

## TEST REPORT

Test Report No.: 1-2213-01-12/10-A



### Testing Laboratory

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**Accredited Test Laboratory:**  
 The test laboratory (area of testing) is accredited according to DIN EN ISO/IEC 17025  
 DAR registration number: DGA-PL-176/94-D1  
 Area of Testing: Radio Satellite Communications

### Applicant

**beyerdynamic GmbH & Co. KG**  
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 Contact: Ulrich Roth  
 e-mail: [roth@beyerdynamic.de](mailto:roth@beyerdynamic.de)  
 Phone: +49 (0) 7131 617 155

### Manufacturer

**beyerdynamic GmbH & Co. KG**  
 Theresienstraße 8  
 74072 Heilbronn / Germany

### Test Standard/s

47 CFR Part 74 Title 47 of the Code of Federal Regulations; Chapter I-Federal Communications Commission Experimental radio, auxiliary, special broadcast and other program distribution services

RSS - 123 Issue 1 Rev. 2 Spectrum Management and Telecommunications Policy - Radio Standards Specification Low Power Licensed Radiocommunication Devices

For further applied test standards please refer to section 2 of this test report.

### Test Item

Kind of test item: Wireless Microphone System

Model name: TS 910 M & TS 910 C

FCC ID: OSDS910

IC: 3628A-S910

Frequency [MHz]: 482 MHz to 518 MHz; 518 MHz to 554 MHz  
 554 MHz to 590 MHz; 590 MHz to 626 MHz  
 626 MHz to 662 MHz; 662 MHz to 698 MHz

Power supply: 3V DC by power supply / 2 \* 1.5 V AA batteries

Temperature range: +60 °C to -10 °C



### Test performed:

2010-11-17 Marco Bertolino

### Test Report authorised:

2010-11-17 Jakob Reschke

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## 1.1 General information

## 1.2 Notes

The test results of this test report relate exclusively to the test item specified in this test report. 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 CETECOM ICT Services GmbH.

This test report is electronically signed and valid without handwriting signature. For verification of the electronic signatures, the public keys can be requested at the testing laboratory.

## 1.3 Application details

Date of receipt of order:	2010-06-15
Date of receipt of test item:	2010-07-05
Start of test:	2010-07-05
End of test:	2010-07-13
Person(s) present during the test:	Mr. Frank Ernst

## 2 Test standard/s

Test Standard	Version	Test Standard Description
47 CFR Part 2	2008-10	Title 47 of the Code of Federal Regulations; Chapter I-Federal Communications Commission Frequency allocations and radio treaty matters; general rules and regulations
47 CFR Part 74	2006-10	Title 47 of the Code of Federal Regulations; Chapter I-Federal Communications Commission Experimental radio, auxiliary, special broadcast and other program distribution services
RSS - Gen Issue 2	2007-06	General Requirements and Information for the Certification of Radiocommunication Equipment
RSS - 123 Issue 1 Rev. 2	2000-03	Spectrum Management and Telecommunications Policy - Radio Standards Specification Low Power Licensed Radiocommunication Devices

## 3 Test environment

Temperature:	$T_{nom}$	+20 °C during room temperature tests
	$T_{max}$	-10 °C during high temperature test
	$T_{min}$	+60 °C during low temperature test
Relative humidity content:		51 %
Air pressure:		not relevant for this kind of testing
Power supply:	$V_{nom}$	3.0 V DC by power supply / 2 * 1.5 V AA batteries
	$V_{max}$	3.1 V
	$V_{min}$	2.2 V

#### 4 Test item

Kind of test item	:	Wireless Microphone System
Type identification	:	TS 910 M pocket transmitter (body pack) TS 910 C pocket transmitter (body pack)
S/N serial number	:	<p>TS 910 M</p> <p>Unit 1: 498111214A      5M2A    band 1 low</p> <p>Unit 2: 498111215A      5M2B    band 1 high</p> <p>Unit 3: 498111216A      5M9A    band 2 low</p> <p>Unit 4: 498111217A      5M9B    band 2 high</p> <p>Unit 5: 498111218A      6M6A    band 3 low</p> <p>Unit 6: 498111219A      6M6B    band 3 high</p> <p>TS 910 C</p> <p>Unit 1: 498111204A      5M2A    band 1 low</p> <p>Unit 2: 498111205A      5M2B    band 1 high</p> <p>Unit 3: 498111206A      5M9A    band 2 low</p> <p>Unit 4: 498111207A      5M9B    band 2 high</p> <p>Unit 5: 498111208A      6M6A    band 3 low</p> <p>Unit 6: 498111209A      6M6B    band 3 high</p>
HW hardware status	:	1.0
SW software status	:	1.0
Frequency Band [MHz]	:	Band 1: 482 MHz to 518 MHz; 518 MHz to 554 MHz Band 2: 554 MHz to 590 MHz; 590 MHz to 626 MHz Band 3: 626 MHz to 662 MHz; 662 MHz to 698 MHz
Type of Modulation	:	FM
Number of channels	:	1440
Antenna	:	External flexible rod. antenna → for more information, please take a look at B – external photos of the EUT
Power Supply	:	3 V DC by power supply / 2 * 1.5 V AA batteries
Temperature Range	:	+60°C to -10 °C

#### 5 Test Laboratories sub-contracted

None

## 6 Technical tests

### 6.1 Details of manufacturer

Name:	beyerdynamic GmbH & Co. KG
Street:	Theresienstraße 8
Town:	74072 Heilbronn
Country:	Germany

### 6.2 Test item and additional EUT information for IC Canada (appendix 2)

Kind of test item:	Body pack transmitter																																				
Type identification:	TS 910 M pocket transmitter TS 910 C pocket transmitter																																				
Open Area Test Site Industry Canada Number:	IC 3462C-1																																				
S/N serial number:	<p>TS 910 M</p> <table border="0"> <tr><td>Unit 1: 498111214A</td><td>5M2A</td><td>band 1 low</td></tr> <tr><td>Unit 2: 498111215A</td><td>5M2B</td><td>band 1 high</td></tr> <tr><td>Unit 3: 498111216A</td><td>5M9A</td><td>band 2 low</td></tr> <tr><td>Unit 4: 498111217A</td><td>5M9B</td><td>band 2 high</td></tr> <tr><td>Unit 5: 498111218A</td><td>6M6A</td><td>band 3 low</td></tr> <tr><td>Unit 6: 498111219A</td><td>6M6B</td><td>band 3 high</td></tr> </table> <p>TS 910 C</p> <table border="0"> <tr><td>Unit 1: 498111204A</td><td>5M2A</td><td>band 1 low</td></tr> <tr><td>Unit 2: 498111205A</td><td>5M2B</td><td>band 1 high</td></tr> <tr><td>Unit 3: 498111206A</td><td>5M9A</td><td>band 2 low</td></tr> <tr><td>Unit 4: 498111207A</td><td>5M9B</td><td>band 2 high</td></tr> <tr><td>Unit 5: 498111208A</td><td>6M6A</td><td>band 3 low</td></tr> <tr><td>Unit 6: 498111209A</td><td>6M6B</td><td>band 3 high</td></tr> </table>	Unit 1: 498111214A	5M2A	band 1 low	Unit 2: 498111215A	5M2B	band 1 high	Unit 3: 498111216A	5M9A	band 2 low	Unit 4: 498111217A	5M9B	band 2 high	Unit 5: 498111218A	6M6A	band 3 low	Unit 6: 498111219A	6M6B	band 3 high	Unit 1: 498111204A	5M2A	band 1 low	Unit 2: 498111205A	5M2B	band 1 high	Unit 3: 498111206A	5M9A	band 2 low	Unit 4: 498111207A	5M9B	band 2 high	Unit 5: 498111208A	6M6A	band 3 low	Unit 6: 498111209A	6M6B	band 3 high
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Frequency Band [MHz]:	Band 1: 482 MHz to 518 MHz; 518 MHz to 554 MHz Band 2: 554 MHz to 590 MHz; 590 MHz to 626 MHz Band 3: 626 MHz to 662 MHz; 662 MHz to 698 MHz																																				
Number of Channels:	1440																																				
Measured Channels	482.000 MHz; 500.000 MHz; 536.000 MHz; 572.000 MHz; 607.925 MHz; 614.075 MHz; 644.000 MHz; 680.000 MHz; 697.925 MHz																																				
Channel 1:	482.000 MHz																																				
Channel 2:	500.000 MHz																																				
Channel 3:	536.000 MHz																																				
Channel 4:	572.000 MHz																																				
Channel 5:	607.925 MHz																																				
Channel 6:	614.075 MHz																																				
Channel 7:	644.000 MHz																																				
Channel 8:	680.000 MHz																																				
Channel 9:	697.925 MHz																																				

RF: Power (max):	TS 910 M radiated: 13.85 dBm / 24.27 mW TS 910 C radiated: 13.05 dBm / 20.18 mW
Type of Modulation:	FM
Antenna type:	External flexible rod. antenna → for more information, please take a look at B – external photos of the EUT
Power Supply:	3 V DC by power supply / 2 * 1.5 V AA batteries
Temperature Range:	+60°C to -10 °C

Occupied Bandwidth (99% BW) [kHz]:	TS 910 M
	<u>482.000 MHz</u>
	170KF3E (2x max. Audio Frequency + 2x max. FM Deviation) 152KF3E (measured Bandwidth)
	<u>500.000 MHz</u>
	170KF3E (2x max. Audio Frequency + 2x max. FM Deviation) 152KF3E (measured Bandwidth)
	<u>536.000 MHz</u>
	170KF3E (2x max. Audio Frequency + 2x max. FM Deviation) 155KF3E (measured Bandwidth)
	<u>572.000 MHz</u>
	170KF3E (2x max. Audio Frequency + 2x max. FM Deviation) 153KF3E (measured Bandwidth)
	<u>607.925 MHz</u>
170KF3E (2x max. Audio Frequency + 2x max. FM Deviation) 125KF3E (measured Bandwidth)	
<u>614.075 MHz</u>	
170KF3E (2x max. Audio Frequency + 2x max. FM Deviation) 125KF3E (measured Bandwidth)	
<u>644.000 MHz</u>	
170KF3E (2x max. Audio Frequency + 2x max. FM Deviation) 180KF3E (measured Bandwidth)	
<u>680.000 MHz</u>	
170KF3E (2x max. Audio Frequency + 2x max. FM Deviation) 153KF3E (measured Bandwidth)	
<u>697.925 MHz</u>	
170KF3E (2x max. Audio Frequency + 2x max. FM Deviation) 121KF3E (measured Bandwidth)	

Occupied Bandwidth (99% BW) [kHz]:	TS 910 C
	<u>482.000 MHz</u>
	170KF3E (2x max. Audio Frequency + 2x max. FM Deviation) 154KF3E (measured Bandwidth)
	<u>500.000 MHz</u>
	170KF3E (2x max. Audio Frequency + 2x max. FM Deviation) 154KF3E (measured Bandwidth)
	<u>536.000 MHz</u>
	170KF3E (2x max. Audio Frequency + 2x max. FM Deviation) 1501KF3E (measured Bandwidth)
	<u>572.000 MHz</u>
	170KF3E (2x max. Audio Frequency + 2x max. FM Deviation) 157KF3E (measured Bandwidth)
	<u>607.925 MHz</u>
	170KF3E (2x max. Audio Frequency + 2x max. FM Deviation) 124KF3E (measured Bandwidth)
	<u>614.075 MHz</u>
170KF3E (2x max. Audio Frequency + 2x max. FM Deviation) 124KF3E (measured Bandwidth)	
<u>644.000 MHz</u>	
170KF3E (2x max. Audio Frequency + 2x max. FM Deviation) 127KF3E (measured Bandwidth)	
<u>680.000 MHz</u>	
170KF3E (2x max. Audio Frequency + 2x max. FM Deviation) 151KF3E (measured Bandwidth)	
<u>697.925 MHz</u>	
170KF3E (2x max. Audio Frequency + 2x max. FM Deviation) 123KF3E (measured Bandwidth)	



Transmitter Spurious (worst case) [dBm]:	-37.27
Receiver Spurious (worst case) [dB $\mu$ V/m @ 3m]:	No receiver mode integrated!
IC Registration Number:	3628A-S910
FCC ID:	OSDS910
IC Standards:	RSS-123 Issue 1, Rev. 2 November 6, 1999

**ATTESTATION:**

I attest that the testing was performed or supervised by me; that the test measurements were made in accordance with the above-mentioned departmental standard(s), and that the radio equipment identified in this application has been subject to all applicable test conditions specified in the departmental standards and all of the requirements of the standards have been met.

Signature:



Test engineer: Marco Bertolino

Date: 2010-11-15

Signature:



Test engineer: Jakob Reschke

Date: 2010-11-15

**7 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

Section in this Report	Test Name	Verdict
3.1.1	RF Power Output	passed
3.1.2	Frequency Stability	passed
3.1.3	Radiated Emissions	passed
3.1.4	Receiver Radiated Emissions	passed
3.1.5	Conducted Spurious Emissions	passed
3.1.6	Block Edge Compliance	passed
3.1.7	Occupied Bandwidth	passed

## 8 Measurements and results

### 8.1 Output power (radiated) FCC rule Part 74.861 (e)(1)(ii)

#### Method of measurement:

Measuring the EIRP of Spurious/Harmonic Emissions using Substitution Method

- (a) The measurements was performed with full rf output power and modulation.
- (b) Test was performed at listed 3m test site (listed with FCC, IC).
- (c) The transmitter under test was placed at the specified height on a non-conducting turntable (80 cm height)
- (d) The BICONILOG antenna (20 MHz to 1 GHz) or HORN antenna (1 GHz to 18 GHz) was used for measuring.
- (e) Load an appropriate correction factors file in EMI Receiver for correcting the field strength reading level  
Total Correction Factor recorded in the EMI Receiver = Cable Loss + Antenna Factor  
 $E \text{ (dBuV/m)} = \text{Reading (dBuV)} + \text{Total Correction Factor (dB/m)}$
- (f) Set the EMI Receiver and #2 as follows:
  - Centre Frequency: test frequency
  - Resolution BW: 100 kHz
  - Video BW: same
  - Detector Mode: positive
  - Average: off
  - Span: 3 x the signal bandwidth
- (g) The test antenna was lowered or raised from 1 to 4 meters until the maximum signal level was detected.
- (h) The transmitter was rotated through 360 o about a vertical axis until a higher maximum signal was received.
- (i) The test antenna was lowered or raised again from 1 to 4 meters until a maximum was obtained. This level was recorded.
- (j) The recorded reading was corrected to the true field strength level by adding the antenna factor, cable loss and subtracting the pre-amplifier gain.
- (k) The above steps were repeated with both transmitters' antenna and test receiving antenna placed in vertical and horizontal polarization. Both readings with the antennas placed in vertical and horizontal polarization shall be recorded.
- (l) Repeat for all different test signal frequencies

### **Measuring the EIRP of Spurious/Harmonic Emissions using Substitution Method**

(a) Set the EMI Receiver (for measuring E-Field) and Receiver #2 (for measuring EIRP) as follows:

Centre Frequency : equal to the signal source  
 Resolution BW : 10 kHz  
 Video BW : same  
 Detector Mode : positive  
 Average : off  
 Span : 3 x the signal bandwidth

(b) Load an appropriate correction factors file in EMI Receiver for correcting the field strength reading level  
 Total Correction Factor recorded in the EMI Receiver = Cable Loss + Antenna Factor  
 $E \text{ (dBuV/m)} = \text{Reading (dBuV)} + \text{Total Correction Factor (dB/m)}$

(c) Select the frequency and E-field levels for ERP/EIRP measurements.

(d) Substitute the EUT by a signal generator and one of the following transmitting antennas (substitution antenna): .DIPOLE antenna for frequency from 30-1000 MHz or .HORN antenna for frequency above 1 GHz}.

(e) Mount the transmitting antenna at 1.5 meter high from the ground plane.

(f) Use one of the following antenna as a receiving antenna: .DIPOLE antenna for frequency from 30-1000 MHz or .HORN antenna for frequency above 1 GHz }.

(g) If the DIPOLE antenna is used, tune its elements to the frequency as specified in the calibration manual.

(h) Adjust both transmitting and receiving antenna in a VERTICAL polarization.

(i) Tune the EMI Receivers to the test frequency.

(j) Lower or raise the test antenna from 1 to 4 meters until the maximum signal level was detected.

(k) The transmitter was rotated through 360 o about a vertical axis until a higher maximum signal was received.

(l) Lower or raise the test antenna from 1 to 4 meters until the maximum signal level was detected.

(m) Adjust input signal to the substitution antenna until an equal or a known related level to that detected from the transmitter was obtained in the test receiver.

(n) Record the power level read from the Average Power Meter and calculates the ERP/EIRP as follows:

$$P = P1 - L1 = (P2 + L2) - L1 = P3 + A + L2 - L1$$

$$\text{EIRP} = P + G1 = P3 + L2 - L1 + A + G1$$

$$\text{ERP} = \text{EIRP} - 2.15 \text{ dB}$$

$$\text{Total Correction factor in EMI Receiver \# 2} = L2 - L1 + G1$$

Where: P: Actual RF Power fed into the substitution antenna port after corrected.

P1: Power output from the signal generator

P2: Power measured at attenuator A input

P3: Power reading on the Average Power Meter

EIRP: EIRP after correction

ERP: ERP after correction

(o) Adjust both transmitting and receiving antenna in a HORIZONTAL polarization, then repeat step (k) to (o)

(p) Repeat step (d) to (o) for different test frequency

(q) Repeat steps (c) to (j) with the substitution antenna oriented in horizontal polarization.

(r) Actual gain of the EUT's antenna is the difference of the measured EIRP and measured RF power at the RF port. Correct the antenna gain if necessary.

**Results: TS 910 M Band 1: 482 MHz to 518 MHz; 518 MHz to 554 MHz**

TEST CONDITIONS		TRANSMITTER OUTPUT POWER					
Frequency (MHz)		5M2A 482 MHz	5M2A 500 MHz	5M2A 518 MHz	5M2B 518 MHz	5M2B 536 MHz	5M2B 554 MHz
T <sub>nom</sub>	V <sub>nom</sub>	13.85 dBm	13.58 dBm	12.66 dBm	11.83 dBm	12.96 dBm	11.66 dBm
antenna gain		0 dB					
Maximum deviation from output power under extreme test conditions (dBc)		±4.0 dB					
Measurement uncertainty		±0.5dB					

**Results: TS 910 M Band 2: 554 MHz to 590 MHz; 590 MHz to 626 MHz**

TEST CONDITIONS		TRANSMITTER OUTPUT POWER					
Frequency (MHz)		5M9A 554 MHz	5M9A 572 MHz	5M9A 590 MHz	5M9B 590 MHz	5M9B 608 MHz	5M9B 614 MHz
T <sub>nom</sub>	V <sub>nom</sub>	11.80 dBm	12.71 dBm	12.76 dBm	10.89 dBm	10.92 dBm	11.39 dBm
antenna gain		0 dB					
Maximum deviation from output power under extreme test conditions (dBc)		±2.2 dB					
Measurement uncertainty		±0.5dB					

**Results: TS 910 M Band 3: 626 MHz to 662 MHz; 662 MHz to 698 MHz**

TEST CONDITIONS		TRANSMITTER OUTPUT POWER					
Frequency (MHz)		6M6A 626 MHz	6M6A 644 MHz	6M6A 662 MHz	6M6B 662 MHz	6M6B 680 MHz	6M6B 698 MHz
T <sub>nom</sub>	V <sub>nom</sub>	11.28 dBm	10.88 dBm	11.12 dBm	10.87 dBm	11.03 dBm	12.17 dBm
antenna gain		0 dB					
Maximum deviation from output power under extreme test conditions (dBc)		±2.7 dB					
Measurement uncertainty		±0.5dB					

**Results: TS 910 C Band 1: 482 MHz to 518 MHz; 518 MHz to 554 MHz**

TEST CONDITIONS		TRANSMITTER OUTPUT POWER					
Frequency (MHz)		5M2A 482 MHz	5M2A 500 MHz	5M2A 518 MHz	5M2B 518 MHz	5M2B 536 MHz	5M2B 554 MHz
T <sub>nom</sub>	V <sub>nom</sub>	12.03 dBm	12.39 dBm	11.86 dBm	11.54 dBm	11.28 dBm	10.90 dBm
antenna gain		0 dB					
Maximum deviation from output power under extreme test conditions (dBc)		±2.0 dB					
Measurement uncertainty		±0.5dB					

**Results: TS 910 C Band 2: 554 MHz to 590 MHz; 590 MHz to 626 MHz**

TEST CONDITIONS		TRANSMITTER OUTPUT POWER					
Frequency (MHz)		5M9A 554 MHz	5M9A 572 MHz	5M9A 590 MHz	5M9B 590 MHz	5M9B 608 MHz	5M9B 614 MHz
T <sub>nom</sub>	V <sub>nom</sub>	10.63 dBm	11.37 dBm	10.26 dBm	12.19 dBm	12.78 dBm	12.41 dBm
antenna gain		0 dB					
Maximum deviation from output power under extreme test conditions (dBc)		±3.2 dB					
Measurement uncertainty		±0.5dB					

**Results: TS 910 C Band 3: 626 MHz to 662 MHz; 662 MHz to 698 MHz**

TEST CONDITIONS		TRANSMITTER OUTPUT POWER					
Frequency (MHz)		6M6A 626 MHz	6M6A 644 MHz	6M6A 662 MHz	6M6B 662 MHz	6M6B 680 MHz	6M6B 698 MHz
T <sub>nom</sub>	V <sub>nom</sub>	11.45 dBm	11.84 dBm	11.86 dBm	10.23 dBm	12.74 dBm	13.05 dBm
antenna gain		0 dB					
Maximum deviation from output power under extreme test conditions (dBc)		±4.2 dB					
Measurement uncertainty		±0.5dB					

**Sample calculation:**

Freg	SA Reading	SG Setting	Ant. gain	Dipol gain	Cable loss	ERP Result	ERP Result
MHz	dB $\mu$ V	dBm	dBi	dBd	dB	dBm	mW
758.0	108.5	13.9	-	0.0	2.9	11.0	12.6

ERP = SG (dBm) - Cable Loss (dB) + Ant. gain (dBd)

**LIMIT**

**FCC Rule Part 74.861**

Frequency range MHz	Power level
54-72, 76-88, 174-216	50 mW / 17 dBm
470-608, 614-806	250 mW / 24 dBm

## 8.2 AFC frequency error vs. voltage FCC rule Part 74.861

### Method of measurement:

The EUT was fixed in test fixture to a resistive coaxial attenuator of normal load impedance, and the unmodulated carrier was measured by means of a spectrum analyzer. The input voltage was varied in an range from 2.2V to 3.1V and the maximum change in frequency was noted within one minute. The temperature tests were performed for each frequency range on one channel.

### For TS 910 M

Frequency (MHz)	Voltage (V)	Frequency Error (Hz)	Frequency Error (%)	Frequency Error (ppm)
482,000	2.2	238	0,000049	0,493776
482,000	2.4	234	0,000049	0,485477
482,000	2.6	190	0,000039	0,394191
482,000	2.8	206	0,000043	0,427386
482,000	3.0	20	0,000004	0,041494
482,000	3.1	170	0,000035	0,352697

Frequency (MHz)	Voltage (V)	Frequency Error (Hz)	Frequency Error (%)	Frequency Error (ppm)
500,000	2.2	220	0,000044	0,440000
500,000	2.4	230	0,000046	0,460000
500,000	2.6	220	0,000044	0,440000
500,000	2.8	210	0,000042	0,420000
500,000	3.0	190	0,000038	0,380000
500,000	3.1	195	0,000039	0,390000

Frequency (MHz)	Voltage (V)	Frequency Error (Hz)	Frequency Error (%)	Frequency Error (ppm)
536,000	2.2	90	0,000017	0,167910
536,000	2.4	150	0,000028	0,279851
536,000	2.6	160	0,000030	0,298507
536,000	2.8	190	0,000035	0,354478
536,000	3.0	200	0,000037	0,373134
536,000	3.1	260	0,000049	0,485075

Frequency (MHz)	Voltage (V)	Frequency Error (Hz)	Frequency Error (%)	Frequency Error (ppm)
572,000	2.2	-340	-0,000059	-0,594406
572,000	2.4	-400	-0,000070	-0,699301
572,000	2.6	-450	-0,000079	-0,786713
572,000	2.8	-460	-0,000080	-0,804196
572,000	3.0	-340	-0,000059	-0,594406
572,000	3.1	-400	-0,000070	-0,699301



Frequency (MHz)	Voltage (V)	Frequency Error (Hz)	Frequency Error (%)	Frequency Error (ppm)
607,925	2.2	760	0,000125	1,250154
607,925	2.4	710	0,000117	1,167907
607,925	2.6	700	0,000115	1,151458
607,925	2.8	740	0,000122	1,217255
607,925	3.0	700	0,000115	1,151458
607,925	3.1	720	0,000118	1,184357

Frequency (MHz)	Voltage (V)	Frequency Error (Hz)	Frequency Error (%)	Frequency Error (ppm)
614,075	2.2	600	0,000098	0,977079
614,075	2.4	600	0,000098	0,977079
614,075	2.6	600	0,000098	0,977079
614,075	2.8	620	0,000101	1,009649
614,075	3.0	620	0,000101	1,009649
614,075	3.1	610	0,000099	0,993364

Frequency (MHz)	Voltage (V)	Frequency Error (Hz)	Frequency Error (%)	Frequency Error (ppm)
644,000	2.2	25	0,000004	0,038820
644,000	2.4	25	0,000004	0,038820
644,000	2.6	370	0,000057	0,574534
644,000	2.8	430	0,000067	0,667702
644,000	3.0	250	0,000039	0,388199
644,000	3.1	330	0,000051	0,512422

Frequency (MHz)	Voltage (V)	Frequency Error (Hz)	Frequency Error (%)	Frequency Error (ppm)
680,000	2.2	980	0,000144	1,441176
680,000	2.4	1000	0,000147	1,470588
680,000	2.6	1000	0,000147	1,470588
680,000	2.8	1140	0,000168	1,676471
680,000	3.0	1230	0,000181	1,808824
680,000	3.1	1260	0,000185	1,852941

Frequency (MHz)	Voltage (V)	Frequency Error (Hz)	Frequency Error (%)	Frequency Error (ppm)
697,925	2.2	830	0,000119	1,189240
697,925	2.4	780	0,000112	1,117599
697,925	2.6	760	0,000109	1,088942
697,925	2.8	810	0,000116	1,160583
697,925	3.0	780	0,000112	1,117599
697,925	3.1	690	0,000099	0,988645

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Frequency (MHz)	Voltage (V)	Frequency Error (Hz)	Frequency Error (%)	Frequency Error (ppm)
482,000	2.2	1180	0,000245	2,448133
482,000	2.4	1180	0,000245	2,448133
482,000	2.6	1260	0,000261	2,614108
482,000	2.8	1260	0,000261	2,614108
482,000	3.0	1260	0,000261	2,614108
482,000	3.1	1340	0,000278	2,780083

Frequency (MHz)	Voltage (V)	Frequency Error (Hz)	Frequency Error (%)	Frequency Error (ppm)
500,000	2.2	1140	0,000228	2,280000
500,000	2.4	1000	0,000200	2,000000
500,000	2.6	1000	0,000200	2,000000
500,000	2.8	1000	0,000200	2,000000
500,000	3.0	900	0,000180	1,800000
500,000	3.1	1000	0,000200	2,000000

Frequency (MHz)	Voltage (V)	Frequency Error (Hz)	Frequency Error (%)	Frequency Error (ppm)
536,000	2.2	530	0,000099	0,988806
536,000	2.4	590	0,000110	1,100746
536,000	2.6	600	0,000112	1,119403
536,000	2.8	600	0,000112	1,119403
536,000	3.0	700	0,000131	1,305970
536,000	3.1	700	0,000131	1,305970

Frequency (MHz)	Voltage (V)	Frequency Error (Hz)	Frequency Error (%)	Frequency Error (ppm)
572,000	2.2	-210	-0,000037	-0,367133
572,000	2.4	-300	-0,000052	-0,524476
572,000	2.6	-250	-0,000044	-0,437063
572,000	2.8	-300	-0,000052	-0,524476
572,000	3.0	-350	-0,000061	-0,611888
572,000	3.1	-350	-0,000061	-0,611888

Frequency (MHz)	Voltage (V)	Frequency Error (Hz)	Frequency Error (%)	Frequency Error (ppm)
607,925	2.2	1000	0,000164	1,644940
607,925	2.4	1100	0,000181	1,809434
607,925	2.6	1200	0,000197	1,973928
607,925	2.8	1200	0,000197	1,973928
607,925	3.0	1300	0,000214	2,138422
607,925	3.1	1370	0,000225	2,253567

Frequency (MHz)	Voltage (V)	Frequency Error (Hz)	Frequency Error (%)	Frequency Error (ppm)
614,075	2.2	400	0,000065	0,651386
614,075	2.4	350	0,000057	0,569963
614,075	2.6	350	0,000057	0,569963
614,075	2.8	350	0,000057	0,569963
614,075	3.0	470	0,000077	0,765379
614,075	3.1	400	0,000065	0,651386

Frequency (MHz)	Voltage (V)	Frequency Error (Hz)	Frequency Error (%)	Frequency Error (ppm)
644,000	2.2	1000	0,000155	1,552795
644,000	2.4	1100	0,000171	1,708075
644,000	2.6	1170	0,000182	1,816770
644,000	2.8	1270	0,000197	1,972050
644,000	3.0	1390	0,000216	2,158385
644,000	3.1	1600	0,000248	2,484472

Frequency (MHz)	Voltage (V)	Frequency Error (Hz)	Frequency Error (%)	Frequency Error (ppm)
680,000	2.2	1100	0,000162	1,617647
680,000	2.4	800	0,000118	1,176471
680,000	2.6	1100	0,000162	1,617647
680,000	2.8	1000	0,000147	1,470588
680,000	3.0	700	0,000103	1,029412
680,000	3.1	400	0,000059	0,588235

Frequency (MHz)	Voltage (V)	Frequency Error (Hz)	Frequency Error (%)	Frequency Error (ppm)
697,925	2.2	200	0,000029	0,286564
697,925	2.4	400	0,000057	0,573127
697,925	2.6	450	0,000064	0,644768
697,925	2.8	450	0,000064	0,644768
697,925	3.0	400	0,000057	0,573127
697,925	3.1	750	0,000107	1,074614

**LIMIT**

**FCC Rule Part 74.861(4)**

The frequency tolerance of the transmitter shall be 0.005 percent

### 8.3 AFC frequency error vs. temperature FCC rule Part 74.861

#### Method of measurement:

The EUT was connected to a resistive coaxial attenuator of normal load impedance, and the un-modulated carrier was measured by means of a spectrum analyzer. With all power removed, the temperature was decreased to  $-30^{\circ}\text{C}$  and permitted to stabilize for three hours. Power was applied and the maximum change in frequency was noted within one minute. With power OFF, the temperature was raised in  $10^{\circ}\text{C}$  steps. The sample was permitted to stabilize at each step for at least one-half hour. Power was applied and the maximum frequency error was noted within one minute. The temperature tests were performed for each frequency range on one channel

#### For TS 910 M

Frequency (MHz)	Temperature ( $^{\circ}\text{C}$ )	Frequency Error (Hz)	Frequency Error (%)	Frequency Error (ppm)
482,000	-30	-9300	-0,001929	-19,294606
482,000	-20	-5800	-0,001203	-12,033195
482,000	-10	-2700	-0,000560	-5,601660
482,000	0	-430	-0,000089	-0,892116
482,000	10	210	0,000044	0,435685
482,000	20	-200	-0,000041	-0,414938
482,000	30	220	0,000046	0,456432
482,000	40	350	0,000073	0,726141
482,000	50	470	0,000098	0,975104

Frequency (MHz)	Temperature ( $^{\circ}\text{C}$ )	Frequency Error (Hz)	Frequency Error (%)	Frequency Error (ppm)
500,000	-30	-2300	-0,000460	-4,600000
500,000	-20	-2000	-0,000400	-4,000000
500,000	-10	-1400	-0,000280	-2,800000
500,000	0	-100	-0,000020	-0,200000
500,000	10	50	0,000010	0,100000
500,000	20	100	0,000020	0,200000
500,000	30	150	0,000030	0,300000
500,000	40	170	0,000034	0,340000
500,000	50	190	0,000038	0,380000

Frequency (MHz)	Temperature ( $^{\circ}\text{C}$ )	Frequency Error (Hz)	Frequency Error (%)	Frequency Error (ppm)
536,000	-30	-2000	-0,000373	-3,731343
536,000	-20	-180	-0,000034	-0,335821
536,000	-10	-1650	-0,000308	-3,078358
536,000	0	-100	-0,000019	-0,186567
536,000	10	60	0,000011	0,111940
536,000	20	0	0,000000	0,000000
536,000	30	90	0,000017	0,167910
536,000	40	100	0,000019	0,186567
536,000	50	140	0,000026	0,261194

Frequency (MHz)	Temperature (°C)	Frequency Error (Hz)	Frequency Error (%)	Frequency Error (ppm)
572,000	-30	-930	-0,000163	-1,625874
572,000	-20	-900	-0,000157	-1,573427
572,000	-10	-960	-0,000168	-1,678322
572,000	0	-190	-0,000033	-0,332168
572,000	10	30	0,000005	0,052448
572,000	20	110	0,000019	0,192308
572,000	30	200	0,000035	0,349650
572,000	40	300	0,000052	0,524476
572,000	50	640	0,000112	1,118881

Frequency (MHz)	Temperature (°C)	Frequency Error (Hz)	Frequency Error (%)	Frequency Error (ppm)
607,925	-30	800	0,000132	1,315952
607,925	-20	1000	0,000164	1,644940
607,925	-10	1400	0,000230	2,302916
607,925	0	600	0,000099	0,986964
607,925	10	40	0,000007	0,065798
607,925	20	110	0,000018	0,180943
607,925	30	-100	-0,000016	-0,164494
607,925	40	-550	-0,000090	-0,904717
607,925	50	-800	-0,000132	-1,315952

Frequency (MHz)	Temperature (°C)	Frequency Error (Hz)	Frequency Error (%)	Frequency Error (ppm)
614,075	-30	-1260	-0,000205	-2,051867
614,075	-20	1980	0,000322	3,224362
614,075	-10	3660	0,000596	5,960184
614,075	0	2500	0,000407	4,071164
614,075	10	50	0,000008	0,081423
614,075	20	-40	-0,000007	-0,065139
614,075	30	-110	-0,000018	-0,179131
614,075	40	-1580	-0,000257	-2,572976
614,075	50	-2100	-0,000342	-3,419778

Frequency (MHz)	Temperature (°C)	Frequency Error (Hz)	Frequency Error (%)	Frequency Error (ppm)
644,000	-30	1860	0,000289	2,888199
644,000	-20	3800	0,000590	5,900621
644,000	-10	5350	0,000831	8,307453
644,000	0	3000	0,000466	4,658385
644,000	10	300	0,000047	0,465839
644,000	20	110	0,000017	0,170807
644,000	30	-600	-0,000093	-0,931677
644,000	40	-1890	-0,000293	-2,934783
644,000	50	-2900	-0,000450	-4,503106

Frequency (MHz)	Temperature (°C)	Frequency Error (Hz)	Frequency Error (%)	Frequency Error (ppm)
680,000	-30	2000	0,000294	2,941176
680,000	-20	3800	0,000559	5,588235
680,000	-10	5350	0,000787	7,867647
680,000	0	1200	0,000176	1,764706
680,000	10	800	0,000118	1,176471
680,000	20	790	0,000116	1,161765
680,000	30	600	0,000088	0,882353
680,000	40	590	0,000087	0,867647
680,000	50	580	0,000085	0,852941

Frequency (MHz)	Temperature (°C)	Frequency Error (Hz)	Frequency Error (%)	Frequency Error (ppm)
697,925	-30	-100	-0,000014	-0,143282
697,925	-20	2990	0,000428	4,284128
697,925	-10	4500	0,000645	6,447684
697,925	0	2500	0,000358	3,582047
697,925	10	600	0,000086	0,859691
697,925	20	240	0,000034	0,343876
697,925	30	-290	-0,000042	-0,415517
697,925	40	-1680	-0,000241	-2,407135
697,925	50	-2000	-0,000287	-2,865637

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Frequency (MHz)	Temperature (°C)	Frequency Error (Hz)	Frequency Error (%)	Frequency Error (ppm)
482,000	-30	3000	0,000622	6,224066
482,000	-20	3500	0,000726	7,261411
482,000	-10	4600	0,000954	9,543568
482,000	0	2900	0,000602	6,016598
482,000	10	2000	0,000415	4,149378
482,000	20	1400	0,000290	2,904564
482,000	30	400	0,000083	0,829876
482,000	40	-1000	-0,000207	-2,074689
482,000	50	-1800	-0,000373	-3,734440

Frequency (MHz)	Temperature (°C)	Frequency Error (Hz)	Frequency Error (%)	Frequency Error (ppm)
500,000	-30	3300	0,000660	6,600000
500,000	-20	3800	0,000760	7,600000
500,000	-10	4900	0,000980	9,800000
500,000	0	2500	0,000500	5,000000
500,000	10	1800	0,000360	3,600000
500,000	20	800	0,000160	1,600000
500,000	30	-400	-0,000080	-0,800000
500,000	40	-1000	-0,000200	-2,000000
500,000	50	-2500	-0,000500	-5,000000

Frequency (MHz)	Temperature (°C)	Frequency Error (Hz)	Frequency Error (%)	Frequency Error (ppm)
536,000	-30	2400	0,000448	4,477612
536,000	-20	2500	0,000466	4,664179
536,000	-10	3000	0,000560	5,597015
536,000	0	1000	0,000187	1,865672
536,000	10	500	0,000093	0,932836
536,000	20	220	0,000041	0,410448
536,000	30	-100	-0,000019	-0,186567
536,000	40	-2400	-0,000448	-4,477612
536,000	50	-3000	-0,000560	-5,597015

Frequency (MHz)	Temperature (°C)	Frequency Error (Hz)	Frequency Error (%)	Frequency Error (ppm)
572,000	-30	-1800	-0,000315	-3,146853
572,000	-20	550	0,000096	0,961538
572,000	-10	2000	0,000350	3,496503
572,000	0	1500	0,000262	2,622378
572,000	10	770	0,000135	1,346154
572,000	20	-220	-0,000038	-0,384615
572,000	30	-1140	-0,000199	-1,993007
572,000	40	-2200	-0,000385	-3,846154
572,000	50	-3500	-0,000612	-6,118881

Frequency (MHz)	Temperature (°C)	Frequency Error (Hz)	Frequency Error (%)	Frequency Error (ppm)
607,925	-30	4000	0,000658	6,579759
607,925	-20	4660	0,000767	7,665419
607,925	-10	5000	0,000822	8,224699
607,925	0	3600	0,000592	5,921783
607,925	10	3400	0,000559	5,592795
607,925	20	2690	0,000442	4,424888
607,925	30	400	0,000066	0,657976
607,925	40	-1000	-0,000164	-1,644940
607,925	50	-2500	-0,000411	-4,112349

Frequency (MHz)	Temperature (°C)	Frequency Error (Hz)	Frequency Error (%)	Frequency Error (ppm)
614,075	-30	7000	0,001140	11,399259
614,075	-20	7550	0,001229	12,294915
614,075	-10	8000	0,001303	13,027725
614,075	0	5900	0,000961	9,607947
614,075	10	4000	0,000651	6,513862
614,075	20	1550	0,000252	2,524122
614,075	30	-600	-0,000098	-0,977079
614,075	40	-6100	-0,000993	-9,933640
614,075	50	-7300	-0,001189	-11,887799

Frequency (MHz)	Temperature (°C)	Frequency Error (Hz)	Frequency Error (%)	Frequency Error (ppm)
644,000	-30	10700	0,001661	16,614907
644,000	-20	17600	0,002733	27,329193
644,000	-10	22000	0,003416	34,161491
644,000	0	3500	0,000543	5,434783
644,000	10	3100	0,000481	4,813665
644,000	20	500	0,000078	0,776398
644,000	30	-2200	-0,000342	-3,416149
644,000	40	-5900	-0,000916	-9,161491
644,000	50	-10300	-0,001599	-15,993789



Frequency (MHz)	Temperature (°C)	Frequency Error (Hz)	Frequency Error (%)	Frequency Error (ppm)
680,000	-30	3000	0,000441	4,411765
680,000	-20	3600	0,000529	5,294118
680,000	-10	4000	0,000588	5,882353
680,000	0	0	0,000000	0,000000
680,000	10	500	0,000074	0,735294
680,000	20	200	0,000029	0,294118
680,000	30	-400	-0,000059	-0,588235
680,000	40	-1500	-0,000221	-2,205882
680,000	50	-3000	-0,000441	-4,411765

Frequency (MHz)	Temperature (°C)	Frequency Error (Hz)	Frequency Error (%)	Frequency Error (ppm)
697,925	-30	4300	0,000616	6,161120
697,925	-20	4600	0,000659	6,590966
697,925	-10	5000	0,000716	7,164094
697,925	0	800	0,000115	1,146255
697,925	10	270	0,000039	0,386861
697,925	20	100	0,000014	0,143282
697,925	30	-500	-0,000072	-0,716409
697,925	40	-600	-0,000086	-0,859691
697,925	50	-4400	-0,000630	-6,304402

**LIMIT**

**FCC Rule Part 74.861**

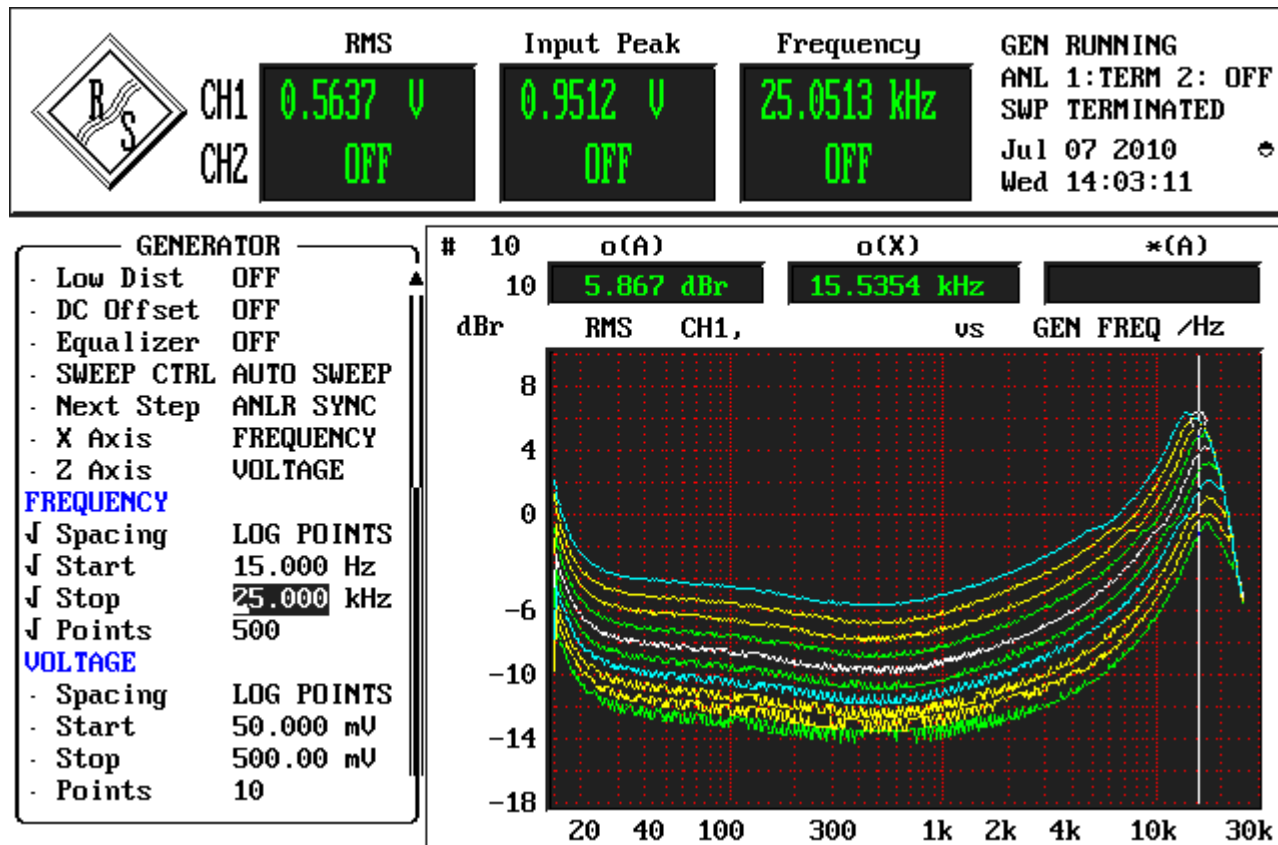
The frequency tolerance of the transmitter shall be 0.005 percent

**8.4 Characteristics of the audio modulation circuitry FCC rule Part 74 .861(e3)**

TS 910 M

**Method of measurement:**

The audio frequency responds was measured in accordance with EIA/TIA 603. The plots shows 10 curves with different modulation levels, starting from 50.0mV to 500 mV (30%+20 dB Modulation), the frequency is varied from 15 Hz to 25 kHz.



Max. measured frequency deviation : 70 kHz

This measurement is valid for all channels

Limit: max Deviation ±75kHz

TS 910 C

**Method of measurement:**

The audio frequency responds was measured in accordance with EIA/TIA 603. The plots shows 10 curves with different modulation levels, starting from 50.0mV to 500 mV (30%+20 dB Modulation), the frequency is varied from 15 Hz to 25 kHz.

	CH1	RMS	Input Peak	Frequency	GEN RUNNING ANL 1: TERM 2: OFF SWP TERMINATED Jul 07 2010 Wed 14:55:17
	CH2	0.3254 V	0.5898 V	25.0521 kHz	
		OFF	OFF	OFF	

**GENERATOR**

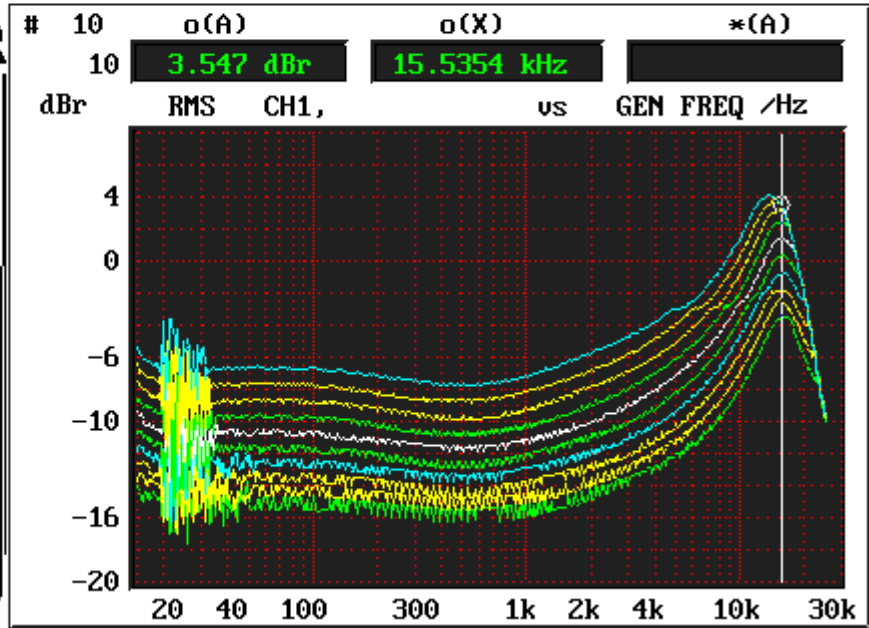
- Low Dist OFF
- DC Offset OFF
- Equalizer OFF
- SWEEP CTRL AUTO SWEEP
- Next Step ANLR SYNC
- X Axis FREQUENCY
- Z Axis VOLTAGE

**FREQUENCY**

- √ Spacing LOG POINTS
- √ Start 15.000 Hz
- √ Stop 25.000 kHz
- √ Points 500

**VOLTAGE**

- Spacing LOG POINTS
- Start 50.000 mV
- Stop 500.00 mV
- Points 10



Max. measured frequency deviation : 70 kHz

This measurement is valid for all channels

Limit: max Deviation  $\pm 75$ kHz

**8.5 Occupied bandwidth FCC rule Part 74.861(e)(3), (5)/ Sec. 2.1049**

**Test method:**

The audio frequency responds was measured in accordance with EIA/TIA 603.

Data in the plots show that all sidebands between 50 & 100% for the authorized bandwidth are attenuated by at least 25dB. From 100 to 250% of the authorized bandwidth they are attenuated by at least 35dB and beyond 250% 43 log(Po) dB. The plot shows the transmitter modulated with 15000 Hz (the highest modulation frequency), adjusted for 50% modulation plus 16 dB. The spectrum analyzer was set with the un-modulated carrier at the top of the screen. The test procedure diagram and occupied bandwidth plots follow.

**TS 910 M**

TEST CONDITIONS Frequency (MHz)		OCCUPIED BANDWIDTH ( kHz )					
		482.000 MHz	500.000 MHz	536.000 MHz	572.000 MHz	607.925 MHz	614.075 MHz
T <sub>nom</sub>	V <sub>nom</sub>	152	152	155	153	125	125
max. Deviation (FM)		70 kHz					
Measurement uncertainty		±0.5%					

TEST CONDITIONS Frequency (MHz)		OCCUPIED BANDWIDTH ( kHz )					
		644.000 MHz	680.000 MHz	697.925 MHz	-/-	-/-	-/-
T <sub>nom</sub>	V <sub>nom</sub>	180	153	121	-/-	-/-	-/-
max. Deviation (FM)		70 kHz					
Measurement uncertainty		±0.5%					

**TS 910 C**

TEST CONDITIONS Frequency (MHz)		OCCUPIED BANDWIDTH ( kHz )					
		<b>482.000 MHz</b>	<b>500.000 MHz</b>	<b>536.000 MHz</b>	<b>572.000 MHz</b>	<b>607.925 MHz</b>	<b>614.075 MHz</b>
T <sub>nom</sub>	V <sub>nom</sub>	154	154	150	157	124	124
max. Deviation (FM)		70 kHz					
Measurement uncertainty		±0.5%					

TEST CONDITIONS Frequency (MHz)		OCCUPIED BANDWIDTH ( kHz )					
		<b>644.000 MHz</b>	<b>680.000 MHz</b>	<b>697.925 MHz</b>	-/-	-/-	-/-
T <sub>nom</sub>	V <sub>nom</sub>	127	151	123	-/-	-/-	-/-
max. Deviation (FM)		70 kHz					
Measurement uncertainty		±0.5%					

**Limits**

**FCC Rule Part 74.861(e)(5)**

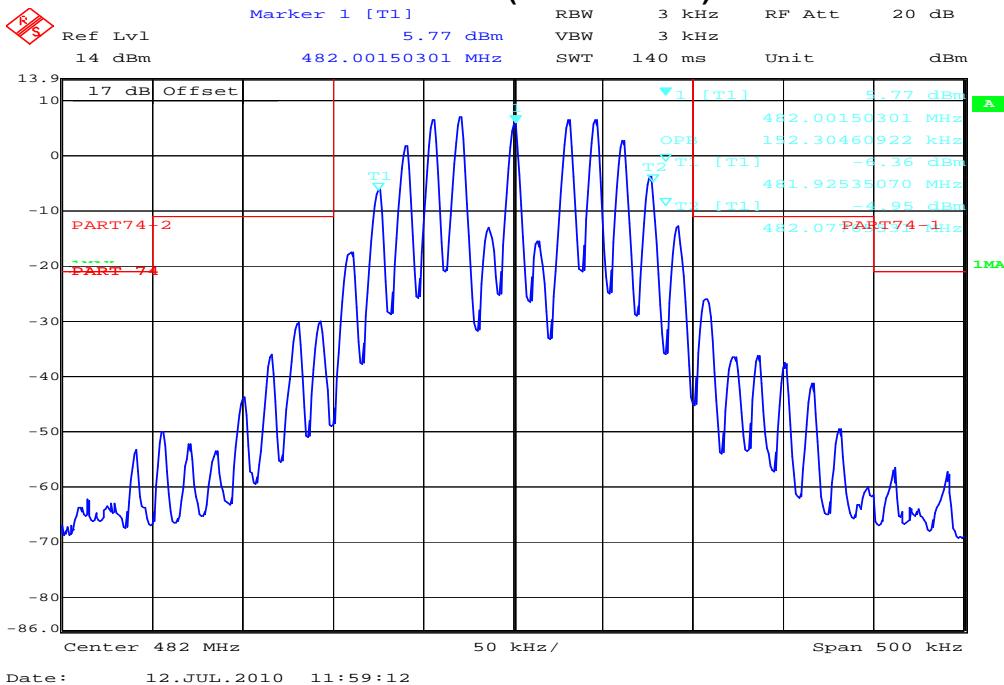
The operating bandwidth shall not exceed 200 kHz
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TS 910 M

OCCUPIED BANDWIDTH

FCC Rule Part 74.861(e)(3), (5)/ Sec. 2.989

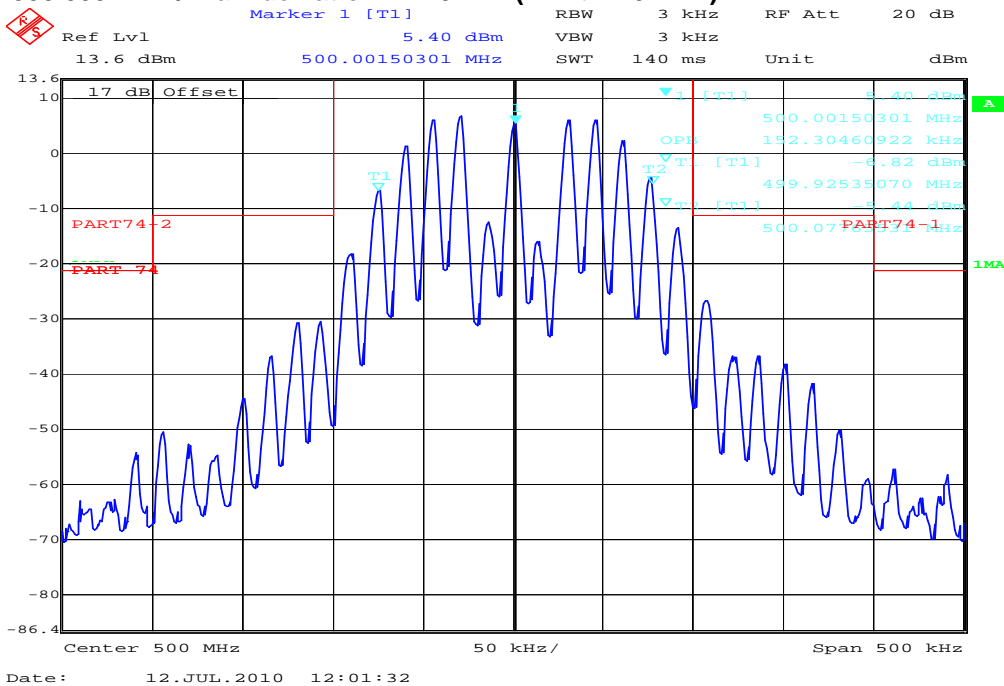
Frequency: 482.000 MHz / max. deviation:  $\pm 70$  kHz (Limit  $\pm 75$  kHz)



OCCUPIED BANDWIDTH

FCC Rule Part 74.861(e)(3), (5)/ Sec. 2.1049

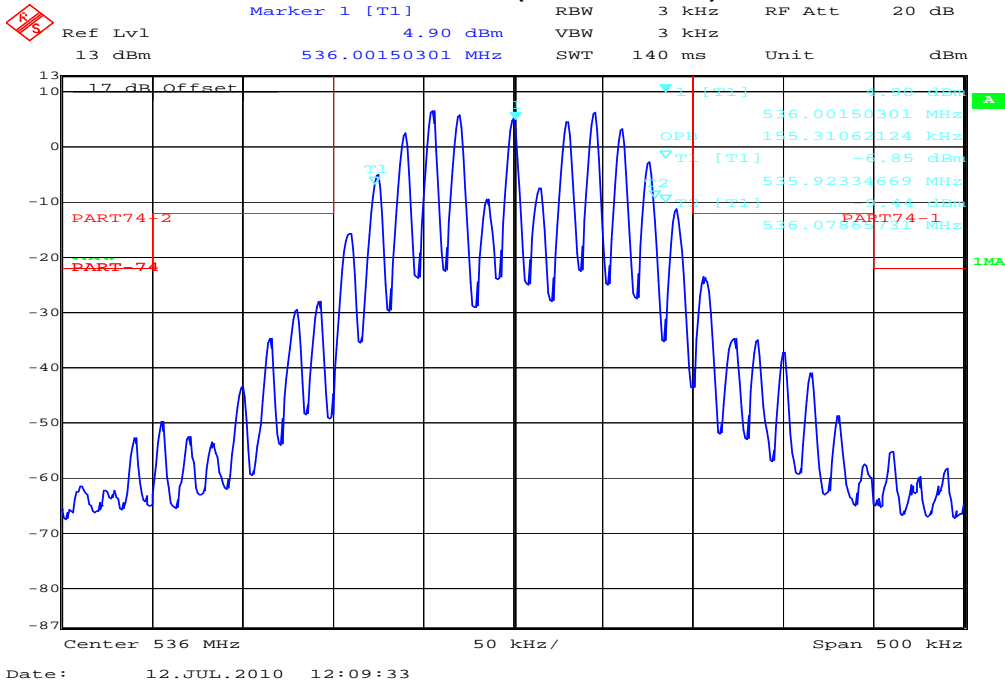
Frequency: 500.000 MHz / max. deviation :  $\pm 70$  kHz (Limit  $\pm 75$  kHz)



OCCUPIED BANDWIDTH

FCC Rule Part 74.861(e)(3), (5)/ Sec. 2.1049

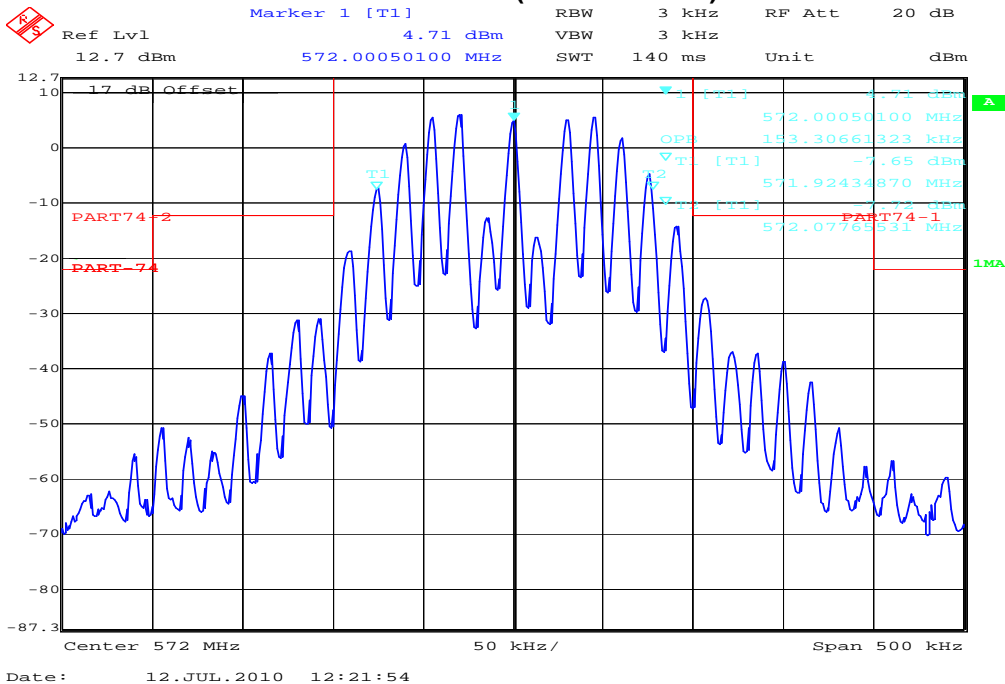
Frequency: 536.000 MHz / max. deviation :  $\pm 70$  kHz (Limit  $\pm 75$  kHz)



OCCUPIED BANDWIDTH

FCC Rule Part 74.861(e)(3), (5)/ Sec. 2.989

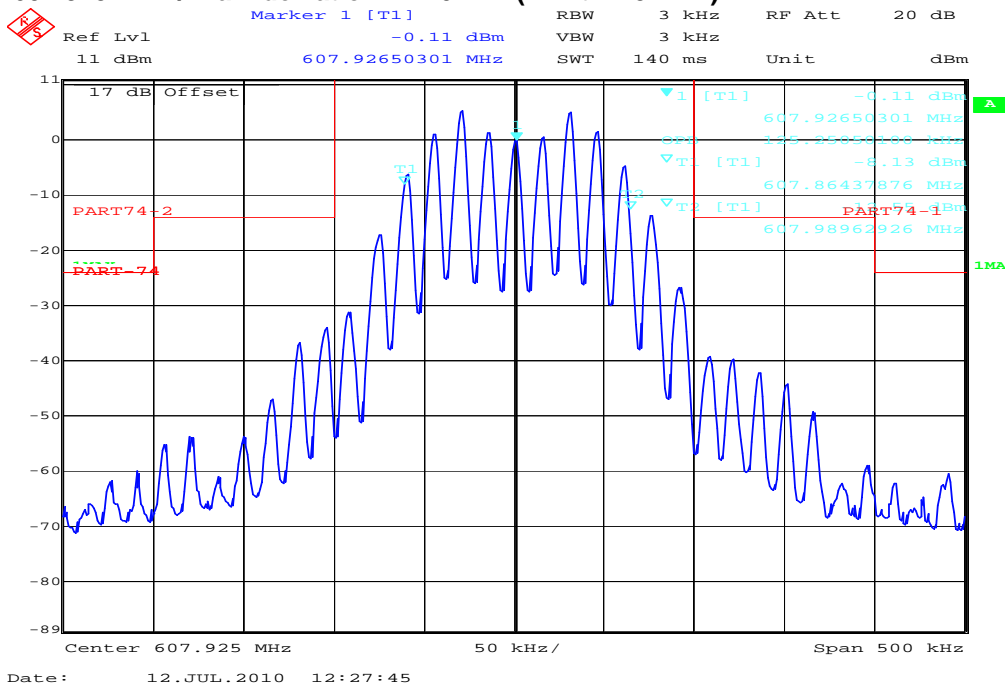
Frequency: 572.000 MHz / max. deviation :  $\pm 70$  kHz (Limit  $\pm 75$  kHz)



OCCUPIED BANDWIDTH

FCC Rule Part 74.861(e)(3), (5)/ Sec. 2.1049

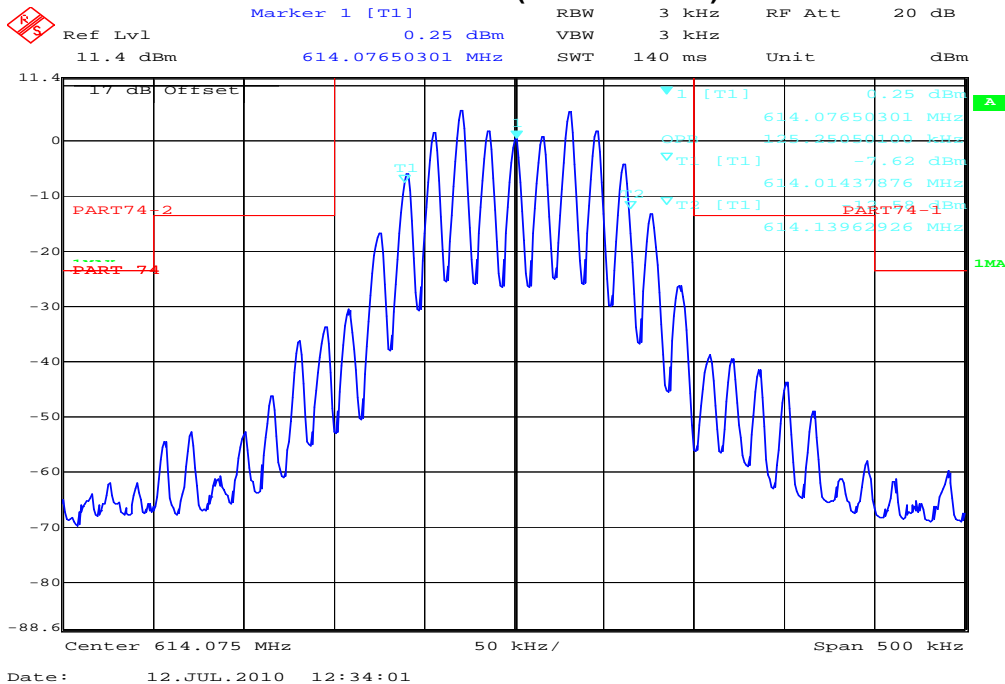
Frequency: 607.925 MHz / max. deviation :  $\pm 70$  kHz (Limit  $\pm 75$  kHz)



OCCUPIED BANDWIDTH

FCC Rule Part 74.861(e)(3), (5)/ Sec. 2.1049

Frequency: 614.075 MHz / max. deviation :  $\pm 70$  kHz (Limit  $\pm 75$  kHz)

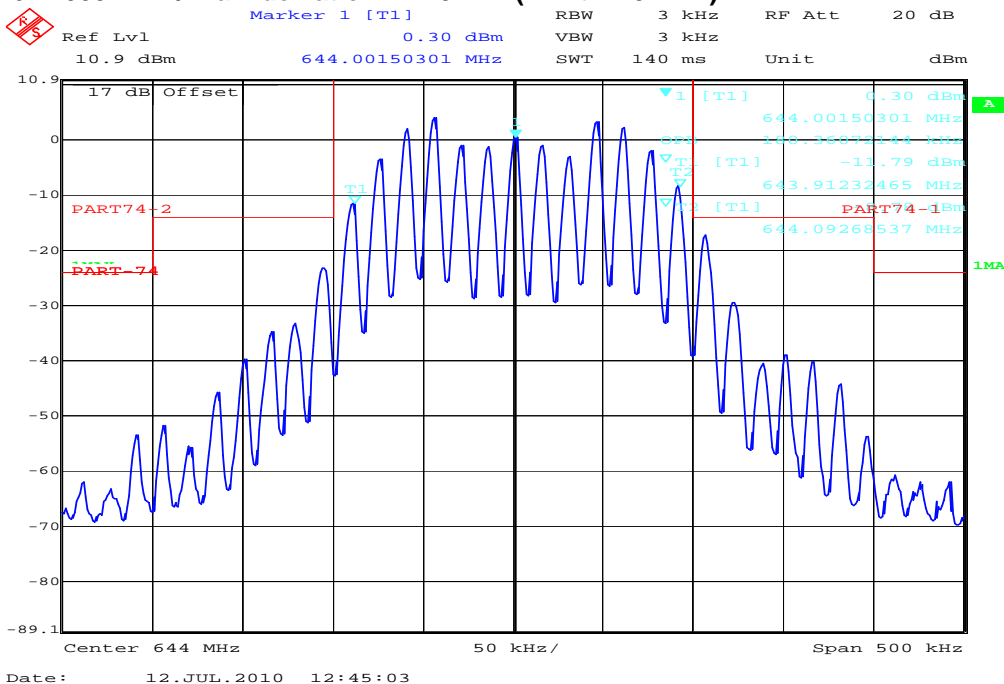




OCCUPIED BANDWIDTH

FCC Rule Part 74.861(e)(3), (5)/ Sec. 2.1049

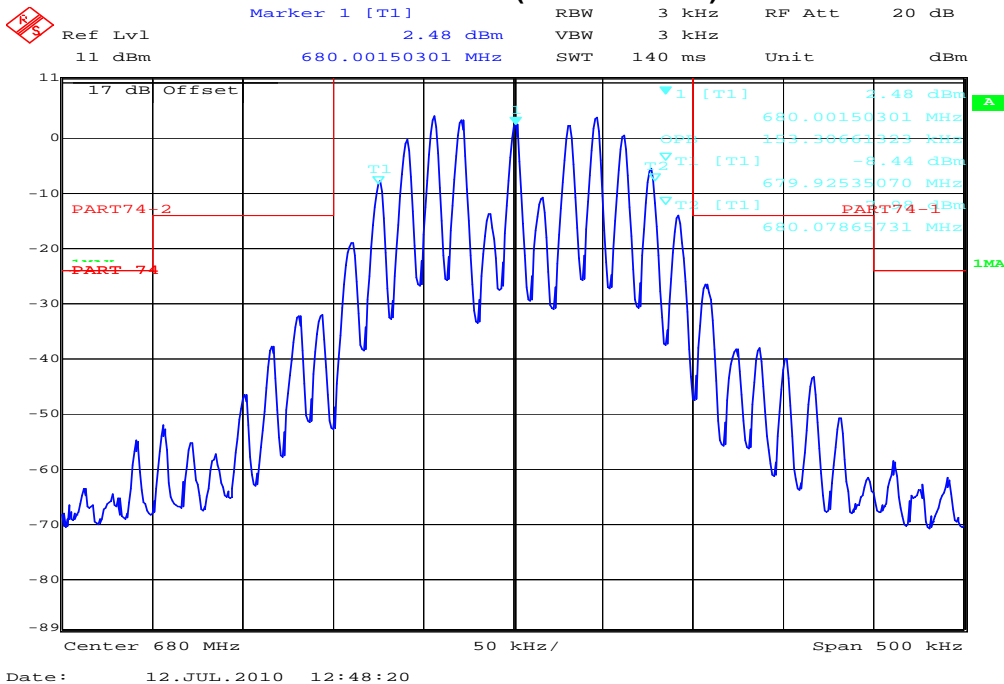
Frequency: 644.000 MHz / max. deviation :  $\pm 70$  kHz (Limit  $\pm 75$  kHz)



OCCUPIED BANDWIDTH

FCC Rule Part 74.861(e)(3), (5)/ Sec. 2.1049

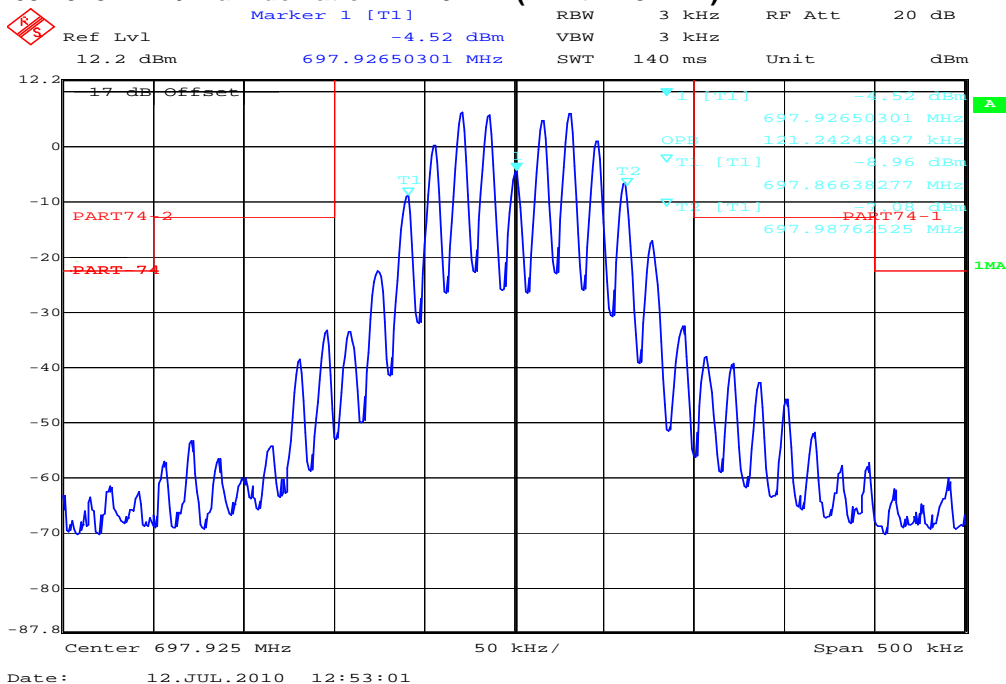
Frequency: 680.000 MHz / max. deviation :  $\pm 70$  kHz (Limit  $\pm 75$  kHz)



OCCUPIED BANDWIDTH

FCC Rule Part 74.861(e)(3), (5)/ Sec. 2.1049

Frequency: 697.925 MHz / max. deviation :  $\pm 70$  kHz (Limit  $\pm 75$  kHz)

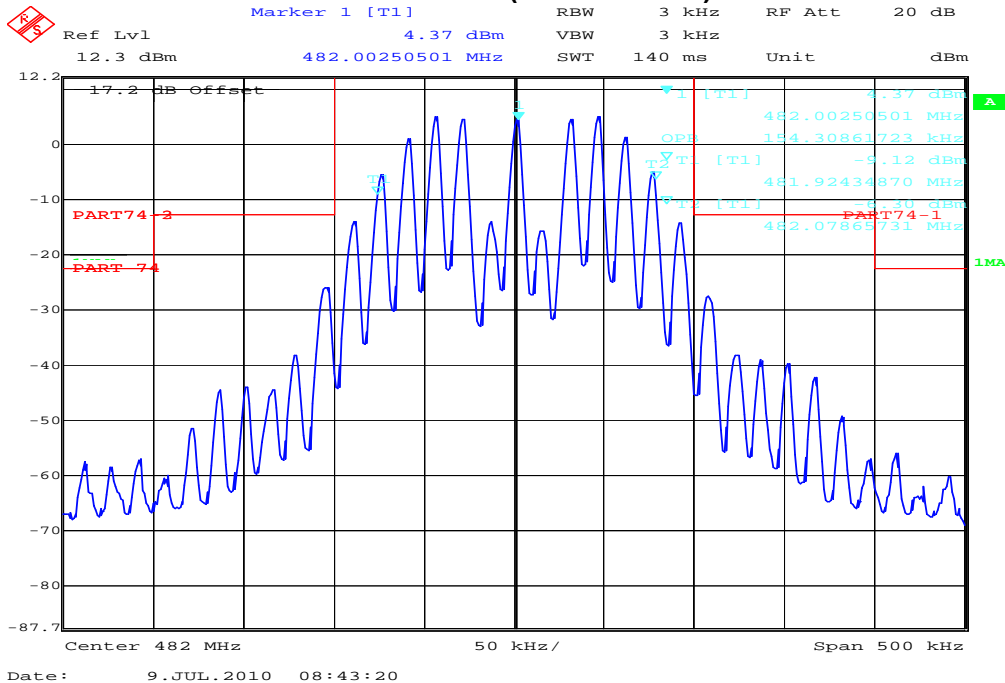


TS 910 C

OCCUPIED BANDWIDTH

FCC Rule Part 74.861(e)(3), (5)/ Sec. 2.989

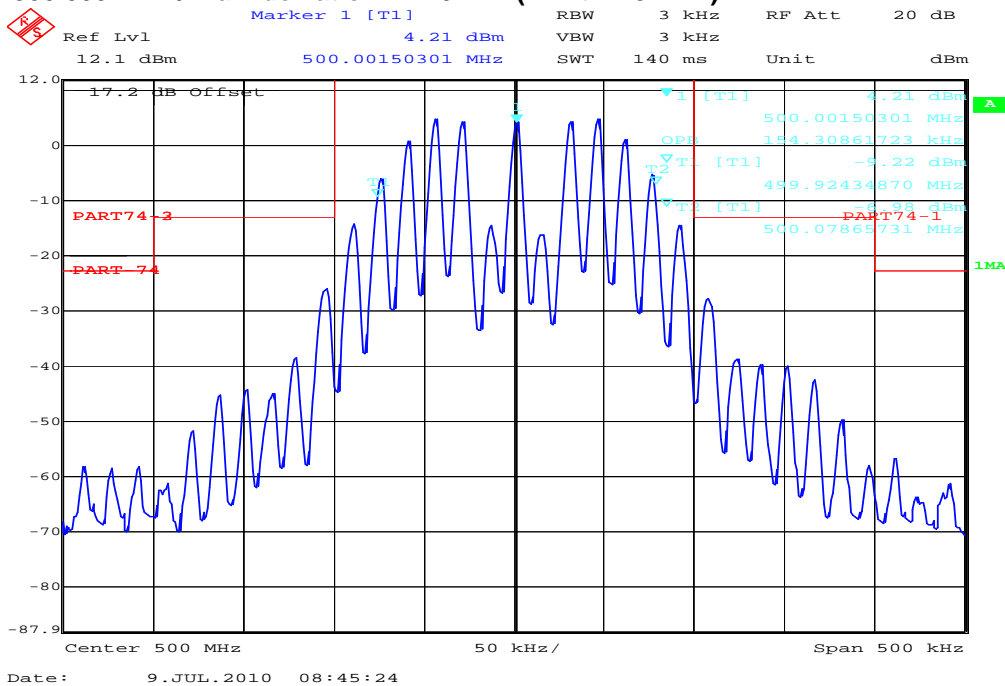
Frequency: 482.000 MHz / max. deviation:  $\pm 70$  kHz (Limit  $\pm 75$  kHz)



OCCUPIED BANDWIDTH

FCC Rule Part 74.861(e)(3), (5)/ Sec. 2.1049

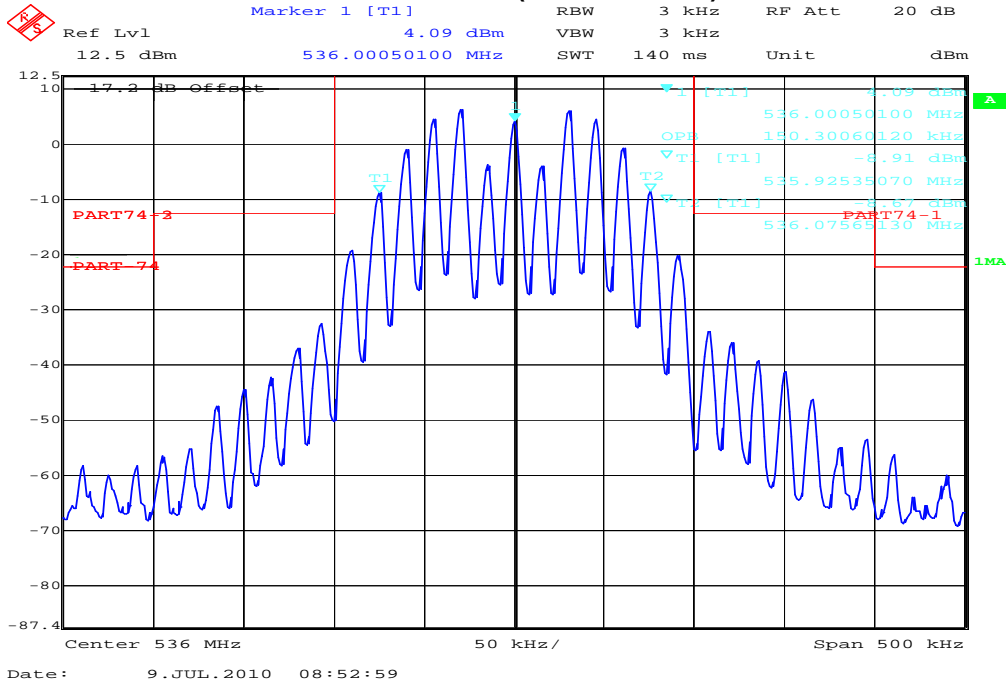
Frequency: 500.000 MHz / max. deviation :  $\pm 70$  kHz (Limit  $\pm 75$  kHz)



**OCCUPIED BANDWIDTH**

FCC Rule Part 74.861(e)(3), (5)/ Sec. 2.1049

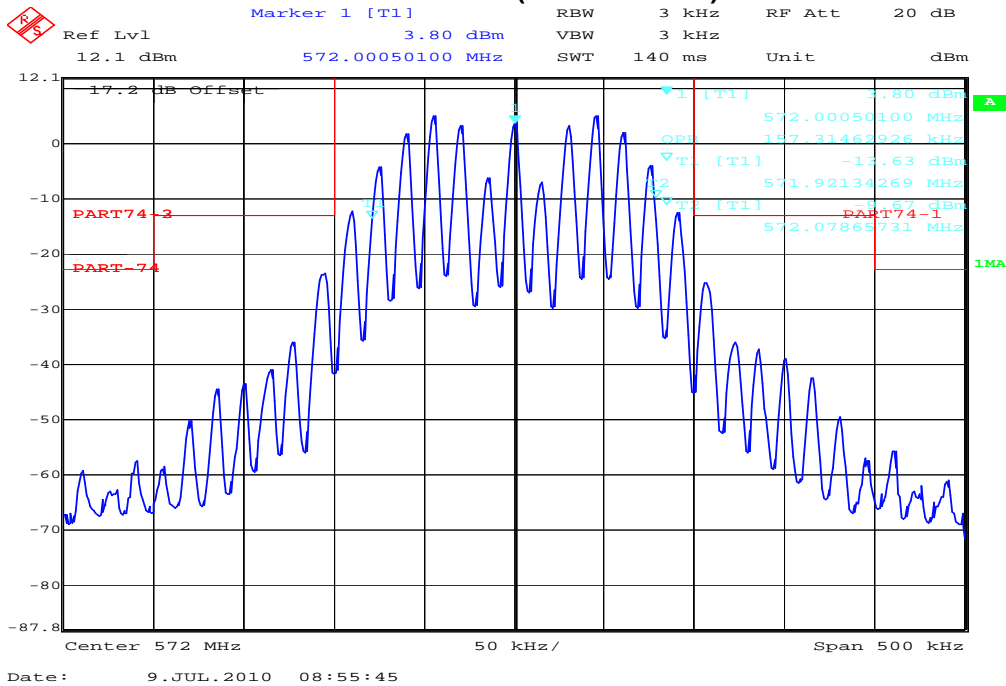
Frequency: 536.000 MHz / max. deviation :  $\pm 70$  kHz (Limit  $\pm 75$  kHz)



**OCCUPIED BANDWIDTH**

FCC Rule Part 74.861(e)(3), (5)/ Sec. 2.989

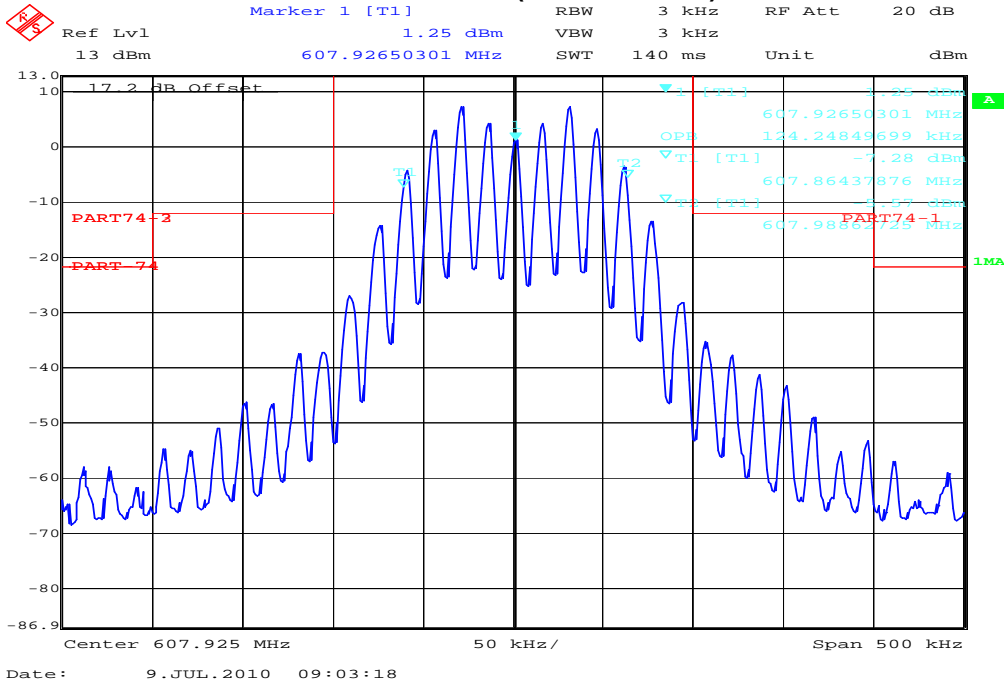
Frequency: 572.000 MHz / max. deviation :  $\pm 70$  kHz (Limit  $\pm 75$  kHz)



OCCUPIED BANDWIDTH

FCC Rule Part 74.861(e)(3), (5)/ Sec. 2.1049

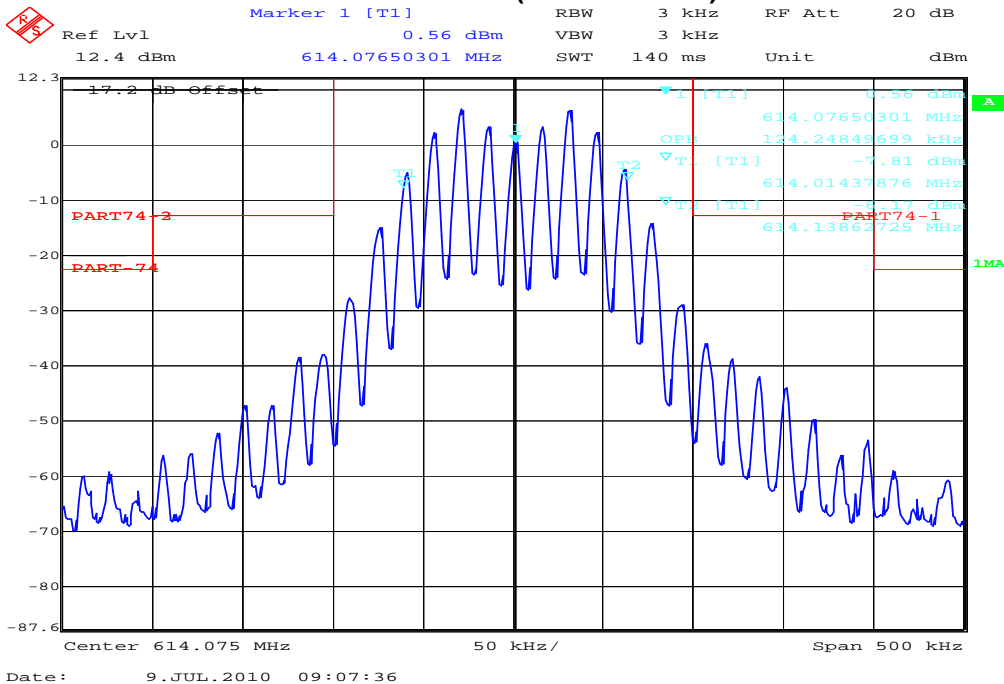
Frequency: 607.925 MHz / max. deviation :  $\pm 70$  kHz (Limit  $\pm 75$  kHz)



OCCUPIED BANDWIDTH

FCC Rule Part 74.861(e)(3), (5)/ Sec. 2.1049

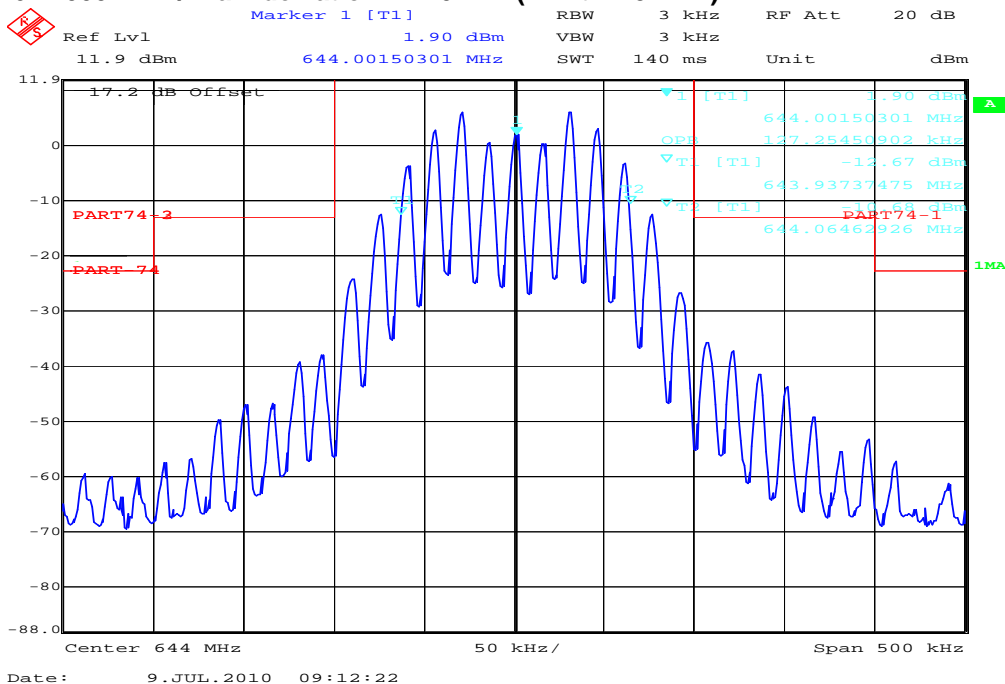
Frequency: 614.075 MHz / max. deviation :  $\pm 70$  kHz (Limit  $\pm 75$  kHz)



OCCUPIED BANDWIDTH

FCC Rule Part 74.861(e)(3), (5)/ Sec. 2.1049

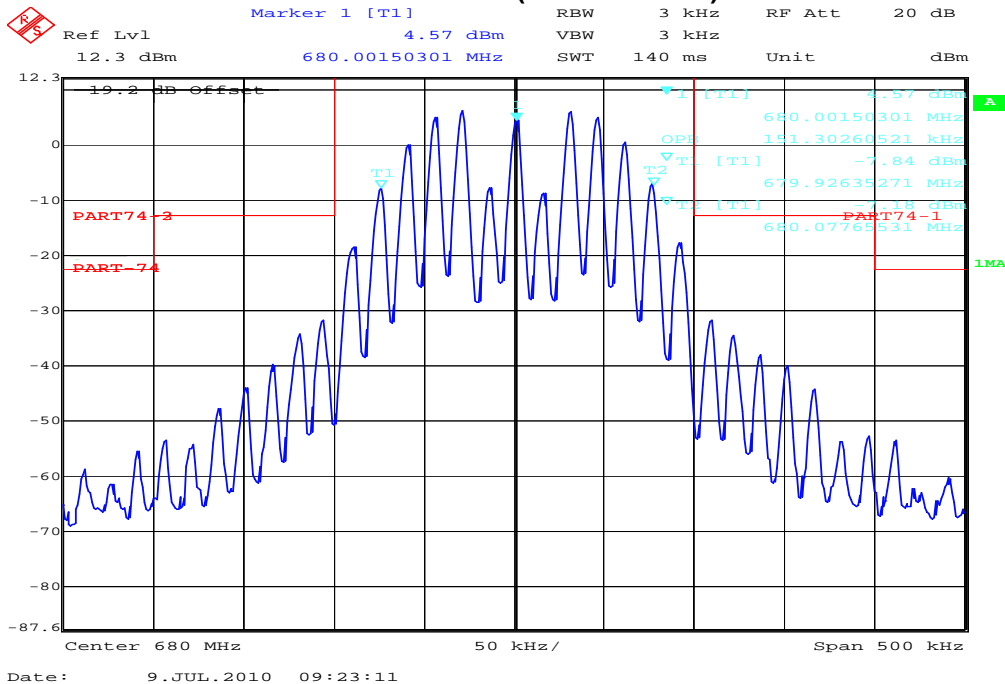
Frequency: 644.000 MHz / max. deviation :  $\pm 70$  kHz (Limit  $\pm 75$  kHz)



OCCUPIED BANDWIDTH

FCC Rule Part 74.861(e)(3), (5)/ Sec. 2.1049

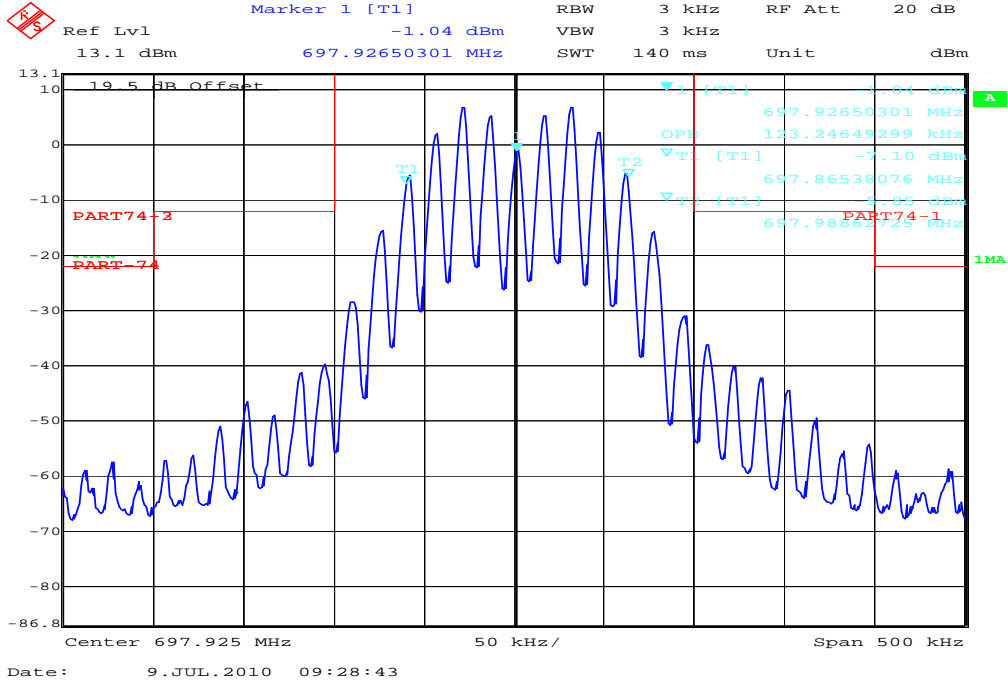
Frequency: 680.000 MHz / max. deviation :  $\pm 70$  kHz (Limit  $\pm 75$  kHz)



OCCUPIED BANDWIDTH

FCC Rule Part 74.861(e)(3), (5)/ Sec. 2.1049

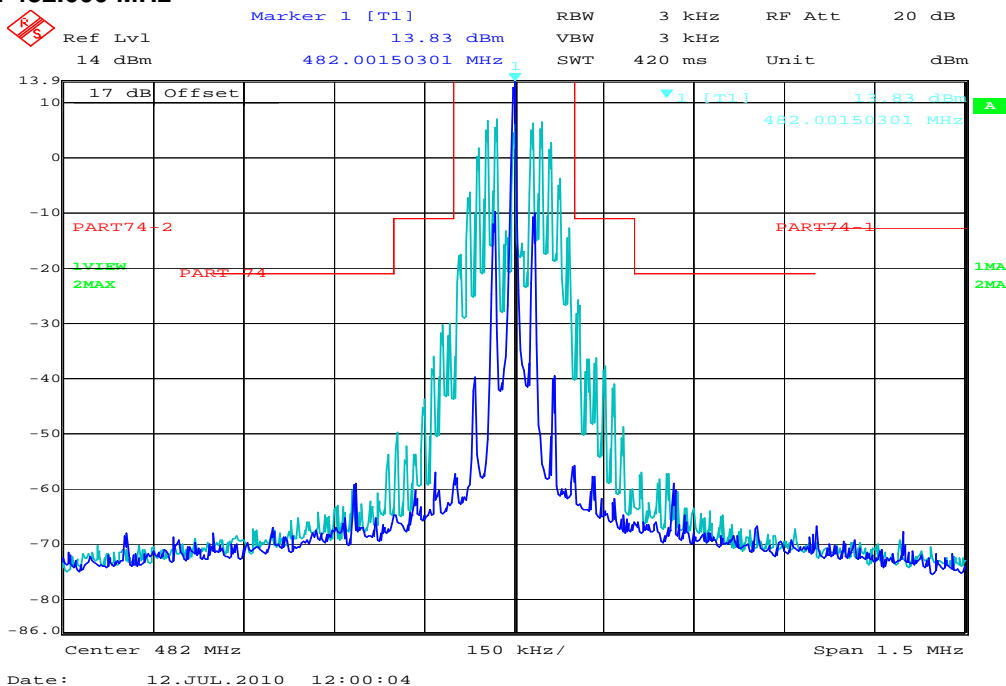
Frequency: 697.925 MHz / max. deviation :  $\pm 70$  kHz (Limit  $\pm 75$  kHz)



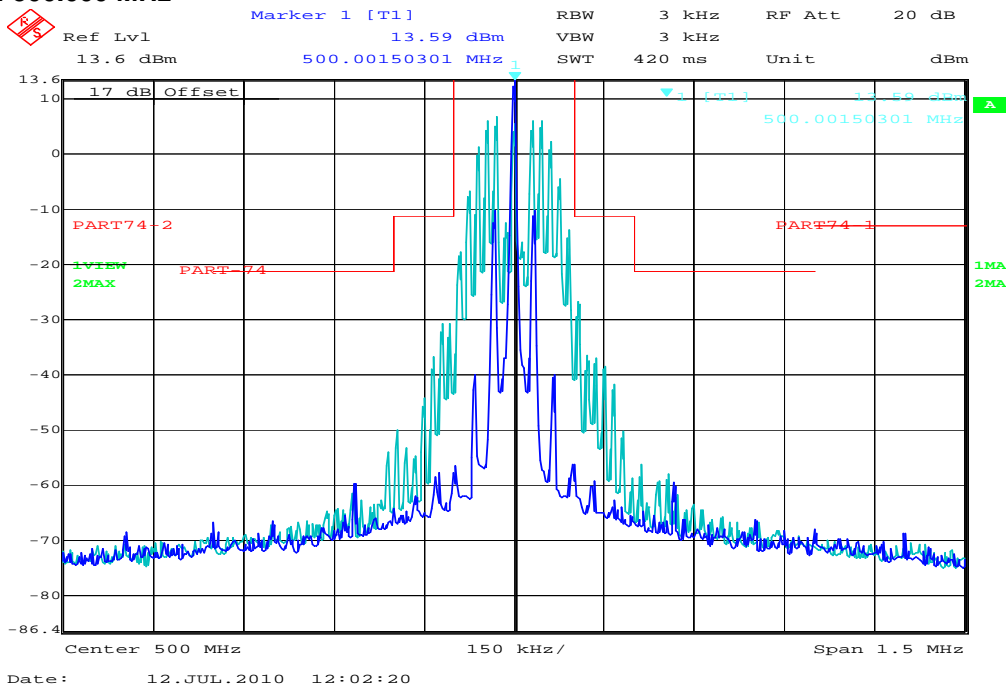
### 8.6 Emission mask FCC 74 861(e)(6)

TS 910 M

Frequency: 482.000 MHz

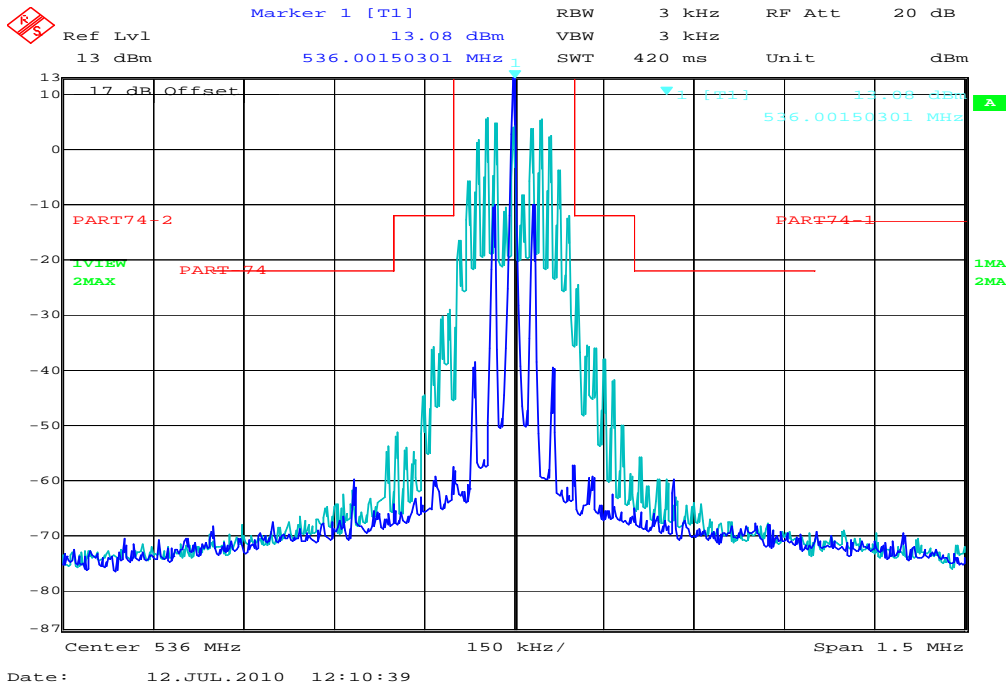


Frequency: 500.000 MHz

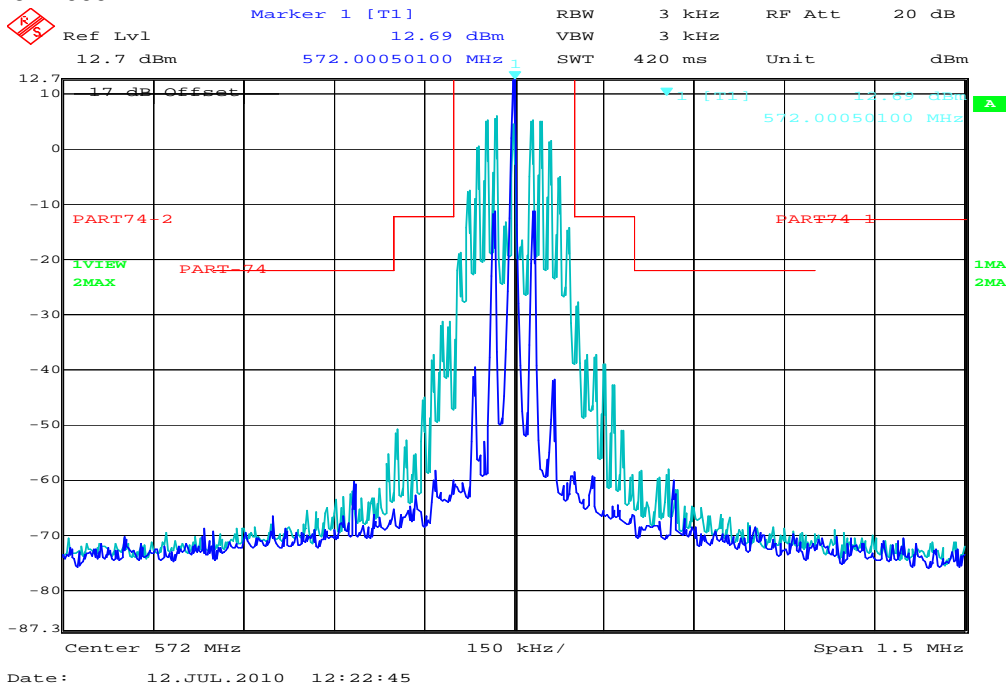




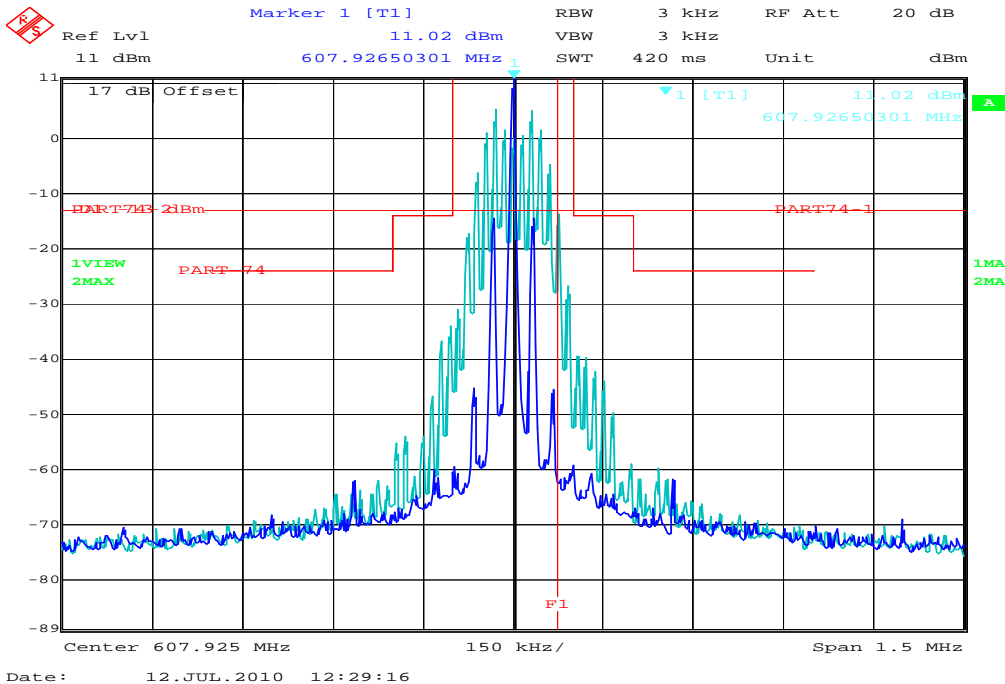
Frequency: 536.000 MHz



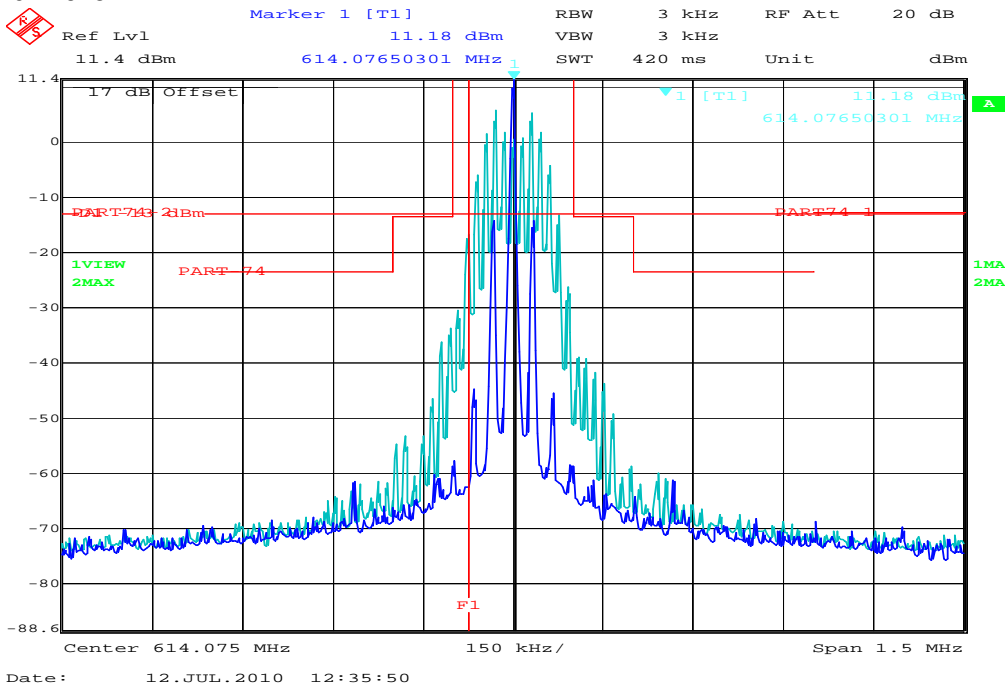
Frequency: 572.000 MHz



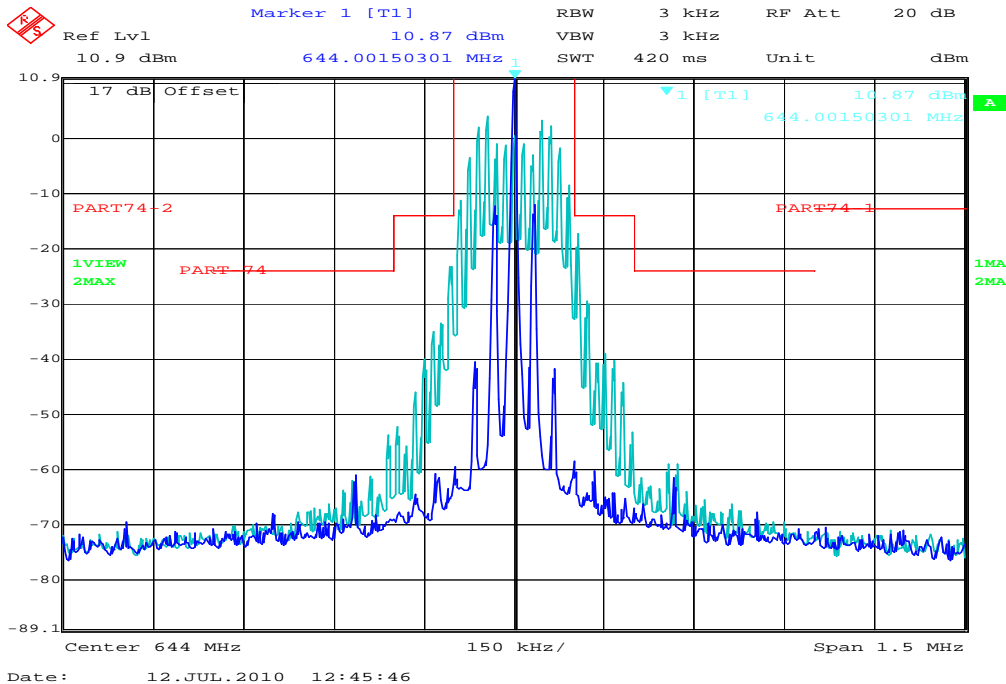
Frequency: 607.925 MHz



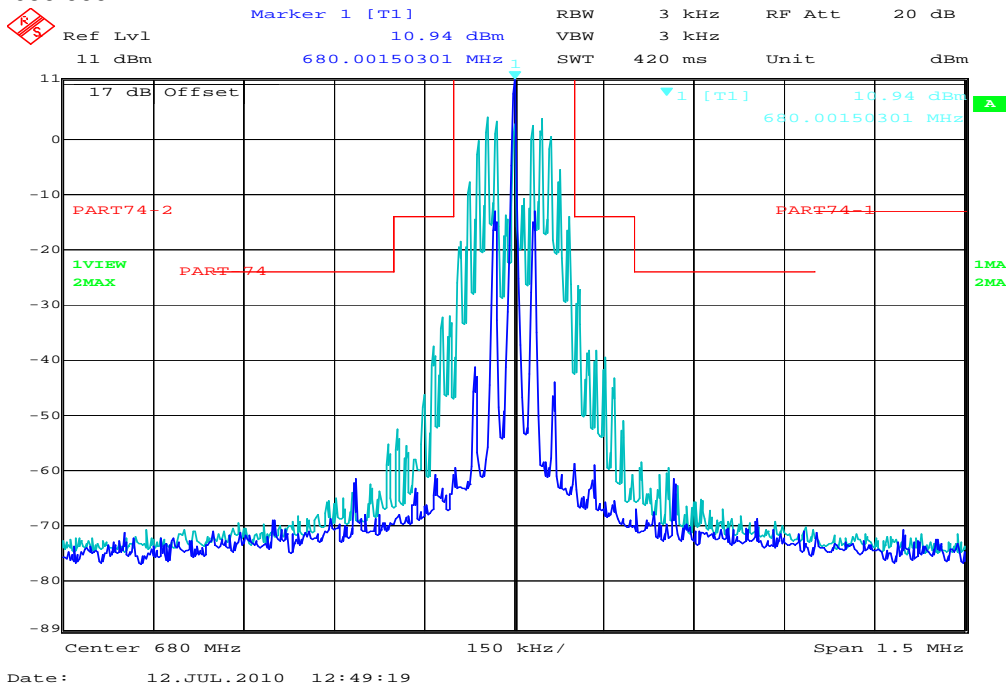
Frequency: 614.075 MHz



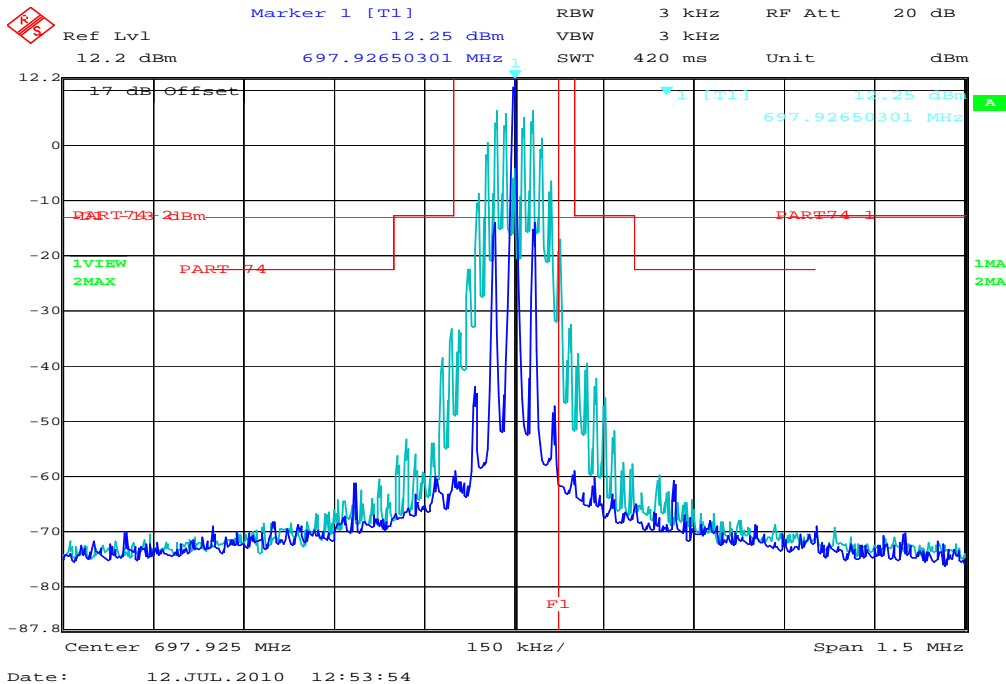
Frequency: 644.000 MHz



Frequency: 680.000 MHz



Frequency: 697.925 MHz



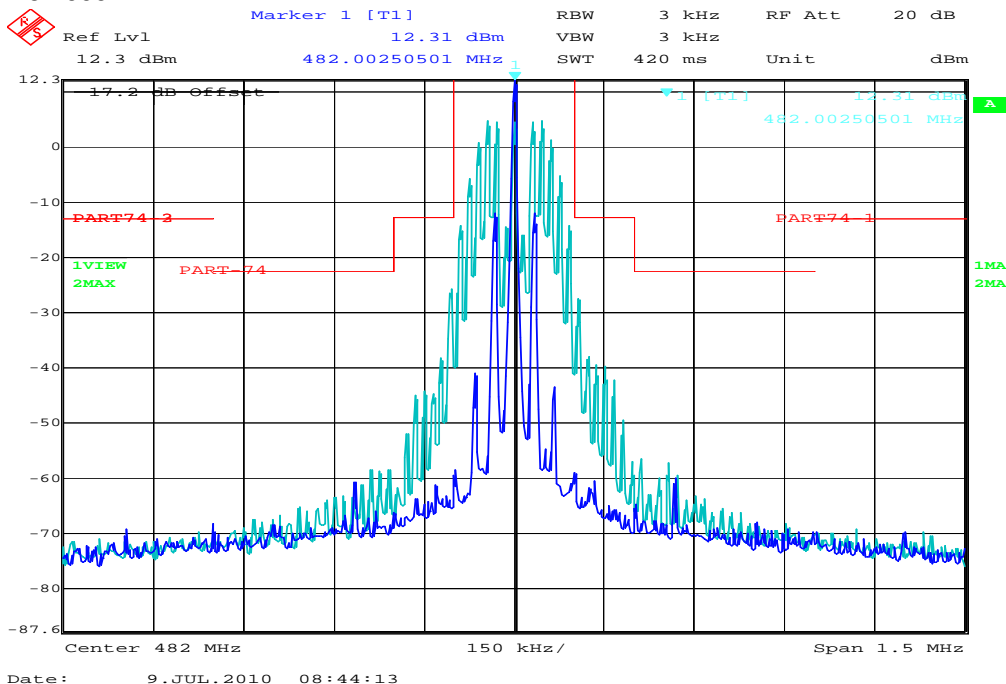
Limits

FCC Rule Part 74.861(e)(6)

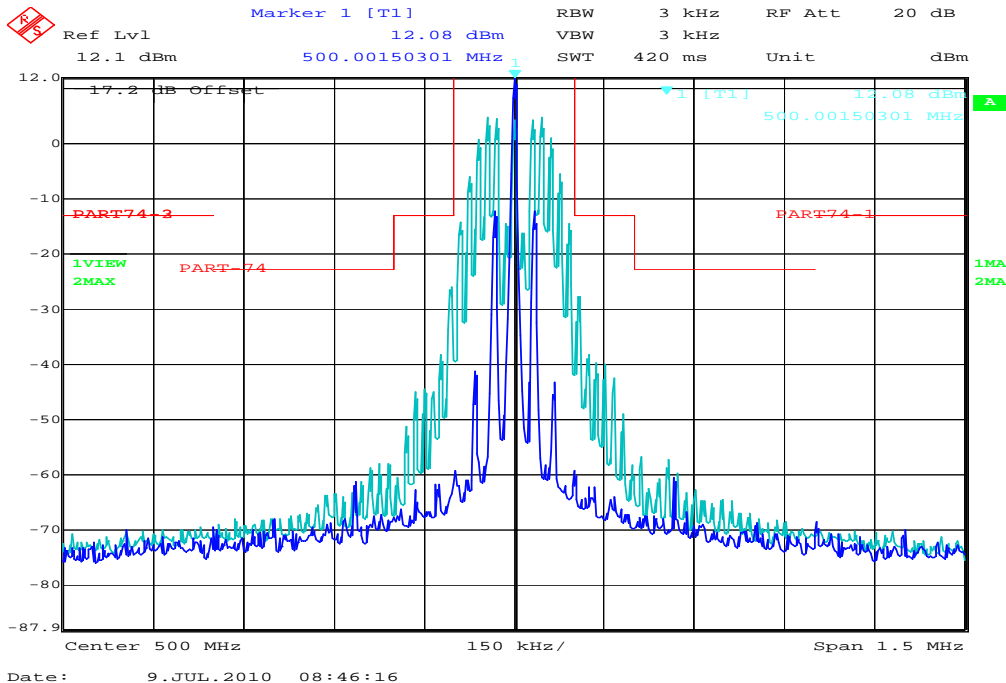
$f \pm 100 \text{ kHz to } f \pm 200 \text{ kHz}$	$f \pm 200 \text{ kHz to } f \pm 500 \text{ kHz}$	$f \pm 500 \text{ kHz}$
25 dBc	35 dBc	$-43 + 10 \log_{10}(\text{mean output power in watts}) \text{ dB below the mean output power}$

TS 910 C

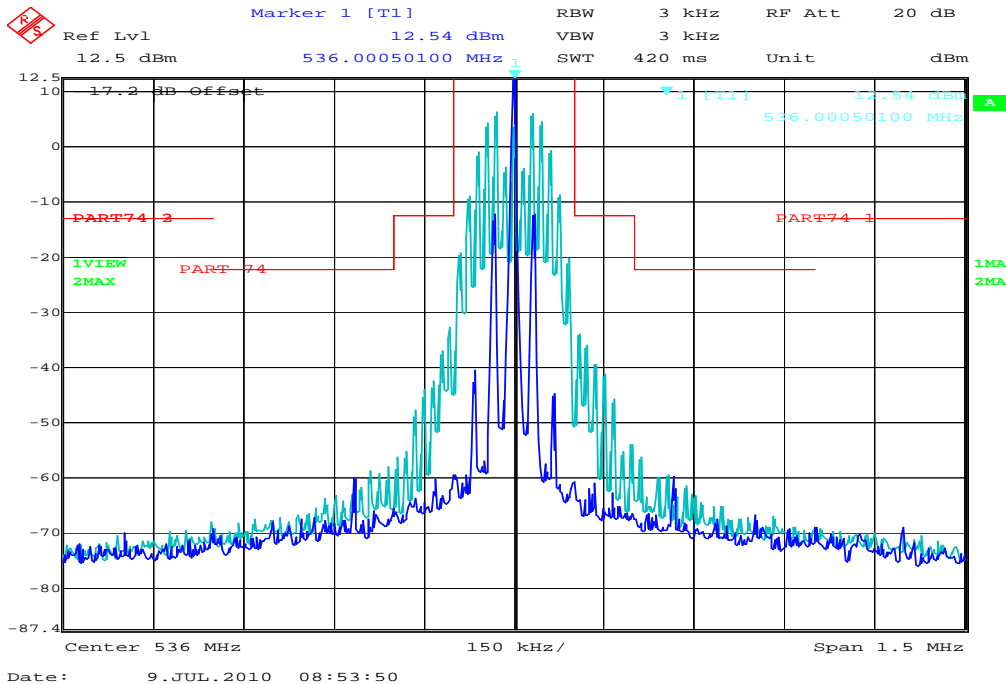
Frequency: 482.000 MHz



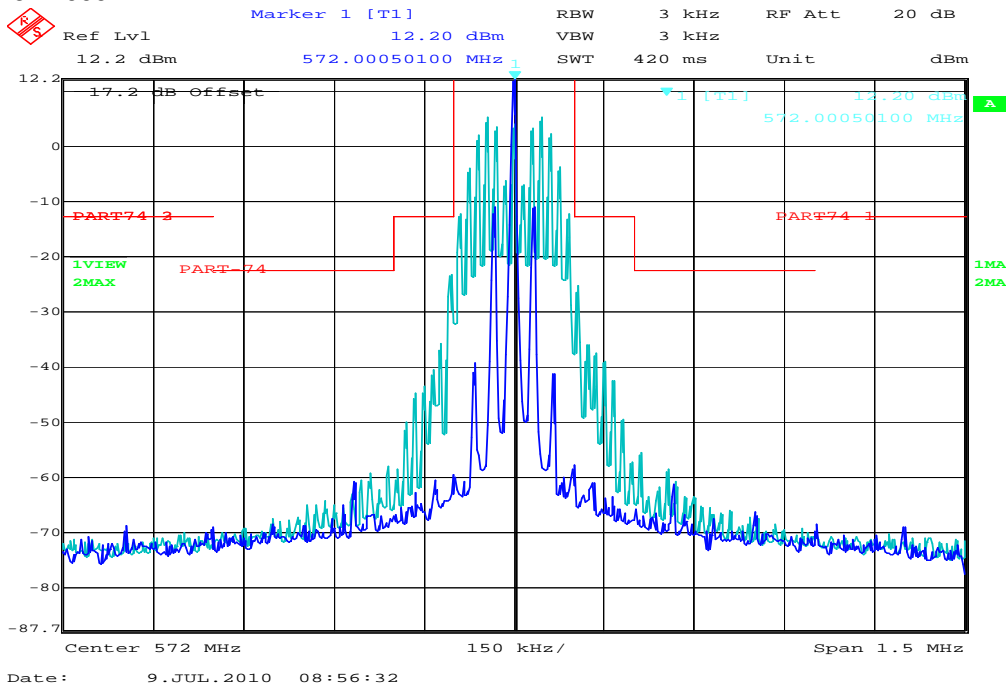
Frequency: 500.000 MHz



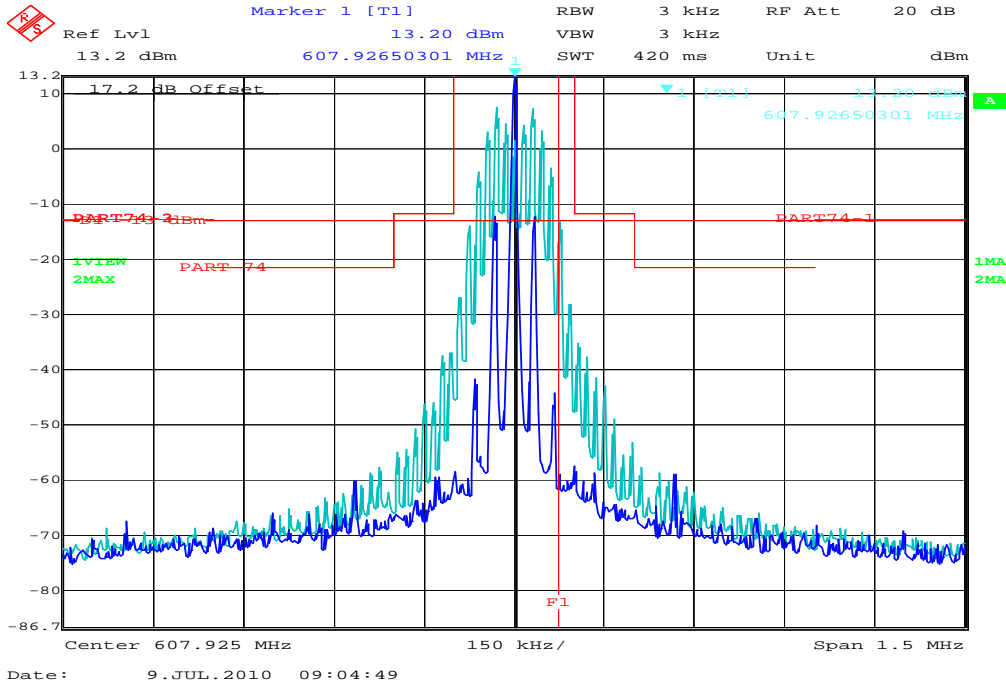
Frequency: 536.000 MHz



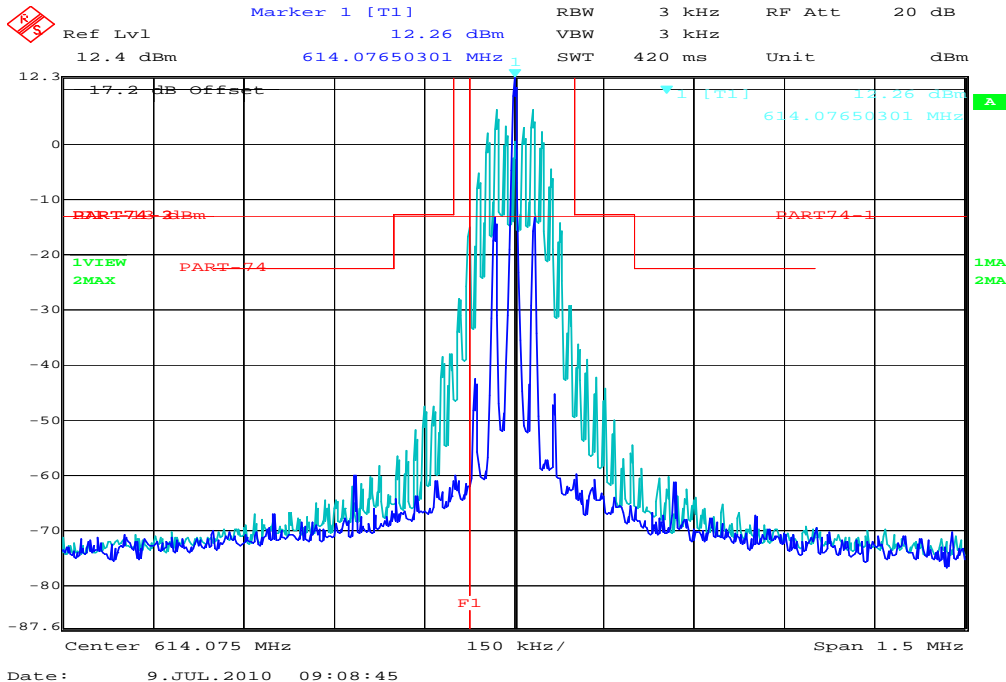
Frequency: 572.000 MHz



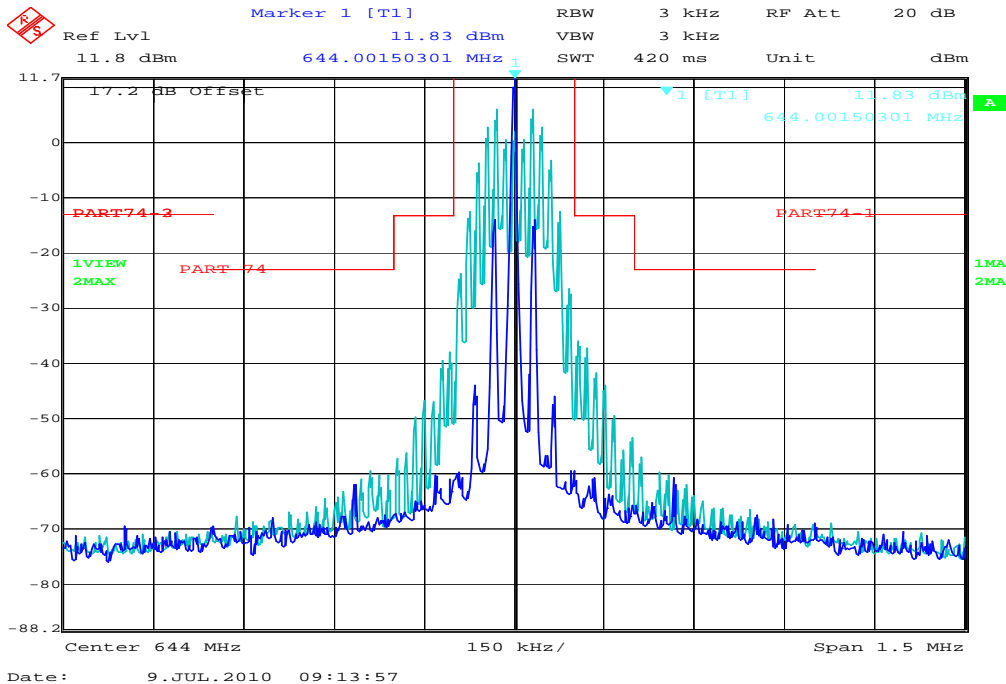
Frequency: 607.925 MHz



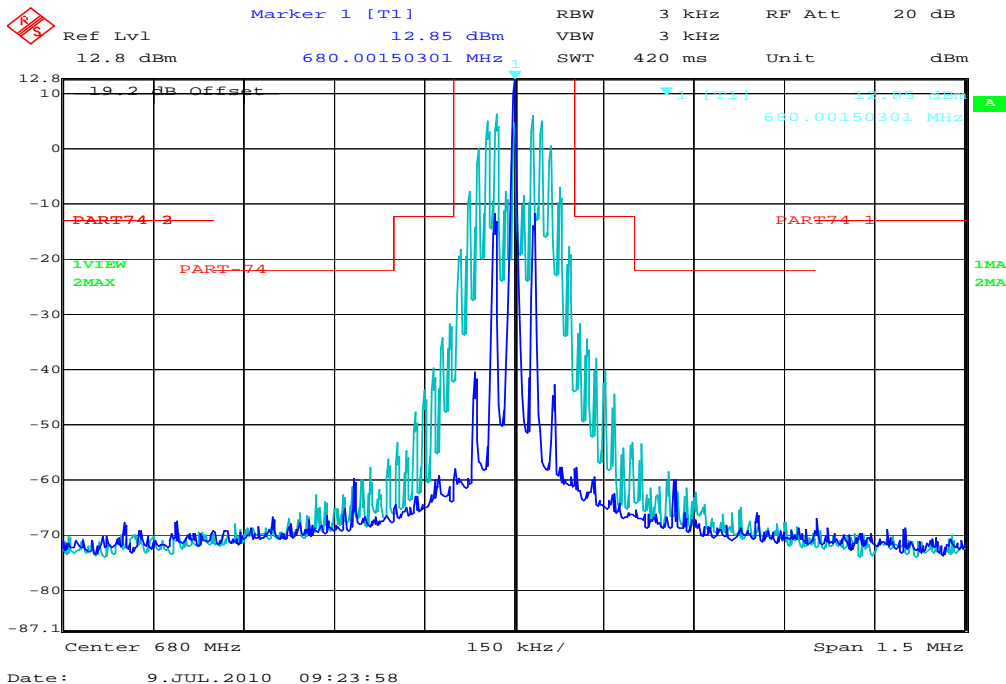
Frequency: 614.075 MHz



Frequency: 644.000 MHz

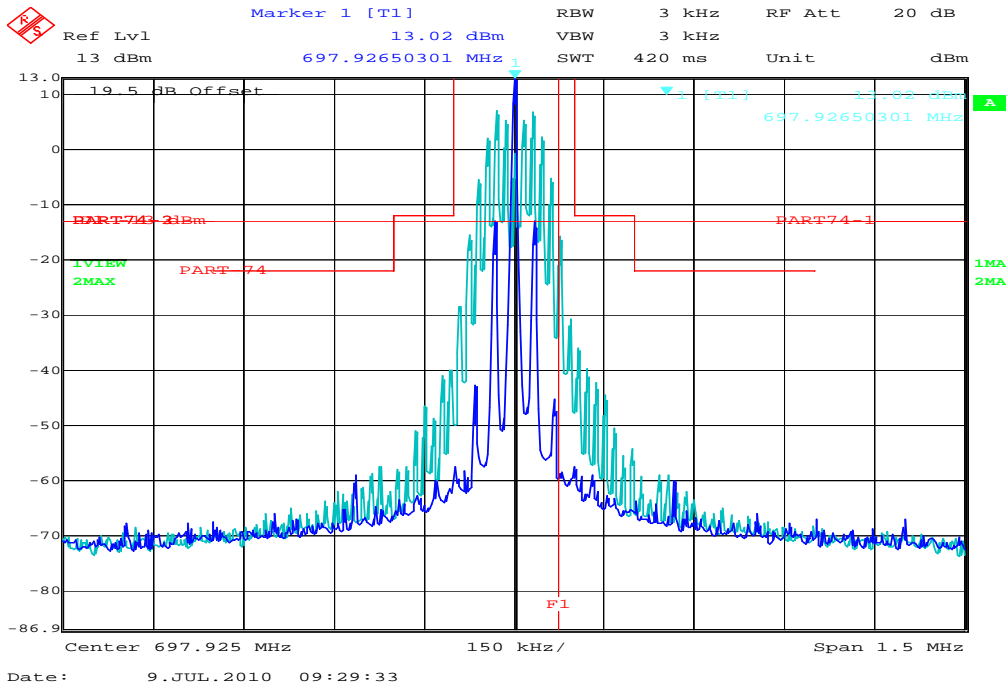


Frequency: 680.000 MHz





Frequency: 697.925 MHz



Limits

FCC Rule Part 74.861(e)(6)

f ± 100 kHz to f ± 200 kHz	f ± 200 kHz to f ± 500 kHz	f ± 500 kHz
25 dBc	35 dBc	-43 + 10 log <sub>10</sub> (mean output power in watts) dB below the mean output power

## 8.7 Radiated emissions FCC rule Part 74 subpart H

### Test procedure

- 1). on a test site, the EUT shall be placed on a turntable and in the position closest to the normal use as declared by the user.
- 2). the test antenna shall be oriented initially for vertical polarization located 3m from the EUT to correspond to the frequency of the transmitter.
- 3). the output of the test antenna shall be connected to the measuring receiver and either a peak or quasi-peak detector was used for the measurement as indicated on the report. The detector selection is based on how close the emission level was approaching the limit.
- 4). the transmitter shall be switched on, if possible, without the modulation and the measurement receiver shall be tuned to the frequency of the transmitter under test.
- 5). the test antenna shall be raised and lowered through the specified range of height until a maximum signal level is detected by the measuring receiver.
- 6). the transmitter shall than be rotated through 360° in the horizontal plane, until the maximum signal level is detected by the measuring receiver.
- 7). the test antenna shall be raised and lowered again through the specified range of height until a maximum signal level is detected by the measuring receiver.
- 8). the maximum signal level detected by the measuring receiver shall be noted.
- 9). the transmitter shall be replaced by a substitution antenna (tuned dipole for f less than 1GHz and horn for frequency higher than 1GHz).
- 10). the substitution antenna shall be oriented for vertical polarization and the length (if a dipole antenna is used) of the substitution antenna shall be adjusted to correspond to the frequency of the transmitter.
- 11). the substitution antenna shall be connected to a calibrated signal generator.
- 12). If necessary, the input attenuator setting of the measuring receiver shall be adjusted in order to increase the sensitivity of the measuring receiver.
- 13). the test antenna shall be raised and lowered through the specified range of the height to ensure that the maximum signal is received.
- 14). the input signal to the substitution antenna shall be adjusted to the level that produces a level detected by the measuring receiver, that is equal to the level noted while the transmitter radiated power was measured, corrected for the change of input attenuation setting of the measuring receiver.
- 15). the input level to the substitution antenna shall be recorded as power level in dBm, corrected for any change of input attenuator setting of the measuring receiver.
- 16). the measurement shall be repeated with the test antenna and the substitution antenna oriented for horizontal polarization.
- 17). the measure of the effective radiated power is the larger of the two levels recorded, at the input to the substitution antenna, corrected for the gain of the substitution antenna if necessary.
- 18). Repeat above substitution measurement procedure for fundamental and all harmonica emissions.

**8.7.1 Results of the measurements**

**Body pack transmitter 1: TS 910 M**

**Results: 5M2A**

TX Spurious Emissions Radiated [dBm]								
TX mode								
Low channel			Mid channel			High channel		
F [MHz]	Detector	Level	F [MHz]	Detector	Level	F [MHz]	Detector	Level
963.99	120 kHz	-50.85 dBm vertical -52.82 dBm horizontal	No critical peaks detected! All detected spurious emissions are more than 20 dB below the limit.			-/-	-/-	-/-
Measurement uncertainty			± 3 dB					

**Results: 5M2B**

TX Spurious Emissions Radiated [dBm]								
TX mode								
Low channel			Mid channel			High channel		
F [MHz]	Detector	Level	F [MHz]	Detector	Level	F [MHz]	Detector	Level
No critical peaks detected! All detected spurious emissions are more than 20 dB below the limit.			-/-	-/-	-/-	-/-	-/-	-/-
Measurement uncertainty			± 3 dB					

**Limits**

**FCC Rule Part 74.861(e)(6)**

f ± 100 kHz to f ± 200 kHz	f ± 200 kHz to f ± 500 kHz	f ± 500 kHz
25 dBc	35 dBc	-43 + 10 log <sub>10</sub> (mean output power in watts) dB below the mean output power

**Results: 5M9A**

TX Spurious Emissions Radiated [dBm]								
TX mode								
Low channel			Mid channel			High channel		
F [MHz]	Detector	Level	F [MHz]	Detector	Level	F [MHz]	Detector	Level
-/-	-/-	-/-	1143.94	1 MHz	-49.64 dBm vertical -48.84 dBm horizontal	-/-	-/-	-/-
			2287.98	1 MHz	-48.37 dBm vertical -45.79 dBm horizontal			
			2860.03	1 MHz	-37.27 dBm vertical -35.63 dBm horizontal			
			3431.94	1 MHz	-41.64 dBm vertical -39.28 dBm horizontal			
Measurement uncertainty			± 3 dB					

**Results: 5M9B**

TX Spurious Emissions Radiated [dBm]								
TX mode								
Low channel			Mid channel			High channel		
F [MHz]	Detector	Level	F [MHz]	Detector	Level	F [MHz]	Detector	Level
-/-	-/-	-/-	No critical peaks detected! All detected spurious emissions are more than 20 dB below the limit.			No critical peaks detected! All detected spurious emissions are more than 20 dB below the limit.		
Measurement uncertainty			± 3 dB					

**Limits**

**FCC Rule Part 74.861(e)(6)**

f ± 100 kHz to f ± 200 kHz	f ± 200 kHz to f ± 500 kHz	f ± 500 kHz
25 dBc	35 dBc	-43 + 10 log <sub>10</sub> (mean output power in watts) dB below the mean output power

**Results: 6M6A**

TX Spurious Emissions Radiated [dBm]								
TX mode								
Low channel			Mid channel			High channel		
F [MHz]	Detector	Level	F [MHz]	Detector	Level	F [MHz]	Detector	Level
-/-	-/-	-/-	No critical peaks detected! All detected spurious emissions are more than 20 dB below the limit.			-/-	-/-	-/-
Measurement uncertainty			± 3 dB					

**Results: 6M6B**

TX Spurious Emissions Radiated [dBm]								
TX mode								
Low channel			Mid channel			High channel		
F [MHz]	Detector	Level	F [MHz]	Detector	Level	F [MHz]	Detector	Level
-/-	-/-	-/-	No critical peaks detected! All detected spurious emissions are more than 20 dB below the limit.			No critical peaks detected! All detected spurious emissions are more than 20 dB below the limit.		
Measurement uncertainty			± 3 dB					

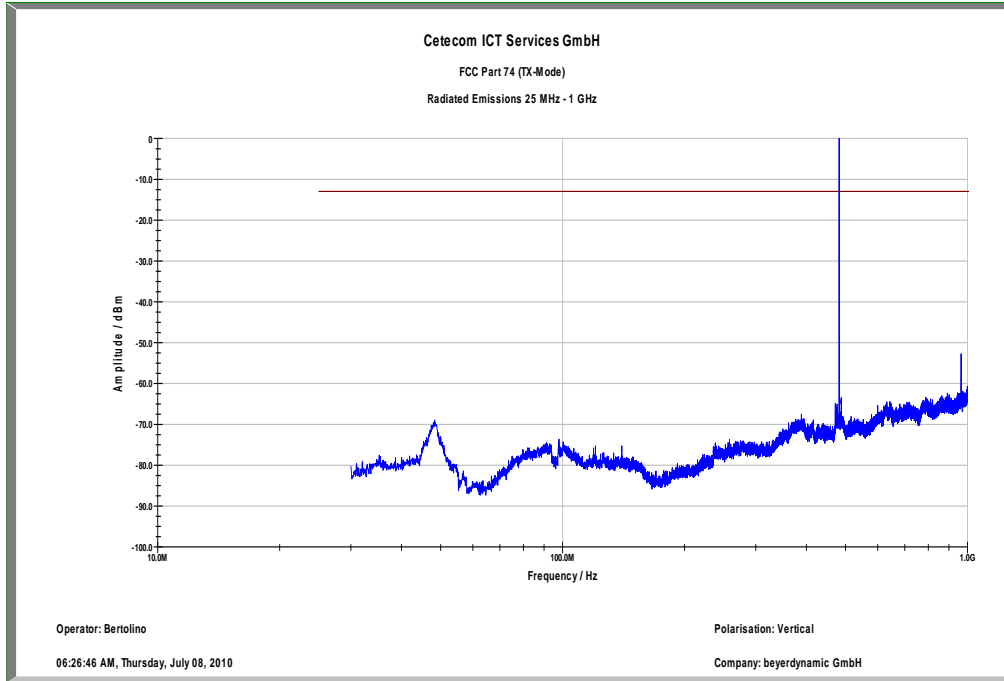
**Limits**

**FCC Rule Part 74.861(e)(6)**

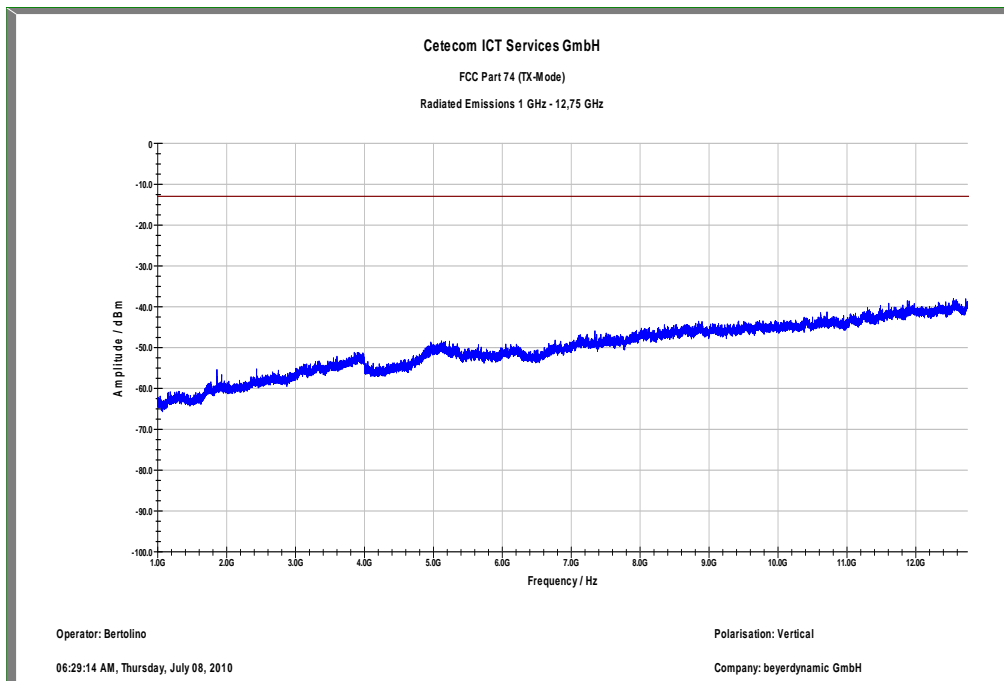
f ± 100 kHz to f ± 200 kHz	f ± 200 kHz to f ± 500 kHz	f ± 500 kHz
25 dBc	35 dBc	-43 +10 log <sub>10</sub> (mean output power in watts) dB below the mean output power

### 8.7.2 Plots of the measurements

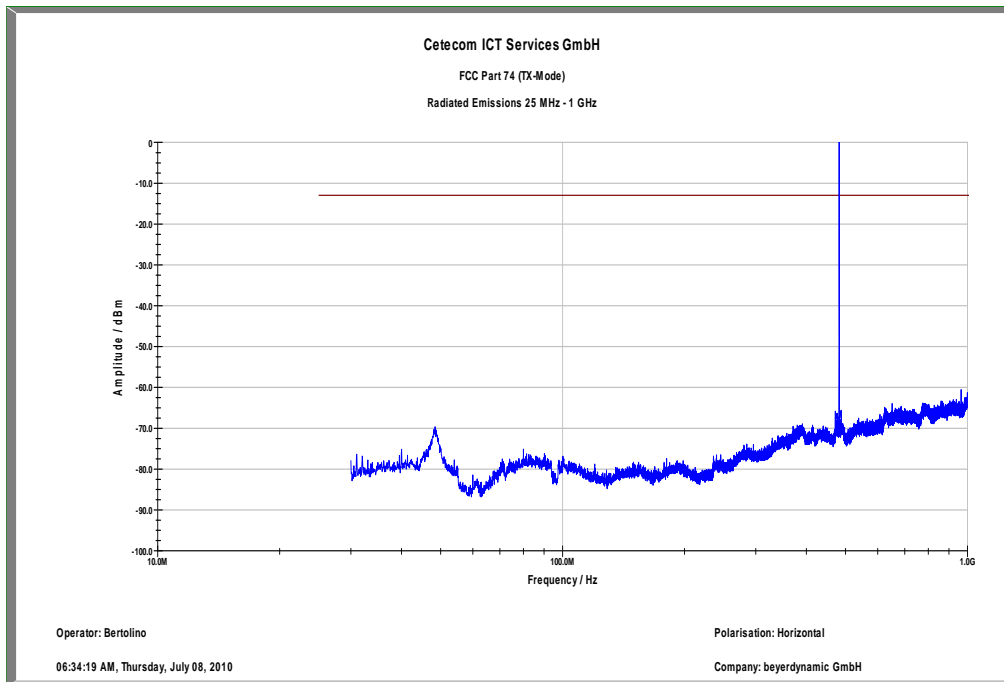
Plot 1: 5M2A band 1 low, TX mode, low channel, 30 MHz to 1 GHz, vertical polarization



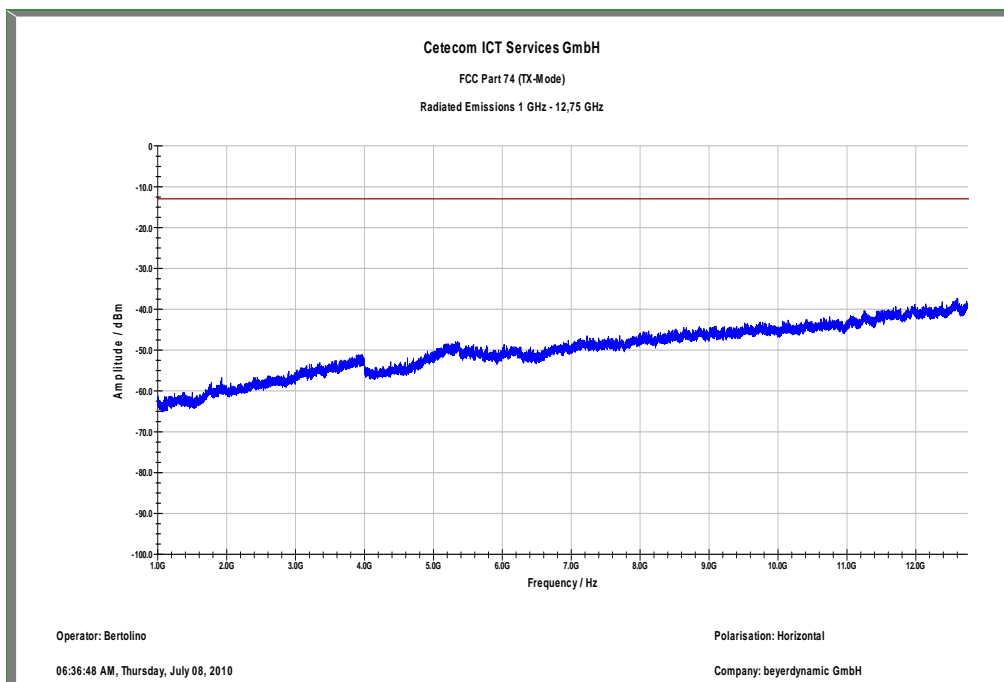
Plot 2: 5M2A band 1 low, TX mode, low channel, 1 GHz to 12.75 GHz, vertical polarization



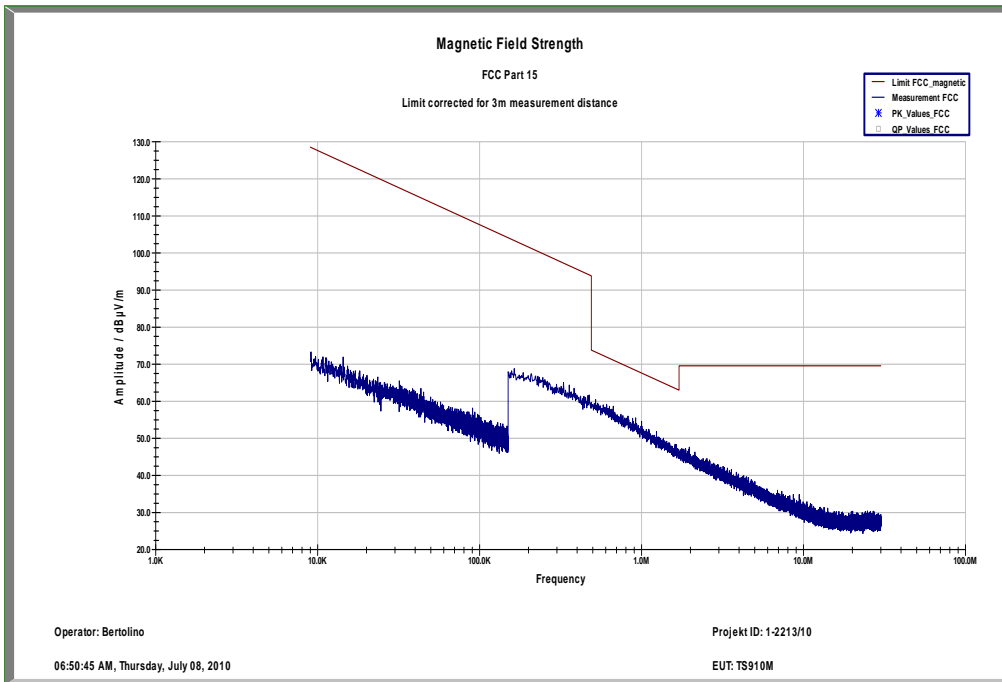
Plot 3: 5M2A band 1 low, TX mode, low channel, 30 MHz to 1 GHz, horizontal polarization



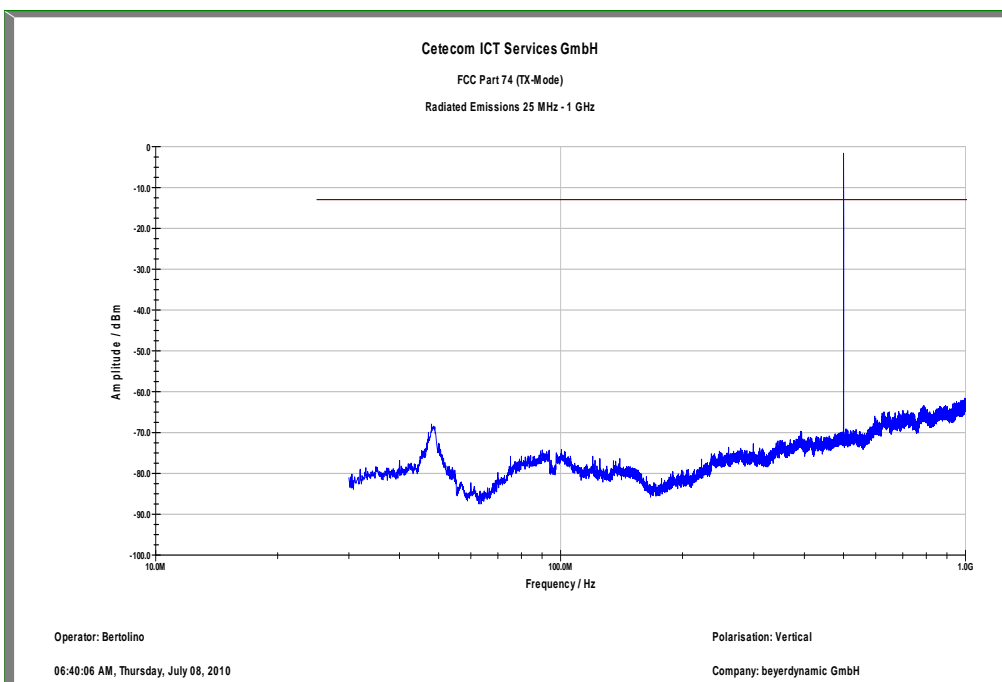
Plot 4: 5M2A band 1 low, TX mode, low channel, 1 GHz to 12.75 GHz, horizontal polarization



Plot 5: 5M2A band 1 low, TX mode, mid channel, 9 kHz to 30 MHz, magnetic (valid for all 5M2A channels)

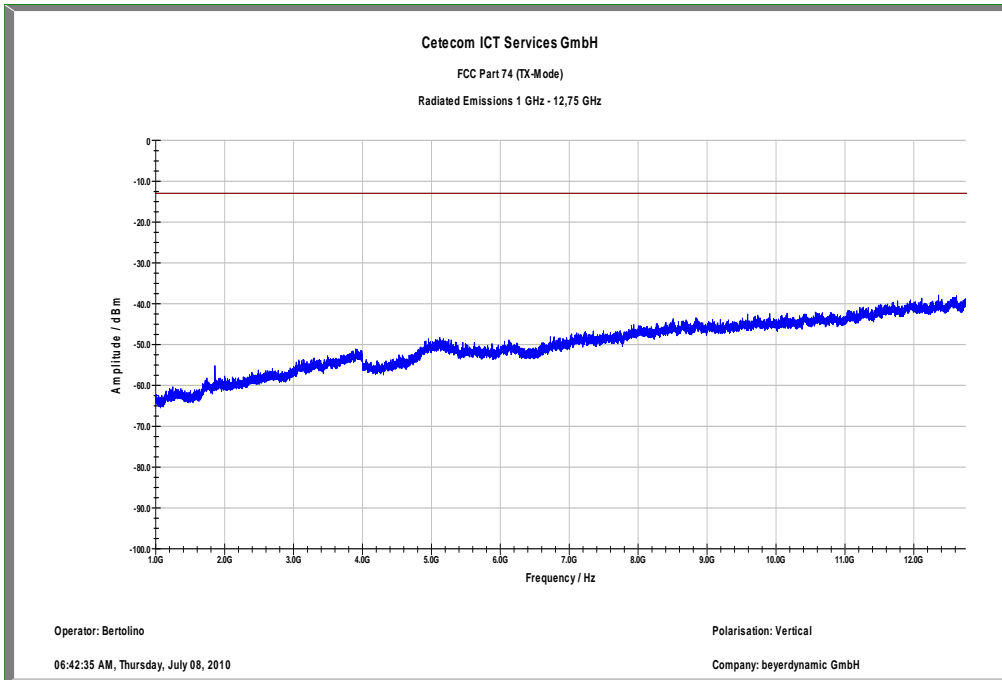


Plot 6: 5M2A band 1 low, TX mode, mid channel, 30 MHz to 1 GHz, vertical polarization

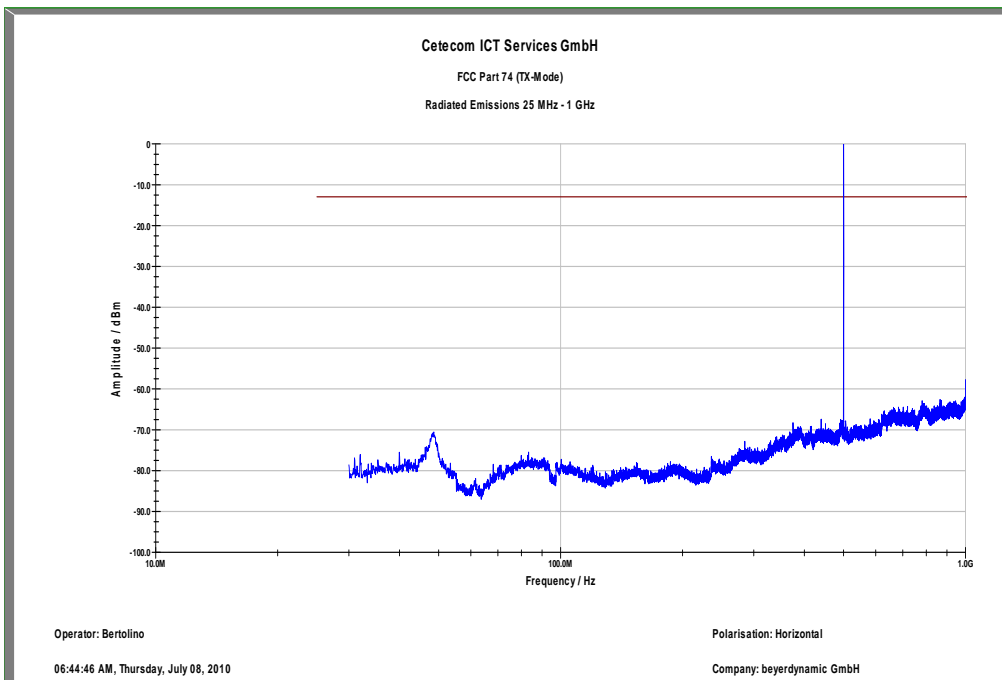




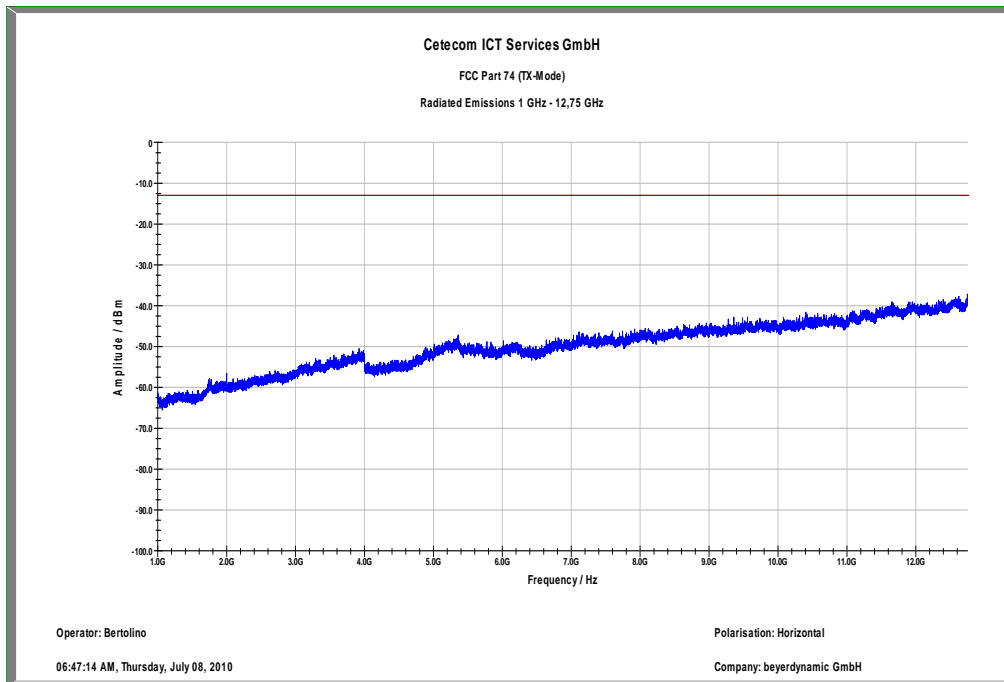
Plot 7: 5M2A band 1 low, TX mode, mid channel, 1 GHz to 12.75 GHz, vertical polarization



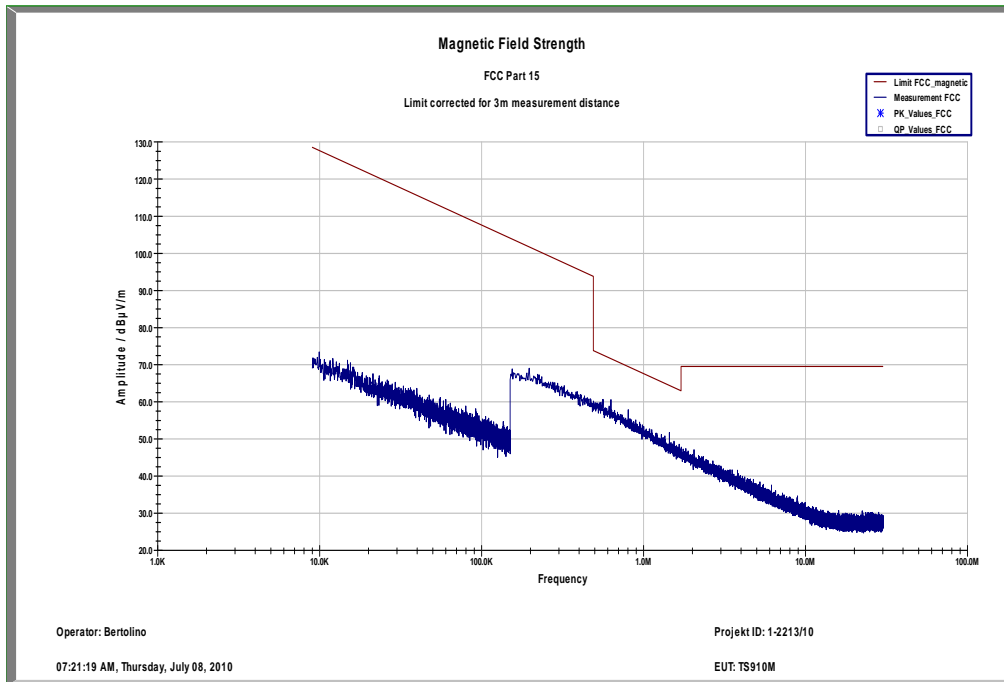
Plot 8: 5M2A band 1 low, TX mode, mid channel, 30 MHz to 1 GHz, horizontal polarization



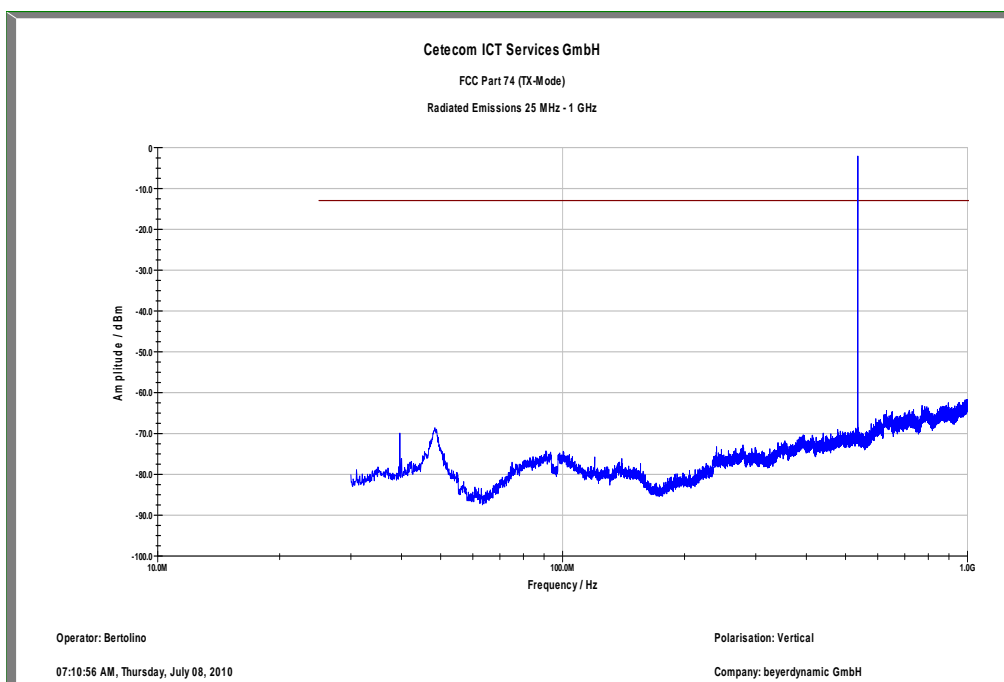
Plot 9: 5M2A band 1 low, TX mode, mid channel, 1 GHz to 12.75 GHz, horizontal polarization



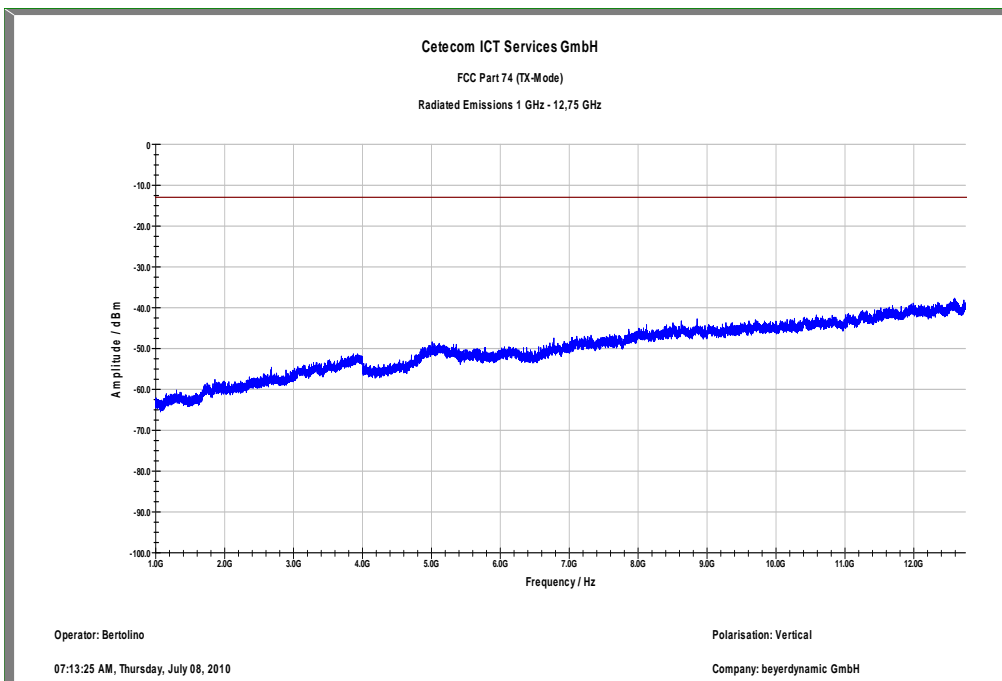
Plot 10: 5M2B band 1 high, TX mode, mid channel, 9 kHz to 30 MHz, magnetic (valid for all 5M2B channels)



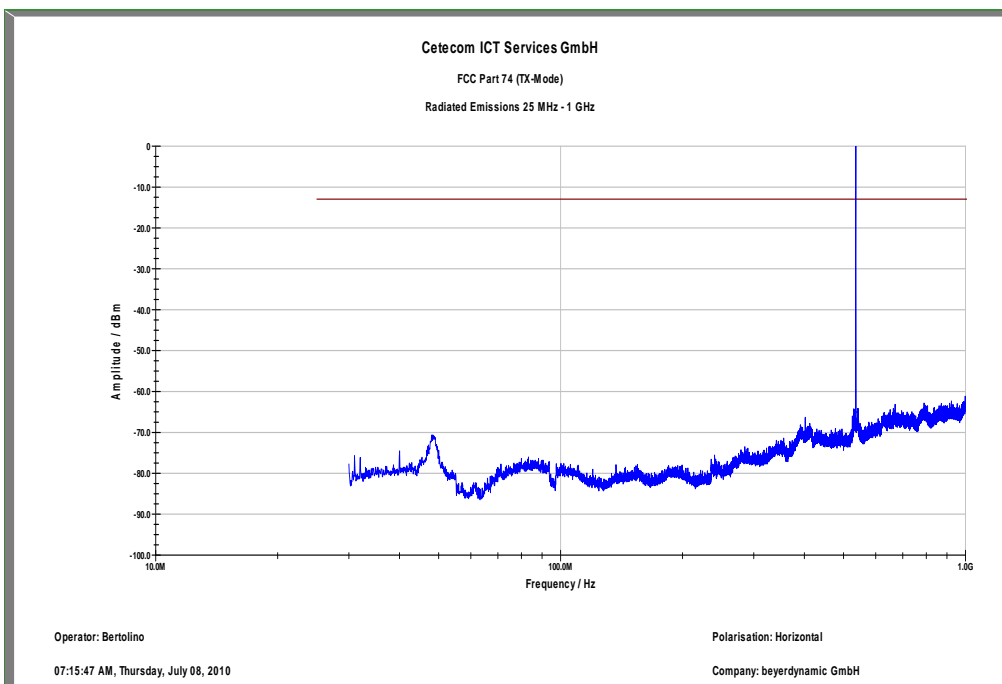
Plot 11: 5M2B band 1 high, TX mode, mid channel, 30 MHz to 1 GHz, vertical polarization



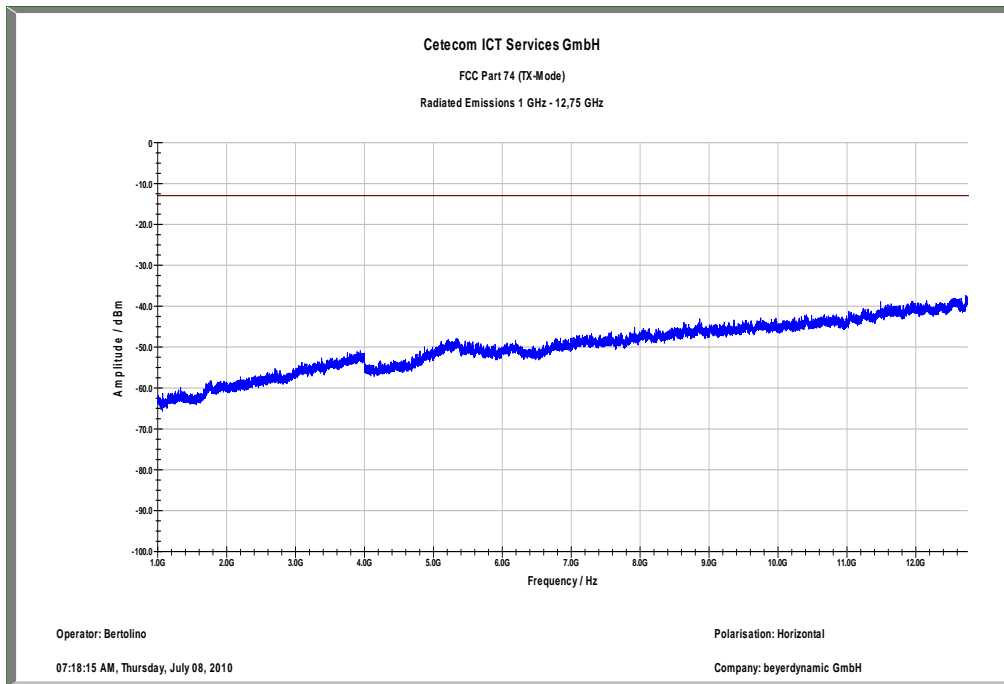
Plot 12: 5M2B band 1 high, TX mode, mid channel, 1 GHz to 12.75 GHz, vertical polarization



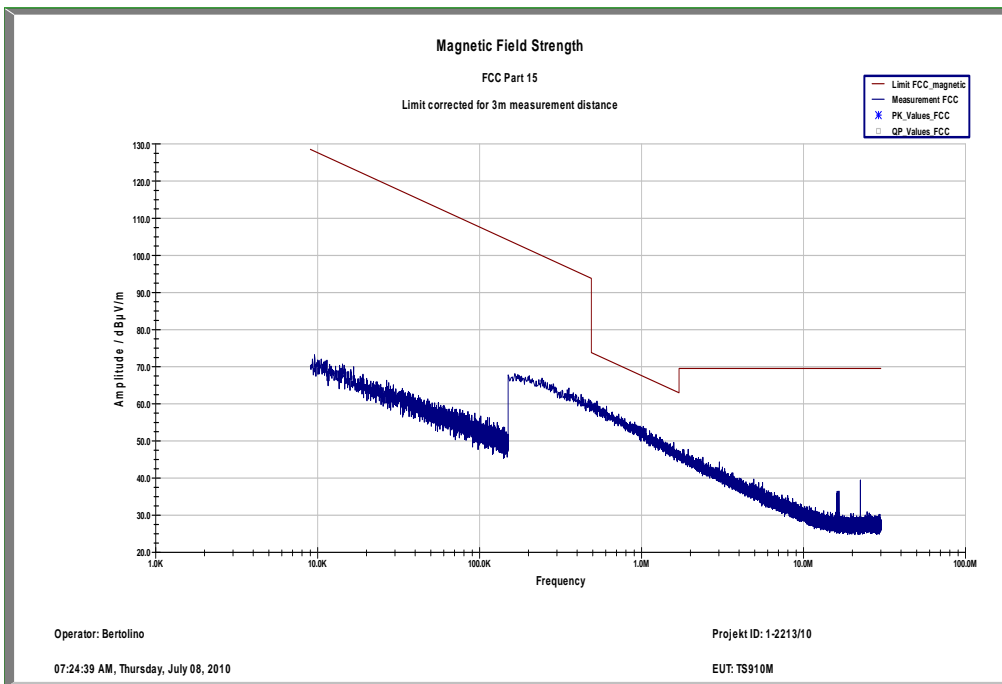
Plot 13: 5M2B band 1 high, TX mode, mid channel, 30 MHz to 1 GHz, horizontal polarization



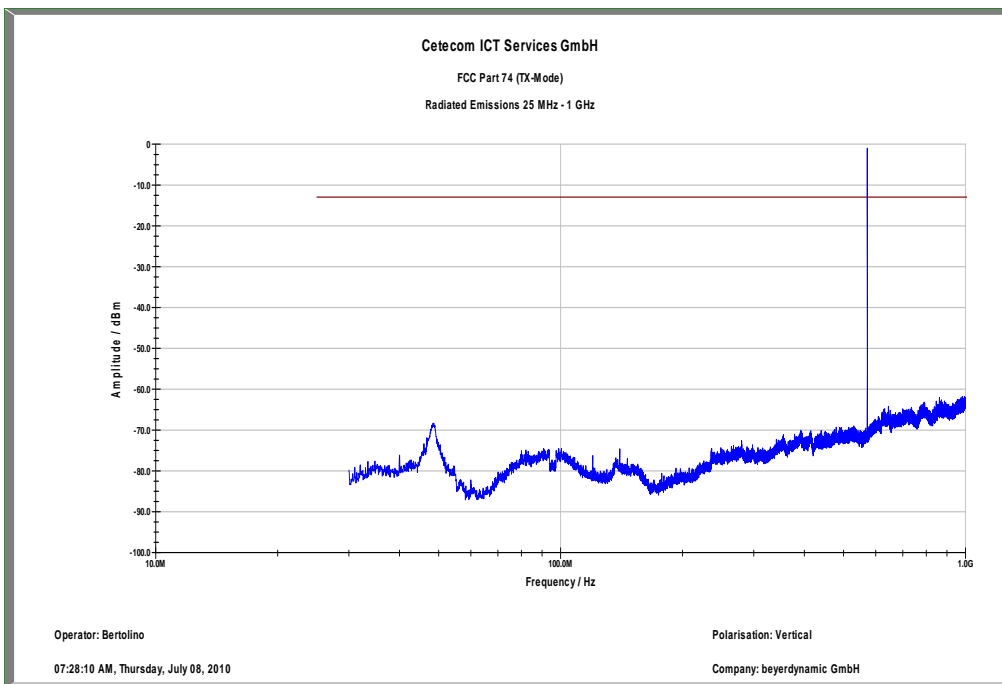
Plot 14: 5M2B band 1 high, TX mode, mid channel, 1 GHz to 12.75 GHz, horizontal polarization



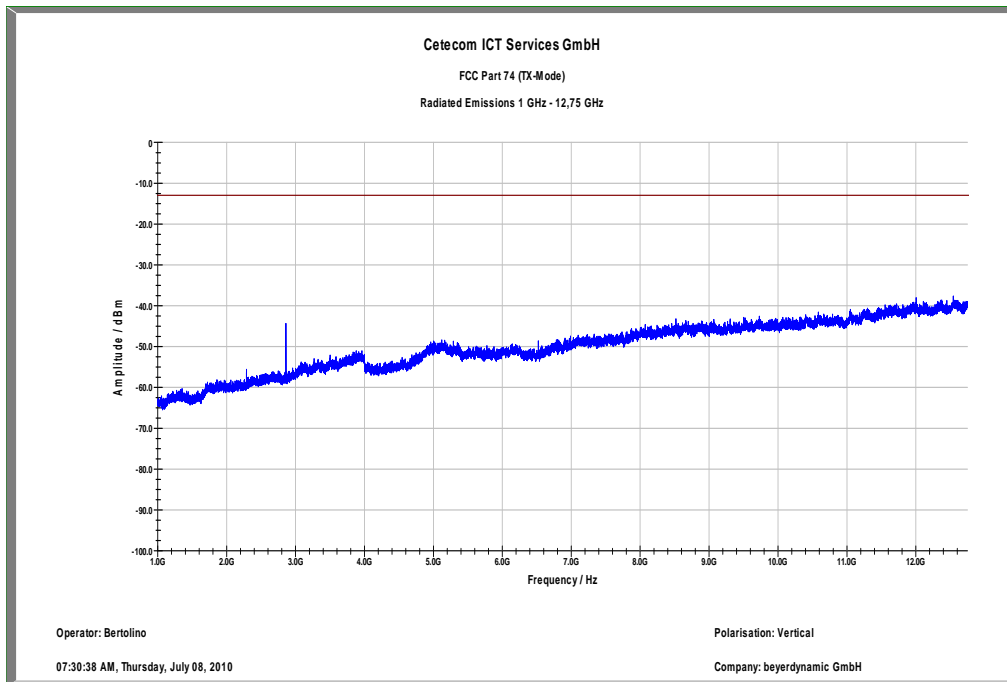
Plot 15: 5M9A band 2 low, TX mode, mid channel, 9 kHz to 30 MHz, magnetic (valid for all 5M9A channels)



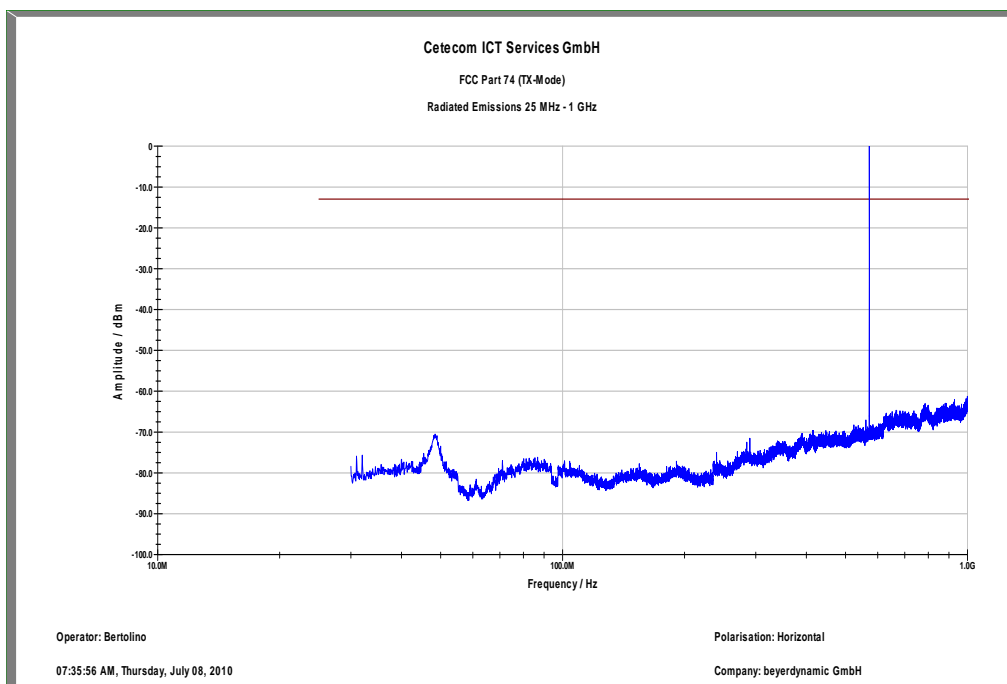
Plot 16: 5M9A band 2 low, TX mode, mid channel, 30 MHz to 1 GHz, vertical polarization



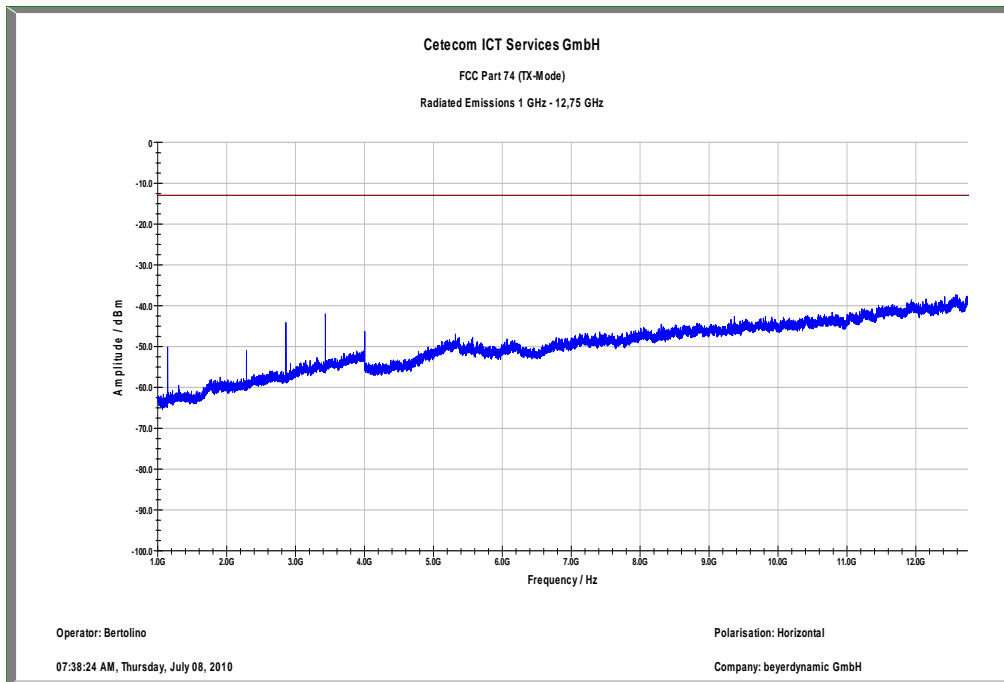
Plot 17: 5M9A band 2 low, TX mode, mid channel, 1 GHz to 12.75 GHz, vertical polarization



Plot 18: 5M9A band 2 low, TX mode, mid channel, 30 MHz to 1 GHz, horizontal polarization

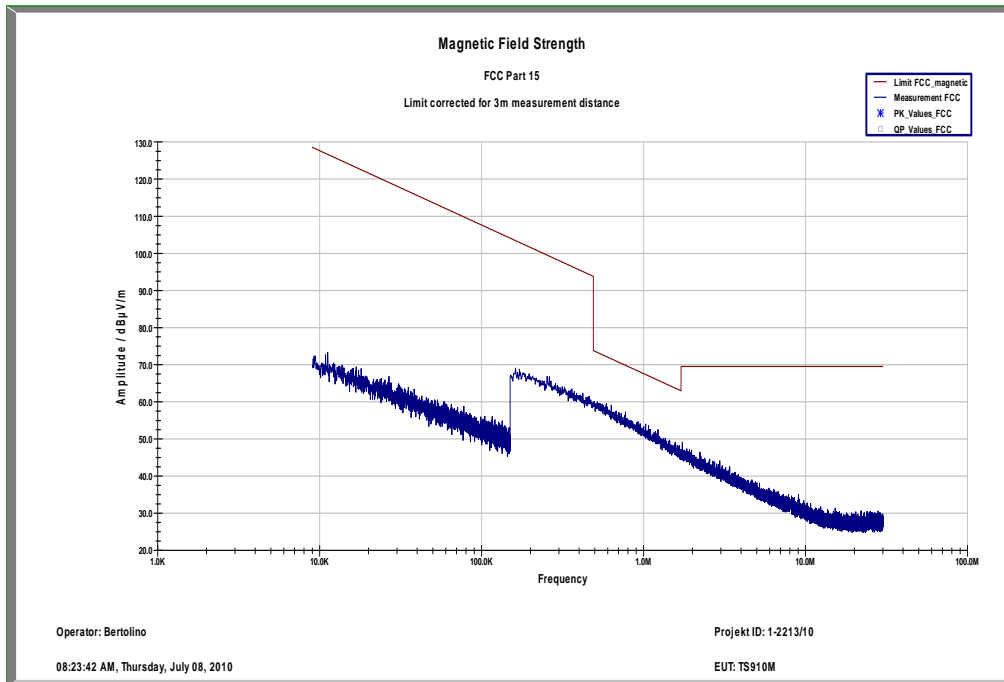


Plot 19: 5M9A band 2 low, TX mode, mid channel, 1 GHz to 12.75 GHz, horizontal polarization

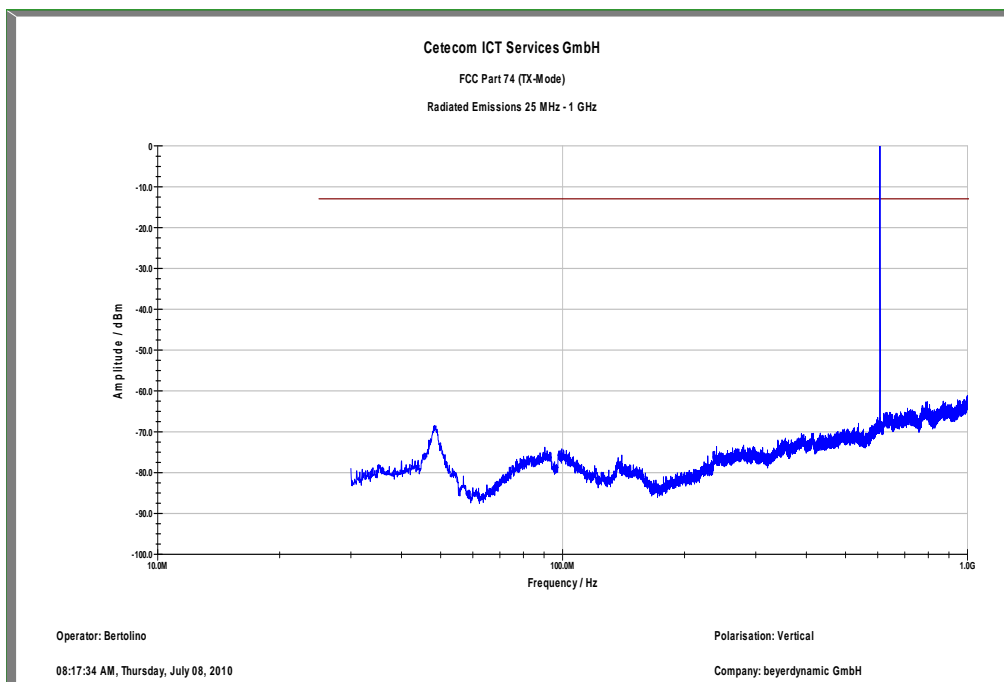




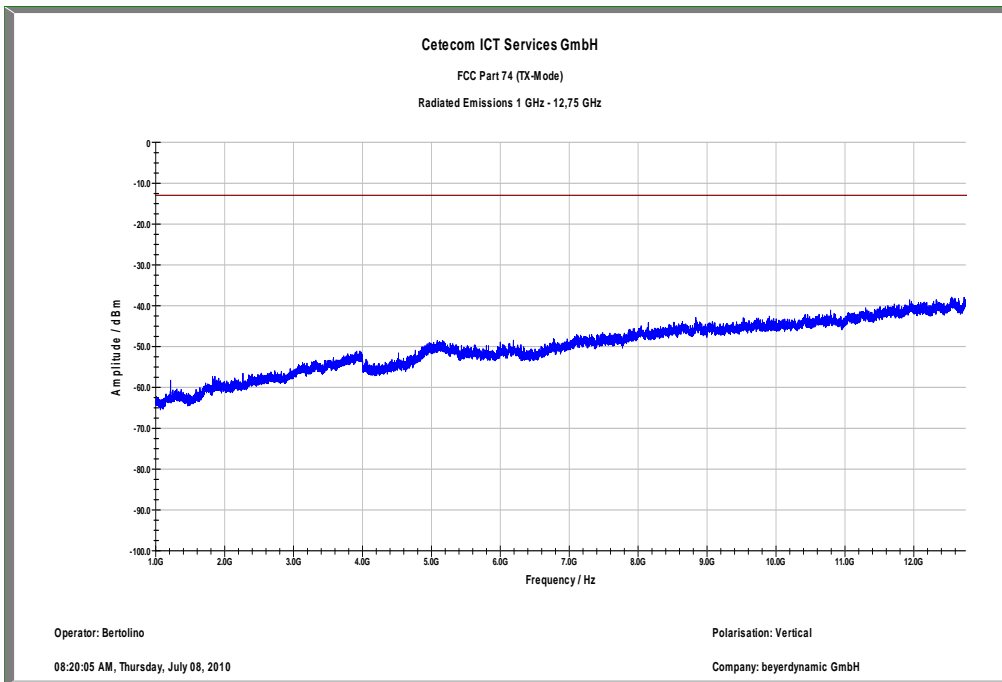
Plot 20: 5M9B band 2 high, TX mode, mid channel, 9 kHz to 30 MHz, magnetic (valid for all 5M2B channels)



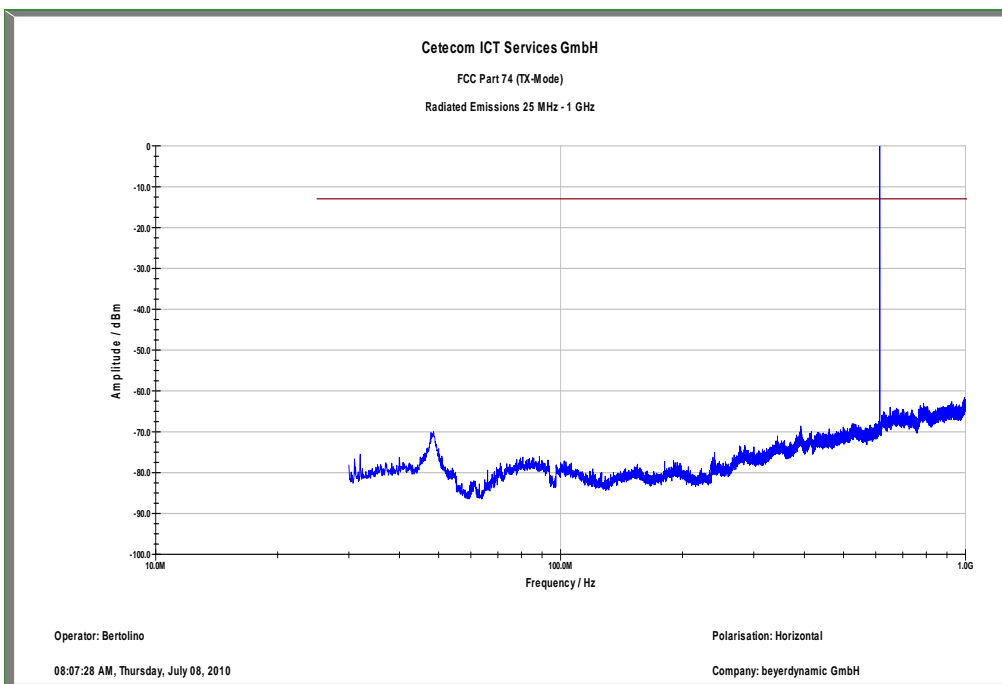
Plot 21: 5M9B band 2 high, TX mode, mid channel, 30 MHz to 1 GHz, vertical polarization



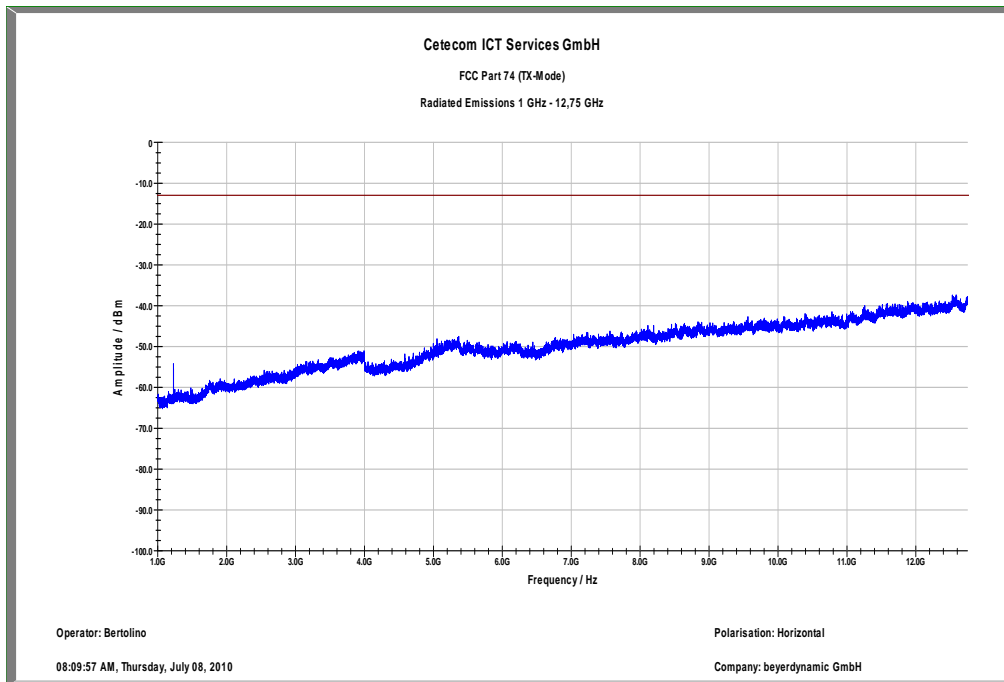
Plot 22: 5M9B band 2 high, TX mode, mid channel, 1 GHz to 12.75 GHz, vertical polarization



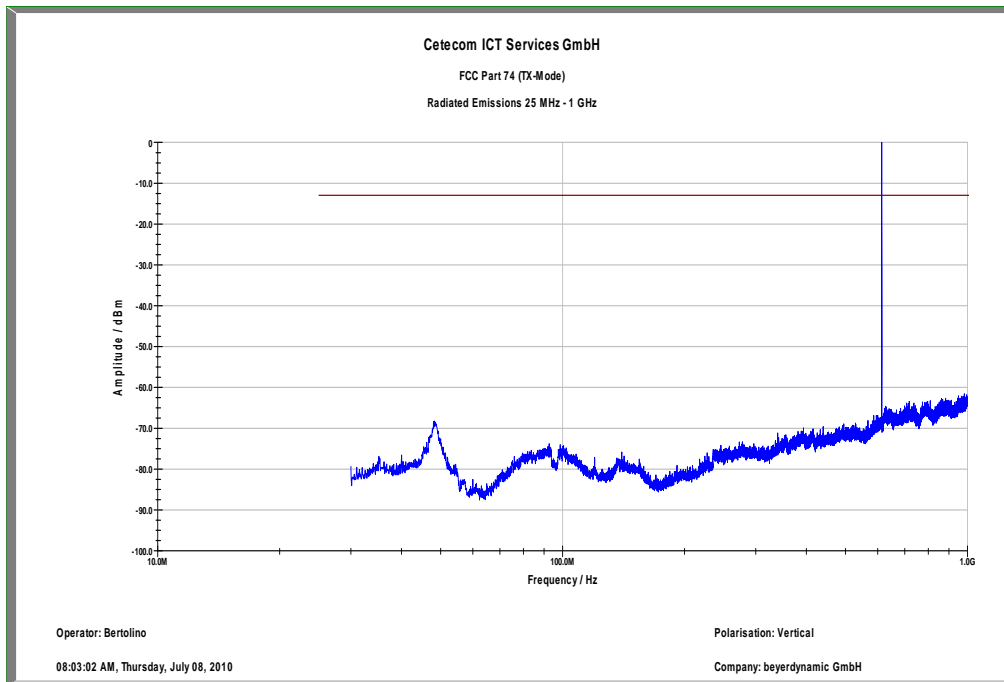
Plot 23: 5M9B band 2 high, TX mode, mid channel, 30 MHz to 1 GHz, horizontal polarization



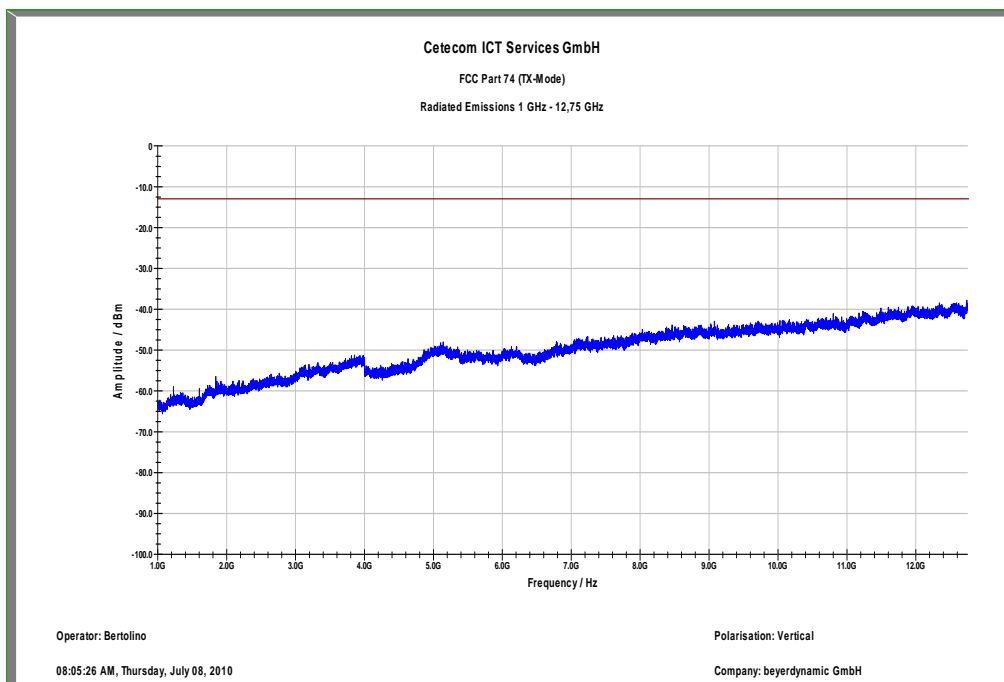
Plot 24: 5M9B band 2 high, TX mode, mid channel, 1 GHz to 12.75 GHz, horizontal polarization



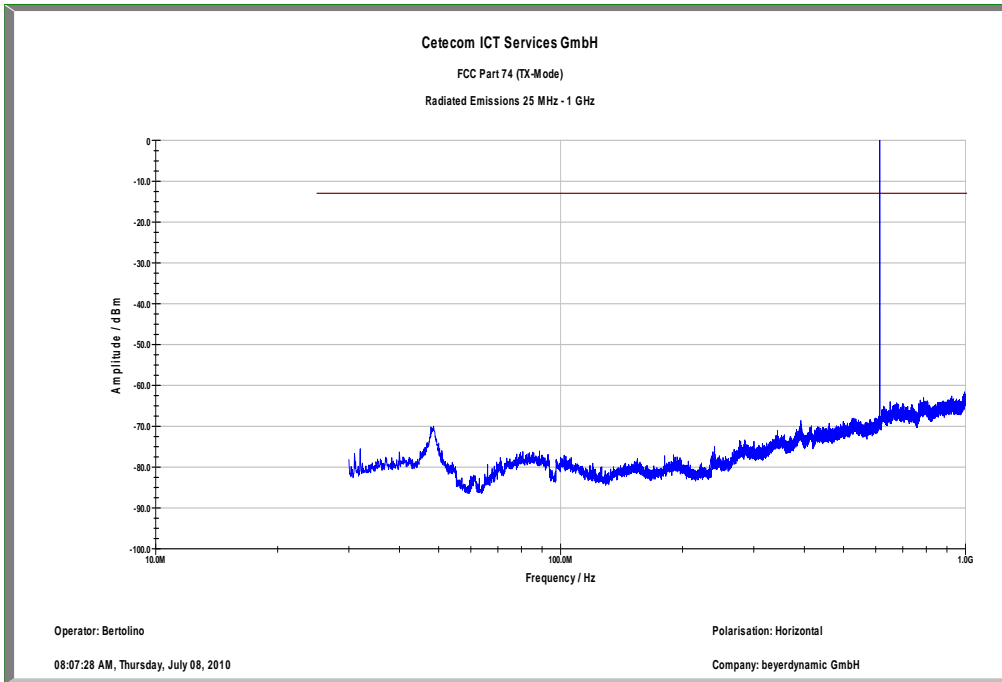
Plot 25: 5M9B band 2 high, TX mode, high channel, 30 MHz to 1 GHz, vertical polarization



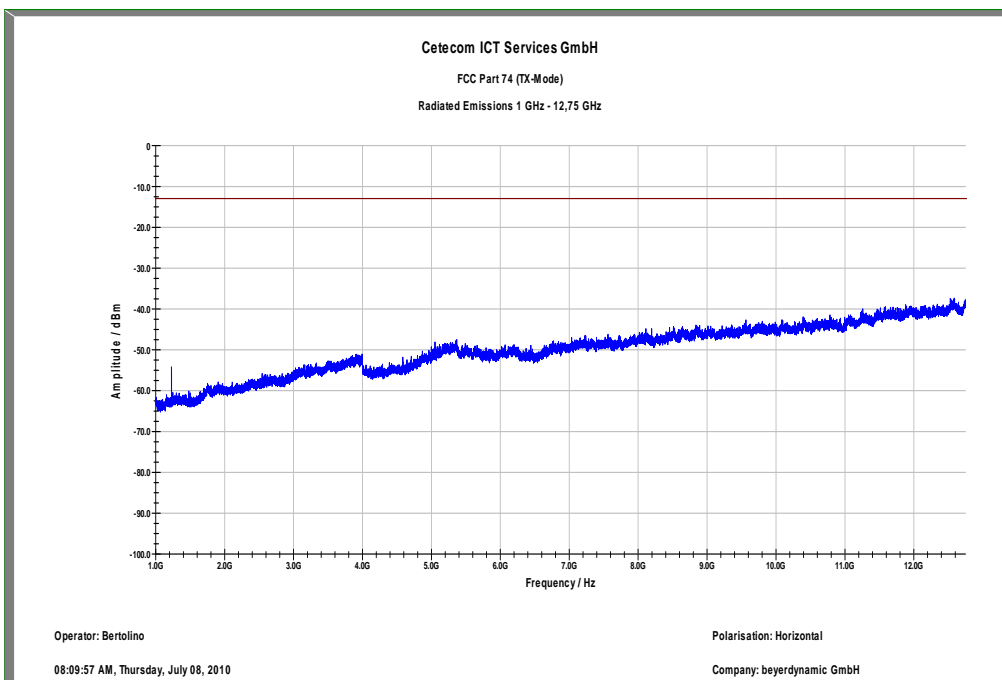
Plot 26: 5M9B band 2 high, TX mode, high channel, 1 GHz to 12.75 GHz, vertical polarization



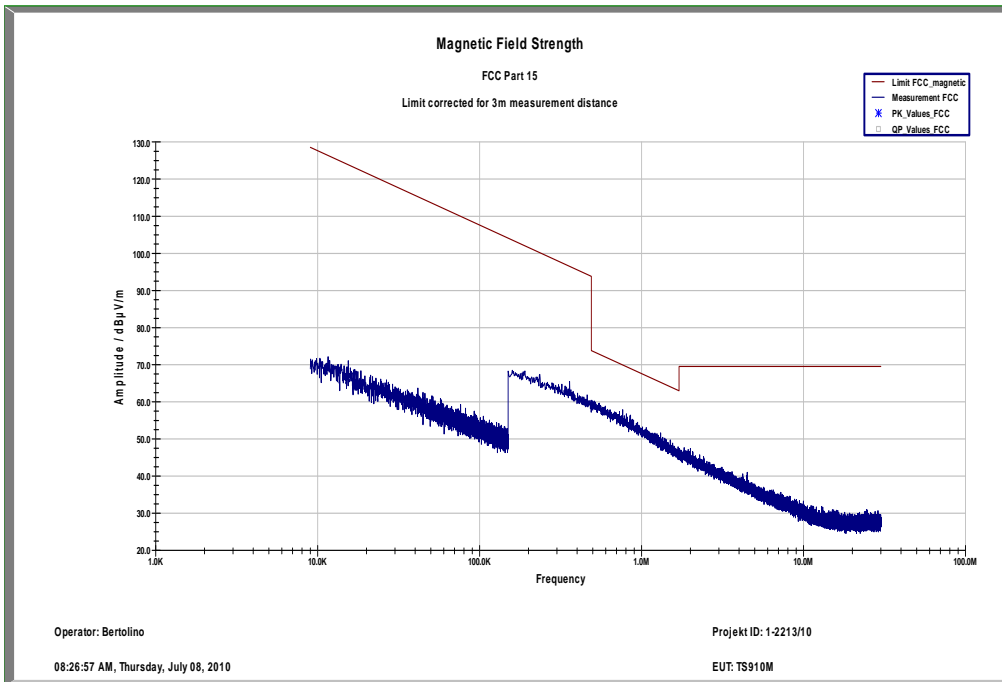
Plot 27: 5M9B band 2 high, TX mode, high channel, 30 MHz to 1 GHz, horizontal polarization



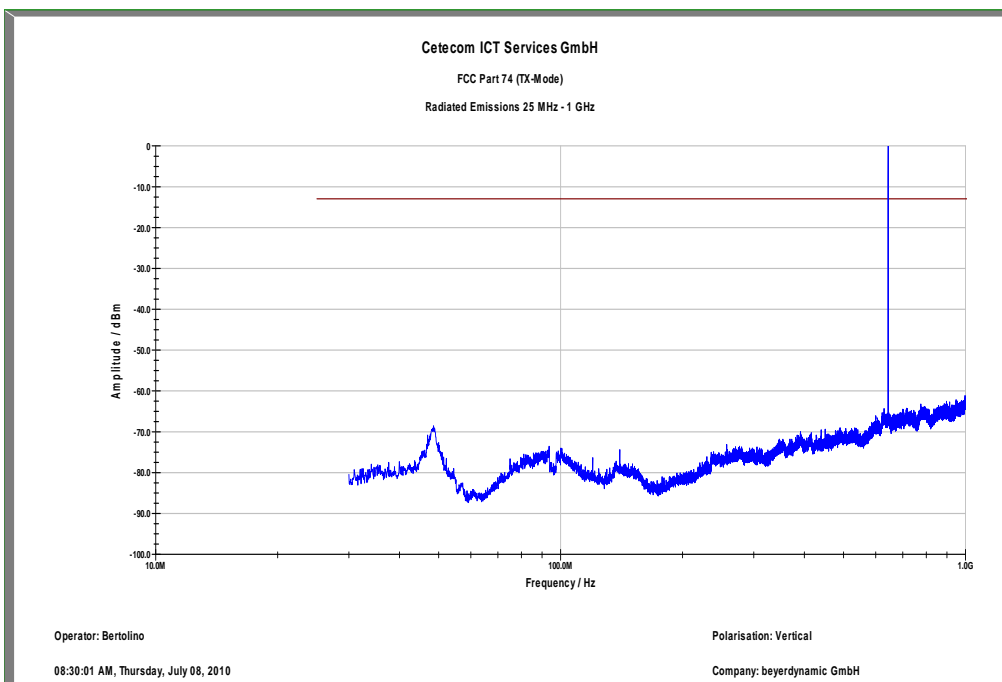
Plot 28: 5M9B band 2 high, TX mode, high channel, 1 GHz to 12.75 GHz, horizontal polarization



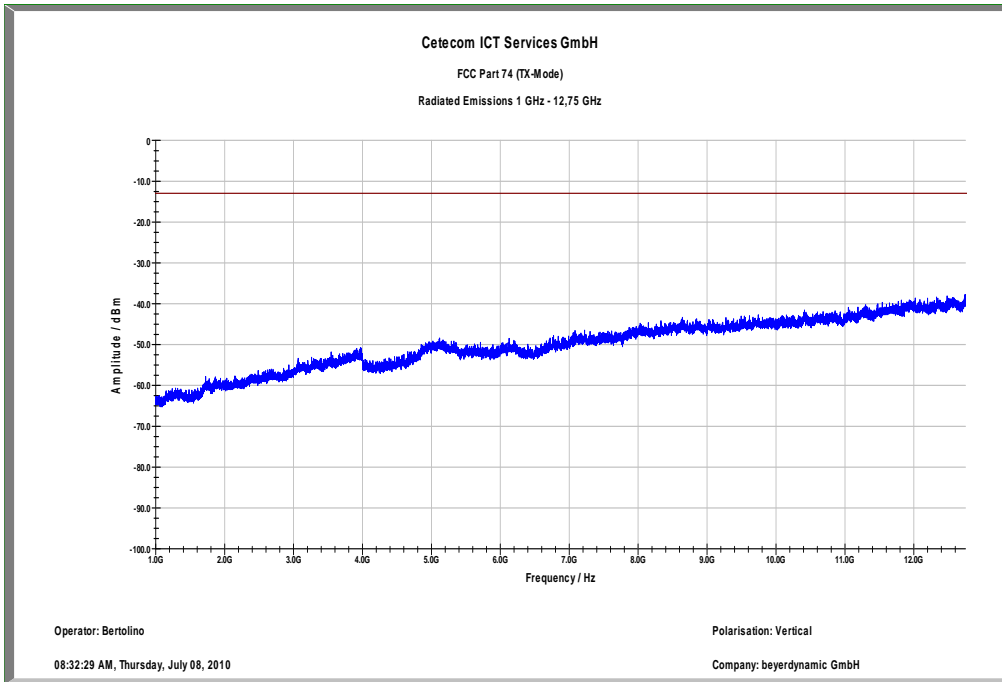
Plot 29: 6M6A band 3 low, TX mode, mid channel, 9 kHz to 30 MHz, magnetic (valid for all 6M6A channels)



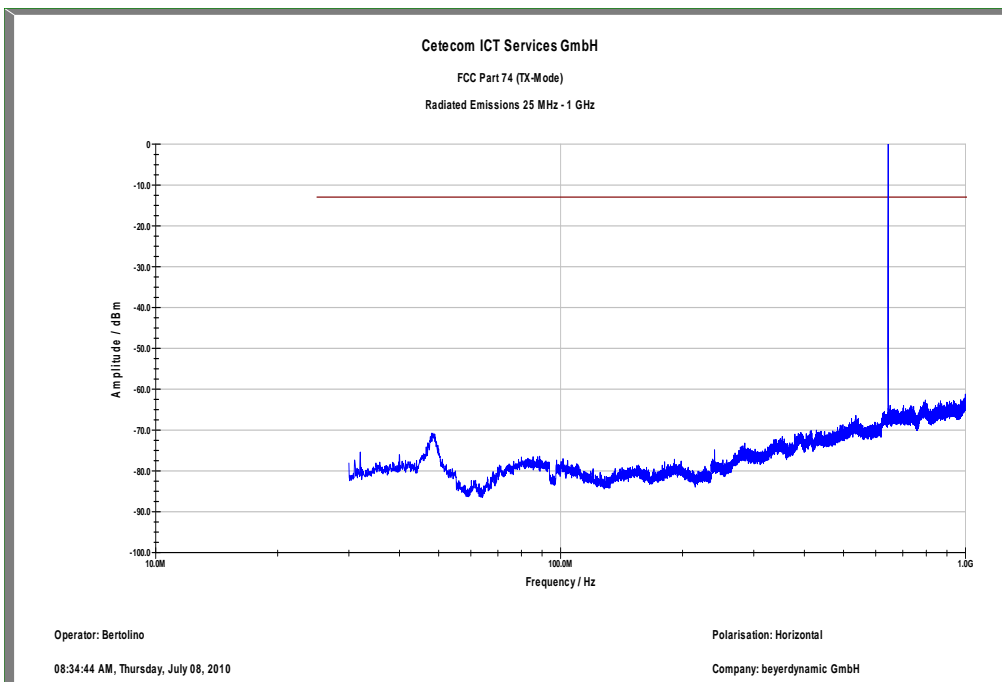
Plot 30: 6M6A band 3 low, TX mode, mid channel, 30 MHz to 1 GHz, vertical polarization



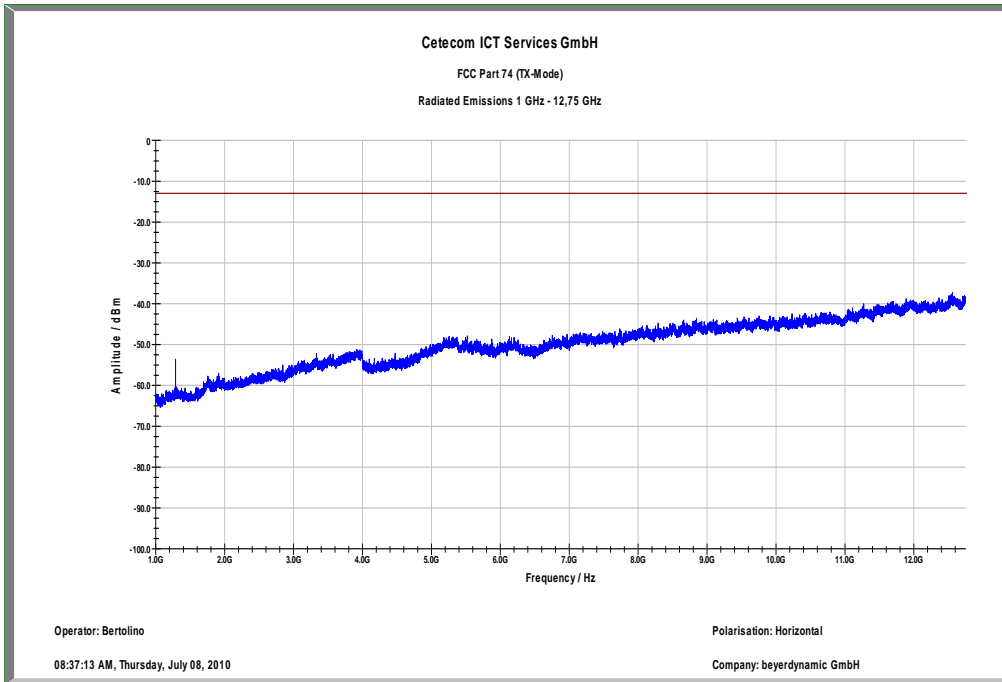
Plot 31: 6M6A band 3 low, TX mode, mid channel, 1 GHz to 12.75 GHz, vertical polarization



Plot 32: 6M6A band 3 low, TX mode, mid channel, 30 MHz to 1 GHz, horizontal polarization

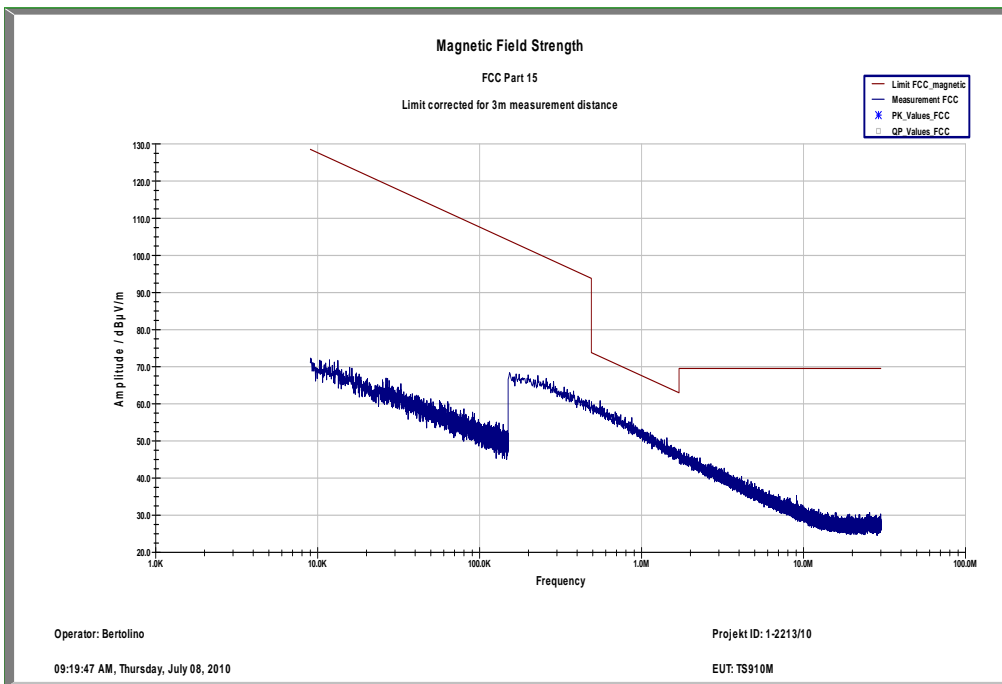


Plot 33: 6M6A band 3 low, TX mode, mid channel, 1 GHz to 12.75 GHz, horizontal polarization

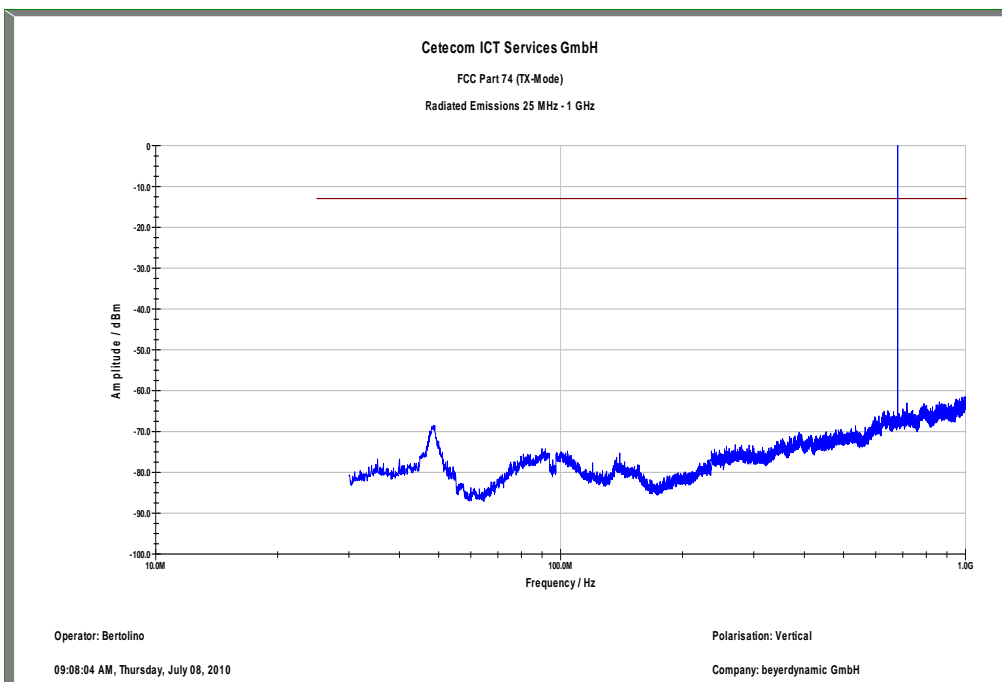




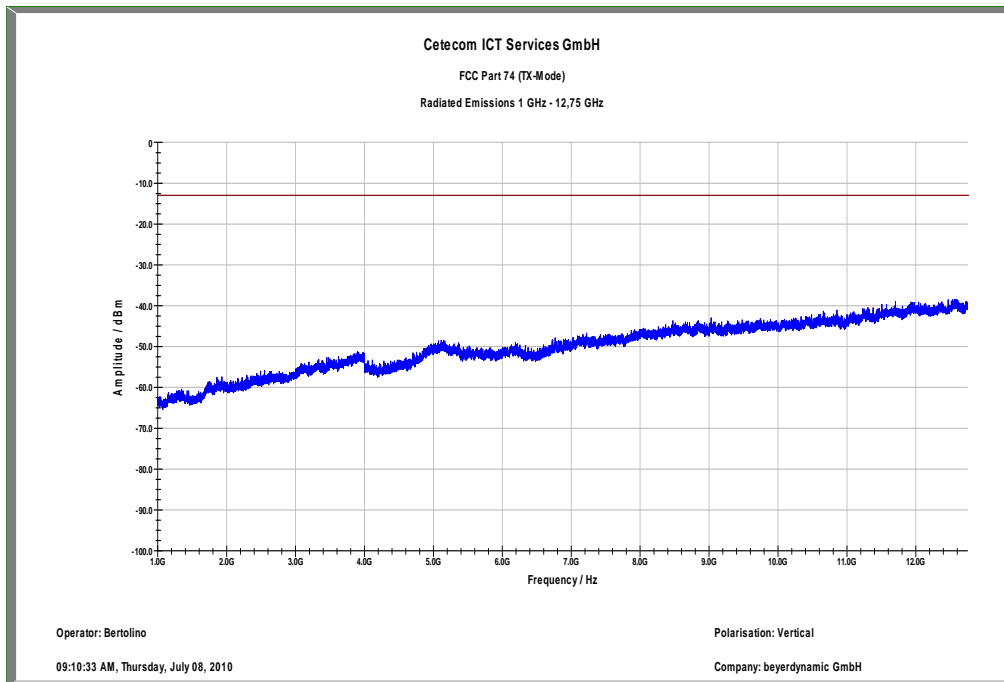
Plot 34: 6M6B band 3 high, TX mode, mid channel, 9 kHz to 30 MHz, magnetic (valid for all 6M6B channels)



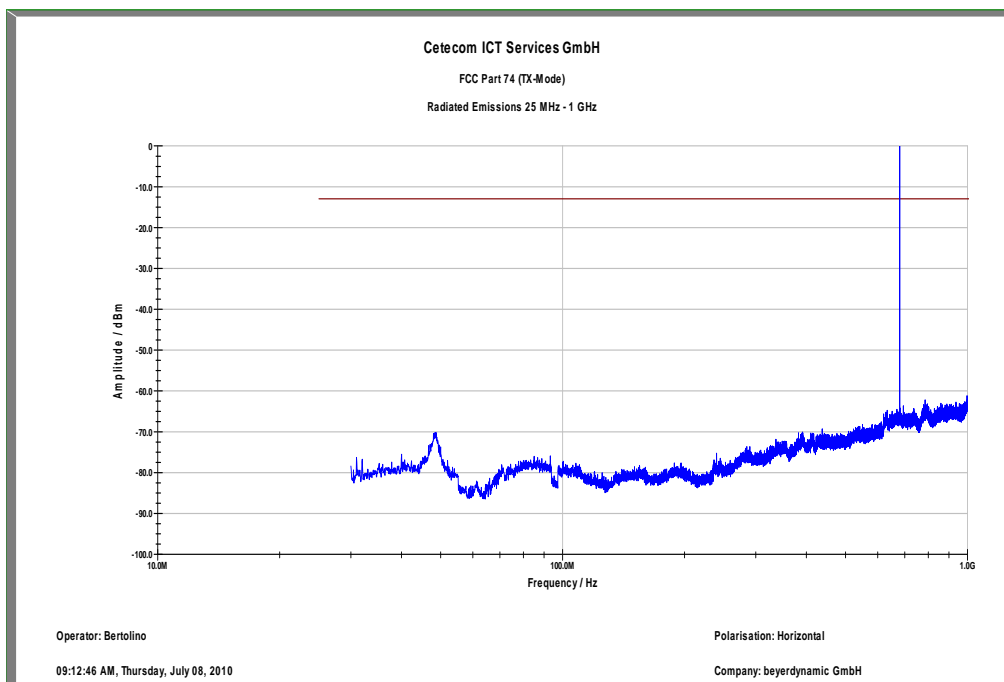
Plot 35: 6M6B band 3 high, TX mode, mid channel, 30 MHz to 1 GHz, vertical polarization



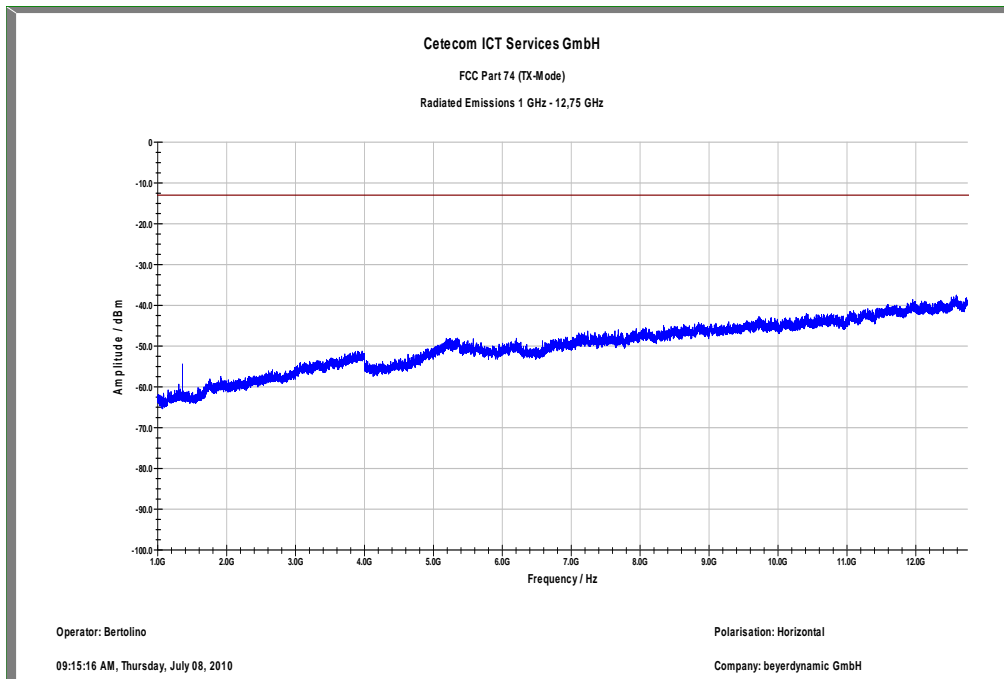
Plot 36: 6M6B band 3 high, TX mode, mid channel, 1 GHz to 12.75 GHz, vertical polarization



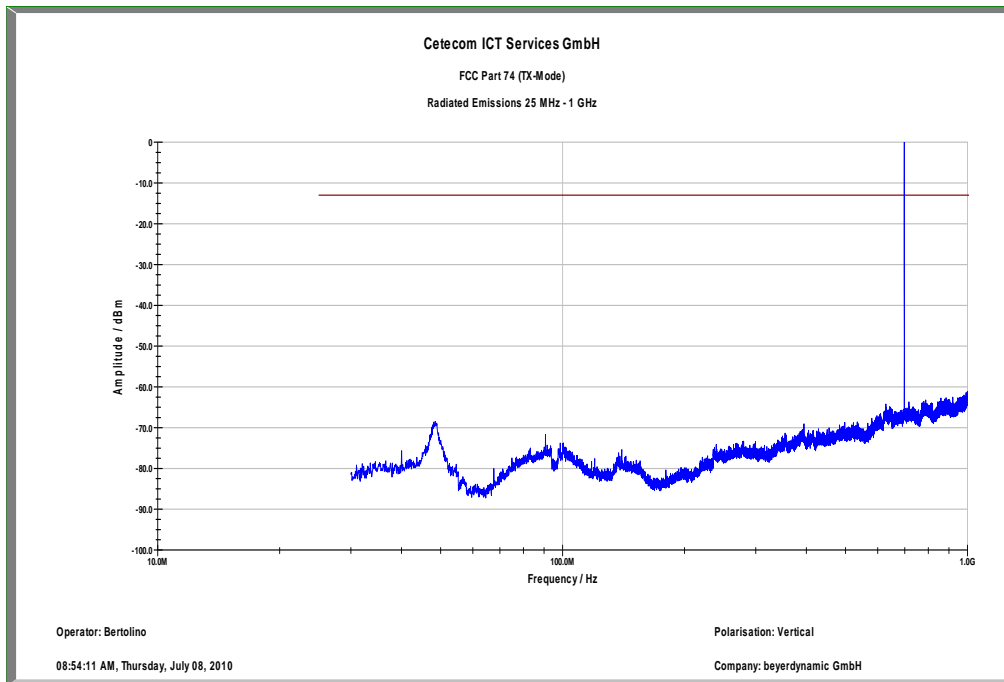
Plot 37: 6M6B band 3 high, TX mode, mid channel, 30 MHz to 1 GHz, horizontal polarization



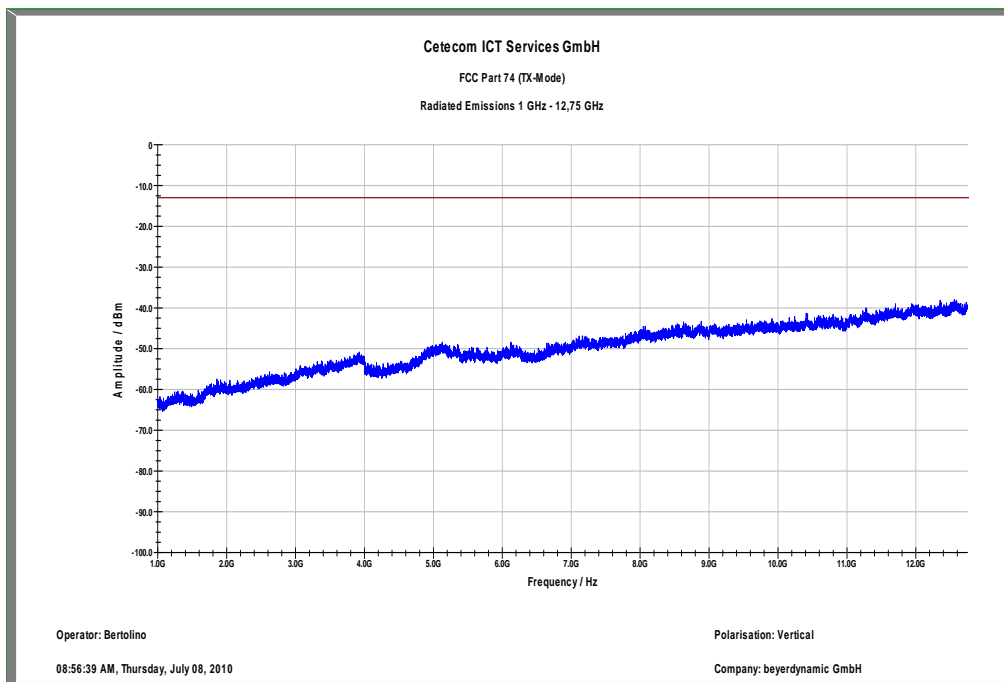
Plot 38: 6M6B band 3 high, TX mode, mid channel, 1 GHz to 12.75 GHz, horizontal polarization



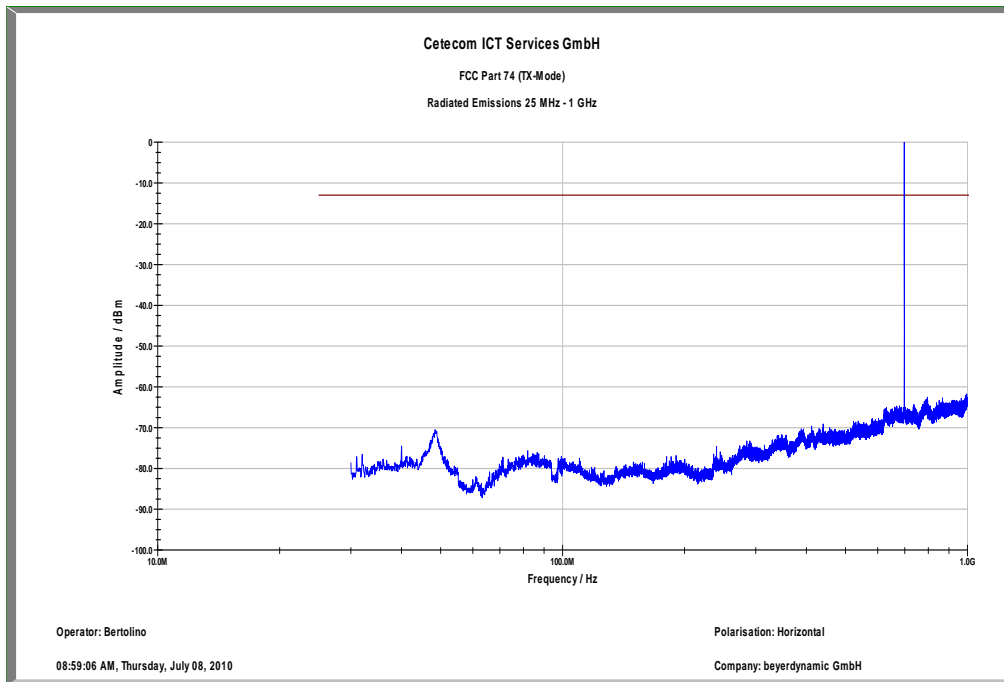
Plot 39: 6M6B band 3 high, TX mode, high channel, 30 MHz to 1 GHz, vertical polarization



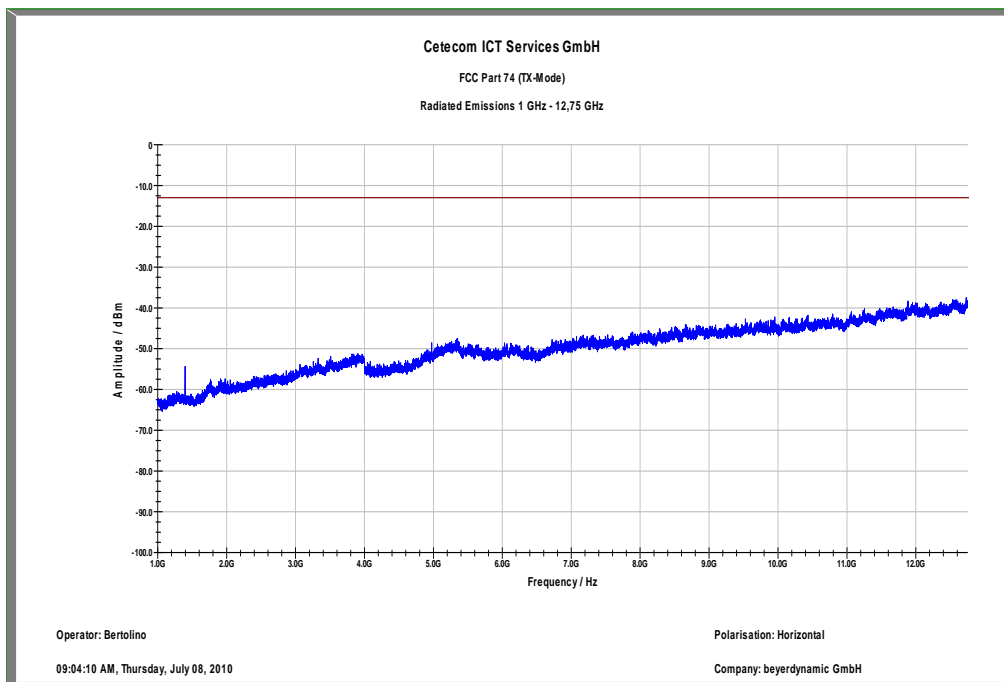
Plot 40: 6M6B band 3 high, TX mode, high channel, 1 GHz to 12.75 GHz, vertical polarization



Plot 41: 6M6B band 3 high, TX mode, high channel, 30 MHz to 1 GHz, horizontal polarization



Plot 42: 6M6B band 3 high, TX mode, high channel, 1 GHz to 12.75 GHz, horizontal polarization



**Body pack transmitter 1: TS 910 C**

**Results: 5M2A**

TX Spurious Emissions Radiated [dBm]								
TX mode								
Low channel			Mid channel			High channel		
F [MHz]	Detector	Level	F [MHz]	Detector	Level	F [MHz]	Detector	Level
No critical peaks detected! All detected spurious emissions are more than 20 dB below the limit.			No critical peaks detected! All detected spurious emissions are more than 20 dB below the limit.			-/-	-/-	-/-
Measurement uncertainty			± 3 dB					

**Results: 5M2B**

TX Spurious Emissions Radiated [dBm]								
TX mode								
Low channel			Mid channel			High channel		
F [MHz]	Detector	Level	F [MHz]	Detector	Level	F [MHz]	Detector	Level
-/-	-/-	-/-	No critical peaks detected! All detected spurious emissions are more than 20 dB below the limit.			-/-	-/-	-/-
Measurement uncertainty			± 3 dB					

**Limits**

**FCC Rule Part 74.861(e)(6)**

f ± 100 kHz to f ± 200 kHz	f ± 200 kHz to f ± 500 kHz	f ± 500 kHz
25 dBc	35 dBc	-43 + 10 log <sub>10</sub> (mean output power in watts) dB below the mean output power

**Results: 5M9A**

TX Spurious Emissions Radiated [dBm]								
TX mode								
Low channel			Mid channel			High channel		
F [MHz]	Detector	Level	F [MHz]	Detector	Level	F [MHz]	Detector	Level
-/-	-/-	-/-	No critical peaks detected! All detected spurious emissions are more than 20 dB below the limit.			-/-	-/-	-/-
Measurement uncertainty			± 3 dB					

**Results: 5M9B**

TX Spurious Emissions Radiated [dBm]								
TX mode								
Low channel			Mid channel			High channel		
F [MHz]	Detector	Level	F [MHz]	Detector	Level	F [MHz]	Detector	Level
-/-	-/-	-/-	1215.98	1 MHz	-48.77 dBm vertical -50.25 dBm horizontal	1227.91	1 MHz	-49.62 dBm vertical -50.78 dBm horizontal
Measurement uncertainty			± 3 dB					

**Limits**

**FCC Rule Part 74.861(e)(6)**

f ± 100 kHz to f ± 200 kHz	f ± 200 kHz to f ± 500 kHz	f ± 500 kHz
25 dBc	35 dBc	-43 + 10 log <sub>10</sub> (mean output power in watts) dB below the mean output power

**Results: 6M6A**

TX Spurious Emissions Radiated [dBm]								
TX mode								
Low channel			Mid channel			High channel		
F [MHz]	Detector	Level	F [MHz]	Detector	Level	F [MHz]	Detector	Level
-/-	-/-	-/-	No critical peaks detected! All detected spurious emissions are more than 20 dB below the limit.			-/-	-/-	-/-
Measurement uncertainty			± 3 dB					

**Results: 6M6B**

TX Spurious Emissions Radiated [dBm]								
TX mode								
Low channel			Mid channel			High channel		
F [MHz]	Detector	Level	F [MHz]	Detector	Level	F [MHz]	Detector	Level
-/-	-/-	-/-	1360.01	1 MHz	-48.11 dBm vertical -47.46 dBm horizontal	1227.91	1 MHz	-43.53 dBm vertical -44.07 dBm horizontal
Measurement uncertainty			± 3 dB					

**Limits**

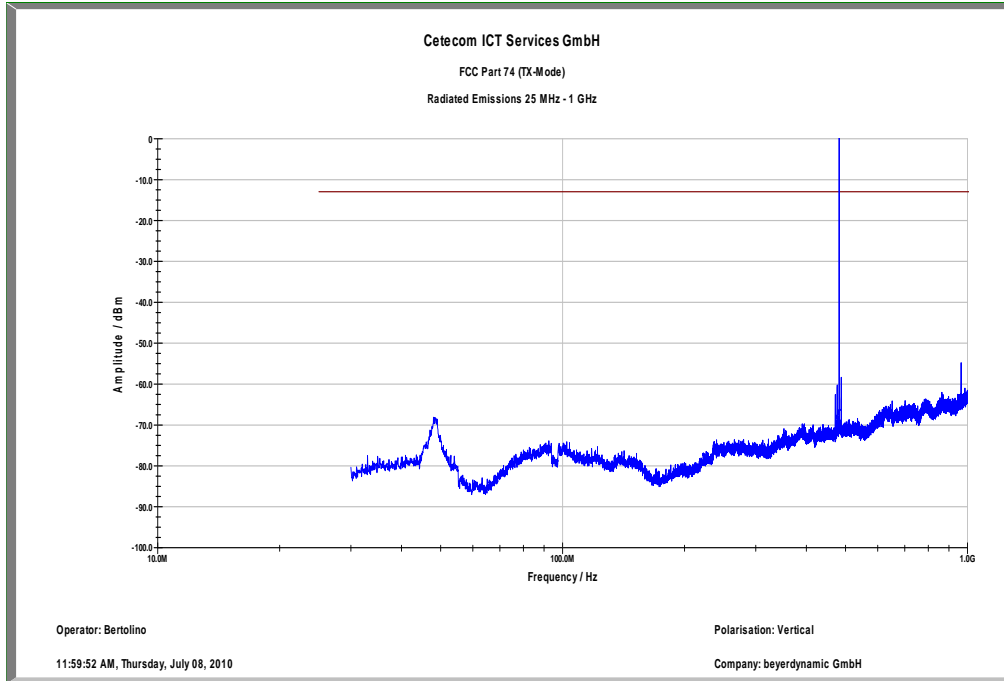
**FCC Rule Part 74.861(e)(6)**

f ± 100 kHz to f ± 200 kHz	f ± 200 kHz to f ± 500 kHz	f ± 500 kHz
25 dBc	35 dBc	-43 + 10 log <sub>10</sub> (mean output power in watts) dB below the mean output power

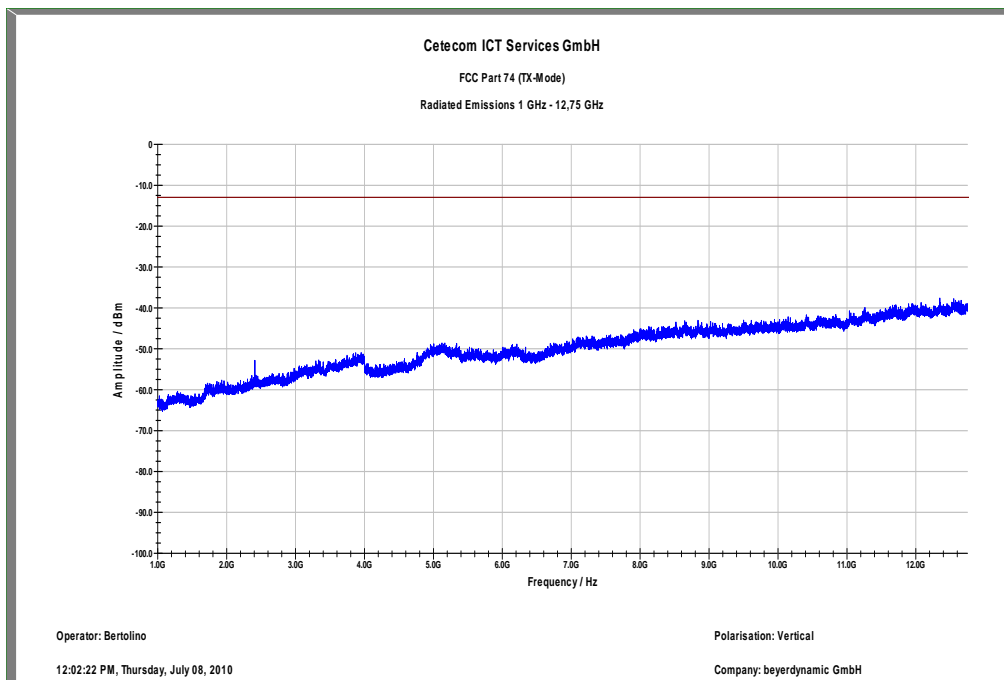


### 8.7.3 Plots of the measurements

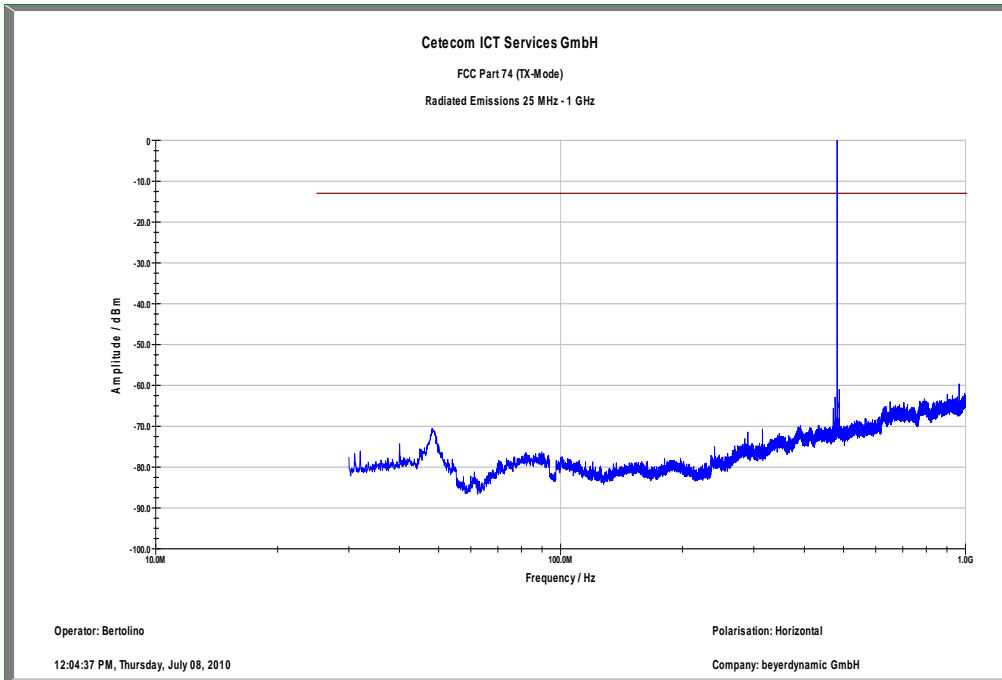
Plot 1: 5M2A band 1 low, TX mode, low channel, 30 MHz to 1 GHz, vertical polarization



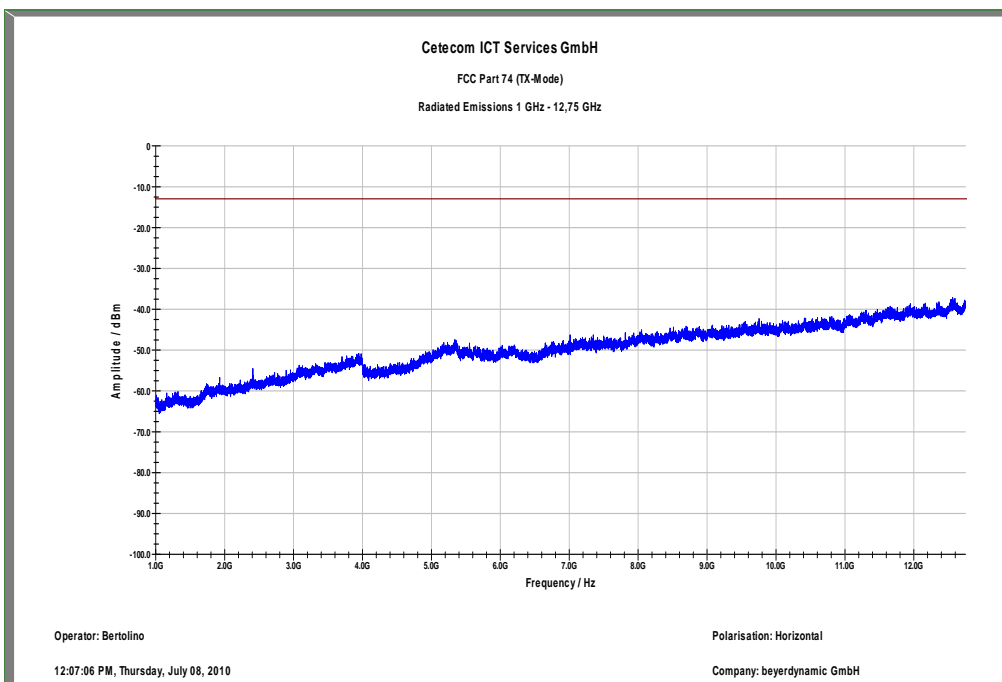
Plot 2: 5M2A band 1 low, TX mode, low channel, 1 GHz to 12.75 GHz, vertical polarization



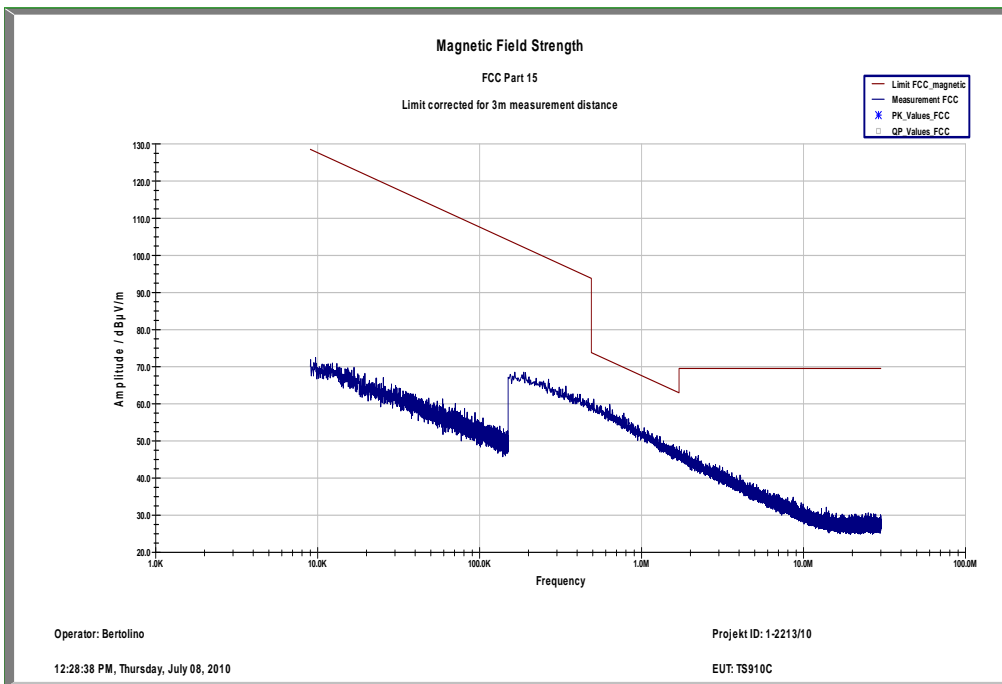
Plot 3: 5M2A band 1 low, TX mode, low channel, 30 MHz to 1 GHz, horizontal polarization



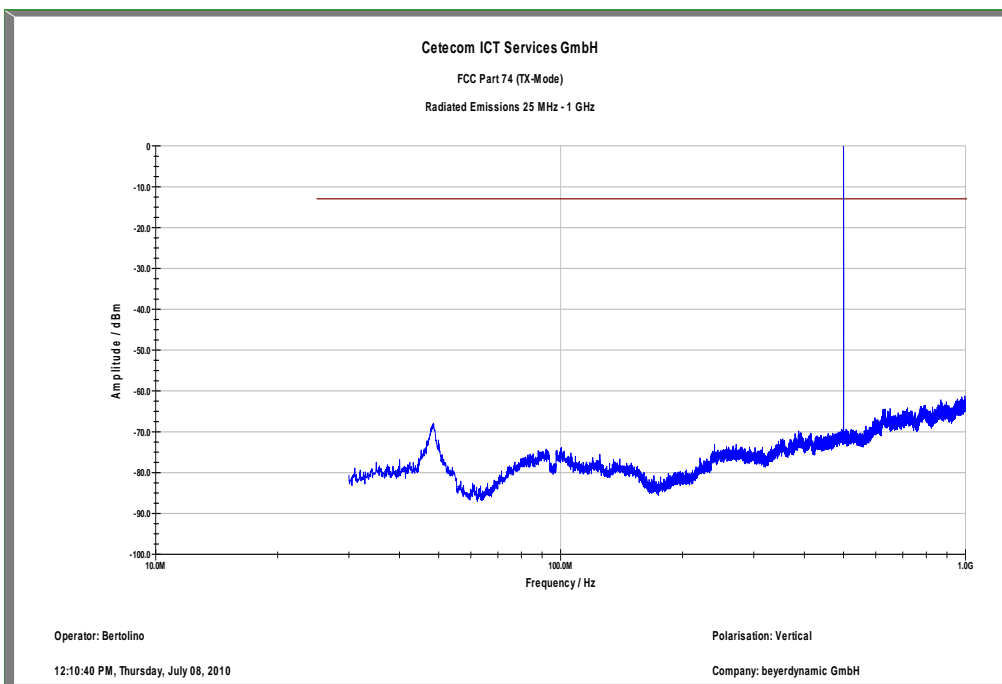
Plot 4: 5M2A band 1 low, TX mode, low channel, 1 GHz to 12.75 GHz, horizontal polarization



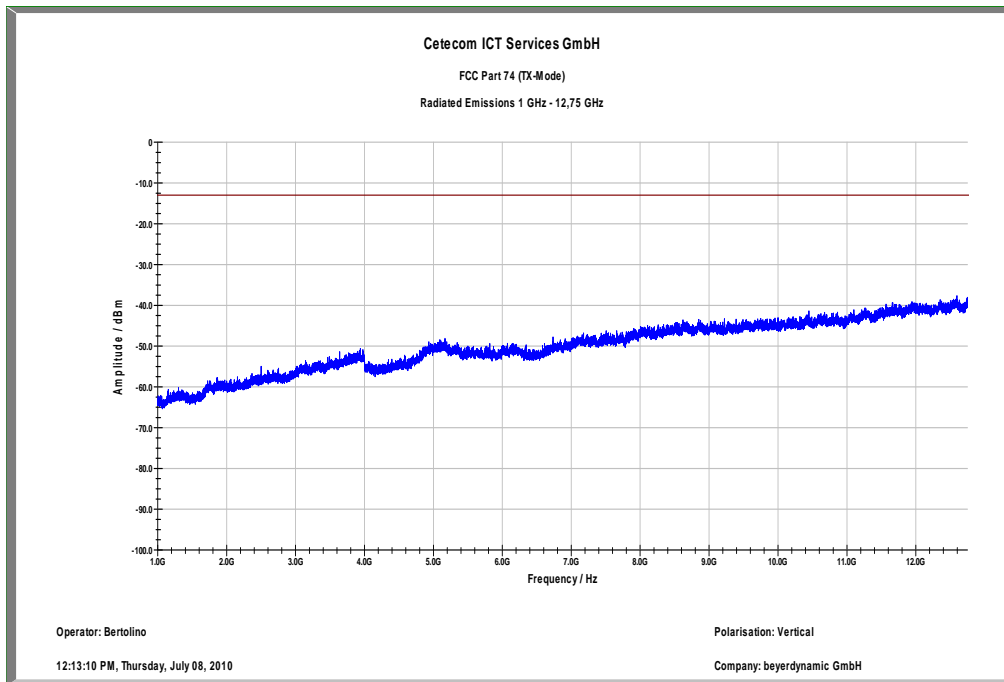
Plot 5: 5M2A band 1 low, TX mode, mid channel, 9 kHz to 30 MHz, magnetic (valid for all 5M2A channels)



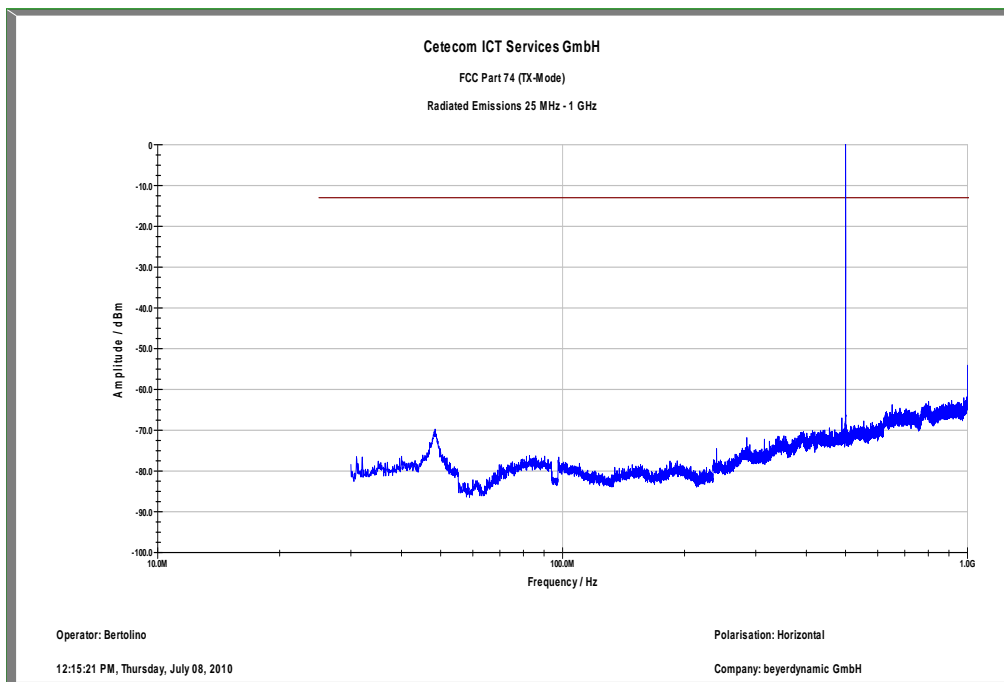
Plot 6: 5M2A band 1 low, TX mode, mid channel, 30 MHz to 1 GHz, vertical polarization



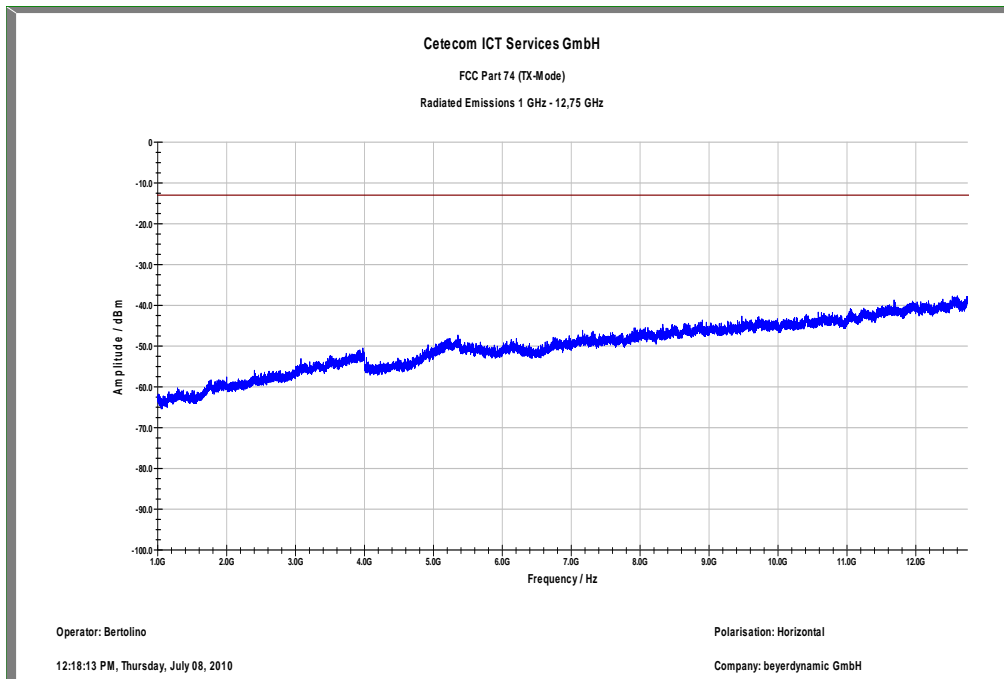
Plot 7: 5M2A band 1 low, TX mode, mid channel, 1 GHz to 12.75 GHz, vertical polarization



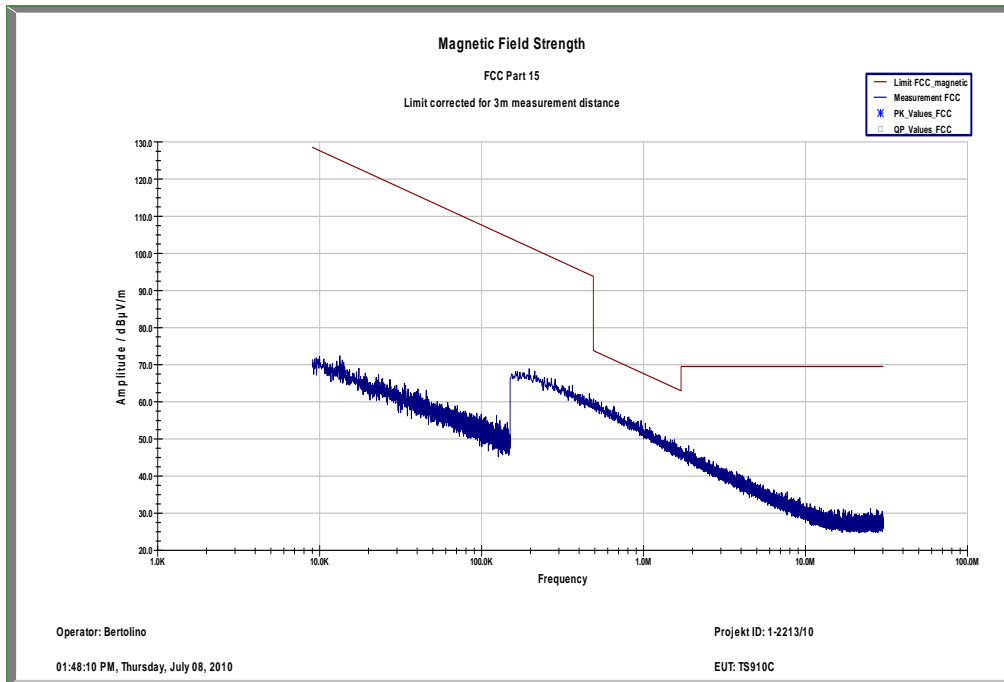
Plot 8: 5M2A band 1 low, TX mode, mid channel, 30 MHz to 1 GHz, horizontal polarization



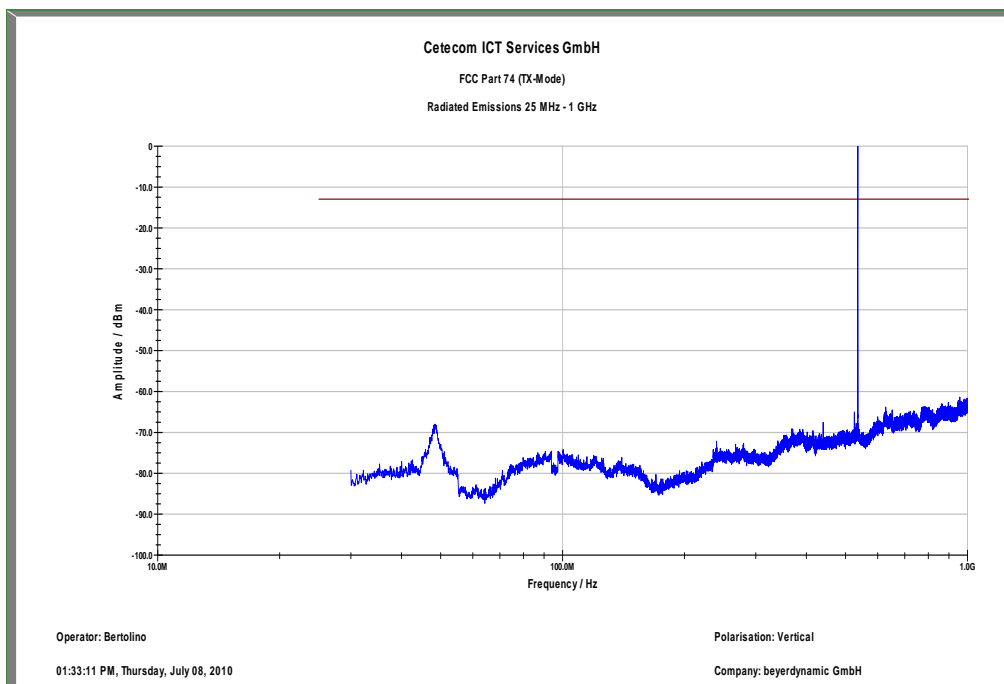
Plot 9: 5M2A band 1 low, TX mode, mid channel, 1 GHz to 12.75 GHz, horizontal polarization



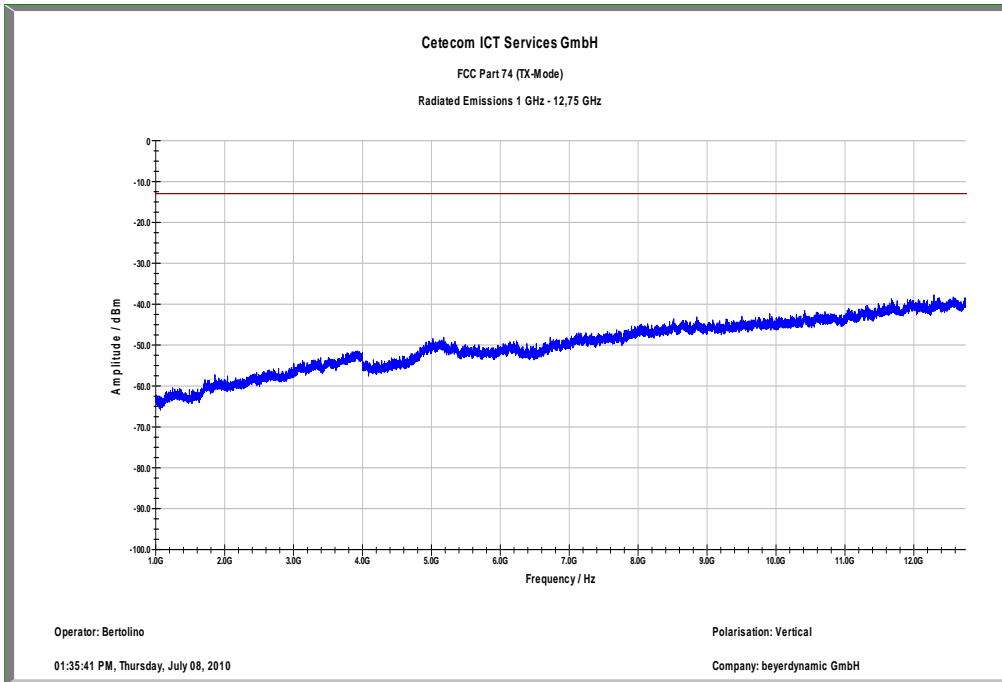
Plot 10: 5M2B band 1 high, TX mode, mid channel, 9 kHz to 30 MHz, magnetic (valid for all 5M2B channels)



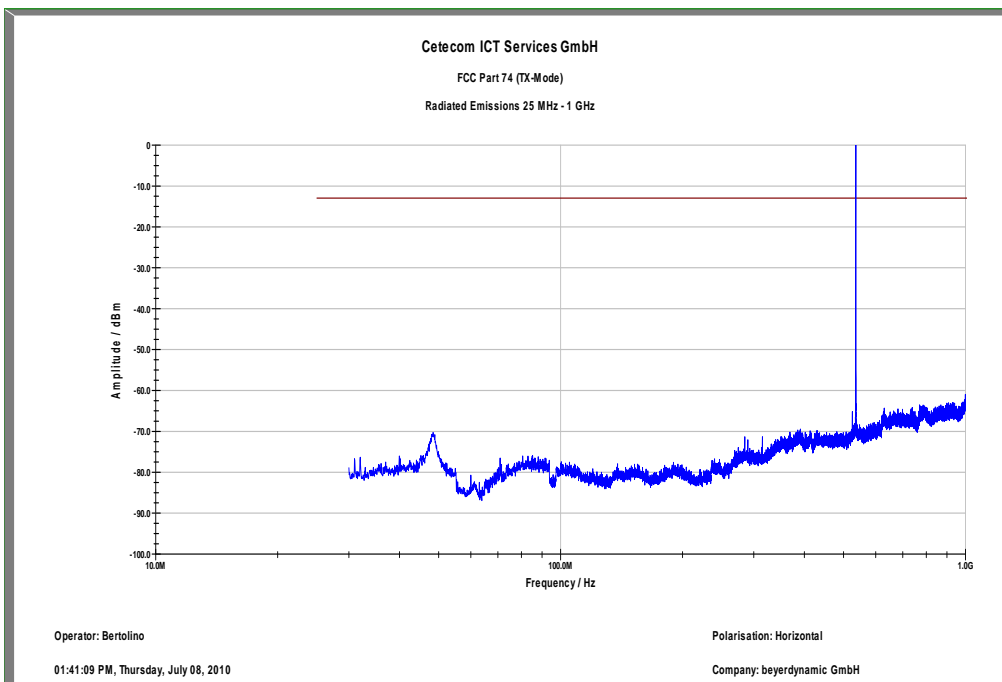
Plot 11: 5M2B band 1 high, TX mode, mid channel, 30 MHz to 1 GHz, vertical polarization



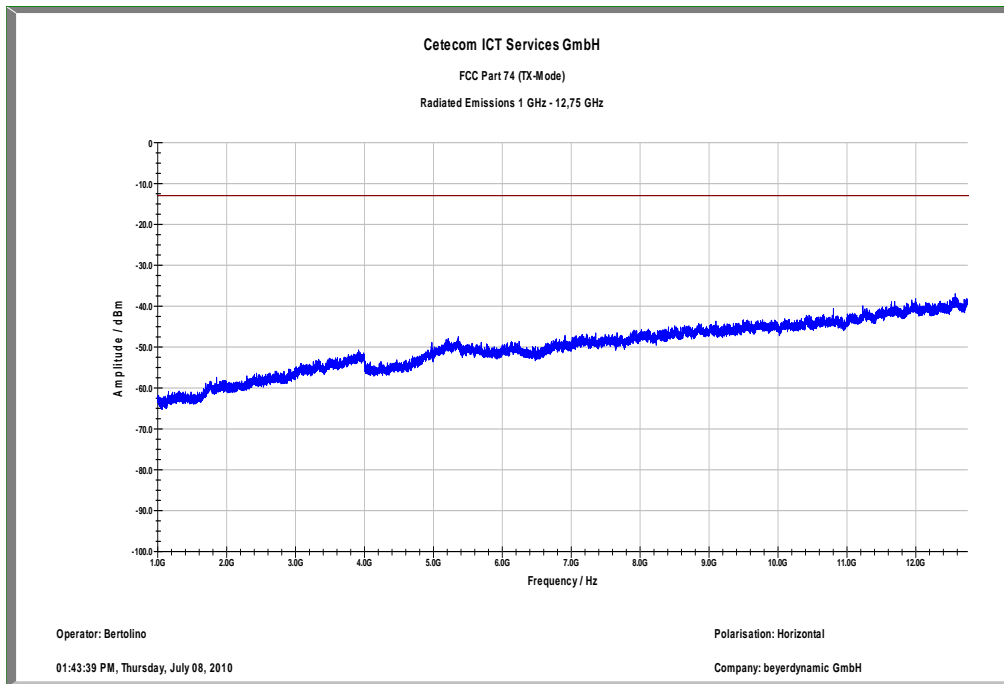
Plot 12: 5M2B band 1 high, TX mode, mid channel, 1 GHz to 12.75 GHz, vertical polarization



Plot 13: 5M2B band 1 high, TX mode, mid channel, 30 MHz to 1 GHz, horizontal polarization

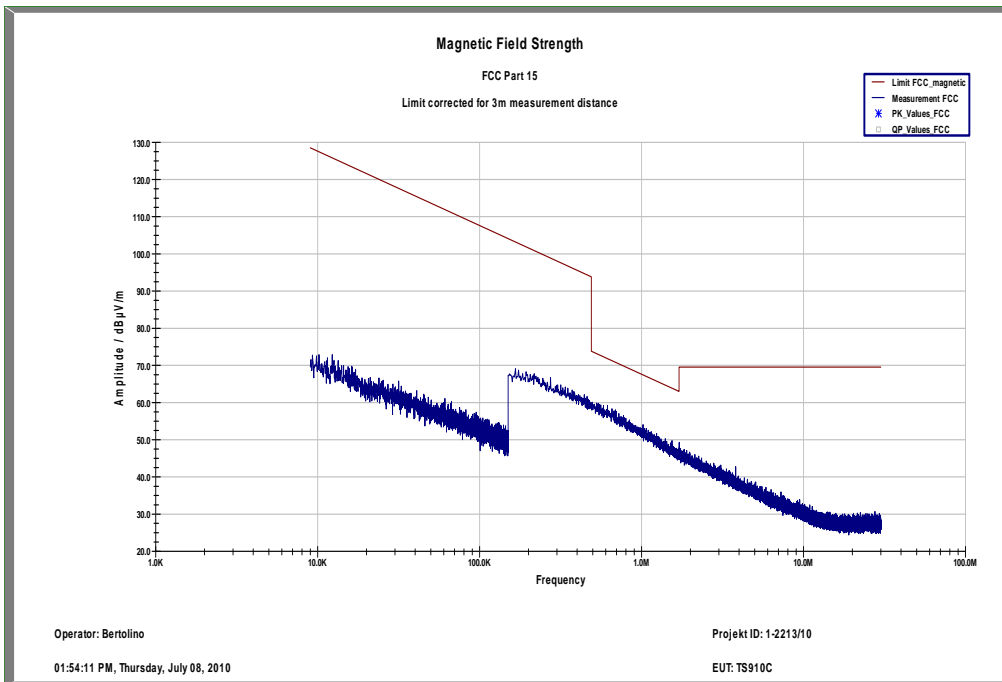


Plot 14: 5M2B band 1 high, TX mode, mid channel, 1 GHz to 12.75 GHz, horizontal polarization

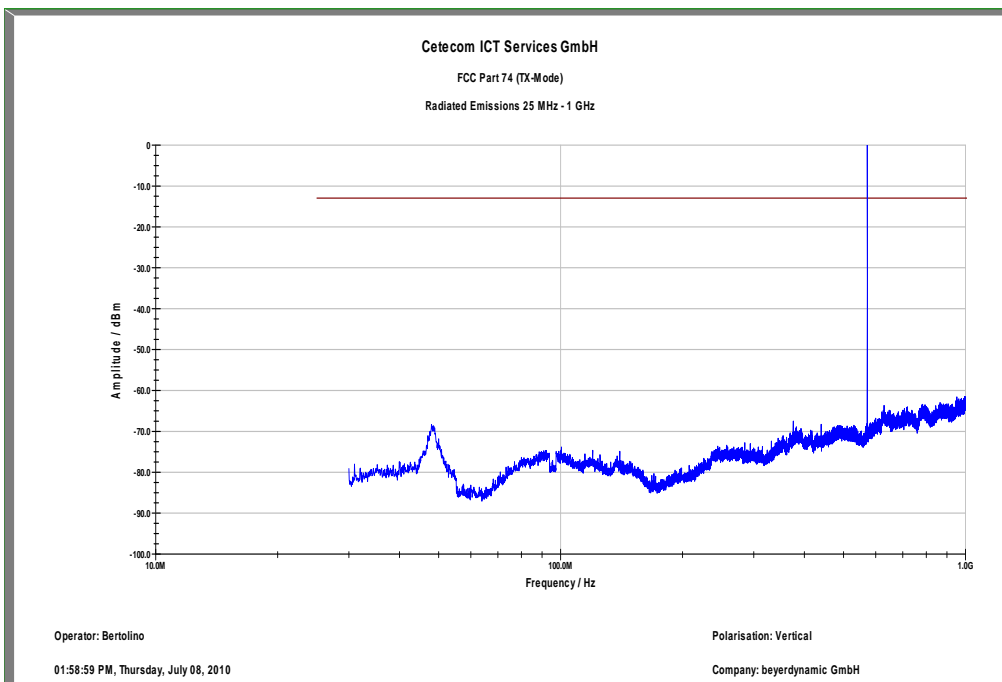




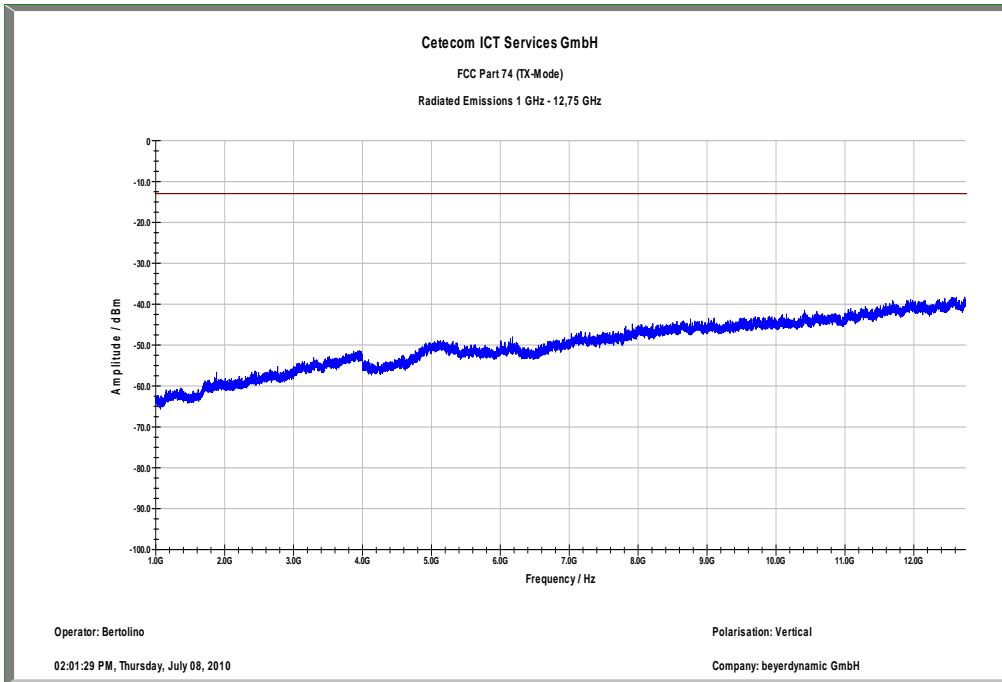
Plot 15: 5M9A band 2 low, TX mode, mid channel, 9 kHz to 30 MHz, magnetic (valid for all 5M9A channels)



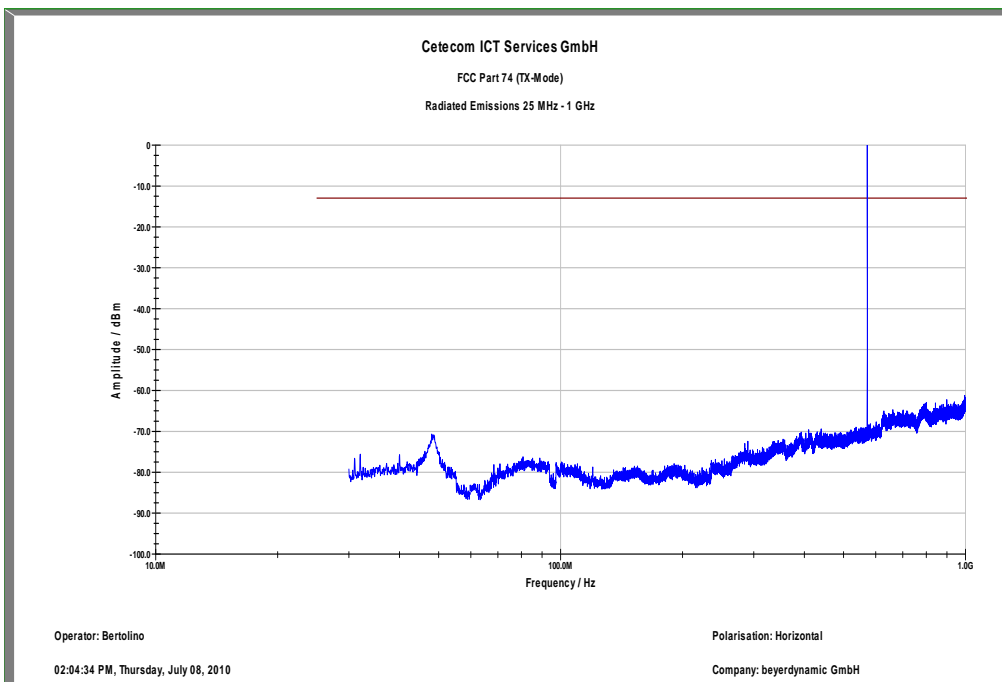
Plot 16: 5M9A band 2 low, TX mode, mid channel, 30 MHz to 1 GHz, vertical polarization



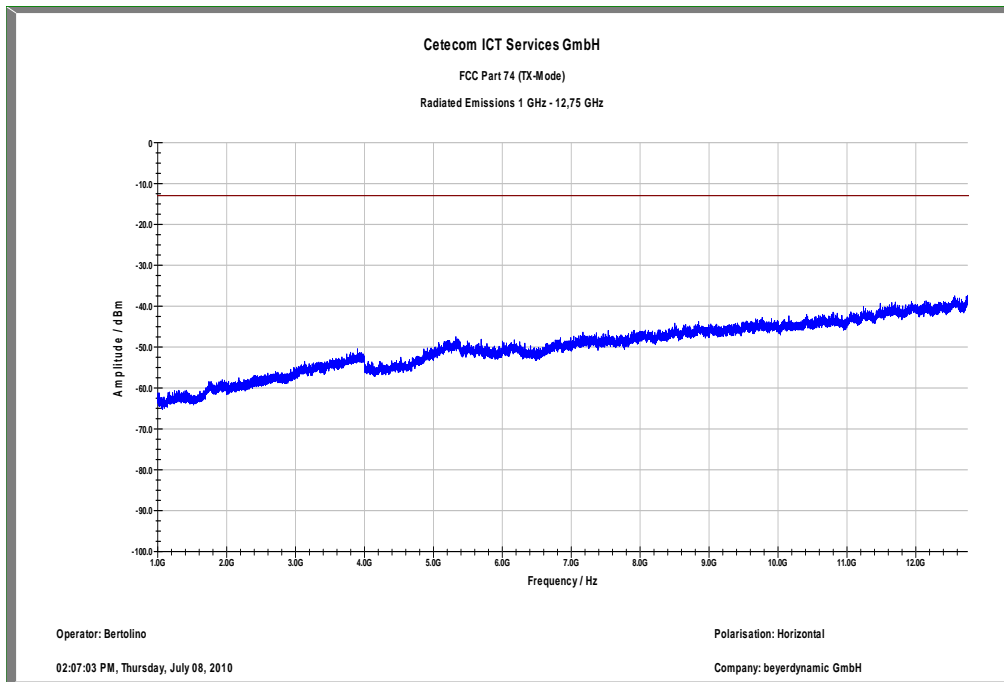
Plot 17: 5M9A band 2 low, TX mode, mid channel, 1 GHz to 12.75 GHz, vertical polarization



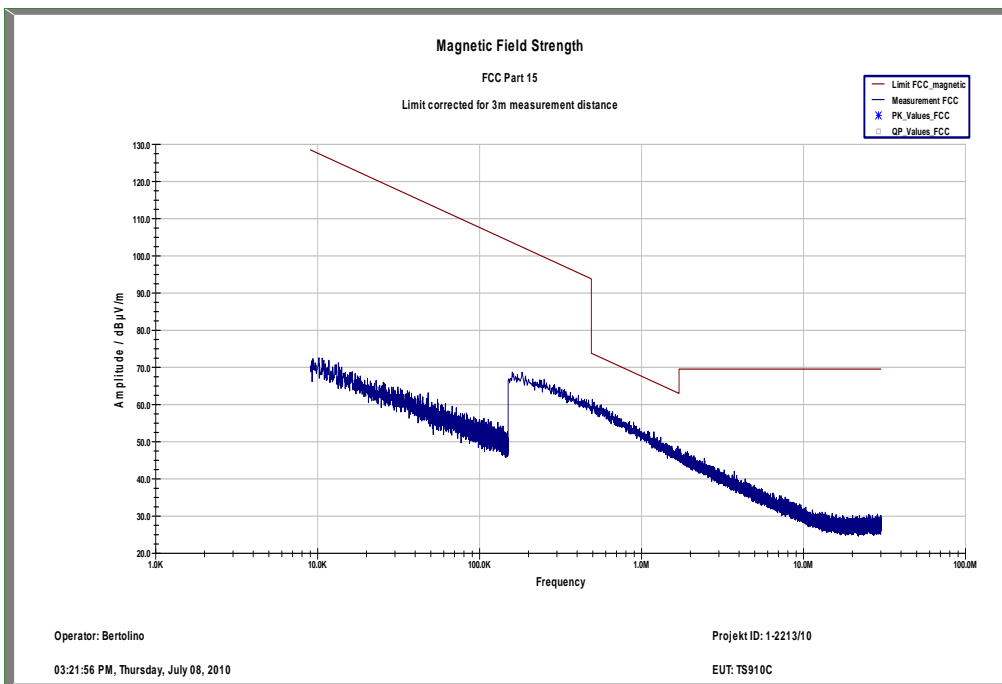
Plot 18: 5M9A band 2 low, TX mode, mid channel, 30 MHz to 1 GHz, horizontal polarization



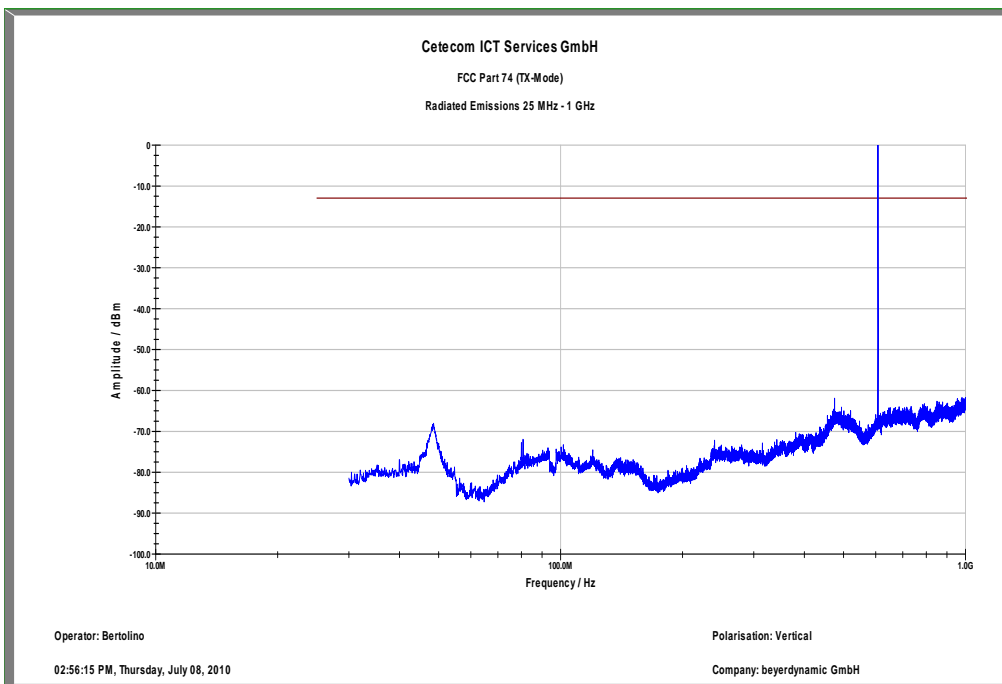
Plot 19: 5M9A band 2 low, TX mode, mid channel, 1 GHz to 12.75 GHz, horizontal polarization



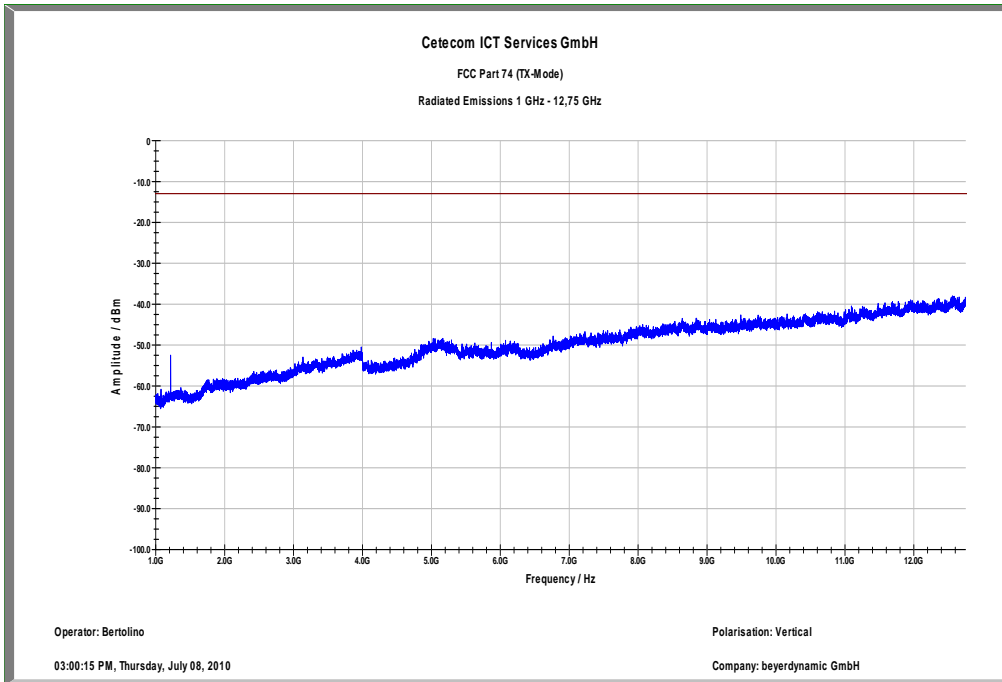
Plot 20: 5M9B band 2 high, TX mode, mid channel, 9 kHz to 30 MHz, magnetic (valid for all 5M9B channels)



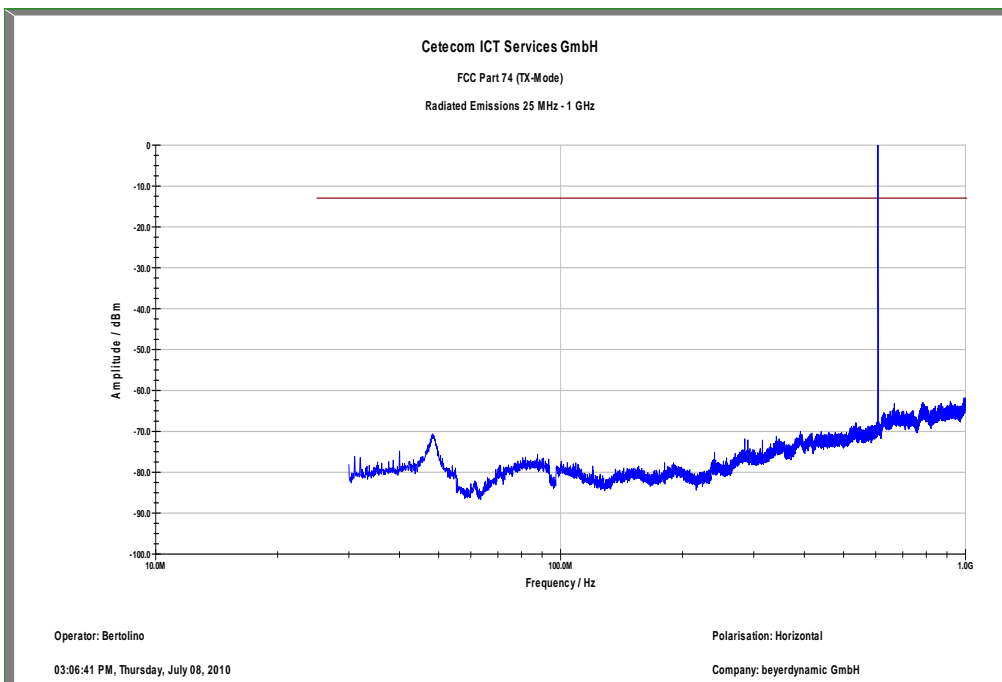
Plot 21: 5M9B band 2 high, TX mode, mid channel, 30 MHz to 1 GHz, vertical polarization



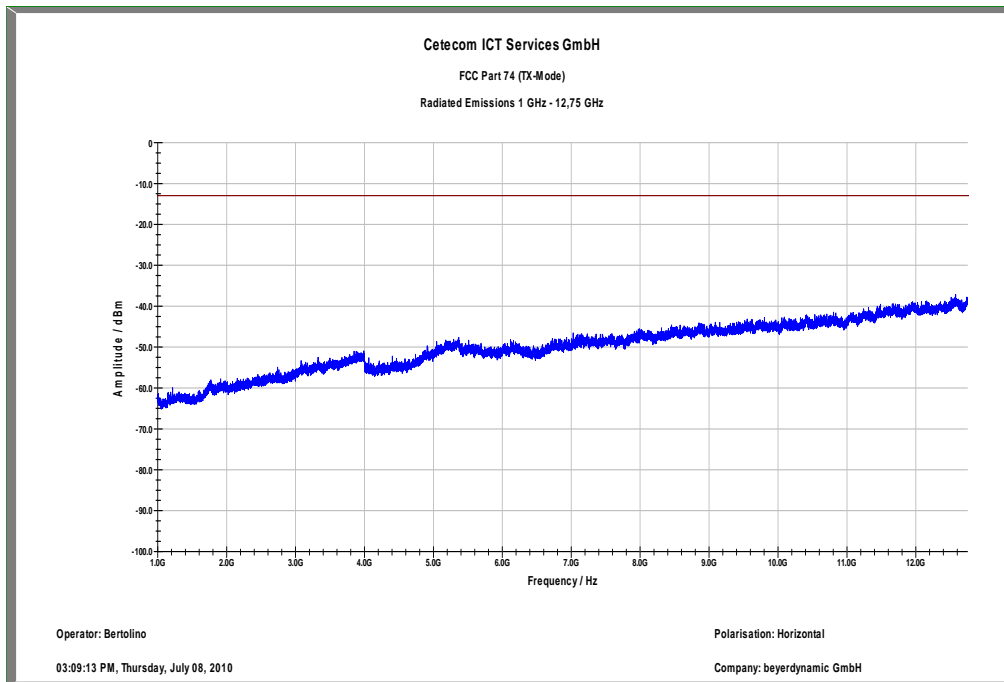
Plot 22: 5M9B band 2 high, TX mode, mid channel, 1 GHz to 12.75 GHz, vertical polarization



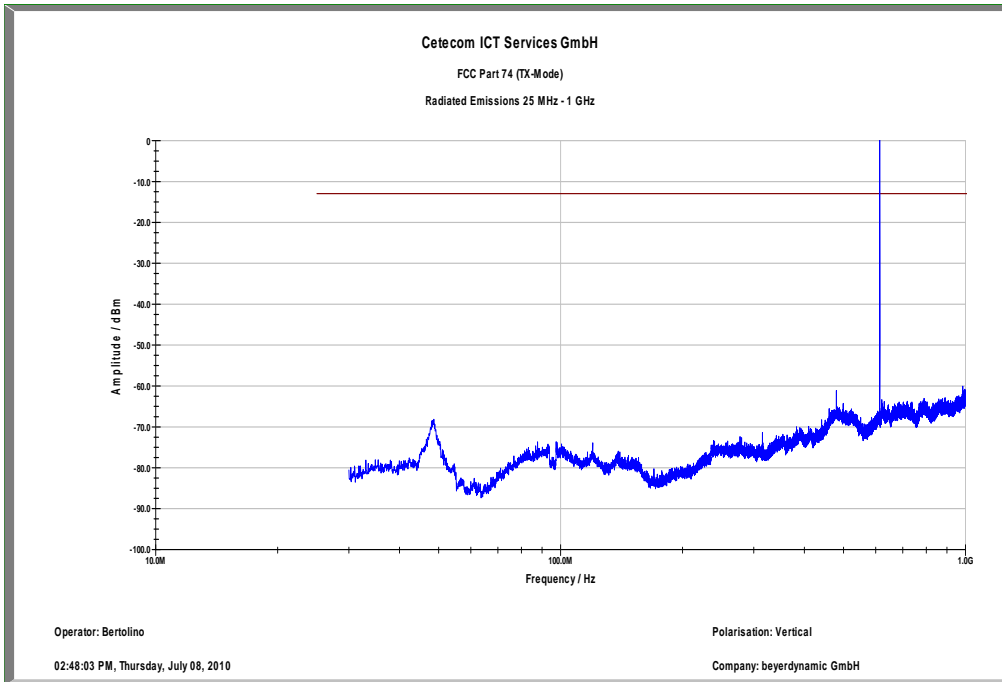
Plot 23: 5M9B band 2 high, TX mode, mid channel, 30 MHz to 1 GHz, horizontal polarization



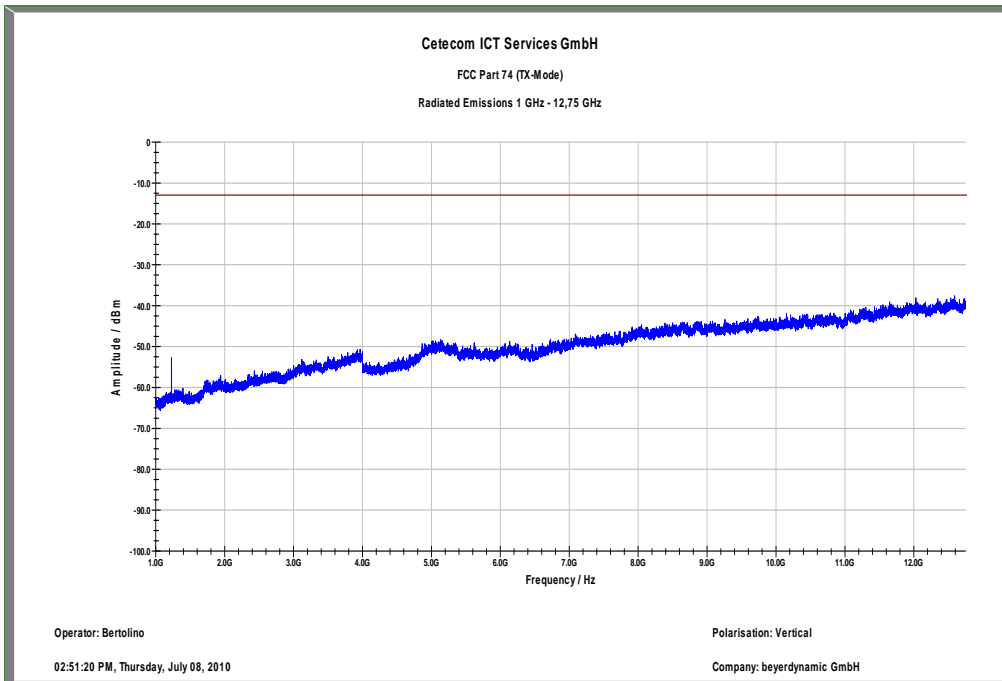
Plot 24: 5M9B band 2 high, TX mode, mid channel, 1 GHz to 12.75 GHz, horizontal polarization



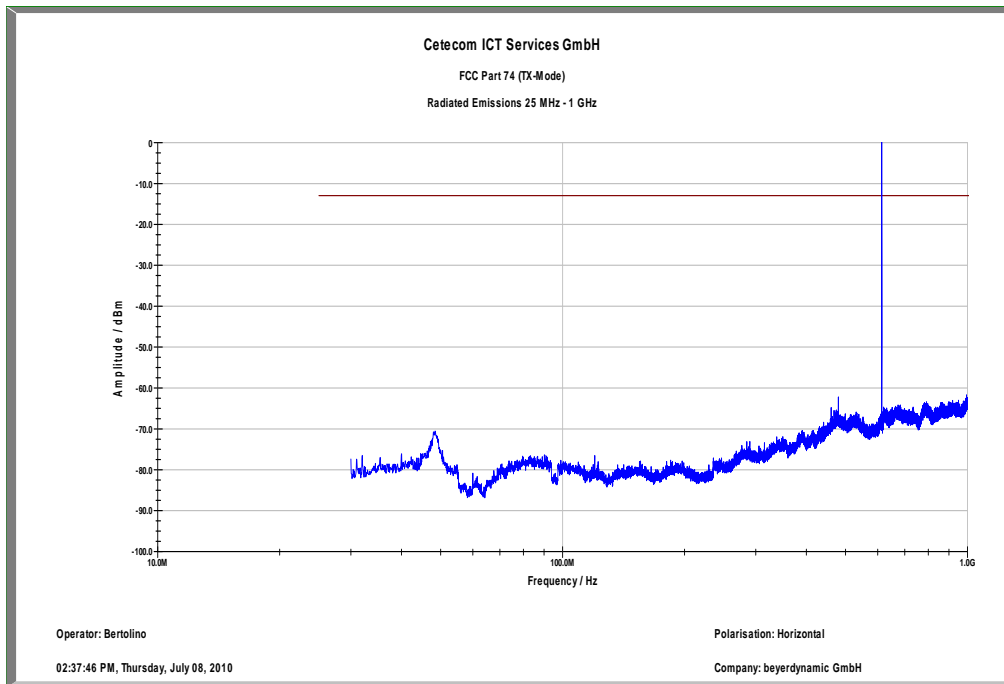
Plot 25: 5M9B band 2 high, TX mode, high channel, 30 MHz to 1 GHz, vertical polarization



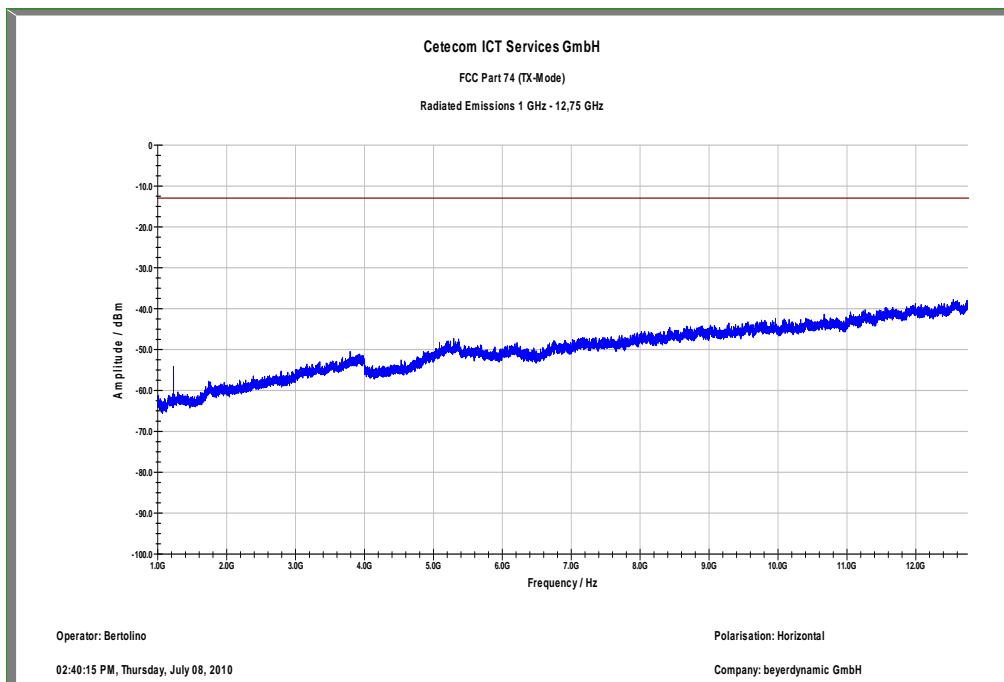
Plot 26: 5M9B band 2 high, TX mode, high channel, 1 GHz to 12.75 GHz, vertical polarization



Plot 27: 5M9B band 2 high, TX mode, high channel, 30 MHz to 1 GHz, horizontal polarization

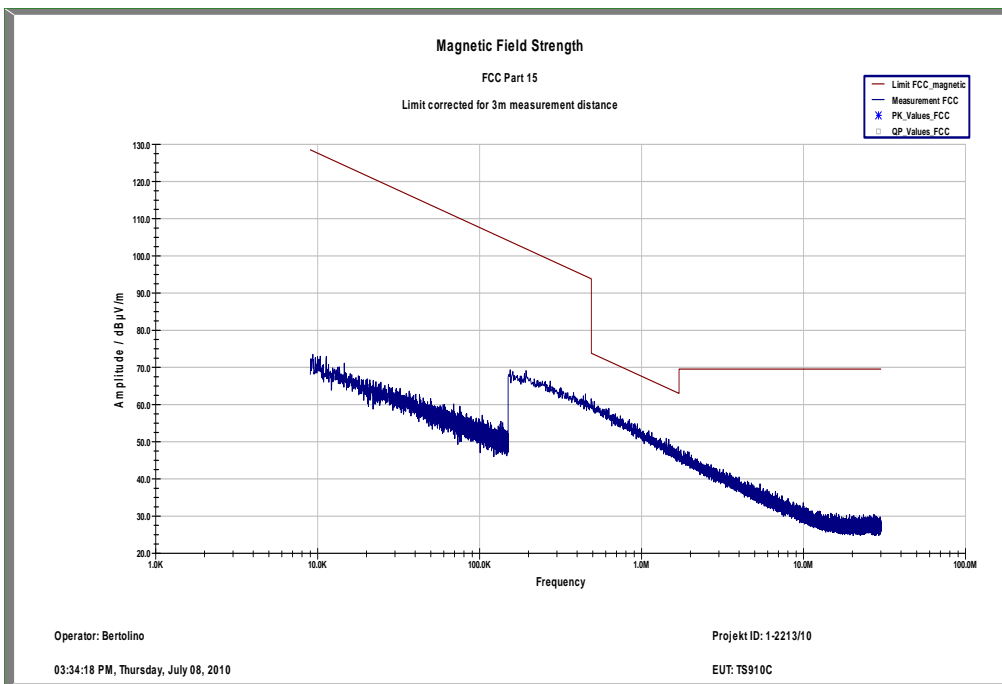


Plot 28: 5M9B band 2 high, TX mode, high channel, 1 GHz to 12.75 GHz, horizontal polarization

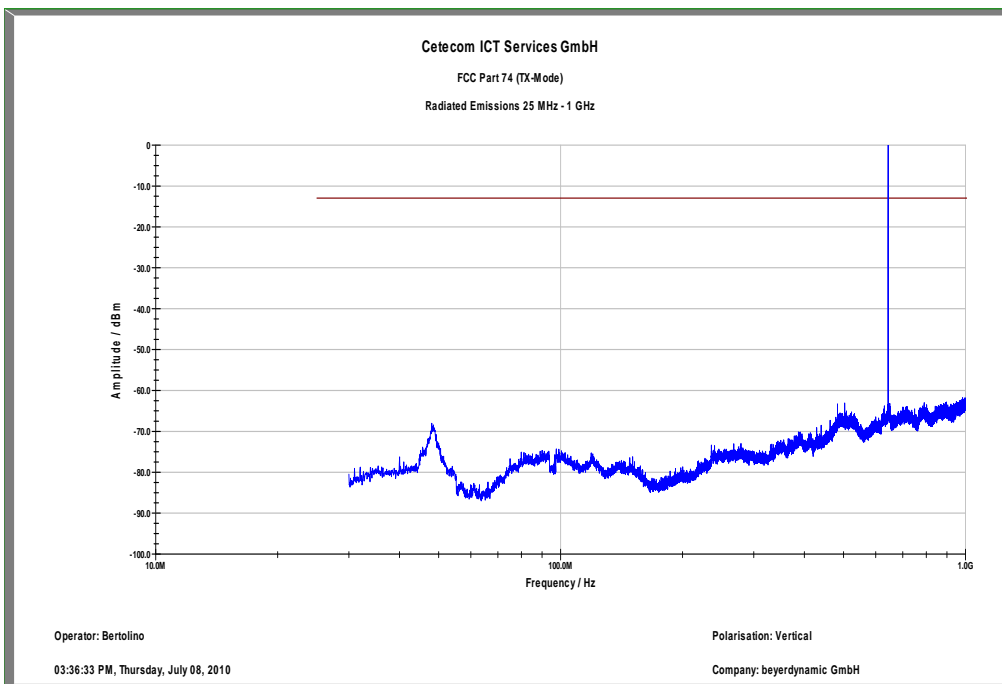




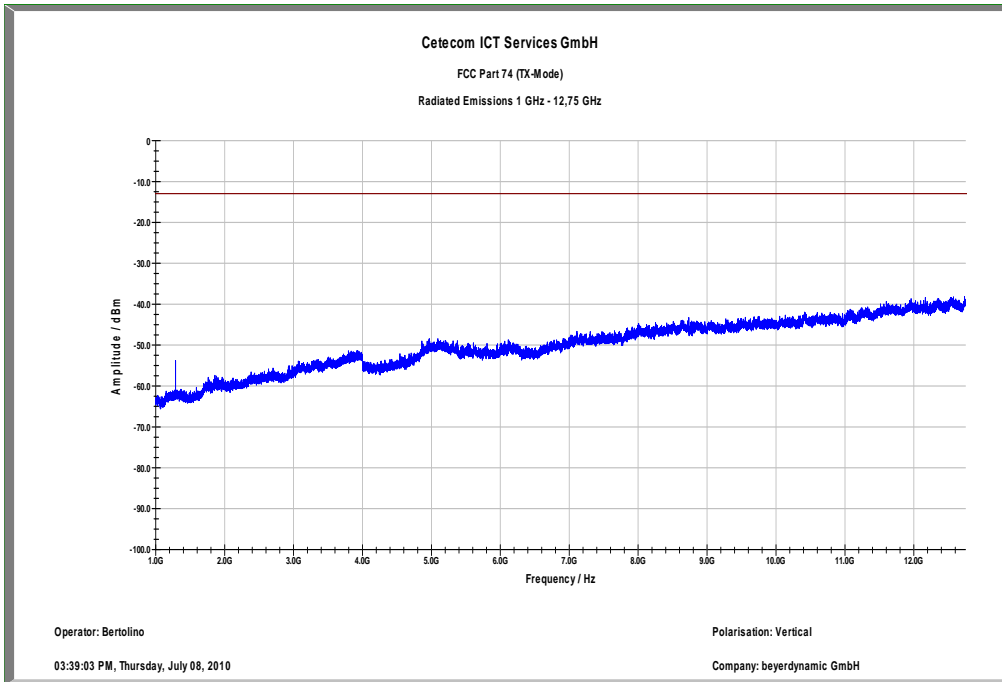
Plot 29: 6M6A band 3 low, TX mode, mid channel, 9 kHz to 30 MHz, magnetic (valid for all 6M6A channels)



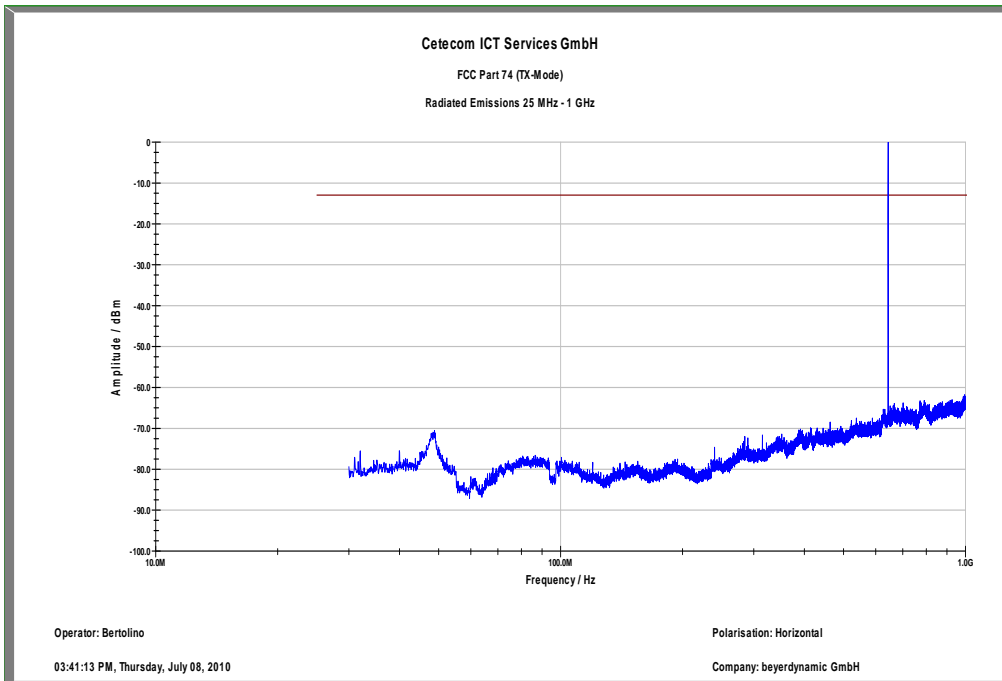
Plot 30: 6M6A band 3 low, TX mode, mid channel, 30 MHz to 1 GHz, vertical polarization



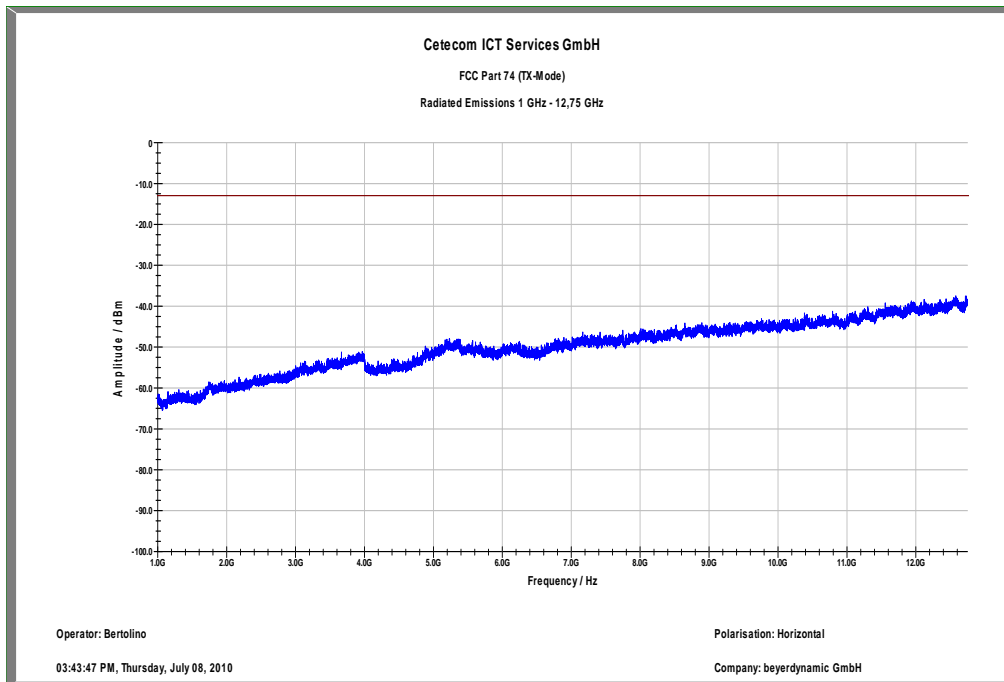
Plot 31: 6M6A band 3 low, TX mode, mid channel, 1 GHz to 12.75 GHz, vertical polarization



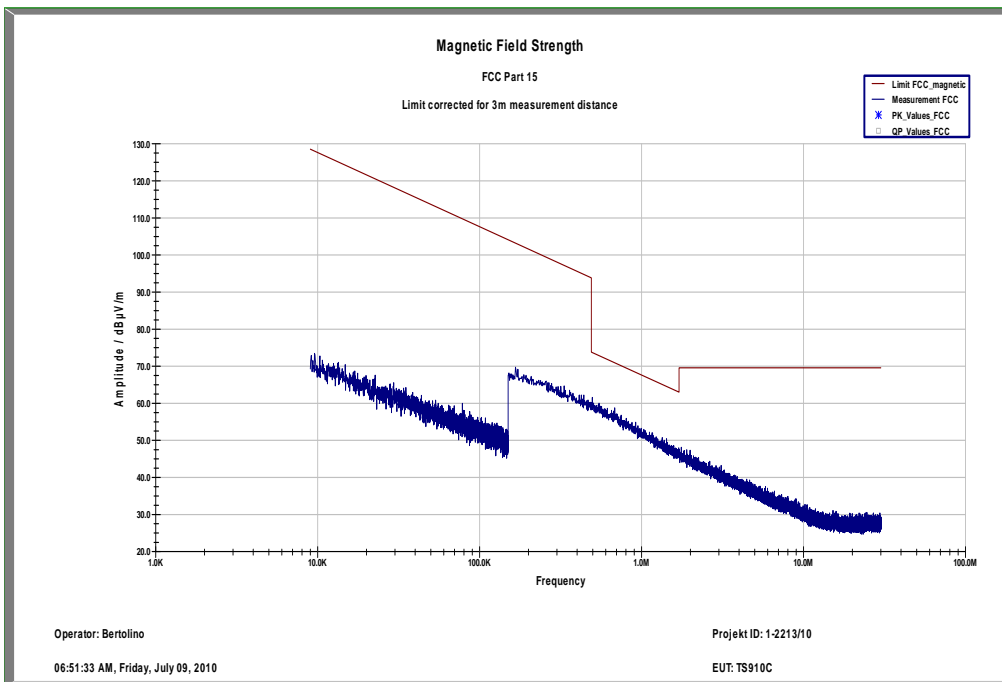
Plot 32: 6M6A band 3 low, TX mode, mid channel, 30 MHz to 1 GHz, horizontal polarization



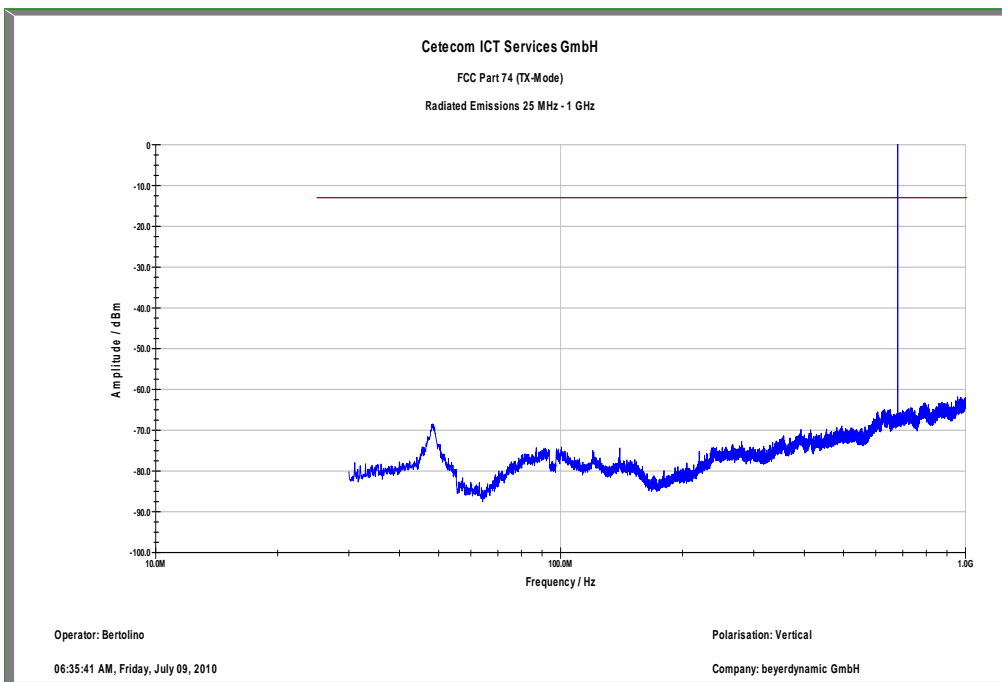
Plot 33: 6M6A band 3 low, TX mode, mid channel, 1 GHz to 12.75 GHz, horizontal polarization



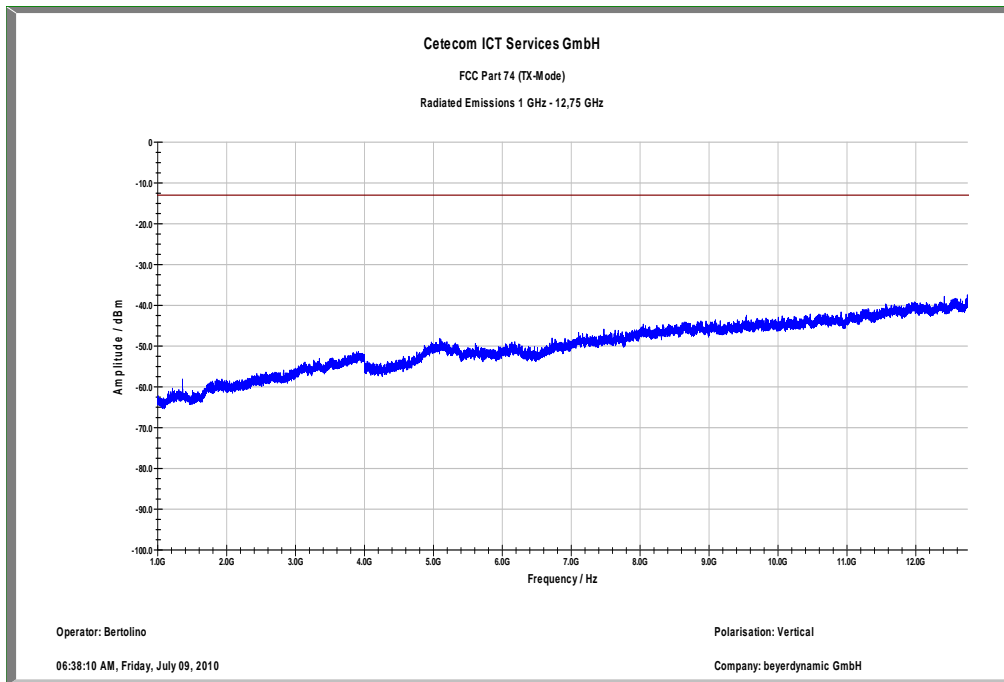
Plot 34: 6M6B band 3 high, TX mode, mid channel, 9 kHz to 30 MHz, magnetic (valid for all 6M6B channels)



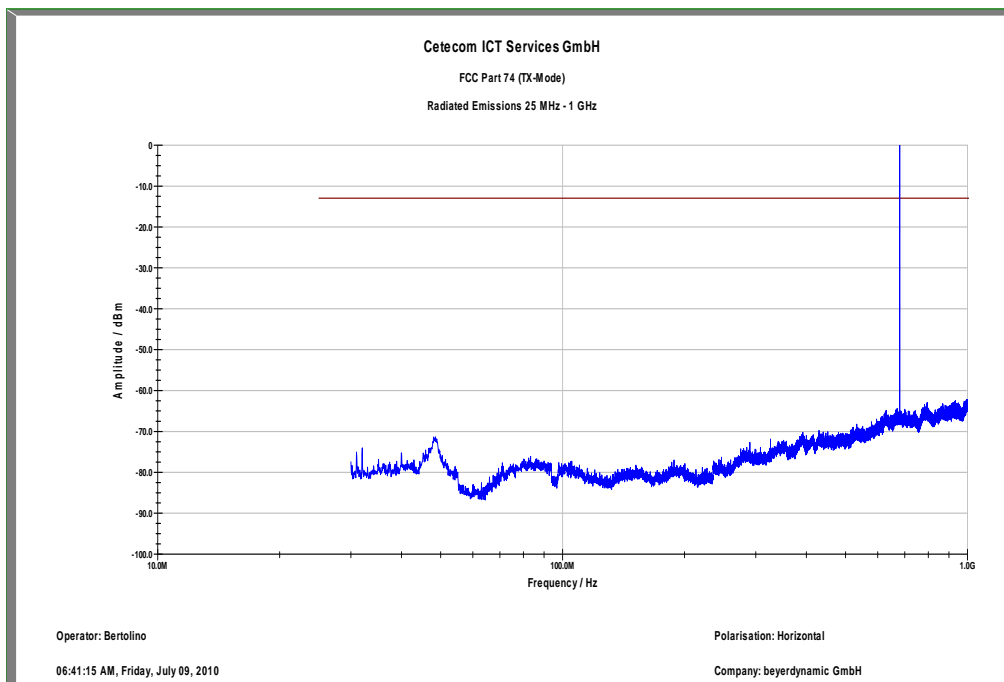
Plot 35: 6M6B band 3 high, TX mode, mid channel, 30 MHz to 1 GHz, vertical polarization



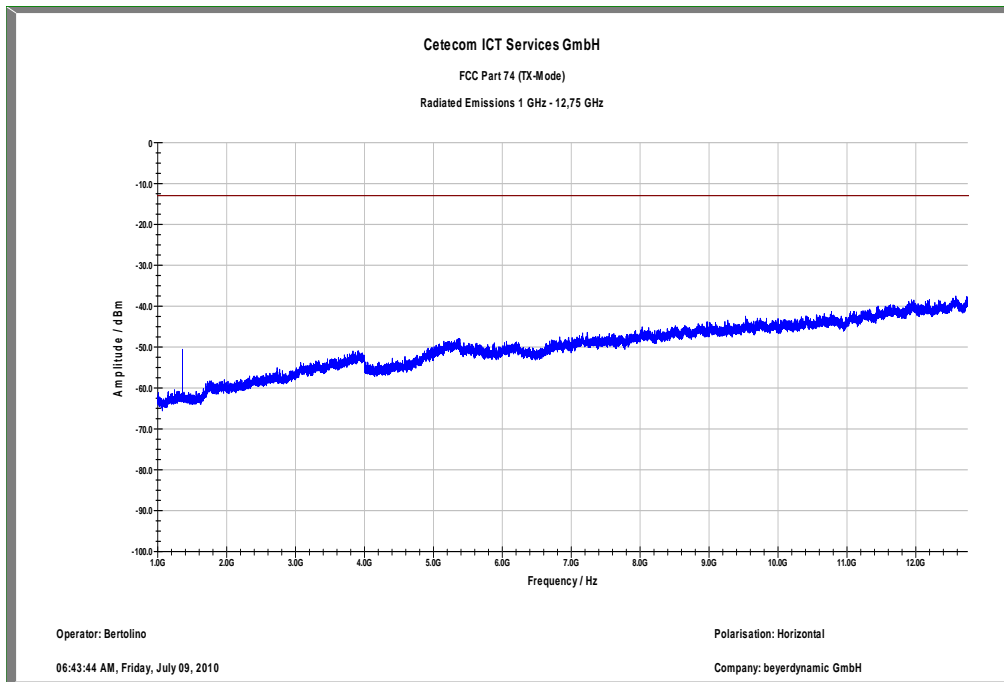
Plot 36: 6M6B band 3 high, TX mode, mid channel, 1 GHz to 12.75 GHz, vertical polarization



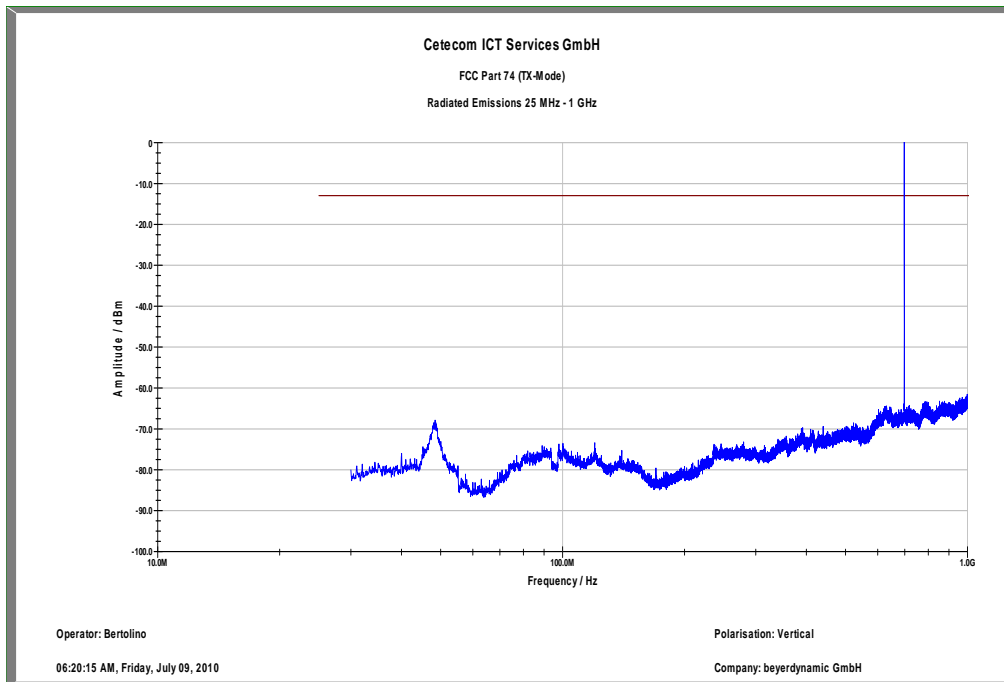
Plot 37: 6M6B band 3 high, TX mode, mid channel, 30 MHz to 1 GHz, horizontal polarization



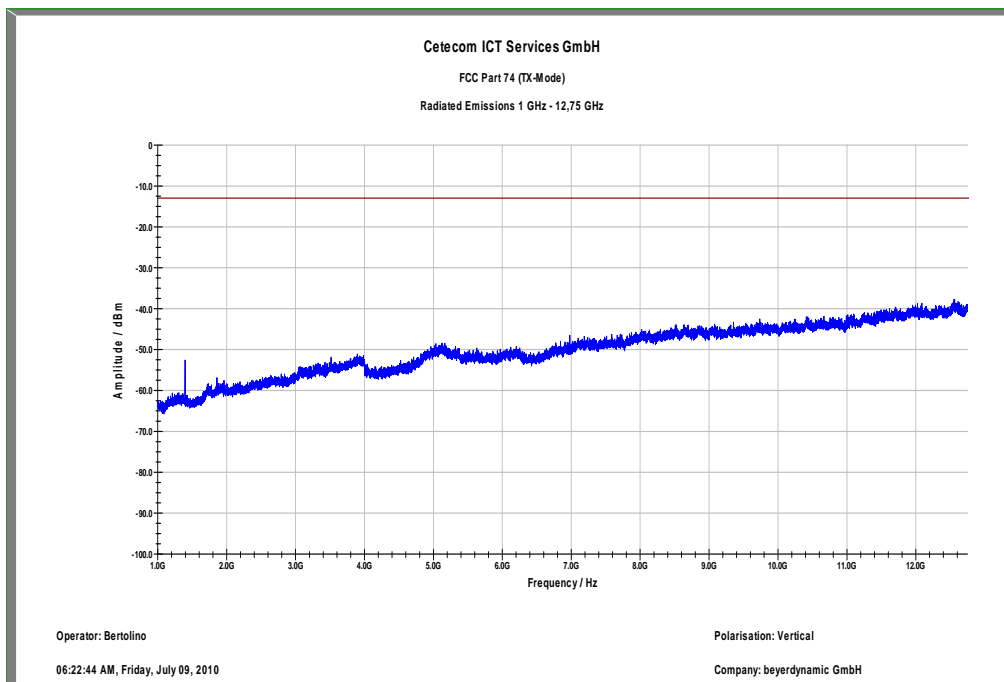
Plot 38: 6M6B band 3 high, TX mode, mid channel, 1 GHz to 12.75 GHz, horizontal polarization



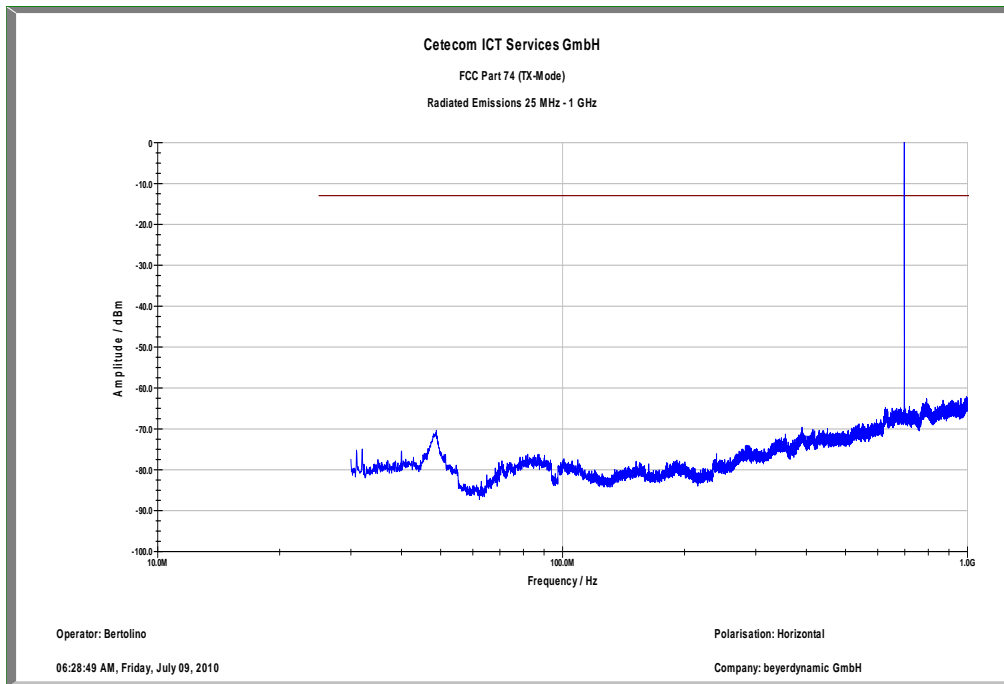
Plot 39: 6M6B band 3 high, TX mode, high channel, 30 MHz to 1 GHz, vertical polarization



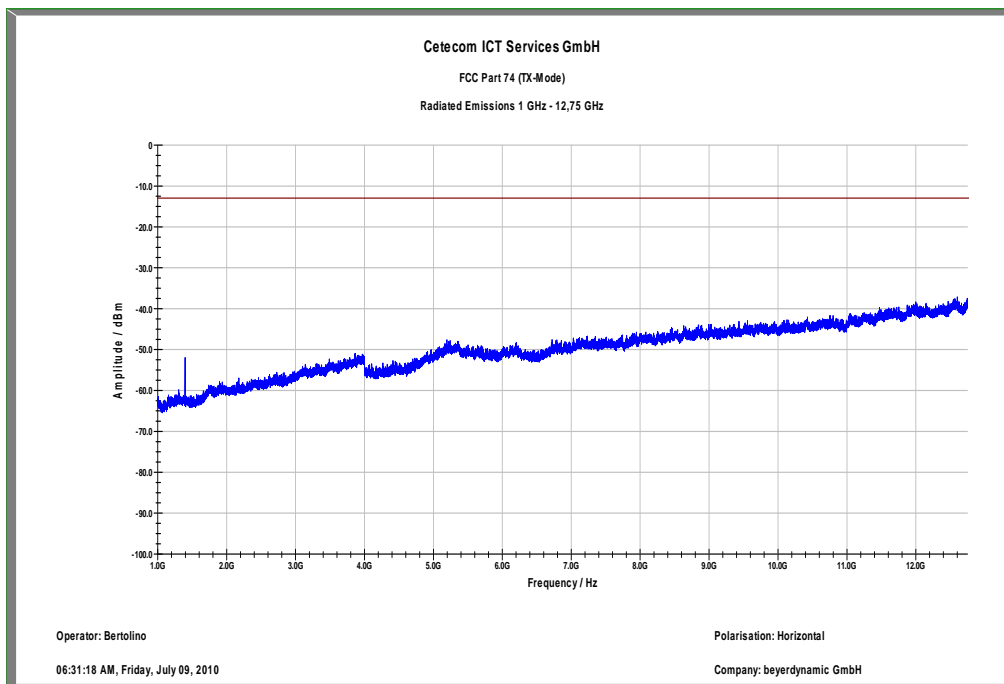
Plot 40: 6M6B band 3 high, TX mode, high channel, 1 GHz to 12.75 GHz, vertical polarization



Plot 41: 6M6B band 3 high, TX mode, high channel, 30 MHz to 1 GHz, horizontal polarization



Plot 42: 6M6B band 3 high, TX mode, high channel, 1 GHz to 12.75 GHz, horizontal polarization





## 9 Test equipment and ancillaries used for tests

In order to simplify the identification of the equipment used at each specific test, each item of test equipment and ancillaries are provided with an identifier or number in the equipment list below. 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).

No.	Labor / Item	Equipment	Type	Manufact.	Serial No.	INV. No Cetecom	Kal. Art	Last Calibration	Next Calibration
1	n. a.	DC power supply, 60Vdc, 50A, 1200 W	6032A	HP Meßtechnik	2818A03450	300001040	Ve	08.01.2009	08.01.2012
2	n. a.	PowerAttenuator	8325	Byrd	1530	300001595			
3	n. a.	Double-Ridged Waveguide Horn Antenna 1-18.0GHz	3115	EMCO	8812-3088	300001032	vIKI!	05.03.2009	05.03.2011
4	n. a.	Active Loop Antenna	6502	EMCO	2210	300001015	ne		
5	n. a.	Anechoic chamber		MWB	87400/02	300000996			
6	Spec.A. 2_2e	System rack for EMI measurement solution	85900	HP I.V.	*	300000222	ne		
7	9	Artificial Mains 9 kHz to 30 MHz, 4 x 25 Ampere	ESH3-Z5	R&S	828576/020	300001210	Ve	06.01.2010	06.01.2012
8	n. a.	Relais Matrix	3488A	HP Meßtechnik	2719A15013	300001156	ne		
9	n. a.	Relais Matrix	PSU	R&S	890167/024	300001168	ne		
10	n. a.	Isolating Transformer	RT5A	Grundig	9242	300001263	ne		
11	n. a.	Three-Way Power Splitter, 50 Ohm	11850C	HP Meßtechnik		300000997	ne		
12	n. a.	Switch / Control Unit	3488A	HP	2605e08770	300001443	ne		
13	n. a.	Band Reject filter	WRCG1855/1910-1835/1925-40/8SS	Wainwright	7	300003350	ev		
14	n. a.	Band Reject filter	WRCG2400/2483-2375/2505-50/10SS	Wainwright	11	300003351	ev		
15	n. a.	TILE-Software Emission	Quantum Change, Modell TILE-ICS/FULL	EMCO	none	300003451	ne		
16	n. a.	Highpass Filter	WHKX2.9/18G-12SS	Wainwright	1	300003492	ev		
17	n. a.	Highpass Filter	WHK1.1/15G-10SS	Wainwright	3	300003255	ev		
18	n. a.	Highpass Filter	WHKX7.0/18G-8SS	Wainwright	18	300003789	ne		
19	n. a.	PSA Spectrum Analyzer 3 Hz - 26.5 GHz	E4440A	Agilent Technologies	MY48250080	300003812	k	05.08.2008	05.08.2010
20	n. a.	MXG Microwave Analog Signal Generator	N5183A	Agilent Technologies	MY47420220	300003813	k	06.08.2008	06.08.2010
21	n. a.	RF Filter Section 9kHz - 1GHz	N9039A	Agilent Technologies	MY48260003	300003825	vIKI!	19.08.2008	19.08.2010
22	n. a.	TRILOG Broadband Test-Antenna 30 MHz - 3 GHz	VULB9163	Schwarzbeck	371	300003854	vIKI!	17.12.2008	17.12.2010
23	n. a.	DC Power Supply 0 – 32V	1108-32	Heiden	001802	300001383	Ve	23.06.2010	23.06.2013
24	n. a.	Temperature Test Chamber	VT 4002	Heraeus Voetsch	521/83761	300002326	Ve	28.05.2009	28.05.2011
25	n. a.	Signal Analyzer 20Hz-26,5GHz-150 to + 30 DBM	FSIQ26	R&S	835111/0004	300002678	Ve	06.01.2009	06.01.2011

## Annex A Photo documentation

Please see 1-2213-01-12/10-A – Annex A

## Annex B Document history

Version	Applied changes	Date of release
1.0	Initial release	2010-07-15
1.0-A	Additional plot description, modified FCC ID, recalculated measurement results  Wrong data imported to frequency error measurement -> corrected  Photos attached to Annex A	2010-11-16

## Annex C 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