8.2 Field strength of emissions (radiated spurious)

Description:

Measurement of the radiated spurious emissions in transmit mode.

Measurement:

Measurement parameter	
Detector:	Peak
Sweep time:	Auto
Video bandwidth:	Auto
Resolution bandwidth:	1 MHz
Frequency range:	110 GHz to 235 GHz
Trace-Mode:	Max Hold

Results:

TX Spurious Emissions Radiated [dBµV/m]								
lower frequency			middle frequency			upper frequency		
F [GHz]	Detector	Level [dBµV/m]	F [GHz]	Detector	Level [dBµV/m]	F [GHz]	Detector	Level [dBµV/m]
No critical peaks detected!			No critical peaks detected!			No critical peaks detected!		
Measurement uncertainty			± 3 dB					

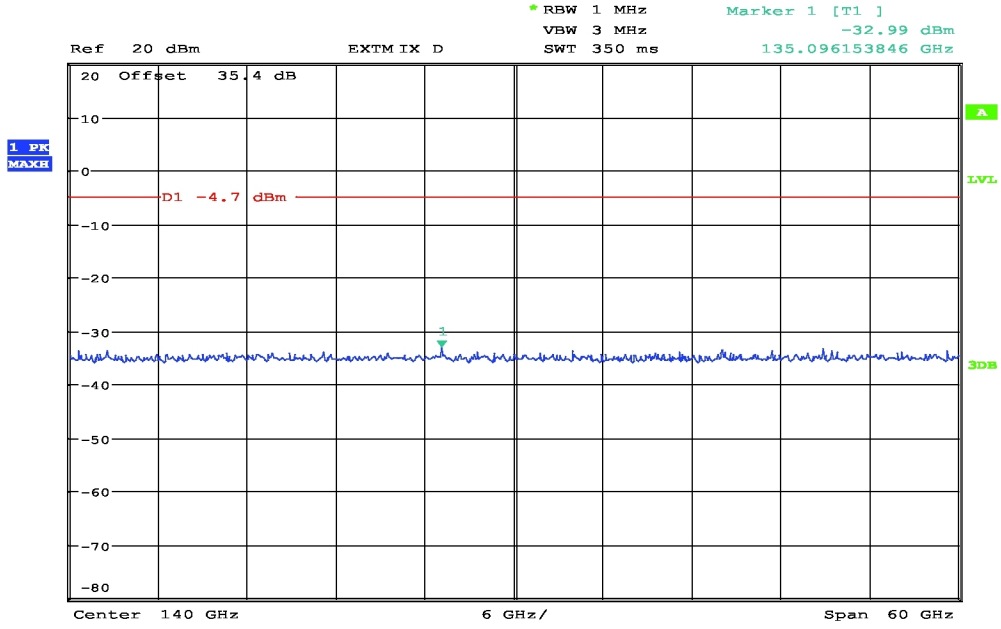
Limits: **FCC §15.253 (e) (2) (ii) + (3)**

Frequency Range [GHz]	Measurement distance	Power Density
40 – 200	3.0 m	600 pW/cm^2 → -1.7 dBm
200 – 231	3.0 m	1000 pW/cm^2 → +0.5 dBm

Result: **The measurement is passed.**

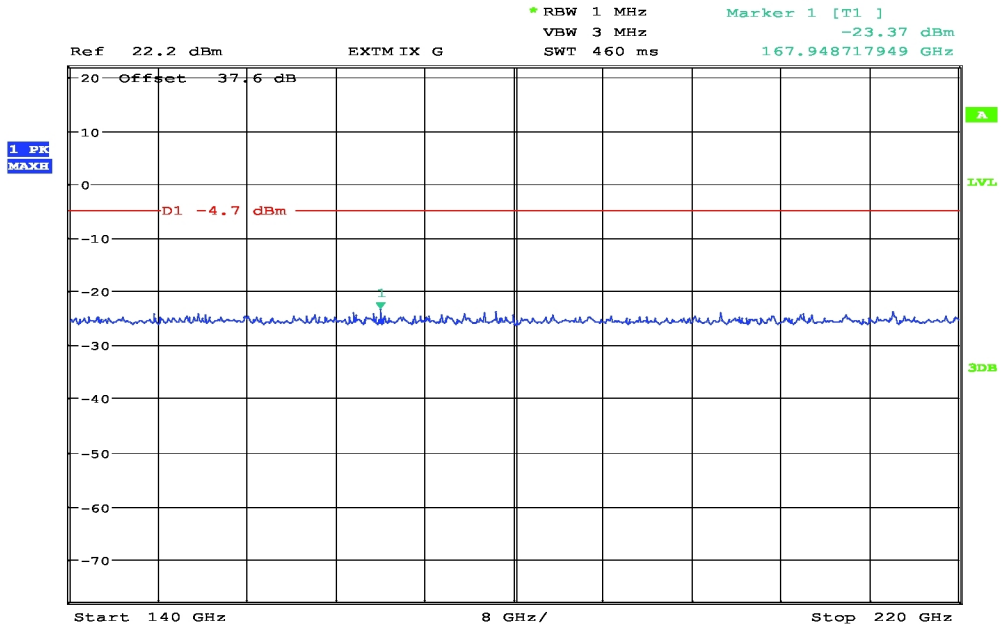
➔ **lower frequency**

Plot 1: 110 GHz – 170 GHz, lower frequency, antenna horizontal / vertical



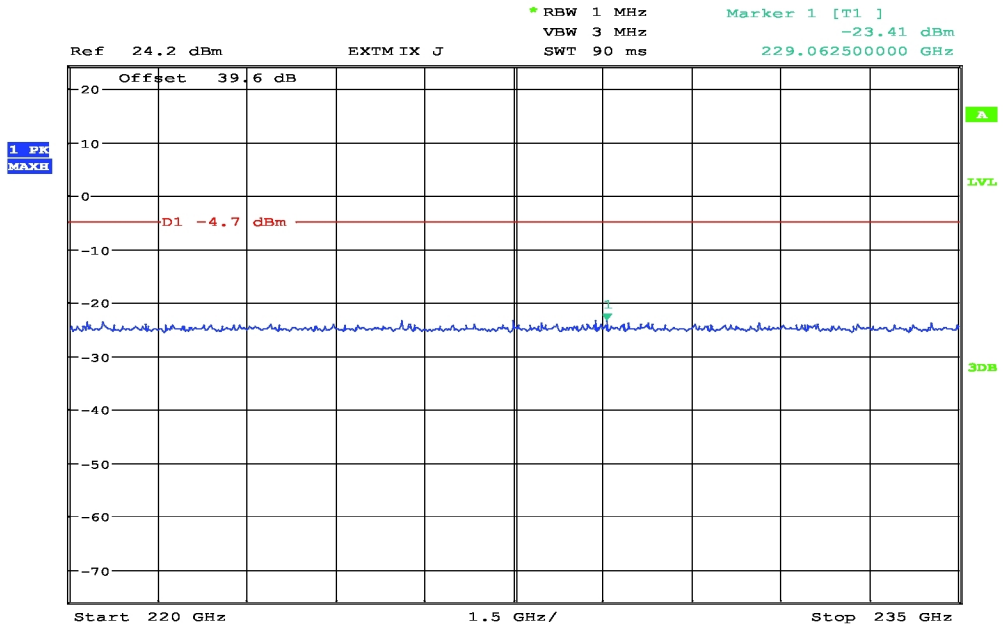
Date: 18.APR.2013 11:26:57

Plot 2: 140 GHz – 220 GHz, lower frequency, antenna horizontal / vertical



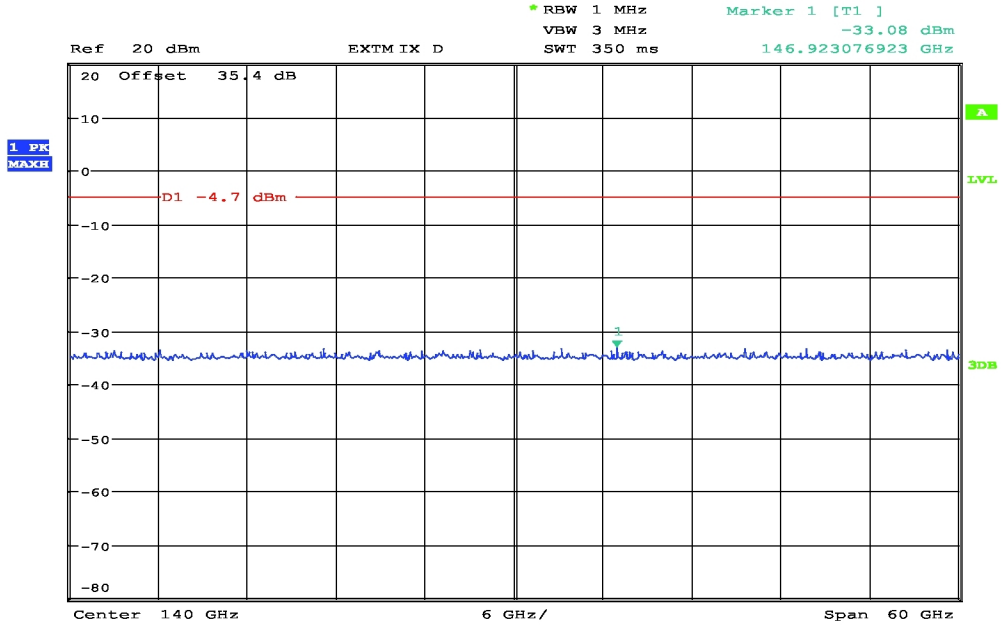
Date: 18.APR.2013 11:32:31

Plot 3: 220 GHz – 235 GHz, lower frequency, antenna horizontal / vertical



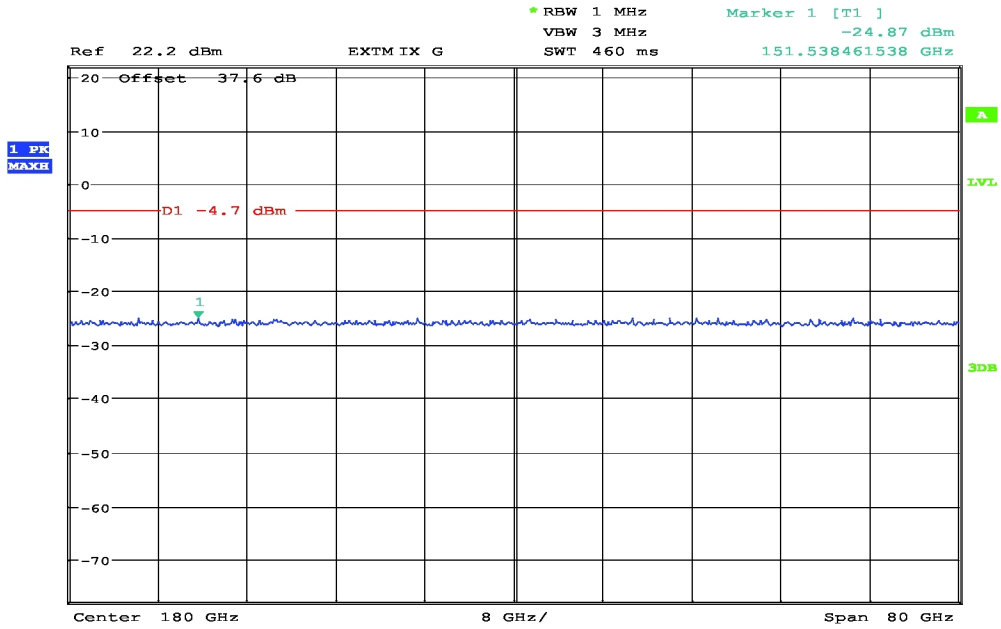
➔ **middle frequency**

Plot 4: 110 GHz – 170 GHz, middle frequency, antenna horizontal / vertical



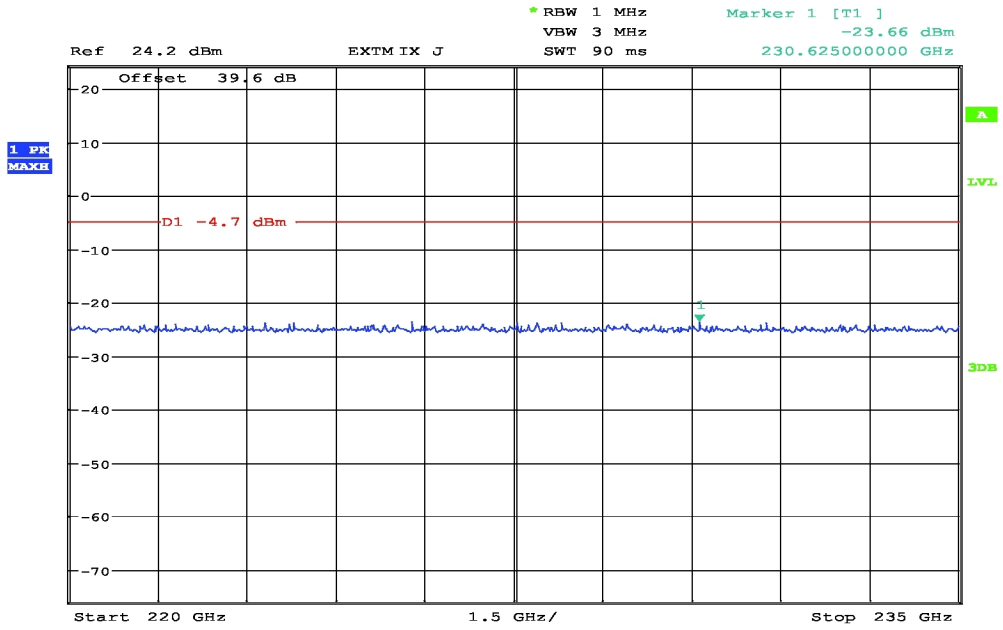
Date: 18.APR.2013 11:26:28

Plot 5: 140 GHz – 220 GHz, middle frequency, antenna horizontal / vertical



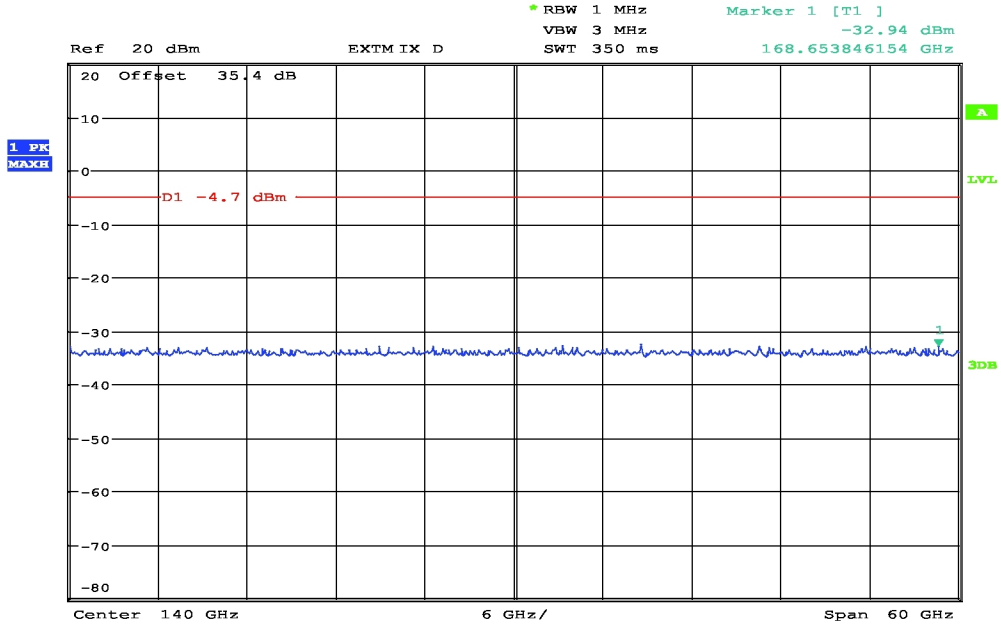
Date: 18.APR.2013 11:38:26

Plot 6: 220 GHz – 235 GHz, middle frequency, antenna horizontal / vertical



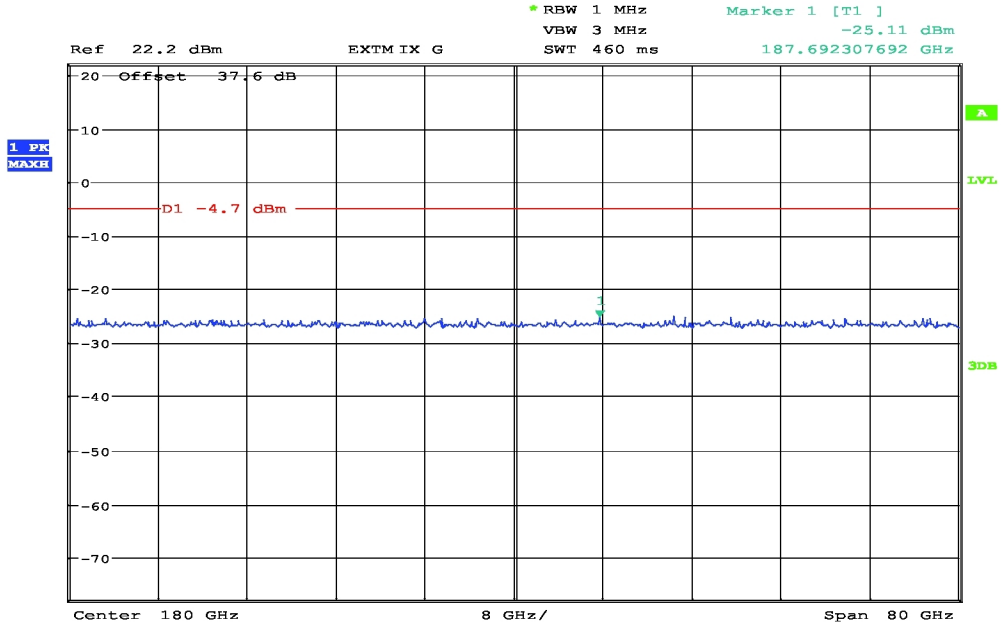
➔ **upper frequency**

Plot 7: 110 GHz – 170 GHz, upper frequency, antenna horizontal / vertical



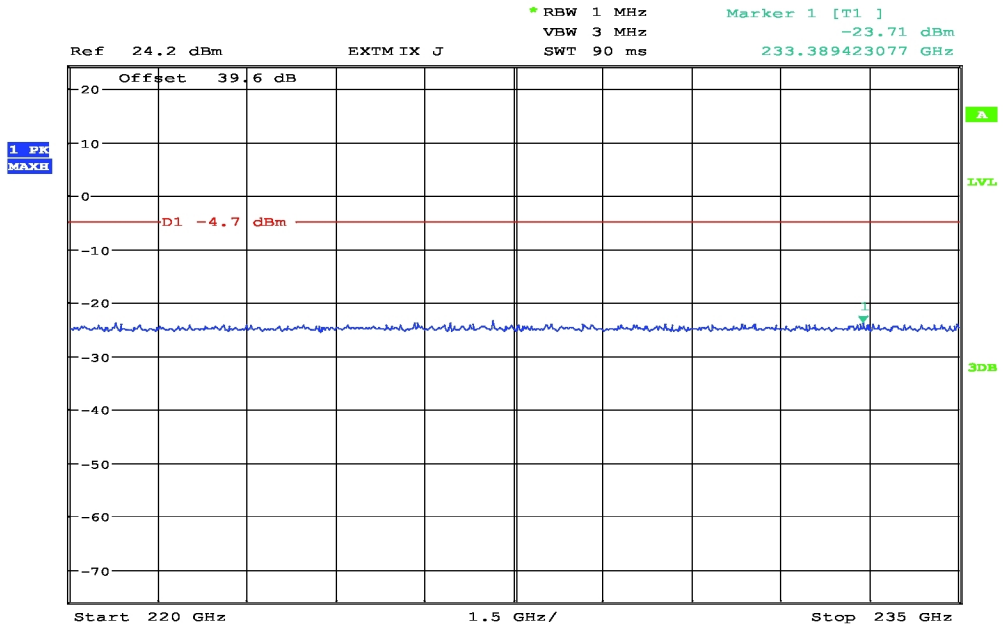
Date: 18.APR.2013 11:25:13

Plot 8: 140 GHz – 220 GHz, upper frequency, antenna horizontal / vertical



Date: 18.APR.2013 11:39:35

Plot 9: 220 GHz – 235 GHz, upper frequency, antenna horizontal / vertical



Annex A Test equipment and ancillaries used for tests

Typically, the calibrations of the test apparatus are commissioned to and performed by an accredited calibration laboratory. The calibration intervals are determined in accordance with the DIN EN ISO/IEC 17025. In addition to the external calibrations, the laboratory executes comparison measurements with other calibrated test systems or effective verifications. Weekly chamber inspections and range calibrations are performed. Where possible, rf-generating and signalling equipment as well as measuring receivers and analyzers are connected to an external high-precision 10 MHz reference (GPS-based or rubidium frequency standard).

In order to simplify the identification of the equipment used at some special tests, some items of test equipment and ancillaries can be provided with an identifier or number in the equipment list below (Labor/Item).

1. Laboratory ´RSC-Sat´

Item No.	Equipment	Manufacturer	Type	S/N	CTC ID	Cal.-/Verif.-cycle
	Cable 50 Ω / SMA	Huber + Suhner.	ST18/SMAm/48	several	-/-	cyclic calibration
438	Std. Gain Horn 110-170 GHz	Flann	2924-20	*	300001999	cyclic calibration
439	Std. Gain Horn 140-220 GHz	Flann	3024-20	*	300002000	cyclic calibration
441	Std. Gain Horn 220-325 GHz	Flann	3224-20	*	300002002	cyclic calibration
3069	Spectrum Analyzer 20 Hz - 50 GHz	R&S	FSU50	200012	300003443	2012-10-12
3858	External Mixer 3-Port, 110-170 GHz	Radiometer Physics GmbH	SAM-170	100014	300004156	2012-09-26
3859	External Mixer 3-Port 140-220 GHz	Radiometer Physics GmbH	SAM-220	200001	300004157	2012-09-26
3860	External Mixer 3-Port 220-325 GHz	Radiometer Physics GmbH	SAM-325	100002	300004158	2012-10-15