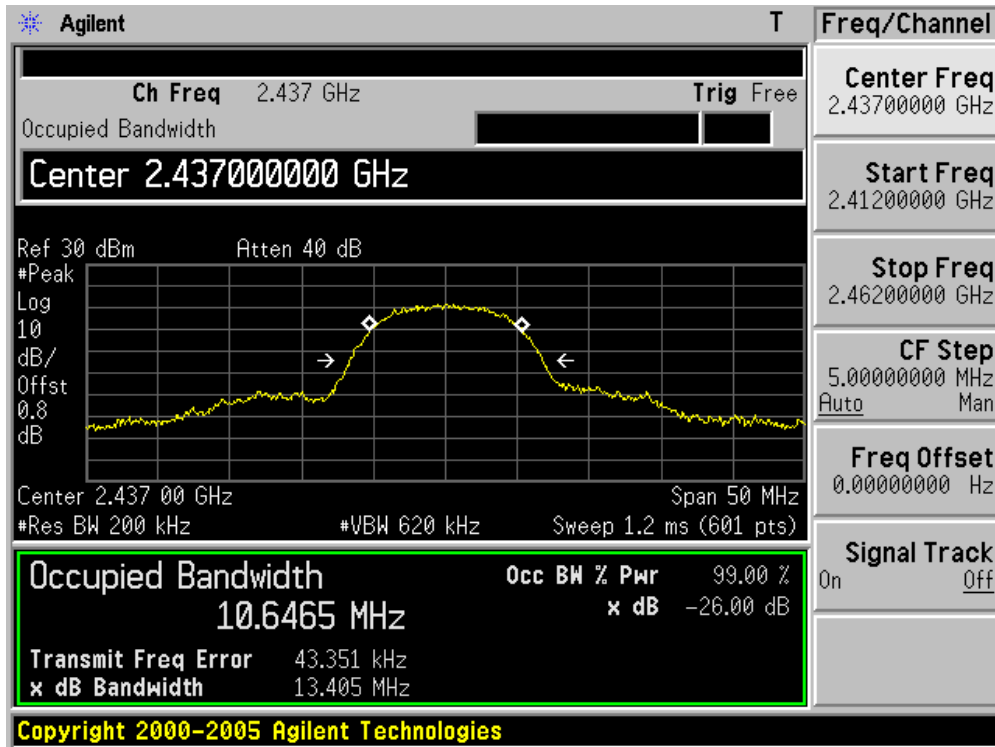
Product	:	IP-STB
Test Item	:	99% Occupied Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 1: Transmit by 802.11b (Chain 0)

Channel No.	Frequency (MHz)	99% Bandwidth (kHz)
01	2412	10731.9
06	2437	10646.5
11	2462	10702.0

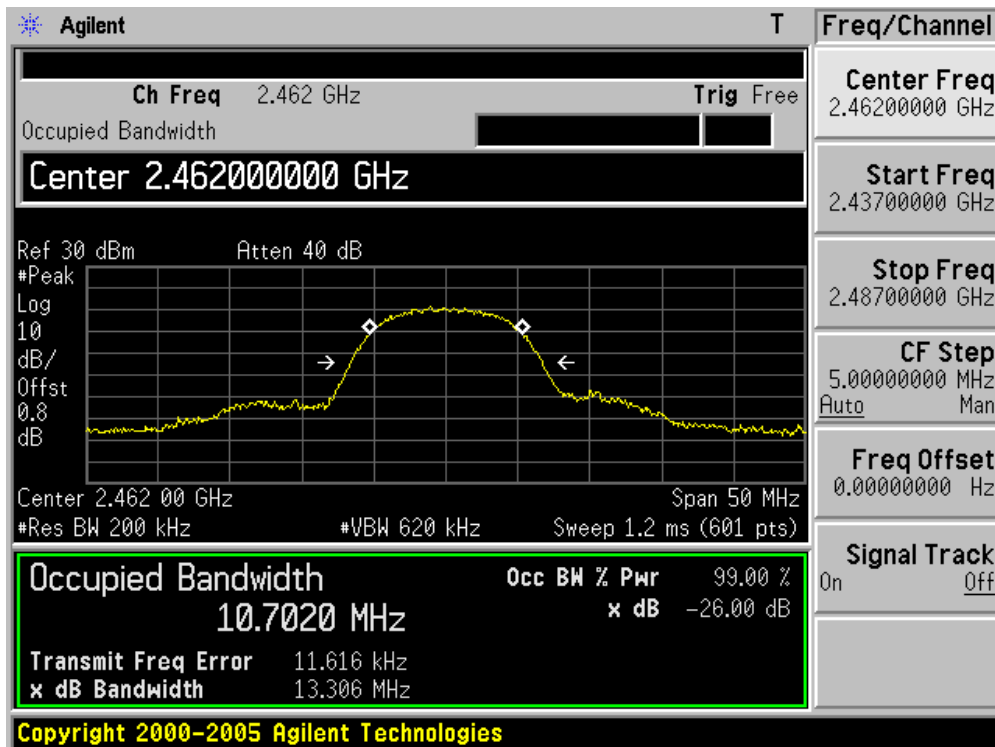
Channel 01 (2412MHz)



Channel 06 (2437MHz)



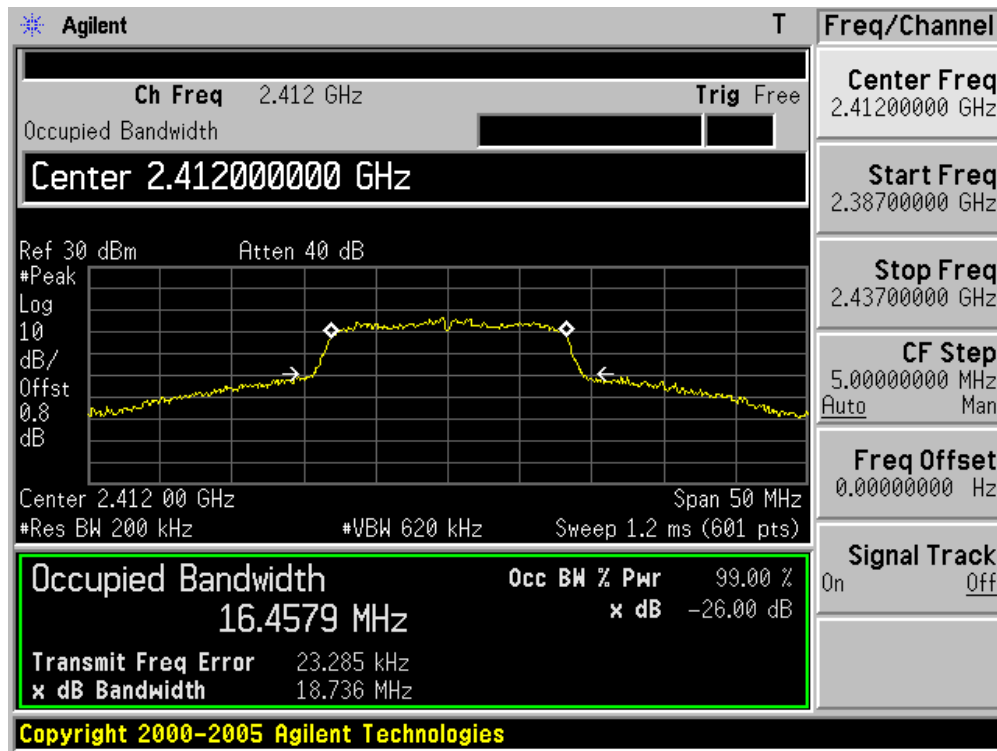
Channel 11 (2462MHz)



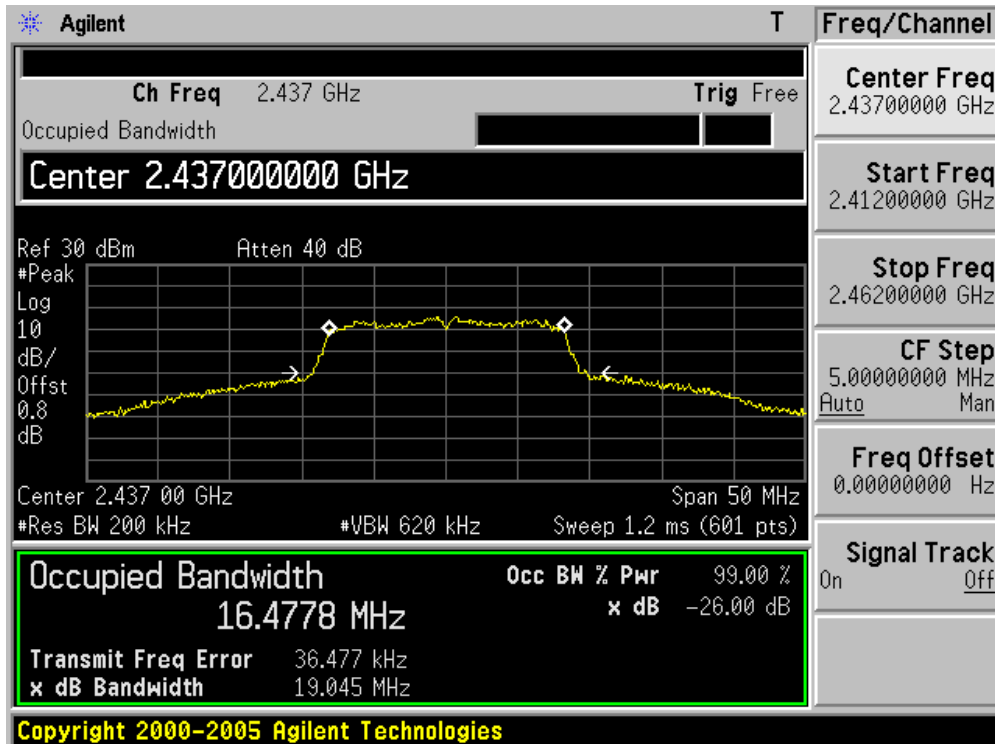
Product	:	IP-STB
Test Item	:	99% Occupied Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 2: Transmit by 802.11g (Chain 0)

Channel No.	Frequency (MHz)	99% Bandwidth (kHz)
01	2412	16457.9
06	2437	16477.8
11	2462	16444.7

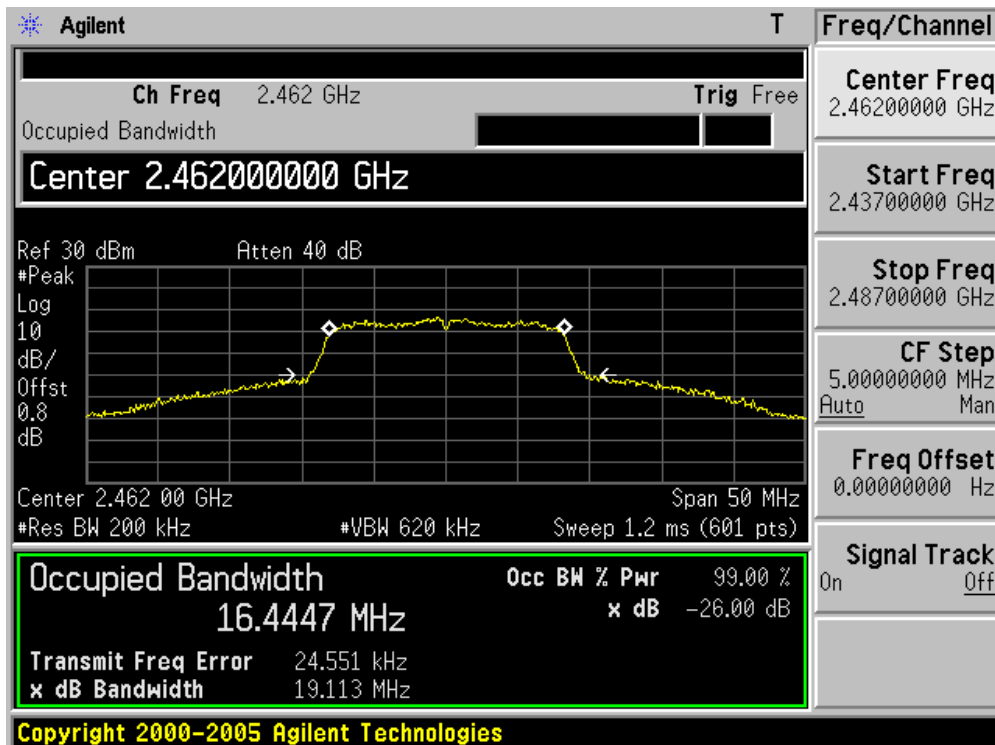
Channel 01 (2412MHz)



Channel 06 (2437MHz)



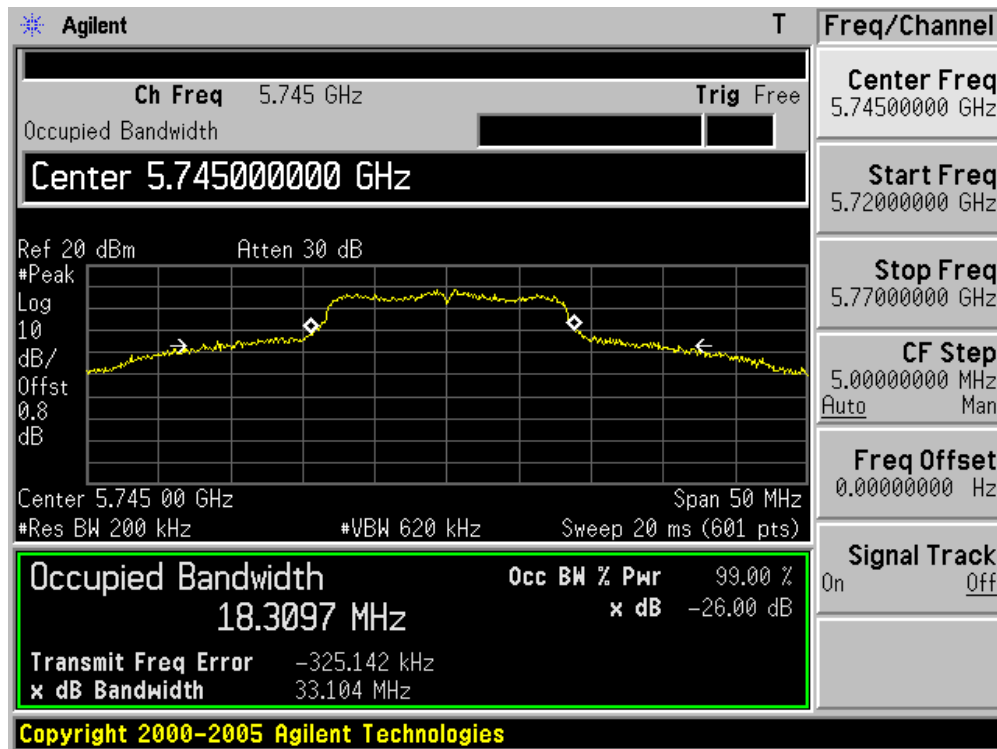
Channel 11 (2462MHz)



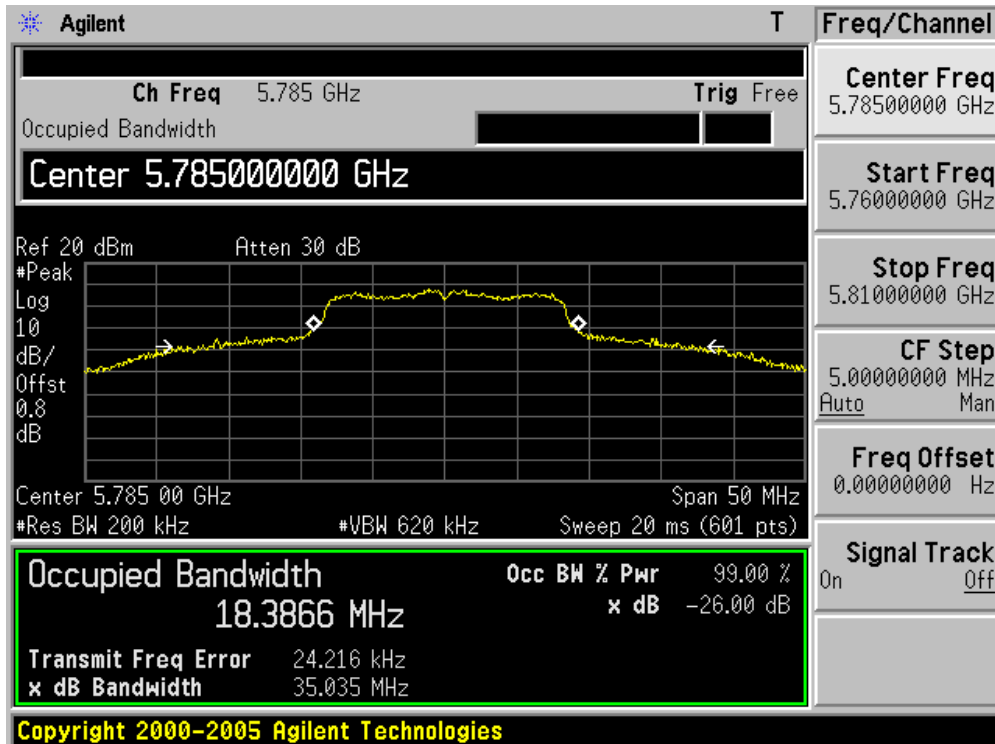
Product	:	IP-STB
Test Item	:	99% Occupied Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 3: Transmit by 802.11a (Chain 0)

Channel No.	Frequency (MHz)	99% Bandwidth (kHz)
149	5745	18309.7
157	5785	18386.6
165	5825	18907.1

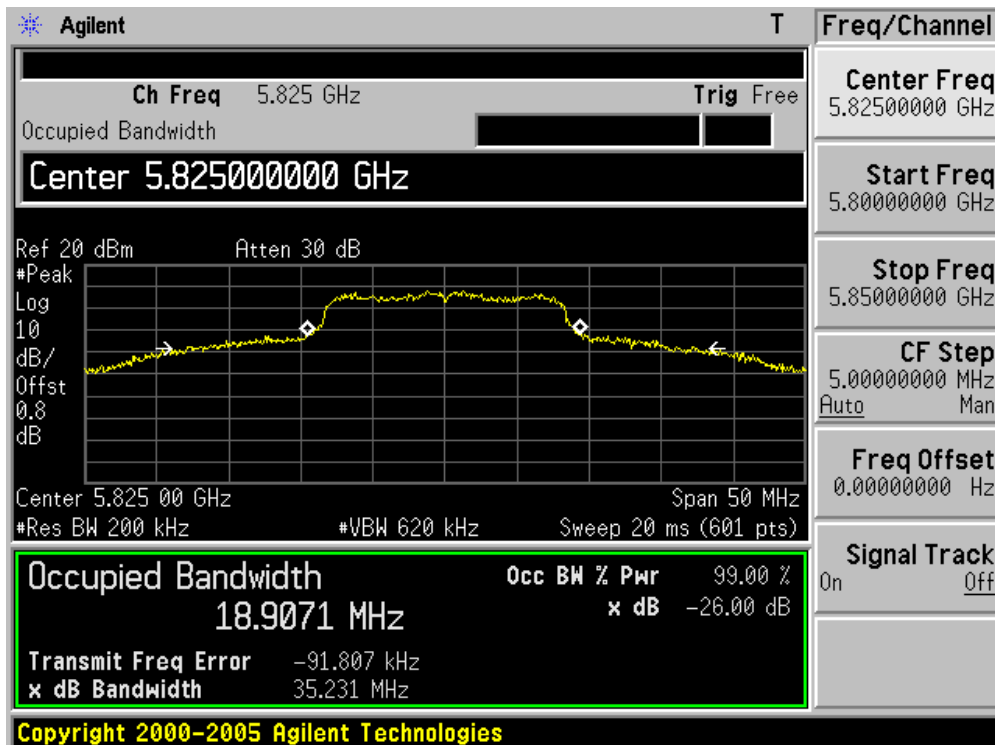
Channel 149 (5745MHz)



Channel 157 (5785MHz)



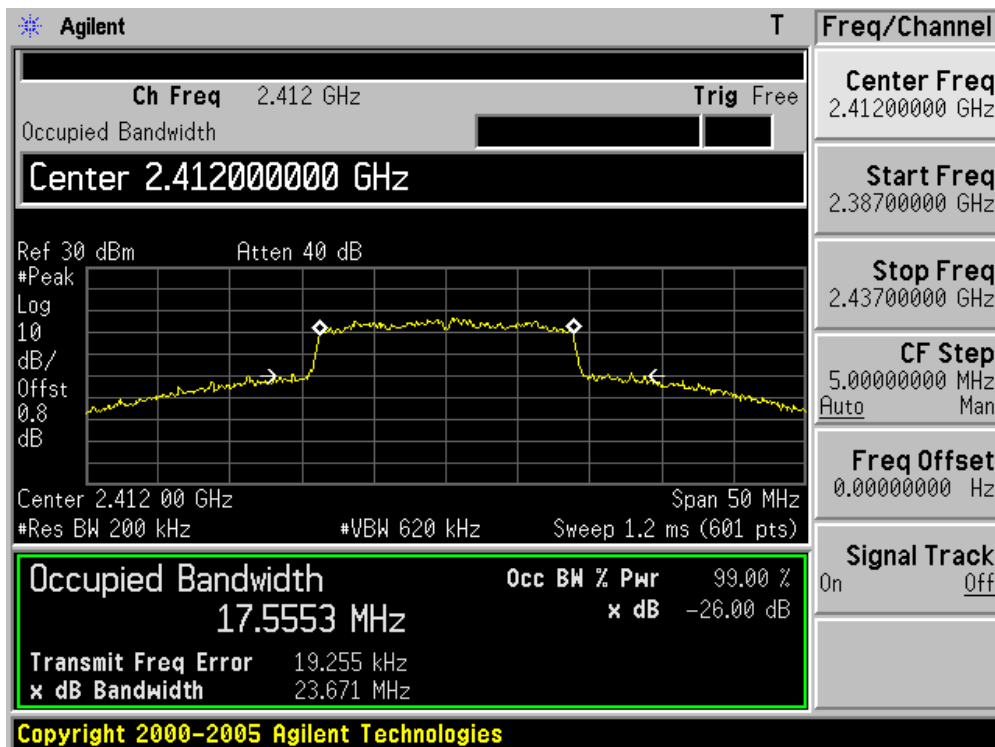
Channel 165 (5825MHz)



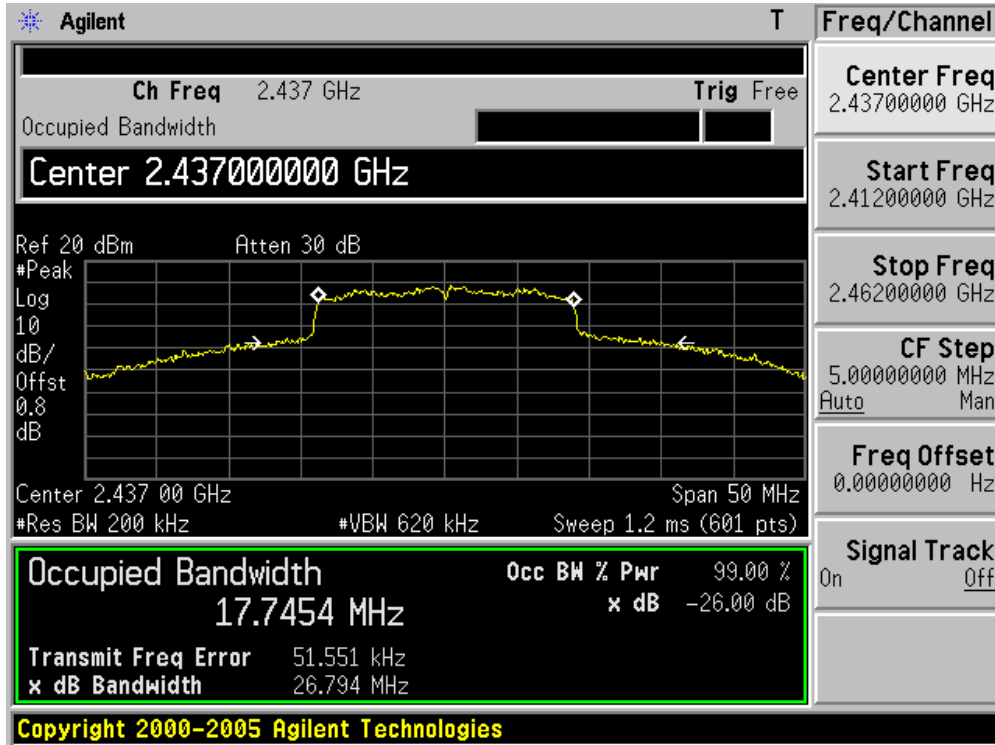
Product	:	IP-STB
Test Item	:	99% Occupied Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 4: Transmit by 802.11n(20MHz) (Chain 0)

Channel No.	Frequency (MHz)	99% Bandwidth (kHz)
01	2412	17555.3
06	2437	17745.4
11	2462	17516.7
149	5745	18209.2
157	5785	18594.3
165	5825	18277.0

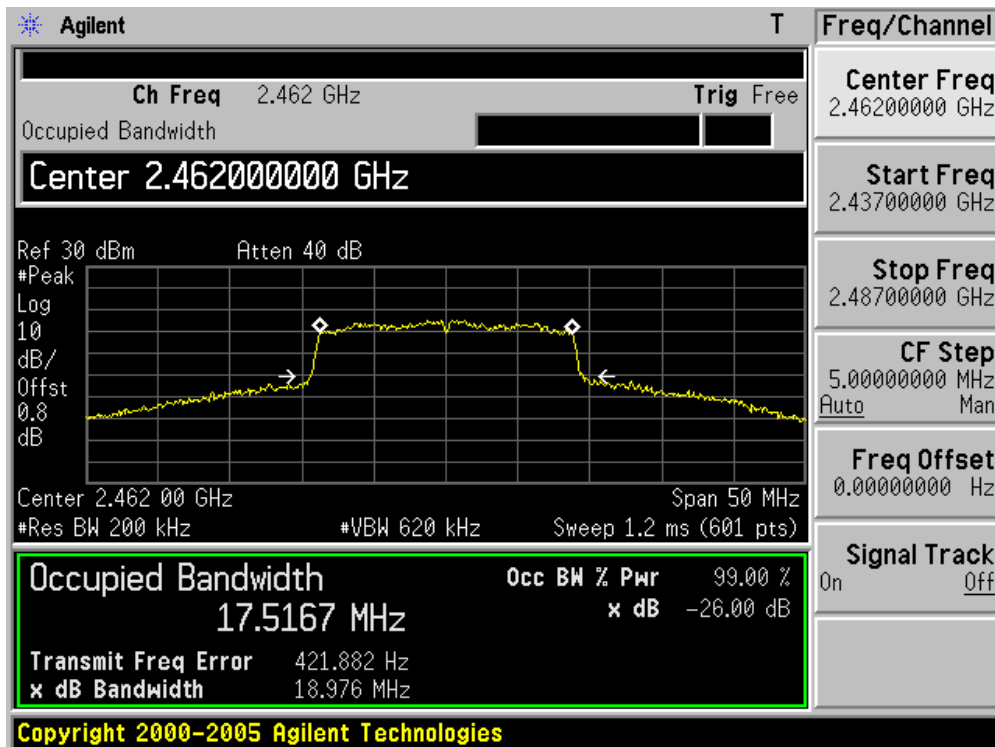
Channel 01 (2412MHz)



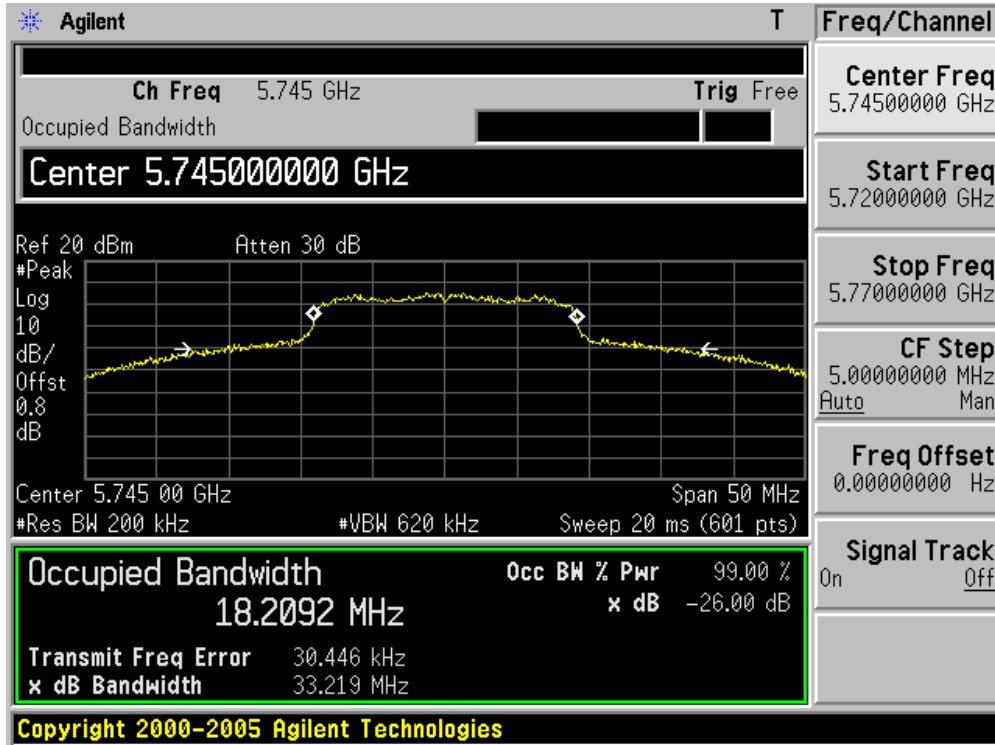
Channel 06 (2437MHz)



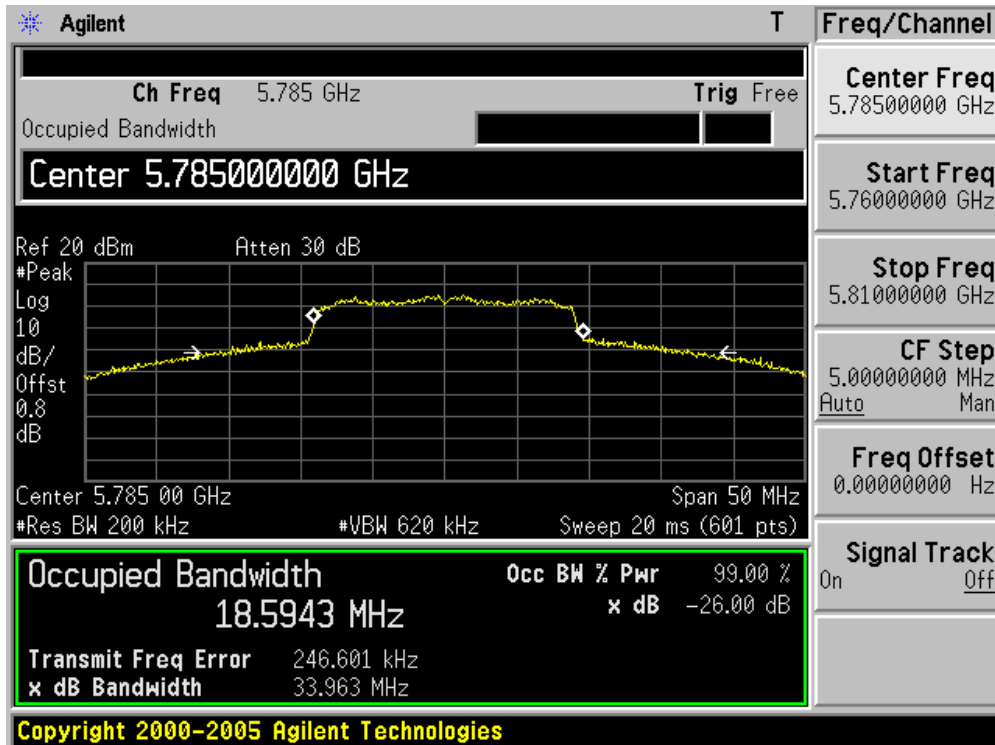
Channel 11 (2462MHz)



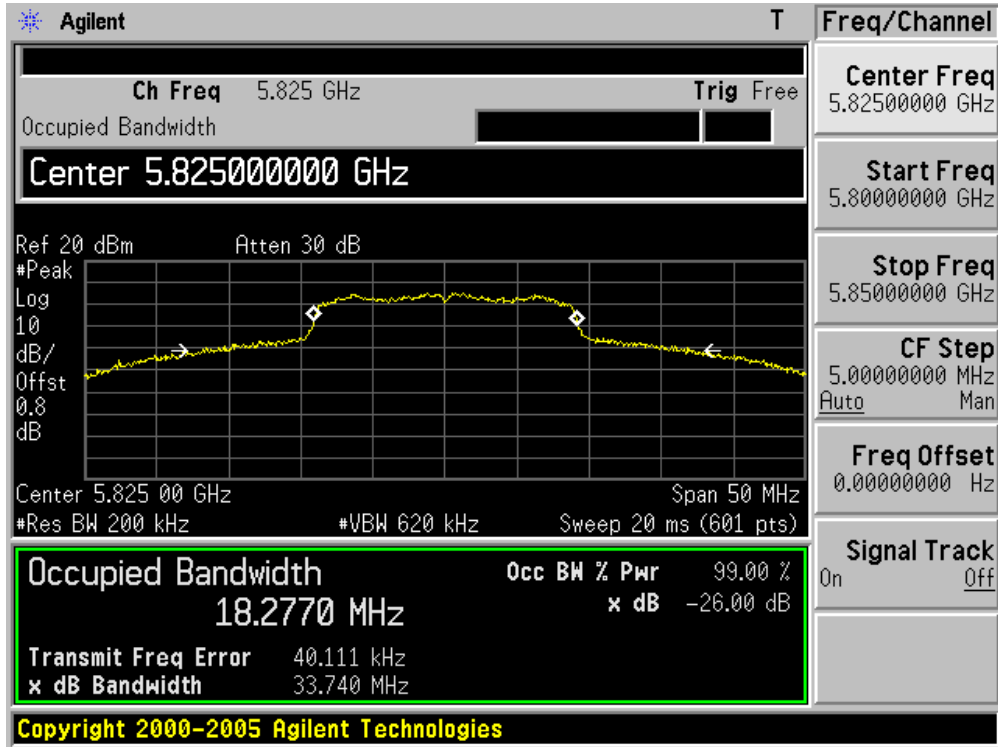
Channel 149 (5745MHz)



Channel 157 (5785MHz)



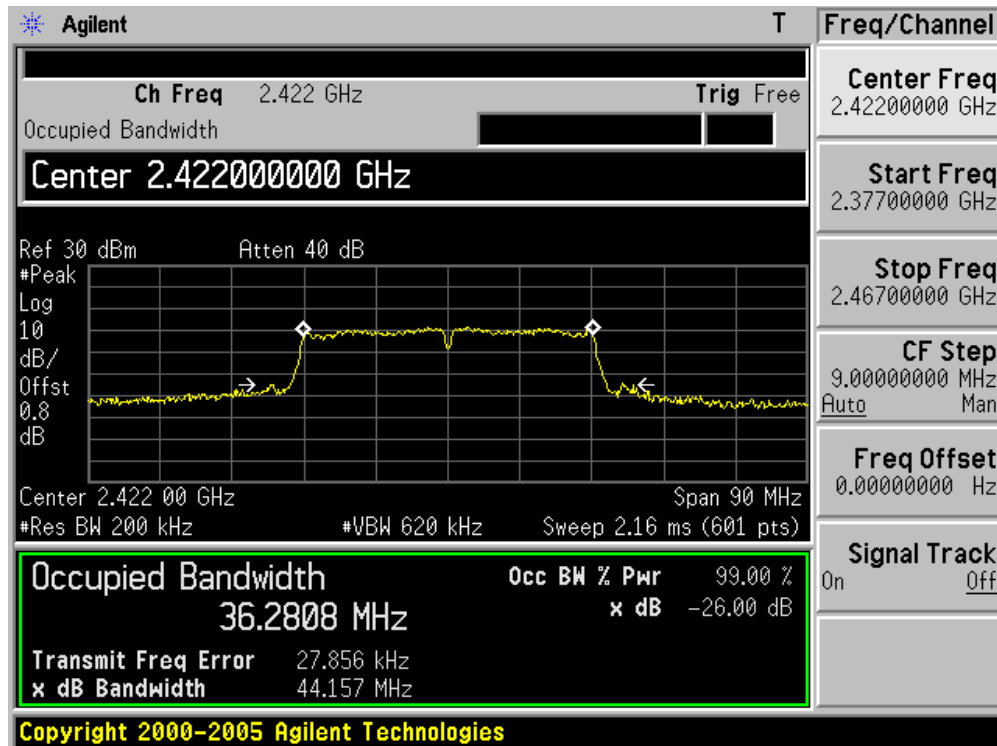
Channel 165 (5825MHz)



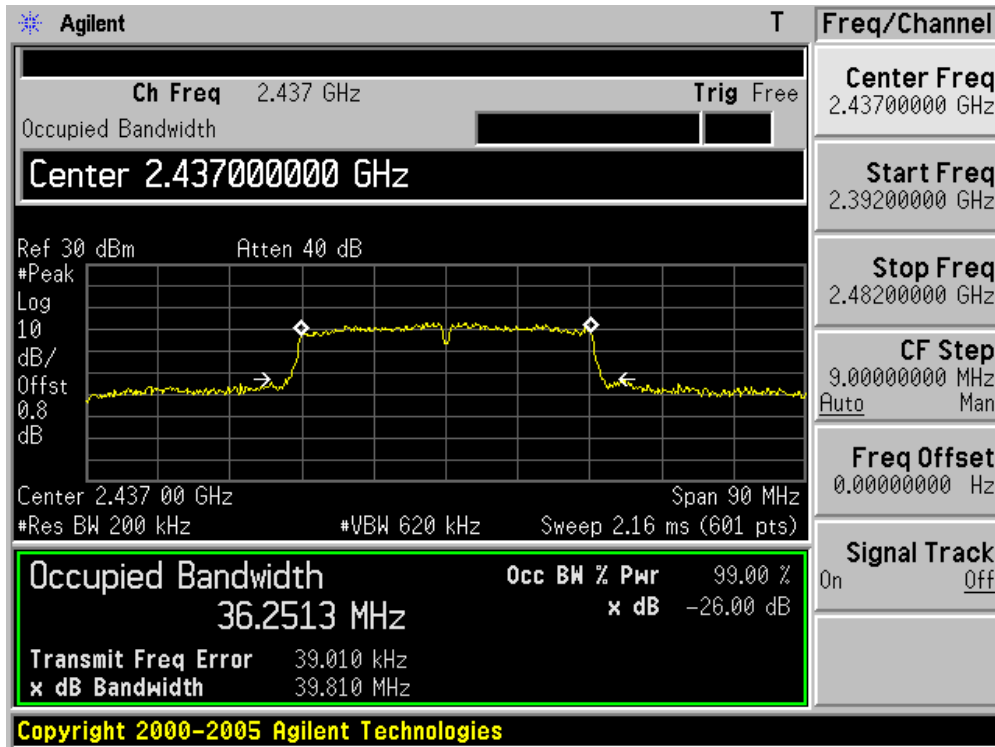
Product	:	IP-STB
Test Item	:	99% Occupied Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 5: Transmit by 802.11n(40MHz) (Chain 0)

Channel No.	Frequency (MHz)	99% Bandwidth (kHz)
03	2422	36280.8
06	2437	36251.3
09	2452	36238.2
151	5755	37984.4
159	5795	37025.2

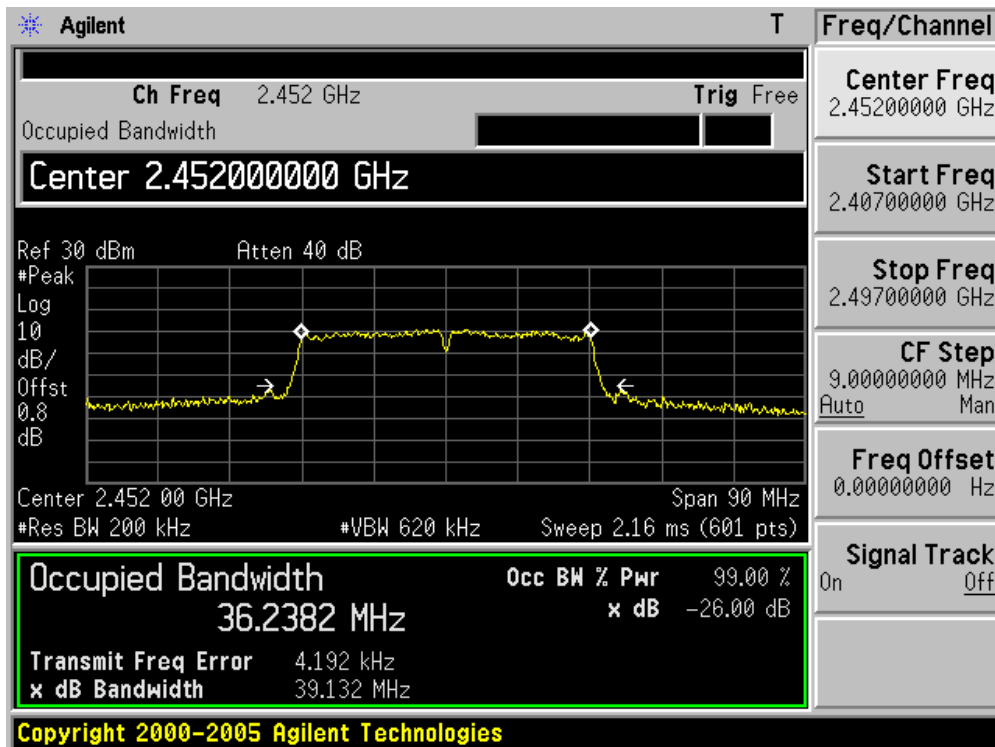
Channel 03 (2422MHz)



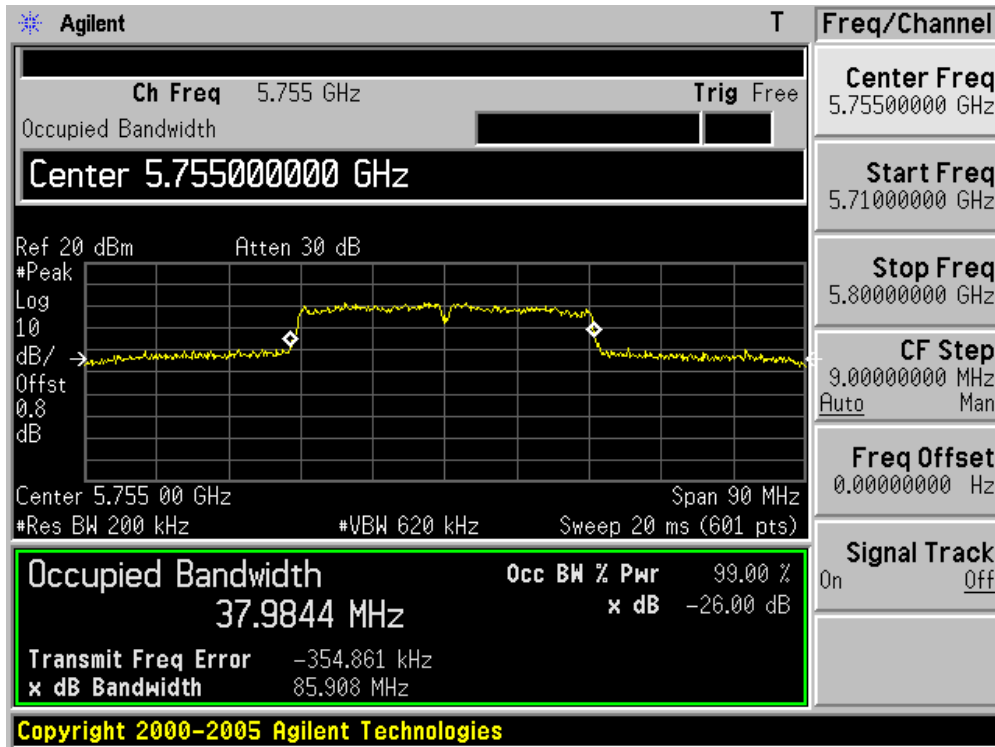
Channel 06 (2437MHz)



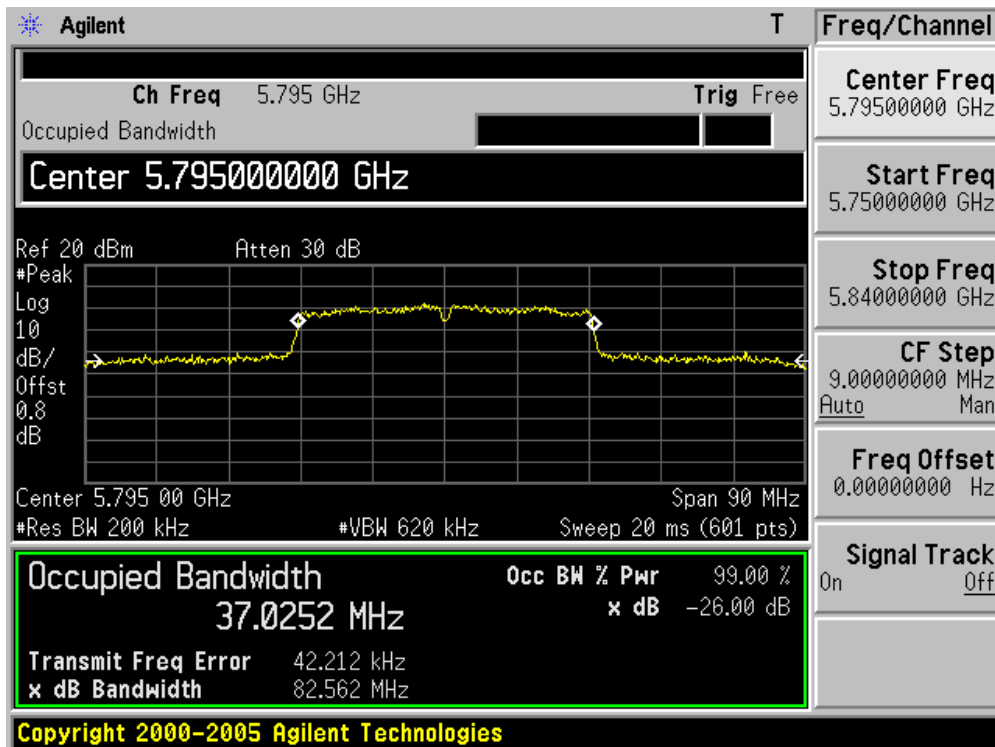
Channel 09 (2452MHz)



Channel 151 (5755MHz)



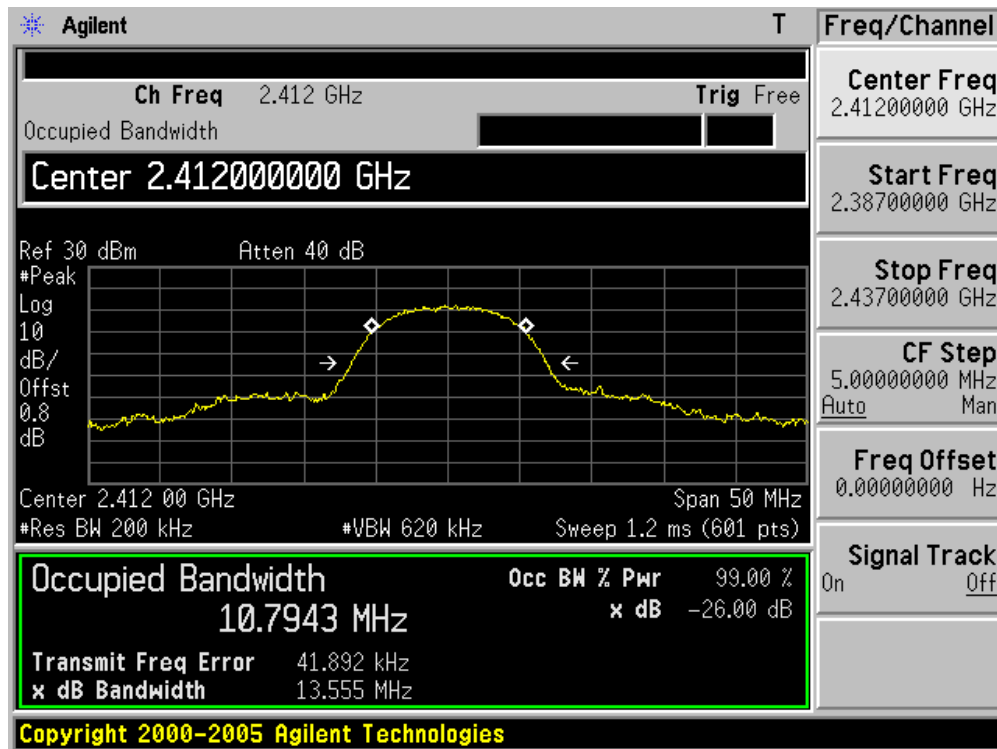
Channel 159 (5795MHz)



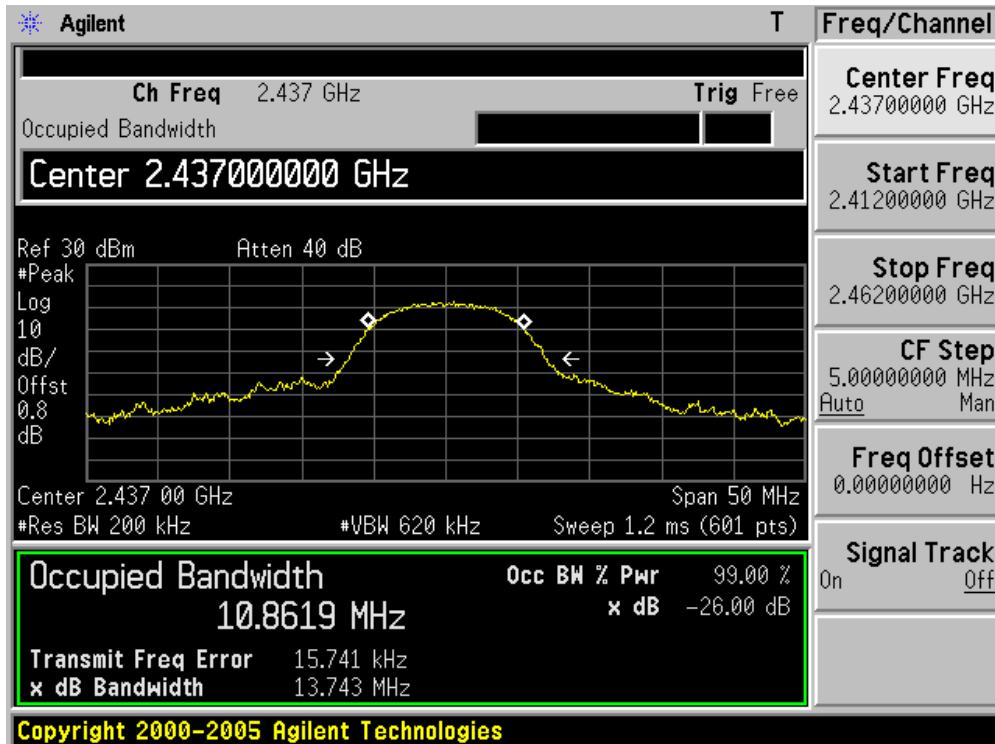
Product	:	IP-STB
Test Item	:	99% Occupied Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 1: Transmit by 802.11b (Chain 1)

Channel No.	Frequency (MHz)	99% Bandwidth (kHz)
01	2412	10794.3
06	2437	10861.9
11	2462	10699.3

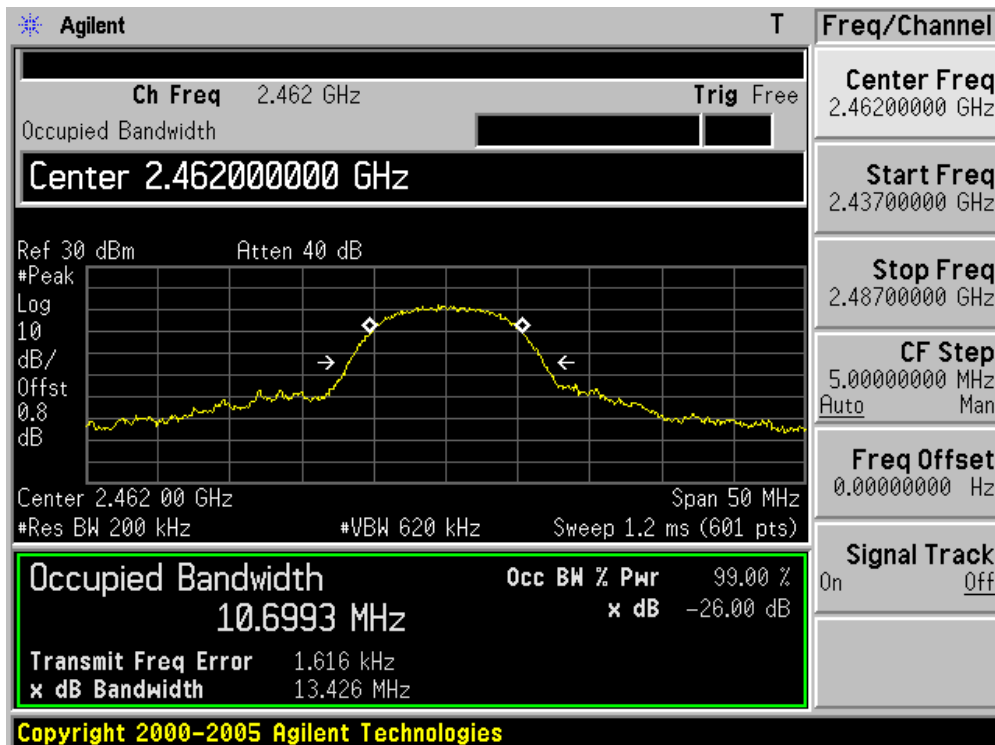
Channel 01 (2412MHz)



Channel 06 (2437MHz)



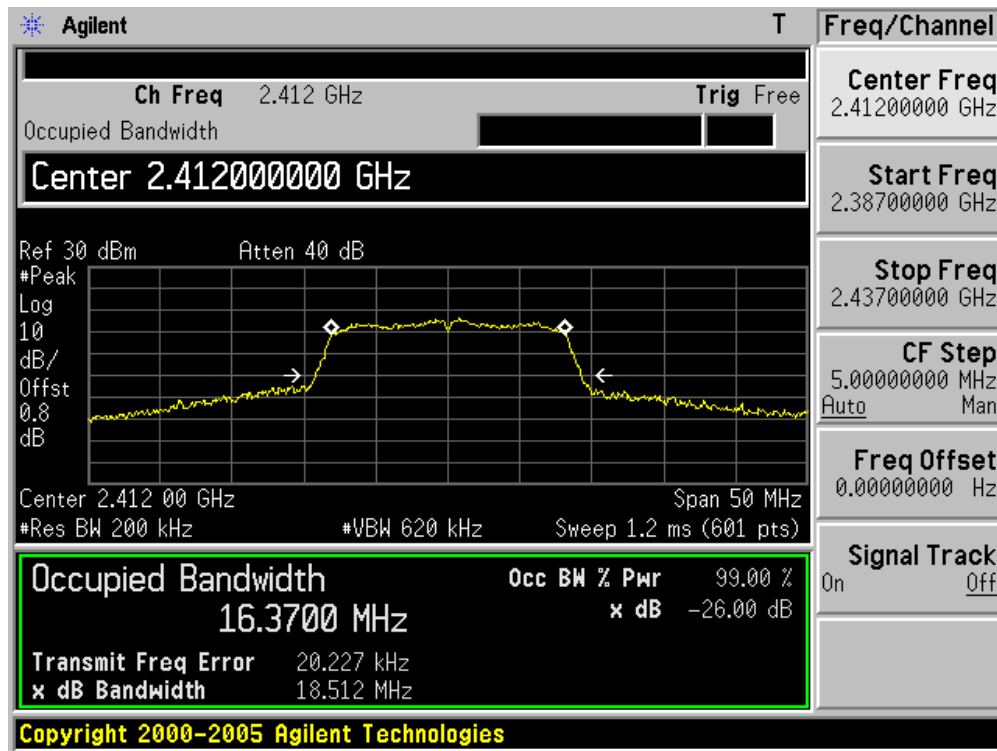
Channel 11 (2462MHz)



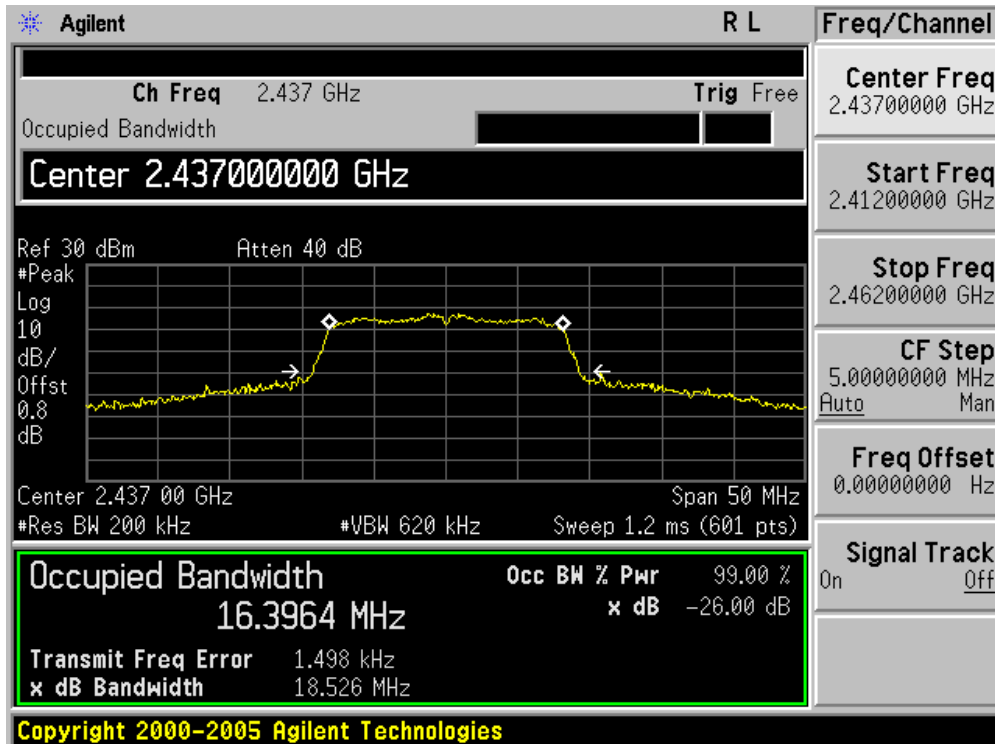
Product	:	IP-STB
Test Item	:	99% Occupied Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 2: Transmit by 802.11g (Chain 1)

Channel No.	Frequency (MHz)	99% Bandwidth (kHz)
01	2412	16370.0
06	2437	16396.4
11	2462	16371.9

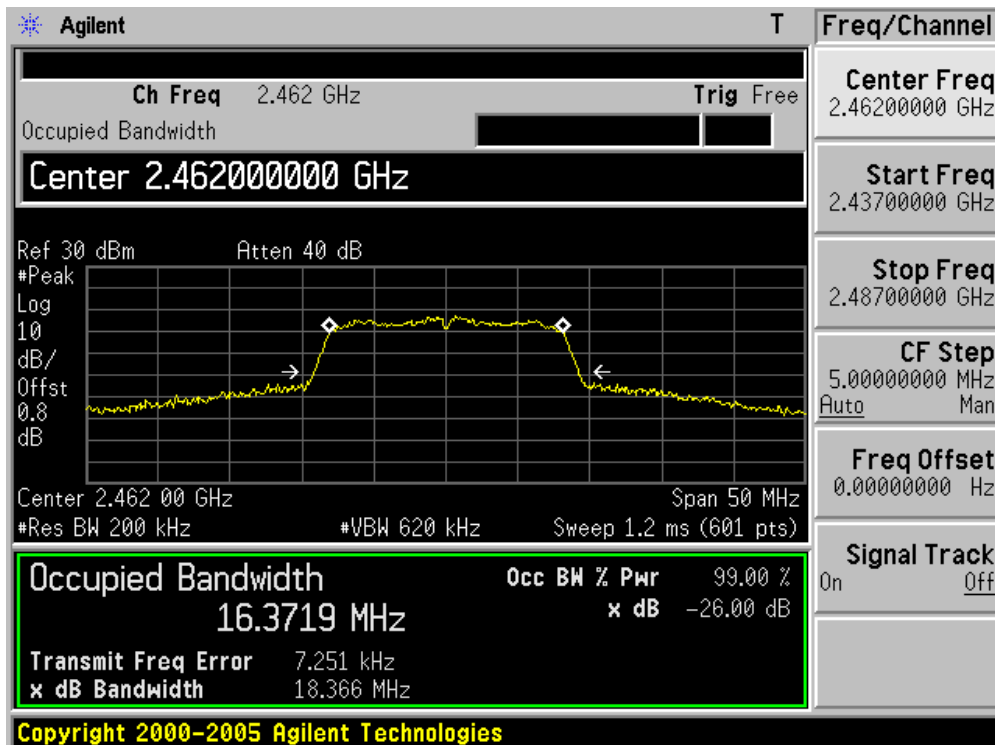
Channel 01 (2412MHz)



Channel 06 (2437MHz)



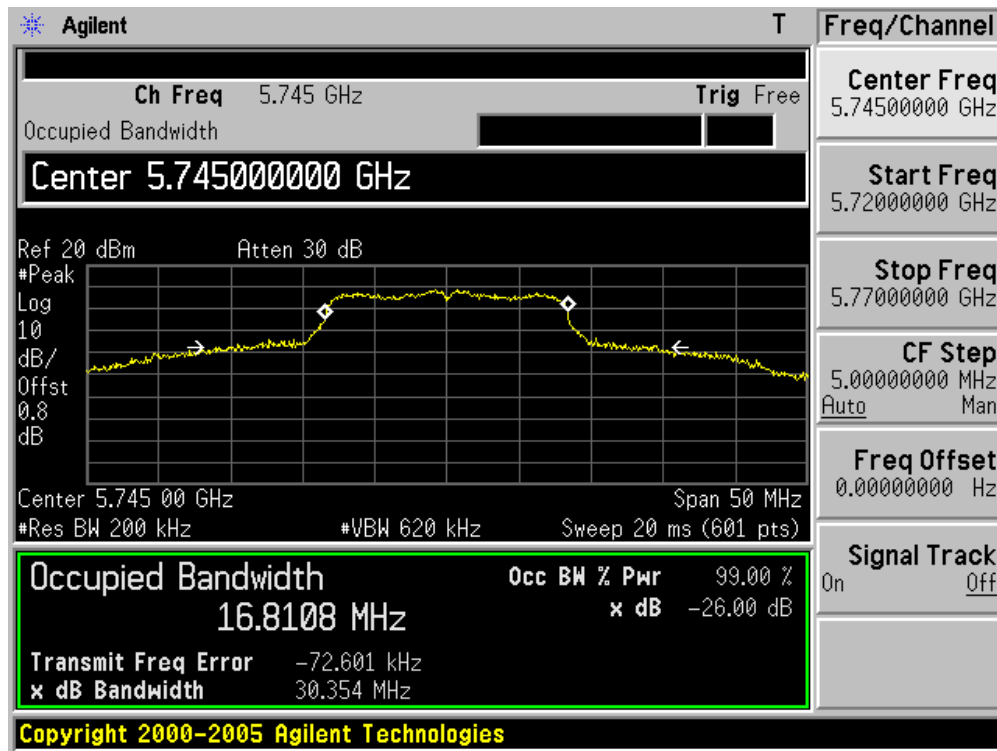
Channel 11 (2462MHz)



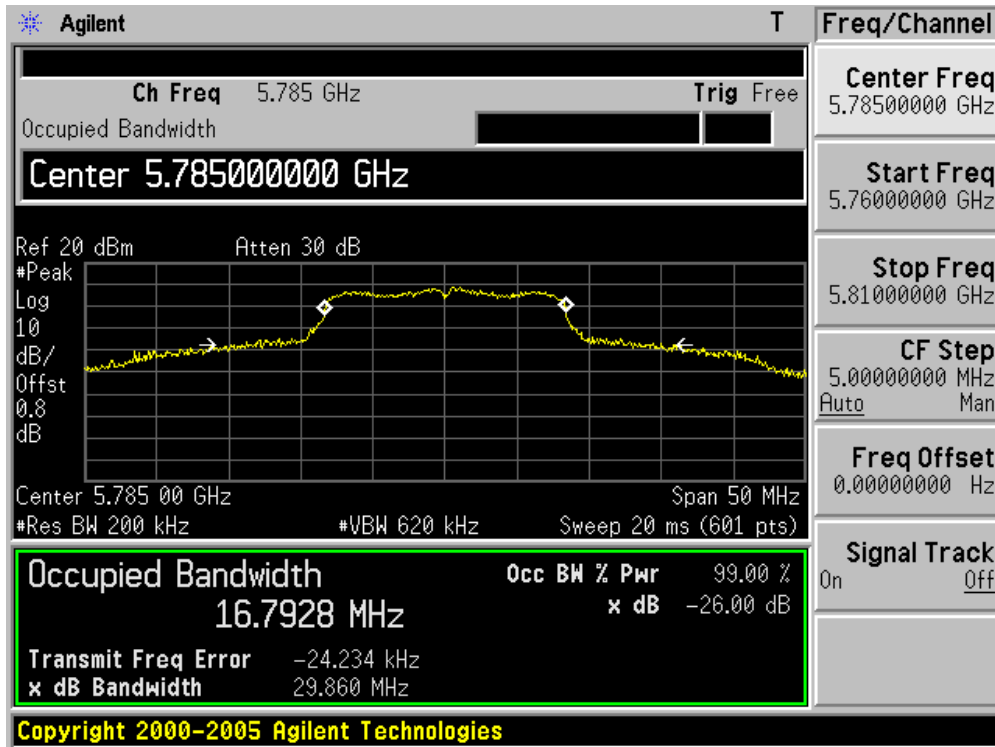
Product	:	IP-STB
Test Item	:	99% Occupied Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 3: Transmit by 802.11a (Chain 1)

Channel No.	Frequency (MHz)	99% Bandwidth (kHz)
149	5745	16810.8
157	5785	16792.8
165	5825	17146.8

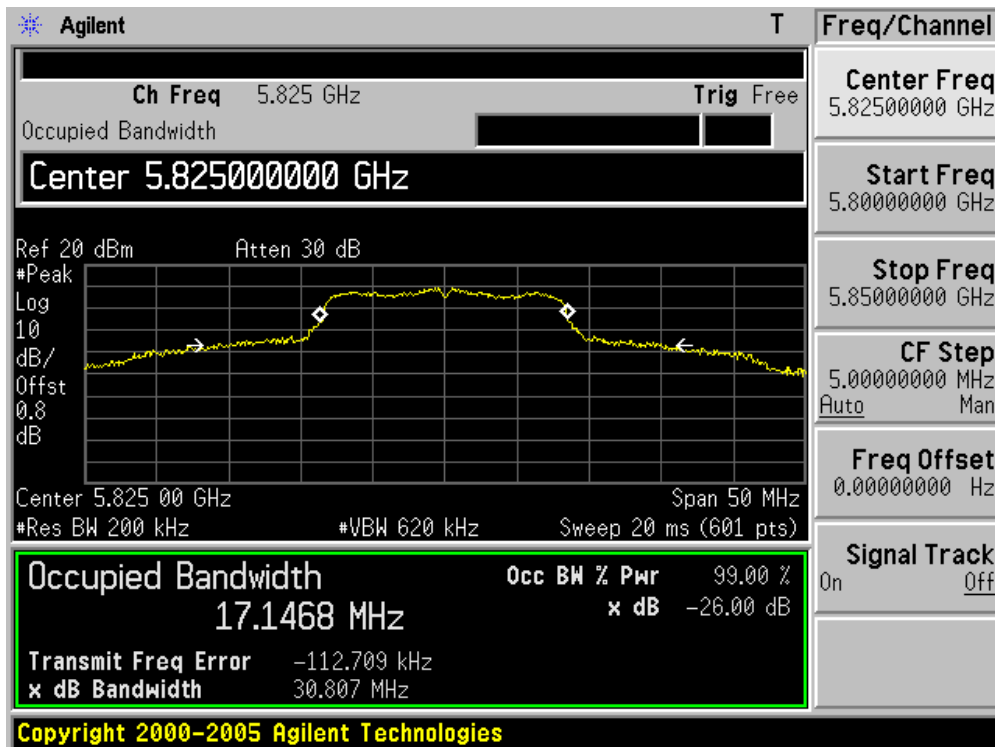
Channel 149 (5745MHz)



Channel 157 (5785MHz)



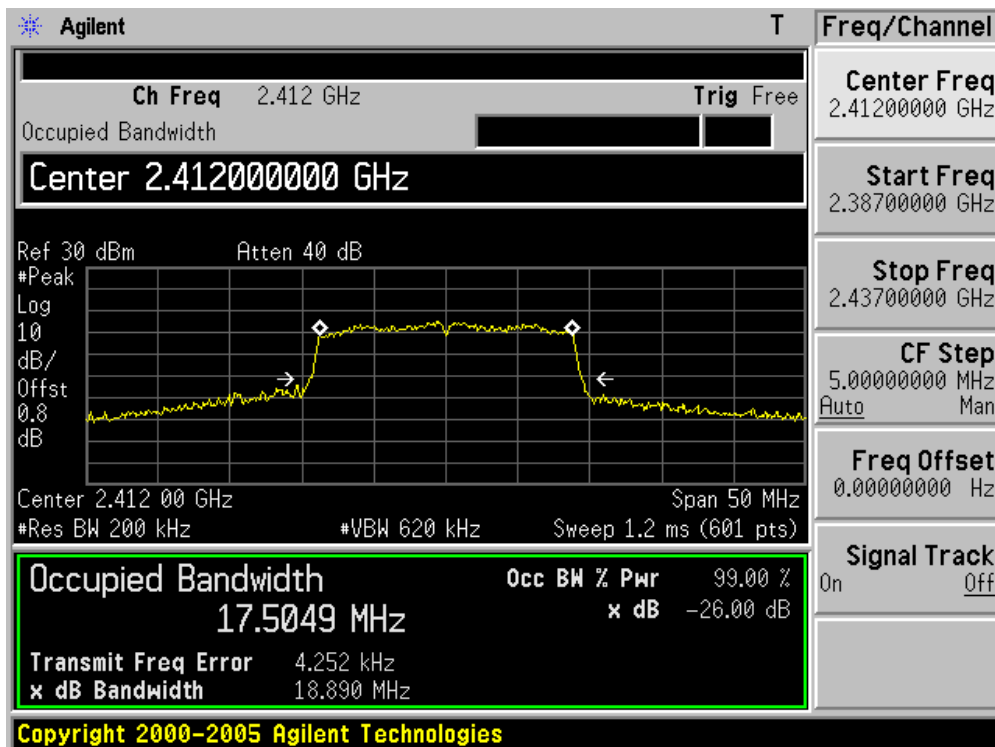
Channel 165 (5825MHz)



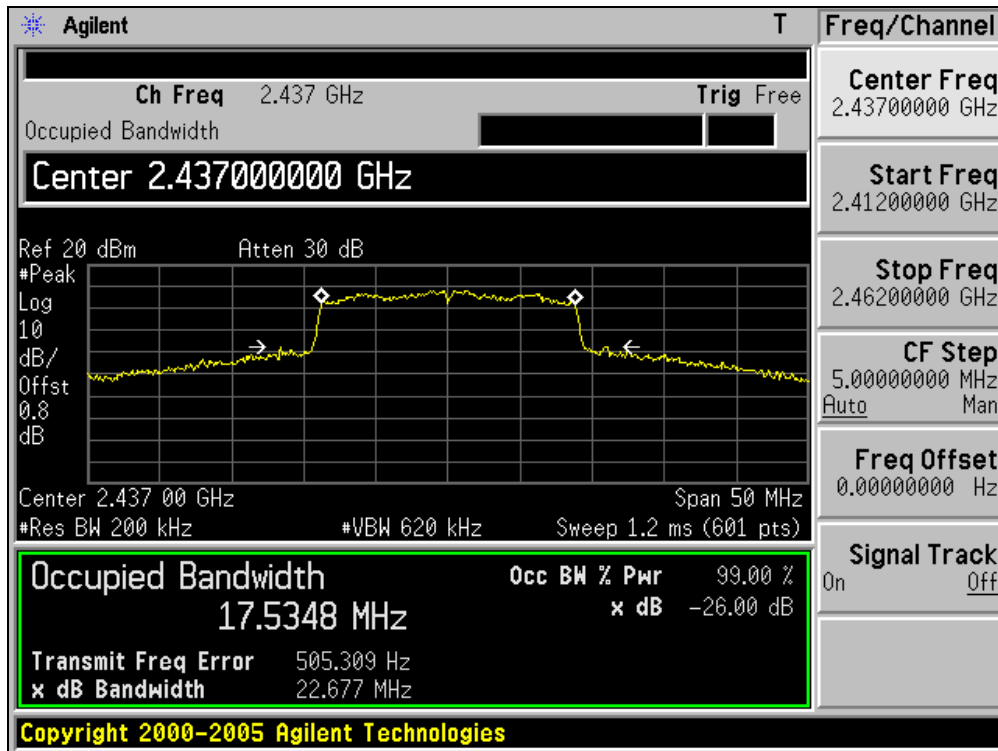
Product	:	IP-STB
Test Item	:	99% Occupied Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 4: Transmit by 802.11n(20MHz) (Chain 1)

Channel No.	Frequency (MHz)	99% Bandwidth (kHz)
01	2412	17504.9
06	2437	17534.8
11	2462	17448.1
149	5745	17761.2
157	5785	17764.3
165	5825	17785.0

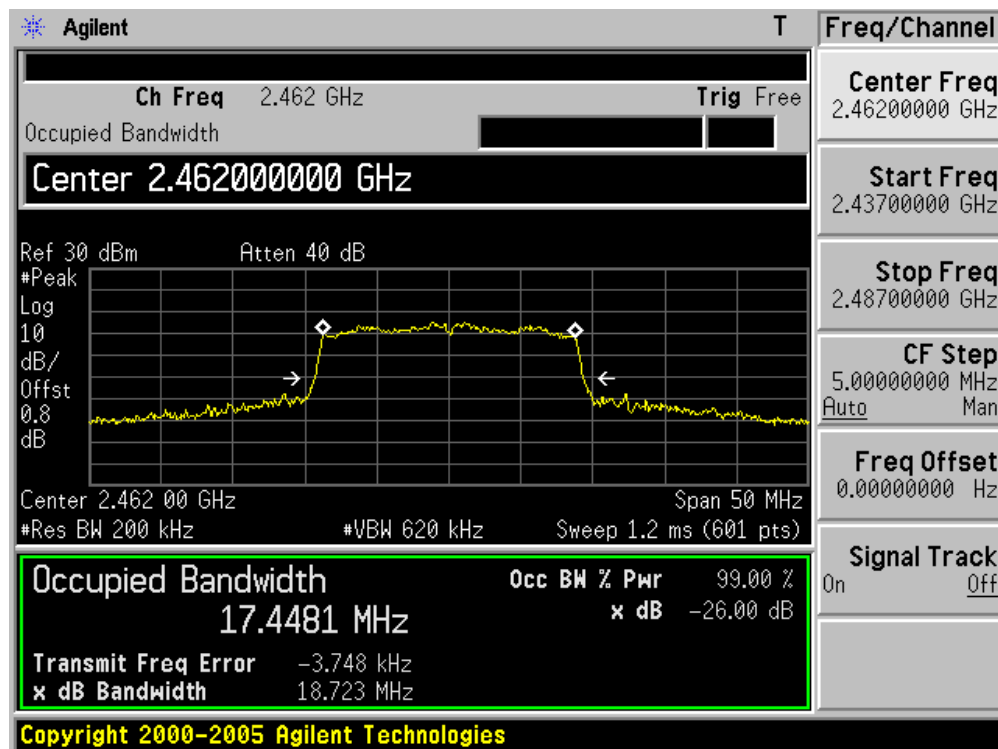
Channel 01 (2412MHz)



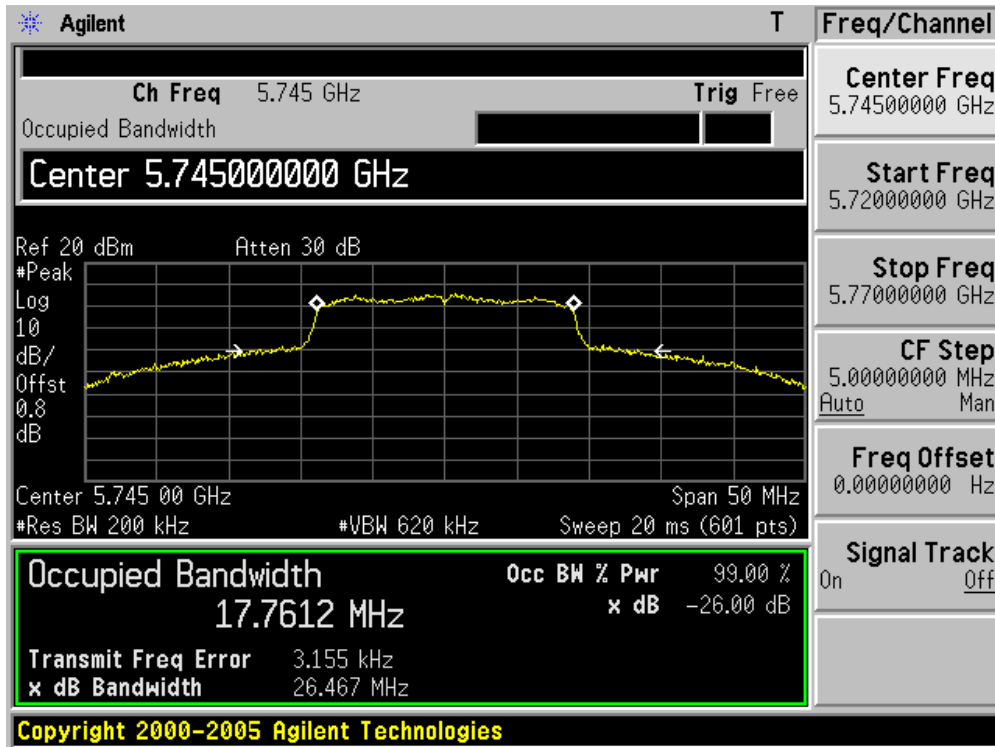
Channel 06 (2437MHz)



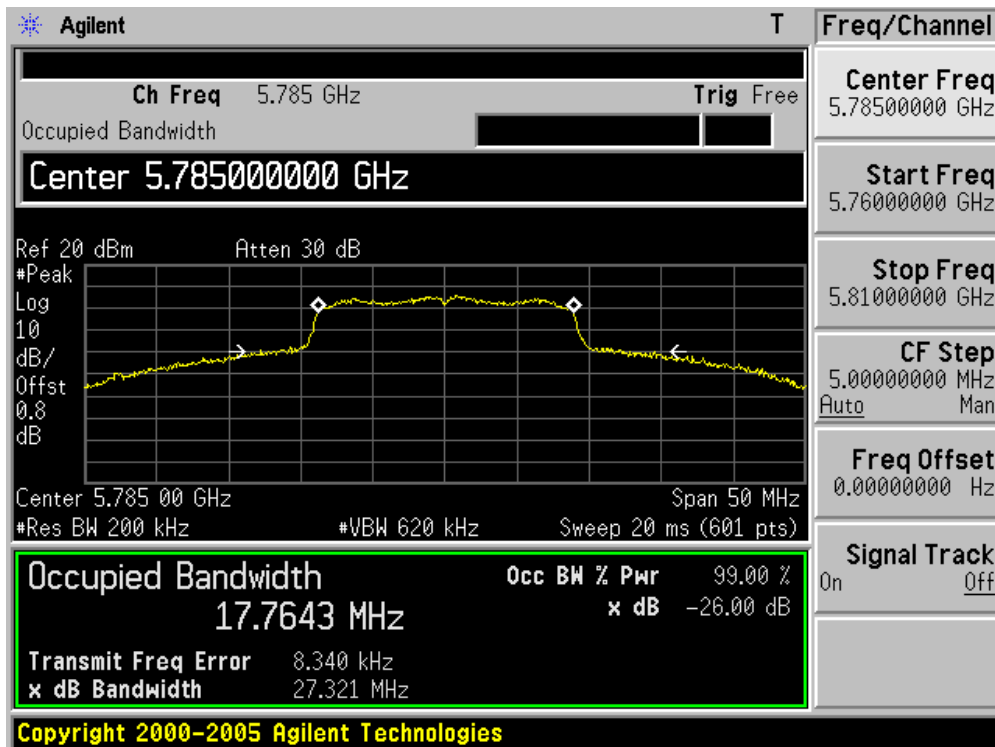
Channel 11 (2462MHz)



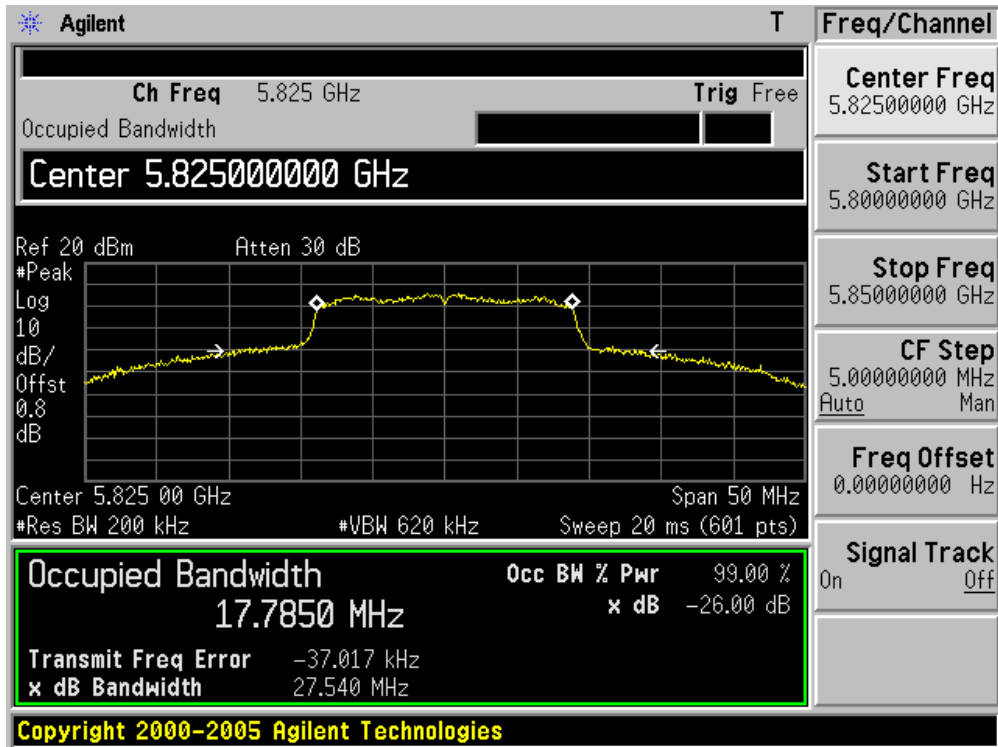
Channel 149 (5745MHz)



Channel 157 (5785MHz)



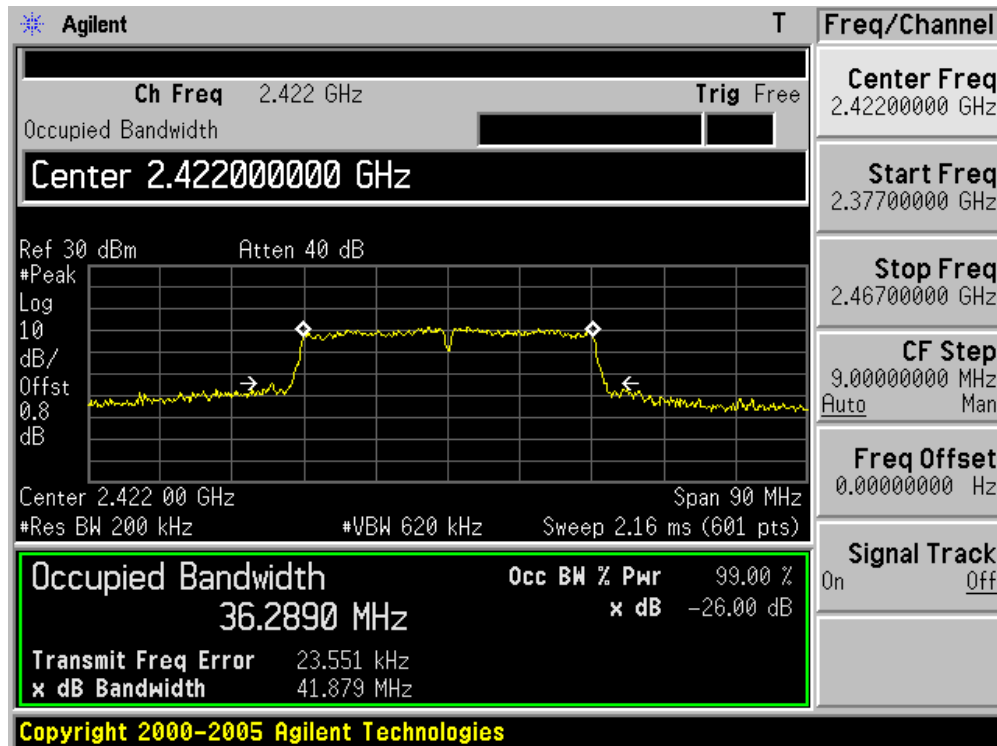
Channel 165 (5825MHz)



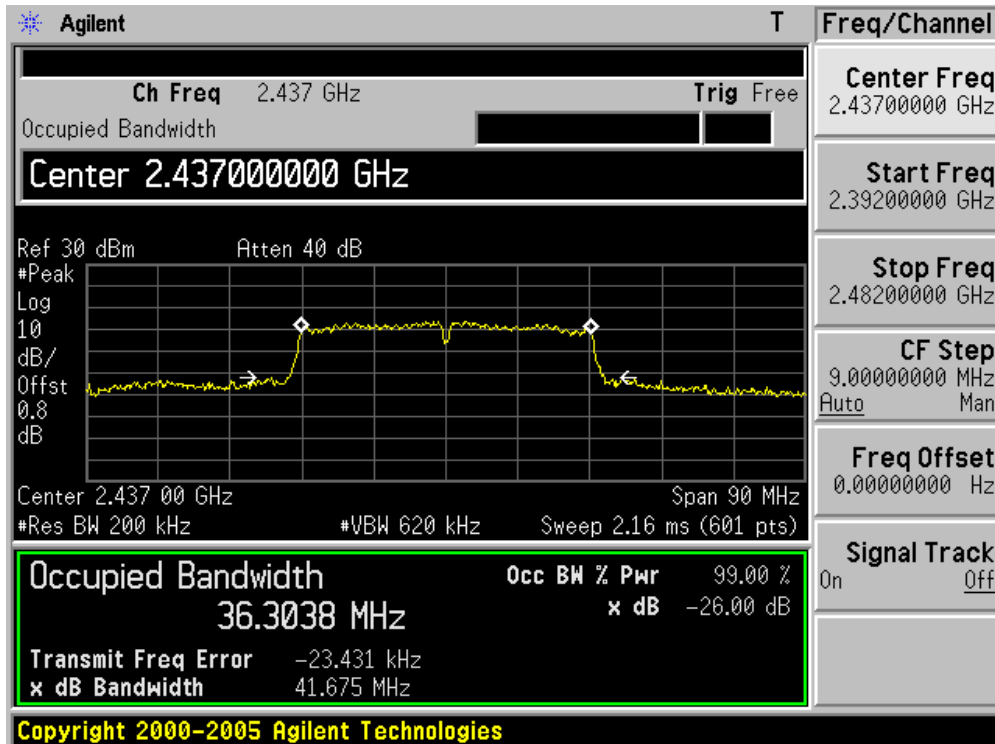
Product	:	IP-STB
Test Item	:	99% Occupied Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 5: Transmit by 802.11n(40MHz) (Chain 1)

Channel No.	Frequency (MHz)	99% Bandwidth (kHz)
03	2422	36289.0
06	2437	36303.8
09	2452	36265.6
151	5755	36479.5
159	5795	36406.9

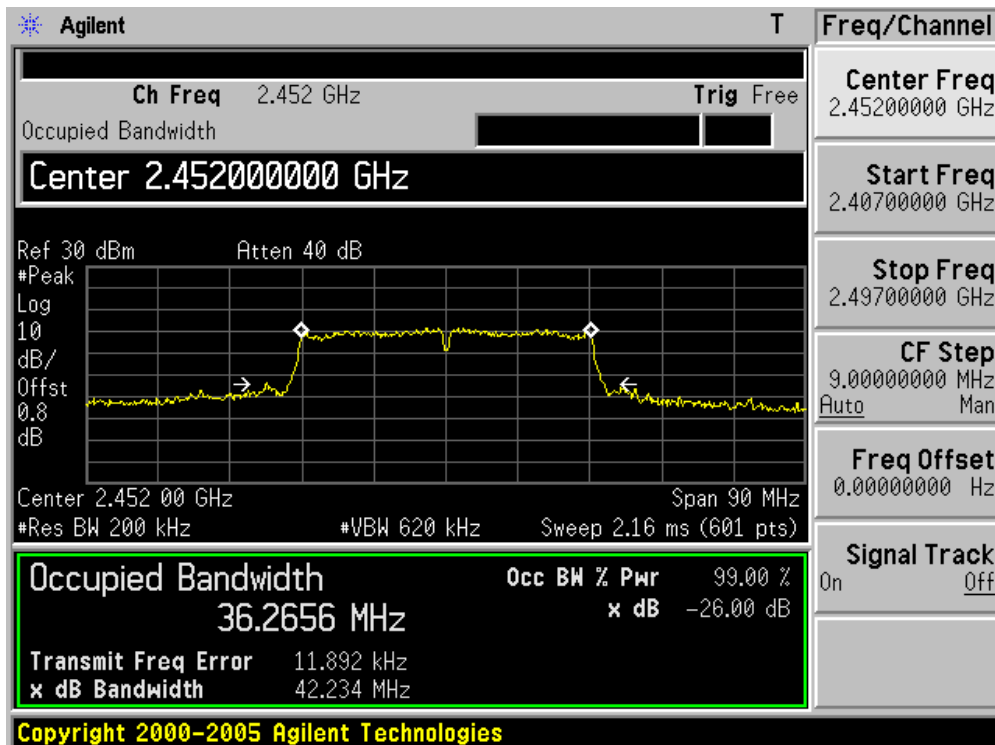
Channel 03 (2422MHz)



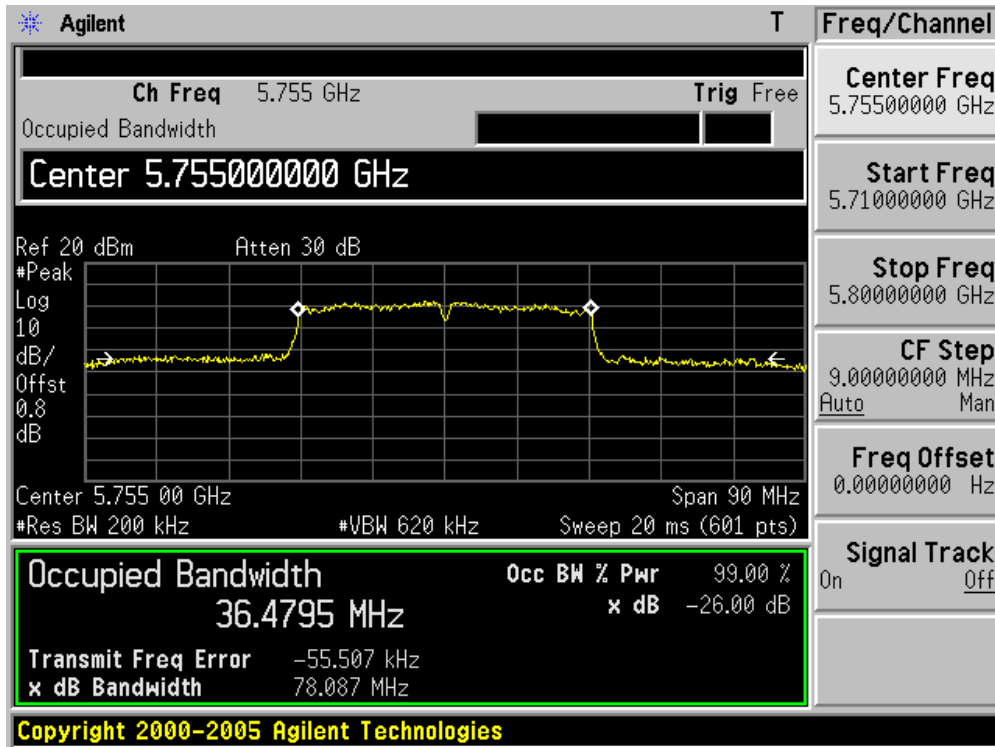
Channel 06 (2437MHz)



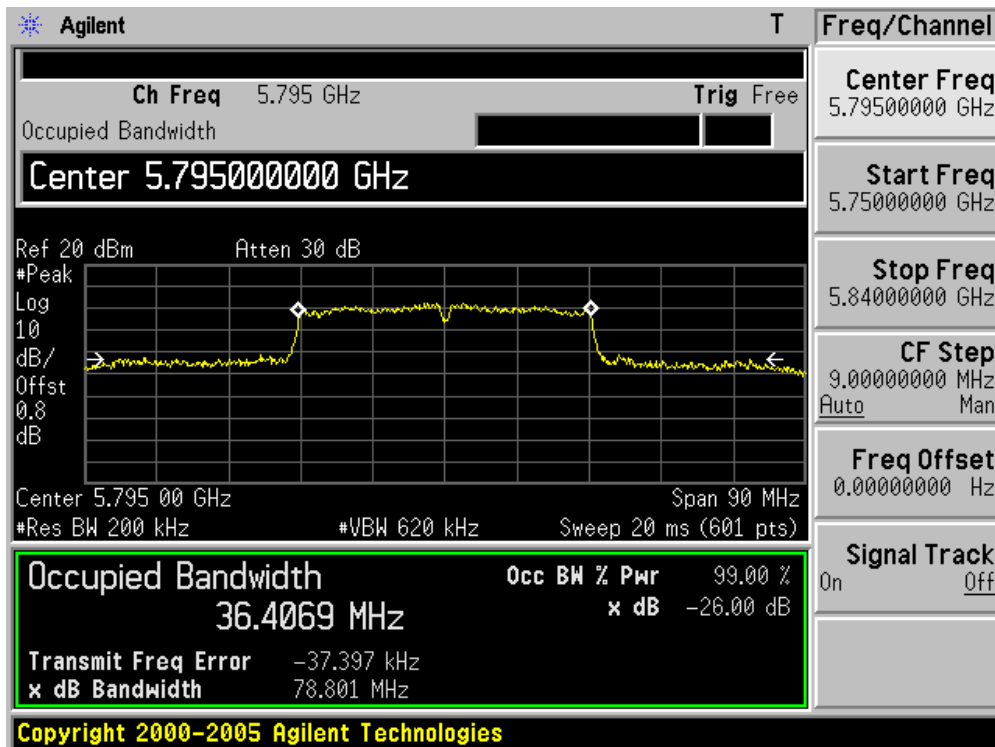
Channel 09 (2452MHz)



Channel 151 (5755MHz)



Channel 159 (5795MHz)



9. Power Output

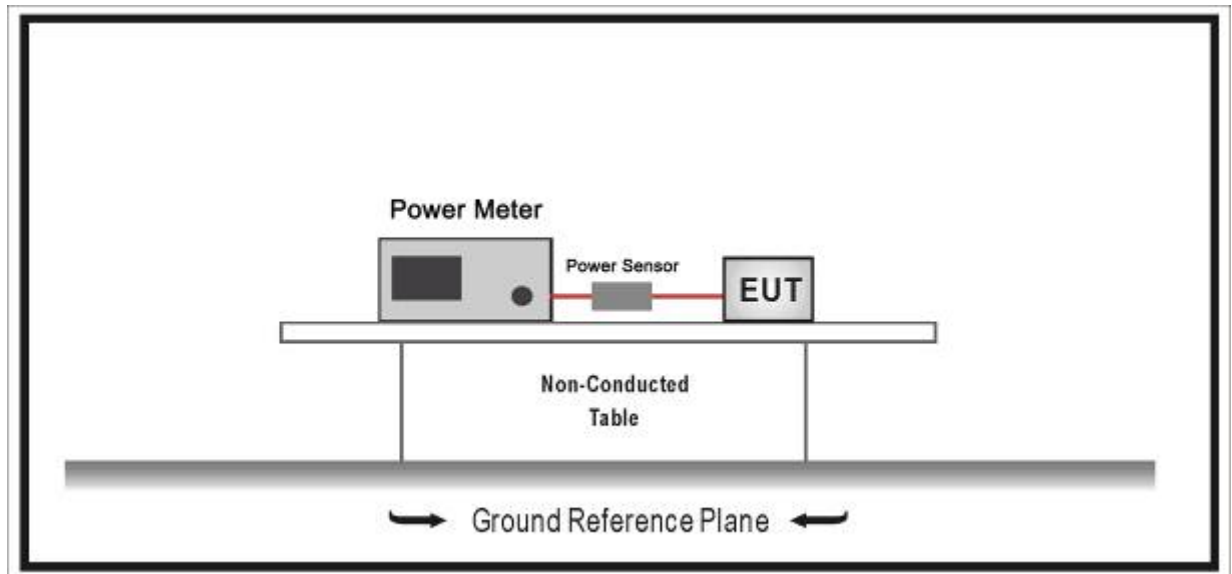
9.1. Test Equipment

Power Output / TR-8

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Wideband Peak Power Meter	Anritsu	ML2495A	0905006	2013.01.12
Power Sensor	Anritsu	MA2411B	0846014	2013.01.12
Temperature/Humidity Meter	zhicheng	ZC1-2	TR8-TH	2013.05.07

Note: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

9.2. Test Setup



9.3. Limit

The maximum peak power shall be less 1 Watt (30dBm).

Note: the conducted output power limit specified above is based on the use the antennas with directional gains that do not exceed 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values above, as appropriate, by the amount in dB that the directional gain of antenna exceeds 6 dBi.

9.4. Test Procedure

The EUT was tested according to ANSI C63.10: 2009 and KDB 558074 for compliance to FCC 47CFR 15.247 requirements.

Use the wideband power meter to test peak power and record the result.

9.5. Uncertainty

The measurement uncertainty is defined as ± 1.27 dB

9.6. Test Result

Power output test was verified over all data rates of each mode shown as below, and then choose the maximum power output (blue marker) for final test of each channel.

MCS Index for 802.11n	Spatial Streams	Data Rate (Mbps)						
		802.11b	802.11g	802.11a	20MHz Bandwidth		40MHz Bandwidth	
					800ns GI	400ns GI	800ns GI	400ns GI
0	1	1	6	6	6.5	7.2	13.5	15.0
1	1	2	9	9	13.0	14.4	27.0	30.0
2	1	5.5	12	12	19.5	21.7	40.5	45.0
3	1	11	18	18	26.0	28.9	54.0	60.0
4	1	---	24	24	39.0	43.3	81.0	90.0
5	1	---	36	36	52.0	57.8	108.0	120.0
6	1	---	48	48	58.5	65.0	121.5	135.0
7	1	---	54	54	65.0	72.2	135.0	150.0
8	2	---	---		13.0	14.4	27.0	30.0
9	2	---	---		26.0	28.9	54.0	60.0
10	2	---	---		39.0	43.3	81.0	90.0
11	2	---	---		52.0	57.8	108.0	120.0
12	2	---	---		78.0	86.7	162.0	180.0
13	2	---	---		104.0	115.6	216.0	240.0
14	2	---	---		117.0	130.0	243.0	270.0
15	2	---	---		130.0	144.0	270.0	300.0

Power output at various data rates:

Test Mode	Bandwidth	Frequency (MHz)	Channel	Data Rate	Peak Power (dBm)
802.11b(Chain 0)	20	2437	6	1	19.44
				5.5	20.50
				11	21.50
802.11g(Chain 0)	20	2437	6	6	22.56
				24	22.74
				54	23.21
802.11a(Chain 0)	20	5785	157	6	21.04
				24	21.21
				54	23.29
802.11n(Chain 0)	20	2437	6	MCS0	21.97
				MCS4	22.02
				MCS7	22.05
		5785	157	MCS0	20.36
				MCS4	20.50
				MCS7	20.53
802.11n(Chain 0)	40	2437	6	MCS0	20.98
				MCS4	20.81
				MCS7	20.71
		5755	151	MCS0	20.58
				MCS4	20.46
				MCS7	20.34

Product	:	IP-STB
Test Item	:	Power Output
Test Site	:	TR8
Test Mode	:	Mode 1: Transmit by 802.11b (Chain 0)

Channel No.	Frequency (MHz)	Measurement Power Output (dBm)		Total Power (dBm)	Limit (dBm)	Result	Max.EIRP (dBm)
		Chain 0	Chain 1				
1	2412	21.42	N/A	21.42	30.00	Pass	23.42
6	2437	21.50	N/A	21.50	30.00	Pass	23.50
11	2462	21.40	N/A	21.40	30.00	Pass	23.40

Max.EIRP=Total Power + Antenna Gain

Product	:	IP-STB
Test Item	:	Power Output
Test Site	:	TR8
Test Mode	:	Mode 1: Transmit by 802.11b (Chain 1)

Channel No.	Frequency (MHz)	Measurement Power Output (dBm)		Total Power (dBm)	Limit (dBm)	Result	Max.EIRP (dBm)
		Chain 0	Chain 1				
1	2412	N/A	21.85	21.85	30.00	Pass	23.85
6	2437	N/A	19.26	19.26	30.00	Pass	21.26
11	2462	N/A	21.57	21.57	30.00	Pass	23.57

Max.EIRP=Total Power + Antenna Gain

Product	:	IP-STB
Test Item	:	Power Output
Test Site	:	TR8
Test Mode	:	Mode 2: Transmit by 802.11g (Chain 0)

Channel No.	Frequency (MHz)	Measurement Power Output (dBm)		Total Power (dBm)	Limit (dBm)	Result	Max.EIRP (dBm)
		Chain 0	Chain 1				
1	2412	20.85	N/A	20.85	30.00	Pass	22.85
6	2437	23.21	N/A	23.21	30.00	Pass	25.21
11	2462	20.54	N/A	20.54	30.00	Pass	22.54

Max.EIRP=Total Power + Antenna Gain

Product	:	IP-STB
Test Item	:	Power Output
Test Site	:	TR8
Test Mode	:	Mode 2: Transmit by 802.11g (Chain 1)

Channel No.	Frequency (MHz)	Measurement Power Output (dBm)		Total Power (dBm)	Limit (dBm)	Result	Max.EIRP (dBm)
		Chain 0	Chain 1				
1	2412	N/A	20.22	20.22	30.00	Pass	22.22
6	2437	N/A	23.74	23.74	30.00	Pass	25.74
11	2462	N/A	21.25	21.25	30.00	Pass	23.25

Max.EIRP=Total Power + Antenna Gain

Product	:	IP-STB
Test Item	:	Power Output
Test Site	:	TR8
Test Mode	:	Mode 3: Transmit by 802.11a (Chain 0)

Channel No.	Frequency (MHz)	Measurement Power Output (dBm)		Total Power (dBm)	Limit (dBm)	Result	Max.EIRP (dBm)
		Chain 0	Chain 1				
149	5745	23.30	N/A	23.30	30.00	Pass	25.30
157	5785	23.29	N/A	23.29	30.00	Pass	25.29
165	5825	23.49	N/A	23.49	30.00	Pass	25.49

Max.EIRP=Total Power + Antenna Gain

Product	:	IP-STB
Test Item	:	Power Output
Test Site	:	TR8
Test Mode	:	Mode 3: Transmit by 802.11a (Chain 1)

Channel No.	Frequency (MHz)	Measurement Power Output (dBm)		Total Power (dBm)	Limit (dBm)	Result	Max.EIRP (dBm)
		Chain 0	Chain 1				
149	5745	N/A	23.10	23.10	30.00	Pass	25.10
157	5785	N/A	23.11	23.11	30.00	Pass	25.11
165	5825	N/A	23.39	23.39	30.00	Pass	25.39

Max.EIRP=Total Power + Antenna Gain

Product	:	IP-STB
Test Item	:	Power Output
Test Site	:	TR8
Test Mode	:	Mode 4: Transmit by 802.11n(20MHz) (Chain 0)

Channel No.	Frequency (MHz)	Measurement Power Output (dBm)		Total Power (dBm)	Limit (dBm)	Result	Max.EIRP (dBm)
		Chain 0	Chain 1				
1	2412	21.05	N/A	21.05	30.00	Pass	23.05
6	2437	22.05	N/A	22.05	30.00	Pass	24.05
11	2462	19.49	N/A	19.49	30.00	Pass	21.49
149	5745	20.53	N/A	20.53	30.00	Pass	22.53
157	5785	20.36	N/A	20.36	30.00	Pass	22.36
165	5825	20.50	N/A	20.50	30.00	Pass	22.50

Max.EIRP=Total Power + Antenna Gain

Product	:	IP-STB
Test Item	:	Power Output
Test Site	:	TR8
Test Mode	:	Mode 4: Transmit by 802.11n(20MHz) (Chain 1)

Channel No.	Frequency (MHz)	Measurement Power Output (dBm)		Total Power (dBm)	Limit (dBm)	Result	Max.EIRP (dBm)
		Chain 0	Chain 1				
1	2412	N/A	19.80	19.80	30.00	Pass	21.80
6	2437	N/A	22.01	22.01	30.00	Pass	24.01
11	2462	N/A	19.52	19.52	30.00	Pass	21.52
149	5745	N/A	21.18	21.18	30.00	Pass	23.18
157	5785	N/A	21.15	21.15	30.00	Pass	23.15
165	5825	N/A	21.45	21.45	30.00	Pass	23.45

Max.EIRP=Total Power + Antenna Gain

Product	:	IP-STB
Test Item	:	Power Output
Test Site	:	TR8
Test Mode	:	Mode 4: Transmit by 802.11n(20MHz) (Chain 0+1)

Channel No.	Frequency (MHz)	Measurement Power Output (dBm)			Total Power (dBm)	Limit (dBm)	Result	Max.EIRP (dBm)
		Chain 0	Chain 1	Chain 2				
1	2412	18.15	19.66	N/A	21.98	30.00	Pass	23.98
6	2437	20.54	20.46	N/A	23.51	30.00	Pass	25.51
11	2462	18.37	19.54	N/A	22.00	30.00	Pass	24.00
149	5745	19.93	19.62	N/A	22.79	30.00	Pass	24.79
157	5785	19.64	19.38	N/A	22.52	30.00	Pass	24.52
165	5825	20.33	19.70	N/A	23.04	30.00	Pass	25.04

Max.EIRP=Total Power + Antenna Gain

Product	:	IP-STB
Test Item	:	Power Output
Test Site	:	TR8
Test Mode	:	Mode 5: Transmit by 802.11n(40MHz) (Chain 0)

Channel No.	Frequency (MHz)	Measurement Power Output (dBm)		Total Power (dBm)	Limit (dBm)	Result	Max.EIRP (dBm)
		Chain 0	Chain 1				
3	2422	19.30	N/A	19.30	30.00	Pass	21.30
6	2437	20.98	N/A	20.98	30.00	Pass	22.98
9	2452	19.03	N/A	19.03	30.00	Pass	21.03
151	5755	20.58	N/A	20.58	30.00	Pass	22.58
159	5795	20.74	N/A	20.74	30.00	Pass	22.74

Max.EIRP=Total Power + Antenna Gain

Product	:	IP-STB
Test Item	:	Power Output
Test Site	:	TR8
Test Mode	:	Mode 5: Transmit by 802.11n(40MHz) (Chain 1)

Channel No.	Frequency (MHz)	Measurement Power Output (dBm)		Total Power (dBm)	Limit (dBm)	Result	Max.EIRP (dBm)
		Chain 0	Chain 1				
3	2422	N/A	19.85	19.85	30.00	Pass	21.85
6	2437	N/A	21.60	21.60	30.00	Pass	23.60
9	2452	N/A	19.72	19.72	30.00	Pass	21.72
151	5755	N/A	20.83	20.83	30.00	Pass	22.83
159	5795	N/A	21.01	21.01	30.00	Pass	23.01

Max.EIRP=Total Power + Antenna Gain

Product	:	IP-STB
Test Item	:	Power Output
Test Site	:	TR8
Test Mode	:	Mode 5: Transmit by 802.11n(40MHz) (Chain 0+1)

Channel No.	Frequency (MHz)	Measurement Power Output (dBm)		Total Power (dBm)	Limit (dBm)	Result	Max.EIRP (dBm)
		Chain 0	Chain 1				
3	2422	17.15	18.11	20.67	30.00	Pass	22.67
6	2437	20.58	20.71	23.66	30.00	Pass	25.66
9	2452	18.27	19.24	21.79	30.00	Pass	23.79
151	5755	20.34	20.65	23.51	30.00	Pass	25.51
159	5795	20.37	20.87	23.64	30.00	Pass	25.64

Max.EIRP=Total Power + Antenna Gain

10. Power Spectral Density

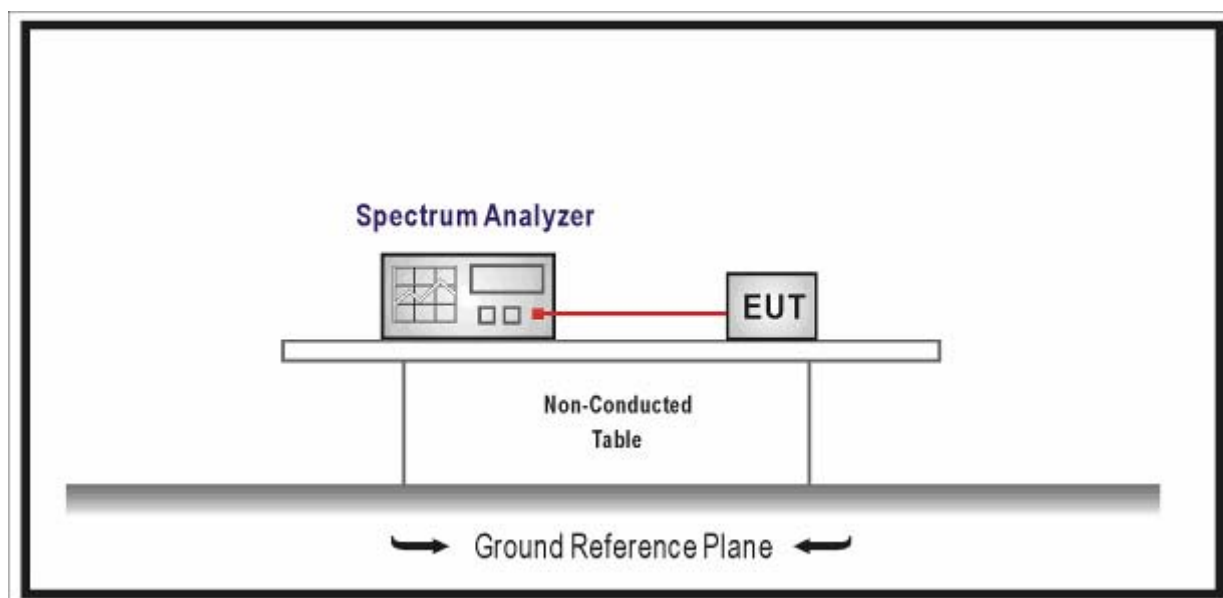
10.1. Test Equipment

Power Spectral Density / TR-8

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2013.04.18
Temperature/Humidity Meter	zhicheng	ZC1-2	TR8-TH	2013.05.07

Note: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

10.2. Test Setup



10.3. Limit

For digitally modulated systems, the power spectral density conducted from the intentional radiated to the antenna shall not be greater than 8dBm in any 3kHz band during any time interval of continuous transmission.

10.4. Test Procedure

The EUT was tested according to ANSI C63.10: 2009 and KDB 558074 for compliance to FCC 47CFR 15.247 requirements.

Set RBW= 100 kHz, VBW \geq 300KHz, SPAN to 5-30 % greater than the EBW, Scale the observed power level to an equivalent value in 3 kHz by adjusting (reducing) the measured power by a bandwidth correction factor (BWCF) where $BWCF = 10\log(3\text{ kHz}/100\text{kHz} = -15.2\text{ dB})$.

10.5. Uncertainty

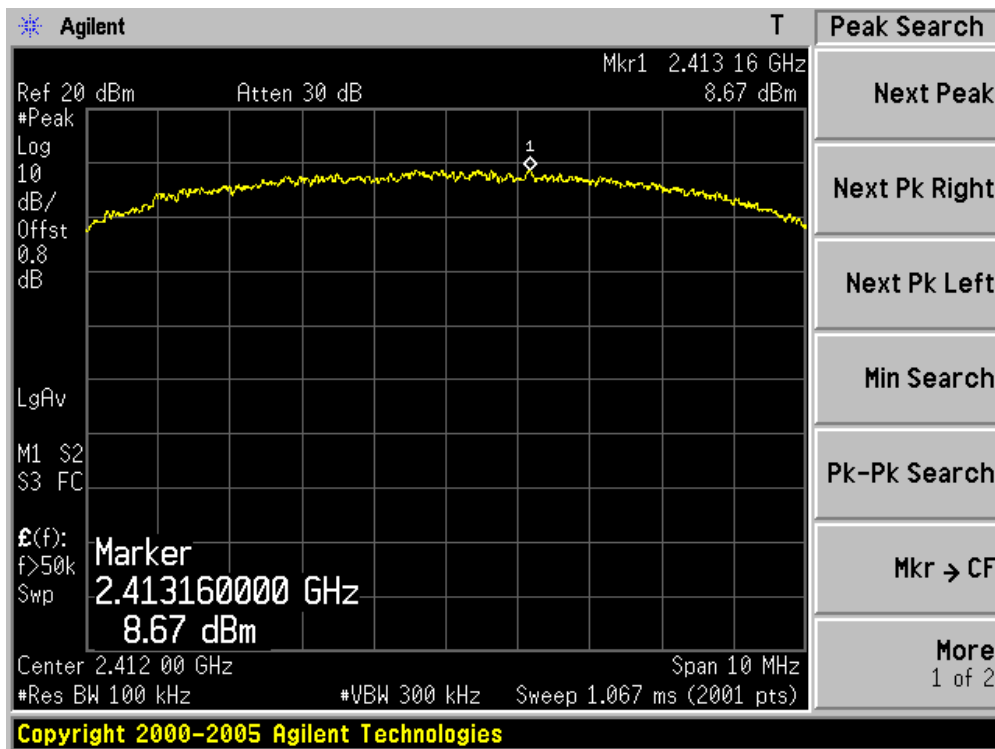
The measurement uncertainty is defined as $\pm 1.27\text{ dB}$

10.6. Test Result

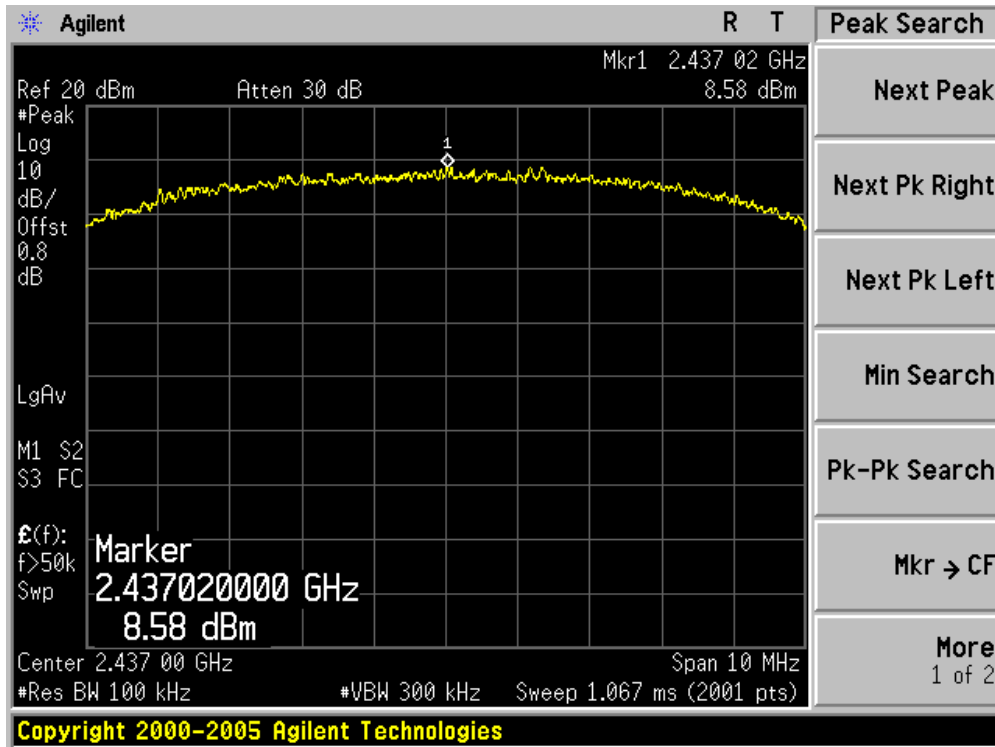
Product	:	IP-STB
Test Item	:	Power Spectral Density
Test Site	:	TR-8
Test Mode	:	Mode 1: Transmit by 802.11b (Chain 0)

Channel No.	Frequency (MHz)	Reading Value (dBm)		BWCF (dB)	PSD (dBm)	Limit (dBm)	Result
		Chain 0	Chain 1				
01	2412	8.67	N/A	-15.2	-6.53	8	Pass
06	2437	8.58	N/A	-15.2	-6.62	8	Pass
11	2462	8.59	N/A	-15.2	-6.61	8	Pass

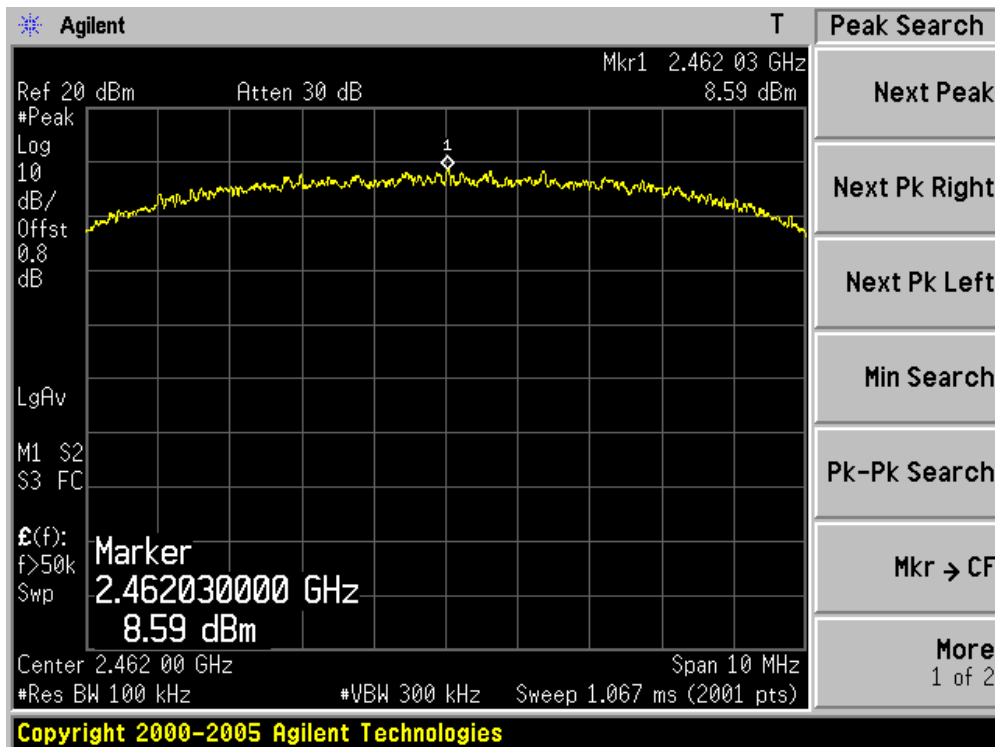
Channel 01 (2412MHz)



Channel 06 (2437MHz)



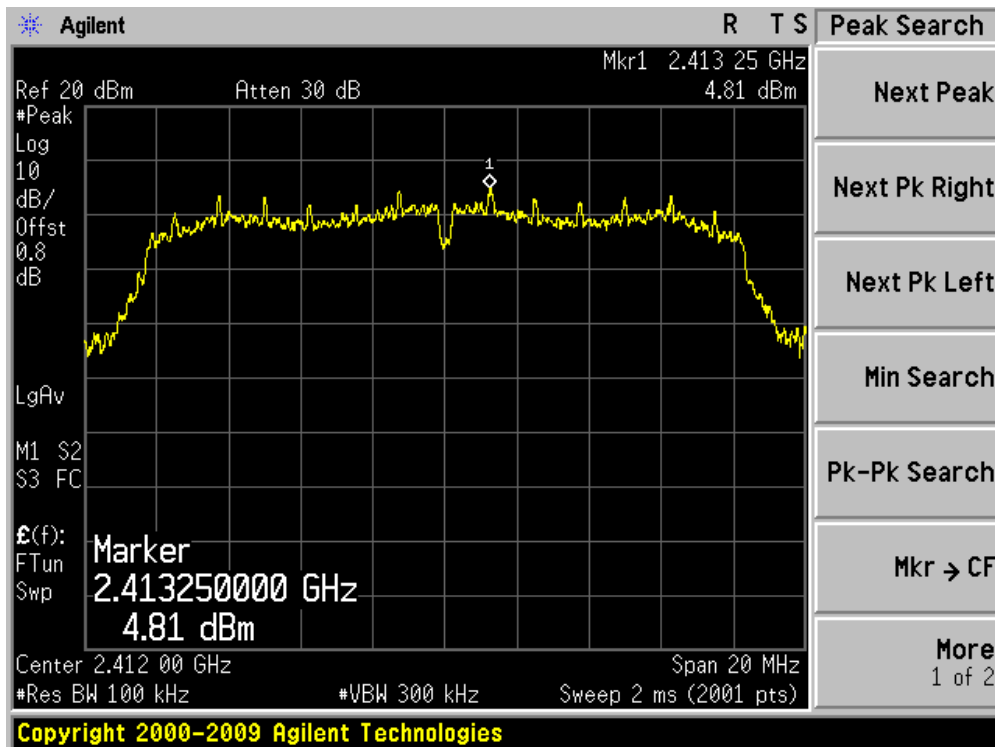
Channel 11 (2462MHz)



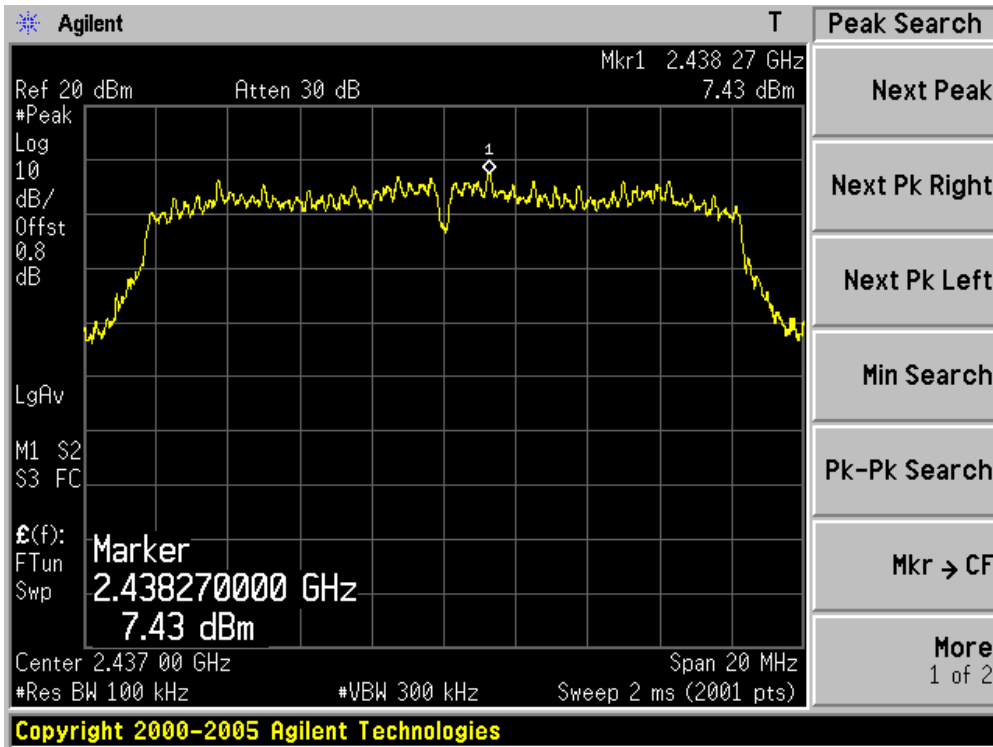
Product	:	IP-STB
Test Item	:	Power Spectral Density
Test Site	:	TR-8
Test Mode	:	Mode 2: Transmit by 802.11g (Chain 0)

Channel No.	Frequency (MHz)	Reading Value (dBm)		BWCF (dB)	PSD (dBm)	Limit (dBm)	Result
		Chain 0	Chain 1				
01	2412	4.81	N/A	-15.2	-10.39	8	Pass
06	2437	7.43	N/A	-15.2	-7.77	8	Pass
11	2462	4.92	N/A	-15.2	-10.28	8	Pass

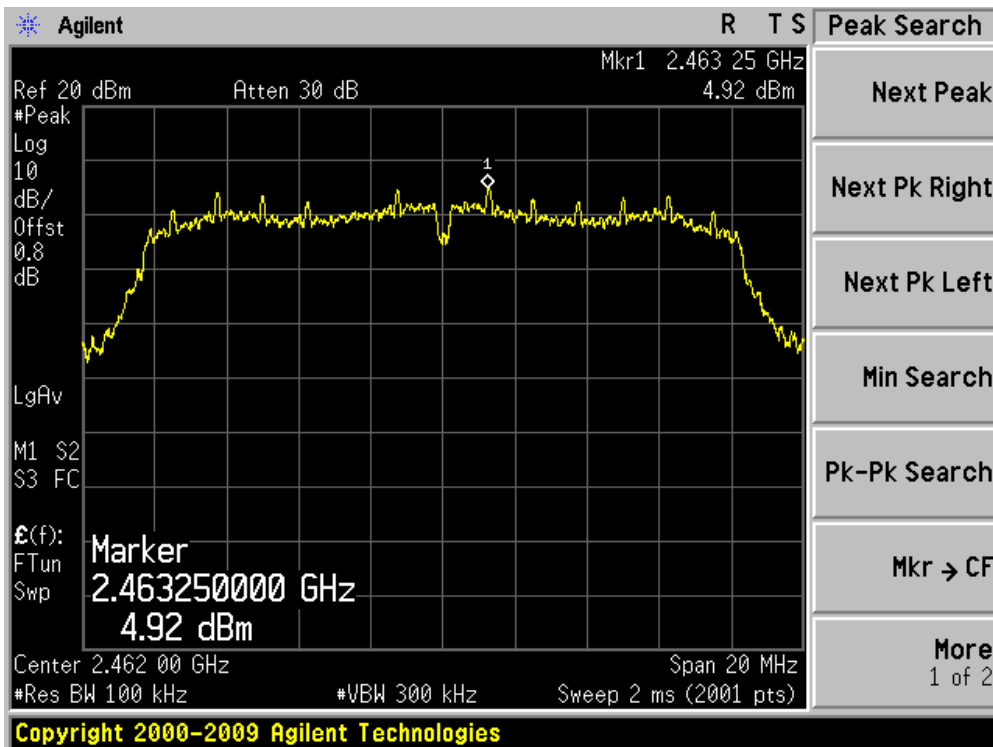
Channel 01 (2412MHz)



Channel 06 (2437MHz)



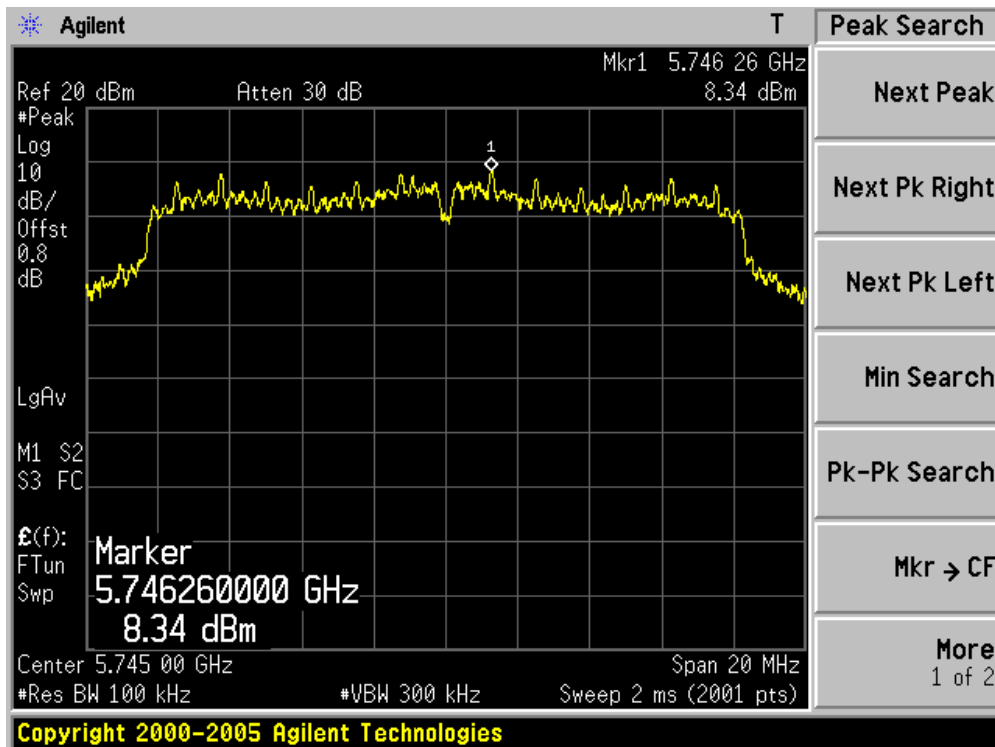
Channel 11 (2462MHz)



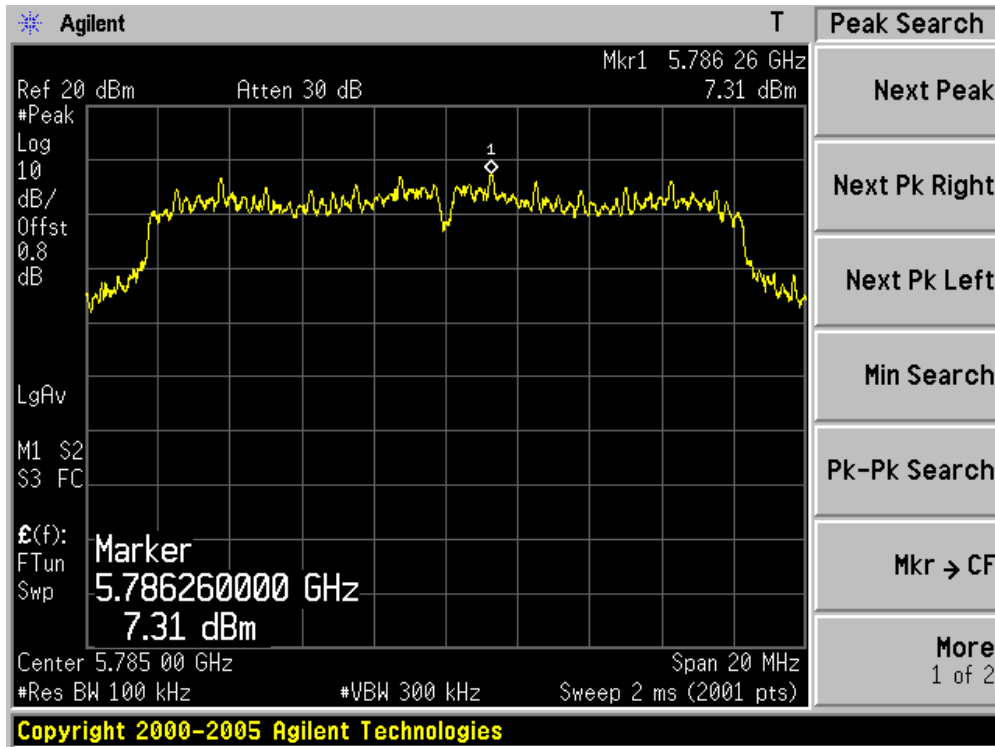
Product	:	IP-STB
Test Item	:	Power Spectral Density
Test Site	:	TR-8
Test Mode	:	Mode 3: Transmit by 802.11a (Chain 0)

Channel No.	Frequency (MHz)	Reading Value (dBm)		BWCF (dB)	PSD (dBm)	Limit (dBm)	Result
		Chain 0	Chain 1				
149	5745	8.34	N/A	-15.2	-6.86	8	Pass
157	5785	7.31	N/A	-15.2	-7.89	8	Pass
165	5825	7.62	N/A	-15.2	-7.58	8	Pass

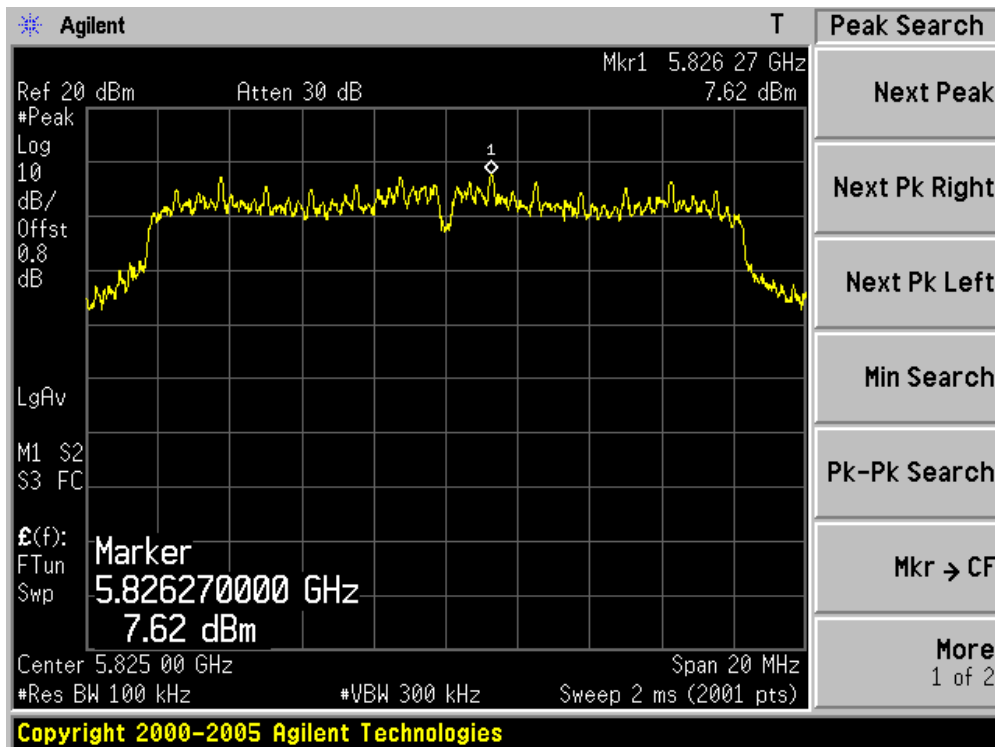
Channel 149 (5745MHz)



Channel 157 (5785MHz)



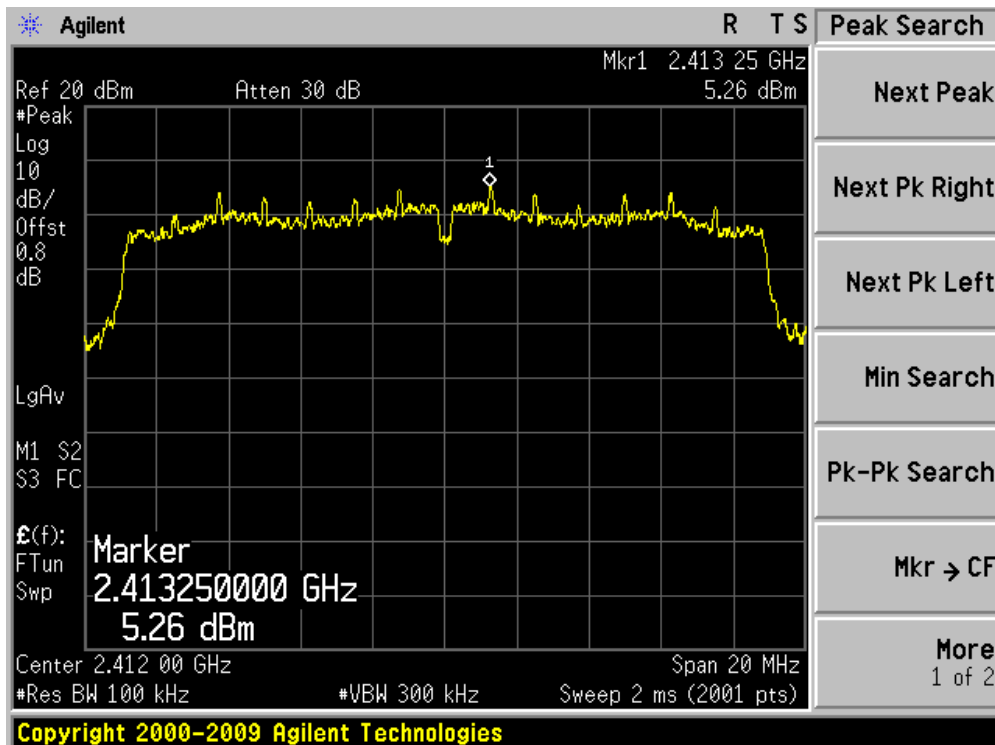
Channel 165 (5825MHz)



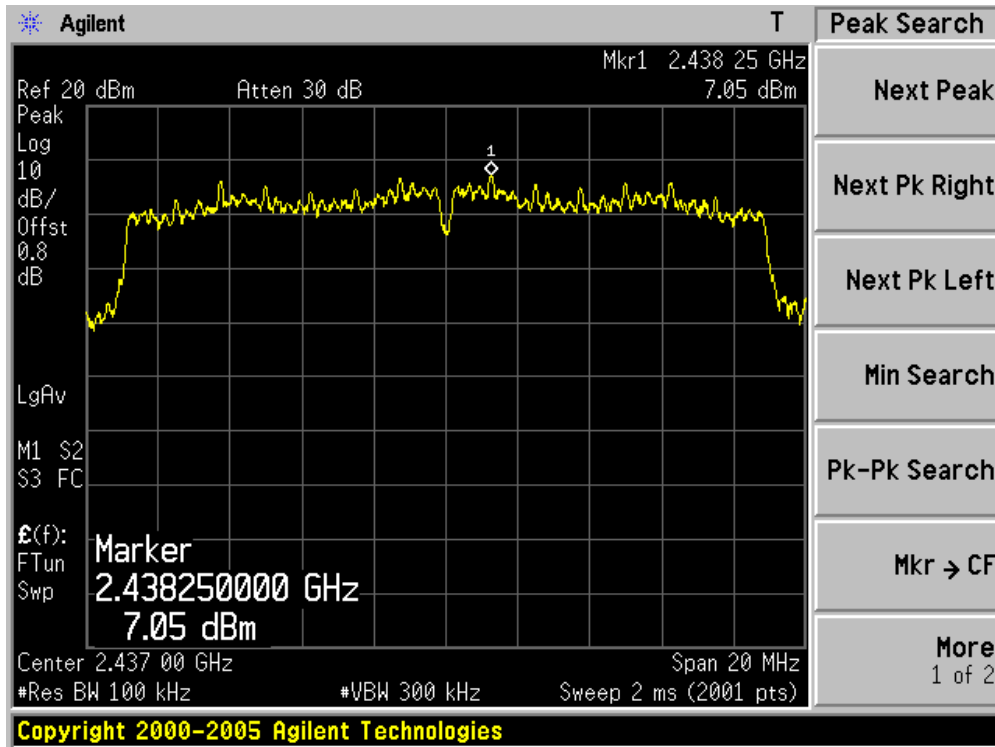
Product	:	IP-STB
Test Item	:	Power Spectral Density
Test Site	:	TR-8
Test Mode	:	Mode 4: Transmit by 802.11n (20MHz) (Chain 0)

Channel No.	Frequency (MHz)	Reading Value (dBm)		BWCF (dB)	PSD (dBm)	Limit (dBm)	Result
		Chain 0	Chain 1				
01	2412	5.26	N/A	-15.2	-9.94	8	Pass
06	2437	7.05	N/A	-15.2	-8.15	8	Pass
11	2462	4.02	N/A	-15.2	-11.18	8	Pass
149	5745	4.55	N/A	-15.2	-10.65	8	Pass
157	5785	4.25	N/A	-15.2	-10.95	8	Pass
165	5825	4.46	N/A	-15.2	-10.74	8	Pass

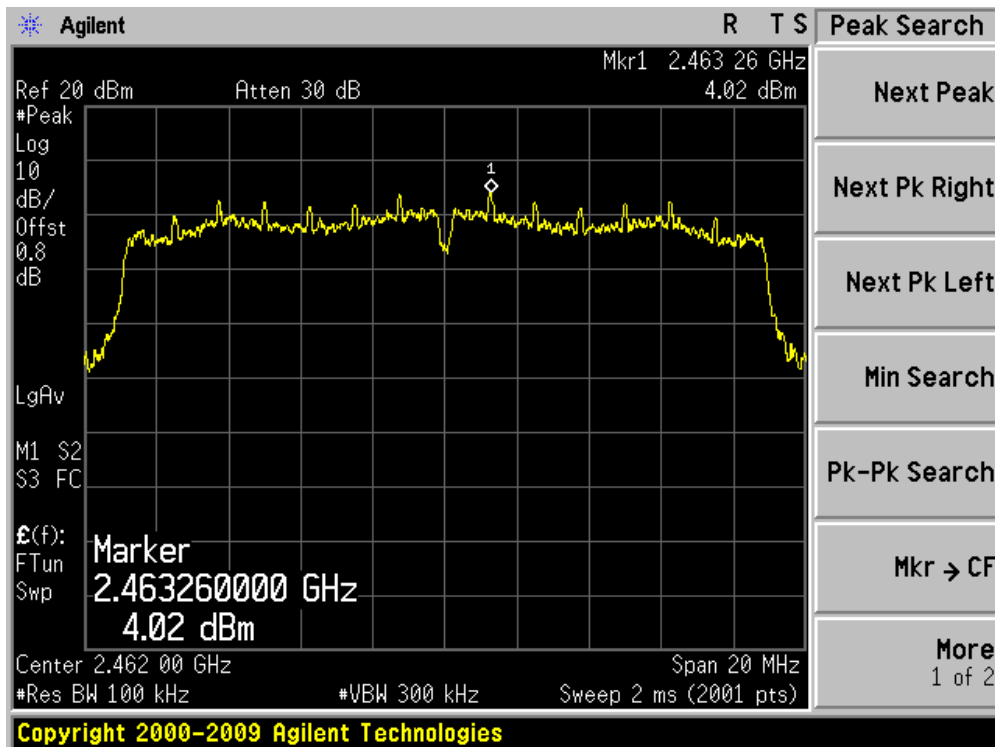
Channel 01 (2412MHz)



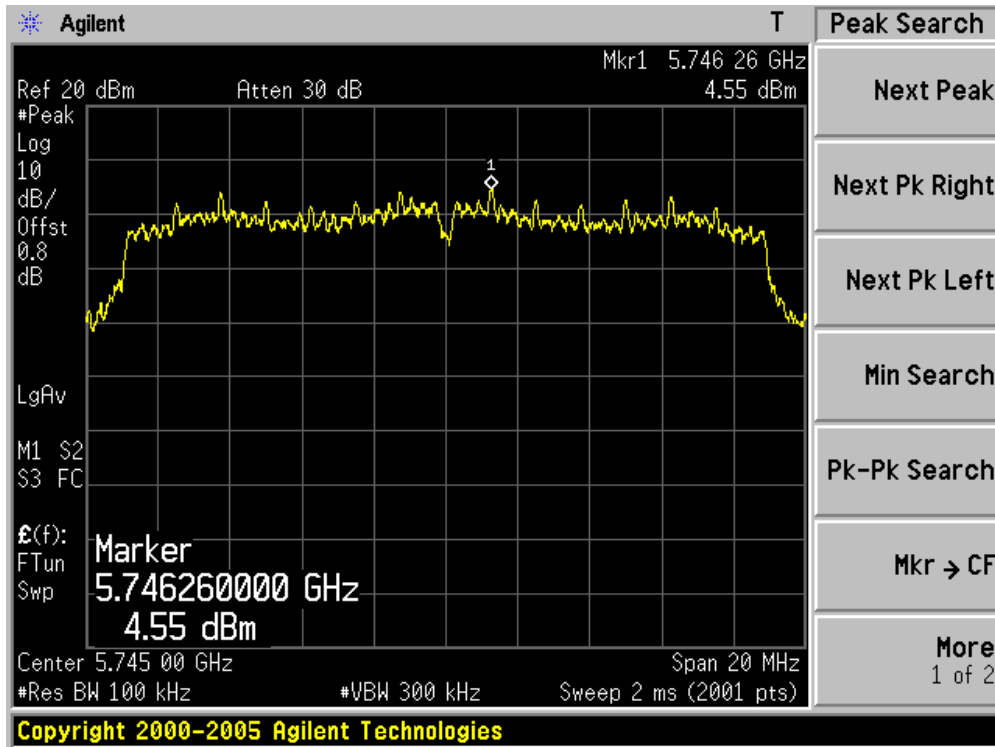
Channel 06 (2437MHz)



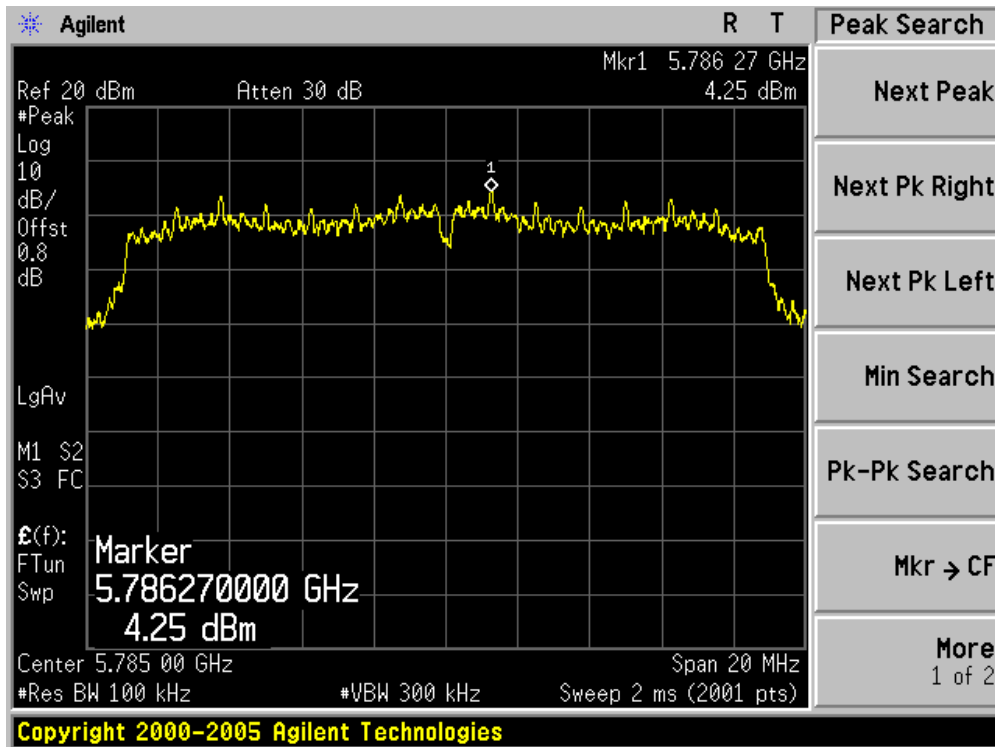
Channel 11 (2462MHz)



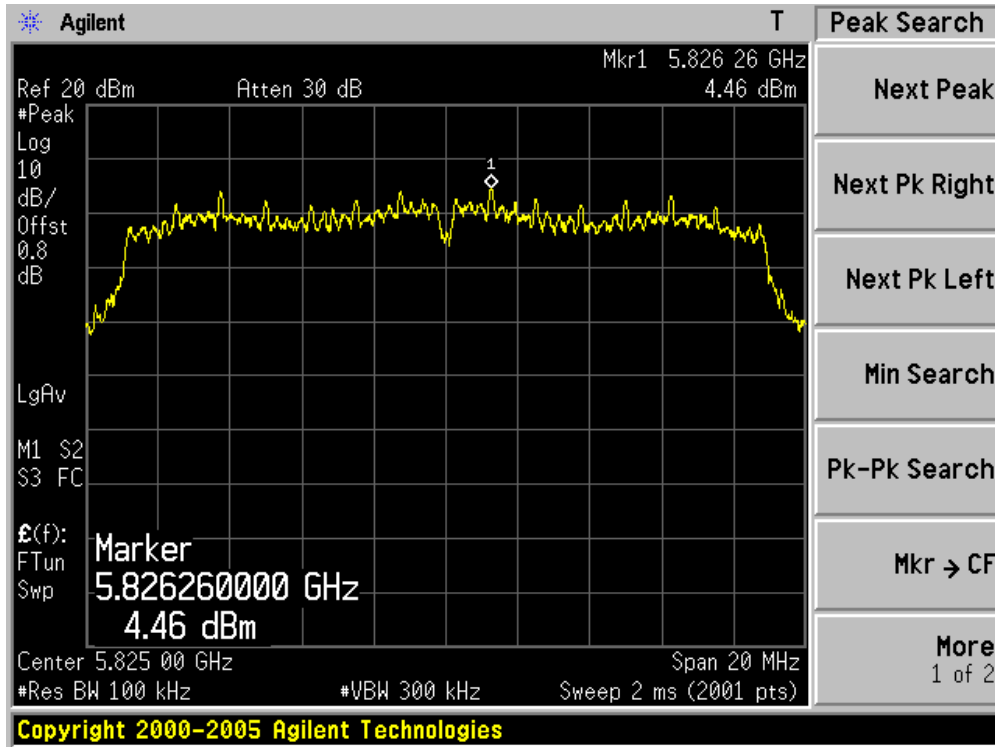
Channel 149 (5745MHz)



Channel 157 (5785MHz)



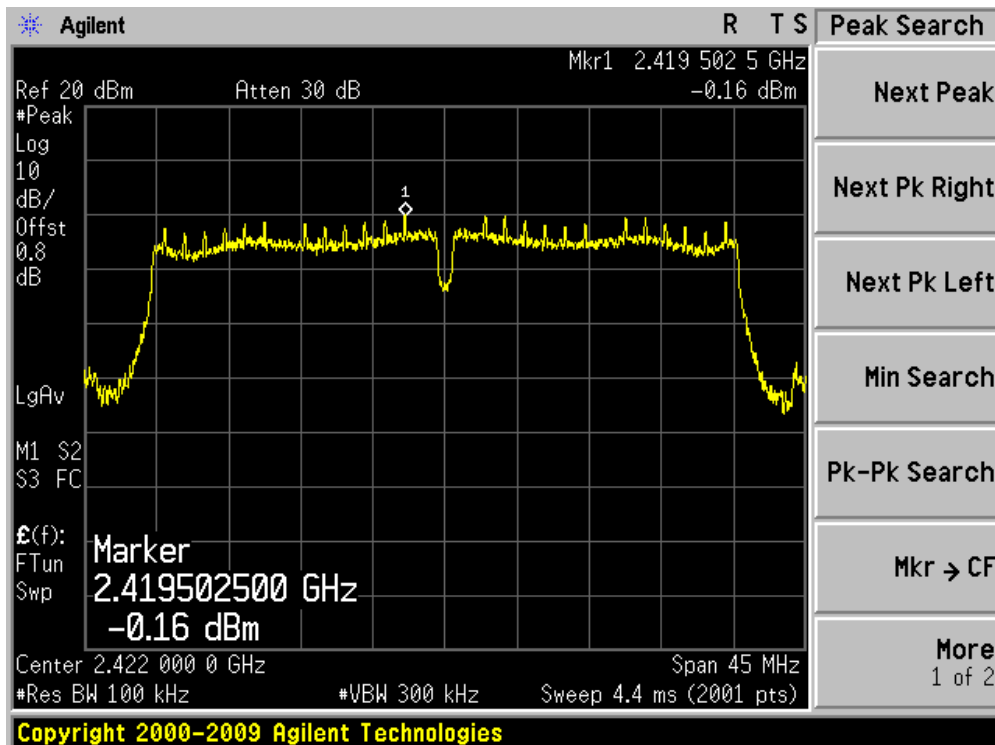
Channel 165 (5825MHz)



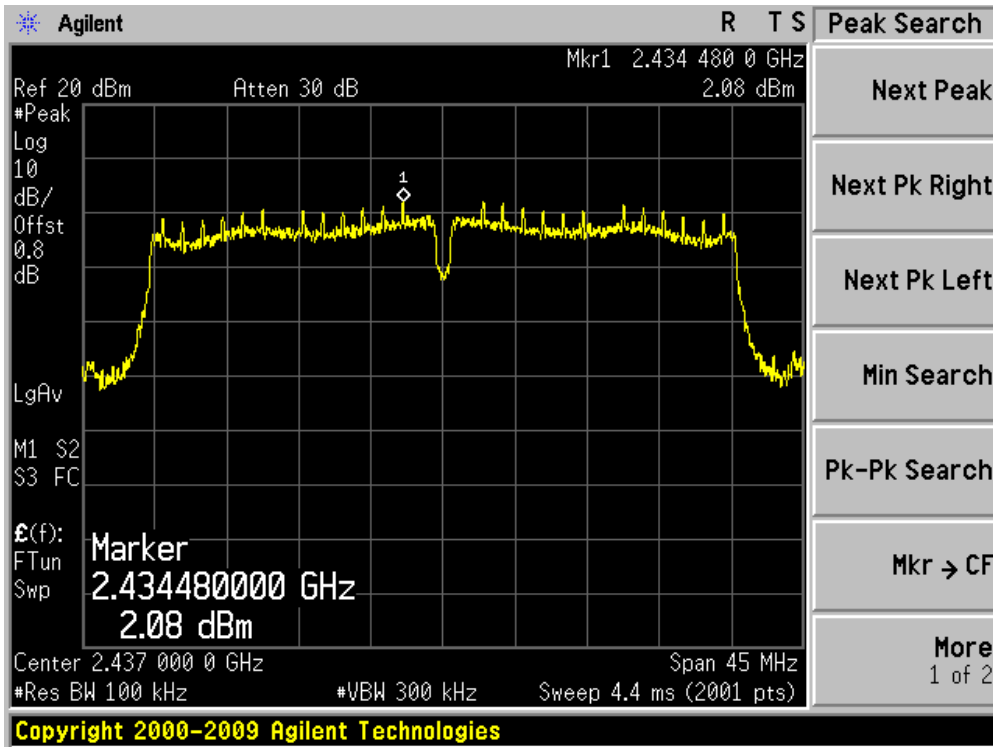
Product	:	IP-STB
Test Item	:	Power Spectral Density
Test Site	:	TR-8
Test Mode	:	Mode 5: Transmit by 802.11n (40MHz) (Chain 0)

Channel No.	Frequency (MHz)	Reading Value (dBm)		BWCF (dB)	PSD (dBm)	Limit (dBm)	Result
		Chain 0	Chain 1				
01	2412	-0.61	N/A	-15.2	-15.81	8	Pass
06	2437	2.08	N/A	-15.2	-13.12	8	Pass
11	2462	-0.26	N/A	-15.2	-15.46	8	Pass
149	5745	-4.95	N/A	-15.2	-20.15	8	Pass
157	5785	1.61	N/A	-15.2	-13.59	8	Pass
165	5825	1.32	N/A	-15.2	-13.88	8	Pass

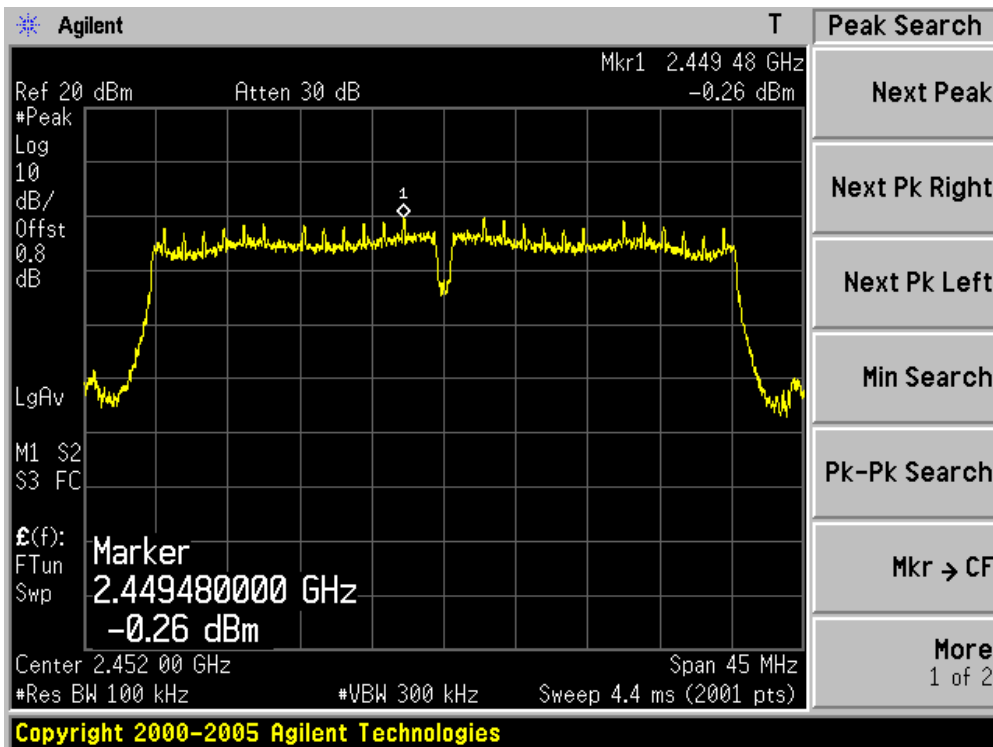
Channel 03 (2422MHz)



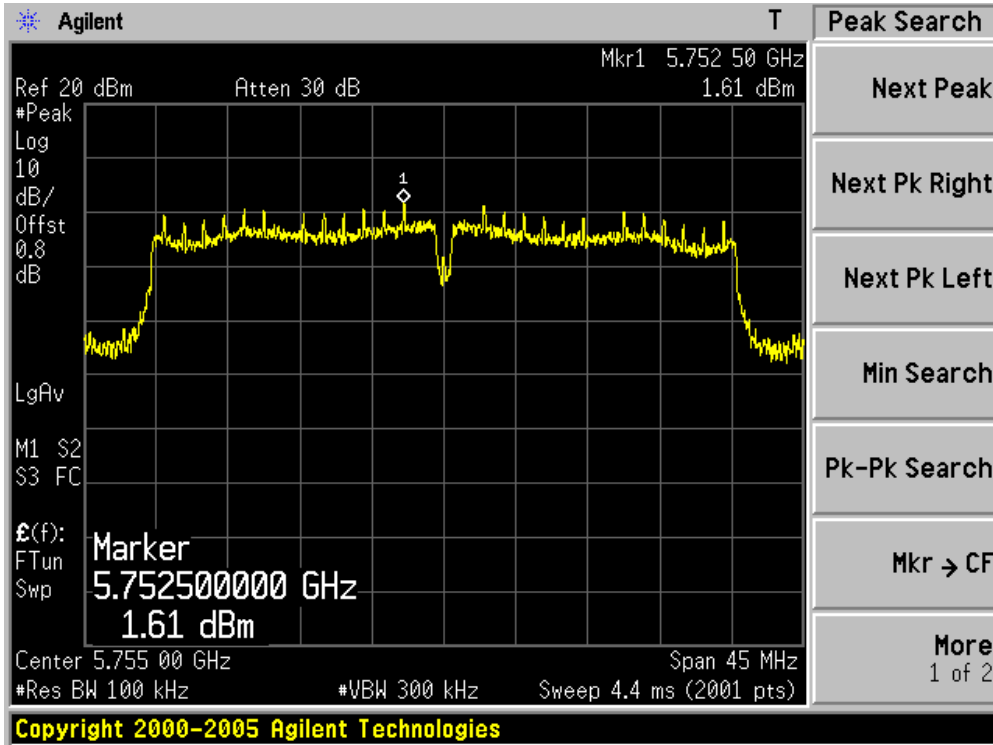
Channel 06 (2437MHz)



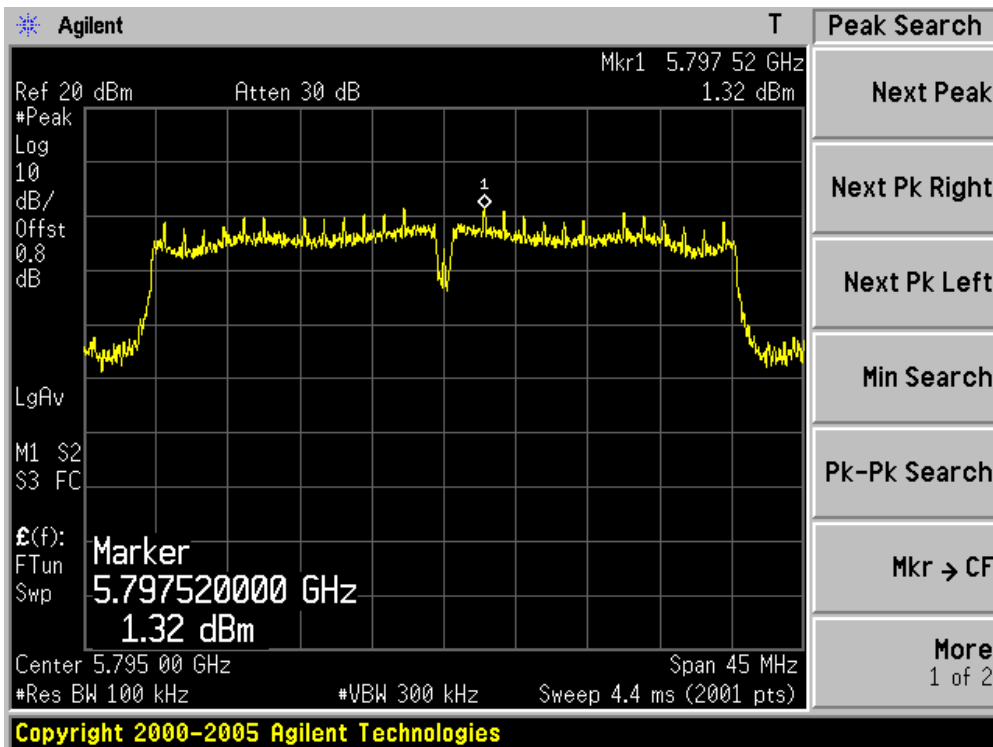
Channel 09 (2452MHz)



Channel 151 (5755MHz)



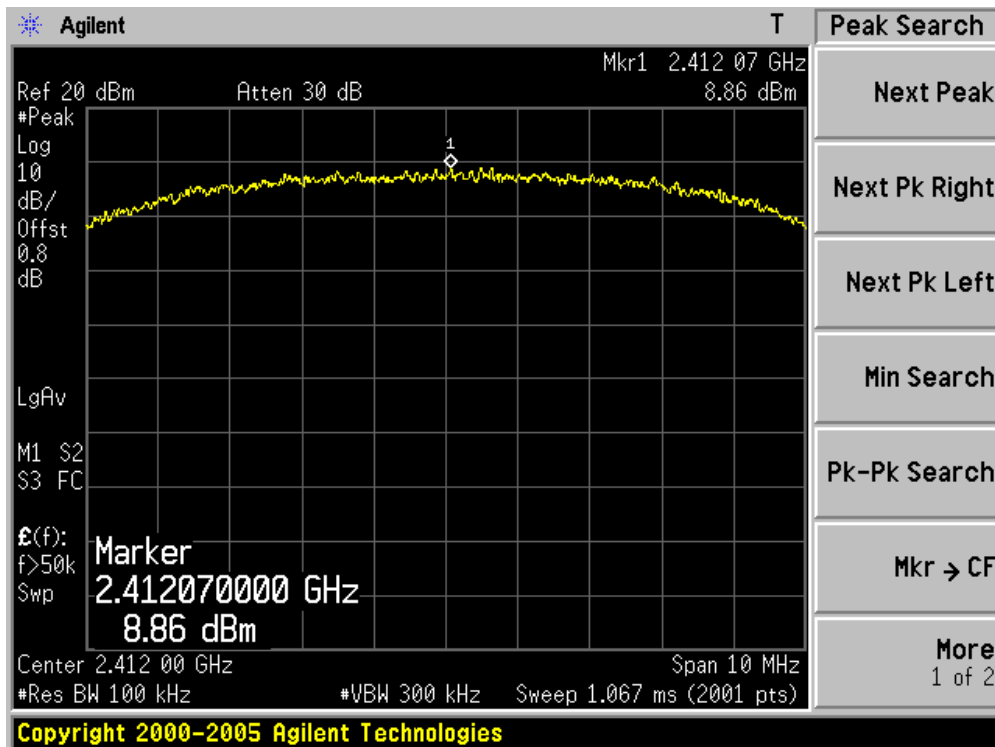
Channel 159 (5795MHz)



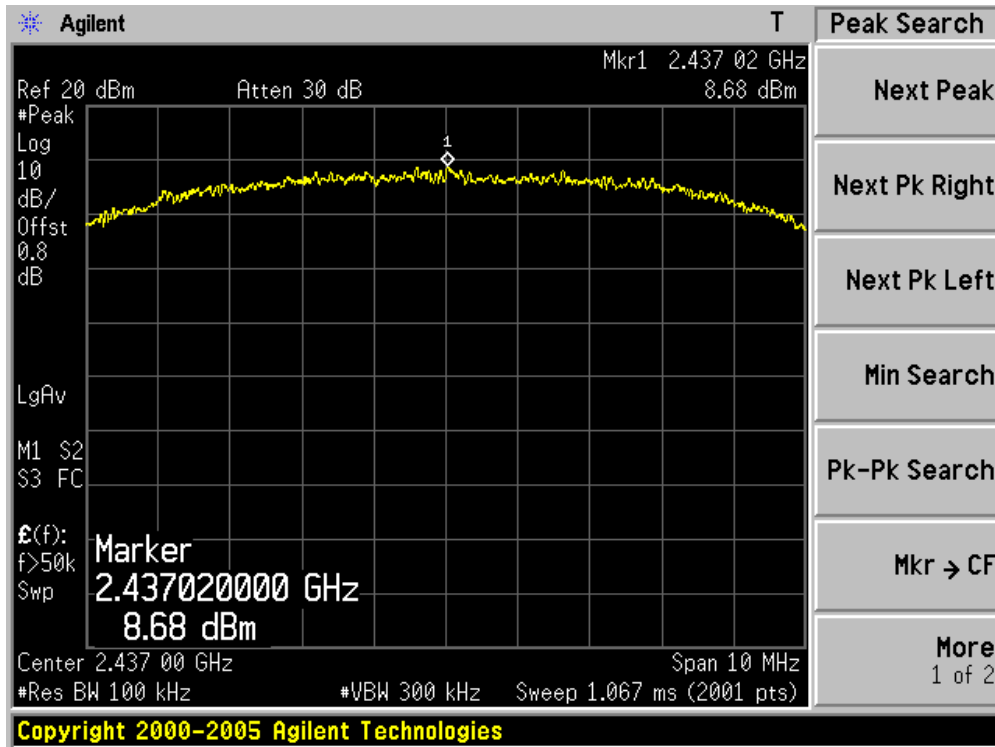
Product	:	IP-STB
Test Item	:	Power Spectral Density
Test Site	:	TR-8
Test Mode	:	Mode 1: Transmit by 802.11b (Chain 1)

Channel No.	Frequency (MHz)	Reading Value (dBm)		BWCF (dB)	PSD (dBm)	Limit (dBm)	Result
		Chain 0	Chain 1				
01	2412	N/A	8.86	-15.2	-6.34	8	Pass
06	2437	N/A	8.68	-15.2	-6.52	8	Pass
11	2462	N/A	8.72	-15.2	-6.48	8	Pass

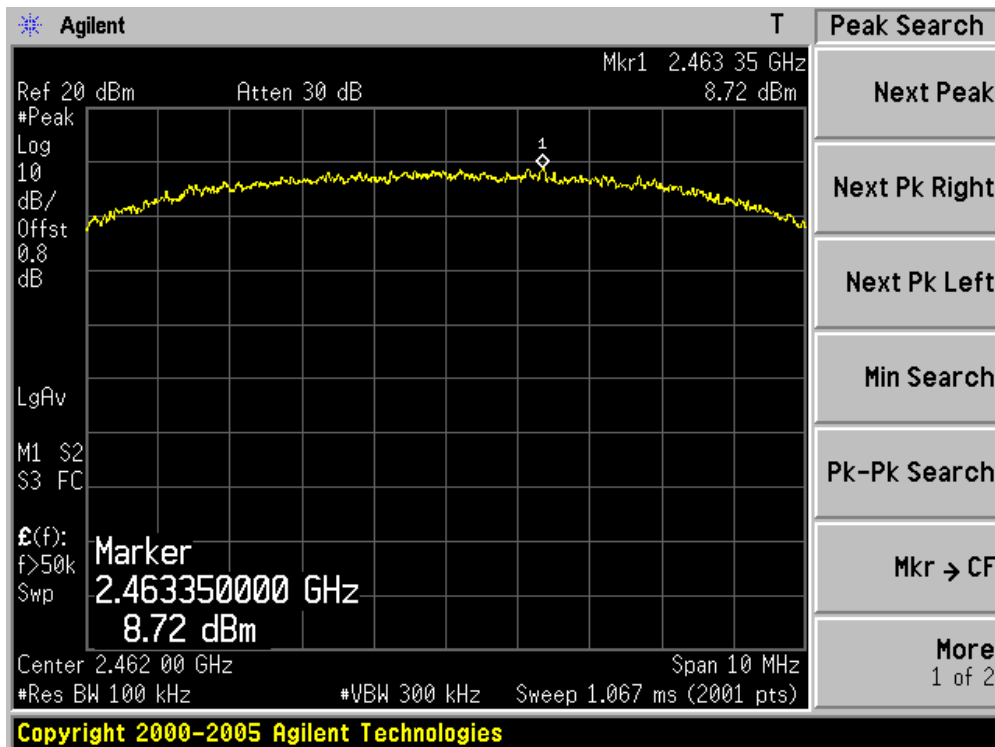
Channel 01 (2412MHz)



Channel 06 (2437MHz)



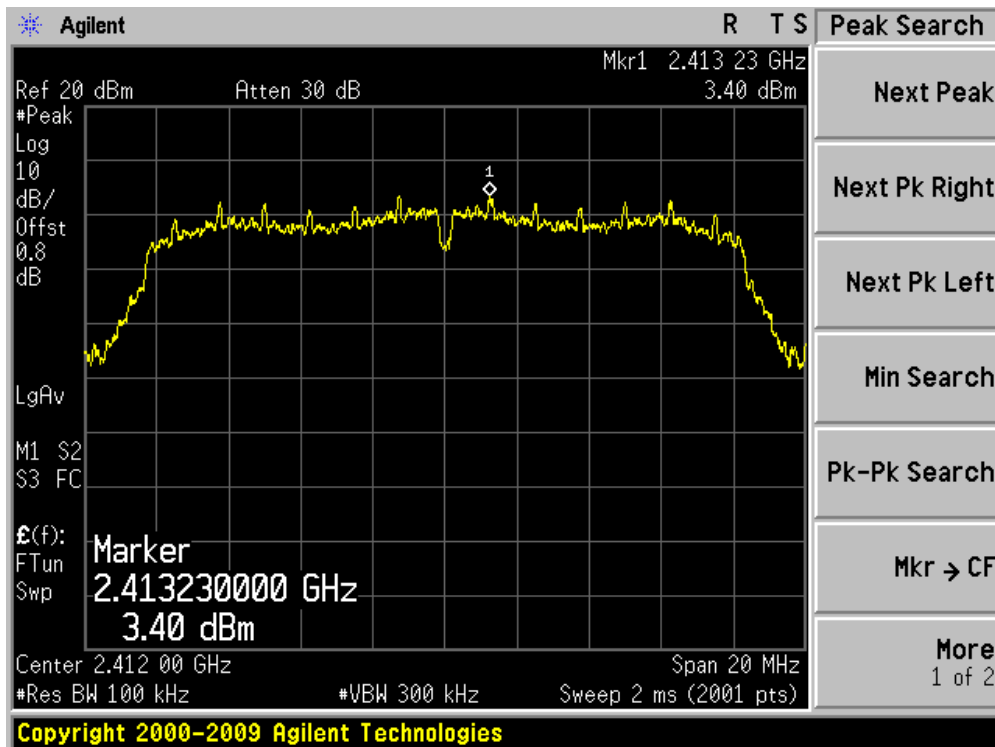
Channel 11 (2462MHz)



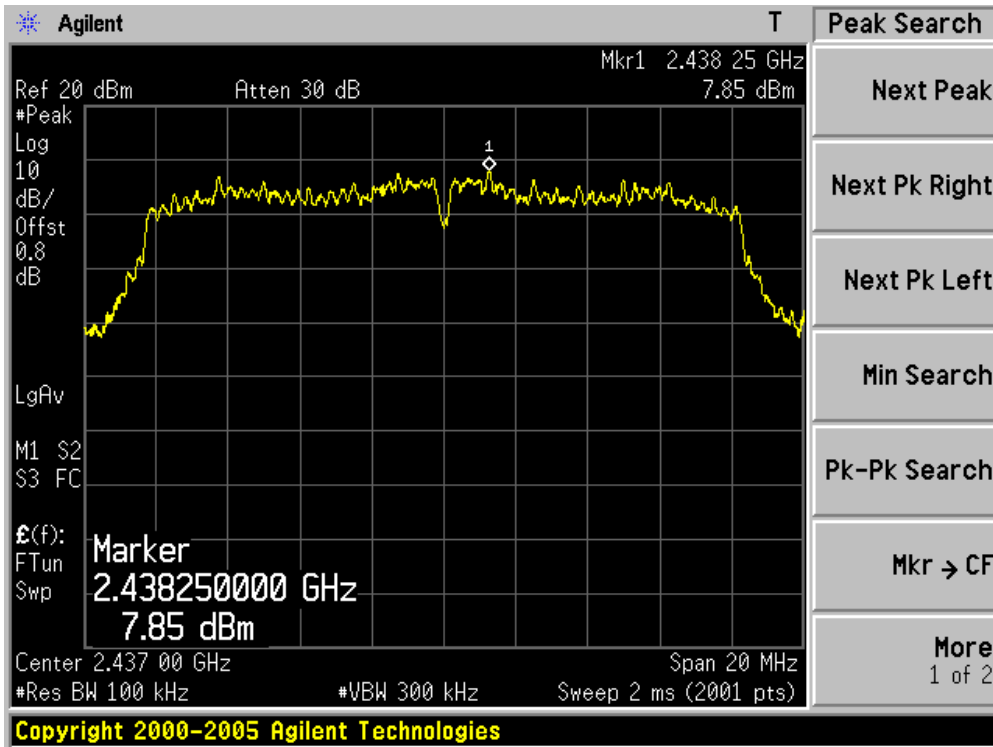
Product	:	IP-STB
Test Item	:	Power Spectral Density
Test Site	:	TR-8
Test Mode	:	Mode 2: Transmit by 802.11g (Chain 1)

Channel No.	Frequency (MHz)	Reading Value (dBm)		BWCF (dB)	PSD (dBm)	Limit (dBm)	Result
		Chain 0	Chain 1				
01	2412	N/A	3.40	-15.2	-11.80	8	Pass
06	2437	N/A	7.85	-15.2	-7.35	8	Pass
11	2462	N/A	5.16	-15.2	-10.04	8	Pass

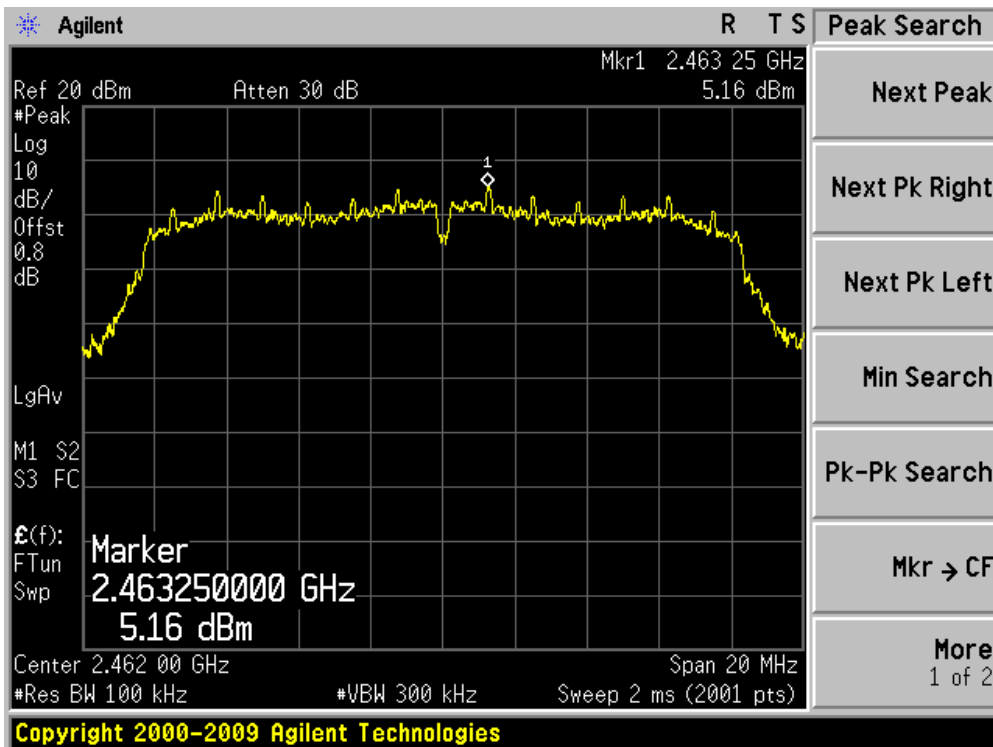
Channel 01 (2412MHz)



Channel 06 (2437MHz)



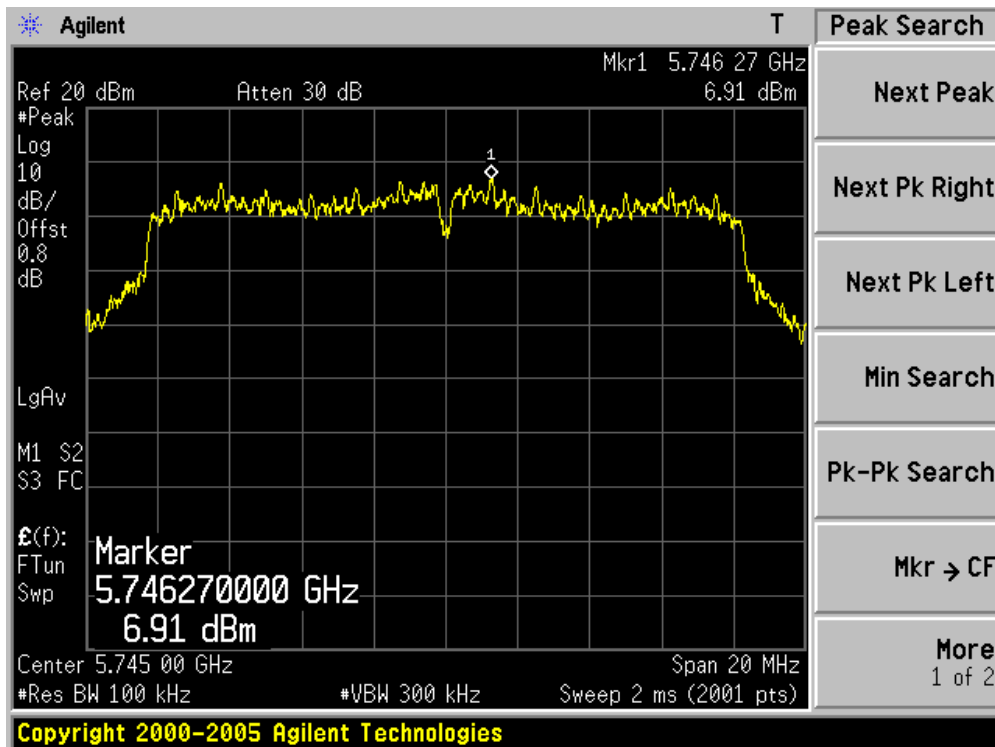
Channel 11 (2462MHz)



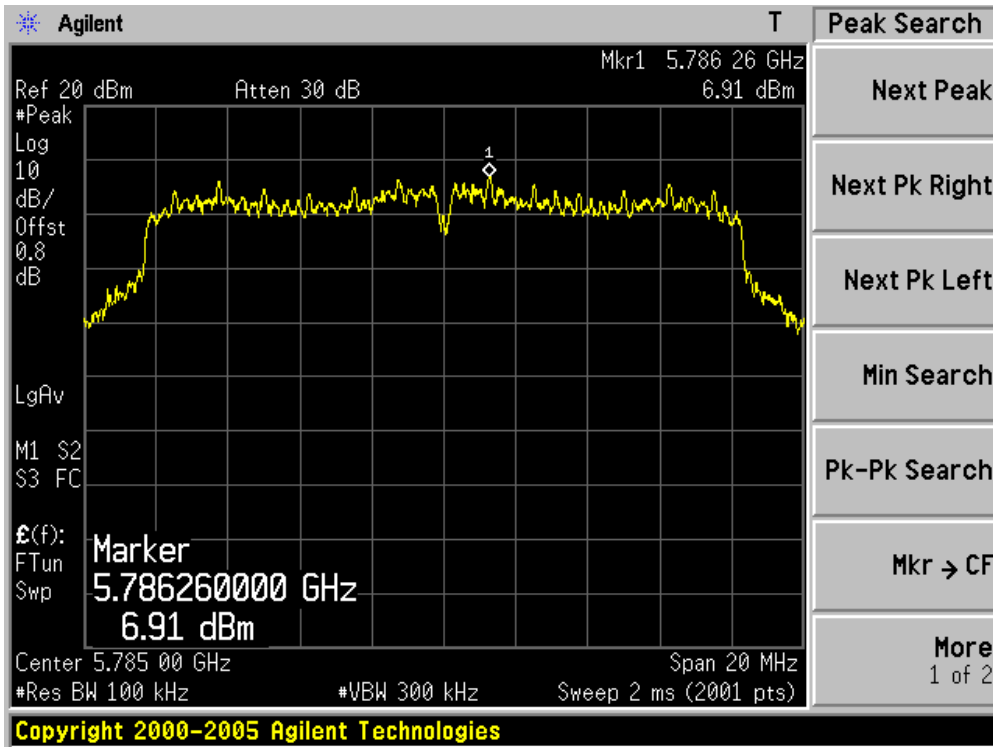
Product	:	IP-STB
Test Item	:	Power Spectral Density
Test Site	:	TR-8
Test Mode	:	Mode 3: Transmit by 802.11a (Chain 1)

Channel No.	Frequency (MHz)	Reading Value (dBm)		BWCF (dB)	PSD (dBm)	Limit (dBm)	Result
		Chain 0	Chain 1				
149	5745	N/A	6.91	-15.2	-8.29	8	Pass
157	5785	N/A	6.91	-15.2	-8.29	8	Pass
165	5825	N/A	7.13	-15.2	-8.07	8	Pass

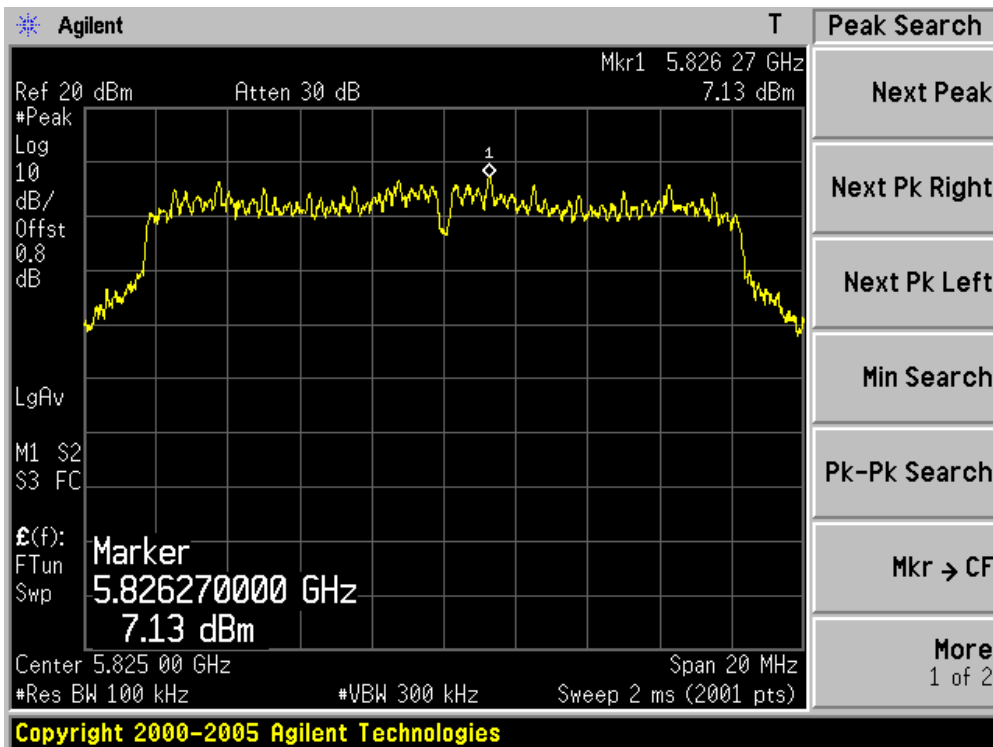
Channel 149 (5745MHz)



Channel 157 (5785MHz)



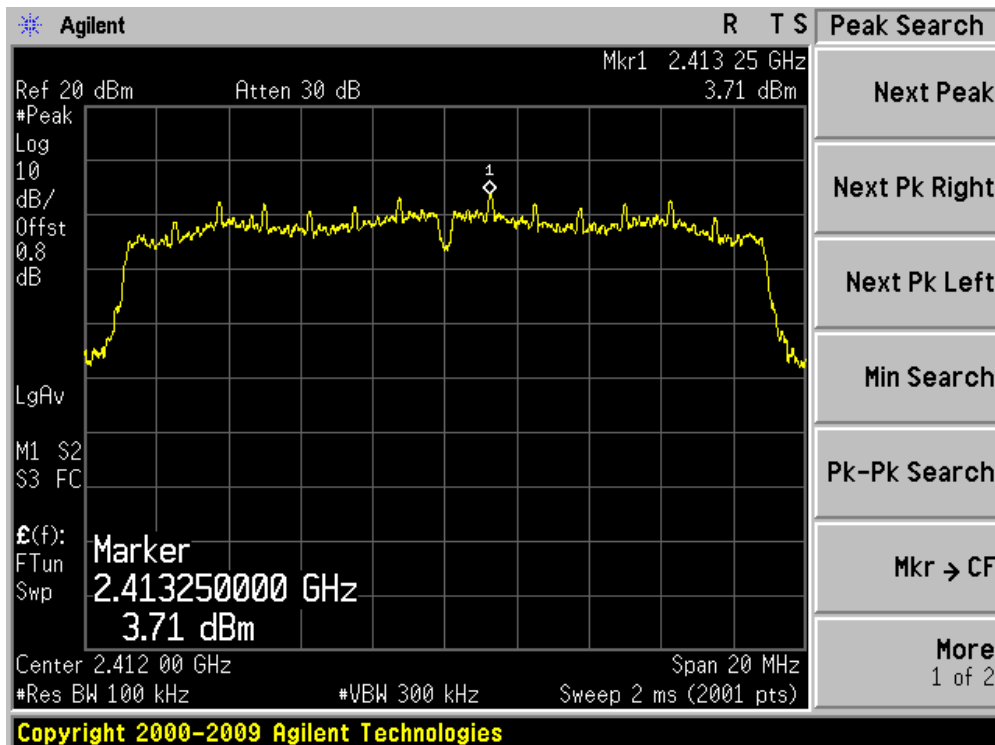
Channel 165 (5825MHz)



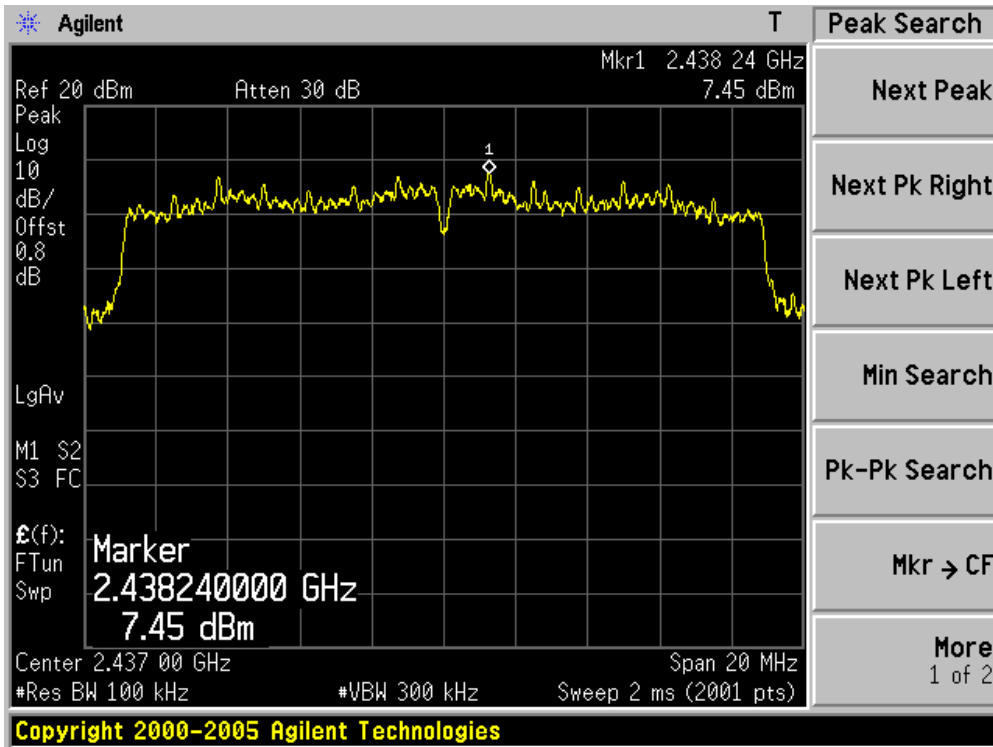
Product	:	IP-STB
Test Item	:	Power Spectral Density
Test Site	:	TR-8
Test Mode	:	Mode 4: Transmit by 802.11n (20MHz) (Chain 1)

Channel No.	Frequency (MHz)	Reading Value (dBm)		BWCF (dB)	PSD (dBm)	Limit (dBm)	Result
		Chain 0	Chain 1				
01	2412	N/A	3.71	-15.2	-11.49	8	Pass
06	2437	N/A	7.45	-15.2	-7.75	8	Pass
11	2462	N/A	3.80	-15.2	-11.40	8	Pass
149	5745	N/A	4.64	-15.2	-10.56	8	Pass
157	5785	N/A	4.59	-15.2	-10.61	8	Pass
165	5825	N/A	4.95	-15.2	-10.25	8	Pass

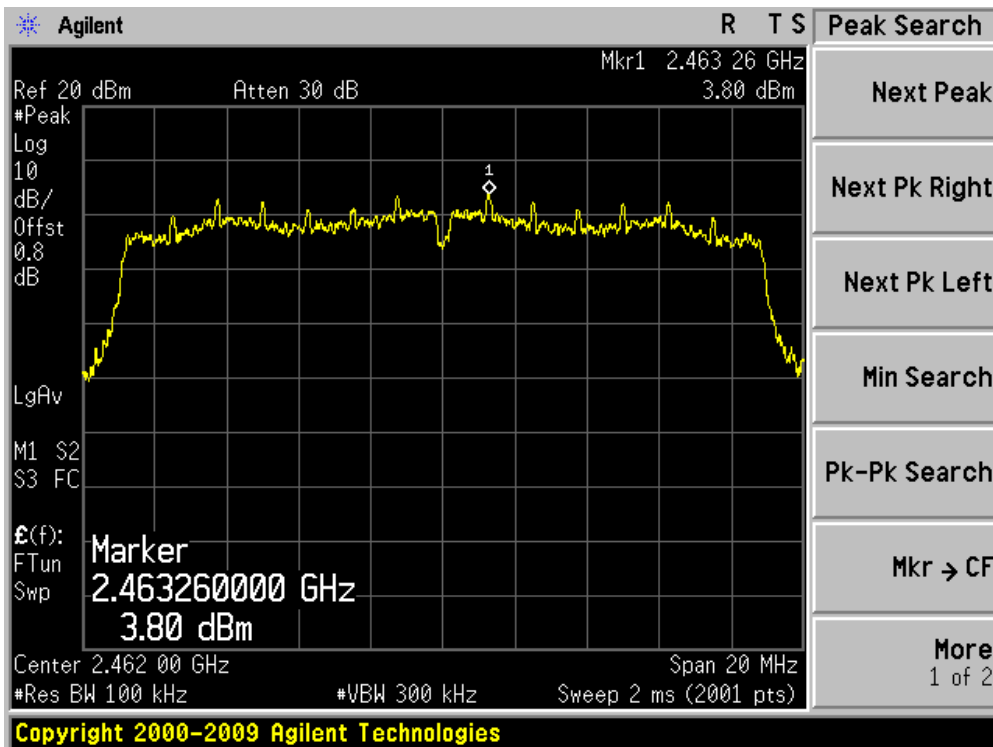
Channel 01 (2412MHz)



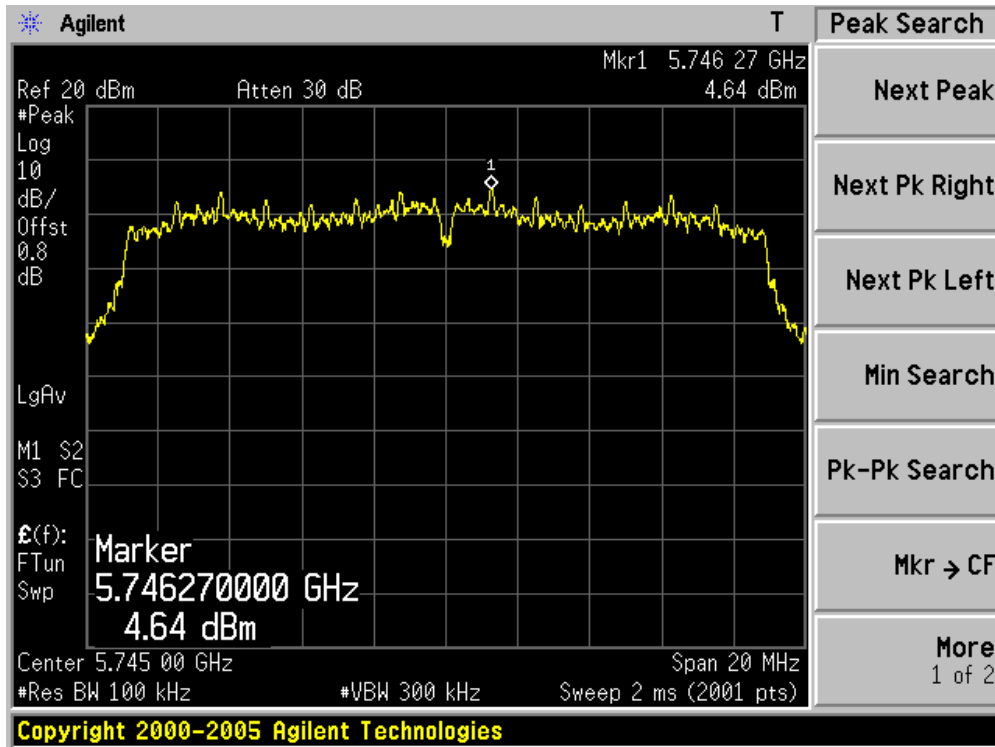
Channel 06 (2437MHz)



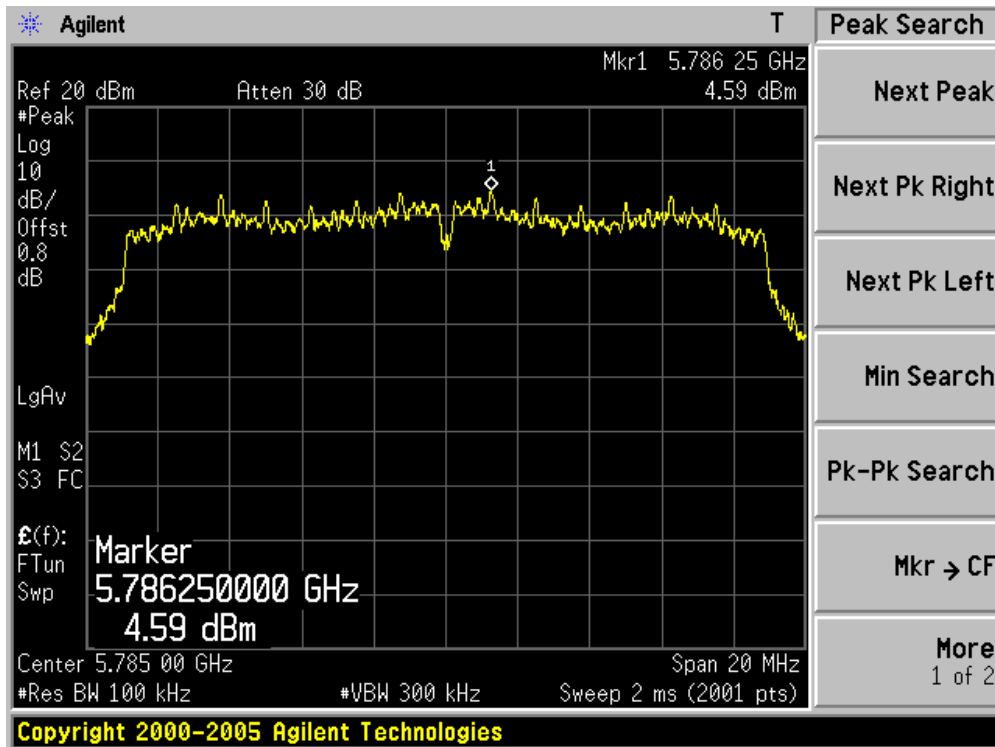
Channel 11 (2462MHz)



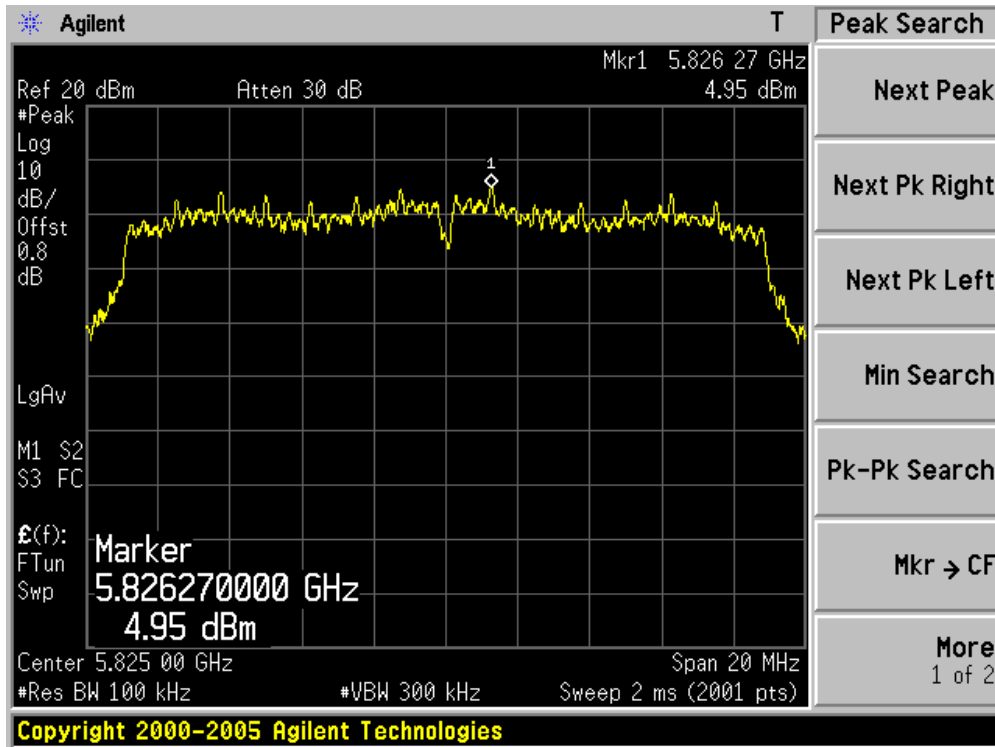
Channel 149 (5745MHz)



Channel 157 (5785MHz)



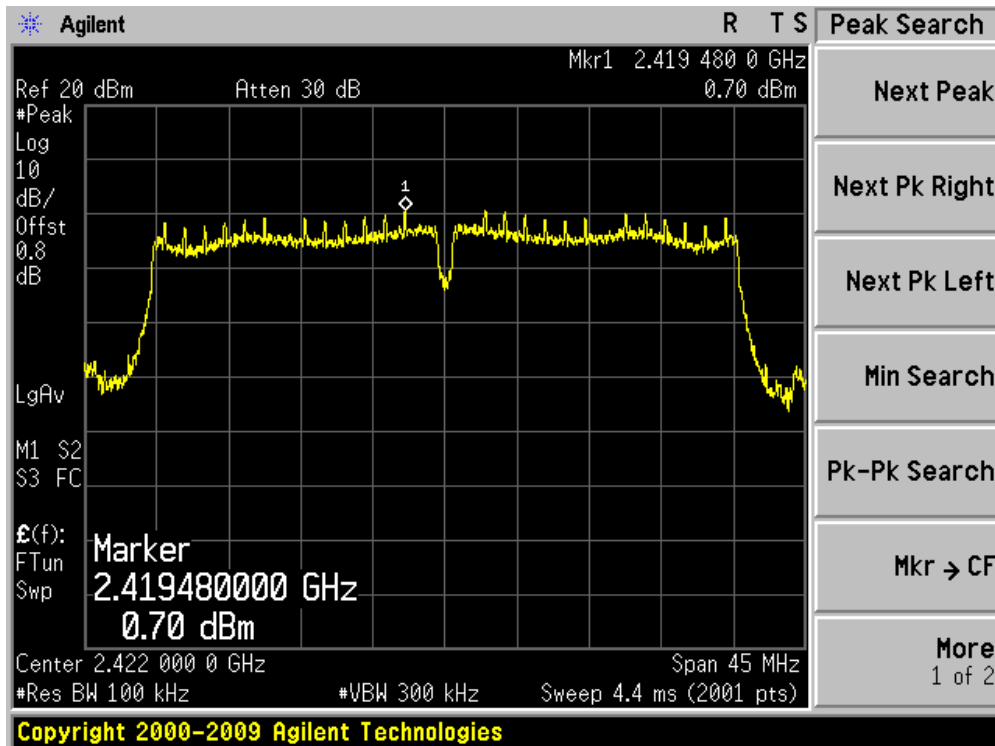
Channel 165 (5825MHz)



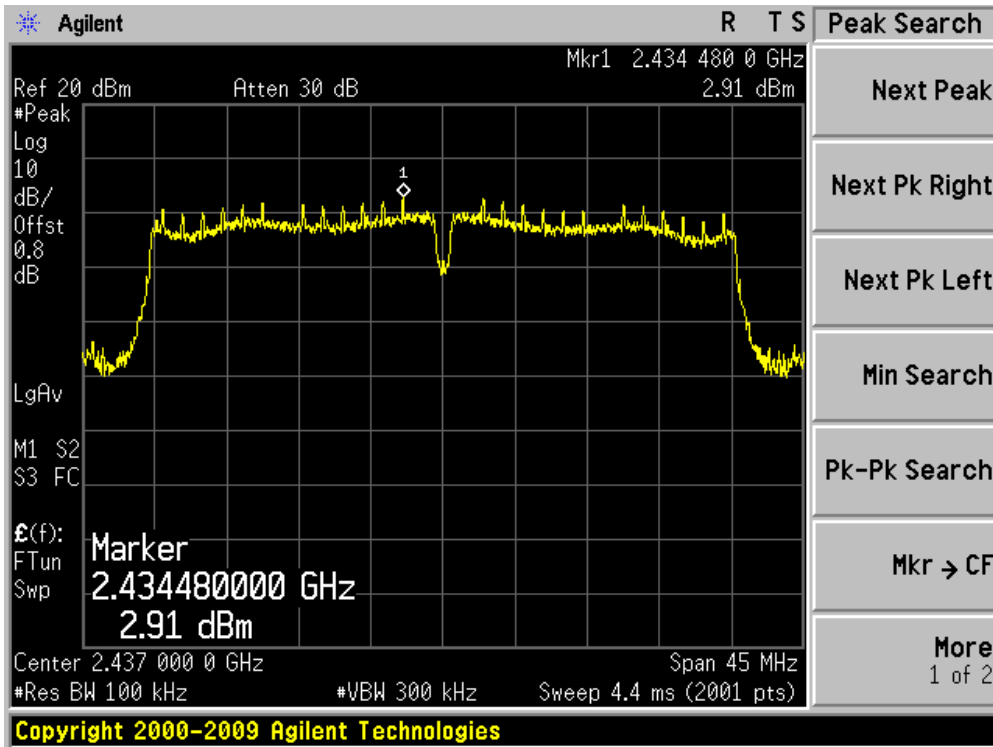
Product	:	IP-STB
Test Item	:	Power Spectral Density
Test Site	:	TR-8
Test Mode	:	Mode 5: Transmit by 802.11n (40MHz) (Chain 1)

Channel No.	Frequency (MHz)	Reading Value (dBm)		BWCF (dB)	PSD (dBm)	Limit (dBm)	Result
		Chain 0	Chain 1				
03	2422	N/A	0.70	-15.2	-14.50	8	Pass
06	2437	N/A	2.91	-15.2	-12.29	8	Pass
09	2452	N/A	0.56	-15.2	-14.64	8	Pass
151	5755	N/A	1.49	-15.2	-13.71	8	Pass
159	5795	N/A	1.68	-15.2	-13.52	8	Pass

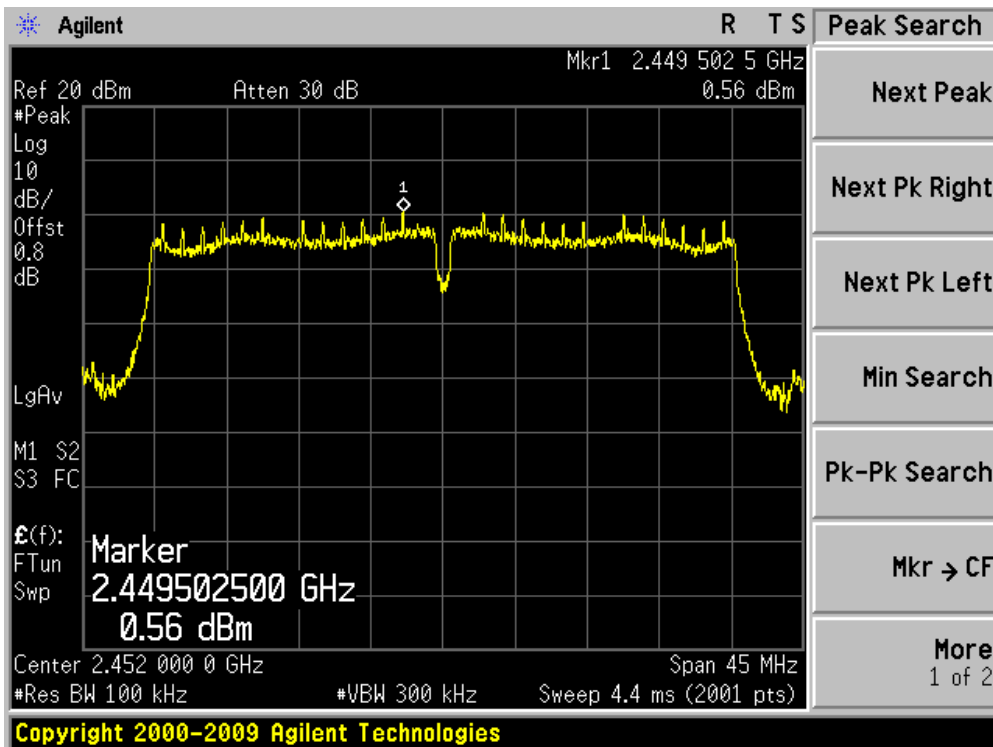
Channel 03 (2422MHz)



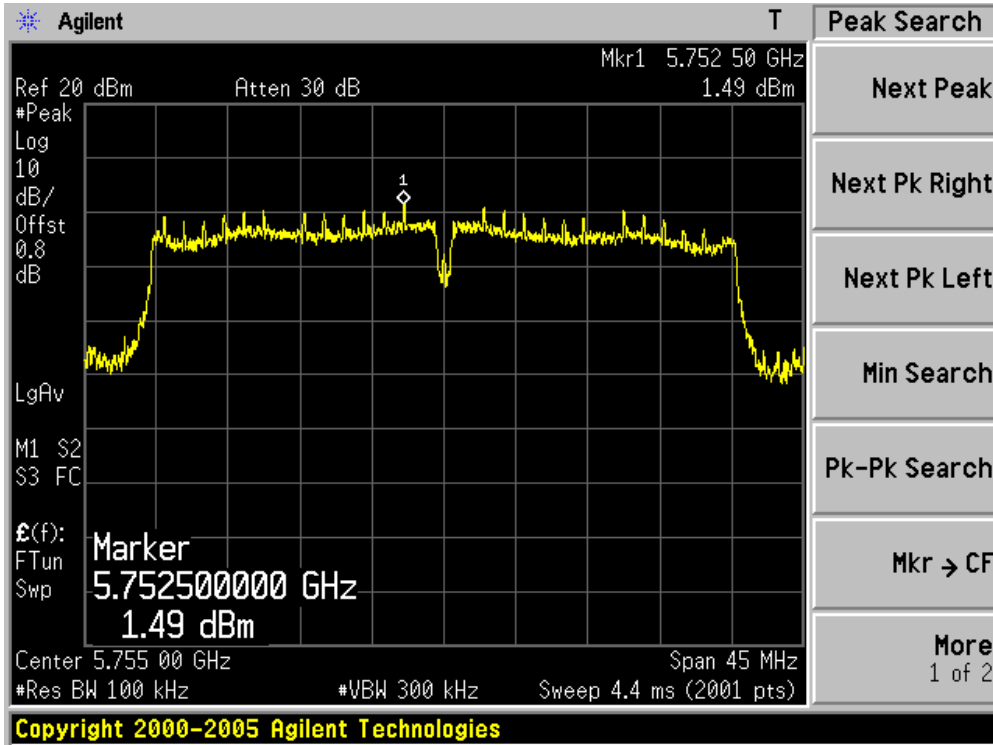
Channel 06 (2437MHz)



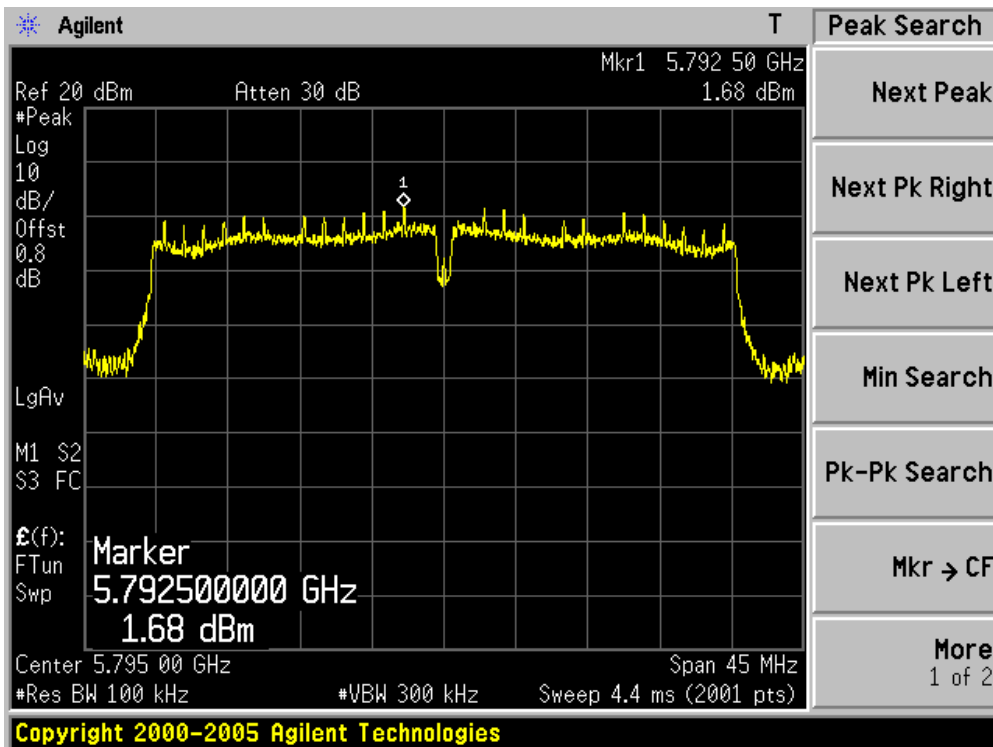
Channel 09 (2452MHz)



Channel 151 (5755MHz)



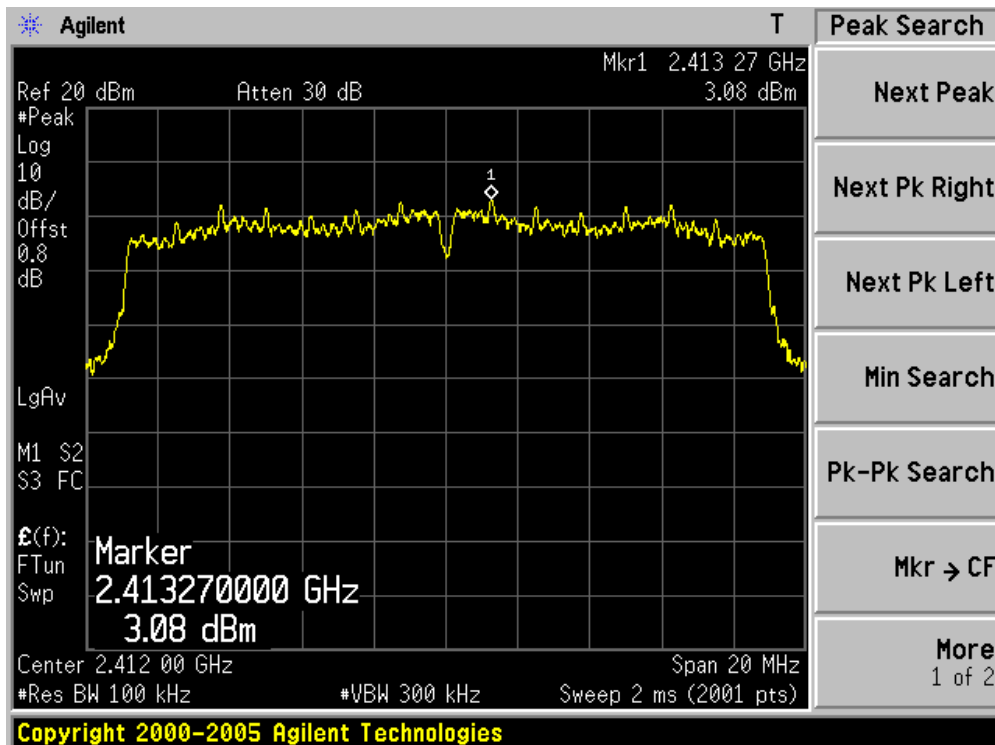
Channel 159 (5795MHz)



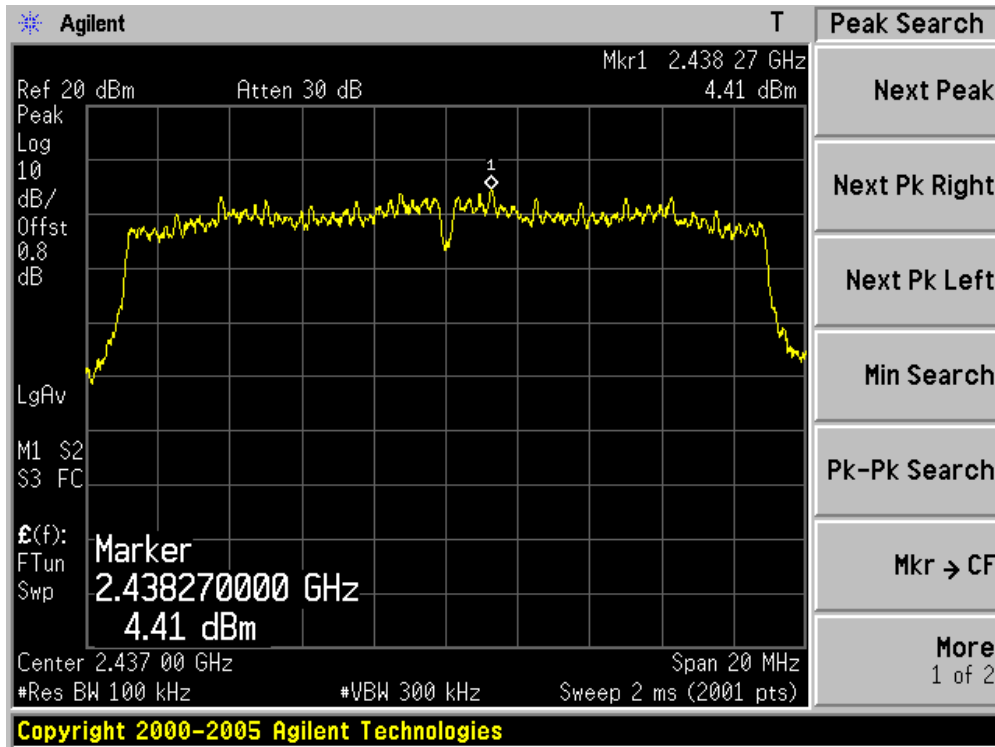
Product	:	IP-STB
Test Item	:	Power Spectral Density
Test Site	:	TR-8
Test Mode	:	Mode 4: Transmit by 802.11n (20MHz) (Chain 0+1)

Channel No.	Frequency (MHz)	Reading Value (dBm)		BWCF (dB)	PSD (dBm)	Limit (dBm)	Result
		Chain 0	Chain 1				
01	2412	3.08	3.29	-15.2	-9.00	8	Pass
06	2437	4.41	4.42	-15.2	-7.77	8	Pass
11	2462	3.15	3.32	-15.2	-8.95	8	Pass
149	5745	4.18	4.18	-15.2	-8.01	8	Pass
157	5785	3.60	3.97	-15.2	-8.40	8	Pass
165	5825	4.21	4.11	-15.2	-8.03	8	Pass

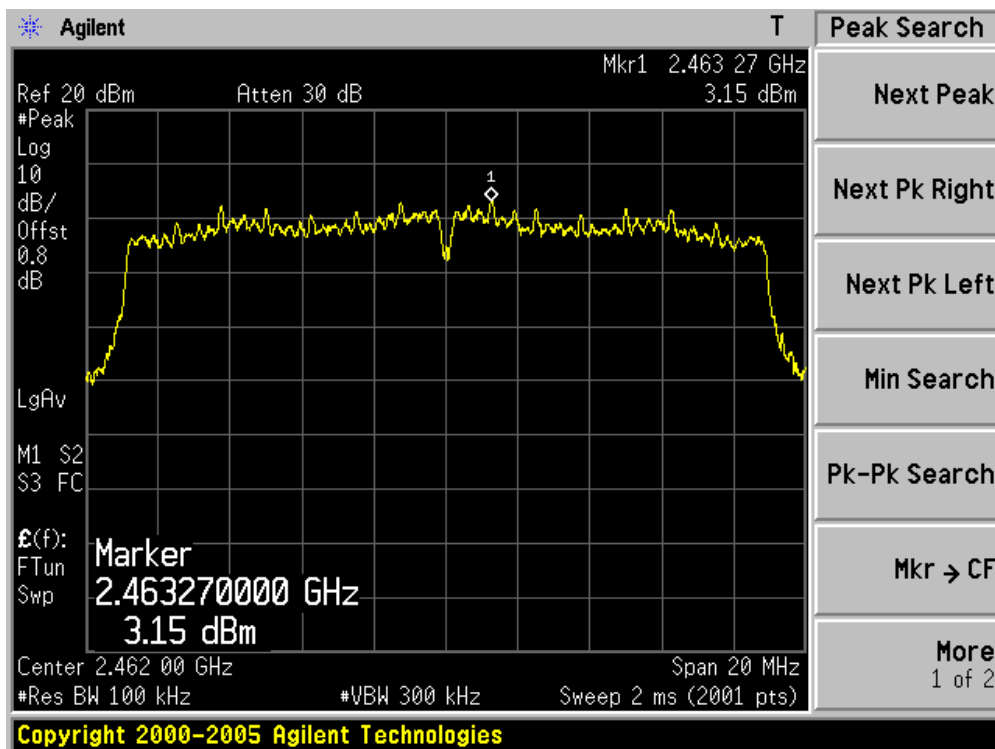
Channel 01 (2412MHz) – Chain 0



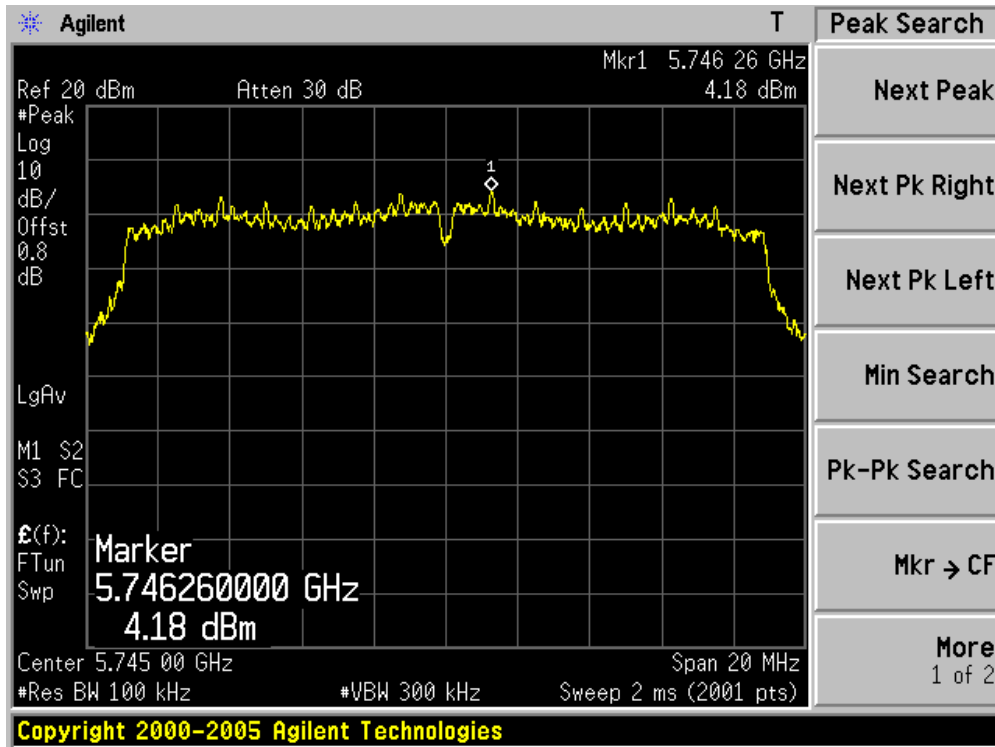
Channel 06 (2437MHz) – Chain 0



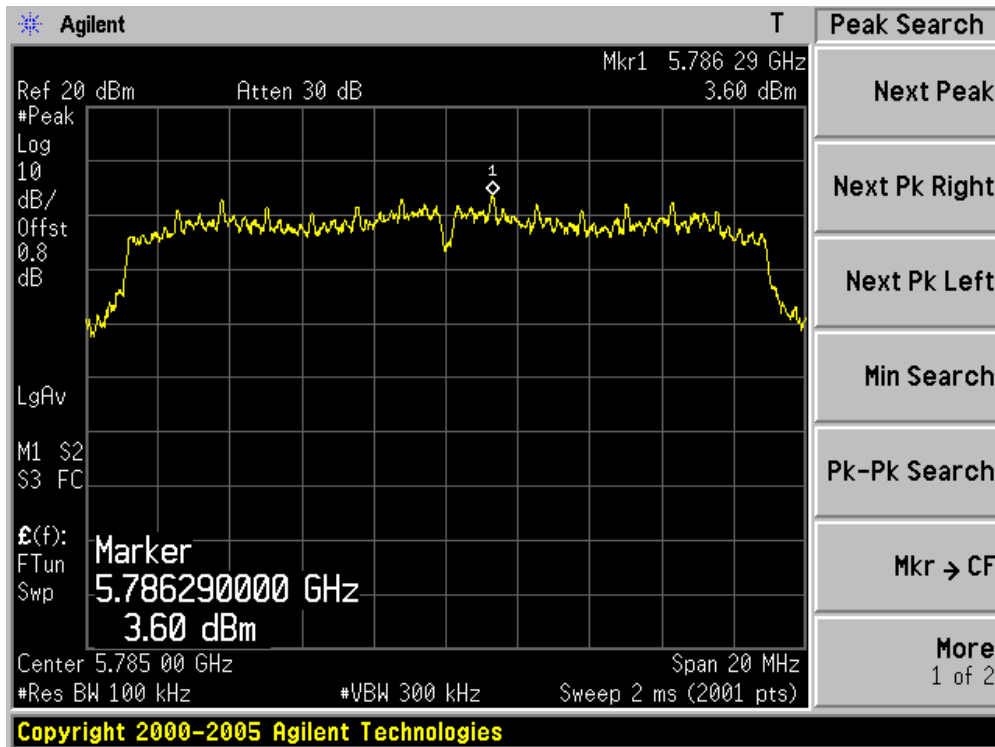
Channel 11 (2462MHz) – Chain 0



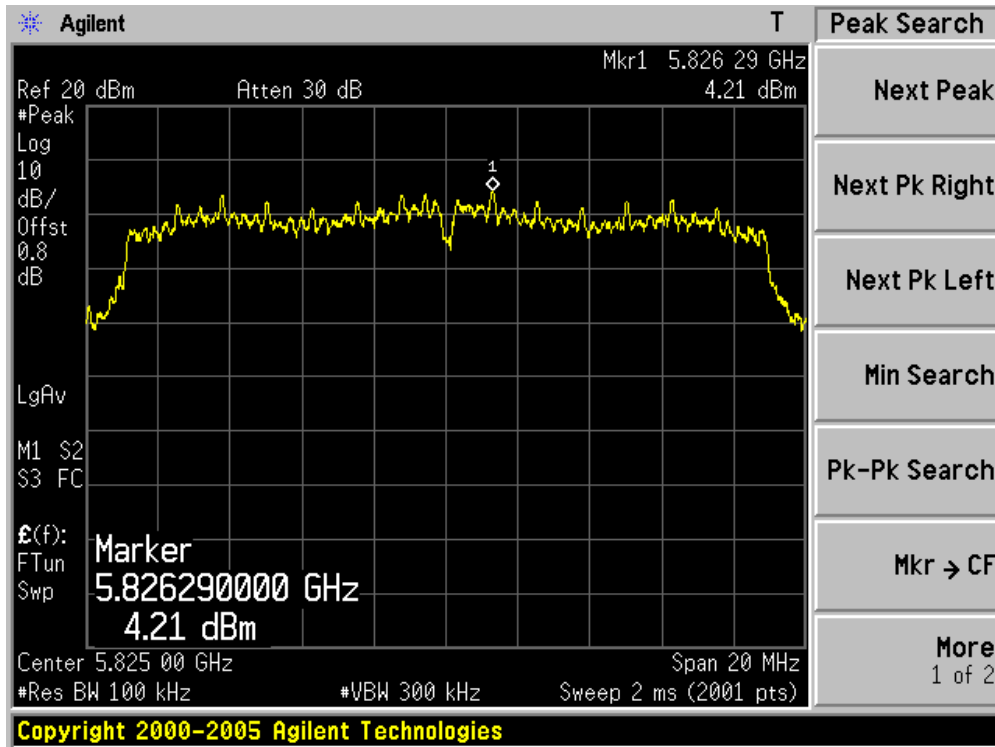
Channel 149 (5745MHz) – Chain 0



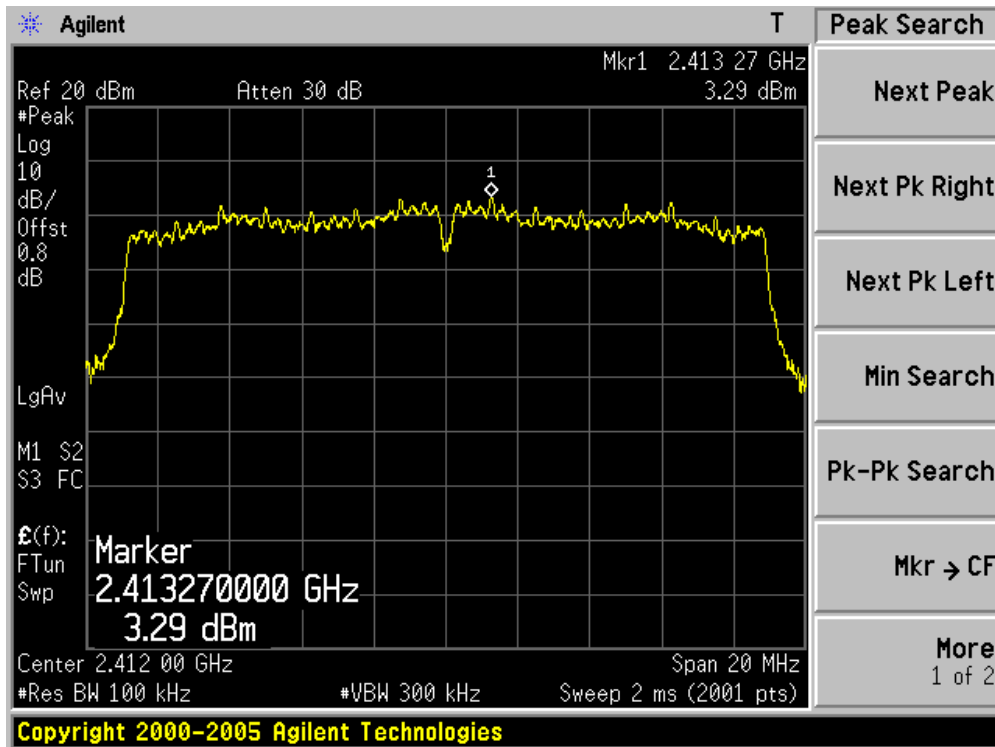
Channel 157 (5785MHz) – Chain 0



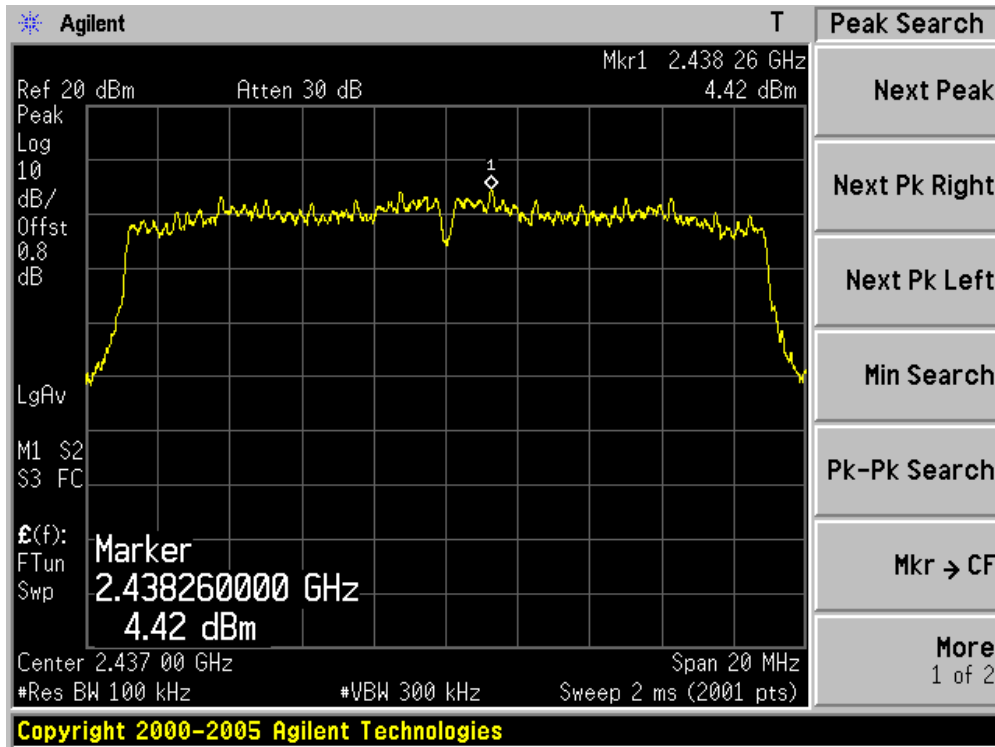
Channel 165 (5825MHz) – Chain 0



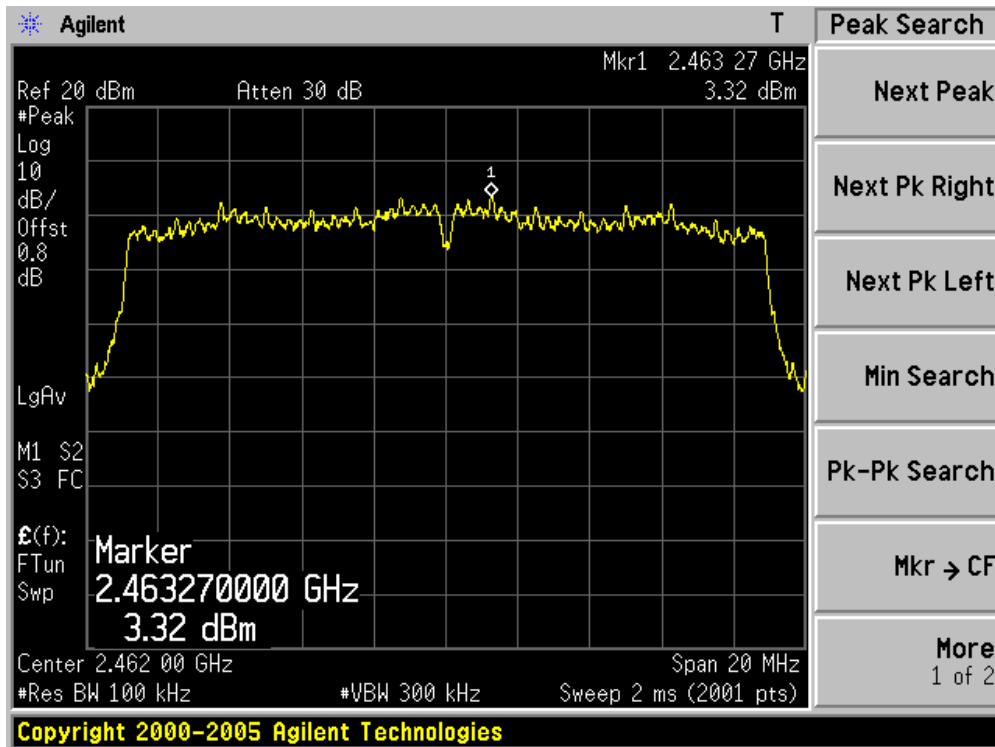
Channel 01 (2412MHz) – Chain 1



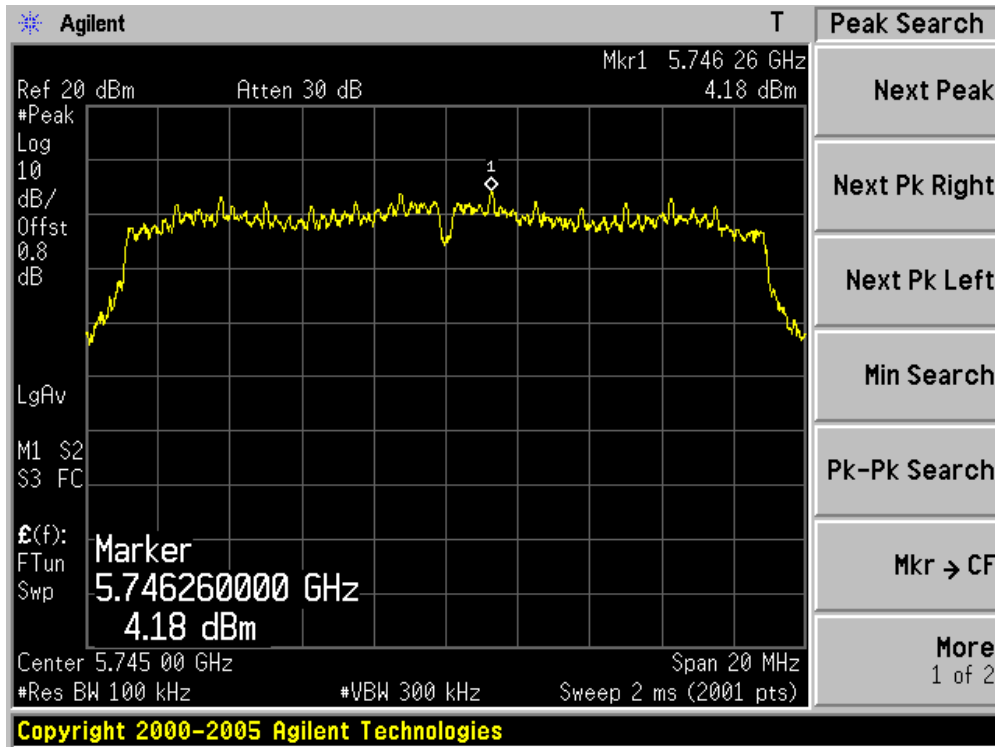
Channel 06 (2437MHz) – Chain 1



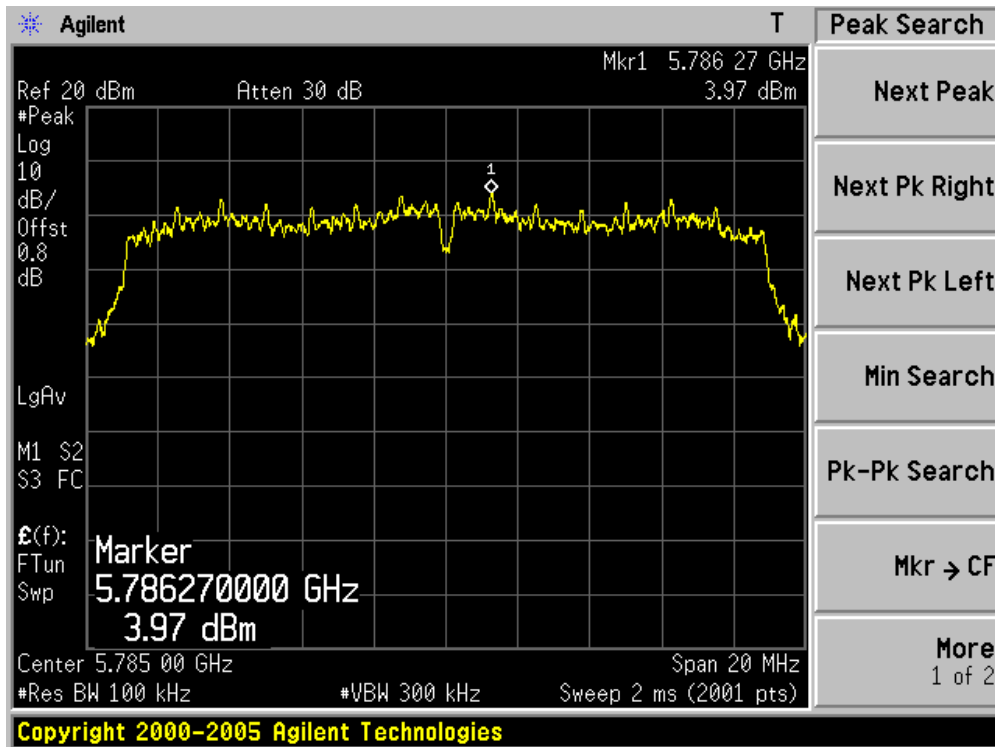
Channel 11 (2462MHz) – Chain 1



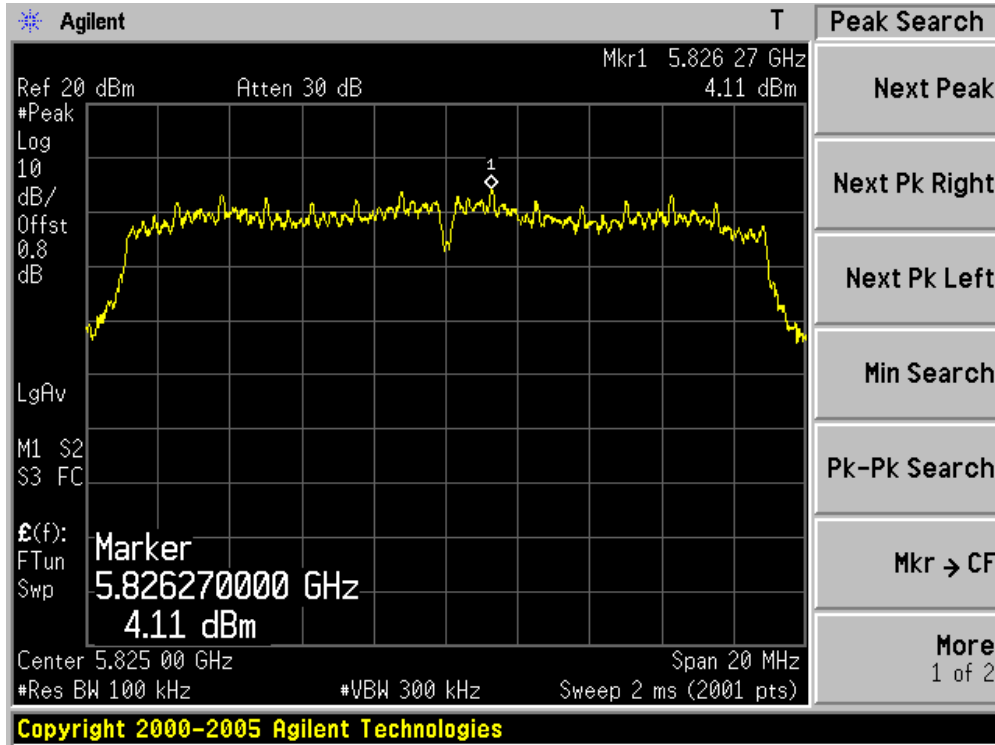
Channel 149 (5745MHz) – Chain 1



Channel 157 (5785MHz) – Chain 1



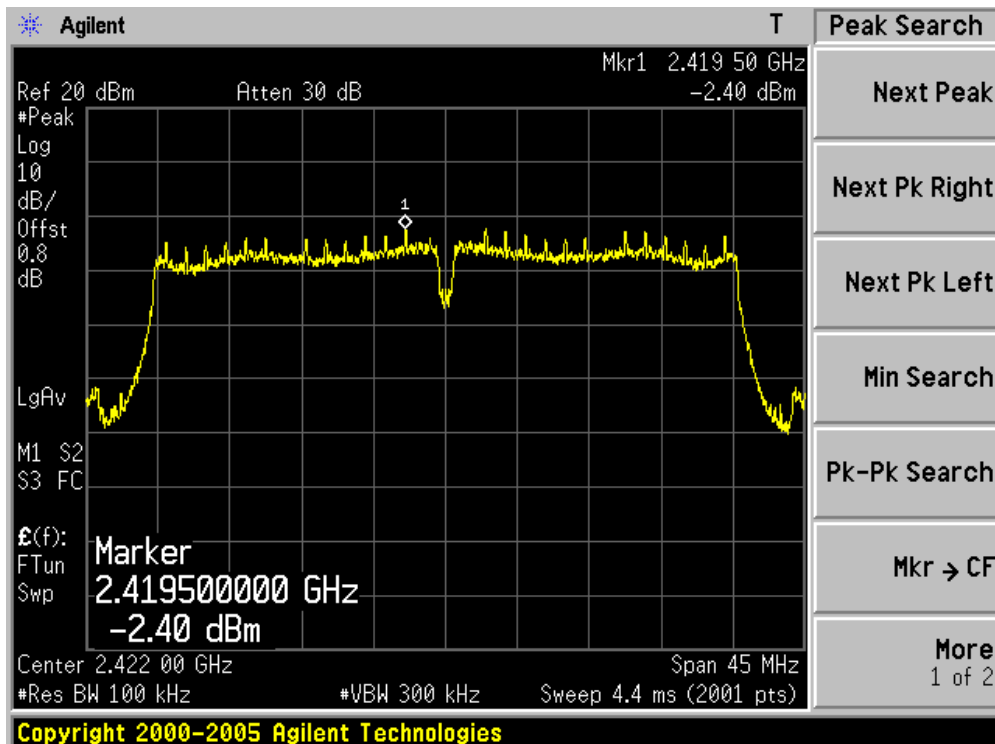
Channel 165 (5825MHz) – Chain 1



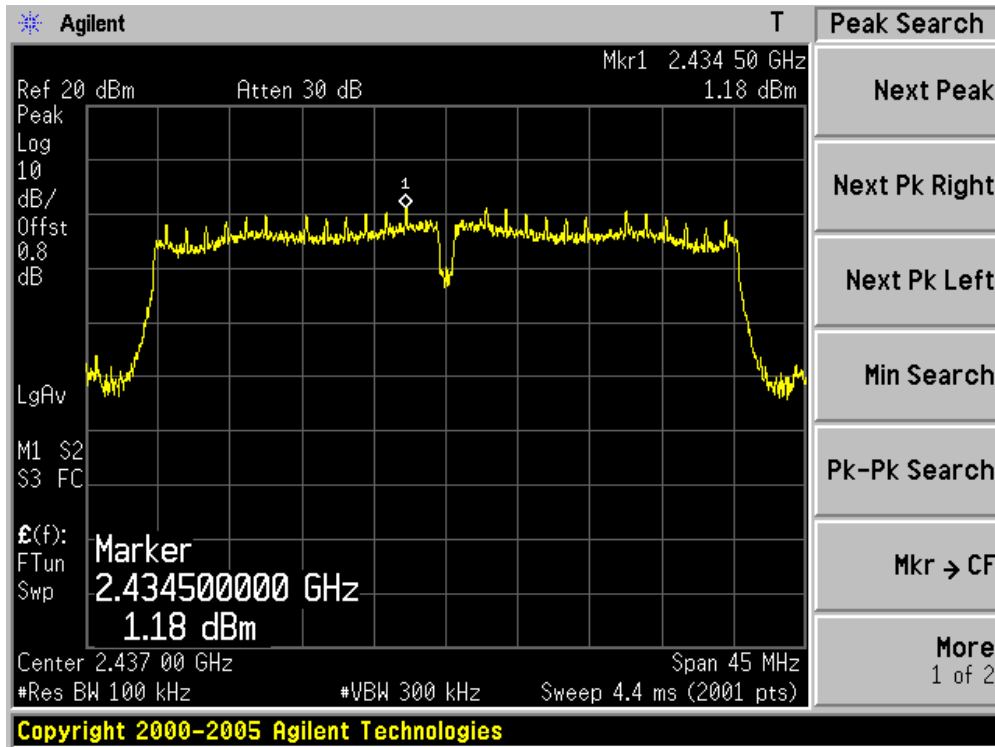
Product	:	IP-STB
Test Item	:	Power Spectral Density
Test Site	:	TR-8
Test Mode	:	Mode 5: Transmit by 802.11n (40MHz) (Chain 0+1)

Channel No.	Frequency (MHz)	Reading Value (dBm)		BWCF (dB)	PSD (dBm)	Limit (dBm)	Result
		Chain 0	Chain 1				
03	2422	-2.40	-1.43	-15.2	-14.08	8	Pass
06	2437	1.18	1.34	-15.2	-10.90	8	8
09	2452	-0.64	-0.21	-15.2	-12.61	8	8
151	5755	1.37	1.17	-15.2	-10.92	8	8
159	5795	1.19	1.42	-15.2	-10.88	8	8

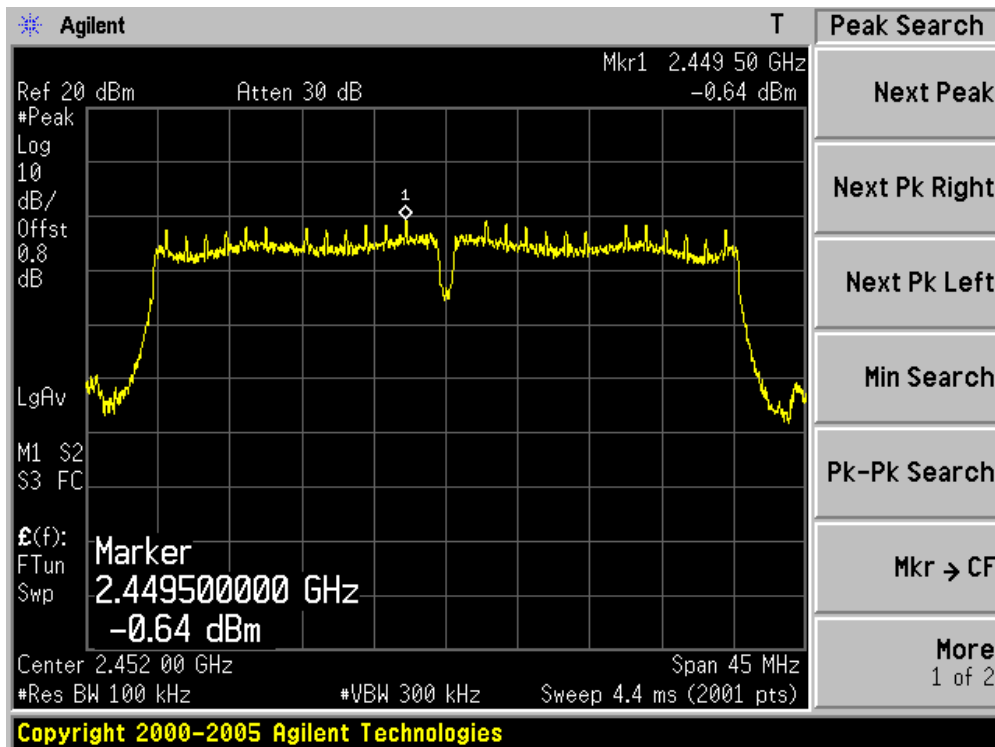
Channel 03 (2422MHz) – Chain 0



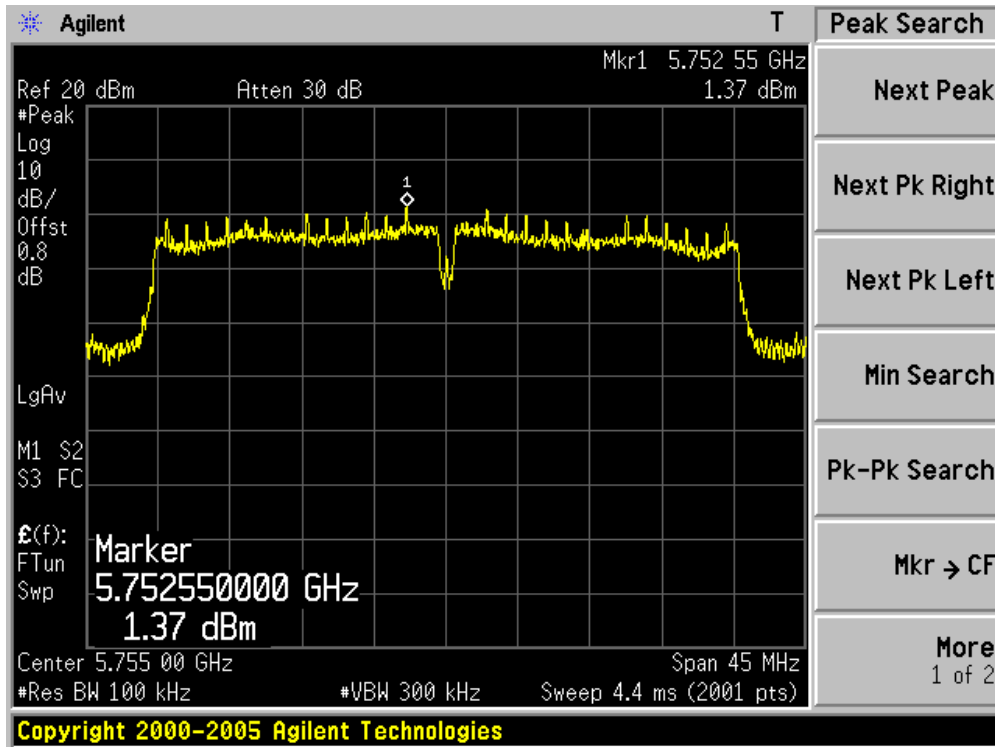
Channel 06 (2437MHz) – Chain 0



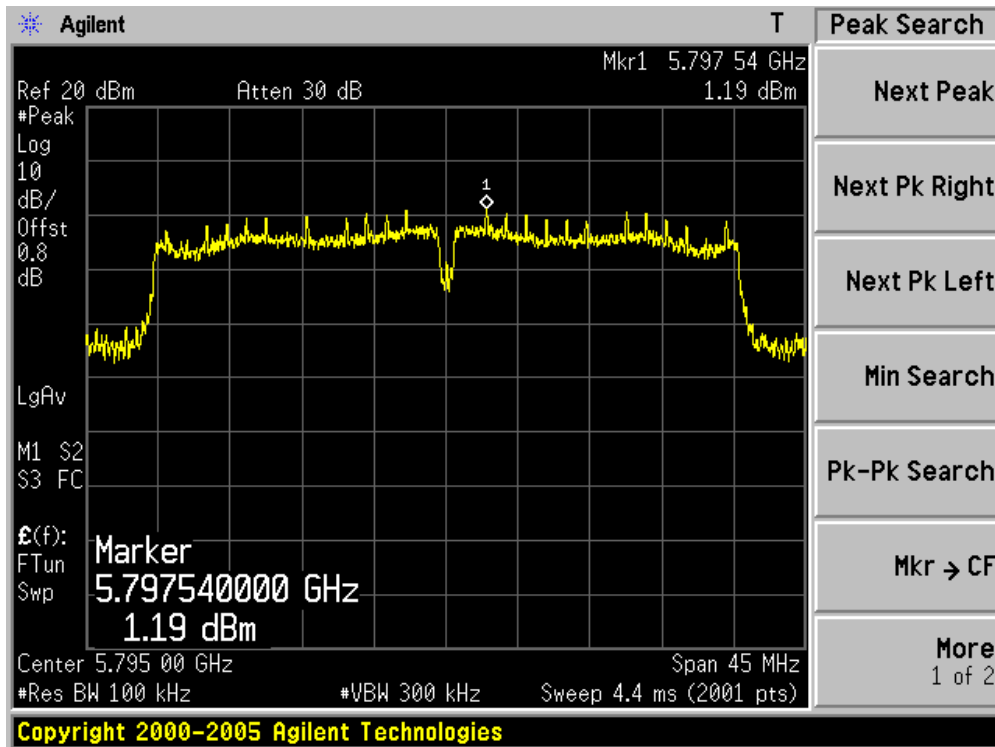
Channel 09 (2452MHz) – Chain 0



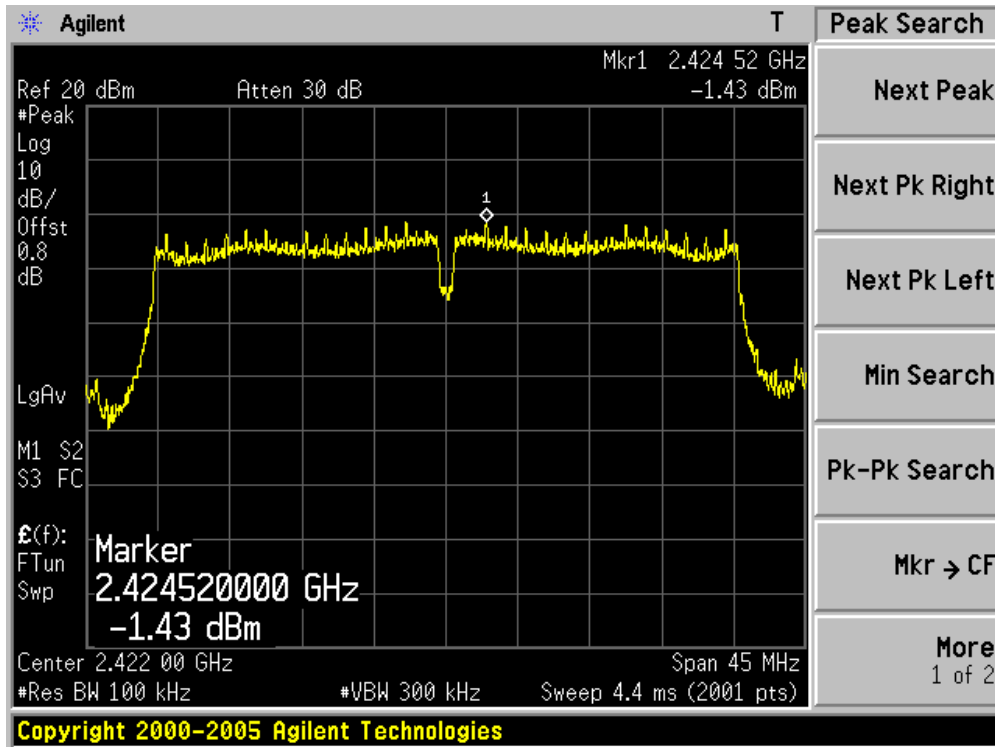
Channel 151 (5755MHz) – Chain 0



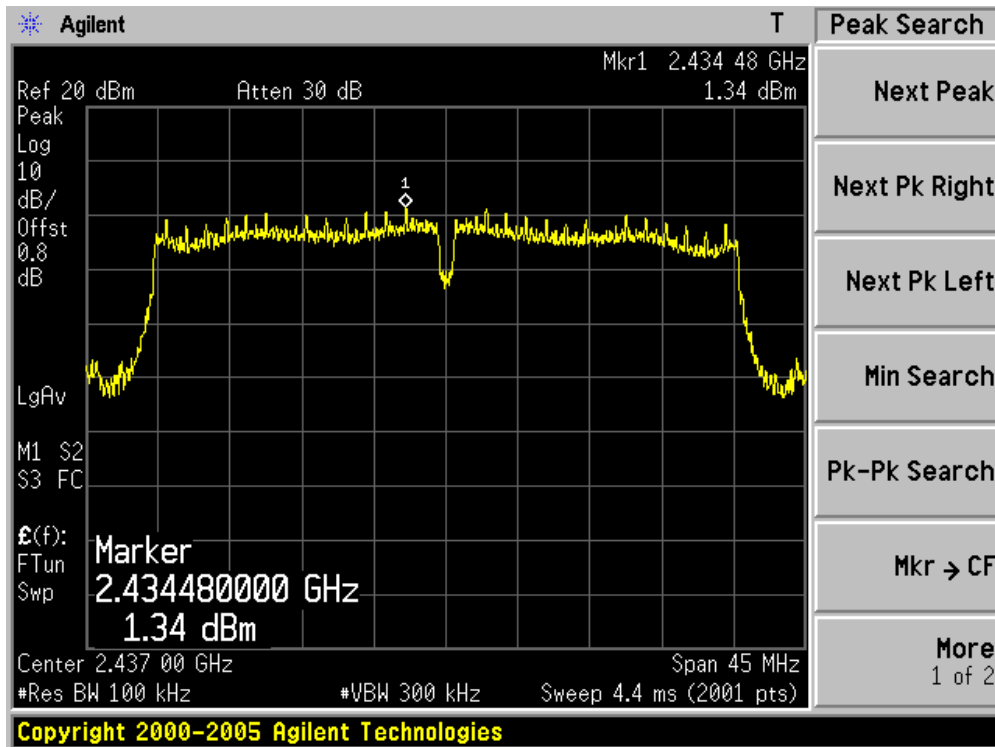
Channel 159 (5795MHz) – Chain 0



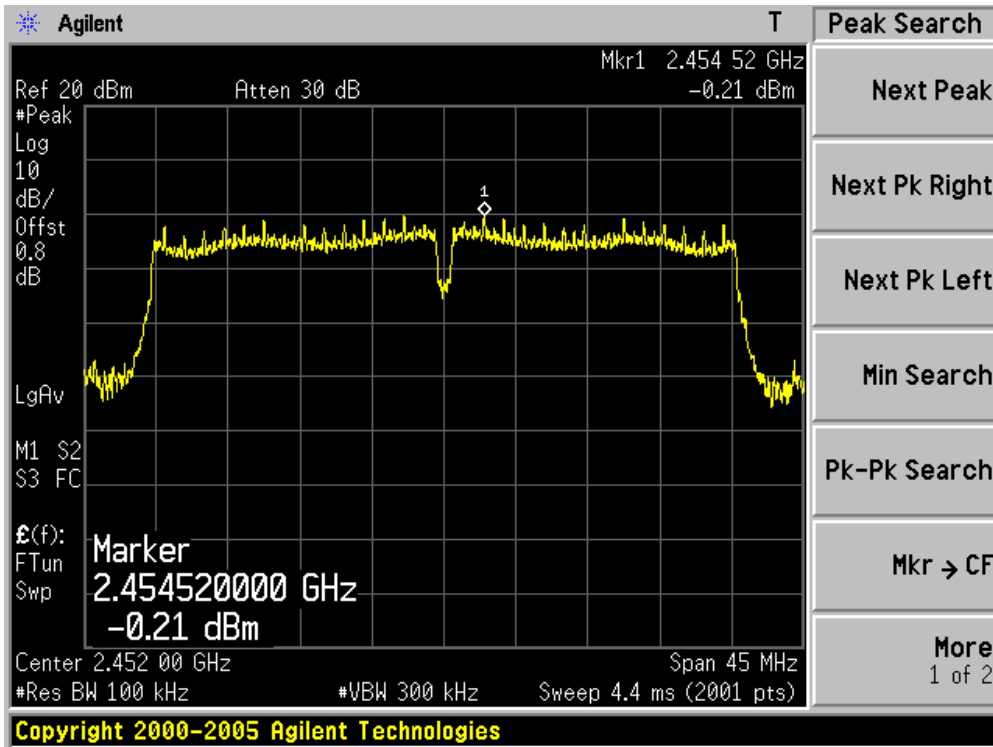
Channel 03 (2422MHz) – Chain 1



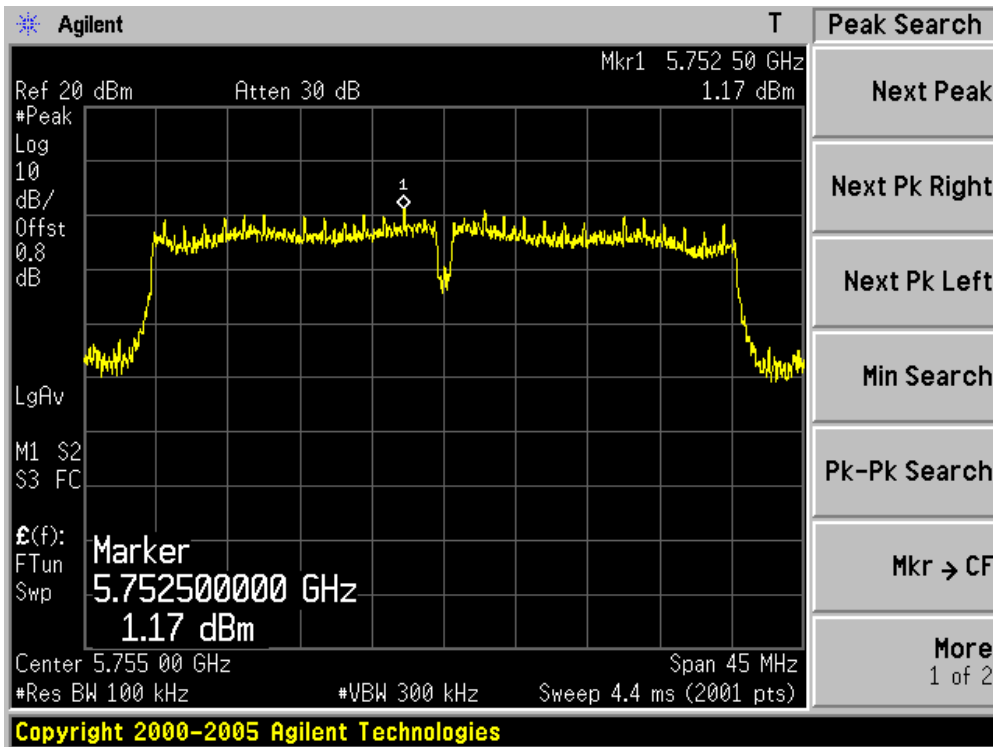
Channel 06 (2437MHz) – Chain 1



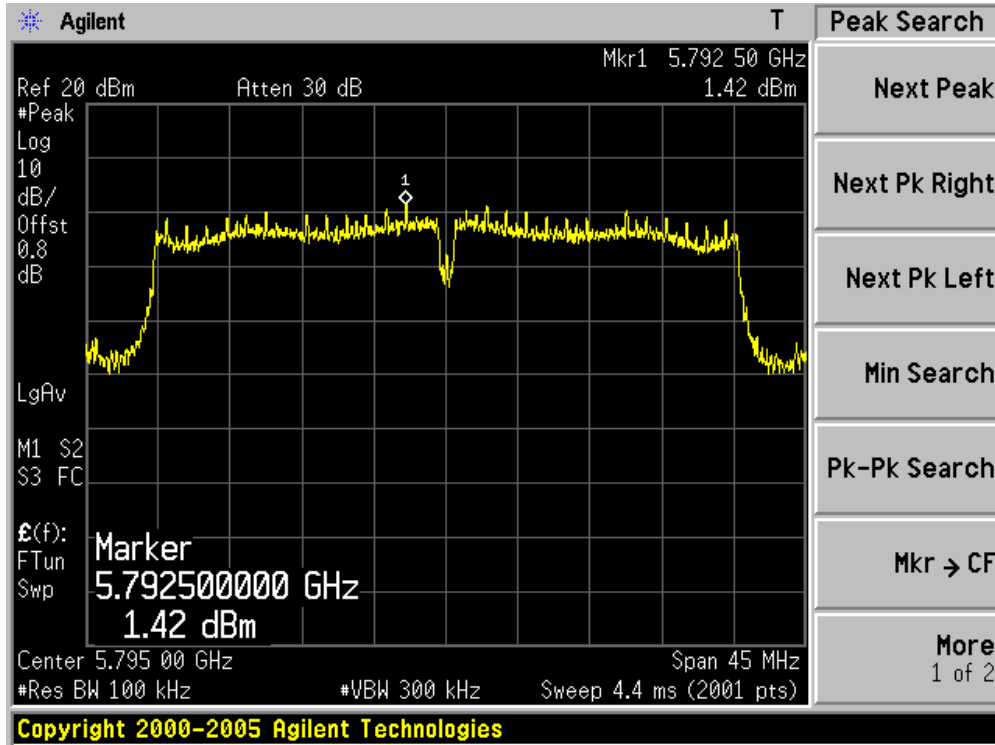
Channel 09 (2452MHz) – Chain 1



Channel 151 (5755MHz) – Chain 1



Channel 159 (5795MHz) – Chain 1



11. Receiver Spurious Emission for Industry Canada RSS-Gen Requirement

11.1. Test Equipment

Radiated Emission / AC-2

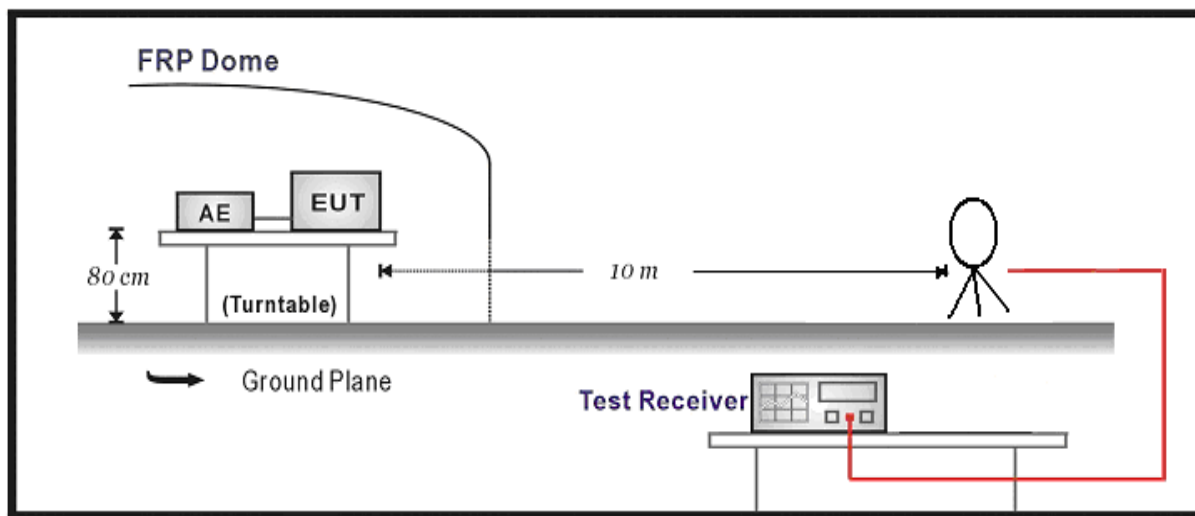
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
EMI Test Receiver	R&S	ESCI	100573	2013.04.18
Loop Antenna	R&S	HFH2-Z2	833799/003	2012.11.22
Bilog Antenna	Teseq GmbH	CBL6112D	27611	2012.10.18
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC2-C	2013.03.02
Temperature/Humidity Meter	Zhicheng	ZC1-2	AC2-TH	2012.01.14

Radiated Emission / AC-5

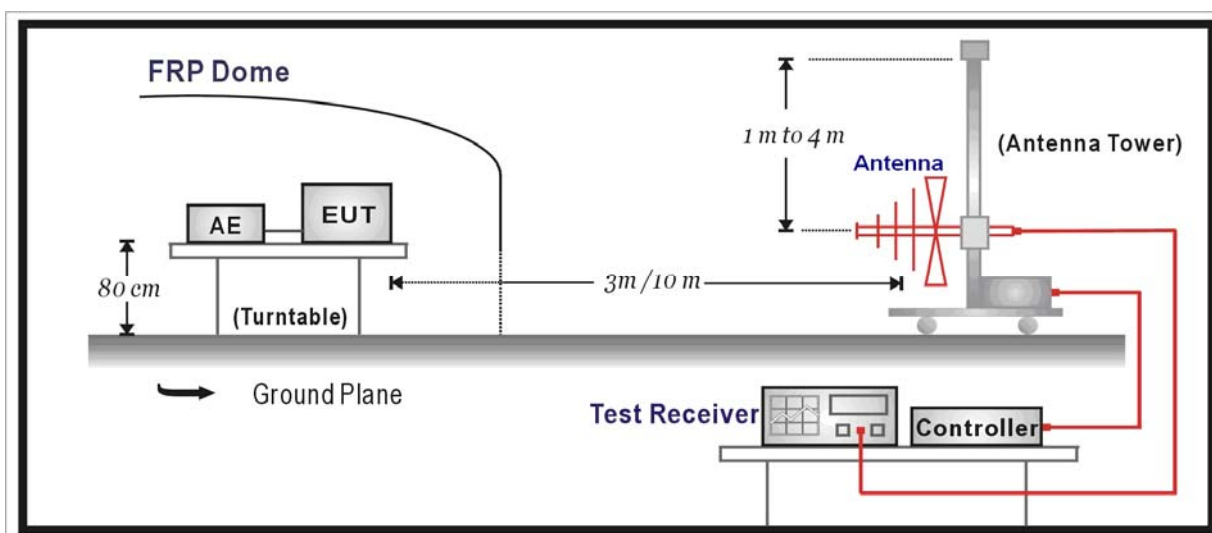
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	Agilent	N9010A	MY48030494	2013.04.18
Preamplifier	Miteq	NSP1800-25	1364185	2013.05.04
Preamplifier	Quietek	AP-040G	CHM-0906001	2013.05.04
Bilog Antenna	Teseq GmbH	CBL6112D	27612	2012.10.18
Broad-Band Horn Antenna	Schwarzbeck	BBHA9120D	499	2012.06.11
Broad-Band Horn Antenna	Schwarzbeck	BBHA9170	294	2013.11.24
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC5-C1	2013.03.02
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC5-C2	2013.03.02
Coaxial Cable	Huber+Suhner	SUCOFLEX 102	AC5-C3	2013.03.02
Temperature/Humidity Meter	Zhicheng	ZC1-2	AC5-TH	2013.01.10

11.2. Test Setup

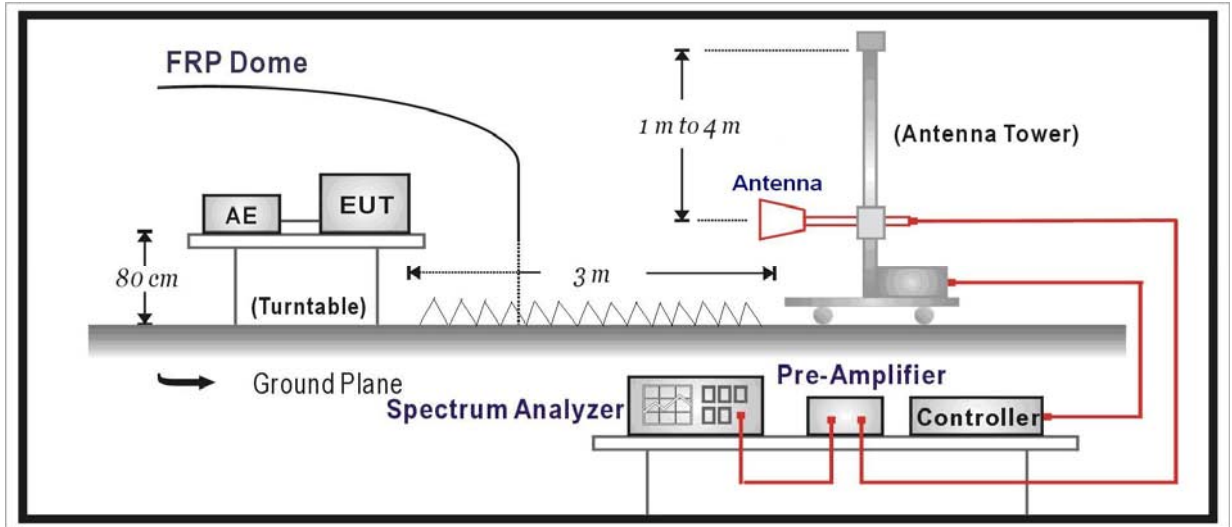
Below 30MHz Test Setup:



Below 1GHz Test Setup:



Above 1GHz Test Setup:



11.3. Limit

FCC Part 15 Subpart B Paragraph 15.109		
Frequency (MHz)	Distance (m)	Level (dBuV/m)
30 - 88	3	40
88 - 216	3	43.5
216 - 960	3	46
Above 960	3	54

Note 1: The lower limit shall apply at the transition frequency.

Note 2: Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

Note 3: E field strength (dBuV/m) = 20 log E field strength (uV/m)

11.4. Test Procedure

According to ANSI C63.10: 2009.

The EUT is placed on a turn table which is 0.8 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.4: 2009 on radiated measurement.

The resolution bandwidth below 1GHz setting on the field strength meter is 120 kHz and above 1GHz is 1MHz.

The frequency range from 9kHz to 10th harmonic is checked.

Note: When doing emission measurement above 1GHz, the horn antenna will be bended down a little (as horn antenna has the narrow beamwidth) in order to keeping the antenna in the "cone of radiation" of EUT. The 3dB beamwidth is 60~10 degrees for H-plane and 90~10 degrees for E-plane.

11.5. Uncertainty

The measurement uncertainty above 1G is defined as ± 3.9 dB

below 1G is defined as ± 3.8 dB

11.6. Test Result

All of the test result shown indicates the worst case, and spectrum analyzer parameters setting as shown below:

Peak detector: RBW = 1MHz, VBW = 3MHz, sweep time = 200ms;

Average detector: RBW = 1MHz, VBW = 10Hz, sweep time = auto.

Measure Level = Reading Level + Cable Loss + Antenna Factor - Preamplifier Gain

Mode 1: Receive by 802.11n (20MHz)

Chain	CH	Antenna	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
Chain 0+1	1	H	666.8	6.0	12.2	18.2	46	-27.8	QP
		V	666.8	4.2	13.3	17.5	46	-28.5	QP
		H	2445.0	44.4	-2.9	41.4	54(Note1)	-12.6	PK
		V	2445.0	44.5	-3.2	41.3	54(Note1)	-12.7	PK
	6	H	237.6	17.3	12.5	29.8	46	-16.2	QP
		V	243.4	15.1	13.3	28.4	46	-17.6	QP
		H	2394.0	47.2	-4.5	42.7	54(Note1)	-11.3	PK
		V	2394.0	47.3	-4.5	42.8	54(Note1)	-11.2	PK
	11	H	697.3	3.1	14.3	17.4	46	-28.6	QP
		V	697.3	2.2	14.3	16.5	46	-29.5	QP
		H	4145.0	41.3	0.9	42.3	54(Note1)	-11.7	PK
		V	4145.0	41.9	0.9	42.9	54(Note1)	-11.1	PK
	149	H	666.8	7.7	12.2	19.9	46	-26.1	QP
		V	666.8	7.7	13.3	20.9	46	-25.1	QP
		H	4145.0	41.3	0.9	42.2	54(Note1)	-11.8	PK
		V	4145.0	42.0	0.9	43.0	54(Note1)	-11.0	PK
	157	H	553.3	6.3	11.9	18.2	46	-27.8	QP
		V	553.3	4.2	12.0	16.2	46	-29.8	QP
		H	2785.0	43.2	-2.4	40.7	54(Note1)	-13.3	PK
		V	2785.0	43.0	-2.4	40.5	54(Note1)	-13.5	PK
165	H	666.8	7.5	12.2	19.7	46	-26.3	QP	
	V	666.8	4.9	13.3	18.2	46	-27.8	QP	
	H	5080.0	40.8	3.7	44.4	54(Note1)	-9.6	PK	
	V	5080.0	40.7	3.7	44.3	54(Note1)	-9.7	PK	

Note1: This limit applies for using average detector, if the test result on peak is lower than average limit, then average measurement needn't be performed.

Mode 2: Receive by 802.11n (40MHz)

Chain	CH	Antenna	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
Chain 0+1	3	H	599.8	2.6	13.4	16.0	46	-30.0	QP
		V	599.8	4.3	13.7	18.0	46	-28.0	QP
		H	1663.0	44.5	-6.6	37.8	54(Note1)	-16.2	PK
		V	1663.0	43.9	-6.6	37.3	54(Note1)	-16.7	PK
	6	H	300.1	11.5	14.7	26.2	46	-19.8	QP
		V	306.0	5.5	14.9	20.4	46	-25.6	QP
		H	2394.0	47.2	-4.5	42.7	54(Note1)	-11.3	PK
		V	2394.0	47.3	-4.5	42.8	54(Note1)	-11.2	PK
	9	H	553.3	6.6	11.9	18.5	46	-27.5	QP
		V	553.3	4.4	12.0	16.4	46	-29.6	QP
		H	2785.0	44.1	-2.4	41.7	54(Note1)	-12.3	PK
		V	2785.0	42.9	-2.4	40.5	54(Note1)	-13.5	PK
	151	H	666.8	7.7	12.2	19.9	46	-26.1	QP
		V	666.8	6.7	13.3	20.0	46	-26.0	QP
		H	4145.0	41.7	0.9	42.6	54(Note1)	-11.4	PK
		V	4145.0	41.5	0.9	42.4	54(Note1)	-11.6	PK
	159	H	553.3	6.5	11.9	18.5	46	-27.5	QP
		V	553.3	6.0	12.0	18.0	46	-28.0	QP
		H	2785.0	42.9	-2.4	40.5	54(Note1)	-13.5	PK
		V	2785.0	43.1	-2.4	40.7	54(Note1)	-13.3	PK

Note1: This limit applies for using average detector, if the test result on peak is lower than average limit, then average measurement needn't be performed.