JRC Japan Radio Co., Ltd.

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Declaration of conformity to FCC Part 80 for Marine Radar

FCC ID: CKENKE2063

We: Japan Radio Company Limited

declare under our sole responsibility that the CKENKE2063 scanner unit conforms to the CFR part 80 rules for Marine Radars

Signed: H. Nakamura Date: 12th January, 2012

Mr. N. Hiroshi
Manager of Radar Group
Engineering Department
Marine Electronics Division

Signed: G. Higuchi

G. Higuchi
Radar Group
Engineering Department
Marine Electronics Division

3. TEST RESULTS SUMMARY

3.1 Mechanical Tests

Appearance and Structure

Scanner Unit	Good

3.2 Electrical Tests

3.2.1 Working of each operation unit

Scanner Unit	Good

3.2.2 Scanner

VSWR	frequency (MHz)	VSWR
	9380	1.02
	9410	1.03
	9440	1.04

Scanner Rotation Speed

NKE-2063	16, 17.4, 19, 20.6, 22.2, 23.8, 25.4 and 27rpm
NKE-2063HS	27, 36, 48rpm

3.2.3 Transmitter

Magnetron Ser. No.	SJ2B/F9017C

Operating Frequency

(at 0.08us / 4000Hz pulse, SP1)	9419.5 MHz
(at 0.08us / 2250Hz pulse, SP2)	9419.5 MHz
(at 0.13us / 1700Hz pulse, SP3)	9418.8 MHz
(at 0.25us / 1700Hz pulse, MP1)	9416.8 MHz
(at 0.50us / 1200Hz pulse, MP2)	9416.2 MHz
(at 0.80us / 750Hz pulse, LP1)	9415.0 MHz
(at 1.0us / 650Hz pulse, LP2)	9414.8 MHz

RF power output

(at 0.08us / 4000Hz pulse, SP1)	0.10kW
(at 0.08us / 2250Hz pulse, SP2)	0.11kW
(at 0.13us / 1700Hz pulse, SP3)	0.33kW
(at 0.25us / 1700Hz pulse, MP1)	0.86kW
(at 0.50us / 1200Hz pulse, MP2)	2.75kW
(at 0.80us / 750Hz pulse, LP1)	4.91kW
(at 1.0us / 650Hz pulse, LP2)	5.58kW

Pulse Length

(at 0.08us / 4000Hz pulse, SP1)	0.071us
(at 0.08us / 2250Hz pulse, SP2)	0.071us
(at 0.13us / 1700Hz pulse, SP3)	0.15us

(at 0.25us / 1700Hz pulse, MP1)	0.25us
(at 0.50us / 1200Hz pulse, MP2)	0.52us
(at 0.80us / 750Hz pulse, LP1)	0.77us
(at 1.0us / 650Hz pulse, LP2)	0.88us

Repetition Frequency

(at 0.08us / 4000Hz pulse, SP1)	4006Hz
(at 0.08us / 2250Hz pulse, SP2)	2246Hz
(at 0.13us / 1700Hz pulse, SP3)	1700Hz
(at 0.25us / 1700Hz pulse, MP1)	1700Hz
(at 0.50us / 1200Hz pulse, MP2)	1202Hz
(at 0.80us / 750Hz pulse, LP1)	750.4Hz
(at 1.0us / 650Hz pulse, LP2)	651.9Hz

Spurious Emission at Antenna Terminal	Good
Field strength of spurious radiation	Good
Radiofrequency radiation exposure limits	Good

3.2.4 Receiver

MIC Front-end Ser. No.	B2959A
Diode limiter Ser. No.	A6429B
IF Center Frequency	60 MHz
IF Bandwidth	20/6/3 MHz

3.2.5 Dissipation Current (Power)

NKE-2063

Input Voltage	12V	24V
(at 0.08us / 4000Hz pulse, SP1)	3.80A(45.6W)	1.91A(45.84W)
(at 0.08us / 2250Hz pulse, SP2)	2.94A(35.28W)	1.50A(36.0W)
(at 0.13us / 1700Hz pulse, SP3)	2.94A(35.28W)	1.49A(35.76W)
(at 0.25us / 1700Hz pulse, MP1)	3.35A(40.2W)	1.69A(40.56W)
(at 0.50us / 1200Hz pulse, MP2)	3.50A(42.0W)	1.75A(42.0W)
(at 0.80us / 750Hz pulse, LP1)	3.27A(39.24W)	1.67A(40.8W)
(at 1.0us / 650Hz pulse, LP2)	3.28A(39.36W)	1.67A(40.8W)

NKE-2063HS

Input Voltage	24V
(at 0.08us / 4000Hz pulse, SP1)	1.92A(46.08W)
(at 0.08us / 2250Hz pulse, SP2)	1.61A(38.64W)
(at 0.13us / 1700Hz pulse, SP3)	1.62A(38.88W)
(at 0.25us / 1700Hz pulse, MP1)	1.84A(44.16W)
(at 0.50us / 1200Hz pulse, MP2)	1.98A(47.52W)
(at 0.80us / 750Hz pulse, LP1)	1.96A(47.04W)
(at 1.0us / 650Hz pulse, LP2)	2.02A(48.48W)

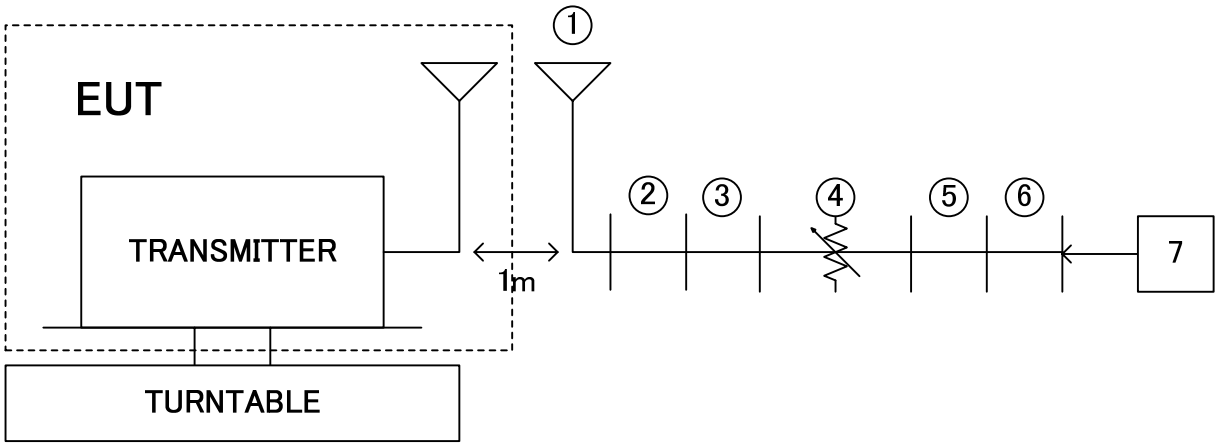
3.3 Overall Tests

Working Time of Timer	1min30sec
Input Variation (10.8Vdc – 31.2Vdc)	Good
Overall Sensitivity	Good
Minimum Range	Good
Bearing Accuracy	Good
Mechanical Noise	Good

4.1 RF Power Output

47 CFR sec. 2.1046

4.1.1 TEST SETUP



4.1.2 TEST INSTRUMENTS

	DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATION DATE	CALIBLATION DUE DATE
1	Double Ridge Horn Antenna ETS LINDGREN	3117	00091928	Sep. 28. 2011	Sep. 2012
2	Coaxial Cable HUBER+SUHNER	SUCOFLEX 100	NA	NA	NA
3	Adaptor MDL	90AC106-1E	NA	NA	NA
4	Variable Attenuator HP	X382A	13681	Jan. 21. 2011	Jan. 2012
5	Adaptor HP	X281A	NA	NA	NA
6	Coaxial Cable HUBER+SUHNER	SUCOFLEX 104PA	5994 /4PA	NA	NA
7	Spectrum Analyzer Agilent	E4448A	MY46180420	Oct. 31. 2011	Oct. 2012

4.1.3 TEST PROCEDURES

Reference to Section 2.2.17 Radiated Power Output on TIA-603-C.

4.1.4 EUT OPERATING CONDITIONS

a. Placed the EUT on the testing table.

b. Prepared other computer systems for controlling EUT and placed them outside of testing area.

c. EUT can be transmitted seven pulses are 0.08us/4000Hz, 0.08us/2250Hz, 0.13us/1700Hz 025us/1700Hz, 0.5us/1200Hz, 0.8us/750Hz, 1.0us/650Hz

4.1.5 TEST RESULTS

The radiated power output is calculated by the following:

$$average radiated\ \ power = 10\log(1/8\sum_{i=1}^{i=8}10^{\frac{LVLi+LOSS}{10}})dBm$$

PW [usec] / PRF [Hz]	0.08 / 4000			0.08 / 2250			0.13 / 1700		
Peak Power [dBm]	**50.13**			**50.25**			**55.14**		
Loss [dB]	−76.05			−76.05			−76.05		
i	RX level	+LOSS	in mW	RX level	+LOSS	in mW	RX level	+LOSS	in mW
1	−25.76	50.29	106905.49	−25.79	50.26	106169.56	−20.73	55.32	340408.19
2	−25.95	50.10	102329.30	−26.03	50.02	100461.58	−20.93	55.12	325087.30
3	−25.89	50.16	103752.84	−25.98	50.07	101624.87	−21.02	55.03	318419.75
4	−25.99	50.06	101391.14	−25.90	50.15	103514.22	−20.89	55.16	328095.29
5	−25.77	50.28	106659.61	−25.68	50.37	108893.01	−20.97	55.08	322106.88
6	−25.94	50.11	102565.19	−25.66	50.39	109395.64	−20.93	55.12	325087.30
7	−25.92	50.13	103038.61	−25.71	50.34	108143.40	−20.97	55.08	322106.88
8	−26.15	49.90	97723.72	−25.65	50.40	109647.82	−20.84	55.21	331894.46

0.25 / 1700			0.5 / 1200			0.8 / 750			1.0 / 650		
59.35			**64.39**			**66.91**			**67.47**		
−76.05			−76.05			−76.05			−76.05		
RX level	+LOSS	in mW	RX level	+LOSS	in mW	RX level	+LOSS	in mW	RX level	+LOSS	in mW
−16.61	59.44	879022.52	−11.64	64.41	2760577.86	−9.00	67.05	5069907.08	−8.41	67.64	5807644.18
−16.65	59.40	870963.59	−11.70	64.35	2722701.31	−9.44	66.61	4581418.87	−8.46	67.59	5741164.62
−16.68	59.37	864967.92	−11.55	64.50	2818382.93	−9.14	66.91	4909078.76	−8.87	67.18	5223961.89
−16.71	59.34	859013.52	−11.71	64.34	2716439.27	−9.04	67.01	5023425.90	−8.51	67.54	5675446.05
−16.68	59.37	864967.92	−11.85	64.20	2630267.99	−9.20	66.85	4841723.68	−8.46	67.59	5741164.62
−16.70	59.35	860993.75	−11.86	64.19	2624218.54	−9.27	66.78	4764309.87	−8.92	67.13	5164163.69
−16.77	59.28	847227.41	−11.57	64.48	2805433.64	−8.98	67.07	5093308.71	−8.51	67.54	5675446.05
−16.84	59.21	833681.18	−11.44	64.61	2890679.88	−9.10	66.95	4954501.91	−8.53	67.52	5649369.75

4.1.6 TEST CONDITIONS

Tamb = 20℃ to 25℃, RHamb = 40% ～ 60%

EUT input = 24 VDC

4.1.7 STABILLIZATION

EUT energized for 10 minutes minimum.

4.1.8 TEST EQUIPMENT

JRC Original – Shielded Room

Other equipment – see test set-ups.

4.1.9 DATE

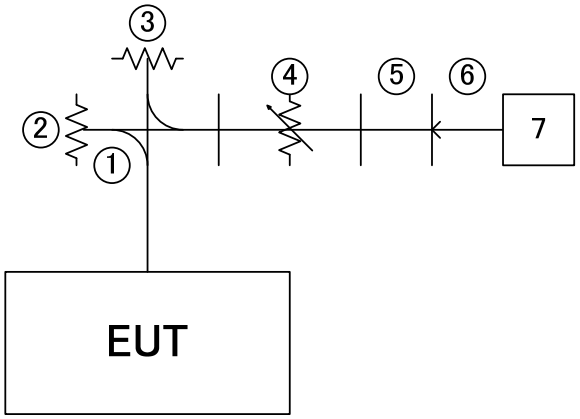
26th Dec., 2011

TESTED BY G. Higuchi

4.2 Spurious emission at antenna terminals

47 CFR sec. 2.1051

4.2.1.1 TEST SETUP for range 10kHz to 12.5GHz



4.2.1.2 TEST INSTRUMENT

	DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATION DATE	CALIBLATION DUE DATE
1	Direction Coupler (30dB) SHIMADARIKA	5D363	R11421	NA	NA
2	Dummy Load PASTERNACK	PE6815	NA	NA	NA
3	High Power Dummy Load PASTERNACK	PE6824	NA	NA	NA
4	Variable Attenuator HP	X382A	13681	Jan. 21. 2011	Jan. 2012
5	Adaptor MDL	90AC106-1E	NA	NA	NA
6	Coaxial Cable HUBER+SUHNER	SUCOFLEX 100	NA	NA	NA
7	Spectrum Analyzer Agilent	E4448A	MY46180420	Oct. 31. 2011	Oct. 2012

Measurement Point : Antenna terminal

Spectrum Analyzer setting: RBW = 10kHz less than 1GHz, 1MHz above 1GHz

VBW = 300kH less than 1GHz, 3MHz above 1GHz

Detector Mode = Positive Peak

4.2.1.3 TEST PROCEDURES

a. Setup EUT as 4.2.1.

b. Transmitted at most powerful pulse and adjusted attenuator for not exceeding the spectrum analyzer maximum rating.

c. Transmitted at seven pulses are 0.08us/4000Hz, 0.08us/2250Hz, 0.13us/1700Hz 025us/1700Hz, 0.5us/1200Hz, 0.8us/750Hz, 1.0us/650Hz, and capture the spectrum at 10kHz to 12.5GHz.

4.2.1.4 EUT OPERATING CONDITIONS

a. Placed the EUT on the testing table.

b. Prepared other computer systems for controlling EUT and placed them outside of testing area.

4.2.1.5 TEST RESULTS

No spurious emissions observed above minimum standard.

Test data is described at section 4.2.1.10 to 4.2.1.16

4.2.1.6 TEST CONDITIONS

Tamb = 20℃ to 25℃, RHamb = 40% ～ 60%

EUT input = 24 VDC

4.2.1.7 STABILLIZATION

EUT energized for 10 minutes minimum.

4.2.1.8 TEST EQUIPMENT

JRC Original – Shielded Room

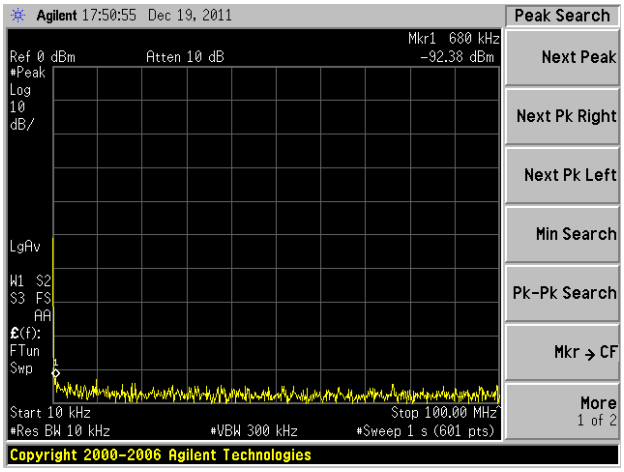
Other equipment – see test set-ups.

4.2.1.9 DATE

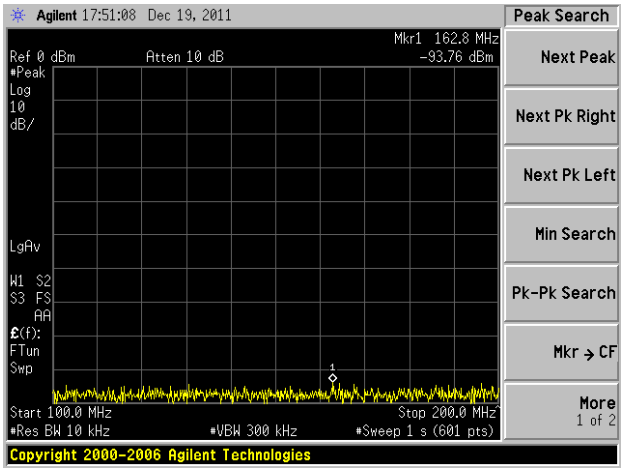
19th Dec., 2011

TESTED BY G. Higuchi

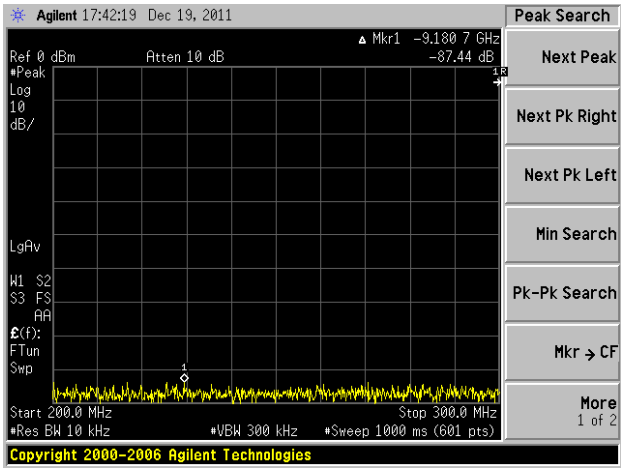
4.2.1.10 TEST RESULTS of 0.08usec/4000Hz pulse



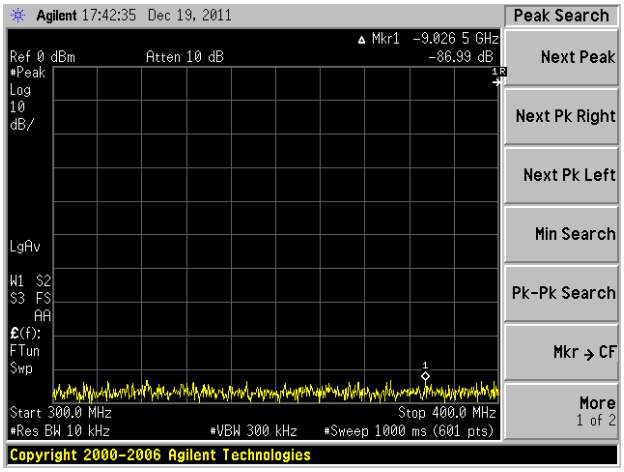
10kHz to 100MHz



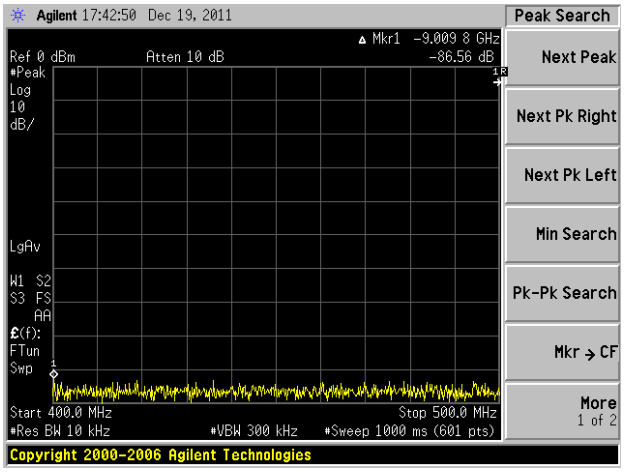
100MHz to 200MHz



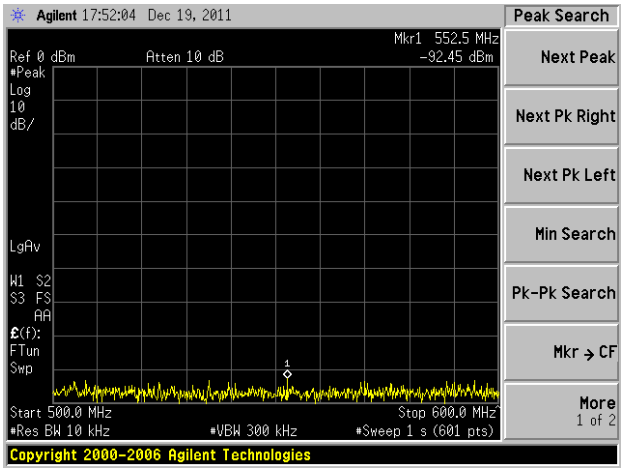
200MHz to 300MHz



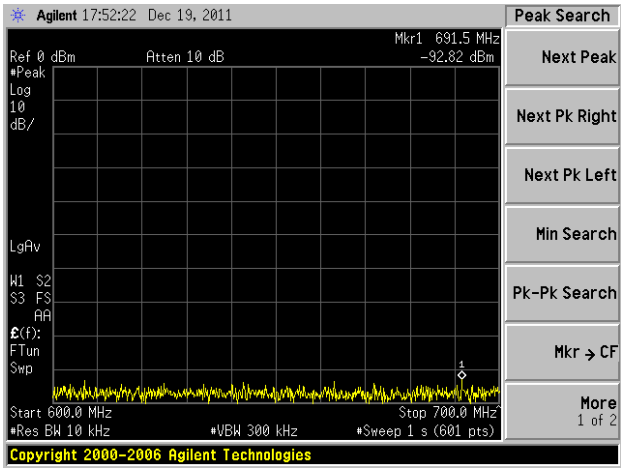
300MHz to 400MHz



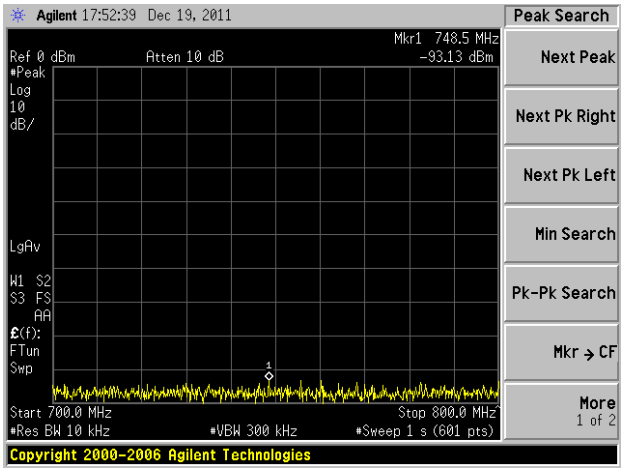
400MHz to 500MHz



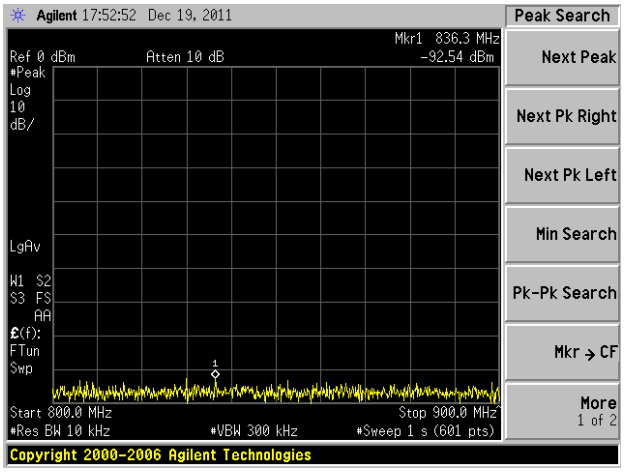
500MHz to 600MHz



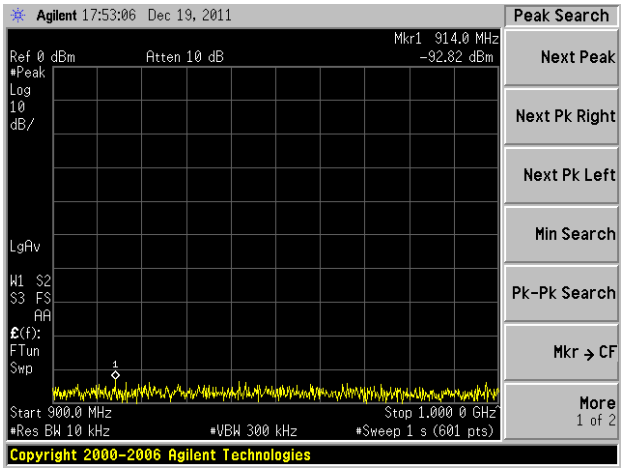
600MHz to 700MHz



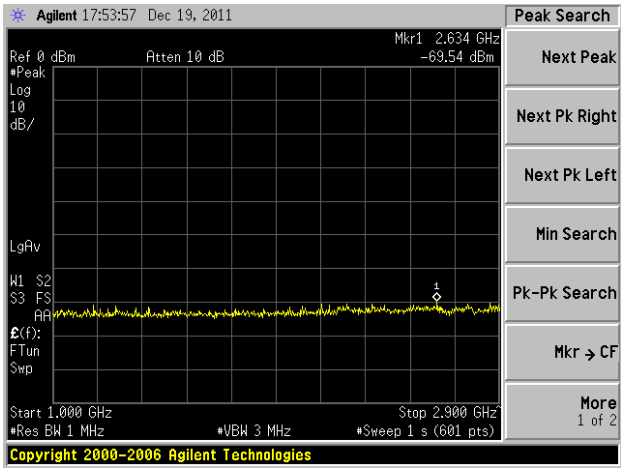
700MHz to 800MHz



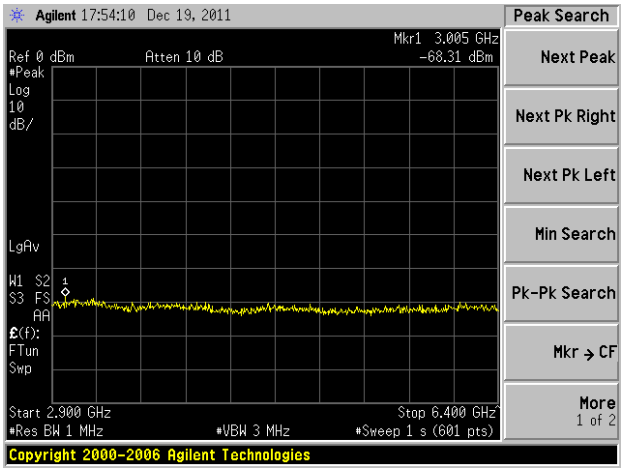
800MHz to 900MHz



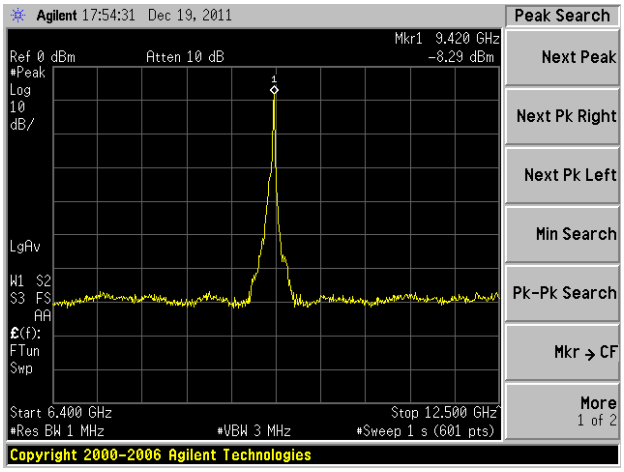
900MHz to 1GHz



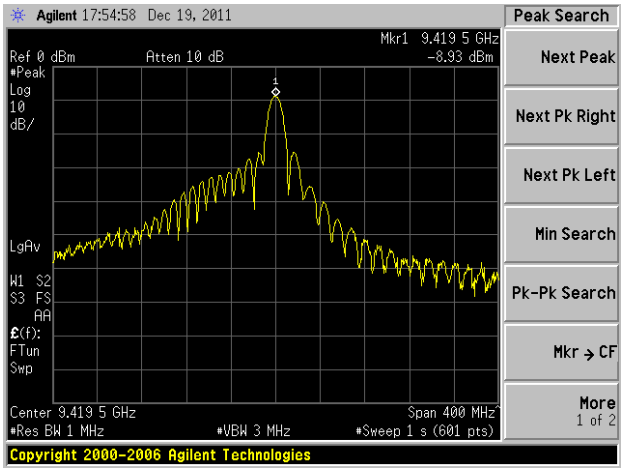
1.0GHz to 2.9GHz



2.9GHz to 6.4GHz

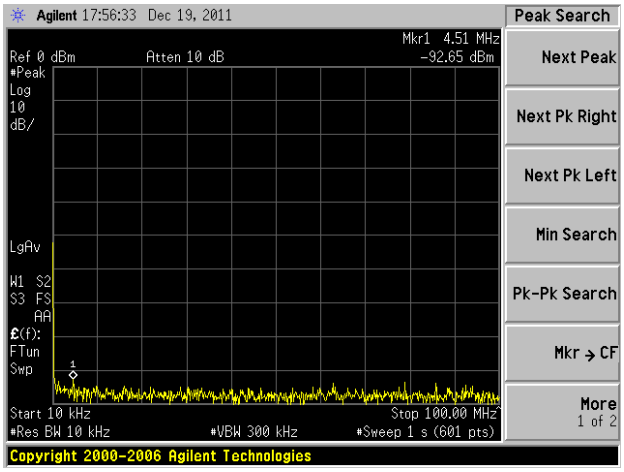


6.4GHz to 12.5GHz

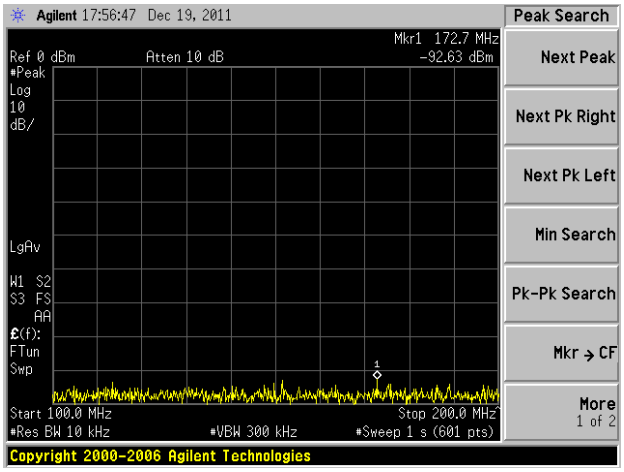


Center 9419.5MHz, Span 400MHz

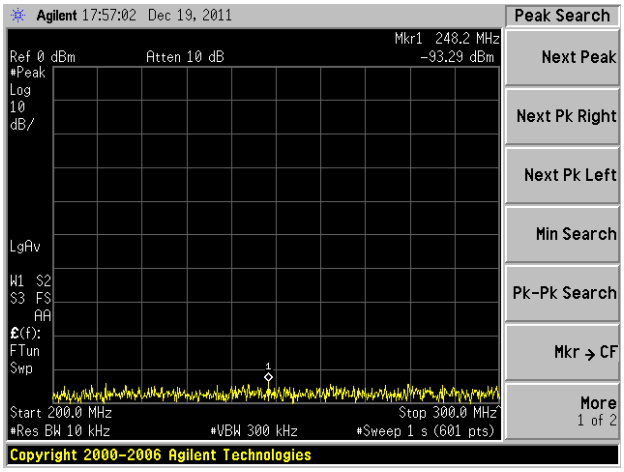
4.2.1.11 TEST RESULTS of 0.08usec/2250Hz pulse



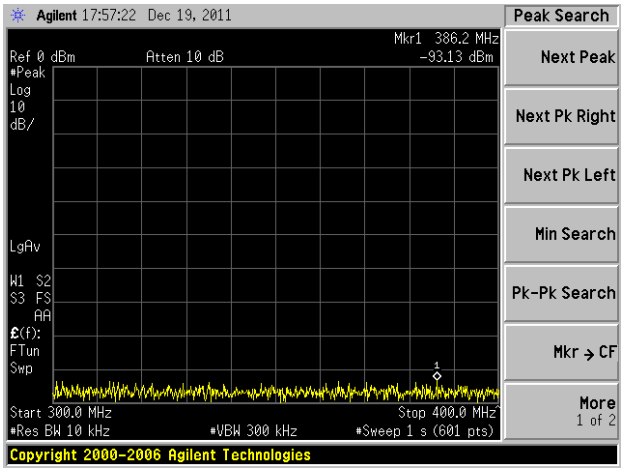
10kHz to 100MHz



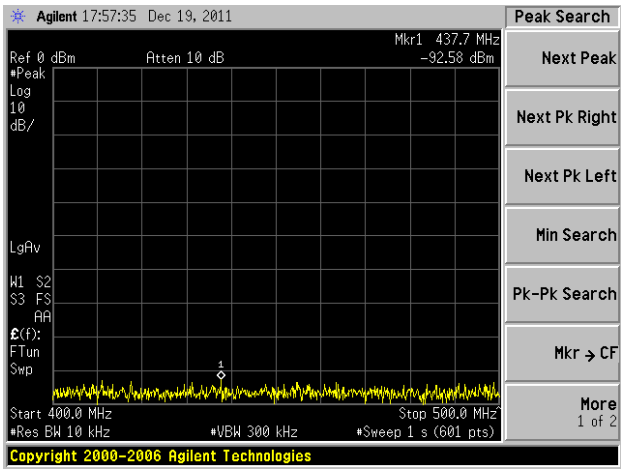
100MHz to 200MHz



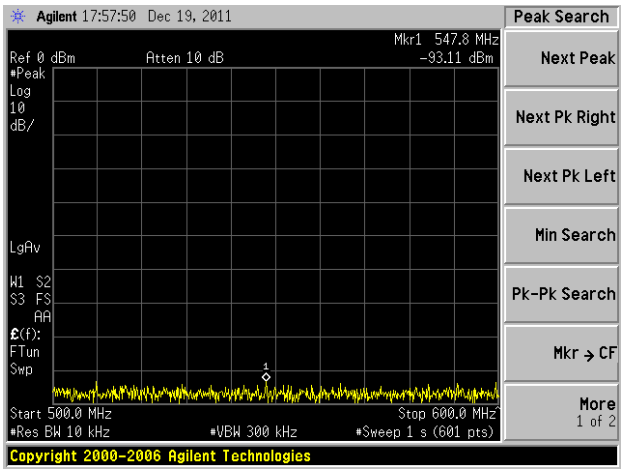
200MHz to 300MHz



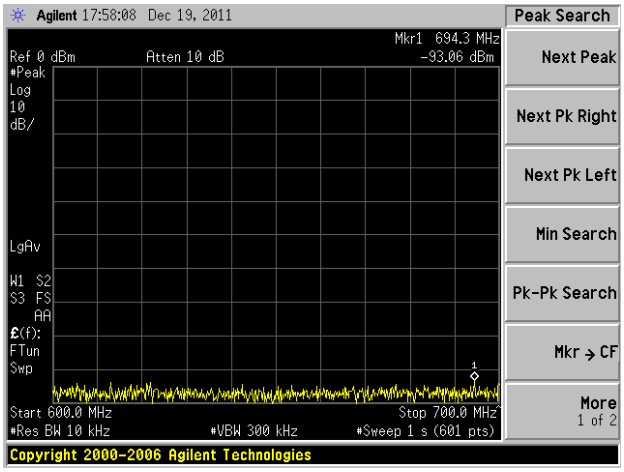
300MHz to 400MHz



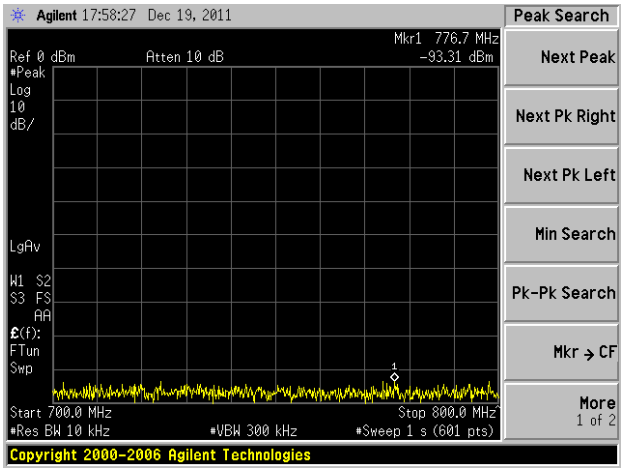
400MHz to 500MHz



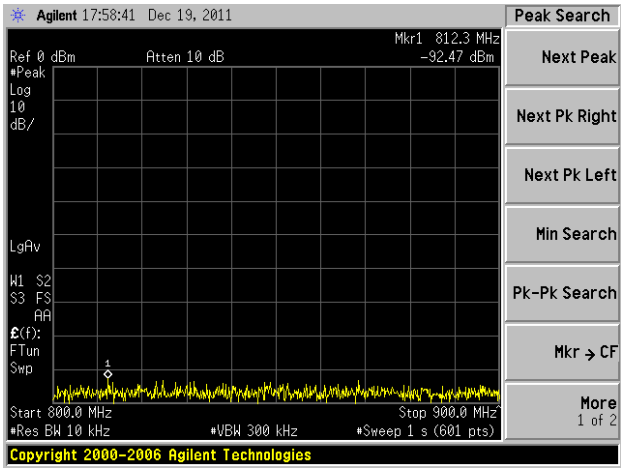
500MHz to 600MHz



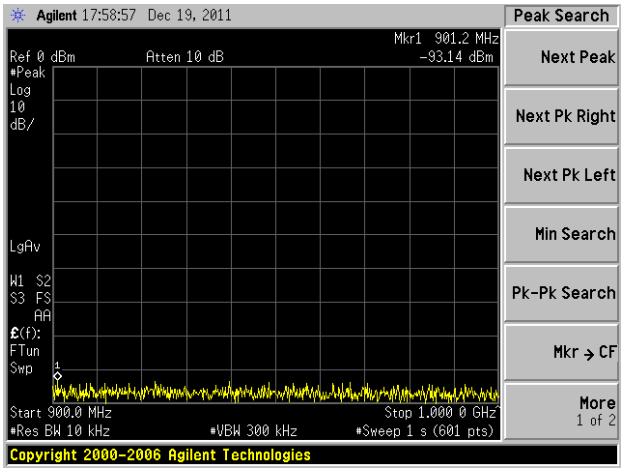
600MHz to 700MHz



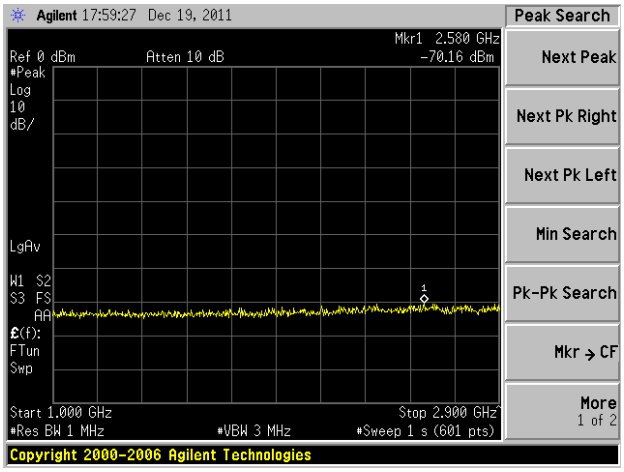
700MHz to 800MHz



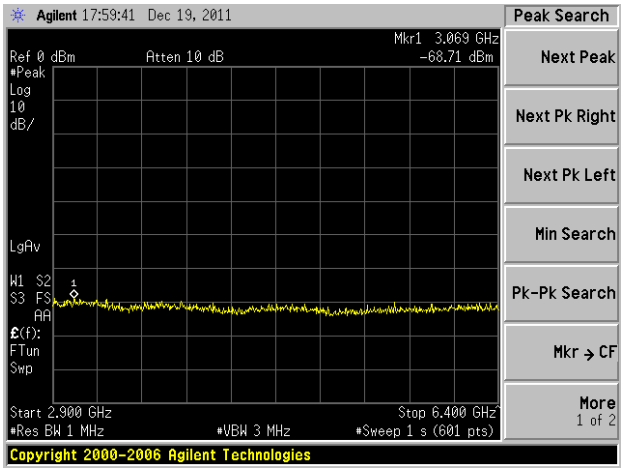
800MHz to 900MHz



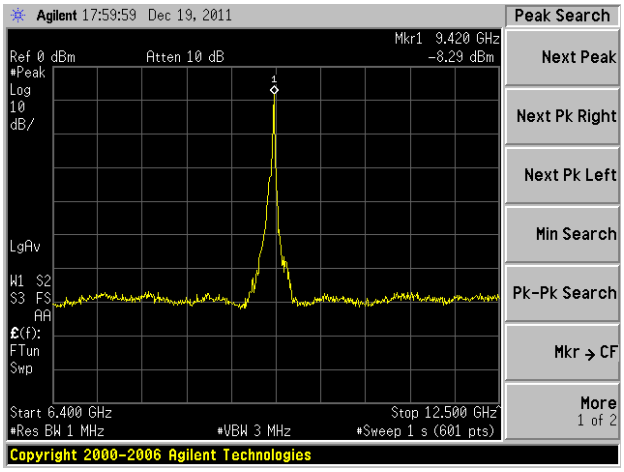
900MHz to 1.0GHz



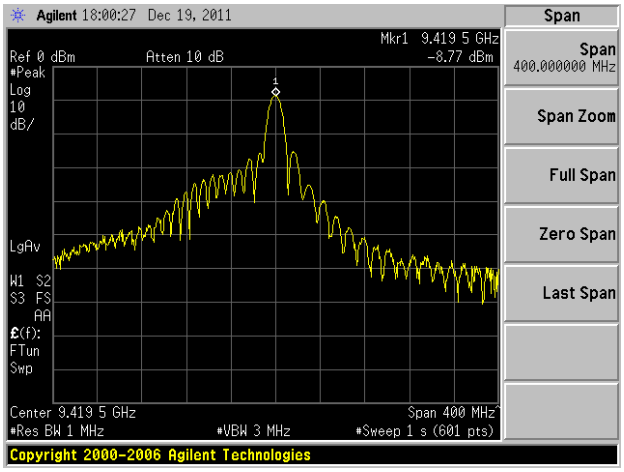
1.0GHz to 2.9GHz



2.9GHz to 6.4GHz

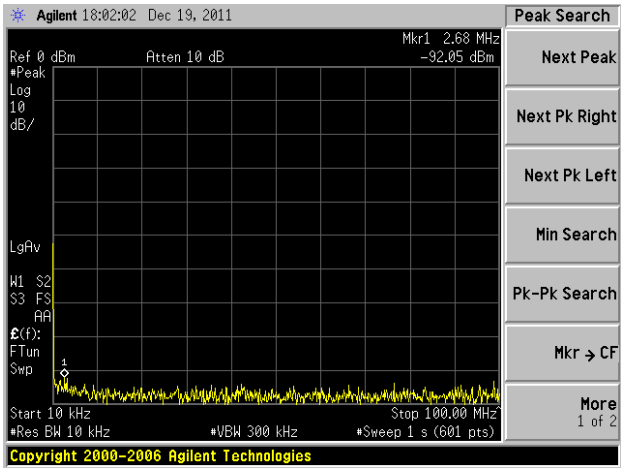


6.4GHz to 12.5GHz

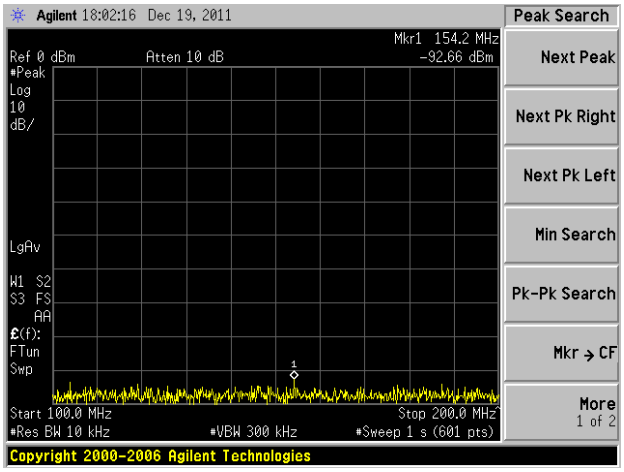


Center 9419.5MHz, Span 400MHz

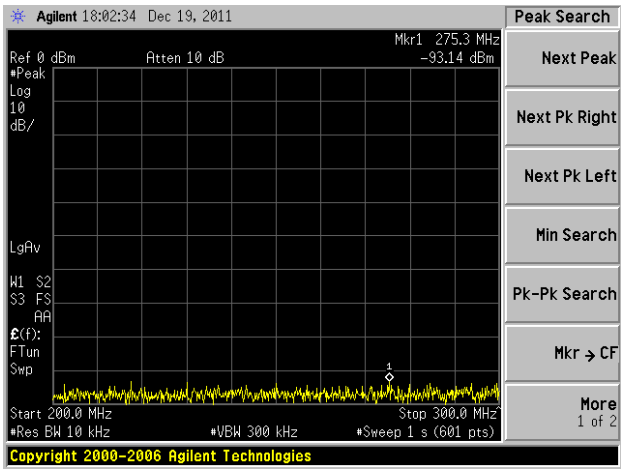
4.2.1.12 TEST RESULTS of 0.13usec/1700Hz pulse



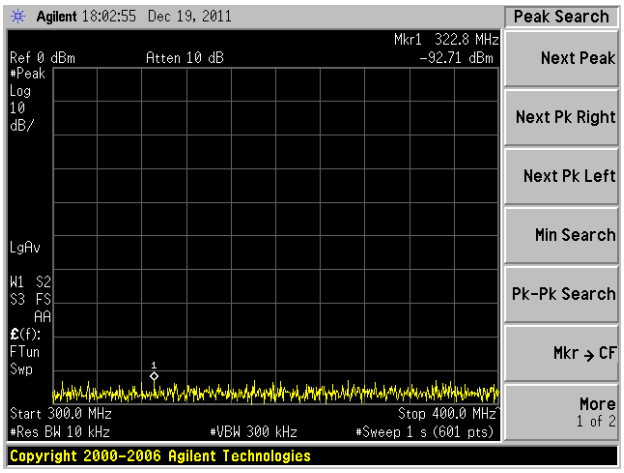
10kHz to 100MHz



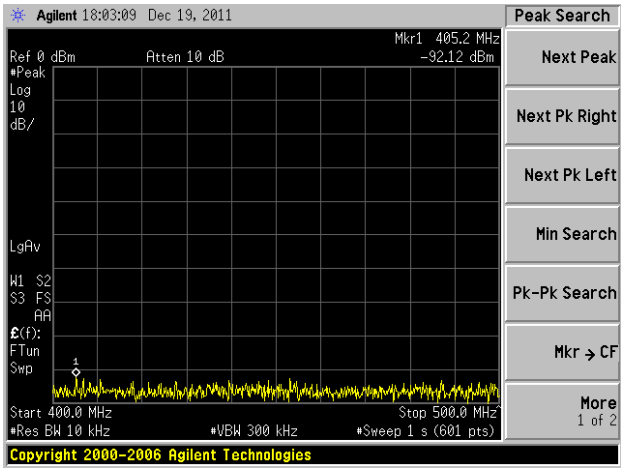
100MHz to 200MHz



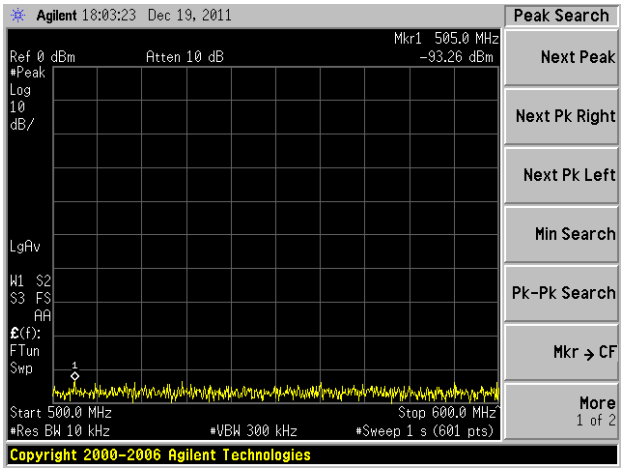
200MHz to 300MHz



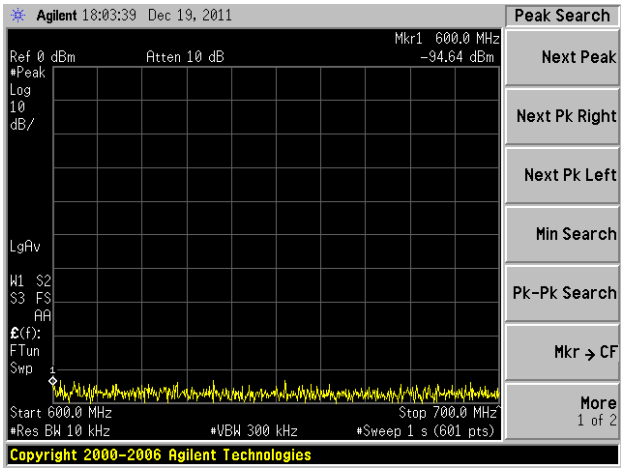
300MHz to 400MHz



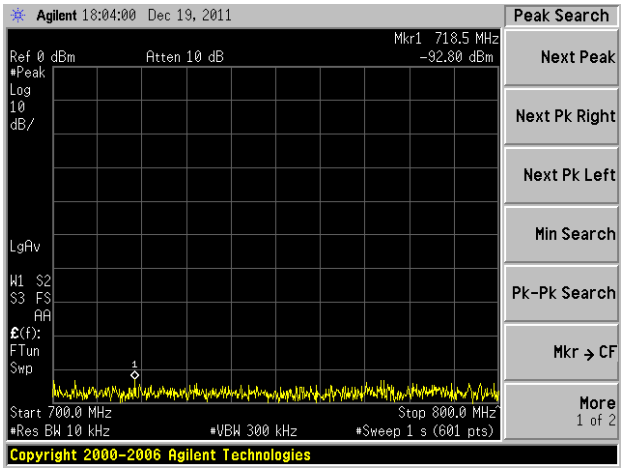
400MHz to 500MHz



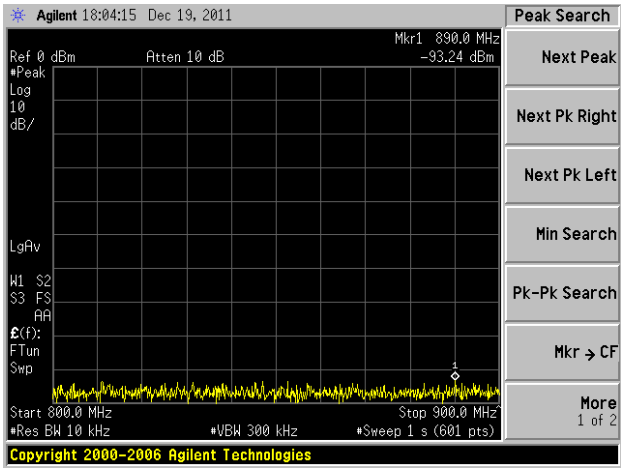
500MHz to 600MHz



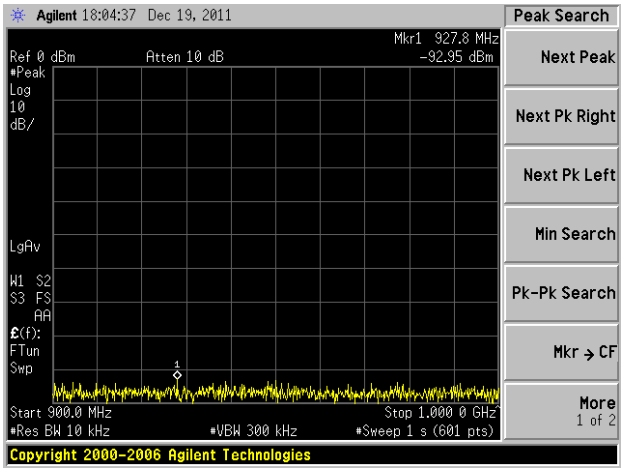
600MHz to 700MHz



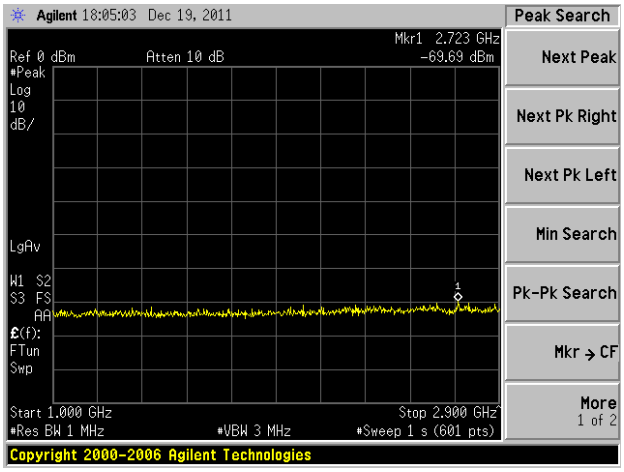
700MHz to 800MHz



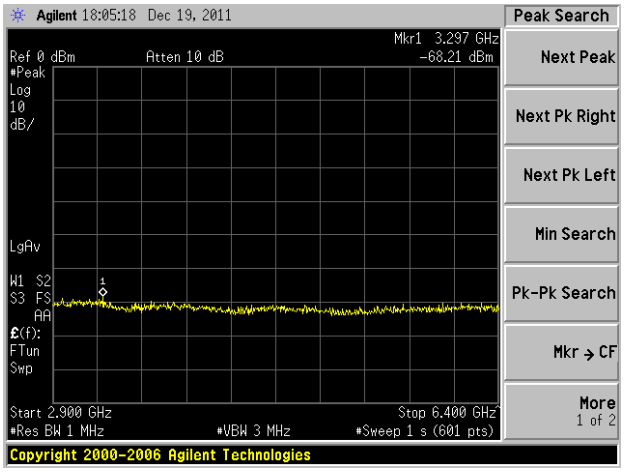
800MHz to 900MHz



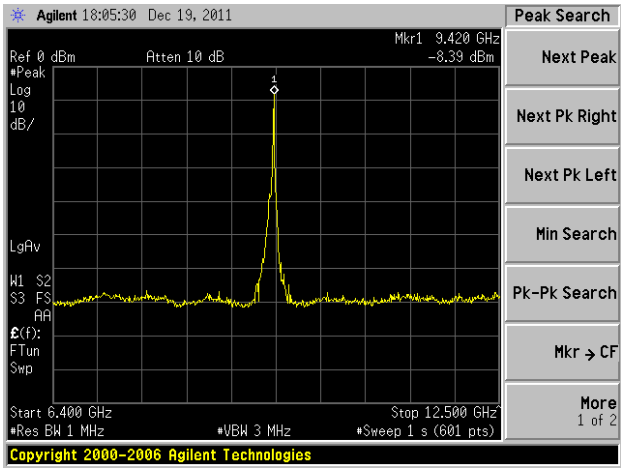
900MHz to 1GHz



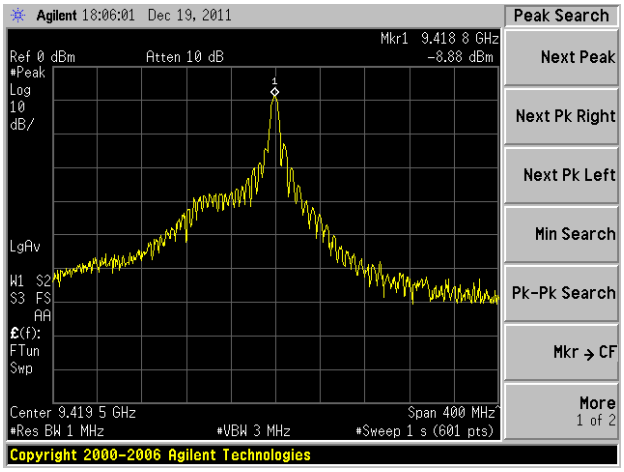
1.0GHz to 2.9GHz



2.9GHz to 6.4GHz

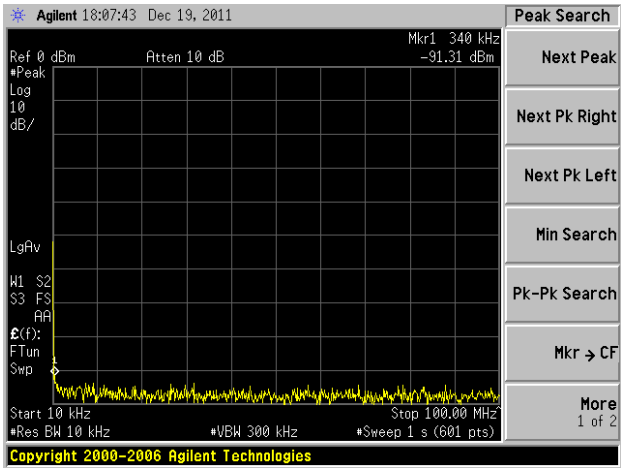


6.4GHz to 12.5GHz

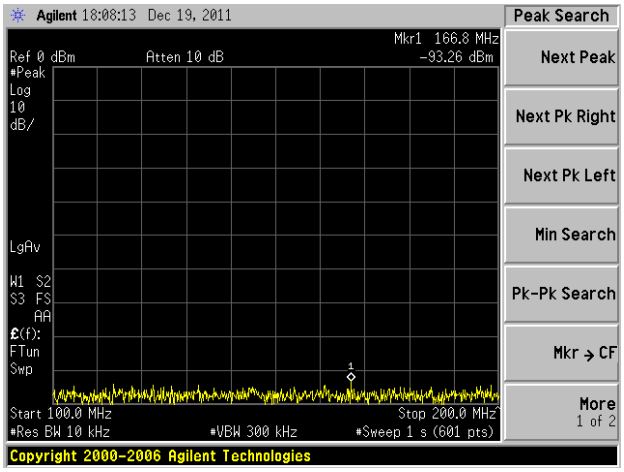


Center 9418.8MHz, Span 400MHz

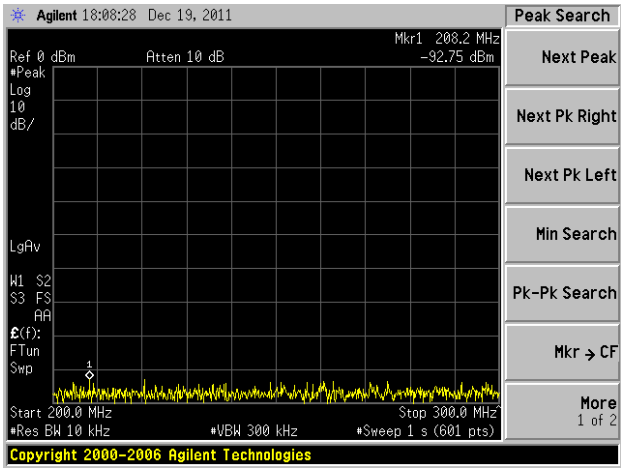
4.2.1.13 TEST RESULTS of 0.25usec/1700Hz pulse



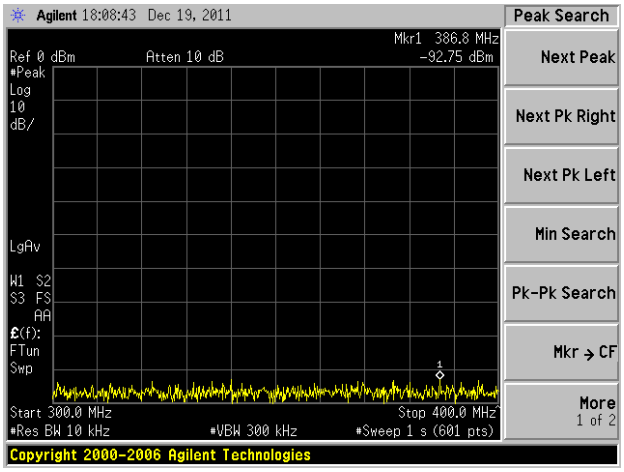
10kHz to 100MHz



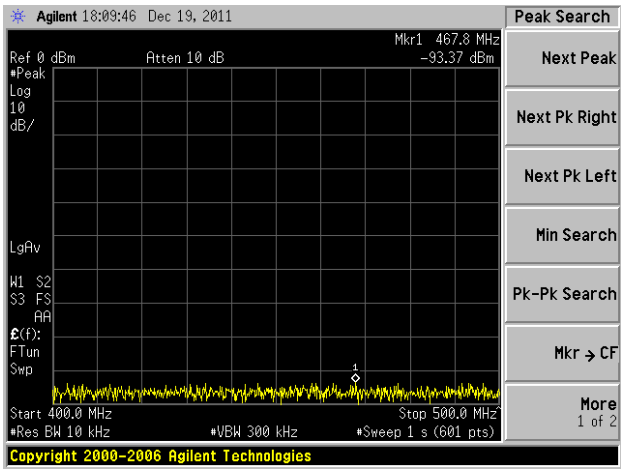
100MHz to 200MHz



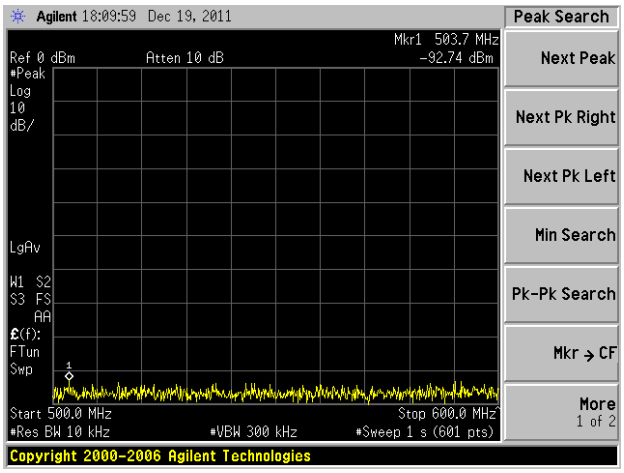
200MHz to 300MHz



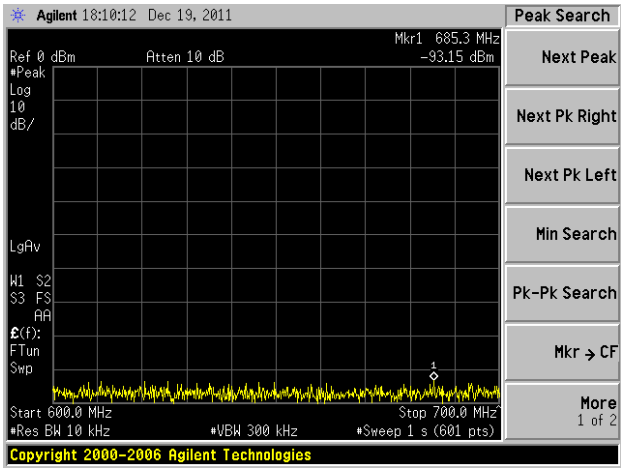
300MHz to 400MHz



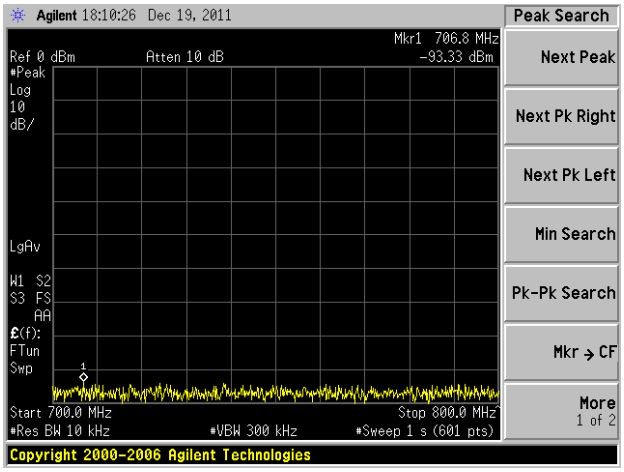
400MHz to 500MHz



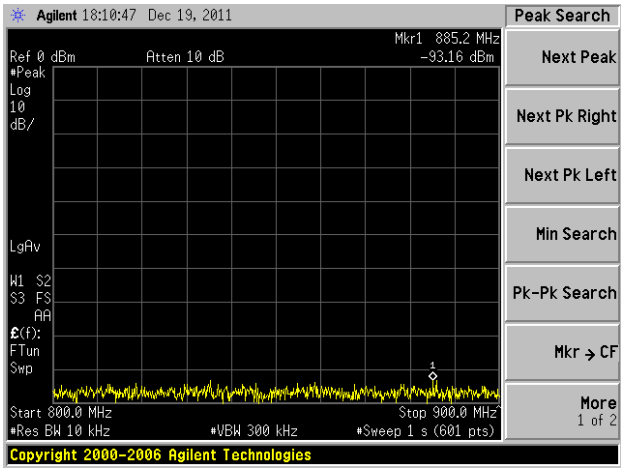
500MHz to 600MHz



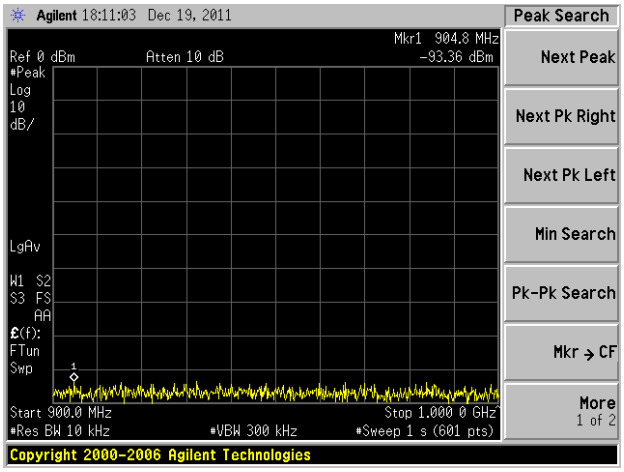
600MHz to 700MHz



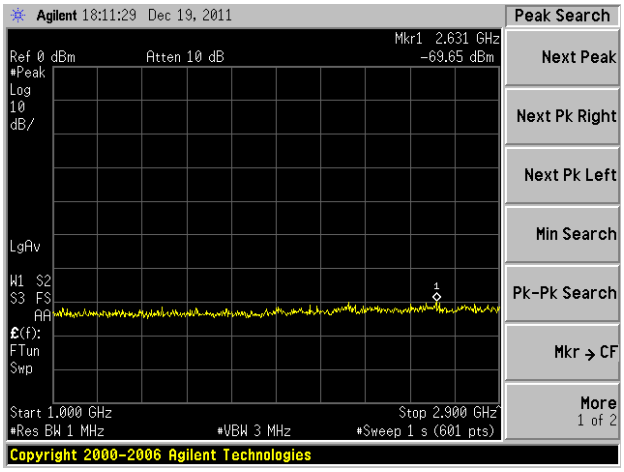
700MHz to 800MHz



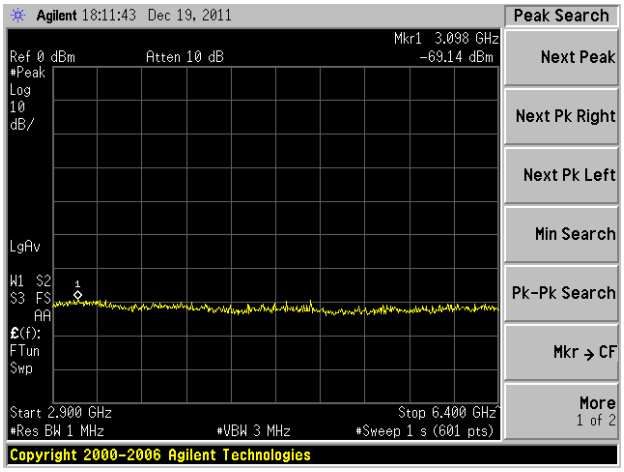
800MHz to 900MHz



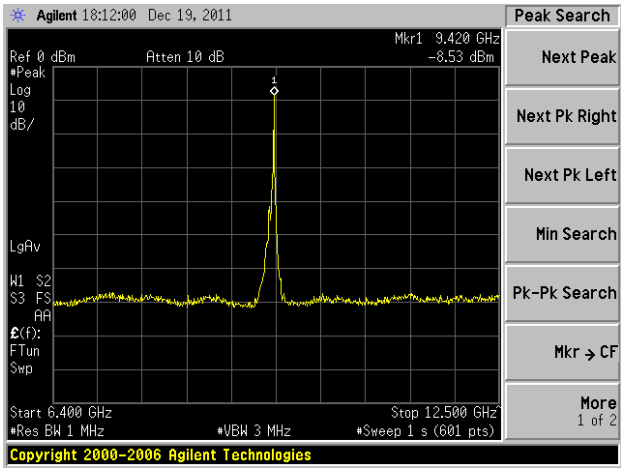
900MHz to 1GHz



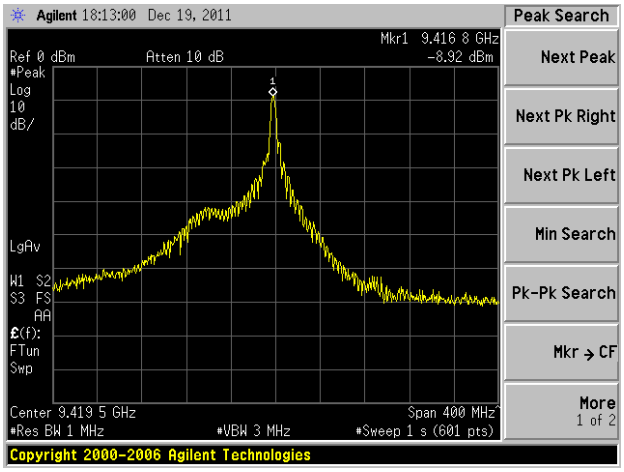
1.0GHz to 2.9GHz



2.9GHz to 6.4GHz

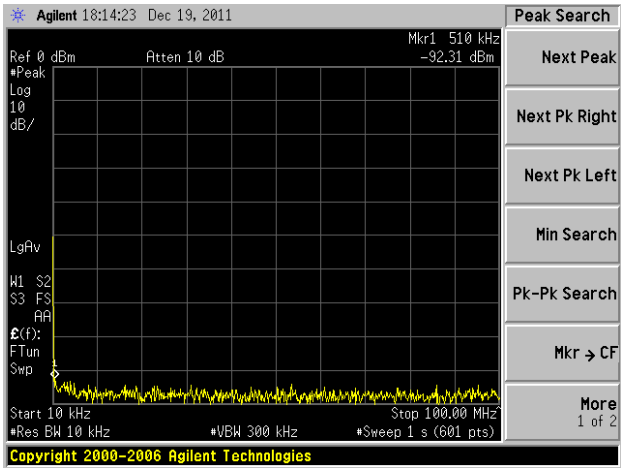


6.4GHz to 12.5GHz

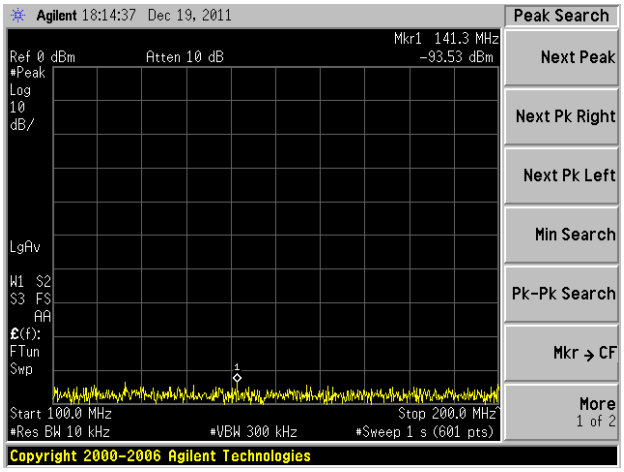


Center 9416.8MHz, Span 400MHz

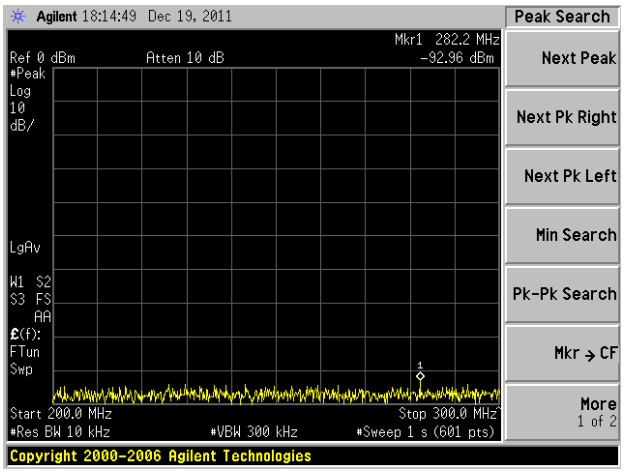
4.2.1.14 TEST RESULTS of 0.5usec/1200Hz pulse



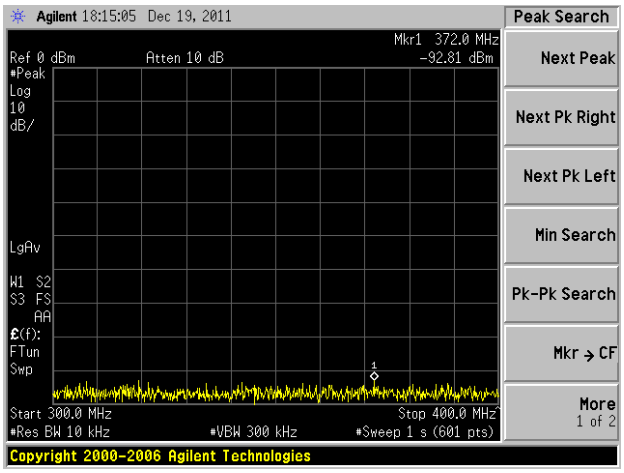
10kHz to 100MHz



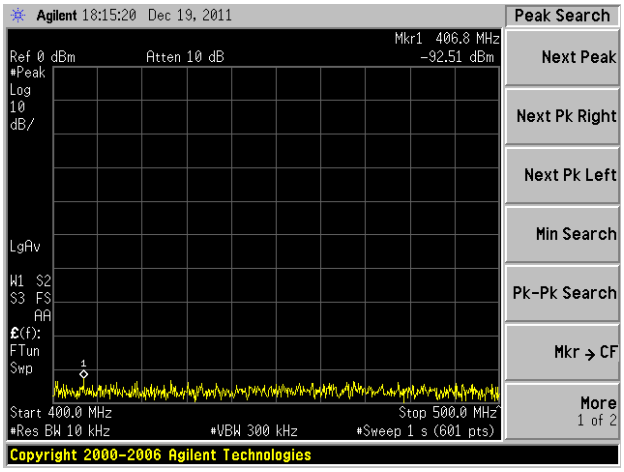
100MHz to 200MHz



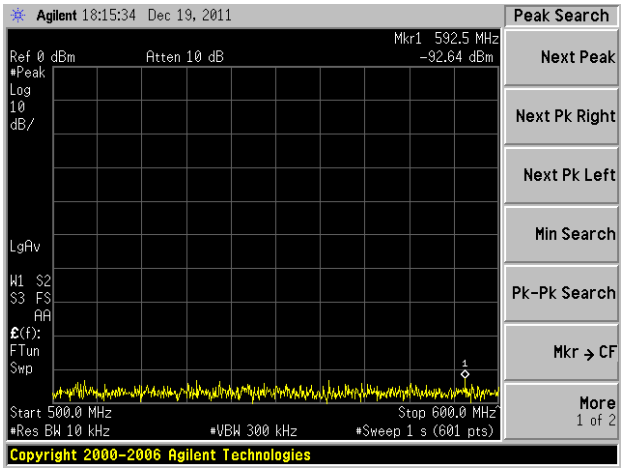
200MHz to 300MHz



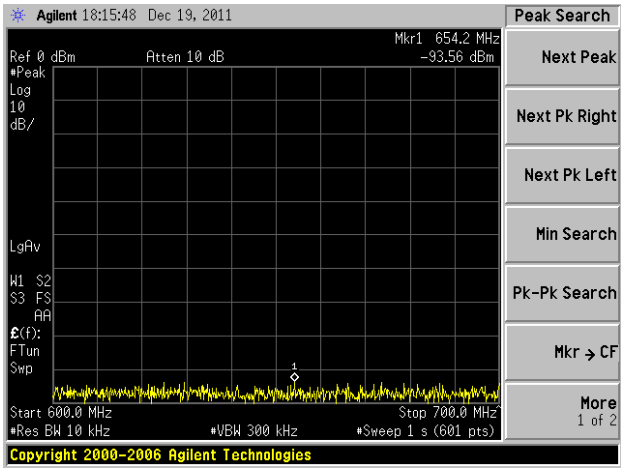
300MHz to 400MHz



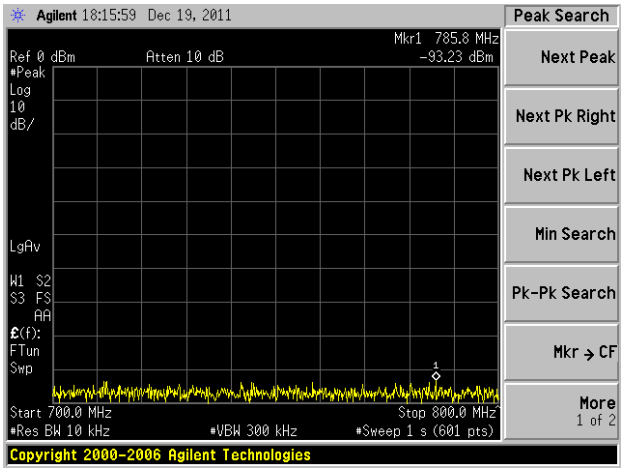
400MHz to 500MHz



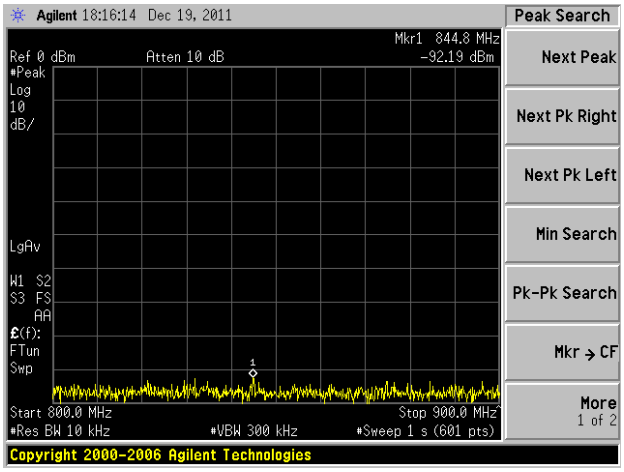
500MHz to 600MHz



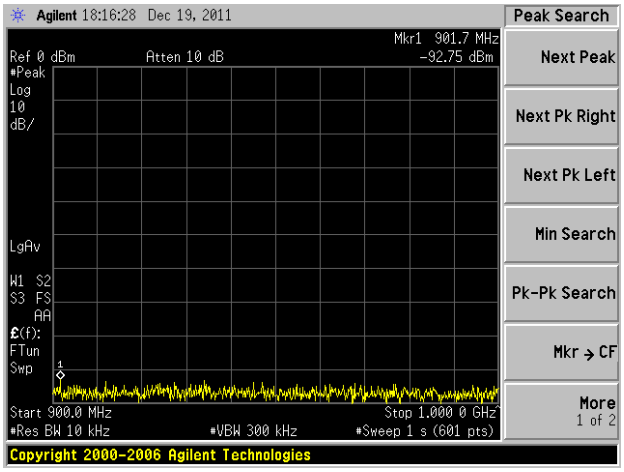
600MHz to 700MHz



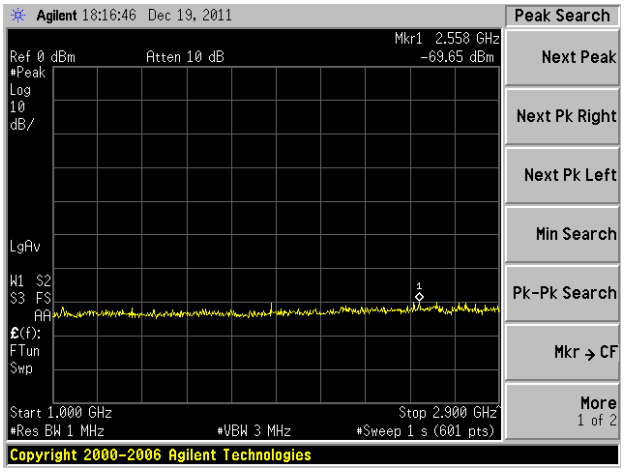
700MHz to 800MHz



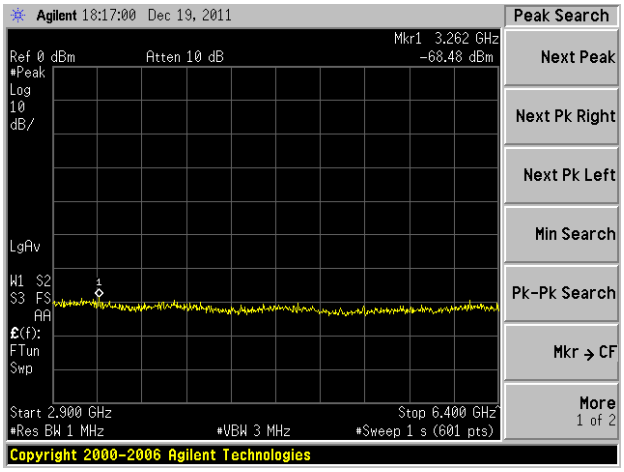
800MHz to 900MHz



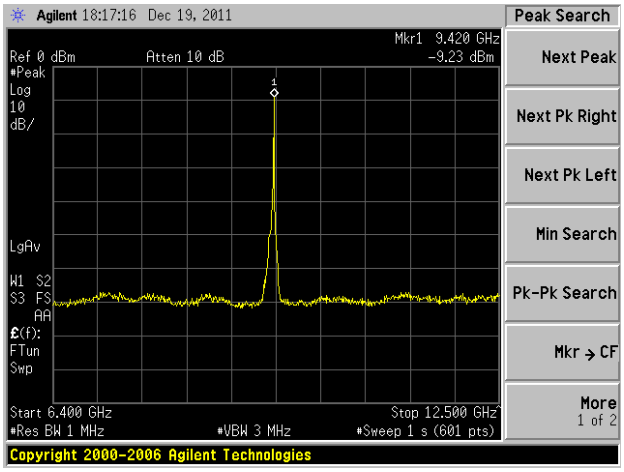
900MHz to 1GHz



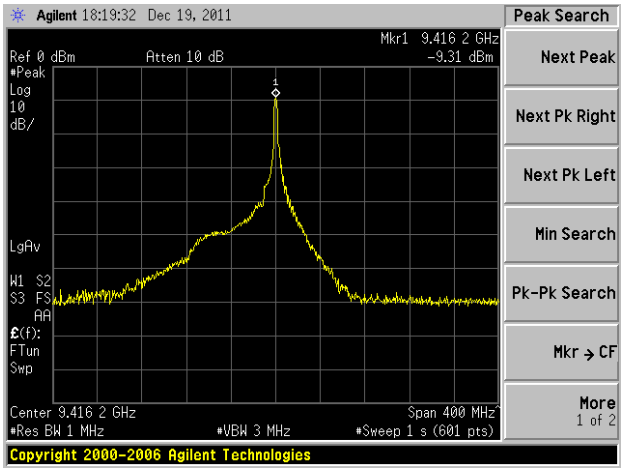
1.0GHz to 2.9GHz



2.9GHz to 6.4GHz

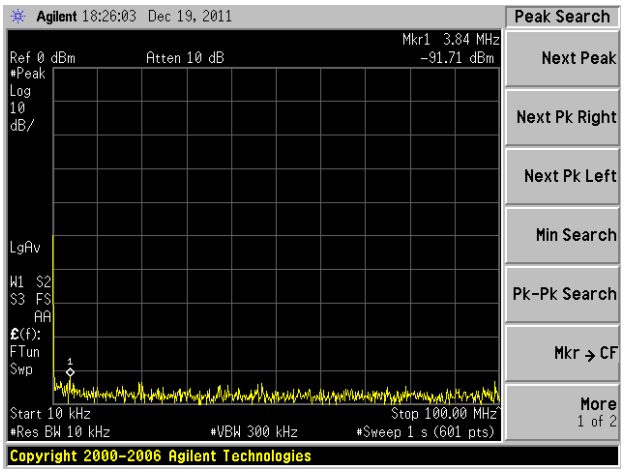


6.4GHz to 12.5GHz

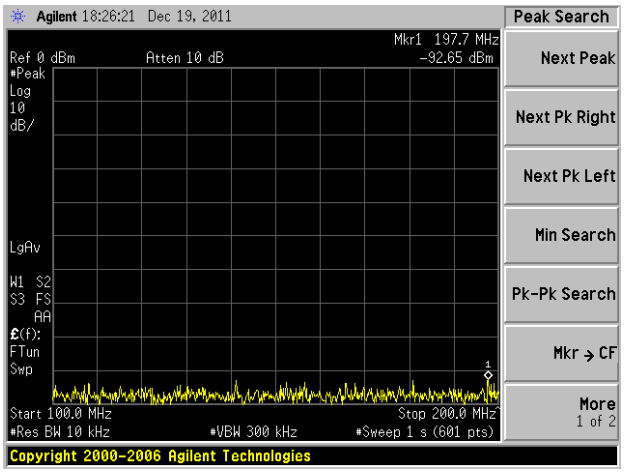


Center 9416.2MHz, Span 400MHz

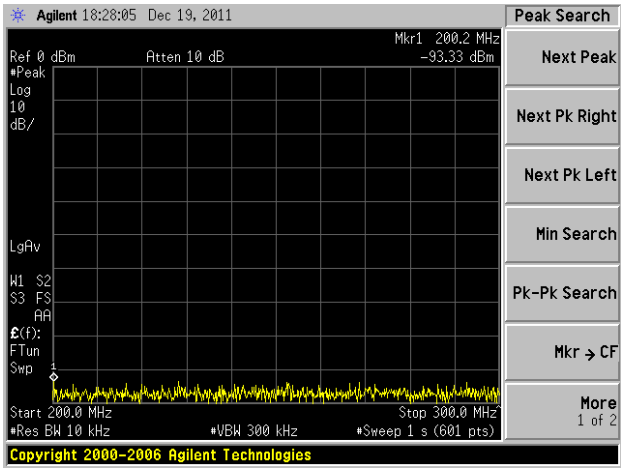
4.2.1.15 TEST RESULTS of 0.8usec/750Hz pulse



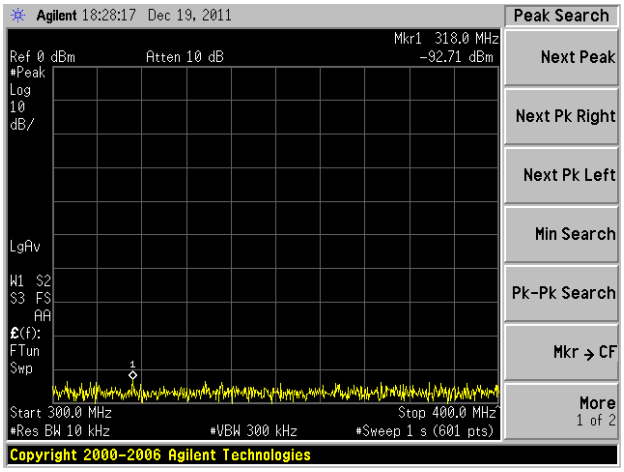
10kHz to 100MHz



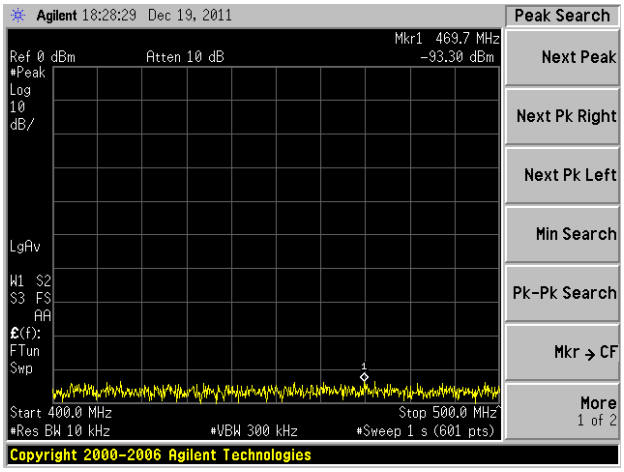
100MHz to 200MHz



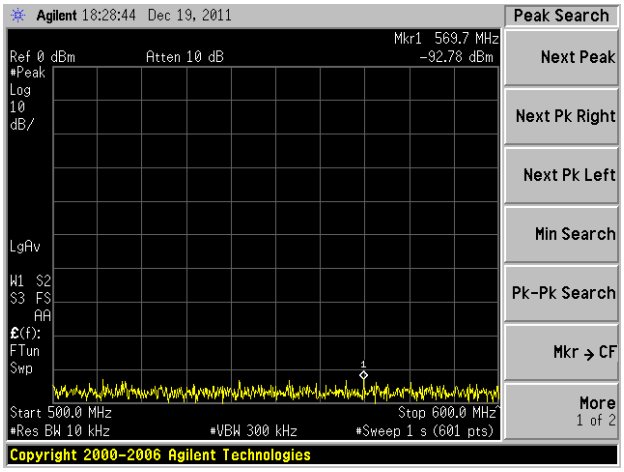
200MHz to 300MHz



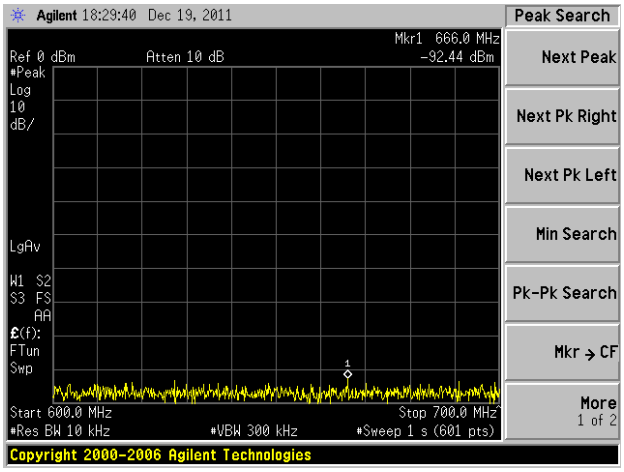
300MHz to 400MHz



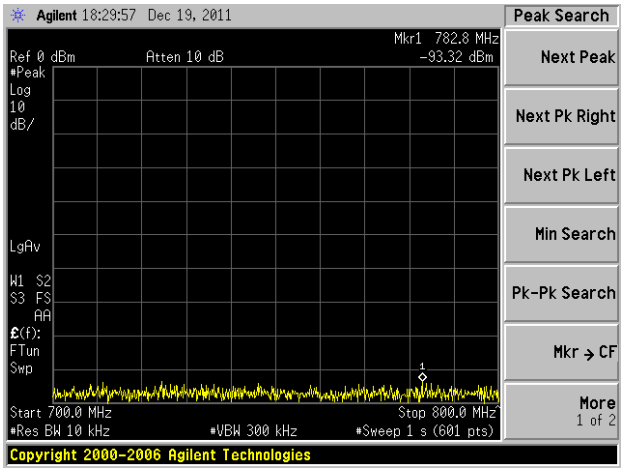
400MHz to 500MHz



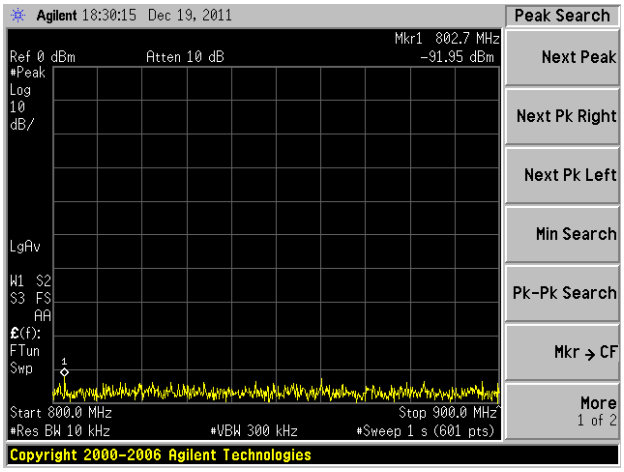
500MHz to 600MHz



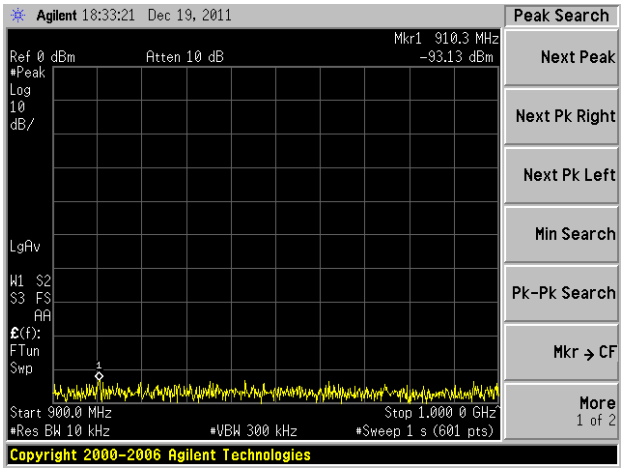
600MHz to 700MHz



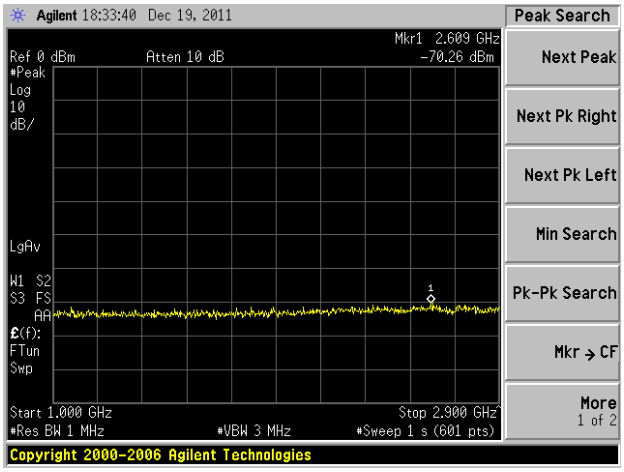
700MHz to 800MHz



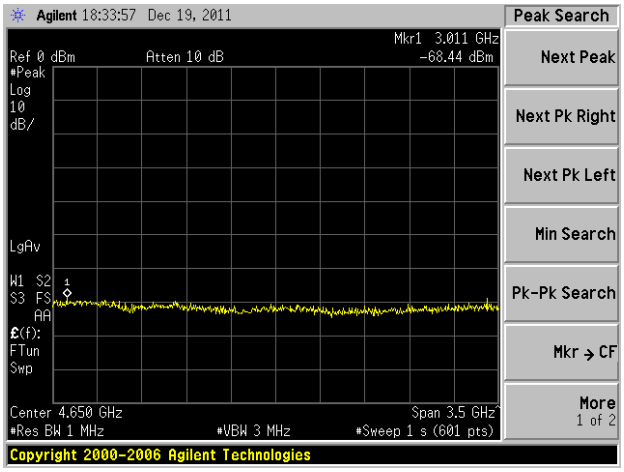
800MHz to 900MHz



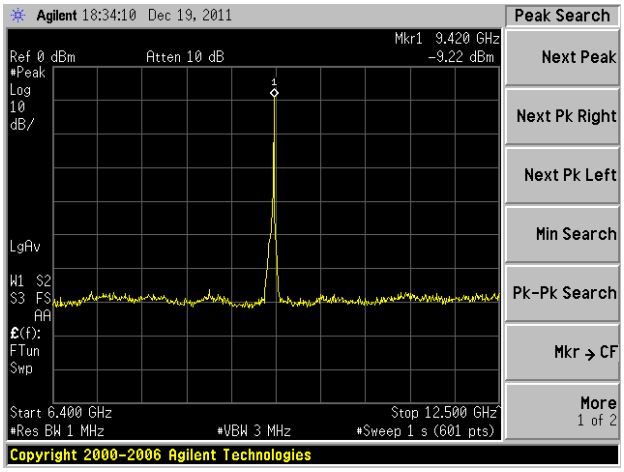
900MHz to 1GHz



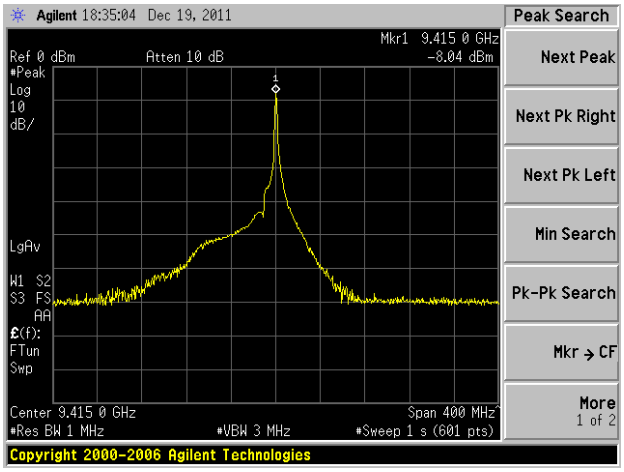
1.0GHz to 2.9GHz



2.9GHz to 6.4GHz

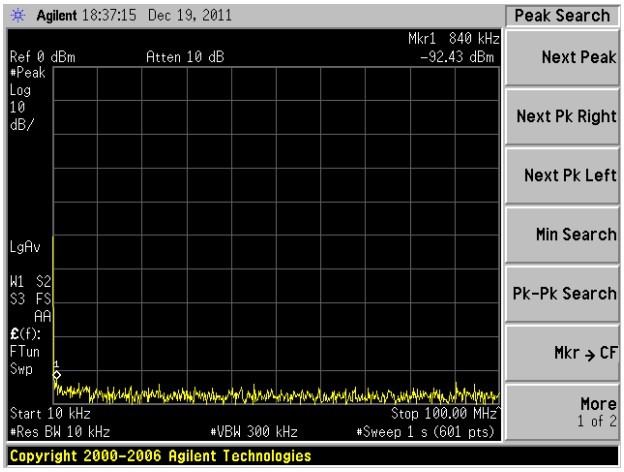


6.4GHz to 12.5GHz

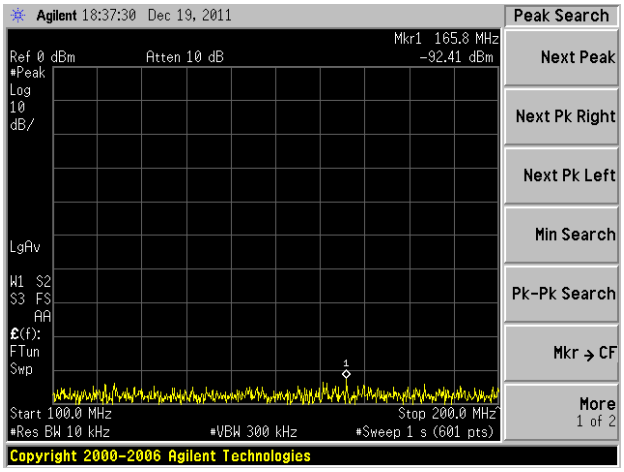


Center 9415.0MHz, Span 400MHz

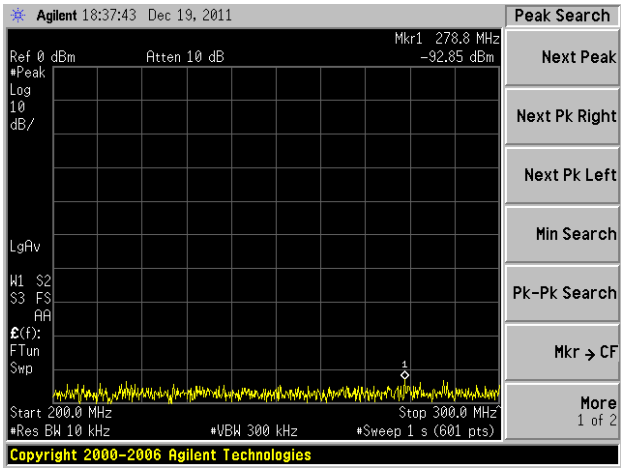
4.2.1.16 TEST RESULTS of 1.0usec/650Hz pulse



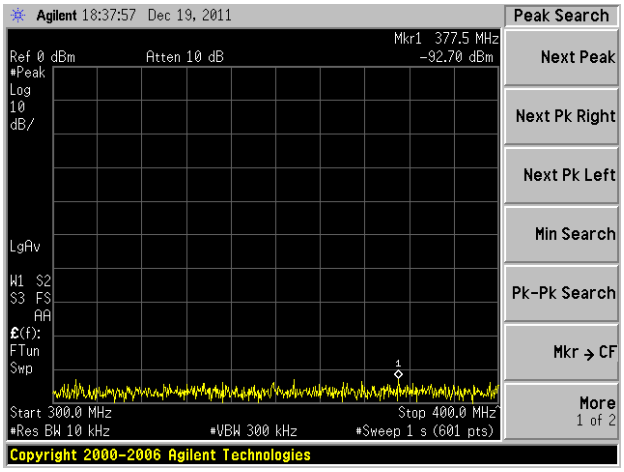
10kHz to 100MHz



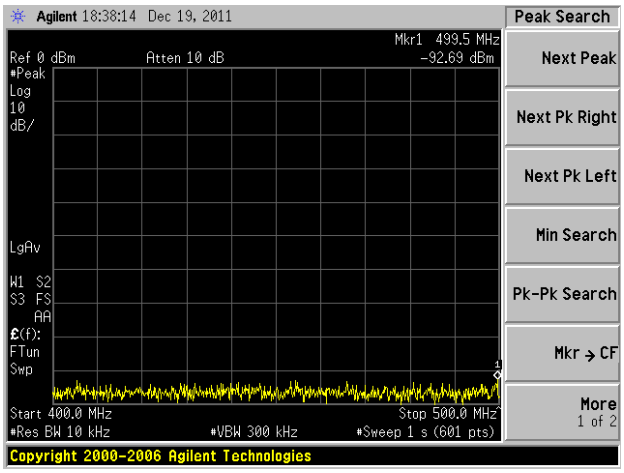
100MHz to 200MHz



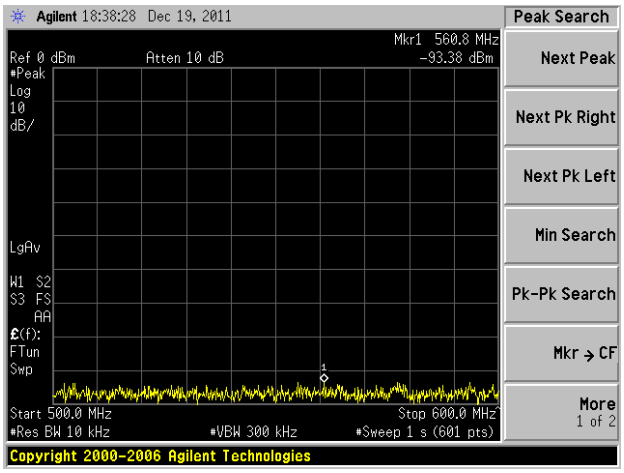
200MHz to 300MHz



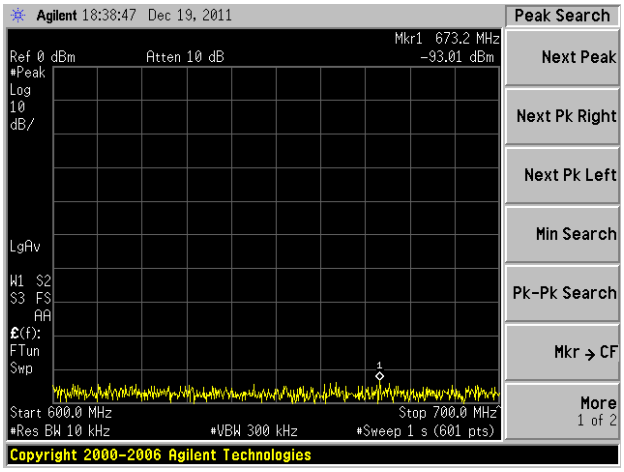
300MHz to 400MHz



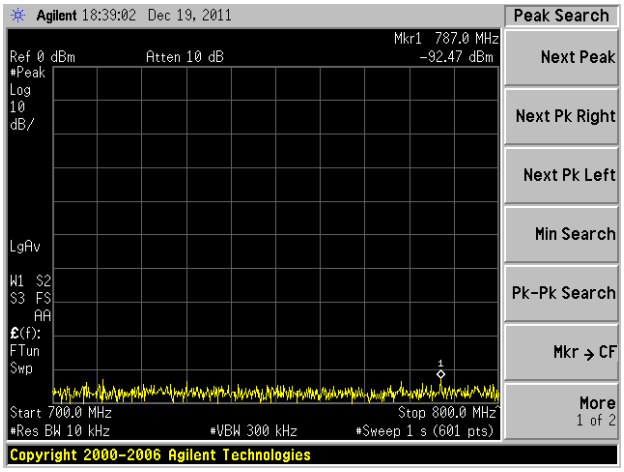
400MHz to 500MHz



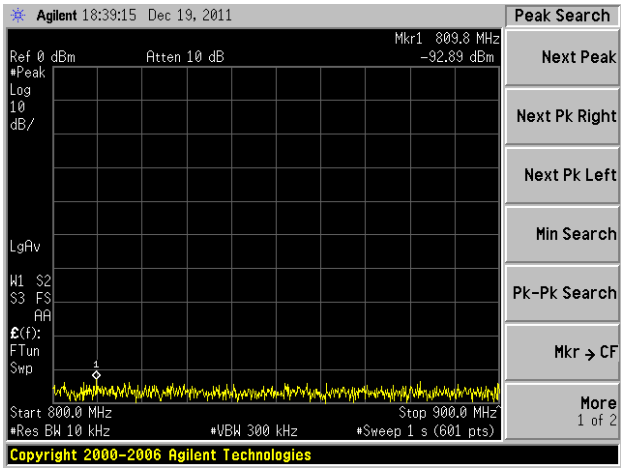
500MHz to 600MHz



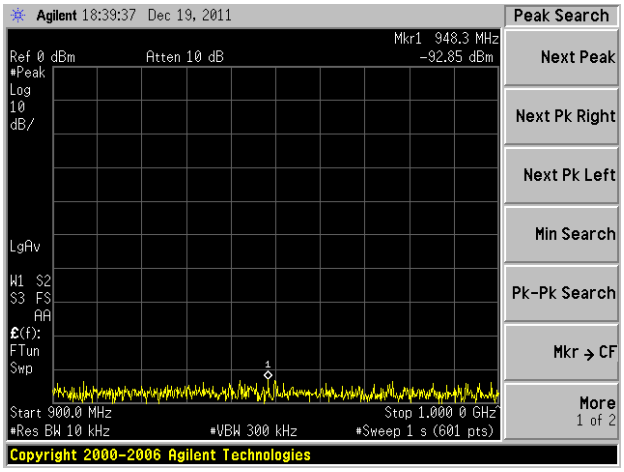
600MHz to 700MHz



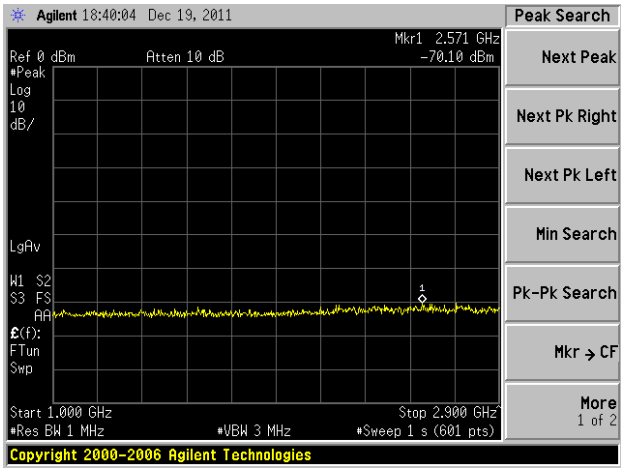
700MHz to 800MHz



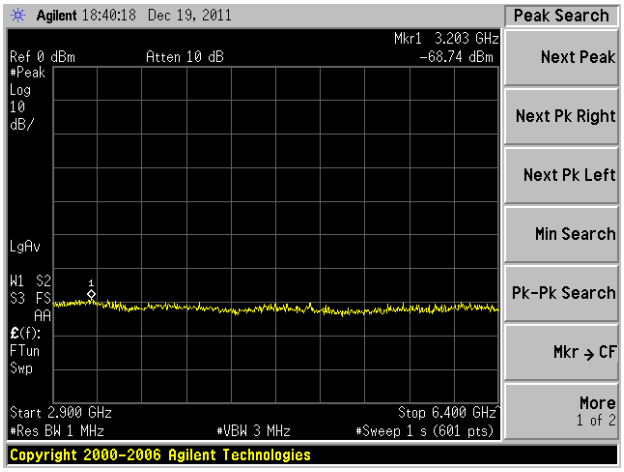
800MHz to 900MHz



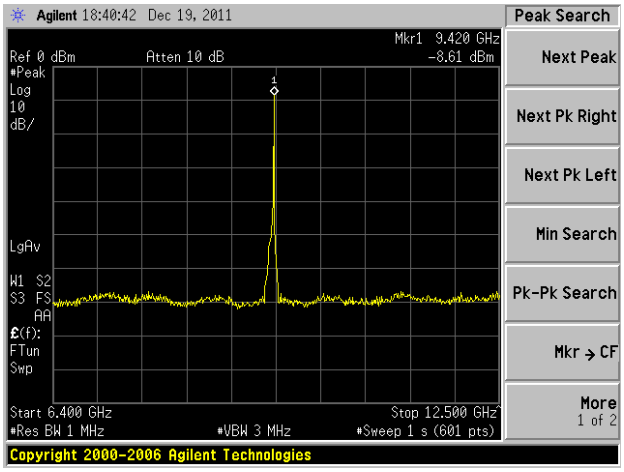
900MHz to 1GHz



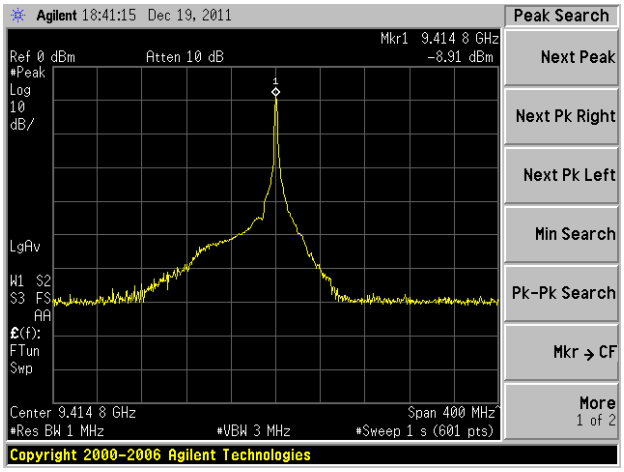
1.0GHz to 2.9GHz



2.9GHz to 6.4GHz

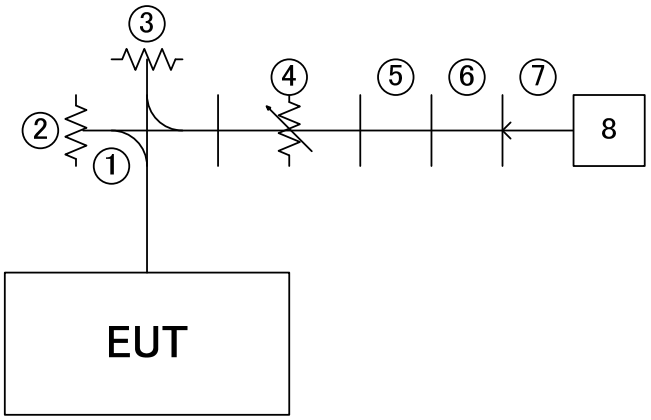


6.4GHz to 12.5GHz



Center 9414.8MHz, Span 400MHz

4.2.2.1 TEST SETUP for range 12.5GHz to 18.0GHz



4.2.2.2 TEST INSTRUMENT

	DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATION DATE	CALIBLATION DUE DATE
1	Direction Coupler (30dB) SHIMADARIKA	5D363	R11421	NA	NA
2	Dummy Load PASTERNACK	PE6815	NA	NA	NA
3	High Power Dummy Load PASTERNACK	PE6824	NA	NA	NA
4	Variable Attenuator HP	X382A	13681	Jan. 21. 2011	Jan. 2012
5	Tapered Waveguide ATM	62/90-6-6-6	G239605-02	NA	NA
6	Adaptor MDL	62AC126	0622	NA	NA
7	Coaxial Cable HUBER+SUHNER	SUCOFLEX 104	NA	NA	NA
8	Spectrum Analyzer Agilent	E4448A	MY46180420	Oct. 31. 2011	Oct. 2012

Measurement Point : Antenna terminal

Spectrum Analyzer setting: RBW = 1MHz

VBW = 3MHz

Detector Mode = Positive Peak

4.2.2.3 TEST PROCEDURES

a. Setup EUT as 4.2.2.1.

b. Transmitted at most powerful pulse and adjusted attenuator for not exceeding the spectrum analyzer maximum rating.

c. Transmitted at seven pulses are 0.08us/4000Hz, 0.08us/2250Hz, 0.13us/1700Hz 025us/1700Hz, 0.5us/1200Hz, 0.8us/750Hz, 1.0us/650Hz, and capture the spectrum at 12.5GHz to 18GHz.

4.2.2.4 EUT OPERATING CONDITIONS

a. Placed the EUT on the testing table.

b. Prepared other computer systems for controlling EUT and placed them outside of testing area.

4.2.2.5 TEST RESULTS

No spurious emissions observed above minimum standard.

Test data is described at section 4.2.2.10

4.2.2.6 TEST CONDITIONS

Tamb = 20℃ to 25℃, RHamb = 40% ～ 60%

EUT input = 24 VDC

4.2.2.7 STABILLIZATION

EUT energized for 10 minutes minimum.

4.2.2.8 TEST EQUIPMENT

JRC Original – Shielded Room

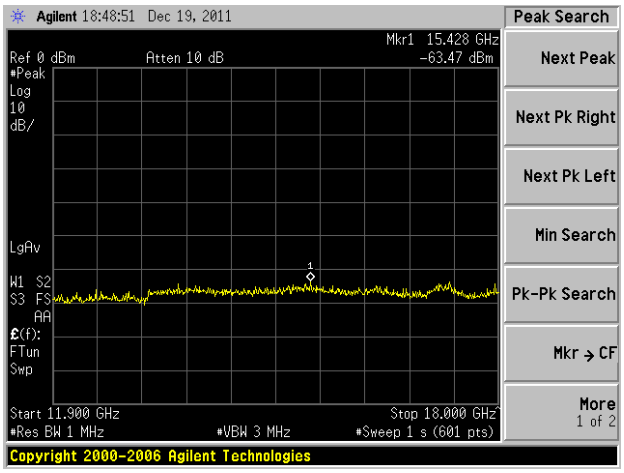
Other equipment – see test set-ups.

4.2.2.9 DATE

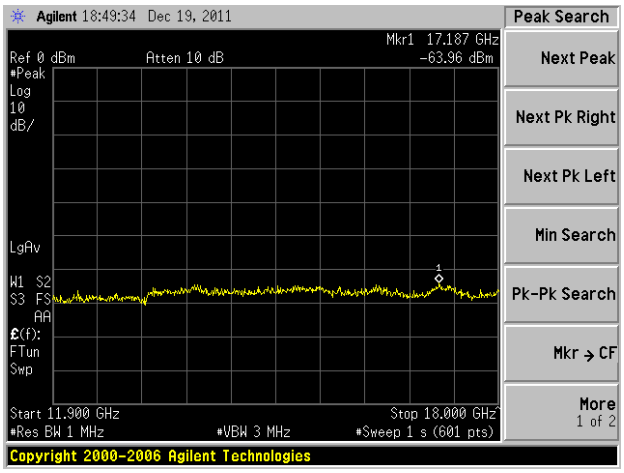
19th Dec., 2011

TESTED BY G. Higuchi

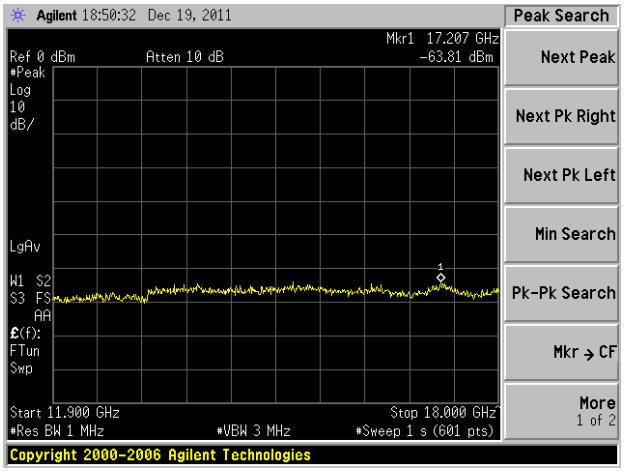
4.2.2.10 TEST RESULTS of 12.5GHz to 18GHz



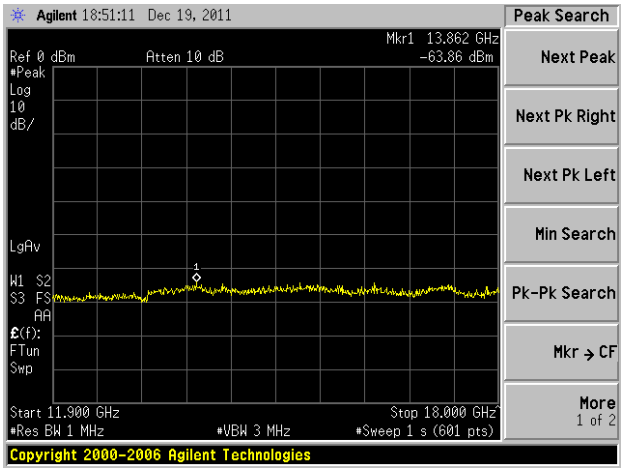
0.08usec/4000Hz



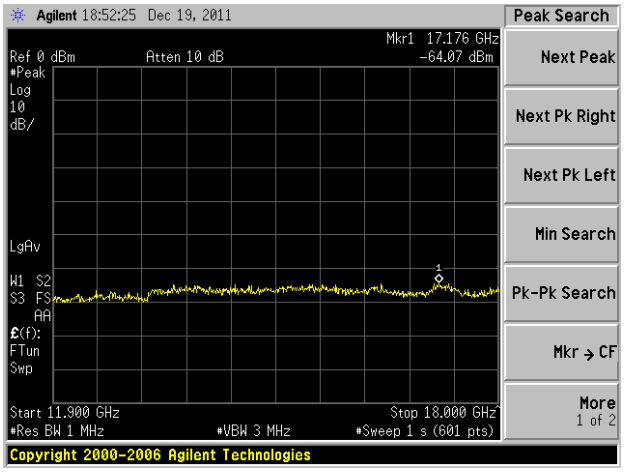
0.08usec/2250Hz



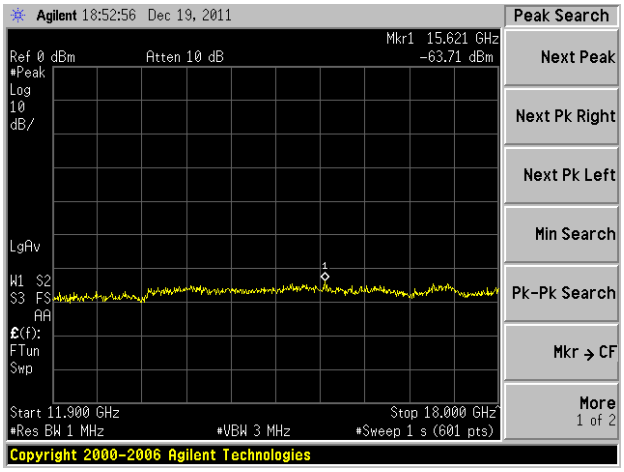
0.13usec/1700Hz



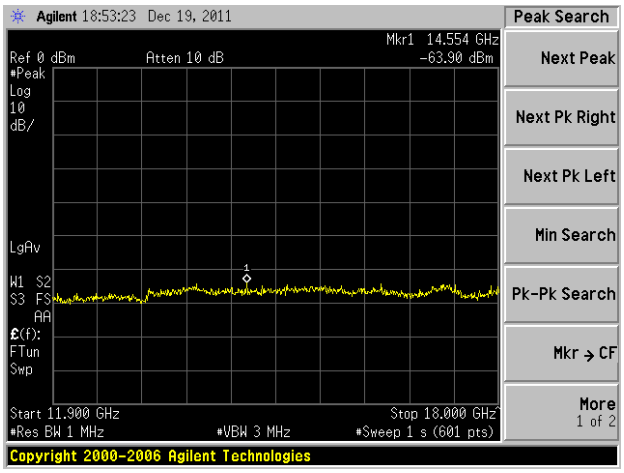
0.25usec/1700Hz



0.50usec/1200Hz

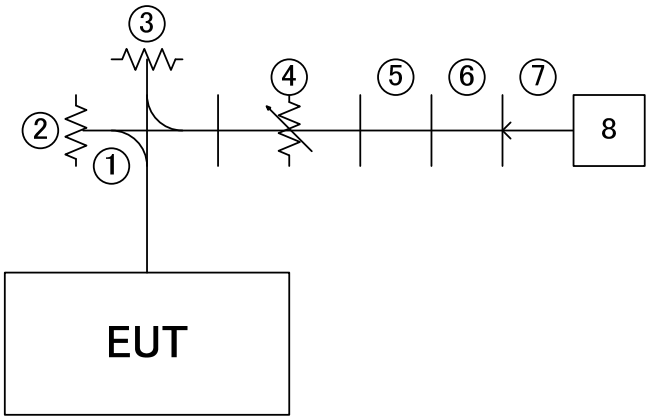


0.8usec/750Hz



1.0usec/650Hz

4.2.3.1 TEST SETUP for range 17.6GHz to 26.7GHz



4.2.3.2 TEST INSTRUMENT

	DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATION DATE	CALIBLATION DUE DATE
1	Direction Coupler (30dB) SHIMADARIKA	5D363	R11421	NA	NA
2	Dummy Load PASTERNACK	PE6815	NA	NA	NA
3	High Power Dummy Load PASTERNACK	PE6824	NA	NA	NA
4	Variable Attenuator HP	X382A	13681	Jan. 21. 2011	Jan. 2012
5	Tapered Waveguide ATM	42/90-8-6-6	G239705-02	NA	NA
6	Adaptor MDL	42AC206	0616	NA	NA
7	Coaxial Cable HUBER+SUHNER	SUCOFLEX 100	5784 /4PA	NA	NA
8	Spectrum Analyzer Agilent	E4448A	MY46180420	Oct. 31. 2011	Oct. 2012

Measurement Point : Antenna terminal

Spectrum Analyzer setting: RBW = 1MHz

VBW = 3MHz

Detector Mode = Positive Peak

4.2.3.3 TEST PROCEDURES

a. Setup EUT as 4.2.3.1.

b. Transmitted at most powerful pulse and adjusted attenuator for not exceeding the spectrum analyzer maximum rating.

c. Transmitted at seven pulses are 0.08us/4000Hz, 0.08us/2250Hz, 0.13us/1700Hz 025us/1700Hz, 0.5us/1200Hz, 0.8us/750Hz, 1.0us/650Hz, and capture the spectrum at 17.6GHz to 40.0GHz.

4.2.3.4 EUT OPERATING CONDITIONS

a. Placed the EUT on the testing table.

b. Prepared other computer systems for controlling EUT and placed them outside of testing area.

4.2.3.5 TEST RESULTS

No spurious emissions observed above minimum standard.

Test data is described at section 4.2.3.10 to 4.2.3.16

4.2.3.6 TEST CONDITIONS

Tamb = 20℃ to 25℃, RHamb = 40% ～ 60%

EUT input = 24 VDC

4.2.3.7 STABILLIZATION

EUT energized for 10 minutes minimum.

4.2.3.8 TEST EQUIPMENT

JRC Original – Shielded Room

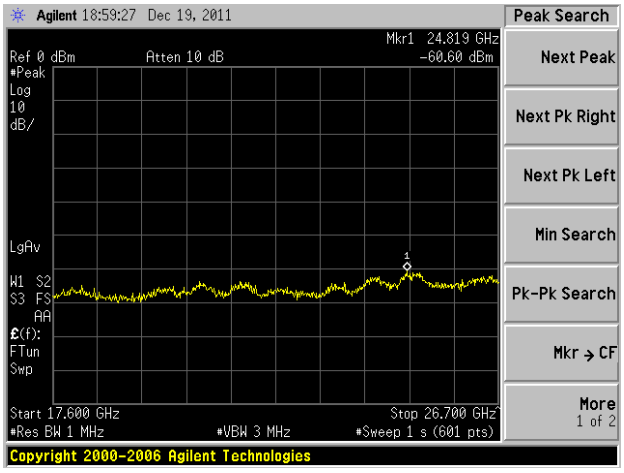
Other equipment – see test set-ups.

4.2.3.9 DATE

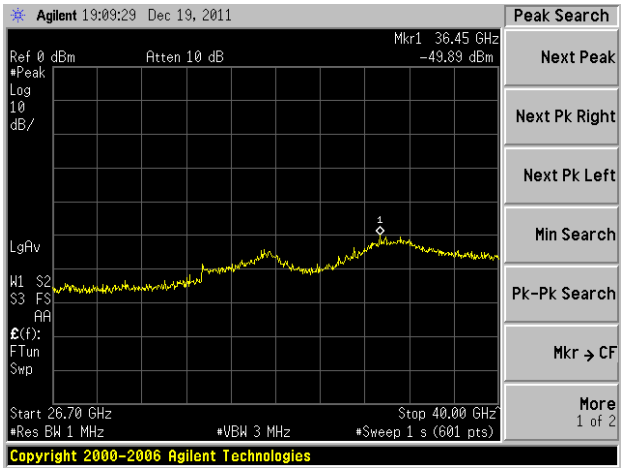
19th Dec., 2011

TESTED BY G. Higuchi

4.2.3.10 TEST RESULTS of 0.08usec/4000Hz

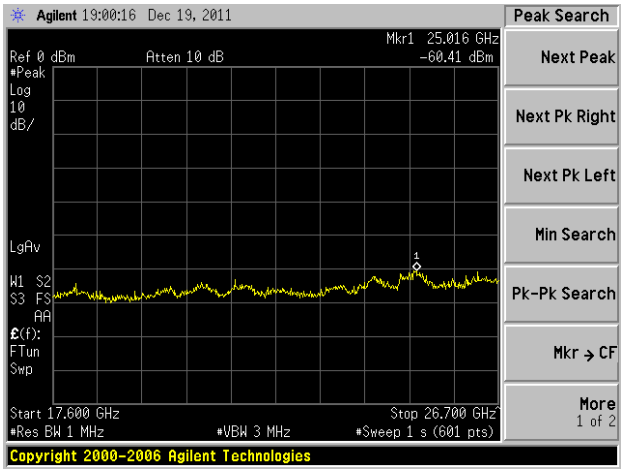


17.6GHz to 26.7GHz

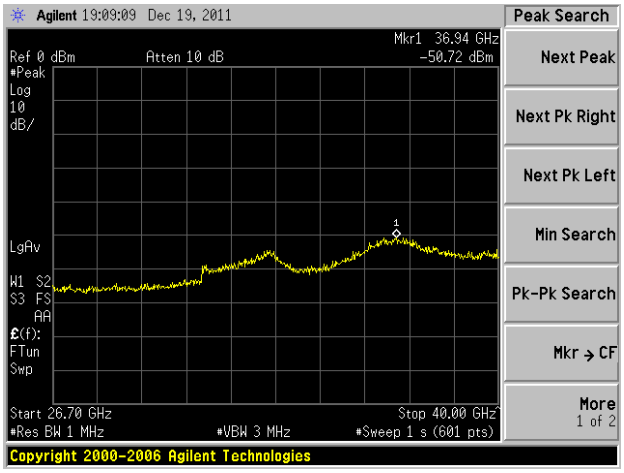


26.7GHz to 40.0GHz

4.2.3.11 TEST RESULTS of 0.08usec/2250Hz

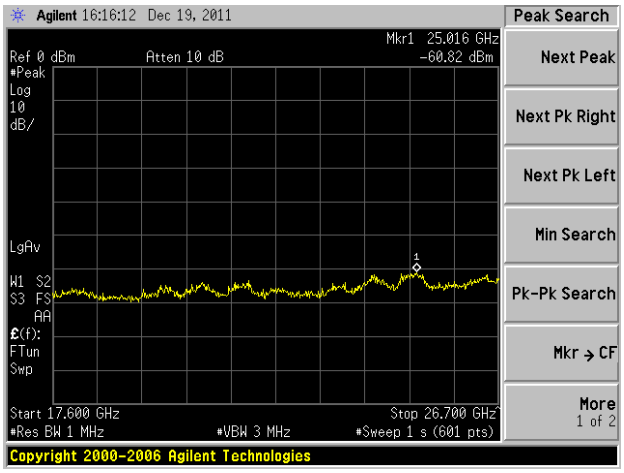


17.6GHz to 26.7GHz

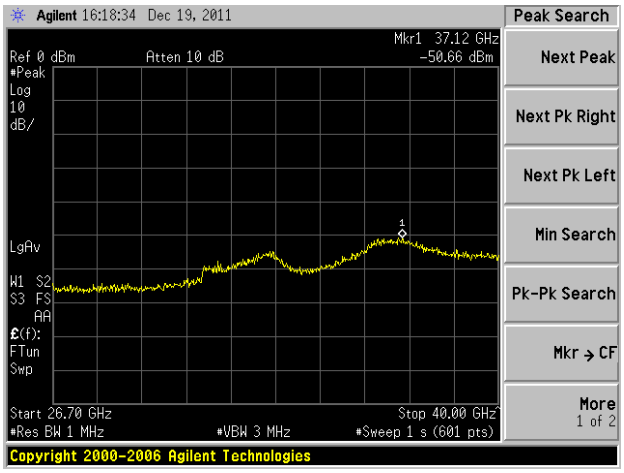


26.7GHz to 40.0GHz

4.2.3.12 TEST RESULTS of 0.13usec/1700Hz

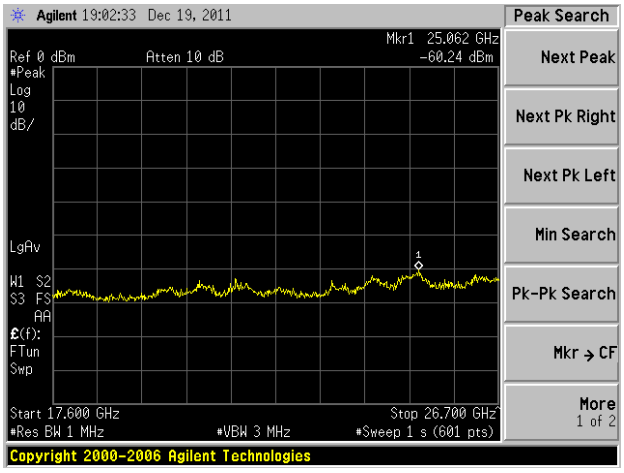


17.6GHz to 26.7GHz

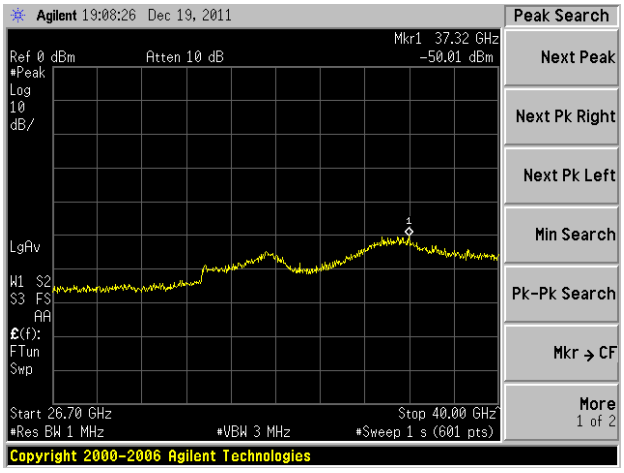


26.7GHz to 40.0GHz

4.2.3.13 TEST RESULTS of 0.25usec/1700Hz

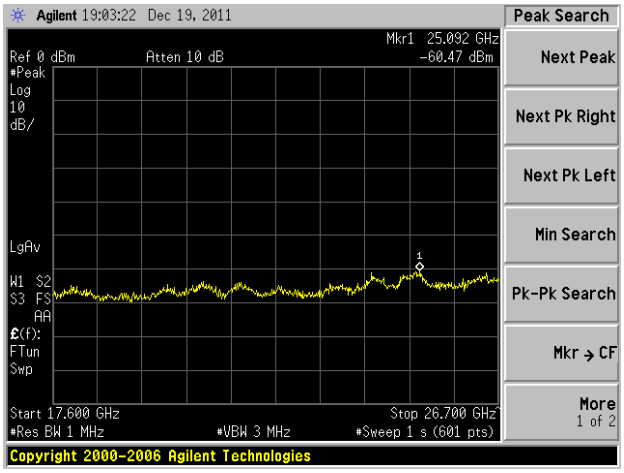


17.6GHz to 26.7GHz

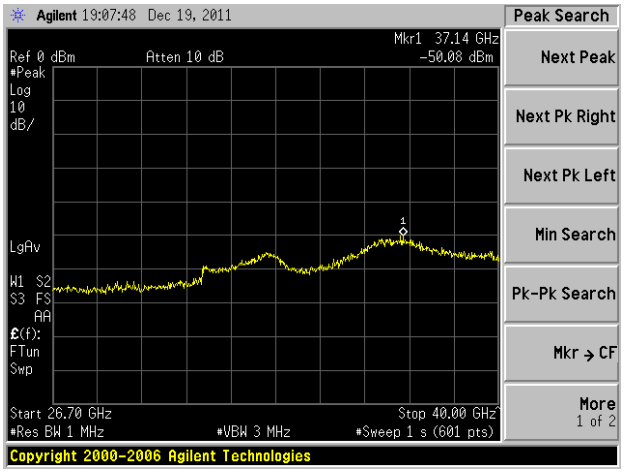


26.7GHz to 40.0GHz

4.2.3.14 TEST RESULTS of 0.5usec/1200Hz

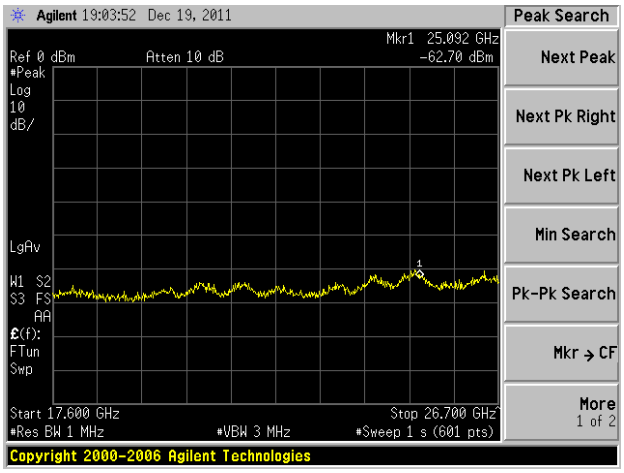


17.6GHz to 26.7GHz

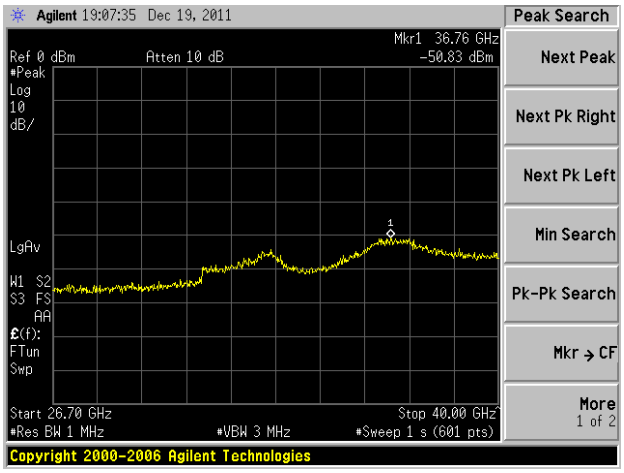


26.7GHz to 40.0GHz

4.2.3.15 TEST RESULTS of 0.8usec/750Hz

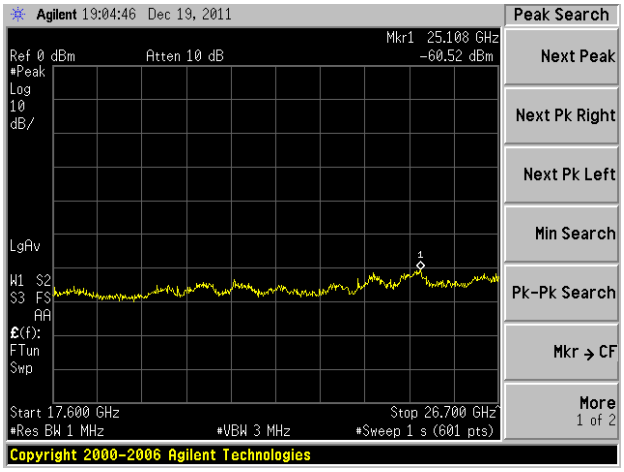


17.6GHz to 26.7GHz

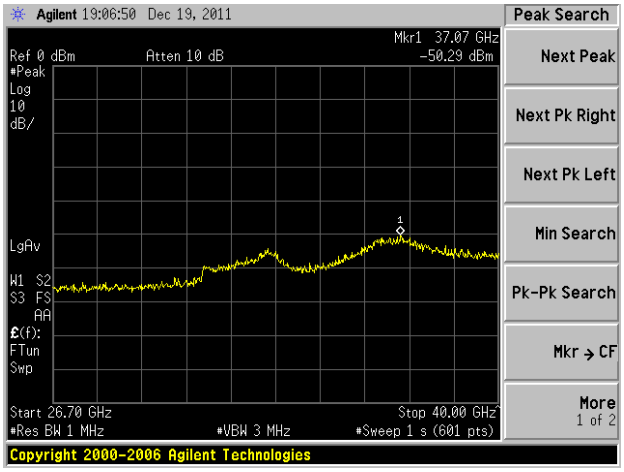


26.7GHz to 40.0GHz

4.2.3.16 TEST RESULTS of 1.0usec/650Hz



17.6GHz to 26.7GHz

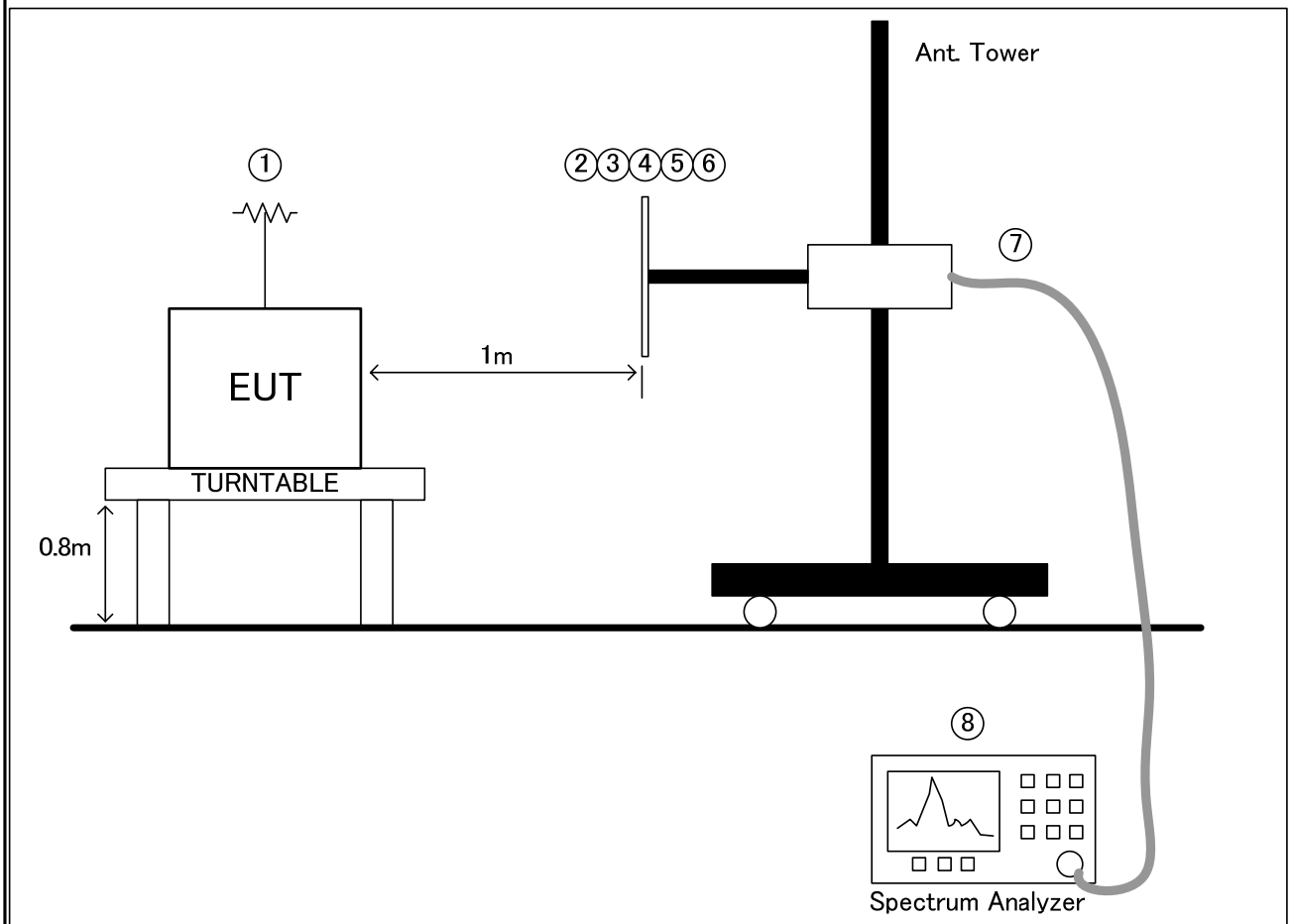


26.7GHz to 40.0GHz

4.3 Field strength of spurious radiation

47 CFR sec. 2.1053

4.3.1.1 TEST SETUP for measuring the radiated spurious emissions are from the EUT.

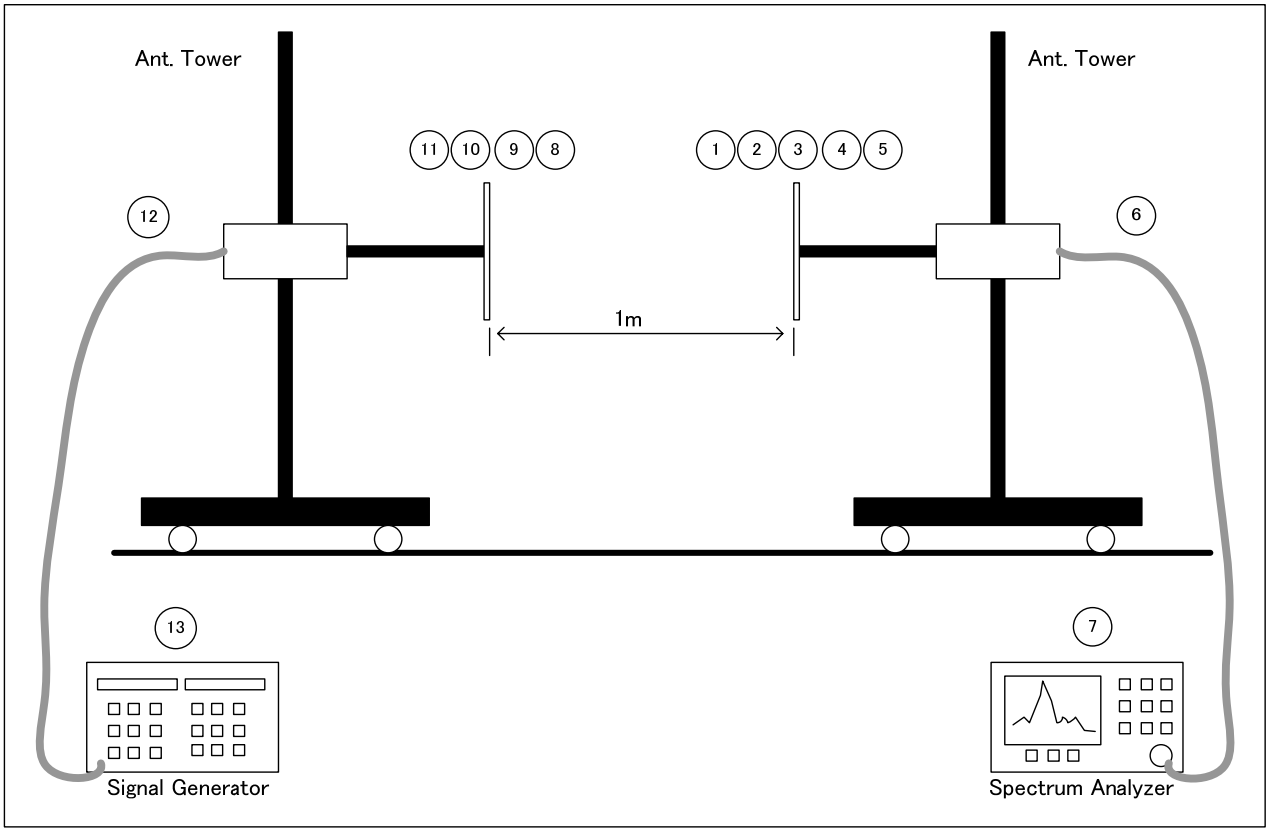


4.3.1.2 TEST INSTRUMENT

	DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATION DATE	CALIBLATION DUE DATE
1	High Power Dummy Load PASTERNACK	PE6824	1005-00684	NA	NA
2	Biconical Schwazbeck	BBA9106	VHA91031979	Apr. 25th 2011	Apr. 2012
3	Logarithmic Periodic Schwazbeck	UHALP9107	91071314	July 22nd 2011	July 2012
4	Double Ridge Horn ETS LINDGREN	3117	00091928	Sep. 28th 2011	Sep. 2012
5	Standard Gain Horn Flann	20240	NA	NA	NA
6	Standard Gain Horn Flann	22240	NA	NA	NA

7	Coaxial Cable HUBER+SUHNER	SUCOFLEX 100	NA	NA	NA
8	Spectrum Analyzer Agilent	E4448A	MY46180420	Oct. 31. 2011	Oct. 2012

4.3.2.1 TEST SETUP for measuring the level of particular spurious frequency from Signal Generator.



4.3.2.2 TEST INSTRUMENT

	DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATION DATE	CALIBLATION DUE DATE
1	Biconical Schwazbeck	BBA9106	VHA91031979	Apr. 25th 2011	Apr. 2012
2	Logarithmic Periodic Schwazbeck	UHALP9107	91071314	July 22nd 2011	July 2012
3	Double Ridge Horn ETS LINDGREN	3117	00091928	Sep. 28th 2011	Sep. 2012
4	Standard Gain Horn Flann	20240	NA	NA	NA
5	Standard Gain Horn Flann	22240	NA	NA	NA
6	Coaxial Cable HUBER+SUHNER	SUCOFLEX 100PA	NA	NA	NA

7	Spectrum Analyzer Agilent	E4448A	MY46180420	Oct. 31st 2011	Oct. 2012
8	Dipole Schwazbeck	UHA9105	NA	Feb. 21st 2011	Feb. 2012
9	Logarithmic Periodic EATON	94612-1	0203	NA	NA
10	Standard Gain Horn Flann	20240	NA	NA	NA
11	Standard Gain Horn Flann	22240	NA	NA	NA
12	Coaxial Cable HUBER+SUHNER	SUCOFLEX 104PA	5994 /4PA	NA	NA
13	Signal Generator Agilent	EE8274C	MY43321154	Sep. 24th 2011	Sep. 2012

Measurement Point : Antenna terminal
Spectrum Analyzer setting: RBW = 10kHz less than 1GHz, 1MHz above 1GHz
VBW = 300kH less than 1GHz, 3MHz above 1GHz
Detector Mode = Positive Peak

4.3.3 TEST PROCEDURES
Reference to Section 2.2.12 Unwanted Emission: Radiated Spurious on TIA-603-C.

4.3.4 MINIMUM STANDARD
Frequency < 9300MHz: Emissions < -25dBc
9500MHz < Frequency < 23750MHz: Emissions < -35dBc
Frequency > 23750MHz: Emissions < -47.2dBc

4.3.5 TEST RESULTS
No spurious emissions observed above minimum standard.
Test data is described at section 4.3.10.

4.3.6 TEST CONDITIONS
Tamb = 20℃ to 25℃, RHamb = 40% ～ 60%
EUT input = 24 VDC

4.3.7 STABILLIZATION
EUT energized for 10 minutes minimum.

4.3.8 TEST EQUIPMENT
JRC Original – Shielded Room
Other equipment – see test set-ups.

4.3.9 DATE

22 December, 2011

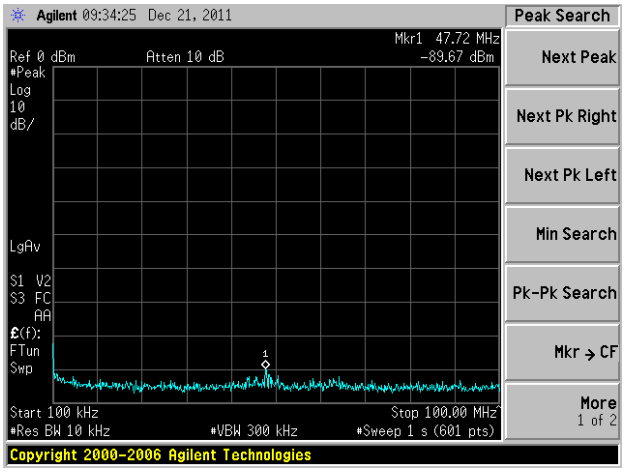
TEST ENGINEER: G. Higuchi

4.3.10.1 TEST RESULTS of Dark Noise

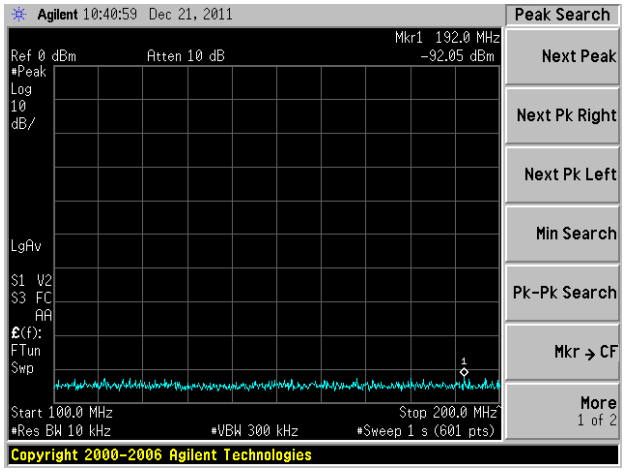
Horizontally Polarized Dark noise							
Range	Frequency [MHz]	level [dBm]	Pg [dBm]	Cable Loss [dB]	Antenna Gain [dB]	Pd [dBm]	Radiated Spurious Emission [dBc]
10kHz – 100MHz	47.72	−89.67	−62.9	0.5	−11.48	−74.9	−142.4
100MHz – 200MHz	192	−92.05	less than the noise floor				less than the noise floor
200MHz – 300MHz	204.3	−92.36	less than the noise floor				less than the noise floor
300MHz – 400MHz	399.7	−90.88	less than the noise floor				less than the noise floor
400MHz – 500MHz	431.2	−91.66	less than the noise floor				less than the noise floor
500MHz – 600MHz	589.2	−91.29	less than the noise floor				less than the noise floor
600MHz – 700MHz	665.8	−91.76	less than the noise floor				less than the noise floor
700MHz – 800MHz	781.3	−92.07	less than the noise floor				less than the noise floor
800MHz – 900MHz	865.8	−91.58	less than the noise floor				less than the noise floor
900MHz – 1.0GHz	908	−91.53	less than the noise floor				less than the noise floor
1.0GHz – 2.9GHz	2624	−69.69	less than the noise floor				less than the noise floor
2.9GHz – 6.4GHz	3227	−66.85	less than the noise floor				less than the noise floor
6.4GHz – 12.5GHz	7091	−65.39	less than the noise floor				less than the noise floor
11.9G – 18GHz	15367	−63.4	less than the noise floor				less than the noise floor
17.6G – 26.7GHz	25062	−59.56	less than the noise floor				less than the noise floor
26.7G – 40.0GHz	36940	−49.03	less than the noise floor				less than the noise floor

Vertically Polarized Dark noise							
Range	Frequency [MHz]	level [dBm]	Pg [dBm]	Cable Loss [dB]	Antenna Gain [dB]	Pd [dBm]	Radiated Spurious Emission [dBc]
10kHz – 100MHz	40.06	−80.93	−48.8	0.5	−15.39	−64.7	−132.2
100MHz – 200MHz	192.5	−92.17	less than the noise floor				less than the noise floor
200MHz – 300MHz	299	−91.18	less than the noise floor				less than the noise floor
300MHz – 400MHz	375	−91.19	less than the noise floor				less than the noise floor
400MHz – 500MHz	414.2	−91.29	less than the noise floor				less than the noise floor
500MHz – 600MHz	505.2	−92.09	less than the noise floor				less than the noise floor
600MHz – 700MHz	676.5	−92.13	less than the noise floor				less than the noise floor
700MHz – 800MHz	715.5	−91.82	less than the noise floor				less than the noise floor
800MHz – 900MHz	821.3	−91.35	less than the noise floor				less than the noise floor
900MHz – 1.0GHz	961.8	−91.68	less than the noise floor				less than the noise floor
1.0GHz – 2.9GHz	2758	−69.04	less than the noise floor				less than the noise floor
2.9GHz – 6.4GHz	3098	−67.8	less than the noise floor				less than the noise floor
6.4GHz – 12.5GHz	11412	−66.21	less than the noise floor				less than the noise floor
11.9G – 18GHz	15387	−62.97	less than the noise floor				less than the noise floor
17.6G – 26.7GHz	25077	−59.7	less than the noise floor				less than the noise floor
26.7G – 40.0GHz	37030	−49.19	less than the noise floor				less than the noise floor

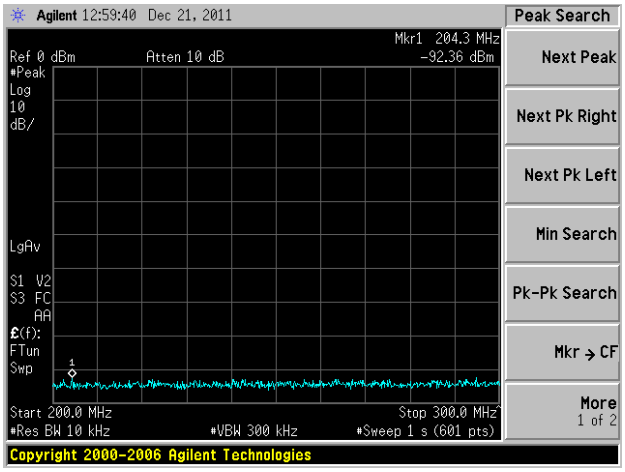
·Horizontally Polarized



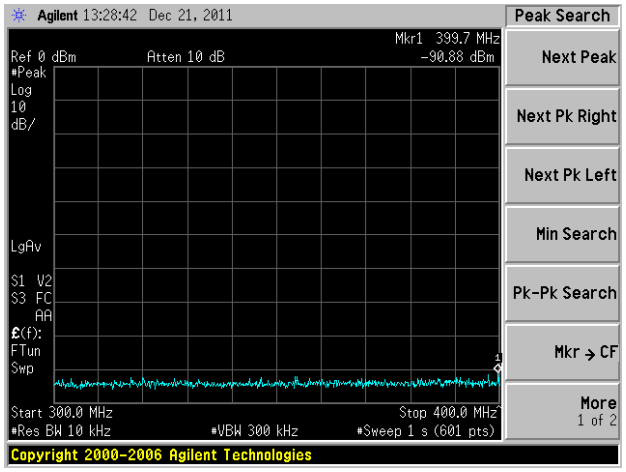
10kHz to 100MHz



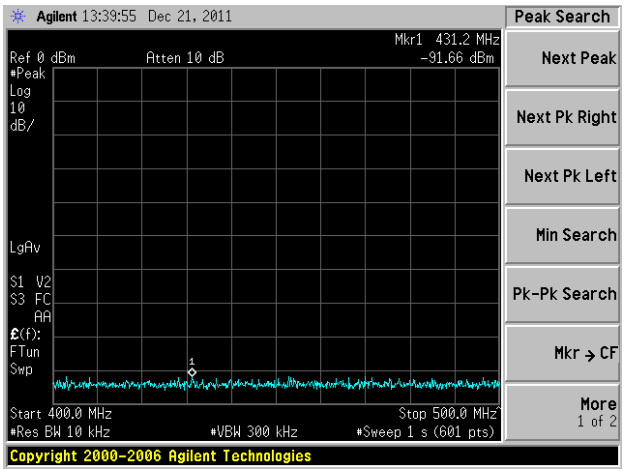
100MHz to 200MHz



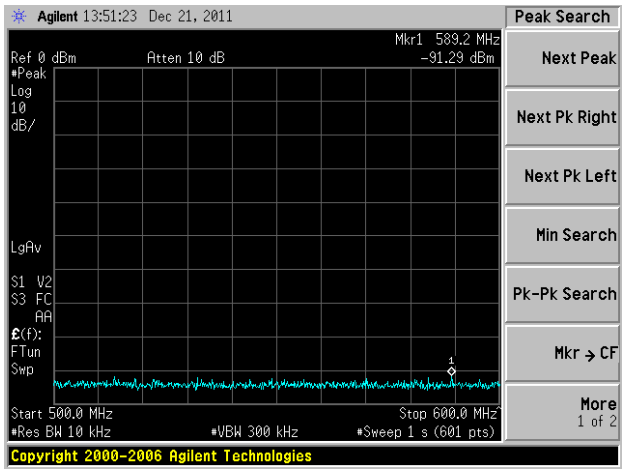
200MHz to 300MHz



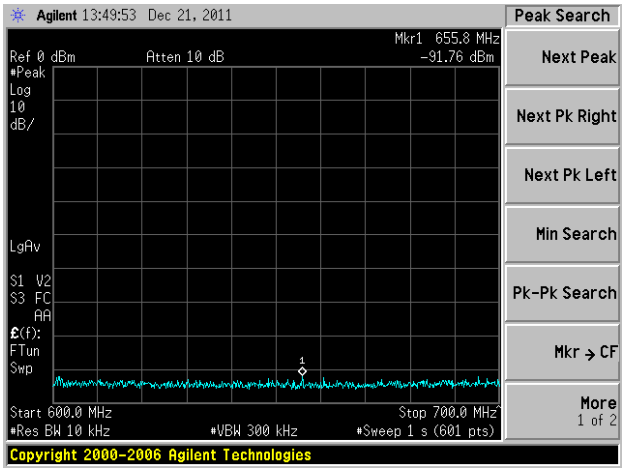
300MHz to 400MHz



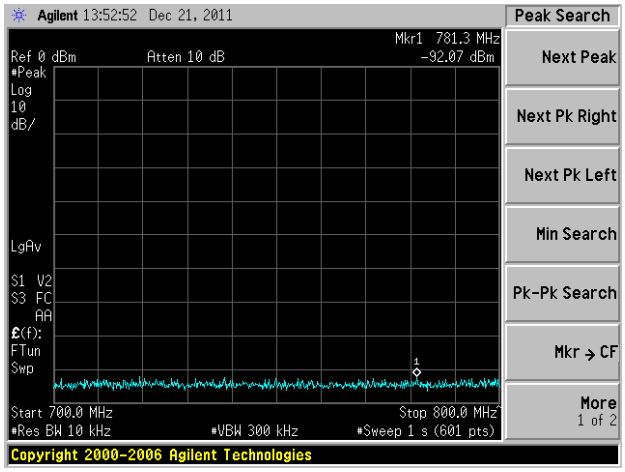
400MHz to 500MHz



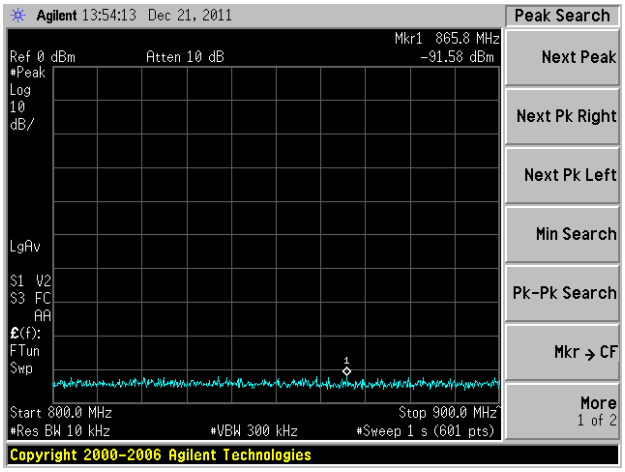
500MHz to 600MHz



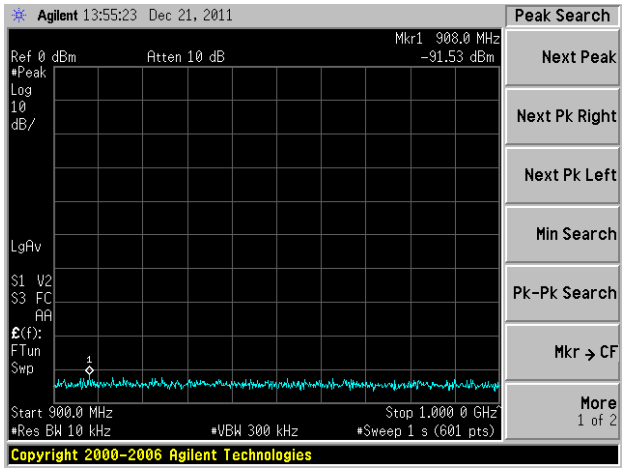
600MHz to 700MHz



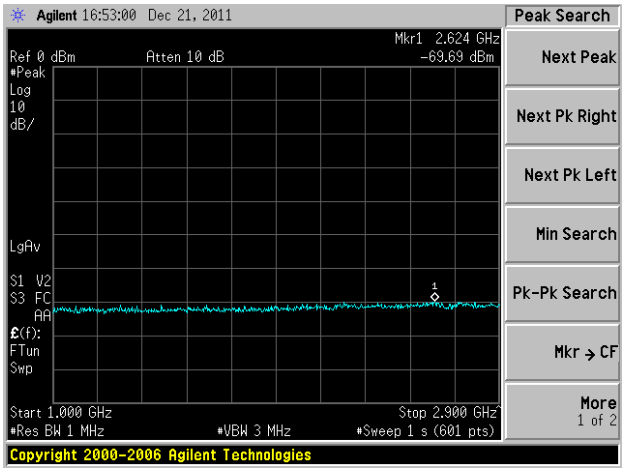
700MHz to 800MHz



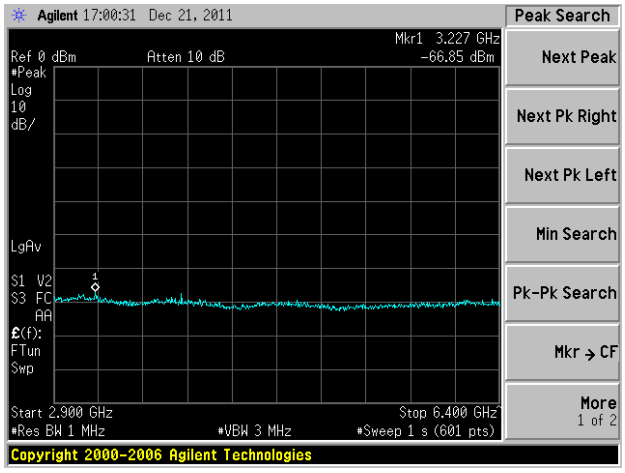
800MHz to 900MHz



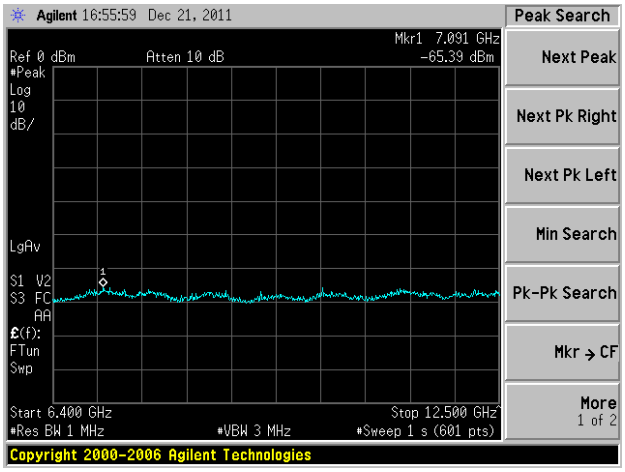
900MHz to 1GHz



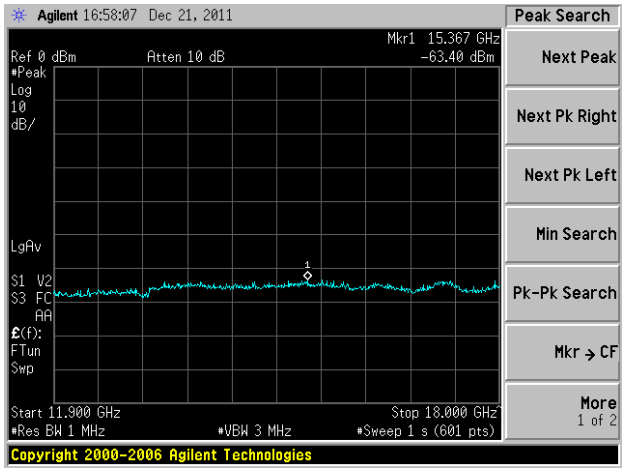
1GHz to 2.9GHz



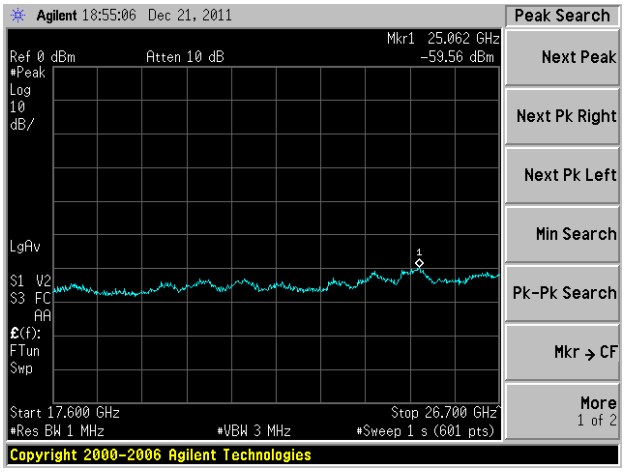
2.9GHz to 6.4GHz



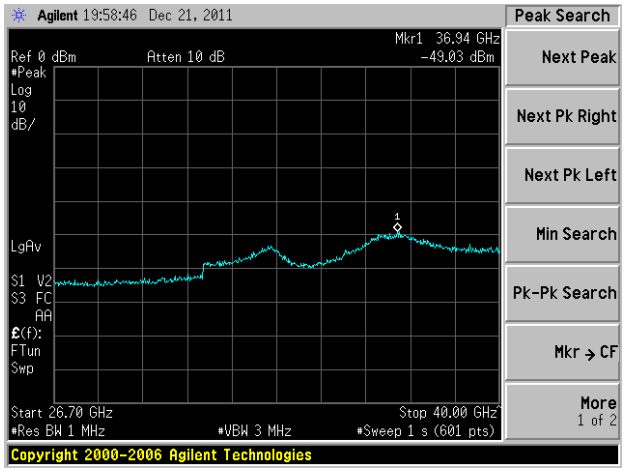
6.4GHz to 12.5GHz



11.9GHz to 18GHz

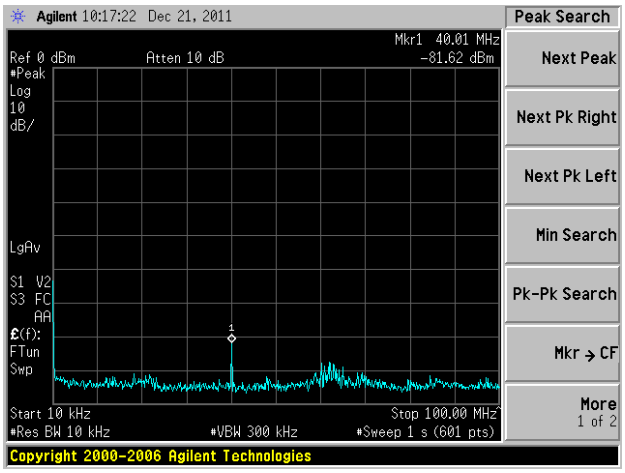


17.6GHz to 26.7GHz

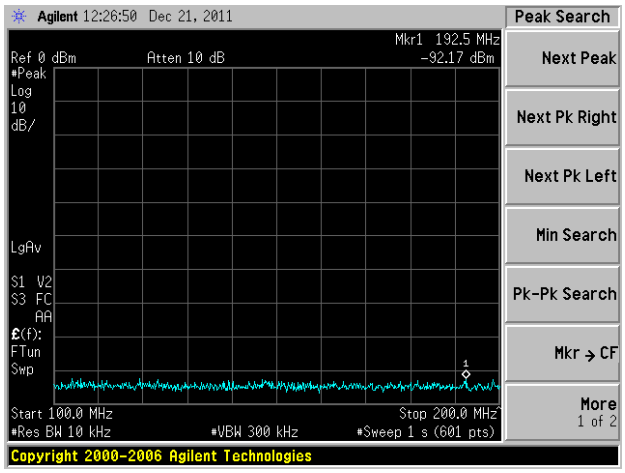


26.5GHz to 40.0GHz

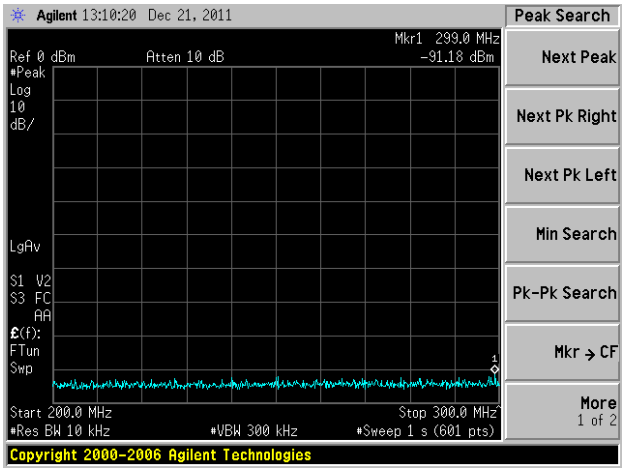
·Vertically Polarized



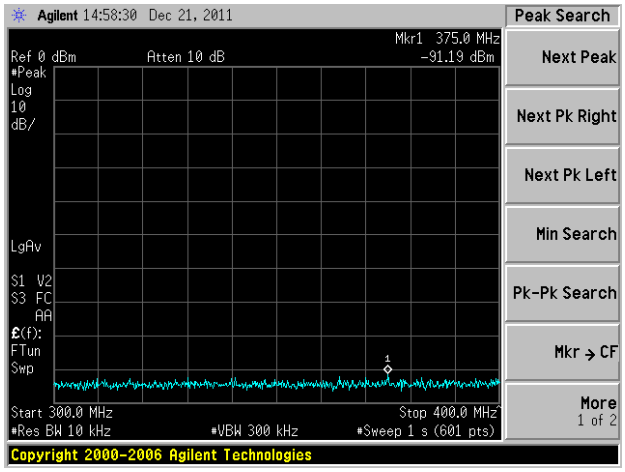
10kHz to 100MHz



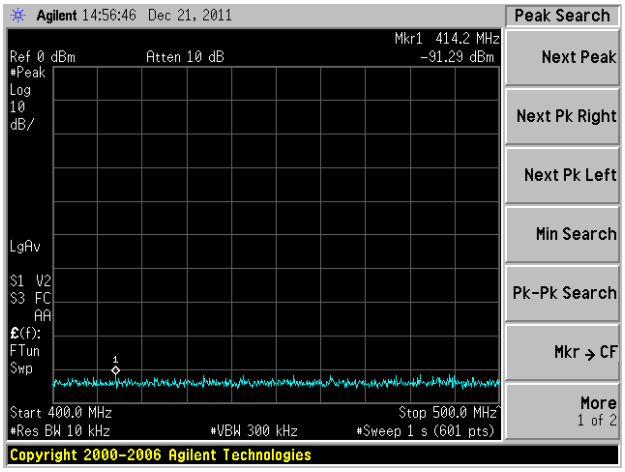
100MHz to 200MHz



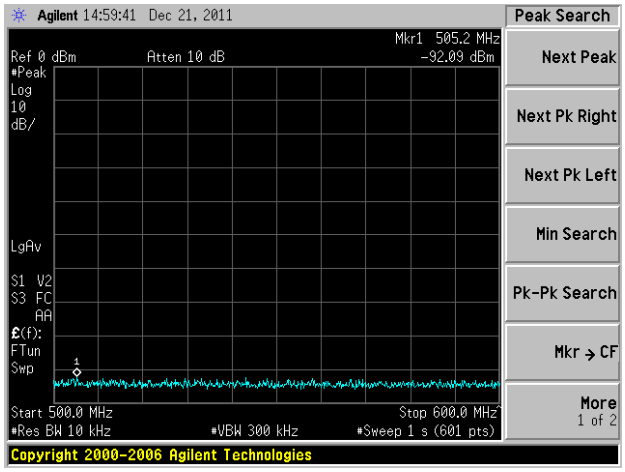
200MHz to 300MHz



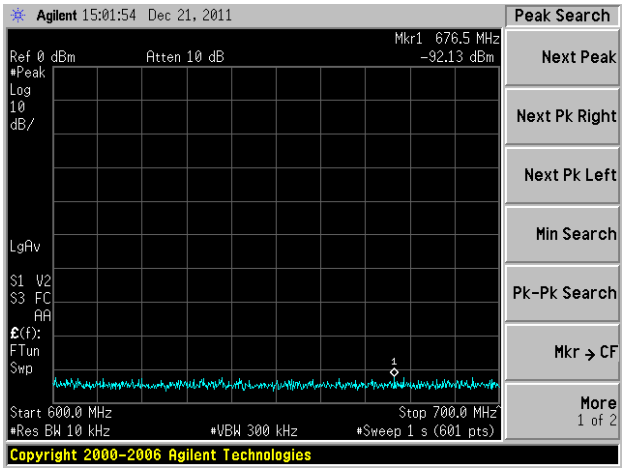
300MHz to 400MHz



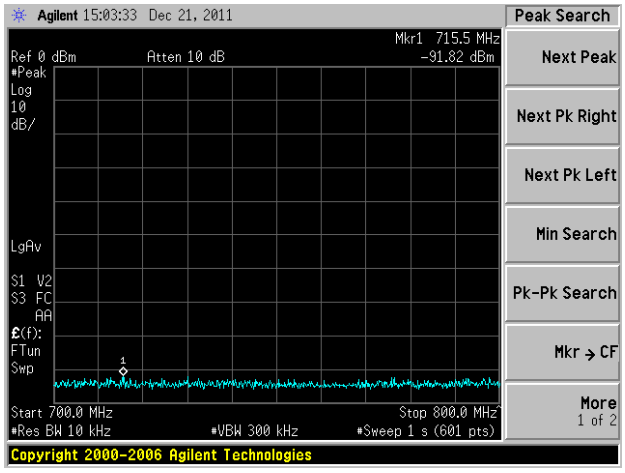
400MHz to 500MHz



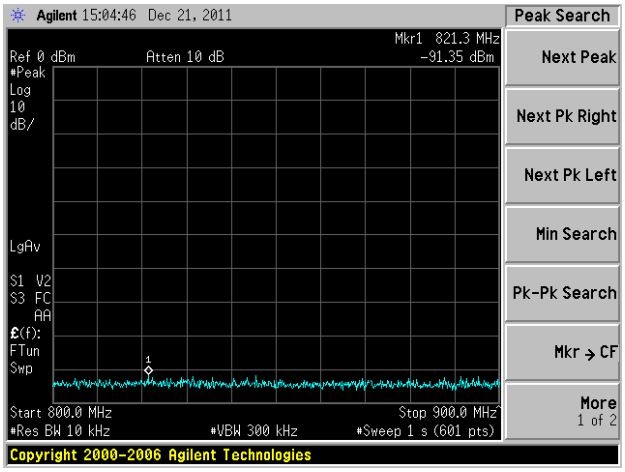
500MHz to 600MHz



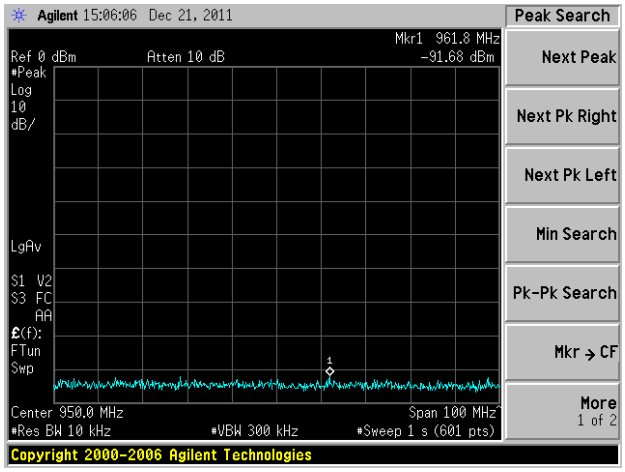
600MHz to 700MHz



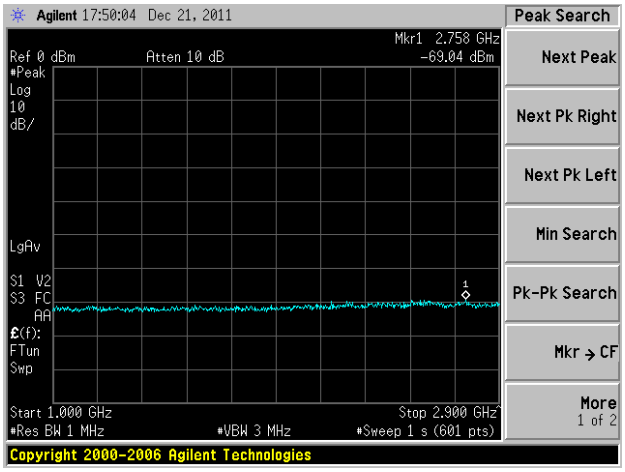
700MHz to 800MHz



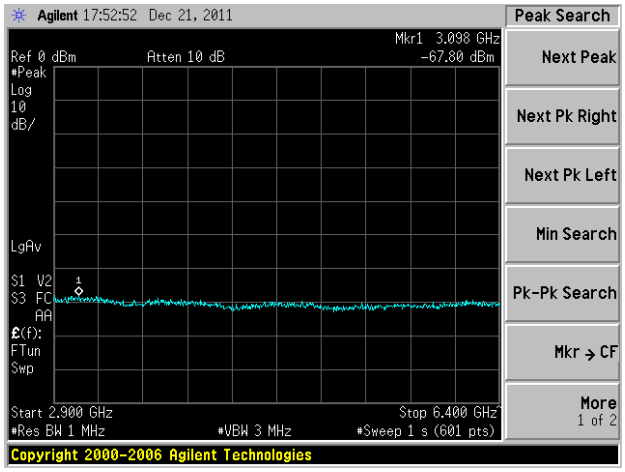
800MHz to 900MHz



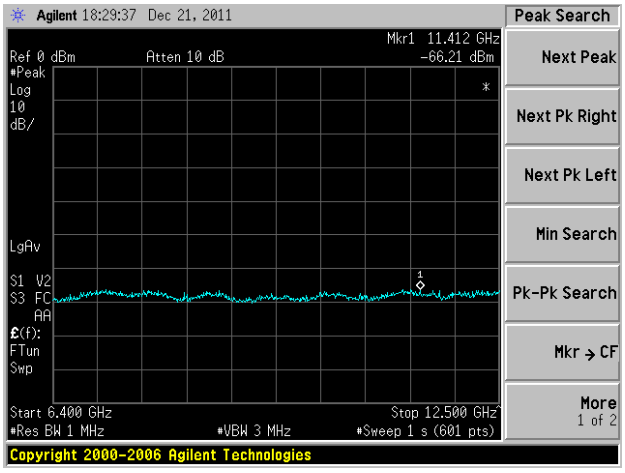
900MHz to 1GHz



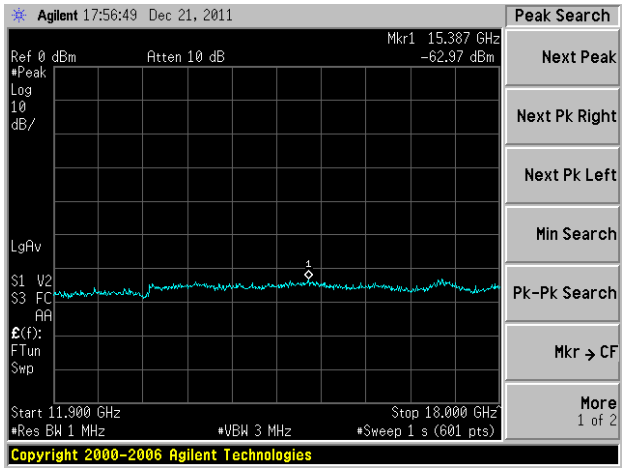
1GHz to 2.9GHz



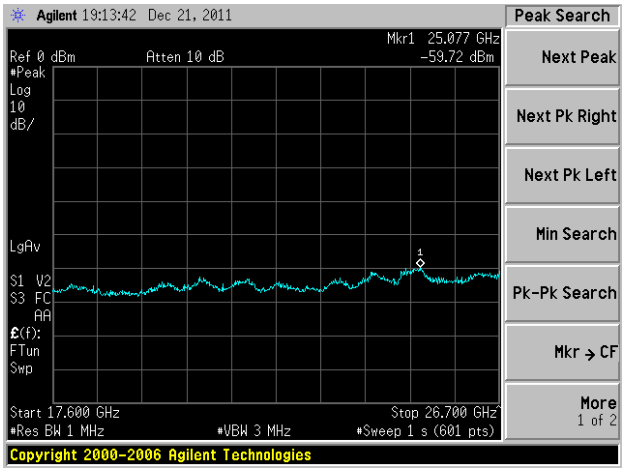
2.9GHz 6.4GHz



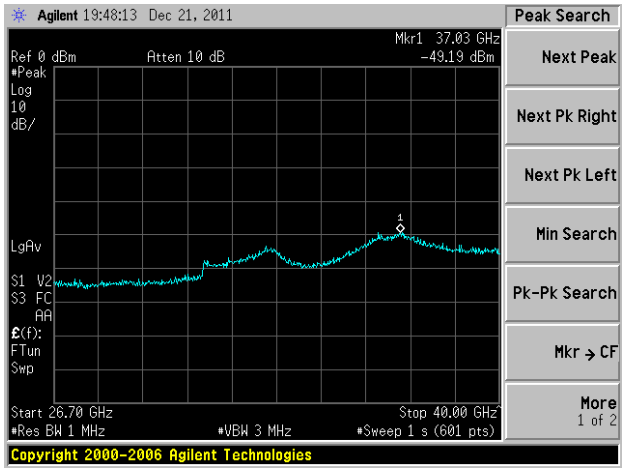
6.4GHz to 12.5GHz



11.9GHz to 18.0GHz



17.6GHz to 26.7GHz



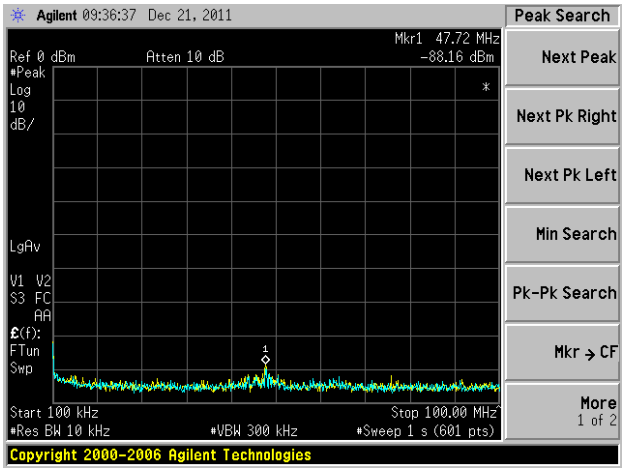
26.4GHz to 40GHz

4.3.10.2 TEST RESULTS of STBY

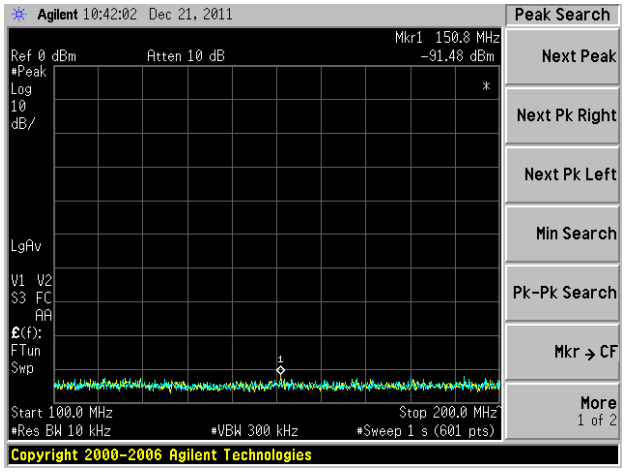
Horizontally Polarized STBY							
Range	Frequency [MHz]	level [dBm]	Pg [dBm]	Cable Loss [dB]	Antenna Gain [dB]	Pd [dBm]	Radiated Spurious Emission [dBc]
10kHz – 100MHz	47.72	−88.16	−61.4	0.5	−11.48	−73.4	−140.8
100MHz – 200MHz	150.8	−91.48	less than the noise floor				less than the noise floor
200MHz – 300MHz	205.2	−91.6	less than the noise floor				less than the noise floor
300MHz – 400MHz	349.7	−91.68	less than the noise floor				less than the noise floor
400MHz – 500MHz	435.8	−91.97	less than the noise floor				less than the noise floor
500MHz – 600MHz	522.3	−92.03	less than the noise floor				less than the noise floor
600MHz – 700MHz	608.5	−92.22	less than the noise floor				less than the noise floor
700MHz – 800MHz	702	−92.37	less than the noise floor				less than the noise floor
800MHz – 900MHz	835.2	−91.06	less than the noise floor				less than the noise floor
900MHz – 1.0GHz	902	−91.85	less than the noise floor				less than the noise floor
1.0GHz – 2.9GHz	2881	−68.99	less than the noise floor				less than the noise floor
2.9GHz – 6.4GHz	3145	−67.25	less than the noise floor				less than the noise floor
6.4GHz – 12.5GHz	10192	−65.38	less than the noise floor				less than the noise floor
11.9G – 18GHz	15560	−63.25	less than the noise floor				less than the noise floor
17.6G – 26.7GHz	24986	−59.59	less than the noise floor				less than the noise floor
26.7G – 40.0GHz	36940	−49.11	less than the noise floor				less than the noise floor

Vertically Polarized STBY							
Range	Frequency [MHz]	level [dBm]	Pg [dBm]	Cable Loss [dB]	Antenna Gain [dB]	Pd [dBm]	Radiated Spurious Emission [dBc]
10kHz – 100MHz	40.01	−83.29	−51.3	0.5	−11.48	−63.3	−130.7
100MHz – 200MHz	150.2	−89.32	−64.2	0.5	−4.48	−69.2	−136.7
200MHz – 300MHz	236	−90.63	−63.1	0.5	−3.26	−66.9	−134.4
300MHz – 400MHz	353.8	−90.43	less than the noise floor				less than the noise floor
400MHz – 500MHz	421.5	−89.21	less than the noise floor				less than the noise floor
500MHz – 600MHz	544.3	−91.72	less than the noise floor				less than the noise floor
600MHz – 700MHz	629.2	−92.05	less than the noise floor				less than the noise floor
700MHz – 800MHz	714.7	−91.79	less than the noise floor				less than the noise floor
800MHz – 900MHz	817	−91.72	less than the noise floor				less than the noise floor
900MHz – 1.0GHz	937.8	−91.49	less than the noise floor				less than the noise floor
1.0GHz – 2.9GHz	2745	−69.21	less than the noise floor				less than the noise floor
2.9GHz – 6.4GHz	3075	−67.17	less than the noise floor				less than the noise floor
6.4GHz – 12.5GHz	11931	−65.51	less than the noise floor				less than the noise floor
11.9G – 18GHz	15428	−63.24	less than the noise floor				less than the noise floor
17.6G – 26.7GHz	25001	−59.35	less than the noise floor				less than the noise floor
26.7G – 40.0GHz	36920	−49.67	less than the noise floor				less than the noise floor

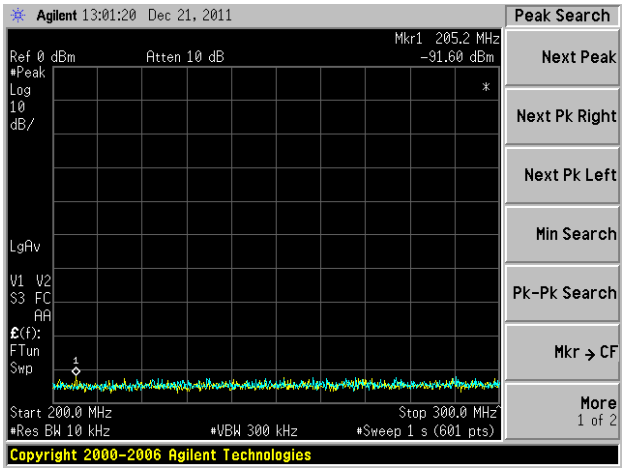
·Horizontally Polarized



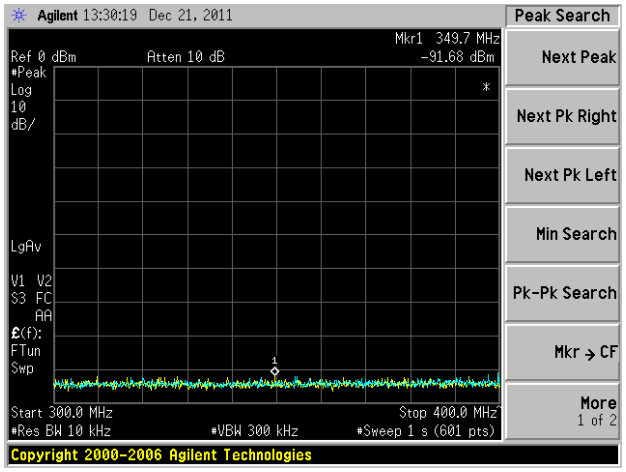
10kHz to 100MHz



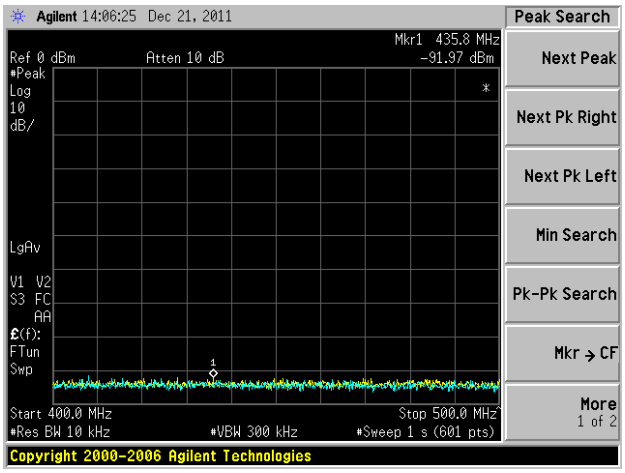
100MHz to 200MHz



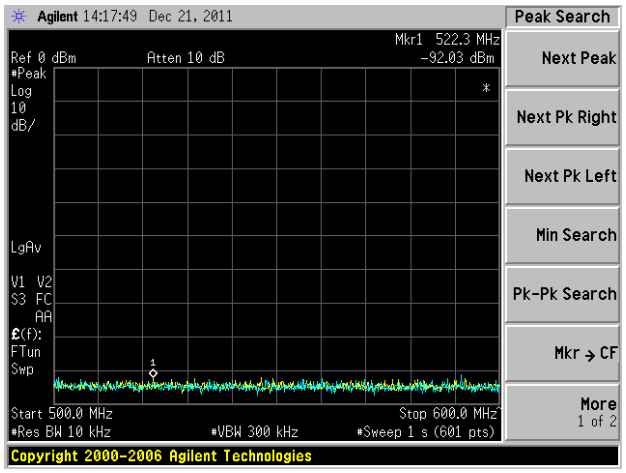
200MHz to 300MHz



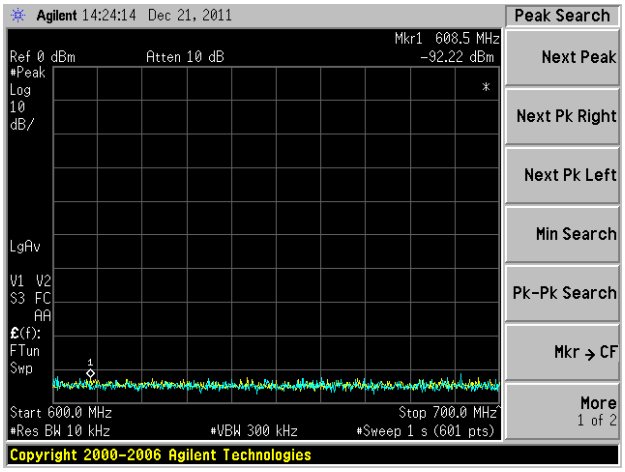
300MHz to 400MHz



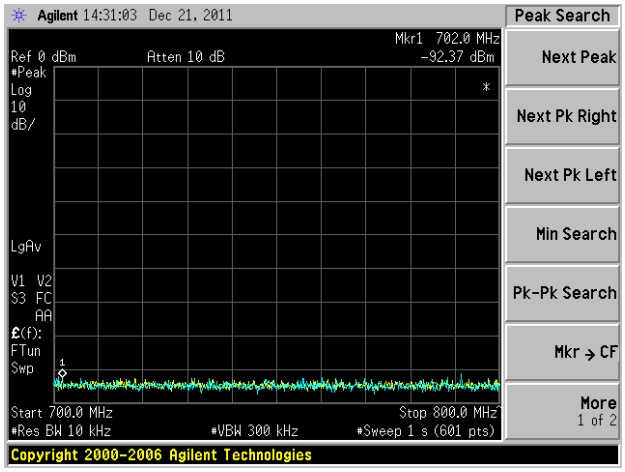
400MHz to 500MHz



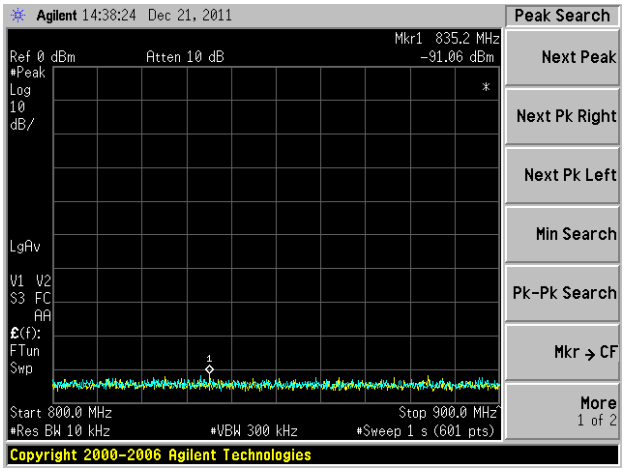
500MHz to 600MHz



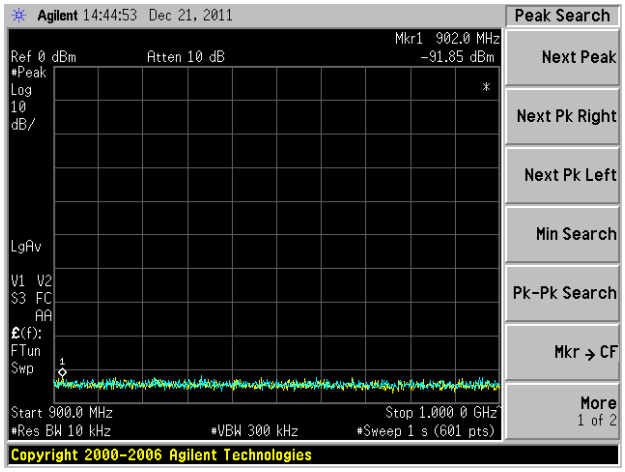
600MHz to 700MHz



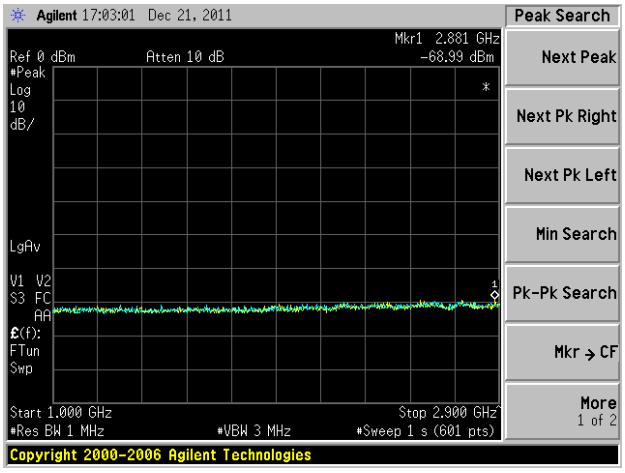
700MHz to 800MHz



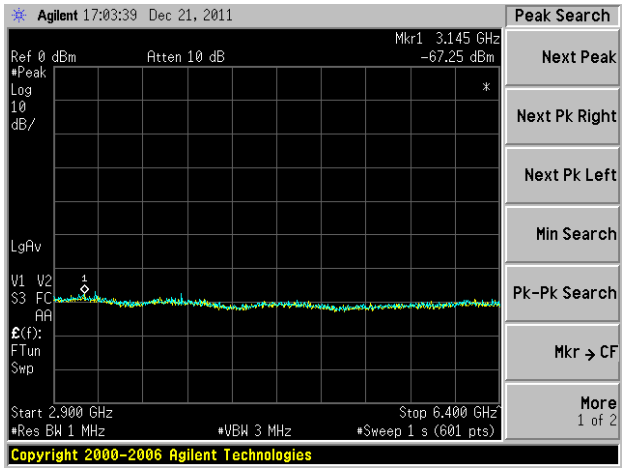
800MHz to 900MHz



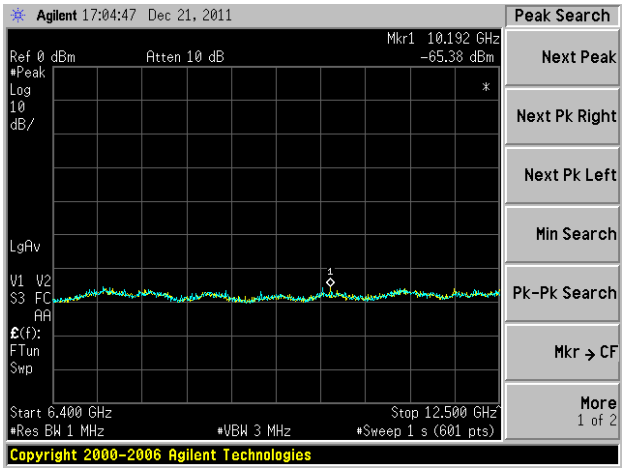
900MHz to 1GHz



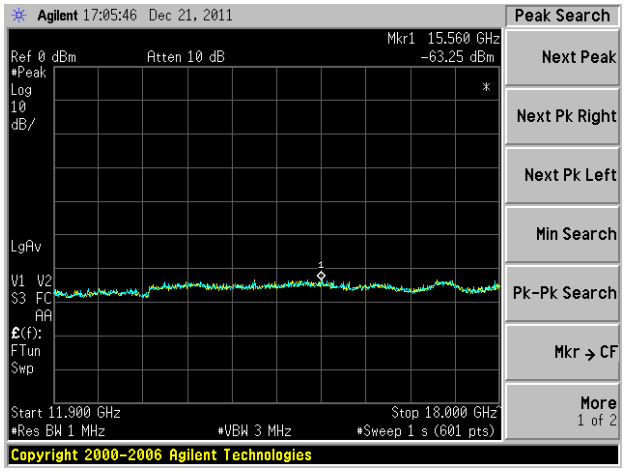
1GHz to 2.9GHz



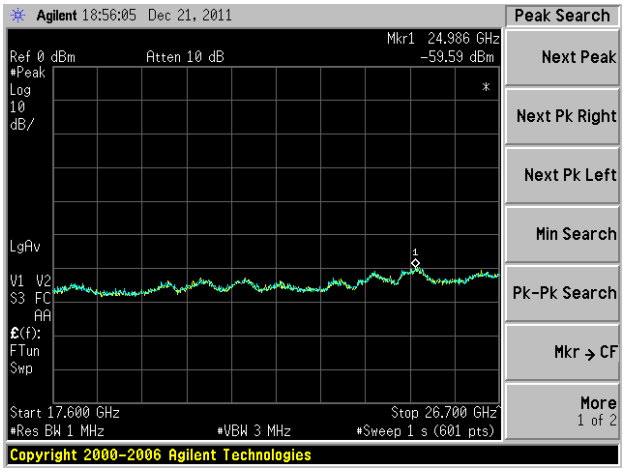
2.9GHz to 6.4GHz



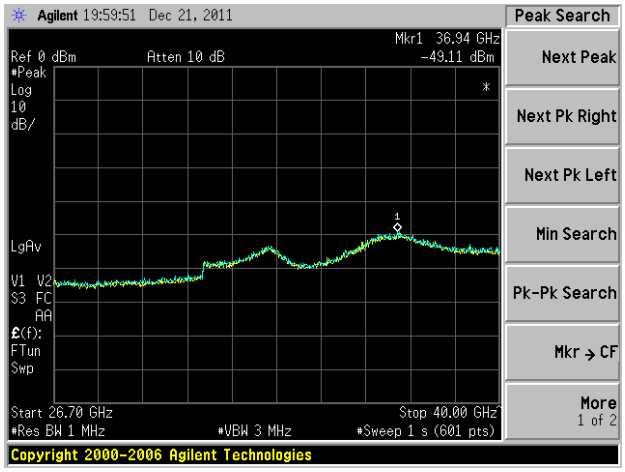
6.4GHz to 12.5GHz



11.9GHz to 18GHz

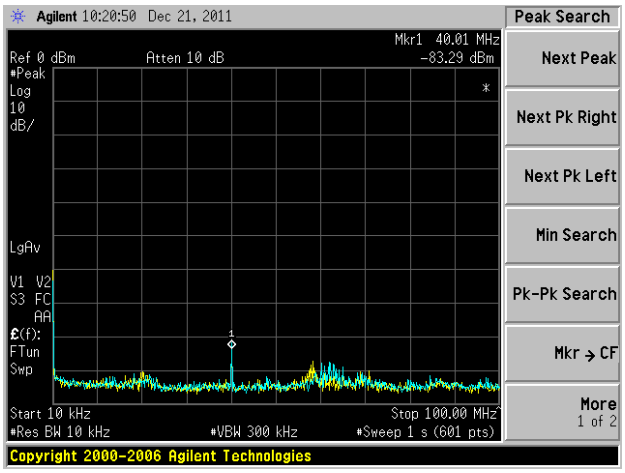


17.6GHz to 26.7GHz

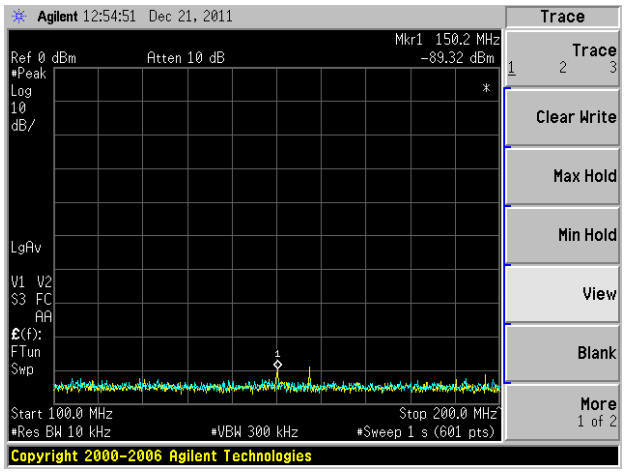


26.5GHz to 40.0GHz

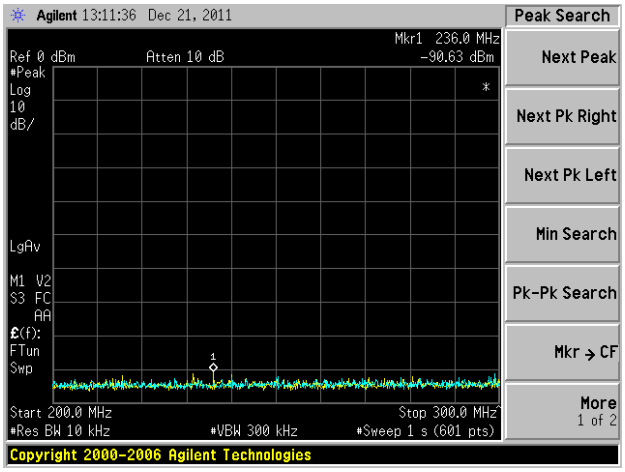
·Vertically Polarized



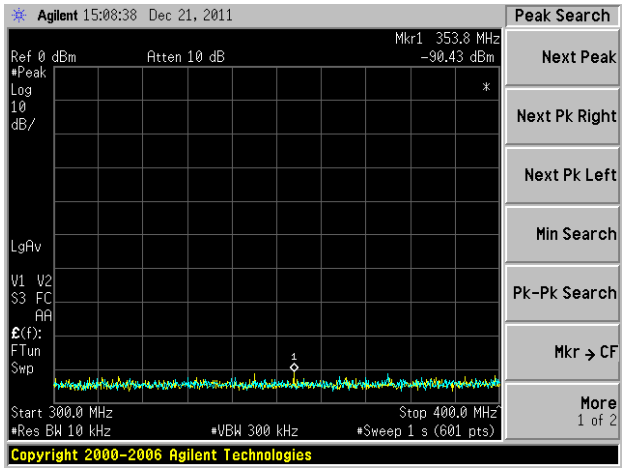
10kHz to 100MHz



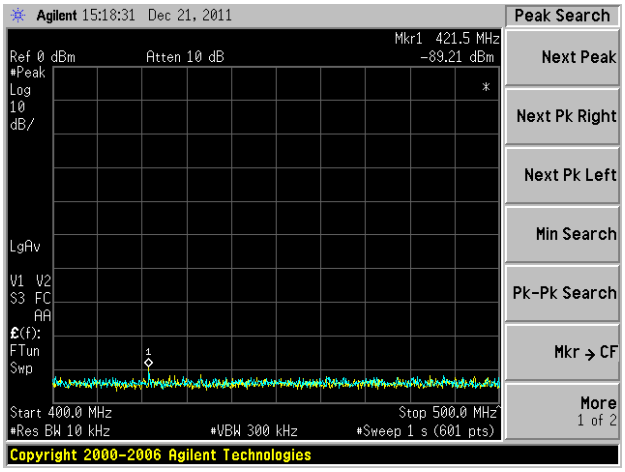
100MHz to 200MHz



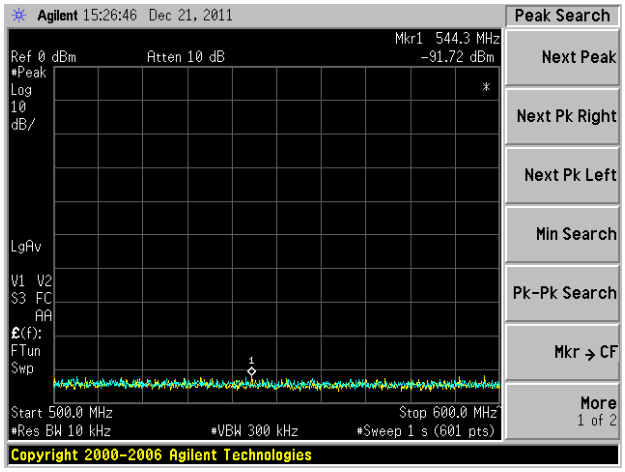
200MHz to 300MHz



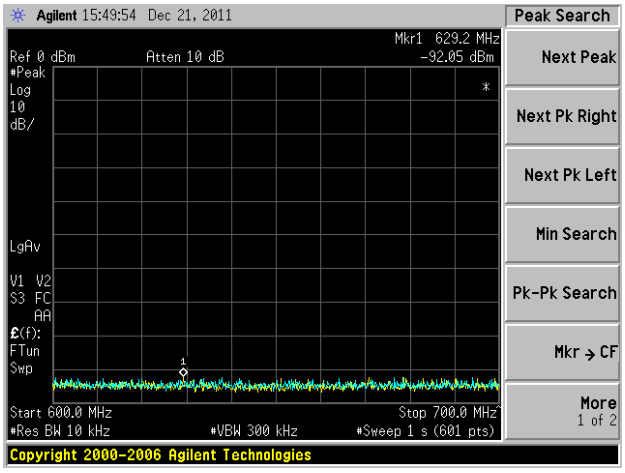
300MHz to 400MHz



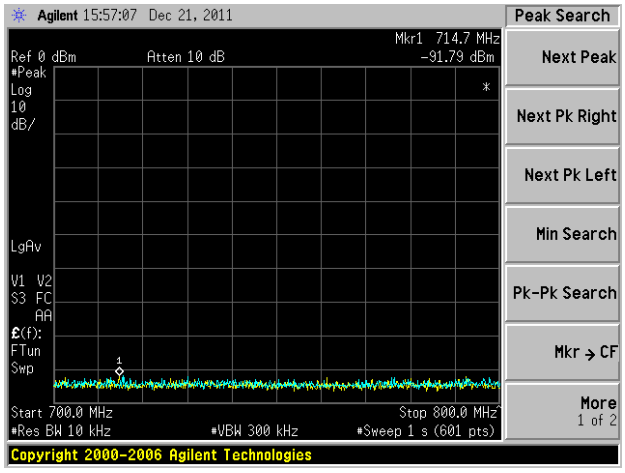
400MHz to 500MHz



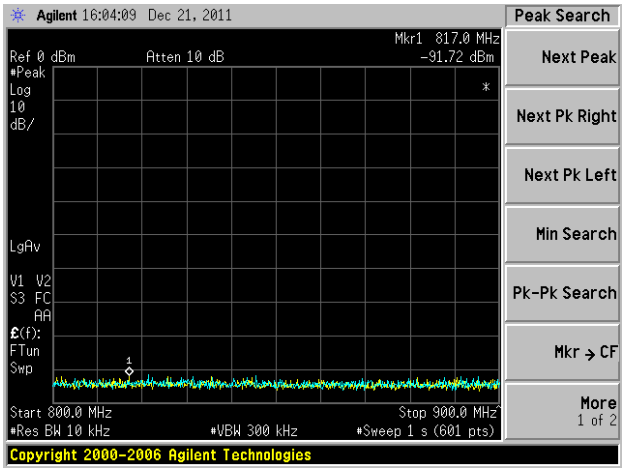
500MHz to 600MHz



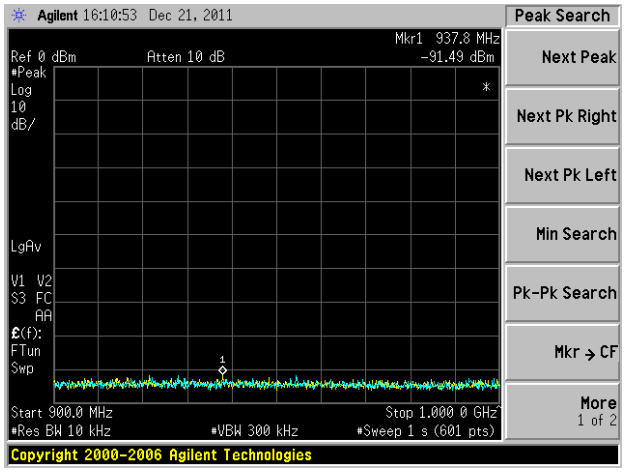
600MHz to 700MHz



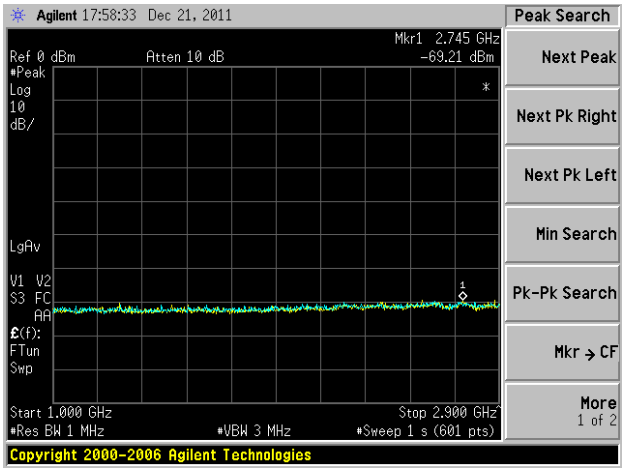
700MHz to 800MHz



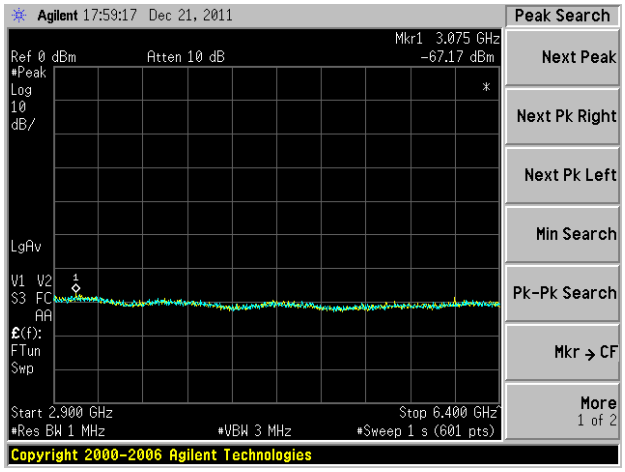
800MHz to 900MHz



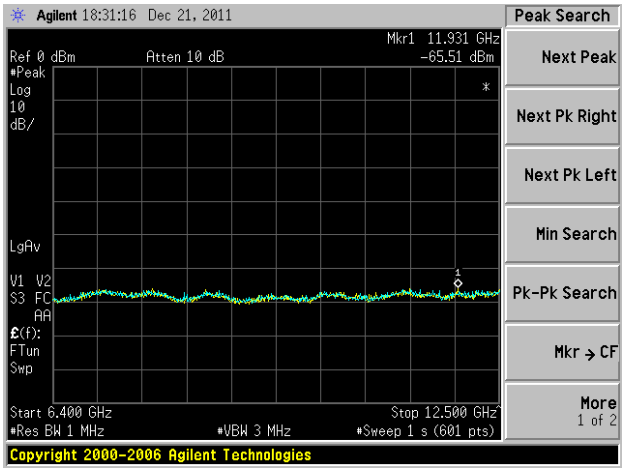
900MHz to 1GHz



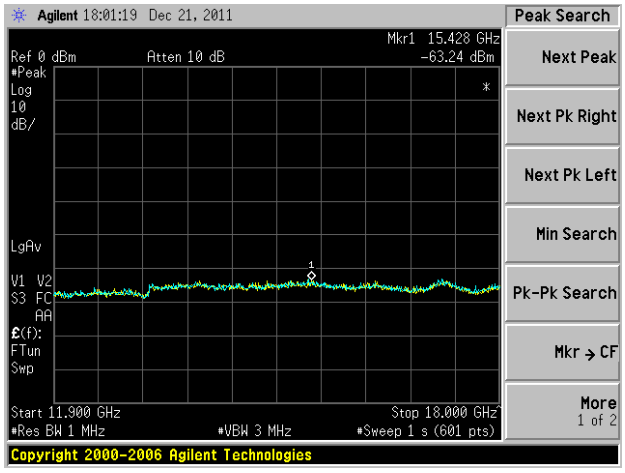
1GHz to 2.9GHz



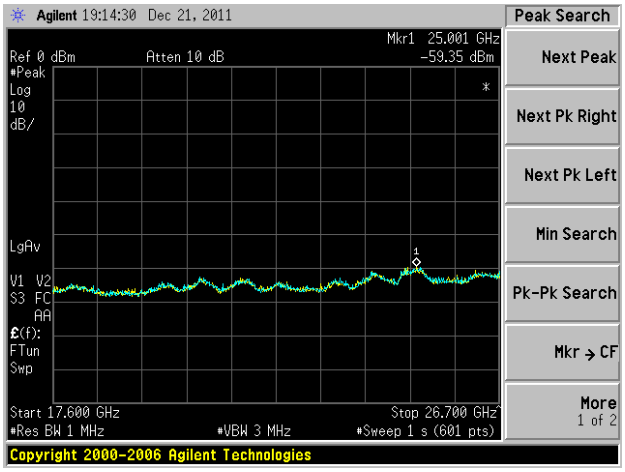
2.9GHz 6.4GHz



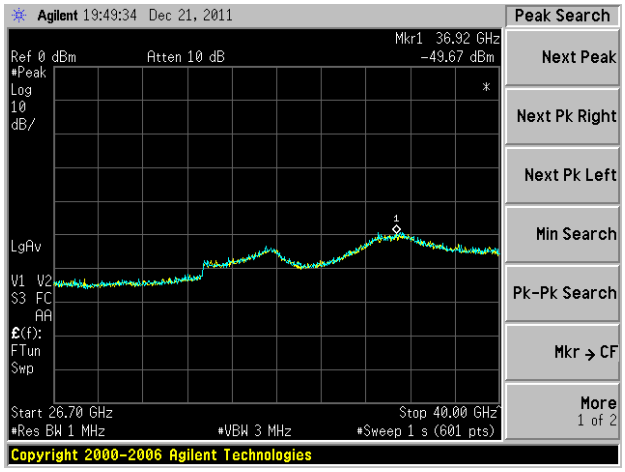
6.4GHz to 12.5GHz



11.9GHz to 18.0GHz



17.6GHz to 26.7GHz



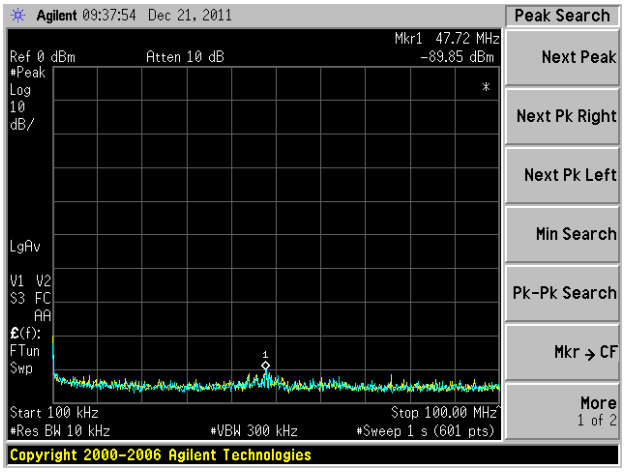
26.4GHz to 40GHz

4.3.10.3 TEST RESULTS of 0.08usec/4000Hz

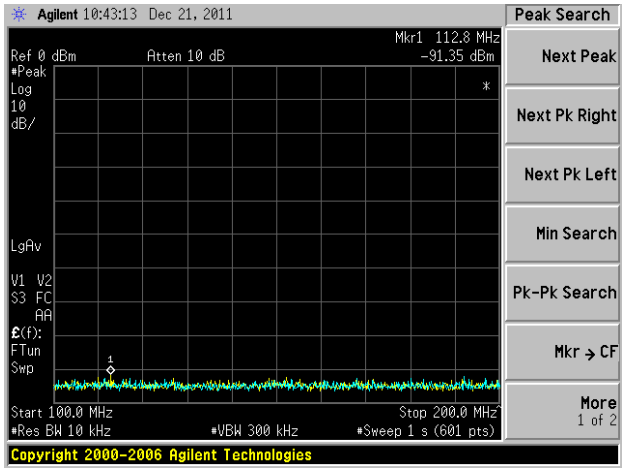
Horizontally Polarized 0.08usec/4000Hz							
Range	Frequency [MHz]	level [dBm]	Pg [dBm]	Cable Loss [dB]	Antenna Gain [dB]	Pd [dBm]	Radiated Spurious Emission [dBc]
10kHz – 100MHz	47.72	−89.85	−63.1	0.5	−11.48	−75.1	−142.5
100MHz – 200MHz	112.8	−91.35	less than the noise floor				less than the noise floor
200MHz – 300MHz	280	−91.65	less than the noise floor				less than the noise floor
300MHz – 400MHz	370	−91.39	less than the noise floor				less than the noise floor
400MHz – 500MHz	460	−91.06	less than the noise floor				less than the noise floor
500MHz – 600MHz	600	−92.09	less than the noise floor				less than the noise floor
600MHz – 700MHz	689.2	−91.75	less than the noise floor				less than the noise floor
700MHz – 800MHz	779.7	−92.02	less than the noise floor				less than the noise floor
800MHz – 900MHz	810.5	−91.68	less than the noise floor				less than the noise floor
900MHz – 1.0GHz	942.2	−92.1	less than the noise floor				less than the noise floor
1.0GHz – 2.9GHz	2267	−69.15	less than the noise floor				less than the noise floor
2.9GHz – 6.4GHz	2923	−67.58	less than the noise floor				less than the noise floor
6.4GHz – 12.5GHz	9420	−42.02	less than the noise floor				less than the noise floor
11.9G – 18GHz	15153	−63.16	less than the noise floor				less than the noise floor
17.6G – 26.7GHz	24986	−59.59	less than the noise floor				less than the noise floor
26.7G – 40.0GHz	37120	−49.26	less than the noise floor				less than the noise floor

Vertically Polarized 0.08usec/4000Hz							
Range	Frequency [MHz]	level [dBm]	Pg [dBm]	Cable Loss [dB]	Antenna Gain [dB]	Pd [dBm]	Radiated Spurious Emission [dBc]
10kHz – 100MHz	40.01	−81.65	−49.7	0.5	−11.48	−61.6	−129.1
100MHz – 200MHz	150.2	−88.84	−63.7	0.5	−4.48	−68.7	−136.2
200MHz – 300MHz	274.7	−90.94	−58.6	0.5	−3.45	−62.6	−130.1
300MHz – 400MHz	387.7	−91.87	less than the noise floor				less than the noise floor
400MHz – 500MHz	495.3	−90.91	less than the noise floor				less than the noise floor
500MHz – 600MHz	503.7	−92	−77.6	0.5	3.05	−75.1	−142.5
600MHz – 700MHz	696.3	−92.16	less than the noise floor				less than the noise floor
700MHz – 800MHz	790.3	−91.07	less than the noise floor				less than the noise floor
800MHz – 900MHz	822.5	−91.77	less than the noise floor				less than the noise floor
900MHz – 1.0GHz	952.8	−91.27	less than the noise floor				less than the noise floor
1.0GHz – 2.9GHz	2241	−69.06	less than the noise floor				less than the noise floor
2.9GHz – 6.4GHz	3139	−67.21	less than the noise floor				less than the noise floor
6.4GHz – 12.5GHz	9420	−34.85	less than the noise floor				less than the noise floor
11.9G – 18GHz	17248	−63.11	less than the noise floor				less than the noise floor
17.6G – 26.7GHz	25092	−60.17	less than the noise floor				less than the noise floor
26.7G – 40.0GHz	36560	−49.69	less than the noise floor				less than the noise floor

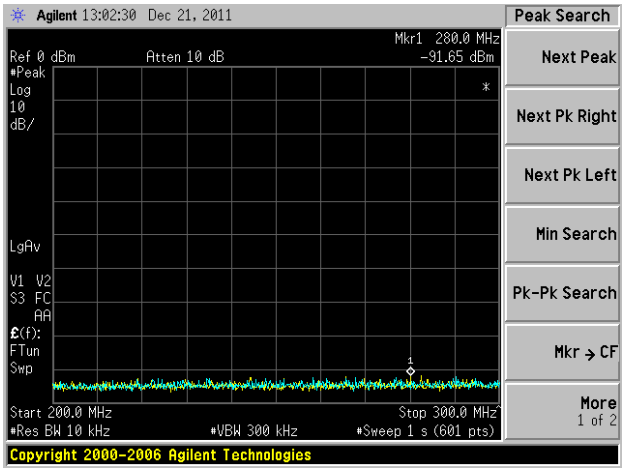
·Horizontally Polarized



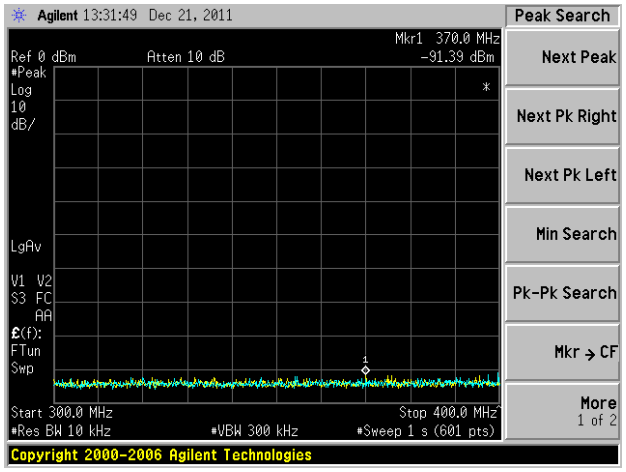
10kHz to 100MHz



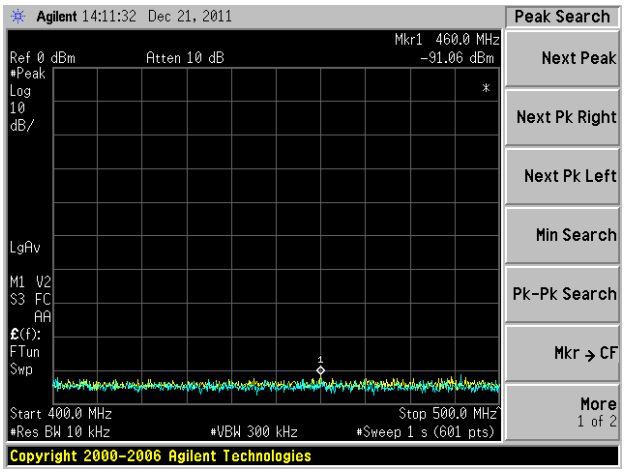
100MHz to 200MHz



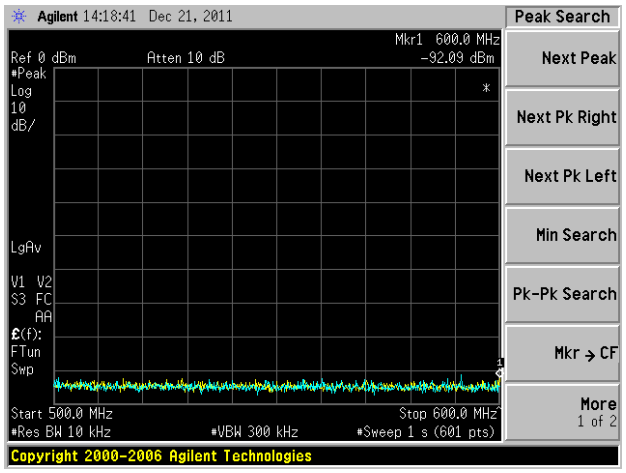
200MHz to 300MHz



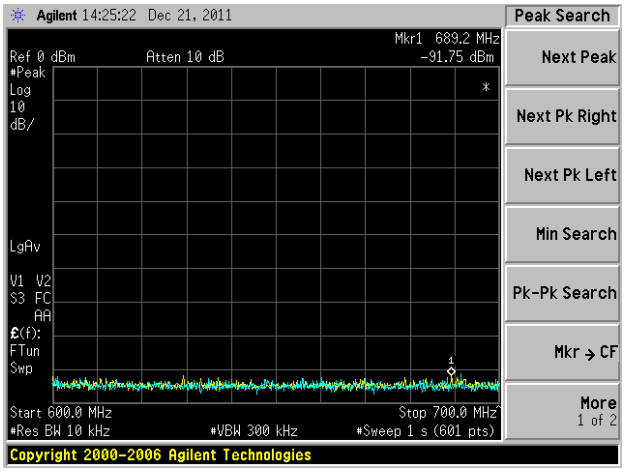
300MHz to 400MHz



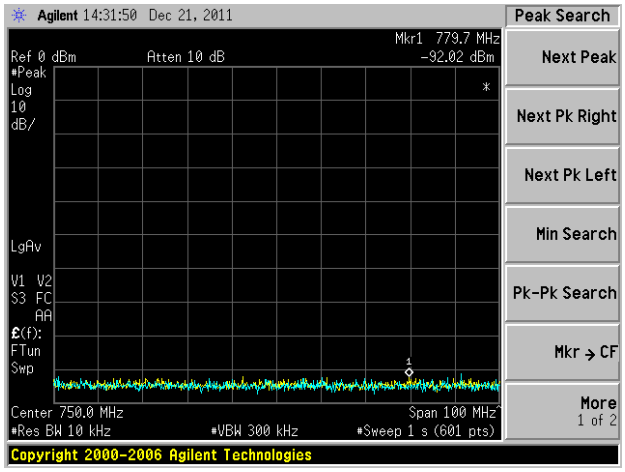
400MHz to 500MHz



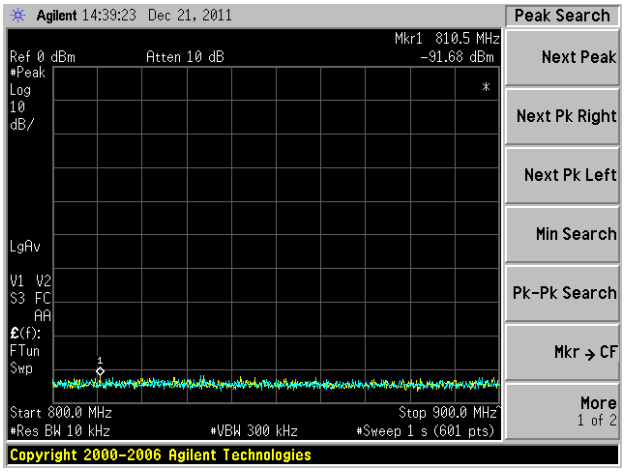
500MHz to 600MHz



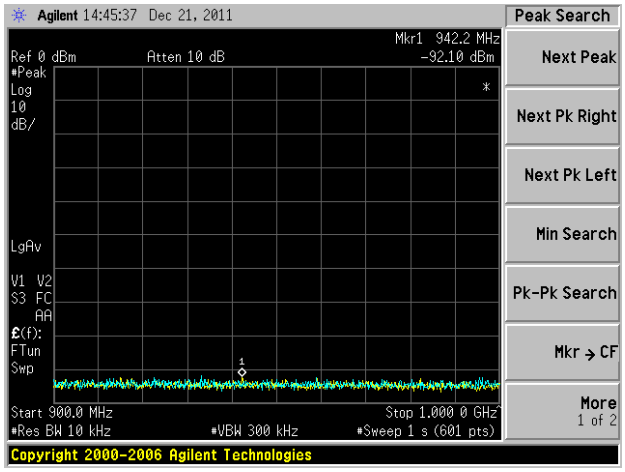
600MHz to 700MHz



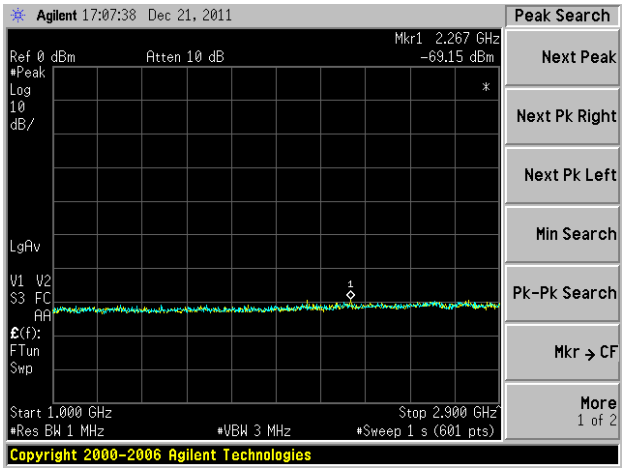
700MHz to 800MHz



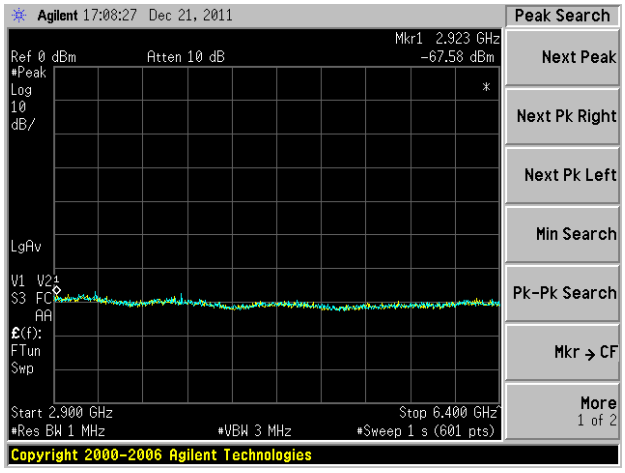
800MHz to 900MHz



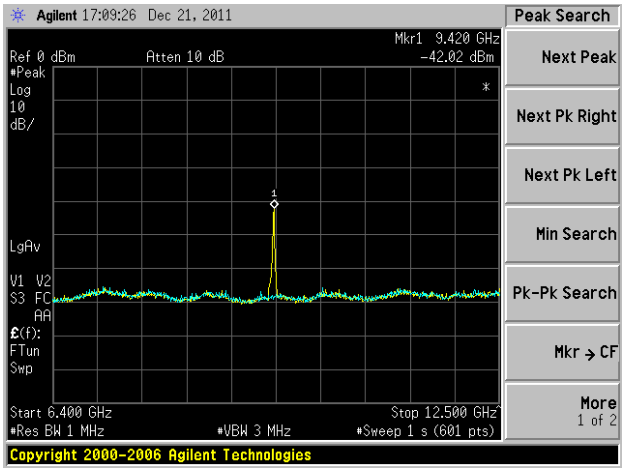
900MHz to 1GHz



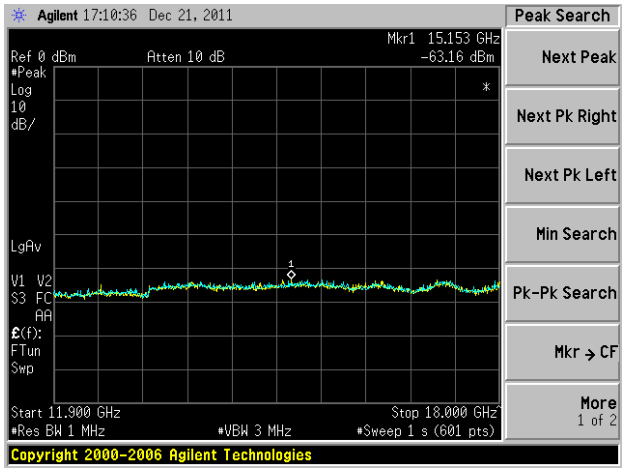
1GHz to 2.9GHz



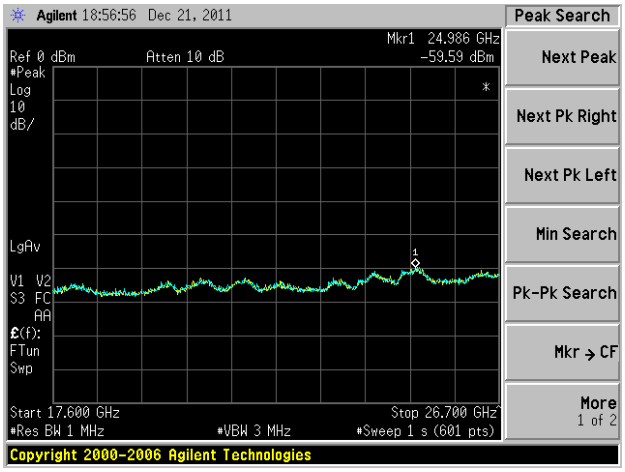
2.9GHz to 6.4GHz



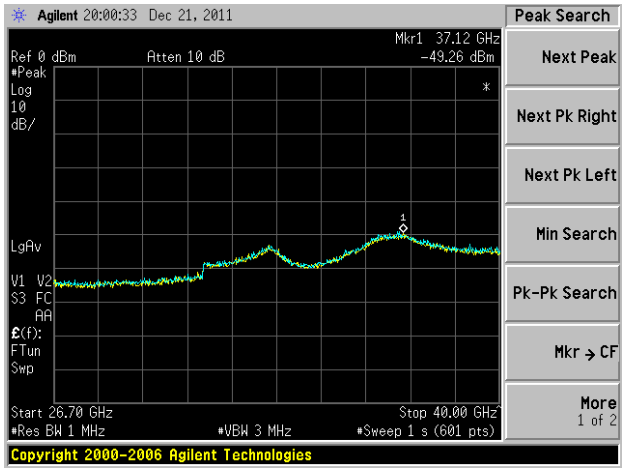
6.4GHz to 12.5GHz



11.9GHz to 18GHz

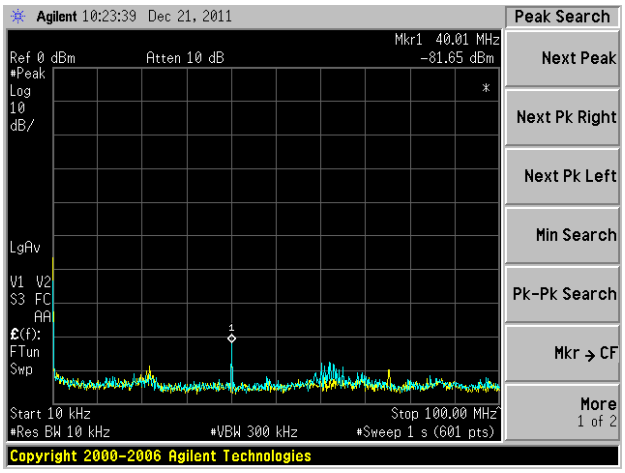


17.6GHz to 26.7GHz

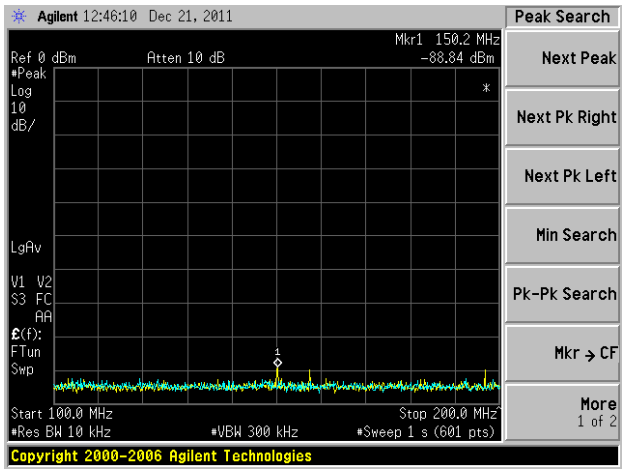


26.5GHz to 40.0GHz

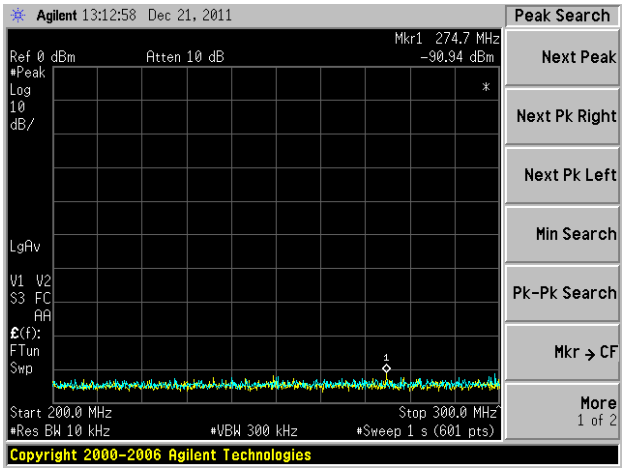
·Vertically Polarized



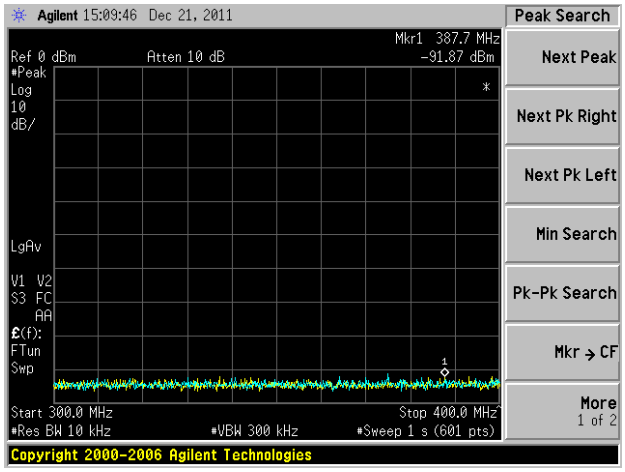
10kHz to 100MHz



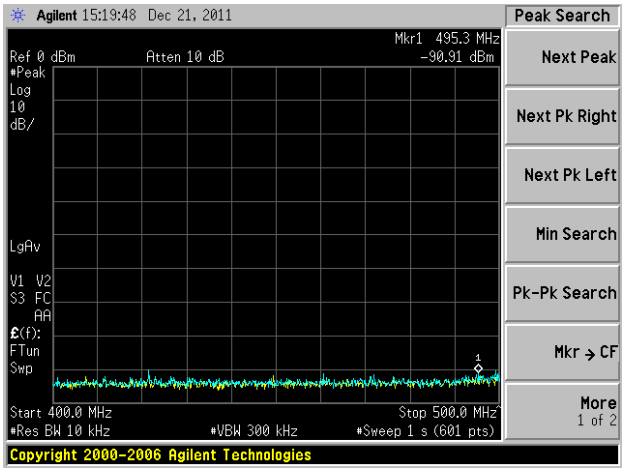
100MHz to 200MHz



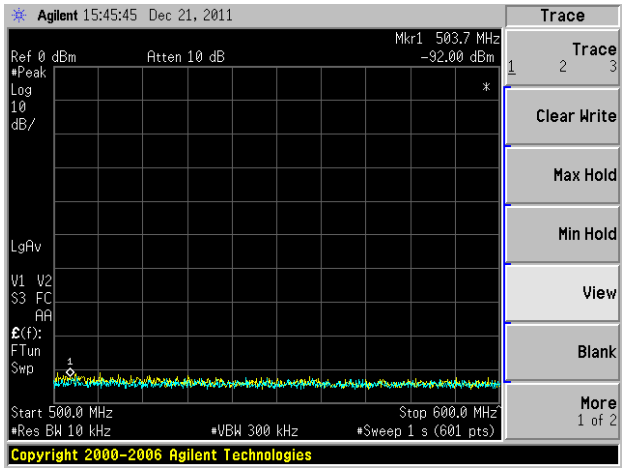
200MHz to 300MHz



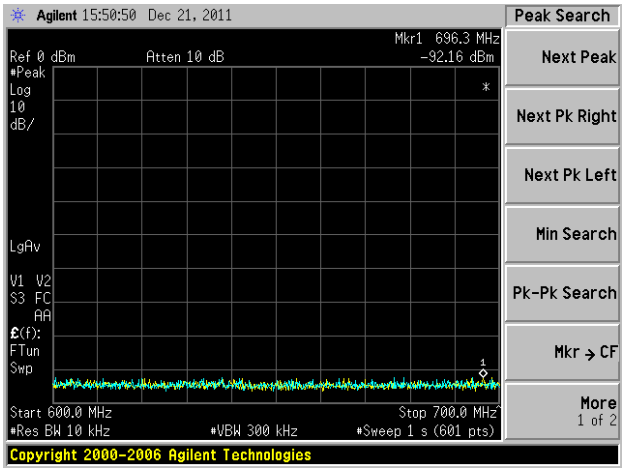
300MHz to 400MHz



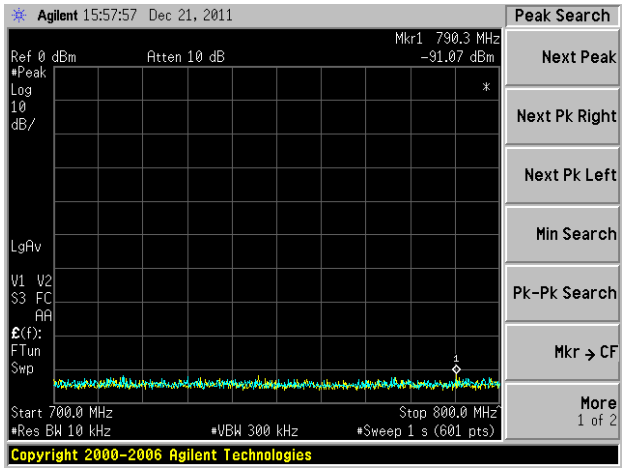
400MHz to 500MHz



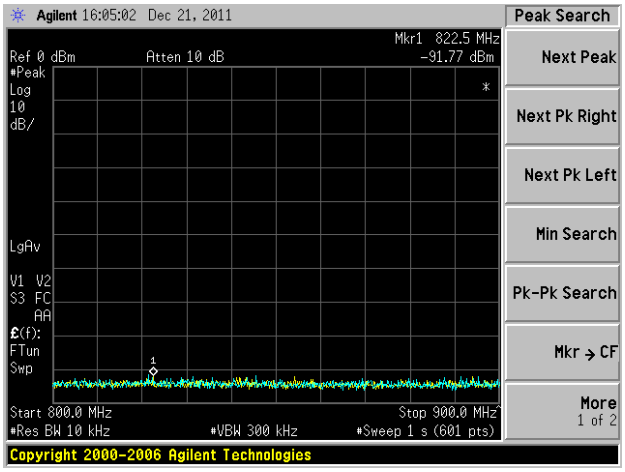
500MHz to 600MHz



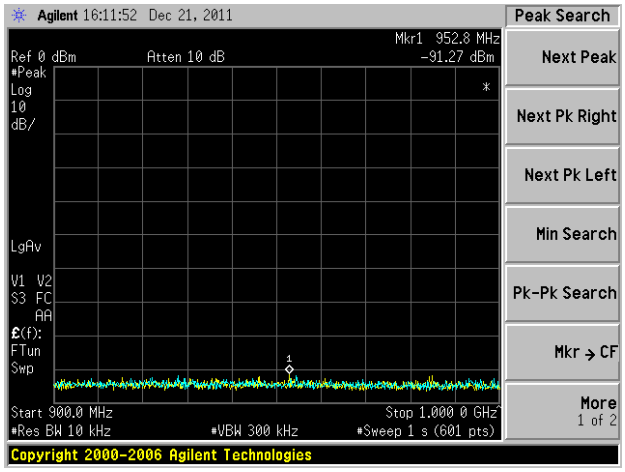
600MHz to 700MHz



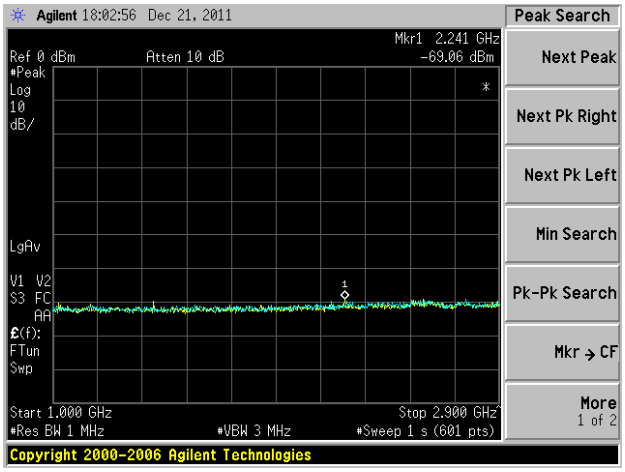
700MHz to 800MHz



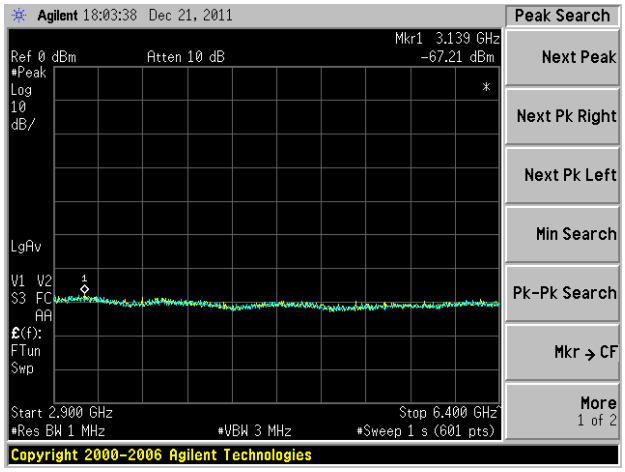
800MHz to 900MHz



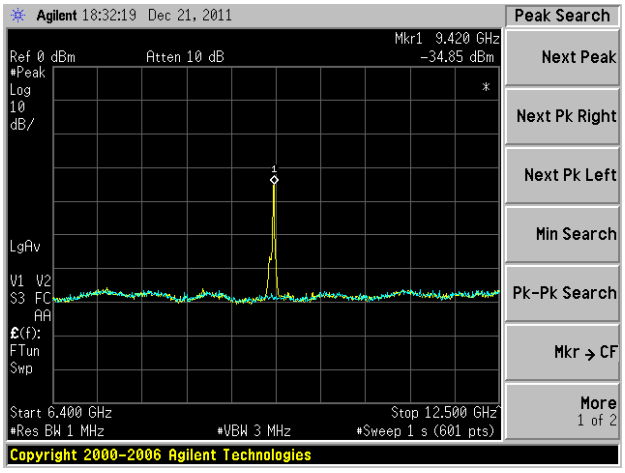
900MHz to 1GHz



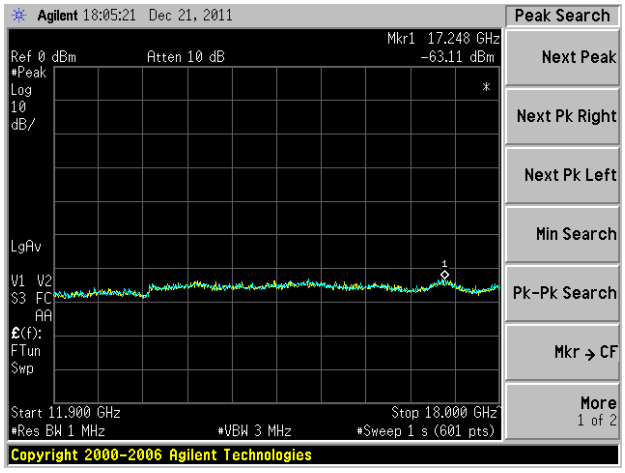
1GHz to 2.9GHz



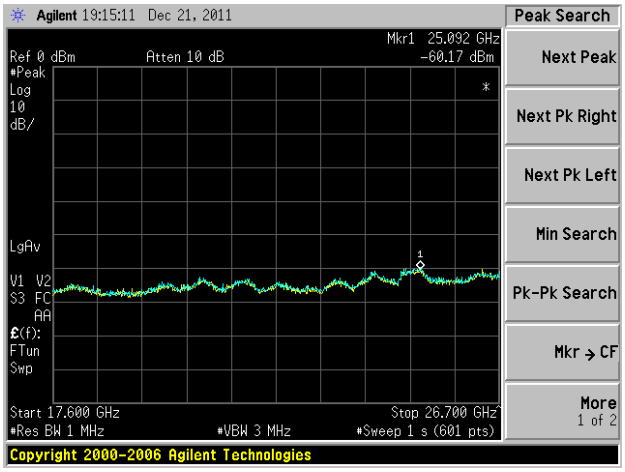
2.9GHz 6.4GHz



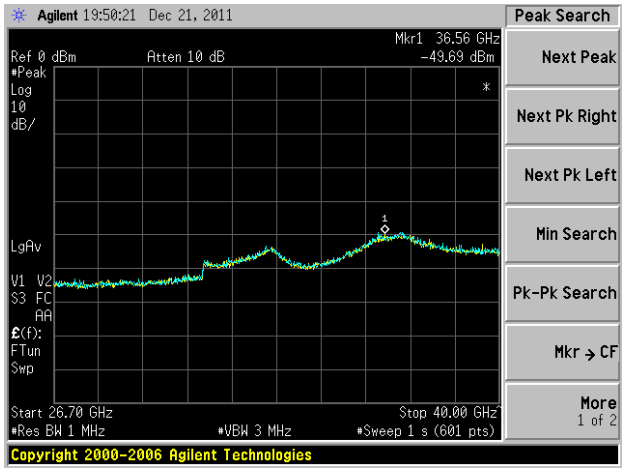
6.4GHz to 12.5GHz



11.9GHz to 18.0GHz



17.6GHz to 26.7GHz



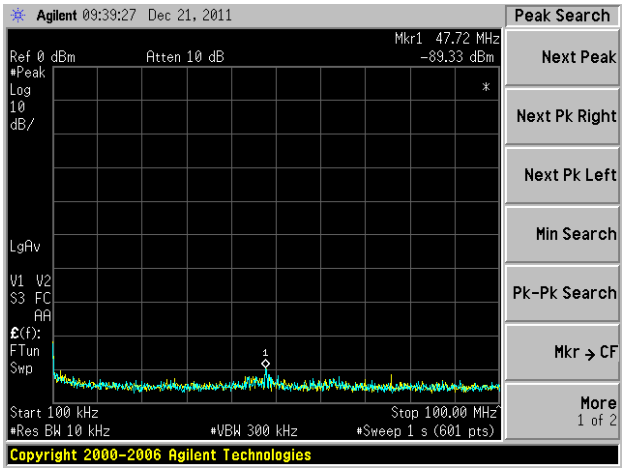
26.7GHz to 40GHz

4.3.10.4 TEST RESULTS of 0.08usec/2250Hz

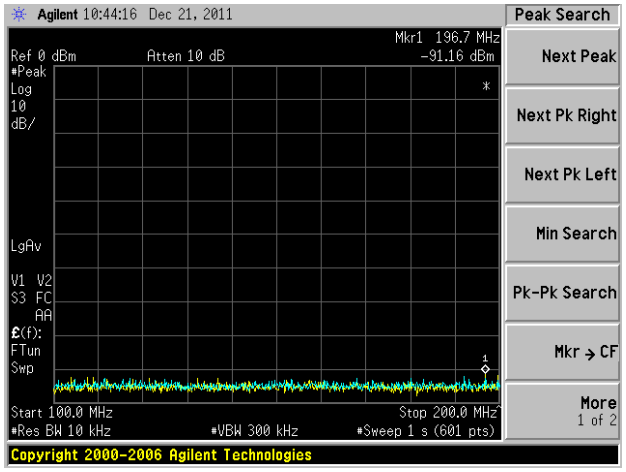
Horizontally Polarized 0.08usec/2250Hz							
Range	Frequency [MHz]	level [dBm]	Pg [dBm]	Cable Loss [dB]	Antenna Gain [dB]	Pd [dBm]	Radiated Spurious Emission [dBc]
10kHz – 100MHz	47.72	−89.33	−62.6	0.5	−11.48	−74.5	−142.0
100MHz – 200MHz	196.7	−91.16	less than the noise floor				less than the noise floor
200MHz – 300MHz	261	−92.07	less than the noise floor				less than the noise floor
300MHz – 400MHz	393.3	−91.32	less than the noise floor				less than the noise floor
400MHz – 500MHz	489.7	−91.73	less than the noise floor				less than the noise floor
500MHz – 600MHz	561.3	−91.71	less than the noise floor				less than the noise floor
600MHz – 700MHz	629.2	−91.29	less than the noise floor				less than the noise floor
700MHz – 800MHz	783.5	−91.98	less than the noise floor				less than the noise floor
800MHz – 900MHz	889.7	−91.55	less than the noise floor				less than the noise floor
900MHz – 1.0GHz	927.2	−92.18	less than the noise floor				less than the noise floor
1.0GHz – 2.9GHz	2735	−69.16	less than the noise floor				less than the noise floor
2.9GHz – 6.4GHz	3174	−67.96	less than the noise floor				less than the noise floor
6.4GHz – 12.5GHz	9420	−40.27	less than the noise floor				less than the noise floor
11.9G – 18GHz	15489	−63.37	less than the noise floor				less than the noise floor
17.6G – 26.7GHz	25032	−59.85	less than the noise floor				less than the noise floor
26.7G – 40.0GHz	37030	−49.42	less than the noise floor				less than the noise floor

Vertically Polarized 0.08usec/2250Hz							
Range	Frequency [MHz]	level [dBm]	Pg [dBm]	Cable Loss [dB]	Antenna Gain [dB]	Pd [dBm]	Radiated Spurious Emission [dBc]
10kHz – 100MHz	40.01	−82.16	−50.2	0.5	−11.48	−62.1	−129.6
100MHz – 200MHz	150.2	−90.38	−65.3	0.5	−4.48	−70.3	−137.7
200MHz – 300MHz	236	−90.85	−63.4	0.5	−3.26	−67.1	−134.6
300MHz – 400MHz	354.8	−91.73	less than the noise floor				less than the noise floor
400MHz – 500MHz	498	−90.64	less than the noise floor				less than the noise floor
500MHz – 600MHz	506.2	−90.77	−76.6	0.5	3.05	−74.0	−141.5
600MHz – 700MHz	683.3	−92.29	less than the noise floor				less than the noise floor
700MHz – 800MHz	793.2	−91.62	less than the noise floor				less than the noise floor
800MHz – 900MHz	808.5	−92.06	less than the noise floor				less than the noise floor
900MHz – 1.0GHz	938.7	−92.11	less than the noise floor				less than the noise floor
1.0GHz – 2.9GHz	2264	−69.33	less than the noise floor				less than the noise floor
2.9GHz – 6.4GHz	3232	−68.05	less than the noise floor				less than the noise floor
6.4GHz – 12.5GHz	9420	−34.45	less than the noise floor				less than the noise floor
11.9G – 18GHz	17207	−62.96	less than the noise floor				less than the noise floor
17.6G – 26.7GHz	25047	−59.47	less than the noise floor				less than the noise floor
26.7G – 40.0GHz	37010	−49.81	less than the noise floor				less than the noise floor

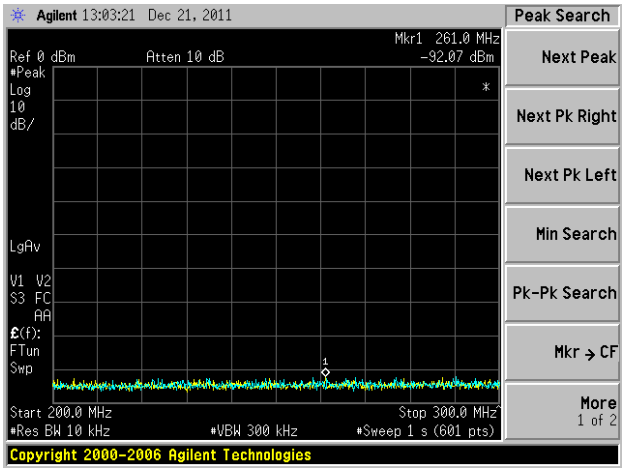
·Horizontally Polarized



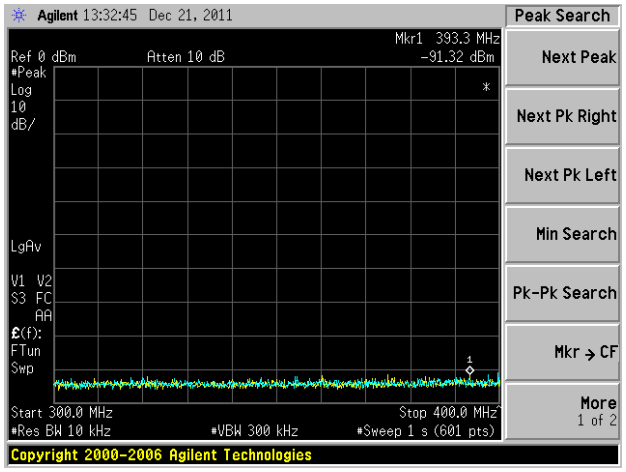
10kHz to 100MHz



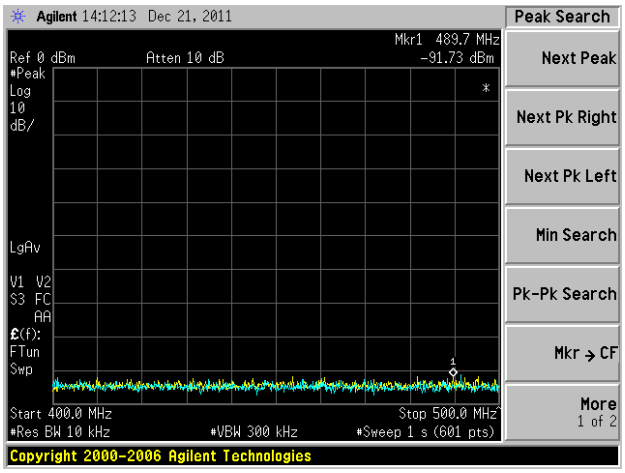
100MHz to 200MHz



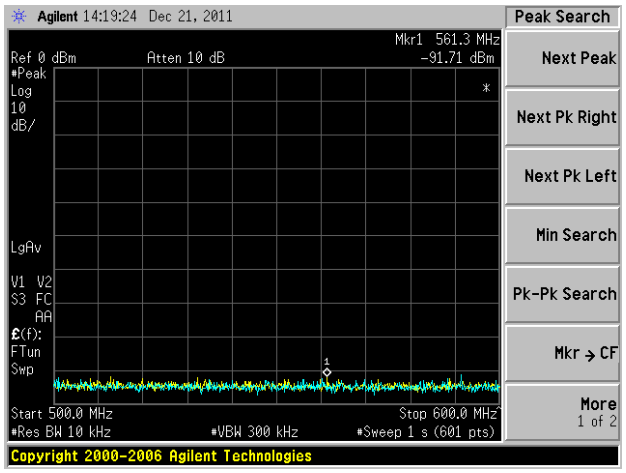
200MHz to 300MHz



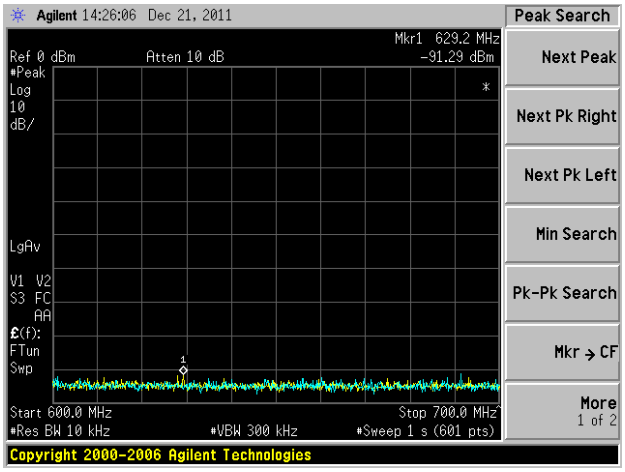
300MHz to 400MHz



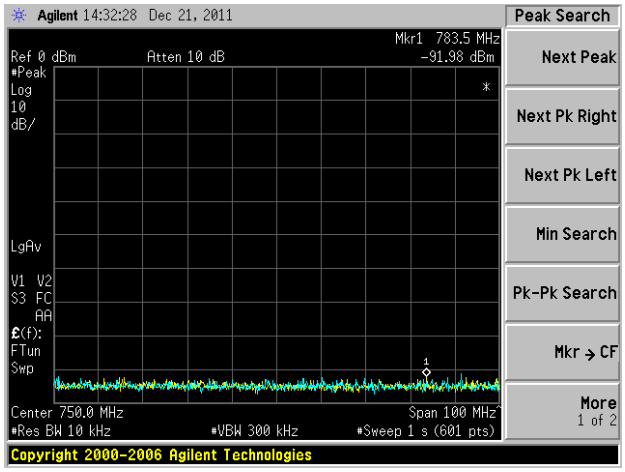
400MHz to 500MHz



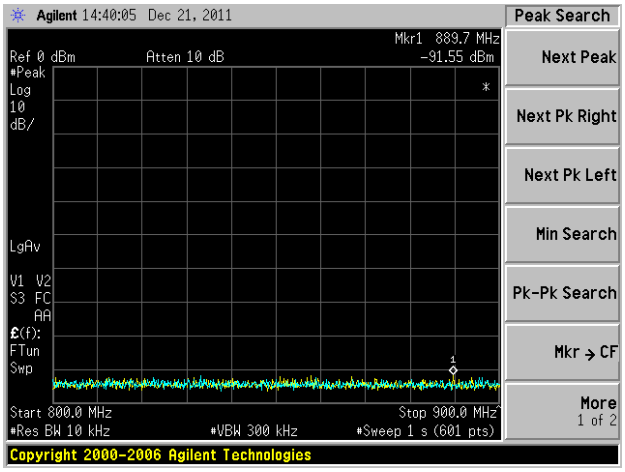
500MHz to 600MHz



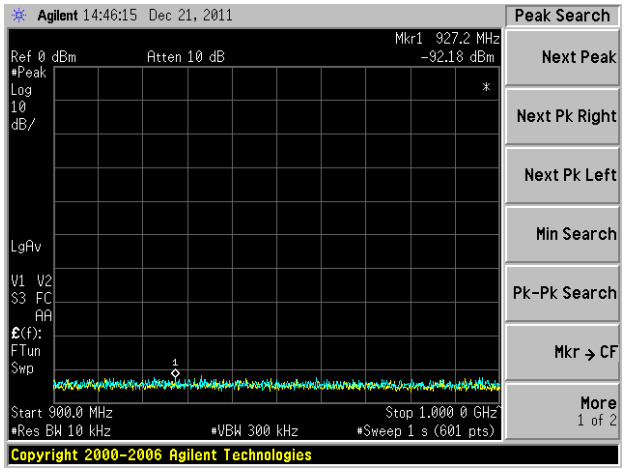
600MHz to 700MHz



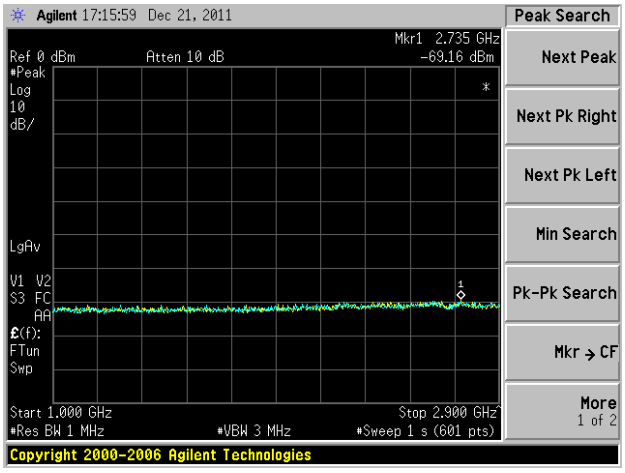
700MHz to 800MHz



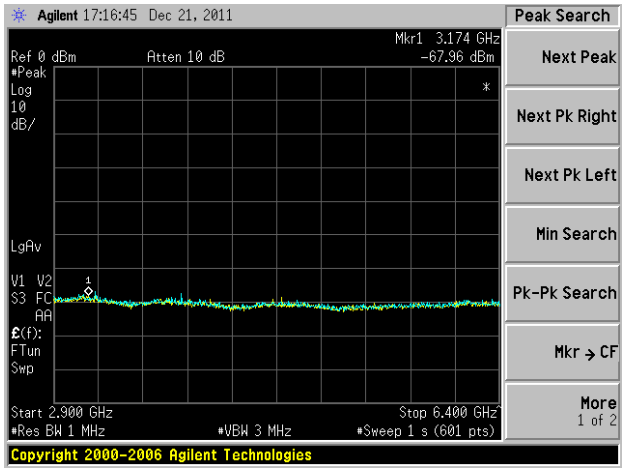
800MHz to 900MHz



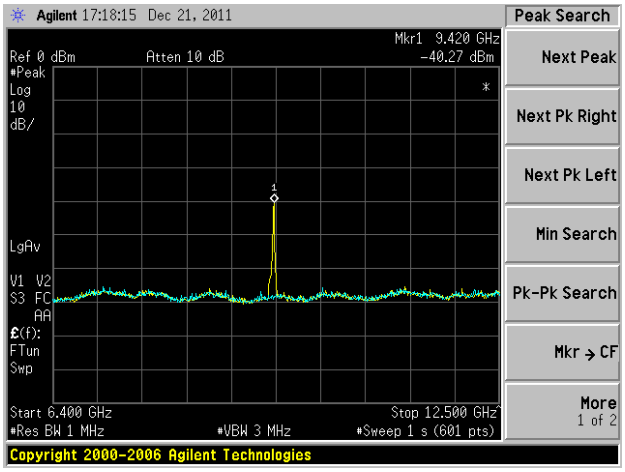
900MHz to 1GHz



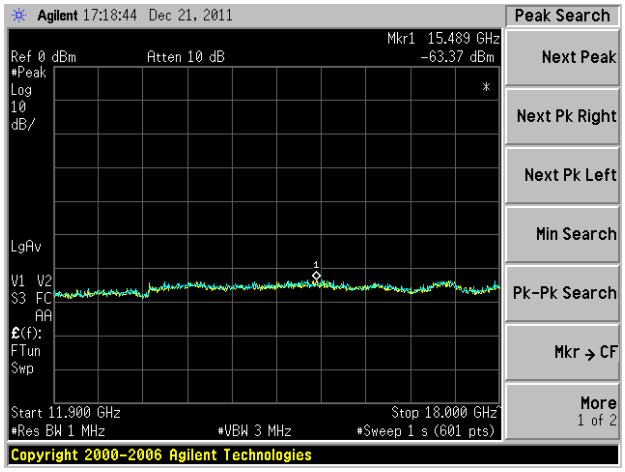
1GHz to 2.9GHz



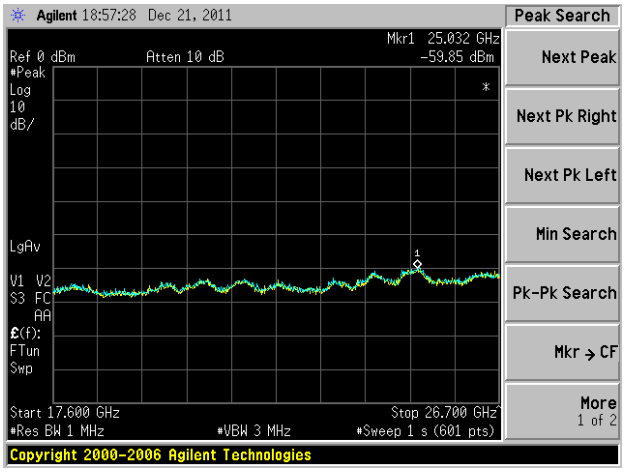
2.9GHz to 6.4GHz



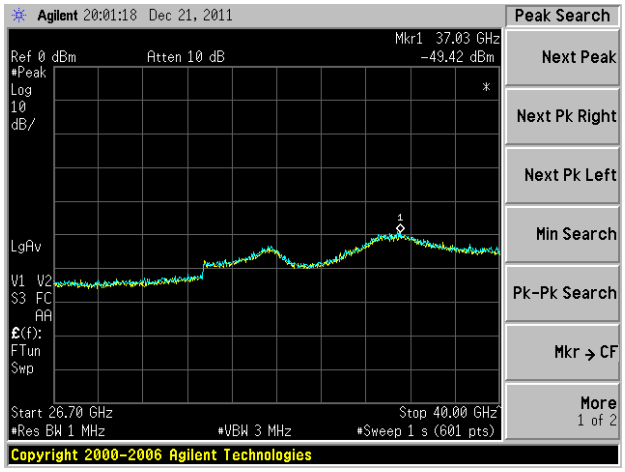
6.4GHz to 12.5GHz



11.9GHz to 18GHz

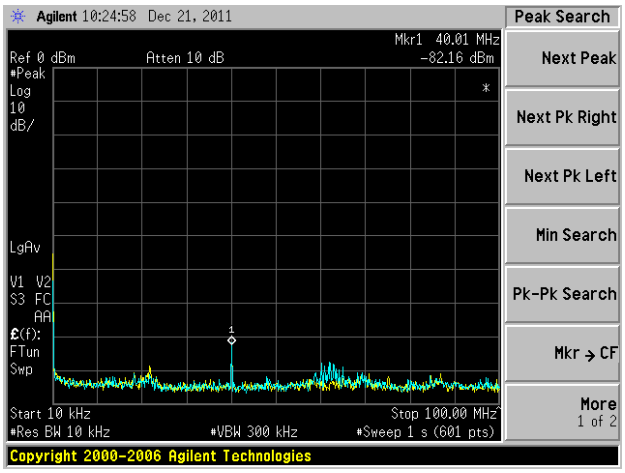


17.6GHz to 26.7GHz

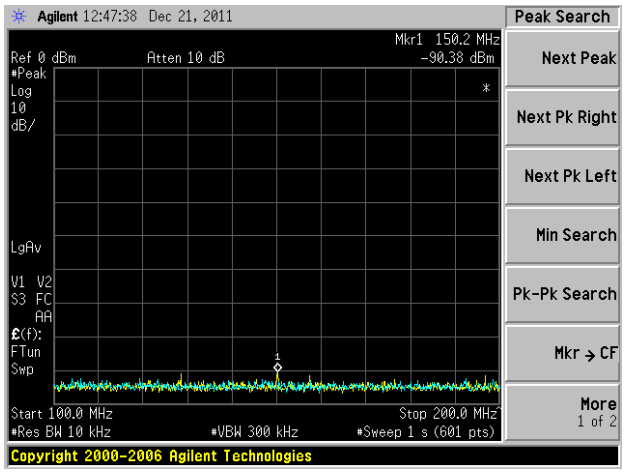


26.5GHz to 40.0GHz

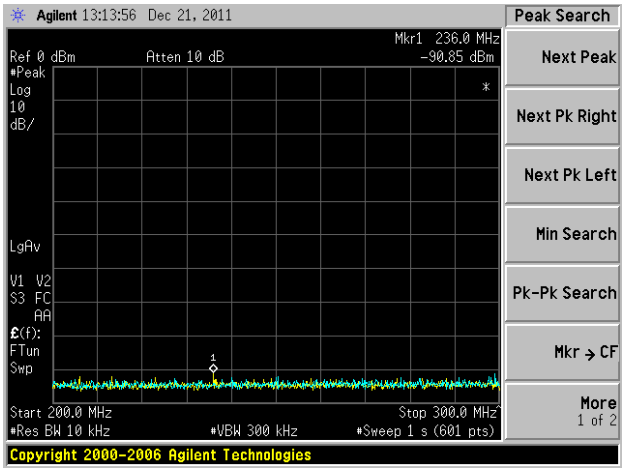
·Vertically Polarized



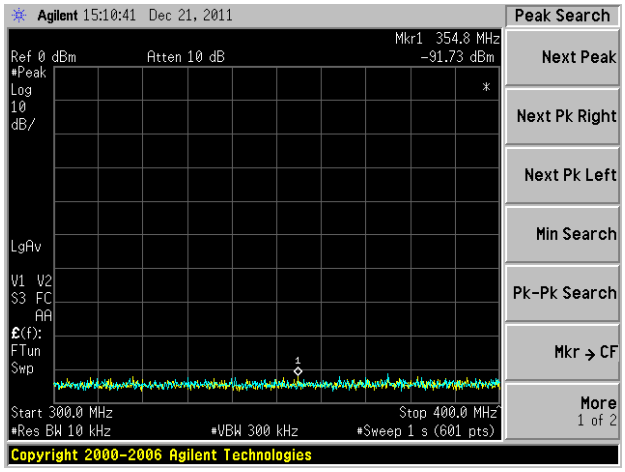
10kHz to 100MHz



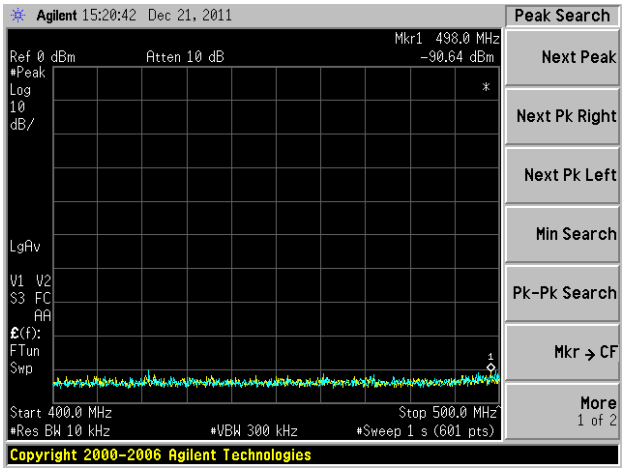
100MHz to 200MHz



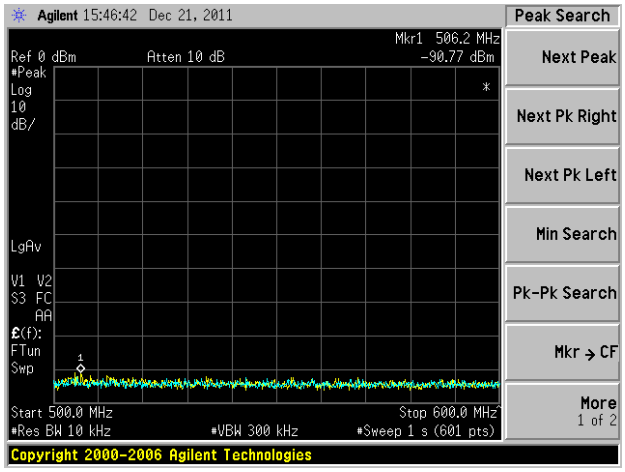
200MHz to 300MHz



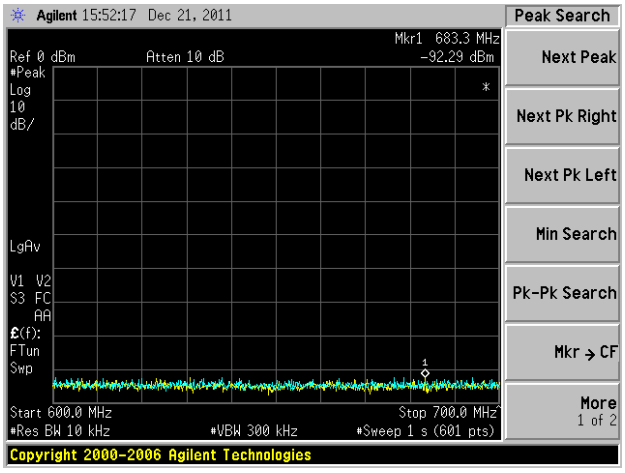
300MHz to 400MHz



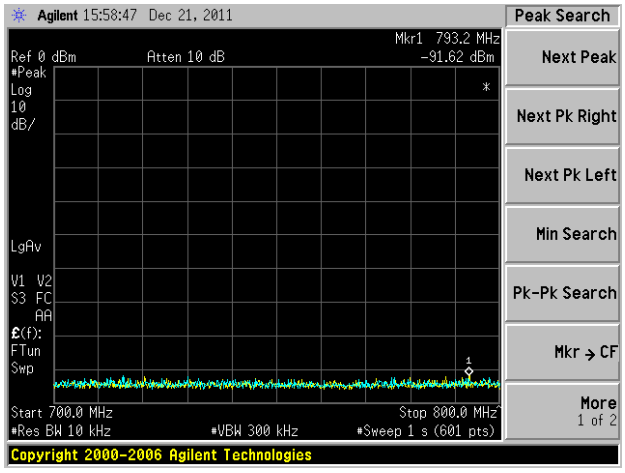
400MHz to 500MHz



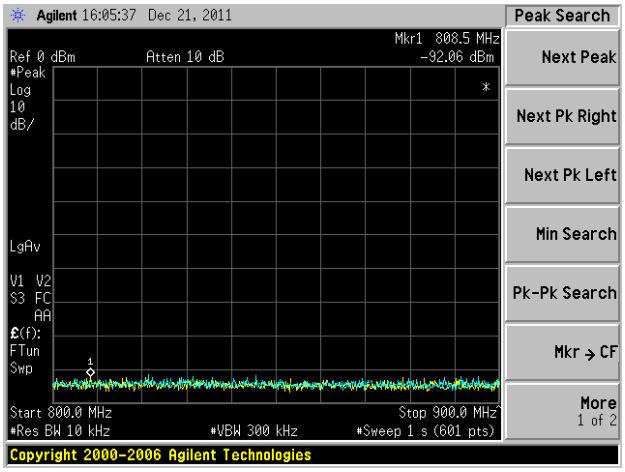
500MHz to 600MHz



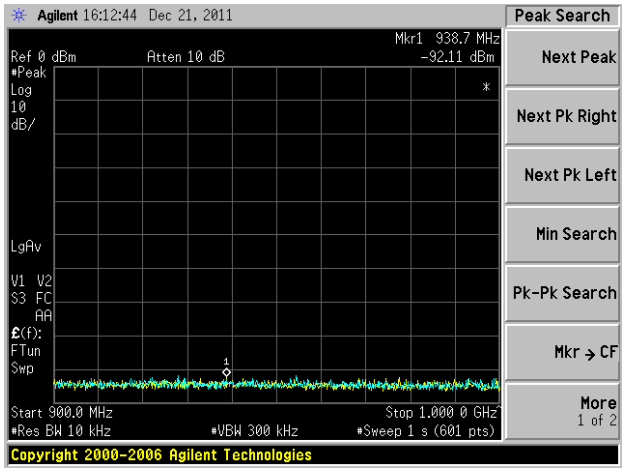
600MHz to 700MHz



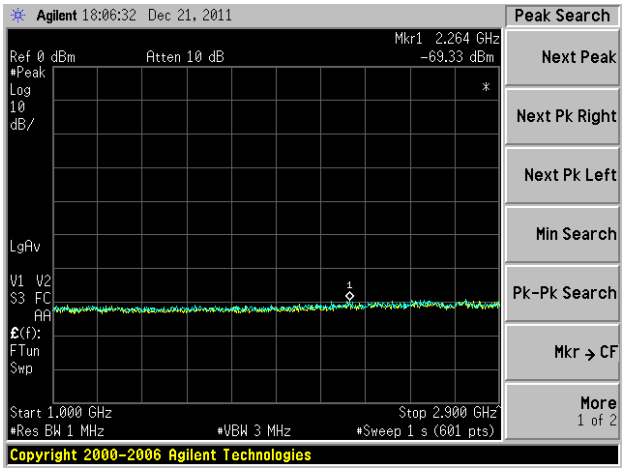
700MHz to 800MHz



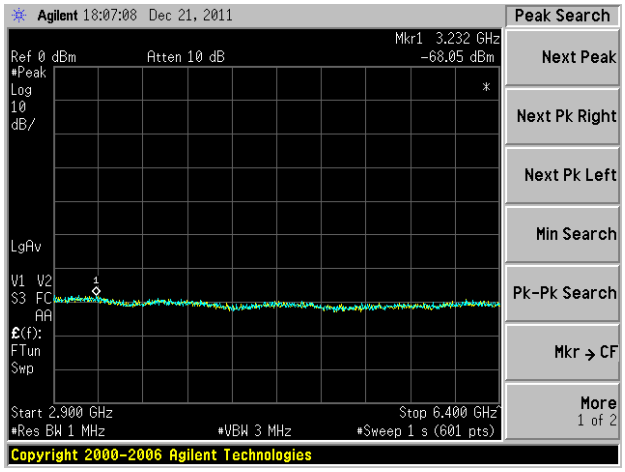
800MHz to 900MHz



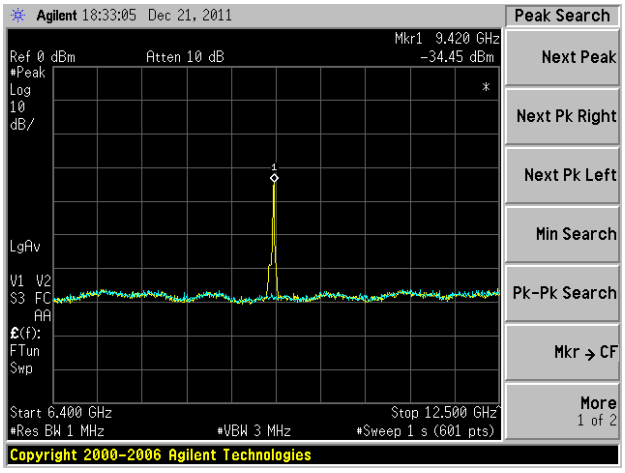
900MHz to 1GHz



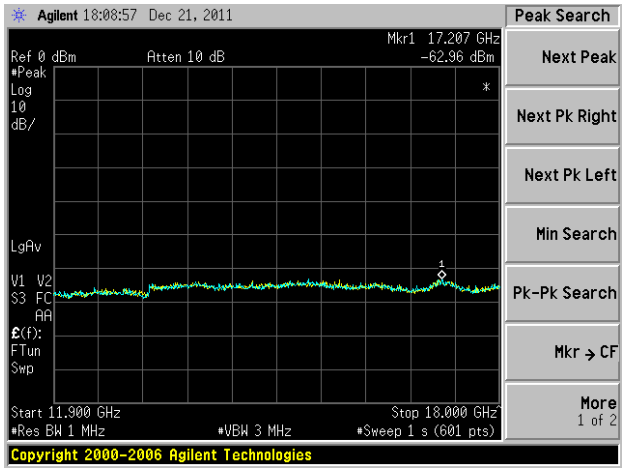
1GHz to 2.9GHz



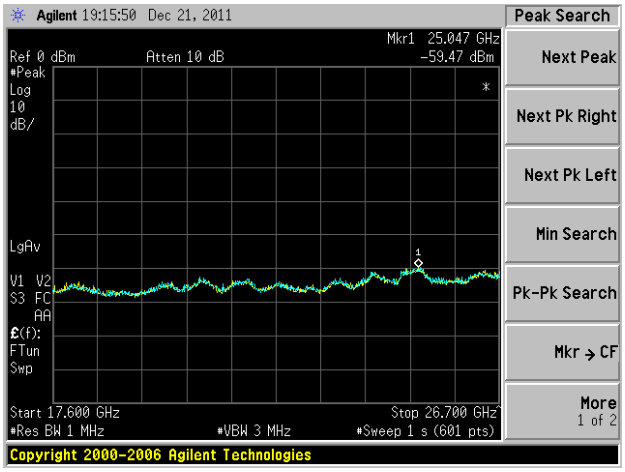
2.9GHz 6.4GHz



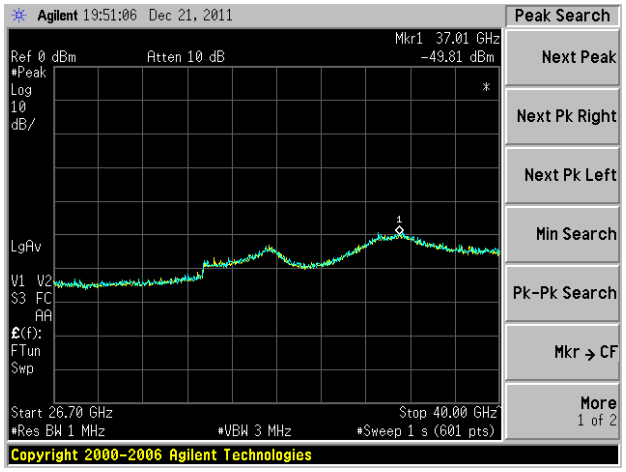
6.4GHz to 12.5GHz



11.9GHz to 18.0GHz



17.6GHz to 26.7GHz



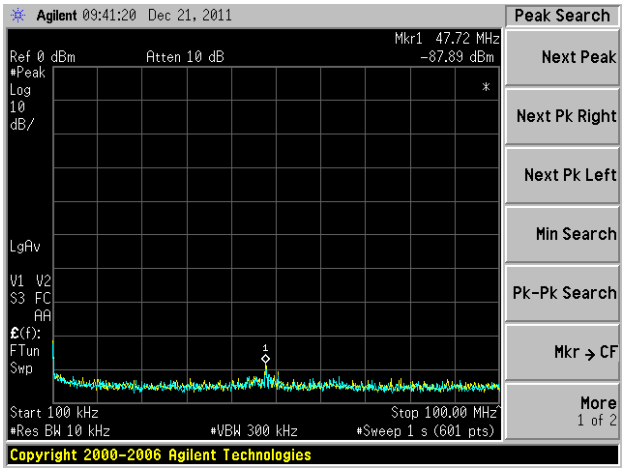
26.7GHz to 40GHz

4.3.10.5 TEST RESULTS of 0.13usec/1700Hz

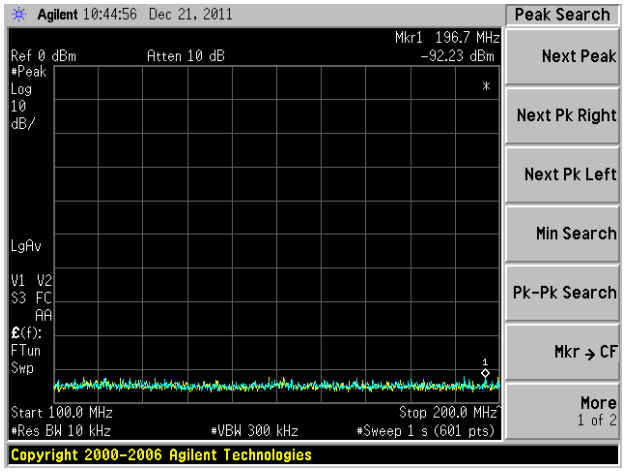
Horizontally Polarized 0.13usec/1700Hz							
Range	Frequency [MHz]	level [dBm]	Pg [dBm]	Cable Loss [dB]	Antenna Gain [dB]	Pd [dBm]	Radiated Spurious Emission [dBc]
10kHz – 100MHz	47.72	−87.89	−61.1	0.5	−11.48	−73.1	−140.6
100MHz – 200MHz	196.7	−92.23	less than the noise floor				less than the noise floor
200MHz – 300MHz	281.5	−91.79	less than the noise floor				less than the noise floor
300MHz – 400MHz	375	−90.71	less than the noise floor				less than the noise floor
400MHz – 500MHz	457.5	−91.07	less than the noise floor				less than the noise floor
500MHz – 600MHz	522.8	−91.89	less than the noise floor				less than the noise floor
600MHz – 700MHz	629.2	−90.68	less than the noise floor				less than the noise floor
700MHz – 800MHz	777.7	−91.14	less than the noise floor				less than the noise floor
800MHz – 900MHz	870.2	−90.82	less than the noise floor				less than the noise floor
900MHz – 1.0GHz	936.8	−92.19	less than the noise floor				less than the noise floor
1.0GHz – 2.9GHz	2615	−69.6	less than the noise floor				less than the noise floor
2.9GHz – 6.4GHz	3058	−68.15	less than the noise floor				less than the noise floor
6.4GHz – 12.5GHz	9420	−35.37	less than the noise floor				less than the noise floor
11.9G – 18GHz	13893	−63.01	less than the noise floor				less than the noise floor
17.6G – 26.7GHz	24880	−59.69	less than the noise floor				less than the noise floor
26.7G – 40.0GHz	36740	−49.53	less than the noise floor				less than the noise floor

Vertically Polarized 0.13usec/1700Hz							
Range	Frequency [MHz]	level [dBm]	Pg [dBm]	Cable Loss [dB]	Antenna Gain [dB]	Pd [dBm]	Radiated Spurious Emission [dBc]
10kHz – 100MHz	40.01	−81.75	−49.8	0.5	−11.48	−61.7	−129.2
100MHz – 200MHz	150.2	−89.34	−64.2	0.5	−4.48	−69.2	−136.7
200MHz – 300MHz	240	−90.95	−63.1	0.5	−3.26	−66.8	−134.3
300MHz – 400MHz	390.7	−90.72	less than the noise floor				less than the noise floor
400MHz – 500MHz	421.3	−89.96	less than the noise floor				less than the noise floor
500MHz – 600MHz	512	−89.01	−74.9	0.5	3.05	−72.4	−139.8
600MHz – 700MHz	697.8	−91.29	less than the noise floor				less than the noise floor
700MHz – 800MHz	793.2	−94.99	less than the noise floor				less than the noise floor
800MHz – 900MHz	829.2	−91.94	less than the noise floor				less than the noise floor
900MHz – 1.0GHz	928.3	−91.64	less than the noise floor				less than the noise floor
1.0GHz – 2.9GHz	2618	−69.71	less than the noise floor				less than the noise floor
2.9GHz – 6.4GHz	3203	−67.73	less than the noise floor				less than the noise floor
6.4GHz – 12.5GHz	9420	−32.24	less than the noise floor				less than the noise floor
11.9G – 18GHz	17298	−63.55	less than the noise floor				less than the noise floor
17.6G – 26.7GHz	25077	−59.78	less than the noise floor				less than the noise floor
26.7G – 40.0GHz	37100	−49.82	less than the noise floor				less than the noise floor

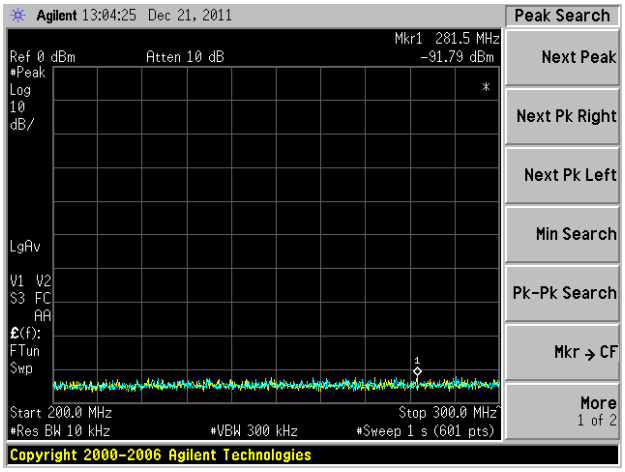
·Horizontally Polarized



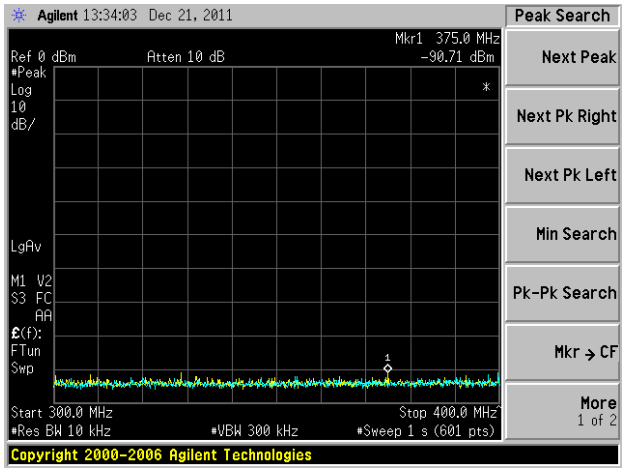
10kHz to 100MHz



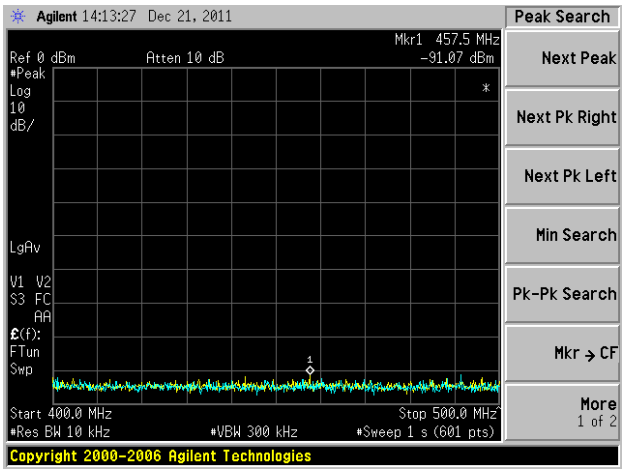
100MHz to 200MHz



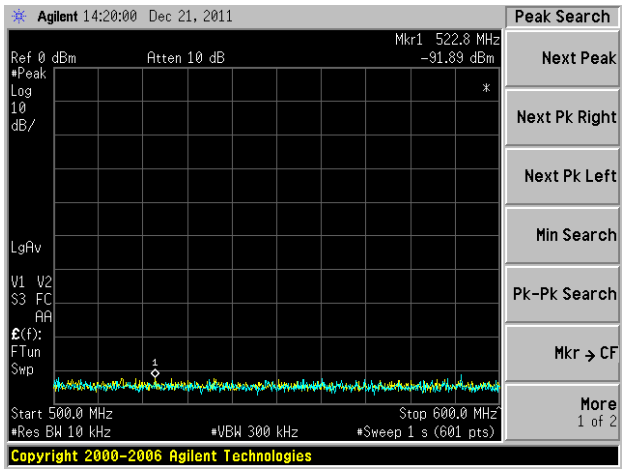
200MHz to 300MHz



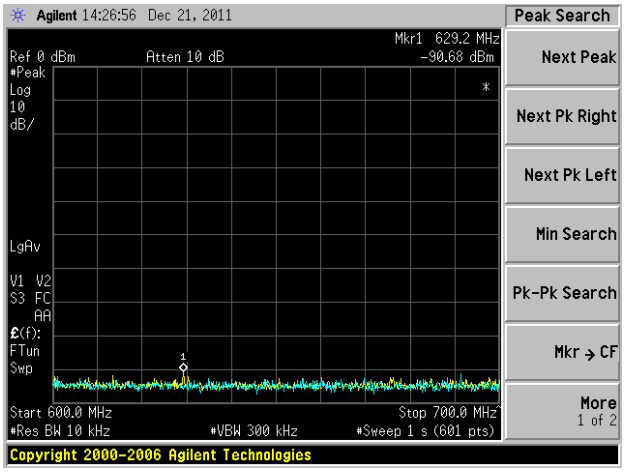
300MHz to 400MHz



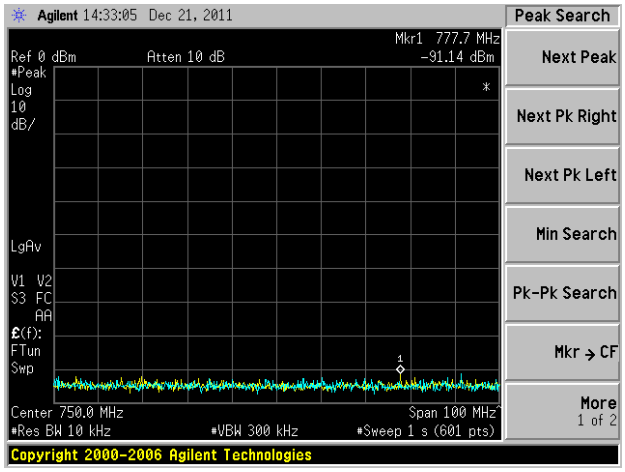
400MHz to 500MHz



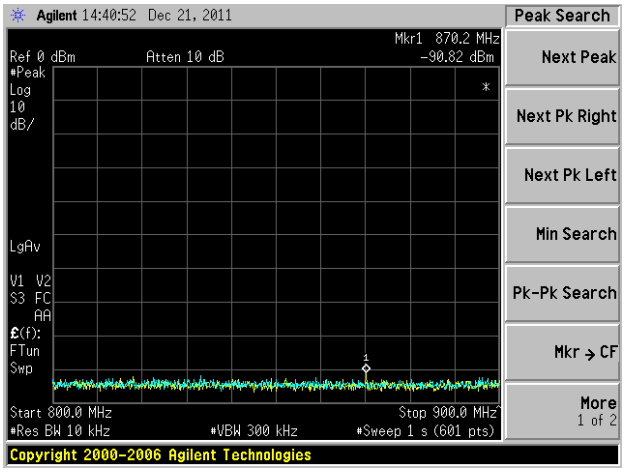
500MHz to 600MHz



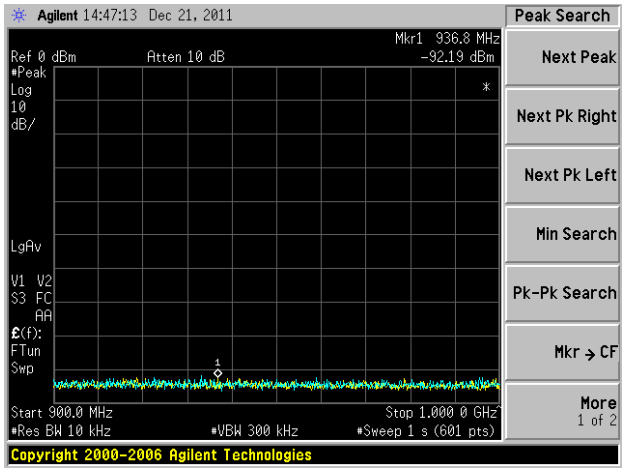
600MHz to 700MHz



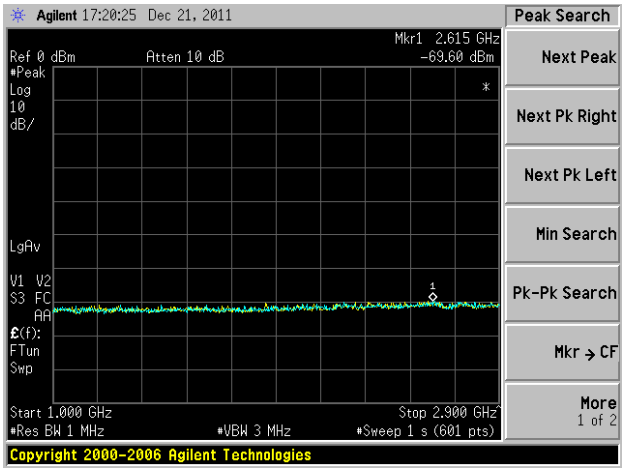
700MHz to 800MHz



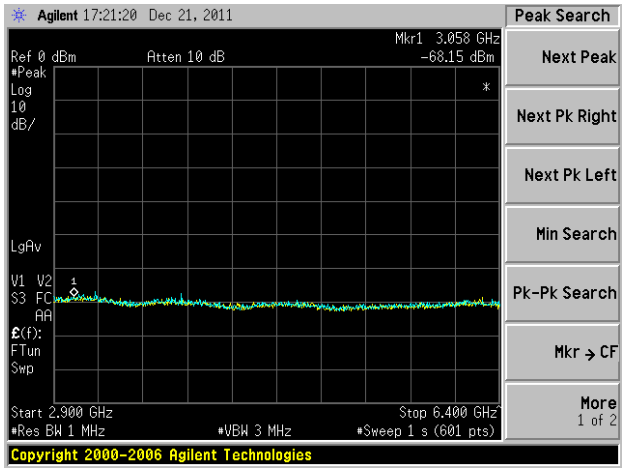
800MHz to 900MHz



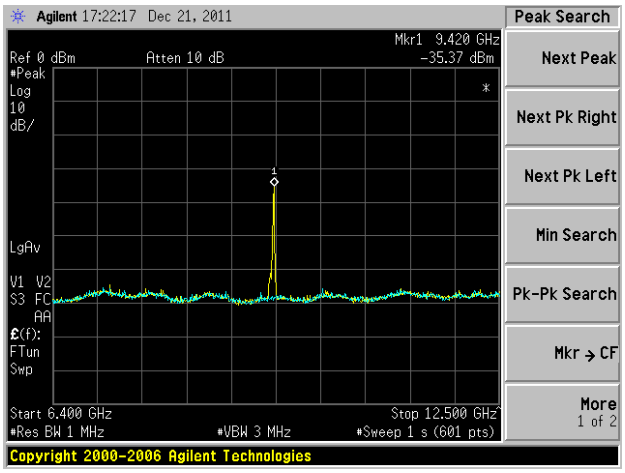
900MHz to 1GHz



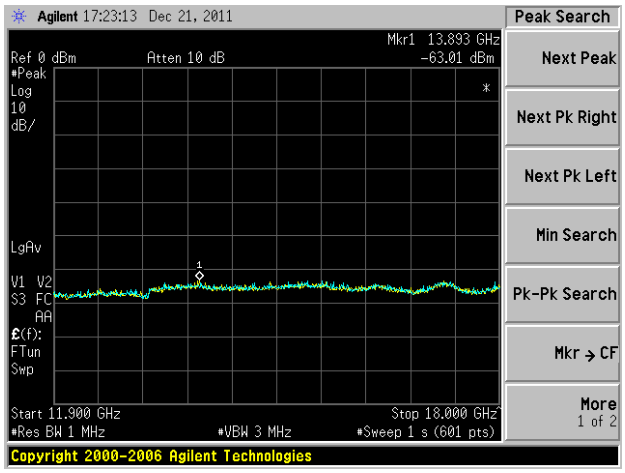
1GHz to 2.9GHz



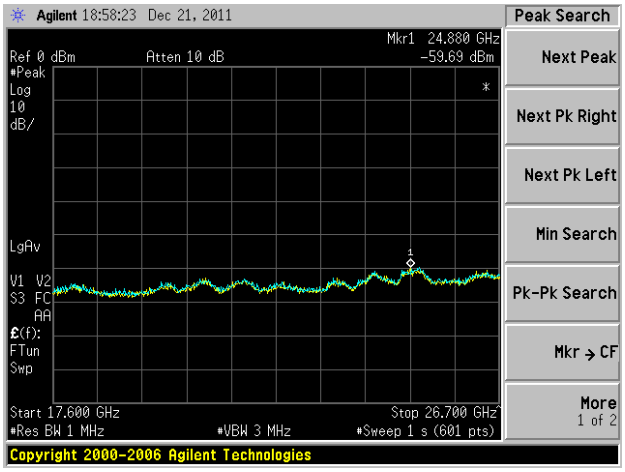
2.9GHz to 6.4GHz



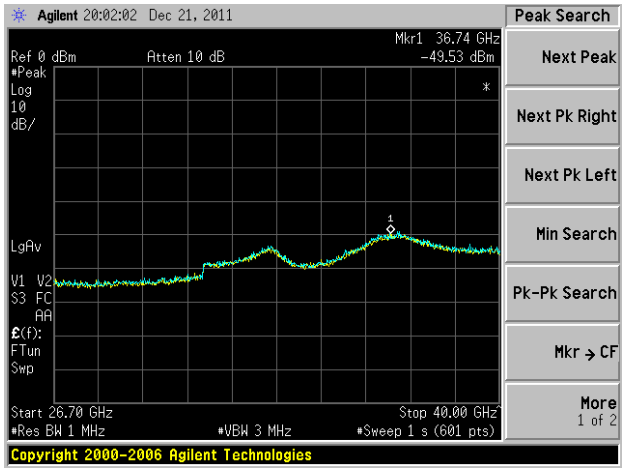
6.4GHz to 12.5GHz



11.9GHz to 18GHz

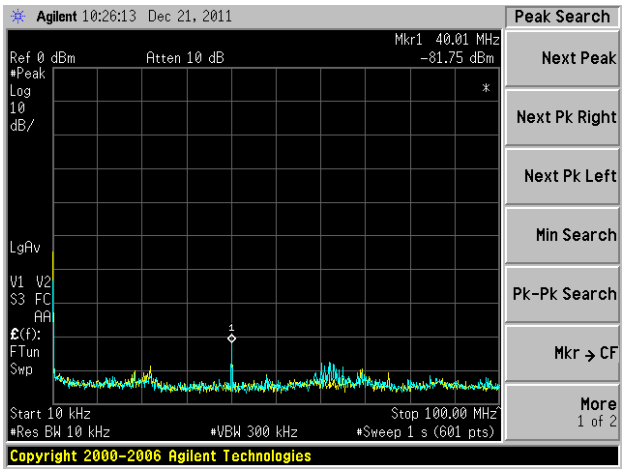


17.6GHz to 26.7GHz

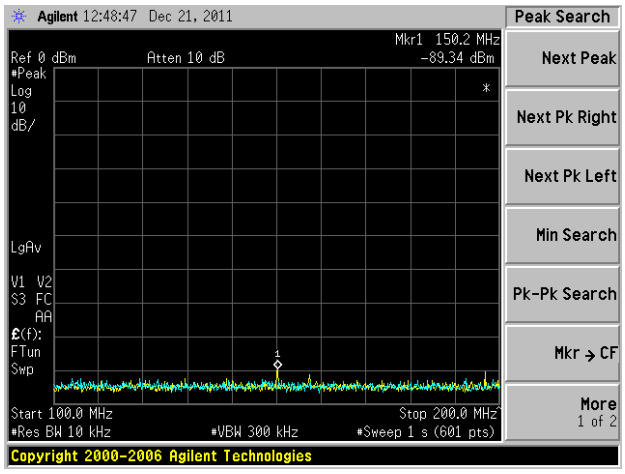


26.7GHz to 40.0GHz

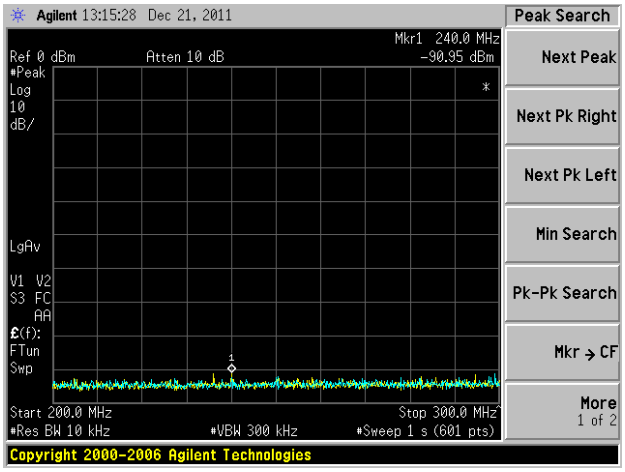
·Vertically Polarized



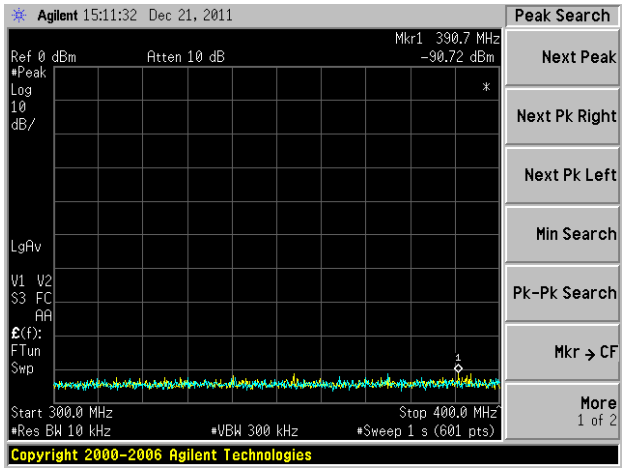
10kHz to 100MHz



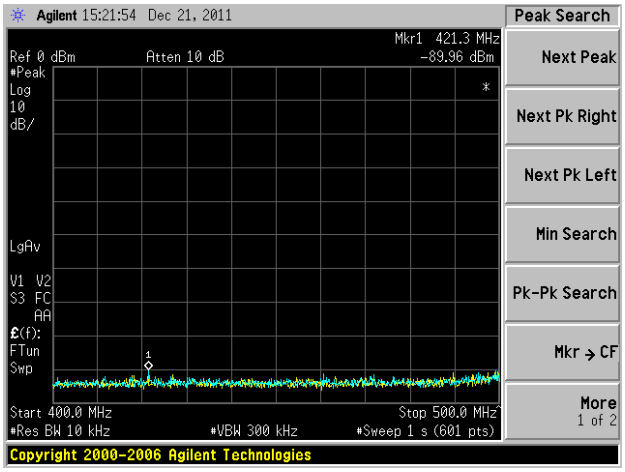
100MHz to 200MHz



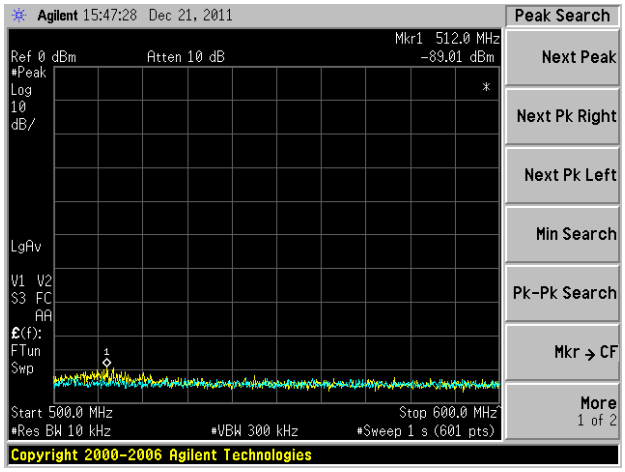
200MHz to 300MHz



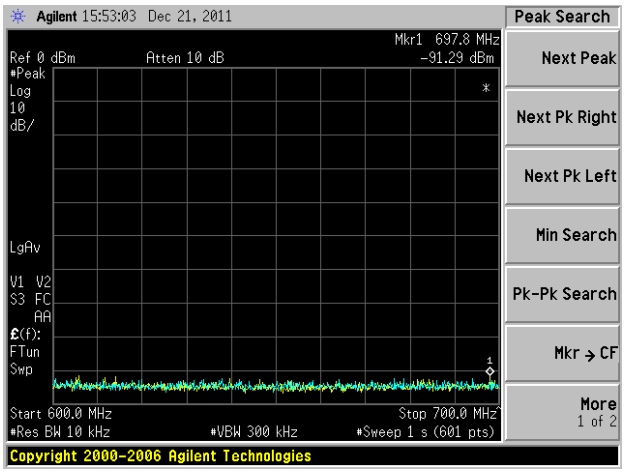
300MHz to 400MHz



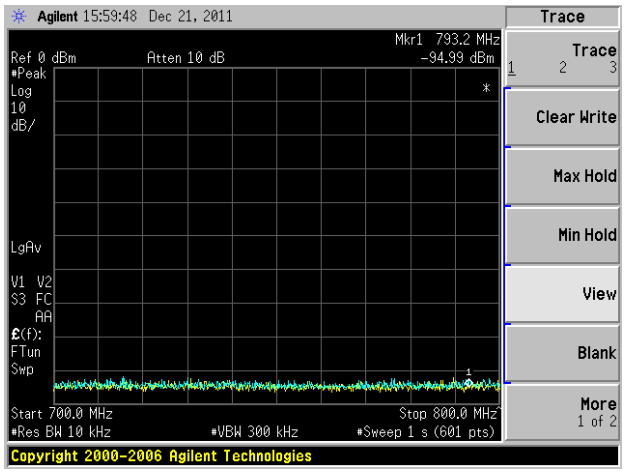
400MHz to 500MHz



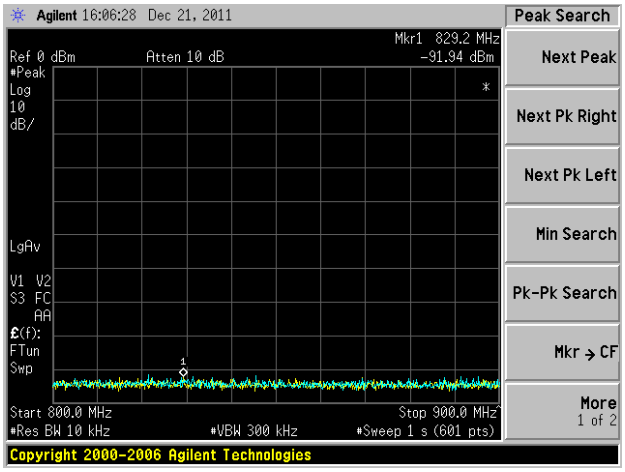
500MHz to 600MHz



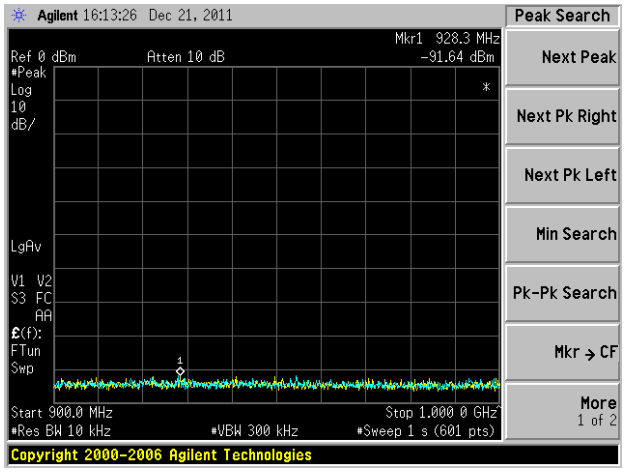
600MHz to 700MHz



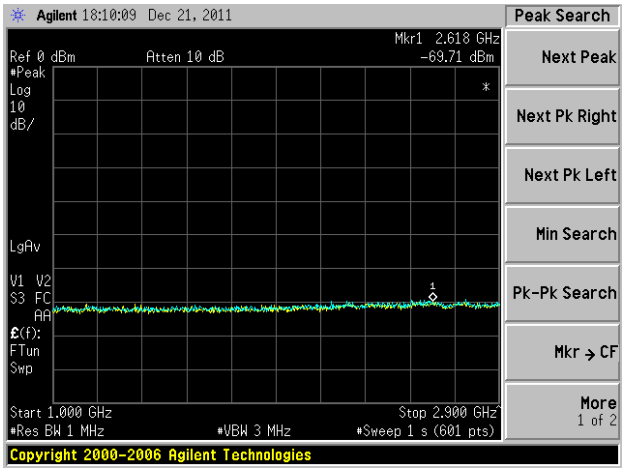
700MHz to 800MHz



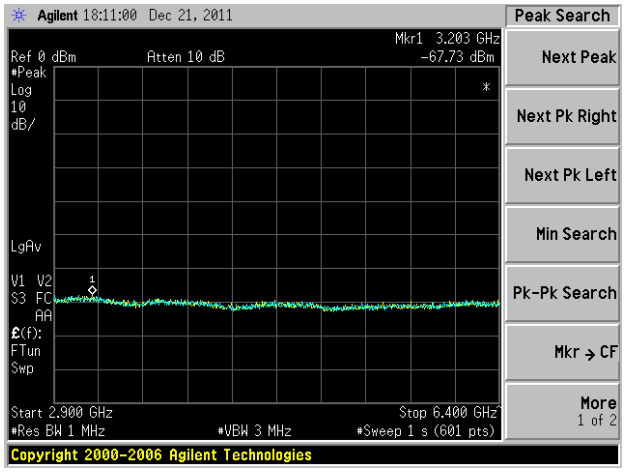
800MHz to 900MHz



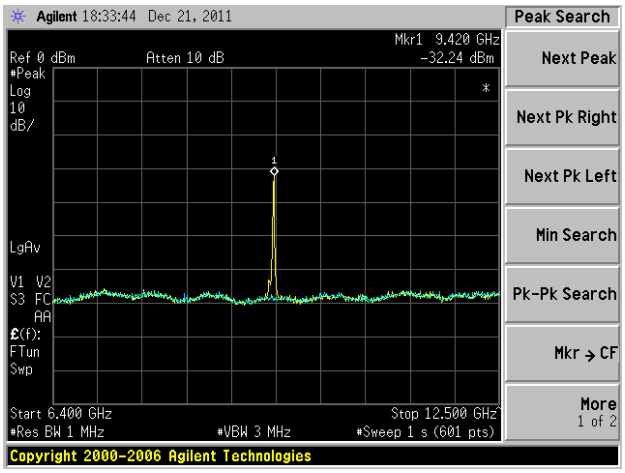
900MHz to 1GHz



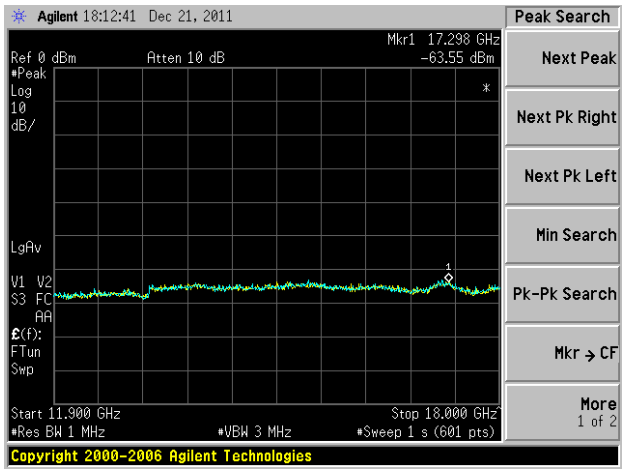
1GHz to 2.9GHz



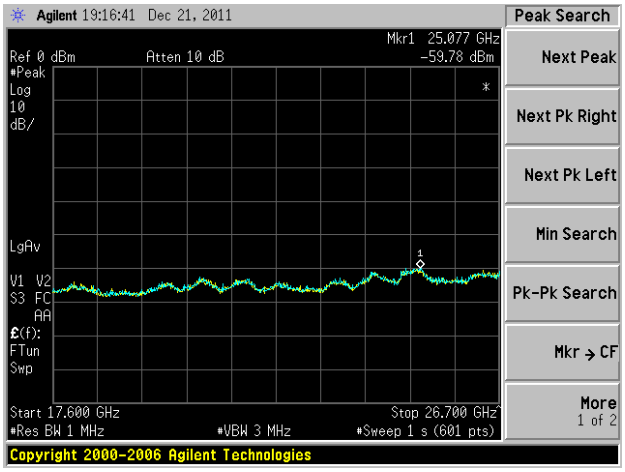
2.9GHz 6.4GHz



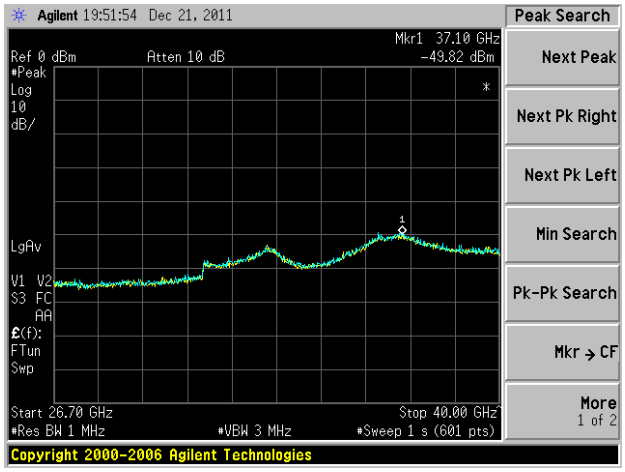
6.4GHz to 12.5GHz



11.9GHz to 18.0GHz



17.6GHz to 26.7GHz



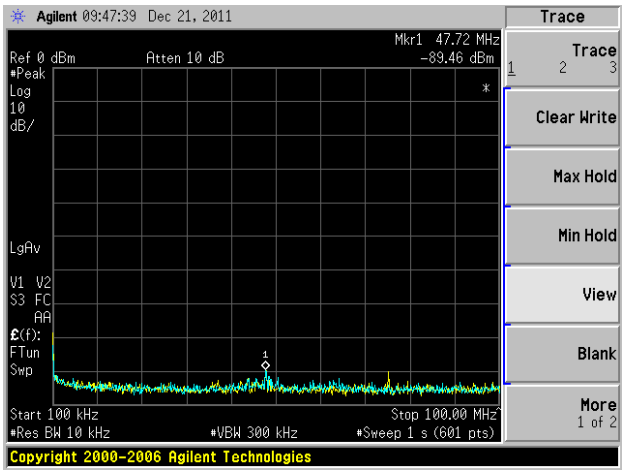
26.7GHz to 40GHz

4.3.10.6 TEST RESULTS of 0.25usec/1700Hz

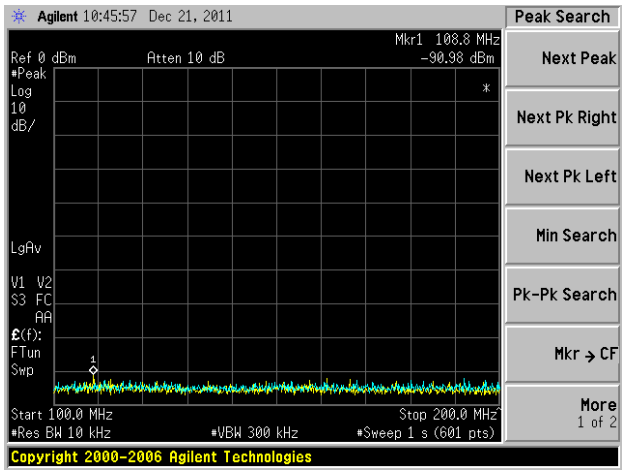
Horizontally Polarized 0.25usec/1700Hz							
Range	Frequency [MHz]	level [dBm]	Pg [dBm]	Cable Loss [dB]	Antenna Gain [dB]	Pd [dBm]	Radiated Spurious Emission [dBc]
10kHz – 100MHz	47.72	−89.46	−62.7	0.5	−11.48	−74.7	−142.1
100MHz – 200MHz	108.8	−90.98	less than the noise floor				less than the noise floor
200MHz – 300MHz	297.5	−92.07	less than the noise floor				less than the noise floor
300MHz – 400MHz	398.3	−90.73	less than the noise floor				less than the noise floor
400MHz – 500MHz	476.2	−91.3	less than the noise floor				less than the noise floor
500MHz – 600MHz	521.2	−91.98	less than the noise floor				less than the noise floor
600MHz – 700MHz	601	−91.78	less than the noise floor				less than the noise floor
700MHz – 800MHz	748.3	−91.38	less than the noise floor				less than the noise floor
800MHz – 900MHz	856.8	−92.02	less than the noise floor				less than the noise floor
900MHz – 1.0GHz	992.5	−92.06	less than the noise floor				less than the noise floor
1.0GHz – 2.9GHz	2650	−69.53	less than the noise floor				less than the noise floor
2.9GHz – 6.4GHz	3168	−67.74	less than the noise floor				less than the noise floor
6.4GHz – 12.5GHz	9420	−31.45	less than the noise floor				less than the noise floor
11.9G – 18GHz	15408	−64.52	less than the noise floor				less than the noise floor
17.6G – 26.7GHz	24956	−59.84	less than the noise floor				less than the noise floor
26.7G – 40.0GHz	37140	−49.91	less than the noise floor				less than the noise floor

Vertically Polarized 0.25usec/1700Hz							
Range	Frequency [MHz]	level [dBm]	Pg [dBm]	Cable Loss [dB]	Antenna Gain [dB]	Pd [dBm]	Radiated Spurious Emission [dBc]
10kHz – 100MHz	40.01	−81.5	−49.5	0.5	−11.48	−61.5	−129.0
100MHz – 200MHz	150.2	−89.31	−64.2	0.5	−4.48	−69.2	−136.7
200MHz – 300MHz	236	−92.55	−65.1	0.5	−3.26	−68.8	−136.3
300MHz – 400MHz	353.8	−91.58	less than the noise floor				less than the noise floor
400MHz – 500MHz	497.7	−88.77	less than the noise floor				less than the noise floor
500MHz – 600MHz	509.3	−89.21	−74.3	0.5	3.05	−71.8	−139.2
600MHz – 700MHz	675.3	−91.4	less than the noise floor				less than the noise floor
700MHz – 800MHz	736.3	−92.03	less than the noise floor				less than the noise floor
800MHz – 900MHz	844	−91.24	less than the noise floor				less than the noise floor
900MHz – 1.0GHz	930.5	−91.64	less than the noise floor				less than the noise floor
1.0GHz – 2.9GHz	2343	−69.31	less than the noise floor				less than the noise floor
2.9GHz – 6.4GHz	3168	−67.57	less than the noise floor				less than the noise floor
6.4GHz – 12.5GHz	9409	−23.48	less than the noise floor				less than the noise floor
11.9G – 18GHz	17319	−63.32	less than the noise floor				less than the noise floor
17.6G – 26.7GHz	24986	−59.66	less than the noise floor				less than the noise floor
26.7G – 40.0GHz	36870	−49.52	less than the noise floor				less than the noise floor

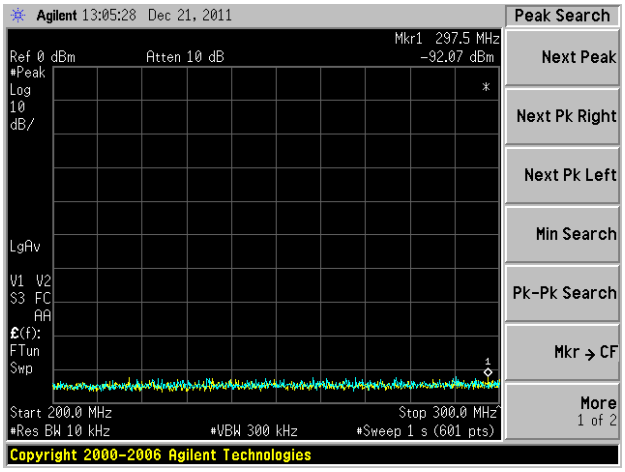
·Horizontally Polarized



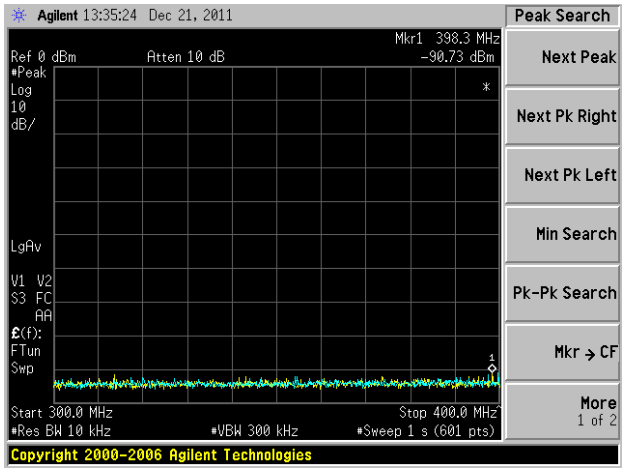
10kHz to 100MHz



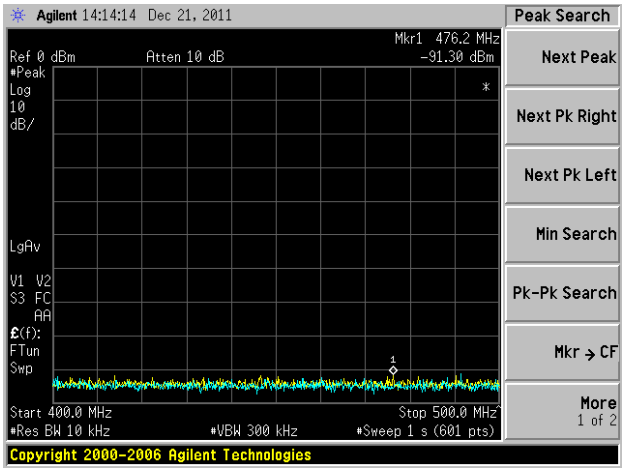
100MHz to 200MHz



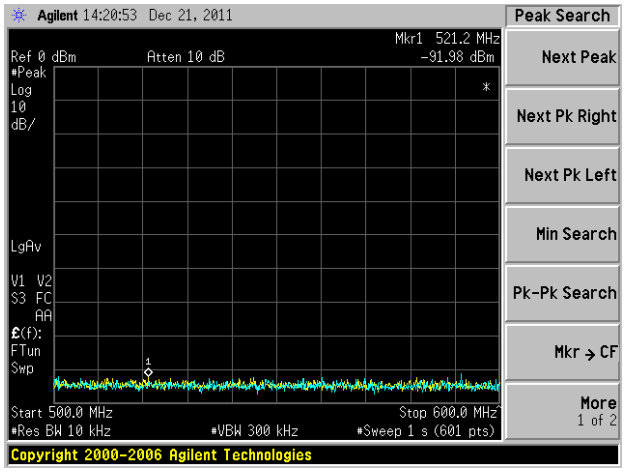
200MHz to 300MHz



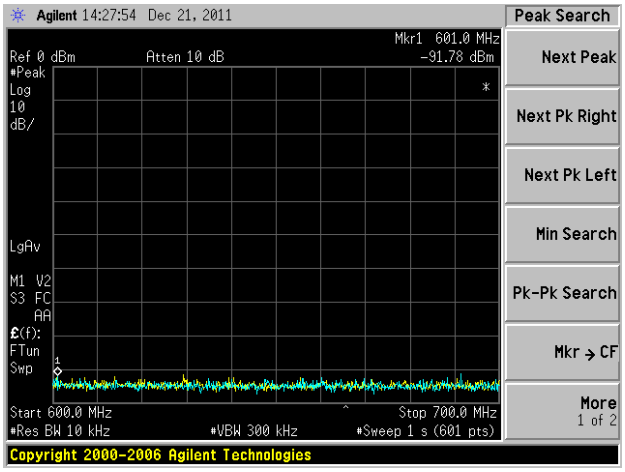
300MHz to 400MHz



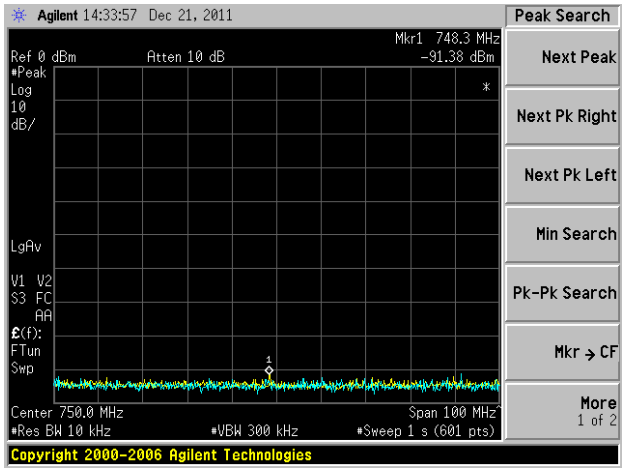
400MHz to 500MHz



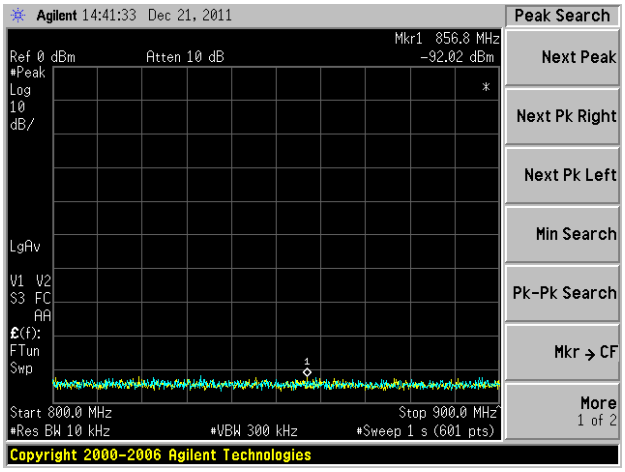
500MHz to 600MHz



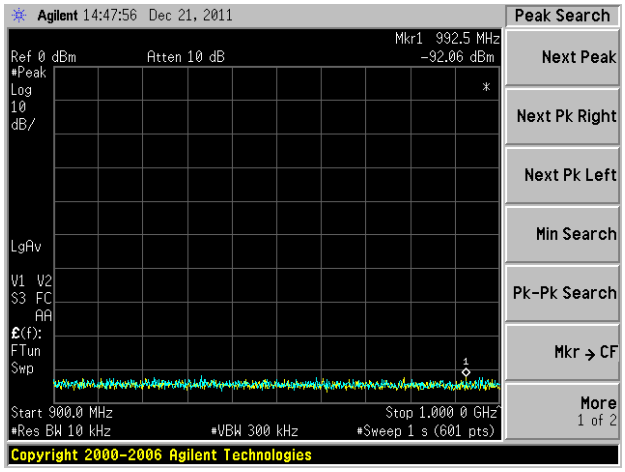
600MHz to 700MHz



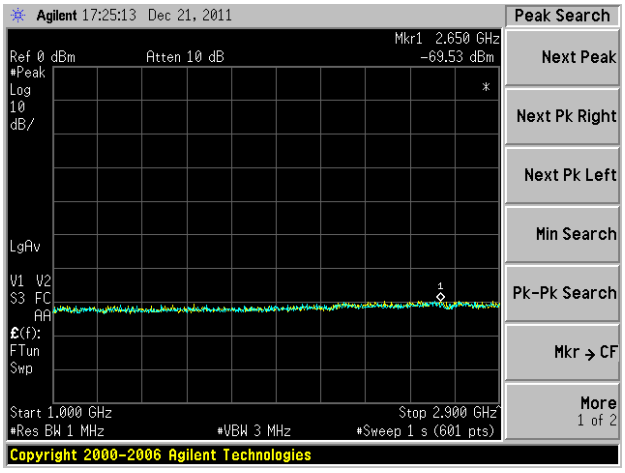
700MHz to 800MHz



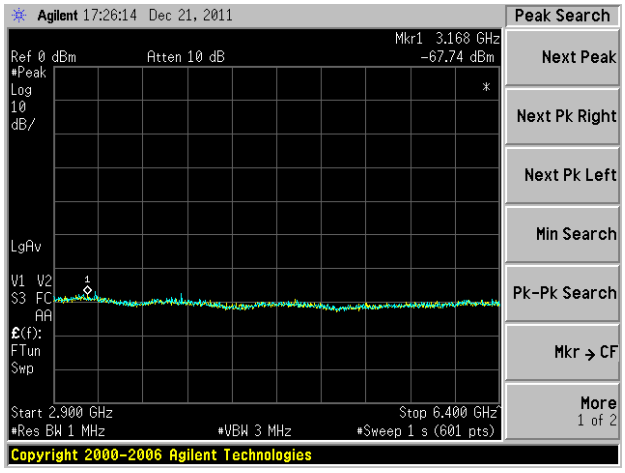
800MHz to 900MHz



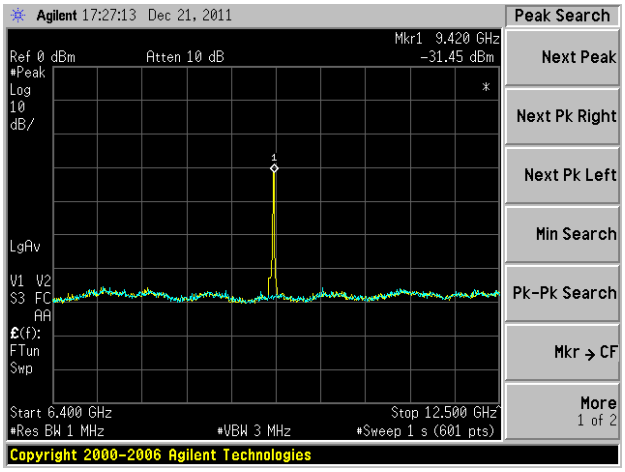
900MHz to 1GHz



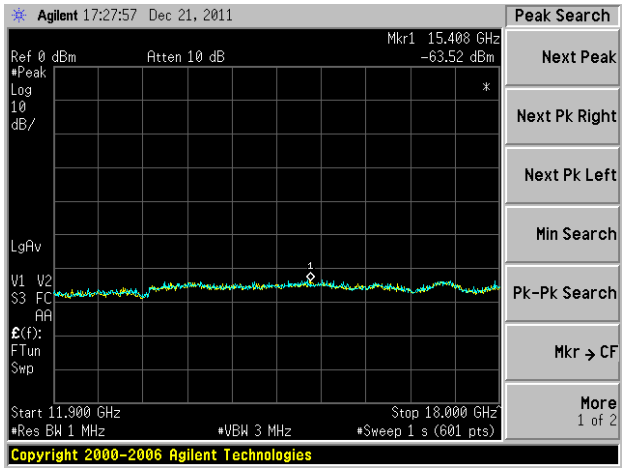
1GHz to 2.9GHz



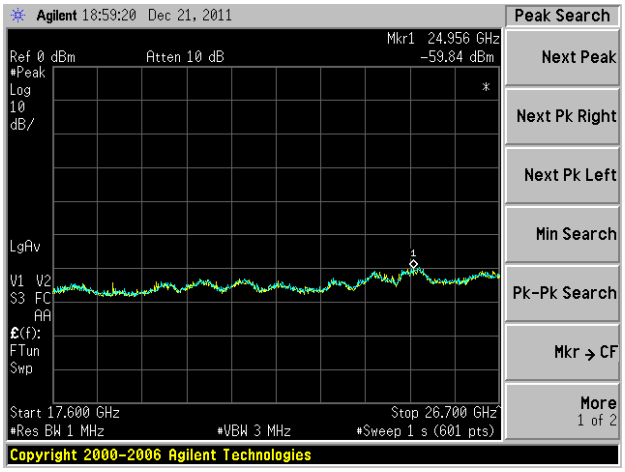
2.9GHz to 6.4GHz



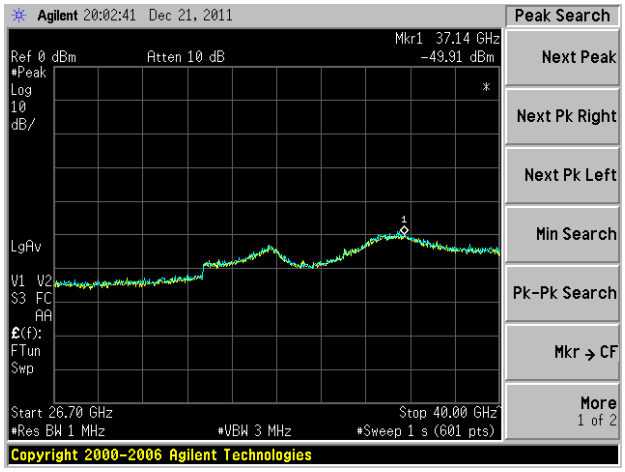
6.4GHz to 12.5GHz



11.9GHz to 18GHz

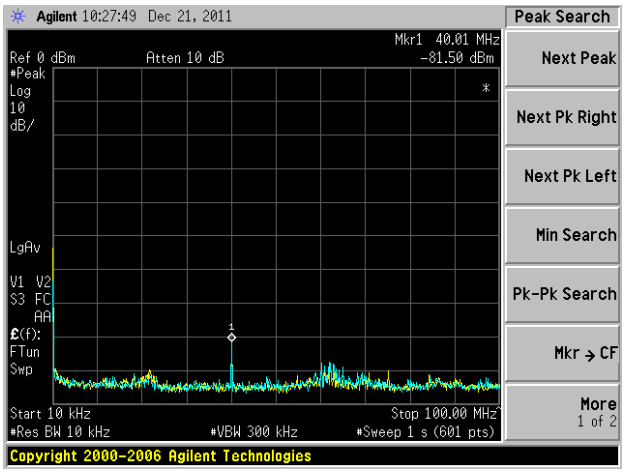


17.6GHz to 26.7GHz

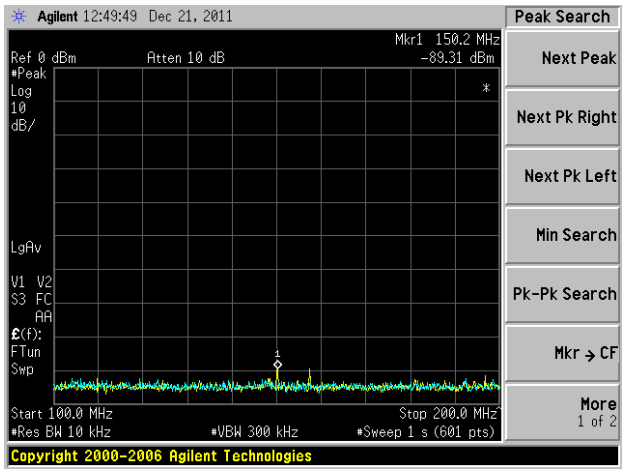


26.7GHz to 40.0GHz

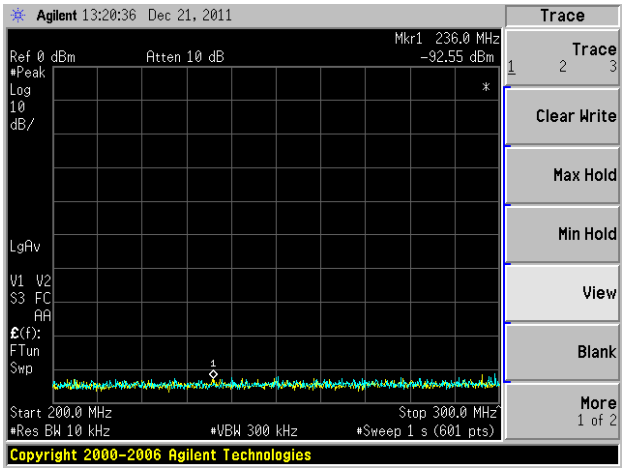
·Vertically Polarized



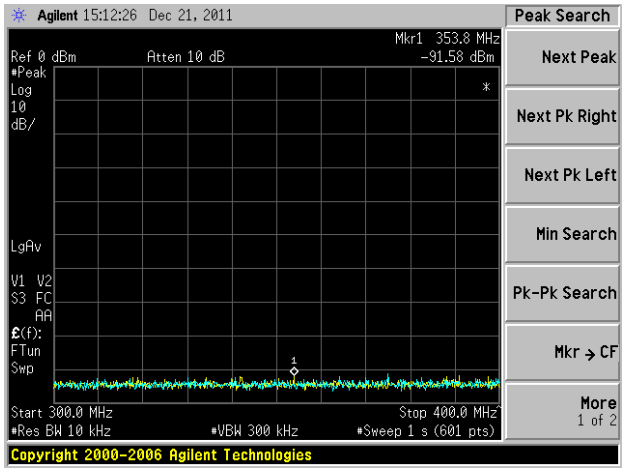
10kHz to 100MHz



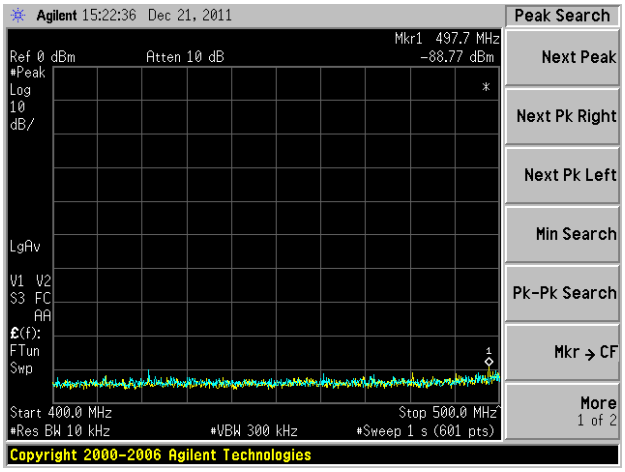
100MHz to 200MHz



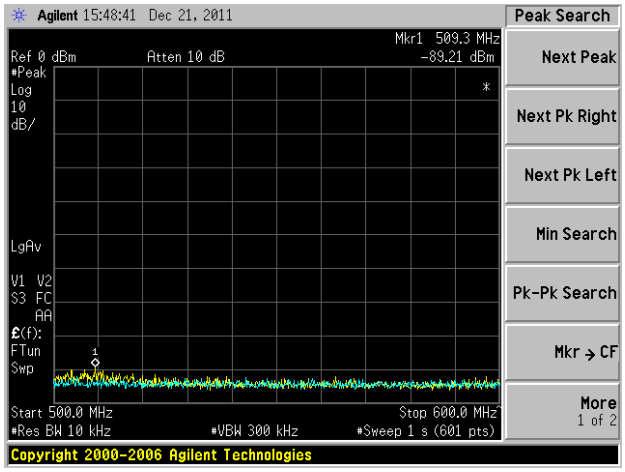
200MHz to 300MHz



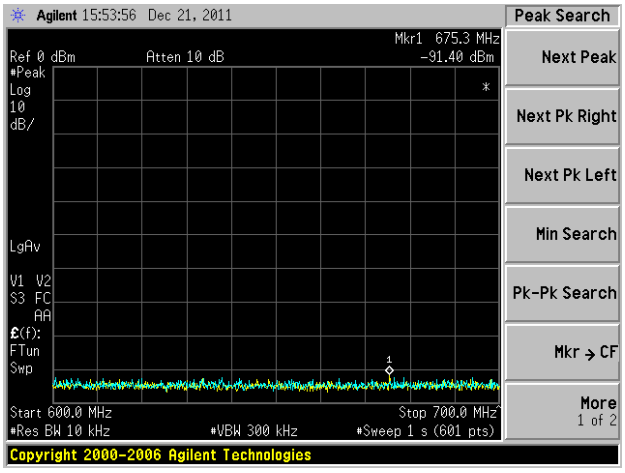
300MHz to 400MHz



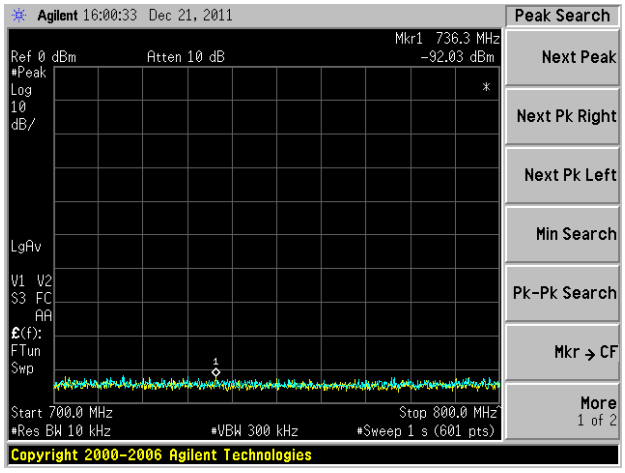
400MHz to 500MHz



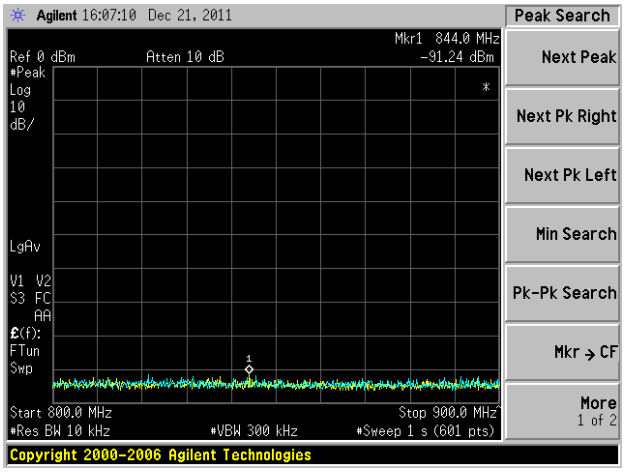
500MHz to 600MHz



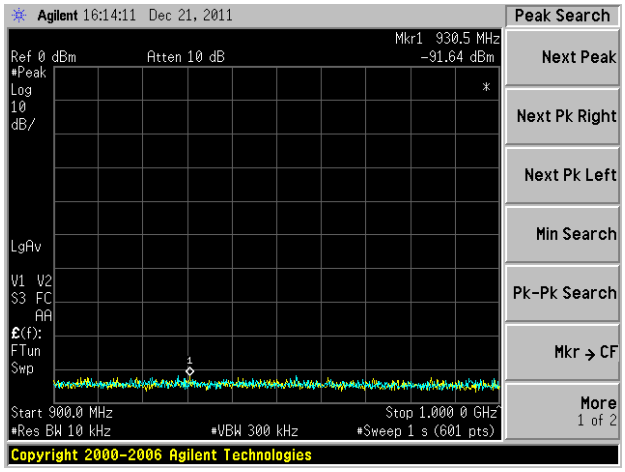
600MHz to 700MHz



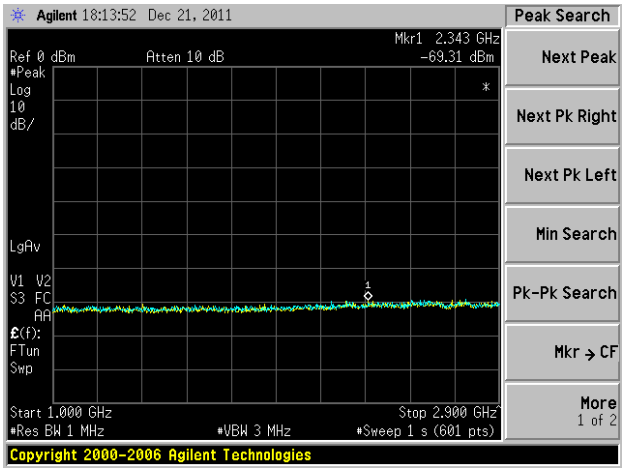
700MHz to 800MHz



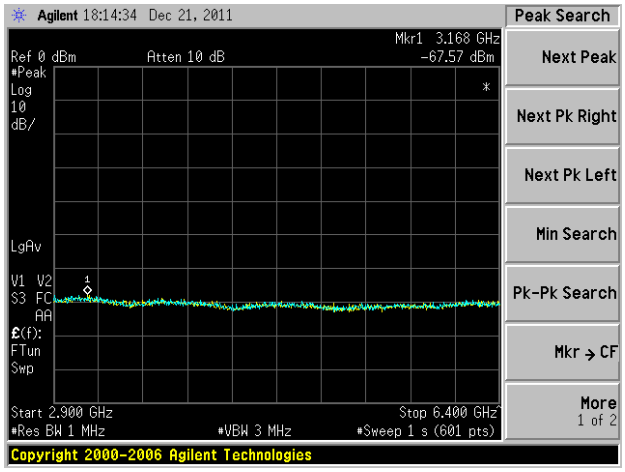
800MHz to 900MHz



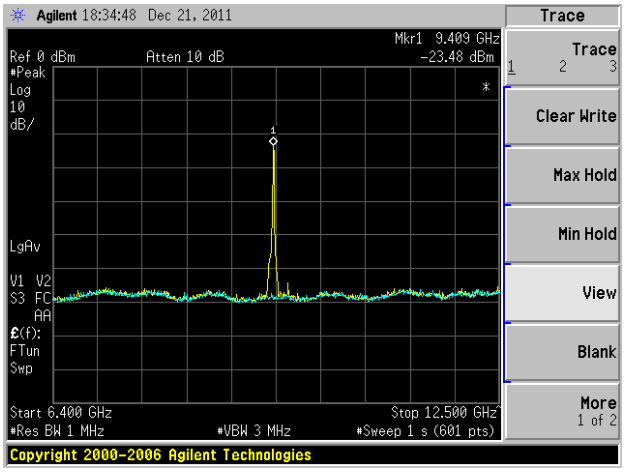
900MHz to 1GHz



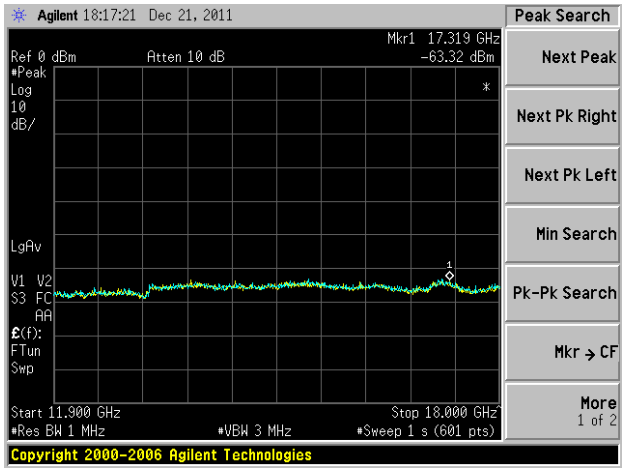
1GHz to 2.9GHz



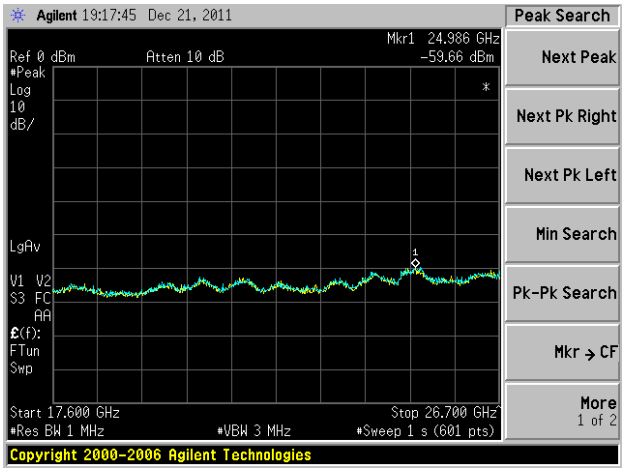
2.9GHz 6.4GHz



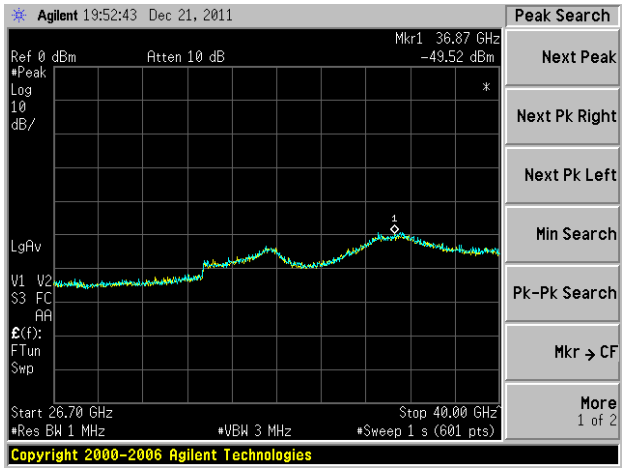
6.4GHz to 12.5GHz



11.9GHz to 18.0GHz



17.6GHz to 26.7GHz



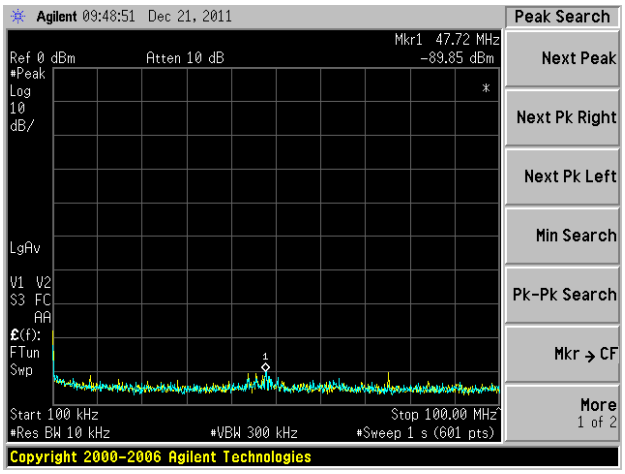
26.7GHz to 40GHz

4.3.10.7 TEST RESULTS of 0.5usec/1200Hz

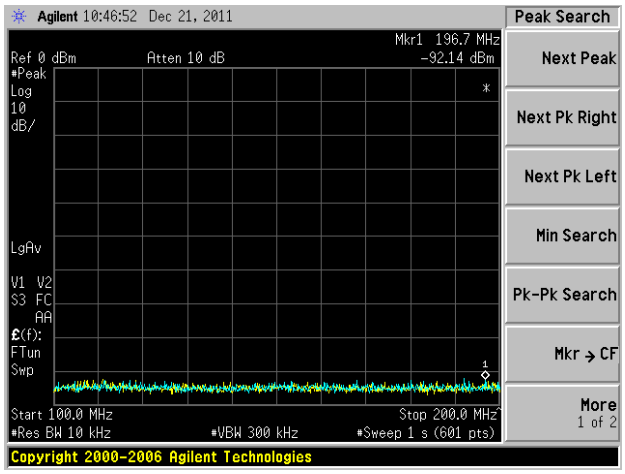
Horizontally Polarized 0.5usec/1200Hz							
Range	Frequency [MHz]	level [dBm]	Pg [dBm]	Cable Loss [dB]	Antenna Gain [dB]	Pd [dBm]	Radiated Spurious Emission [dBc]
10kHz – 100MHz	47.72	-89.95	-63.2	0.5	-11.48	-75.2	-142.6
100MHz – 200MHz	196.7	-92.14	less than the noise floor				less than the noise floor
200MHz – 300MHz	280.3	-92.68	less than the noise floor				less than the noise floor
300MHz – 400MHz	394.7	-90.99	less than the noise floor				less than the noise floor
400MHz – 500MHz	488.6	-91.44	less than the noise floor				less than the noise floor
500MHz – 600MHz	503.7	-91.14	less than the noise floor				less than the noise floor
600MHz – 700MHz	629.2	-91.32	less than the noise floor				less than the noise floor
700MHz – 800MHz	720.2	-92.06	less than the noise floor				less than the noise floor
800MHz – 900MHz	856.2	-91.93	less than the noise floor				less than the noise floor
900MHz – 1.0GHz	973.3	-91.52	less than the noise floor				less than the noise floor
1.0GHz – 2.9GHz	2640	-69.75	less than the noise floor				less than the noise floor
2.9GHz – 6.4GHz	3145	-67.99	less than the noise floor				less than the noise floor
6.4GHz – 12.5GHz	9420	-25.75	less than the noise floor				less than the noise floor
11.9G – 18GHz	15367	-64.41	less than the noise floor				less than the noise floor
17.6G – 26.7GHz	25077	-59.76	less than the noise floor				less than the noise floor
26.7G – 40.0GHz	37180	-49.64	less than the noise floor				less than the noise floor

Vertically Polarized 0.5usec/1200Hz							
Range	Frequency [MHz]	level [dBm]	Pg [dBm]	Cable Loss [dB]	Antenna Gain [dB]	Pd [dBm]	Radiated Spurious Emission [dBc]
10kHz – 100MHz	40.01	-82.38	-50.4	0.5	-11.48	-62.4	-129.8
100MHz – 200MHz	150.2	-89.22	-64.1	0.5	-4.48	-69.1	-136.6
200MHz – 300MHz	236	-90.79	-63.3	0.5	-3.26	-67.1	-134.5
300MHz – 400MHz	375	-89.87	less than the noise floor				less than the noise floor
400MHz – 500MHz	421.2	-90.98	less than the noise floor				less than the noise floor
500MHz – 600MHz	504	-89.61	-74.9	0.5	3.05	-72.4	-139.8
600MHz – 700MHz	697.7	-92	less than the noise floor				less than the noise floor
700MHz – 800MHz	736.8	-91.89	less than the noise floor				less than the noise floor
800MHz – 900MHz	826.2	-91.79	less than the noise floor				less than the noise floor
900MHz – 1.0GHz	911	-92.11	less than the noise floor				less than the noise floor
1.0GHz – 2.9GHz	2526	-69.28	less than the noise floor				less than the noise floor
2.9GHz – 6.4GHz	3162	-68.41	less than the noise floor				less than the noise floor
6.4GHz – 12.5GHz	9409	-22.23	less than the noise floor				less than the noise floor
11.9G – 18GHz	15336	-62.65	less than the noise floor				less than the noise floor
17.6G – 26.7GHz	25062	-59.51	less than the noise floor				less than the noise floor
26.7G – 40.0GHz	37300	-49.89	less than the noise floor				less than the noise floor

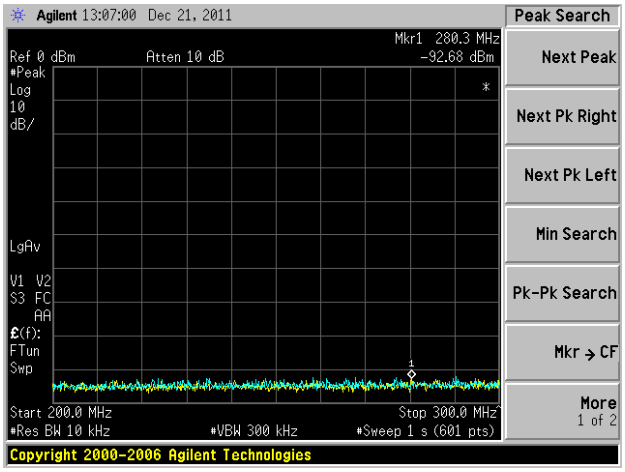
·Horizontally Polarized



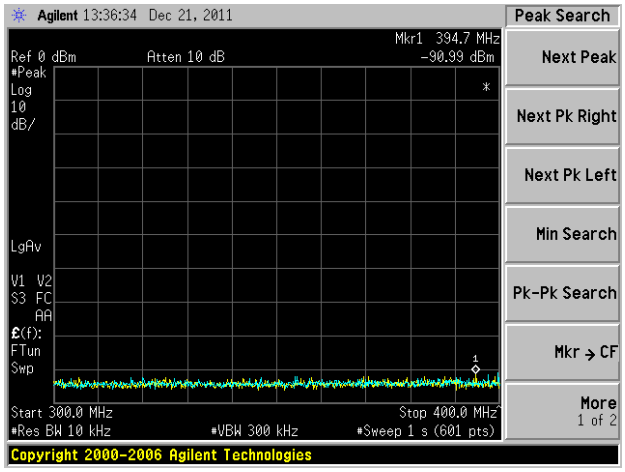
10kHz to 100MHz



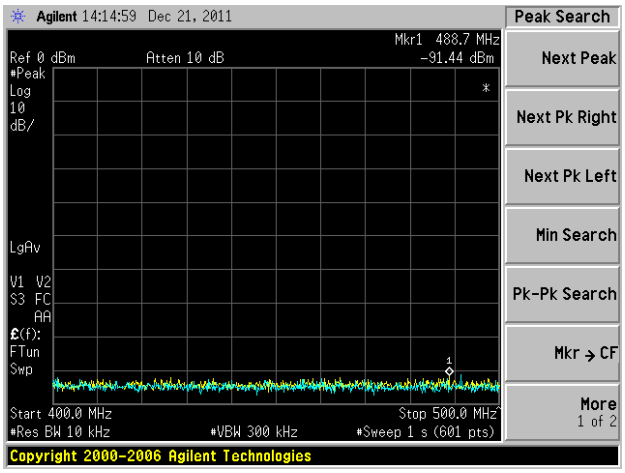
100MHz to 200MHz



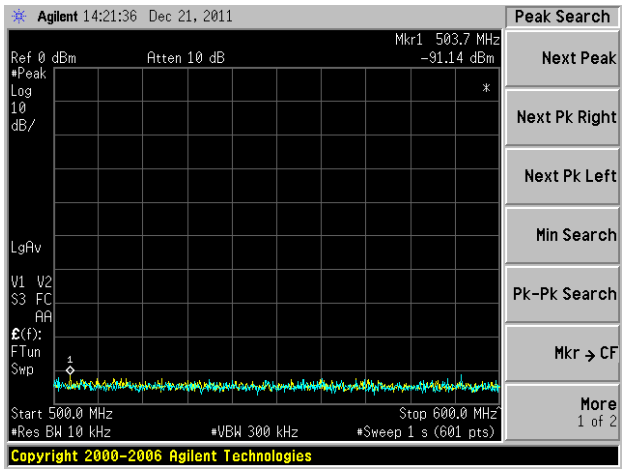
200MHz to 300MHz



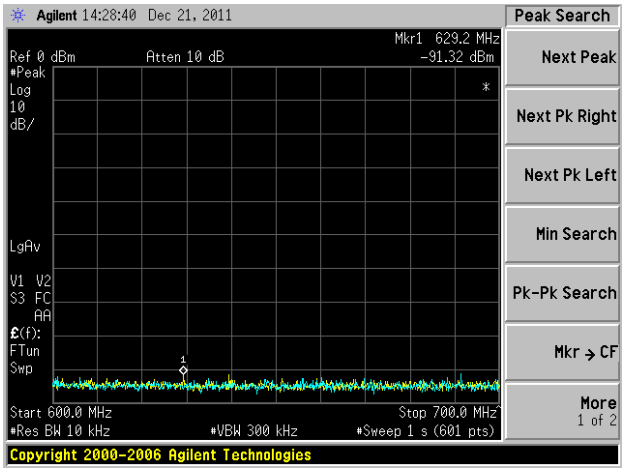
300MHz to 400MHz



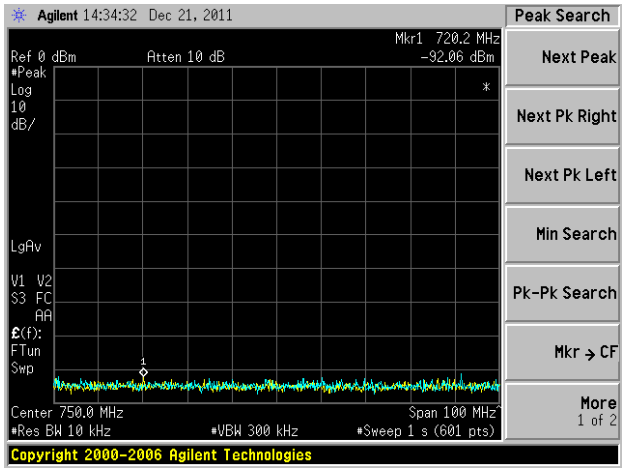
400MHz to 500MHz



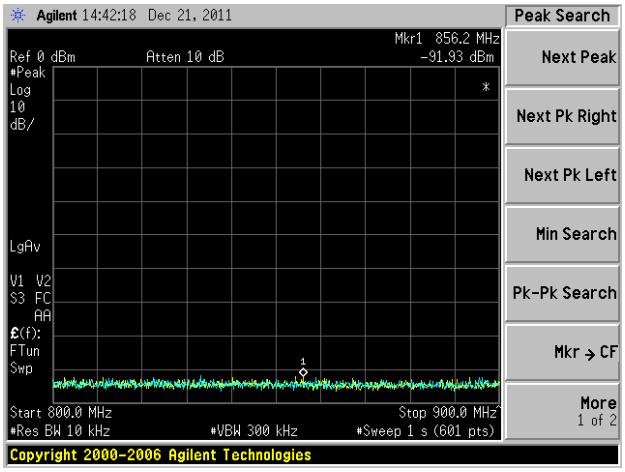
500MHz to 600MHz



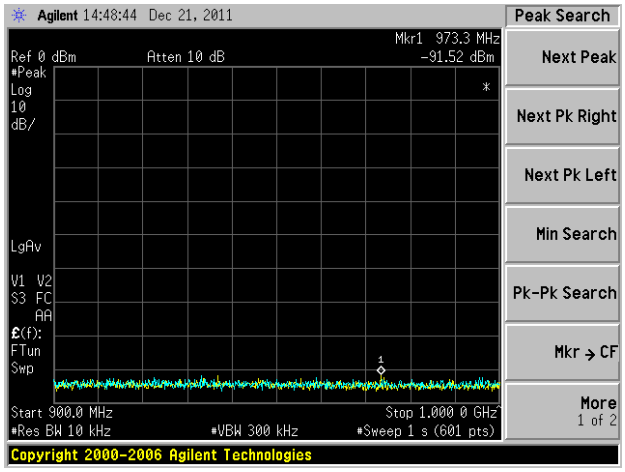
600MHz to 700MHz



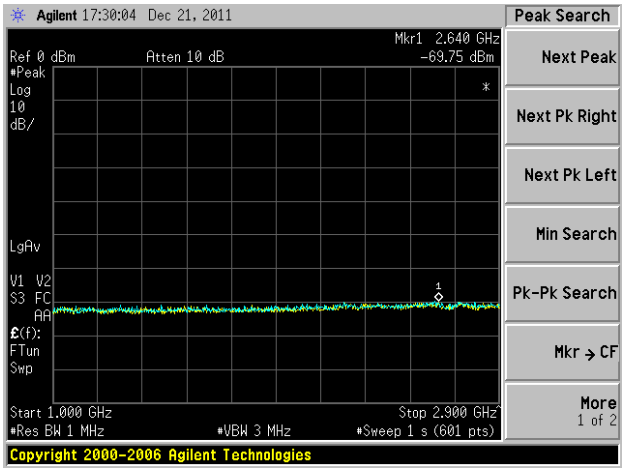
700MHz to 800MHz



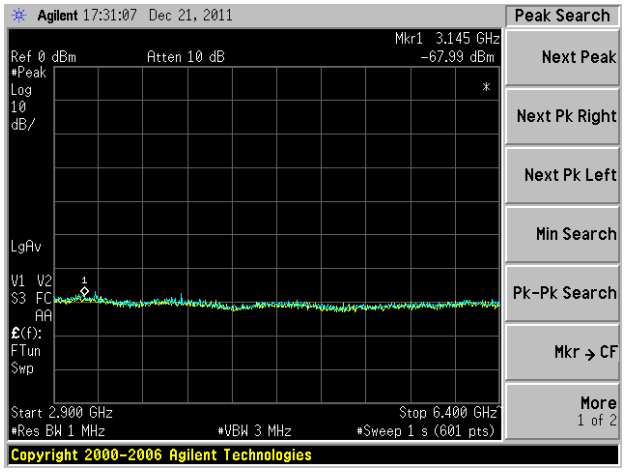
800MHz to 900MHz



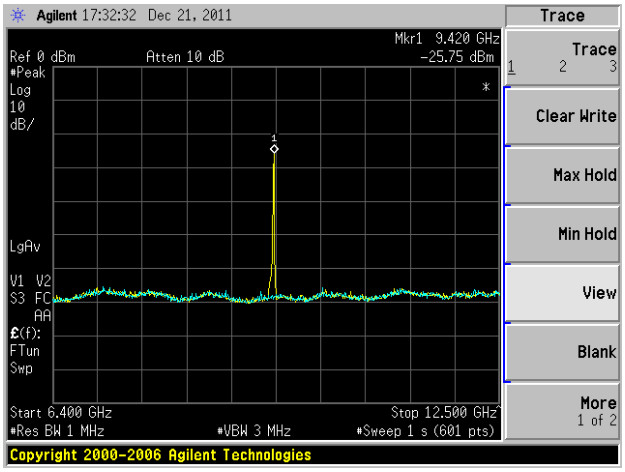
900MHz to 1GHz



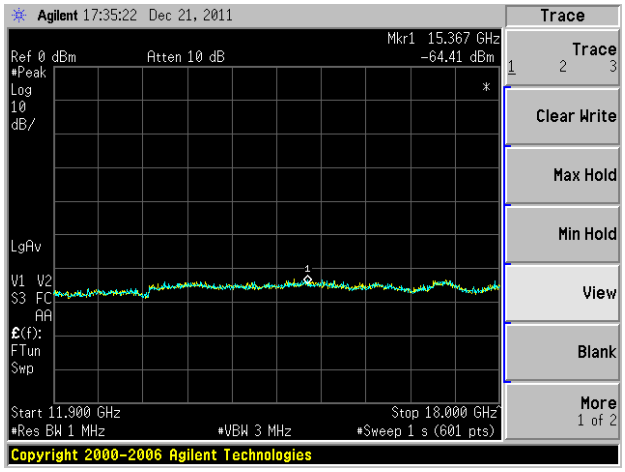
1GHz to 2.9GHz



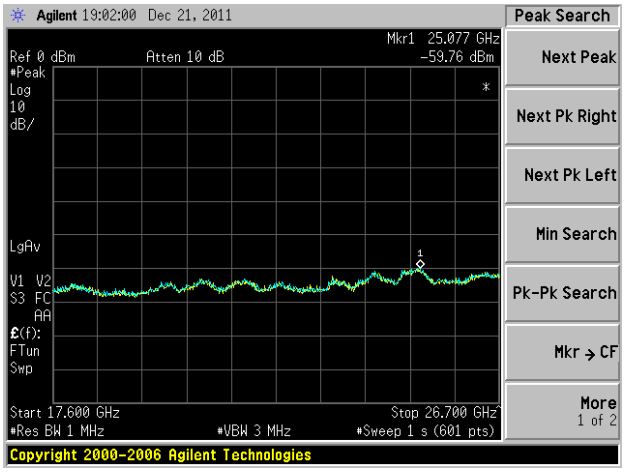
2.9GHz to 6.4GHz



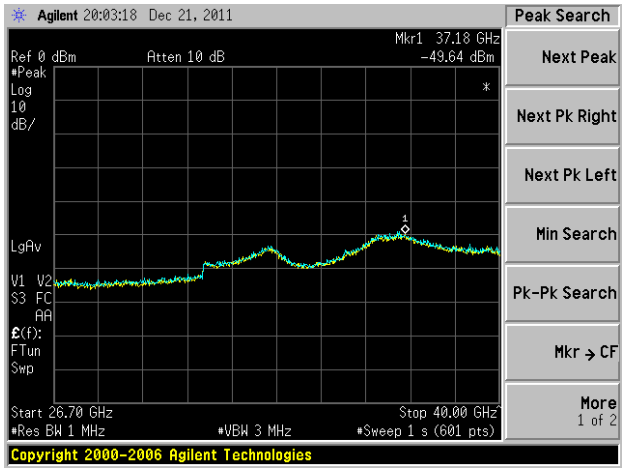
6.4GHz to 12.5GHz



11.9GHz to 18GHz

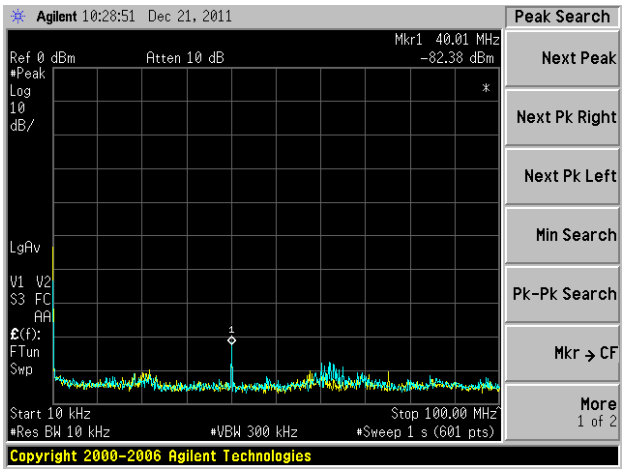


17.6GHz to 26.7GHz

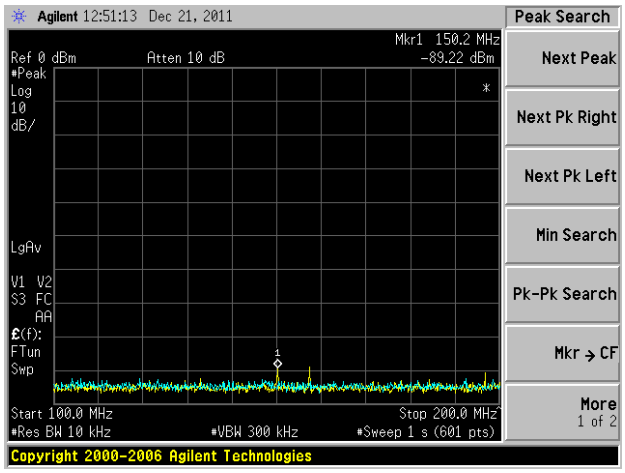


26.7GHz to 40.0GHz

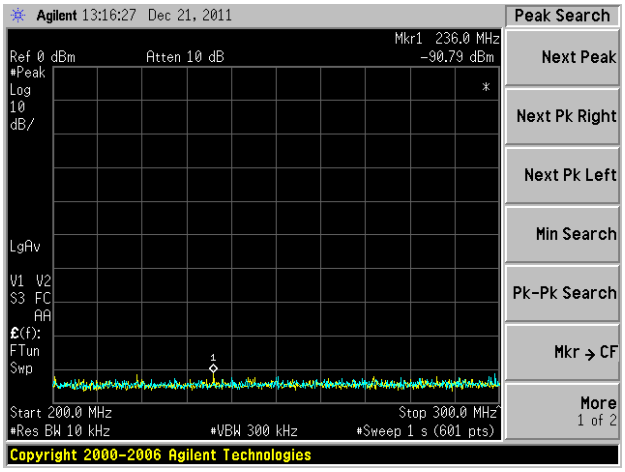
·Vertically Polarized



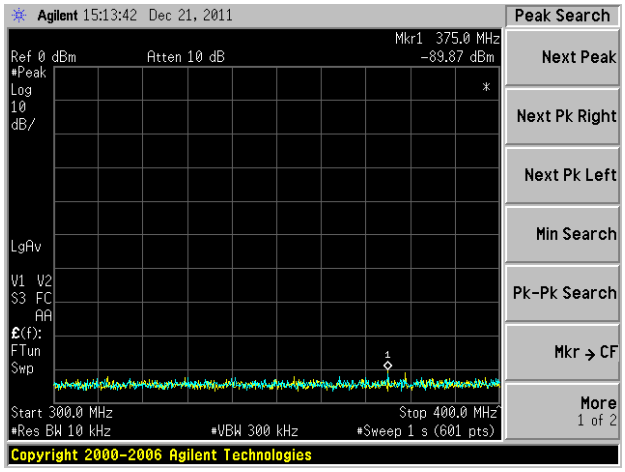
10kHz to 100MHz



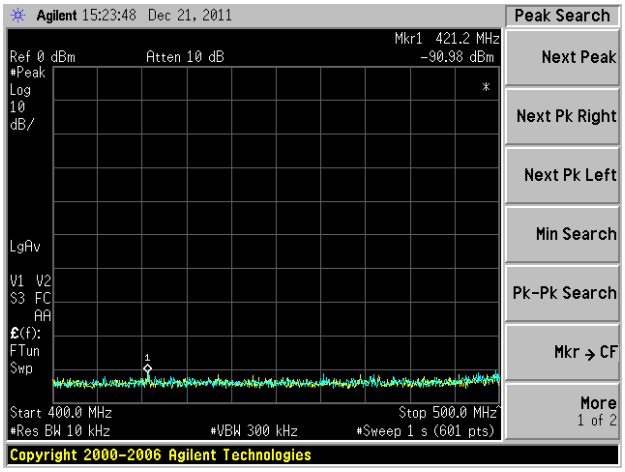
100MHz to 200MHz



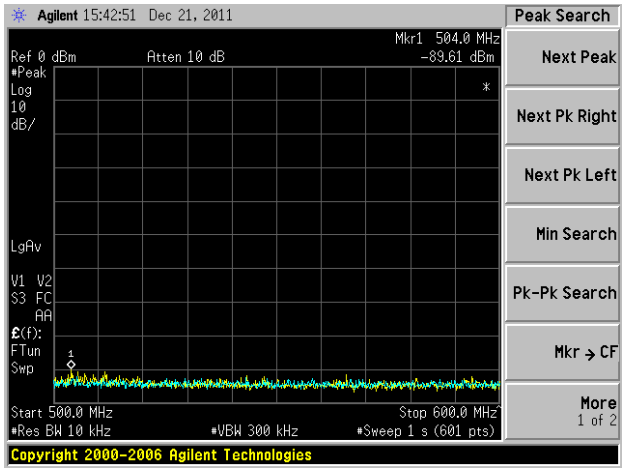
200MHz to 300MHz



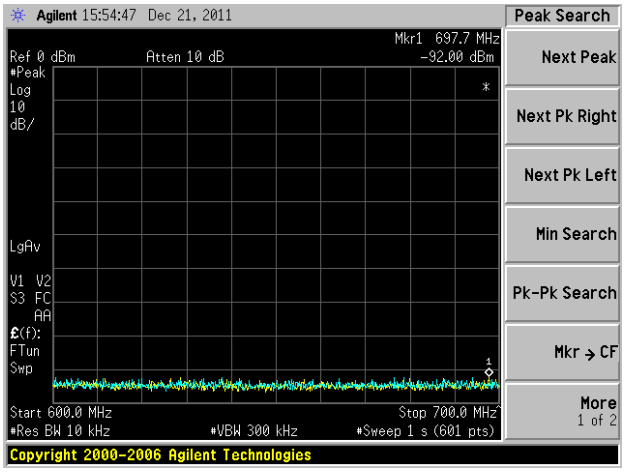
300MHz to 400MHz



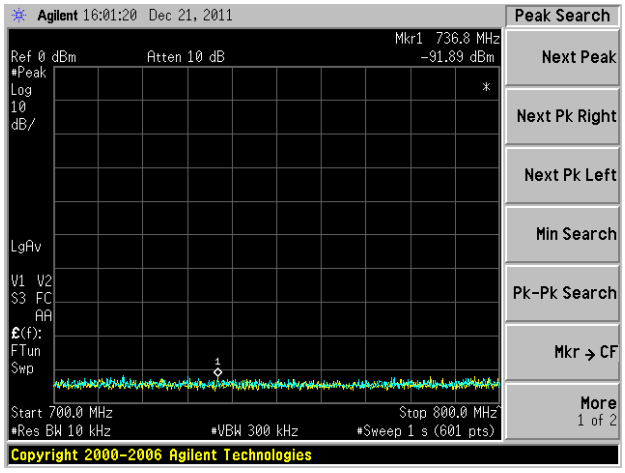
400MHz to 500MHz



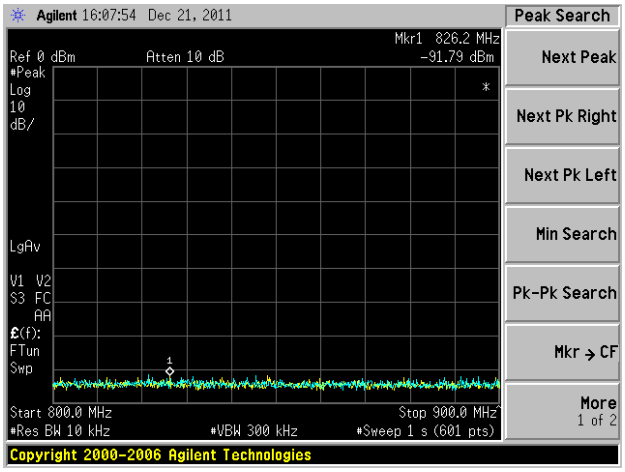
500MHz to 600MHz



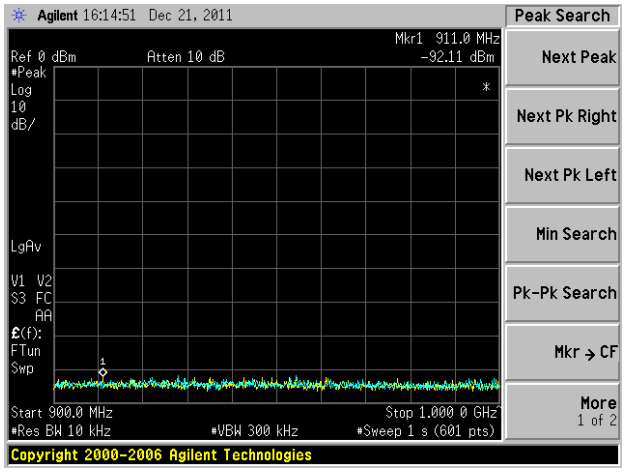
600MHz to 700MHz



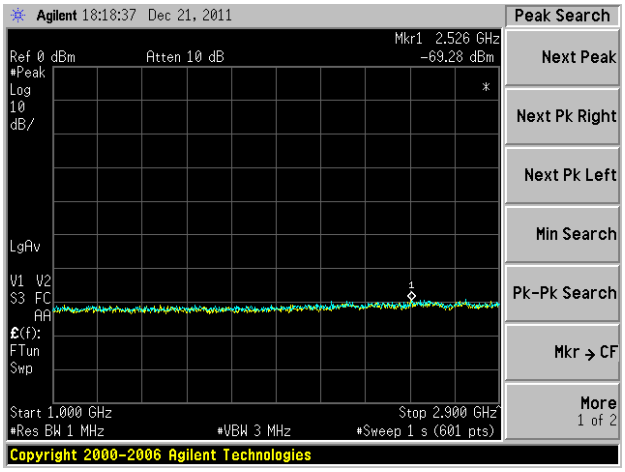
700MHz to 800MHz



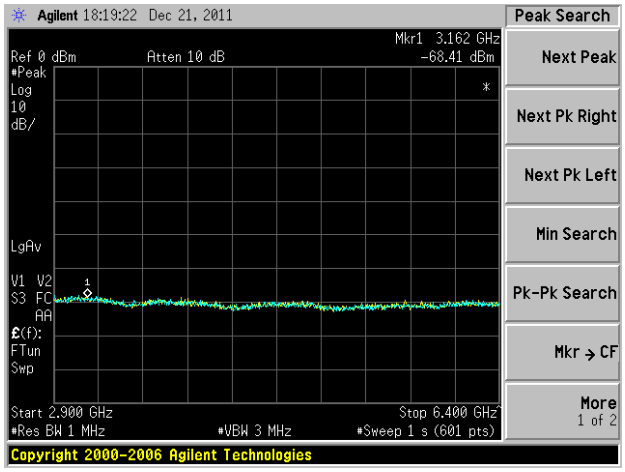
800MHz to 900MHz



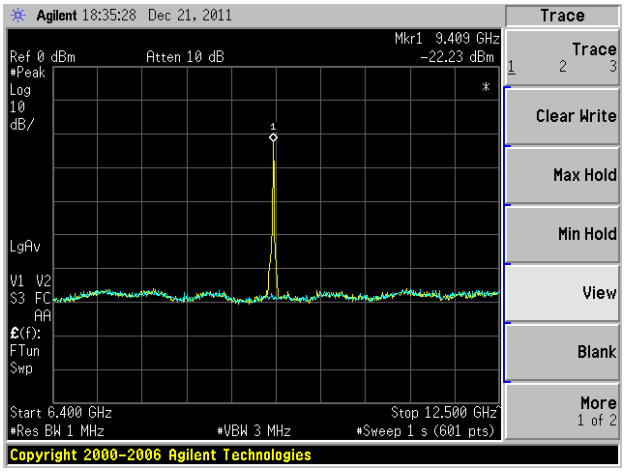
900MHz to 1GHz



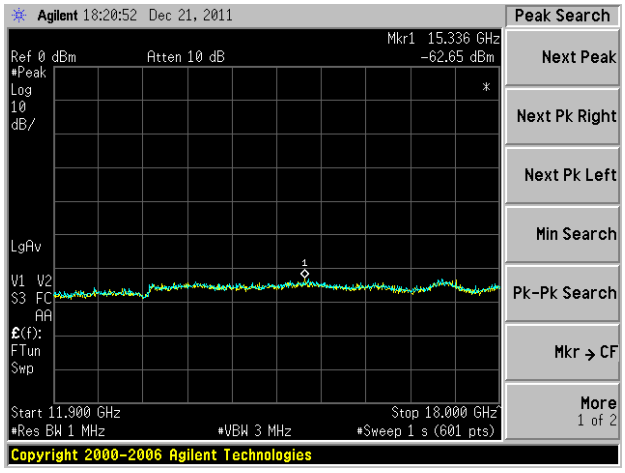
1GHz to 2.9GHz



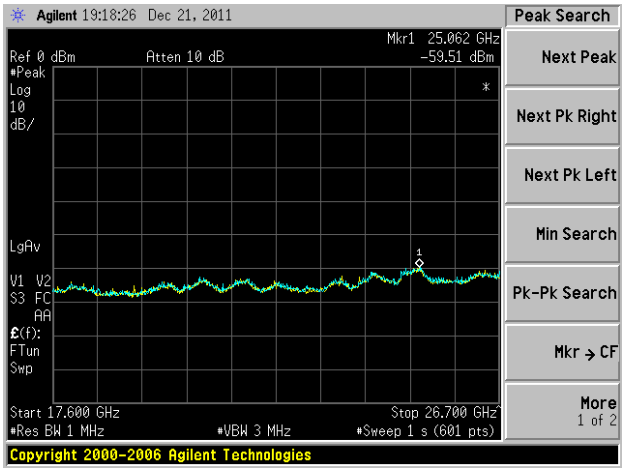
2.9GHz 6.4GHz



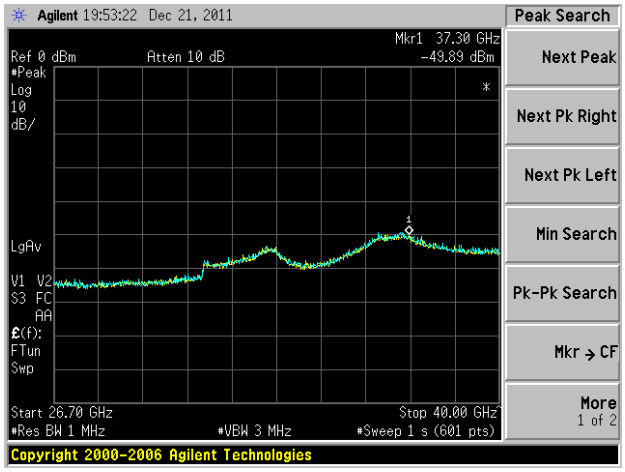
6.4GHz to 12.5GHz



11.9GHz to 18.0GHz



17.6GHz to 26.7GHz



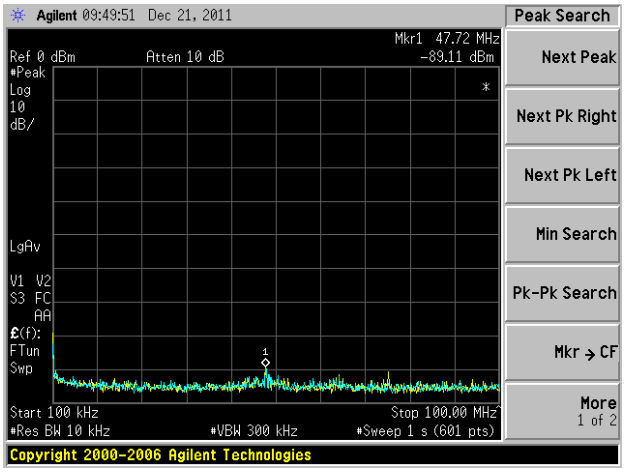
26.7GHz to 40GHz

4.3.10.8 TEST RESULTS of 0.8usec/750Hz

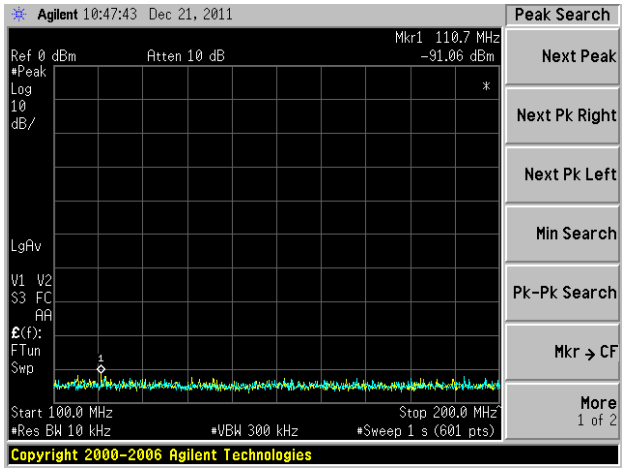
Horizontally Polarized 0.8usec/750Hz							
Range	Frequency [MHz]	level [dBm]	Pg [dBm]	Cable Loss [dB]	Antenna Gain [dB]	Pd [dBm]	Radiated Spurious Emission [dBc]
10kHz – 100MHz	47.72	−89.11	−62.3	0.5	−11.48	−74.3	−141.8
100MHz – 200MHz	110.7	−91.06	less than the noise floor				less than the noise floor
200MHz – 300MHz	269	−92.04	less than the noise floor				less than the noise floor
300MHz – 400MHz	391.5	−91.64	less than the noise floor				less than the noise floor
400MHz – 500MHz	405.5	−90.63	less than the noise floor				less than the noise floor
500MHz – 600MHz	589.7	−91.28	less than the noise floor				less than the noise floor
600MHz – 700MHz	673.8	−91.95	less than the noise floor				less than the noise floor
700MHz – 800MHz	794.3	−92.04	less than the noise floor				less than the noise floor
800MHz – 900MHz	879.7	−92	less than the noise floor				less than the noise floor
900MHz – 1.0GHz	926.2	−92.01	less than the noise floor				less than the noise floor
1.0GHz – 2.9GHz	2599	−68.82	less than the noise floor				less than the noise floor
2.9GHz – 6.4GHz	3174	−68.02	less than the noise floor				less than the noise floor
6.4GHz – 12.5GHz	9409	−25.63	less than the noise floor				less than the noise floor
11.9G – 18GHz	17278	−62.42	less than the noise floor				less than the noise floor
17.6G – 26.7GHz	25062	−59.37	less than the noise floor				less than the noise floor
26.7G – 40.0GHz	36900	−49.29	less than the noise floor				less than the noise floor

Vertically Polarized 0.8usec/750Hz							
Range	Frequency [MHz]	level [dBm]	Pg [dBm]	Cable Loss [dB]	Antenna Gain [dB]	Pd [dBm]	Radiated Spurious Emission [dBc]
10kHz – 100MHz	40.01	−82.62	−50.6	0.5	−11.48	−62.6	−130.1
100MHz – 200MHz	150.2	−89.68	−64.6	0.5	−4.48	−69.6	−137.0
200MHz – 300MHz	236	−90.99	−63.5	0.5	−3.26	−67.3	−134.7
300MHz – 400MHz	351.7	−92.18	less than the noise floor				less than the noise floor
400MHz – 500MHz	421.2	−89.84	less than the noise floor				less than the noise floor
500MHz – 600MHz	512.8	−90.05	−75.1	0.5	3.05	−72.5	−140.0
600MHz – 700MHz	600	−91.87	less than the noise floor				less than the noise floor
700MHz – 800MHz	702.5	−91.43	less than the noise floor				less than the noise floor
800MHz – 900MHz	831.2	−91.68	less than the noise floor				less than the noise floor
900MHz – 1.0GHz	902.3	−92.33	less than the noise floor				less than the noise floor
1.0GHz – 2.9GHz	2400	−69.11	less than the noise floor				less than the noise floor
2.9GHz – 6.4GHz	3087	−68.19	less than the noise floor				less than the noise floor
6.4GHz – 12.5GHz	9409	−18.95	less than the noise floor				less than the noise floor
11.9G – 18GHz	17116	−62.68	less than the noise floor				less than the noise floor
17.6G – 26.7GHz	25001	−60.33	less than the noise floor				less than the noise floor
26.7G – 40.0GHz	36900	−49.45	less than the noise floor				less than the noise floor

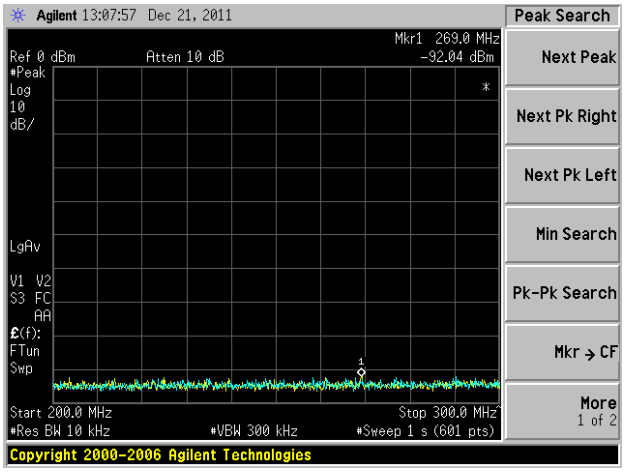
·Horizontally Polarized



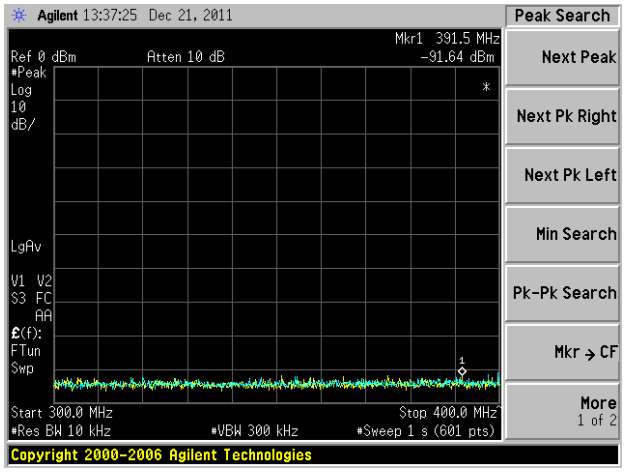
10kHz to 100MHz



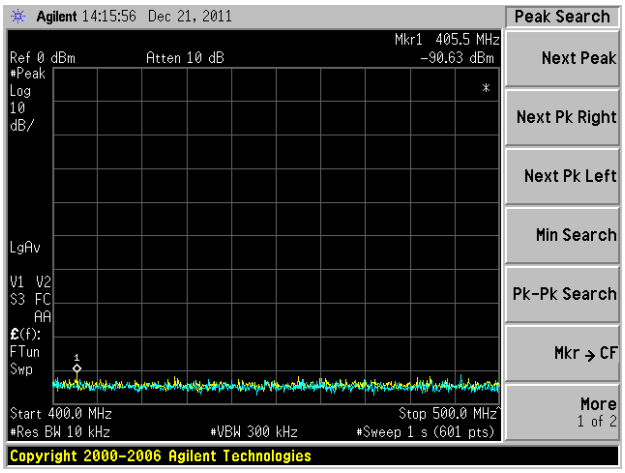
100MHz to 200MHz



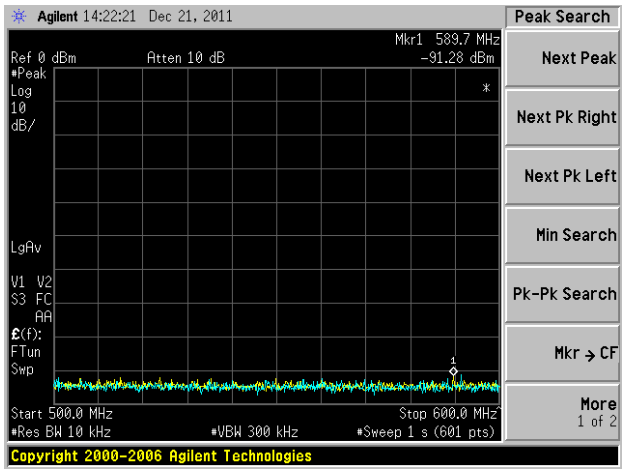
200MHz to 300MHz



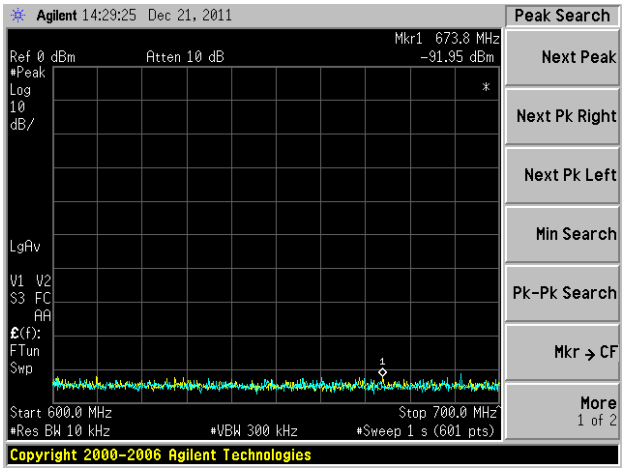
300MHz to 400MHz



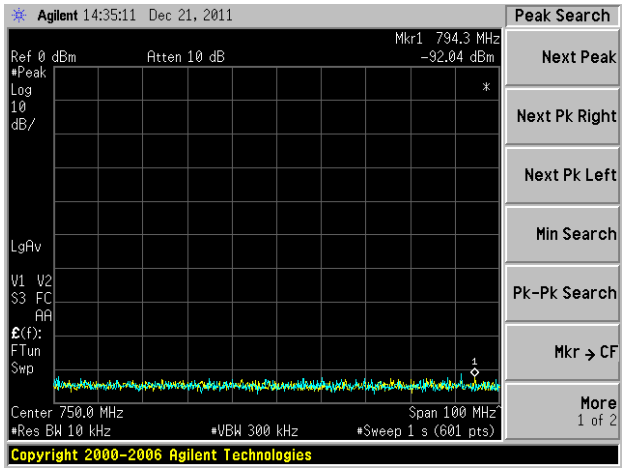
400MHz to 500MHz



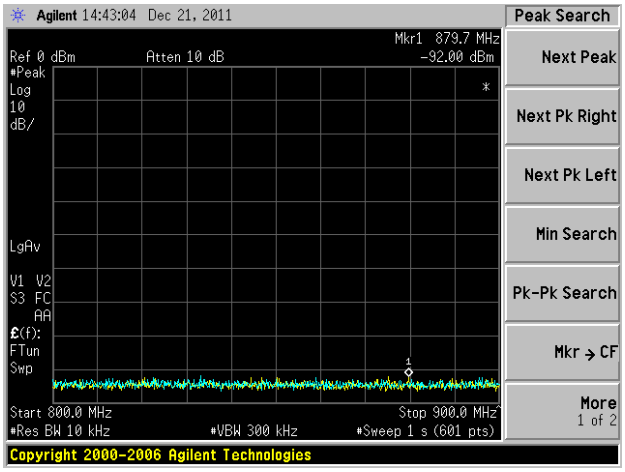
500MHz to 600MHz



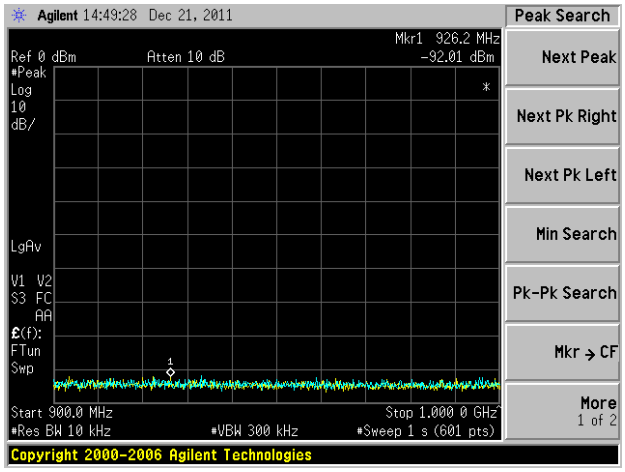
600MHz to 700MHz



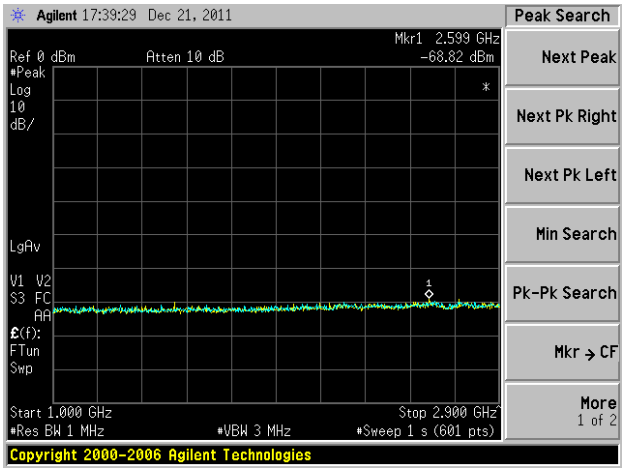
700MHz to 800MHz



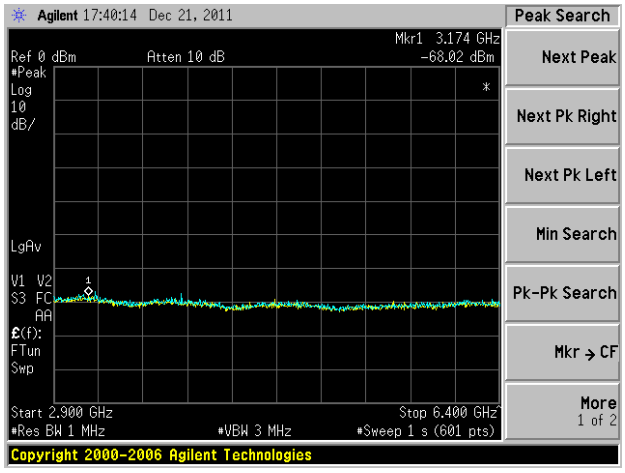
800MHz to 900MHz



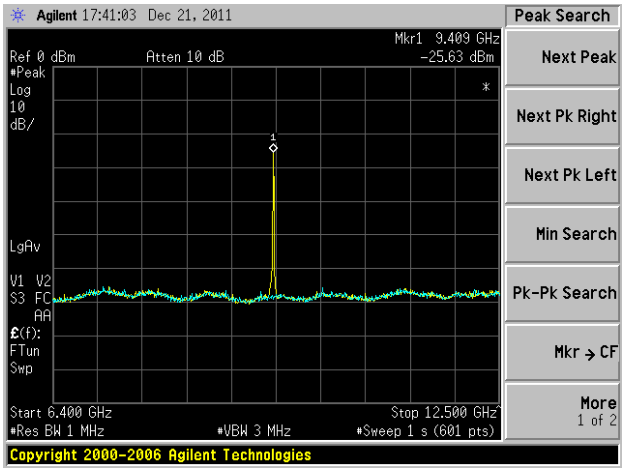
900MHz to 1GHz



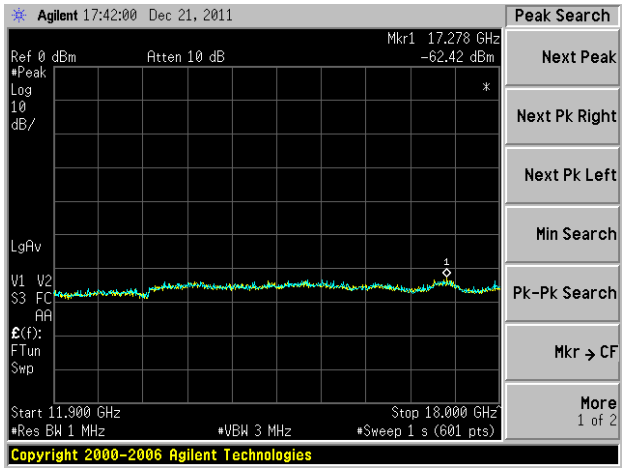
1GHz to 2.9GHz



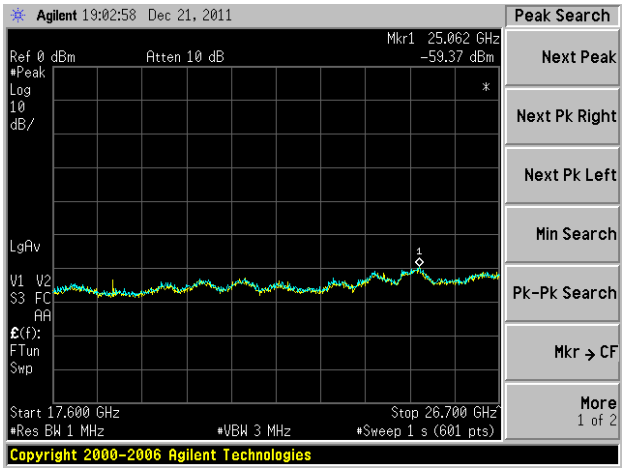
2.9GHz to 6.4GHz



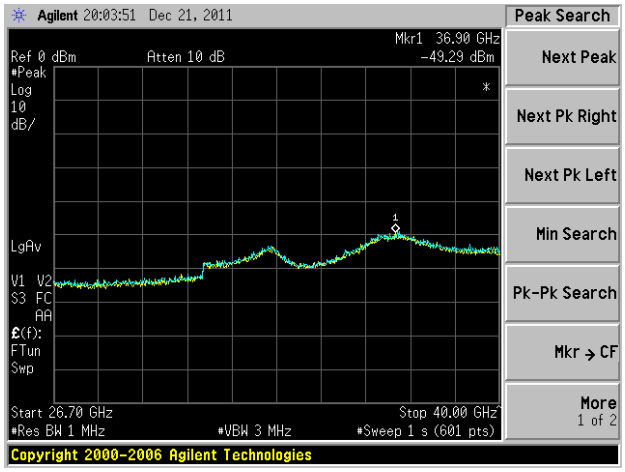
6.4GHz to 12.5GHz



11.9GHz to 18GHz

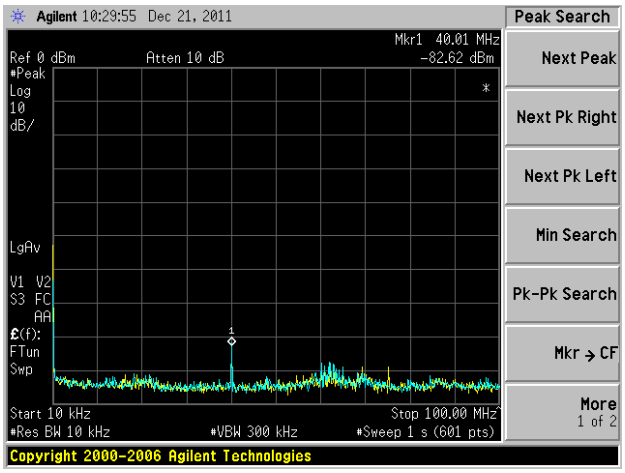


17.6GHz to 26.7GHz

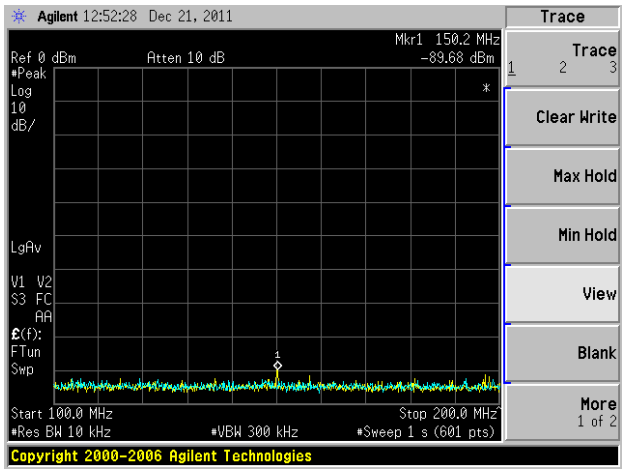


26.7GHz to 40.0GHz

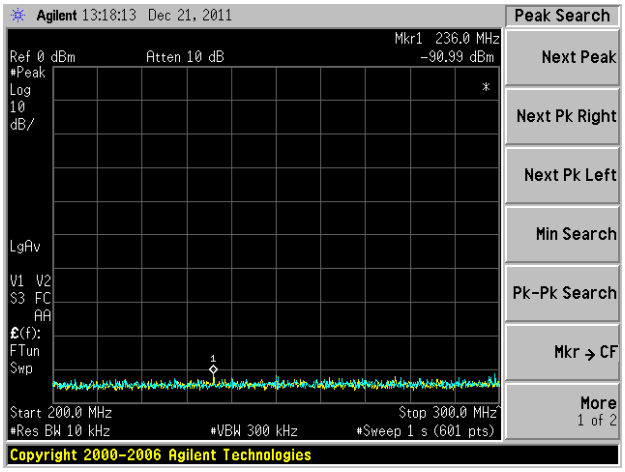
·Vertically Polarized



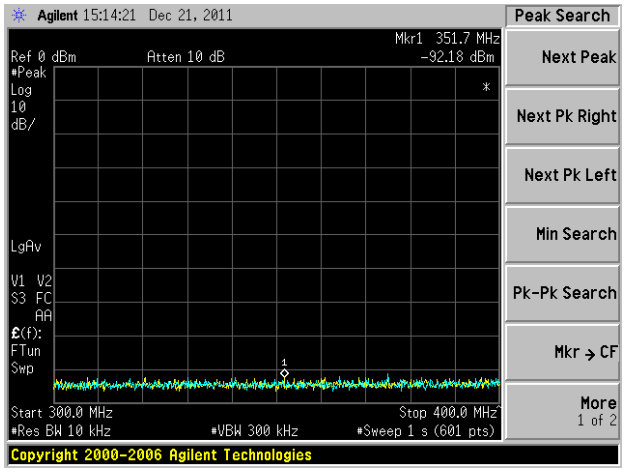
10kHz to 100MHz



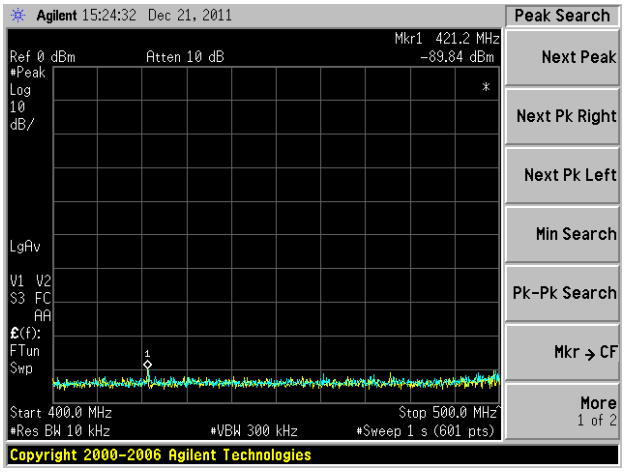
100MHz to 200MHz



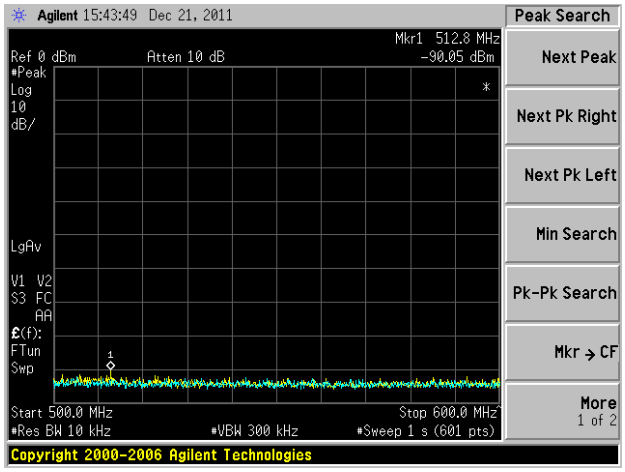
200MHz to 300MHz



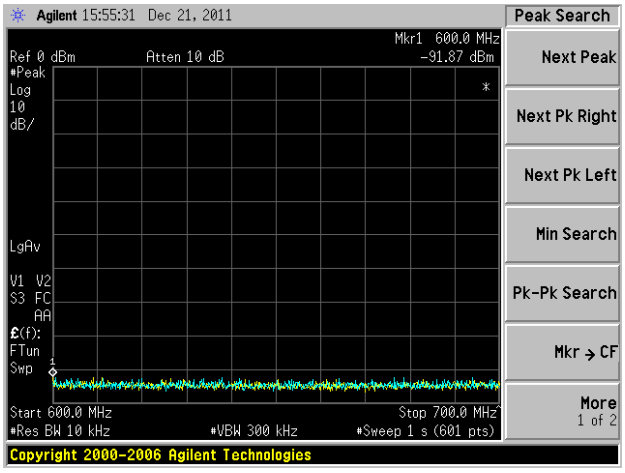
300MHz to 400MHz



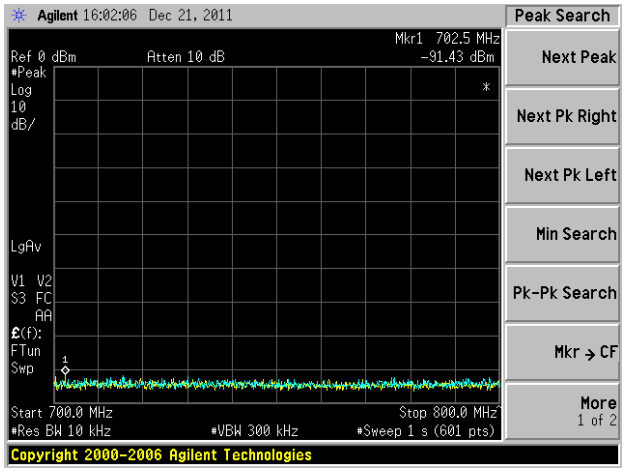
400MHz to 500MHz



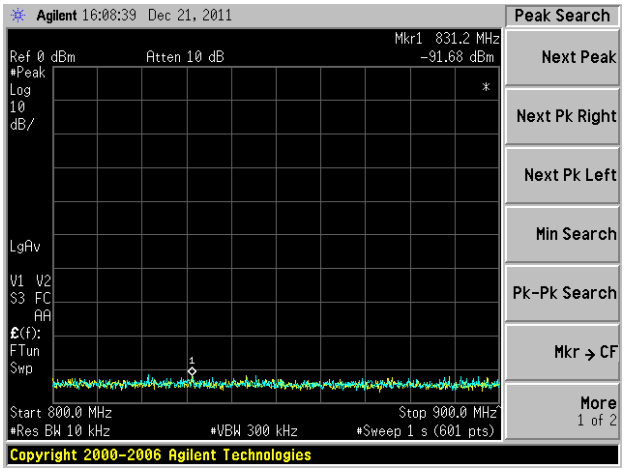
500MHz to 600MHz



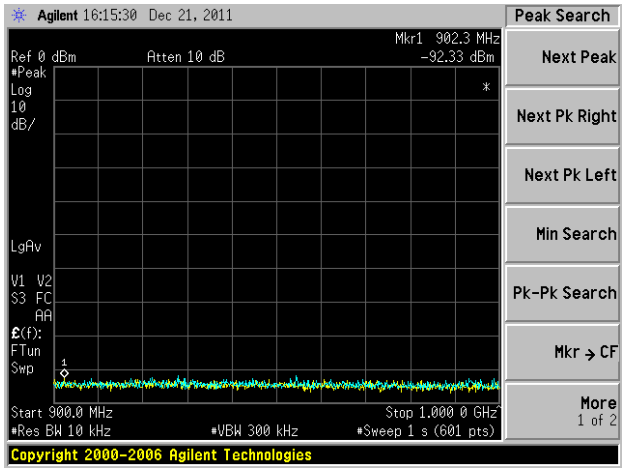
600MHz to 700MHz



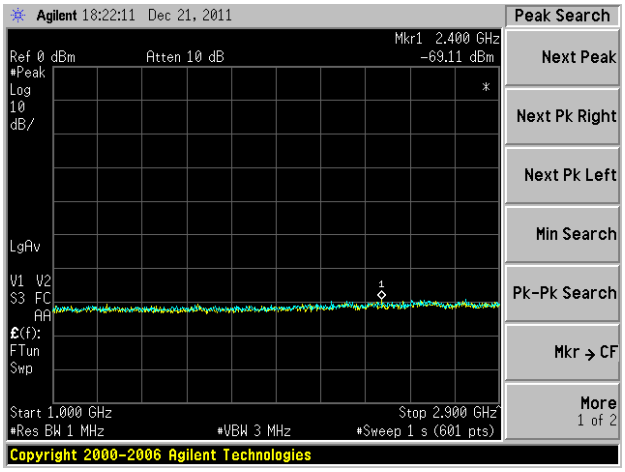
700MHz to 800MHz



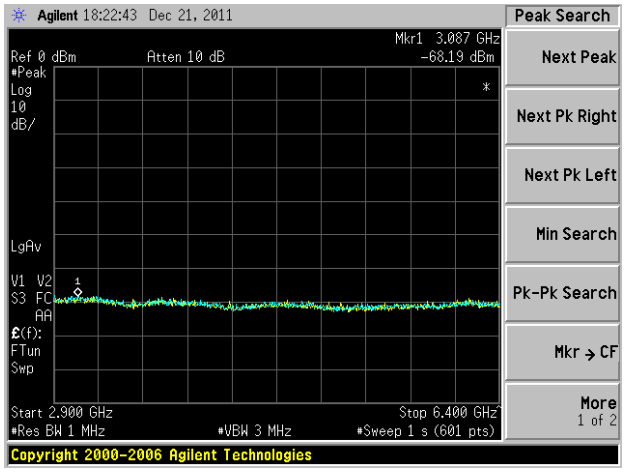
800MHz to 900MHz



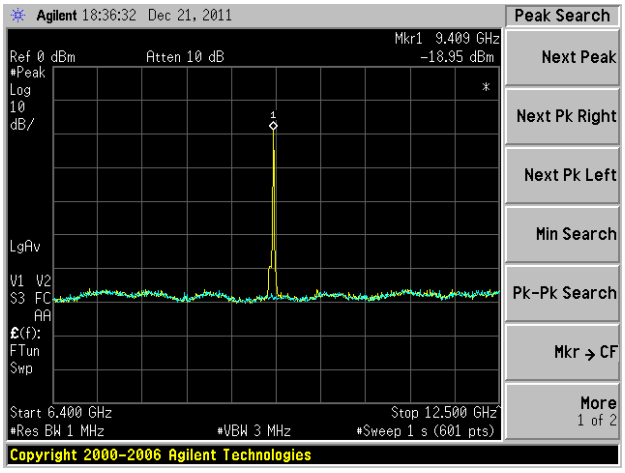
900MHz to 1GHz



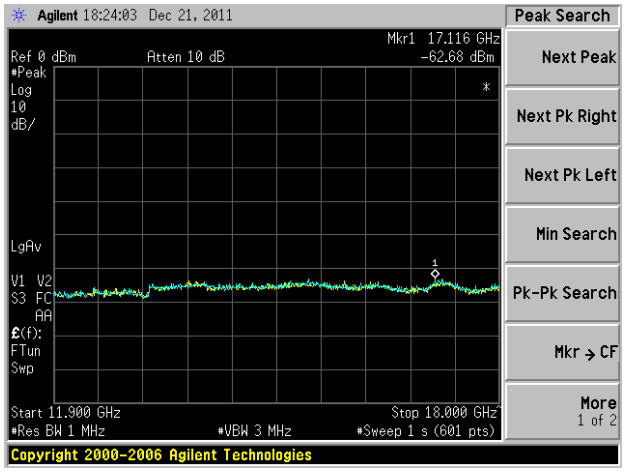
1GHz to 2.9GHz



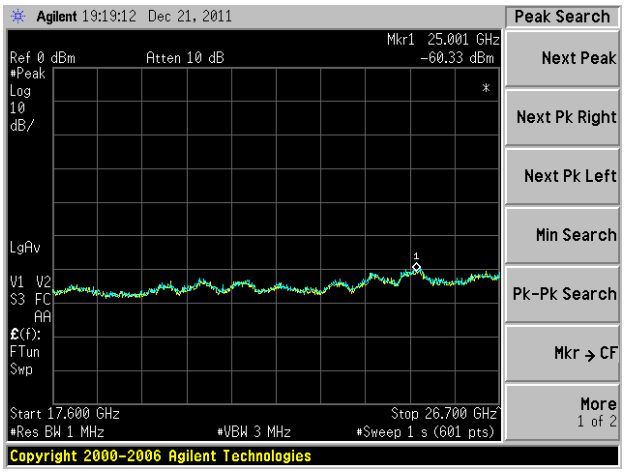
2.9GHz 6.4GHz



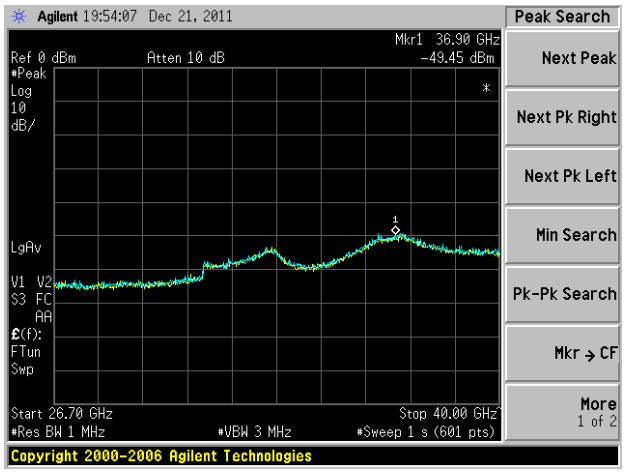
6.4GHz to 12.5GHz



11.9GHz to 18.0GHz



17.6GHz to 26.7GHz



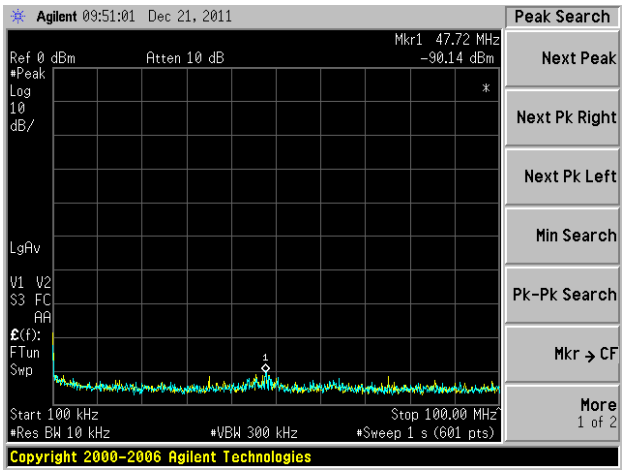
26.7GHz to 40GHz

4.3.10.9 TEST RESULTS of 1.0usec/650Hz

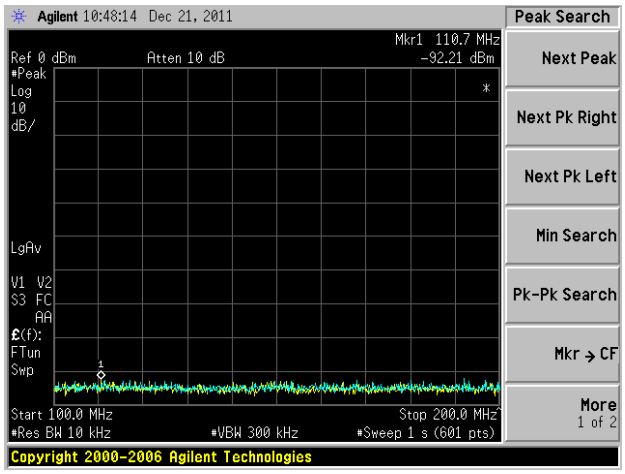
Horizontally Polarized 1.0usec/650Hz							
Range	Frequency [MHz]	level [dBm]	Pg [dBm]	Cable Loss [dB]	Antenna Gain [dB]	Pd [dBm]	Radiated Spurious Emission [dBc]
10kHz – 100MHz	47.72	−90.14	−63.4	0.5	−11.48	−75.4	−142.8
100MHz – 200MHz	110.7	−92.21	less than the noise floor				less than the noise floor
200MHz – 300MHz	246.3	−92.42	less than the noise floor				less than the noise floor
300MHz – 400MHz	301.2	−91.84	less than the noise floor				less than the noise floor
400MHz – 500MHz	419.2	−91.63	less than the noise floor				less than the noise floor
500MHz – 600MHz	504.2	−91.16	less than the noise floor				less than the noise floor
600MHz – 700MHz	629.2	−91.89	less than the noise floor				less than the noise floor
700MHz – 800MHz	766	−92.23	less than the noise floor				less than the noise floor
800MHz – 900MHz	848.7	−91.34	less than the noise floor				less than the noise floor
900MHz – 1.0GHz	956.3	−92.31	less than the noise floor				less than the noise floor
1.0GHz – 2.9GHz	2628	−69.65	less than the noise floor				less than the noise floor
2.9GHz – 6.4GHz	3227	−68.07	less than the noise floor				less than the noise floor
6.4GHz – 12.5GHz	9409	−29.16	less than the noise floor				less than the noise floor
11.9G – 18GHz	15092	−62.27	less than the noise floor				less than the noise floor
17.6G – 26.7GHz	24956	−59.81	less than the noise floor				less than the noise floor
26.7G – 40.0GHz	36650	−49.18	less than the noise floor				less than the noise floor

Vertically Polarized 1.0usec/650Hz							
Range	Frequency [MHz]	level [dBm]	Pg [dBm]	Cable Loss [dB]	Antenna Gain [dB]	Pd [dBm]	Radiated Spurious Emission [dBc]
10kHz – 100MHz	40.01	−81.33	−49.3	0.5	−11.48	−61.3	−128.8
100MHz – 200MHz	150.2	−88.8	−63.7	0.5	−4.48	−68.7	−136.2
200MHz – 300MHz	260	−91.46	−63.1	0.5	−3.29	−66.9	−134.3
300MHz – 400MHz	357.8	−91.83	less than the noise floor				less than the noise floor
400MHz – 500MHz	433.3	−91.3	less than the noise floor				less than the noise floor
500MHz – 600MHz	503.7	−91.48	−77.1	0.5	3.05	−74.5	−142.0
600MHz – 700MHz	657.8	−92.05	less than the noise floor				less than the noise floor
700MHz – 800MHz	787	−92.19	less than the noise floor				less than the noise floor
800MHz – 900MHz	851.3	−90.05	less than the noise floor				less than the noise floor
900MHz – 1.0GHz	924	−91.96	less than the noise floor				less than the noise floor
1.0GHz – 2.9GHz	2568	−69.64	less than the noise floor				less than the noise floor
2.9GHz – 6.4GHz	3092	−67.6	less than the noise floor				less than the noise floor
6.4GHz – 12.5GHz	9409	−15.73	less than the noise floor				less than the noise floor
11.9G – 18GHz	17298	−63.51	less than the noise floor				less than the noise floor
17.6G – 26.7GHz	25001	−59.79	less than the noise floor				less than the noise floor
26.7G – 40.0GHz	37070	−49.03	less than the noise floor				less than the noise floor

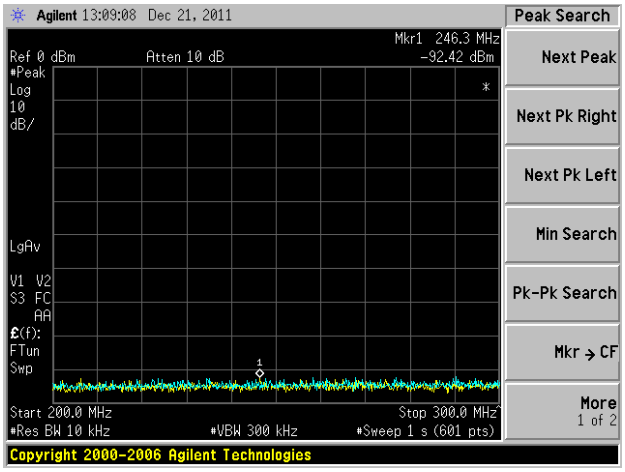
·Horizontally Polarized



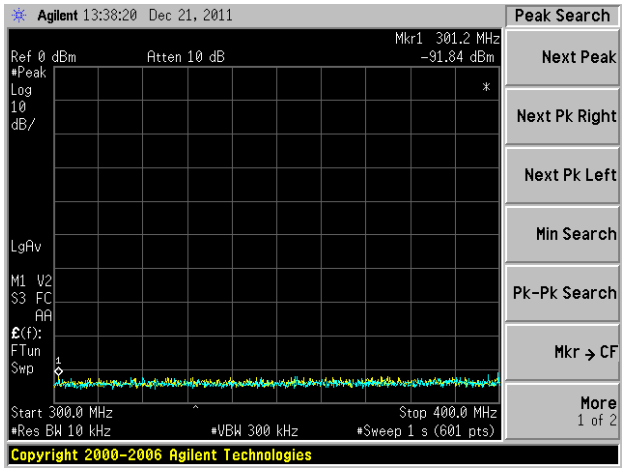
10kHz to 100MHz



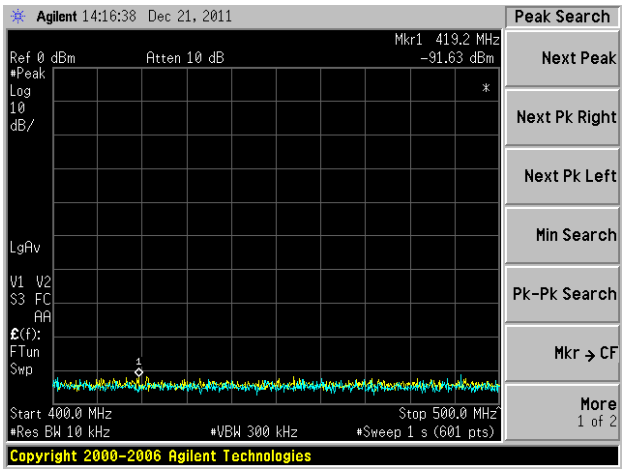
100MHz to 200MHz



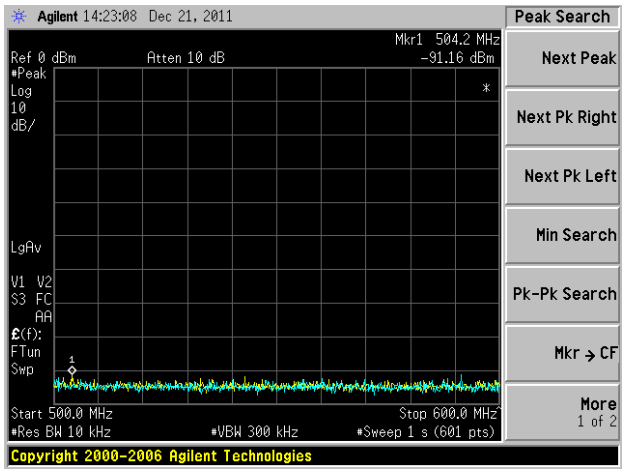
200MHz to 300MHz



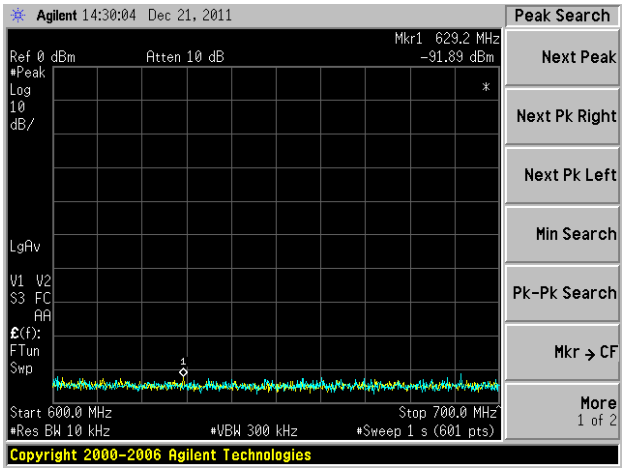
300MHz to 400MHz



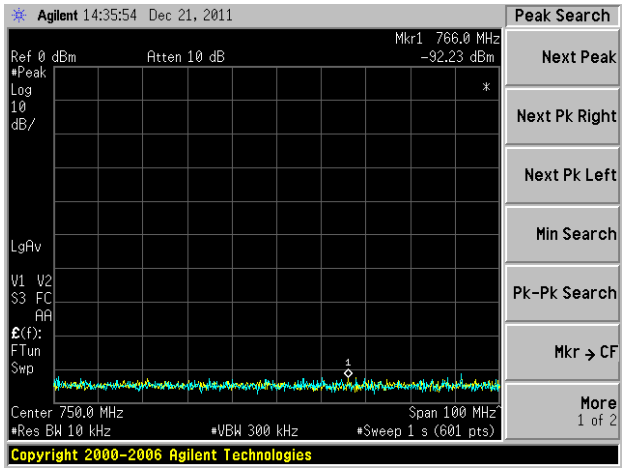
400MHz to 500MHz



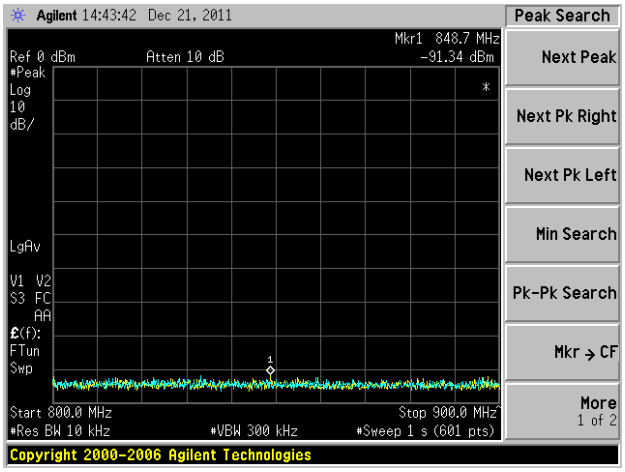
500MHz to 600MHz



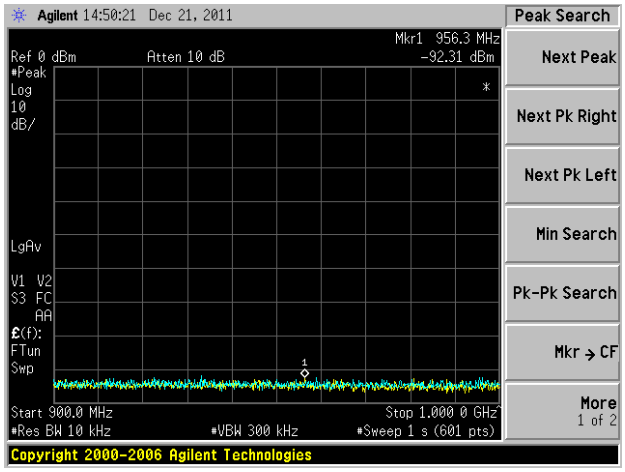
600MHz to 700MHz



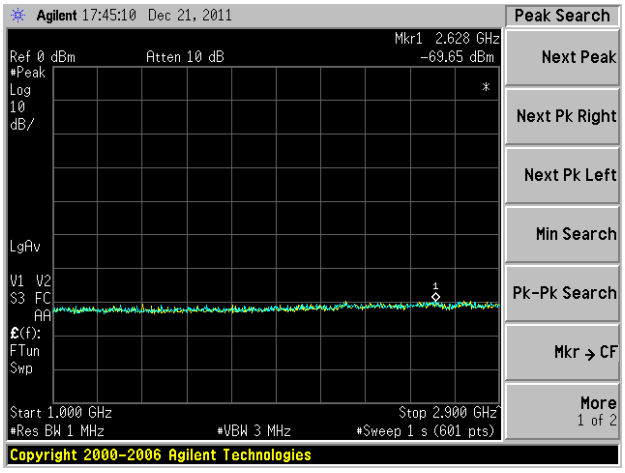
700MHz to 800MHz



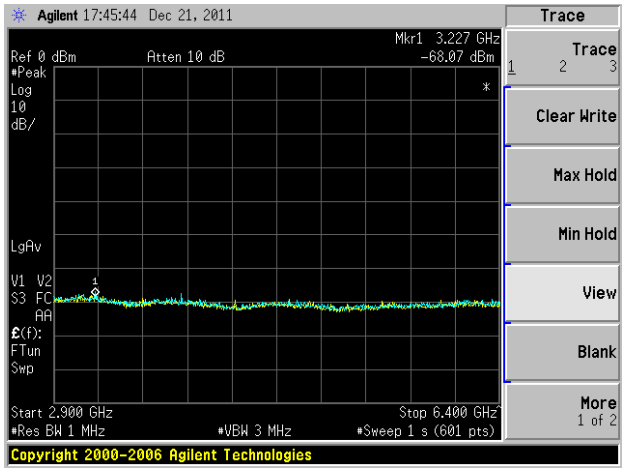
800MHz to 900MHz



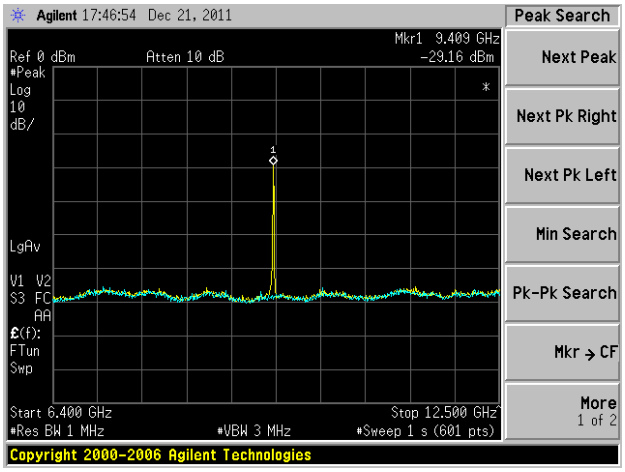
900MHz to 1GHz



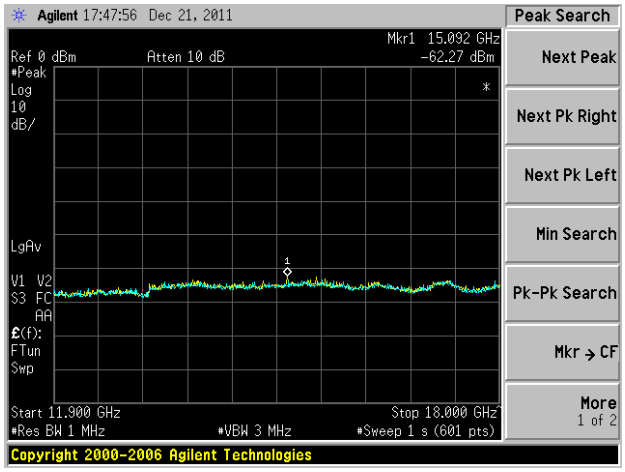
1GHz to 2.9GHz



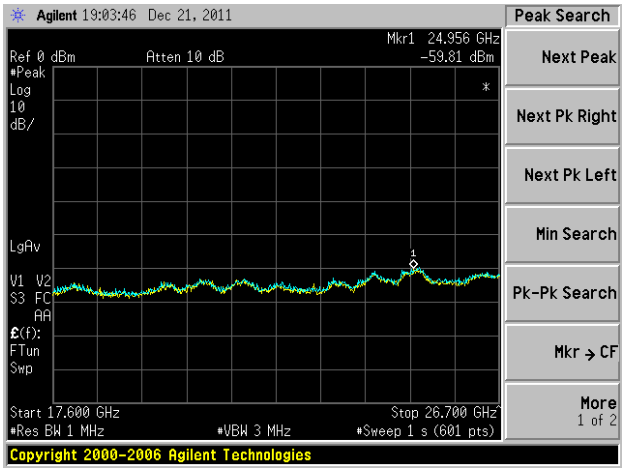
2.9GHz to 6.4GHz



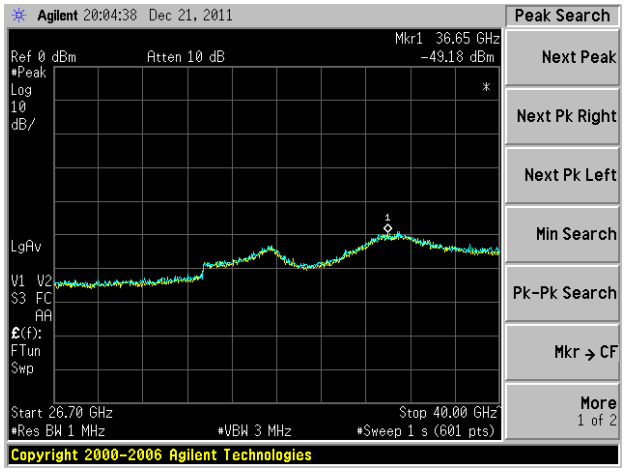
6.4GHz to 12.5GHz



11.9GHz to 18GHz

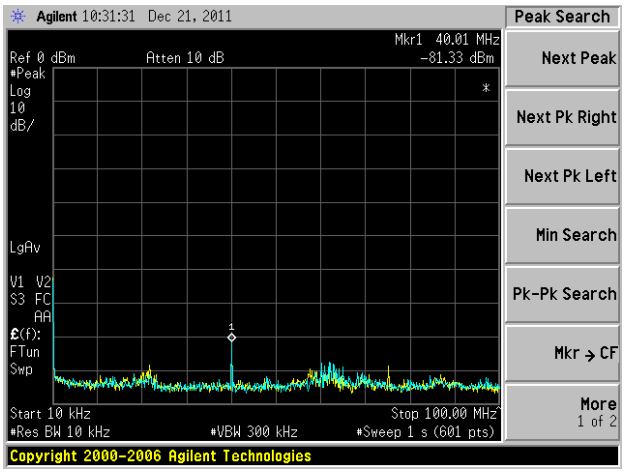


17.6GHz to 26.7GHz

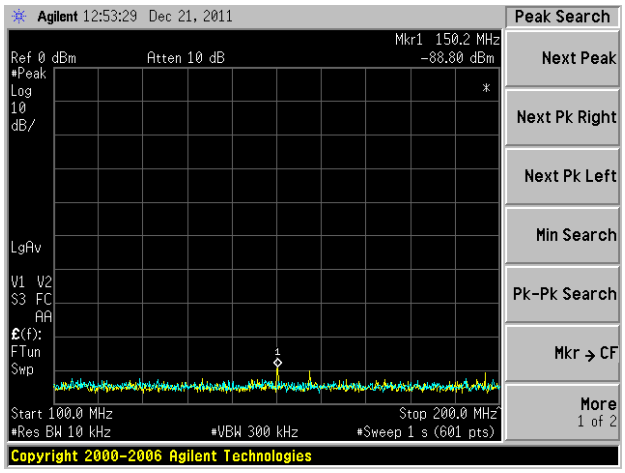


26.7GHz to 40.0GHz

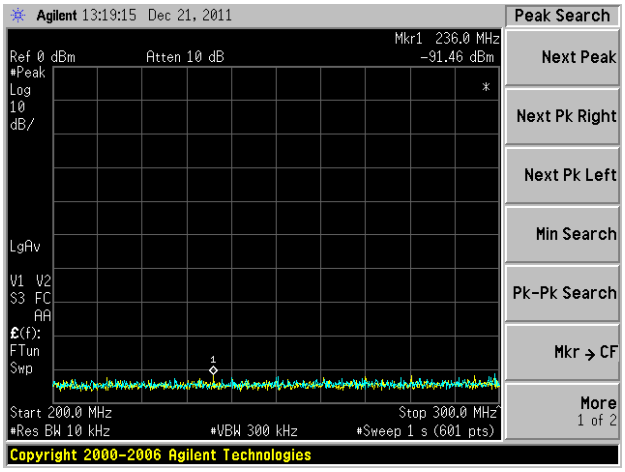
·Vertically Polarized



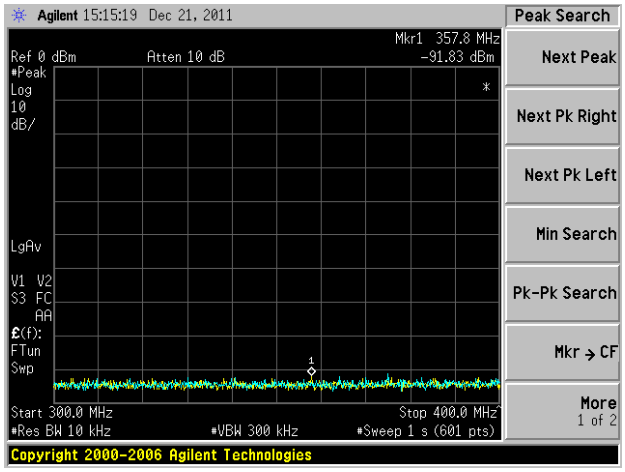
10kHz to 100MHz



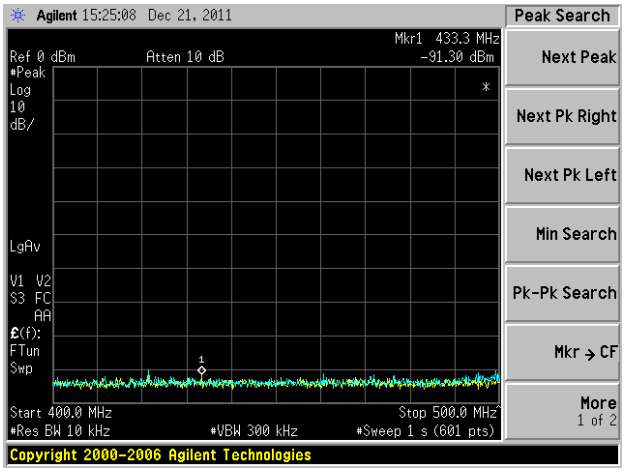
100MHz to 200MHz



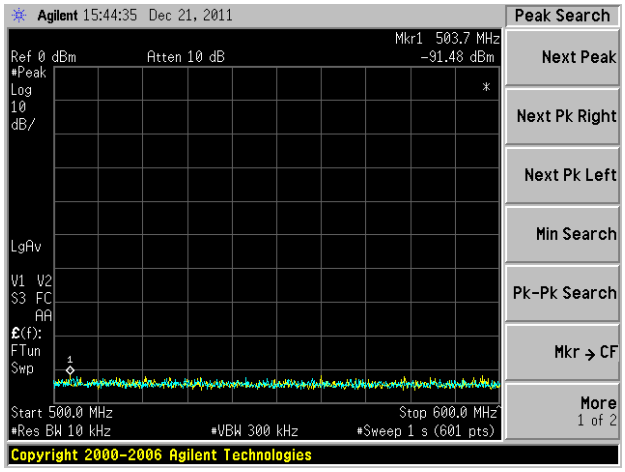
200MHz to 300MHz



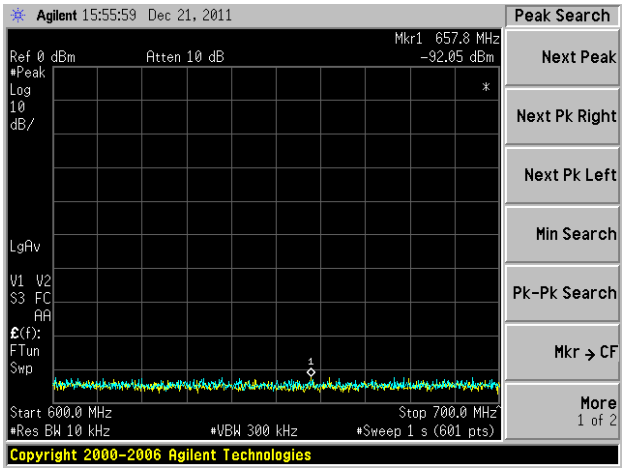
300MHz to 400MHz



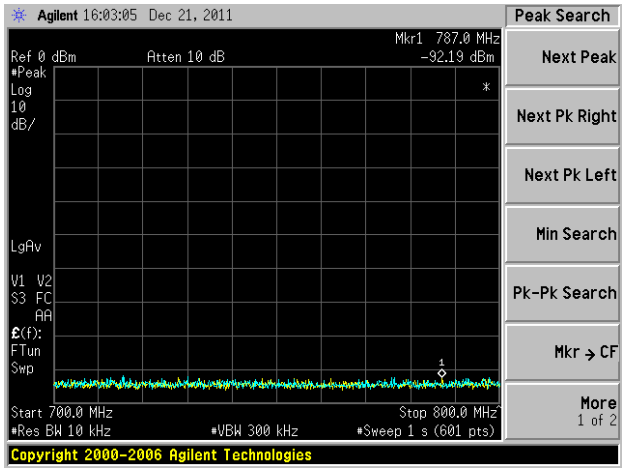
400MHz to 500MHz



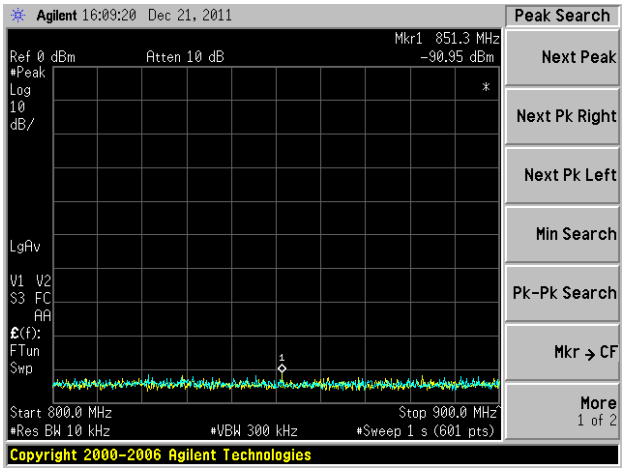
500MHz to 600MHz



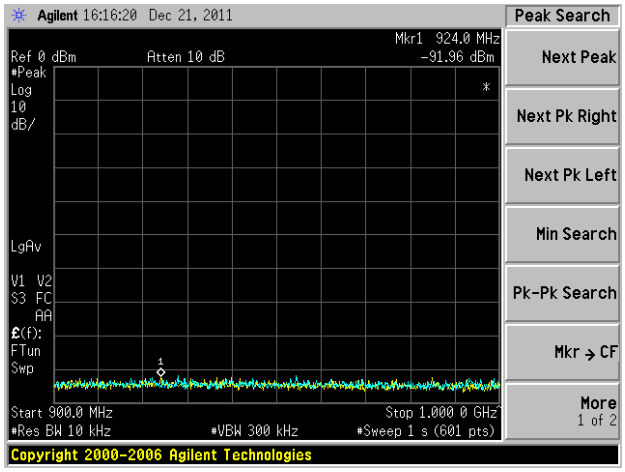
600MHz to 700MHz



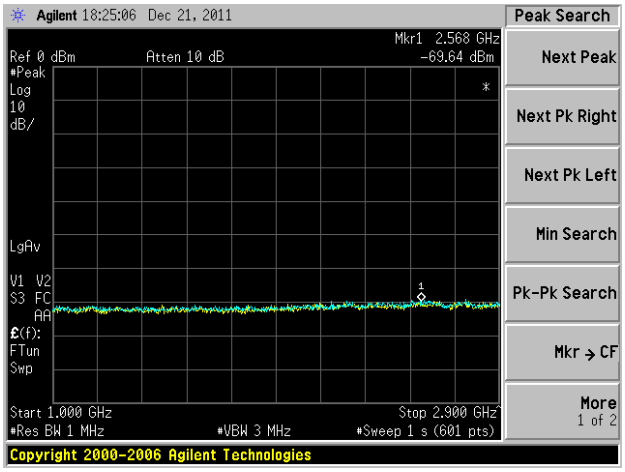
700MHz to 800MHz



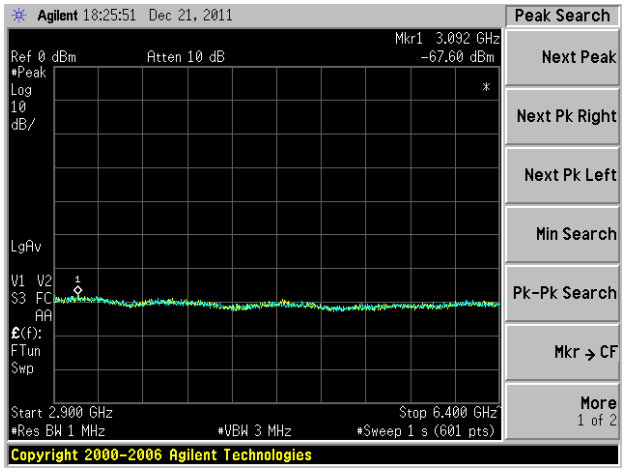
800MHz to 900MHz



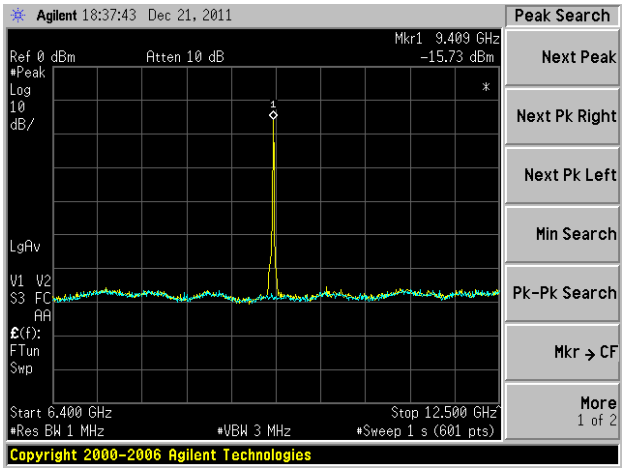
900MHz to 1GHz



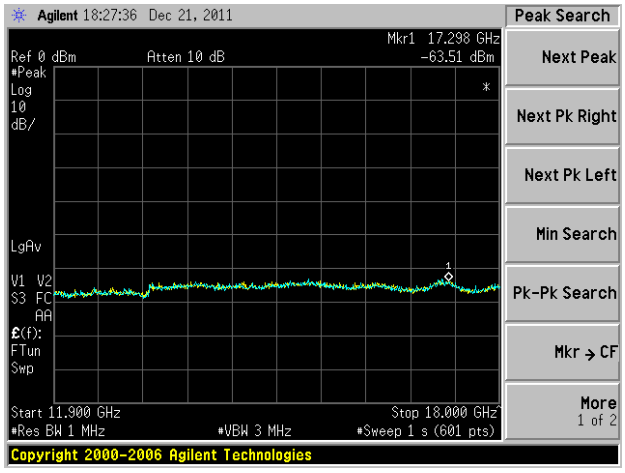
1GHz to 2.9GHz



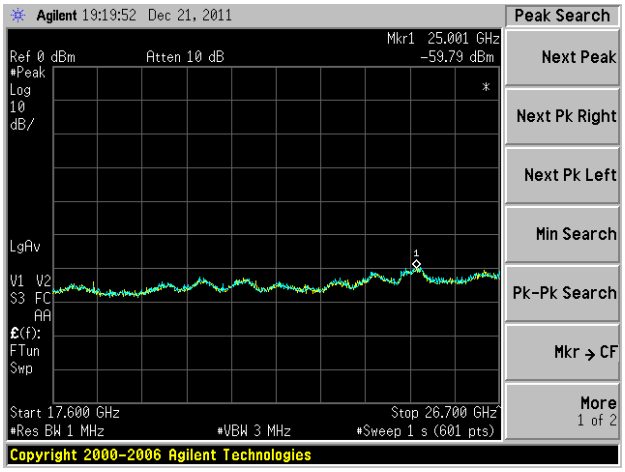
2.9GHz 6.4GHz



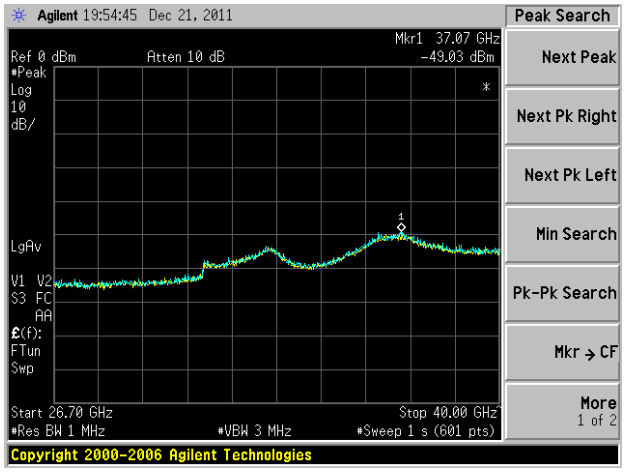
6.4GHz to 12.5GHz



11.9GHz to 18.0GHz



17.6GHz to 26.7GHz



26.7GHz to 40GHz

Pd (dBm) = Pg(dBm) - Cable Loss(dB) + antenna gain(dB)

where;

Pg is the generator output power into the substitution antenna.

Pd is the dipole equivalent power

and radiated spurious emissions can be calculated by the following:

$$Radiated\ \ spurious\ \ emissions(dBc) = -\left[10\log\left(\frac{TXpowerinwatts}{0.001}\right) - Pd(dBm)\right]$$

4.4 Radiofrequency radiation exposure limits.

47 CFR sec. 1.1310

Power density = 0.186 [mW/cm²] is satisfied about 5 [mW/cm²].

Frequency rage [MHz]	Electric field strength [V/m]	Magnetic field strength [A/m]	Power density [mW/cm²]	Averaging time [minutes]
1500 – 100,000	26.48	0.070	0.186	6

Calculated by prediction method refer to OET Bulletin 65 as follows;

Power density $S_{limit} = \frac{PG}{4\pi R^2}$

$= \frac{5000 * 616.59}{4 * \pi * 2803^2}$

$= 0.031\ [mW/cm^2]$

where: P = 5000mW (power input to antenna)
G = 10^(dB/10) = 10^(27.9/10) = 616.59 (power gain of the antenna)
R = 2803cm (distance to the center of radiation of antenna)

Distance to the center of radiation of antenna

$R = \frac{0.6D^2}{\lambda}$

$= \frac{0.6 * 121.9^2}{3.18}$

$= 2803$

where: D = 121.9cm (antenna diameter)
λ = 3.18cm (wavelength) f =9410MHz

Power density level(s) during the appropriate time-averaging interval

$\sum S_{exp} t_{exp} = S_{limit} t_{ave}$

$= 0.031 * 6$

$= 0.186$

Electric field strength

$E = \sqrt{S * 3770}$

$= \sqrt{0.186 * 3770}$

$= 26.48$ [V/m]

Magnetic field strength

$H = \sqrt{\frac{S}{37.7}}$

$= \sqrt{\frac{0.186}{37.7}}$

$= 0.070$ [A/m]