



## **Accredited testing-laboratory**

**DAR registration number: DGA-PL-176/94-D1**

**Federal Motor Transport Authority (KBA)  
DAR registration number: KBA-P 00070-97**

**Recognized by the Federal Communications Commission**

**Anechoic chamber registration no.: 90462 (FCC)**

**Anechoic chamber registration no.: 3462C-1 (IC)**

**Certification ID: DE 0001**

**Accreditation ID: DE 0002**

**Accredited Bluetooth® Test Facility (BQTF)**

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**Test report no. : 1-1827-01-03/09 A**  
**Type identification : OBU TS3304**  
**Applicant : KAPSCH TrafficCom AG**  
**FCC ID : XZU3304**  
**Test standards : 47 CFR Part 2**  
**47 CFR Part 95L**  
**ASTM E2213**  
**IEEE 802.11p**

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## 1 General information

### 1.1 Notes

The test results of this test report relate exclusively to the test item specified in 3.1.1. The CETECOM ICT Services GmbH does not assume responsibility for any conclusions and generalisations drawn from the test results with regard to other specimens or samples of the type of the equipment represented by the test item. The test report may only be reproduced or published in full. Reproduction or publication of extracts from the report requires the prior written approval of the CETECOM ICT Services GmbH.

#### Test laboratory manager:

**2010-01-28**

Date

**Marco Bertolino**

Name




Signature

**2010-01-28**

Date

**Stefan Bös**

Name



Signature

#### Technical responsibility for area of testing:

**2010-01-28**

Date

**Michael Berg**

Name



Signature

## 1.2 Testing laboratory

CETECOM ICT Services GmbH

Untertürkheimer Straße 6 - 10

66117 Saarbrücken

Germany

Phone: + 49 681 5 98 - 0

Fax: + 49 681 5 98 - 9075

e-mail: info@ICT.cetecom.de

Internet: http://www.cetecom-ict.de

State of accreditation:

The test laboratory (area of testing) is accredited according to

DIN EN ISO/IEC 17025

DAR registration number: DGA-PL-176/94-D1

Accredited by:

Federal Motor Transport Authority (KBA)

DAR registration number: KBA-P 00070-97

Testing location, if different from CETECOM ICT Services GmbH:

Name :

Street :

Town :

Country :

Phone :

Fax :

## 1.3 Details of applicant

<b>Name:</b>	KAPSCH TrafficCom AG
<b>Street:</b>	Am Europlatz 2
<b>Town:</b>	1120 Vienna
<b>Country:</b>	AUSTRIA
<b>Telephone:</b>	+43-50 811-7857
<b>Fax:</b>	+43-50 811-2209
<b>Contact:</b>	Herbert Diemling
<b>E-mail:</b>	herbert.diemling@kapsch.net
<b>Telephone:</b>	+43-50 811-7857

## 1.4 Application details

<b>Date of receipt of order:</b>	2009-12-15
<b>Date of receipt of test item:</b>	2010-01-11
<b>Date of start test:</b>	2010-01-11
<b>Date of end test:</b>	2010-01-13
<b>Persons(s) who have been present during the test:</b>	Mr. Ludvig Sjöholm (Electronics Design Engineer)

## 2 Test standard/s

47 CFR Part 2	2008-10	Frequency allocations and radio treaty matters; GENERAL RULES AND REGULATIONS
47 CFR Part 95	2008-10	Title 47 of the Code of Federal Regulations; Part 95 Personal Radio Services / subpart L - Dedicated Short Range Communications Service On-Board Units (DSRCS-OBUs)
IEEE 802.11 p	1999/2000	Part 11: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) specifications High-speed Physical Layer in the 5 GHz Band
ASTM E2213	2003	Standard Specification for Telecommunications and Information Exchange between Roadside and Vehicle Systems - 5 GHz Band Dedicated Short Range Communications (DSRC) Medium Access Control (MAC) and Physical Layer (PHY) Specifications

### 3 Technical tests

#### 3.1 Details of manufacturer

Name:	KAPSCH TrafficCom AG
Street:	Am Europlatz 2
Town:	1120 Vienna
Country:	AUSTRIA

##### 3.1.1 Test item

Kind of test item	:	OBUS3304
Type identification	:	TS3304
S/N serial number	:	Cond.: 06 Rad.: 05
HW hardware status	:	8633 002-746
SW software status	:	AR6001: 0.3.3 STM8: 0.3.3
Frequency Band [MHz]	:	5860 MHz – 5910 MHz
Type of Modulation	:	OFDM → QPSK (6 Mbit/s)
Emission designator	:	8M34GXD
Number of channels	:	6
Antenna	:	Integrated PCB antenna – for more information, please take a look at sub clause 8 → Photos of the EUT
Power Supply	:	3 V DC by Lithium battery CR17335
Temperature Range	:	-40°C to +85 °C

Max. power radiated: -2.29 dBm  
Max. power conducted: -7.21 dBm

FCC ID: XZU3304

### 3.1.2 Extreme conditions testing values

Description	Shortcut	Unit	Value
Nominal Temperature	T <sub>nom</sub>	°C	20
Nominal Humidity	H <sub>nom</sub>	%	53
Nominal Power Source	V <sub>nom</sub>	V	3

**Type of power source:** DC by Lithium battery CR17335

Deviations from these values are reported in chapter 2

#### 4 Summary of Measurement Results and list of all performed test cases

- ☒ No deviations from the technical specifications were ascertained  
☐ There were deviations from the technical specifications ascertained

TC identifier	Description	verdict	date	Remark
RF-Testing	FCC Part 2 & Part 95 L, 802.11 a, ASTM E2213	PASS	2010-01-28	-/-

Test Specification Clause	Test Case	Pass	Fail	Not applicable	Not performed
None	Antenna Gain	Yes			
ASTM – 8.9.2 Part 95	Spectrum Bandwidth of a OFDM System / 20dB BW	Yes			
ASTM Table3 Part 95	Modulation characteristics	Yes			
ASTM – 8.9.2 Part 95	Transmit Spectrum Mask	Yes			
ASTM – 8.9.4 Part 95	Transmit Center Frequency Tolerance	Yes			
ASTM – 8.9.1 Part 95	Maximum output power (conducted)	Yes			
ASTM – 8.9.1 Part 95	Max. peak output power (radiated)	Yes			
ASTM – 8.9.2 Part 95	Spurious Emission - conducted (Transmitter)	Yes			
ASTM – 8.9.2 Part 95	Spurious Emission -radiated (Transmitter)	Yes			



## **5 RF measurement testing**

### **5.1 Measurements and results**

For Part 2 / Part 95 we use the substitution method (TIA/EIA 603).

### **5.2 Referenced Documents**

None

### **5.3 Additional comments**

None

## 5.4 Antenna gain

The antenna gain of the complete system is calculated by the difference of radiated power in EIRP and the conducted power of the module.

	Channel 1 5860 MHz	Channel 2 5880 MHz	Channel 3 5910 MHz
Conducted power [dBm] <i>(measured)</i>	<b>-7.21</b>	-7.24	-7.26
Radiated power [dBm] <i>(measured)</i>	<b>-2.29</b>	-3.12	-4.62
Gain [dBi] <i>(calculated)</i>	<b>4.92</b>	4.12	2.64

## 5.5 Frequency Tolerance according ASTM §8.9.4 / IEEE 802.11 p 17.3.9.4 / § 2.1055)

### Results:

Temperatur	5860 MHz F	5860 MHz kHz / PPM	5880 MHz F	5880 MHz kHz / PPM	5910 MHz F	5910 MHz kHz / PPM
85 C°	5859.9703	-29.7 / -5.1	5879.9573	-42.7 / -7.3	5909.9794	-20.6 / -3.5
80 C°	5859.9884	-11.6 / -2.0	5879.9754	-24.6 / -4.2	5909.9764	-23.6 / -4.0
70 C°	5859.9553	-44.7 / -7.6	5879.9603	-39.7 / -6.8	5909.9764	-23.6 / -4.0
60 C°	5859.9523	-47.7 / -8.1	5879.9423	-57.7 / -9.8	5909.9553	-44.7 / -7.6
50 C°	5859.9553	-44.7 / -7.6	5879.9453	-54.7 / -9.3	5909.9523	-47.7 / -8.1
40 C°	5859.9673	-32.7 / -5.6	5879.9573	-42.7 / -7.3	5909.9703	-29.7 / -5.0
30 C°	5859.9944	-5.6 / -1.0	5879.9824	-27.6 / -4.7	5909.9764	-23.6 / -4.0
20 C°	5860.0004	0.4 / 0.1	5880.0034	3.4 / 0.6	5910.0124	12.4 / 2.1
10 C°	5860.0365	36.5 / 6.2	5880.0244	24.4 / 4.1	5910.0214	21.4 / 3.6
0 C°	5860.0214	21.4 / 3.7	5880.0425	42.5 / 7.2	5910.0345	34.5 / 5.8
-10 C°	5860.0395	39.5 / 6.7	5880.0435	43.5 / 7.4	5910.0435	43.5 / 7.4
-20 C°	5860.0365	36.5 / 6.2	5880.0435	43.5 / 7.4	5910.0465	46.5 / 7.9
-30 C°	5860.0225	22.5 / 3.8	5880.0385	38.5 / 6.5	5910.0415	41.5 / 7.0
-40 C°	5860.0205	20.5 / 3.5	5880.0305	30.5 / 5.2	5910.0314	31.4 / 5.3

### Limits:

Under normal test conditions and extreme test condition (temperature & voltage)	The transmitted center frequency tolerance shall be $\pm 10$ ppm maximum. (according ASTM 8.9.4)
---------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------

## **5.6 Modulation characteristics (ASTM Table 3 / § 2.1047 / § 95.631)**

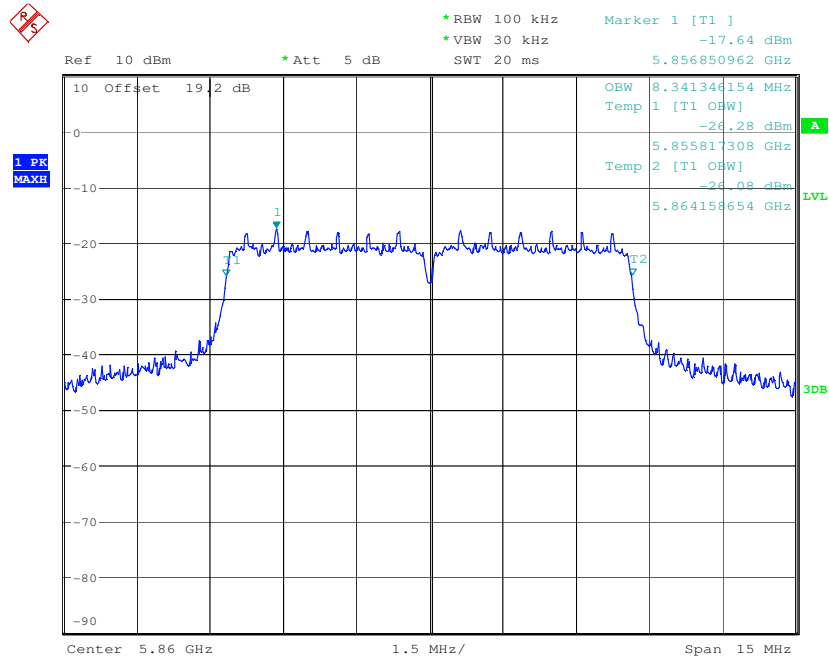
The EUT only supports the following data rate – sub-carrier modulation:

6 Mbit/s data rate      QPSK modulation

Emission designator:      8M34GXD

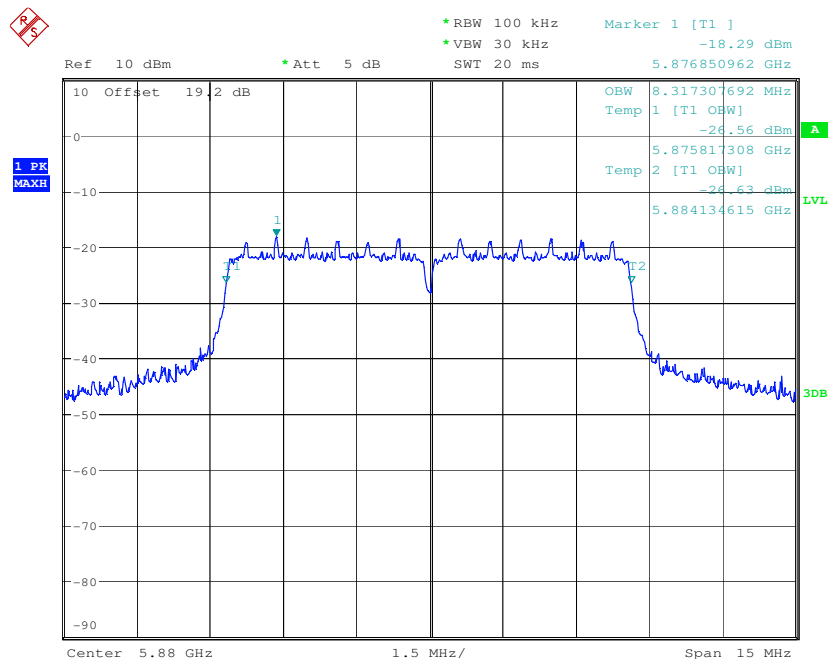
## 5.7 Spectrum Bandwidth of a OFDM System / 99% Bandwidth (ASTM 8.9.2 / § 95.633 g / § 95.1509)

Plot 1: Channel 1 (5860 MHz), data rate (6 Mbit/s)



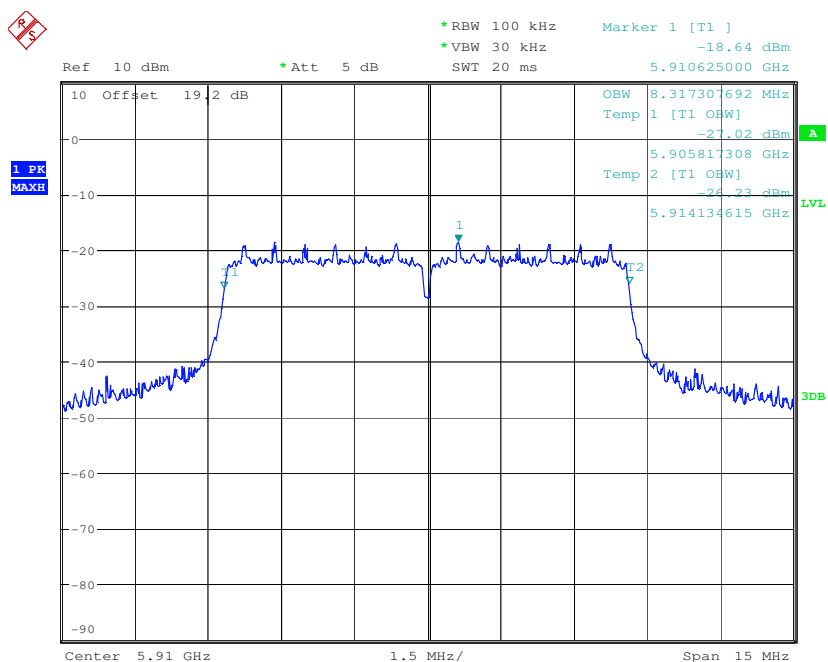
Date: 11.JAN.2010 11:48:40

Plot 2: Channel 2 (5880 MHz), data rate (6 Mbit/s)



Date: 11.JAN.2010 11:51:32

Plot 3: Channel 3 (5910 MHz), data rate (6 Mbit/s)



Date: 11.JAN.2010 11:52:21

## Results:

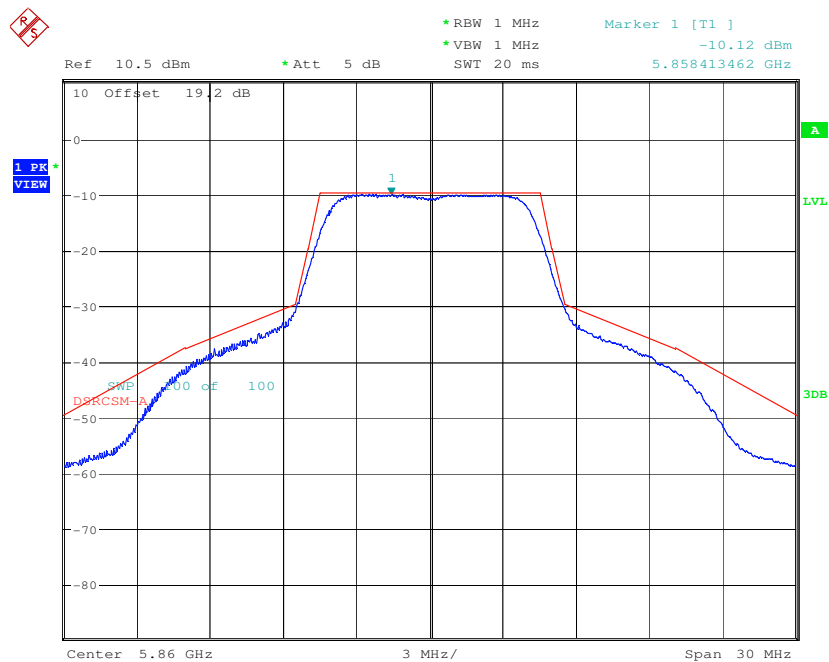
Test conditions		20 dB BANDWIDTH [MHz]		
Frequency [MHz]		5860	5880	5910
$T_{nom}$	$V_{nom}$	8.34	8.32	8.32
Measurement uncertainty		$\pm 100$ kHz		

RBW: 100 kHz / VBW 30 kHz

## 5.8 Transmit Spectrum Mask (ASTM 8.9.2 / § 95.635 F / § 95.1509)

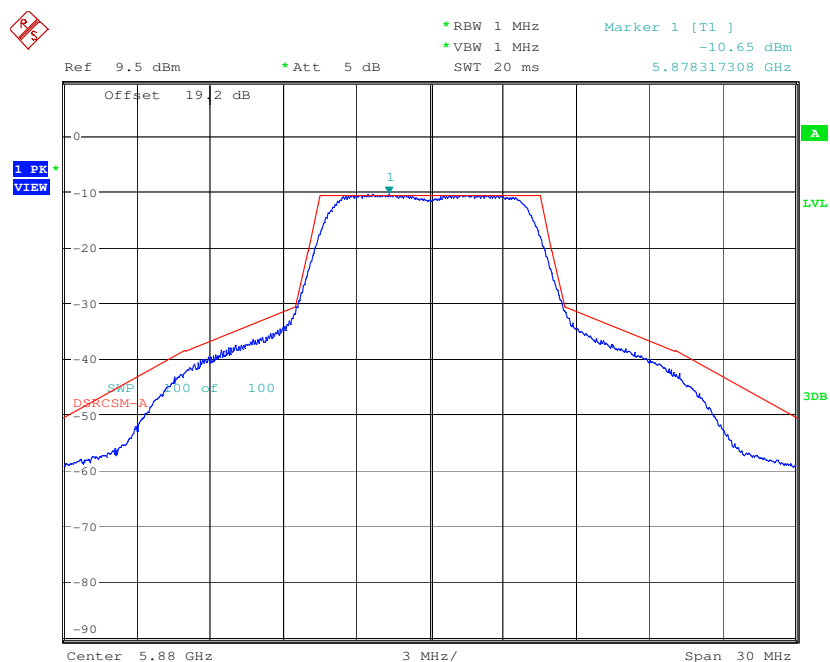
EUT is specified as Class A equipment.

Plot 1: Channel 1 (5860 MHz), data rate (6 Mbit/s)



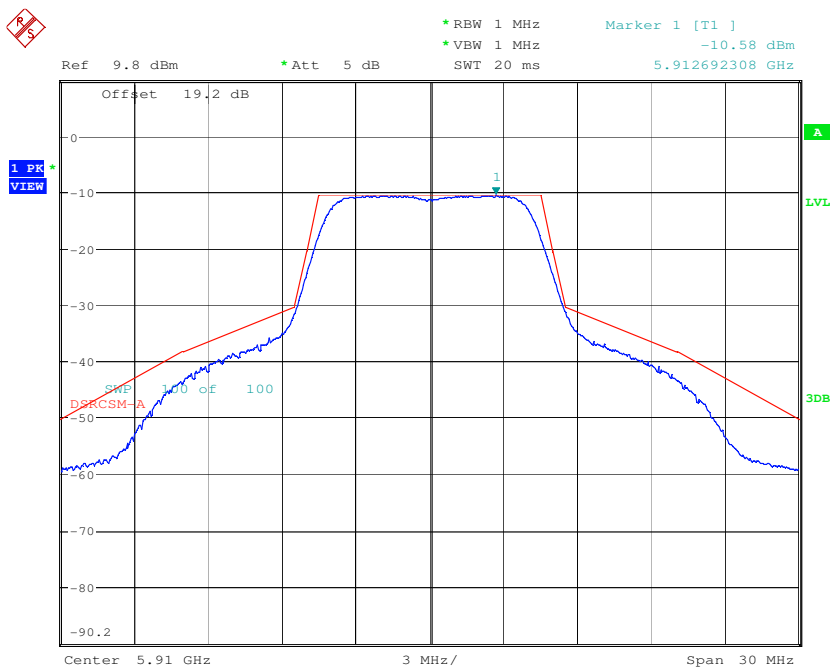
Date: 11.JAN.2010 13:06:53

Plot 2: Channel 2 (5880 MHz), data rate (6 Mbit/s)



Date: 11.JAN.2010 13:09:19

Plot 3: Channel 3 (5910 MHz), data rate (6 Mbit/s)

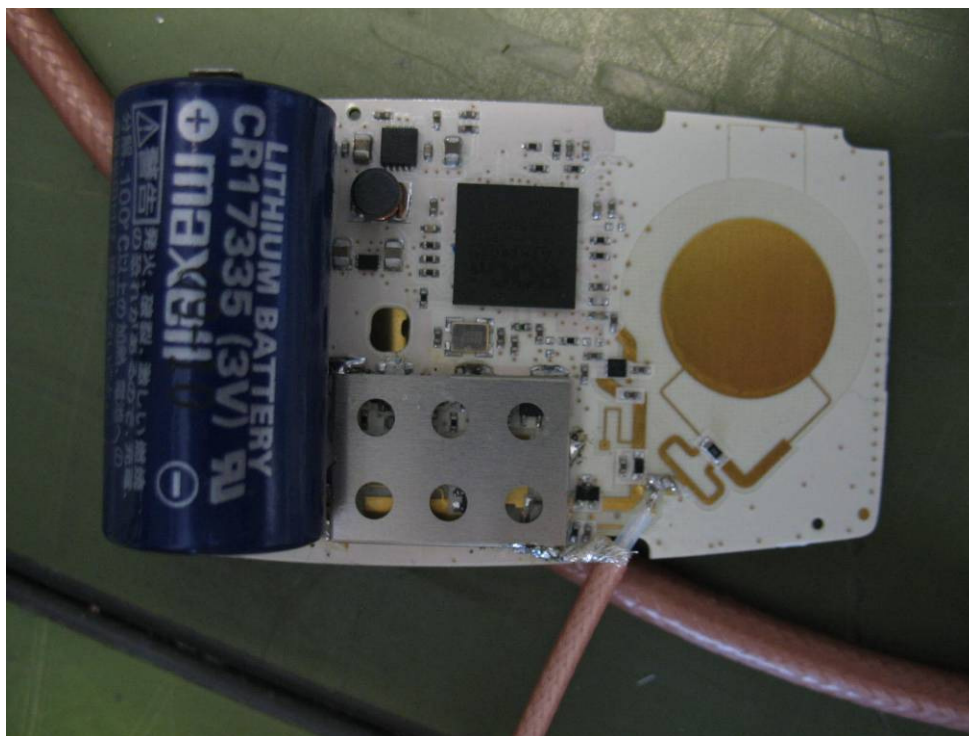


Date: 11.JAN.2010 13:11:20

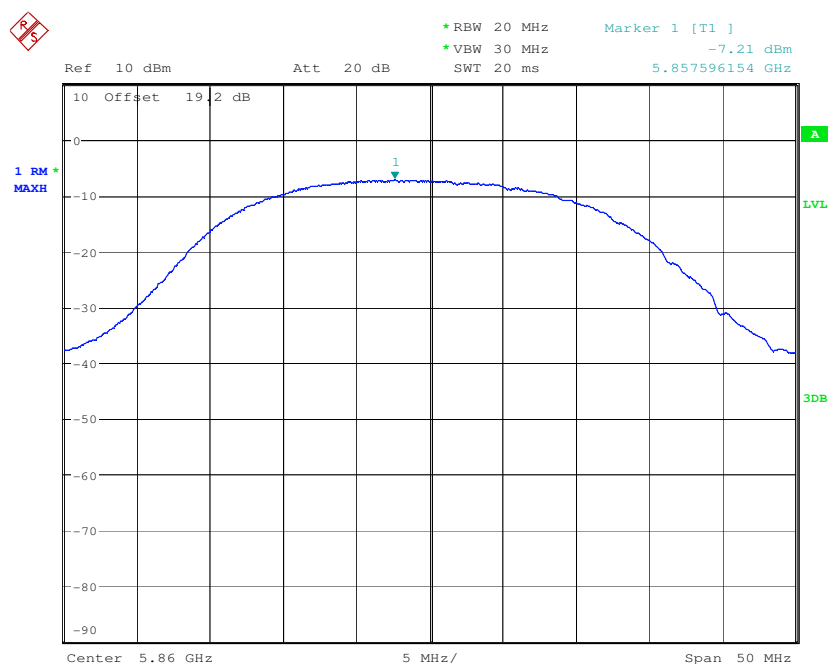


## 5.9 Maximum output power (conducted) (ASTM 8.9.1/§ 2.1046/§ 95.639/§ 95.1509)

Photo 1: Conducted Sample

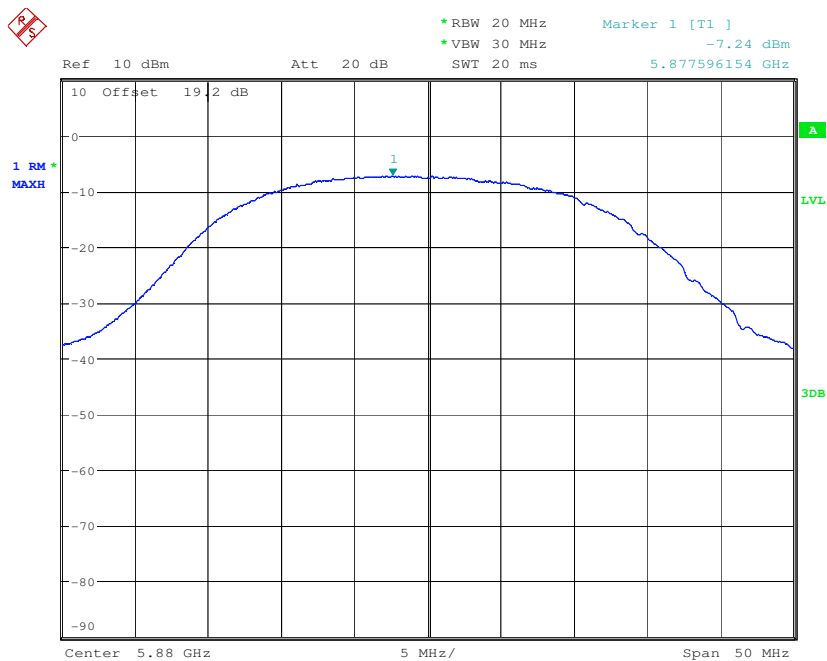


Plot 1: Channel 1 (5860 MHz), data rate (6 Mbit/s)



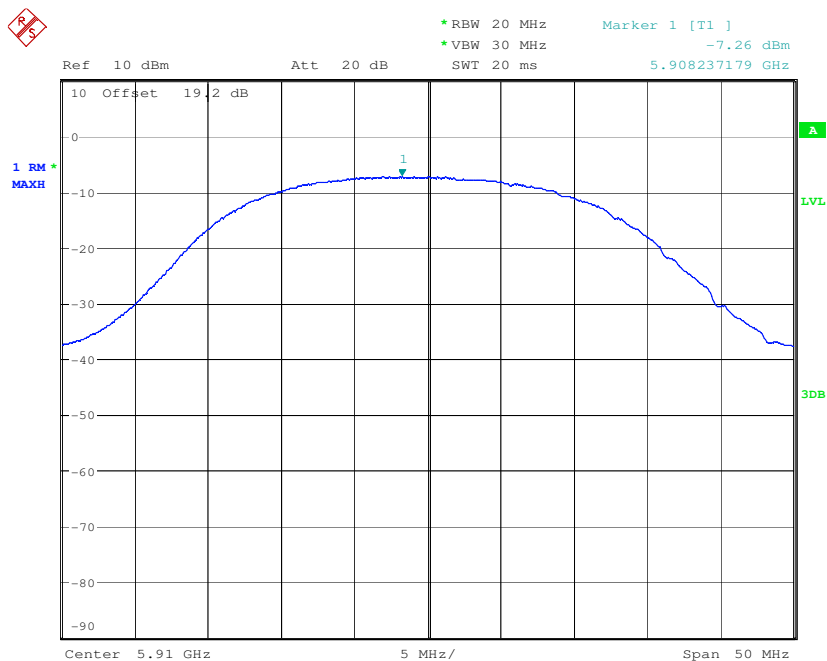
Date: 11.JAN.2010 09:49:58

Plot 2: Channel 2 (5880 MHz), data rate (6 Mbit/s)



Date: 11.JAN.2010 09:52:17

Plot 3: Channel 3 (5910 MHz), data rate (6 Mbit/s)



Date: 11.JAN.2010 09:53:09

## Results:

Test conditions		Max. output power [dBm]		
Frequency [MHz]		5860	5880	5910
T <sub>nom</sub>	V <sub>nom</sub>	-7.21	-7.24	-7.26
Measurement uncertainty		± 3 dB		

Limits:

Under normal test conditions only	Class A / 0 dBm
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### 5.10 Max. peak output power (radiated) (ASTM 8.9.1 / § 2.1046 / § 95.639 / § 95.1509)

Results:

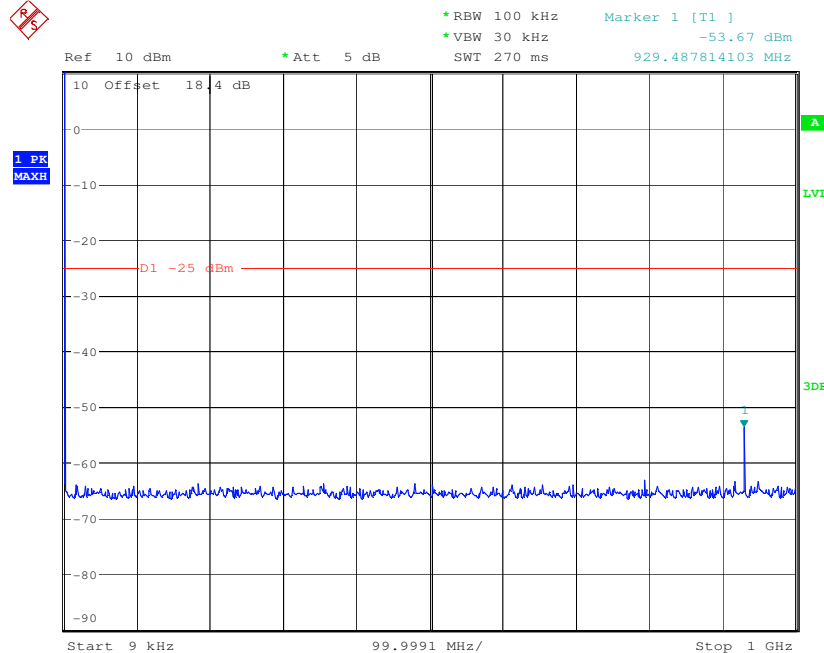
Test conditions		Max. output power [dBm]		
Frequency [MHz]		5860	5880	5910
$T_{\text{nom}}$	$V_{\text{nom}}$	-2.29	-3.12	-4.62
Measurement uncertainty		$\pm 3$ dB		

Limits:

Under normal test conditions only	5860 MHz to 5890 MHz : 33 dBm 5890 MHz to 5910 MHz : 23 dBm 5920 MHz : 33 dBm ASTM: Class A – 0 dBm
-----------------------------------	--------------------------------------------------------------------------------------------------------------

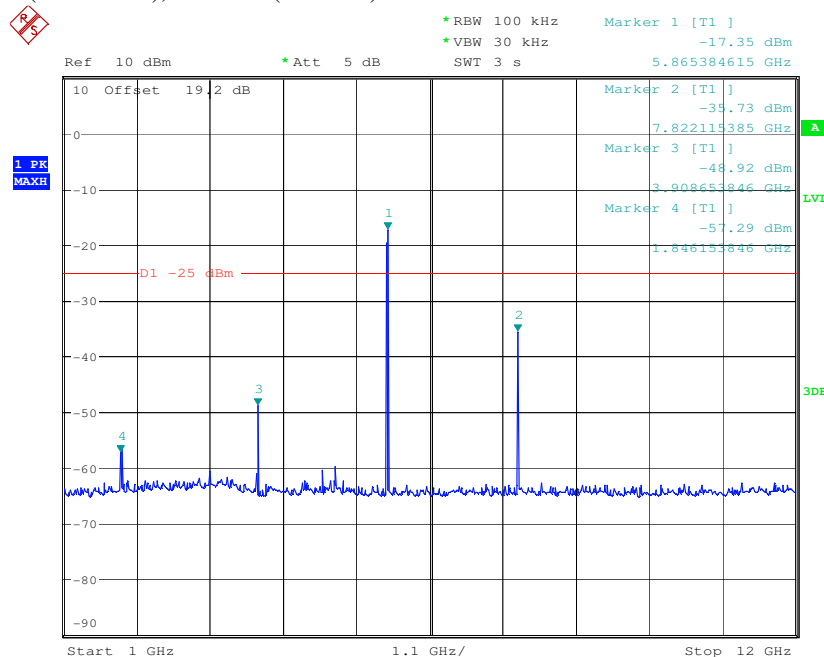
## 5.11 Spurious Emissions - conducted Transmitter (§ 95.635 / § 95.1509 / § 2.1051)

Plot 1: Channel 1 (5860 MHz), data rate (6 Mbit/s)



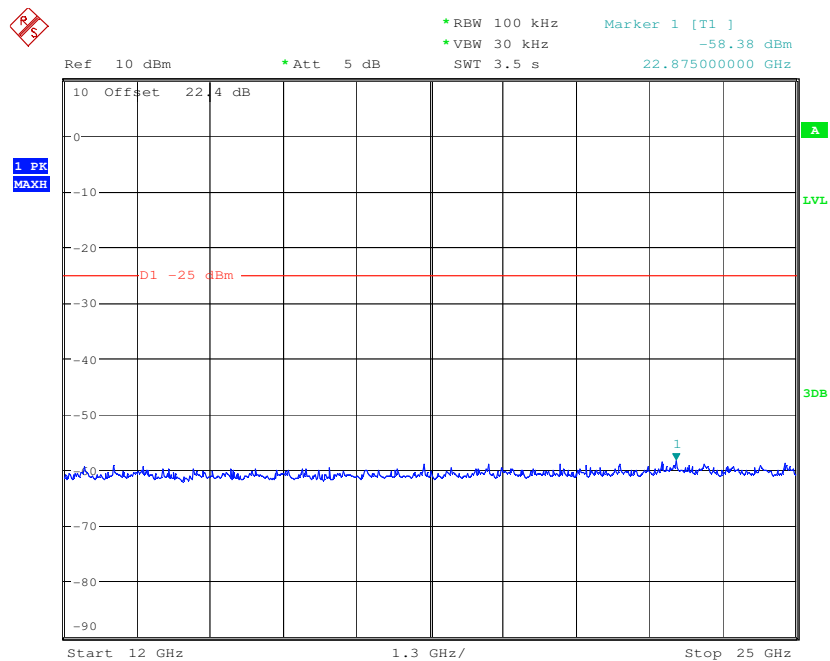
Date: 11.JAN.2010 14:01:54

Plot 2: Channel 1 (5860 MHz), data rate (6 Mbit/s)



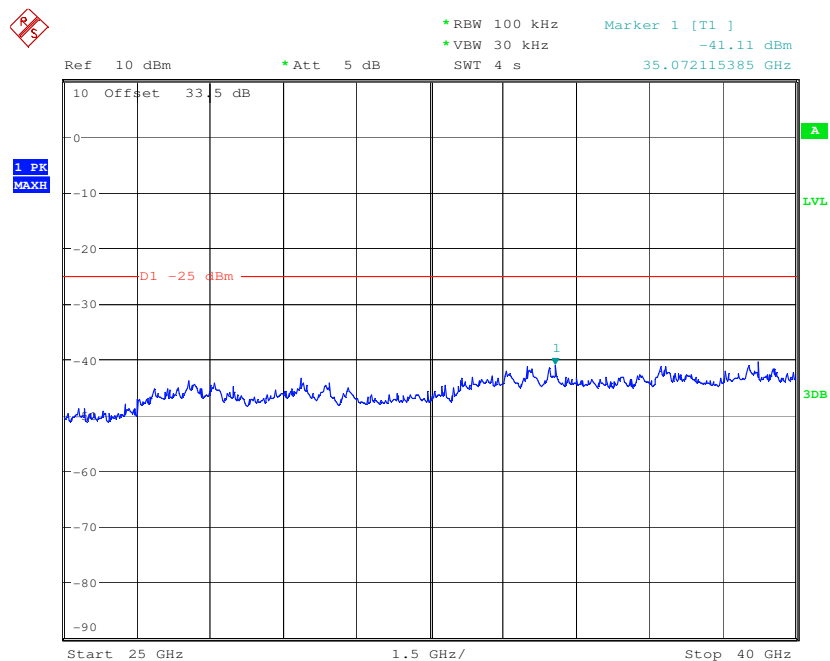
Date: 11.JAN.2010 13:50:42

Plot 3: Channel 1 (5860 MHz), data rate (6 Mbit/s)



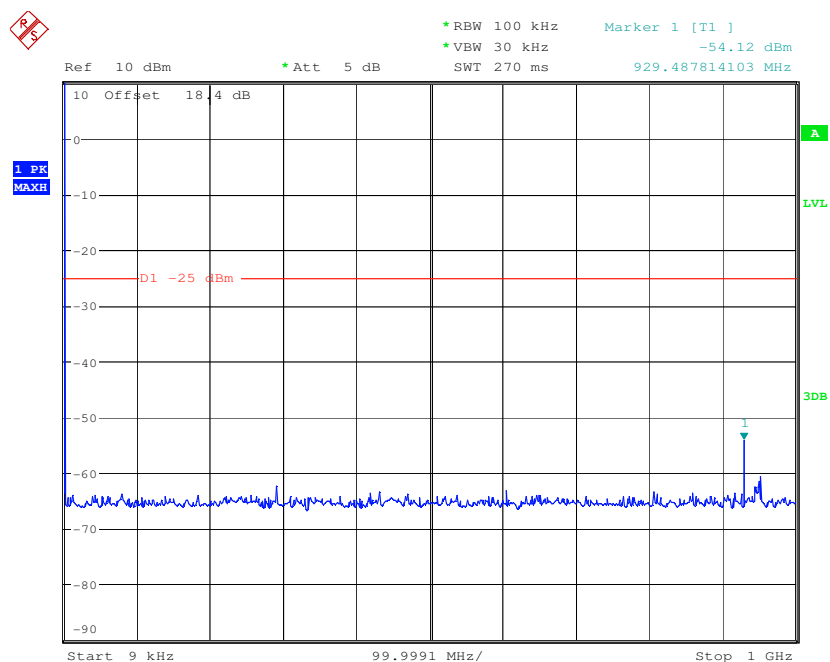
Date: 11.JAN.2010 13:55:25

Plot 4: Channel 1 (5860 MHz), data rate (6 Mbit/s)



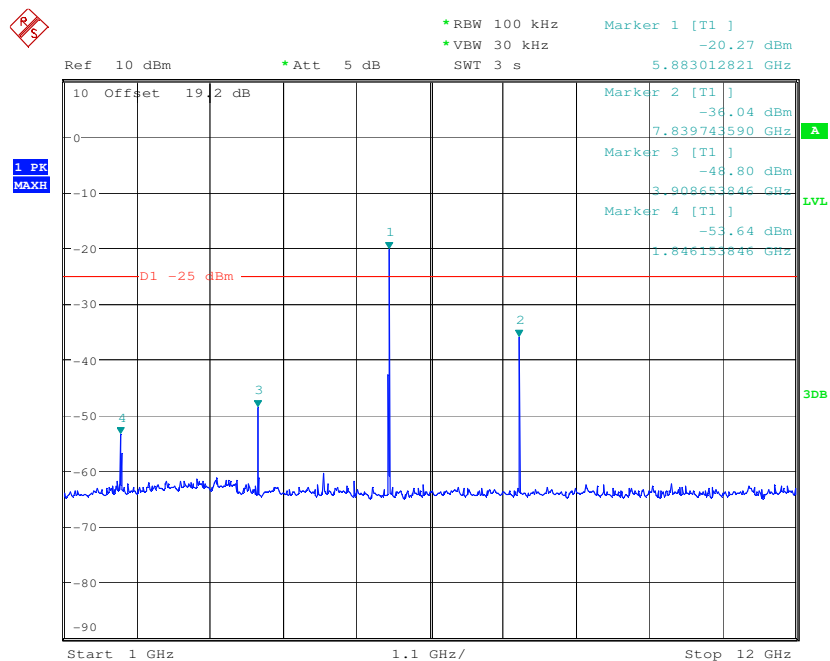
Date: 11.JAN.2010 13:58:01

Plot 5: Channel 2 (5880 MHz), data rate (6 Mbit/s)



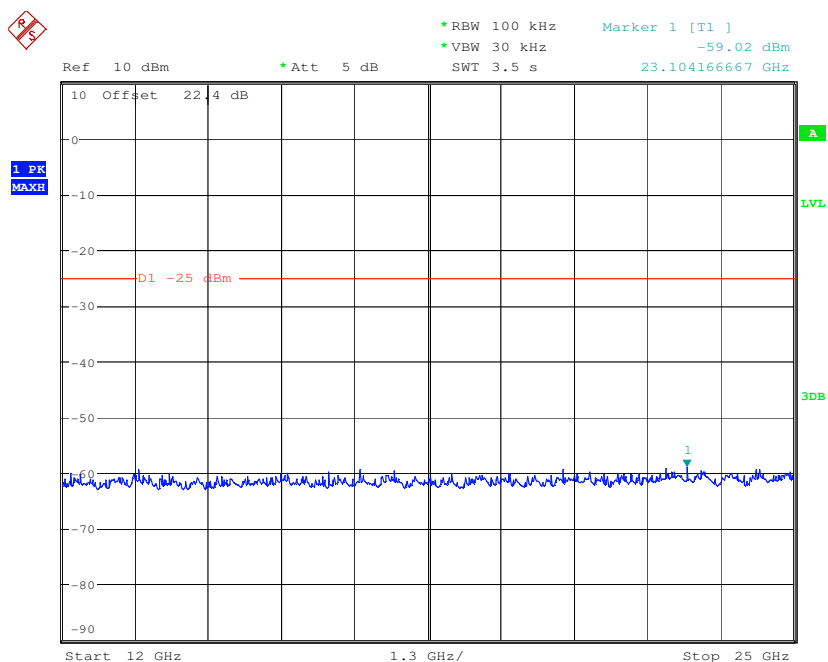
Date: 11.JAN.2010 14:00:49

Plot 6: Channel 2 (5880 MHz), data rate (6 Mbit/s)



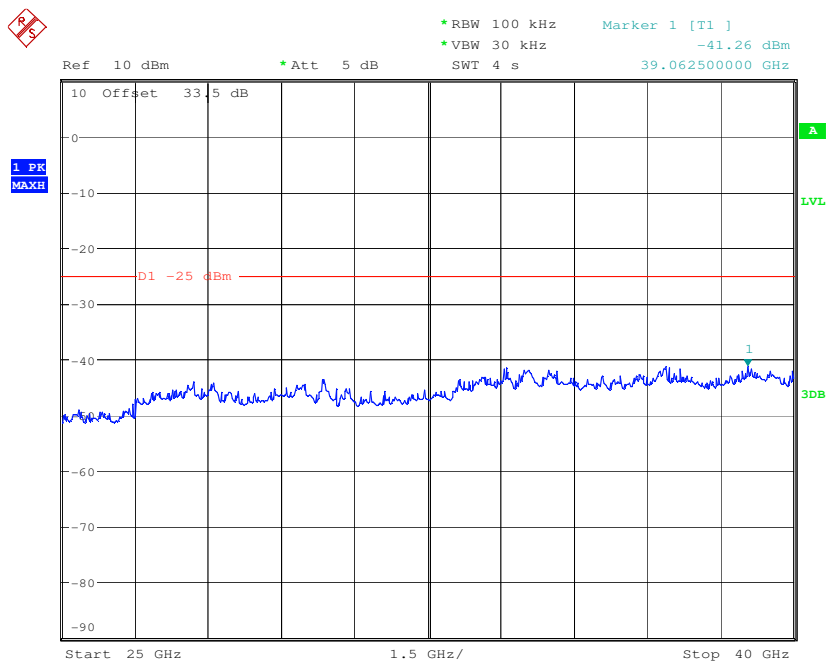
Date: 11.JAN.2010 13:48:38

Plot 7: Channel 2 (5880 MHz), data rate (6 Mbit/s)



Date: 11.JAN.2010 13:56:08

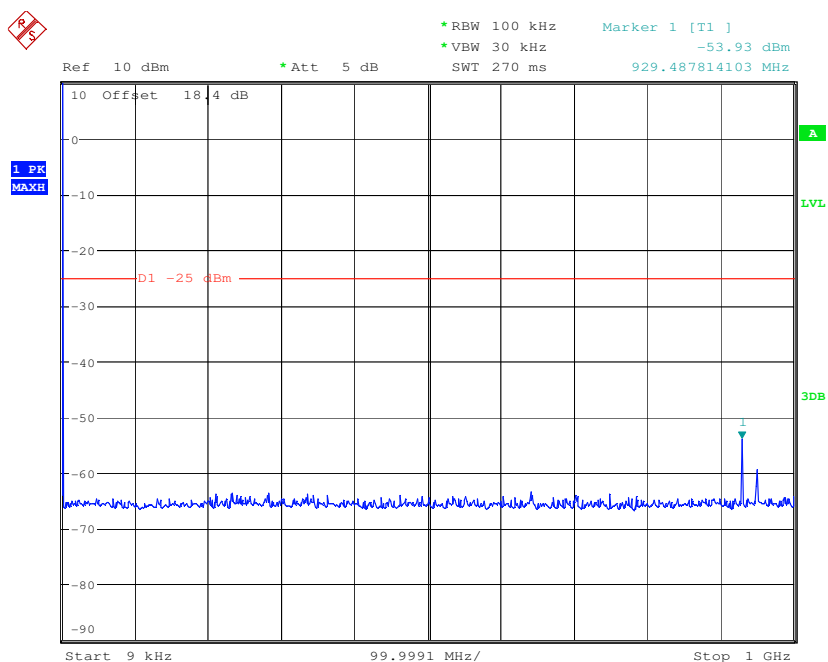
Plot 8: Channel 2 (5880 MHz), data rate (6 Mbit/s)



Date: 11.JAN.2010 13:58:39

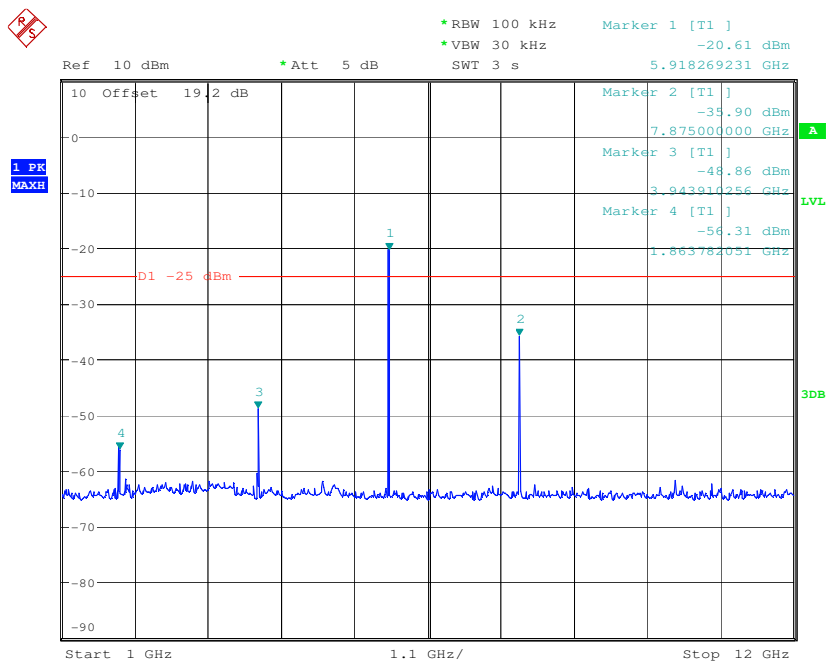


Plot 9: Channel 3 (5910 MHz), data rate (6 Mbit/s)



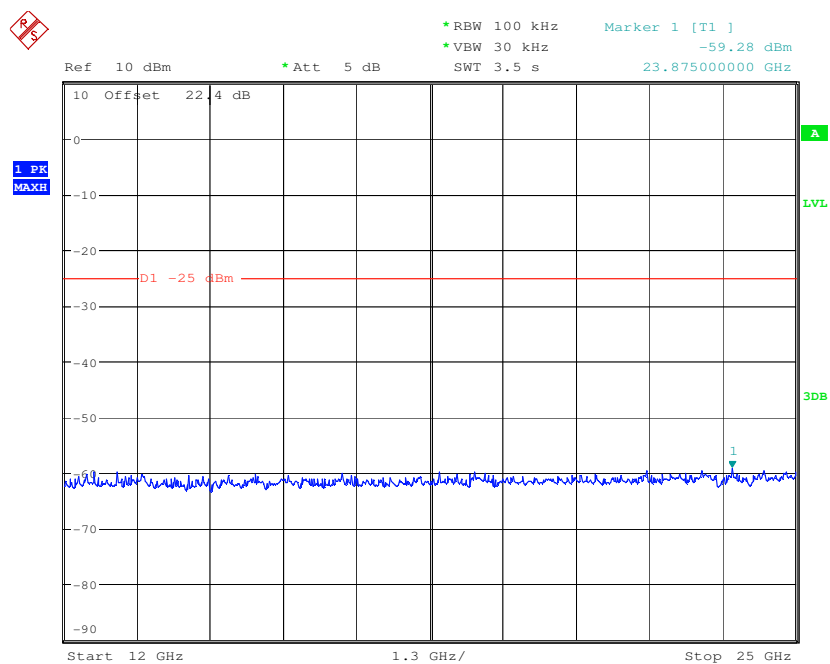
Date: 11.JAN.2010 14:02:52

Plot 10: Channel 3 (5910 MHz), data rate (6 Mbit/s)



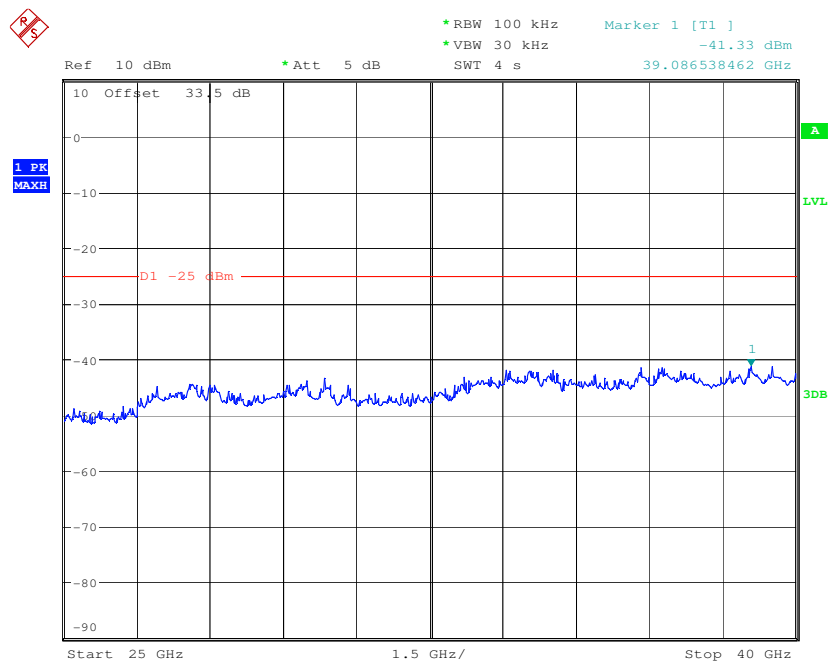
Date: 11.JAN.2010 13:51:49

Plot 11: Channel 3 (5910 MHz), data rate (6 Mbit/s)



Date: 11.JAN.2010 13:56:45

Plot 12: Channel 3 (5910 MHz), data rate (6 Mbit/s)



Date: 11.JAN.2010 13:59:11

Result & Limits:

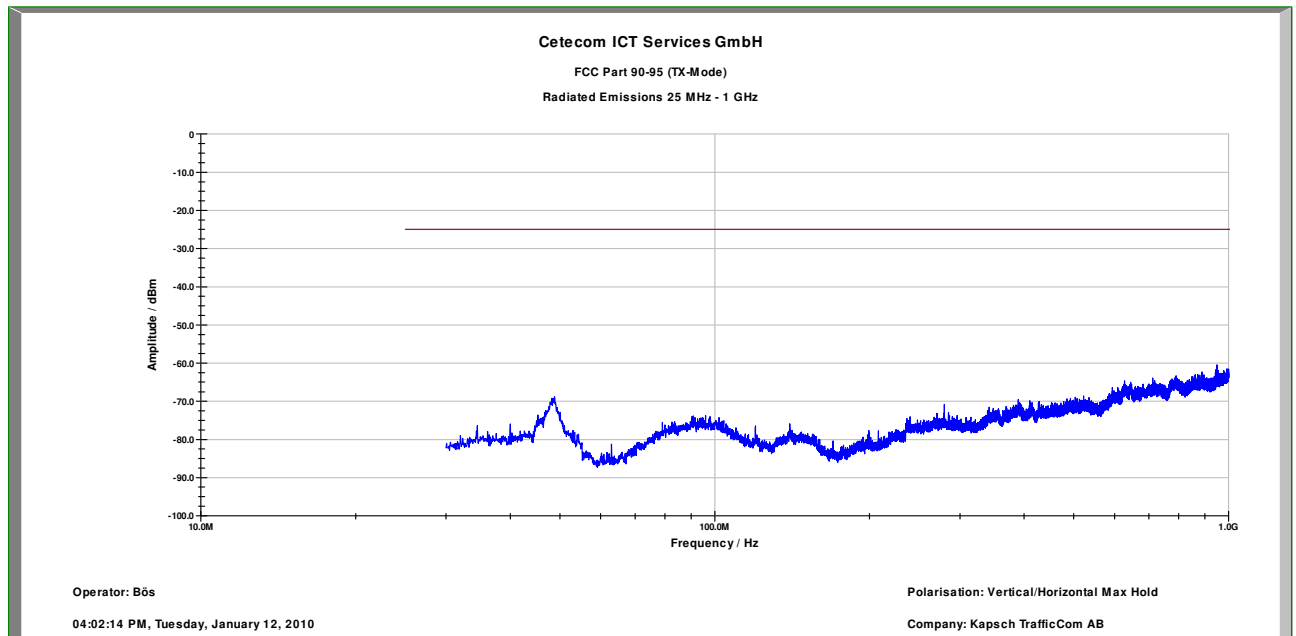
Emission Limitations					
f [MHz]	Det.	amplitude of emission [dBm]	limit max. allowed emission power	actual attenuation below limit [dB]	results
5860	Pk	-17.4	-25 dBm		Operating frequency
929.5	Pk	-53.7		28.7	Complies
1846.2	Pk	-57.3		22.3	Complies
3908.7	Pk	-48.9		23.9	Complies
7822.1	Pk	-35.7		10.7	Complies
5880	Pk	-20.3	-25 dBm		Operating frequency
929.5	Pk	-54.1		29.1	Complies
1846.2	Pk	-53.6		28.6	Complies
3908.7	Pk	-48.8		23.8	Complies
7839.7	Pk	-36.0		11.0	Complies
5910	Pk	-20.3	-25 dBm		Operating frequency
929.5	Pk	-53.9		28.9	Complies
1863.8	Pk	-56.3		31.3	Complies
3943.9	Pk	-48.9		23.9	Complies
7875.0	Pk	-35.9		10.9	Complies
Measurement uncertainty		± 3dB			

Limit:

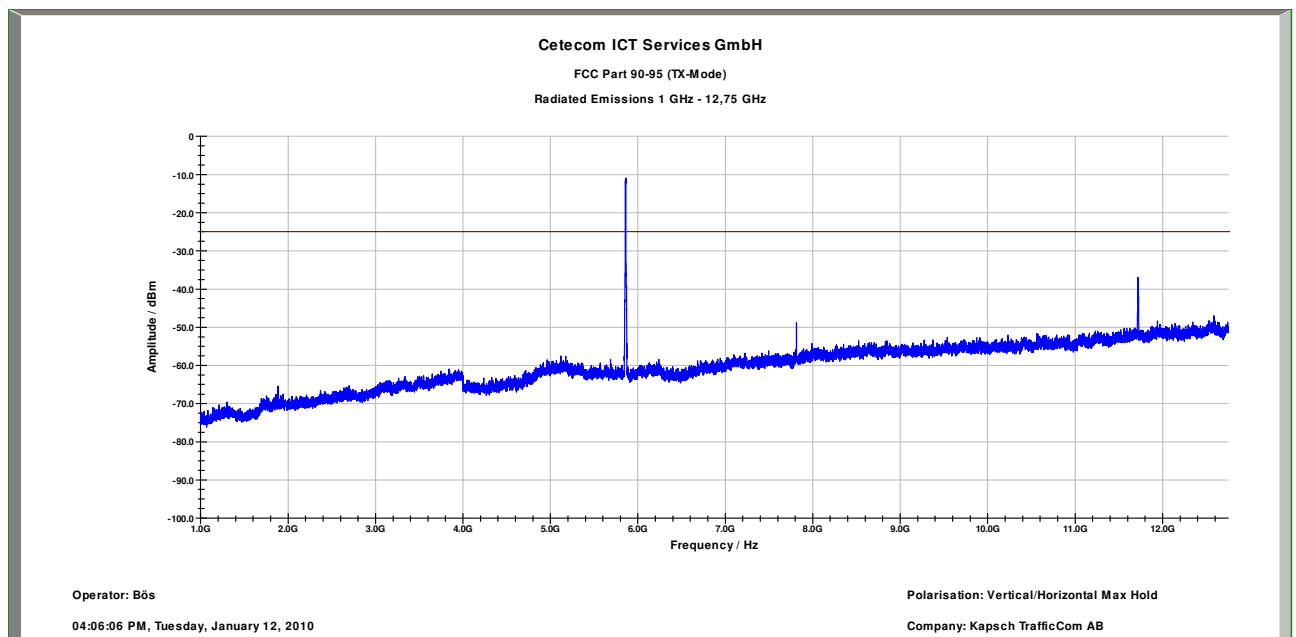
Under normal test conditions only	-25 dBm
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## 5.12 Spurious Emissions - radiated (Transmitter) (§ 95.635 / § 95.1509 / § 2.1053)

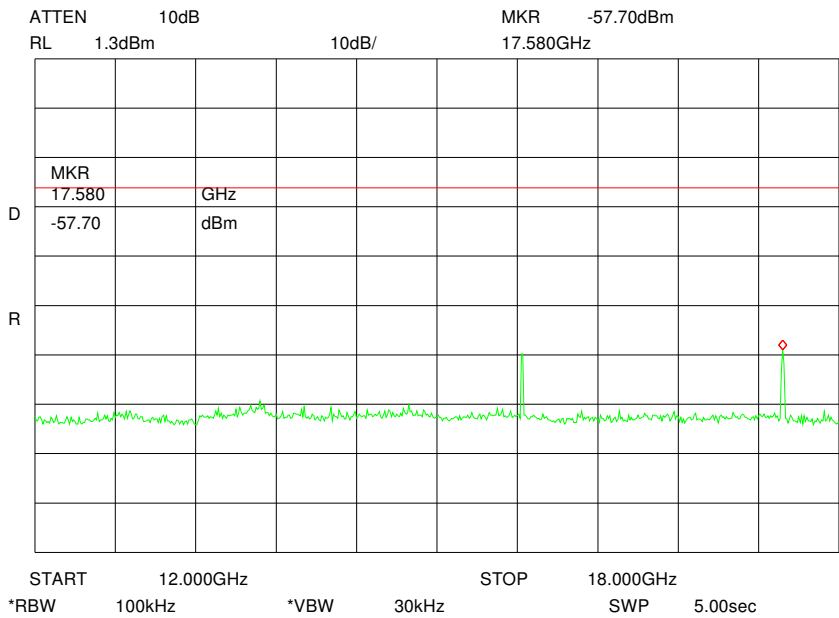
Plot 1: 5860 MHz, data rate 6 MBit/s, 30 MHz – 1 GHz, Max. hor./vert. polarization



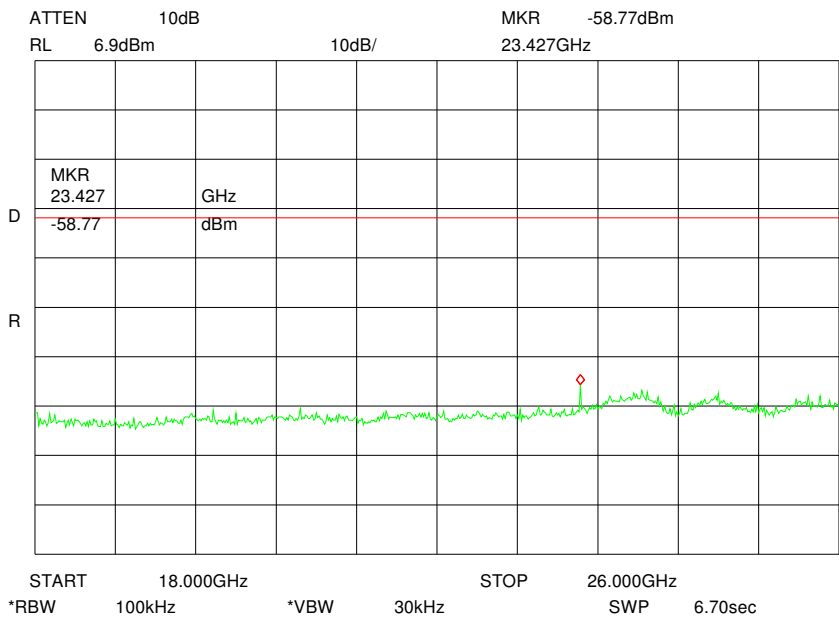
Plot 2: 5860 MHz, data rate 6 MBit/s, 1 GHz – 12.75 GHz, Max. hor./vert. polarization



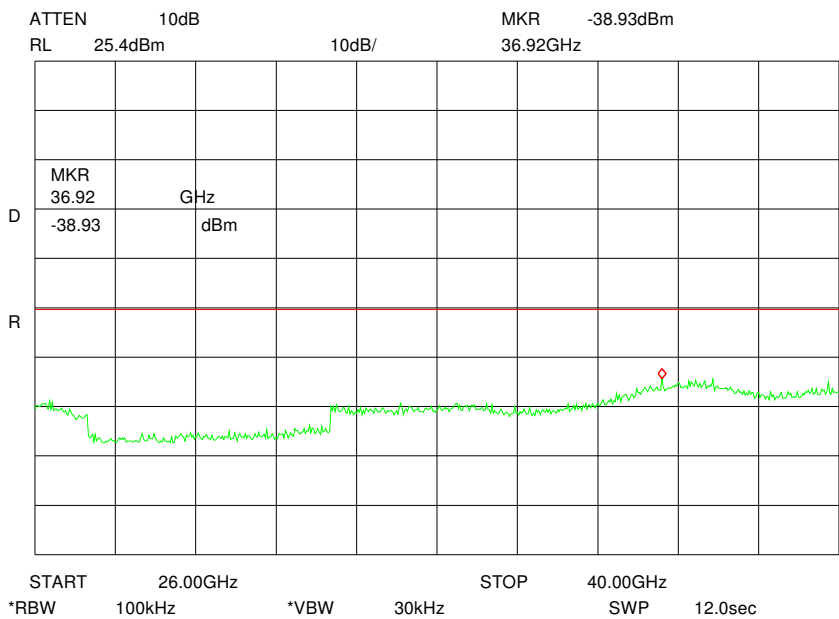
Plot 3: 5860 MHz, data rate 6 MBit/s, 12 GHz – 18 GHz, Max. hor./vert. polarization (valid for all channels)



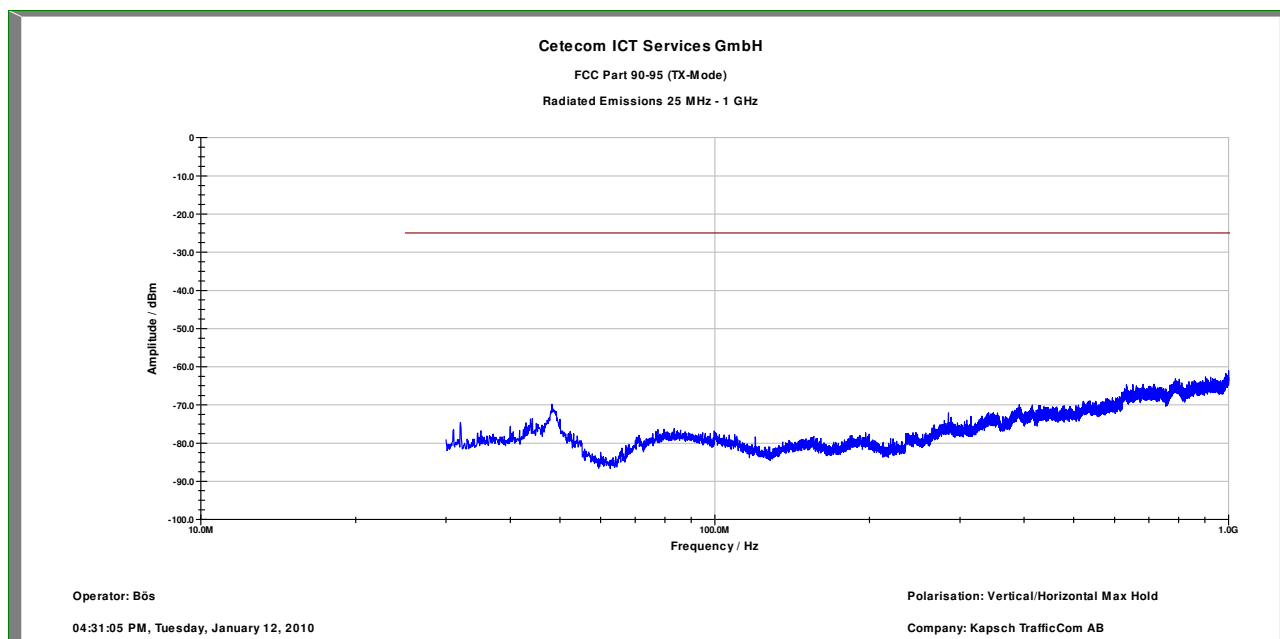
Plot 4: 5860 MHz, data rate 6 MBit/s, 18 GHz – 26 GHz, Max. hor./vert. polarization (valid for all channels)



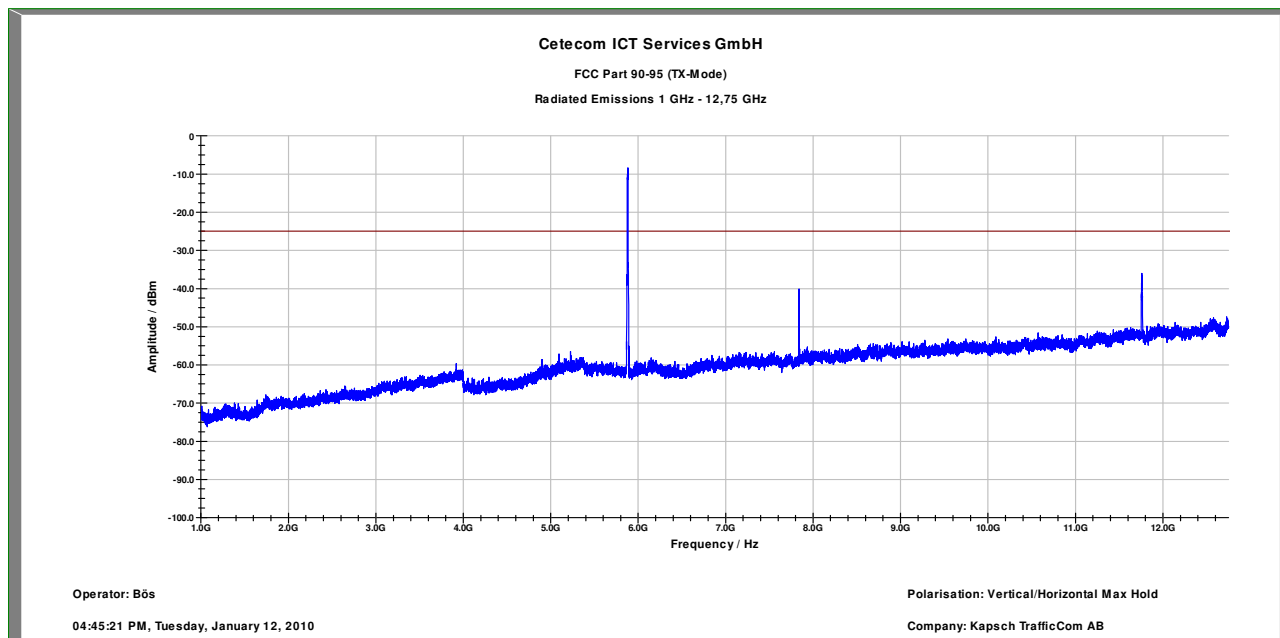
Plot 5: 5860 MHz, data rate 6MBit/s, 26 GHz – 40 GHz, Max. hor./vert. polarization (valid for all channels)



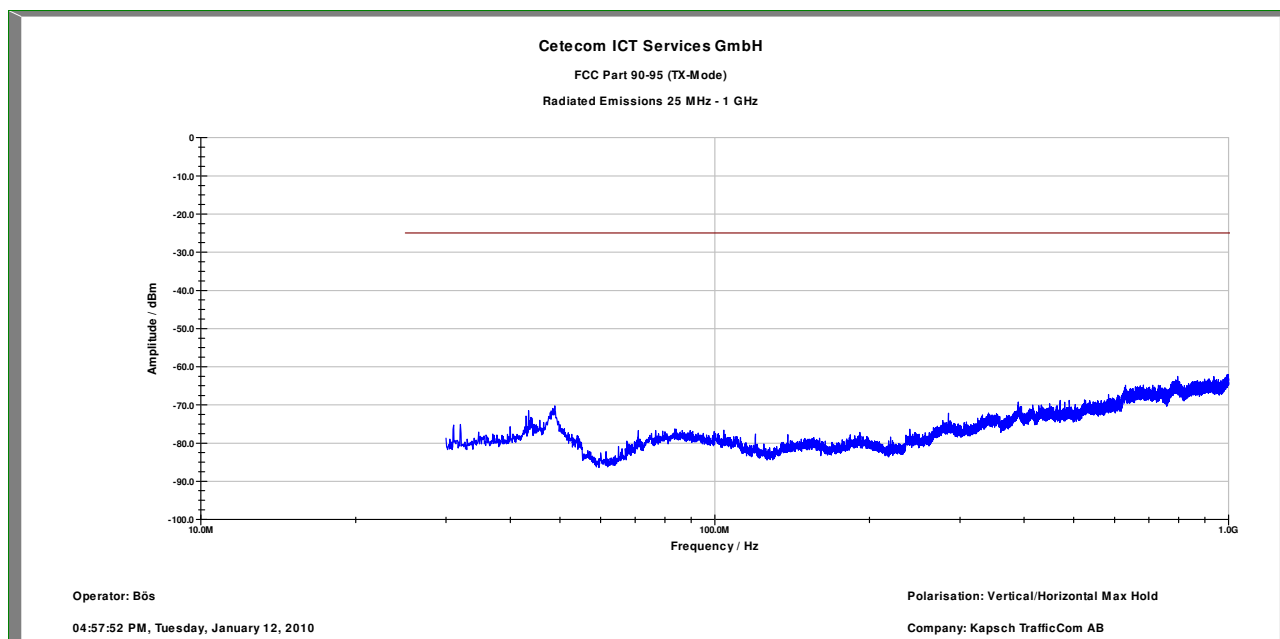
Plot 6: 5880 MHz, data rate 6 MBit/s, 30 MHz – 1 GHz, Max. hor./vert. polarization



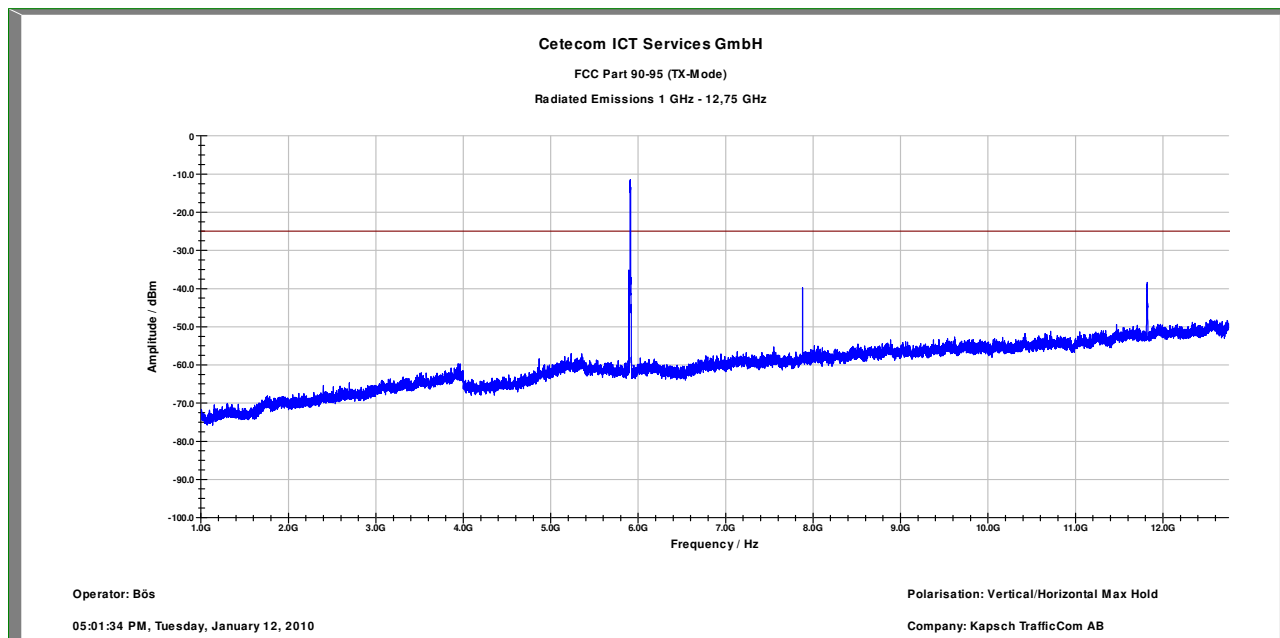
Plot 7: 5880 MHz, data rate 6 MBit/s, 1 GHz – 12.75 GHz, Max. hor./vert. polarization



Plot 8: 5910 MHz, data rate 6 MBit/s, 30 MHz – 1 GHz, Max. hor./vert. polarization



Plot 9: 5910 MHz, data rate 6 MBit/s, 1 GHz – 12.75 GHz, Max. hor./vert. polarization





Results:

SPURIOUS EMISSIONS LEVEL								
5860 MHz			5880 MHz			5910 MHz		
F [MHz]	Detector	Level [dBm]	F [MHz]	Detector	Level [dBm]	F [MHz]	Detector	Level [dBm]
7813.3	PP	-28.4	7385.0	PP	-29.8	7880.0	PP	-29.1
11720.0	PP	-26.5	11760.0	PP	-31.9	11820.0	PP	-34.1
17580.0	PP	-57.7						
Measurement uncertainty			±3 dB					

RBW = 100 kHz

VBW = 30 kHz

Limit:

Under normal test conditions only	-25 dBm
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## 6 Test equipment and ancillaries used for tests

To simplify the identification on each page of the test equipment used, on each page of the test report, each item of test equipment and ancillaries such as cables are identified (numbered) by the Test Laboratory, below.

All reported calibration intervals are calibrations according to the EN/ISO/IEC 17025 standard. These calibrations were performed from an accredited external calibration laboratory.

Additional to these calibrations the laboratory performed comparison measurements with other calibrated systems and performed a weekly chamber inspection.

All used devices are connected with a 10 MHz external reference.

According to the manufacturers' instruction is it possible to establish a calibration interval for the FSP unit of 24 month, if the device has an external 10 MHz reference.

### *Anechoic chamber C:*

No	Equipment/Type	Manuf.	Serial Nr.	Inv. No. Cetecom	Last Calibration	Frequency (months)	Next Calibration
1	Anechoic chamber	MWB	87400/02	300000996	Monthly verification		
2	System-Rack 85900	HP I.V.	*	300000222	n.a.		
3	Measurement System 1						
4	PSA-Spektrumanalysator 3 Hz - 26.5 GHz (E4440A)	Agilent	MY48250080	300003812	05.08.2008	24	05.08.2010
5	EMI Preselector 9 kHz - 1 GHz (N9039A)	Agilent	MY48260003	300003825	19.08.2008	24	19.08.2010
6	Microwave Analog Signal Generator (N5183A)	Agilent	MY47420220	300003813	06.08.2008	24	06.08.2010
7	PC	F+W			n.a.		
8	TILE	TILE			n.a.		
9	TRILOG Super Broadband Antenna (VULB9163)	Schwarzbeck	371	300003854	Monthly verification (System cal.)		
10	Double Ridged Antenna 3115	EMCO	3088	300001032	Monthly verification (System cal.)		
11	Active Loop Antenna 6502	EMCO	2210	300001015	Monthly verification (System cal.)		
12	Switch / Control Unit 3488A	HP	2719A15013	300001156	n.a.		
13	Power Supply 6032A	HP	2818A03450	300001040	08.01.2009	36	08.01.2012
14	Busisolator	Kontron		300001056	n.a.		
15	Leitungsteiler 11850C	HP		300000997	Monthly verification (System cal.)		
16	Power attenuator 8325	Byrd	1530	300001595	Monthly verification (System cal.)		
17	Band reject filter WRCG1855/1910	Wainwright	7	300003350	Monthly verification (System cal.)		
18	Band reject filter WRCG2400/2483	Wainwright	11	300003351	Monthly verification (System cal.)		
19	Hochpassfilter WHK1.1/15G-10SS	Wainwright	3	300003255	Monthly verification (System cal.)		
20	Hochpassfilter WHKX2.9/18G-12SS	Wainwright	1	300003492	Monthly verification (System cal.)		
21	Hochpassfilter WHKX7.0/18G-8SS	Wainwright	18	300003789	Monthly verification (System cal.)		
22	Switch / Control Unit 3488A	HP	2605e08770	300001443	n.a.		
23	Trenntrafo RT5A	Grundig	9242	300001263	n.a.		
24	Relais Matrix PSU	R&S	890167/024	300001168	n.a.		
25	Netznachbildung ESH3-Z5	R&S	828576/020	300001210	n.a.		

**System Rack Room 005:**

No	Equipment/Type	Manuf.	Serial Nr.	Inv. No. Cetecom	Last Calibration	Frequency (months)	Next Calibration
1	FSP 30	R&S	100886	300003575	25.08.2008	24	25.08.2010
2	CBT	R&S	100313	300003516	03.09.2008	24	03.09.2010
3	Switch Matrix	HP		300000929	n.a.		
4	Power Supply 6625A	HP	3041A00544	300002270	13.05.2007	36	13.05.2010
5	Signal Generator SMIQ03B	R&S	836206/0092	300002680	30.05.2007	36	30.05.2010

**Signalling Units:**

No	Equipment/Type	Manuf.	Serial Nr.	Inv. No. Cetecom	Last Calibration	Frequency (months)	Next Calibration
1	CBT	R&S	100313	300003516	03.09.2008	24	03.09.2010
2	CBT	R&S	100185	300003416	27.08.2008	24	27.08.2010
3	CMU-200	R&S	103992	300003231	04.06.2008	24	04.06.2010
4	CMU-200	R&S	106240	300003321	27.08.2008	24	27.08.2010
5	CMU-200	R&S	832221/0055	300002862	20.03.2008	24	20.03.2010

**Climatic Box:**

No	Equipment/Type	Manuf.	Serial Nr.	Inv. No. Cetecom	Last Calibration	Frequency (months)	Next Calibration
1	Climatic box VT 4002	Heraeus Vötsch	58566046820010	300003019	28.05.2009	24	28.05.2011
2	Climatic box CTS T-40/50	CTS	064023	300003540	04.06.2009	24	04.06.2011

**SRD Laboratory Room 005:**

No	Equipment/Type	Manuf.	Serial Nr.	Inv. No. Cetecom	Last Calibration	Frequency (months)	Next Calibration
1	Spektrum Analyzer 8566B	HP	2747A05275	300000219	18.01.2008	24	18.01.2010
2	Spektrum Analyzer Display 85662A	HP	2816A16497	300001690	23.01.2008	24	23.01.2010
3	Quasi-Peak-Adapter 85650A	HP	2811A01135	300000216	23.01.2008	24	23.01.2010
4	Power Supply	Heiden	003202	300001187	12.05.2007	36	12.05.2010
5	Power Supply	Heiden	1701	300001392	12.05.2007	36	12.05.2010

**SRD Laboratory Room 011:**

No	Equipment/Type	Manuf.	Serial Nr.	Inv. No. Cetecom	Last Calibration	Frequency (months)	Next Calibration
1	NRP Power Meter	R&S	100212	300003780	27.02.2008	24	27.02.2010

*Anechoic chamber F:*

No	Equipment/Type	Manuf.	Serial Nr.	Inv. No. Cetecom	Last Calibration	Frequency (months)	Next Calibration
1	Control Computer	F+W	FW0502032	300003303	-/-	-/-	-/-
2	Trilog Antenna VULB 9163	Schwarzbeck	295	300003787	01.04.2008	24	01.04.2010
3	Amplifier - 0518C-138	Veritech Micro- wave Inc.	-/-	-/-	-/-	-/-	-/-
4	Switch - 3488A	HP		300000368	-/-	-/-	-/-
5	EMI Test receiver - ESCI	R&S	100083	300003312	01.06.2009	24	01.06.2011
6	Turntable Controller - 1061 3M	EMCO	1218	300000661	-/-	-/-	-/-
7	Tower Controller 1051 Controller	EMCO	1262	300000625	-/-	-/-	-/-
8	Tower - 1051	EMCO	1262	300000625	-/-	-/-	-/-
10	Ultra Notch-Filter Rejected band Ch. 62	WRCD	9	-/-	-/-	-/-	-/-