



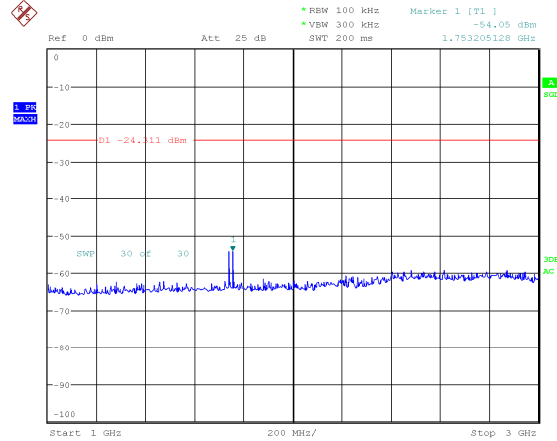
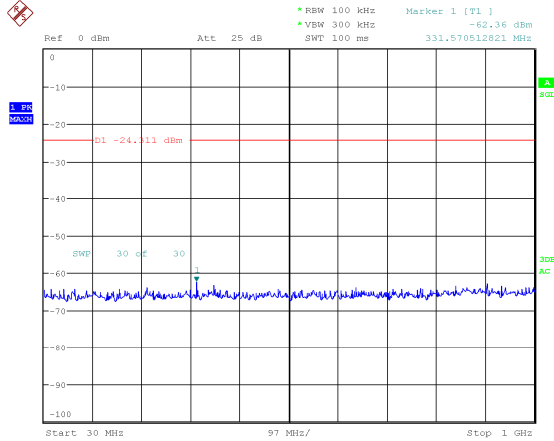
2.1.7 Conducted Spurious Emissions

Procedure:

KDB 789033 Conducted Measurements.

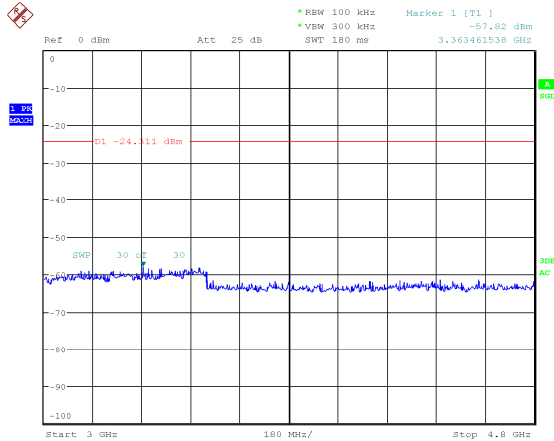
Measurement Data: Next Page

802.11a



Date: 7.AUG.2015 17:35:32

5180MHz 30MHz~1GHz

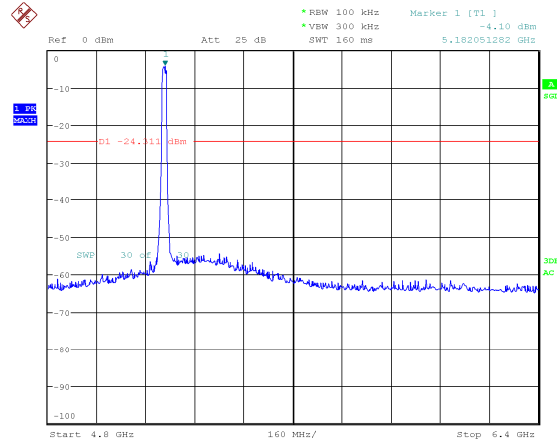


Date: 7.AUG.2015 17:36:01

5180MHz 3GHz~4.8GHz

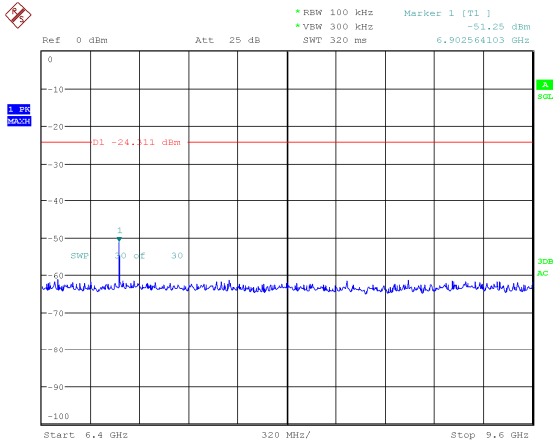
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5180MHz 1GHz~3GHz



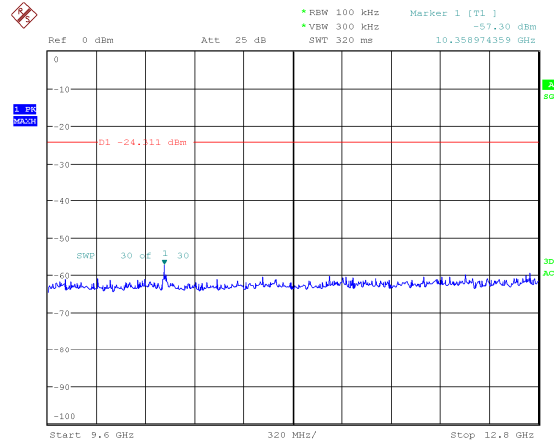
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5180MHz 4.8GHz~6.4GHz



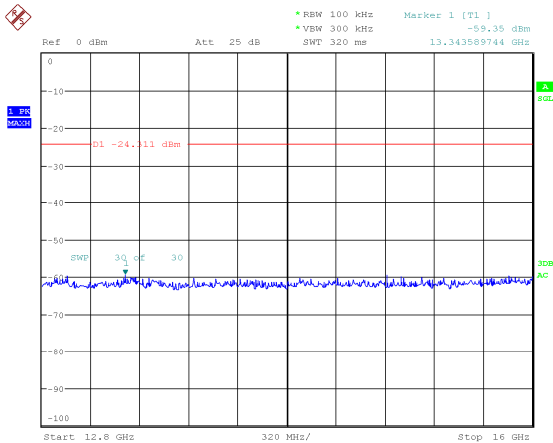
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5180MHz 6.4GHz~9.6GHz



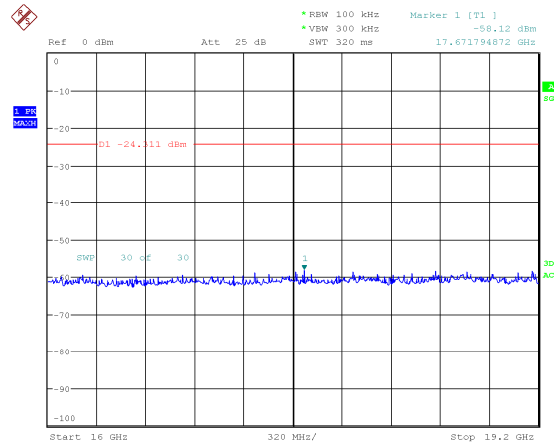
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5180MHz 9.6GHz~12.8GHz



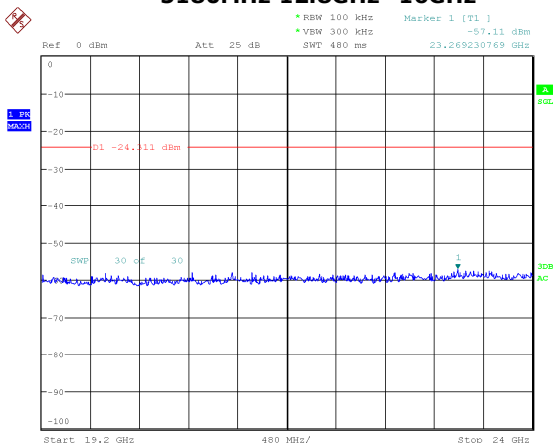
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5180MHz 12.8GHz~16GHz



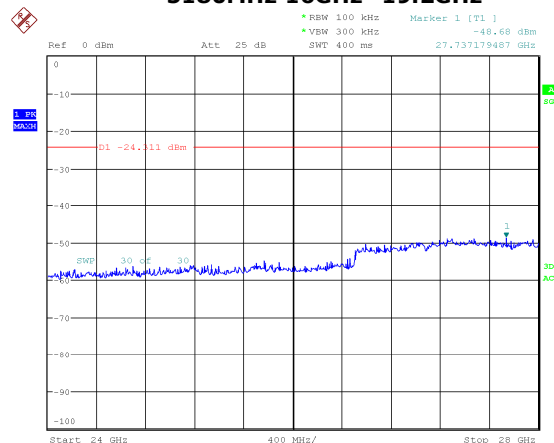
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5180MHz 16GHz~19.2GHz



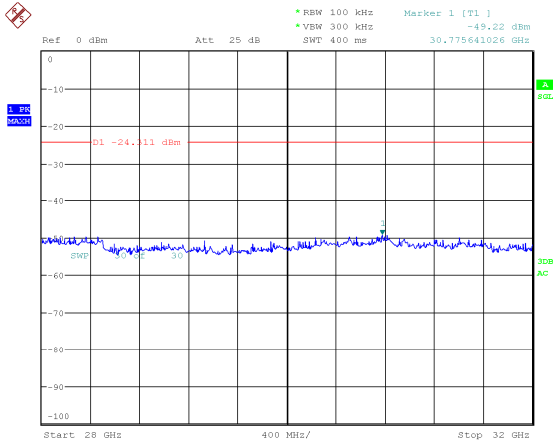
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5180MHz 19.2GHz~24GHz



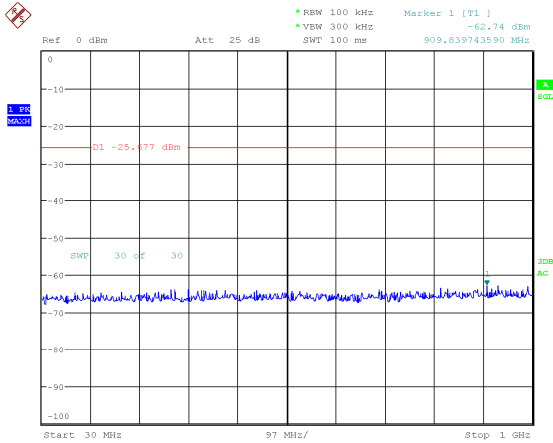
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5180MHz 24GHz~28GHz



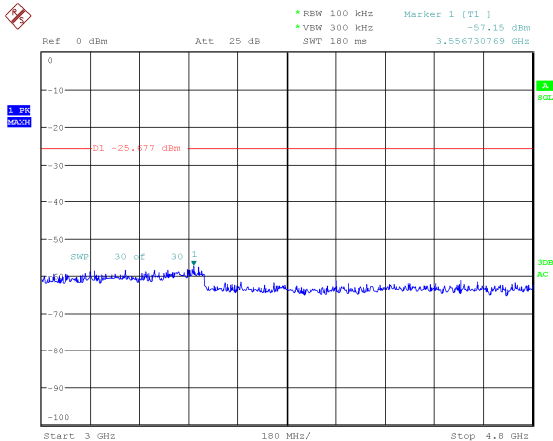
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5180MHz 28GHz~32GHz



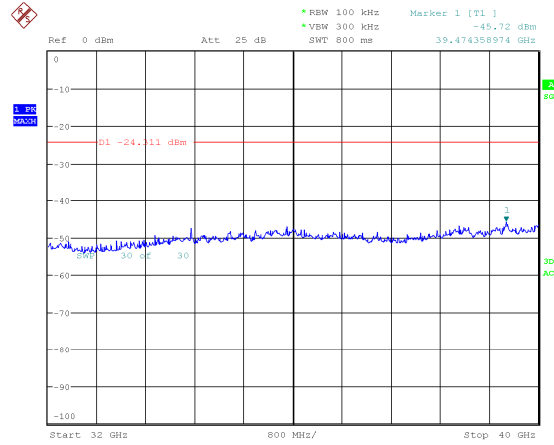
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5200MHz 30MHz~1GHz



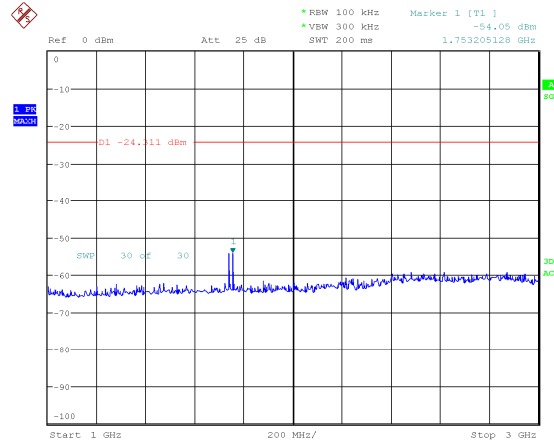
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5200MHz 3GHz~4.8GHz



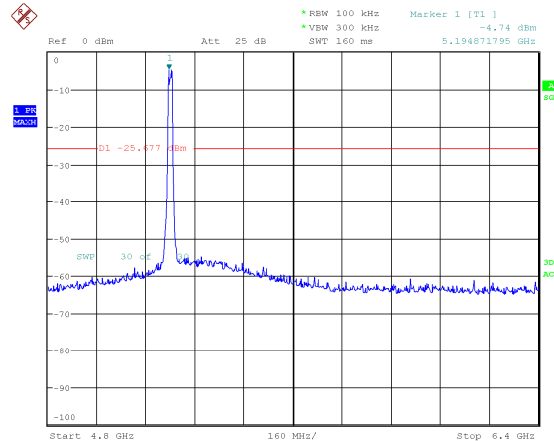
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5180MHz 32GHz~40GHz



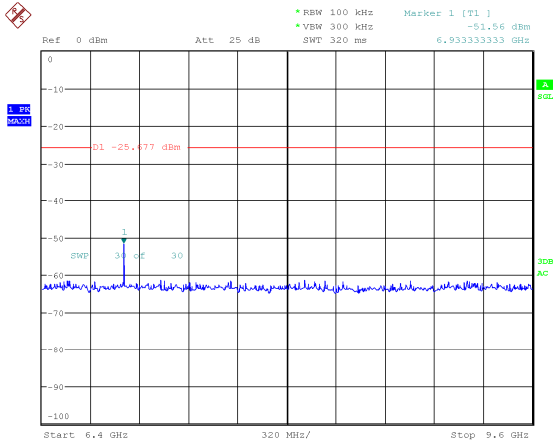
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5200MHz 1GHz~3GHz



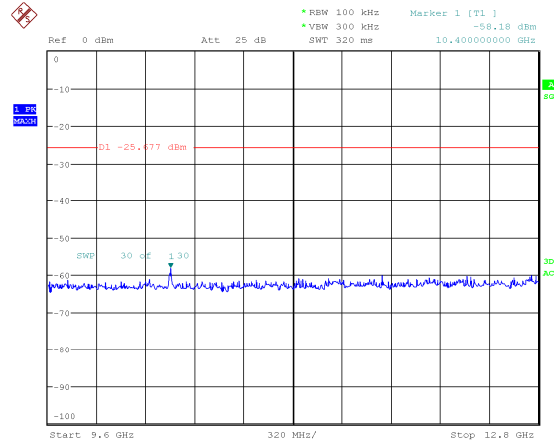
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5200MHz 4.8GHz~6.4GHz



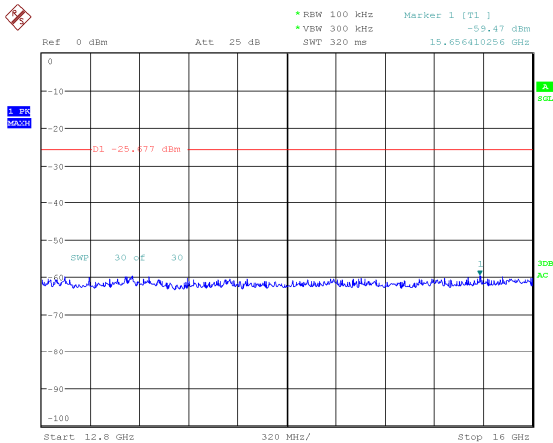
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5200MHz 6.4GHz~9.6GHz



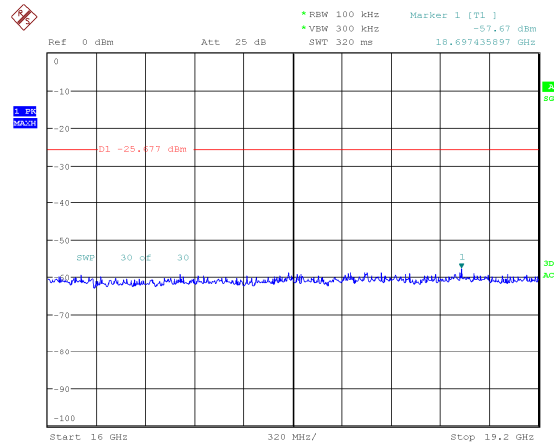
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5200MHz 9.6GHz~12.8GHz



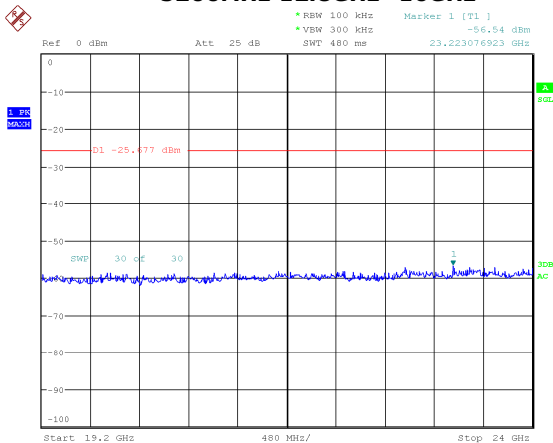
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5200MHz 12.8GHz~16GHz



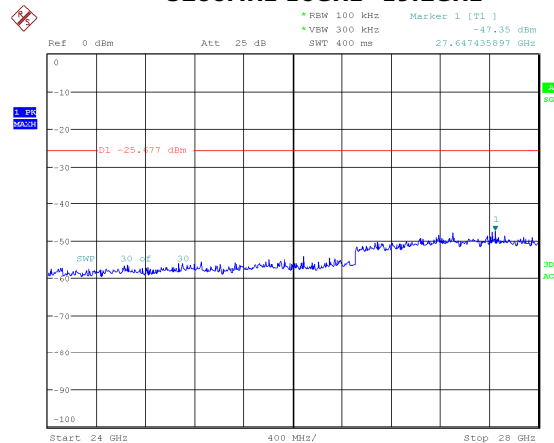
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5200MHz 16GHz~19.2GHz



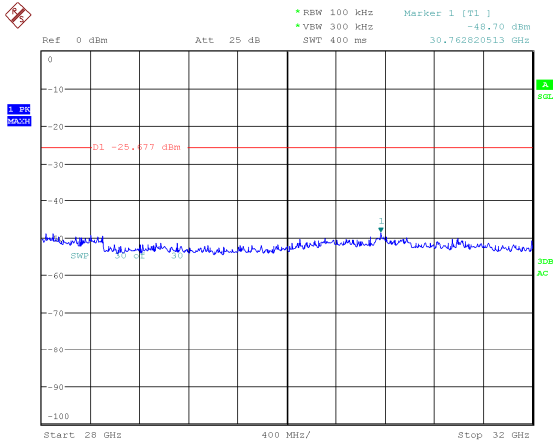
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5200MHz 19.2GHz~24GHz



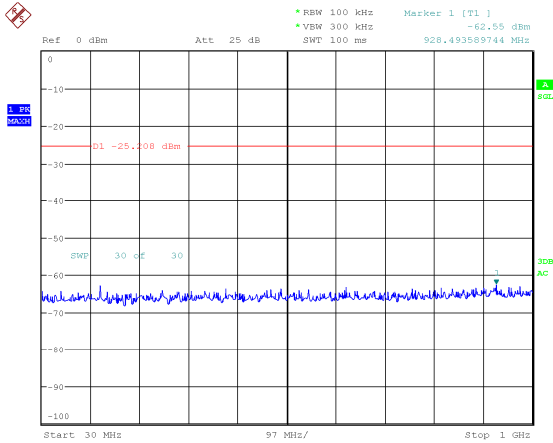
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5200MHz 24GHz~28GHz



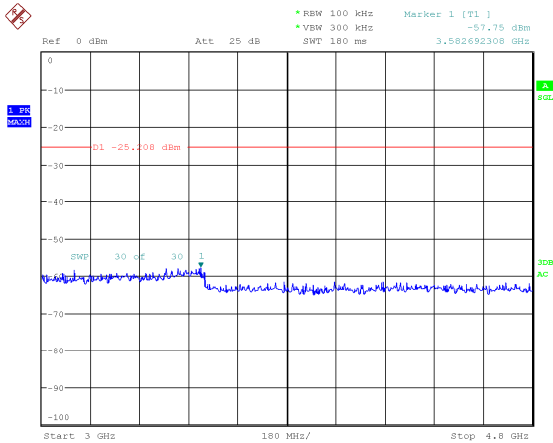
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5200MHz 28GHz~32GHz



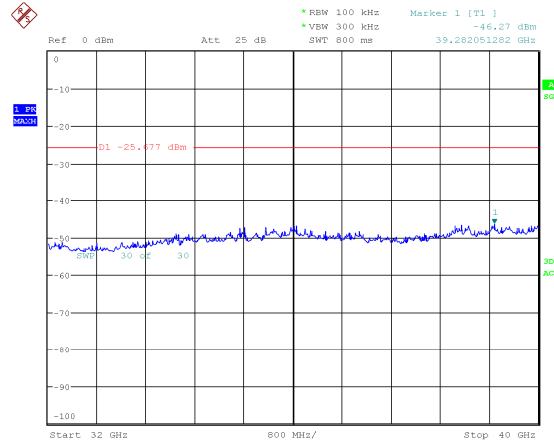
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5240MHz 30MHz~1GHz



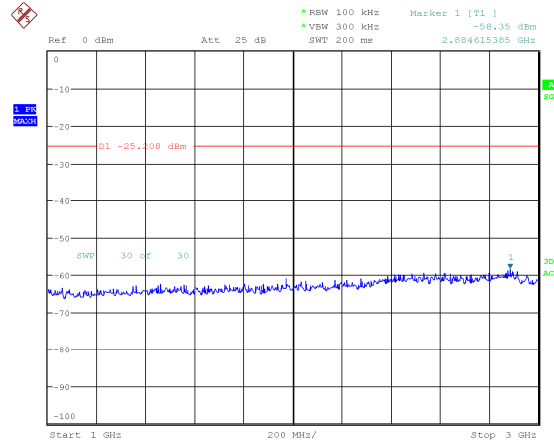
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5240MHz 3GHz~4.8GHz



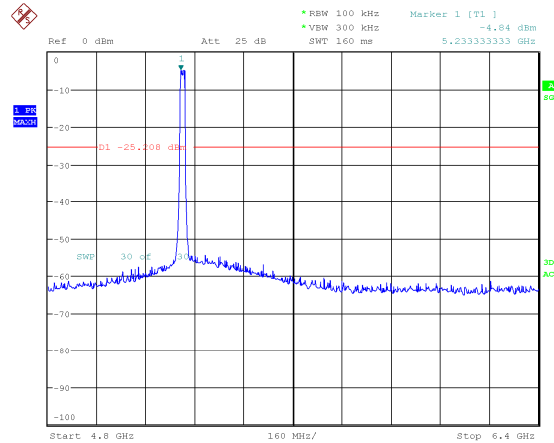
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5200MHz 32GHz~40GHz



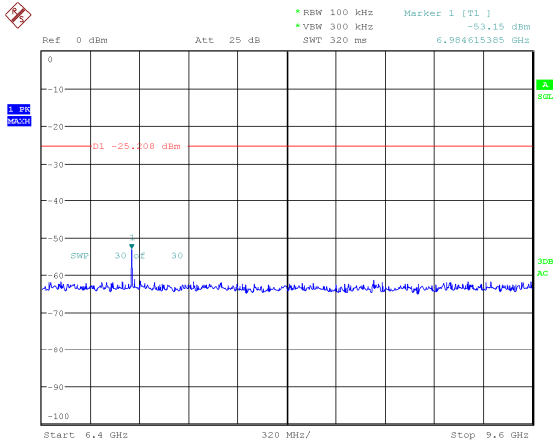
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5240MHz 1GHz~3GHz



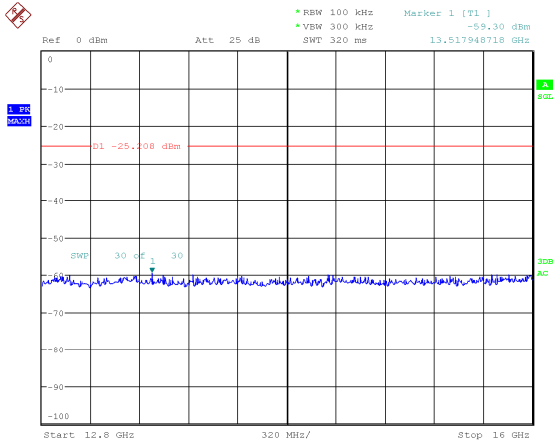
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5240MHz 4.8GHz~6.4GHz



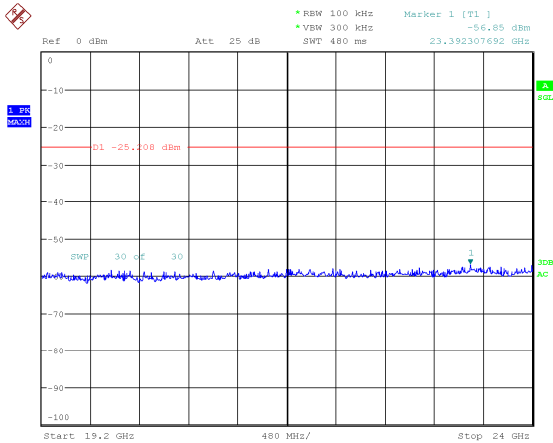
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5240MHz 6.4GHz~9.6GHz



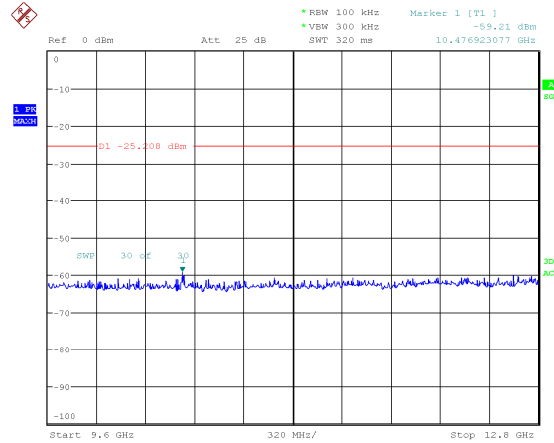
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5240MHz 12.8GHz~16GHz



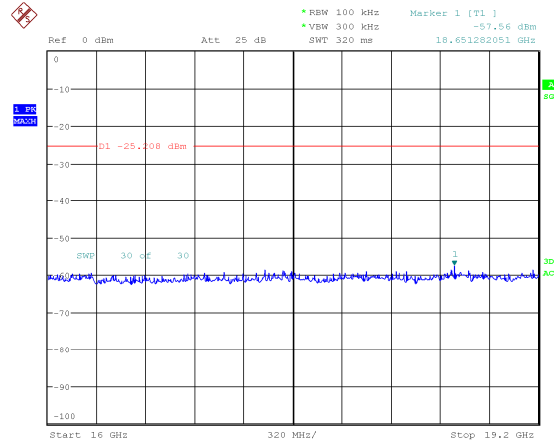
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5240MHz 19.2GHz~24GHz



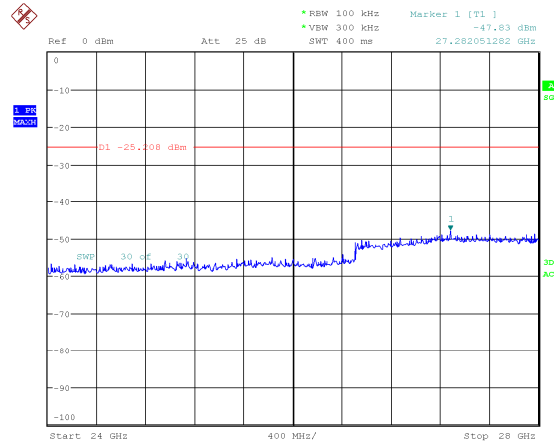
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5240MHz 9.6GHz~12.8GHz



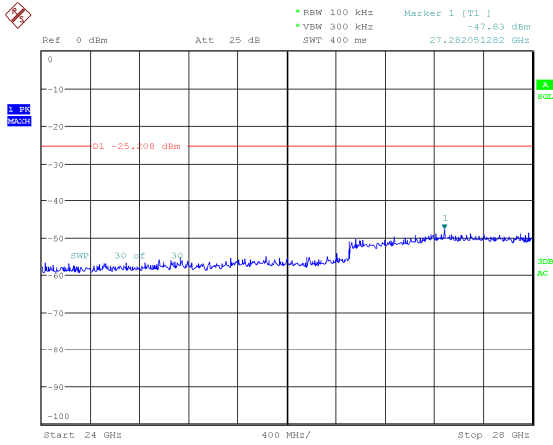
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5240MHz 16GHz~19.2GHz

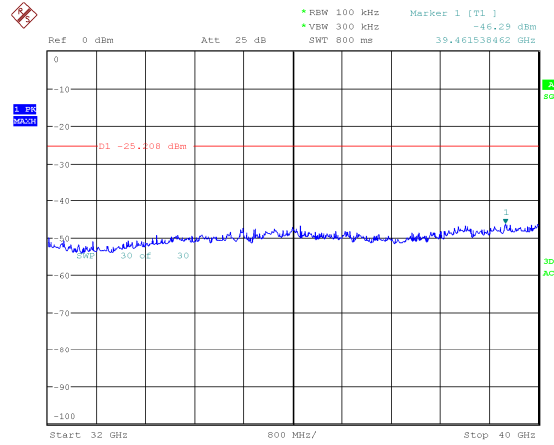


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5240MHz 24GHz~28GHz

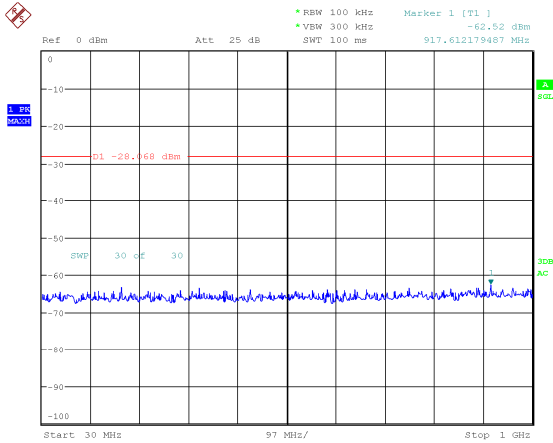


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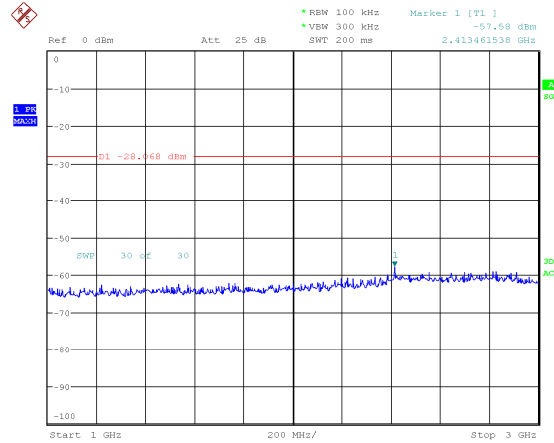
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5240MHz 28GHz~32GHz



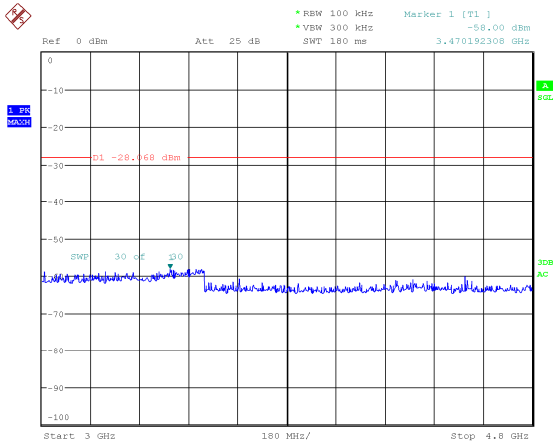
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5240MHz 32GHz~40GHz



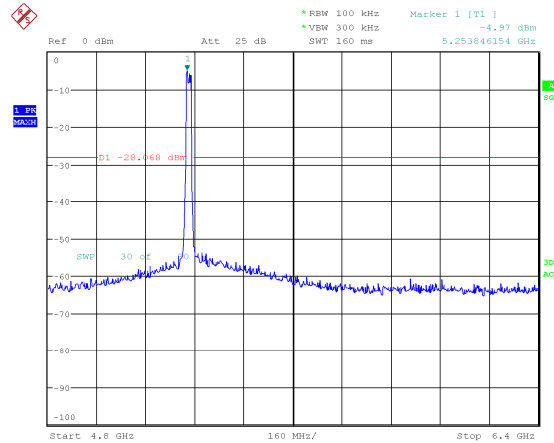
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5260MHz 30MHz~1GHz



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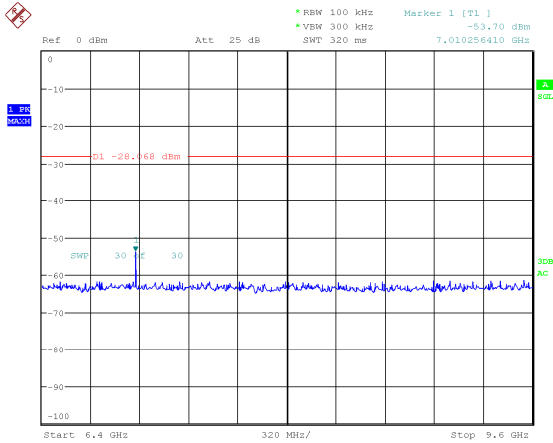
5260MHz 1GHz~3GHz



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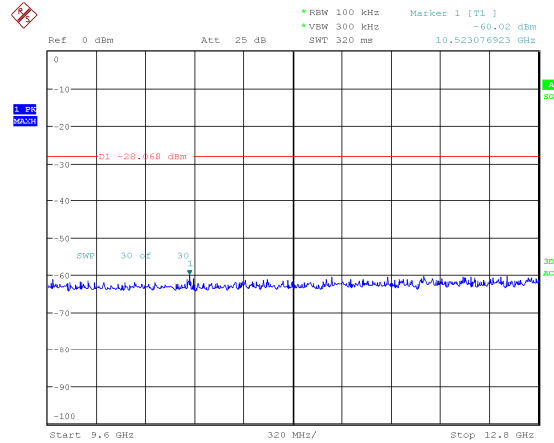
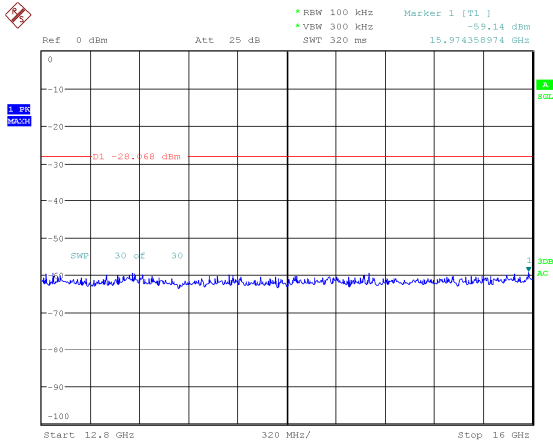
5260MHz 3GHz~4.8GHz

5260MHz 4.8GHz~6.4GHz



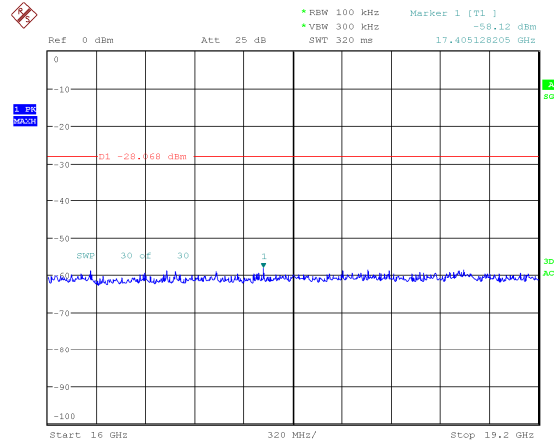
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5260MHz 6.4GHz~9.6GHz



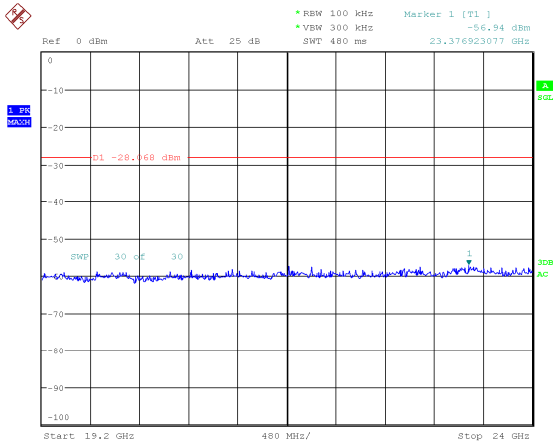
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5260MHz 9.6GHz~12.8GHz



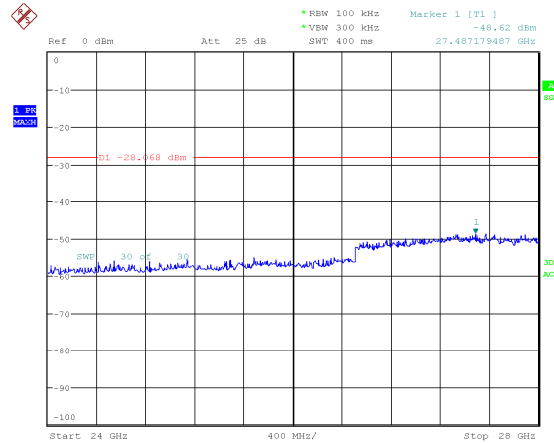
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5260MHz 12.8GHz~16GHz



Date: 7.AUG.2015 17:53:27

5260MHz 16GHz~19.2GHz

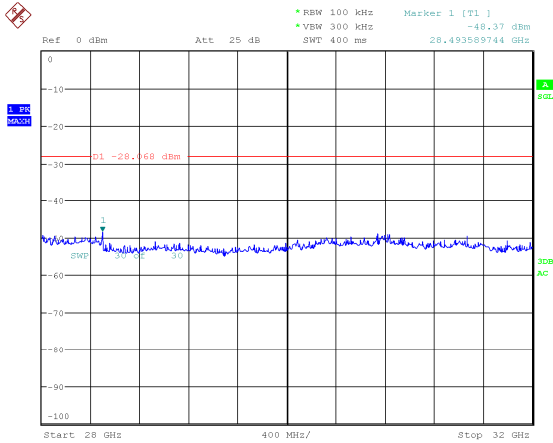


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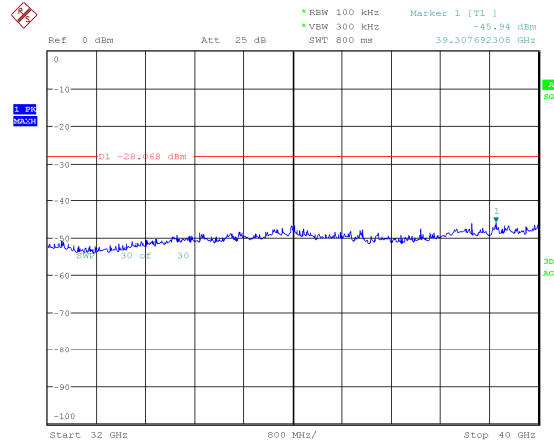
5260MHz 19.2GHz~24GHz

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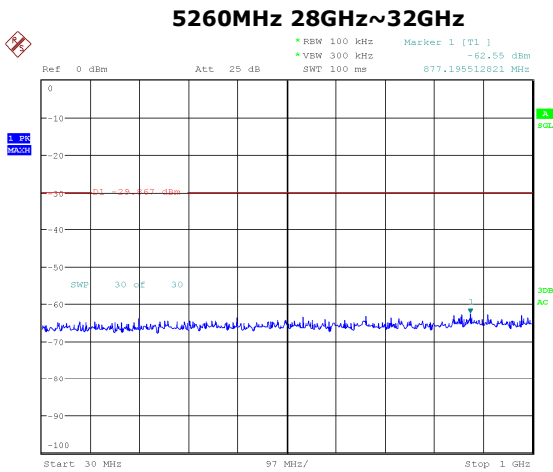
5260MHz 24GHz~28GHz



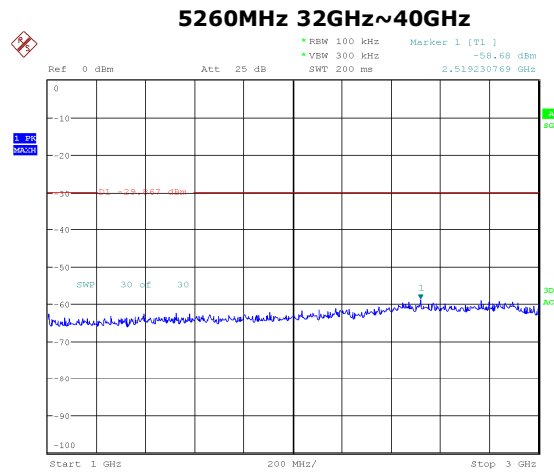
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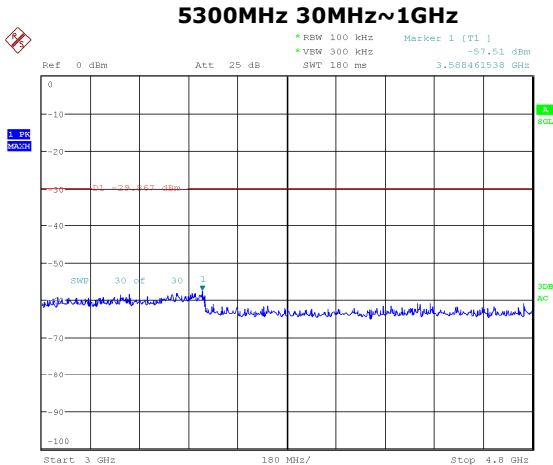
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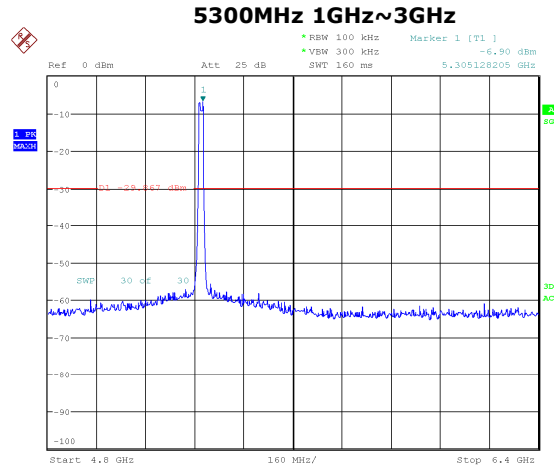
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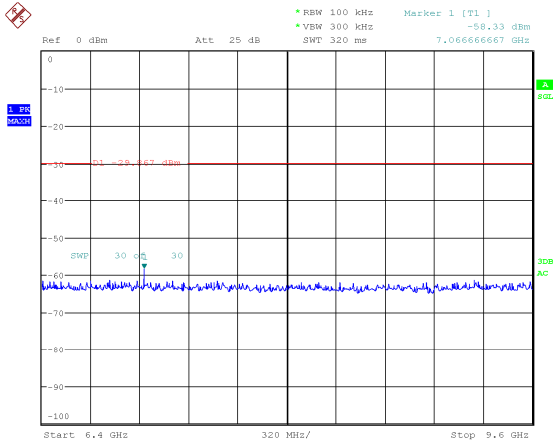
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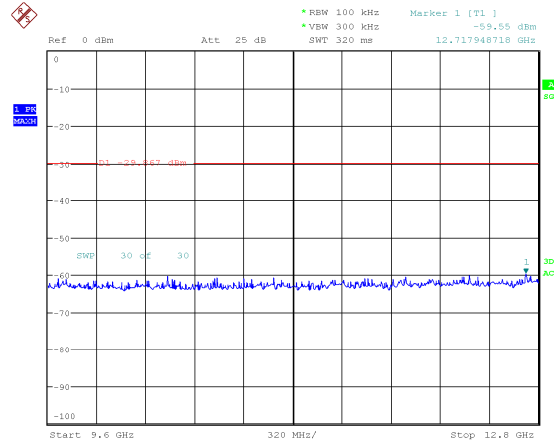
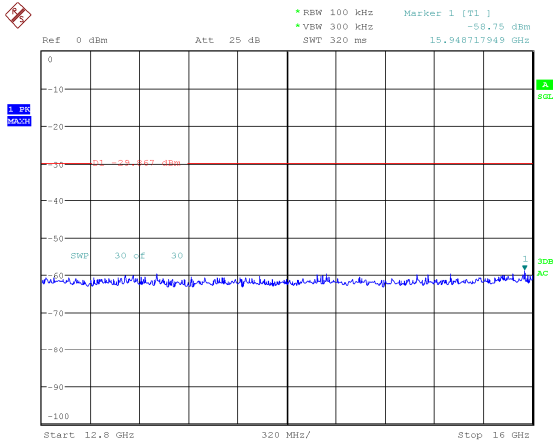


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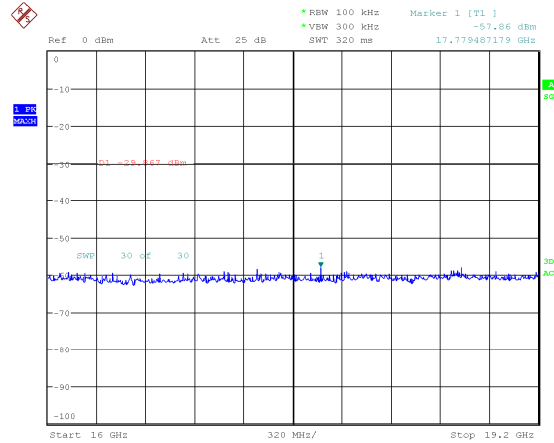
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5300MHz 6.4GHz~9.6GHz



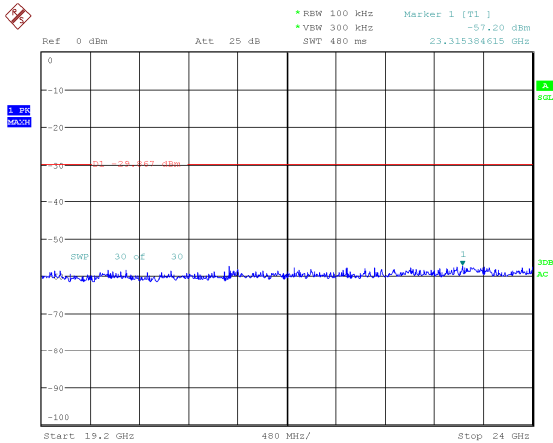
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5300MHz 9.6GHz~12.8GHz



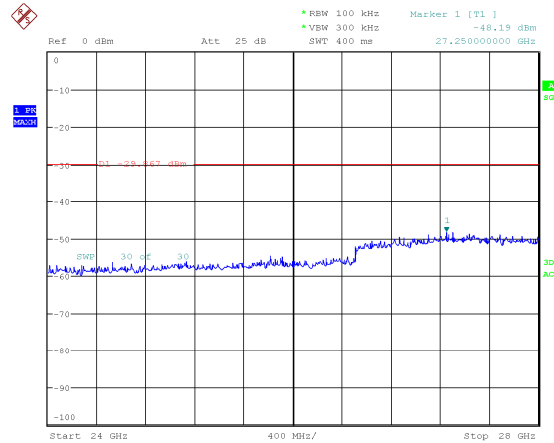
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5300MHz 12.8GHz~16GHz



Date: 7.AUG.2015 17:58:33

5300MHz 16GHz~19.2GHz



Date: 7.AUG.2015 17:58:59

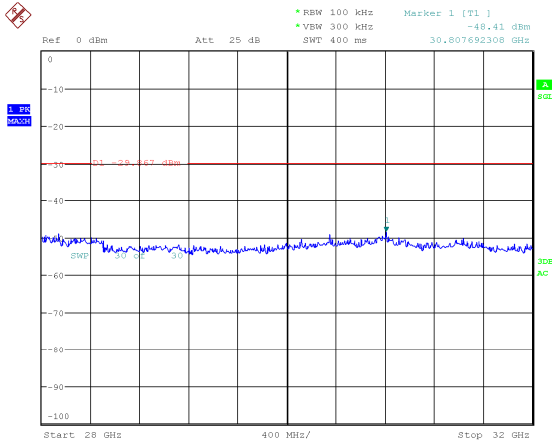
5300MHz 19.2GHz~24GHz

Date: 7.AUG.2015 17:59:24

5300MHz 24GHz~28GHz

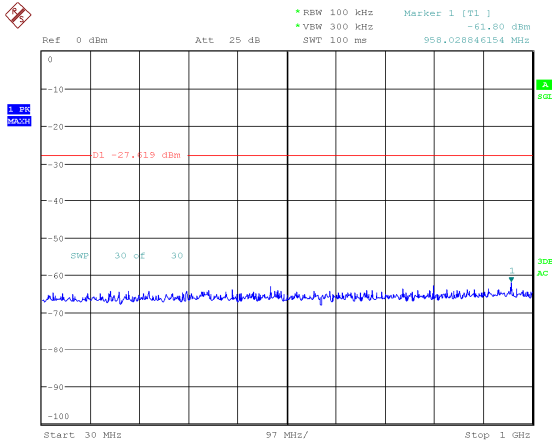


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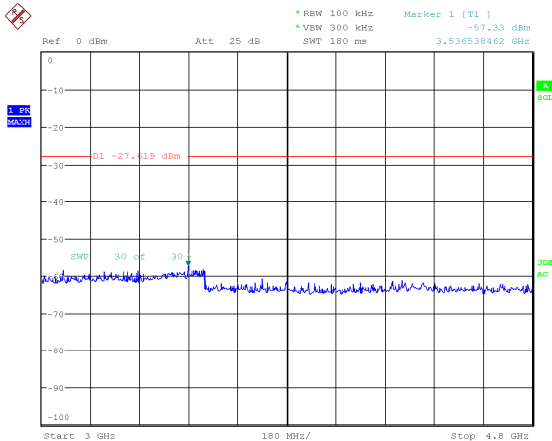
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5300MHz 28GHz~32GHz



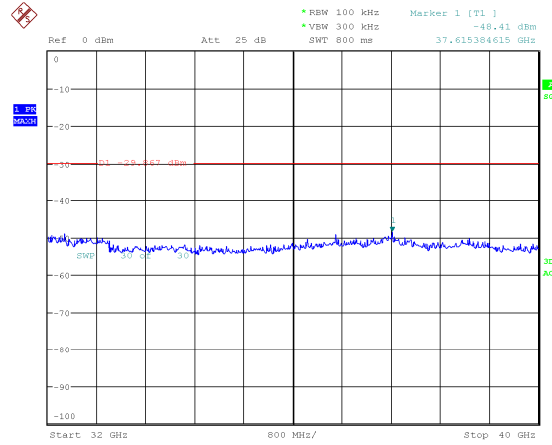
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5320MHz 30MHz~1GHz



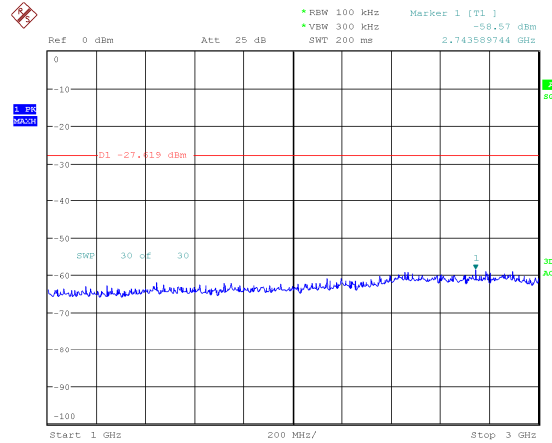
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5320MHz 3GHz~4.8GHz



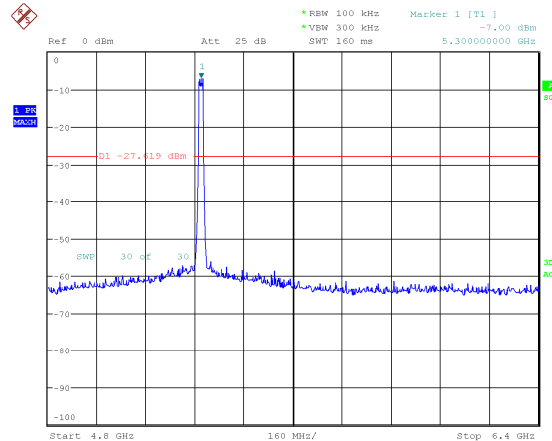
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5300MHz 32GHz~40GHz



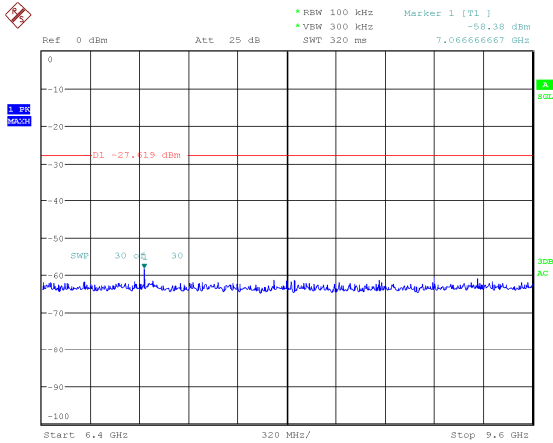
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5320MHz 1GHz~3GHz



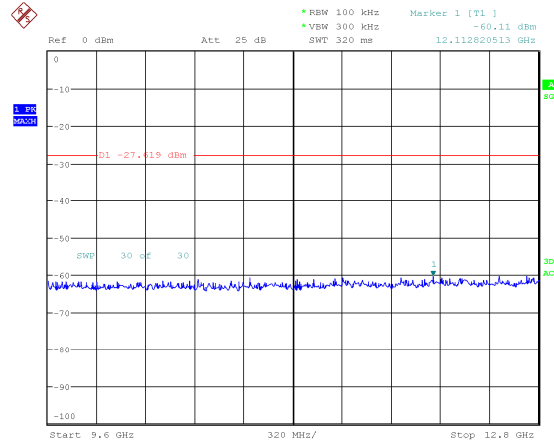
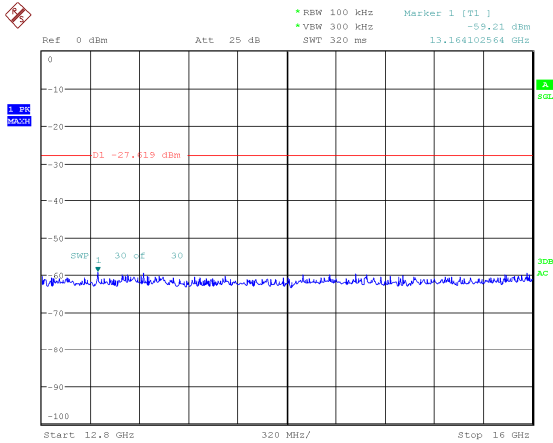
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5320MHz 4.8GHz~6.4GHz



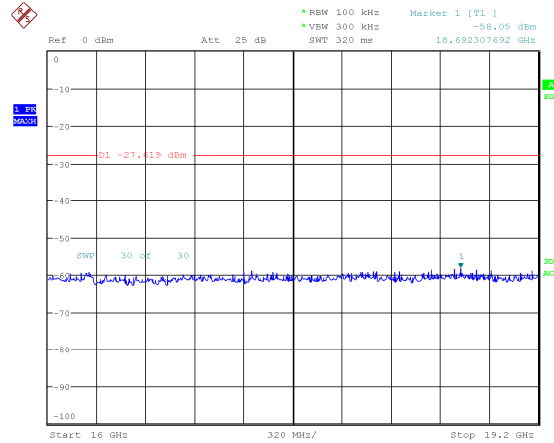
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5320MHz 6.4GHz~9.6GHz



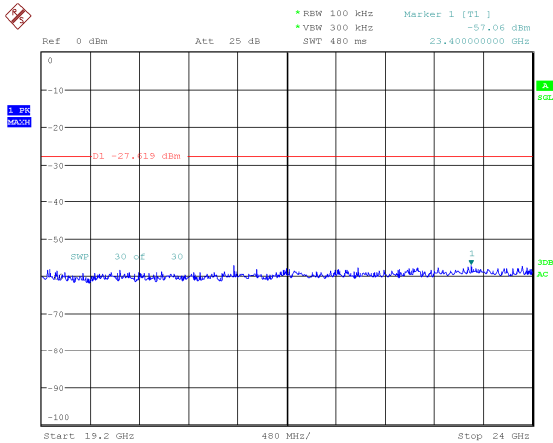
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5320MHz 9.6GHz~12.8GHz



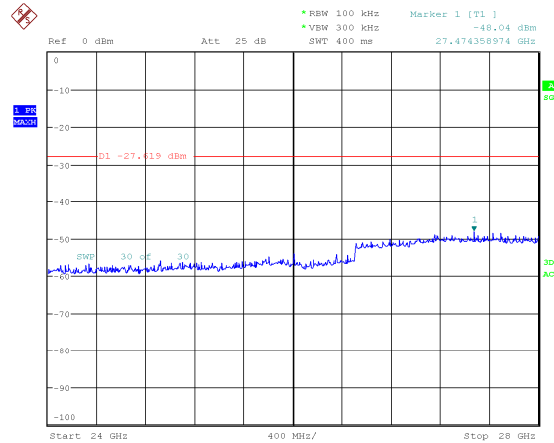
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5320MHz 12.8GHz~16GHz



Date: 7.AUG.2015 18:04:14

5320MHz 16GHz~19.2GHz



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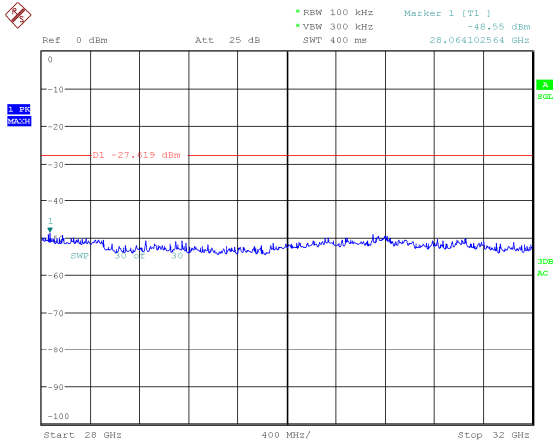
5320MHz 19.2GHz~24GHz

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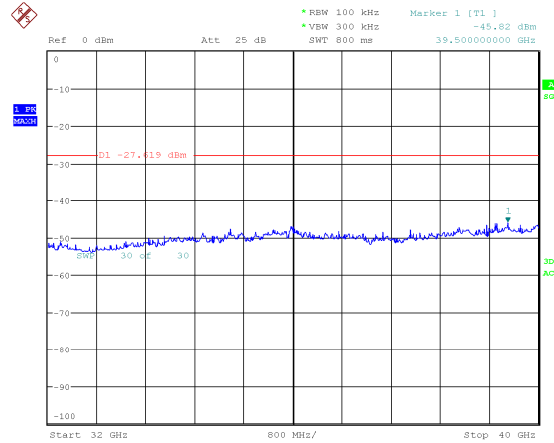
5320MHz 24GHz~28GHz



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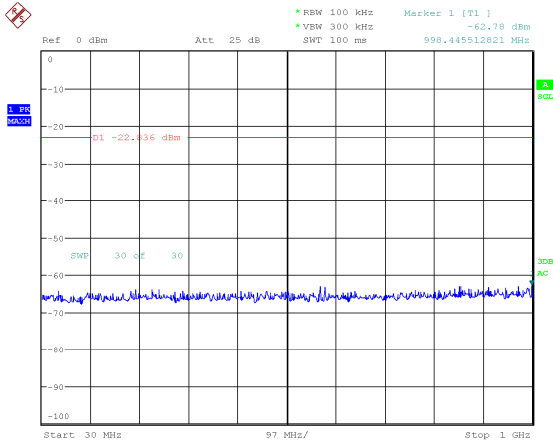


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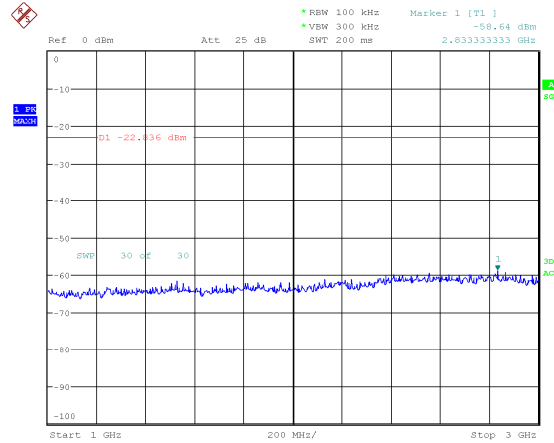
Date: 7.AUG.2015 18:06:07

5320MHz 28GHz~32GHz



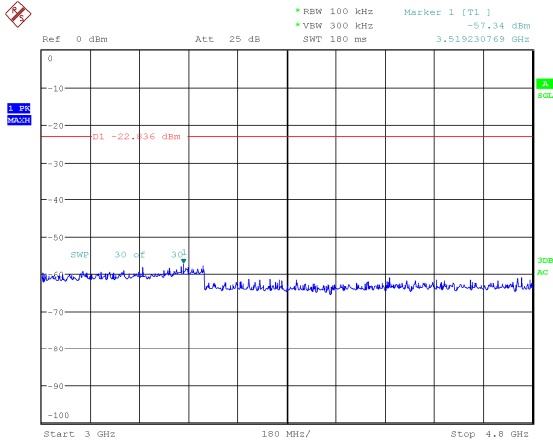
Date: 7.AUG.2015 18:07:13

5320MHz 32GHz~40GHz



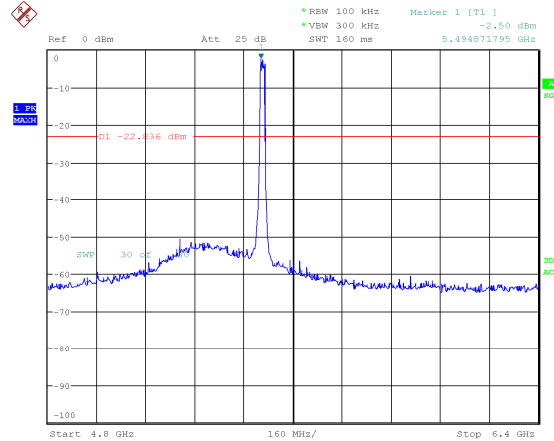
Date: 7.AUG.2015 18:07:24

5500MHz 30MHz~1GHz



Date: 7.AUG.2015 18:07:42

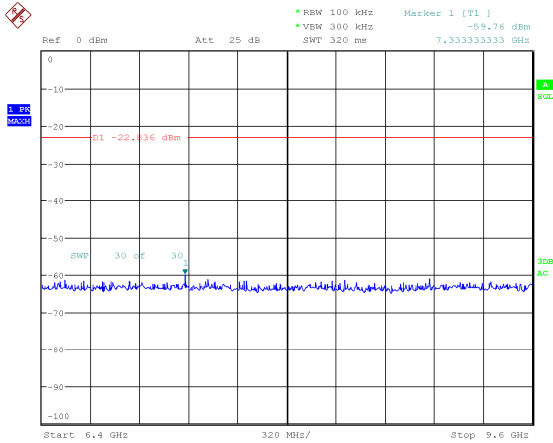
5500MHz 1GHz~3GHz



Date: 7.AUG.2015 18:07:58

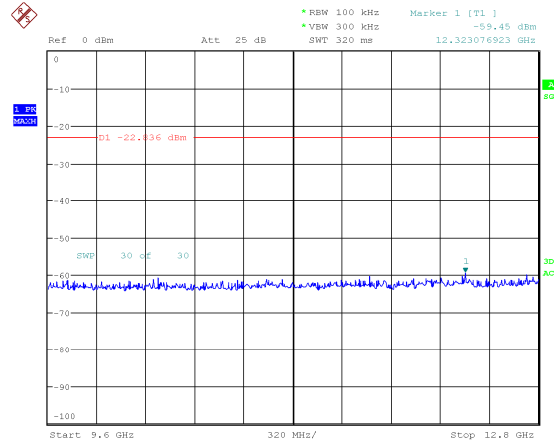
5500MHz 3GHz~4.8GHz

5500MHz 4.8GHz~6.4GHz



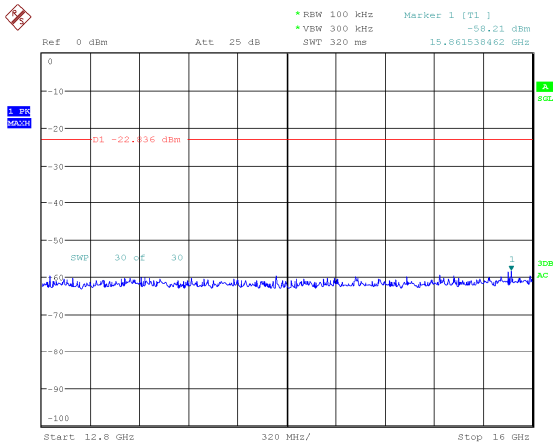
Date: 7.AUG.2015 18:08:20

5500MHz 6.4GHz~9.6GHz



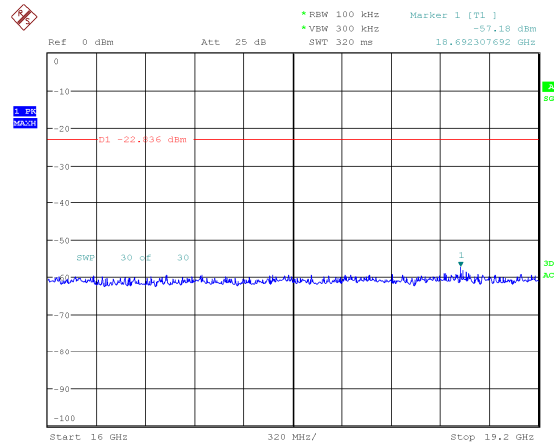
Date: 7.AUG.2015 18:08:41

5500MHz 9.6GHz~12.8GHz



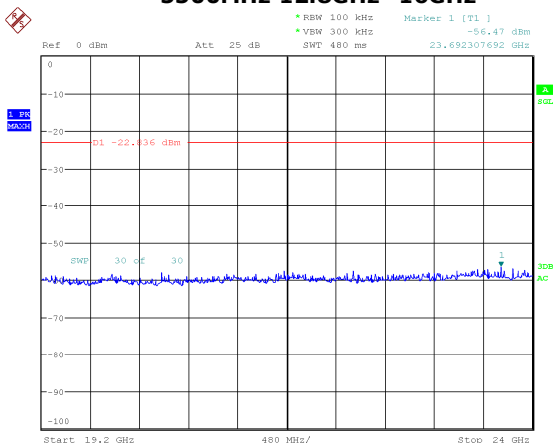
Date: 7.AUG.2015 18:09:03

5500MHz 12.8GHz~16GHz



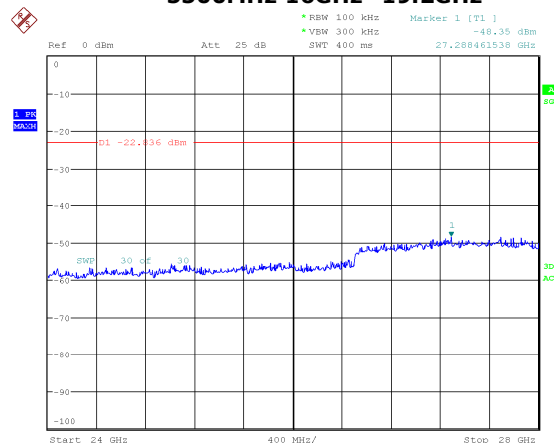
Date: 7.AUG.2015 18:09:25

5500MHz 16GHz~19.2GHz



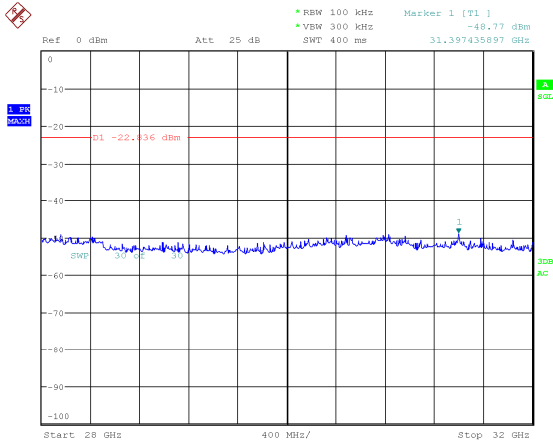
Date: 7.AUG.2015 18:09:51

5500MHz 19.2GHz~24GHz

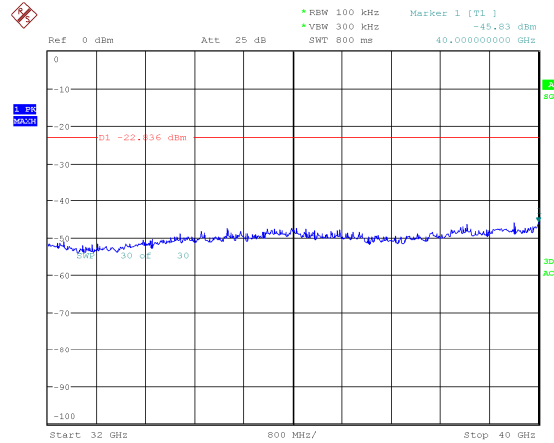


Date: 7.AUG.2015 18:10:16

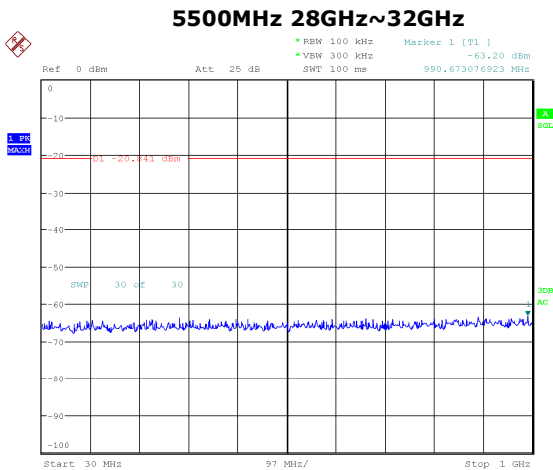
5500MHz 24GHz~28GHz



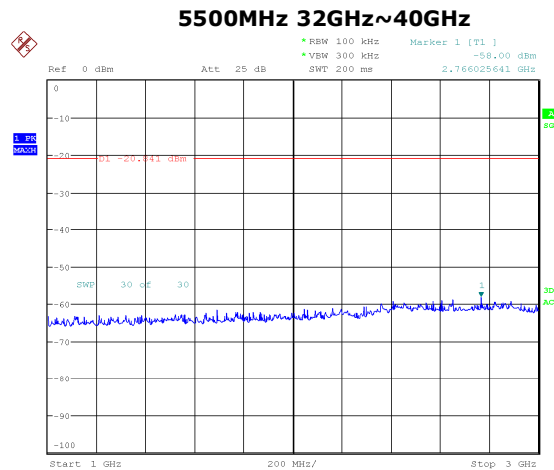
Date: 7.AUG.2015 18:10:41



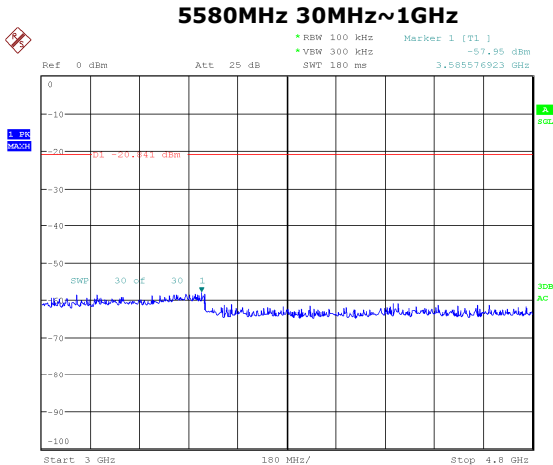
Date: 7.AUG.2015 18:11:18



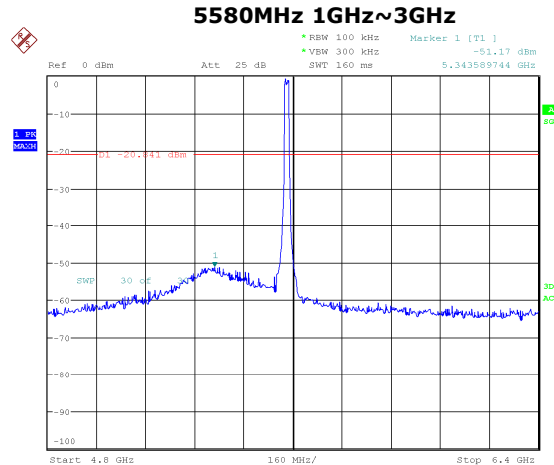
Date: 7.AUG.2015 18:12:23



Date: 7.AUG.2015 18:12:33



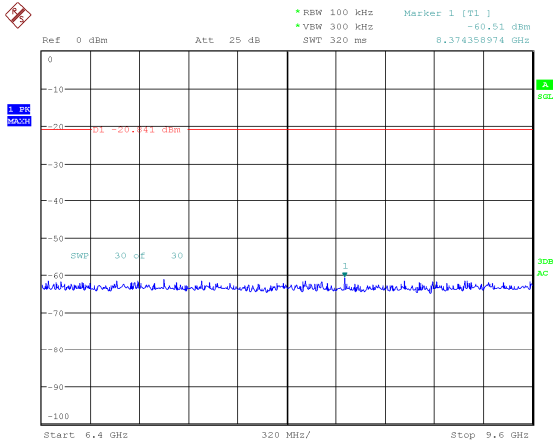
Date: 7.AUG.2015 18:12:52



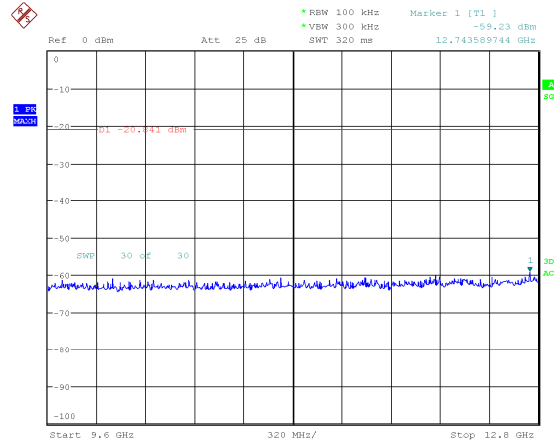
Date: 7.AUG.2015 18:13:09

5580MHz 3GHz~4.8GHz

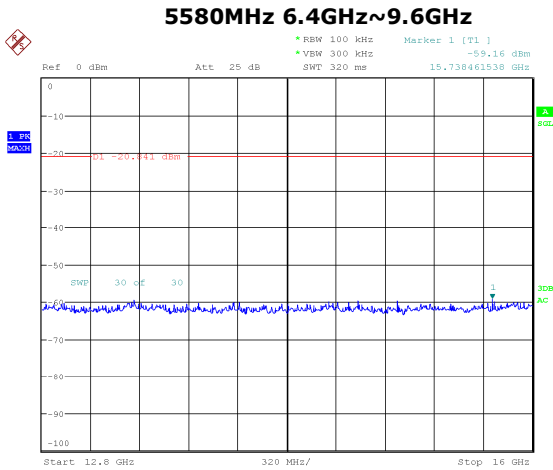
5580MHz 4.8GHz~6.4GHz



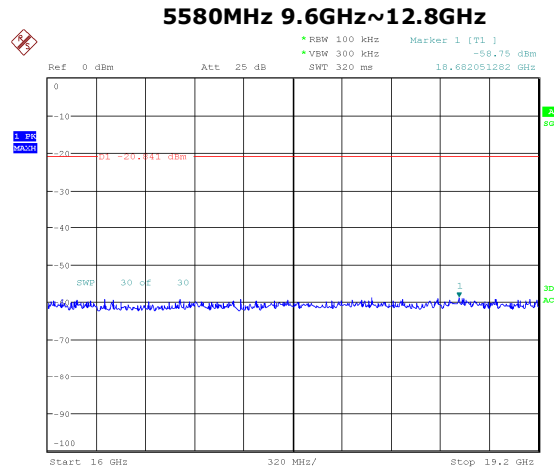
Date: 7.AUG.2015 18:13:30



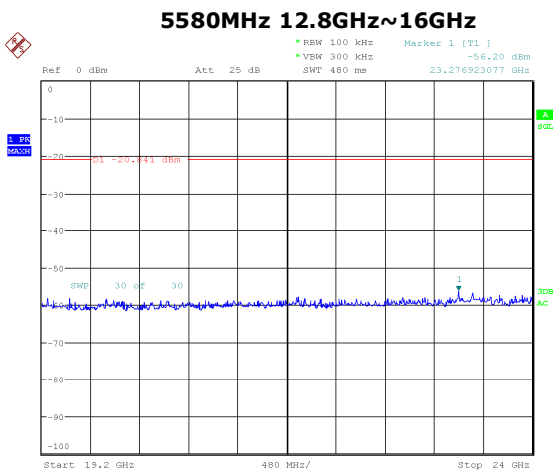
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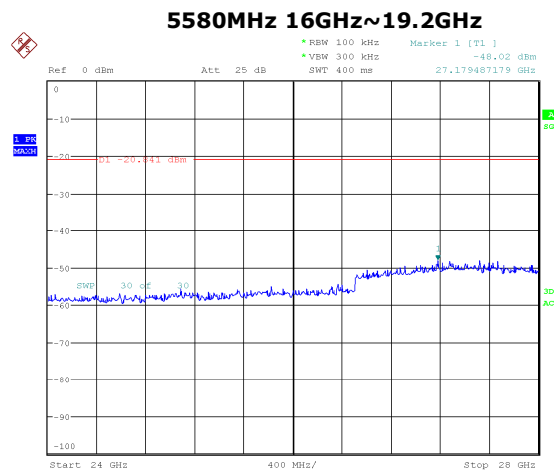
Date: 7.AUG.2015 18:14:13



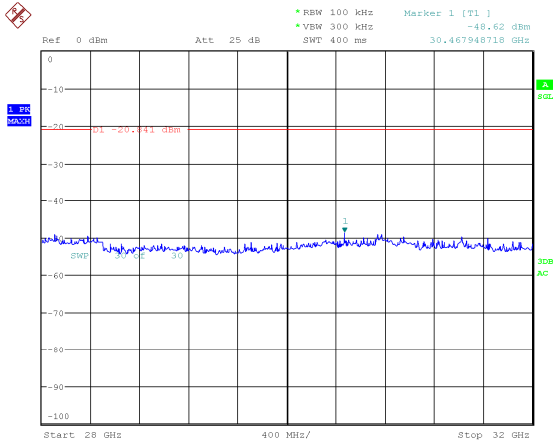
Date: 7.AUG.2015 18:14:35



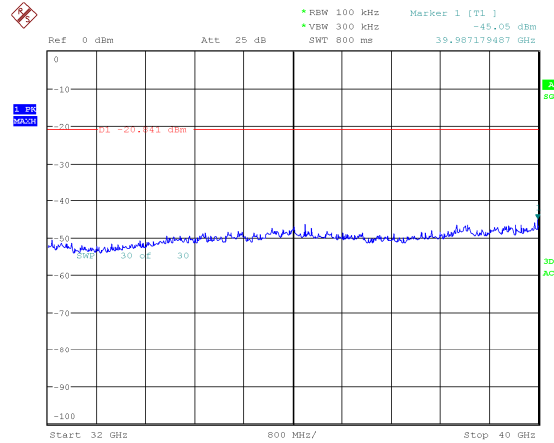
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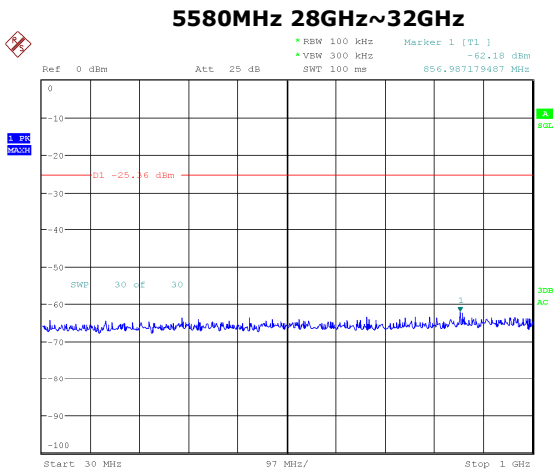
Date: 7.AUG.2015 18:15:26



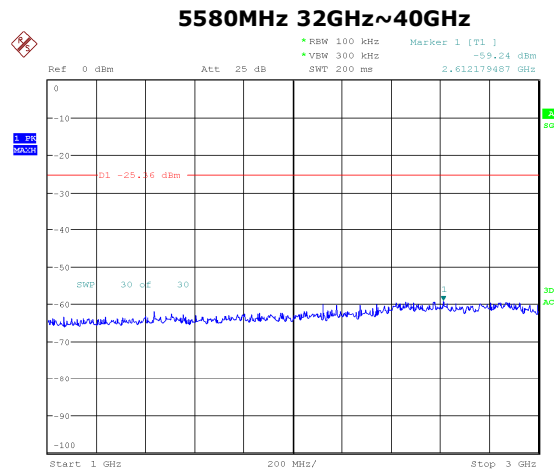
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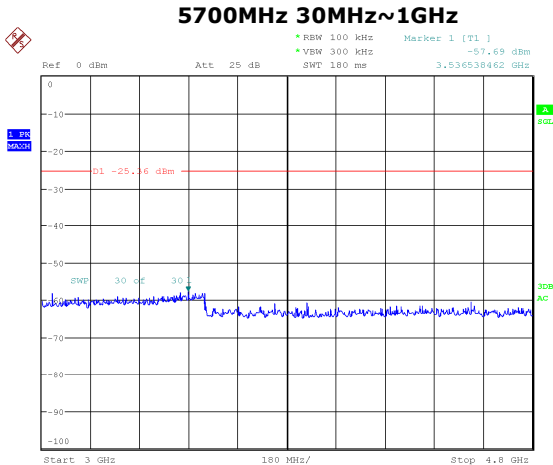
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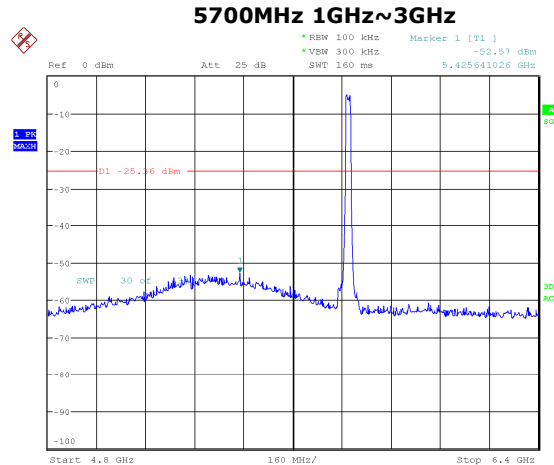
Date: 7.AUG.2015 18:18:02



Date: 7.AUG.2015 18:18:13



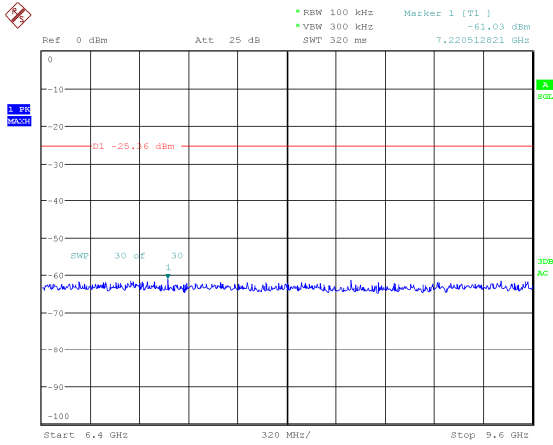
Date: 7.AUG.2015 18:18:31



Date: 7.AUG.2015 18:18:48

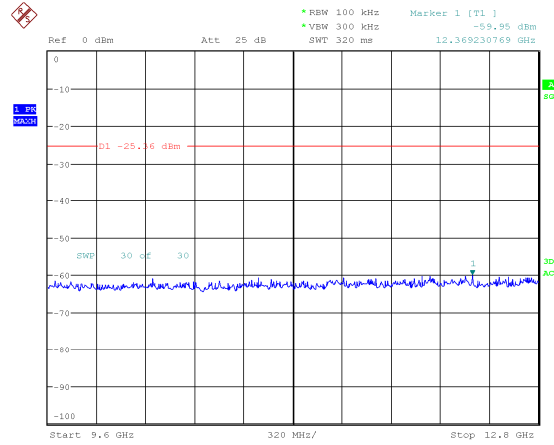
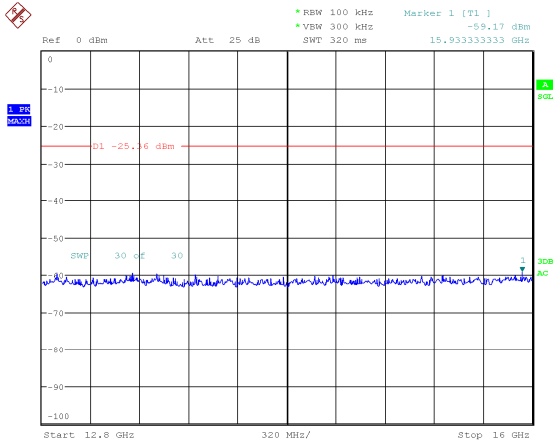
5700MHz 3GHz~4.8GHz

5700MHz 4.8GHz~6.4GHz



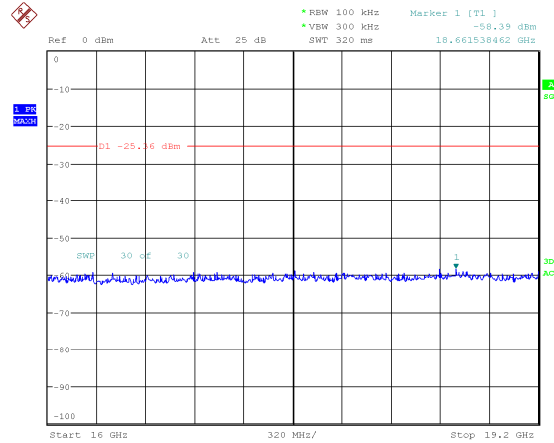
Date: 7.AUG.2015 18:19:09

5180MHz 6.4GHz~9.6GHz



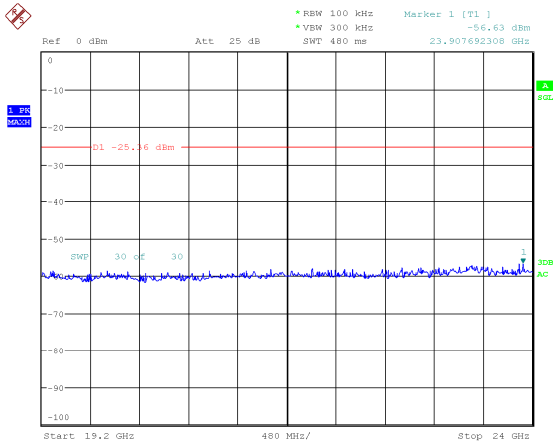
Date: 7.AUG.2015 18:19:31

5180MHz 9.6GHz~12.8GHz



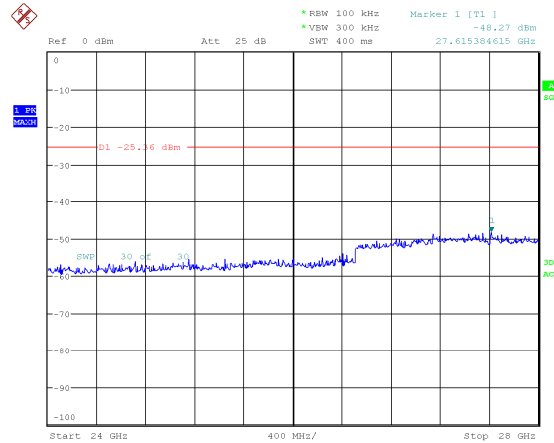
Date: 7.AUG.2015 18:19:53

5700MHz 12.8GHz~16GHz



Date: 7.AUG.2015 18:20:14

5700MHz 16GHz~19.2GHz

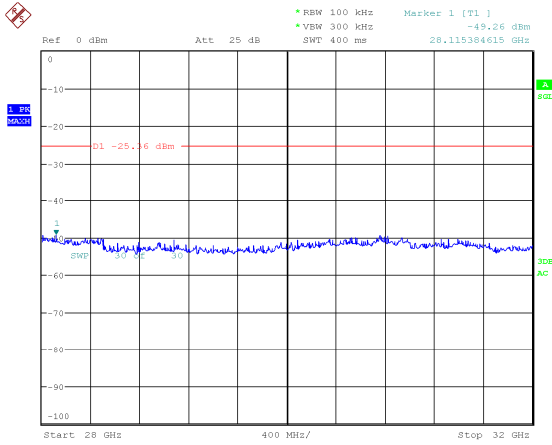


Date: 7.AUG.2015 18:20:40

5700MHz 19.2GHz~24GHz

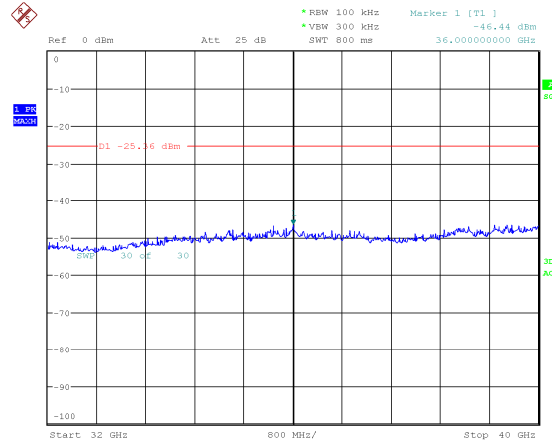
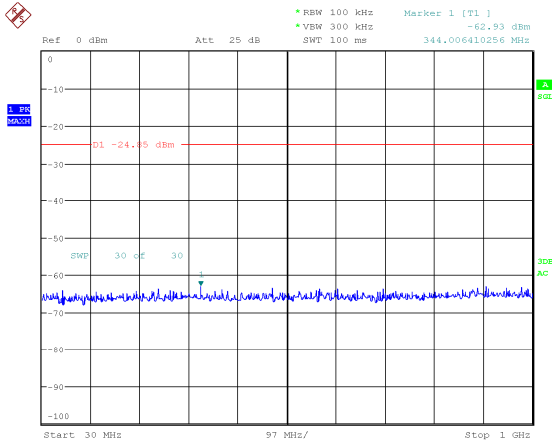
Date: 7.AUG.2015 18:21:05

5700MHz 24GHz~28GHz



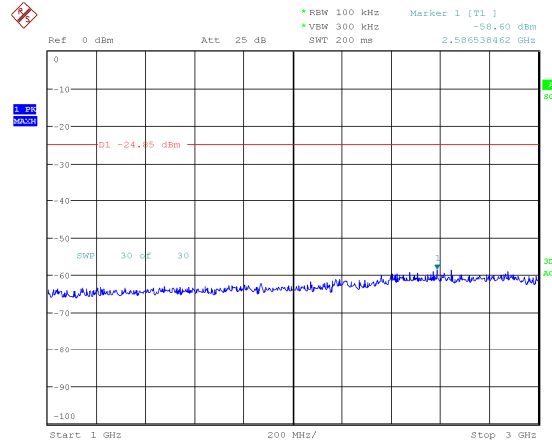
Date: 7.AUG.2015 18:21:30

5700MHz 28GHz~32GHz



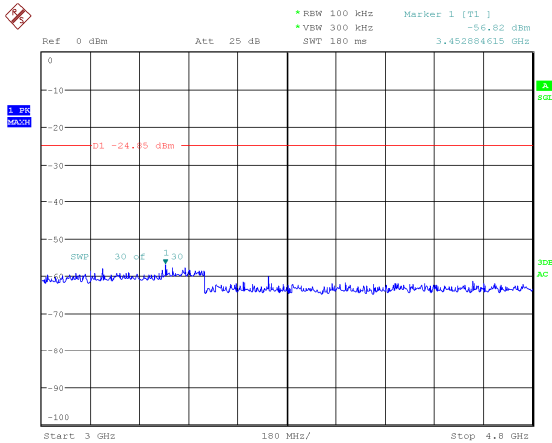
Date: 7.AUG.2015 18:22:07

5700MHz 32GHz~40GHz



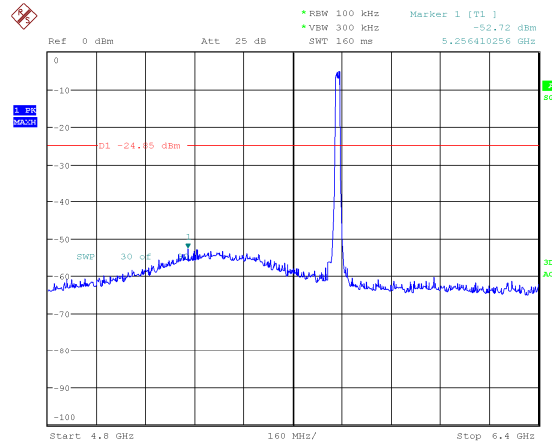
Date: 7.AUG.2015 18:23:07

5745MHz 30MHz~1GHz



Date: 7.AUG.2015 18:23:18

5745MHz 1GHz~3GHz

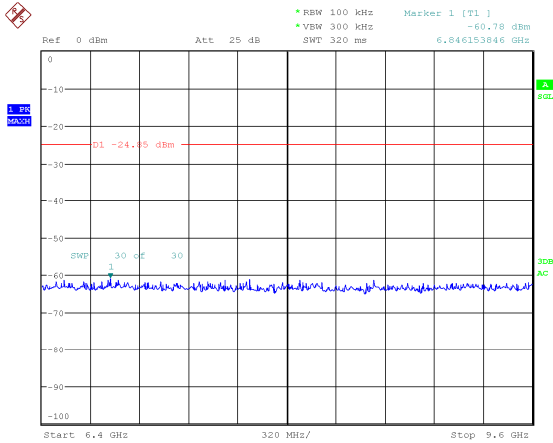


Date: 7.AUG.2015 18:23:37

5745MHz 3GHz~4.8GHz

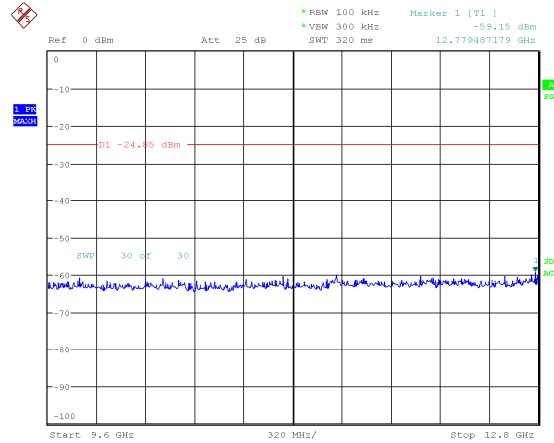
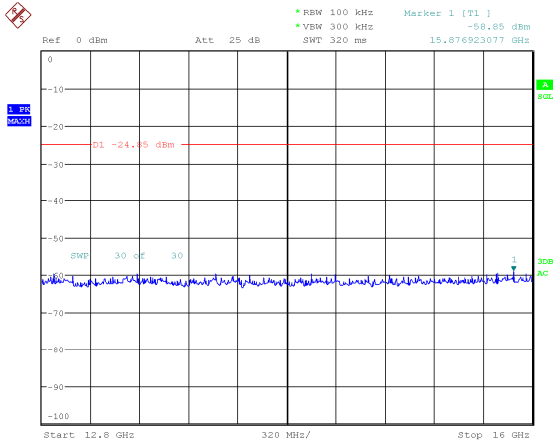
Date: 7.AUG.2015 18:23:53

5745MHz 4.8GHz~6.4GHz



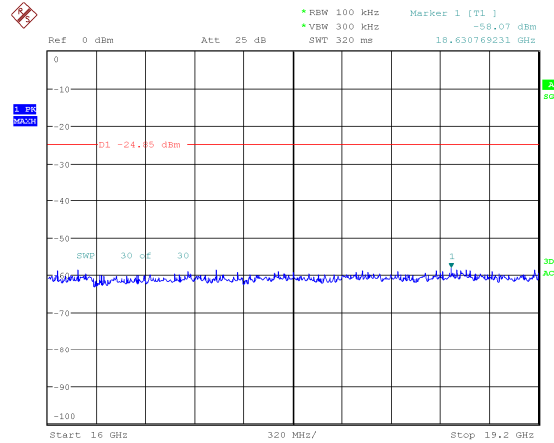
Date: 7.AUG.2015 18:24:15

5745MHz 6.4GHz~9.6GHz



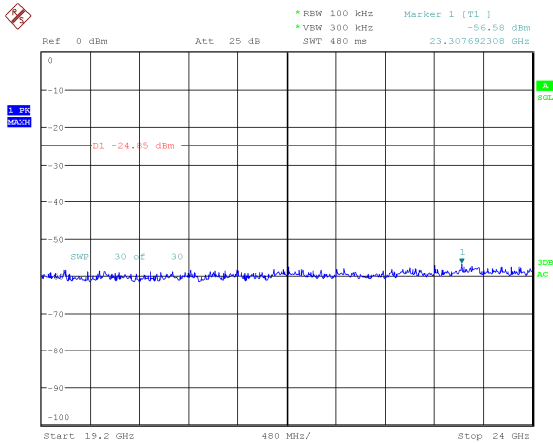
Date: 7.AUG.2015 18:24:36

5745MHz 9.6GHz~12.8GHz



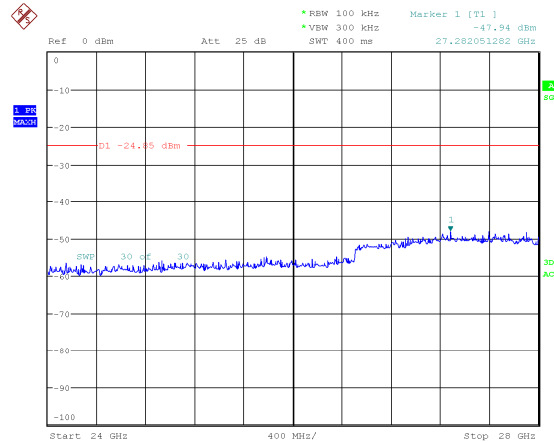
Date: 7.AUG.2015 18:24:58

5745MHz 12.8GHz~16GHz



Date: 7.AUG.2015 18:25:19

5745MHz 16GHz~19.2GHz

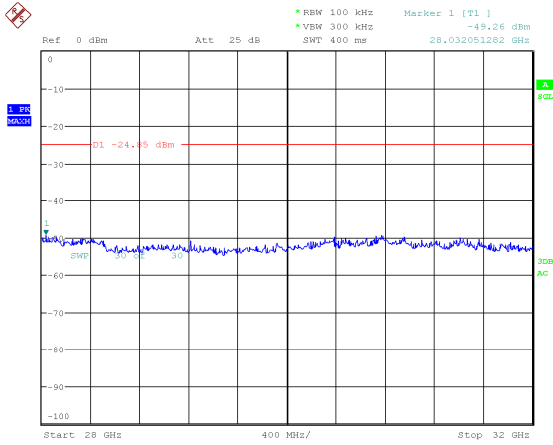


Date: 7.AUG.2015 18:25:46

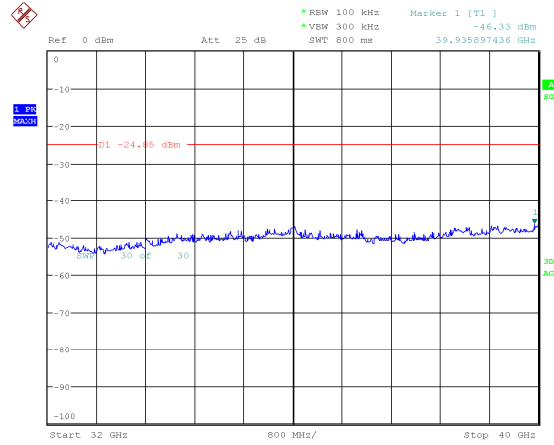
5745MHz 19.2GHz~24GHz

Date: 7.AUG.2015 18:26:11

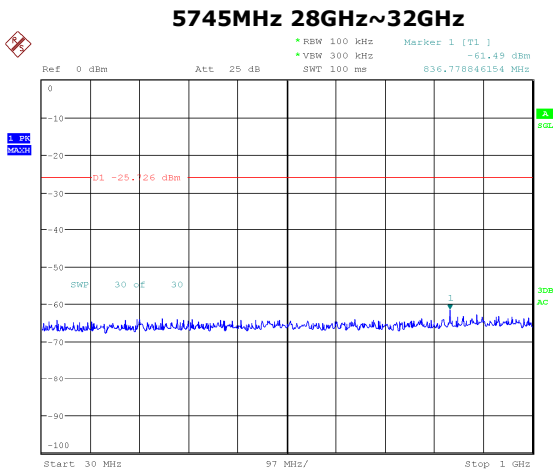
5745MHz 24GHz~28GHz



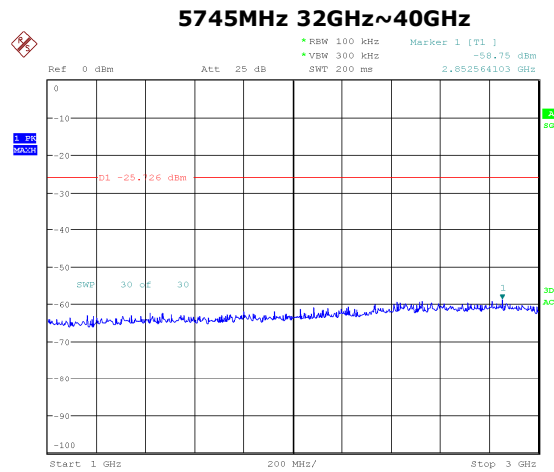
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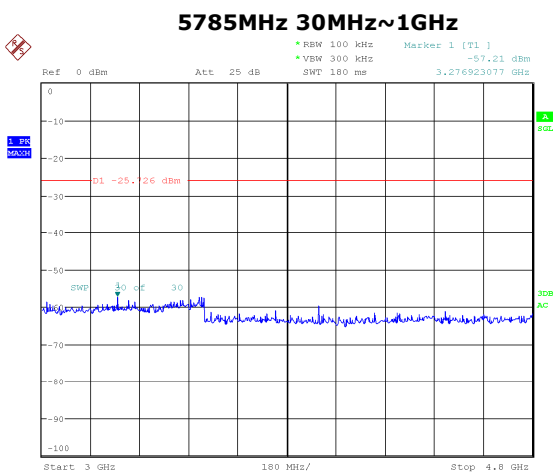
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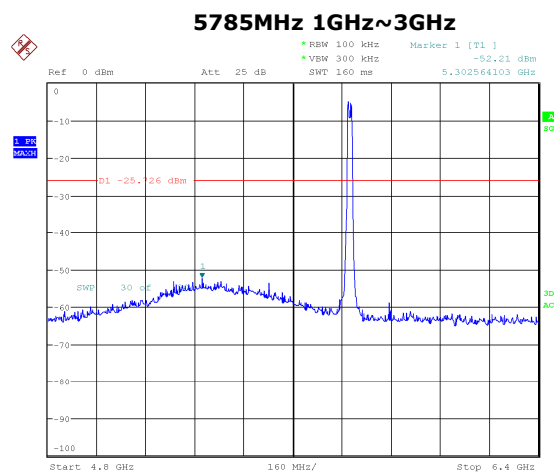
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Date: 7.AUG.2015 18:30:18



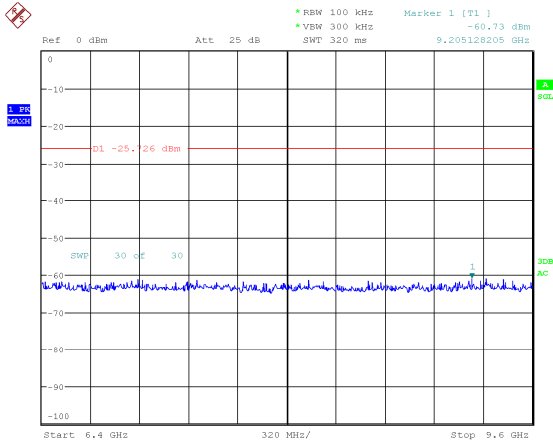
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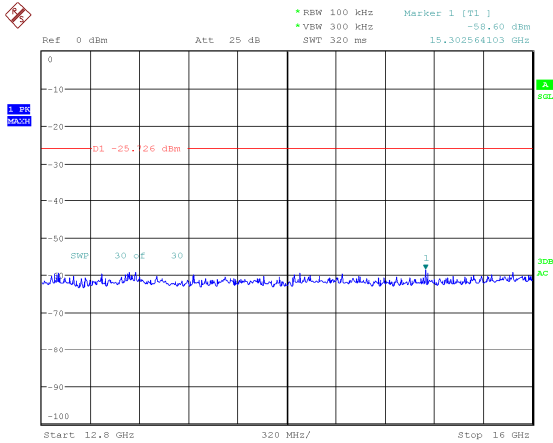
5180MHz 3GHz~4.8GHz

5180MHz 4.8GHz~6.4GHz



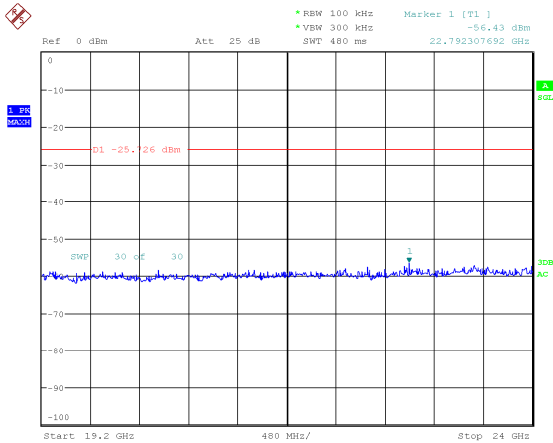
Date: 7.AUG.2015 18:31:15

5785MHz 6.4GHz~9.6GHz



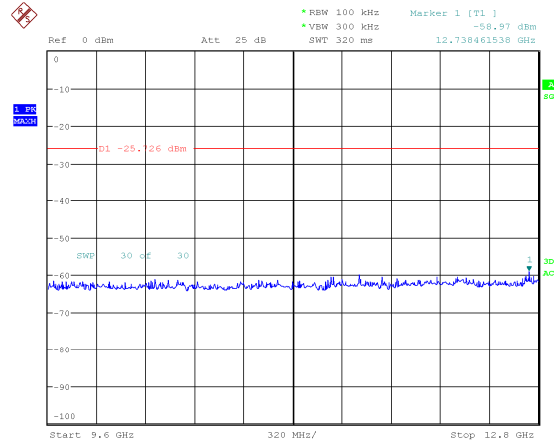
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5785MHz 12.8GHz~16GHz



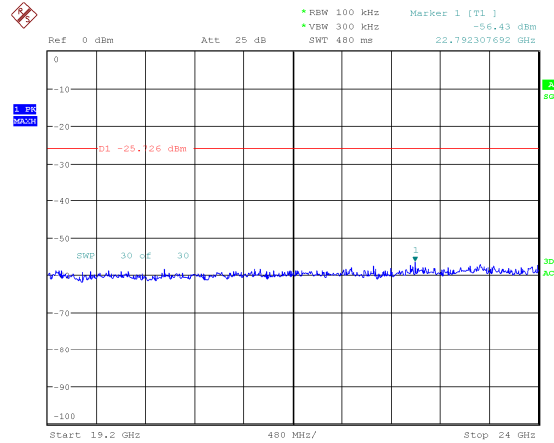
Date: 7.AUG.2015 18:32:46

5785MHz 19.2GHz~24GHz



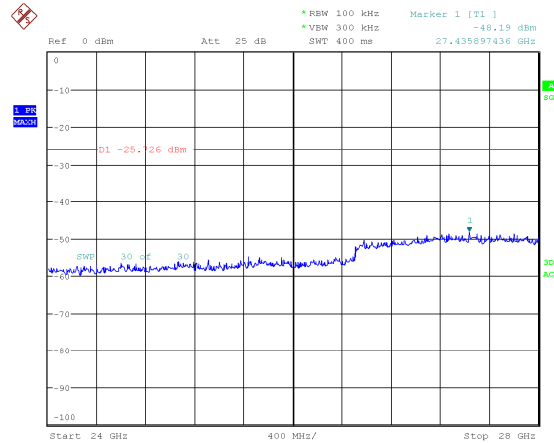
Date: 7.AUG.2015 18:31:36

5785MHz 9.6GHz~12.8GHz



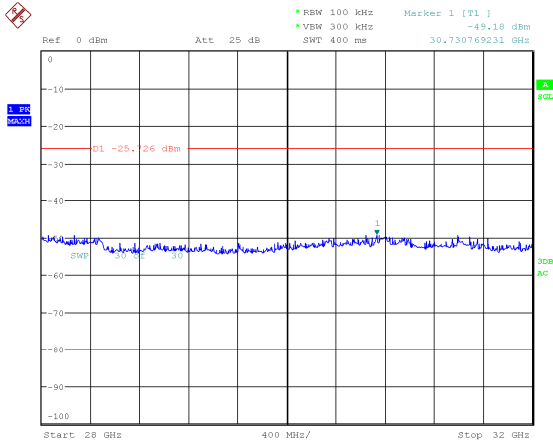
Date: 7.AUG.2015 18:32:46

5785MHz 16GHz~19.2GHz



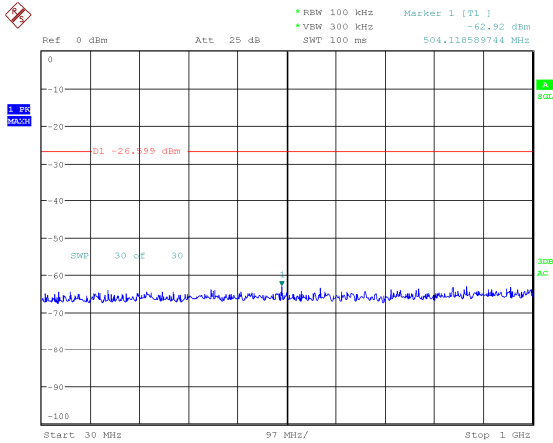
Date: 7.AUG.2015 18:33:11

5785MHz 24GHz~28GHz



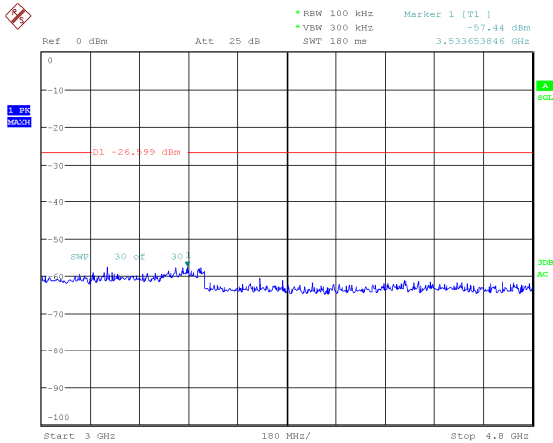
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5785MHz 28GHz~32GHz



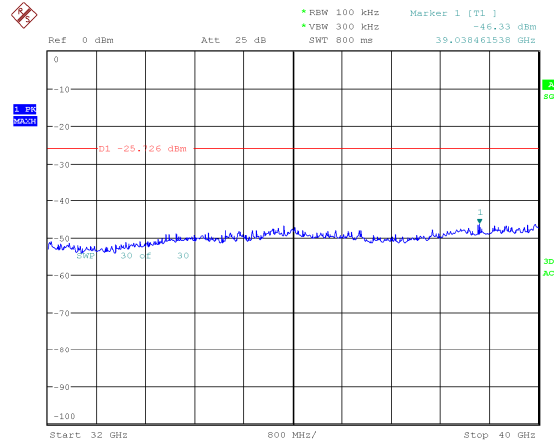
Date: 7.AUG.2015 18:35:08

5825MHz 30MHz~1GHz



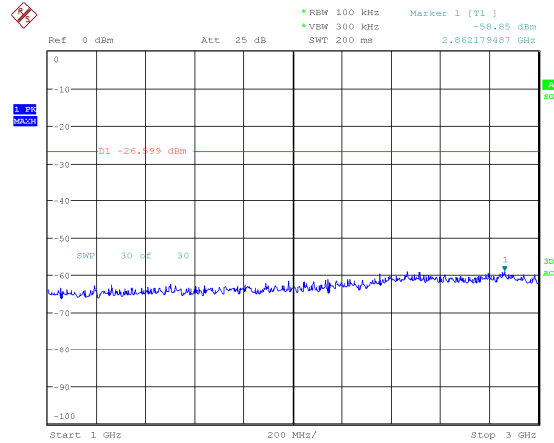
Date: 7.AUG.2015 18:35:38

5825MHz 3GHz~4.8GHz



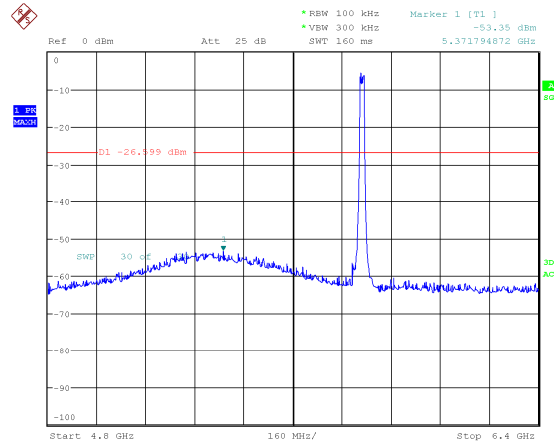
Date: 7.AUG.2015 18:34:12

5785MHz 32GHz~40GHz



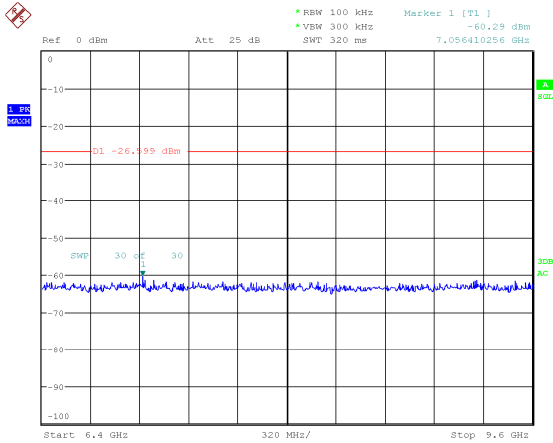
Date: 7.AUG.2015 18:35:19

5825MHz 1GHz~3GHz



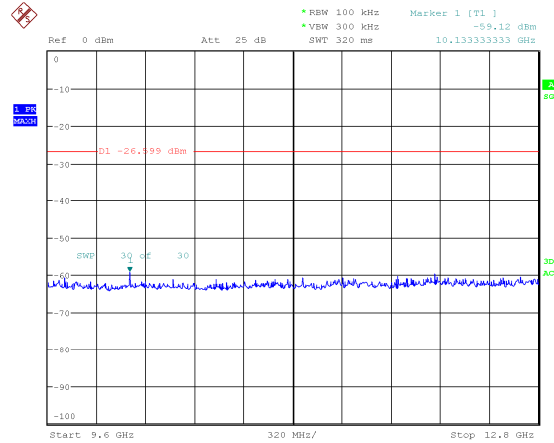
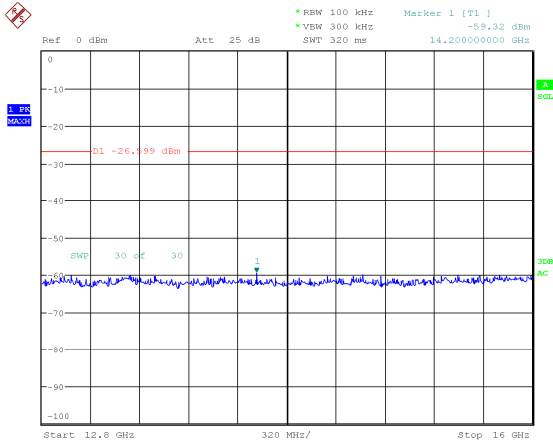
Date: 7.AUG.2015 18:35:54

5825MHz 4.8GHz~6.4GHz



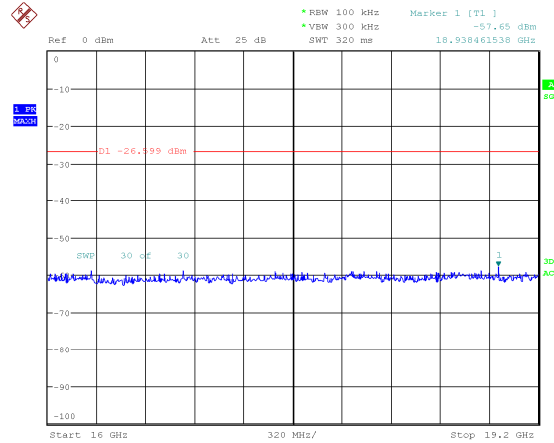
Date: 7.AUG.2015 18:36:16

5825MHz 6.4GHz~9.6GHz



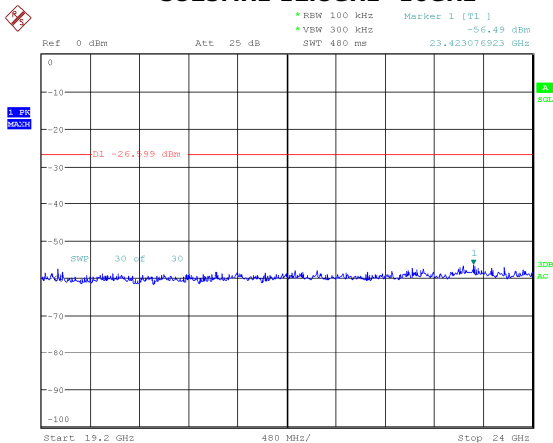
Date: 7.AUG.2015 18:36:38

5825MHz 9.6GHz~12.8GHz



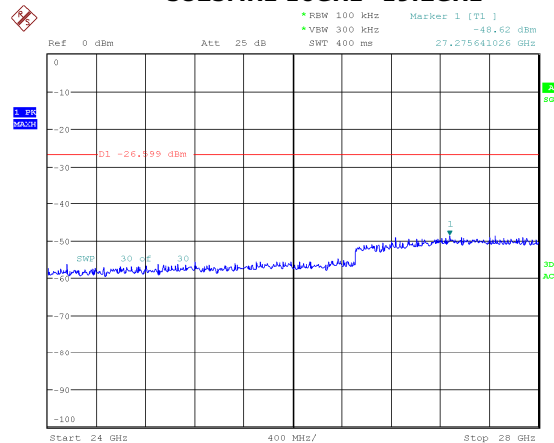
Date: 7.AUG.2015 18:36:59

5825MHz 12.8GHz~16GHz



Date: 7.AUG.2015 18:37:21

5825MHz 16GHz~19.2GHz

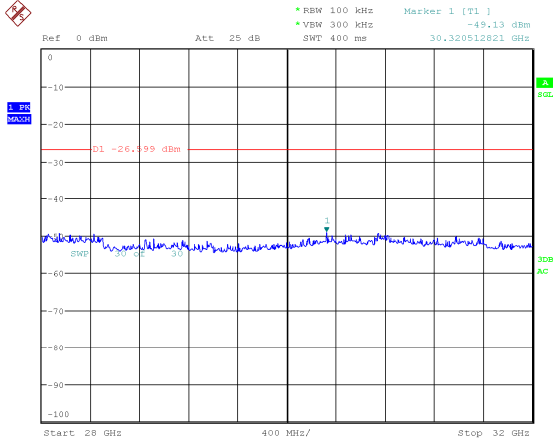


Date: 7.AUG.2015 18:37:47

5825MHz 19.2GHz~24GHz

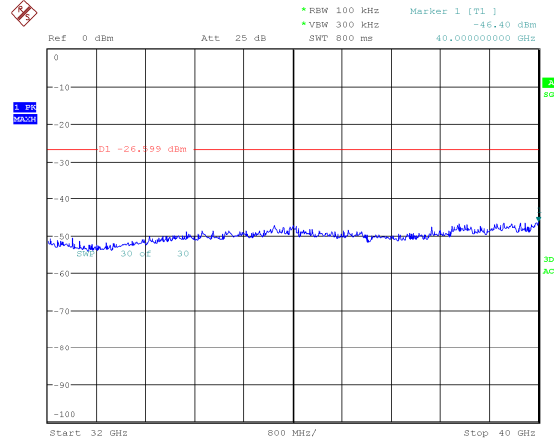
Date: 7.AUG.2015 18:38:12

5825MHz 24GHz~28GHz



Date: 7.AUG.2015 18:38:37

5825MHz 28GHz~32GHz



Date: 7.AUG.2015 18:39:14

5825MHz 32GHz~40GHz



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2.1.8 Unwanted Emissions

Test Location

10 m SAC (test distance : 10 m, 3 m)

3 m SAC (test distance : 3 m)

Test Procedures

- 1) In the frequency range of 9 kHz to 30 MHz, magnetic field is measured with Loop Antenna. The Test Antenna is positioned with its plane vertical at 1m distance from the EUT. The center of the Loop Test Antenna is 1m above the ground. During the measurement the Loop Test Antenna rotates about its vertical axis for maximum response at each azimuth about the EUT.
- 2) In the frequency range above 30 MHz, Bi-Log Test Antenna(30 MHz to 1 GHz) and Horn Test Antenna(above 1 GHz) are used. Test Antenna is 3m away from the EUT. Test Antenna height is carried from 1m to 4m above the ground to determine the maximum value of the field strength. The emissions levels at both horizontal and vertical polarizations should be tested.

The spectrum analyzer is set to:

Frequency Range = 9 kHz ~ 40 GHz

RBW = 1 MHz for $f \geq 1$ GHz, 120 kHz for $f < 1$ GHz, 9 kHz for $f < 30$ MHz

VBW \geq RBW

Sweep = auto



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Limit

§ 15.205 (a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	MHz	MHz	GHz
0.09-0.11	8.37626-8.38675	73-74.6	399.9-410	2690-2900	10.6-12.7
¹ 0.495-0.505	8.41425-8.41475	74.8-75.2	608-614	3260-3267	13.25-13.4
2.1735-2.1905	12.29-12.293	108-121.94	960-1240	3332-3339	14.47-14.5
4.125-4.128	12.51975-12.52025	123-138	1300-1427	3345.8-3358	15.35-16.2
4.17725-4.17775	12.57675-12.57725	149.9-150.05	1435-1626.5	3600-4400	17.7-21.4
4.20725-4.20775	13.36-13.41	156.52475-156.52525	1645.5-1646.5	4500-5150	22.01-23.12
6.215-6.218	16.42-16.423	156.7-156.9	1660-1710	5350-5460	23.6-24
6.26775-6.26825	16.69475-16.69525	162.0125-167.17	1718.8-1722.2	7250-7750	31.2-31.8
6.31175-6.31225	16.80425-16.80475	167.72-173.2	2200-2300	8025-8500	36.43-36.5
8.291-8.294	25.5-25.67	240-285	2310-2390	9000-9200	² Above 38.6
8.362-8.366	37.5-38.25	322-335.4	2483.5-2500	9300-9500	

¹ Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

² Above 38.6

§ 15.205 (b) Except as provided in paragraphs (d) and (e), the field strength of emissions appearing within these frequency bands shall not exceed the limits shown in Section 15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in Section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.



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§ 15.209 (a) Except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table :

Frequency(MHz)	Field Strength uV/m@3m	Field Strength dBuV/m@3m	Deasurement Distance (meters)
0.009-0.490	2400/F(kHz)	-	300
0.490-1.705	24000/F(kHz)	-	30
1.705-30	30	-	30
30-88	100**	40	3
88-216	150**	43.5	3
216-960	200**	46	3
Above 960	500	54	3

** Except as provided in 15.209(g).fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72MHz, 76-88MHz, 174-216MHz, 470-806MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g.15.231 and 15.241.

Note :

- 1) For above 1 GHz, the emission limit in this paragraph is based on measurement instrumentation employing an average detector, measurement using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit.
- 2) For above 1 GHz, limit field strength of harmonics : 54 dBuV/m@3m (AV) and 74 dBuV/m@3m (PK)
- 3) For measurement above 1GHz, the resolution bandwidth is set to 1 MHz and video bandwidth is set to 1 MHz for peak measurement and 10 Hz for average measurement.(Duty Cycle is > 98%,)
- 4) Duty Cycle is < 98%, VBW setting will need to > 1/T.(1 / 0.276 ms = 3.623 kHz)

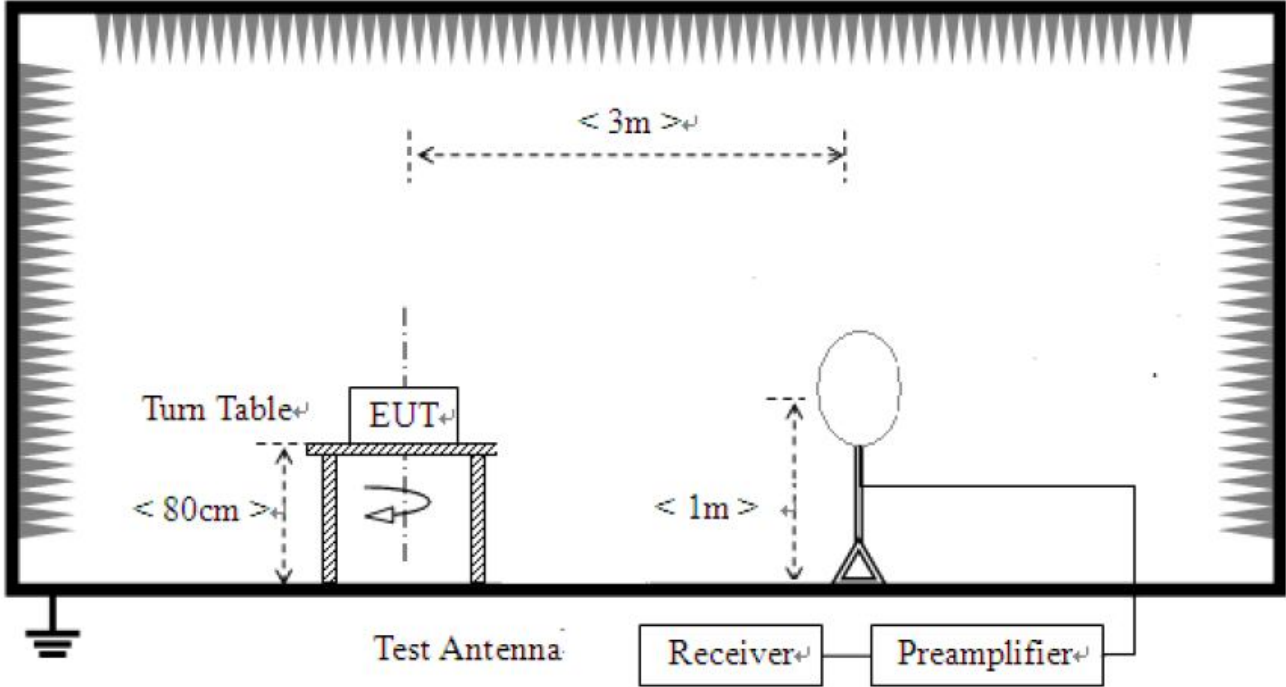
- 15.407, KDB 789033

E.I.R.P -27 dBm/MHz

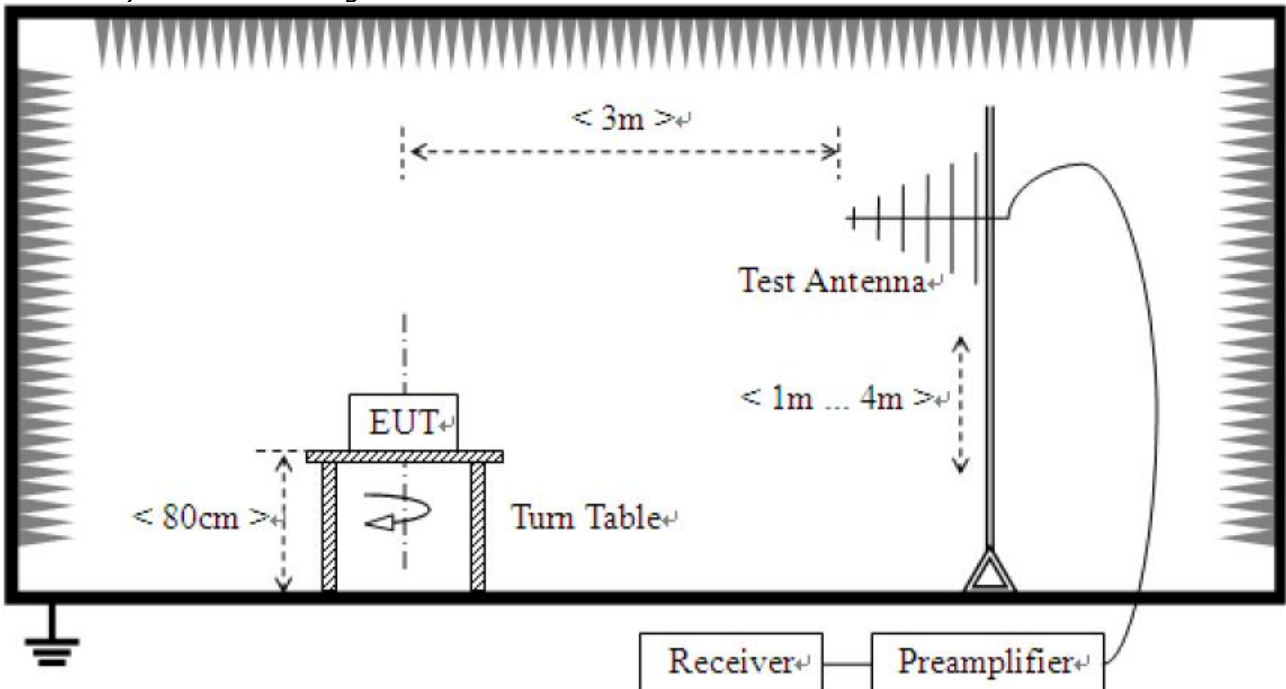
$$E[\text{dBuV/m}] = \text{EIRP}[\text{dBm}] + 95.2, \text{ for } d = 3\text{m}$$

Test Setup:

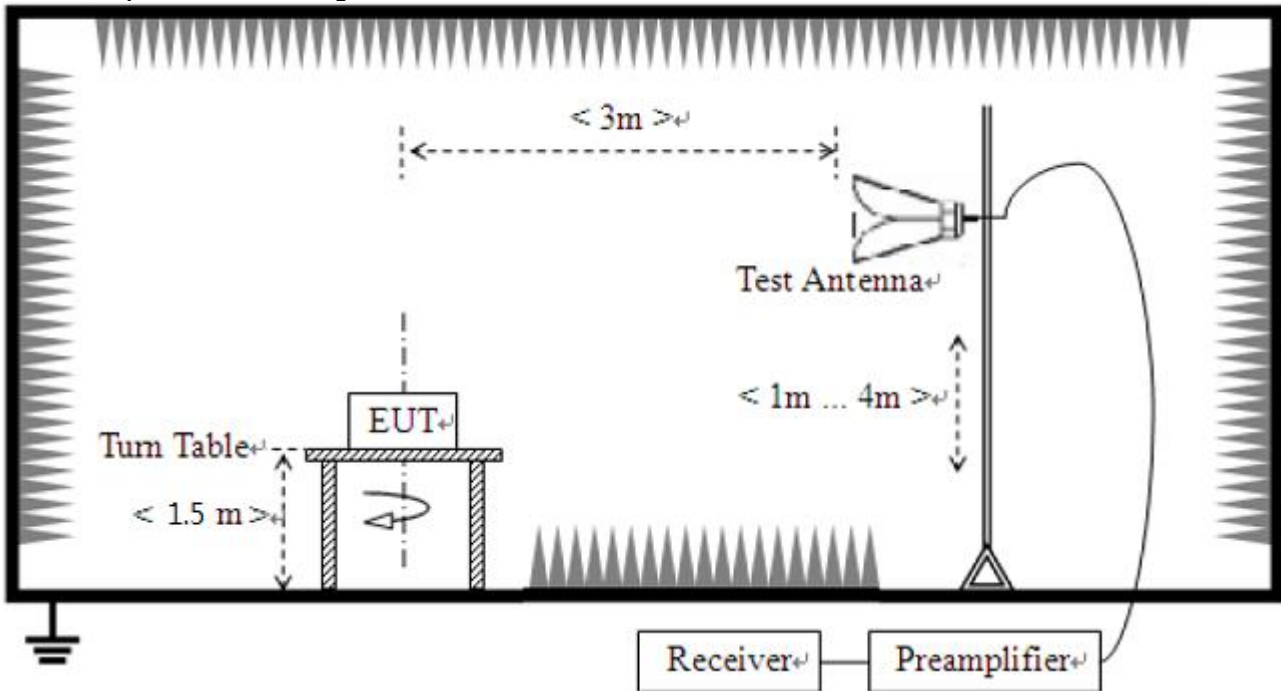
1) For field strength of emissions from 9 kHz to 30 MHz



2) For field strength of emissions from 30 MHz to 1 GHz



3) For field strength of emissions above 1 GHz



Test Mode

The worst-case antenna configuration are determined to be as follows for each mode.

802.11a



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Test Results

1) 9 kHz to 30 MHz

EUT	Mobile Printer	Measurement Detail	
Model	9485NP	Frequency Range	9 kHz – 30 MHz
Test mode	802.11a	Detector function	Quasi-Peak

The requirements are:

Complies

Frequency (MHz)	Measured Data (dBuV/m)	Margin (dB)	Remark
-	-	-	See note

Note :

The amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.

Distance extrapolation factor = $40 \log (\text{specific distance} / \text{test distance})$ (dB)



2) 30 MHz to 1 GHz

Test mode : 802.11a

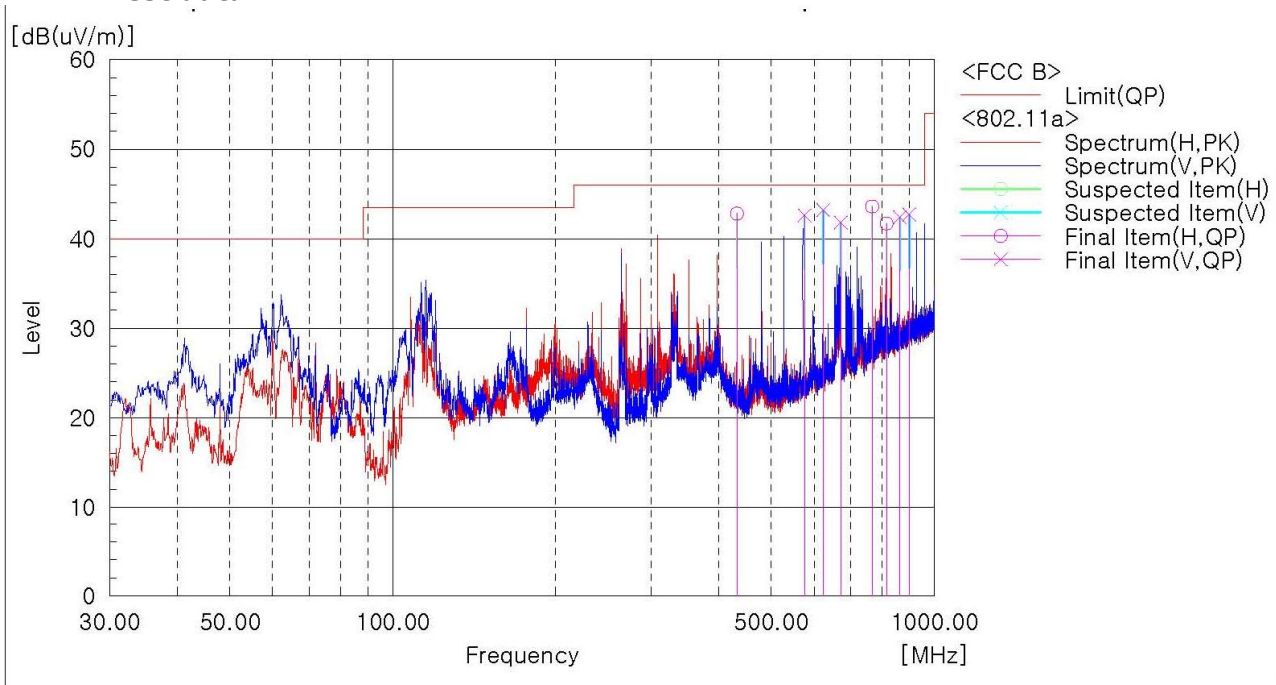
EUT	Mobile Printer	Measurement Detail	
Model	9485NP	Frequency Range	Below 1000MHz
Mode	802.11a	Detector function	Quasi-Peak

The requirements are:

Complies

Frequency (MHz)	Measured Data (dBuV/m)	Margin (dB)	Remark
768.049	43.6	2.4	Quasi-Peak

Test data



Final Result

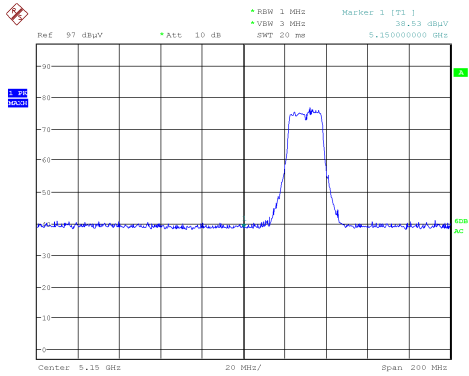
No.	Frequency [MHz]	(P)	Reading QP [dB(uV)]	c.f [dB(1/m)]	Result QP [dB(uV/m)]	Limit QP [dB(uV/m)]	Margin QP [dB]	Height [cm]	Angle [deg]	Remark
1	432.065	H	47.0	-4.2	42.8	46.0	3.2	208.0	308.0	
2	576.110	V	42.9	-0.3	42.6	46.0	3.4	100.0	159.0	
3	624.004	V	42.4	0.8	43.2	46.0	2.8	100.0	10.0	
4	672.019	V	40.2	1.6	41.8	46.0	4.2	100.0	10.0	
5	768.049	H	40.2	3.4	43.6	46.0	2.4	100.0	52.0	
6	816.064	H	37.2	4.5	41.7	46.0	4.3	100.0	52.0	
7	864.079	V	36.7	5.7	42.4	46.0	3.6	100.0	10.0	
8	900.090	V	36.0	6.7	42.7	46.0	3.3	100.0	10.0	

Remark :

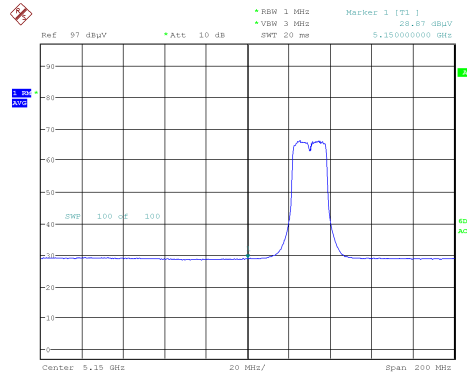
1. The field strength of spurious emission was measured in the following position: EUT and antenna stand-up position(Z axis), lie-down position(X,Y axis). The worst emission was found in stand-up position(X axis) and the worst case was recorded.



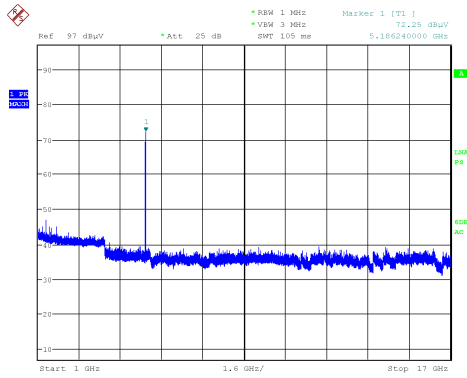
3) Radiated Band Edge and Spurious Emissions Measurements



Date: 20.AUG.2015 23:26:31

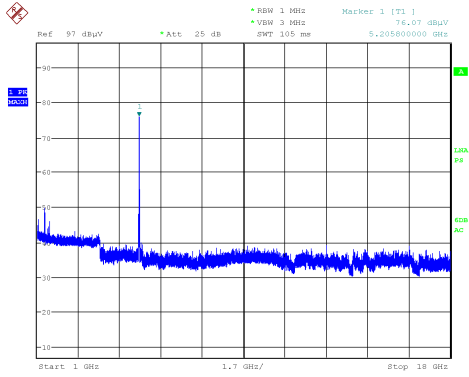


Date: 20.AUG.2015 23:24:44



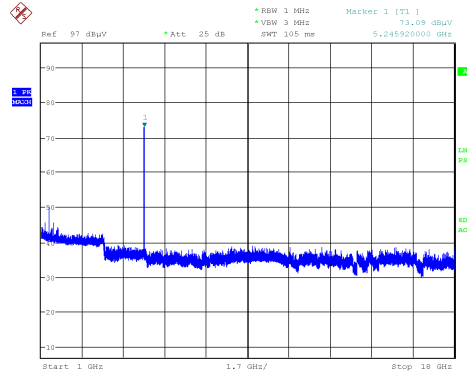
Date: 20.AUG.2015 21:12:43

5180 MHz



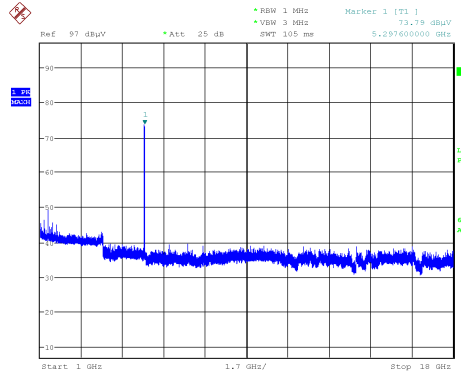
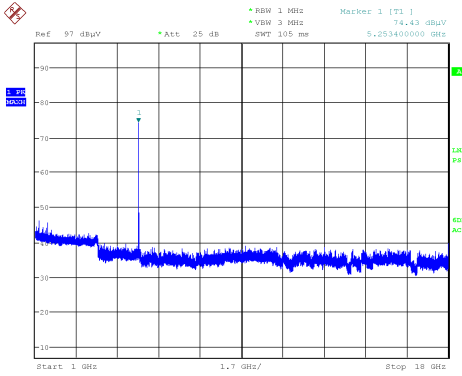
Date: 20.AUG.2015 22:19:05

5200 MHz



Date: 20.AUG.2015 22:21:11

5240 MHz

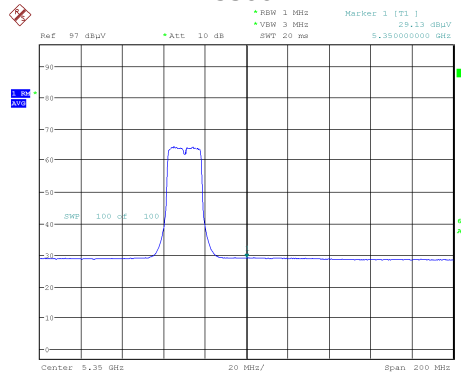
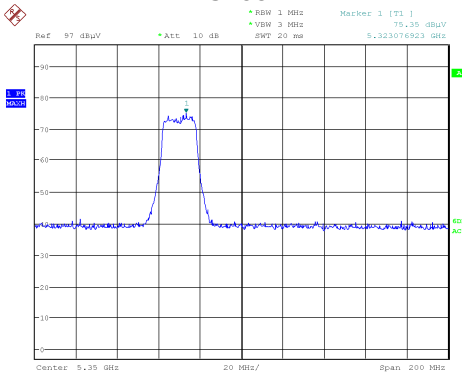


Date: 20.AUG.2015 22:23:12

Date: 20.AUG.2015 22:25:44

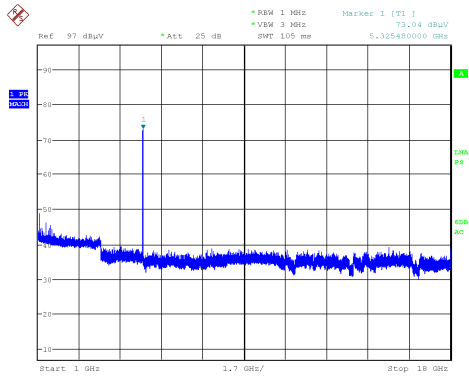
5260 MHz

5300 MHz



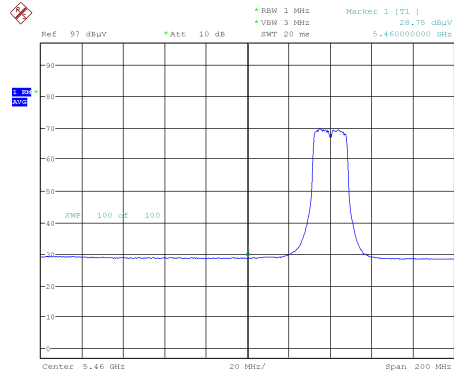
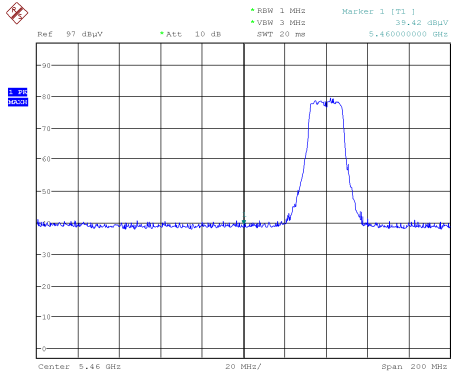
Date: 20.AUG.2015 23:28:47

Date: 20.AUG.2015 23:29:58



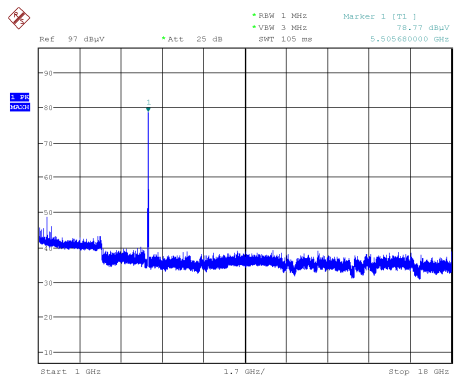
Date: 20.AUG.2015 22:27:50

5320 MHz



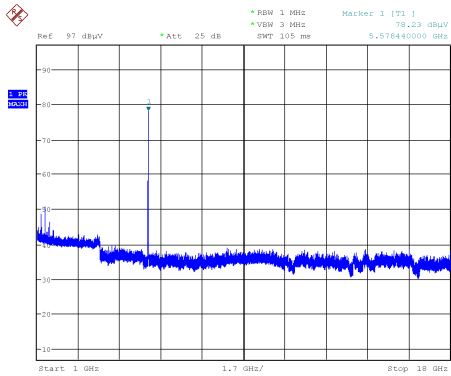
Date: 20.AUG.2015 23:33:15

Date: 20.AUG.2015 23:31:37



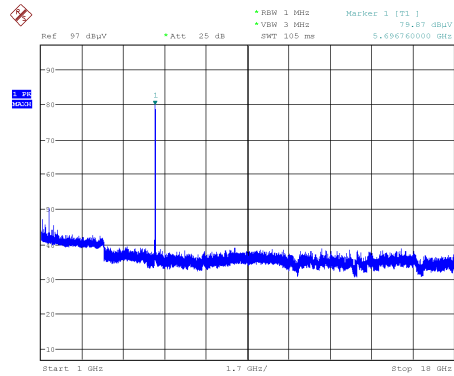
Date: 20.AUG.2015 22:30:48

5500 MHz



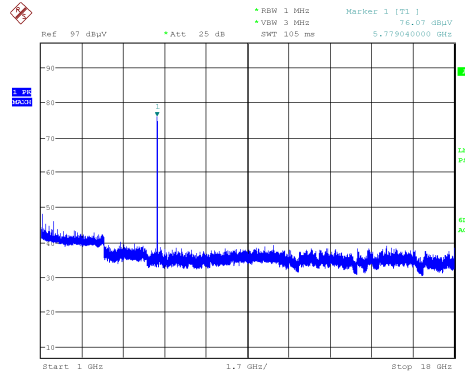
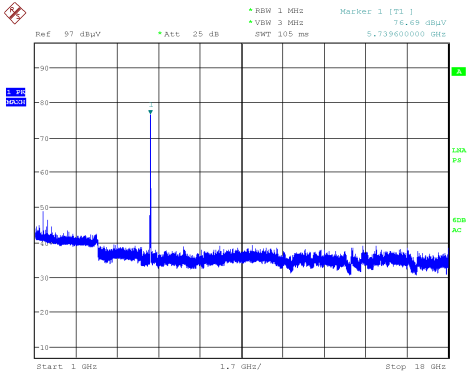
Date: 20.AUG.2015 22:32:57

5580 MHz



Date: 20.AUG.2015 22:35:11

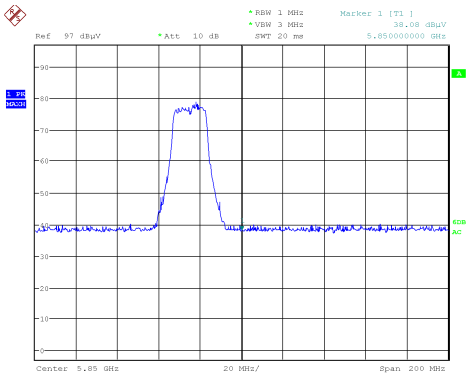
5700 MHz



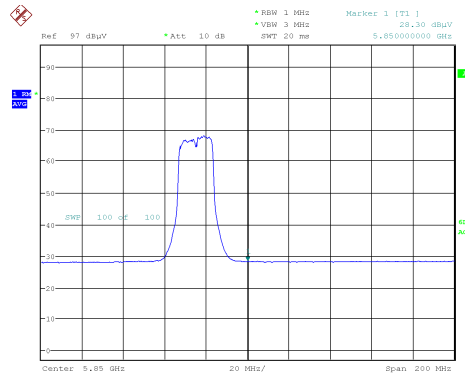
Date: 20.AUG.2015 22:37:12

Date: 20.AUG.2015 22:39:13

5745 MHz

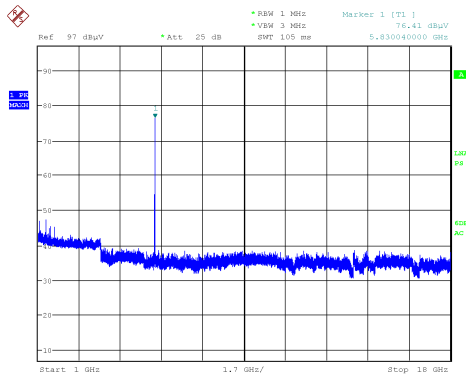


5785 MHz



Date: 20.AUG.2015 23:36:28

Date: 20.AUG.2015 23:37:31



Date: 20.AUG.2015 22:41:17

5825 MHz



Test mode : 802.11a

EUT	Mobile Printer	Measurement Detail	
Model	9485NP	Frequency Range	1-40GHz
Mode	802.11a	Detector function	Average / Peak

Remarks

We have tested three mode (X, Y, Z). The worst mode (X axis) for final test.

The requirements are:

Complies

Frequency (MHz)	Measured Data (dBUV/m)	Margin (dB)	Remark
No emissions were detected at a level greater than 20dB below limit.			

Ch.36(5180 MHz)

Frequency [MHz]	(P)	Reading AV [dB(uV)]	Reading PK [dB(uV)]	Factor [dB(1/m)]	Level AV [dB(uV/m)]	Level PK [dB(uV/m)]	Limit AV [dB(uV/m)]	Limit PK [dB(uV/m)]	Margin AV [dB]	Margin PK [dB]
No emissions were detected at a level greater than 20dB below limit.										

Ch.40(5200 MHz)

Frequency [MHz]	(P)	Reading AV [dB(uV)]	Reading PK [dB(uV)]	Factor [dB(1/m)]	Level AV [dB(uV/m)]	Level PK [dB(uV/m)]	Limit AV [dB(uV/m)]	Limit PK [dB(uV/m)]	Margin AV [dB]	Margin PK [dB]
No emissions were detected at a level greater than 20dB below limit.										

Ch.48(5240 MHz)

Frequency [MHz]	(P)	Reading AV [dB(uV)]	Reading PK [dB(uV)]	Factor [dB(1/m)]	Level AV [dB(uV/m)]	Level PK [dB(uV/m)]	Limit AV [dB(uV/m)]	Limit PK [dB(uV/m)]	Margin AV [dB]	Margin PK [dB]
No emissions were detected at a level greater than 20dB below limit.										

Ch.52(5260 MHz)

Frequency [MHz]	(P)	Reading AV [dB(uV)]	Reading PK [dB(uV)]	Factor [dB(1/m)]	Level AV [dB(uV/m)]	Level PK [dB(uV/m)]	Limit AV [dB(uV/m)]	Limit PK [dB(uV/m)]	Margin AV [dB]	Margin PK [dB]
No emissions were detected at a level greater than 20dB below limit.										

Ch.60(5300 MHz)

Frequency [MHz]	(P)	Reading AV [dB(uV)]	Reading PK [dB(uV)]	Factor [dB(1/m)]	Level AV [dB(uV/m)]	Level PK [dB(uV/m)]	Limit AV [dB(uV/m)]	Limit PK [dB(uV/m)]	Margin AV [dB]	Margin PK [dB]
No emissions were detected at a level greater than 20dB below limit.										



Ch.64(5320 MHz)

Frequency [MHz]	(P)	Reading AV [dB(uV)]	Reading PK [dB(uV)]	Factor [dB(1/m)]	Level AV [dB(uV/m)]	Level PK [dB(uV/m)]	Limit AV [dB(uV/m)]	Limit PK [dB(uV/m)]	Margin AV [dB]	Margin PK [dB]
--------------------	-----	------------------------	------------------------	---------------------	------------------------	------------------------	------------------------	------------------------	-------------------	-------------------

No emissions were detected at a level greater than 20dB below limit.

Ch.100(5500 MHz)

Frequency [MHz]	(P)	Reading AV [dB(uV)]	Reading PK [dB(uV)]	Factor [dB(1/m)]	Level AV [dB(uV/m)]	Level PK [dB(uV/m)]	Limit AV [dB(uV/m)]	Limit PK [dB(uV/m)]	Margin AV [dB]	Margin PK [dB]
--------------------	-----	------------------------	------------------------	---------------------	------------------------	------------------------	------------------------	------------------------	-------------------	-------------------

No emissions were detected at a level greater than 20dB below limit.

Ch.120(5600 MHz)

Frequency [MHz]	(P)	Reading AV [dB(uV)]	Reading PK [dB(uV)]	Factor [dB(1/m)]	Level AV [dB(uV/m)]	Level PK [dB(uV/m)]	Limit AV [dB(uV/m)]	Limit PK [dB(uV/m)]	Margin AV [dB]	Margin PK [dB]
--------------------	-----	------------------------	------------------------	---------------------	------------------------	------------------------	------------------------	------------------------	-------------------	-------------------

No emissions were detected at a level greater than 20dB below limit.

Ch.144(5720 MHz)

Frequency [MHz]	(P)	Reading AV [dB(uV)]	Reading PK [dB(uV)]	Factor [dB(1/m)]	Level AV [dB(uV/m)]	Level PK [dB(uV/m)]	Limit AV [dB(uV/m)]	Limit PK [dB(uV/m)]	Margin AV [dB]	Margin PK [dB]
--------------------	-----	------------------------	------------------------	---------------------	------------------------	------------------------	------------------------	------------------------	-------------------	-------------------

No emissions were detected at a level greater than 20dB below limit.

Ch.149(5745 MHz)

Frequency [MHz]	(P)	Reading AV [dB(uV)]	Reading PK [dB(uV)]	Factor [dB(1/m)]	Level AV [dB(uV/m)]	Level PK [dB(uV/m)]	Limit AV [dB(uV/m)]	Limit PK [dB(uV/m)]	Margin AV [dB]	Margin PK [dB]
--------------------	-----	------------------------	------------------------	---------------------	------------------------	------------------------	------------------------	------------------------	-------------------	-------------------

No emissions were detected at a level greater than 20dB below limit.

Ch.157(5785 MHz)

Frequency [MHz]	(P)	Reading AV [dB(uV)]	Reading PK [dB(uV)]	Factor [dB(1/m)]	Level AV [dB(uV/m)]	Level PK [dB(uV/m)]	Limit AV [dB(uV/m)]	Limit PK [dB(uV/m)]	Margin AV [dB]	Margin PK [dB]
--------------------	-----	------------------------	------------------------	---------------------	------------------------	------------------------	------------------------	------------------------	-------------------	-------------------

No emissions were detected at a level greater than 20dB below limit.

Ch.165(5825 MHz)

Frequency [MHz]	(P)	Reading AV [dB(uV)]	Reading PK [dB(uV)]	Factor [dB(1/m)]	Level AV [dB(uV/m)]	Level PK [dB(uV/m)]	Limit AV [dB(uV/m)]	Limit PK [dB(uV/m)]	Margin AV [dB]	Margin PK [dB]
--------------------	-----	------------------------	------------------------	---------------------	------------------------	------------------------	------------------------	------------------------	-------------------	-------------------

No emissions were detected at a level greater than 20dB below limit.



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Test Results

4) 9 kHz to 30 MHz

Test mode : Receiver

EUT	Mobile Printer	Measurement Detail	
Model	9485NP	Frequency Range	9 kHz - 30 MHz
Mode	802.11a	Detector function	Quasi-Peak

The requirements are:

Complies

Frequency (MHz)	Measured Data (dBUV/m)	Margin (dB)	Remark
-	-	-	See note

Note :

The amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.

Distance extrapolation factor = $40 \log (\text{specific distance} / \text{test distance})$ (dB)



5) 30 MHz to 1 GHz

Test mode : Receiver

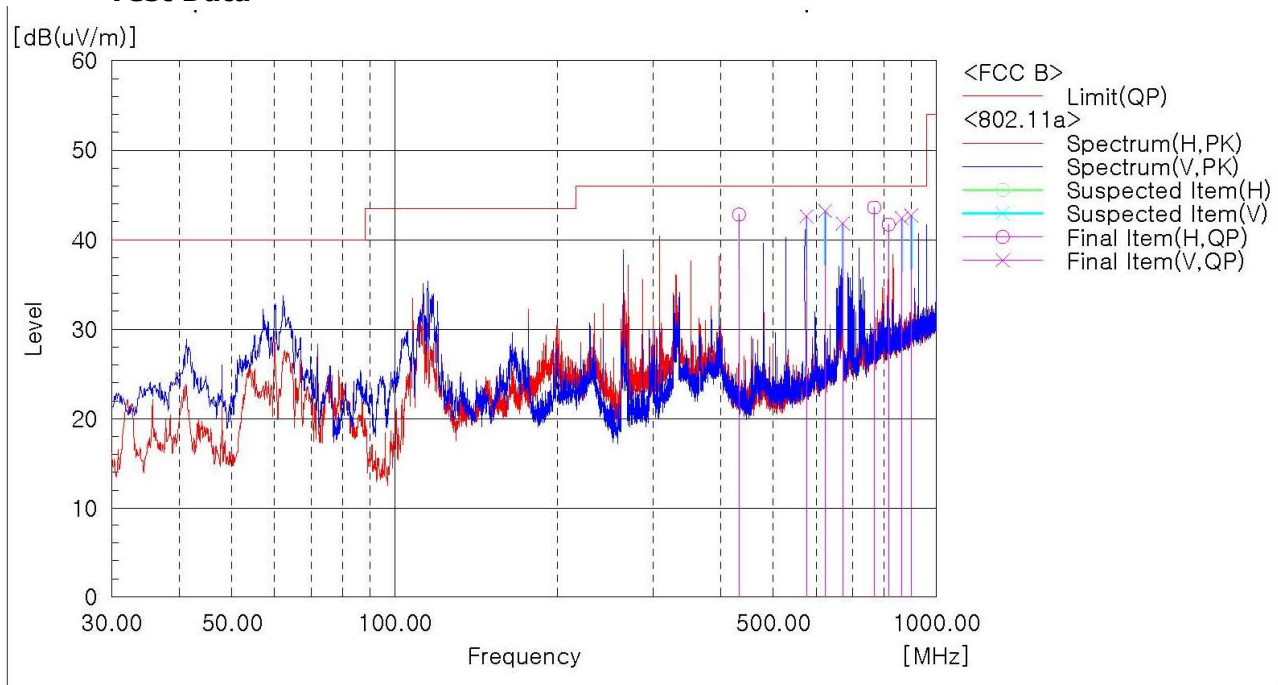
EUT	Mobile Printer	Measurement Detail	
Model	9485NP	Frequency Range	Below 1000MHz
Mode	802.11a	Detector function	Quasi-Peak / Peak

The requirements are:

Complies

Frequency (MHz)	Measured Data (dBuV/m)	Margin (dB)	Remark
768.049	43.6	2.4	Quasi-Peak

Test Data



Final Result

No.	Frequency [MHz]	(P)	Reading QP [dB(uV)]	c.f [dB(1/m)]	Result QP [dB(uV/m)]	Limit QP [dB(uV/m)]	Margin QP [dB]	Height [cm]	Angle [deg]	Remark
1	432.065	H	47.0	-4.2	42.8	46.0	3.2	208.0	308.0	
2	576.110	V	42.9	-0.3	42.6	46.0	3.4	100.0	159.0	
3	624.004	V	42.4	0.8	43.2	46.0	2.8	100.0	10.0	
4	672.019	V	40.2	1.6	41.8	46.0	4.2	100.0	10.0	
5	768.049	H	40.2	3.4	43.6	46.0	2.4	100.0	52.0	
6	816.064	H	37.2	4.5	41.7	46.0	4.3	100.0	52.0	
7	864.079	V	36.7	5.7	42.4	46.0	3.6	100.0	10.0	
8	900.090	V	36.0	6.7	42.7	46.0	3.3	100.0	10.0	

Remark :

1. The field strength of spurious emission was measured in the following position: EUT stand-up position(Z axis), lie-down position(X,Y axis). The worst emission was found in stand-up position(Z axis) and the worst case was recorded.



Test mode : Receiver

EUT	Mobile Printer	Measurement Detail	
Model	9485NP	Frequency Range	1-40GHz
Mode	802.11a	Detector function	Average / Peak

Remarks

We have tested three mode (X, Y, Z). The worst mode (X axis) for final test.

The requirements are:

Complies

Frequency (MHz)	Measured Data (dBuV/m)	Margin (dB)	Remark
No emissions were detected at a level greater than 20dB below limit.			

Frequency [MHz]	(P)	Reading AV [dB(uV)]	Reading PK [dB(uV)]	Factor [dB(1/m)]	Level AV [dB(uV/m)]	Level PK [dB(uV/m)]	Limit AV [dB(uV/m)]	Limit PK [dB(uV/m)]	Margin AV [dB]	Margin PK [dB]
-----------------	-----	---------------------	---------------------	------------------	---------------------	---------------------	---------------------	---------------------	----------------	----------------

No emissions were detected at a level greater than 20dB below limit.



2.1.9 AC Conducted Emissions

Test Location

Shielded Room

Frequency Range of Measurement

150 kHz to 30 MHz

Instrument Settings

IF Band Width: 9 kHz

Test Procedures

The EUT was placed on a non-metallic table 0.8m above the metallic, grounded floor and 0.4m from the reference ground plane wall. The distance to other metallic surfaces was at least 0.8m.

Amplitude measurements were performed with a quasi-peak detector and an average detector.

Limit

- 15.207(a)

Frequency (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15 ~ 0.5	66 to 56*	56 to 46*
0.5 ~ 5	56	46
5 ~ 30	60	50

* Decreases with the logarithm of the frequency.

Test Results

The requirements are:

Complies

Frequency (MHz)	Measured Data (dBuV/m)	Margin (dB)	Remark
6.243	47.0	13.0	Quasi-Peak



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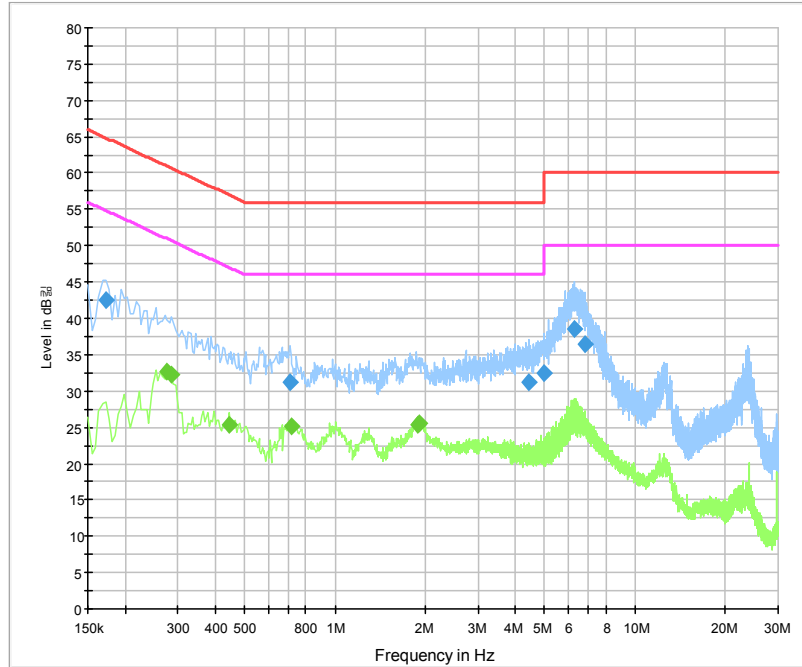
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Test Data

[HOT]

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Final Result 1

Frequency (MHz)	QuasiPeak (dBuV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.172500	42.6	1000.0	9.000	On	L1	9.8	22.2	64.8
0.708000	31.3	1000.0	9.000	On	L1	9.8	24.7	56.0
4.434000	31.1	1000.0	9.000	On	L1	9.8	24.9	56.0
4.996500	32.6	1000.0	9.000	On	L1	9.8	23.4	56.0
6.274500	38.5	1000.0	9.000	On	L1	9.8	21.5	60.0
6.832500	36.5	1000.0	9.000	On	L1	9.8	23.5	60.0

Final Result 2

Frequency (MHz)	CAverage (dBuV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.276000	32.7	1000.0	9.000	On	L1	9.7	18.2	50.9
0.285000	32.3	1000.0	9.000	On	L1	9.7	18.4	50.7
0.442500	25.4	1000.0	9.000	On	L1	9.9	21.6	47.0
0.717000	25.2	1000.0	9.000	On	L1	9.8	20.8	46.0
1.887000	25.4	1000.0	9.000	On	L1	9.7	20.6	46.0
1.918500	25.5	1000.0	9.000	On	L1	9.7	20.5	46.0



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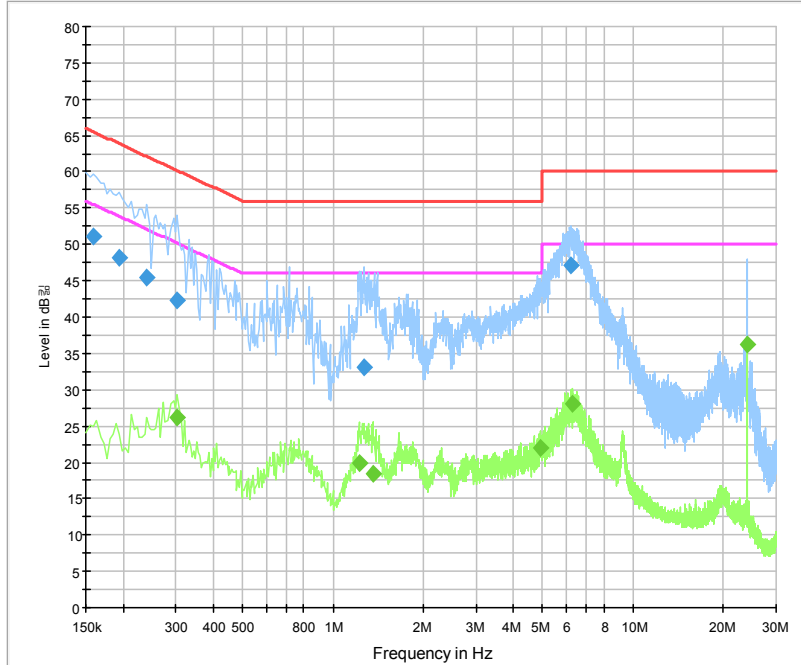
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[NEUTRAL]

CISPR 22 Class B_N



Final Result 1

Frequency (MHz)	QuasiPeak (dBuV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.159000	51.1	1000.0	9.000	On	N	9.7	14.4	65.5
0.195000	48.3	1000.0	9.000	On	N	9.8	15.6	63.8
0.240000	45.5	1000.0	9.000	On	N	9.7	16.6	62.1
0.303000	42.3	1000.0	9.000	On	N	9.7	17.9	60.2
1.275000	33.0	1000.0	9.000	On	N	9.7	23.0	56.0
6.243000	47.0	1000.0	9.000	On	N	9.7	13.0	60.0

Final Result 2

Frequency (MHz)	CAverage (dBuV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBuV)
0.303000	26.2	1000.0	9.000	On	N	9.7	24.0	50.2
1.221000	20.0	1000.0	9.000	On	N	9.7	26.0	46.0
1.360500	18.5	1000.0	9.000	On	N	9.7	27.5	46.0
4.906500	22.1	1000.0	9.000	On	N	9.7	23.9	46.0
6.283500	28.0	1000.0	9.000	On	N	9.7	22.0	50.0
24.135000	36.2	1000.0	9.000	On	N	10.1	13.8	50.0



2.1.10 Dynamic Frequency Selection

Test Setup

The testing was performed in a shield room. An arbitrary waveform synthesizer coupled with a signal generator was used to generate the interfering radar signal.

The event log of an approved DFS master, FCC ID: A3LWEA403E, was used to determine channel usage and also monitor DFS master commands to the EUT.

Test Procedure

The procedure referenced was Appendix B. FCC order, ET Docket No. 03-122 (FCC 06-96):
The test was facilitated with the use of an approved DFS master device: A3LWEA403E. The DFS mechanism of the DFS master device/AP is triggered by presenting it with a recognized radar signal type. The table below lists the approved short pulse radar test waveforms:

Radar Type	Pulse Width (µsec)	PRI (µsec)	Number of Pulses	Minimum Percentage of Successful Detection	Minimum Number of Trials
1	1	1428	18	60%	30
2	1-5	150-230	23-29	60%	30
3	6-10	200-500	16-18	60%	30
4	11-20	200-500	12-16	60%	30
Aggregate (Radar Types 1-4)				80%	120

The radar type used for this test was 28 pulses of type 2 radar with a pulse width of 5 microseconds and a pulse repetition interval of 230 microseconds. This waveform originates from the arbitrary waveform generator. This waveform is then fed into a signal generator operating at the desired frequency.

The falling edge of the last pulse of the radar pulse train was used as the t=0 reference for the Channel closing and channel move time.

Limit

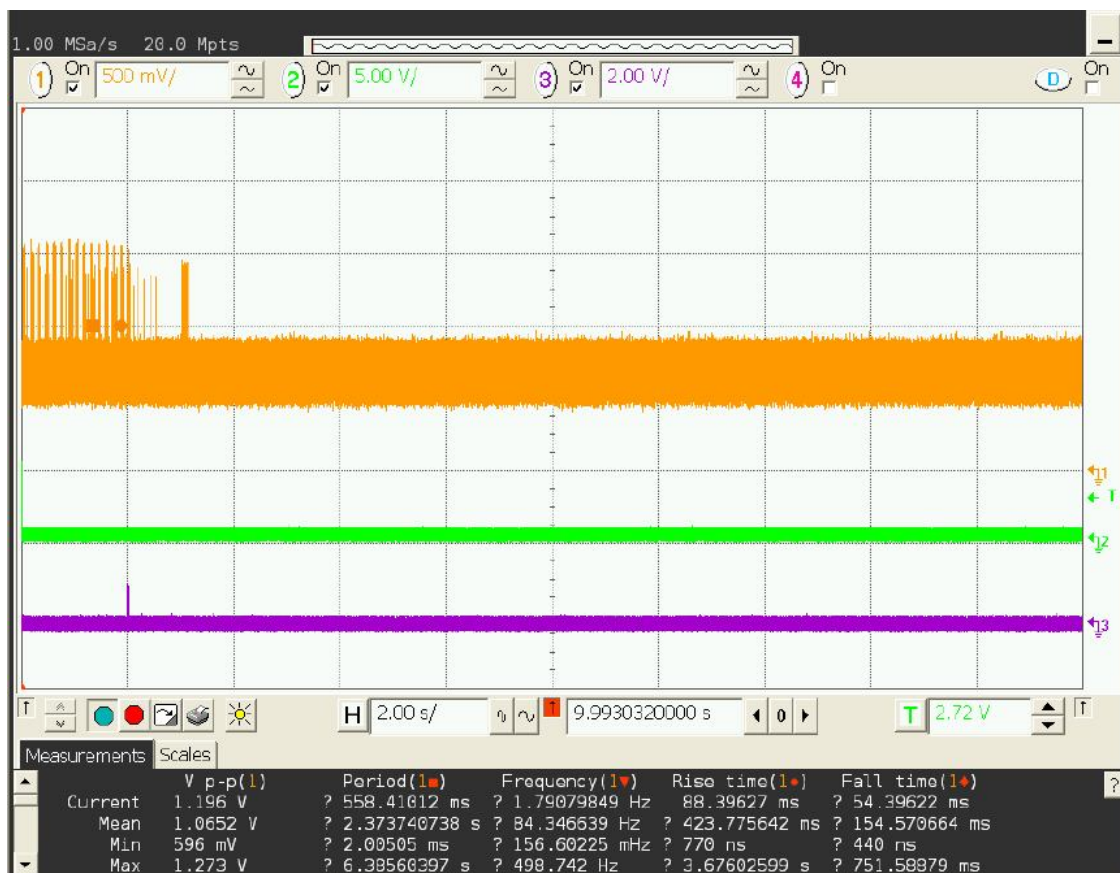
Channel move time : 10 seconds after detection
 Channel closing : 200ms after detection + 60 ms (aggregate) over the remaining 10 second period.
 Channel non-occupancy period : 30 minutes(1800 seconds)

Test Results

The requirements are:

Complies

[Channel move time]



- *Orange trace : Traffic on frequency of interest
- *Purple trace : Type 2 Radar pulse directly from arbitrary wave generator
- *Green trace : Event trigger (triggers oscilloscope)

The 20 second sweep of the event, confirms that traffic between the DFS master and the EUT has ceased on the original channel, 5500MHz, within the limit of 10 seconds.

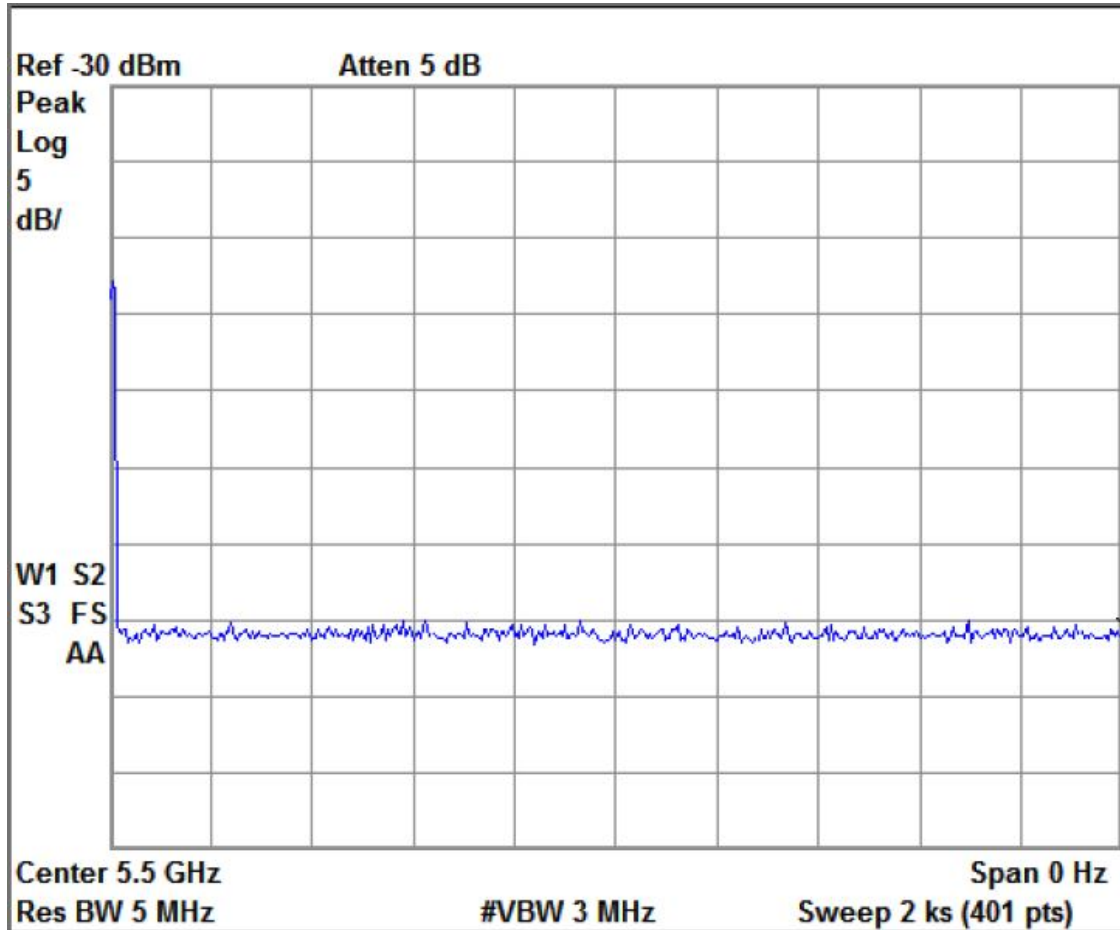


[Channel close time]

the aggregate of the control signals were within the 60 milliseconds limit.

Aggregate = 14.74ms

[Channel non occupancy time]



no other traffic on channel 5500MHz within the 30 minute limit.



APPENDIX A – Test Equipment Used For Tests

	Name of Equipment	Manufacturer	Model No.	Serial No.	Cal Date	Due Date
1	Signal Analyzer	Agilent	N9020A	MY48011598	2014-11-07	2015-11-07
2	EMI Test Receiver	Rohde & Schwarz	ESCI7	100814	2014-12-05	2015-12-05
3	EMI Test Receiver	Rohde & Schwarz	ESCI7	100816	2014-12-05	2015-12-05
4	DC POWER SUPPLY	Agilent	E3632A	MY40011638	2014-11-07	2015-11-07
5	Horn Antenna	ETS-Lindgren	3115	00078895	2015-05-07	2017-05-07
6	Horn Antenna	ETS-Lindgren	3116	00062916	2015-04-30	2017-04-30
7	OPT H64 AMPLIFIER	HP	8447F	3113A06814	2015-02-06	2016-02-06
8	PREAMPLIFIER	Agilent	8449B	3008A02307	2014-10-24	2015-10-24
9	LISN	Rohde & Schwarz	ENV216	101760	2015-02-02	2016-02-02
10	DC POWER SUPPLY	Agilent	E3632A	MY40011638	2014-11-07	2015-11-07
11	EMI Test Receiver	Rohde & Schwarz	ESCI3	100032	2015-02-02	2016-02-02
12	6dB Attenuator	R&S	DNF	272.4110.50	2014-11-07	2015-11-07
13	AMPLIFIER	Sonoma Instrument Co.	310	291721	2015-02-02	2016-02-02
14	EMI Test Receiver	Rohde & Schwarz	ESU40	100336	2015-05-15	2016-05-15
15	Signal Generator	Rohde & Schwarz	SMBV100A	258008	2015-05-13	2016-05-13
16	Signal Generator	Rohde & Schwarz	SMB100A	175528	2015-01-19	2016-01-19
17	Bilog Antenna	Schaffner	CBL6111C	2551	2014-05-08	2016-05-08
18	Dual Directional Coupler	HEWLETT-PACKARD	11692D	1212A03629	2014-11-11	2015-11-11