RADIO TEST REPORT

No. 405923

EQUIPMENT UNDER TEST

Equipment:	Repeater system
Type / model:	CSFT 1922-ER CSFT 1922-DD
Manufacturer:	Avitec AB
Tested by request of:	Avitec AB

SUMMARY

The equipment complies with the requirements of the following standards:

FCC, Part 24, Subpart E (2003);
FCC, Part 15, Subpart B, class A (2003)

Date of issue: June 30, 2004

Tested by: Linda Heikurainen
Linda Heikurainen

Approved by: Henric Larsson
Henric Larsson

Intertek Semko AB
Torshamnsgatan 43, Box 1103, SE-164 22 Kista, Sweden
Telephone +46 8 750 00 00, Fax +46 8 750 60 30, www.sweden.intertek-etlsemko.com
Registered in Sweden: No SE556024059901, Registered office: As address

CONTENTS

Page

1. CLIENT INFORMATION

The EUT has been tested by request of

Company:	Avitec AB Box 20116 161 02 Bromma Sweden
Name of contact:	Rolf Folkesson

2. EQUIPMENT UNDER TEST (EUT)

2.1 Identification of the EUT according to the manufacturer/client declaration

Equipment:	Repeater system	
Type/Model:	CSFT 1922-ER	CSFT 1922-DD
Brand name:	Avitec	Avitec
Serial number:	4AC7	49JN
Manufacturer:	Avitec AB	Avitec AB
Rating/Supplying voltage:	120 VAC	120 VAC
Rating RF output power:	Downlink (DL): +43 dBm Uplink (UL): +37 dBm	DL: +37 dBm UL: -7 dBm
External antenna connector:	Yes	Yes
Operating temperature range:	-25 to +55 ºC	-25 to +55 ºC
Frequency range:	UL: 1850-1910 MHz DL: 1930-1990 MHz	UL: 1850-1910 MHz DL: 1930-1990 MHz
Number of channels:	299	299
Modulation characteristics:	8-PSK, GMSK	8-PSK, GMSK
Stand by mode supported:	Yes	Yes

2.2 Additional hardware information about the EUT

The EUT consists of the following units:

CSFT 1922-ER:

Unit	Type and version	Serial number
Control Module	H311001C	44SZ
Power Supply	J791001X	46C3
LIMPA[1] Uplink	E451031A	49JZ
LIMPA[1] Downlink	E451032A	49JT
Filtering and distribution donor	G661001A	49GE
Filtering and distribution server	G671002A	499Z
Filtering and distribution server 2	G671002A	49AC
Reference Generator	R031001A	45MZ
External Interface Board	J691001D	46W5
Master Distribution Board	J641030A	45YL

CSFT 1922-DD:

Unit	Type and version	Serial number
Control Module	H311001C	44QV
Power Supply	J791001X	46C2
LIMPA[1] Uplink	E451033A	49JX
LIMPA[1] Downlink	E451032A	49JV
Filtering and distribution donor	G661003A	49EX
Filtering and distribution donor 2	G661003A	49F1
Filtering and distribution server	G671001A	49BX
Reference Generator	R031001A	45N1
External Interface Board	J691001D	46U7
Master Distribution Board	J641030A	45YK

2.3 Additional software information about the EUT

During the tests the EUT supported the following software:

Software	Version
RMC Repeater Maintenance Console	2.025

2.4 Peripheral equipment

Peripheral equipment is defined as equipment needed for correct operation of the EUT, but not included as a part of the testing and evaluation of the EUT.

Equipment	Manufacturer / Type	Serial number
Signal generator (CW)	Hewlett & Packard / 83712A	Semko: S-3148
Signal generator (8-PSK)	Agilent, E4436 B	US 39261173

2.5 Modifications during the test

No modifications have been made during the tests.

---

[1] LIMPA= Levelling Intermediate (frequency) Module and Power Amplifier

3. TEST SPECIFICATIONS

3.1 Standards

FCC 47 CFR part 24 (2003): Subpart E – Broadband PCS
FCC 47 CFR part 15 (2003): Subpart B – Unintentional radiators

Measurements methods according to ANSI C63.4-2001

3.2 Additions, deviations and exclusions from standards

No additions, deviations or exclusions have been made from standards.

3.3 Test set-up

Measurement set-up for the tests of: conducted disturbance voltage in the frequency range 0,45-30 MHz, output power and out-of-band spurious emissions test, are described in the sections for respective test. During other tests the EUT was connected to the spectrum analyzer by cable.

3.4 Operating environment

If not additionally specified, the tests were performed under the following environmental conditions:

Air temperature:	21-23°C
Relative humidity:	30-48%

4. TEST SUMMARY

The results in this report apply only to the sample tested.

FCC reference	Test	Result	Note
24.232	RF output power	Pass	
24.238 (a-d)	26 dB bandwidth	Pass	1.
24.235	Frequency stability with temperature variations	Pass	
24.235	Frequency stability with voltage variations	Pass	
24.238 (a-d)	Out of band spurious emissions, radiated	Pass	
24.238 (a-d)	Out of band spurious emissions, conducted	Pass	
15B	Out of band spurious emissions, radiated	Pass	
15B	Conducted emission at AC port	Pass	
24.238 (b)	Band edge compliance	Pass	
24.238 (a-d)	3-tone intermodulation test	Pass	

Note 1: No limits apply for the test; the result is used to calculate the resolution bandwidth for Band edge compliance.

5. RF OUTPUT POWER

5.1 Test protocol

Date of test: 2004-06-04

EUT mode of operation: Maximum gain, unmodulated CW-signal

CSFT 1922-ER, Downlink

Channel (MHz)	Peak Output Power (dBm)	Limit value (dBm)
1930,2	43,4	< 50
1960,0	43,9	
1989,8	43,1	

CSFT 1922-ER, Uplink

Channel (MHz)	Peak Output Power (dBm)	Limit value (dBm)
1850,2	38,7	< 50
1880,0	39,0	
1909,8	38,7	

CSFT 1922-DD, Downlink

Channel (MHz)	Peak Output Power (dBm)	Limit value (dBm)
1930,2	38,4	< 50
1960,0	38,8	
1989,8	38,2	

CSFT 1922-DD, Uplink

Channel (MHz)	Peak Output Power (dBm)	Limit value (dBm)
1850,2	-9,9	< 50
1880,0	-9,3	
1909,8	-9,6	

The measurement was made using a power meter with a peak power sensor measuring the peak output power.

Measurement results are corrected for attenuation in the set-up configuration and antenna gain declared by the manufacturer.

Example calculation:

Peak output power [dBm] = Analyser reading [dBm] + cable loss [dB] + attenuators [dB]

6. 26 DB BANDWIDTH

6.1 Test protocol

Date of test: 2004-06-22

EUT mode of operation: Maximum gain, EDGE-modulated carrier.

Spectrum analyzer settings:

Span: 0,5 - 0,75 MHz
RBW: 3 kHz
VBW: 3 kHz
Sweep time: Auto
Detector: Peak
Trace: Max Hold

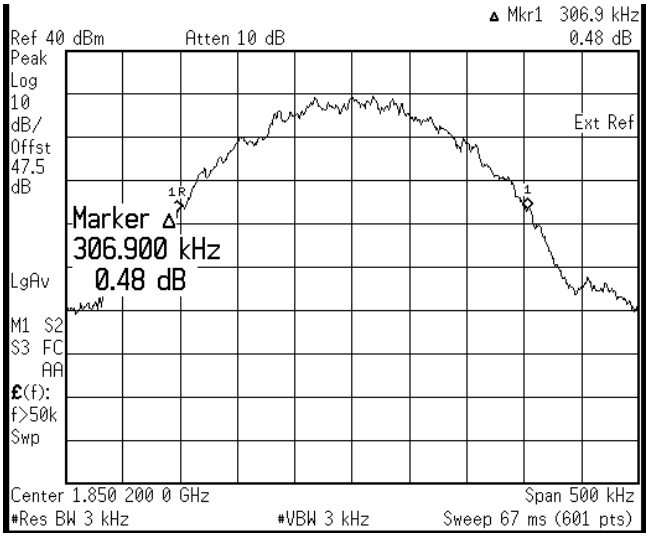
CSFT 1922-ER

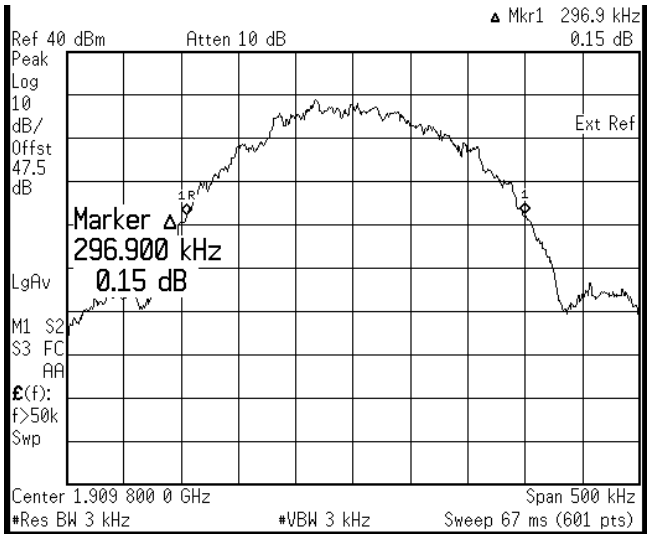
Channel (MHz)	26 dB bandwidth (kHz)	UL/ DL
1850,2	307	UL
1909,8	297	UL
1930,2	314	DL
1989,8	322	DL

CSFT 1922-DD

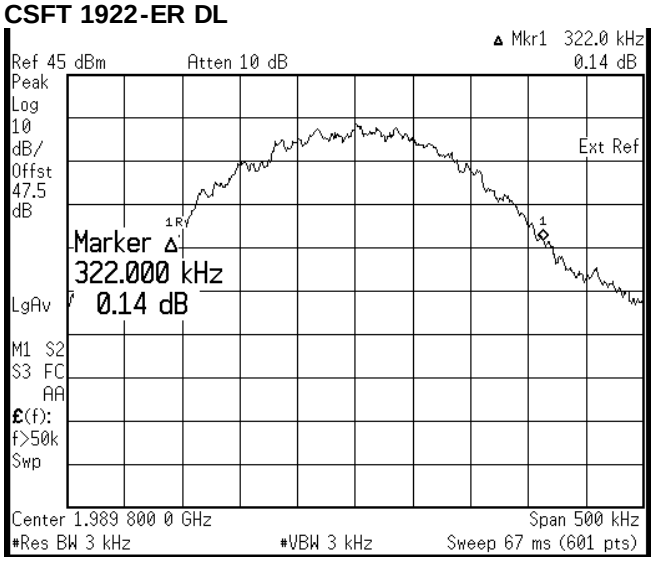
Channel (MHz)	26 dB bandwidth (kHz)	UL/ DL
1850,2	299	UL
1909,8	297	UL
1930,2	313	DL
1989,8	320	DL

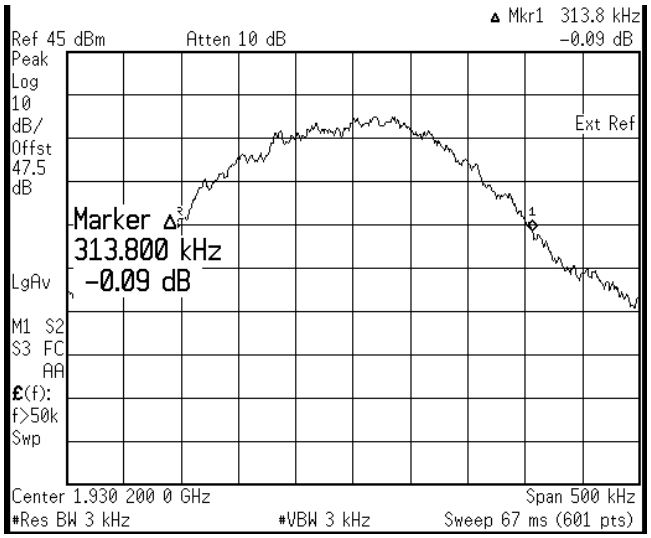
CSFT 1922-ER UL



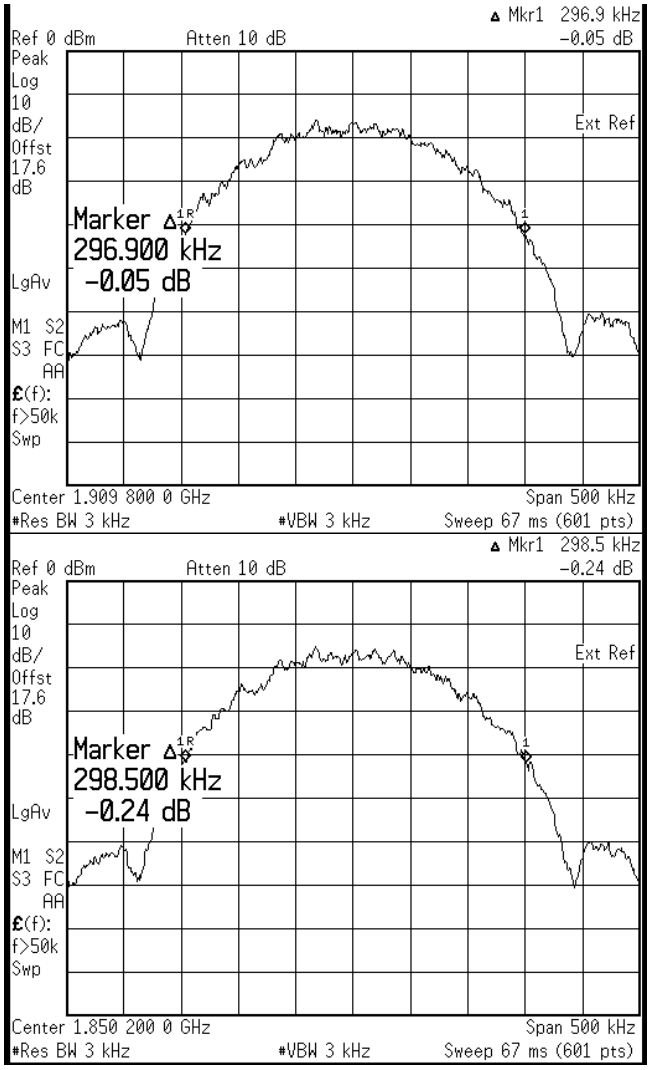


CSFT 1922-ER DL

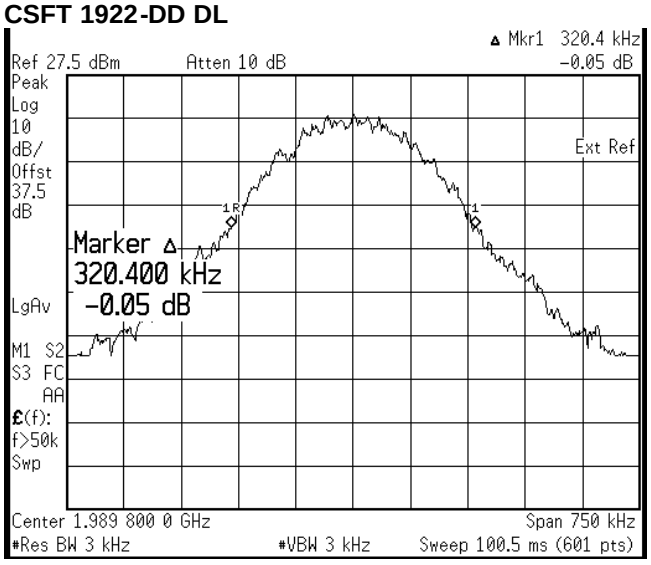


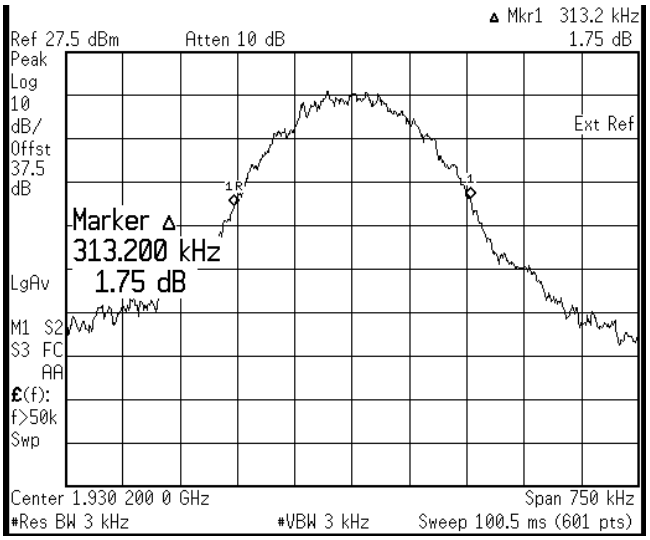


CSFT 1922-DD UL



CSFT 1922-DD DL




Ref 27.5 dBm
Atten 10 dB
Mkr1 313.2 kHz
1.75 dB
Peak
Log
10
dB/
Offst
37.5
dB
Ext Ref
Marker Δ
313.200 kHz
1.75 dB
LgAv
M1 S2
S3 FC
AA
£(f):
f>50k
Swp
Center 1.930 200 0 GHz
Span 750 kHz
#Res BW 3 kHz
#VBW 3 kHz
Sweep 100.5 ms (601 pts)

7. FREQUENCY STABILITY WITH TEMPERATURE VARIATIONS

7.1 Test protocol

Date of test: 2004-06-15

EUT mode of operation: Maximum gain, EDGE-modulated carrier

Test conditions	Frequency (MHz)			
	Uplink		Downlink	
	1850,2 Error (Hz)	1909,8 Error (Hz)	1930,2 Error (Hz)	1889,8 Error (Hz)
T_{min} (-25)°C	<-35	<15	<15	<12
T_{nom} (20)°C	>-12	<15	>-27	<25
T_{max} (55)°C	<-25	<25	<12	<10

Limit = Stay within the authorized frequency block, the RF carrier frequency shall not depart more than ±200 Hz from the reference frequency.

8. FREQUENCY STABILITY WITH VOLTAGE VARIATIONS

8.1 Test protocol

Date of test: 2004-06-15

EUT mode of operation: Maximum gain, EDGE-modulated carrier

Test conditions	Frequency (MHz)			
	Uplink		Downlink	
	1850,2 Error (Hz)	1909,8 Error (Hz)	1930,2 Error (Hz)	1889,8 Error (Hz)
V_{min} (102)VAC	>-13	<12	>-17	<30
V_{nom} (120)VAC	>-12	<15	>-27	<25
V_{max} (138)VAC	<24	<13	>-29	>-28

Limit = Stay within the authorized frequency block, the RF carrier frequency shall not depart more than ±200 Hz from the reference frequency.

9. RADIATED SPURIOUS EMISSIONS

9.1 Operating environment

Temperature:	21-22	°C	(10 – 40 °C)
Relative Humidity:	33	%	(10 - 90 %)

9.2 Measurement uncertainty

Radiated disturbance electric field intensity, 30 – 1000 MHz: ± 4,6 dB
Radiated disturbance electric field intensity, 1000 – 18000 MHz: ± 6,0 dB

The measurement uncertainty describes the overall uncertainty of the given measured value during operation of the EUT.

Measurement uncertainty is calculated in accordance with EA-4/02-1997.
The measurement uncertainty is given with a confidence of 95%.

9.3 Test equipment

Equipment	Manufacturer	Type	SEMKO No.
Test site: Semi-anechoic shielded chamber, 10 x 20 x 8,5 m (W x L x H)			30300
Software:	Rohde & Schwarz	ES-K1, V1.60	
Measurement receiver:	Rohde & Schwarz	ESAI	2973/2974
Antenna amplifier:	SEMKO		7992/7993
Antenna, bilog:	Chase	CBL6111B	8578
Test site: Bluetooth anechoic shielded chamber, 3,7 x 7,0 x 2,4 m (W x L x H)			12285
Software:	Rohde & Schwarz	ES-K1, V1.70	
Signal analyser:	Rohde & Schwarz	FSIQ 40	40023
Preamplifier:	MITEQ	AFS6/AFS44	12335
Antennas:			
Double Ridge Guide Horn:	EMCO	3115	4936
Horn antenna:	EMCO	3160-08	30099
Horn antenna:	EMCO	3160-09	30101

9.4 Measurement set-up

Test site: Semi-anechoic shielded chamber (30 – 1000 MHz)

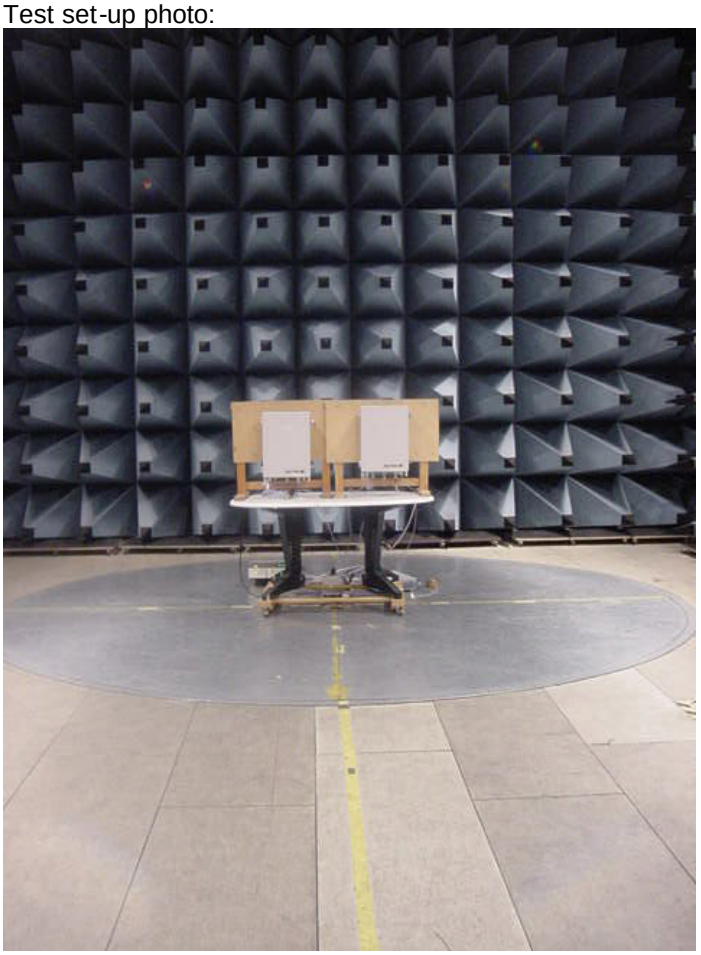
The radiated disturbance electric field intensity was measured in a semi-anechoic chamber at a distance of 10 m and the EUT was placed on a non-metallic table, 0,8 m above the reference ground plane. The specified test mode was enabled. Test set-up photo is given below.

An overview sweep with peak detection of the electric field intensity was performed with the measurement receiver in max-hold and with the antenna placed 1,5 m, 2,5 m and 3,5 m above the floor. The polarisation was horizontal and vertical. The measurements were repeated with the EUT rotated in 90-degree steps.

At the frequencies where high disturbance levels were found a search for max disturbance level was performed. With the EUT and antenna in the worst-case configuration new measurements were carried out.

The EUT was supplied by 120 VAC (50 Hz) during the test.

Test set-up photo:

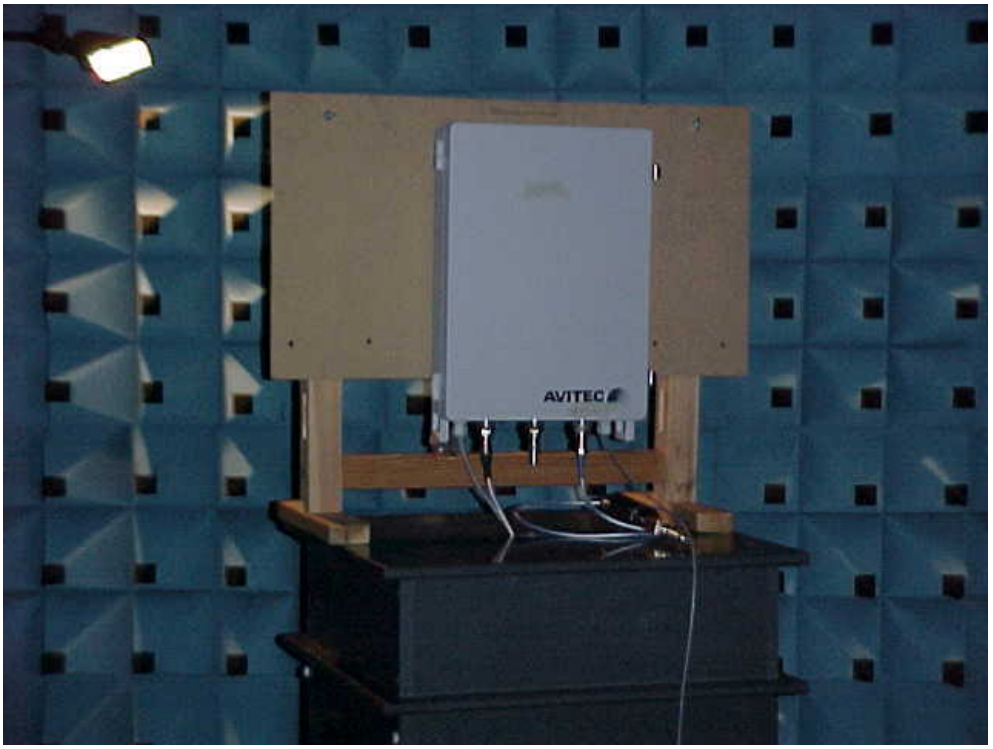


Test site: Bluetooth anechoic shielded chamber (1 – 26 GHz)

In the Bluetooth anechoic chamber the EUT was placed on a non-metallic table, 1,4 m above the floor. The radiated disturbance electric field intensity was measured at a distance of 3 m. The specified test mode was enabled.

An overview sweep with peak detection of the electric field intensity was performed with the spectrum analyser in max-hold and with the antenna placed 1,4 m above the floor. The polarisation was horizontal and vertical. The measurements were repeated with the EUT rotated in 90-degree steps. If necessary, the sweep was repeated with average detection. Test set-up photo is shown below.

The EUT was supplied by 120 VAC (50 Hz) during the test.

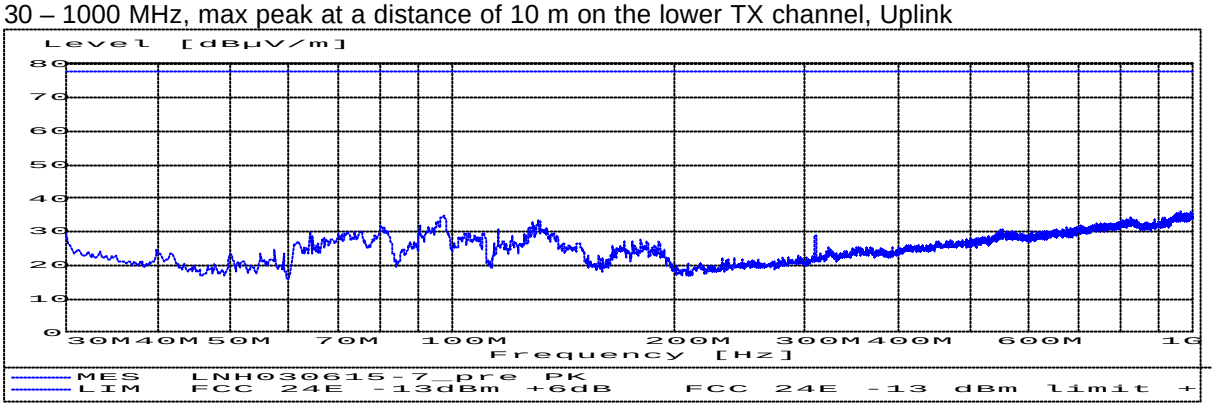


9.5 Test protocol

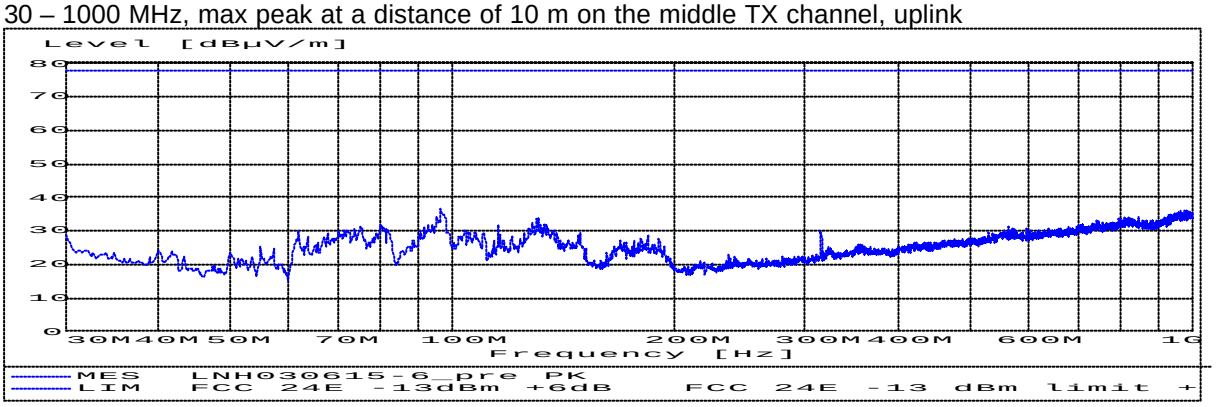
Semi-anechoic shielded chamber

Date of test: 2004-06-15

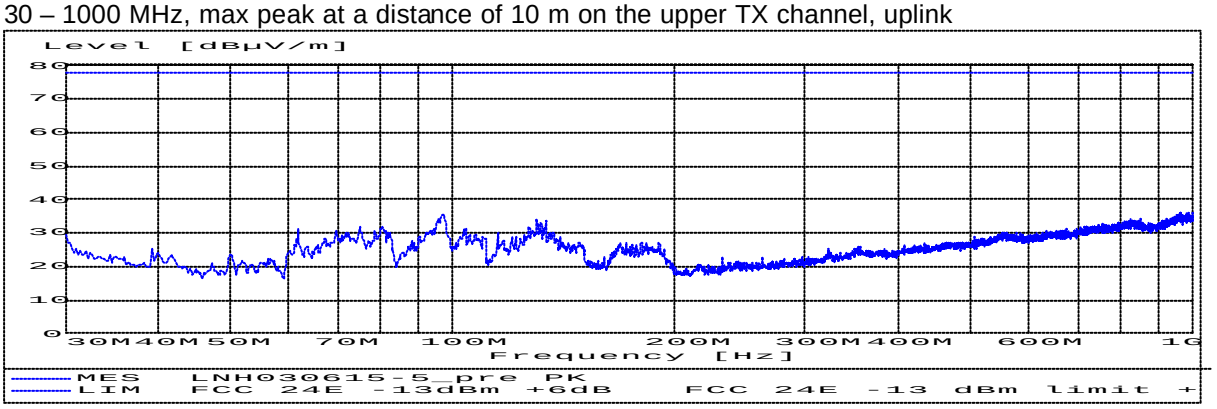
30 – 1000 MHz, max peak at a distance of 10 m on the lower TX channel, Uplink



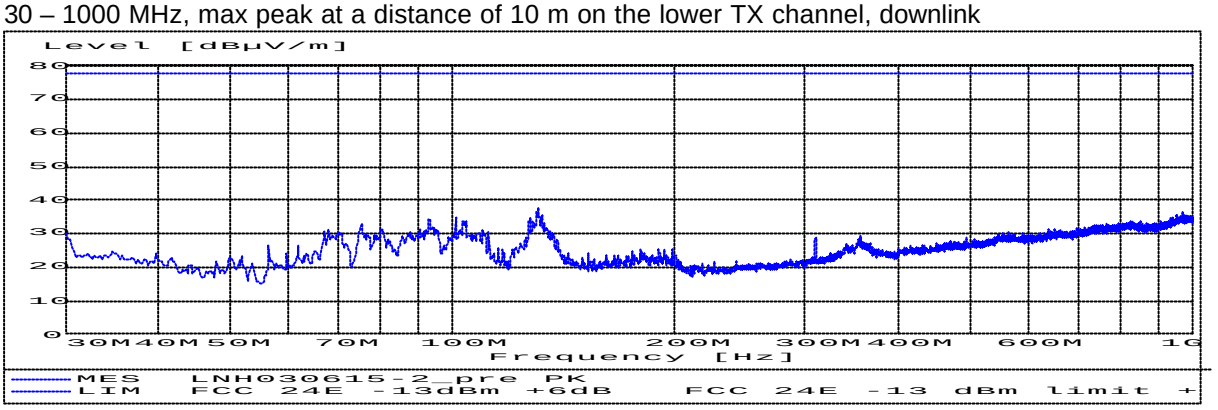
30 – 1000 MHz, max peak at a distance of 10 m on the middle TX channel, uplink



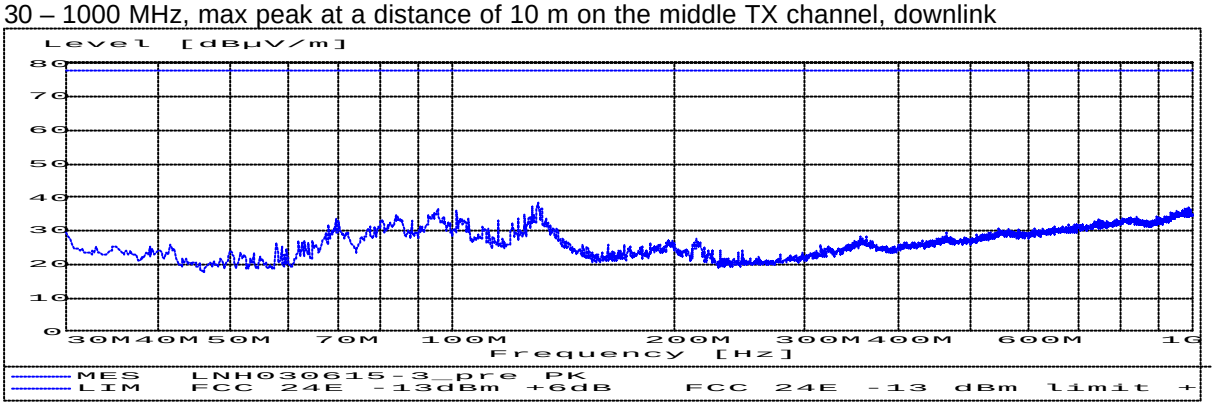
30 – 1000 MHz, max peak at a distance of 10 m on the upper TX channel, uplink



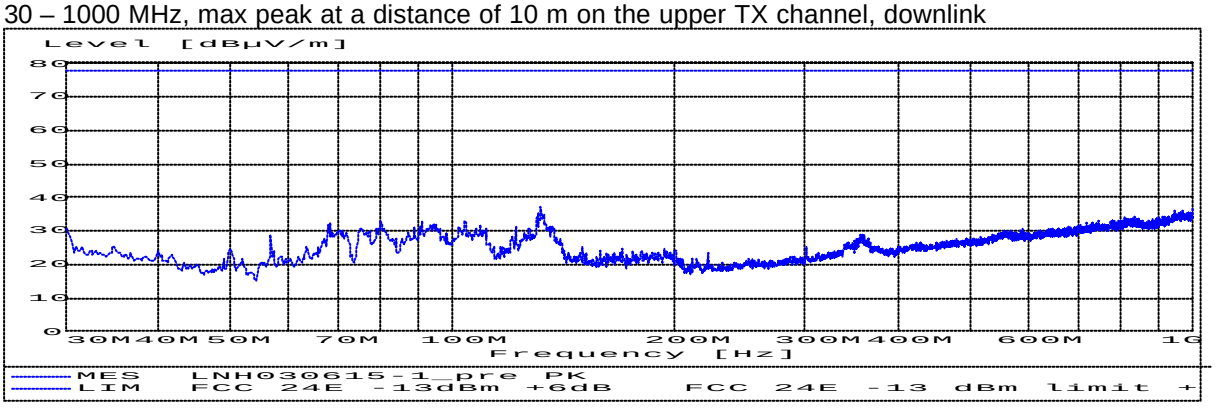
30 – 1000 MHz, max peak at a distance of 10 m on the lower TX channel, downlink



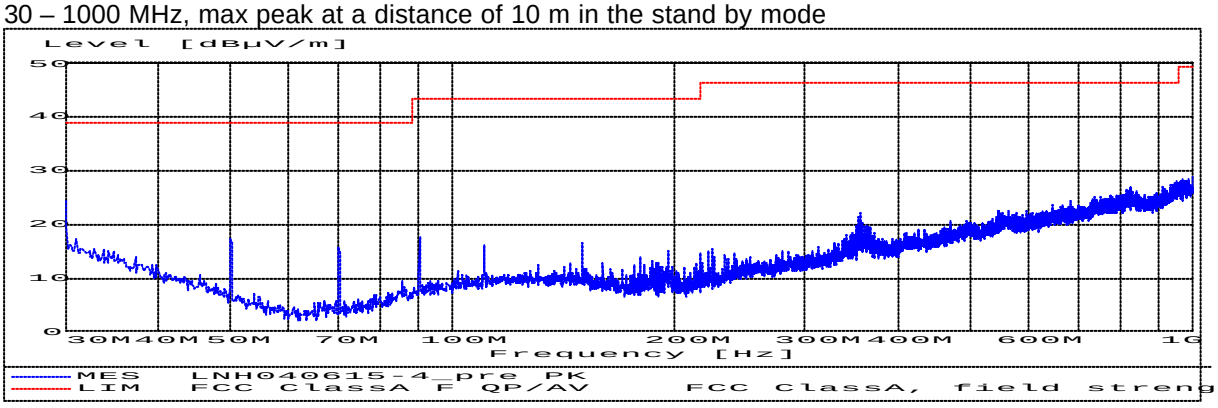
30 – 1000 MHz, max peak at a distance of 10 m on the middle TX channel, downlink



30 – 1000 MHz, max peak at a distance of 10 m on the upper TX channel, downlink



30 – 1000 MHz, max peak at a distance of 10 m in the stand by mode

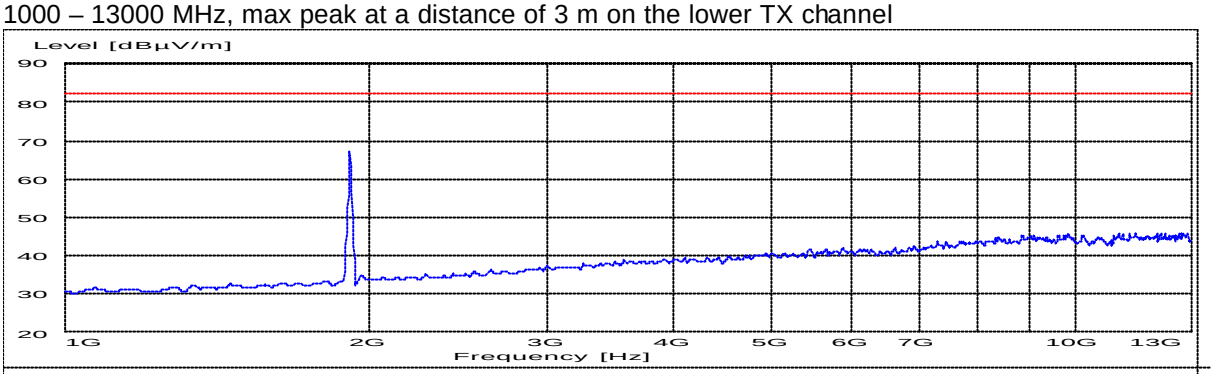


Bluetooth anechoic shielded chamber

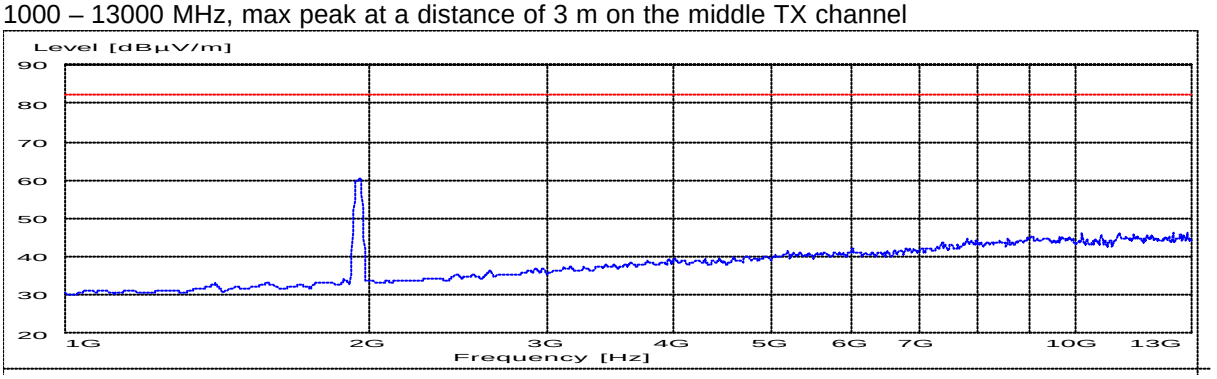
Date of test: 2004-06-17

CSFT 1922-DD DL

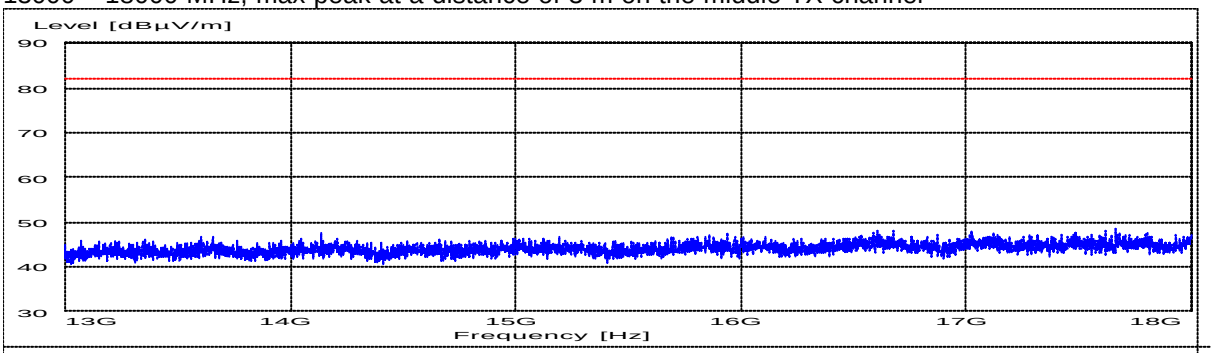
1000 – 13000 MHz, max peak at a distance of 3 m on the lower TX channel



1000 – 13000 MHz, max peak at a distance of 3 m on the middle TX channel

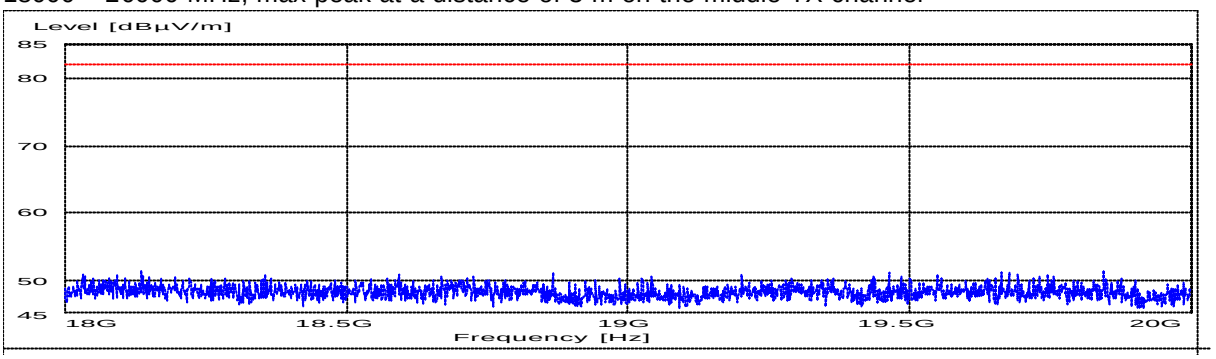


13000 – 18000 MHz, max peak at a distance of 3 m on the middle TX channel[2]

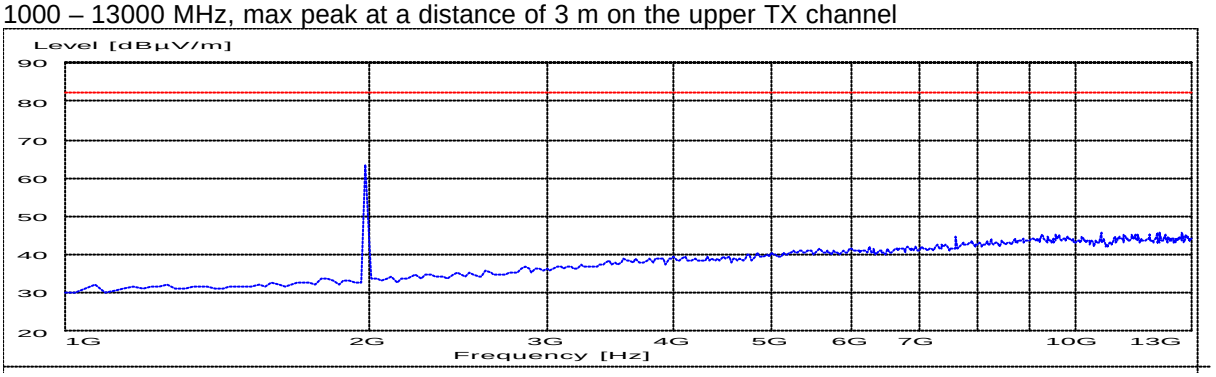


[2] This measurement also applies to the high and low channels.

18000 – 20000 MHz, max peak at a distance of 3 m on the middle TX channel[3]

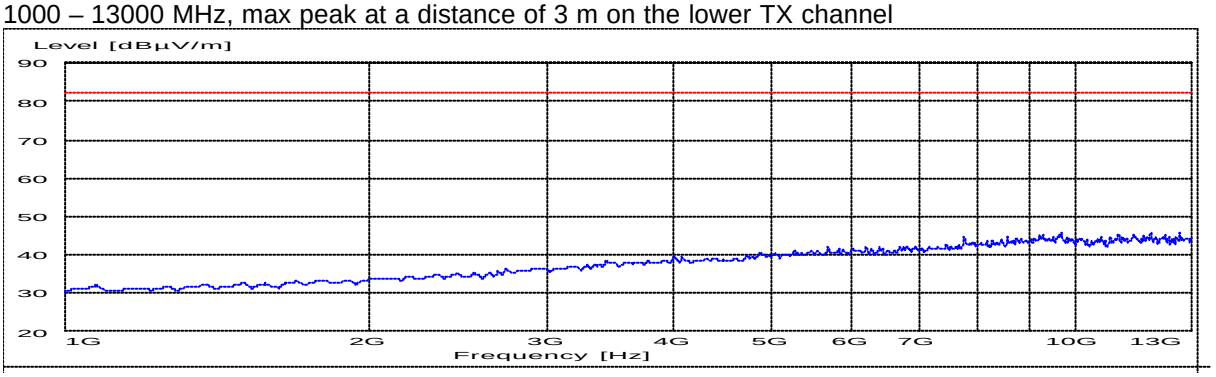


1000 – 13000 MHz, max peak at a distance of 3 m on the upper TX channel

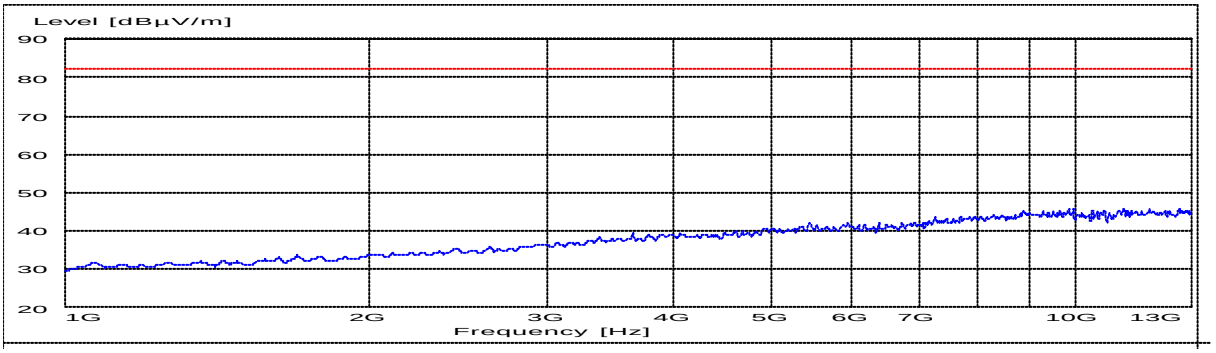


CSFT 1922-DD UL

1000 – 13000 MHz, max peak at a distance of 3 m on the lower TX channel

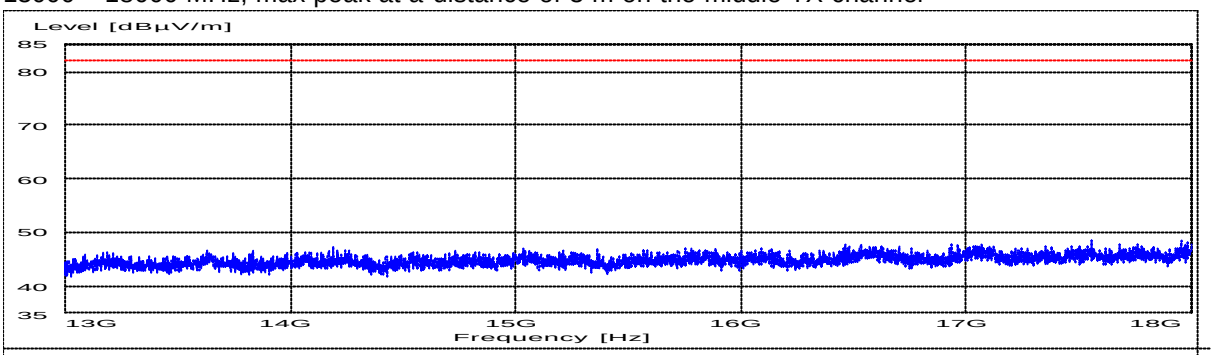


1000 – 13000 MHz, max peak at a distance of 3 m on the middle TX channel

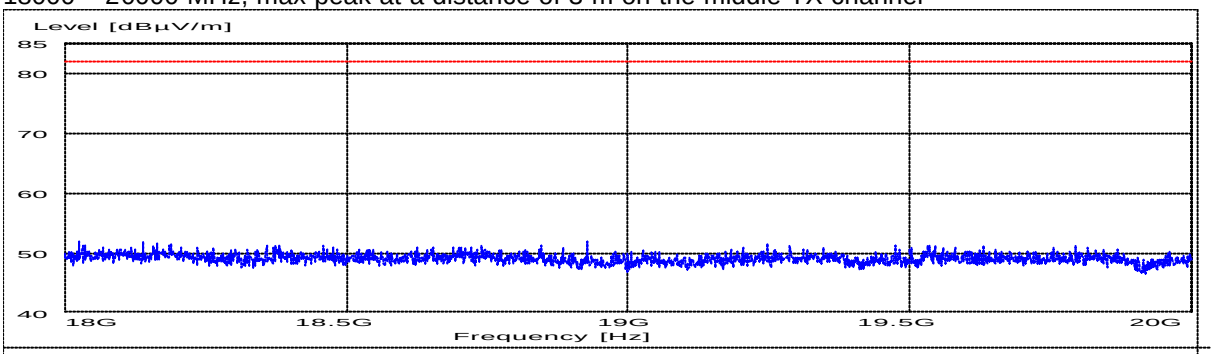


[3] This measurement also applies to the high and low channels

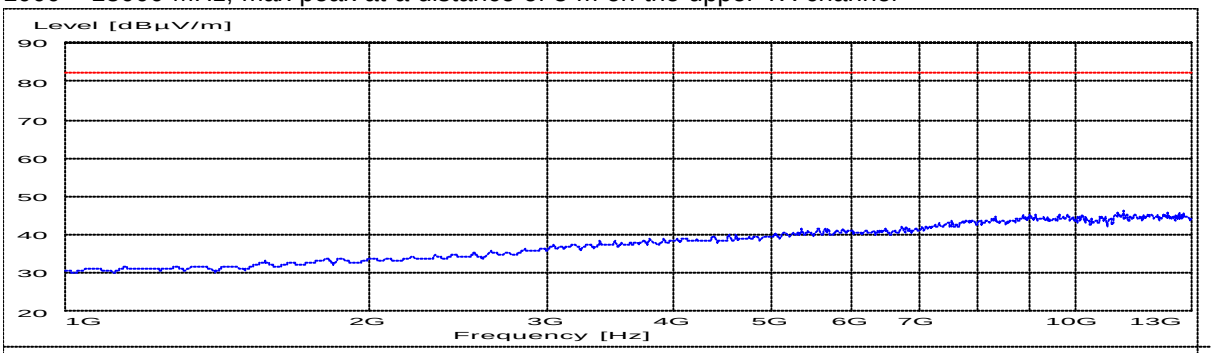
13000 – 18000 MHz, max peak at a distance of 3 m on the middle TX channel[4]



18000 – 20000 MHz, max peak at a distance of 3 m on the middle TX channel[4]

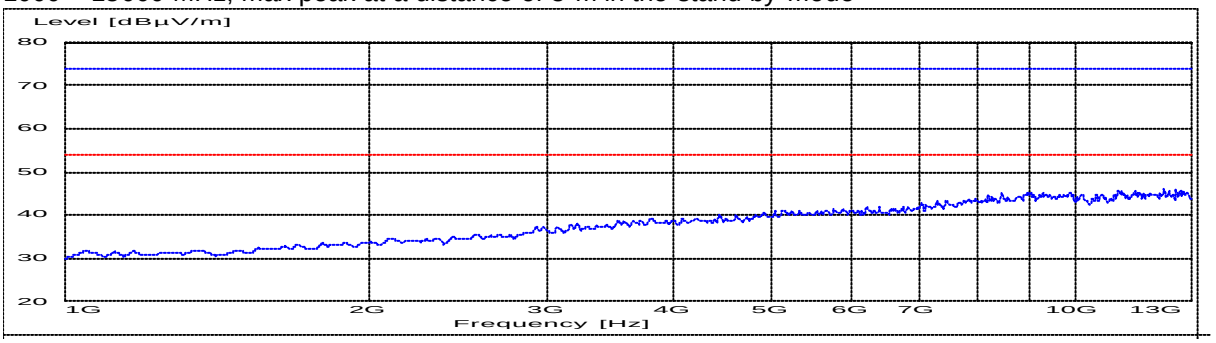


1000 – 13000 MHz, max peak at a distance of 3 m on the upper TX channel



CSFT 1922-DD

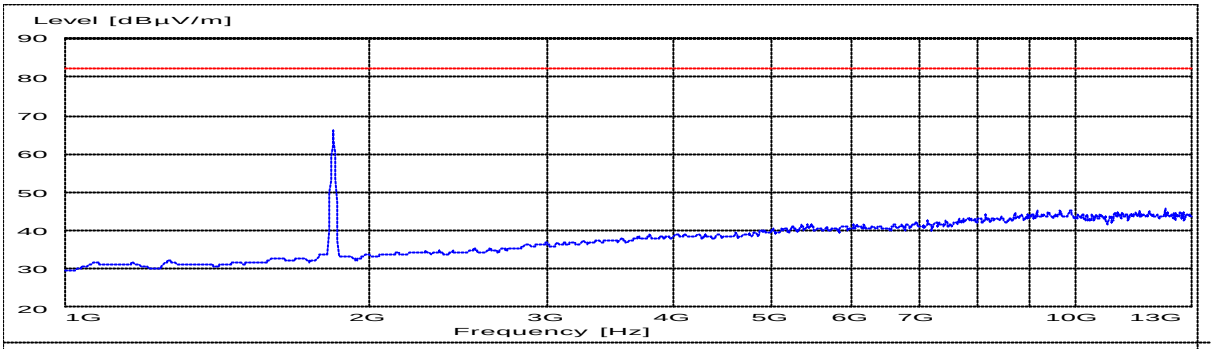
1000 – 13000 MHz, max peak at a distance of 3 m in the stand by mode



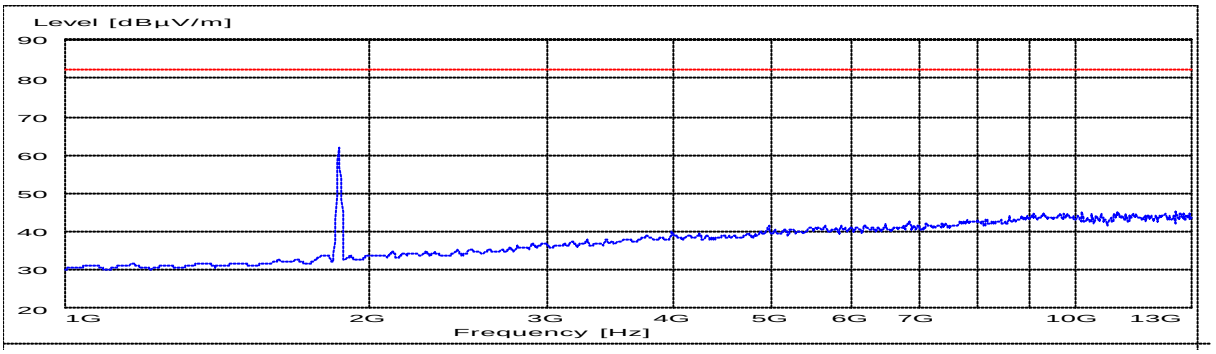
[4] This measurement also applies to the high and low channels

CSFT 1922-ER UL

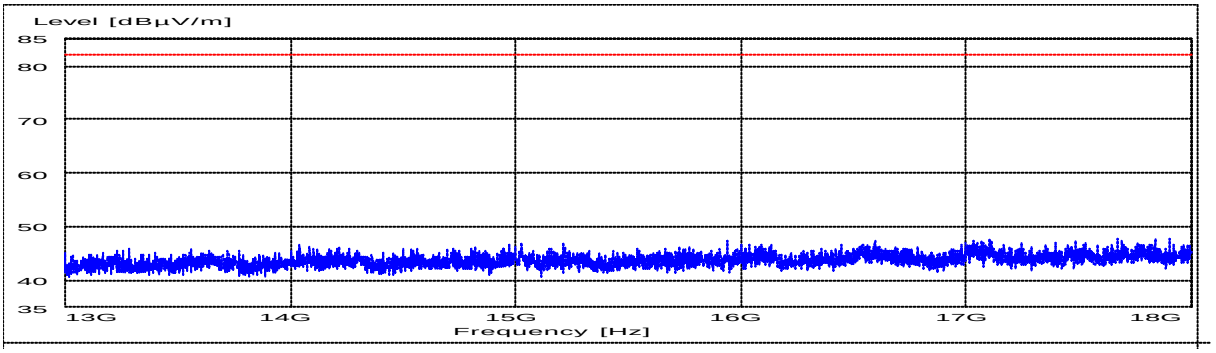
1000 – 13000 MHz, max peak at a distance of 3 m on the lower TX channel



1000 – 13000 MHz, max peak at a distance of 3 m on the middle TX channel

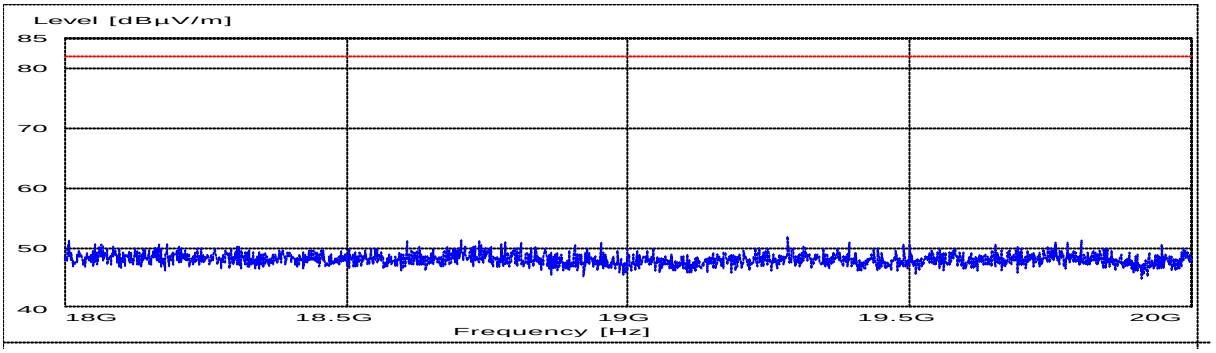


13000 – 18000 MHz, max peak at a distance of 3 m on the middle TX channel[5]

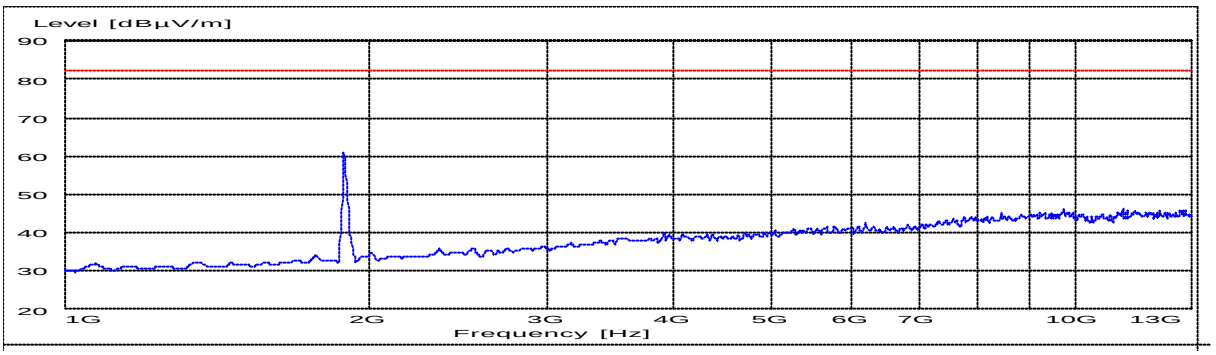


[5] This measurement also applies to the high and low channels

18000 – 20000 MHz, max peak at a distance of 3 m on the middle TX channel[6]

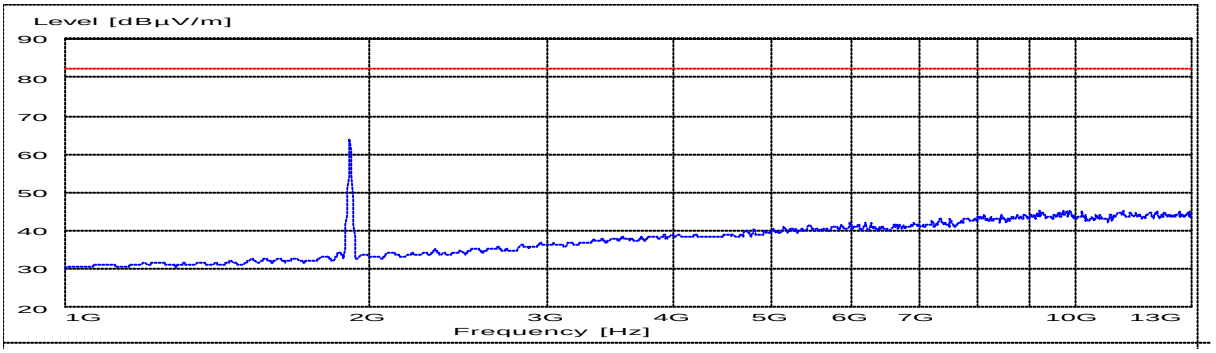


1000 – 13000 MHz, max peak at a distance of 3 m on the upper TX channel



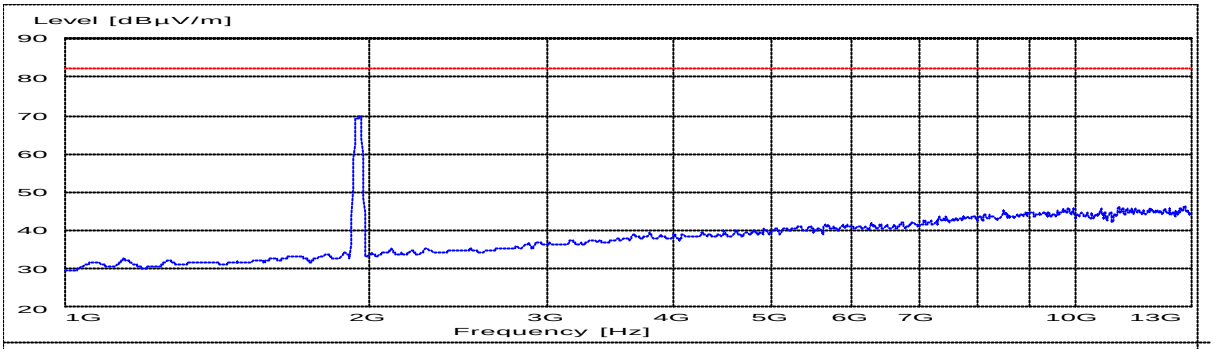
CSFT 1922-ER DL

1000 – 13000 MHz, max peak at a distance of 3 m on the lower TX channel

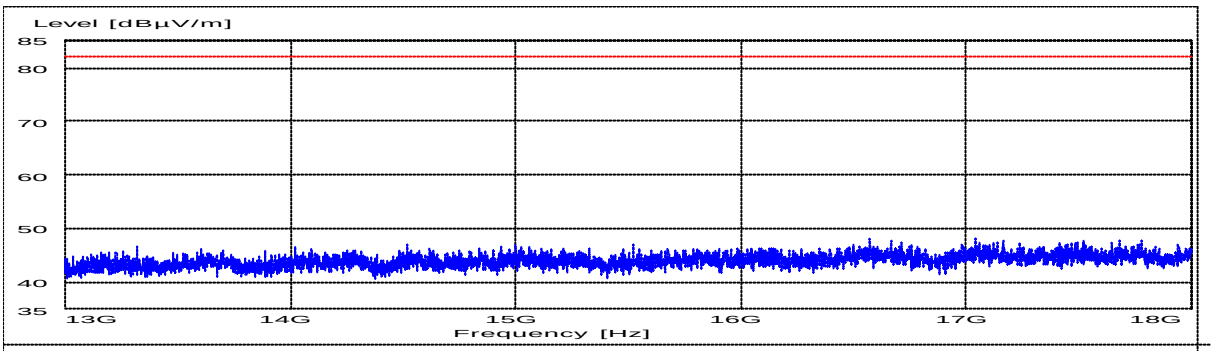


[6] This measurement also applies to the high and low channels.

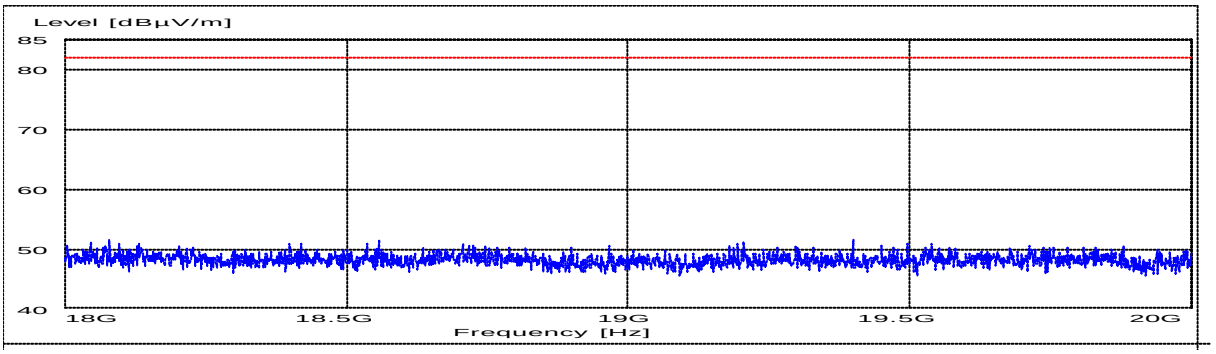
1000 – 13000 MHz, max peak at a distance of 3 m on the middle TX channel



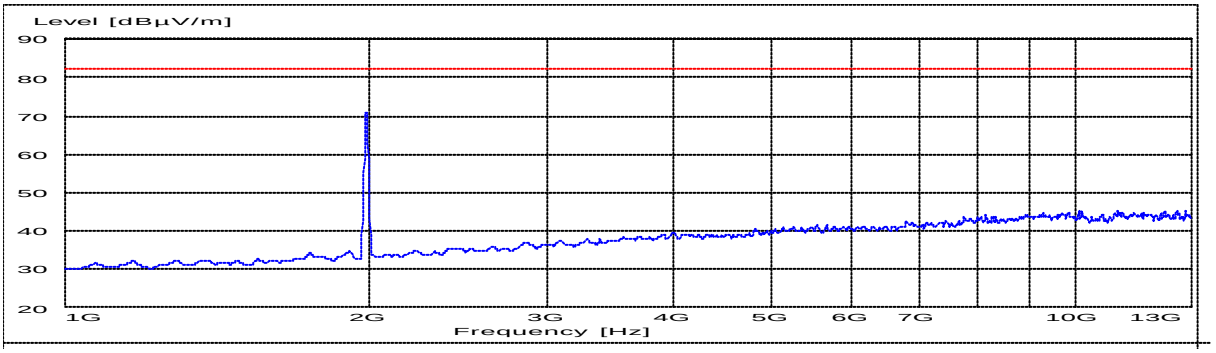
13000 – 18000 MHz, max peak at a distance of 3 m on the middle TX channel[7]



18000 – 20000 MHz, max peak at a distance of 3 m on the middle TX channel[7]



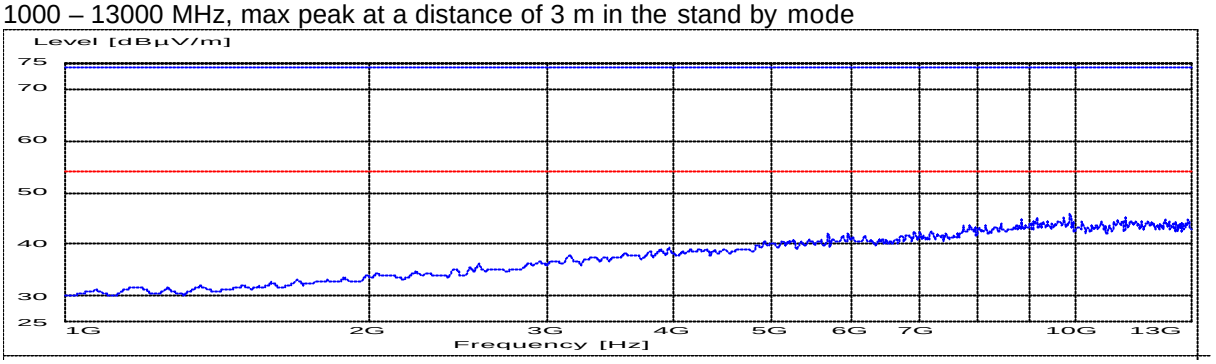
1000 – 13000 MHz, max peak at a distance of 3 m on the upper TX channel



[7] This measurement also applies to the high and low channels

CSFT 1922-DD

1000 – 13000 MHz, max peak at a distance of 3 m in the stand by mode



Data summary: Stand by mode

Field strength of spurious emissions						
Frequency [MHz]	RBW [kHz]	Measured level		Limit		Note
		Peak [dB(µV/m)]	QP/AV [dB(µV/m)]	Peak [dB(µV/m)]	QP/AV [dB(µV/m)]	
30	120	-	26	-	29,5	10 m distance
50	120	-	17	-	29,5	"
70	120	-	16	-	29,5	"
354	120	-	21	-	35,6	"
548,6	120	-	14	-	35,6	"
958,9	120	-	20	-	35,6	"
8849,7	1000	45	-	74	54	3 m distance
9893,5	1000	46	-	74	54	"
12226,5	1000	46	-	74	54	"

At 10 m test distance is the limit extrapolated to 3 m by 20 dB/ decade.

Example calculation:
Measured level [dBuV/m] = Analyser reading [dBuV] + cable loss [dB] – preamplifier gain [dB] + antenna factor [1/m]

TX-mode:

Field strength of spurious emissions						
Frequency	RBW	Measured level		Limit		Note
		Peak	AV	Peak	AV	
[MHz]	[kHz]	[dBm]	[dBm]	[dBm]	[dBm]	
30-1000	1000	<-51	-	-13	-	Note 1, 10 m distance
1000 - 13000	1000	<-48	-	-13	-	Note 2, 3 m distance
13000 - 18000	1000	<-48	-	-13	-	"
18000 - 20000	1000	<-42	-	-13	-	"

Note 1: The radiated spurious emissions below 1 GHz have been measured as field strength.
The corresponding radiated power for 10 m antenna distance has been calculated:
34 dBµV/m is the calculated field strength at 10 m when -57 dBm is radiated
37 dBµV/m is the calculated field strength at 10 m when -54 dBm is radiated
49 dBµV/m is the calculated field strength at 10 m when -36 dBm is radiated

Note 2: The radiated spurious emissions above 13 GHz have been measured as field strength.
The corresponding radiated power for 3 m antenna distance has been calculated:
38 dBµV/m is the calculated field strength at 3 m when -57 dBm is radiated
41 dBµV/m is the calculated field strength at 3 m when -54 dBm is radiated
59 dBµV/m is the calculated field strength at 3 m when -36 dBm is radiated

10. CONDUCTED DISTURBANCE VOLTAGE IN THE FREQUENCY RANGE 0,15 - 30 MHZ

10.1 Operating environment

Temperature:	22°C	(10 – 40 °C)
Relative Humidity:	31%	(10 - 90 %)

10.2 Measurement uncertainty

Conducted disturbance voltage, quasi-peak detection: ±2,0 dB

The measurement uncertainty describes the overall uncertainty of the given measured value during operation of the EUT.

Measurement uncertainty is calculated in accordance with EA-4/02-1997.
The measurement uncertainty is given with a confidence of 95%.

10.3 Test equipment

Test site:	FCC		
Equipment	Manufacturer	Type	SEMKO No.
Software:	Rohde & Schwarz	ES-K1 V1.60	
Measurement receiver:	Rohde & Schwarz	ESHS 30	4946
Artificial mains network:	Rohde & Schwarz	ESH3-Z5	2727
Transformer:	TUFVASSONS	AFM-1500	375

10.4 Measurement set-up

The mains terminal disturbance voltage was measured with the EUT located 0,8 m above the ground plane and 0,4 m from the vertical ground plane. The EUT was connected to an artificial mains network (AMN). The AMN was placed on a metallic, grounded floor. Amplitude measurements were performed with a quasi-peak detector. The test set-up photo is given below.

The EUT was supplied by 120 VAC (60 Hz) during the test.

Test set-up photo:

10.5 Test protocol

Date of test: 2004-06-10

CSFT 1922-ER

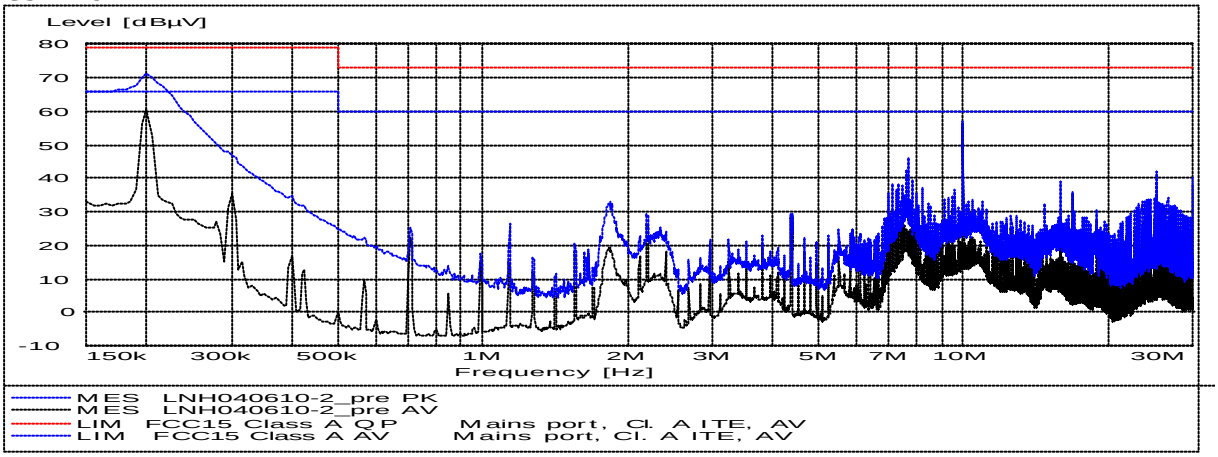
Frequency /MHz	Quasi-Peak Disturbance Level /dB(µV)	Quasi-Peak Permitted limit /dB(µV)
0,2	65	79
7,4	31	66
7,7	31	66
10,0	57	66
30,0	37	66

CSFT 1922-DD

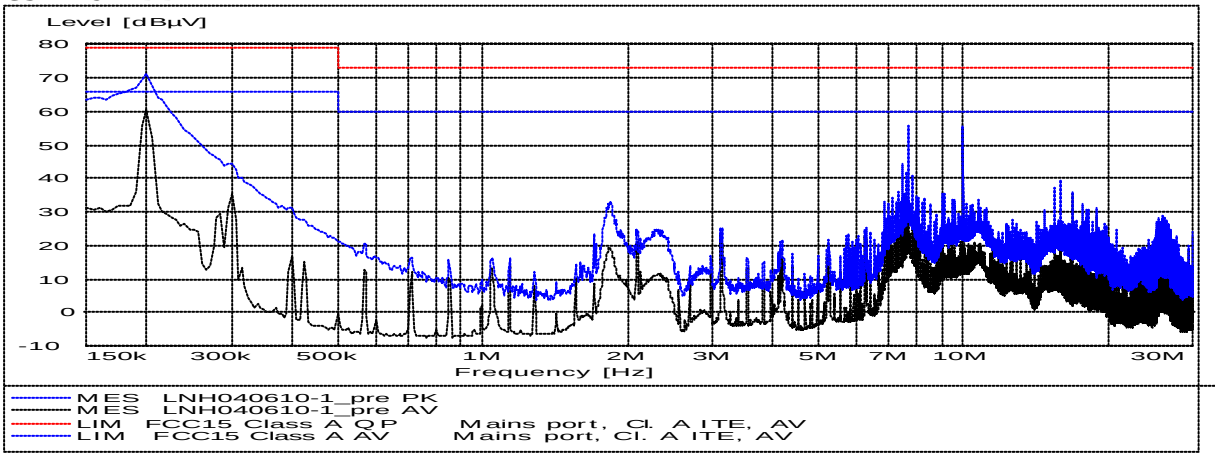
Frequency /MHz	Quasi-Peak Disturbance Level /dB(µV)	Quasi-Peak Permitted limit /dB(µV)
0,2	65	79
7,6	32	66
10,0	55	66
15,4	31	66
16,8	36	66

An overview sweep performed with a peak detector is shown below.

CSFT 1922-ER



CSFT 1922-DD



11. OUT OF BAND SPURIOUS EMISSIONS, CONDUCTED AT ANTENNA PORT

11.1 Test equipment

Equipment	Manufacturer	Type	SEMKO No.
Spectrum analyzer:	HP	8566B	7617
Attenuator 6 dB	Spinner	BN534352	7761
Attenuator 10 dB	Narda	776B-10	8337
Attenuator 20 dB	HP	8491A	30090
Attenuator 10 dB	HP	8491A	30089
Attenuator 6 dB	HP	8491A	7637
Cable	Midwest	CSY-NMNM-80-350-CS	8002
Signal generator	HP	83712A	3148
Cable	Suhner	Sucoflex	5192

HP = Hewlett & Packard

11.2 Measurement set-up

The EUT was connected to a spectrum analyzer through power attenuators. Attenuation used was between 24,5 - 43 dB, depending on the amplifier gain.

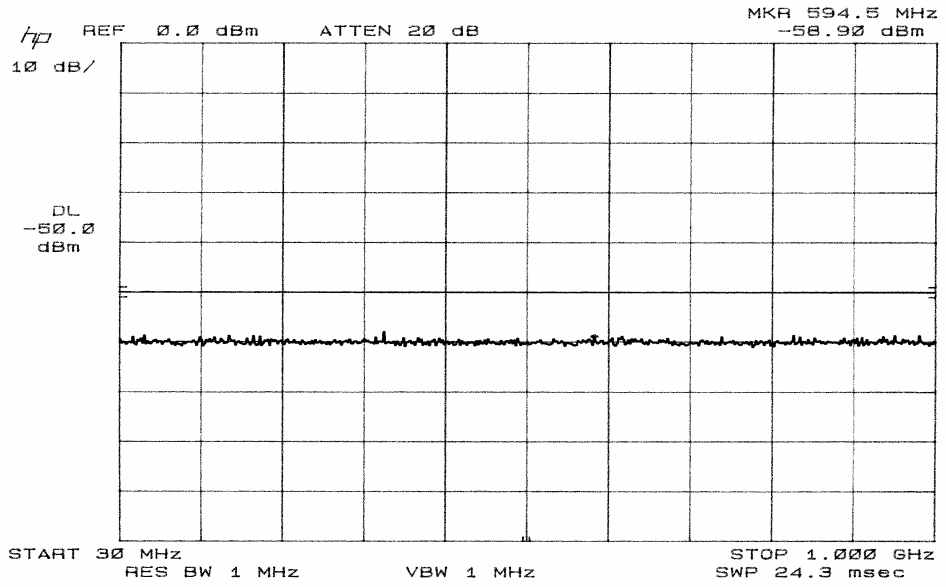
11.3 Test protocol

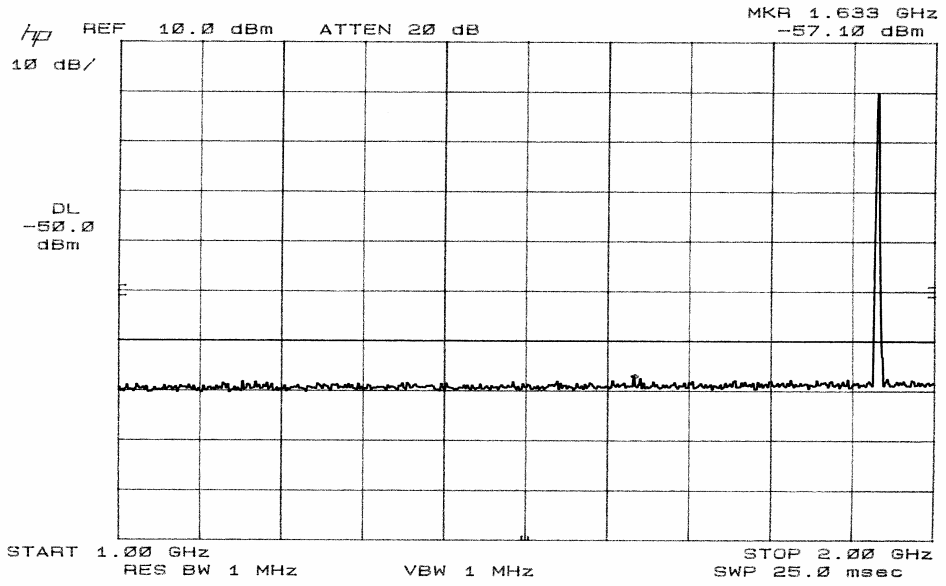
Strength of conducted spurious emissions						
Frequency	RBW	Measured level		Limit		Note
		Peak	QP/AV	Peak	QP/AV	
[MHz]	[kHz]	[dBm]	[dBm]	[dBm]	[dBm]	
30 -1000	1000	-19	-	-13	-	Noise floor
1000 - 2000	1000	-19	-	-13	-	"
2000 - 5000	1000	-19	-	-13	-	"
5000 - 10000	1000	-22	-	-13	-	"
10000 - 20000	3000	-17	-	-13	-	"

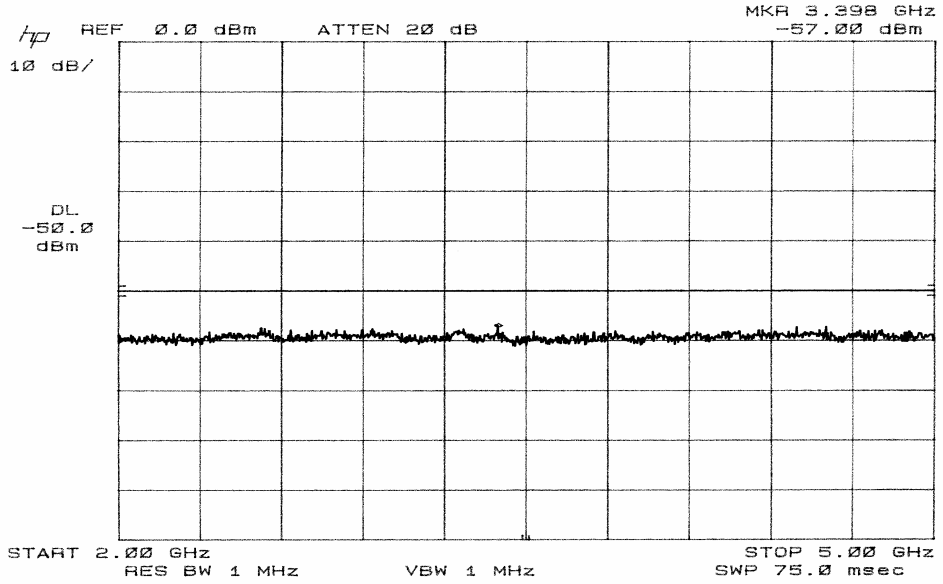
Limit: In any 1 MHz bandwidth outside the operating frequency band (1850-1910MHz and 1930-1990 MHz), the radio frequency power that is produced by the intentional radiator shall be attenuated below -13 dBm[8].

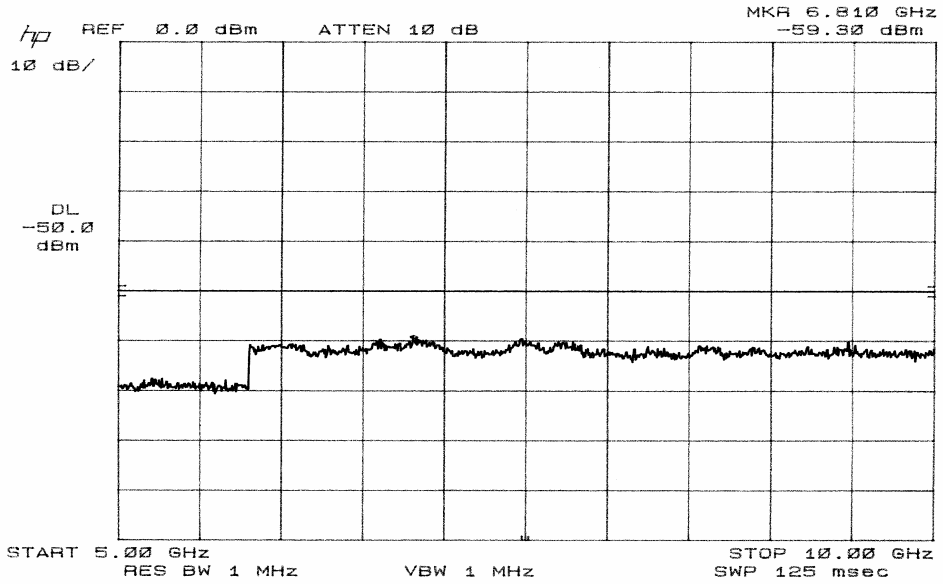
[8] Calculated with the formula: 43+10log (P) dB below the measured transmitter output power. Output power, see section 5.

CSFT 1922-DD, Downlink, channel 512

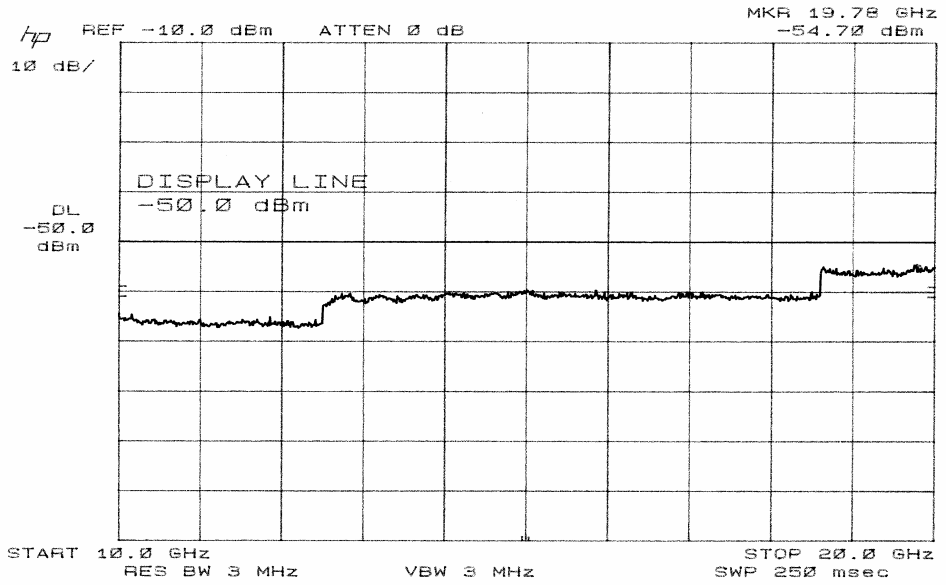




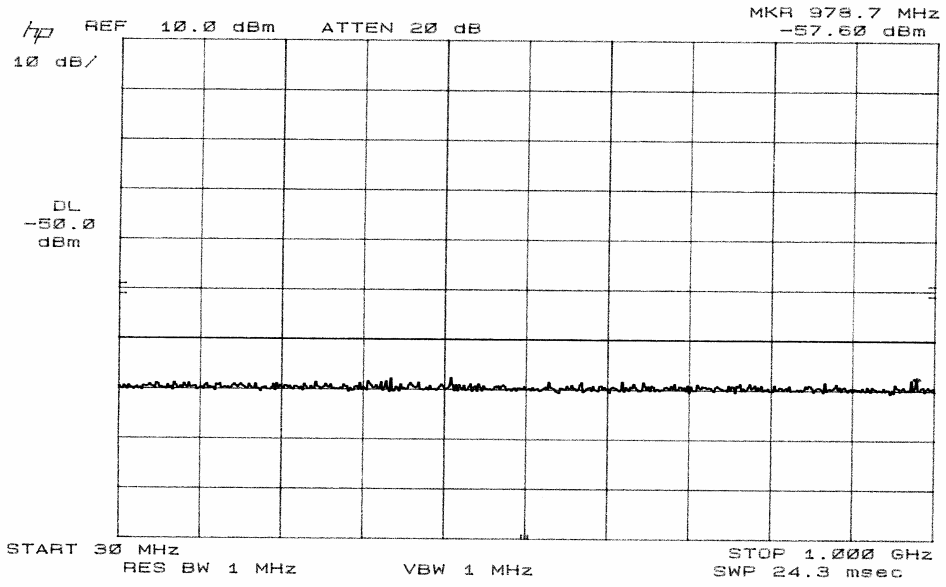

MKR 3.398 GHz
-57.00 dBm
REF 0.0 dBm
ATTEN 20 dB
10 dB/
DL
-50.0
dBm
START 2.00 GHz
RES BW 1 MHz
VBW 1 MHz
STOP 5.00 GHz
SWP 75.0 msec


MKR 6.810 GHz
-59.30 dBm
REF 0.0 dBm
ATTEN 10 dB
10 dB/
DL
-50.0
dBm
START 5.00 GHz
RES BW 1 MHz
VBW 1 MHz
STOP 10.00 GHz
SWP 125 msec

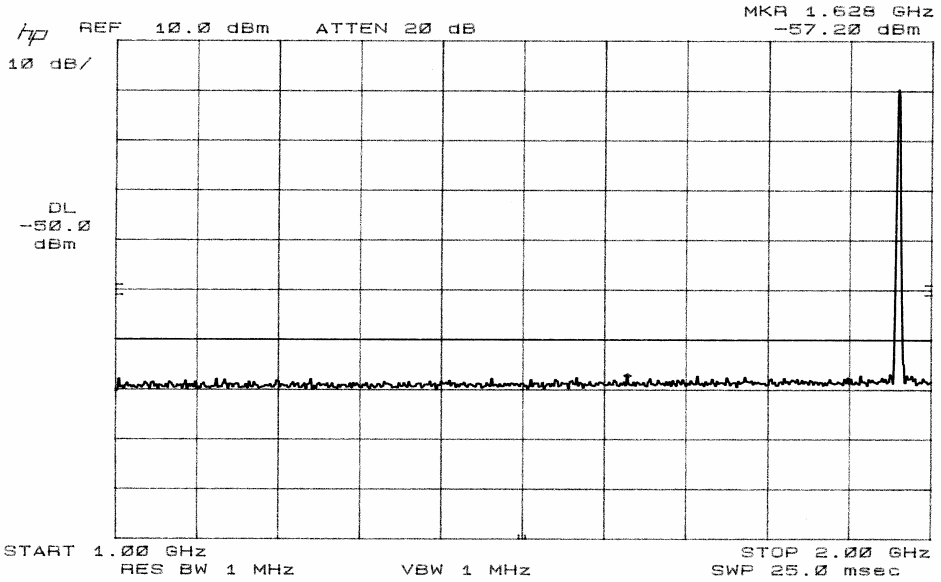
Note [9]

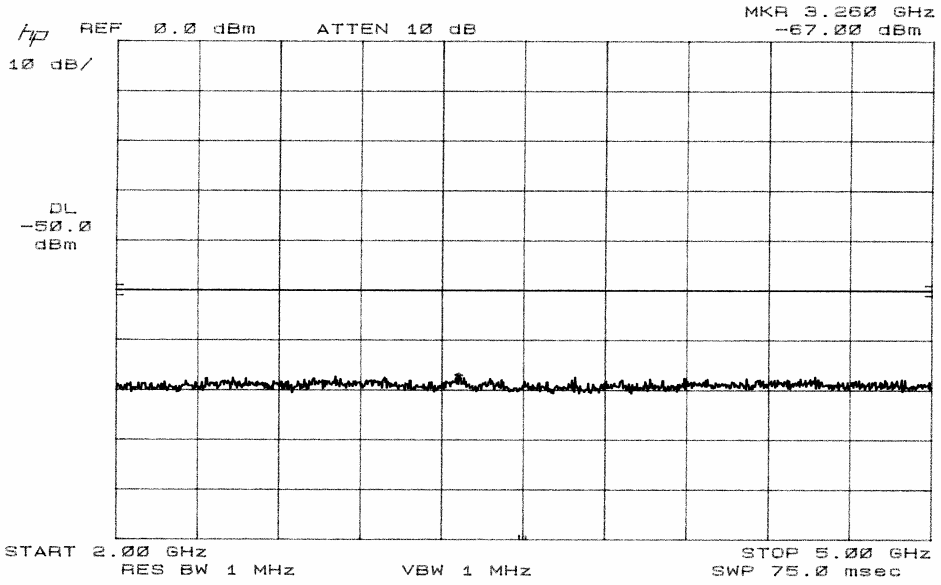


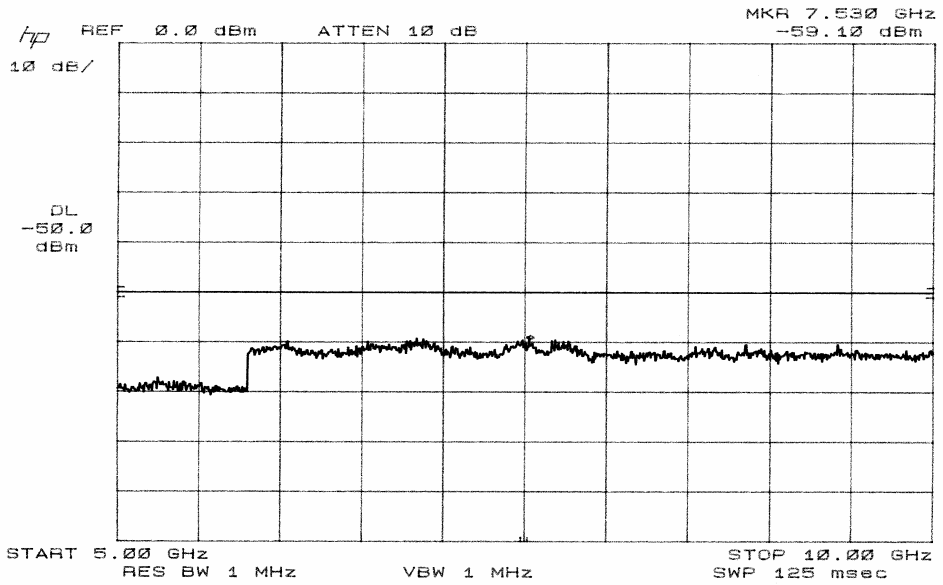
Channel 661



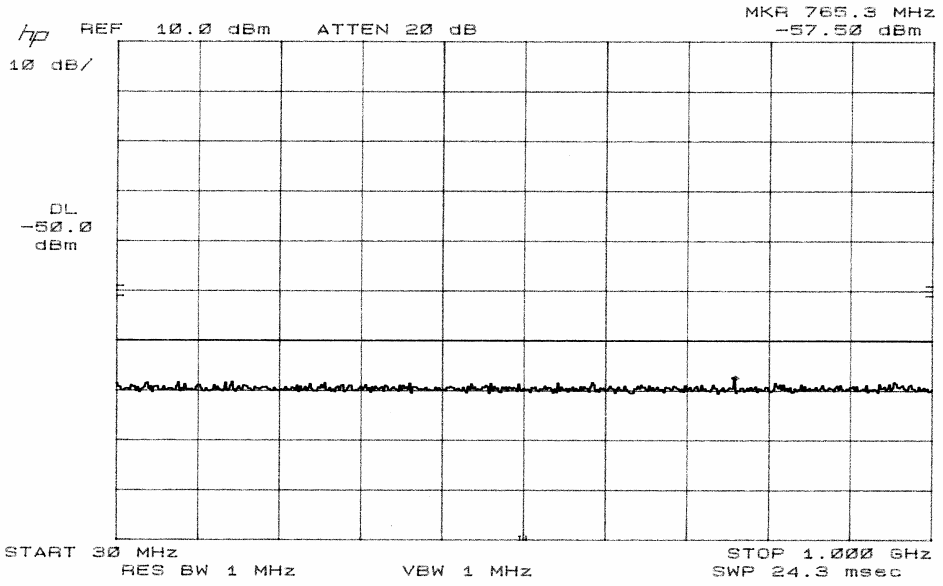
[9] This measurement applies also to channel 661, channel 810, channel 661-low power and channel 661-donor connector 2.

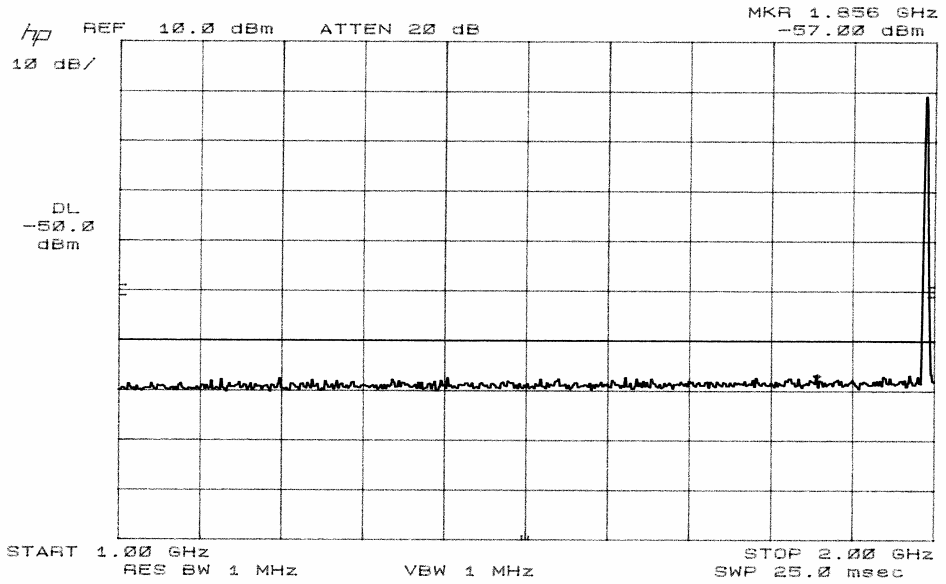

REF 10.0 dBm
ATTEN 20 dB
MKR 1.628 GHz
-57.20 dBm
10 dB/
DL
-50.0
dBm
START 1.000 GHz
RES BW 1 MHz
VBW 1 MHz
STOP 2.000 GHz
SWP 25.0 msec

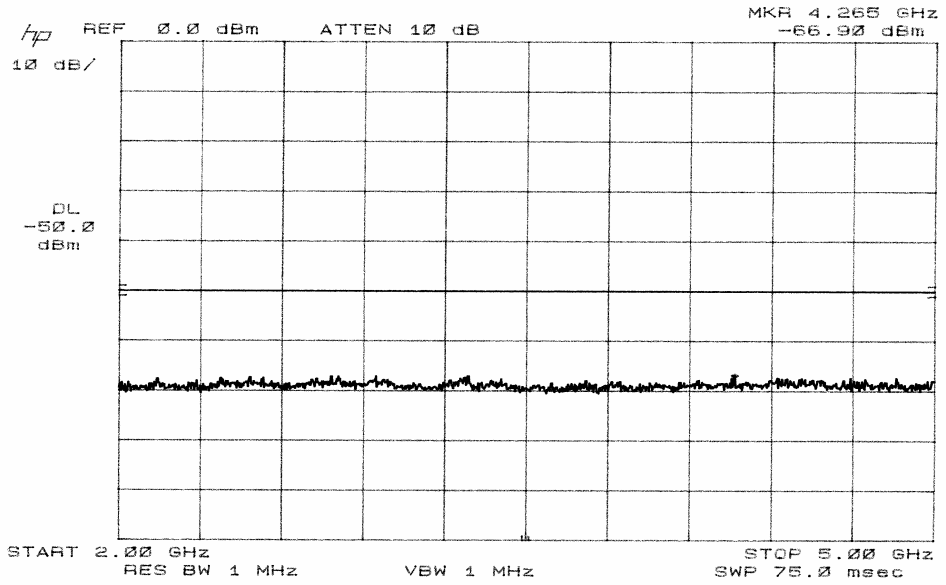

REF 0.0 dBm
ATTEN 10 dB
MKR 3.260 GHz
-67.00 dBm
10 dB/
DL
-50.0
dBm
START 2.000 GHz
RES BW 1 MHz
VBW 1 MHz
STOP 5.000 GHz
SWP 75.0 msec

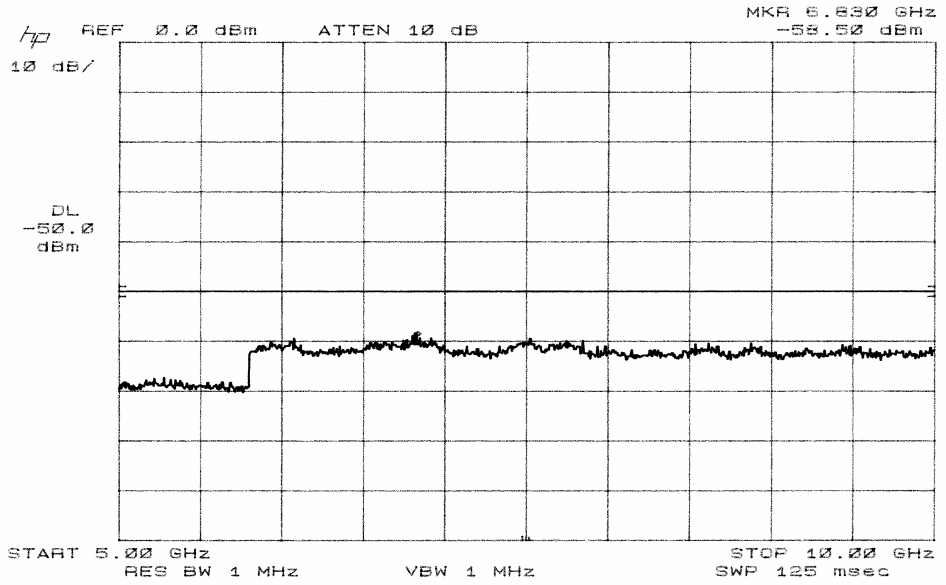

REF 0.0 dBm
ATTEN 10 dB
MKR 7.530 GHz
-59.10 dBm
10 dB/
DL
-50.0
dBm
START 5.00 GHz
RES BW 1 MHz
VBW 1 MHz
STOP 10.00 GHz
SWP 125 msec

Channel 810

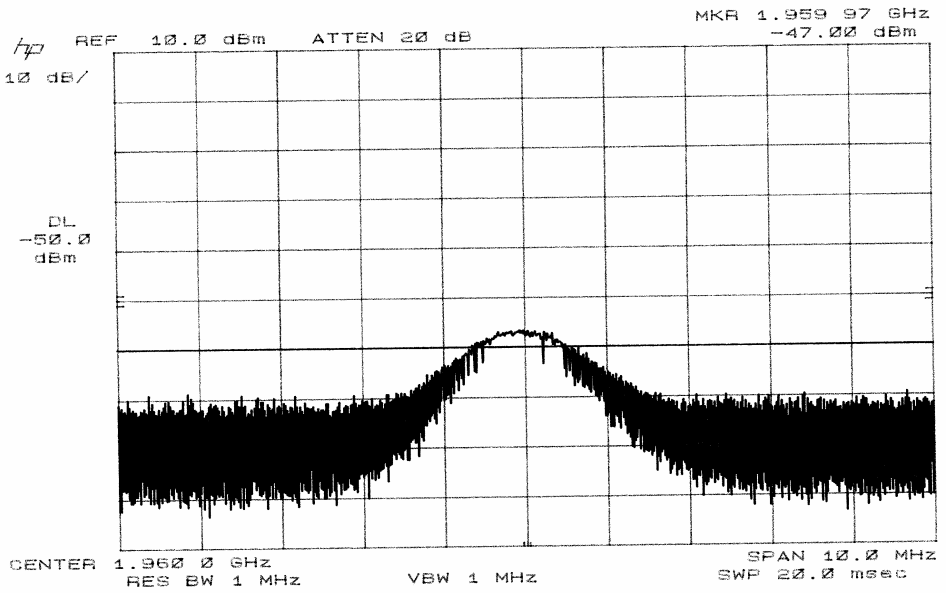

REF 10.0 dBm
ATTEN 20 dB
MKR 765.3 MHz
-57.50 dBm
10 dB/
DL
-50.0
dBm
START 30 MHz
RES BW 1 MHz
VBW 1 MHz
STOP 1.000 GHz
SWP 24.3 msec

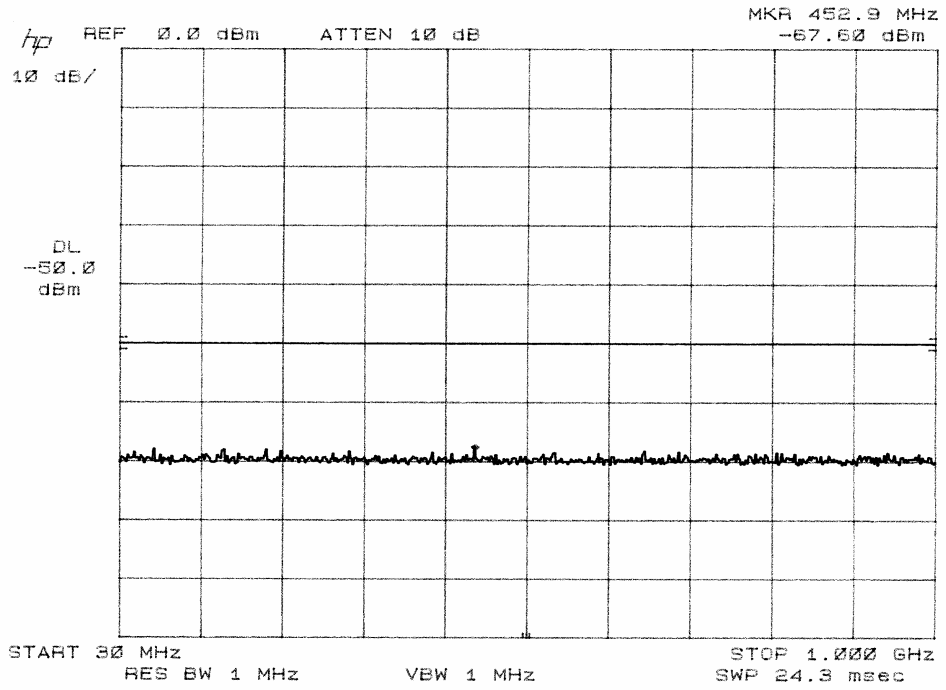

REF 10.0 dBm
ATTEN 20 dB
MKR 1.856 GHz
-57.00 dBm
10 dB/
DL
-50.0
dBm
START 1.00 GHz
RES BW 1 MHz
VBW 1 MHz
STOP 2.00 GHz
SWP 25.0 msec

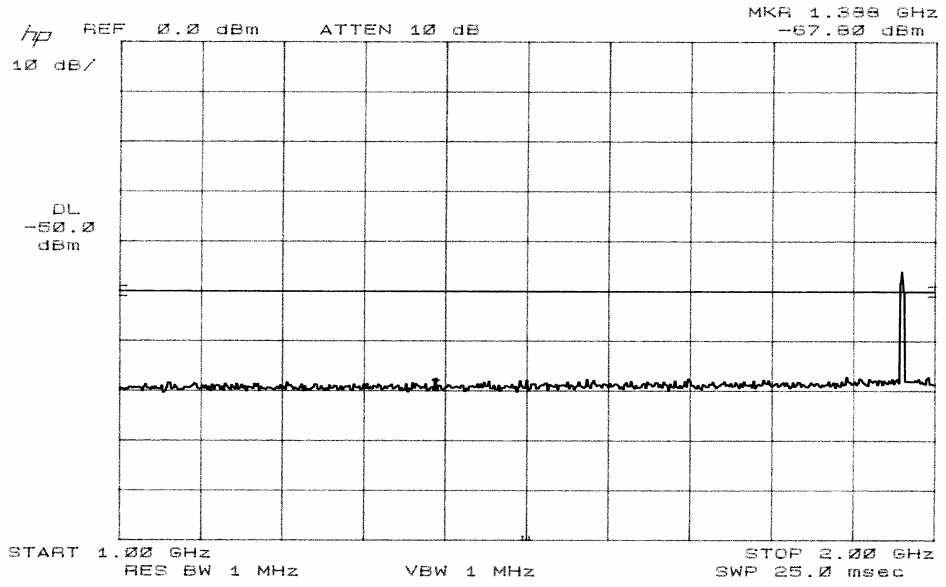

REF 0.0 dBm
ATTEN 10 dB
MKR 4.265 GHz
-66.90 dBm
10 dB/
DL
-50.0
dBm
START 2.00 GHz
RES BW 1 MHz
VBW 1 MHz
STOP 5.00 GHz
SWP 75.0 msec

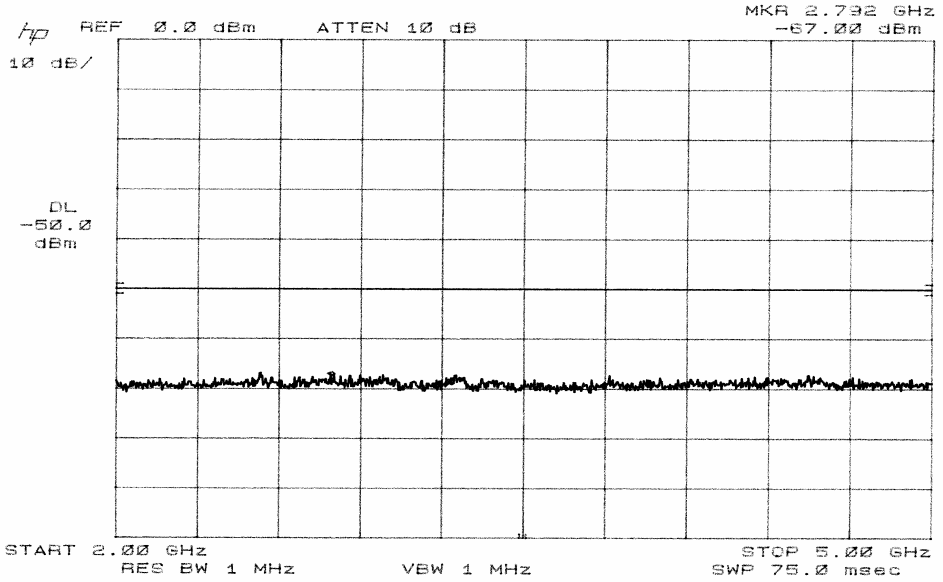


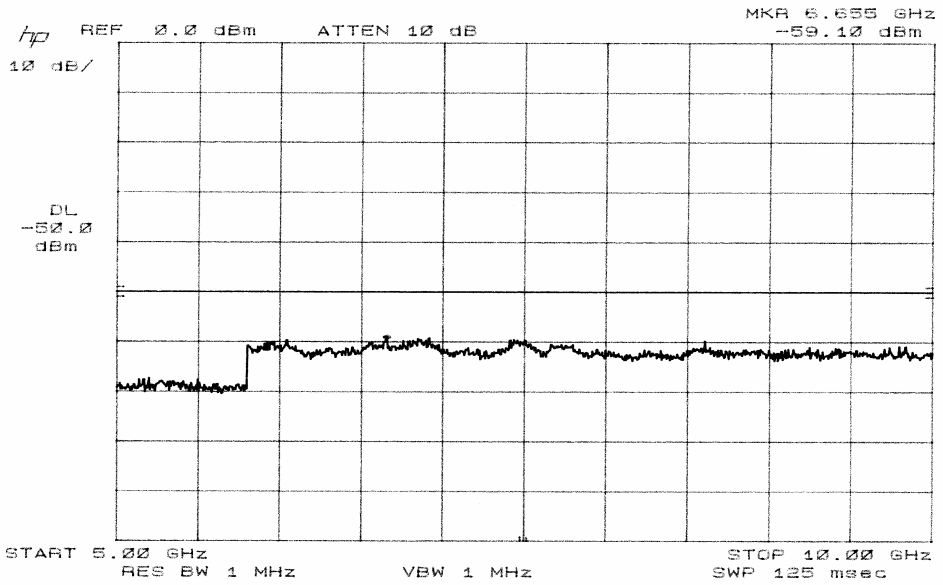
Channel 661, low power



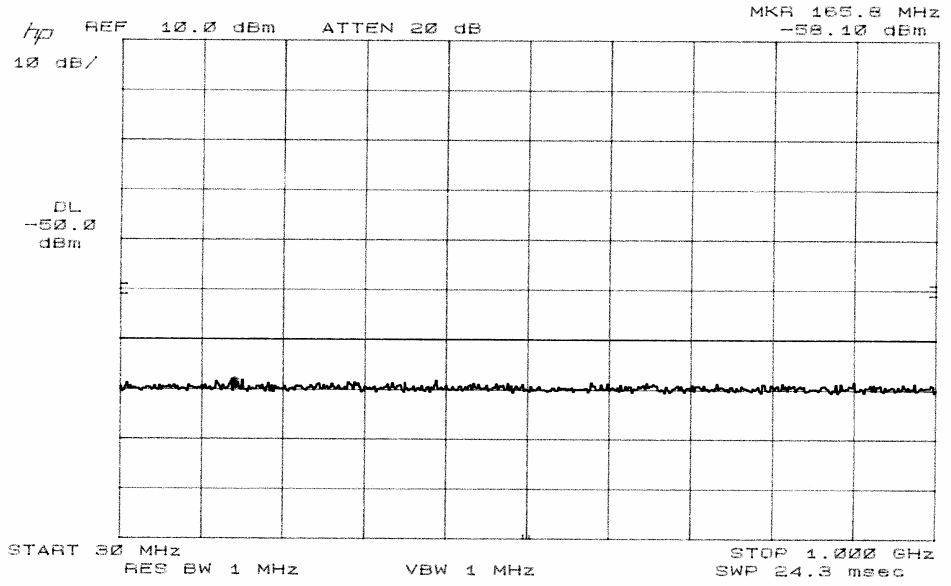

REF 0.0 dBm
ATTEN 10 dB
MKR 452.9 MHz
-67.60 dBm
10 dB/
DL
-50.0
dBm
START 30 MHz
RES BW 1 MHz
VBW 1 MHz
STOP 1.000 GHz
SWP 24.3 msec

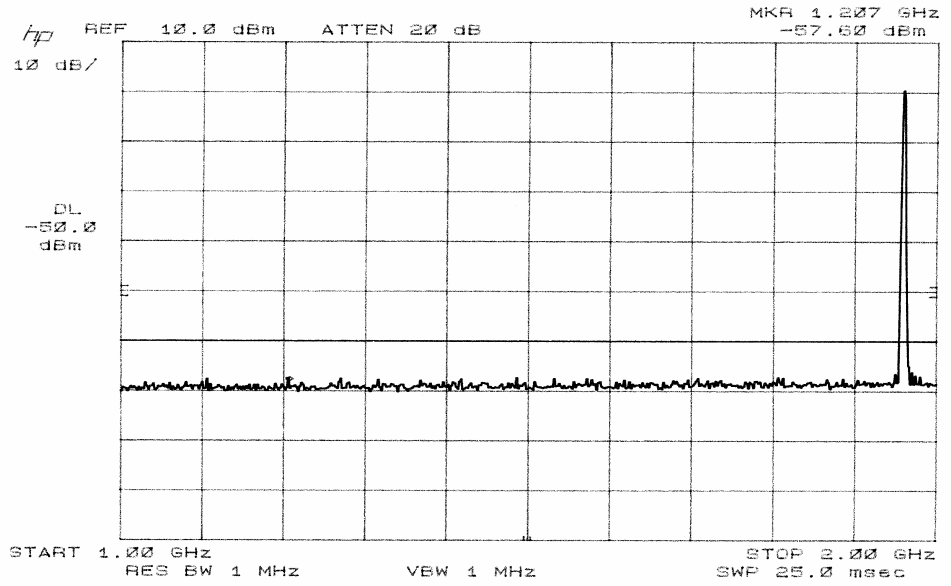

REF 0.0 dBm
ATTEN 10 dB
MKR 1.388 GHz
-67.60 dBm
10 dB/
DL
-50.0
dBm
START 1.000 GHz
RES BW 1 MHz
VBW 1 MHz
STOP 2.000 GHz
SWP 25.0 msec

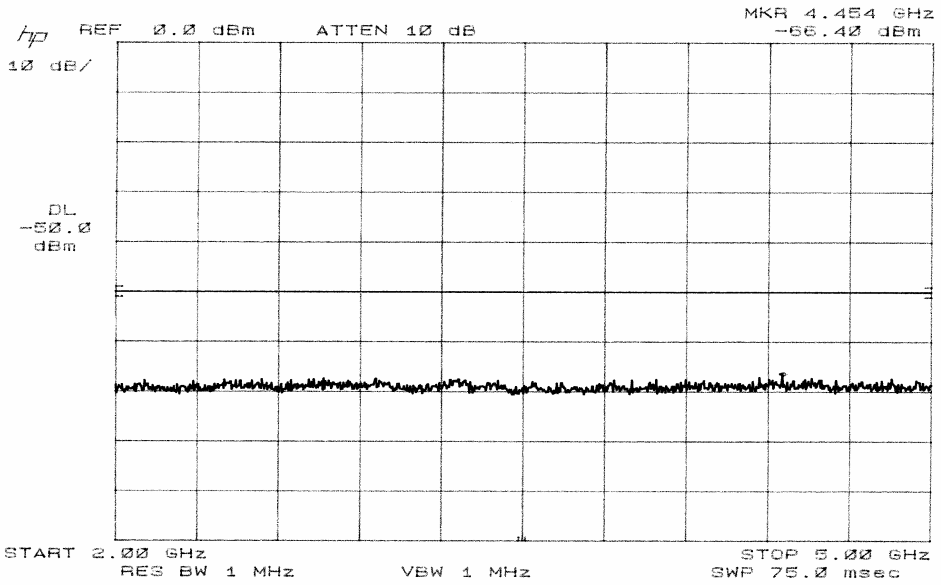

REF 0.0 dBm
ATTEN 10 dB
MKR 2.732 GHz
-67.00 dBm
10 dB/
DL
-50.0
dBm
START 2.00 GHz
RES BW 1 MHz
VBW 1 MHz
STOP 5.00 GHz
SWP 75.0 msec

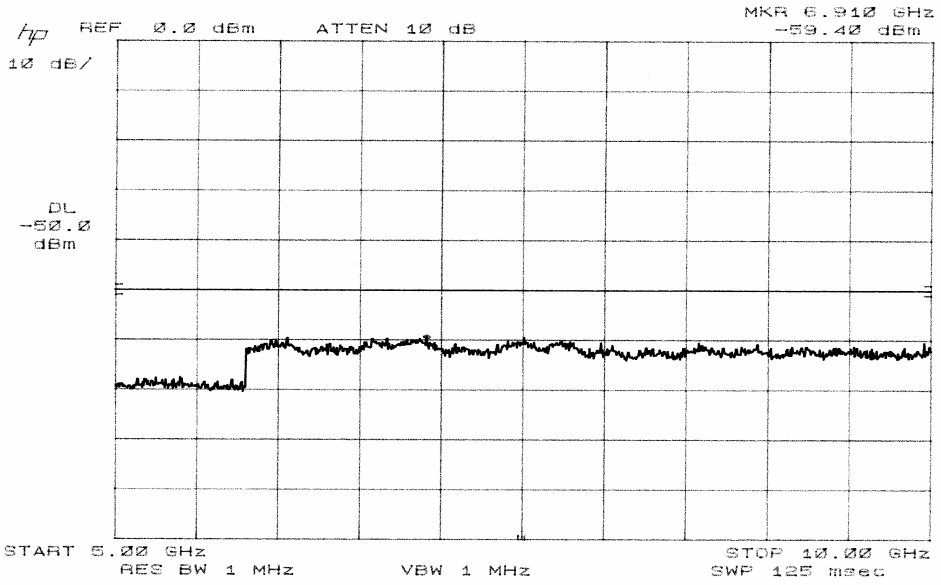

REF 0.0 dBm
ATTEN 10 dB
MKR 5.655 GHz
-59.10 dBm
10 dB/
DL
-50.0
dBm
START 5.00 GHz
RES BW 1 MHz
VBW 1 MHz
STOP 10.00 GHz
SWP 125 msec

Channel 661, donor 2

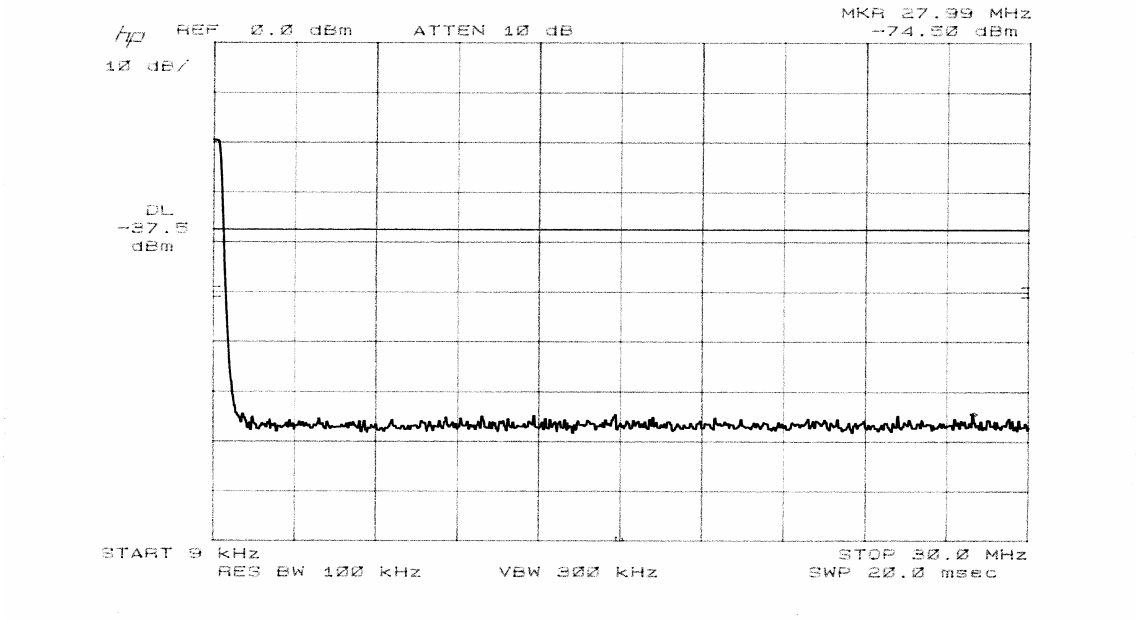


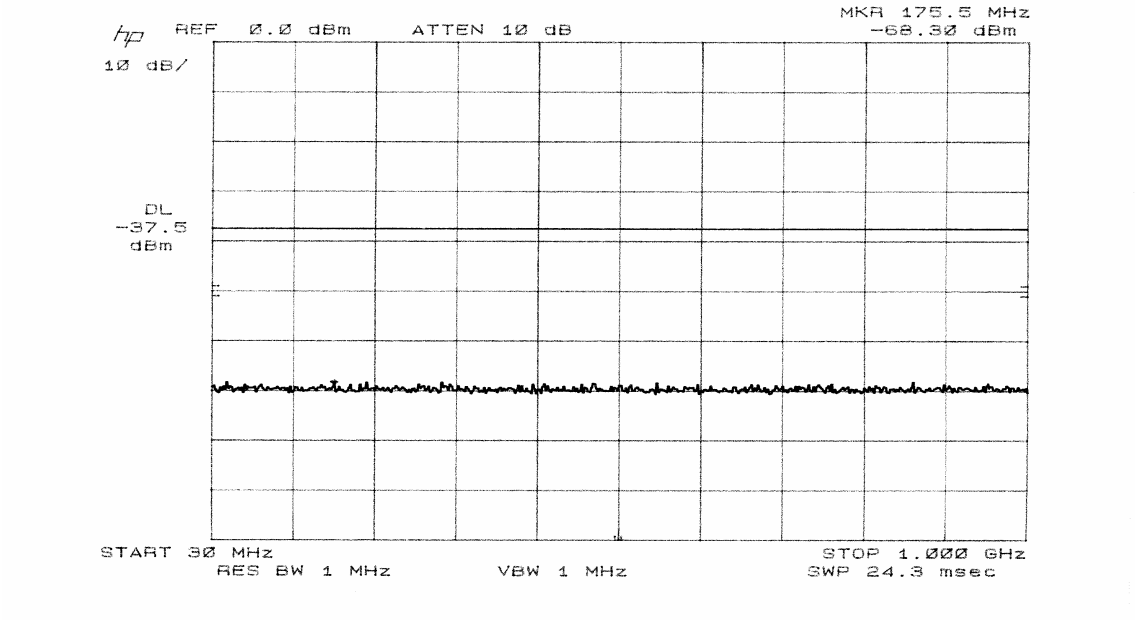


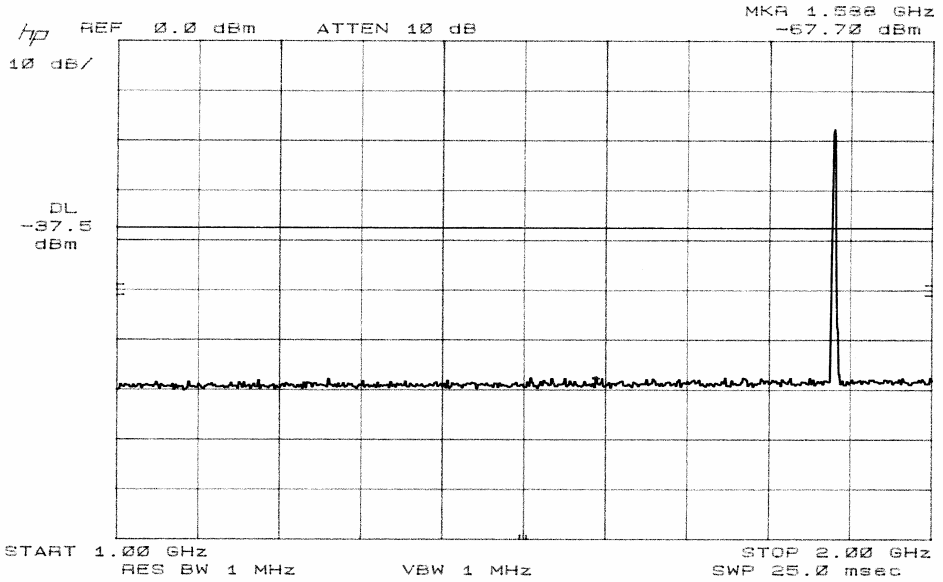

REF 0.0 dBm
ATTEN 10 dB
MKR 4.454 GHz
-56.40 dBm
10 dB/
DL
-50.0
dBm
START 2.000 GHz
RES BW 1 MHz
VBW 1 MHz
STOP 5.000 GHz
SWP 75.0 msec

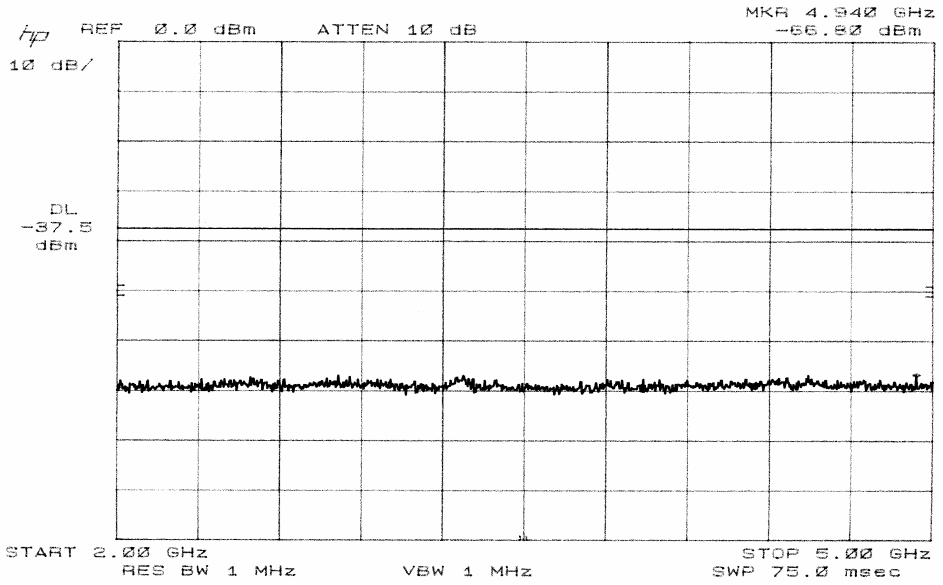

REF 0.0 dBm
ATTEN 10 dB
MKR 6.910 GHz
-59.40 dBm
10 dB/
DL
-50.0
dBm
START 5.000 GHz
RES BW 1 MHz
VBW 1 MHz
STOP 10.000 GHz
SWP 125 msec

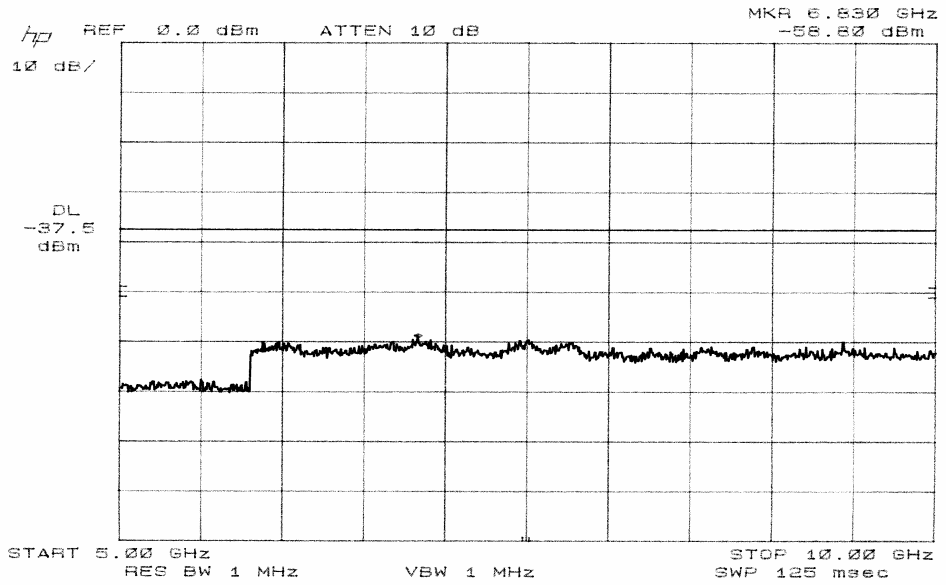
Uplink, channel 661



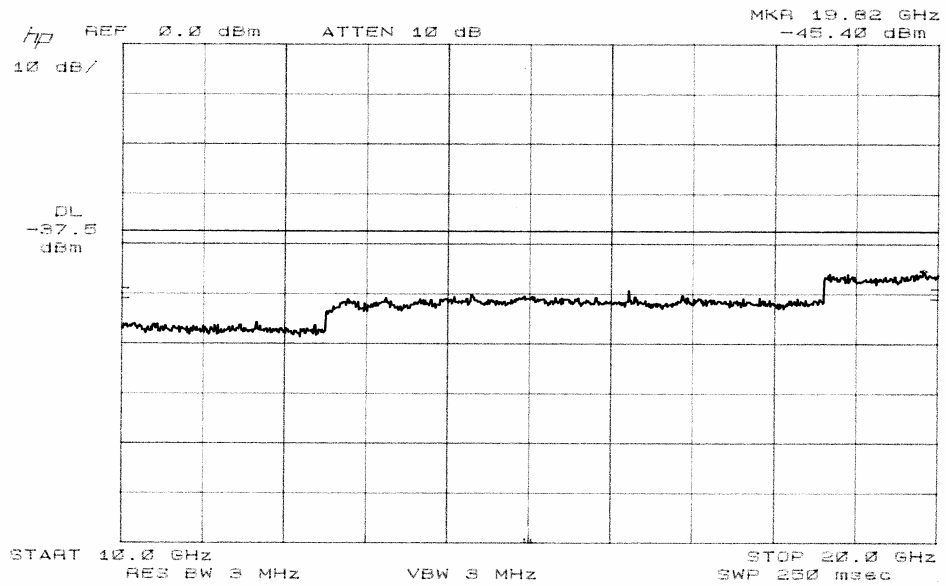



REF 0.0 dBm
ATTEN 10 dB
MKR 1.538 GHz
-57.70 dBm
10 dB/
DL
-37.5
dBm
START 1.000 GHz
RES BW 1 MHz
VBW 1 MHz
STOP 2.000 GHz
SWP 25.0 msec


REF 0.0 dBm
ATTEN 10 dB
MKR 4.940 GHz
-66.80 dBm
10 dB/
DL
-37.5
dBm
START 2.000 GHz
RES BW 1 MHz
VBW 1 MHz
STOP 5.000 GHz
SWP 75.0 msec



Note [10]



[10] This measurement applies also to channel 512, channel 810, channel 661-low power and channel 661-donor connector 2.