

Result: Also see plots

TX spurious emissions radiated [dBµV/m]								
2402 MHz			2440 MHz			2480 MHz		
F [MHz]	Detector	Level [dBµV/m]	F [MHz]	Detector	Level [dBµV/m]	F [MHz]	Detector	Level [dBµV/m]
Spurious < 1GHz see table in Plot 1			Spurious < 1GHz see table in Plot 4			Spurious < 1GHz see table in Plot 7		
4804	1 MHz PP	54.48	4880	1 MHz PP	55.62	4960	1 MHz PP	56.39
4804	1 MHz / 10 Hz	36.84	4880	1 MHz / 10 Hz	40.12	4960	1 MHz / 10 Hz	42.49
Measurement uncertainty			± 3 dB					

Result: The result of the measurement is passed.

Plot 1: 30 MHz to 1 GHz / lowest channel (horizontal/vertical)

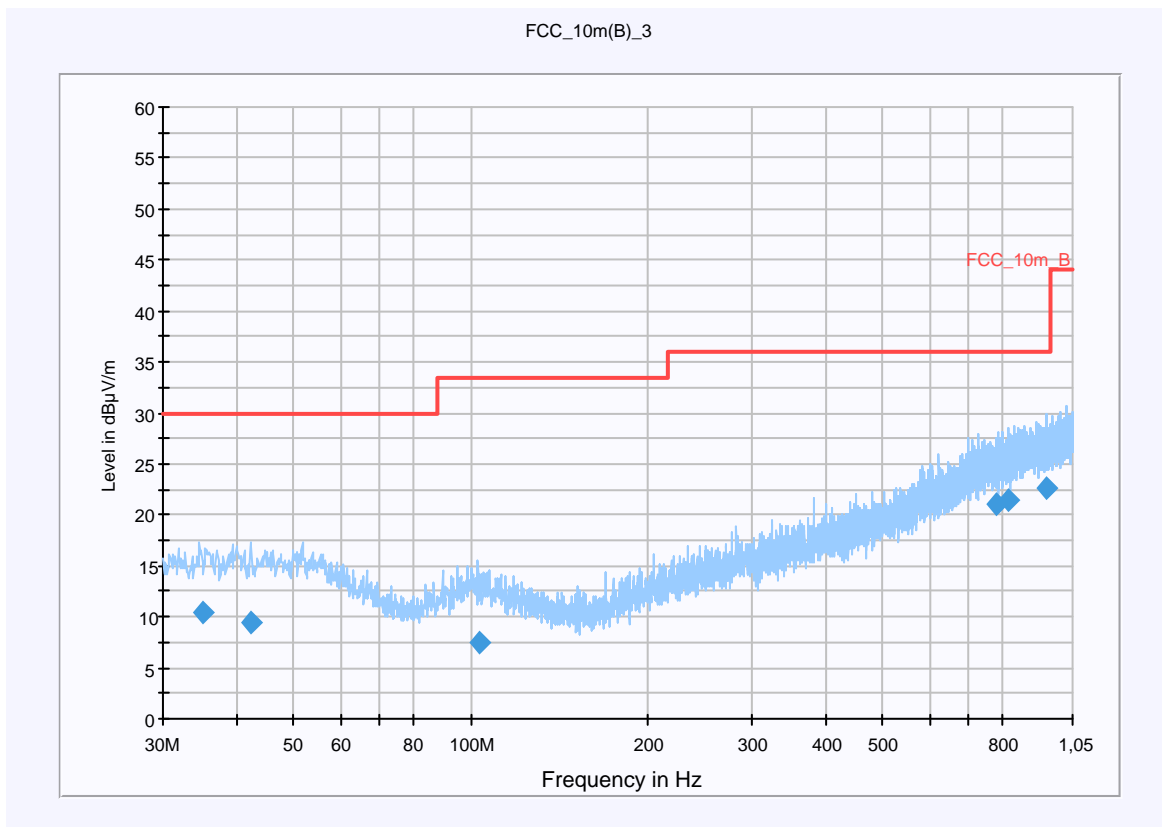
CETECOM ICT Services GmbH

Common Information

EUT: GB-6900
 Serial Number: unknown
 Test Description: FCC part 15 class B @ 10 m
 Operating Conditions: TX Ch. 0
 Operator Name: Hennemann
 Comment: DC: 3 V

Scan Setup: STAN_Fin [EMI radiated]

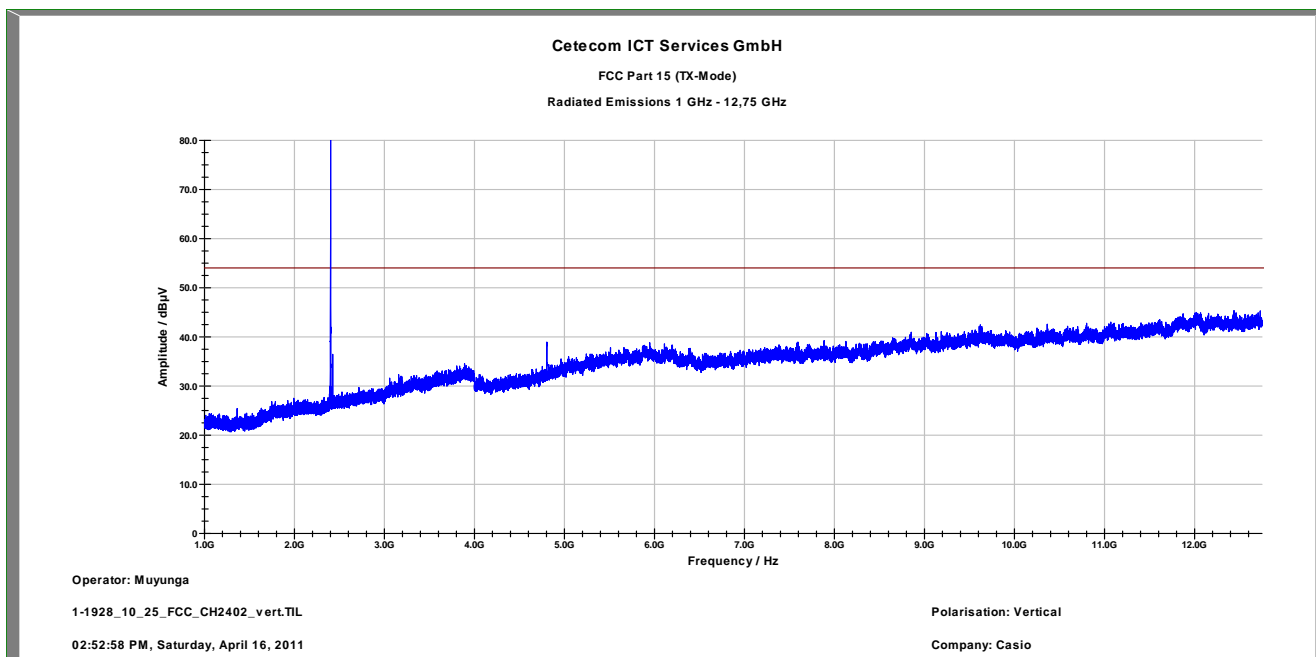
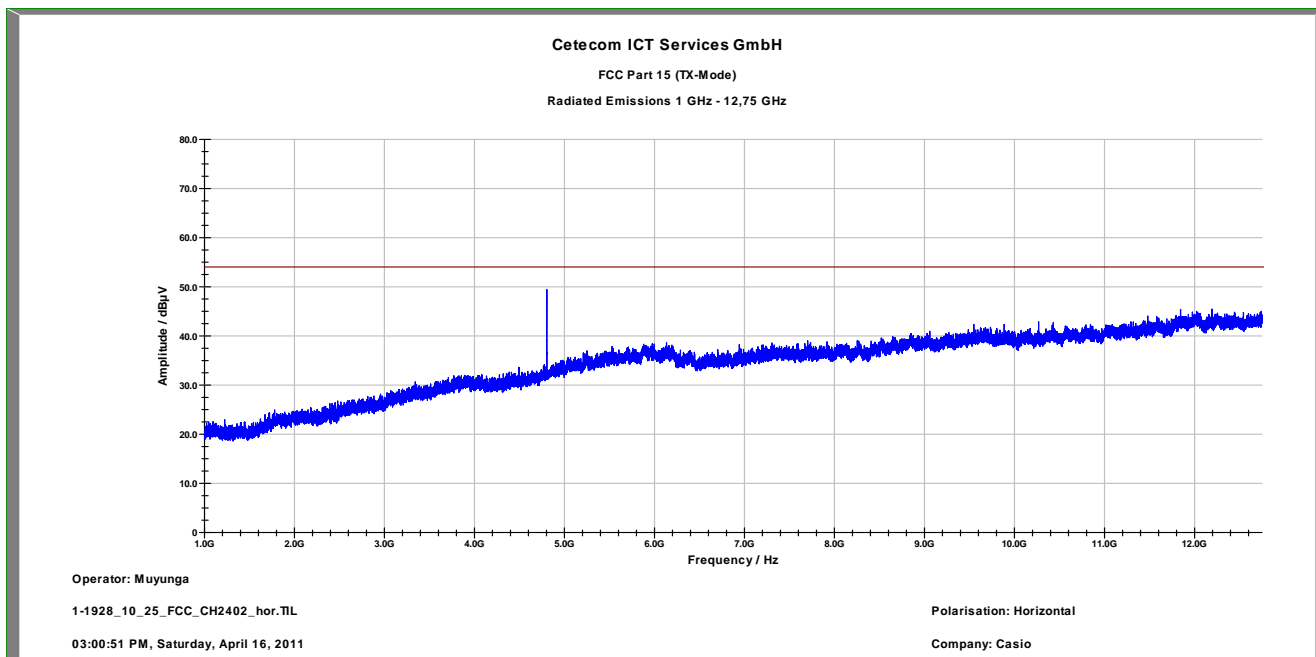
Hardware Setup: Electric Field (NOS)
 Level Unit: dB μ V/m
Subrange **Detectors** **IF Bandwidth** **Meas. Time** **Receiver**
 30 MHz - 2 GHz QuasiPeak 120 kHz 15 s Receiver



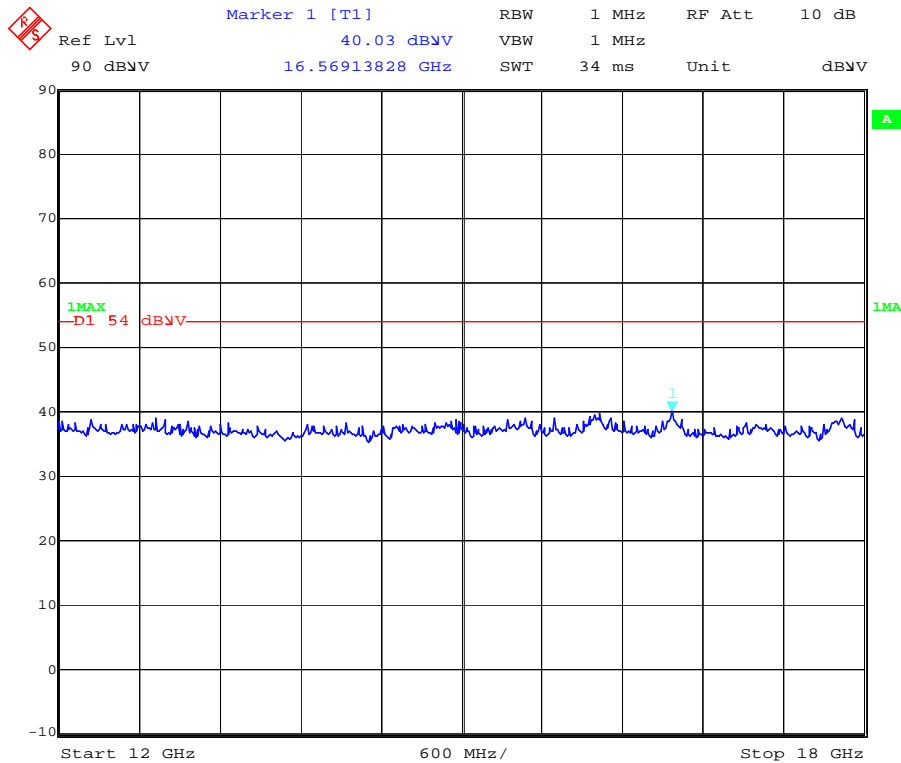
Final Result 1

Frequency (MHz)	QuasiPeak (dB μ V/m)	Meas. Time (ms)	Bandwidth (kHz)	Antenna height (cm)	Polarity	Turntable position (deg)	Corr. (dB)	Margin (dB)	Limit (dB μ V/m)	Comment
35.160750	10.3	15000.000	120.000	144.0	H	161.0	13.0	19.7	30.0	
42.299250	9.5	15000.000	120.000	207.0	H	-5.0	13.4	20.5	30.0	
103.360800	7.5	15000.000	120.000	177.0	V	236.0	11.6	26.0	33.5	
782.724750	21.1	15000.000	120.000	98.0	H	258.0	23.7	14.9	36.0	
818.639550	21.5	15000.000	120.000	212.0	H	146.0	24.1	14.5	36.0	
949.566750	22.6	15000.000	120.000	98.0	H	74.0	25.4	13.4	36.0	

Plot 2: 1 GHz to 12.75 GHz / lowest channel (horizontal/vertical)



Plot 3: 12 GHz to 25 GHz / lowest channel (horizontal/vertical) – valid for all channels



Date: 16.APR.2011 18:21:15



Date: 16.APR.2011 18:28:13

Plot 4: 30 MHz to 1 GHz / mid channel (horizontal/vertical)

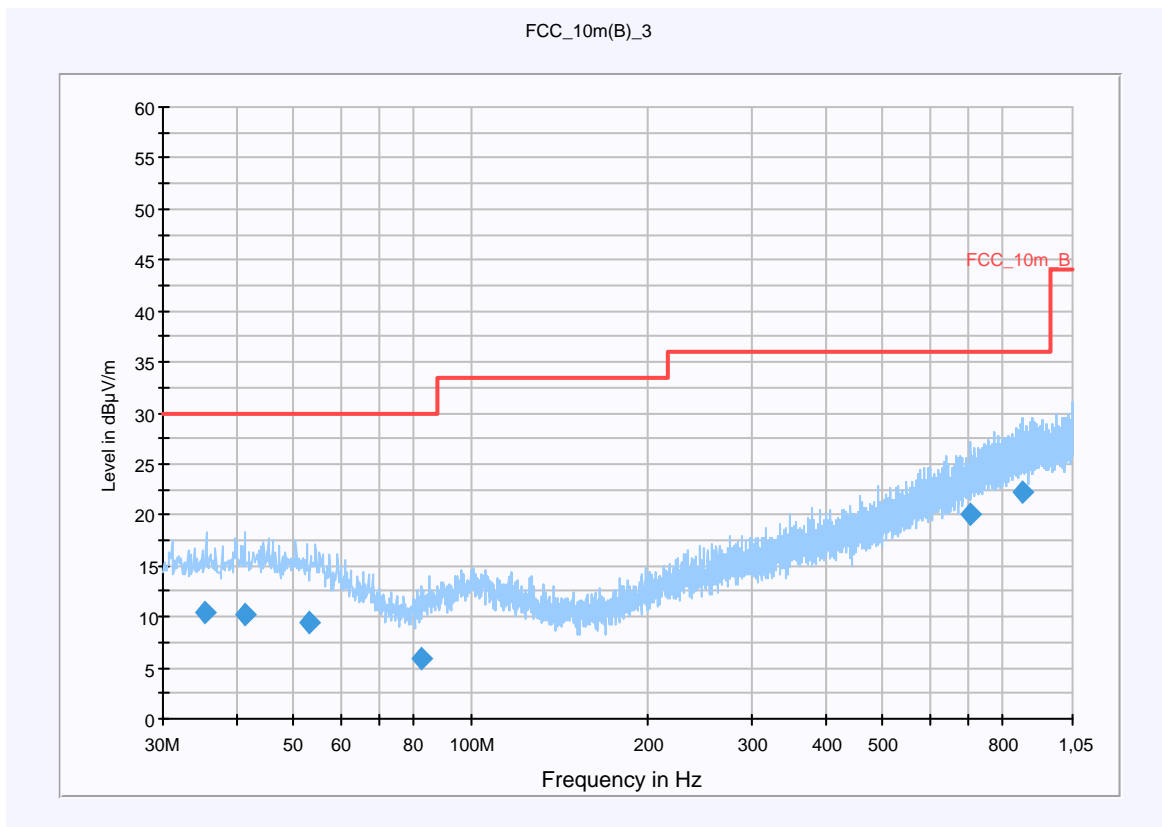
CETECOM ICT Services GmbH

Common Information

EUT: GB-6900
 Serial Number: unknown
 Test Description: FCC part 15 class B @ 10 m
 Operating Conditions: TX Ch. 19
 Operator Name: Hennemann
 Comment: DC: 3 V

Scan Setup: STAN_Fin [EMI radiated]

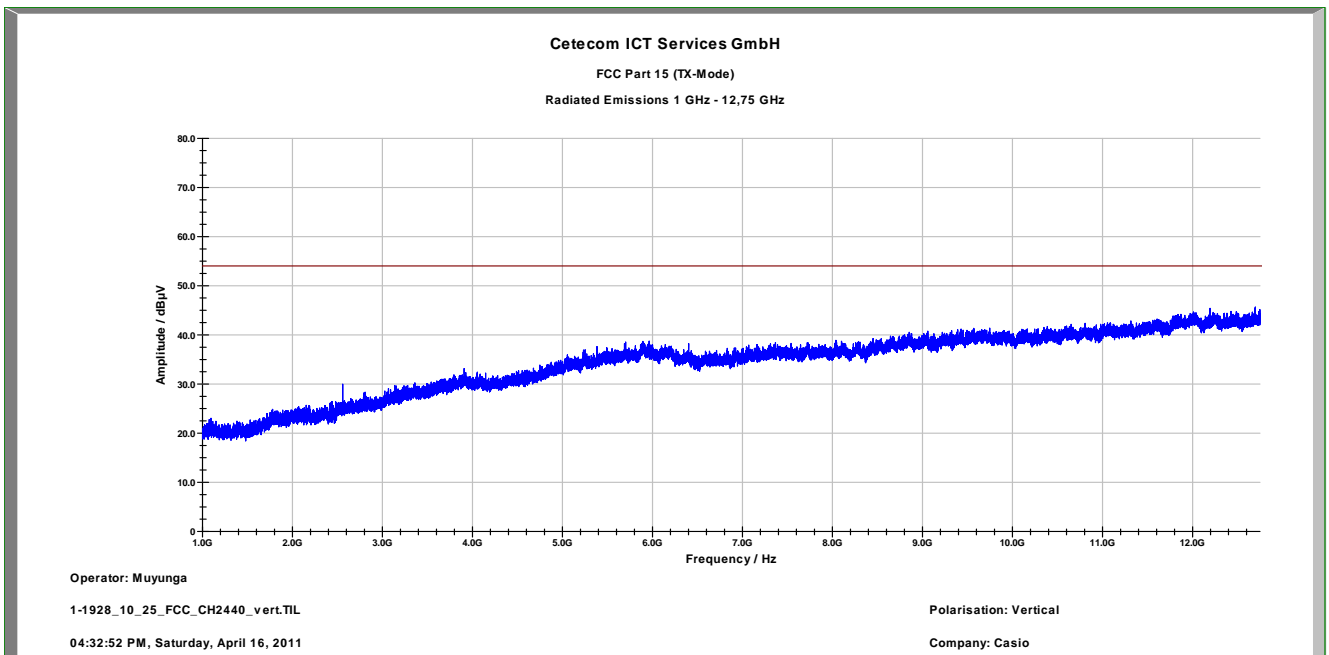
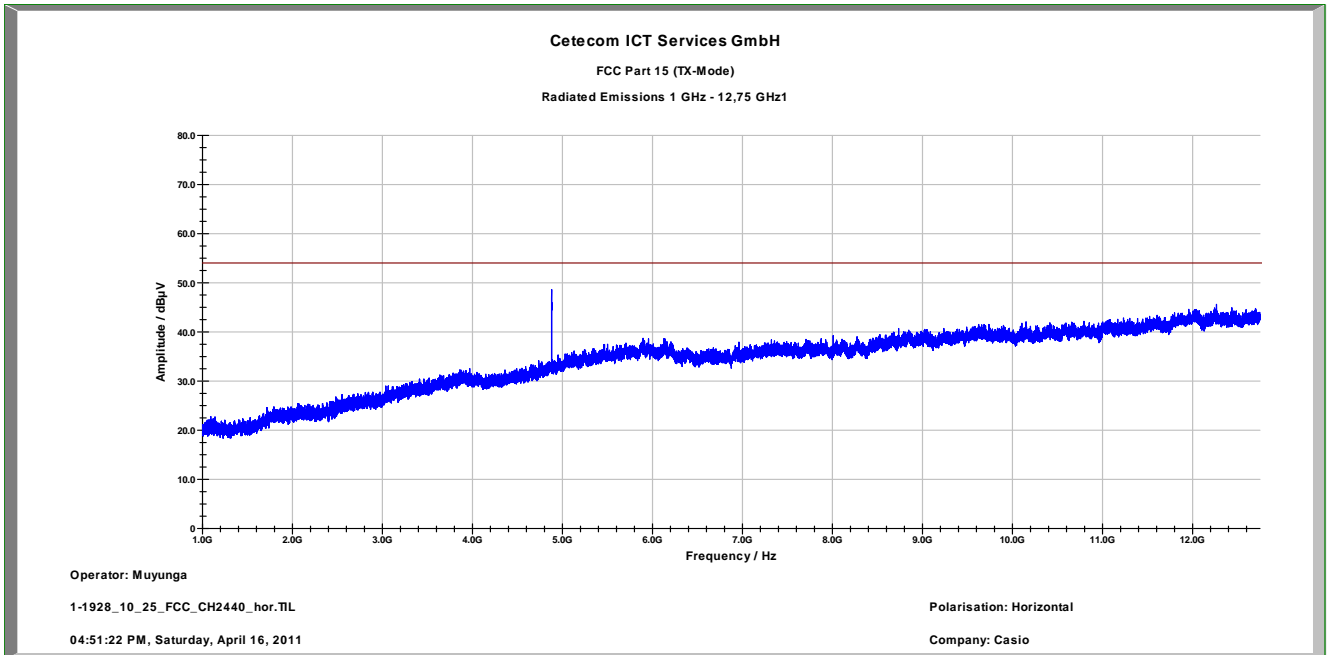
Hardware Setup: Electric Field (NOS)
 Level Unit: dB μ V/m
Subrange **Detectors** **IF Bandwidth** **Meas. Time** **Receiver**
 30 MHz - 2 GHz QuasiPeak 120 kHz 15 s Receiver



Final Result 1

Frequency (MHz)	QuasiPeak (dB μ V/m)	Meas. Time (ms)	Bandwidth (kHz)	Antenna height (cm)	Polarity	Turntable position (deg)	Corr. (dB)	Margin (dB)	Limit (dB μ V/m)	Comment
35.391750	10.4	15000.000	120.000	220.0	H	82.0	13.1	19.6	30.0	
41.437800	10.1	15000.000	120.000	135.0	H	71.0	13.4	19.9	30.0	
52.992900	9.4	15000.000	120.000	106.0	V	324.0	13.1	20.6	30.0	
82.363200	5.8	15000.000	120.000	186.0	V	25.0	9.4	24.2	30.0	
703.872900	20.1	15000.000	120.000	220.0	H	53.0	22.6	15.9	36.0	
861.544350	22.2	15000.000	120.000	220.0	V	249.0	24.7	13.8	36.0	

Plot 5: 1 GHz to 12.75 GHz / mid channel (horizontal/vertical)



Plot 6: 12 GHz to 25 GHz / lowest channel- valid for all channels



Date: 16.APR.2011 18:23:15



Date: 16.APR.2011 18:30:32

Plot 7: 30 MHz to 1 GHz / highest channel (horizontal/vertical)

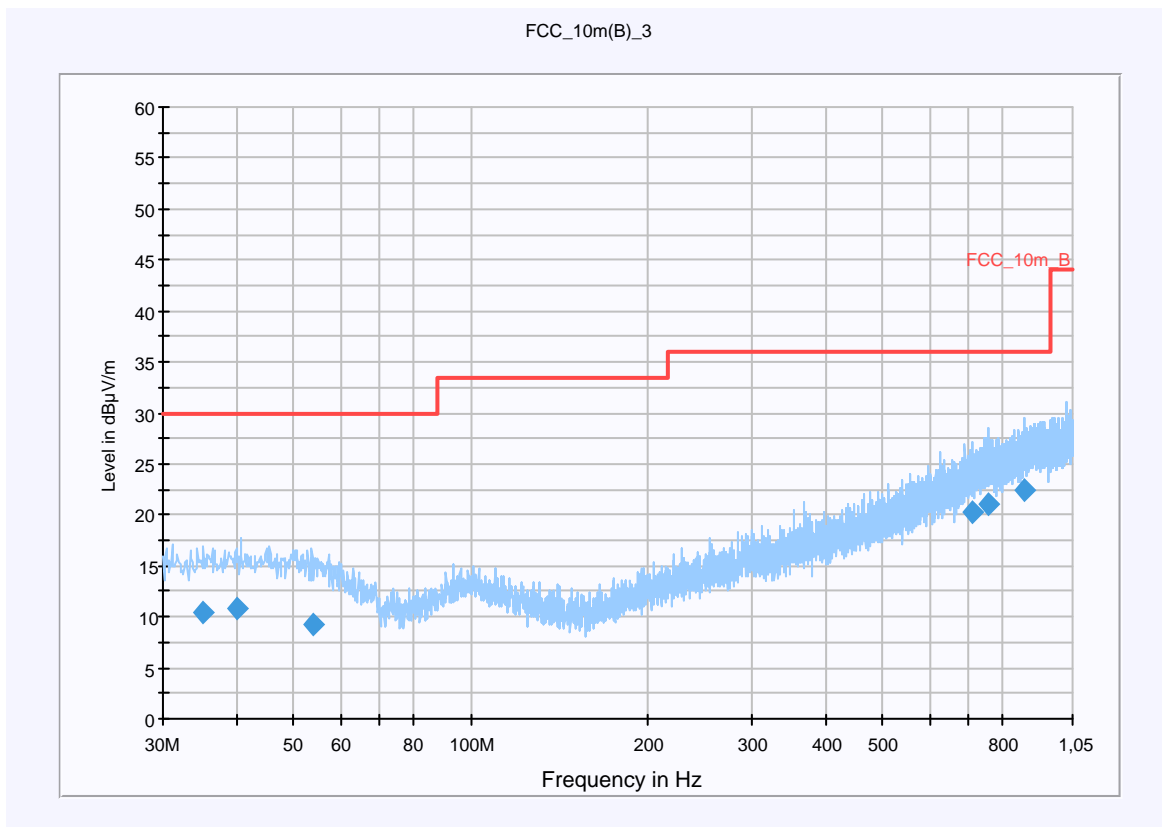
CETECOM ICT Services GmbH

Common Information

EUT: GB-6900
 Serial Number: unknown
 Test Description: FCC part 15 class B @ 10 m
 Operating Conditions: TX Ch. 39
 Operator Name: Hennemann
 Comment: DC: 3 V

Scan Setup: STAN_Fin [EMI radiated]

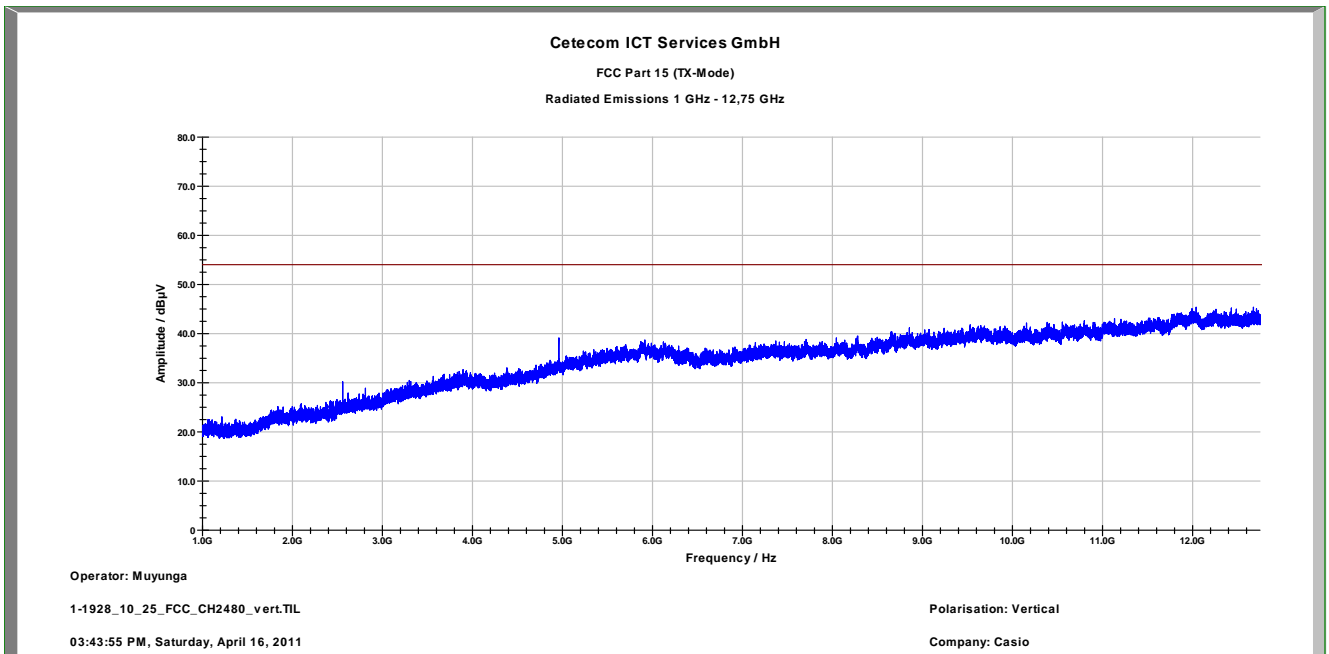
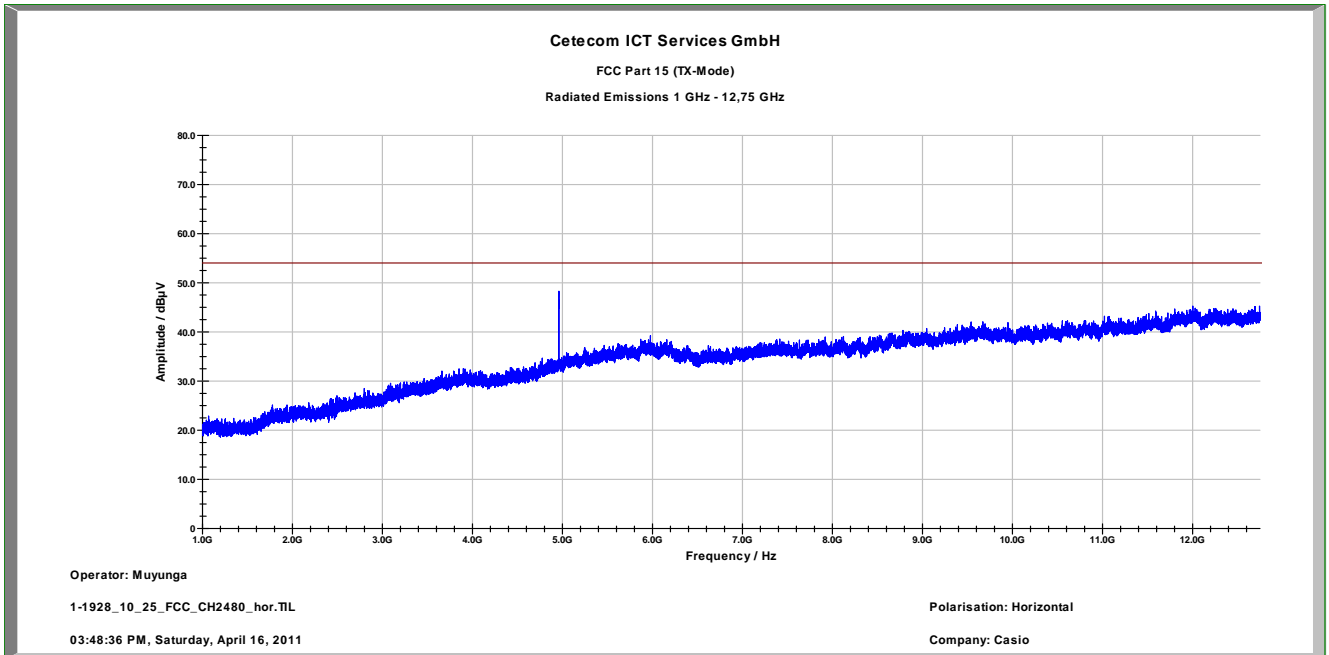
Hardware Setup: Electric Field (NOS)
 Level Unit: dB μ V/m
Subrange **Detectors** **IF Bandwidth** **Meas. Time** **Receiver**
 30 MHz - 2 GHz QuasiPeak 120 kHz 15 s Receiver



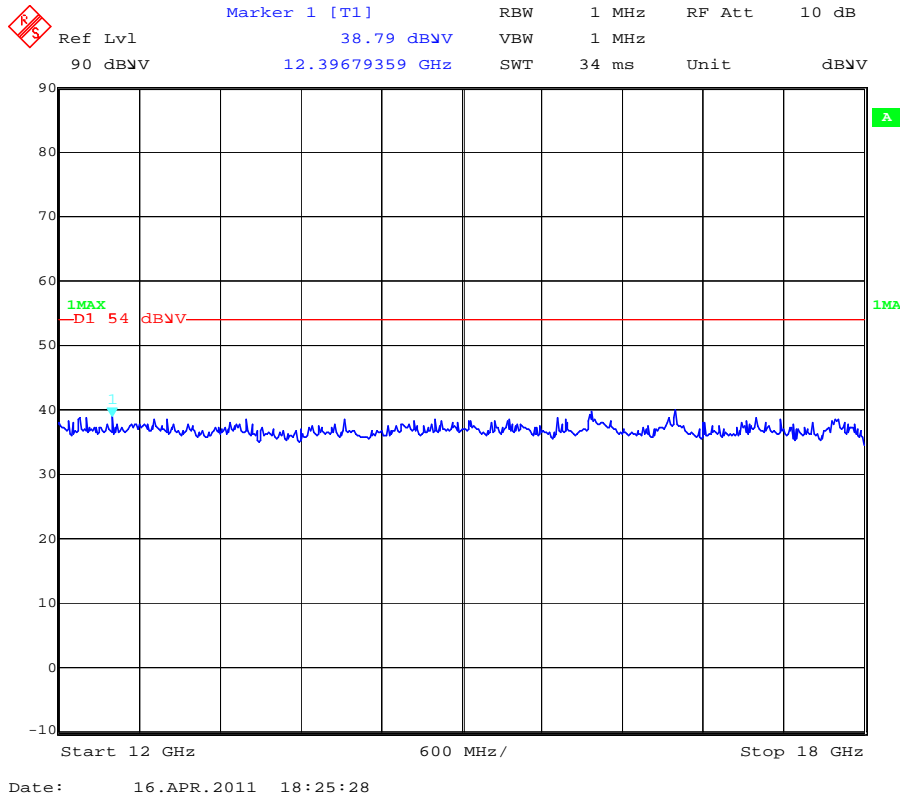
Final Result 1

Frequency (MHz)	QuasiPeak (dB μ V/m)	Meas. Time (ms)	Bandwidth (kHz)	Antenna height (cm)	Polarity	Turntable position (deg)	Corr. (dB)	Margin (dB)	Limit (dB μ V/m)	Comment
35.177400	10.4	15000.000	120.000	98.0	V	198.0	13.0	19.6	30.0	
40.204650	10.8	15000.000	120.000	202.0	H	48.0	13.4	19.2	30.0	
53.903250	9.3	15000.000	120.000	174.0	H	308.0	13.0	20.7	30.0	
710.292150	20.3	15000.000	120.000	167.0	V	140.0	22.7	15.7	36.0	
756.815850	21.1	15000.000	120.000	220.0	H	238.0	23.7	14.9	36.0	
868.721400	22.4	15000.000	120.000	108.0	H	48.0	24.8	13.6	36.0	

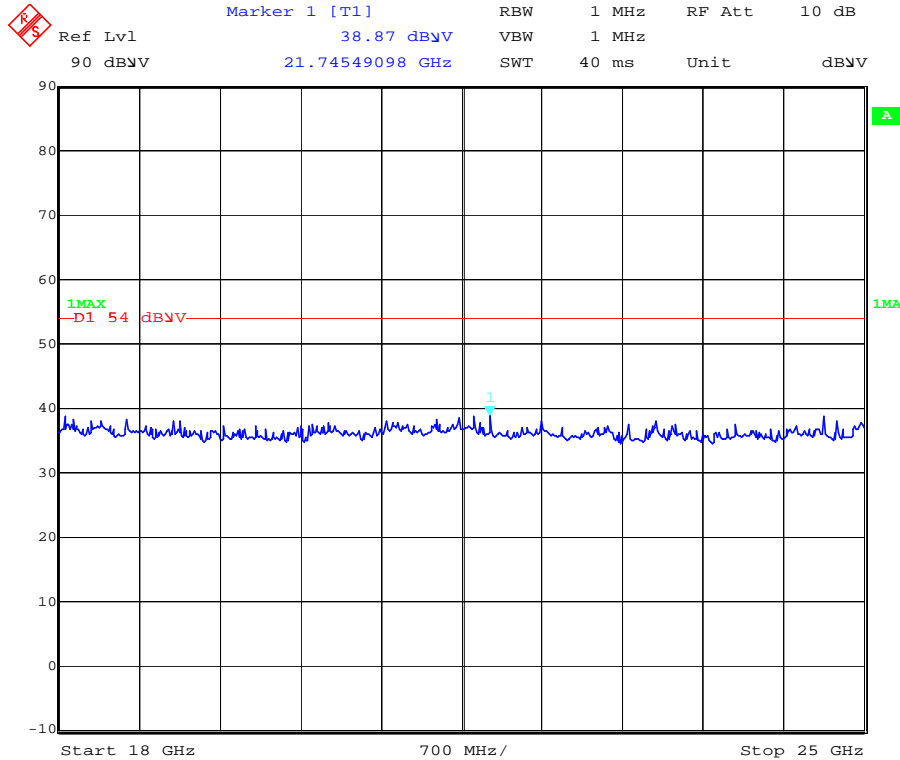
Plot 8: 1 GHz to 12.75 GHz / highest channel (horizontal/vertical)



Plot 9: 12 GHz to 25 GHz / lowest channel (horizontal/vertical) – valid for all channels



Date: 16.APR.2011 18:25:28



Date: 16.APR.2011 18:32:24

9.12 RX spurious emissions radiated

Description:

Measurement of the radiated spurious emissions in idle/receive mode. The EUT is detached so all oscillators are active.

Measurement:

Measurement parameter	
Detector:	Peak / Quasi peak
Sweep time:	Auto
Video bandwidth:	Sweep: 100 kHz Remeasurement: 10 Hz
Resolution bandwidth:	F < 1 GHz: 100 kHz F > 1 GHz: 1 MHz
Span:	30 MHz to 25 GHz
Trace-Mode:	Max Hold

Limits:

FCC		IC
CFR Part 15.109		RSS Gen, Issue 2, 4.10
RX Spurious Emissions Radiated		
Frequency (MHz)	Field strength (dBµV/m)	Measurement distance
30 - 88	30.0	10
88 – 216	33.5	10
216 – 960	36.0	10
Above 960	54.0	3

Result: Also see plots

RX spurious emissions radiated [dBµV/m]		
F [MHz]	Detector	Level [dBµV/m]
No critical peaks found.		
Measurement uncertainty	±3 dB	

Result: The result of the measurement is passed.

Plot 1: 30 MHz to 1 GHz / idle-mode (horizontal/vertical)

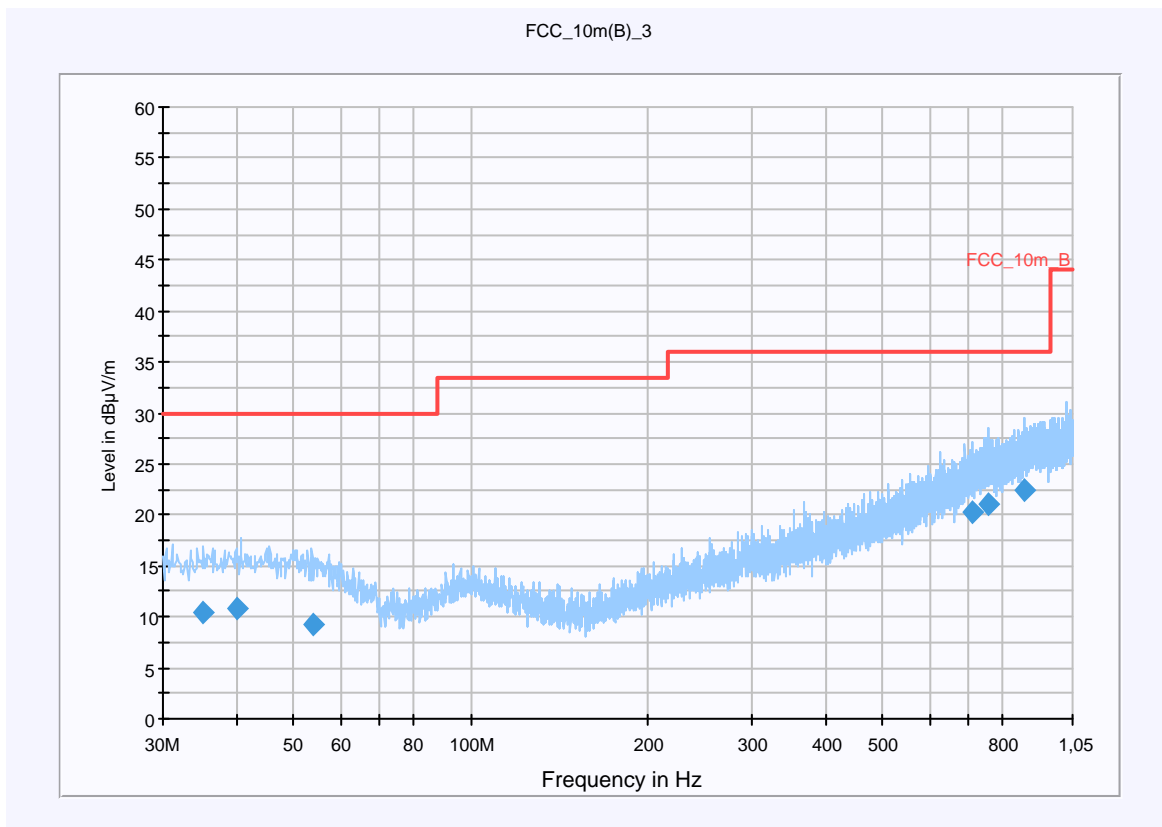
CETECOM ICT Services GmbH

Common Information

EUT: GB-6900
 Serial Number: unknown
 Test Description: FCC part 15 class B @ 10 m
 Operating Conditions: TX Ch. 39
 Operator Name: Hennemann
 Comment: DC: 3 V

Scan Setup: STAN_Fin [EMI radiated]

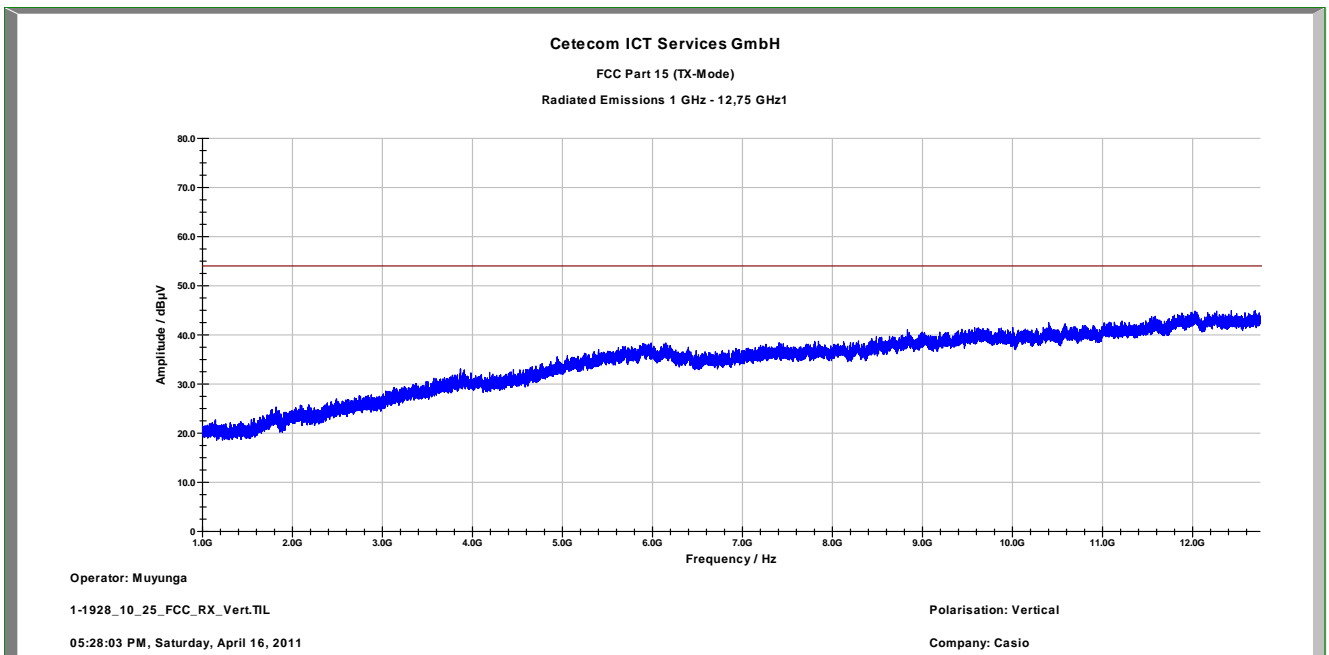
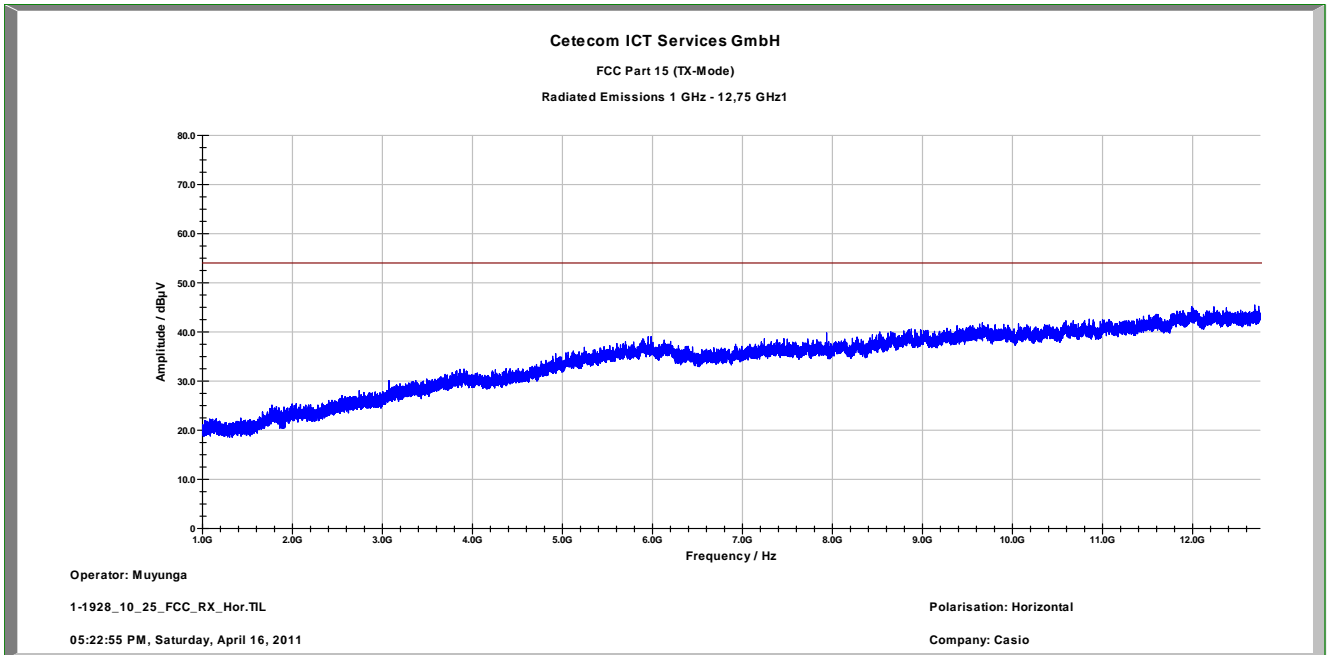
Hardware Setup: Electric Field (NOS)
 Level Unit: dB μ V/m
Subrange **Detectors** **IF Bandwidth** **Meas. Time** **Receiver**
 30 MHz - 2 GHz QuasiPeak 120 kHz 15 s Receiver



Final Result 1

Frequency (MHz)	QuasiPeak (dB μ V/m)	Meas. Time (ms)	Bandwidth (kHz)	Antenna height (cm)	Polarity	Turntable position (deg)	Corr. (dB)	Margin (dB)	Limit (dB μ V/m)	Comment
35.177400	10.4	15000.000	120.000	98.0	V	198.0	13.0	19.6	30.0	
40.204650	10.8	15000.000	120.000	202.0	H	48.0	13.4	19.2	30.0	
53.903250	9.3	15000.000	120.000	174.0	H	308.0	13.0	20.7	30.0	
710.292150	20.3	15000.000	120.000	167.0	V	140.0	22.7	15.7	36.0	
756.815850	21.1	15000.000	120.000	220.0	H	238.0	23.7	14.9	36.0	
868.721400	22.4	15000.000	120.000	108.0	H	48.0	24.8	13.6	36.0	

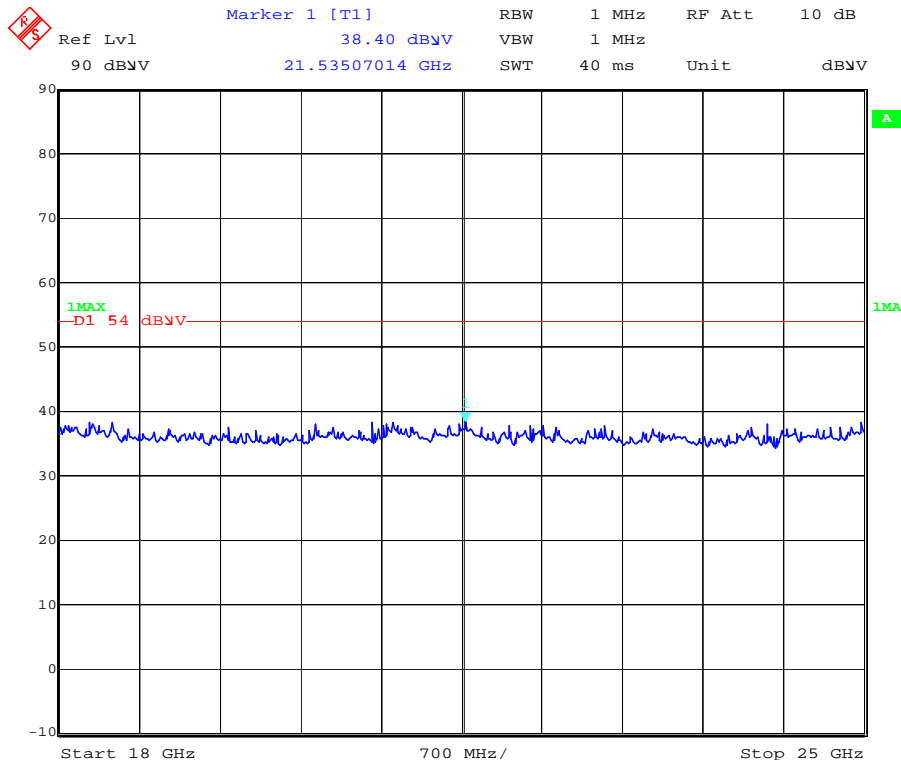
Plot 2: 1 GHz to 12.75 GHz / idle-mode (horizontal/vertical)



Plot 3: 12 GHz to 25 GHz / idle-mode (horizontal/vertical)



Date: 16.APR.2011 18:26:42



Date: 16.APR.2011 18:33:31

9.13 TX spurious emissions radiated < 30 MHz

Description:

Measurement of the radiated spurious emissions in transmit mode below 30 MHz. The EUT is set to single channel mode and the transmit channel is channel 39. This measurement is representative for all channels and modes. If critical peaks are found channel 00 and channel 78 will be measured too. The measurement is performed in the mode with the highest output power. The limits are recalculated to a measurement distance of 3 m with 40 dB/decade according CFR Part 2.

Measurement:

Measurement parameter	
Detector:	Peak / Quasi peak
Sweep time:	Auto
Video bandwidth:	F < 150 kHz: 200 Hz F > 150 kHz: 9 kHz
Resolution bandwidth:	F < 150 kHz: 1 kHz F > 150 kHz: 100 kHz
Span:	9 kHz to 30 MHz
Trace-Mode:	Max Hold

Limits:

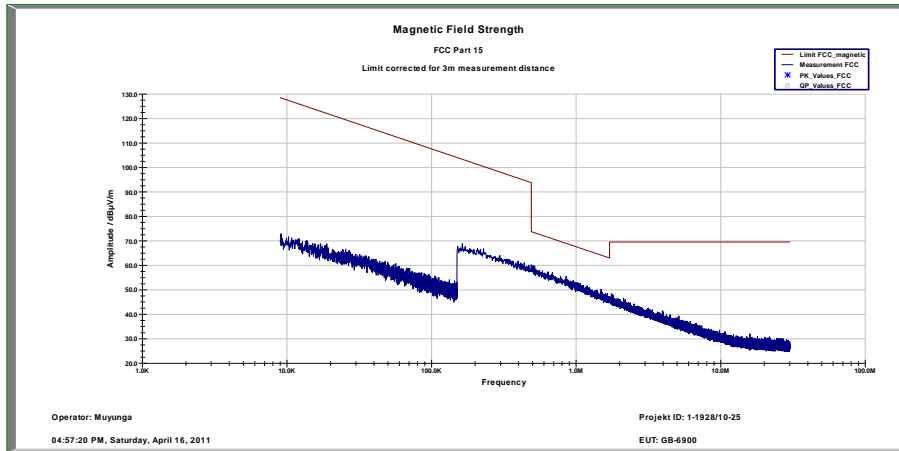
FCC		IC	
CFR Part 15.209(a)		RSS 210, Issue 8, 2.2	
TX spurious emissions radiated < 30 MHz			
Frequency (MHz)	Field strength (dBµV/m)	Measurement distance	
0.009 – 0.490	2400/F(kHz)	300	
0.490 – 1.705	24000/F(kHz)	30	
1.705 – 30.0	30	30	

Result: Also see plot

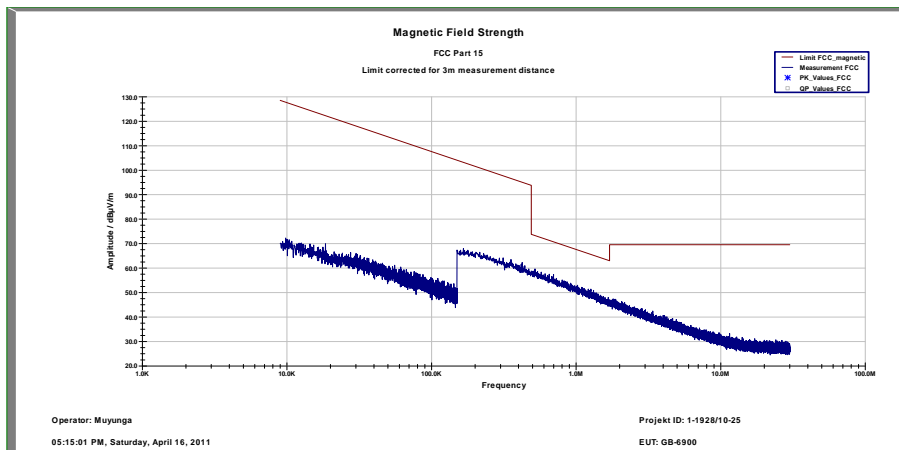
TX spurious emissions radiated < 30 MHz [dBµV/m]		
F [MHz]	Detector	Level [dBµV/m]
No critical peaks found		
Measurement uncertainty	± 3 dB	

Result: The result of the measurement is passed.

Plot 1: 9 kHz to 30 MHz / mid channel (valid for all channels)



Plot 1: 9 kHz to 30 MHz / idle mode



9.14 TX spurious emissions conducted < 30 MHz

Not applicable

10 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).

No.	Lab / Item	Equipment	Type	Manufact.	Serial No.	INV. No Cetecom	Kind of Calibration	Last Calibration	Next Calibration
1	n. a.	Antenna Tower	Model 2175	ETS-LINDGREN	64762	300003745	izw		
2	n. a.	Positioning Controller	Model 2090	ETS-LINDGREN	64672	300003746	izw		
3	n. a.	Turntable Interface-Box	Model 105637	ETS-LINDGREN	44583	300003747	izw		
4	n. a.	TRILOG Broadband Test-Antenna 30 MHz - 3 GHz	VULB9163	Schwarzbeck	295	300003787	k	01.04.2010	01.04.2012
5	n. a.	Spectrum-Analyzer	FSU26	R&S	200809	300003874	k	10.01.2011	10.01.2013
6	n. a.	Switch / Control Unit	3488A	HP Meßtechnik		300001691	ne		
7	n. a.	Power Supply DC	NGPE 40/40	R&S	388	400000078	viKI!	13.09.2010	13.09.2012
8	n. a.	Power Sensor 50 Ohms, 10 MHz - 18 GHz, 1 nW - 20 mW	NRV-Z1	R&S	833894/011	300002681-0010	k	09.09.2010	09.09.2012
9	n. a.	Hygro-Thermometer	-/, 5-45°C, 20-100%rF	Thies Clima	-/	400000080	k	04.05.2010	04.05.2011
10	n. a.	Vector Signal Generator, 300 kHz to 2.2 GHz	SMIQ03B	R&S	835541/055	300002681-0001	k	25.08.2008	25.08.2011
11	n. a.	Vector Signal Generator, 300 kHz to 2.2 GHz	SMIQ03B	R&S	835541/056	300002681-0002	k	26.08.2008	26.08.2011
12	n. a.	Signal Generator 0.01/2 - 20 GHz, Frequ. Resol. 0.1Hz	SMP02	R&S	835133/011	300002681-0003	k	26.08.2008	26.08.2011
13	n. a.	Dual Channel Power Meter	NRVD	R&S	835430/044	300002681-0004	k	13.09.2010	13.09.2012
14	n. a.	Signal Analyzer 20Hz- 26,5GHz-150 to + 30 DBM	FSIQ26	R&S	835540/018	300002681-0005	k	07.01.2010	07.01.2012
15	n. a.	Frequency Standard (Rubidium Frequency Standard)	MFS (Rubidium)	R&S (Datum)	002	300002681-0009	Ve	13.09.2010	13.09.2012
16	n. a.	Directional Coupler	101020010	Krytar	70215	300002840	ev		
17	n. a.	DC-Blocker	8143	Inmet Corp.	none	300002842	ne		
18	n. a.	Powersplitter	6005-3	Inmet Corp.		300002841	ev		
19	n. a.	Temperature Test Chamber	VT 4002	Heraeus Voetsch	58566046820010	300003019	Ve	28.05.2009	28.05.2011
20	n. a.	CBT (Bluetooth Tester + EDR Signalling)	CBT 1153.9000K35	R&S	100185	300003416	viKI!	13.09.2010	13.09.2012
21	n. a.	Spectrum Analyzer 9kHz to 30GHz - 140..+30dBm	FSP30	R&S	100886	300003575	k	07.09.2010	07.09.2012
22	n. a.	CBT-K57	CBT-K57	R&S	101051	300003910	ne		

		Software-Option for CBT/CBT32							
23	n. a.	Isolating Transformer	RT5A	Grundig	8041	300001626	g		
24	n. a.	DC power supply, 60Vdc, 50A, 1200 W	6032A	HP Meßtechnik	2818A03450	300001040	Ve	08.01.2009	08.01.2012
25	n. a.	Coaxial Attenuator 30dB/500W	8325	Bird	1530	300001595	ev		
26	n. a.	Double-Ridged Waveguide Horn Antenna 1-18.0GHz	3115	EMCO	8812-3088	300001032	vlKI!	05.03.2009	05.09.2011
27	n. a.	Active Loop Antenna	6502	EMCO	2210	300001015	ne		
28	n. a.	Anechoic chamber	FAC 3/5m	MWB / TDK	87400/02	300000996		23.03.2009	
29	Spec.A. 2_2e	System rack for EMI measurement solution	85900	HP I.V.	*	300000222	ne		
30	9	Artificial Mains 9 kHz to 30 MHz	ESH3-Z5	R&S	828576/020	300001210	Ve	06.01.2010	06.01.2012
31	n. a.	Relais Matrix	3488A	HP Meßtechnik	2719A15013	300001156	ne		
32	n. a.	Relais Matrix	PSU	R&S	890167/024	300001168	ne		
33	n. a.	Isolating Transformer	RT5A	Grundig	9242	300001263	ne		
34	n. a.	Three-Way Power Splitter, 50 Ohm	11850C	HP Meßtechnik		300000997	ne		
35	n. a.	Switch / Control Unit	3488A	HP	2605e08770	300001443	ne		
36	n. a.	Amplifier	js42-00502650-28-5a	Parzich GMBH	928979	300003143	ne		
37	n. a.	Band Reject filter	WRCG1855/1910-1835/1925-40/8SS	Wainwright	7	300003350	ev		
38	n. a.	Band Reject filter	WRCG2400/2483-2375/2505-50/10SS	Wainwright	11	300003351	ev		
39	n. a.	TILE-Software Emission	Quantum Change, Modell TILE-ICS/FULL	EMCO	none	300003451	ne		
40	n. a.	Highpass Filter	WHKX2.9/18G-12SS	Wainwright	1	300003492	ev		
41	n. a.	Highpass Filter	WHK1.1/15G-10SS	Wainwright	3	300003255	ev		
42	n. a.	Highpass Filter	WHKX7.0/18G-8SS	Wainwright	18	300003789	ne		
43	n. a.	PSA Spectrum Analyzer 3 Hz - 26.5 GHz	E4440A	Agilent Technologies	MY48250080	300003812	k	08.09.2010	08.09.2012
44	n. a.	MXG Microwave Analog Signal Generator	N5183A	Agilent Technologies	MY47420220	300003813	k	13.09.2010	13.09.2012
45	n. a.	RF Filter Section 9kHz - 1GHz	N9039A	Agilent Technologies	MY48260003	300003825	vlKI!	08.09.2010	08.09.2012
46	n. a.	TRILOG Broadband Test-Antenna 30 MHz - 3 GHz	VULB9163	Schwarzbeck	371	300003854	vlKI!	17.12.2008	17.12.2011
48	n. a.	software	SPS_PHE 1.4f	Spitzberger & Spieß	B5981; 5D1081;B5979	300000210	ne		
49	n. a.	EMI Test Receiver	ESCI 1166.5950.03	R&S	100083	300003312	k	05.01.2011	05.01.2013
50	n. a.	Analyzer-Reference-System (Harmonics and Flicker)	ARS 16/1	SPS	A3509 07/0 0205	300003314	k	01.06.2009	01.06.2011
51	n. a.	Amplifier	JS42-00502650-28-5A	MITEQ	1084532	300003379	ev		

Agenda: Kind of Calibration

k	calibration / calibrated	EK	limited calibration
ne	not required (k, ev, izw, zw not required)	zw	cyclical maintenance (external cyclical maintenance)
ev	periodic self verification	izw	internal cyclical maintenance
Ve	long-term stability recognized	g	blocked for accredited testing
vkI!	Attention: extended calibration interval		
NK!	Attention: not calibrated	*)	next calibration ordered / currently in progress

Annex Photographs of the test setup

Photo documentation:
Photo 1:



Photo 2:

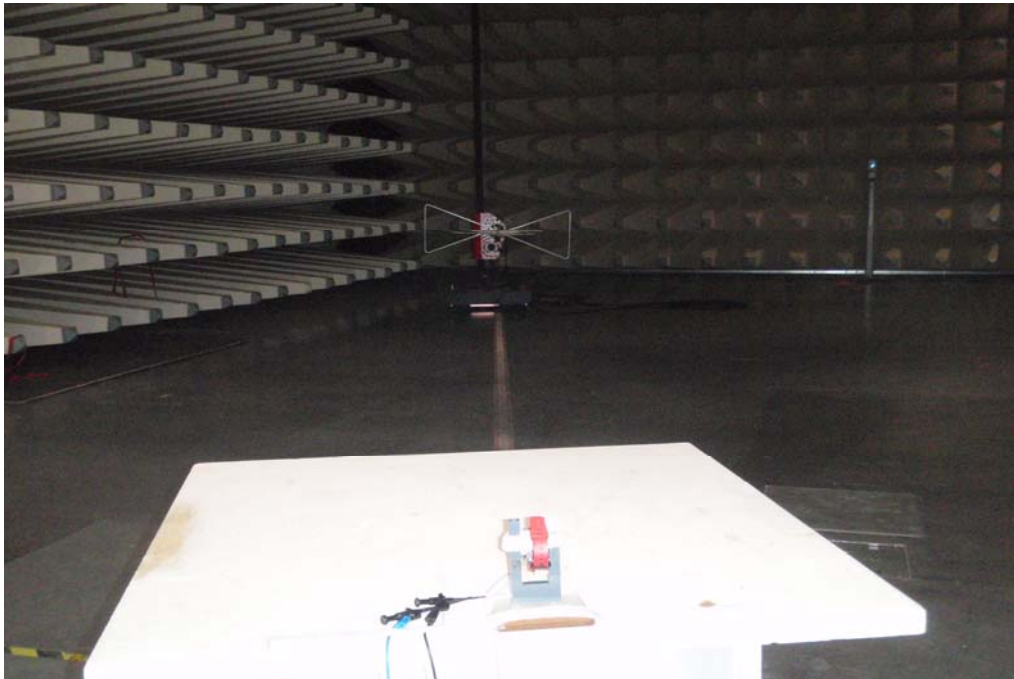


Photo 3:

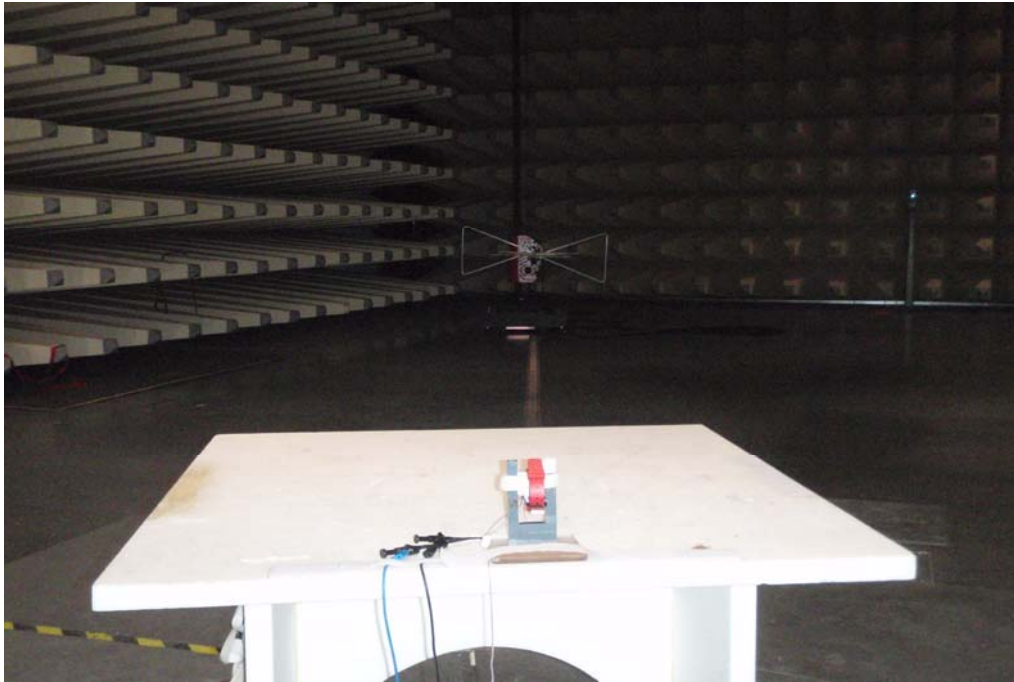


Photo 4: tested radiated sample (sample #2)



Photo 5: tested conducted sample (sample #1)



Annex A Annex External photographs of the EUT

Photo documentation:

Photo 1:



Photo 2:



Photo 3:

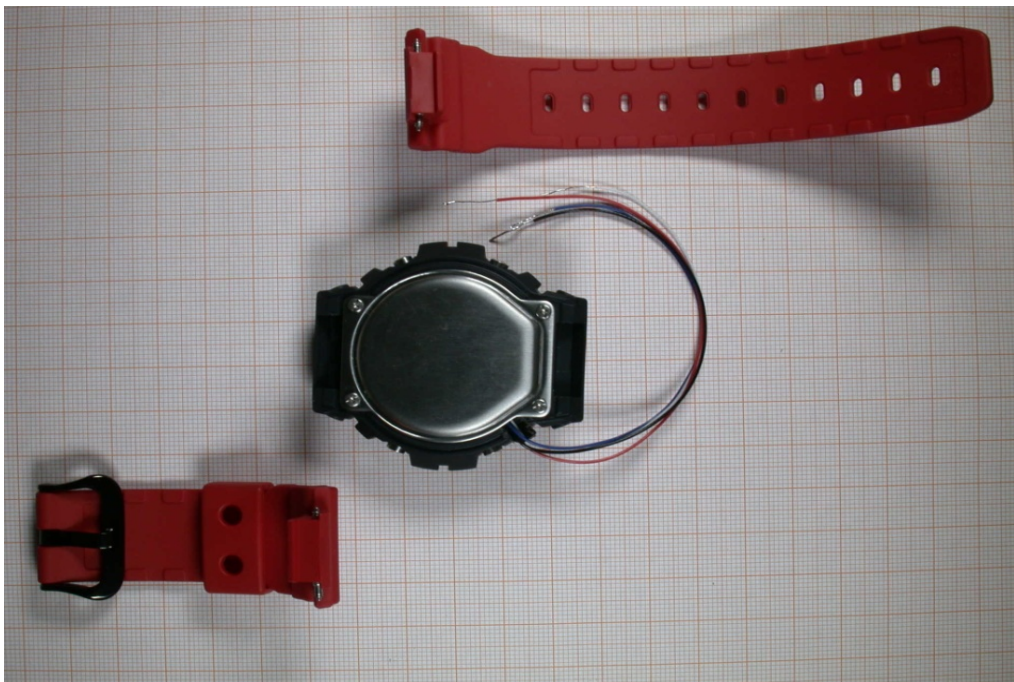
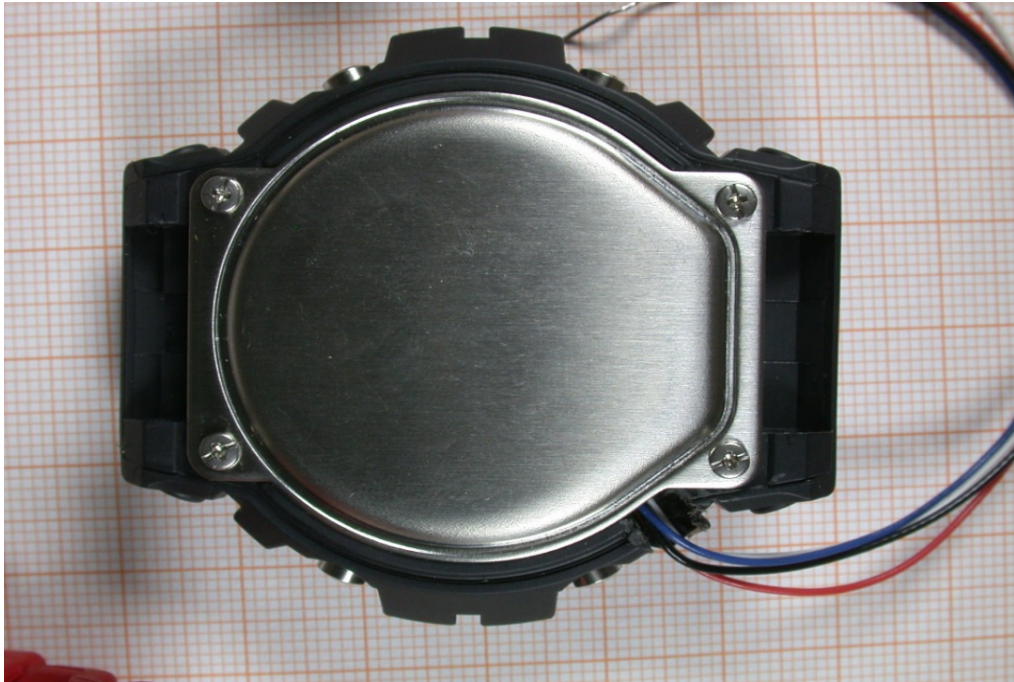


Photo 4:



Annex B Annex Internal photographs of the EUT

Photo documentation:

Photo 1:

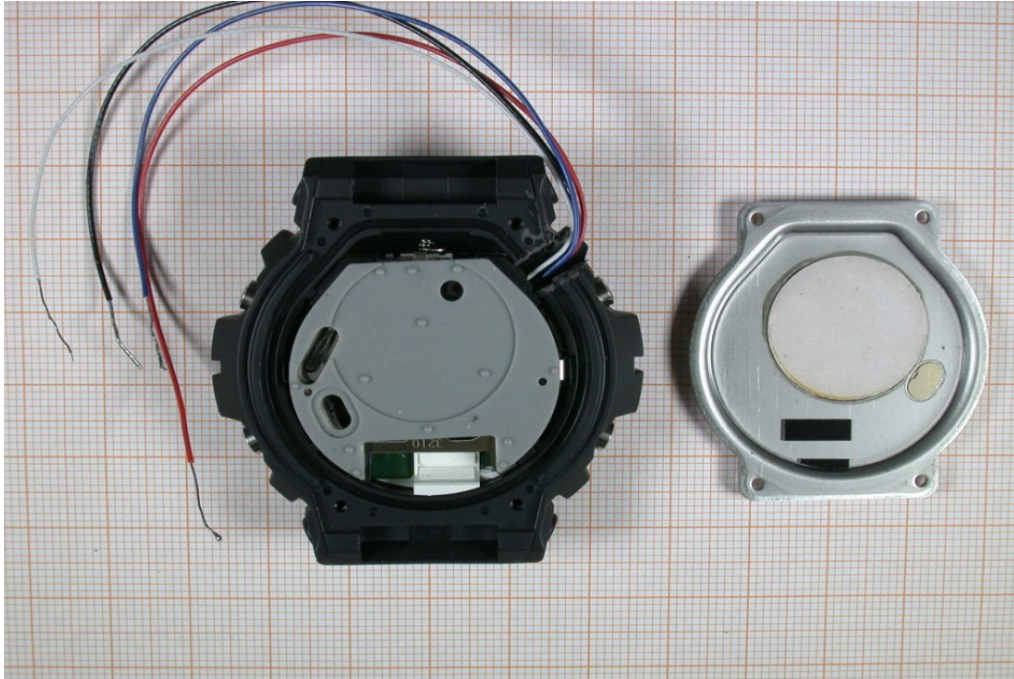


Photo 2:

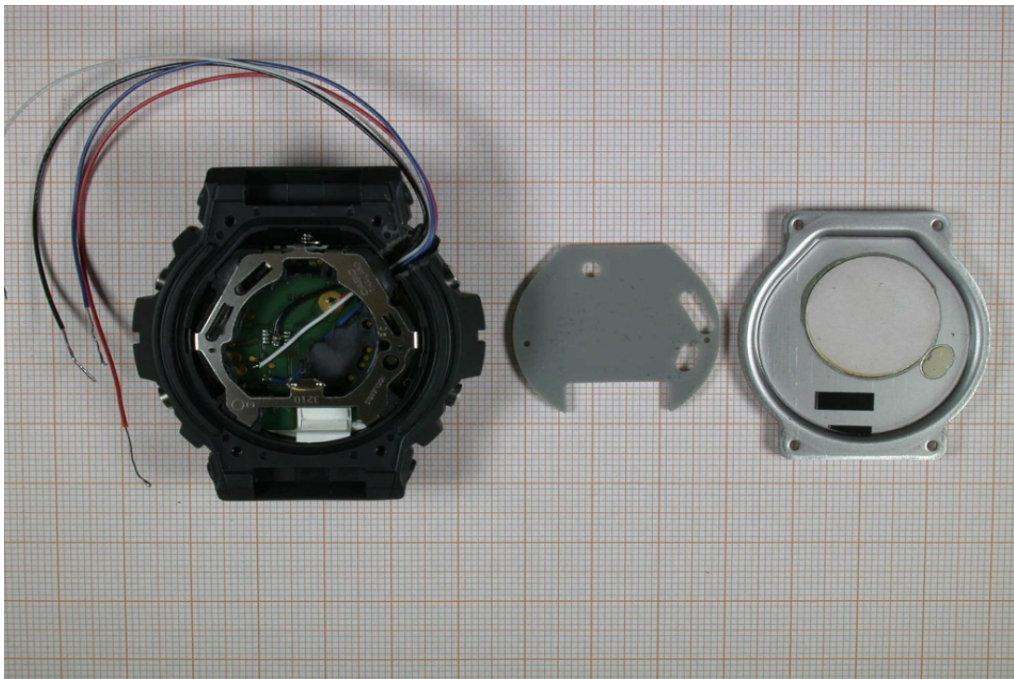


Photo 3:

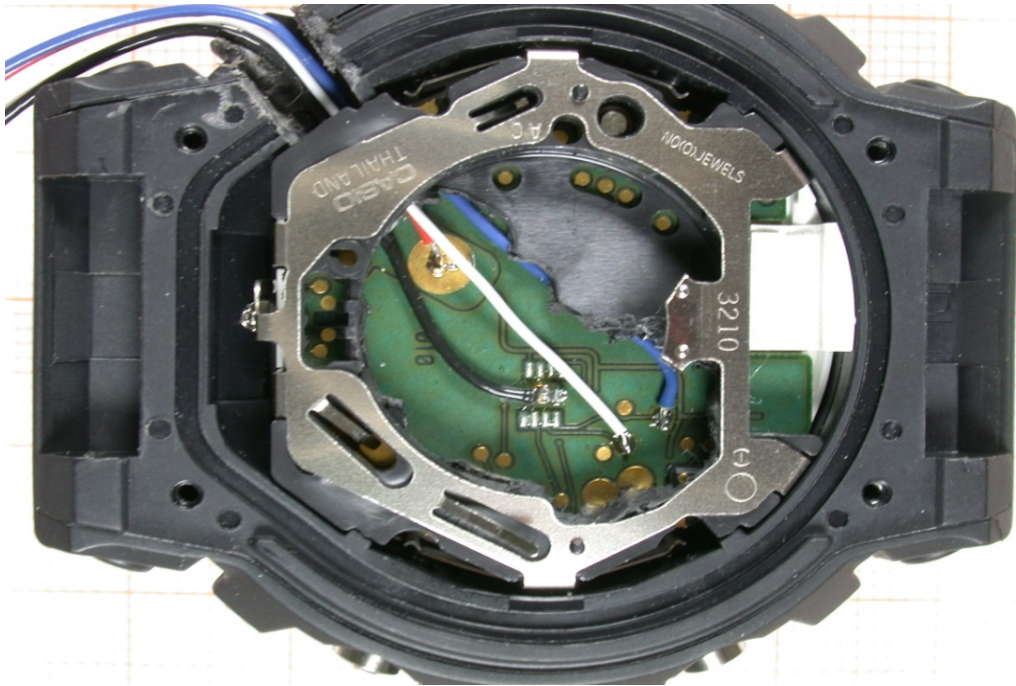


Photo 4:

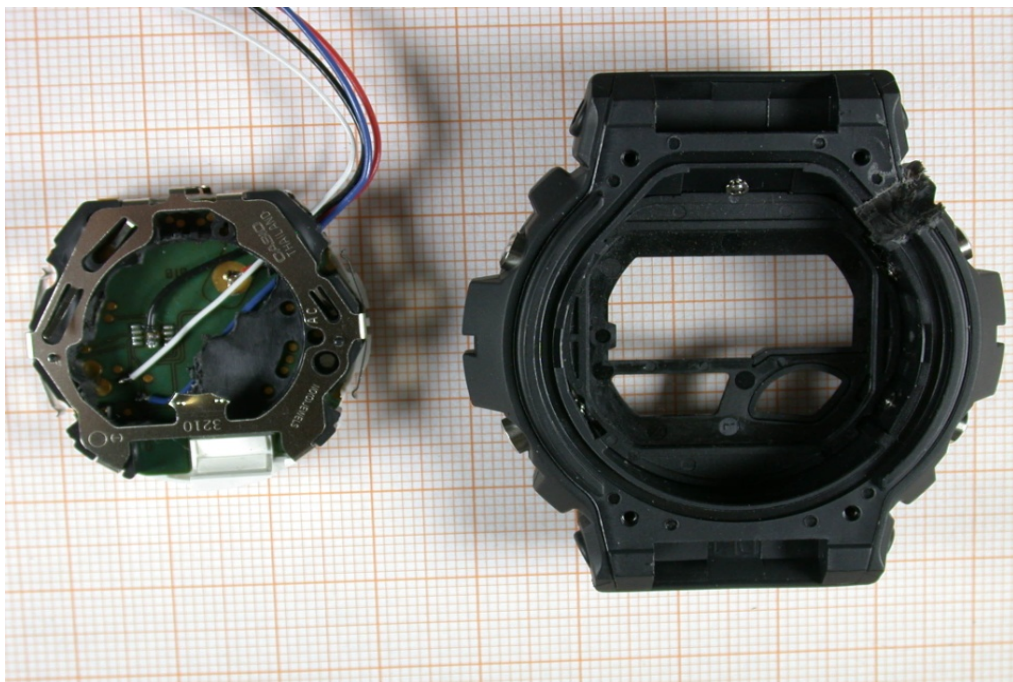


Photo 5:

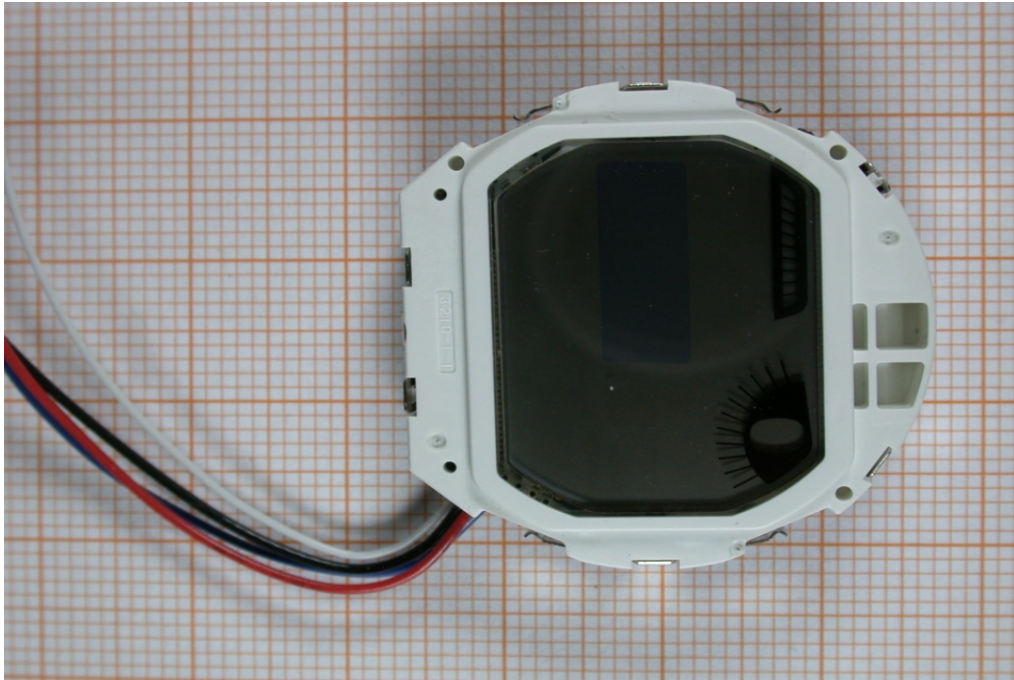


Photo 6:

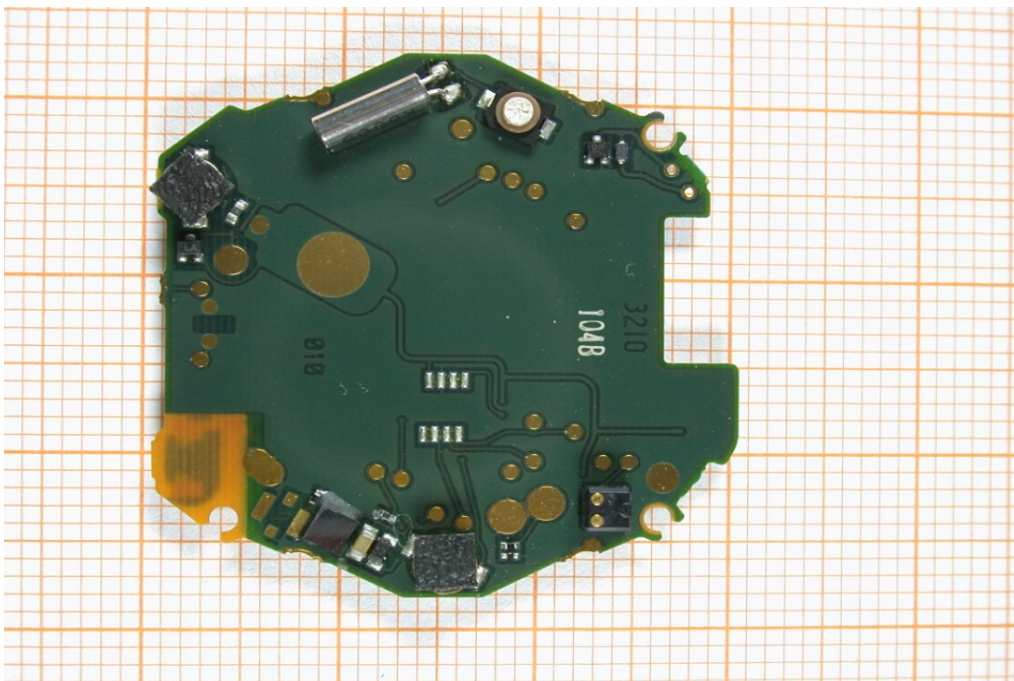


Photo 7:

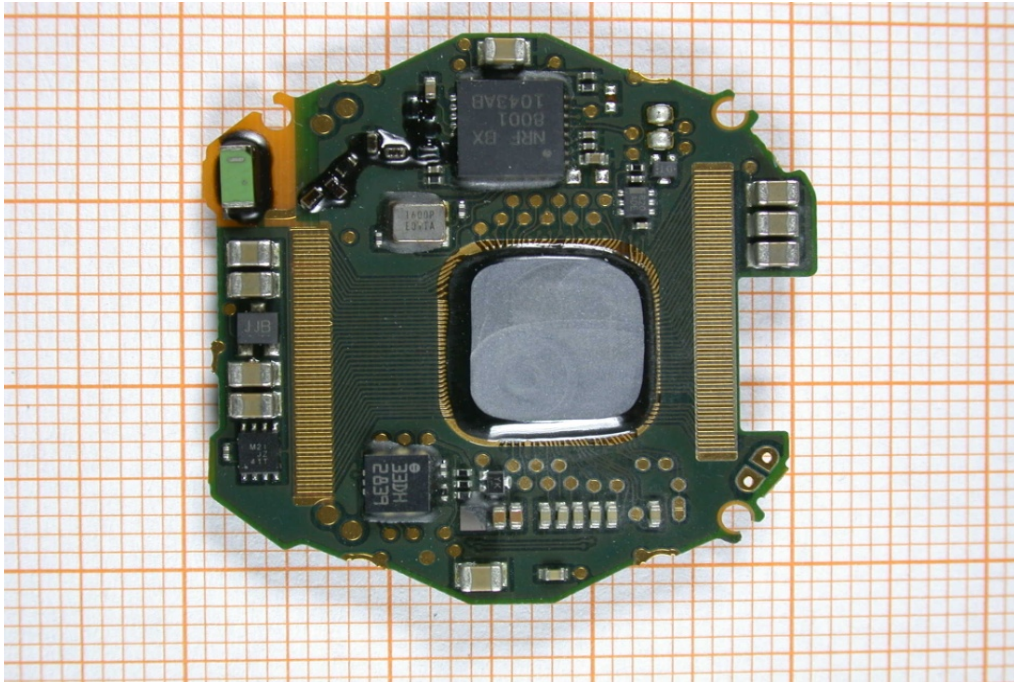


Photo 8:

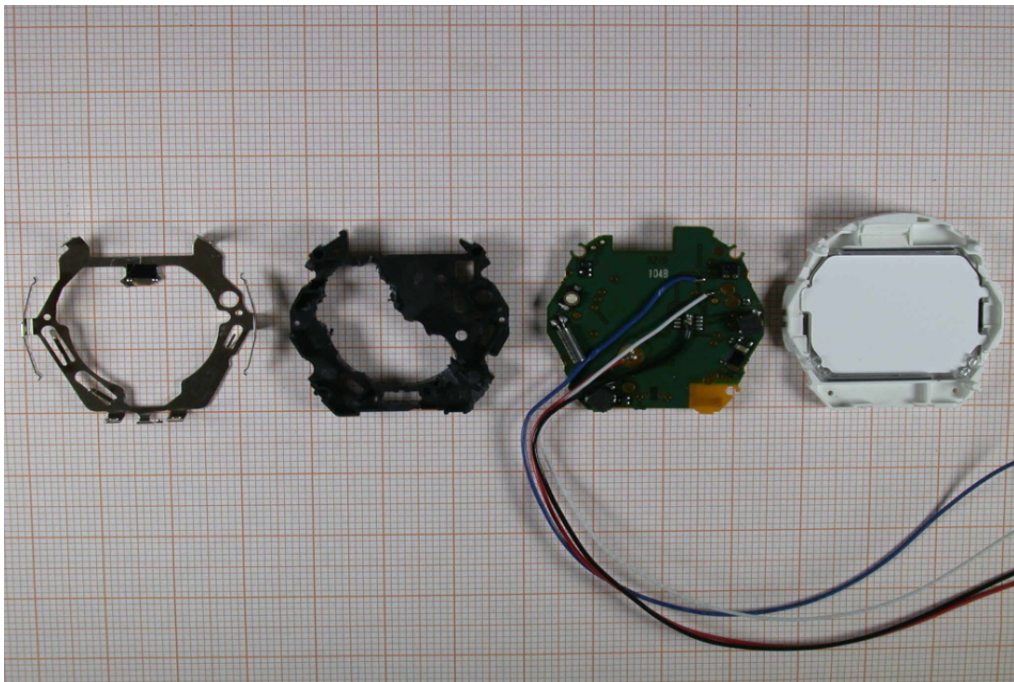


Photo 9:

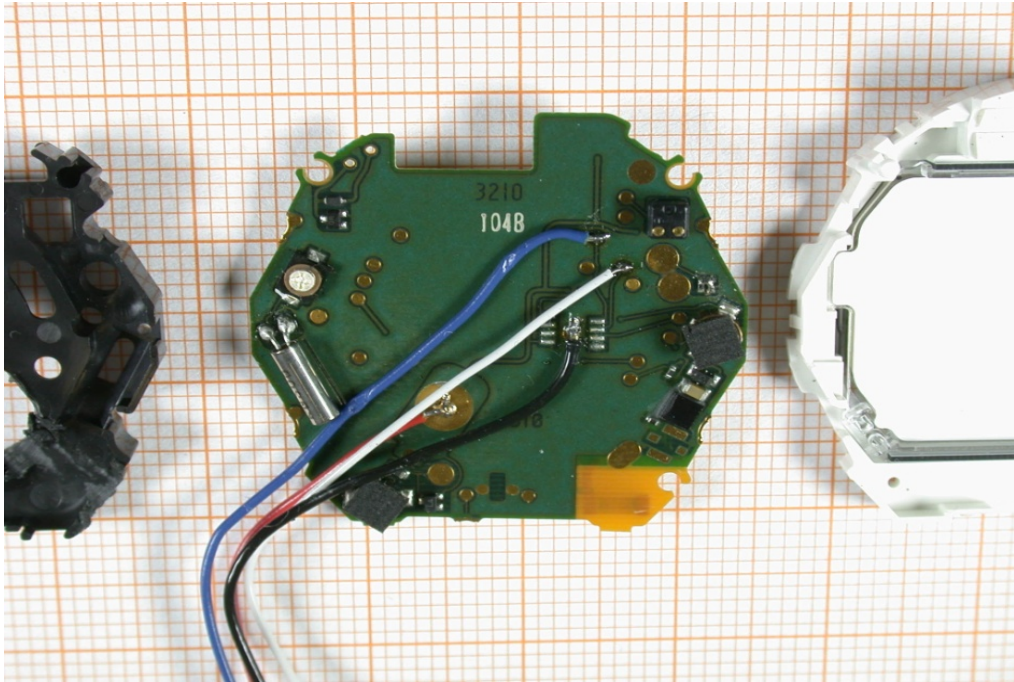
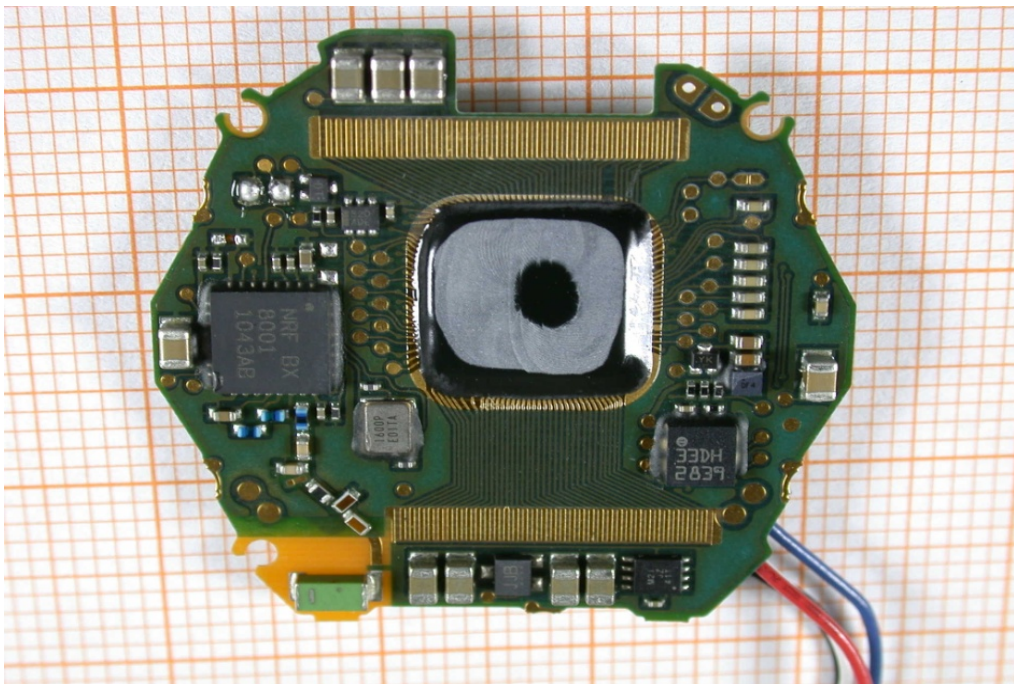


Photo 10:



Annex C Document history

Version	Applied changes	Date of release
1.0	Initial release	2011-04-21

Annex D Further information**Glossary**

DUT	-	Device under Test
EMC	-	Electromagnetic Compatibility
EUT	-	Equipment under Test
FCC	-	Federal Communication Commission
FCC ID	-	Company Identifier at FCC
HW	-	Hardware
IC	-	Industry Canada
Inv. No.	-	Inventory number
N/A	-	not applicable
S/N	-	Serial Number
SW	-	Software