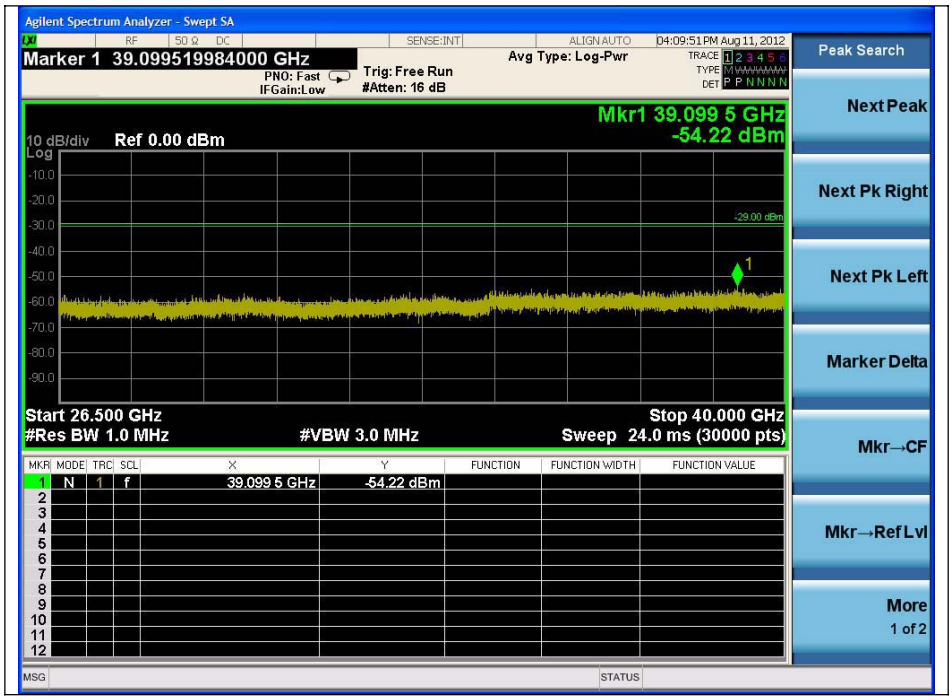
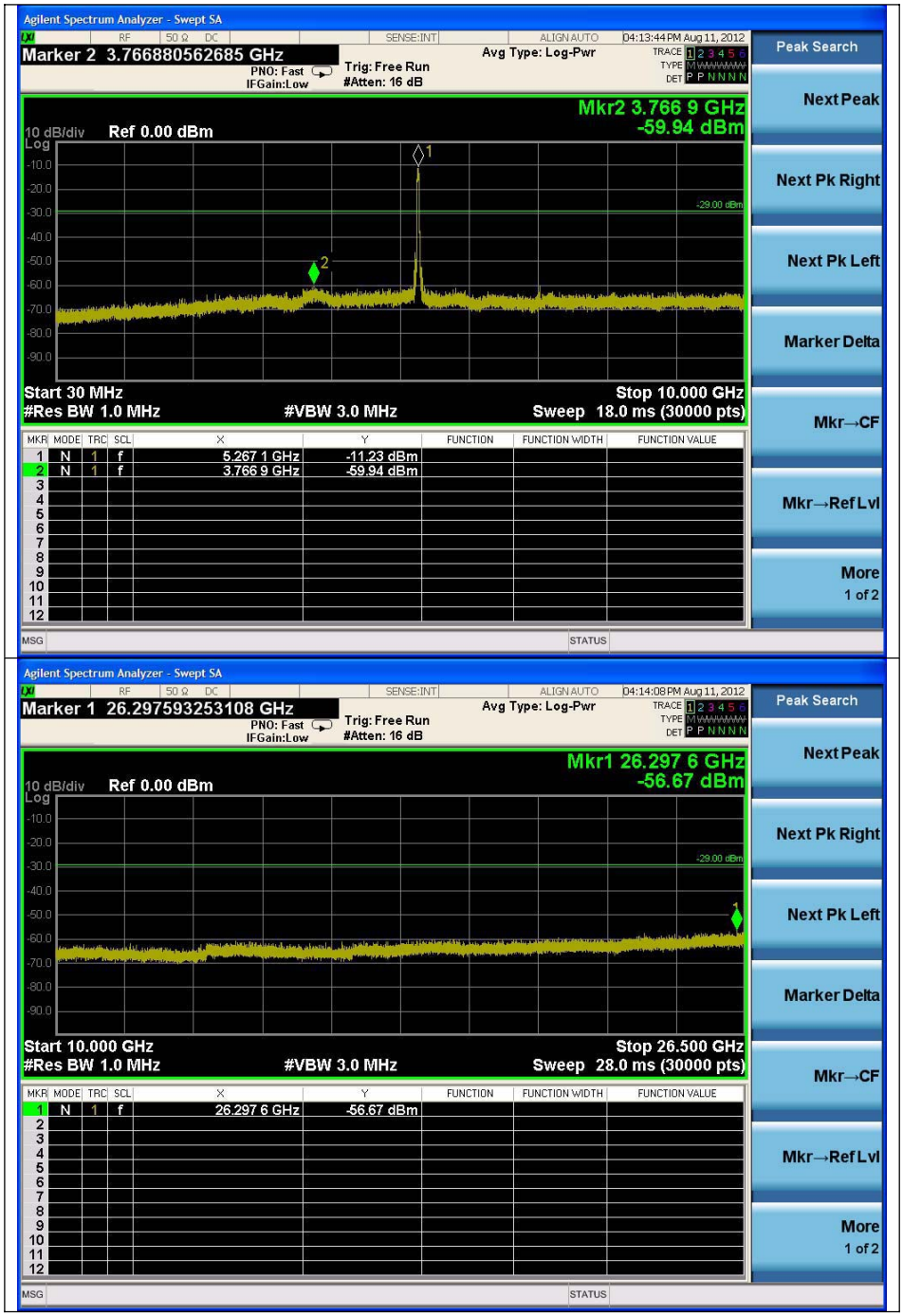


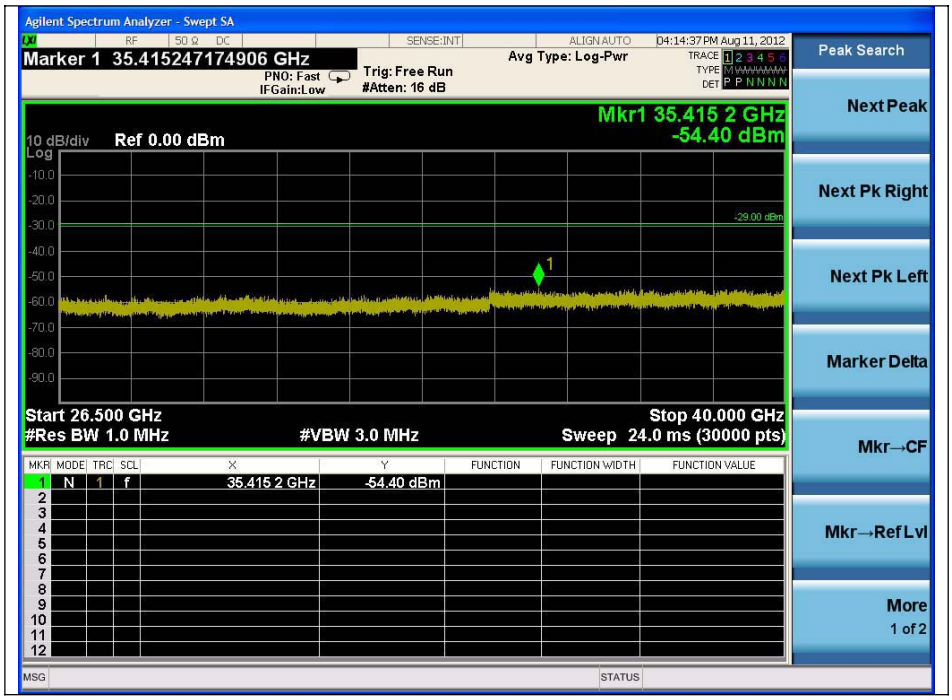
Note:
Offset (dB) = Power Divider (dB) + Attenuator (dB) + Cable loss (dB)
Result (dB m) = Spurious offset (dB) + Reading values (dB m)

Frequency (MHz)	offset (dB)	Reading values (dB m)	Result (dB m)
7 600.8	18.52	-59.24	-40.72
26 008.8	Noise level	-	-
39 099.5	Noise level	-	-

802.11n-HT40 (DFS)_MCS0

5 270 ㎒

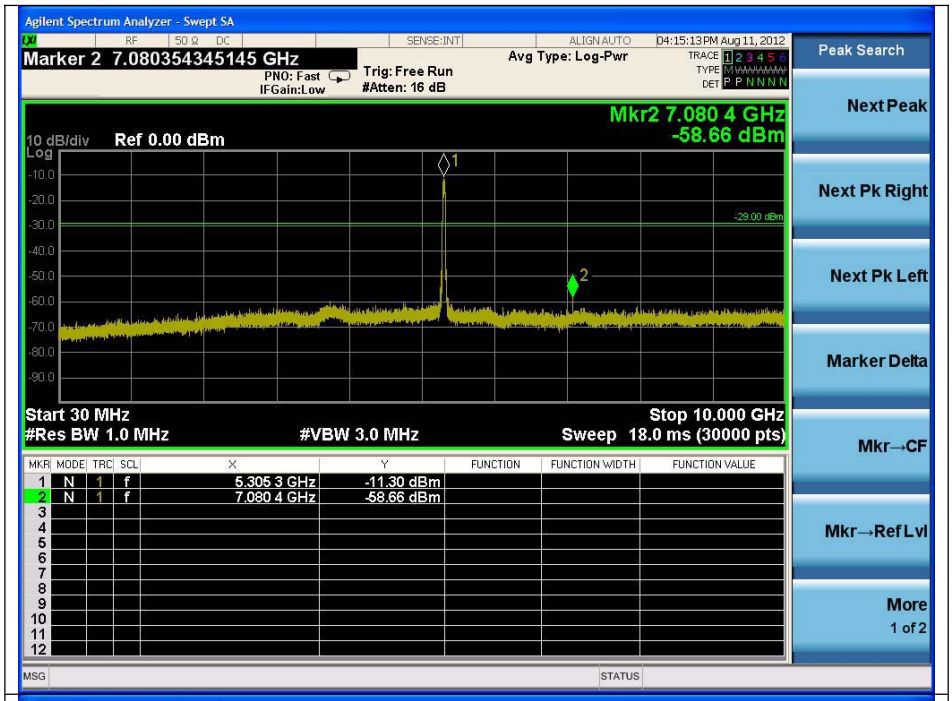


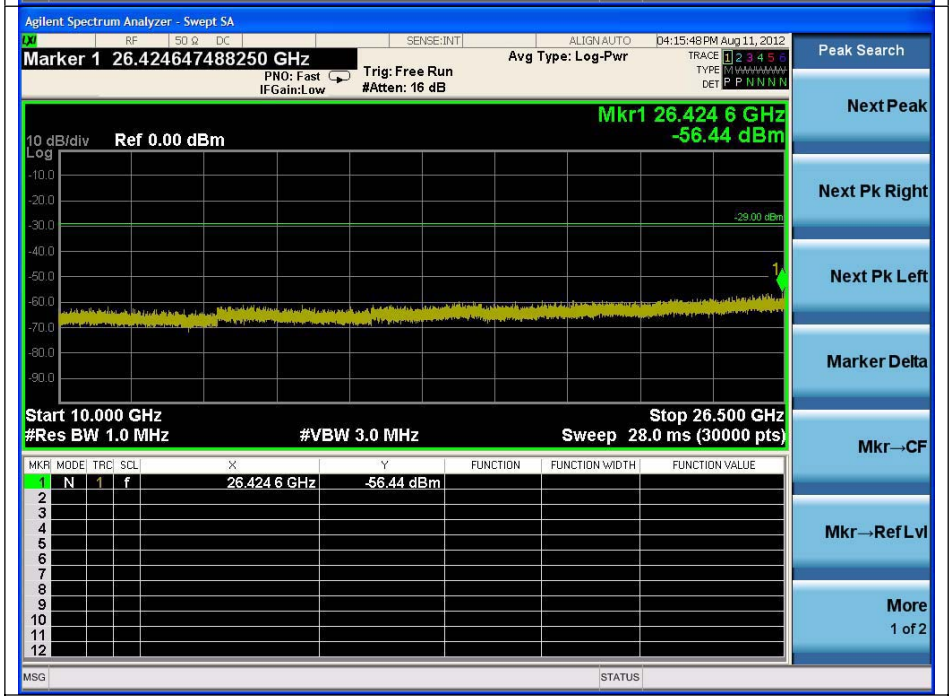


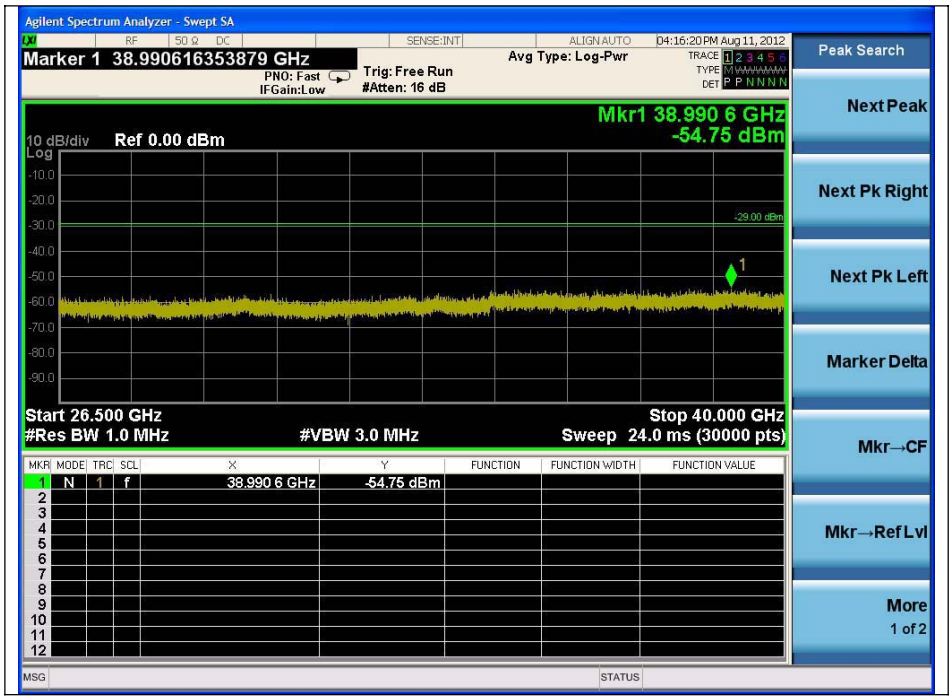
Note:
Offset (dB) = Power Divider (dB) + Attenuator (dB) + Cable loss (dB)
Result (dB m) = Spurious offset (dB) + Reading values (dB m)

Frequency (MHz)	offset (dB)	Reading values (dB m)	Result (dB m)
3 766.9	Noise level	-	-
26 297.6	Noise level	-	-
35 415.2	Noise level	-	-

5 310 ㎒



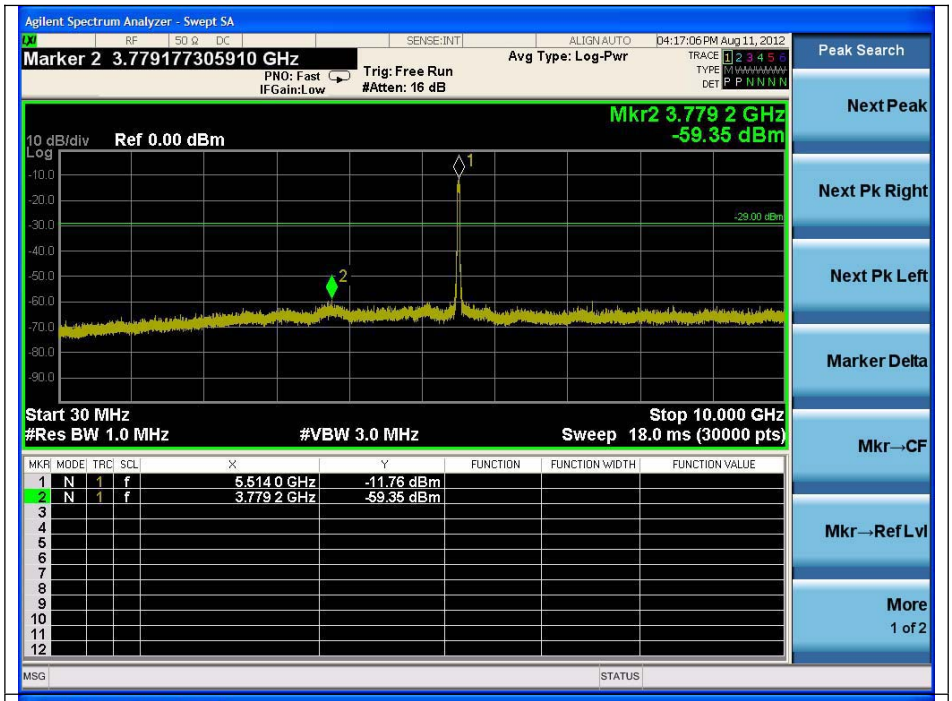


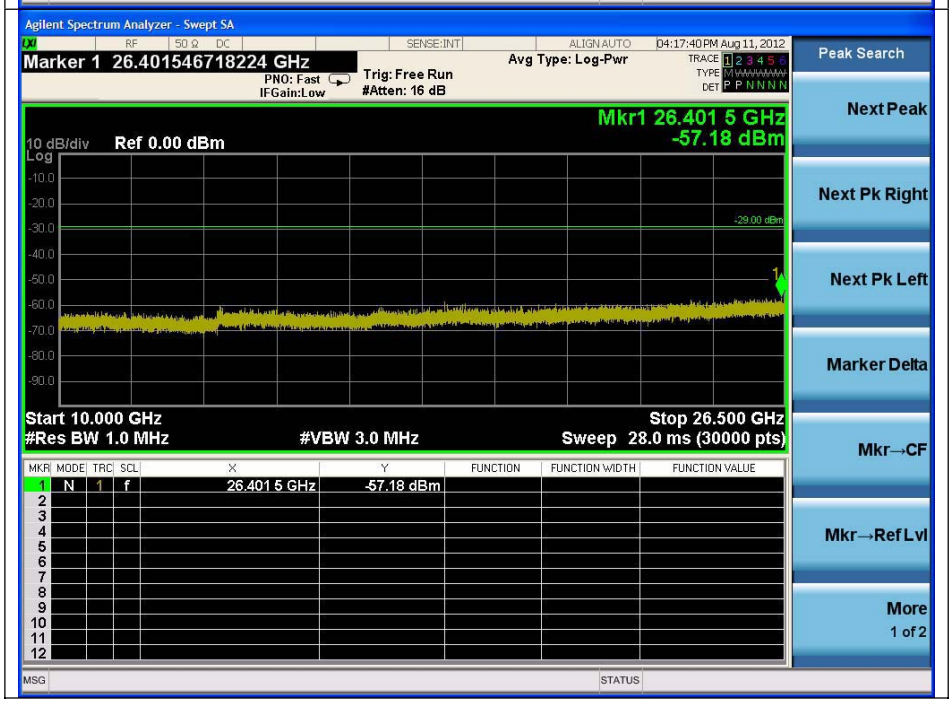


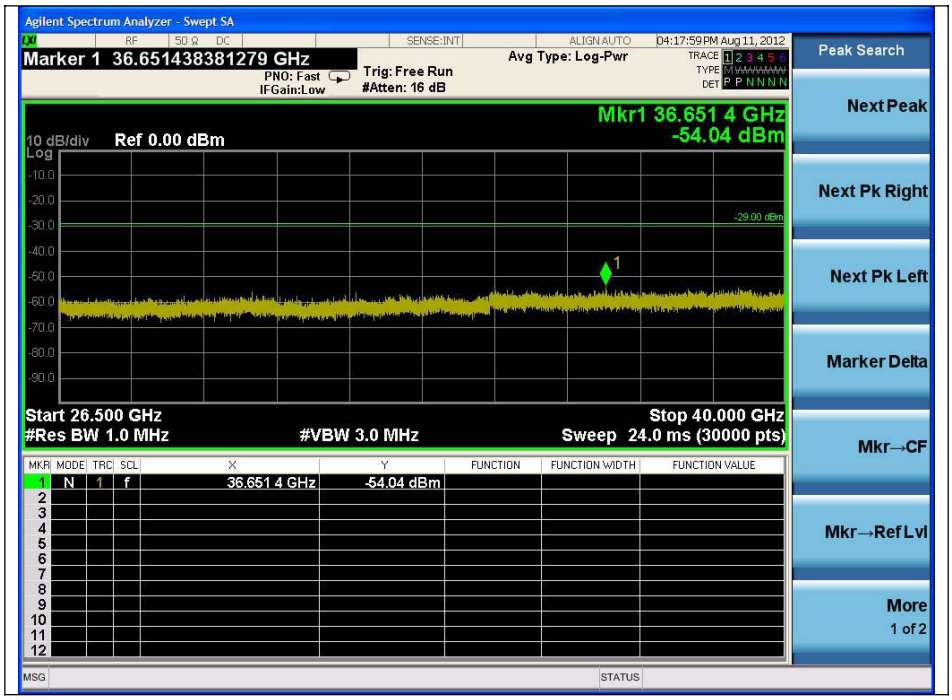
Note:
Offset (dB) = Power Divider (dB) + Attenuator (dB) + Cable loss (dB)
Result (dB m) = Spurious offset (dB) + Reading values (dB m)

Frequency (Mhz)	offset (dB)	Reading values (dB m)	Result (dB m)
7 080.4	18.00	-58.66	-40.66
26 424.6	Noise level	-	-
38 990.6	Noise level	-	-

5 510 ㎒



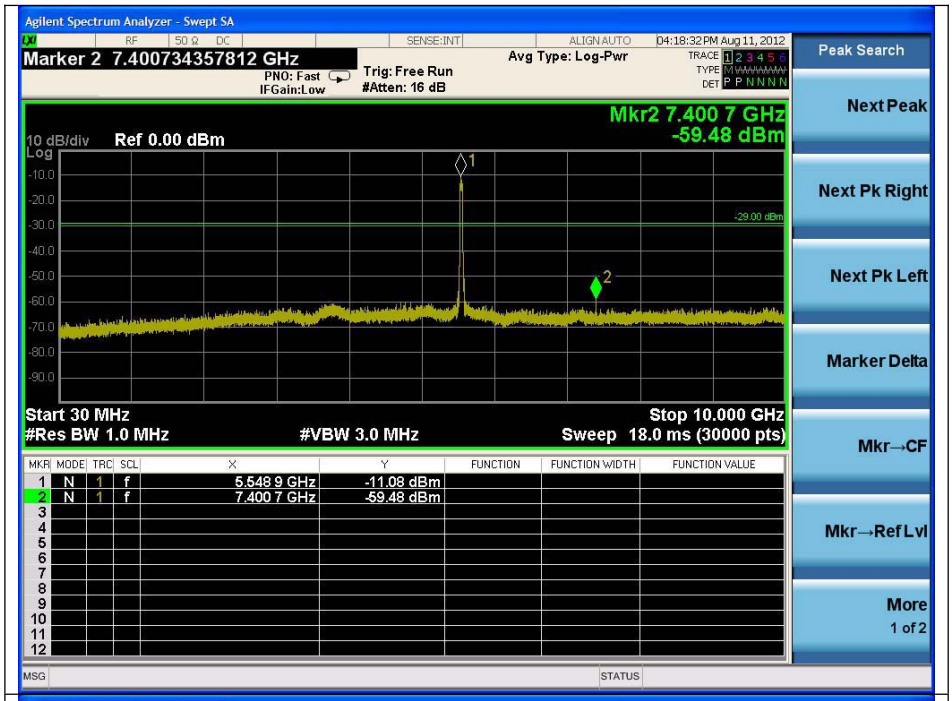


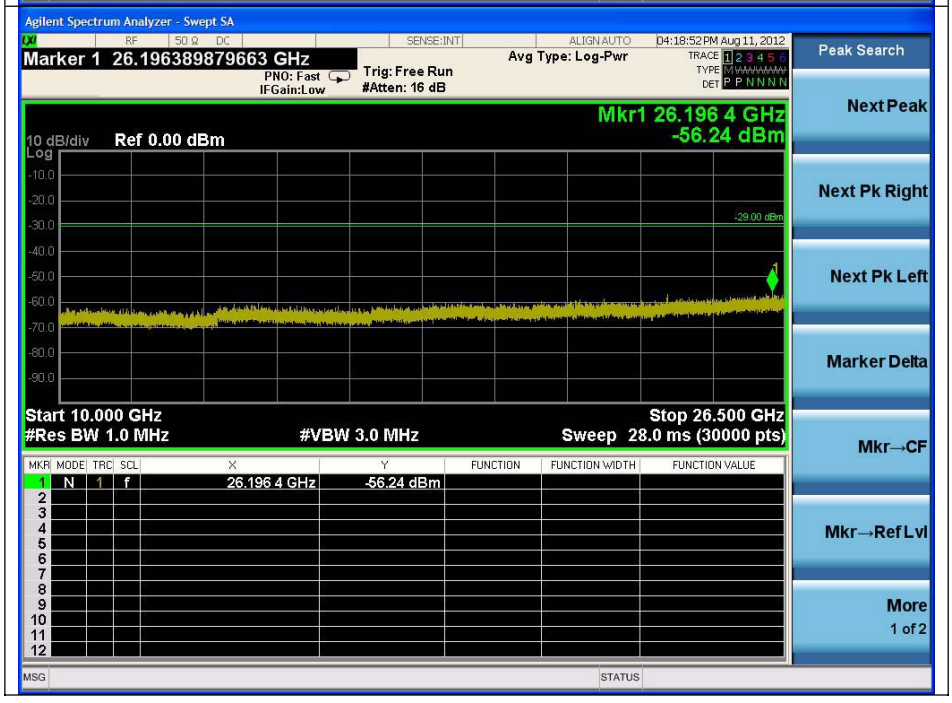


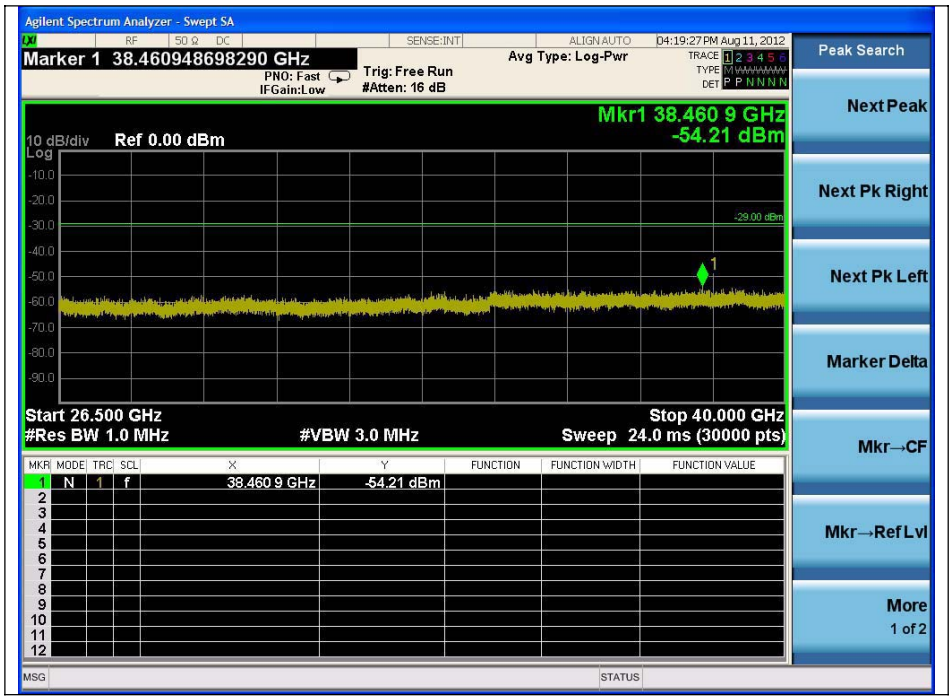
Note:
Offset (dB) = Power Divider (dB) + Attenuator (dB) + Cable loss (dB)
Result (dB m) = Spurious offset (dB) + Reading values (dB m)

Frequency (MHz)	offset (dB)	Reading values (dB m)	Result (dB m)
3 779.2	Noise level	-	-
26 401.5	Noise level	-	-
36 651.4	Noise level	-	-

5 550 ㎒



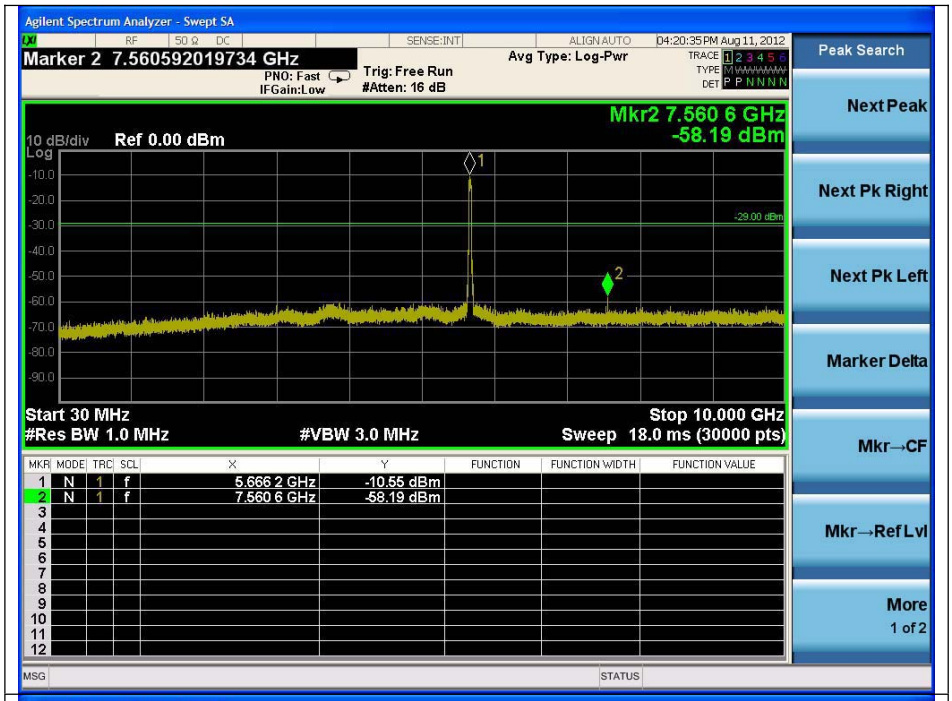


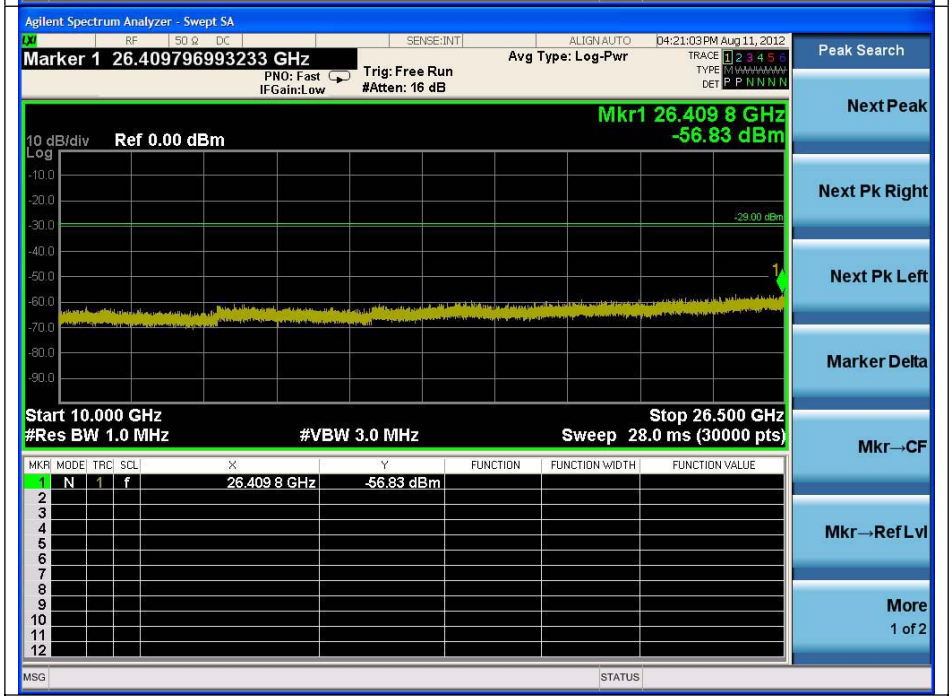


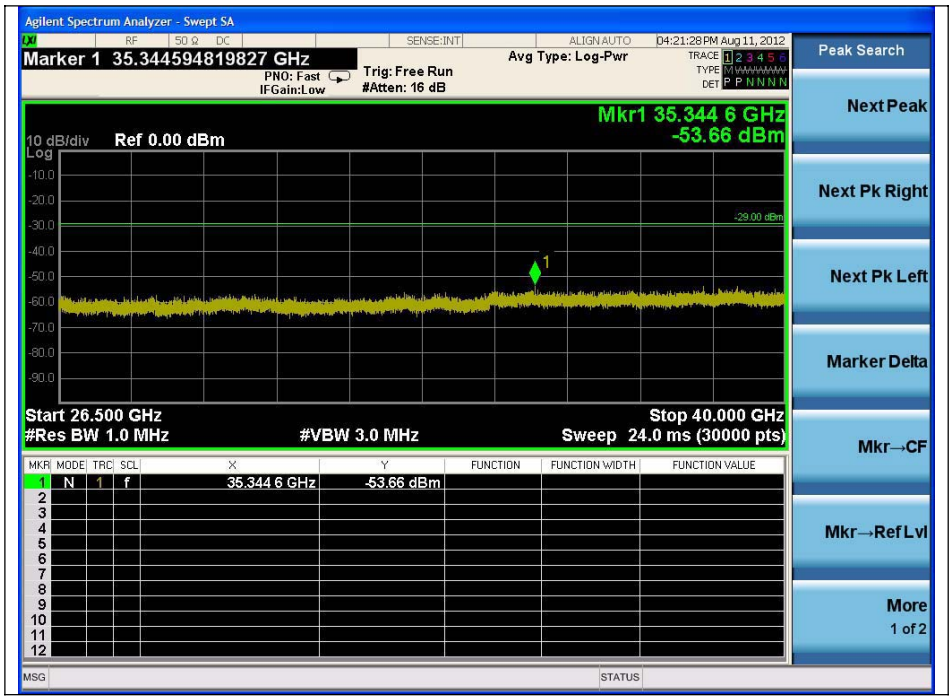
Note:
Offset (dB) = Power Divider (dB) + Attenuator (dB) + Cable loss (dB)
Result (dB m) = Spurious offset (dB) + Reading values (dB m)

Frequency (MHz)	offset (dB)	Reading values (dB m)	Result (dB m)
7 400.7	18.52	-59.48	-40.96
26 196.4	Noise level	-	-
38 460.9	Noise level	-	-

5 670 ㎒





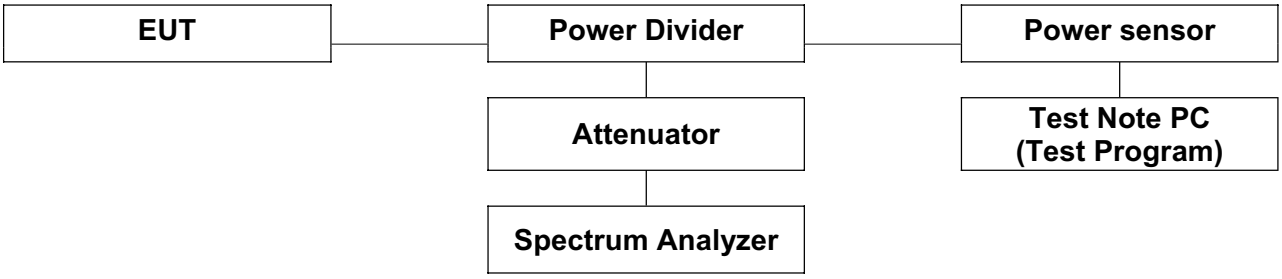


Note:
Offset (dB) = Power Divider (dB) + Attenuator (dB) + Cable loss (dB)
Result (dB m) = Spurious offset (dB) + Reading values (dB m)

Frequency (MHz)	offset (dB)	Reading values (dB m)	Result (dB m)
7 560.6	18.52	-58.19	-39.67
26 409.8	Noise level	-	-
35 344.6	Noise level	-	-

3. 26 dB bandwidth

3.1. Test setup



3.2. Limit

None; for reporting purpose only

3.3. Test procedure

All data rates and modes were investigated for this test. The full data for the worst case data rate are reported in this section.

1. This measurement settings are specified in section D of KDB 789033.
2. Set RBW: approximately 1% of the emission bandwidth.
3. Set the VBW > RBW.
4. Detector = Peak
5. Trace mode = max hold.
6. Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1 %

Note: The automatic bandwidth measurement capability of a spectrum analyzer may be employed if it implements the functionality described above.

3.4. Test result

Ambient temperature : (24 ± 2) ℃
Relative humidity : 49 % R.H.

Mode: 11a

Operating mode	Data Rate (Mbps)	Frequency (㎒)	26 ㏈ bandwidth (㎒)
Non - DFS	6	5 180	22.33
	6	5 220	21.47
	6	5 240	21.89
DFS	6	5 260	21.74
	6	5 300	21.04
	6	5 320	21.51
DFS	6	5 500	21.36
	6	5 580	20.64
	6	5 700	21.14

Mode: 11n_HT20

Operating mode	Data Rate (Mbps)	Frequency (㎒)	26 ㏈ bandwidth (㎒)
Non - DFS	MCS0	5 180	22.03
	MCS0	5 220	21.89
	MCS0	5 240	22.36
DFS	MCS0	5 260	21.99
	MCS0	5 300	21.91
	MCS0	5 320	22.25
DFS	MCS0	5 500	22.32
	MCS0	5 580	21.96
	MCS0	5 700	21.77

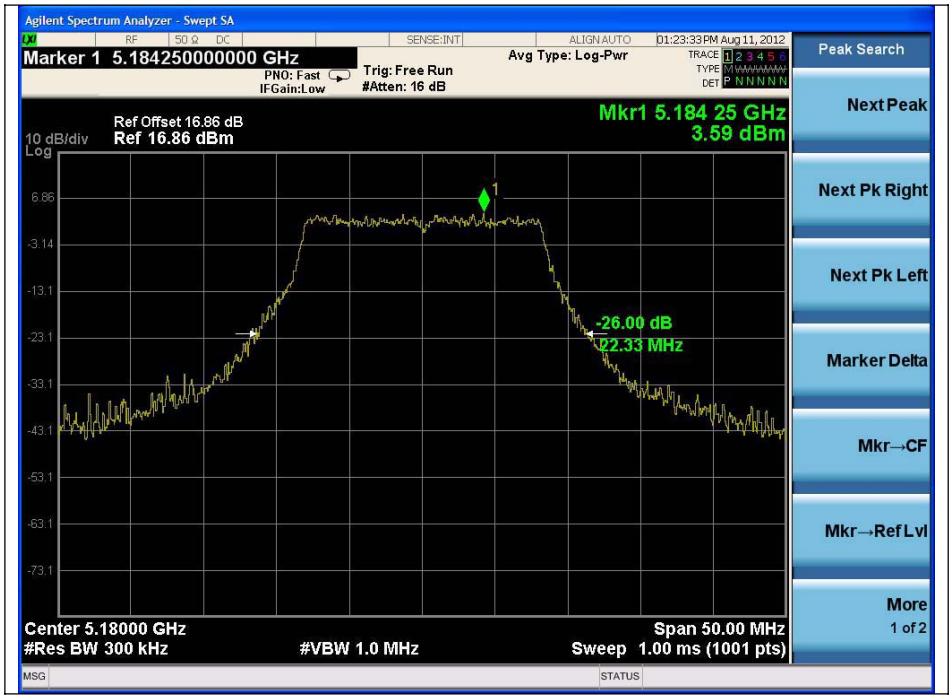
Mode: 11n_HT40

Operating mode	Data Rate (Mbps)	Frequency (㎒)	26 ㏈ bandwidth (㎒)
Non - DFS	MCS0	5 190	41.60
	MCS0	5 230	42.30
DFS	MCS0	5 270	41.20
	MCS0	5 310	39.90
	MCS0	5 510	41.30
	MCS0	5 550	41.70
	MCS0	5 670	41.50

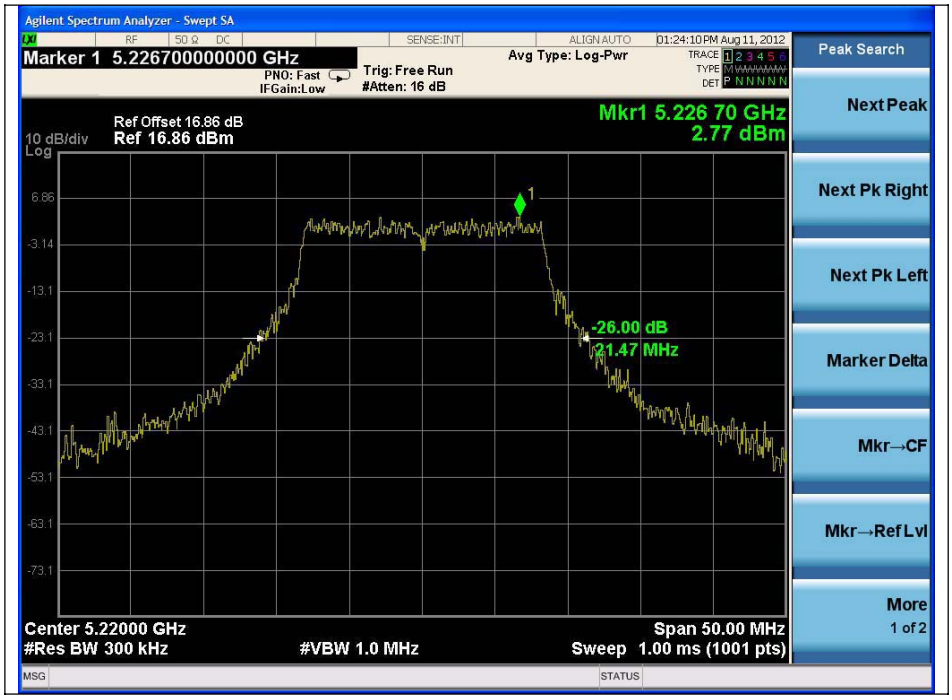
26 dB Bandwidth

802.11a (Non-DFS)

Low Channel (5 180 ㎒)



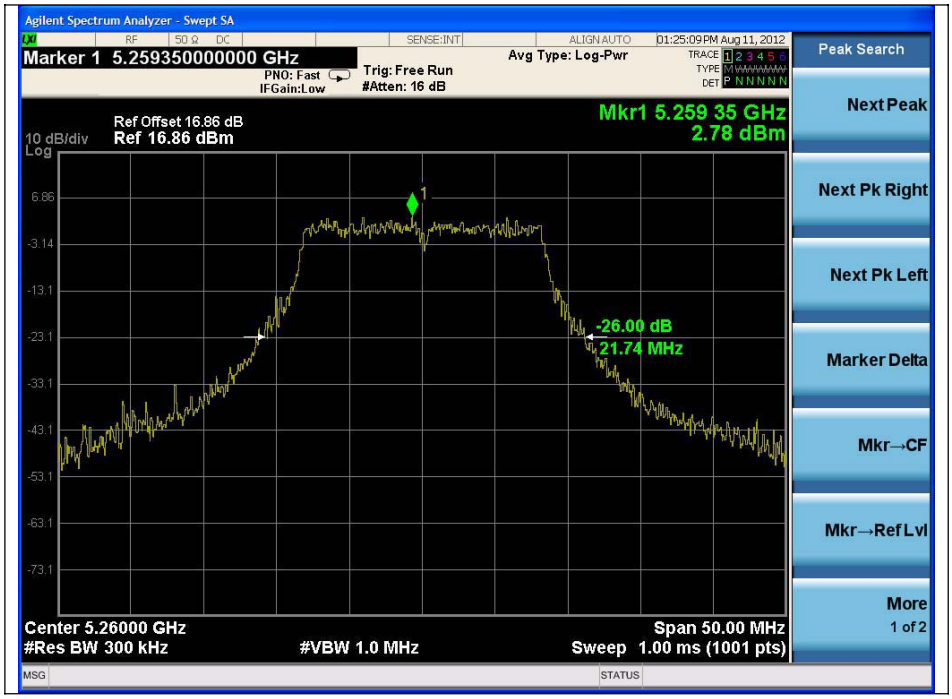
Middle Channel (5 220 ㎒)



High Channel (5 240 ㎒)

802.11a (DFS)

Low Channel (5 260 ㎒)

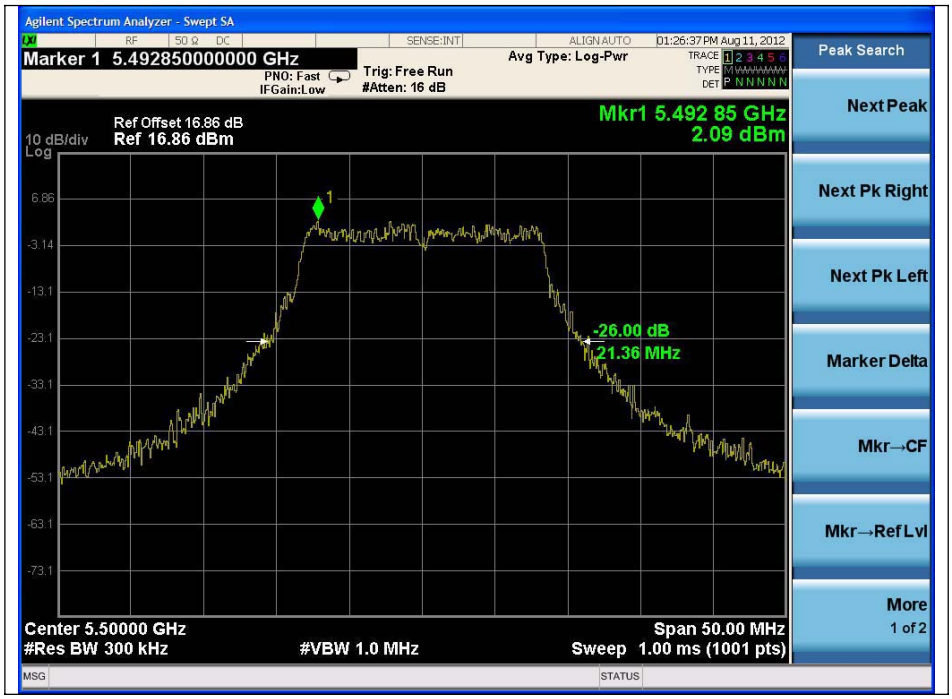


Middle Channel (5 300 ㎒)

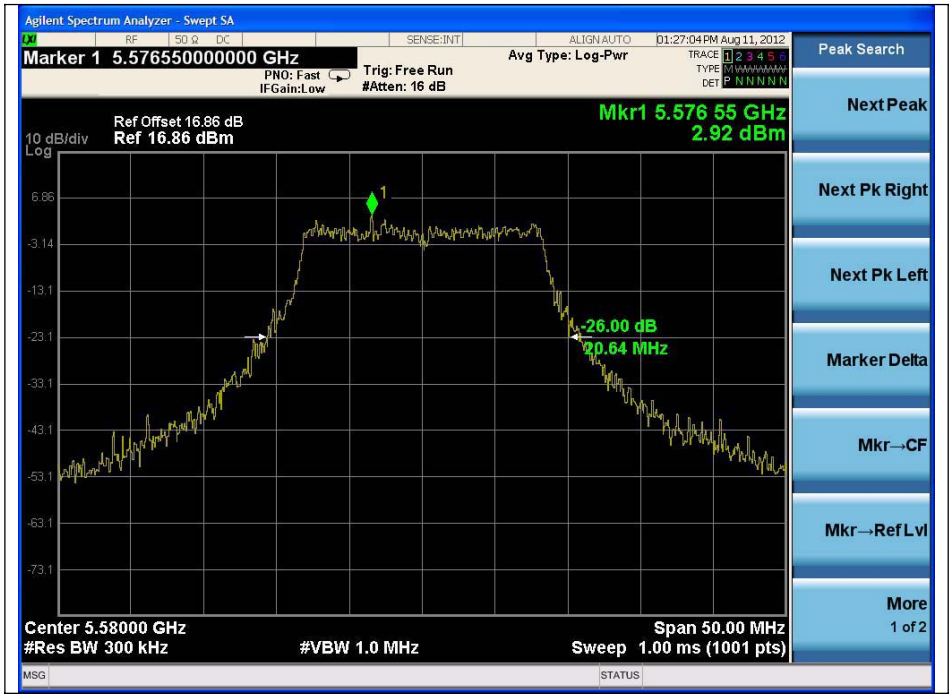
High Channel (5 320 ㎒)

802.11a (DFS)

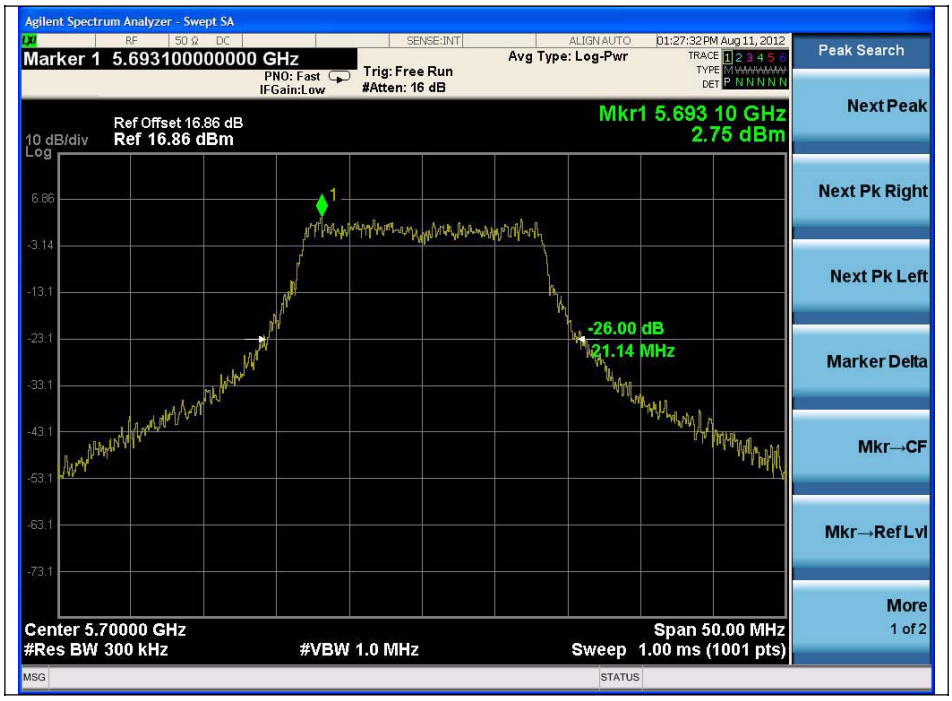
Low Channel (5 500 ㎒)



Middle Channel (5 580 ㎒)



High Channel (5 700 ㎒)

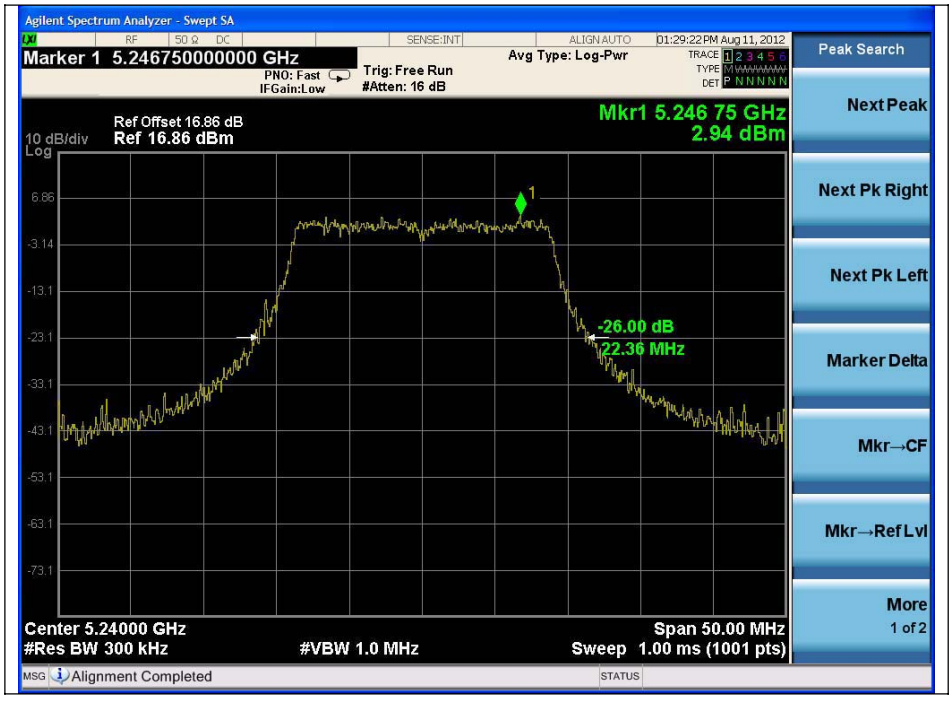


802.11n-HT20 (Non-DFS)

Low Channel (5 180 ㎒)

Middle Channel (5 220 ㎒)

High Channel (5 240 ㎒)



802.11n-HT20 (DFS)

Low Channel (5 260 ㎒)

Middle Channel (5 300 ㎒)

High Channel (5 320 ㎒)

802.11n-HT20 (DFS)

Low Channel (5 500 ㎒)

Middle Channel (5 580 ㎒)

High Channel (5 700 ㎒)

802.11n-HT40 (Non-DFS)

Low Channel (5 190 ㎒)

High Channel (5 230 ㎒)

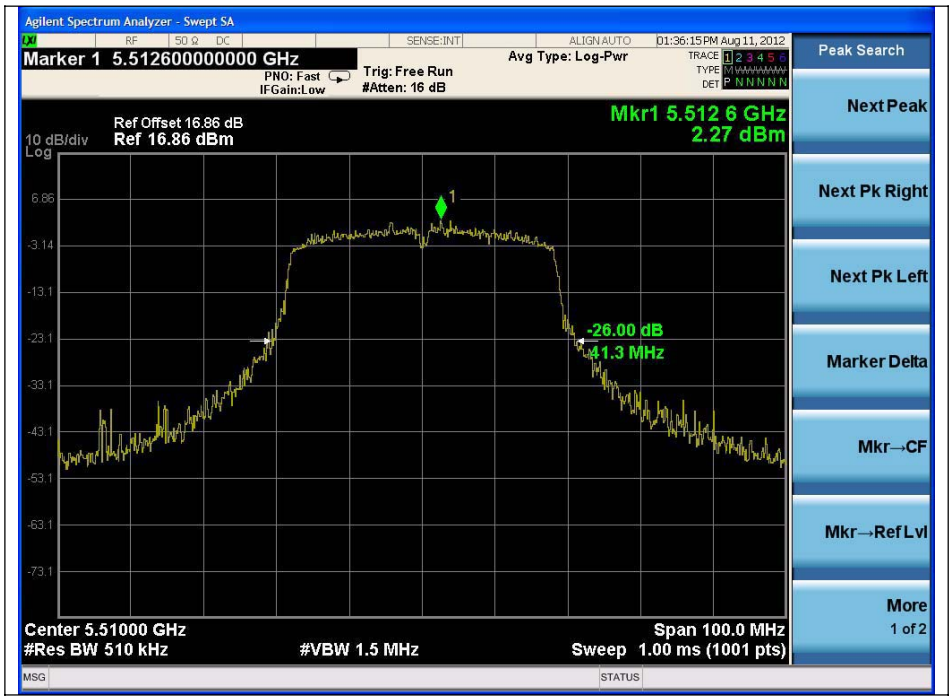
802.11n-HT40 (DFS)

Low Channel (5 270 ㎒)

High Channel (5 310 ㎒)

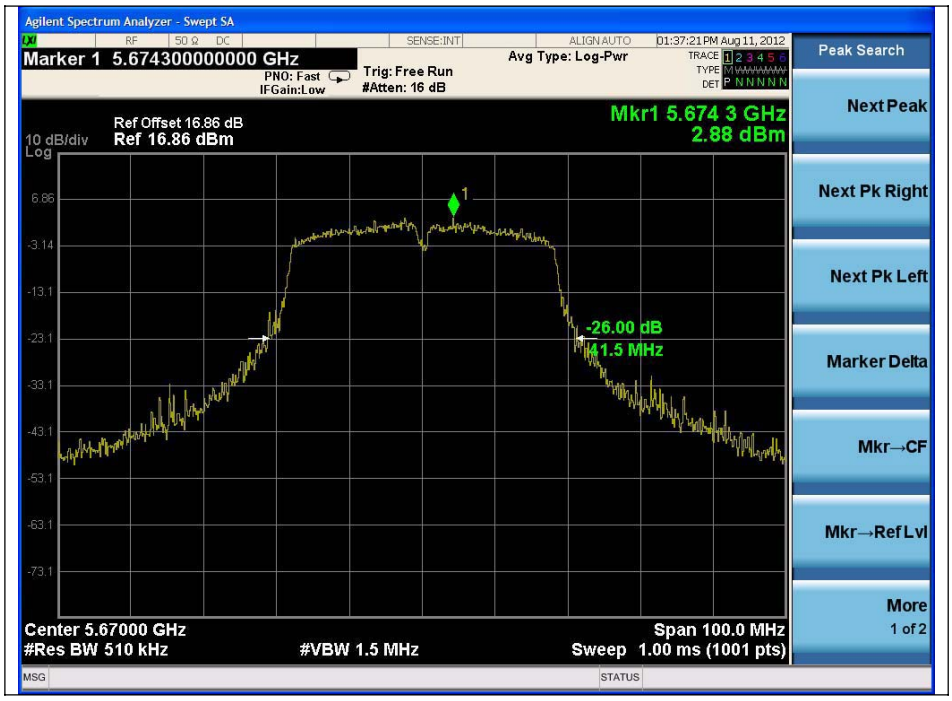
802.11n-HT40 (DFS)

Low Channel (5 510 ㎒)



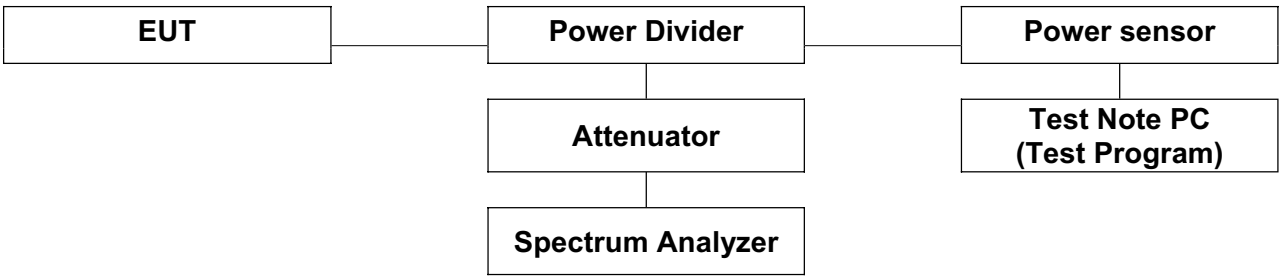
Low Channel (5 550 ㎒)

High Channel (5 670 ㎒)



4. Output power

4.1. Test setup



4.2. Limit

4.2.1. FCC 15.407

(a)(1)

For the 5.15-5.25 ㎓ band, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 50 ㎽ or 4 ㏈m + 10 log B, where B is the 26-㏈ emission bandwidth in ㎒. If transmitting antennas of directional gain greater than 6 ㏈i are used, both the peak transmit power and the peak power spectral density shall be reduced by the amount in ㏈ that the directional gain of the antenna exceeds 6 ㏈i.

(a)(2)

For the 5.25–5.35 ㎓ and 5.47–5.725 ㎓ bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 ㎽ or 11 ㏈m + 10 log B, where B is the 26 ㏈ emission bandwidth in megahertz. In addition, the peak power spectral density shall not exceed 11 ㏈m in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 ㏈i are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in ㏈ that the directional gain of the antenna exceeds 6 ㏈i.

4.3. Test procedure

4.3.1. 11an_HT20

1. This measurement settings are specified in clause 4) of section C of KDB 789033.
2. As an alternative to spectrum analyzer measurements, measurements may be performed using a wideband RF power meter with a thermocouple detector or equivalent if all of the conditions listed below are satisfied.
- The EUT is configured to transmit continuously or to transmit with a consistent duty factor.
-At all times when the EUT is transmitting, it must be transmitting at its maximum power control level.
-The integration period of the power meter exceeds the repetition period of the transmitted signal by at least a factor of five.
3. If the transmitter does not transmit continuously, measure the duty cycle, x, of the transmitter output signal as described in section B).
4. Measure the average power of the transmitter. This measurement is an average over both the on and off periods of the transmitter.
5. Adjust the measurement in dBm by adding 10 log (1/x) where x is the duty cycle (e.g., 10 log(1/0.25) if the duty cycle is 25 percent).

4.3.2. 11n_HT40

1. This measurement settings are specified in clause b) of section C of KDB 789033.
2. Set span to encompass the entire emission bandwidth (EBW) of the signal.
3. Set RBW = 1 MHz
4. Set VBW ≥ 3 MHz
5. Number of points in sweep ≥ 2 Span / RBW. (This ensures that bin-to-bin spacing is ≤ RBW/2, so that narrowband signals are not lost between frequency bins.)
6. Sweep time = auto.
7. Detector = RMS (i.e., power averaging), if available. Otherwise, use sample detector mode.
8. if transmit duty cycle < 98 percent, use a video trigger with the trigger level set to enable triggering only on full power pulses. Transmitter must operate at maximum power control level for the entire duration of every sweep. If the EUT transmits continuously (i.e., with no off intervals) or at duty cycle ≥ 98 percent, and if each transmission is entirely at the maximum power control level, then the trigger shall be set to “free run”.
9. Trace average at least 100 traces in power averaging (i.e., RMS) mode.
10. Compute power by integrating the spectrum across the 26 dB EBW of the signal using the spectrum analyzer’s band power measurement function with band limits set equal to the EBW band edges. If the spectrum analyzer does not have a band power function, sum the spectrum levels (in power units) at 1 MHz intervals extending across the 26 dB EBW of the spectrum.

4.4. Test result

Ambient temperature : (24 ± 2) ℃
Relative humidity : 49 % R.H.

4.4.1. Limit

-11a

Mode	Frequency (㎒)	Data Rate (Mbps)	Fixed Limit (dB m)	26 dB BW (㎒)	4+10LogB (dB m)	Antenna gain (dB i)	Limit (dB)
11a	5 180	6	17	22.33	17.49	-1.37	17
	5 220	6	17	21.47	17.32	-1.37	17
	5 240	6	17	21.89	17.40	-1.37	17
Mode	**Frequency (㎒)**	**Data Rate (Mbps)**	**Fixed Limit (dB m)**	**26 dB BW (㎒)**	**11+10LogB (dB m)**	**Antenna gain (dB i)**	**Limit (dB)**
11a	5 260	6	24	21.74	24.37	-1.37	24
	5 300	6	24	21.04	24.23	-1.37	24
	5 320	6	24	21.51	24.33	-1.37	24
	5 500	6	24	21.36	24.30	-2.10	24
	5 580	6	24	20.64	24.15	-2.10	24
	5 700	6	24	21.14	24.25	-2.10	24

-11n_HT20

Mode	Frequency (㎒)	Data Rate (Mbps)	Fixed Limit (dB m)	26 dB BW (㎒)	4+10LogB (dB m)	Antenna gain (dB i)	Limit (dB)
11n_HT20	5 180	MCS0	17	22.03	17.43	-1.37	17
	5 220	MCS0	17	21.89	17.40	-1.37	17
	5 240	MCS0	17	22.36	17.49	-1.37	17
Mode	**Frequency (㎒)**	**Data Rate (Mbps)**	**Fixed Limit (dB m)**	**26 dB BW (㎒)**	**11+10LogB (dB m)**	**Antenna gain (dB i)**	**Limit (dB)**
11n_HT20	5 260	MCS0	24	21.99	24.42	-1.37	24
	5 300	MCS0	24	21.91	24.41	-1.37	24
	5 320	MCS0	24	22.25	24.47	-1.37	24
	5 500	MCS0	24	22.32	24.49	-2.10	24
	5 580	MCS0	24	21.96	24.42	-2.10	24
	5 700	MCS0	24	21.77	24.38	-2.10	24

-11n_HT40

Mode	Frequency (㎒)	Data Rate (Mbps)	Fixed Limit (dB m)	26 dB BW (㎒)	4+10LogB (dB m)	Antenna gain (dB i)	Limit (dB)
11n_HT40	5 190	MCS0	17	41.60	20.19	-1.37	17
	5 230	MCS0	17	42.30	20.26	-1.37	17
Mode	**Frequency (㎒)**	**Data Rate (Mbps)**	**Fixed Limit (dB m)**	**26 dB BW (㎒)**	**11+10LogB (dB m)**	**Antenna gain (dB i)**	**Limit (dB)**
11n_HT40	5 270	MCS0	24	41.20	27.15	-1.37	24
	5 310	MCS0	24	39.90	27.01	-1.37	24
	5 510	MCS0	24	41.30	27.16	-2.10	24
	5 550	MCS0	24	41.70	27.20	-2.10	24
	5 670	MCS0	24	41.50	27.18	-2.10	24

4.4.1. Result

-11a

Operation Mode	Channel	Data rate	Channel Frequency (㎒)	Result (㏈m)	Limit (㏈m)
Non DFS 11a	Low	6	5 180	12.89	17
		9		12.79	17
		12		12.71	17
		18		12.54	17
		24		12.34	17
		36		11.97	17
		48		11.69	17
		54		11.58	17
	Middle	6	5 220	12.71	17
		9		12.65	17
		12		12.63	17
		18		12.55	17
		24		12.25	17
		36		12.13	17
		48		12.03	17
		54		11.95	17
	High	6	5 240	12.86	17
		9		12.77	17
		12		12.75	17
		18		12.63	17
		24		12.55	17
		36		12.41	17
		48		12.35	17
		54		12.20	17