



Neutron Engineering Inc.

FCC Radio Test Report

FCC ID: QISMT2-L03

This report concerns (check one): ☒ Original Grant ☐ Class II Change

Issued Date : Mar. 07, 2014
Project No. : 1402C116
Equipment : LTE/UMTS Smart Phone
Model Name : HUAWEI MT2-L03; MT2-L03
Applicant : Huawei Technologies Co.,Ltd.
Address : Administration Building, Headquarters
of Huawei Technologies Co., Ltd.,
Bantian, Longgang District Shenzhen
China

Tested by: Neutron Engineering Inc. EMC Laboratory

Date of Receipt: Feb. 21, 2014

Date of Test: Feb. 21, 2014 ~ Mar. 06, 2014

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Declaration

Neutron represents to the client that testing is done in accordance with standard procedures as applicable and that test instruments used has been calibrated with the standards traceable to National Measurement Laboratory (**NML**) of **R.O.C.**, or National Institute of Standards and Technology (**NIST**) of **U.S.A.**

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Limitation

For the use of the authority's logo is limited unless the Test Standard(s)/Scope(s)/Item(s) mentioned in this test report is (are) included in the conformity assessment authorities acceptance respective.



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REPORT ISSUED HISTORY

Issued No.	Description	Issued Date
NEI-FCCP-3-1402C116	Original Issue.	Mar. 07, 2014



1. CERTIFICATION

Equipment : LTE/UMTS Smart Phone
Brand Name : HUAWEI
Model Name : HUAWEI MT2-L03; MT2-L03
Applicant : Huawei Technologies Co.,Ltd.
Manufacturer : Huawei Technologies Co.,Ltd.
Address : Huawei Base, Bantian, Longgang District, Shenzhen 518129, P.R.China
Factory : Huawei Technologies Co.,Ltd.
Address : Huawei Base, Bantian, Longgang District, Shenzhen 518129, P.R.China
Date of Test : Feb. 21, 2014 ~ Mar. 06, 2014
Test Item : ENGINEERING SAMPLE
Standard(s) : FCC Part15, Subpart C(15.247) / ANSI C63.4-2009

The above equipment has been tested and found compliance with the requirement of the relative standards by Neutron Engineering Inc. EMC Laboratory.

The test data, data evaluation, and equipment configuration contained in our test report (Ref No. NEI-FCCP-3-1402C116) were obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of TAF according to the ISO-17025 quality assessment standard and technical standard(s).



2. SUMMARY OF TEST RESULTS

Test procedures according to the technical standard(s):

Applied Standard(s): FCC Part15 (15.247) , Subpart C				
Standard(s) Section		Test Item	Judgment	Remark
FCC				
15.207		Conducted Emission	N/A	Note (3)
15.247(d)		Antenna conducted Spurious Emission	N/A	Note (3)
15.247(a)(2)		6dB Bandwidth	N/A	Note (3)
15.247(b)(3)		Peak Output Power	N/A	Note (3)
15.247(e)		Power Spectral Density	N/A	Note (3)
15.203		Antenna Requirement	N/A	Note (3)
15.209/15.205		Transmitter Radiated Emissions	PASS	

NOTE:

- (1) "N/A" denotes test is not applicable in this test report.
- (2) The test follows FCC KDB Publication No. 558074 D01 DTS Meas Guidance v03r01 (Measurement Guidelines of DTS)
- (3) Tested by HUAWEI. Only radiated tested by Neutron Engineering Inc. and recorded in this report.



2.1 TEST FACILITY

The test facilities used to collect the test data in this report is **DG-CB03** at the location of No.3,Jinshagang 1st Road, ShiXia, Dalang Town, Dong Guan, China.523792
Neutron's test firm number for FCC: 319330

2.2 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

The reported uncertainty of measurement $y \pm U$, where expanded uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95 %.

A. Radiated Measurement :

Test Site	Method	Measurement Frequency Range	Ant. H / V	U , (dB)	NOTE
DG-CB03	CISPR	9KHz~30MHz	V	3.79	
		9KHz~30MHz	H	3.57	
		30MHz ~ 200MHz	V	3.82	
		30MHz ~ 200MHz	H	3.60	
		200MHz ~ 1,000MHz	V	3.86	
		200MHz ~ 1,000MHz	H	3.94	
		1GHz~18GHz	V	3.12	
		1GHz~18GHz	H	3.68	
		18GHz~40GHz	V	4.15	
		18GHz~40GHz	H	4.14	

**3. GENERAL INFORMATION****3.1 GENERAL DESCRIPTION OF EUT**

Equipment	LTE/UMTS Smart Phone	
Brand Name	HUAWEI	
Model Name	HUAWEI MT2-L03; MT2-L03	
Model Difference	Only differ in model name.	
Product Description	Operation Frequency	5745~5825 MHz
	Modulation Technology	OFDM
	Bit Rate of Transmitter	150Mbps
Power Source	#1 DC voltage supplied from AC/DC adapter. Brand / Model; HUAWEI / HW-050200U3W #2 Supplied from battery.	
Power Rating	#1 I/P: AC 100-240V~50/60Hz 0.5A MAX O/P: DC 5.0V 2A #2 DC 3.8V	
Connecting I/O Port(s)	Please refer to the User's Manual	

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.



2.

802.11a / 802.11n 20M/802.11ac 20M					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
149	5745	153	5765	157	5785
161	5805	165	5825		

802.11n 40M/802.11ac 40M			
Channel	Frequency (MHz)	Channel	Frequency (MHz)
151	5755	159	5795

802.11ac 80M			
Channel	Frequency (MHz)		
155	5775		

3. Table for Filed Antenna

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	Note
1	N/A	N/A	Internal	N/A	1	TX/RX



3.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Pretest Mode	Description
Mode 1	TX A MODE CHANNEL 149/157/165
Mode 2	TX N-20MHZ MODE CHANNEL 149/157/165
Mode 3	TX N-40MHZ MODE CHANNEL 151/159
Mode 4	TX AC-20MHZ MODE CHANNEL 149/157/165
Mode 5	TX AC-40MHZ MODE CHANNEL 151/159
Mode 6	TX AC-80MHZ MODE CHANNEL 155

For Radiated Test	
Final Test Mode	Description
Mode 1	TX A MODE CHANNEL 149/157/165
Mode 2	TX N-20MHZ MODE CHANNEL 149/157/165
Mode 3	TX N-40MHZ MODE CHANNEL 151/159
Mode 4	TX AC-20MHZ MODE CHANNEL 149/157/165
Mode 5	TX AC-40MHZ MODE CHANNEL 151/159
Mode 6	TX AC-80MHZ MODE CHANNEL 155

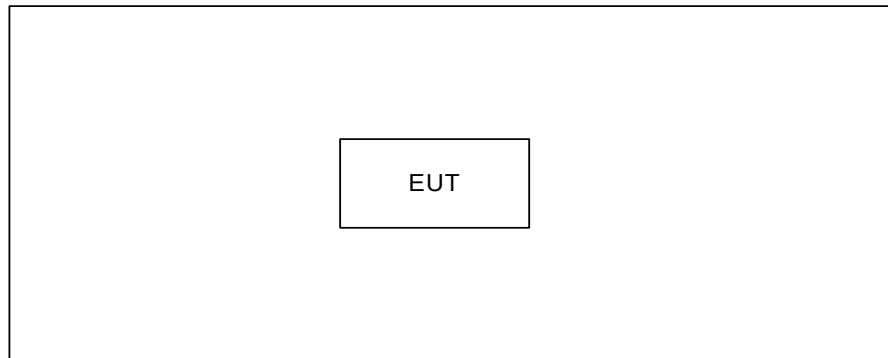
Note:

(1) For radiated below 1G test, the 802.11a is found to be the worst case and recorded.



3.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Radiated TX Mode:



Control Room

3.5 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	FCC ID/IC	Series No.	Note
N/A	-	-	-	-	-	

Item	Shielded Type	Ferrite Core	Length	Note
N/A	-	-	-	



4. EMC EMISSION TEST

4.1 RADIATED EMISSION MEASUREMENT

4.1.1 RADIATED EMISSION LIMITS (Frequency Range 9KHz-1000MHz)

20dB in any 100 KHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
960~1000	500	3

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

Frequency (MHz)	(dBuV/m) (at 3 meters)	
	PEAK	AVERAGE
Above 1000	74	54

Notes:

- (1) The limit for radiated test was performed according to FCC PART 15C.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RBW / VBW (Emission in restricted band)	1MHz / 1MHz for Peak, 1 MHz / 10Hz for Average

Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9KHz~90KHz for PK/AVG detector
Start ~ Stop Frequency	90KHz~110KHz for QP detector
Start ~ Stop Frequency	110KHz~490KHz for PK/AVG detector
Start ~ Stop Frequency	490KHz~30MHz for QP detector
Start ~ Stop Frequency	30MHz~1000MHz for QP detector



4.1.2 TEST PROCEDURE

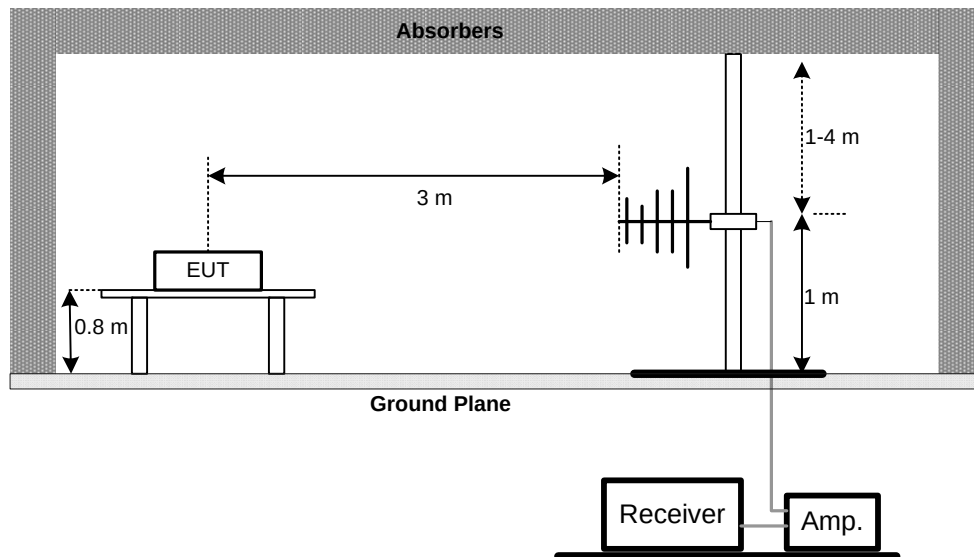
- The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1GHz)
- The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(above 1GHz)
- The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
- For the actual test configuration, please refer to the related Item –EUT Test Photos.

4.1.3 DEVIATION FROM TEST STANDARD

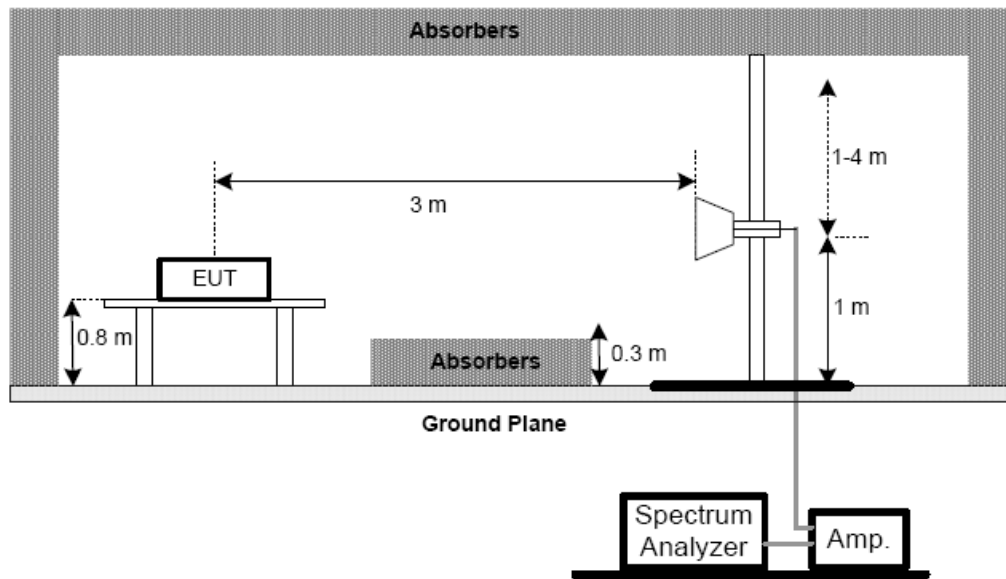
No deviation

4.1.4 TEST SETUP

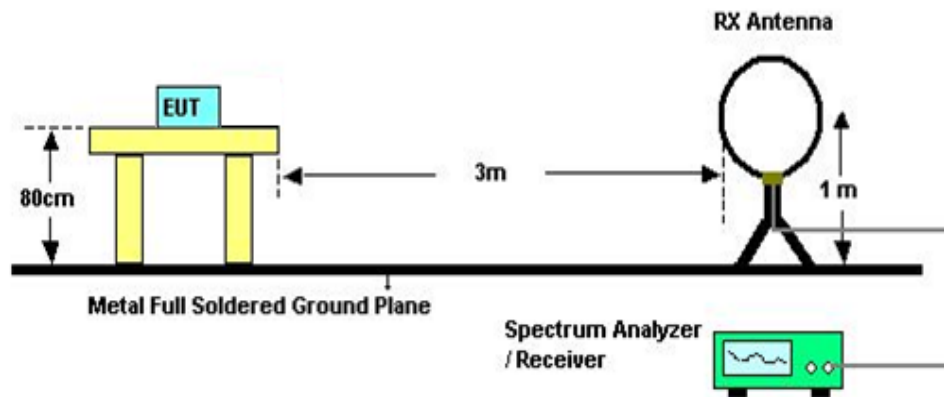
(A) Radiated Emission Test Set-Up Frequency Below 1 GHz



(B) Radiated Emission Test Set-Up Frequency Above 1 GHz



(C) For radiated emissions below 30MHz



4.1.5 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of **4.1.6** Unless otherwise a special operating condition is specified in the follows during the testing.

4.1.6 EUT TEST CONDITIONS

Temperature: 25°C

Relative Humidity: 55%

Test Voltage: DC 3.8V



4.1.7 TEST RESULTS (9K~ 30MHZ)

Test Mode : TX Mode 5745MHz

Freq. (MHz)	Ant. 0°/90°	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits(QP) (dBuV/m)	Margin (dB)	Note
0.0094	0°	17.53	24.30	41.83	128.12	-86.29	AV
0.0094	0°	19.72	24.30	44.02	148.12	-104.10	PK
0.0136	0°	18.15	24.30	42.45	124.93	-82.48	AV
0.0137	0°	20.40	24.30	44.70	144.93	-100.23	PK
0.0245	0°	17.46	24.02	41.48	119.82	-78.35	AV
0.0246	0°	20.08	24.02	44.10	139.82	-95.73	PK
0.0327	0°	18.13	23.50	41.63	117.31	-75.69	AV
0.0328	0°	20.55	23.50	44.05	137.31	-93.27	PK
0.4250	0°	18.72	19.98	38.70	95.04	-56.34	AVG
0.4260	0°	21.15	19.98	41.13	115.04	-73.91	PK
1.5250	0°	18.95	19.55	38.50	63.94	-25.44	QP

Freq. (MHz)	Ant. 0°/90°	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits(QP) (dBuV/m)	Margin (dB)	Note
0.0094	90°	18.51	24.30	42.81	128.19	-85.38	AVG
0.0094	90°	20.23	24.30	44.53	148.19	-103.66	PK
0.0236	90°	17.55	24.07	41.62	120.15	-78.52	AVG
0.0237	90°	20.33	24.07	44.40	140.15	-95.74	PK
0.0317	90°	18.43	23.56	41.99	117.58	-75.59	AVG
0.0318	90°	20.67	23.56	44.23	137.58	-93.35	PK
0.0427	90°	17.85	22.86	40.71	115.00	-74.28	AVG
0.0429	90°	20.39	22.86	43.25	135.00	-91.74	PK
0.2380	90°	17.45	20.42	37.87	100.07	-62.20	AVG
0.2390	90°	20.72	20.42	41.14	120.07	-78.93	PK
1.6760	90°	18.63	19.53	38.16	63.12	-24.96	QP

Remark:

- (1) The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.
- (2) Distance extrapolation factor = $40 \log (\text{specific distance} / \text{test distance})$ (dB);
- (3) Limit line = specific limits (dBuV) + distance extrapolation factor.



4.1.8 TEST RESULTS (BETWEEN 30 – 1000 MHZ)

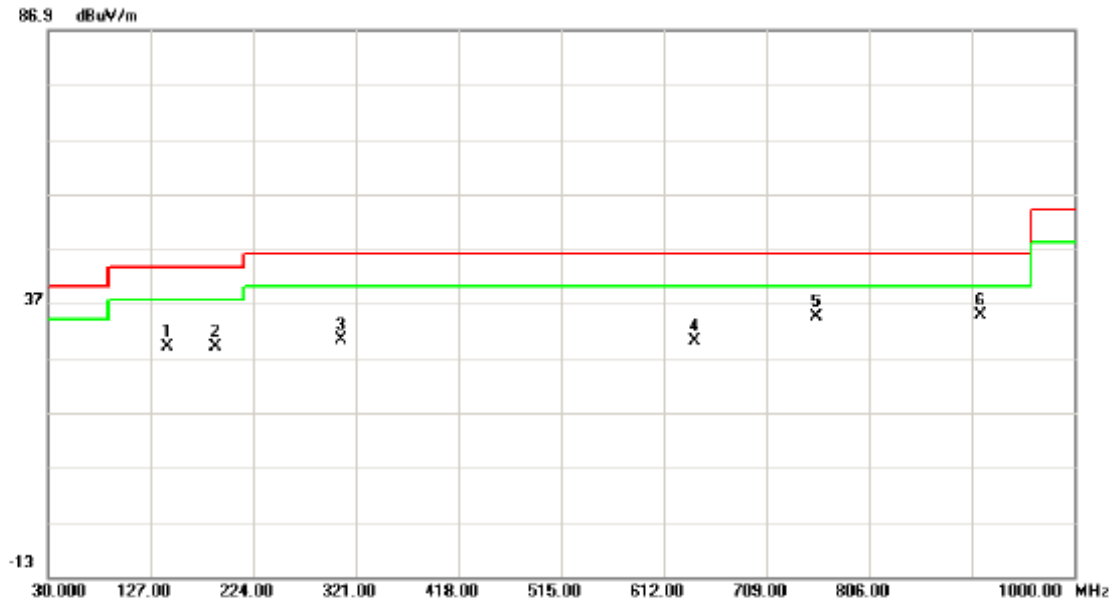
Remark:

- (1) Reading in which marked as QP or Peak means measurements by using are Quasi-Peak Mode or Peak Mode with Detector BW=120KHz ; SPA setting in RBW=120KHz, VBW =120KHz, Swp. Time = 0.3 sec./MHz.
- (2) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.
- (3) Measuring frequency range from 30MHz to 1000MHz.
- (4) If the peak scan value lower limit more than 20dB, then this signal data does not show in table.



Test Mode: TX A MODE 5745MHz

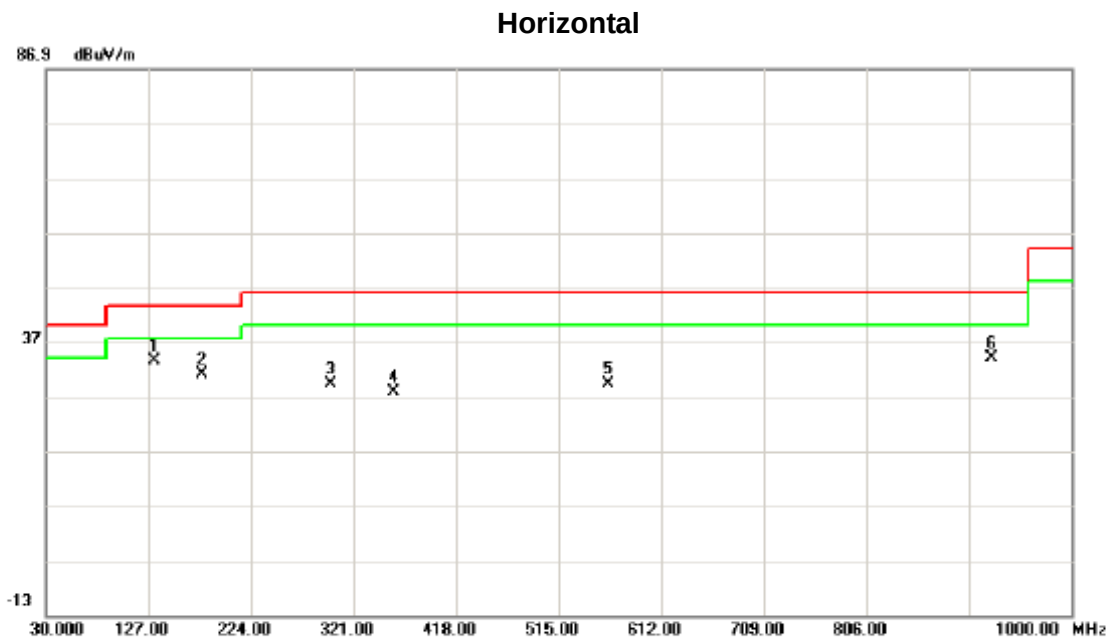
Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Detector	Comment
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1		143.4900	42.73	-13.76	28.97	43.50	-14.53	peak	
2		188.1100	43.04	-14.04	29.00	43.50	-14.50	peak	
3		307.4200	41.54	-11.28	30.26	46.00	-15.74	peak	
4		641.1000	36.04	-6.02	30.02	46.00	-15.98	peak	
5		755.5600	39.19	-4.70	34.49	46.00	-11.51	peak	
6	*	910.7600	35.81	-1.10	34.71	46.00	-11.29	peak	



Test Mode:	TX A MODE 5745MHz
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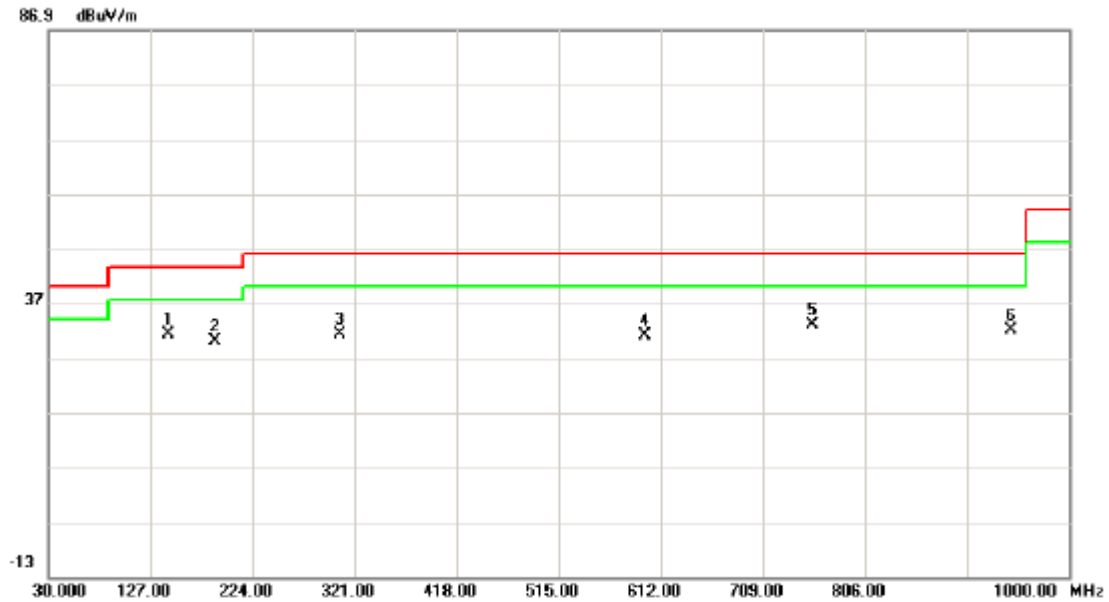


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	*	132.8200	47.00	-13.46	33.54	43.50	-9.96	peak	
2		177.4400	43.87	-12.81	31.06	43.50	-12.44	peak	
3		299.6600	40.64	-11.27	29.37	46.00	-16.63	peak	
4		358.8300	39.07	-11.18	27.89	46.00	-18.11	peak	
5		562.5300	37.08	-7.76	29.32	46.00	-16.68	peak	
6		924.3400	34.83	-0.91	33.92	46.00	-12.08	peak	



Test Mode: TX A MODE 5785MHz

Vertical

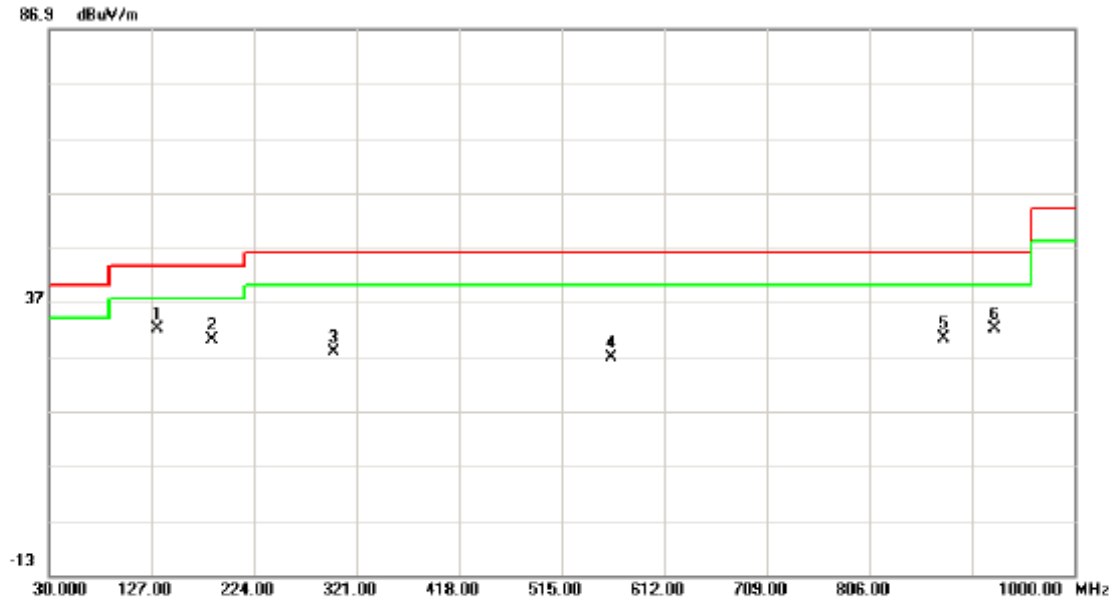


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	*	144.4600	45.04	-13.76	31.28	43.50	-12.22	peak	
2		188.1100	44.04	-14.04	30.00	43.50	-13.50	peak	
3		307.4200	42.54	-11.28	31.26	46.00	-14.74	peak	
4		596.4800	39.10	-8.07	31.03	46.00	-14.97	peak	
5		755.5600	37.69	-4.70	32.99	46.00	-13.01	peak	
6		944.7100	32.72	-0.60	32.12	46.00	-13.88	peak	



Test Mode:	TX A MODE 5785MHz
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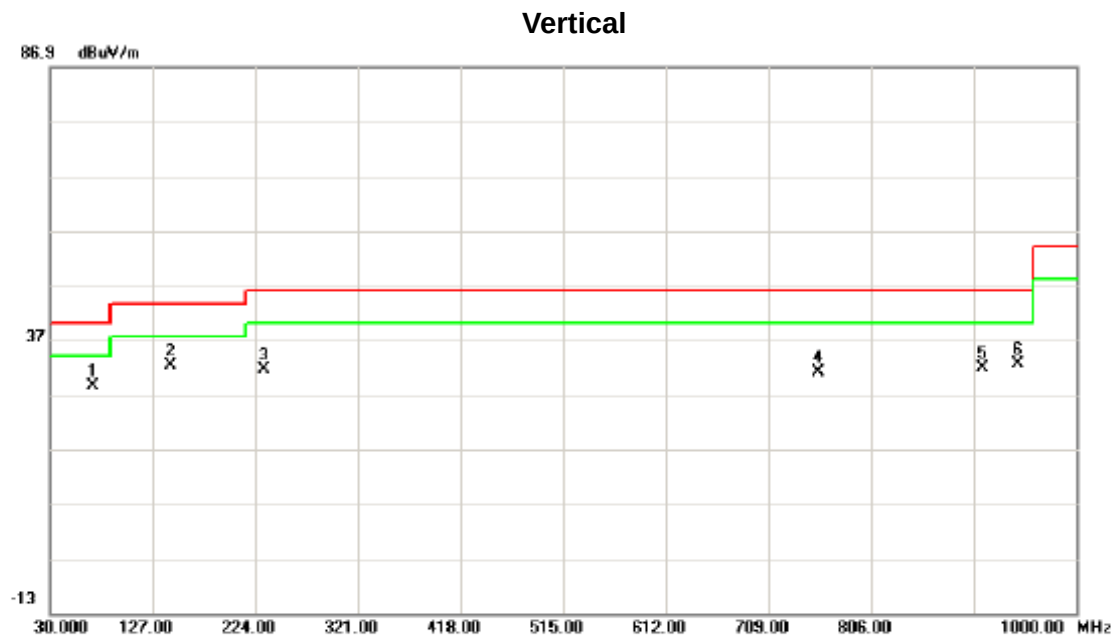
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1	*	132.8200	45.50	-13.46	32.04	43.50	-11.46	peak	
2		184.2300	43.44	-13.46	29.98	43.50	-13.52	peak	
3		299.6600	39.14	-11.27	27.87	46.00	-18.13	peak	
4		562.5300	34.58	-7.76	26.82	46.00	-19.18	peak	
5		876.8100	32.75	-2.38	30.37	46.00	-15.63	peak	
6		924.3400	32.83	-0.91	31.92	46.00	-14.08	peak	



Test Mode:	TX A MODE 5825MHz
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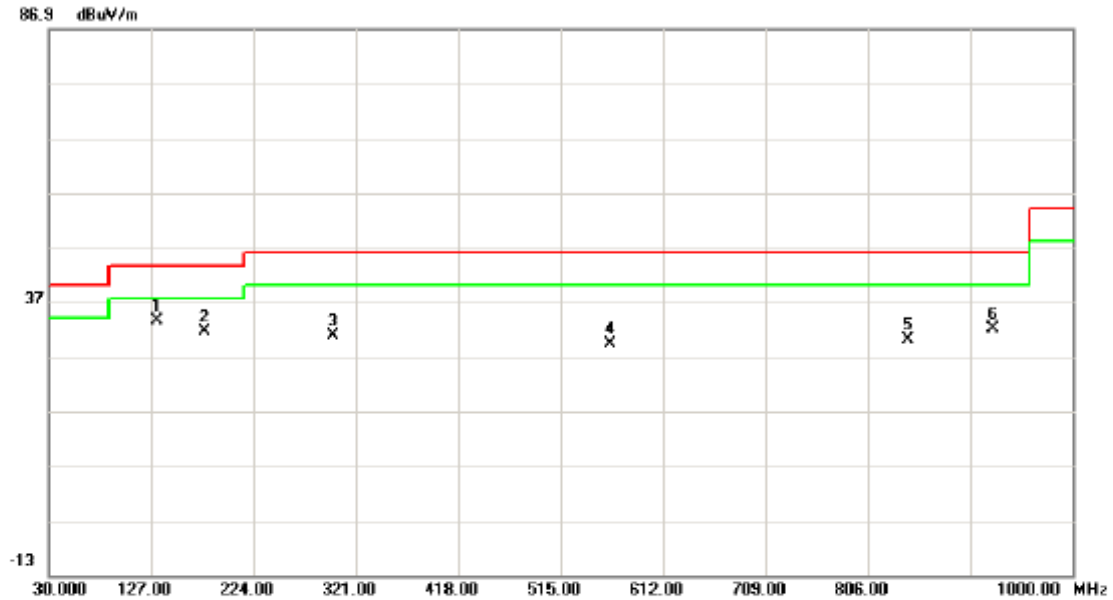


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		70.7400	44.99	-16.37	28.62	40.00	-11.38	peak	
2	*	144.4600	46.04	-13.76	32.28	43.50	-11.22	peak	
3		232.7300	46.20	-14.57	31.63	46.00	-14.37	peak	
4		755.5600	35.69	-4.70	30.99	46.00	-15.01	peak	
5		910.7600	32.81	-1.10	31.71	46.00	-14.29	peak	
6		944.7100	33.22	-0.60	32.62	46.00	-13.38	peak	



Test Mode: TX A MODE 5825MHz

Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	*	132.8200	47.00	-13.46	33.54	43.50	-9.96	peak	
2		177.4400	44.37	-12.81	31.56	43.50	-11.94	peak	
3		299.6600	42.14	-11.27	30.87	46.00	-15.13	peak	
4		562.5300	37.08	-7.76	29.32	46.00	-16.68	peak	
5		843.8300	33.54	-3.60	29.94	46.00	-16.06	peak	
6		924.3400	32.83	-0.91	31.92	46.00	-14.08	peak	



4.1.9 TEST RESULTS (ABOVE 1000 MHZ)

Remark:

- (1) All readings are Peak unless otherwise stated QP in column of 『Note 』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.
- (2) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency. "F" denotes fundamental frequency; "H" denotes spurious frequency; "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)
- (3) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission.
- (4) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (5) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (6) EUT Orthogonal Axis:
"X" - denotes Laid on Table; "Y" - denotes Vertical Stand; "Z" - denotes Side Stand
- (7) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna
- (8) "#" The radiated frequency is out of the restricted band. Limit line= fundamental - 20dB



Test Mode : TX A MODE 5745MHz

Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
#5725.00	V	12.25	0.48	44.34	56.59	44.82	74.98	66.44	X/E
5741.70	V	50.57	42.03	44.41	94.98	86.44			X/F
11491.17	V	33.93	22.75	18.47	52.40	41.22	74.00	54.00	X/H

Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
#5725.00	H	12.18	-0.07	44.34	56.52	44.27	72.95	64.62	X/E
5747.70	H	48.53	40.20	44.42	92.95	84.62			X/F
11490.76	H	34.01	24.37	18.47	52.48	42.84	74.00	54.00	X/H

Test Mode : TX A MODE 5785MHz

Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
5791.80	V	52.62	44.38	44.58	97.20	88.96			X/F
11569.99	V	33.81	22.58	18.67	52.48	41.25	74.00	54.00	X/H

Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
5791.70	H	46.46	38.40	44.58	91.04	82.98			X/F
11570.62	H	33.94	24.16	18.67	52.61	42.83	74.00	54.00	X/H

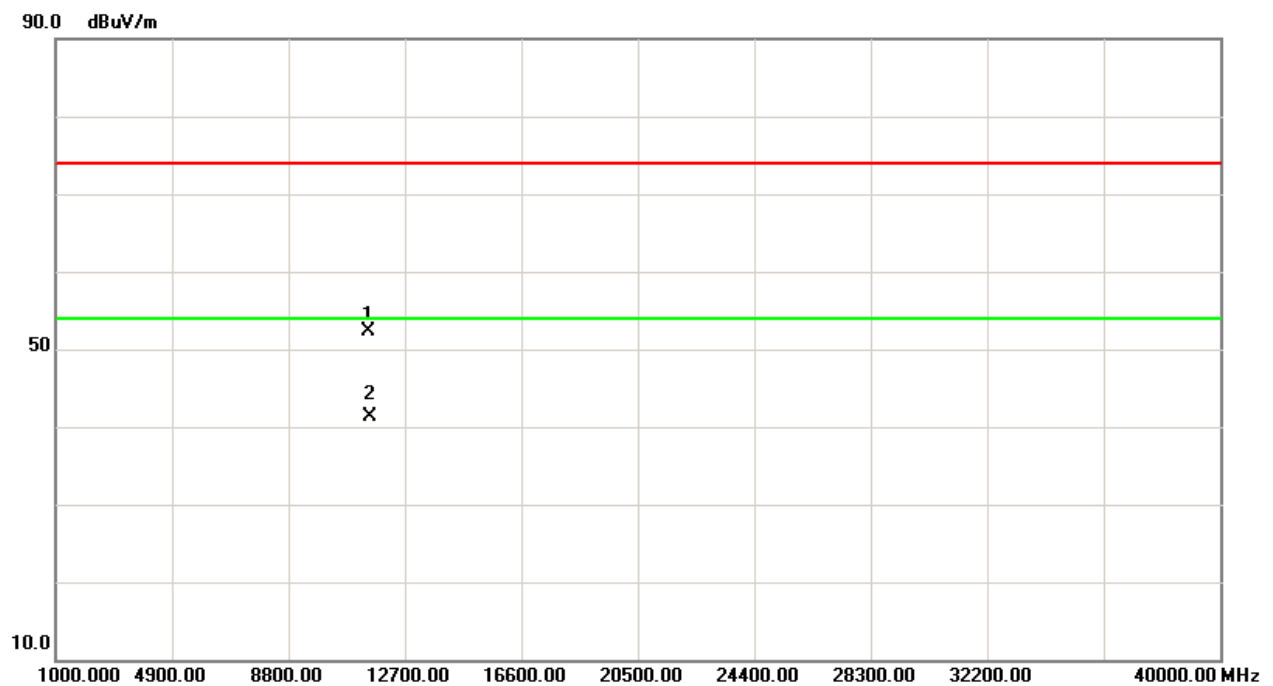
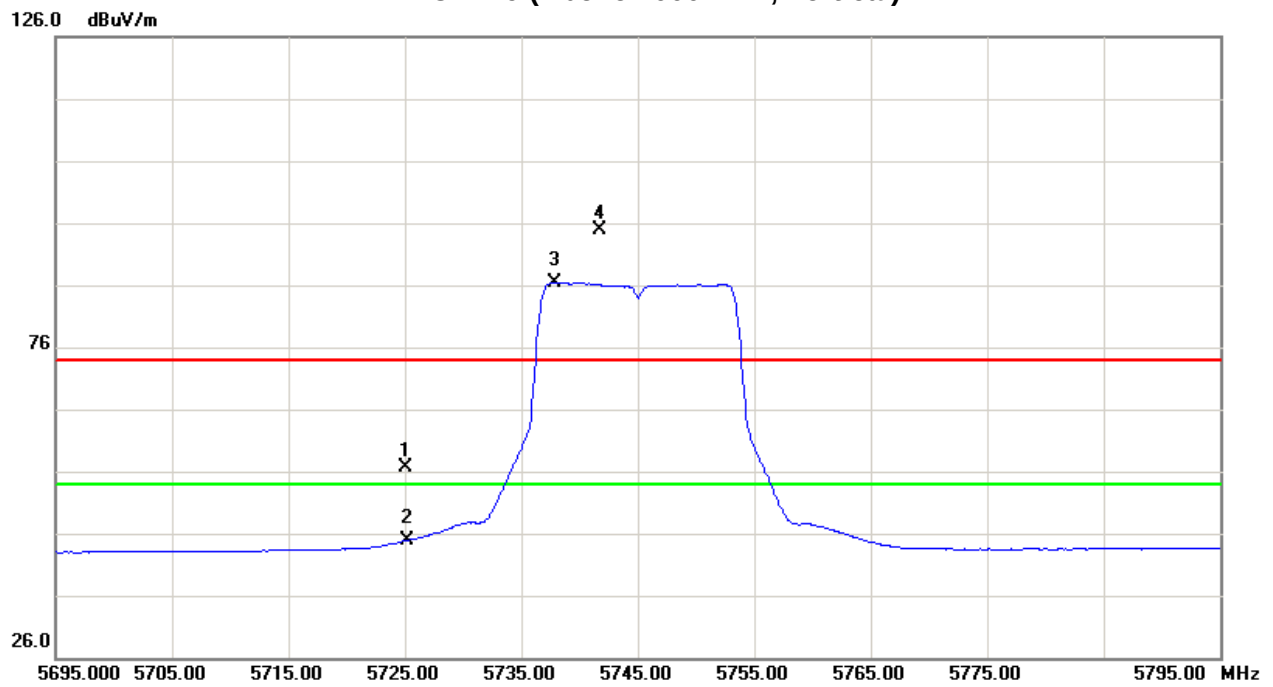
Test Mode : TX A MODE 5825MHz

Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
5832.00	V	49.86	41.40	44.72	94.58	86.12			X/F
#5850.00	V	12.42	-1.07	44.78	57.20	43.71	74.58	66.12	X/E
11649.78	V	33.64	24.19	18.86	52.50	43.05	74.00	54.00	X/H

Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
5822.60	H	43.29	35.03	44.69	87.98	79.72			X/F
#5850.00	H	11.94	-1.20	44.78	56.72	43.58	67.98	59.72	X/E
11650.87	H	33.87	23.77	18.87	52.74	42.64	74.00	54.00	X/H

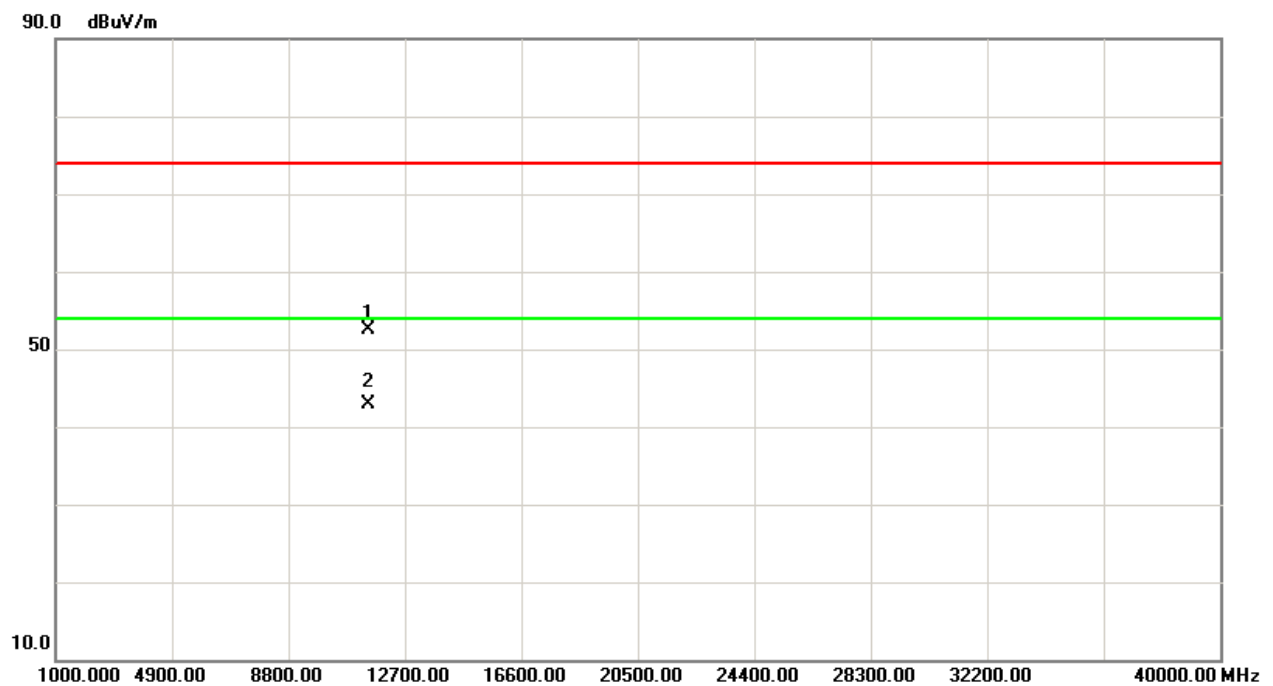
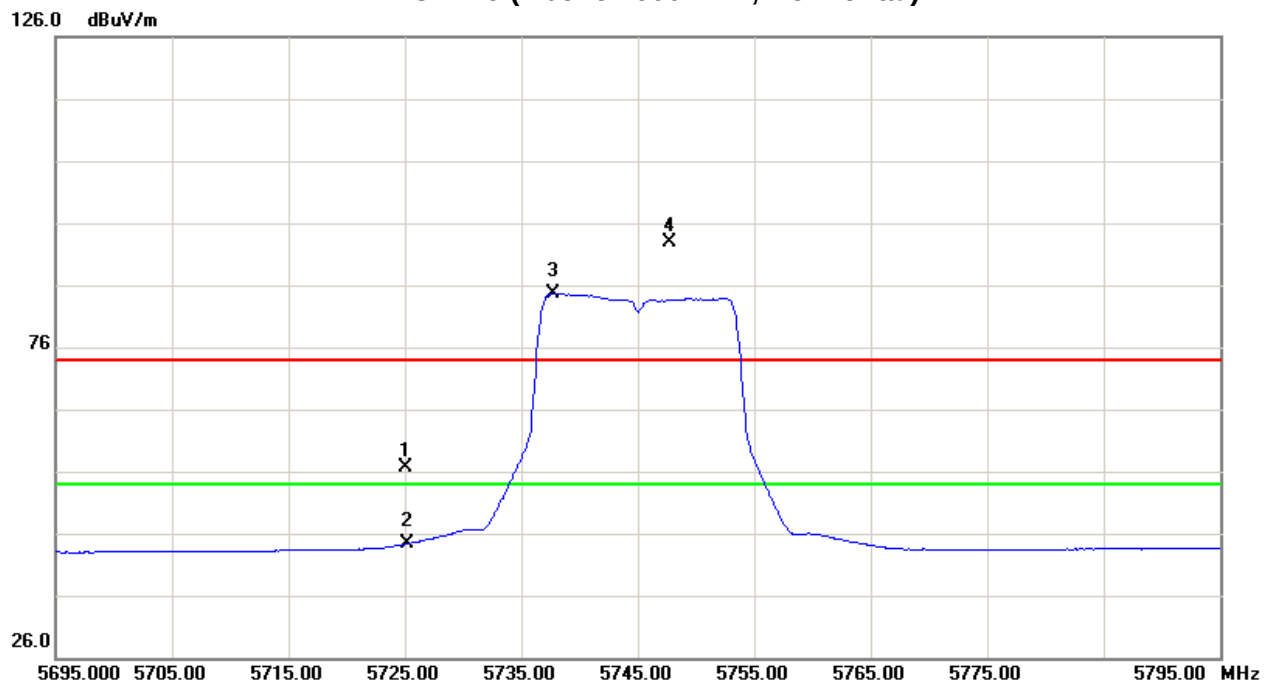


TX CH149 (Above 1000 MHz, Vertical)



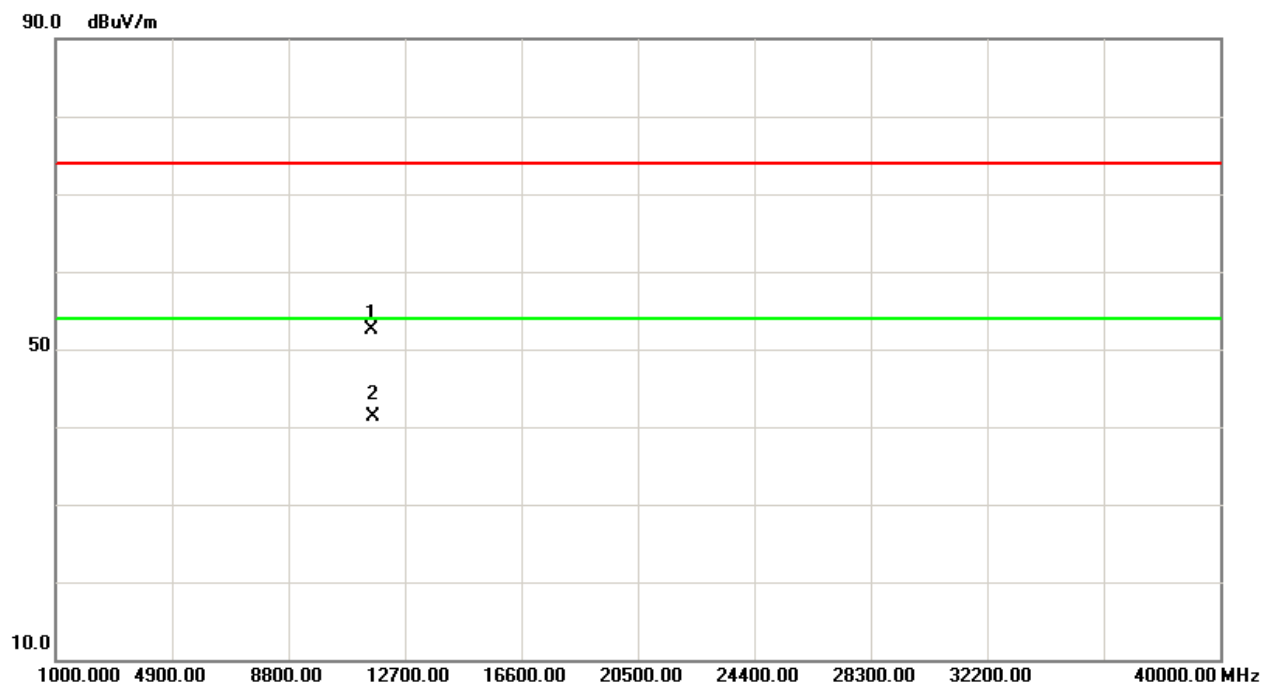
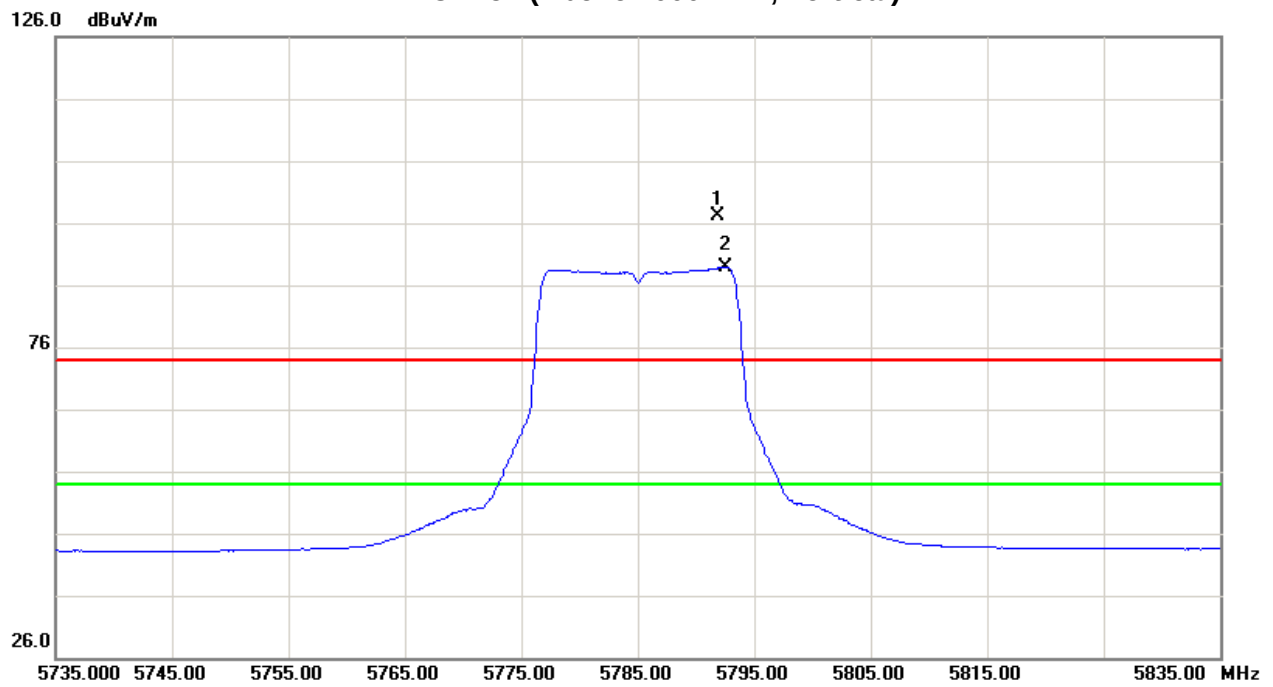


TX CH149 (Above 1000 MHz, Horizontal)





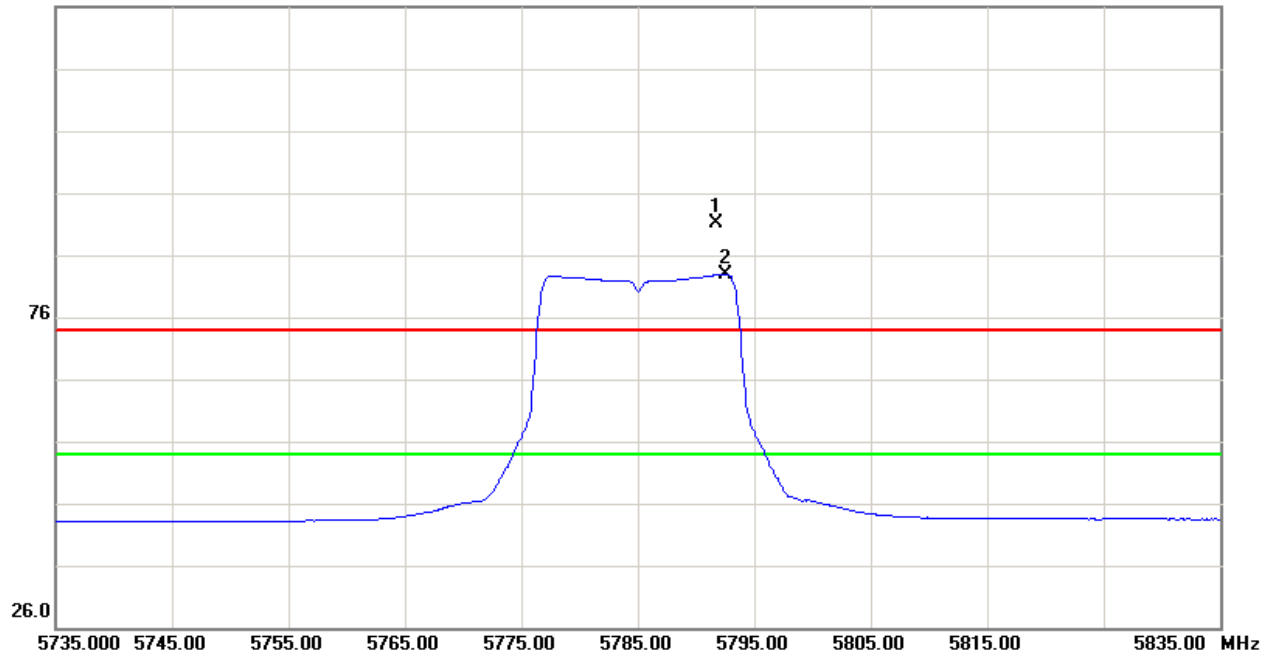
TX CH157 (Above 1000 MHz, Vertical)



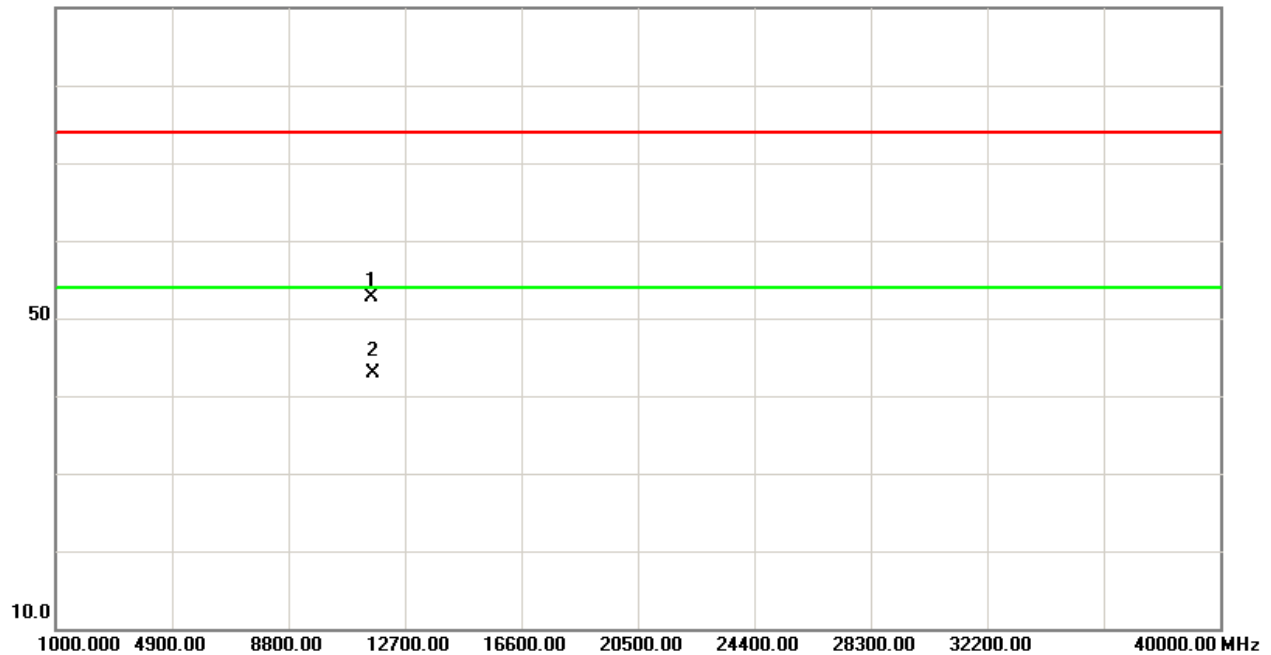


TX CH157 (Above 1000 MHz, Horizontal)

126.0 dBuV/m

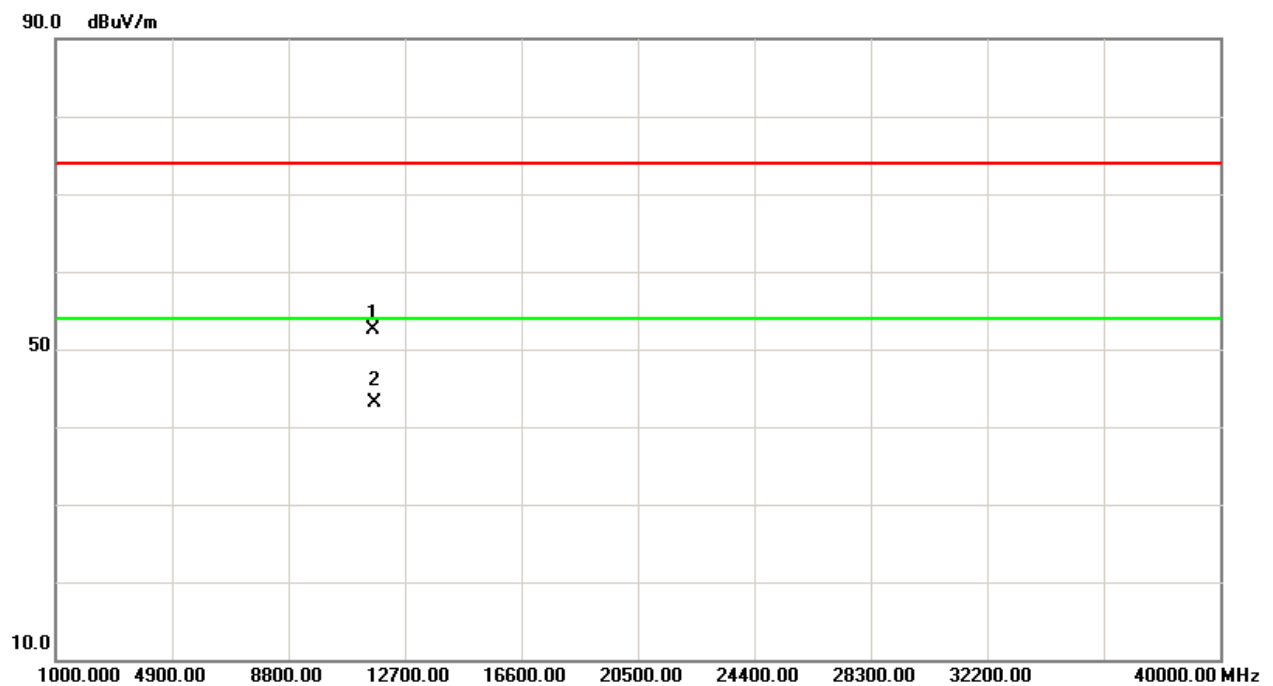
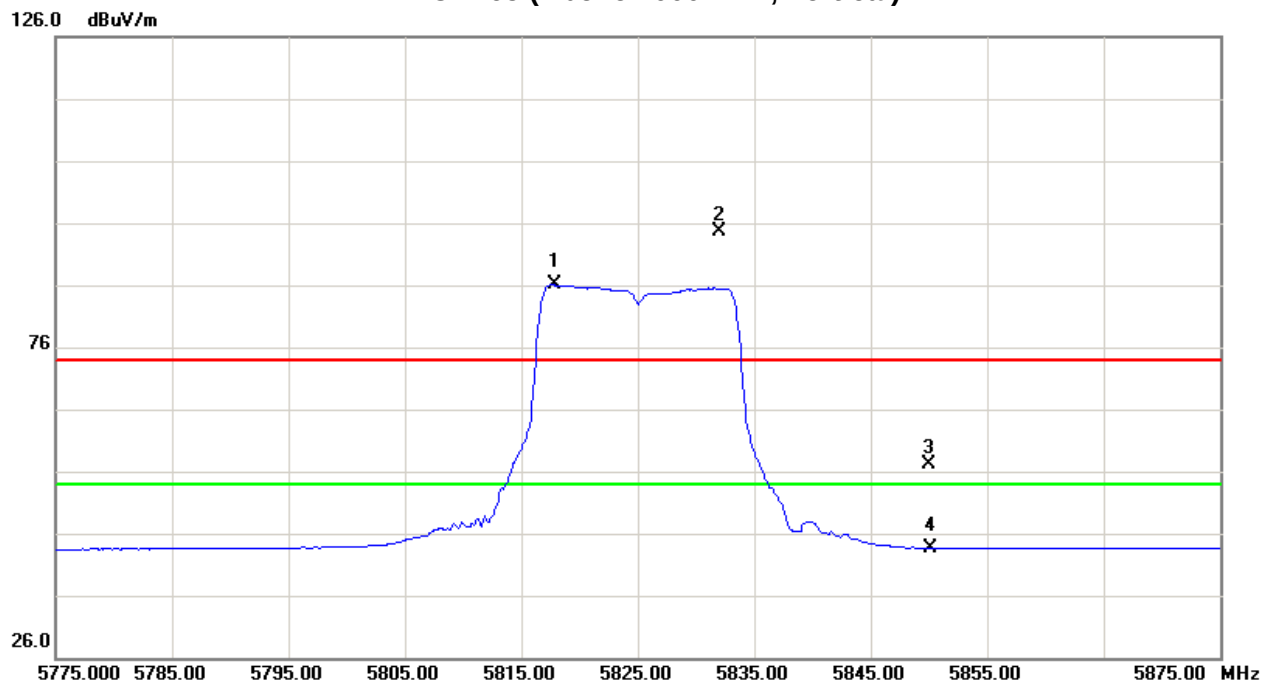


90.0 dBuV/m



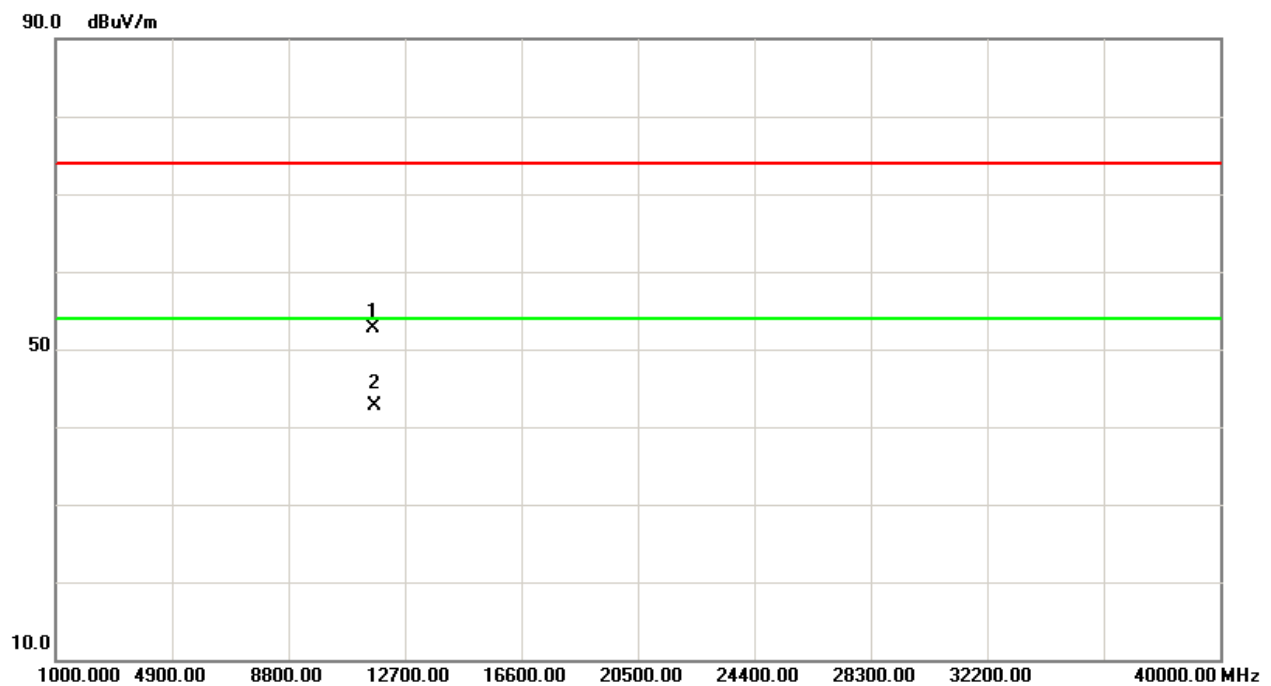
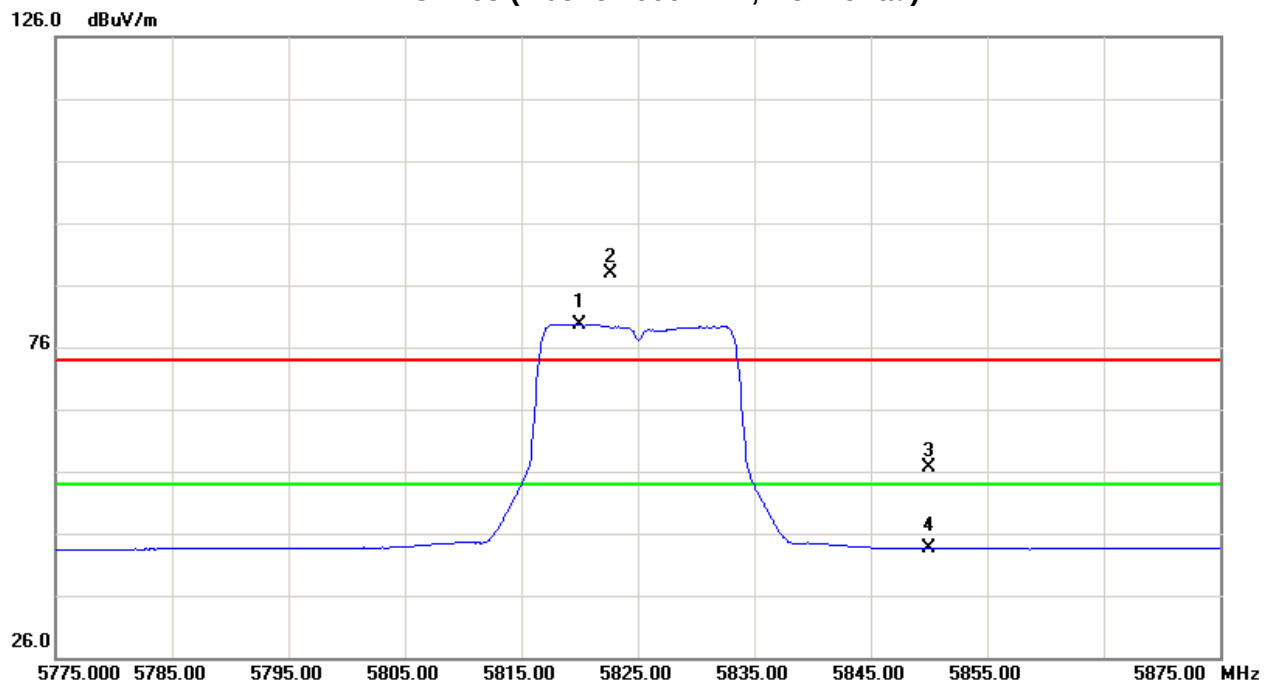


TX CH165 (Above 1000 MHz, Vertical)





TX CH165 (Above 1000 MHz, Horizontal)





Test Mode : TX N-20M MODE 5745MHz

Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
#5725.00	V	12.52	0.33	44.34	56.86	44.67	76.02	67.30	X/E
5738.20	V	51.63	42.91	44.39	96.02	87.30			X/F
11489.65	V	32.81	22.78	18.47	51.28	41.25	74.00	54.00	X/H

Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
#5725.00	H	12.26	-0.64	44.34	56.60	43.70	71.14	62.44	X/E
5747.00	H	46.72	38.02	44.42	91.14	82.44			X/F
11489.17	H	32.73	24.93	18.47	51.20	43.40	74.00	54.00	X/H

Test Mode : TX N-20M MODE 5785MHz

Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
5788.30	V	50.93	42.79	44.56	95.49	87.35			X/F
11570.14	V	34.73	23.58	18.67	53.40	42.25	74.00	54.00	X/H

Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
5792.60	H	43.92	36.00	44.58	88.50	80.58			X/F
11570.96	H	35.23	24.59	18.67	53.90	43.26	74.00	54.00	X/H

Test Mode : TX N-20M MODE 5825MHz

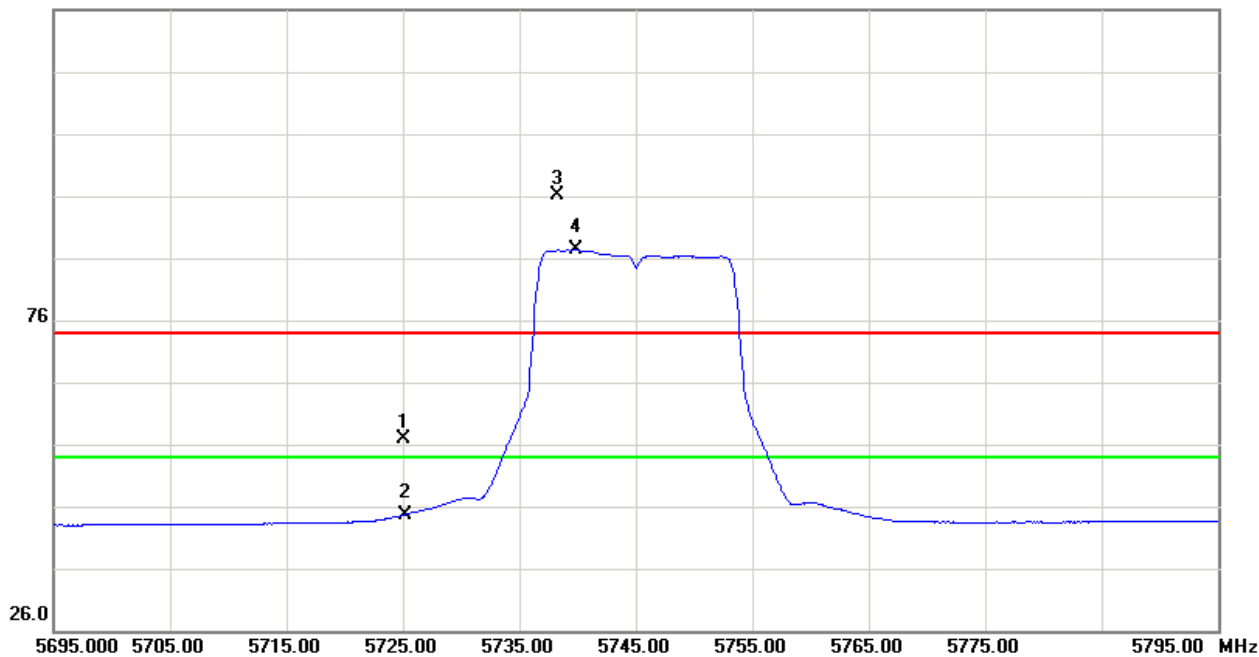
Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
5817.90	V	50.40	41.84	44.66	95.06	86.50			X/F
#5850.00	V	12.22	-1.05	44.78	57.00	43.73	75.06	66.50	X/E
11651.32	V	33.53	23.38	18.87	52.40	42.25	74.00	54.00	X/H

Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
5818.50	H	45.84	37.35	44.67	90.51	82.02			X/F
#5850.00	H	12.18	-1.13	44.78	56.96	43.65	70.51	62.02	X/E
11650.31	H	32.82	24.78	18.87	51.69	43.65	74.00	54.00	X/H

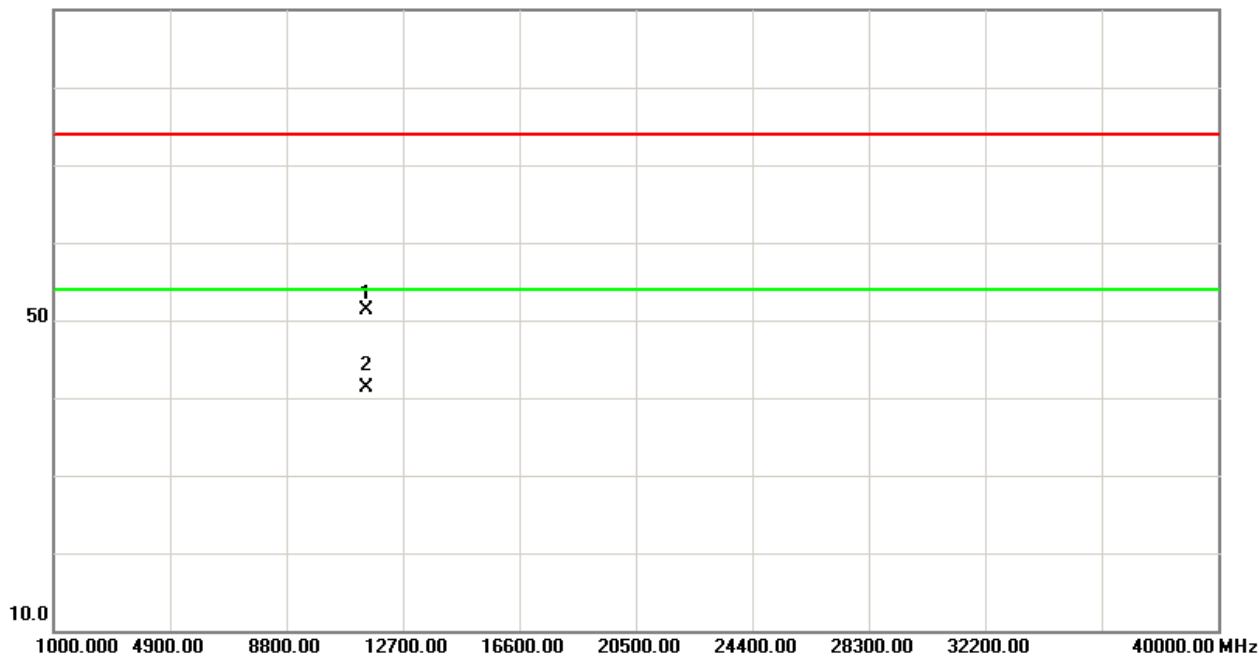


TX CH149 (Above 1000 MHz, Vertical)

126.0 dBuV/m

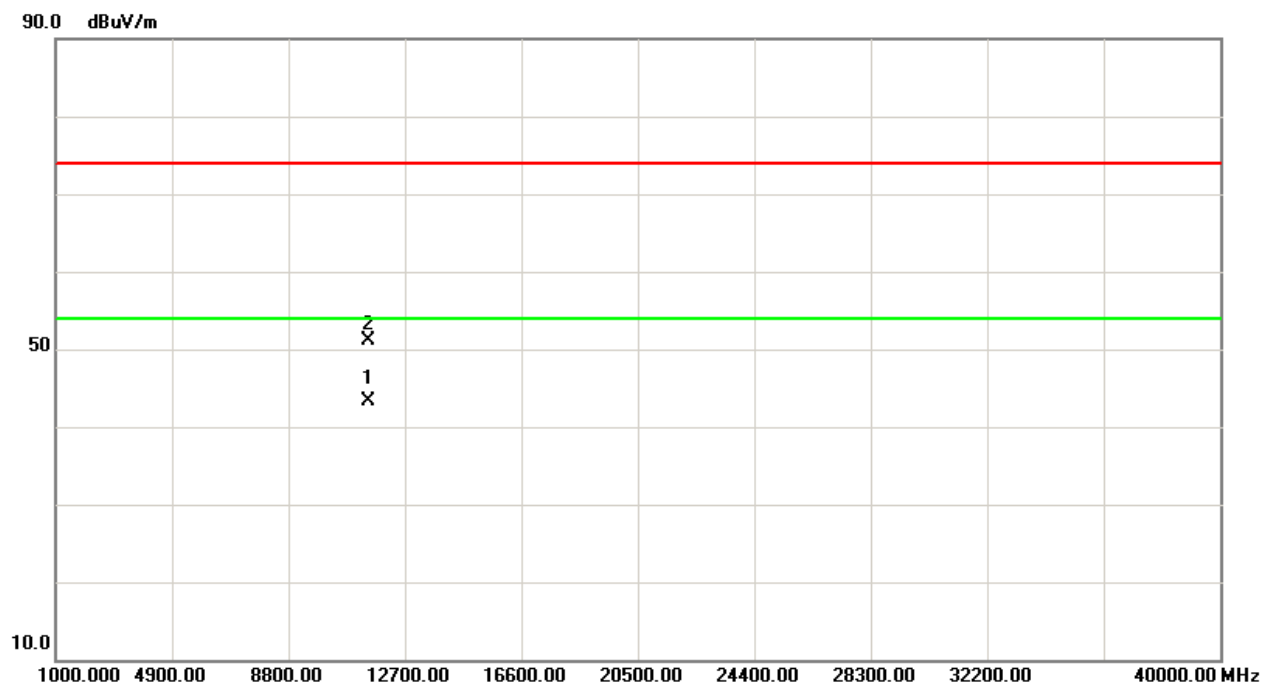
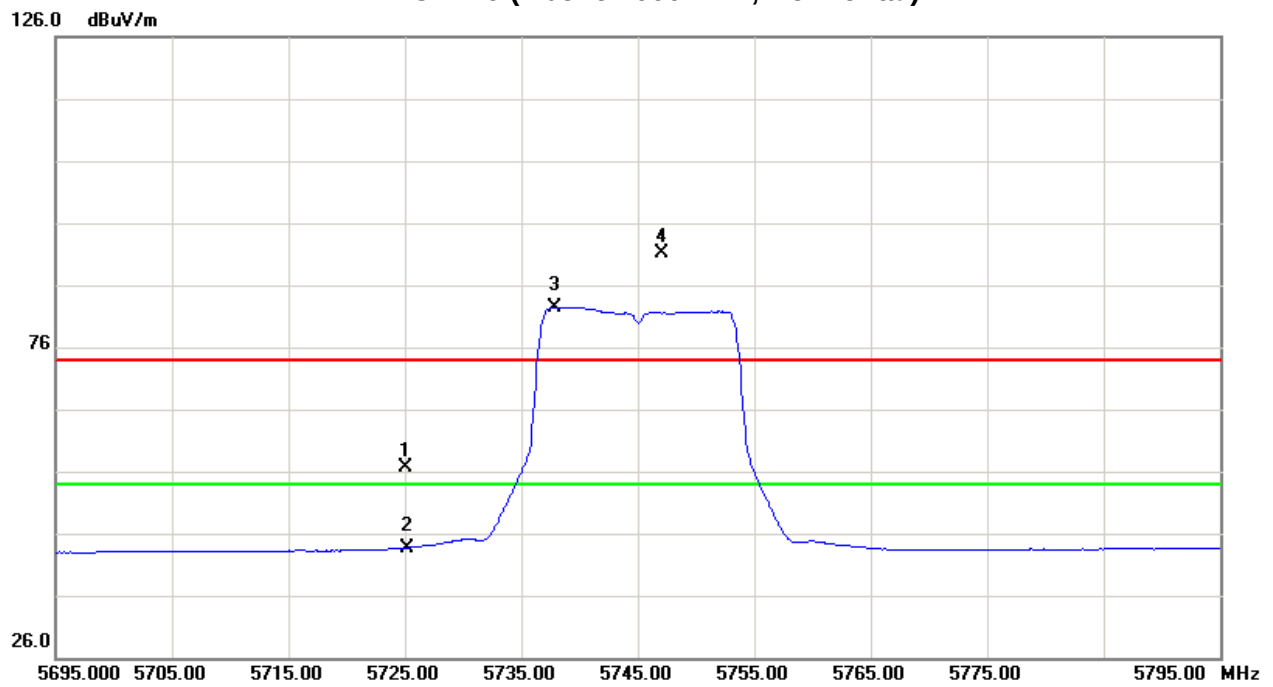


90.0 dBuV/m



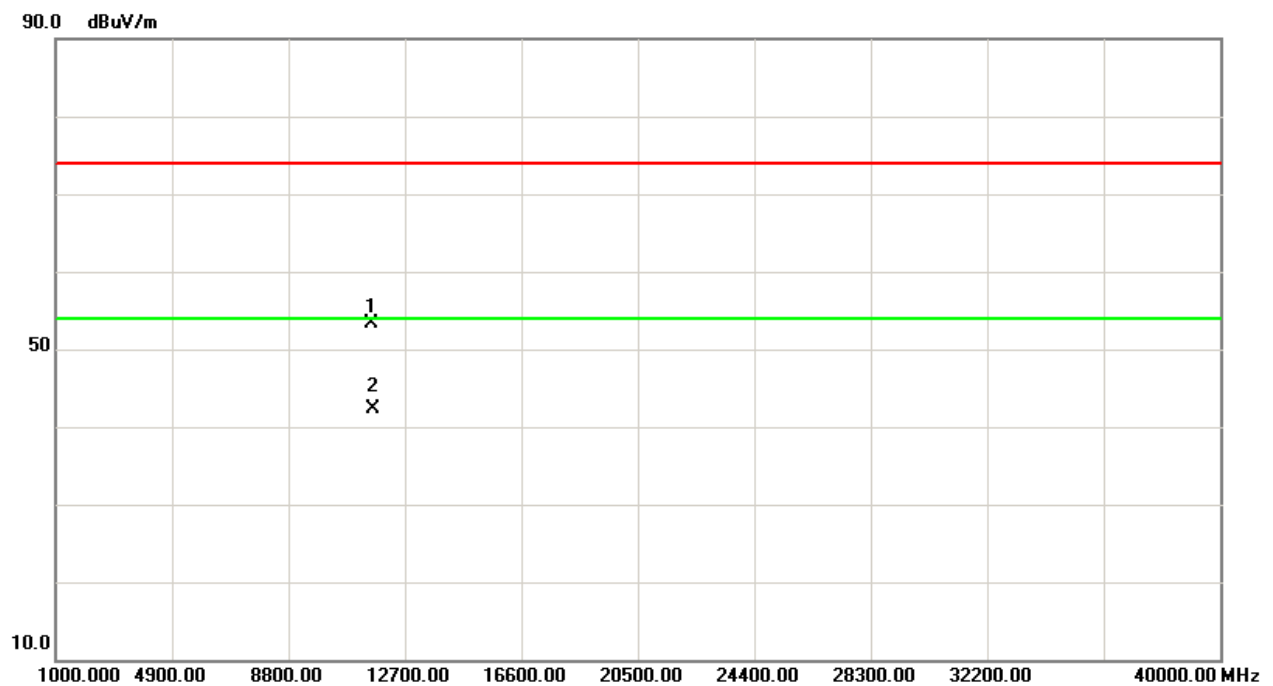
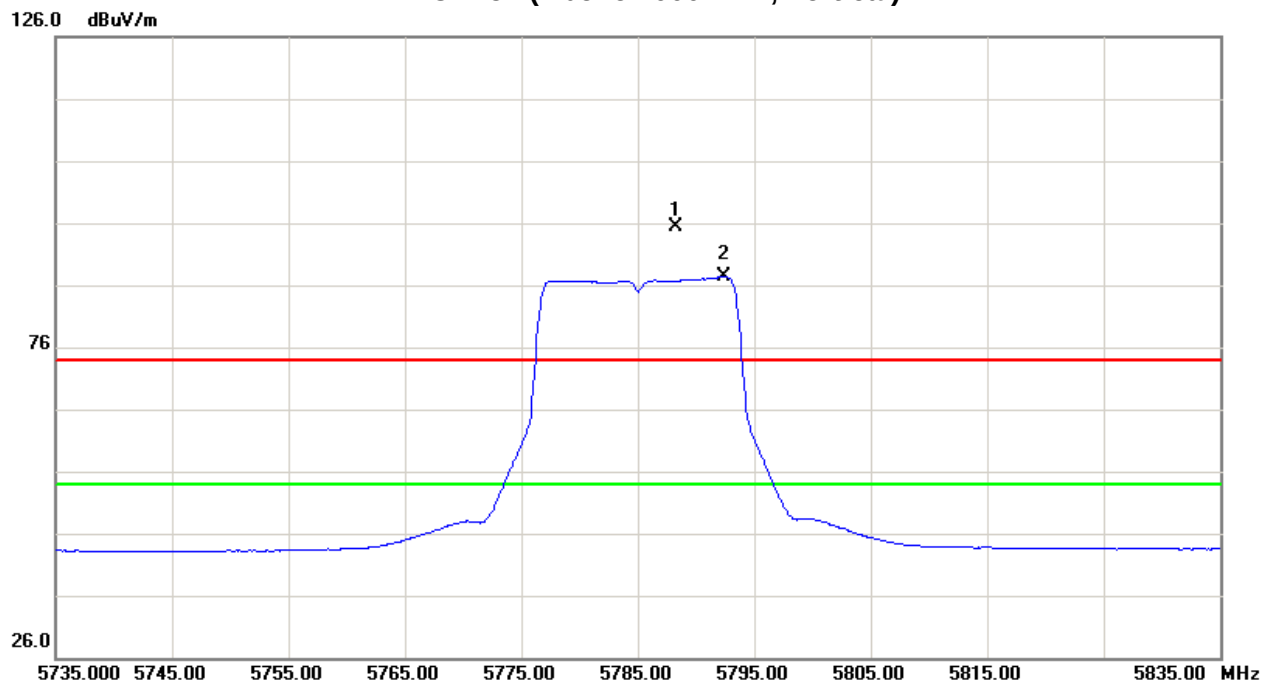


TX CH149 (Above 1000 MHz, Horizontal)



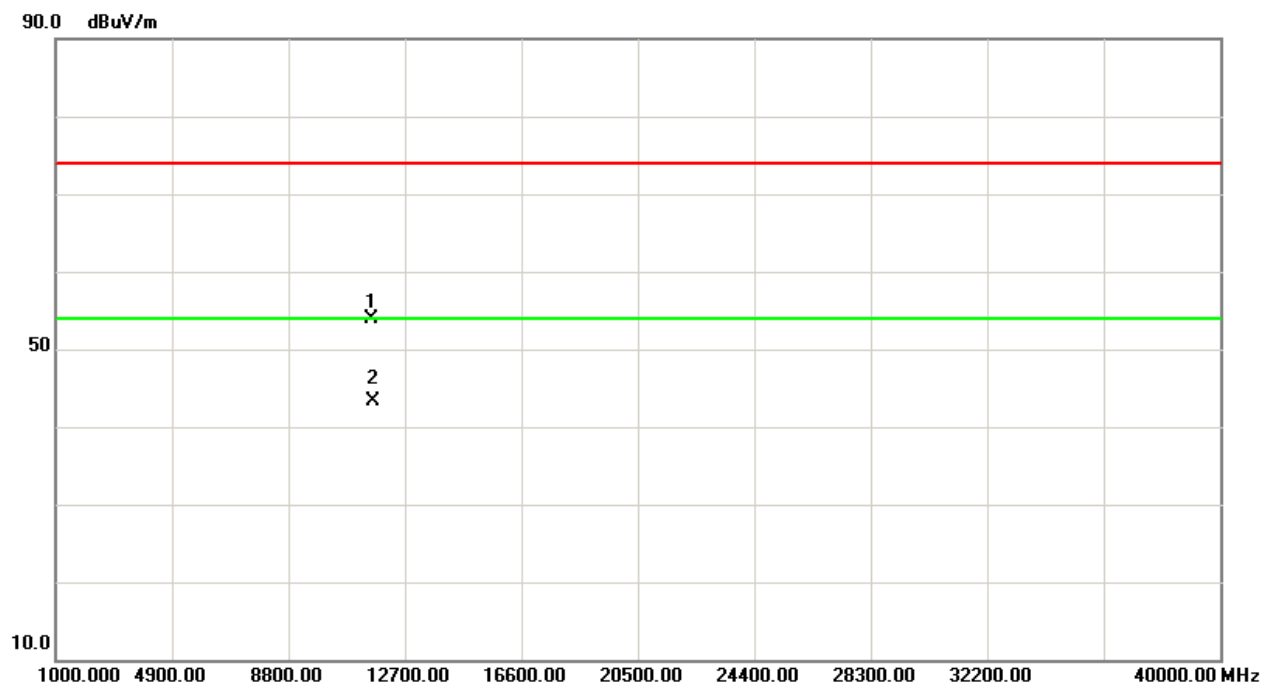
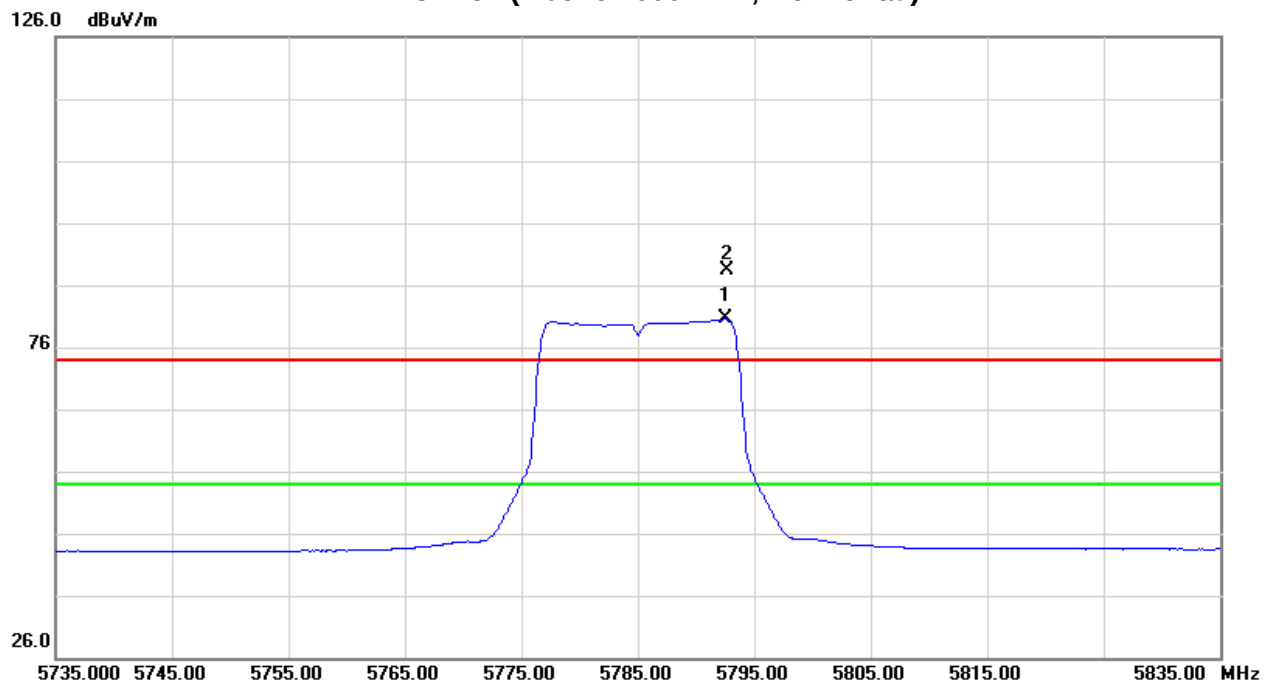


TX CH157 (Above 1000 MHz, Vertical)



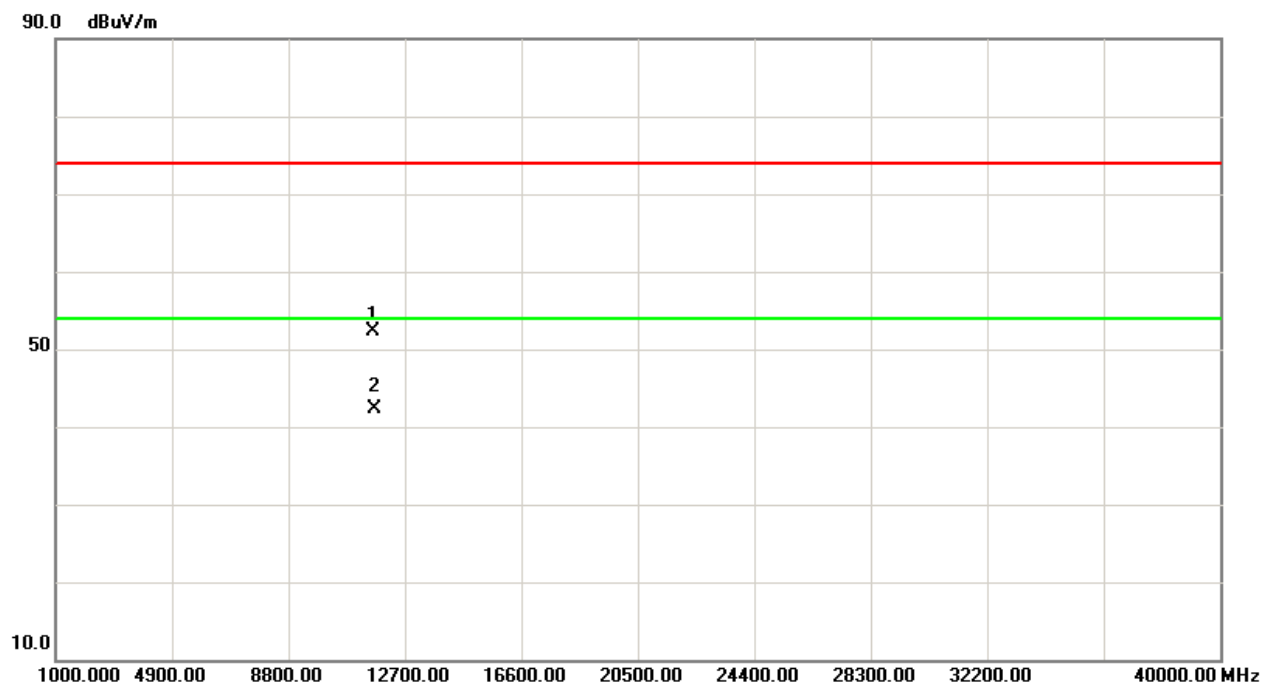
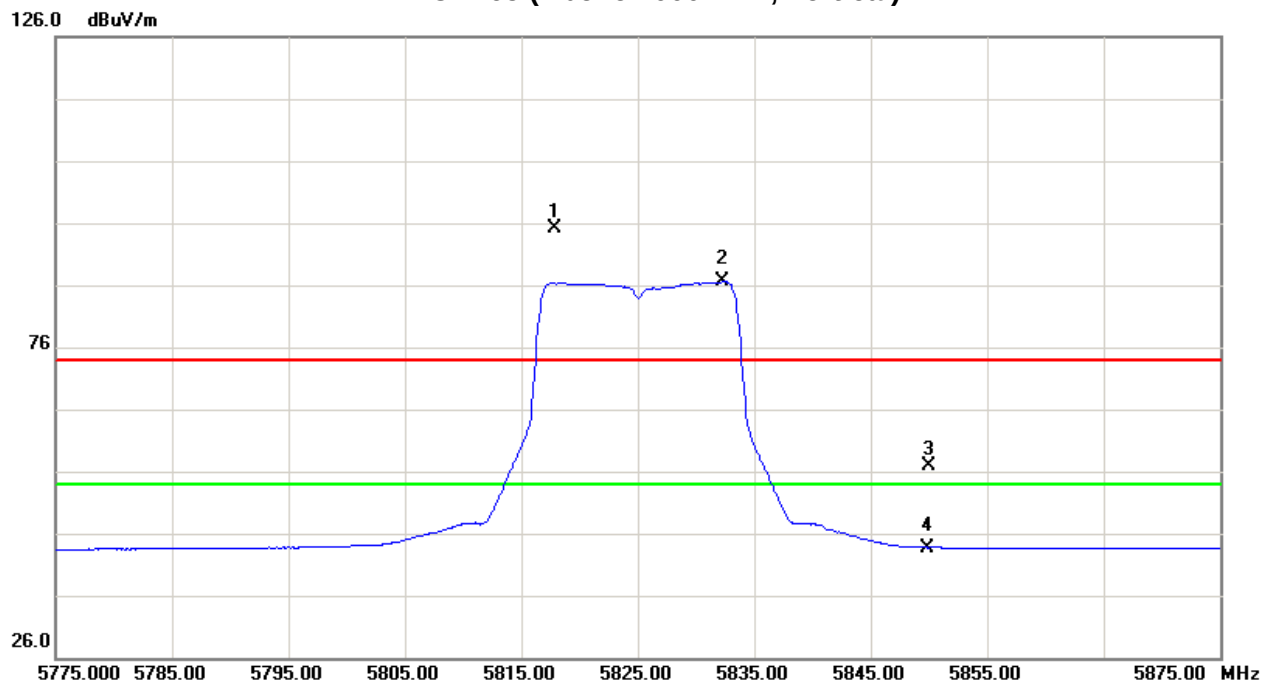


TX CH157 (Above 1000 MHz, Horizontal)



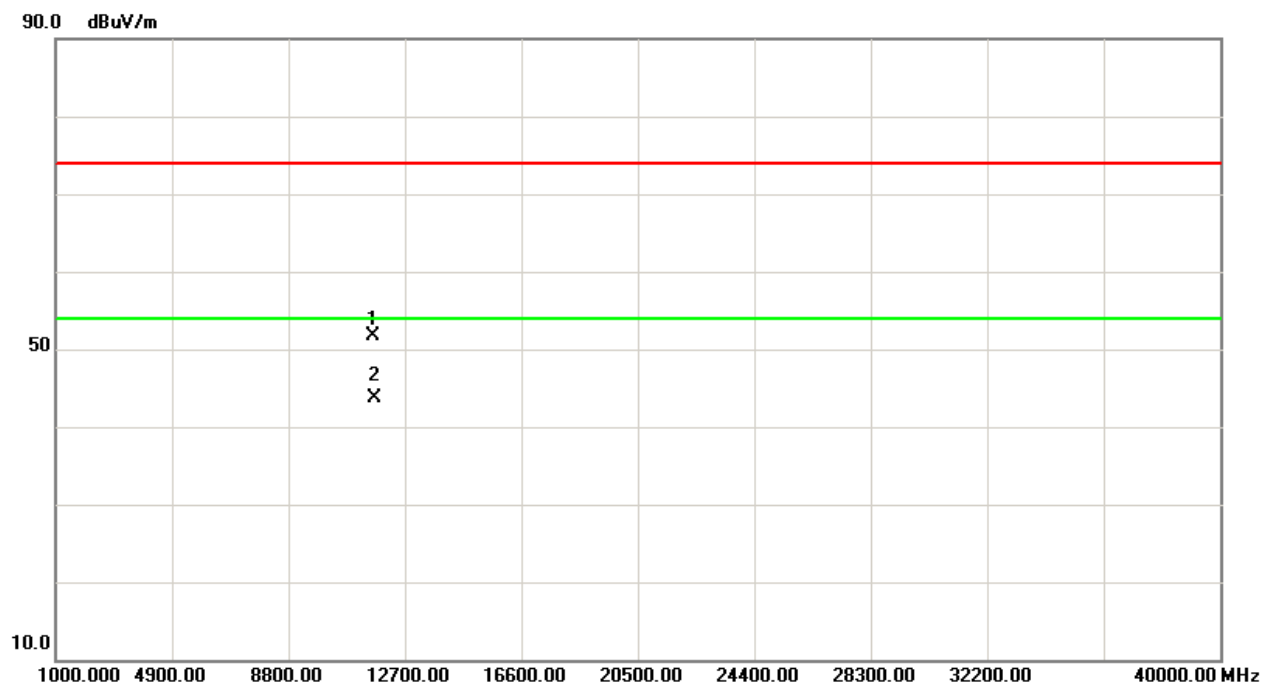
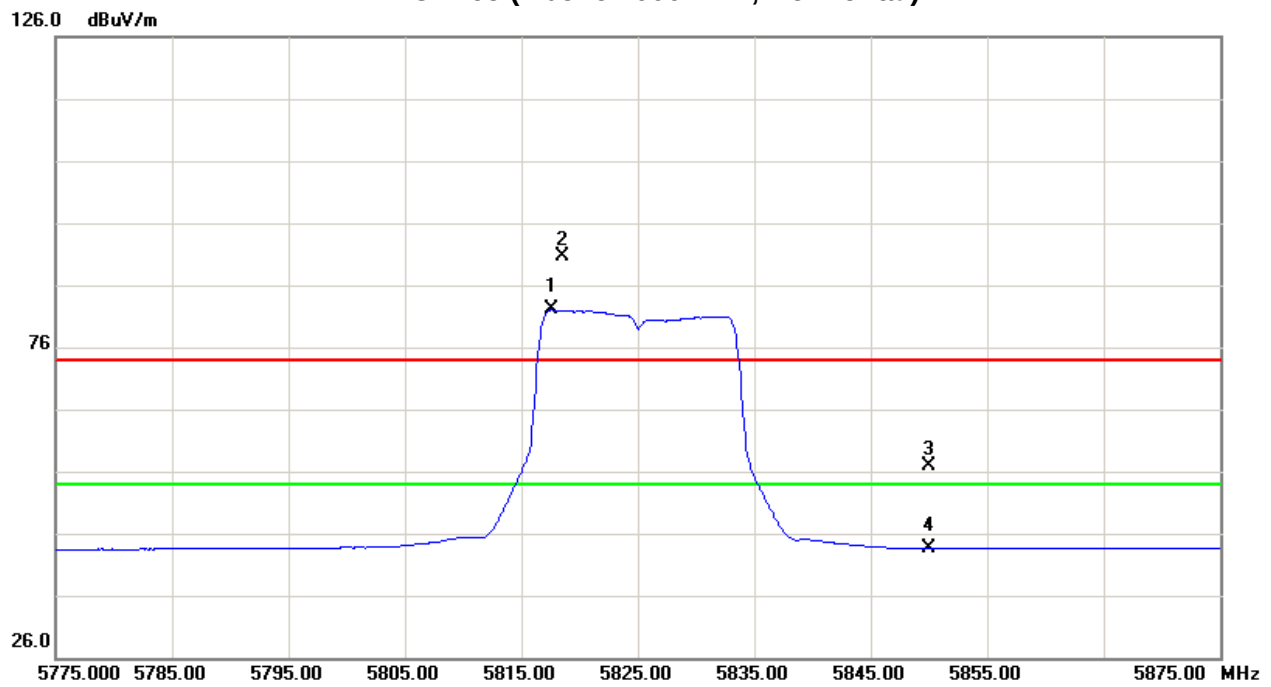


TX CH165 (Above 1000 MHz, Vertical)





TX CH165 (Above 1000 MHz, Horizontal)





Test Mode : TX N-40M MODE 5755MHz

Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
#5725.00	V	12.69	0.06	44.34	57.03	44.40	71.47	60.50	X/E
5766.20	V	46.98	36.01	44.49	91.47	80.50			X/F
11510.16	V	32.75	22.74	18.51	51.26	41.25	74.00	54.00	X/H

Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
#5725.00	H	12.79	-0.59	44.34	57.13	43.75	67.21	56.55	X/E
5767.20	H	42.72	32.06	44.49	87.21	76.55			X/F
11510.65	H	34.45	23.74	18.51	52.96	42.25	74.00	54.00	X/H

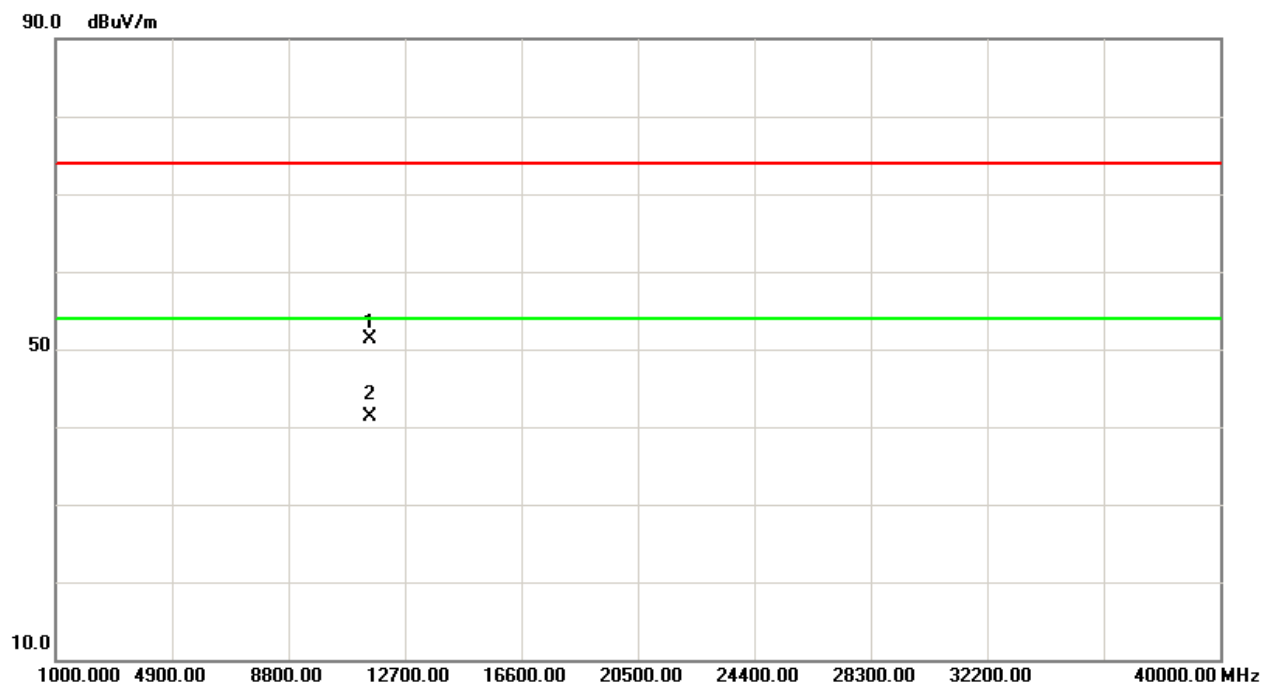
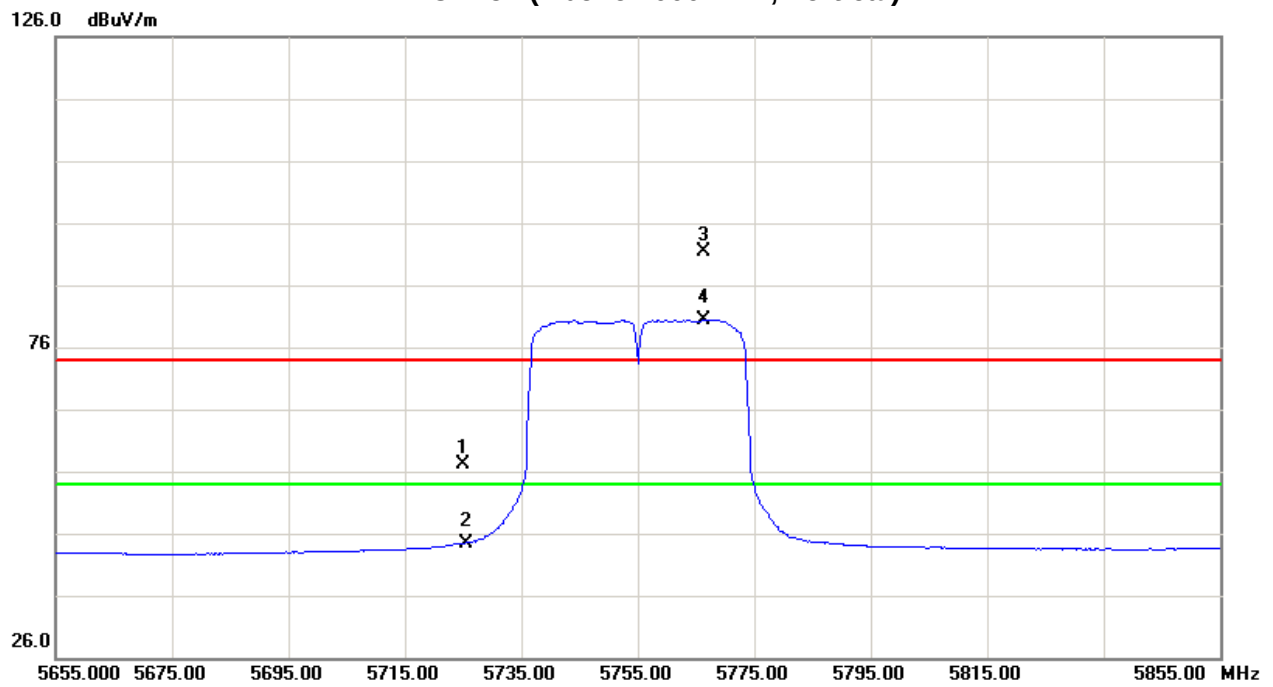
Test Mode : TX N-40M MODE 5795MHz

Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
5791.40	V	47.45	37.30	44.57	92.02	81.87			X/F
#5850.00	V	11.49	-1.16	44.78	56.27	43.62	72.02	61.87	X/E
11590.96	V	31.52	21.47	18.72	50.24	40.19	74.00	54.00	X/H

Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
5787.20	H	42.89	32.36	44.56	87.45	76.92			X/F
#5850.00	H	11.93	-1.20	44.78	56.71	43.58	67.45	56.92	X/E
11590.14	H	31.60	24.43	18.72	50.32	43.15	74.00	54.00	X/H

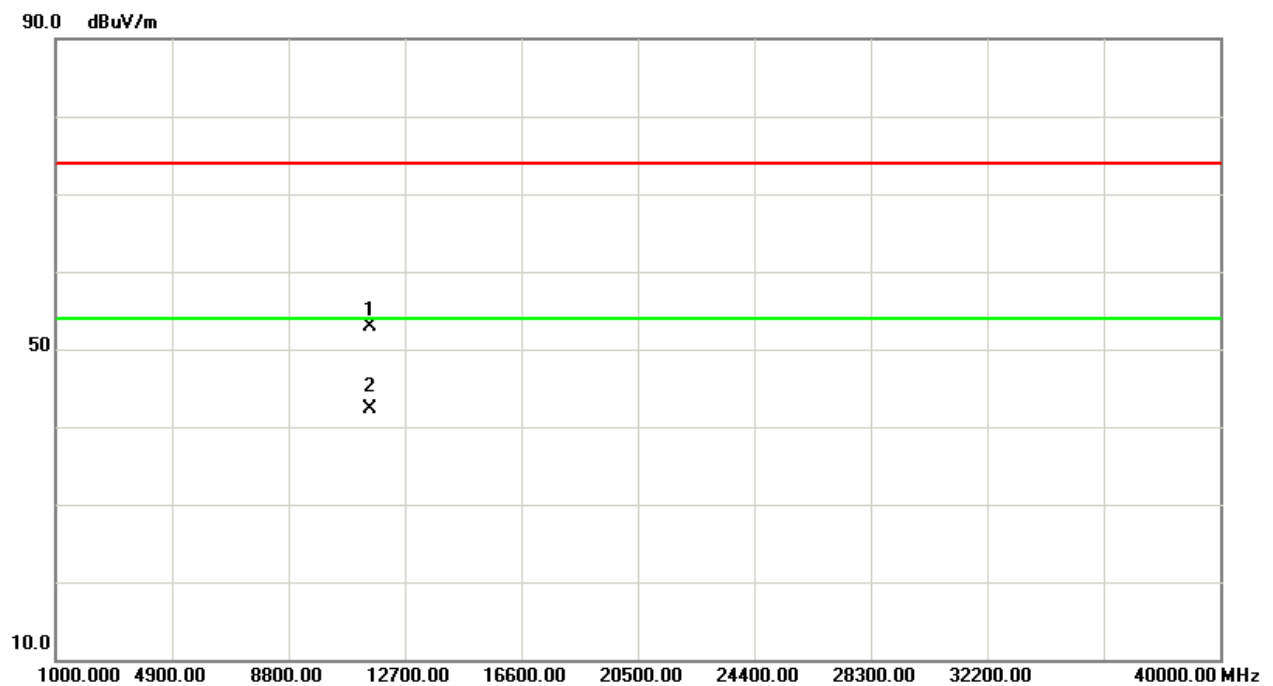
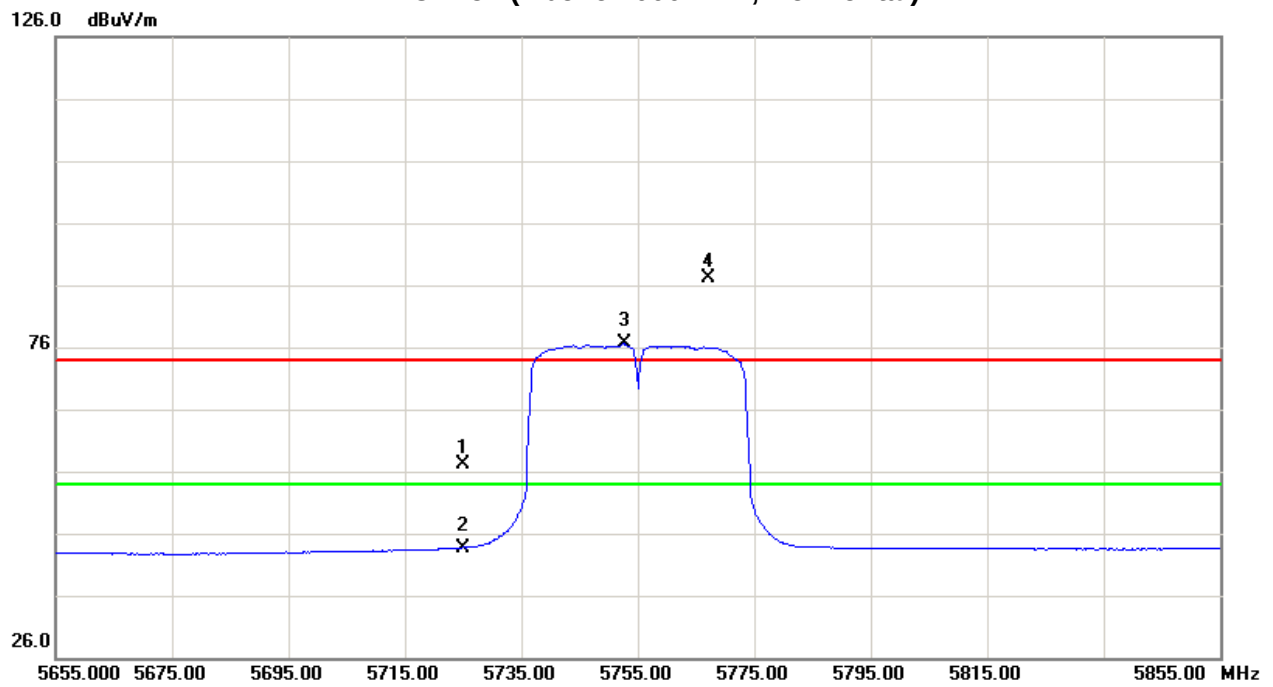


TX CH151 (Above 1000 MHz, Vertical)



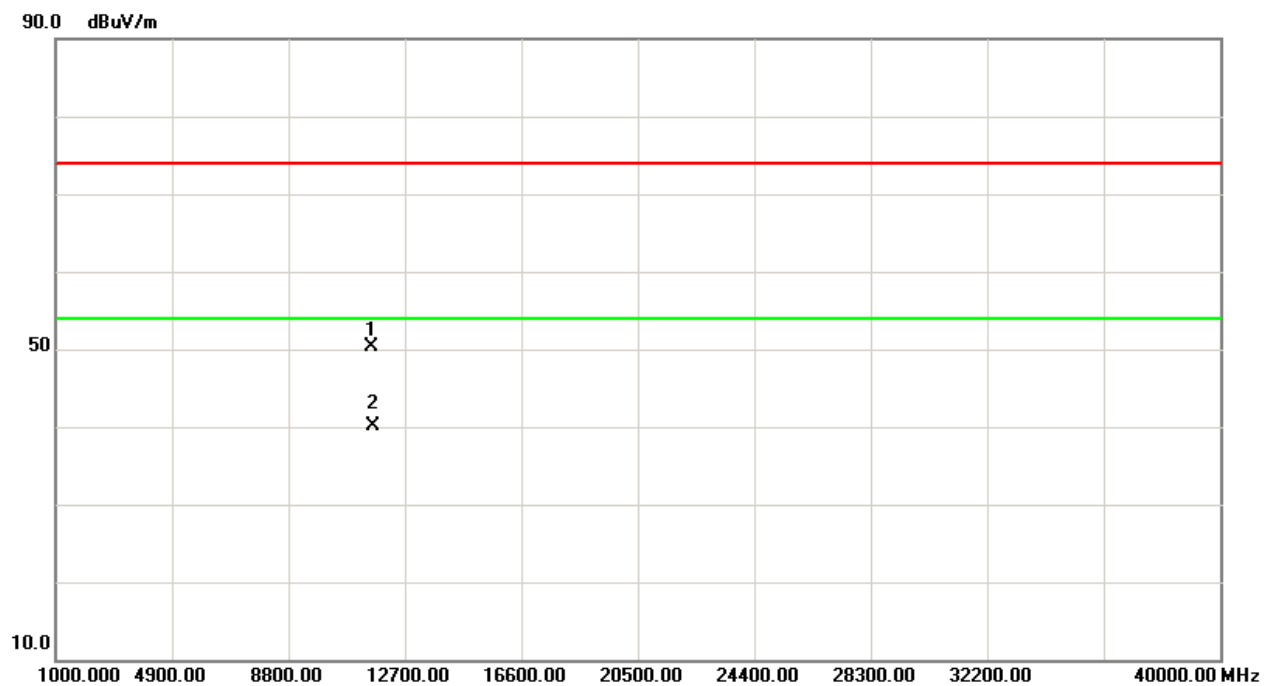
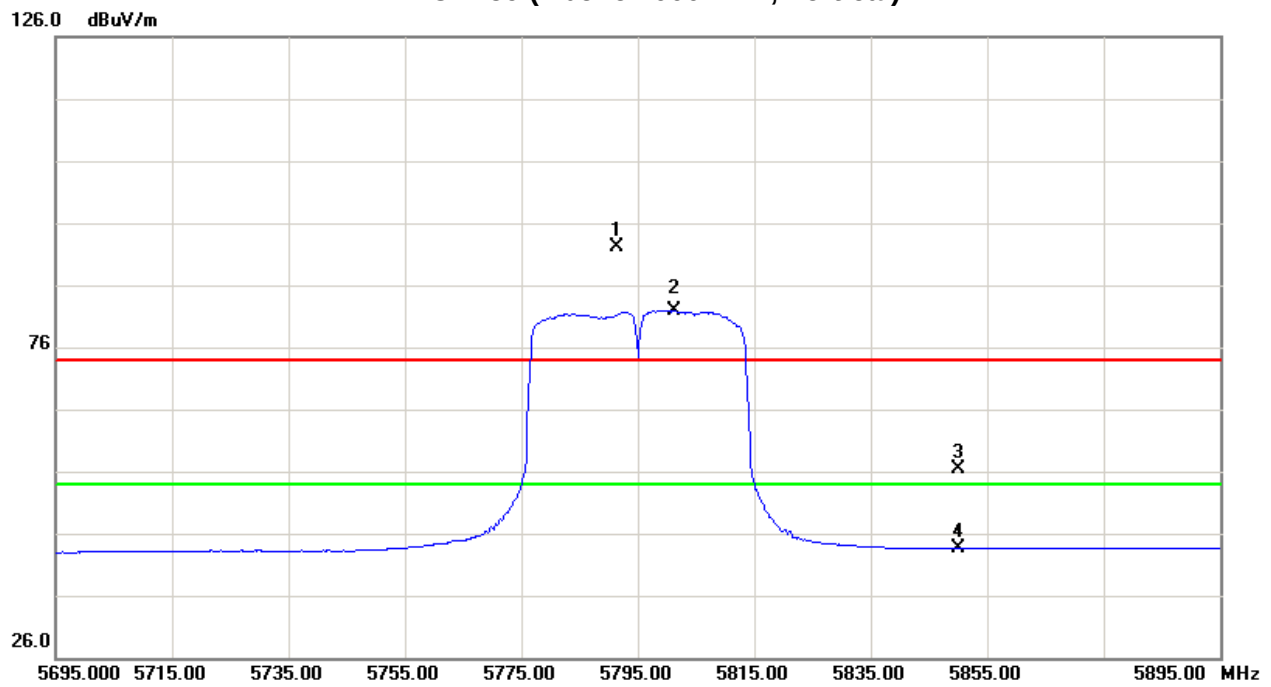


TX CH151 (Above 1000 MHz, Horizontal)



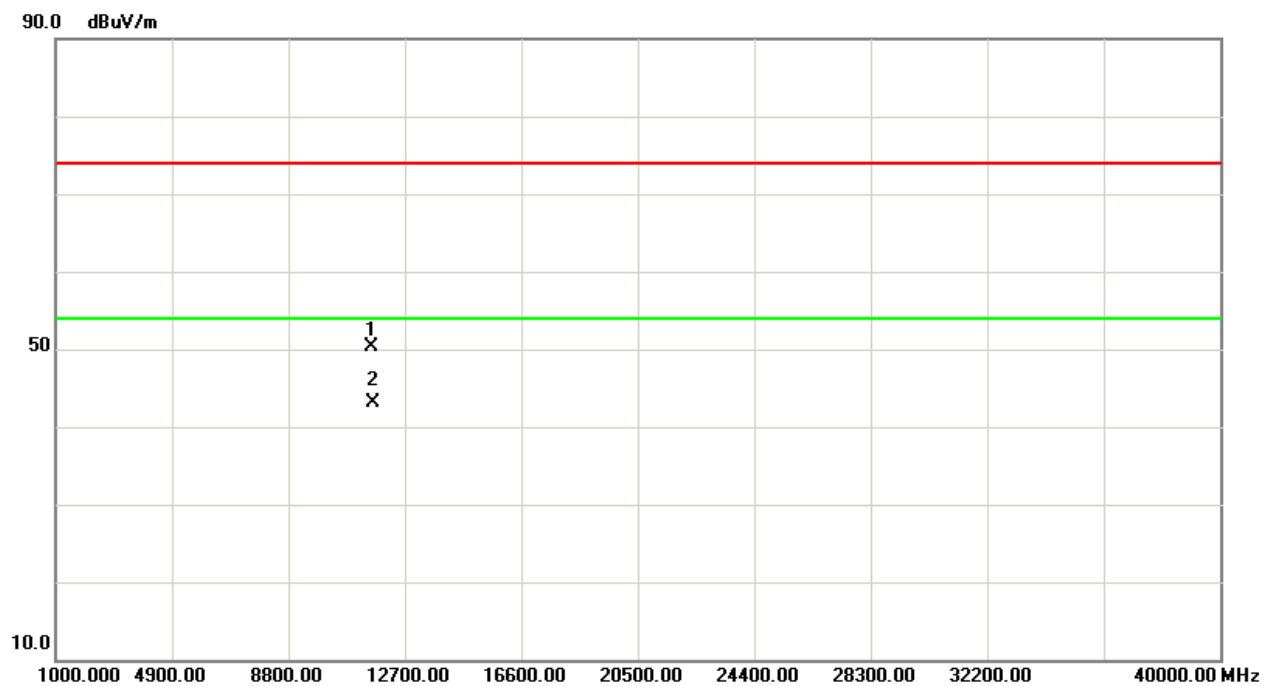
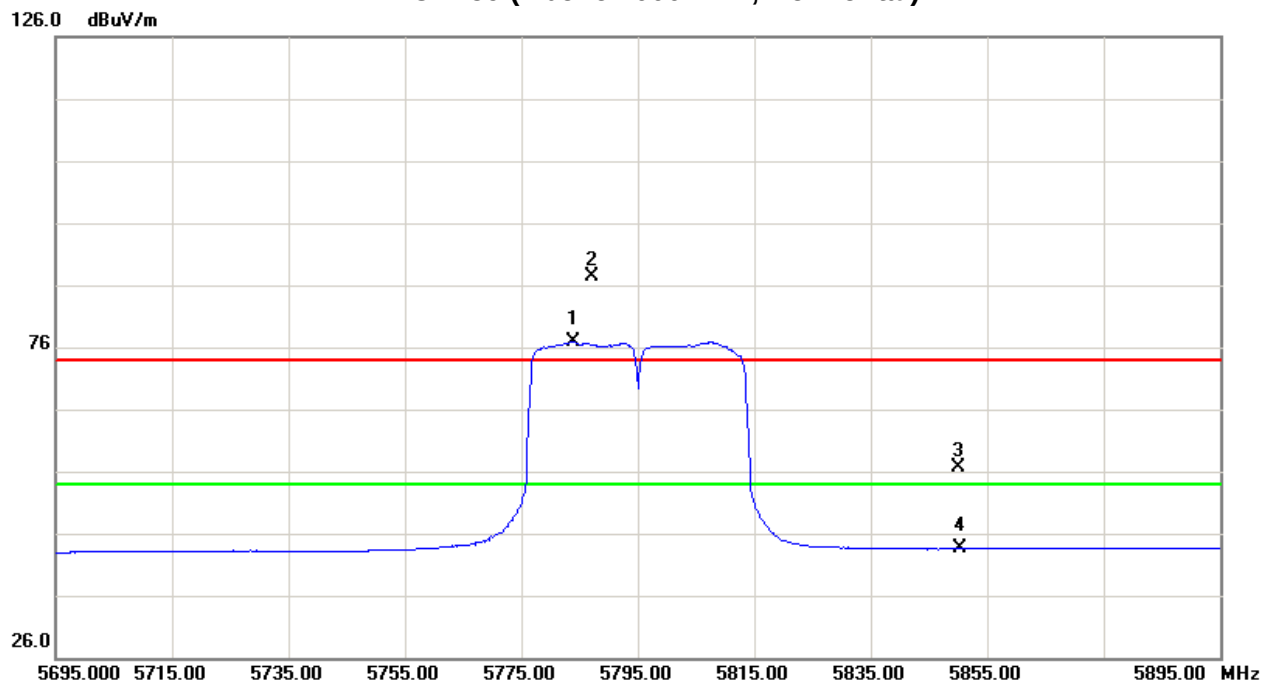


TX CH159 (Above 1000 MHz, Vertical)





TX CH159 (Above 1000 MHz, Horizontal)





Test Mode : TX AC-20M MODE 5745MHz

Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
#5725.00	V	13.45	0.41	44.34	57.79	44.75	74.25	66.21	X/E
5741.30	V	49.85	41.81	44.40	94.25	86.21			X/F
11490.75	V	34.00	23.57	18.47	52.47	42.04	74.00	54.00	X/H

Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
#5725.00	H	13.75	-0.48	44.34	58.09	43.86	71.08	62.66	X/E
5742.50	H	46.67	38.25	44.41	91.08	82.66			X/F
11490.35	H	34.35	23.78	18.47	52.82	42.25	74.00	54.00	X/H

Test Mode : TX AC-20M MODE 5785MHz

Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
5780.40	V	47.69	38.86	44.54	92.23	83.40			X/F
11569.75	V	32.19	22.58	18.67	50.86	41.25	74.00	54.00	X/H

Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
5792.70	H	45.07	36.53	44.58	89.65	81.11			X/F
11570.74	H	32.81	24.54	18.67	51.48	43.21	74.00	54.00	X/H

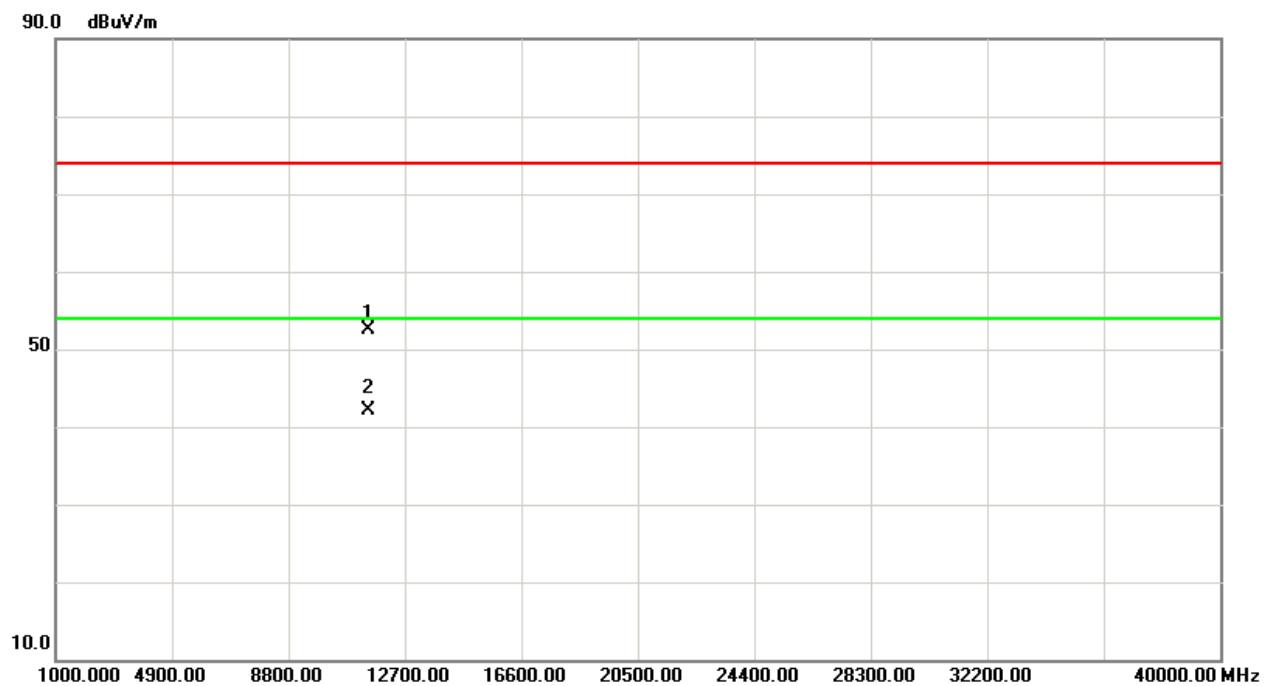
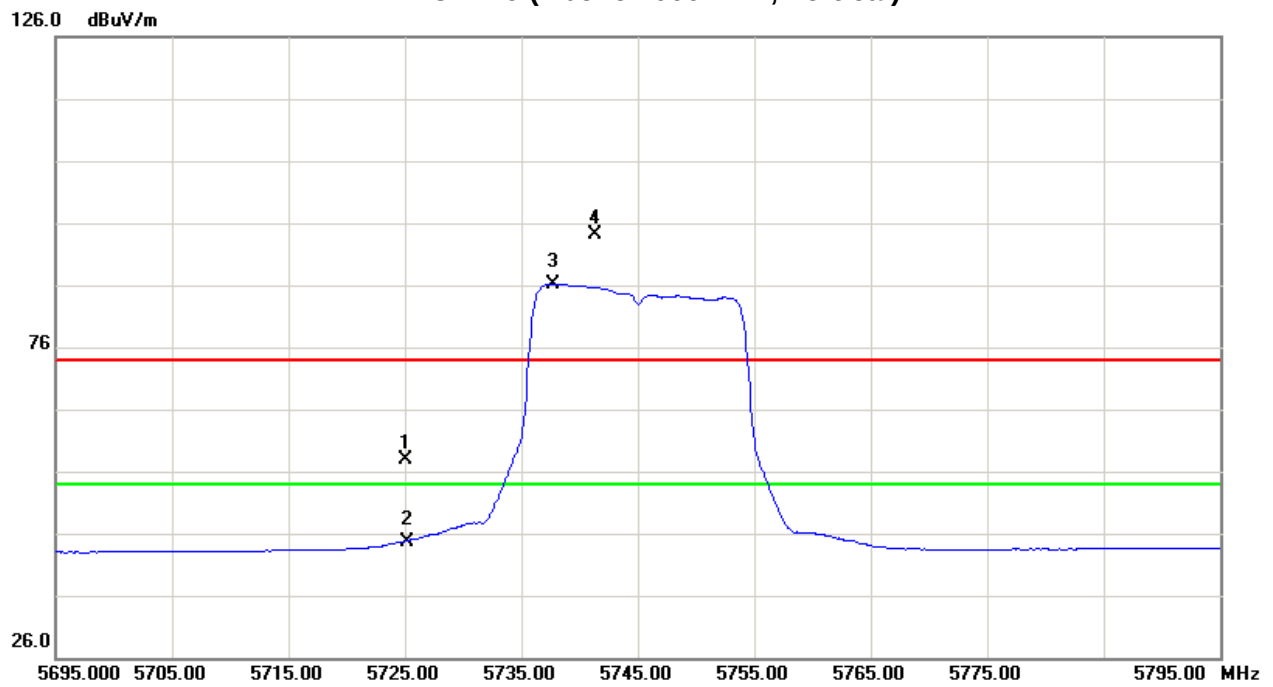
Test Mode : TX AC-20M MODE 5825MHz

Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
5832.20	V	47.76	39.65	44.72	92.48	84.37			X/F
#5850.00	V	13.12	-1.09	44.78	57.90	43.69	72.48	64.37	X/E
11650.11	V	31.95	23.05	18.87	50.82	41.92	74.00	54.00	X/H

Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
5832.50	H	44.52	35.46	44.72	89.24	80.18			X/F
#5850.00	H	12.97	-1.17	44.78	57.75	43.61	69.24	60.18	X/E
11650.27	H	33.53	24.18	18.87	52.40	43.05	74.00	54.00	X/H



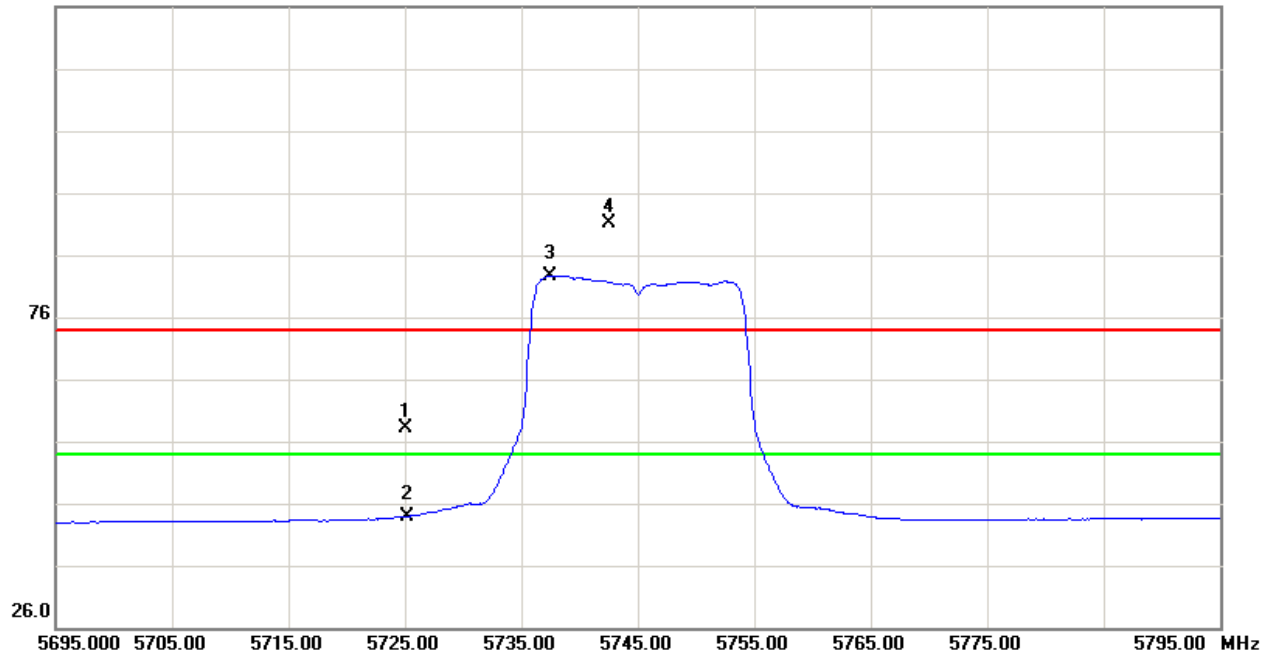
TX CH149 (Above 1000 MHz, Vertical)



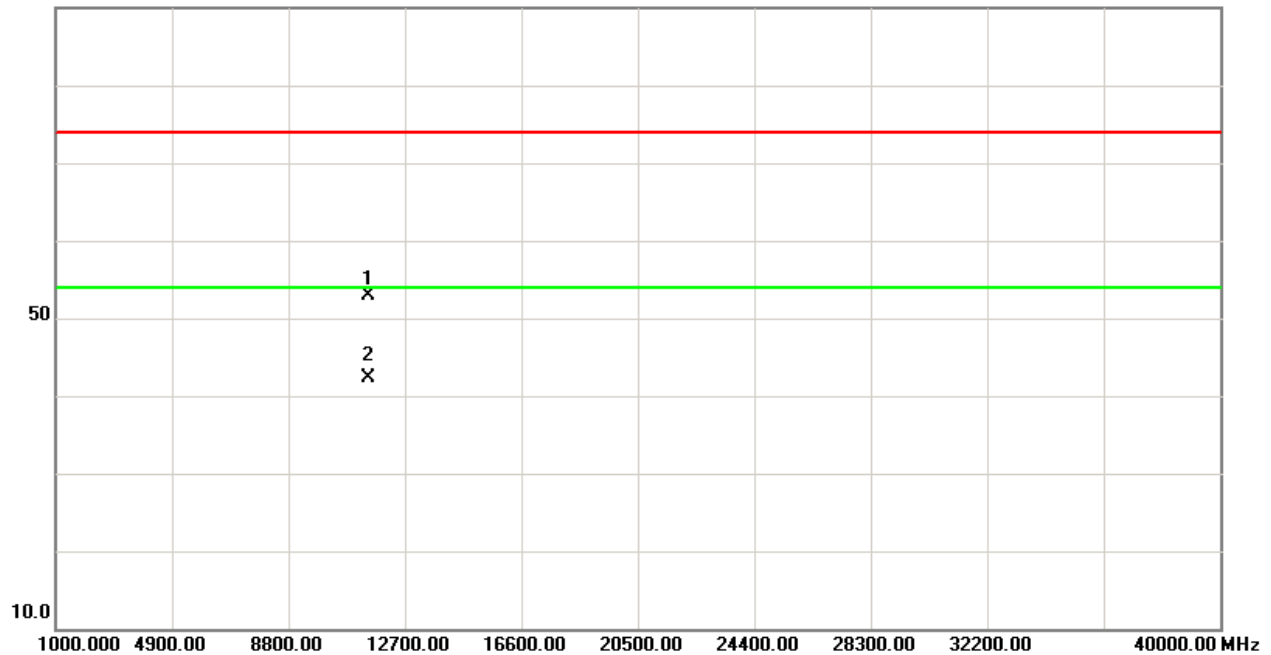


TX CH149 (Above 1000 MHz, Horizontal)

126.0 dBuV/m

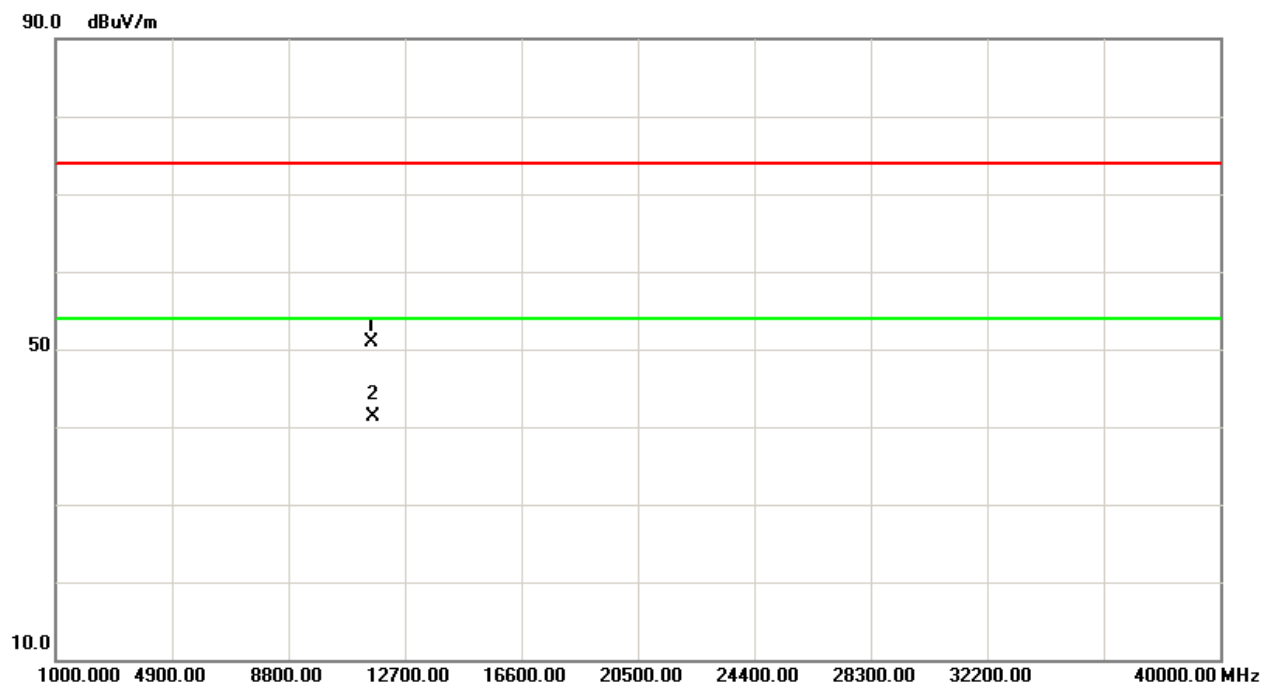
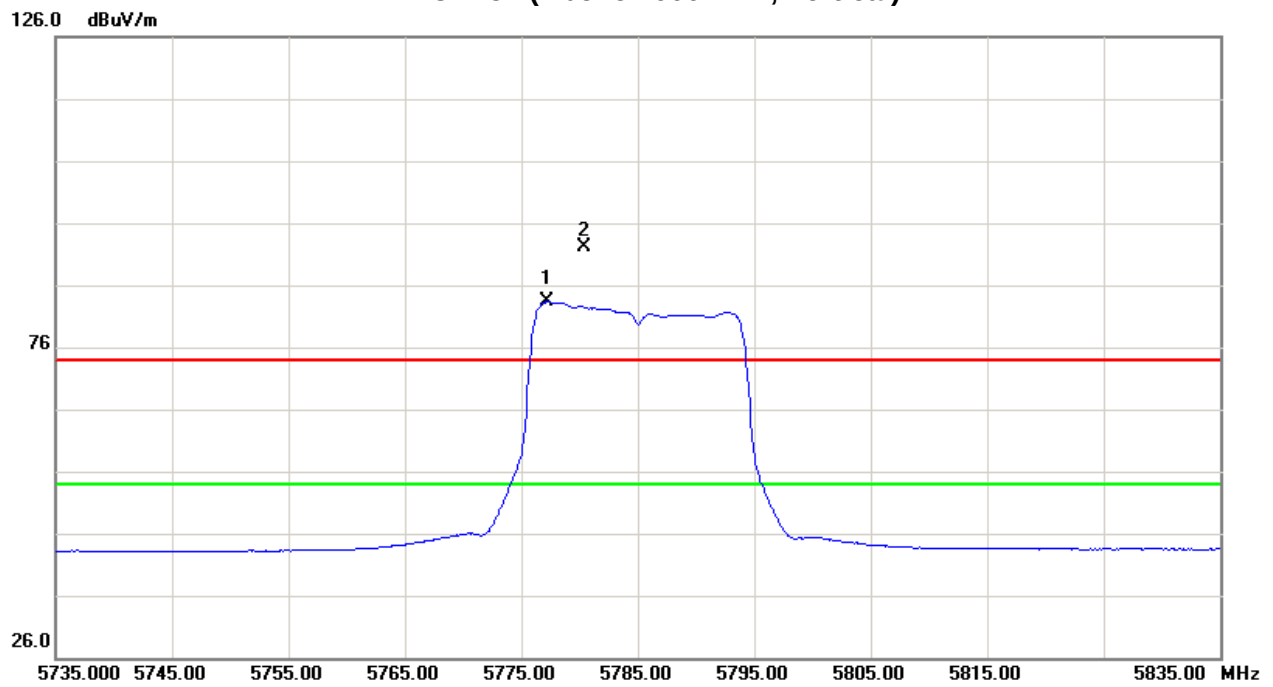


90.0 dBuV/m





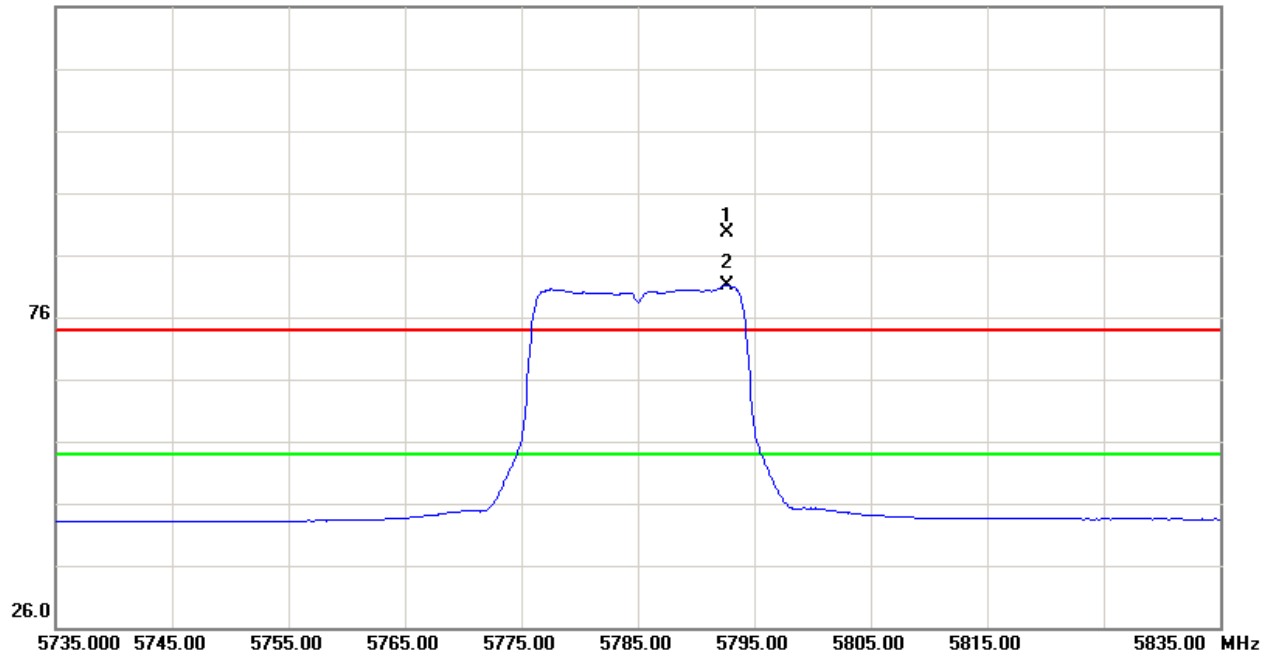
TX CH157 (Above 1000 MHz, Vertical)



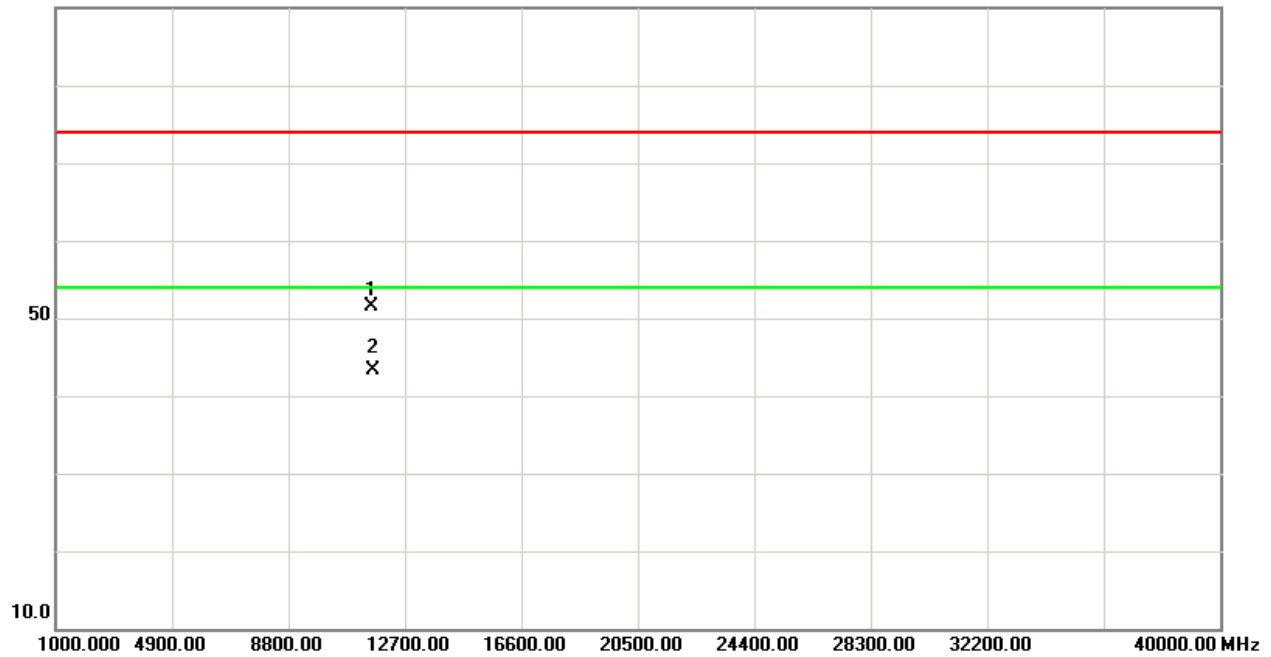


TX CH157 (Above 1000 MHz, Horizontal)

126.0 dBuV/m

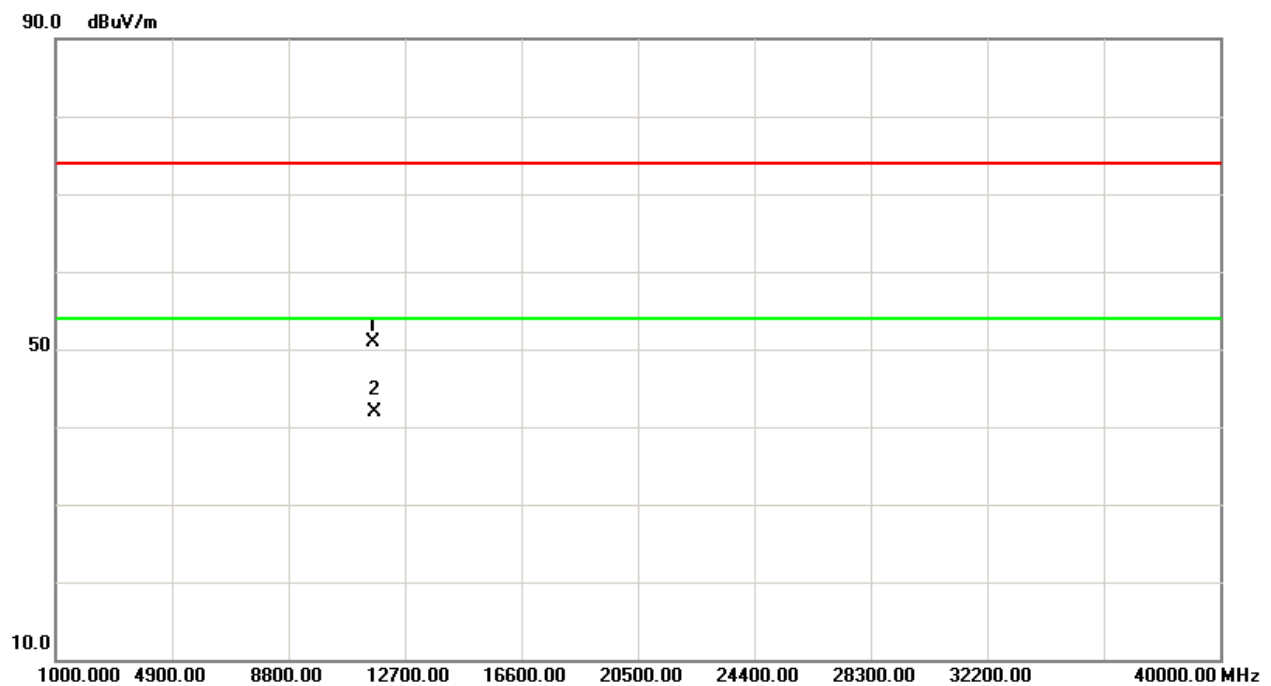
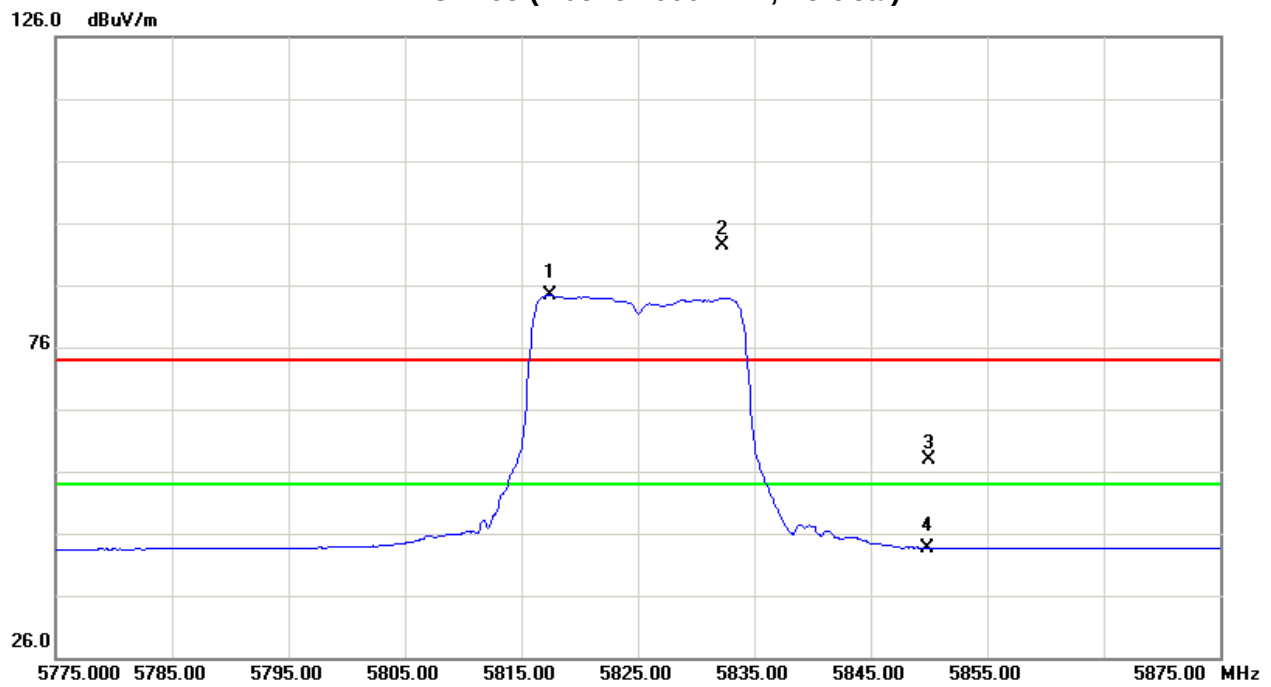


90.0 dBuV/m



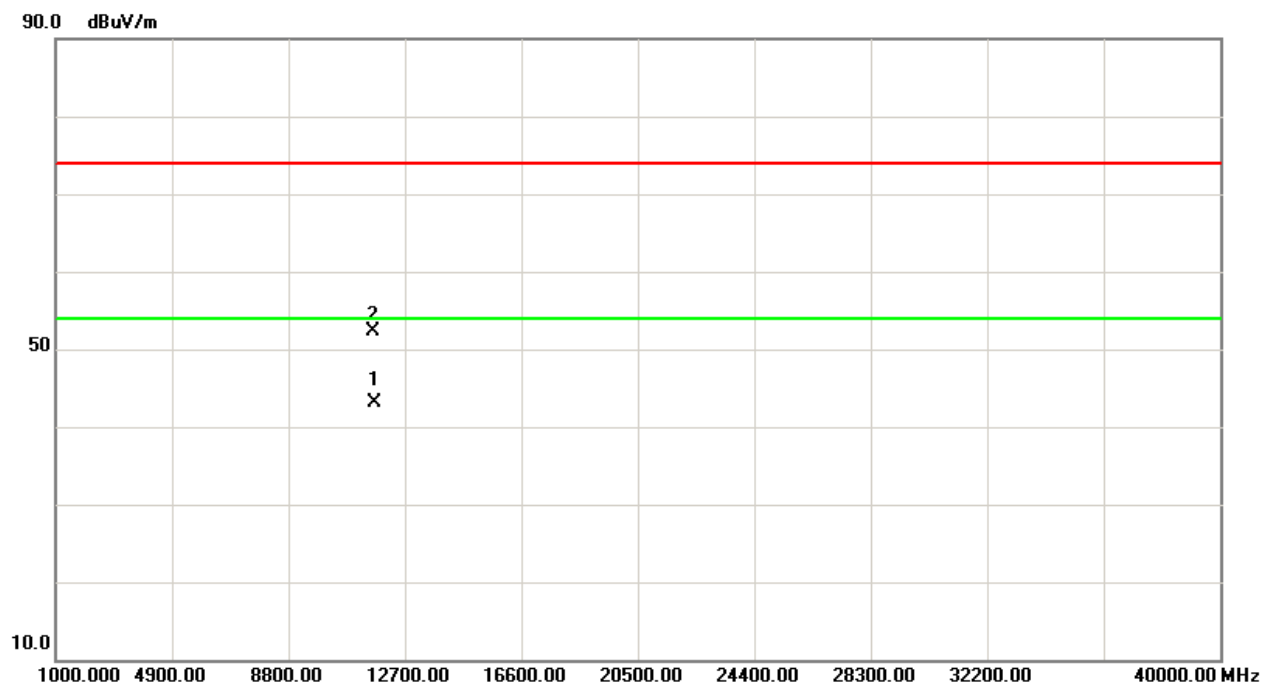
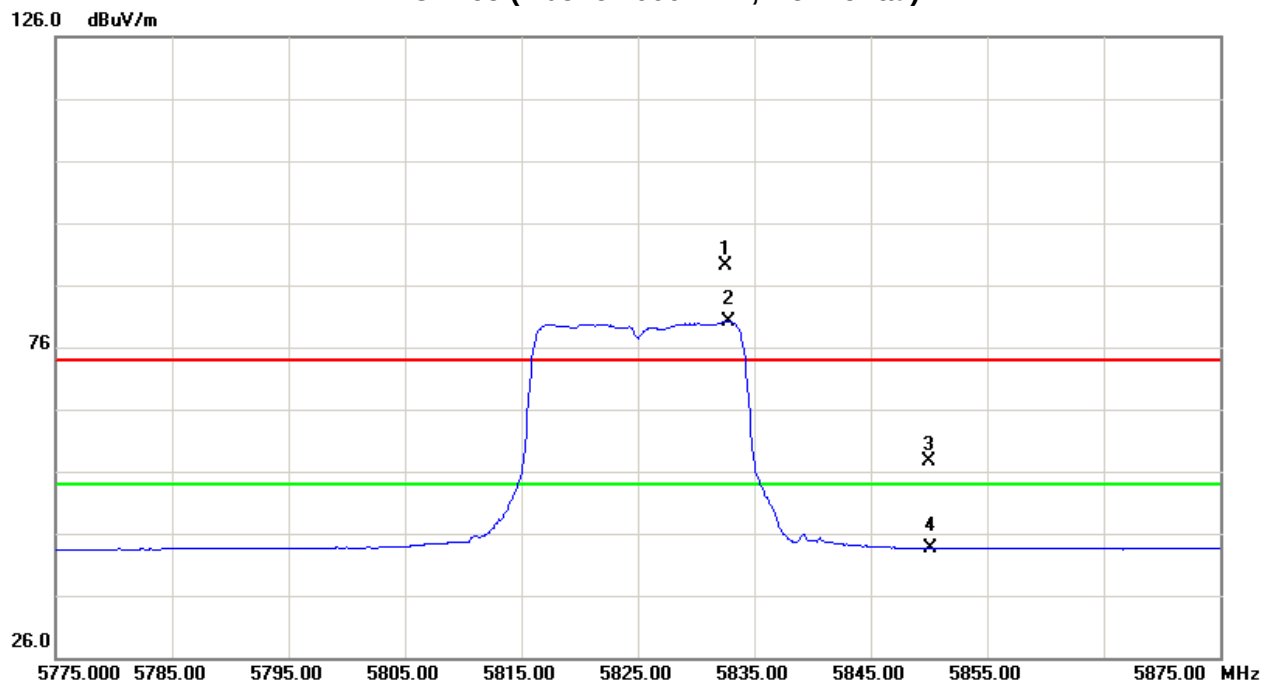


TX CH165 (Above 1000 MHz, Vertical)





TX CH165 (Above 1000 MHz, Horizontal)





Test Mode : TX AC-40M MODE 5755MHz

Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
#5725.00	V	12.37	0.22	44.34	56.71	44.56	72.40	61.25	X/E
5768.40	V	47.90	36.75	44.50	92.40	81.25			X/F
11510.38	V	32.41	23.58	18.51	50.92	42.09	74.00	54.00	X/H

Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
#5725.00	H	12.54	-0.68	44.34	56.88	43.66	66.70	56.58	X/E
5740.40	H	42.30	32.18	44.40	86.70	76.58			X/F
11509.78	H	33.63	24.12	18.51	52.14	42.63	74.00	54.00	X/H

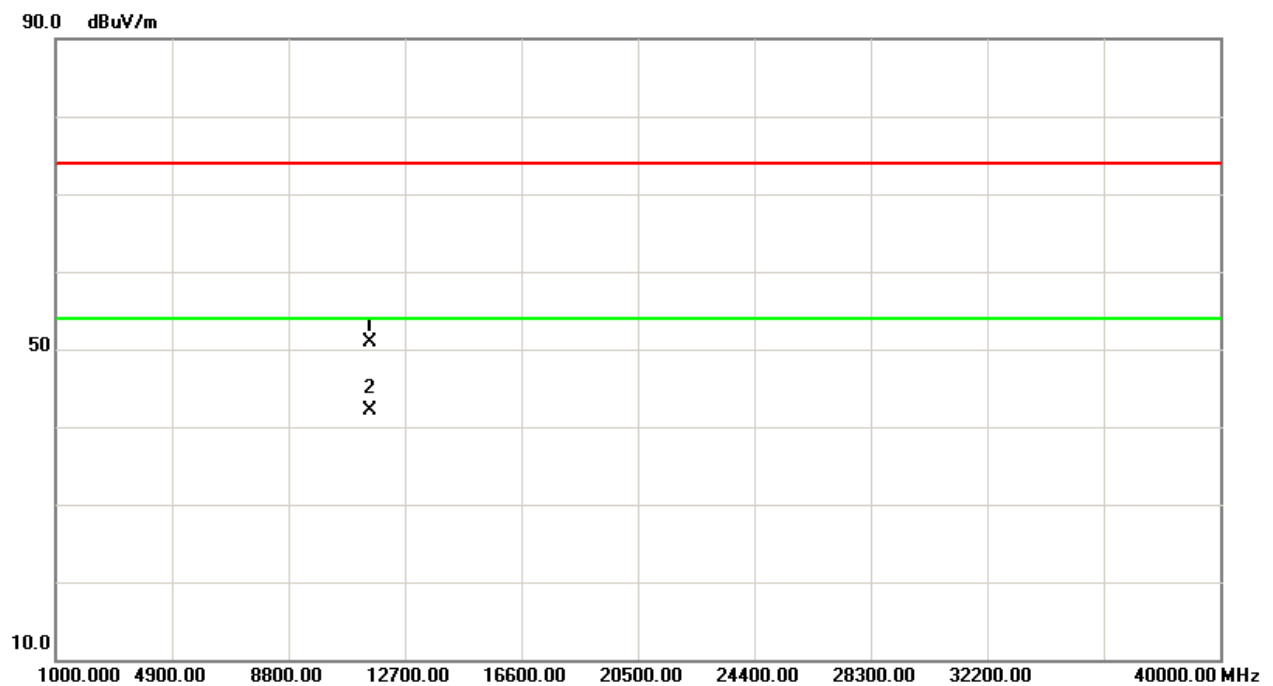
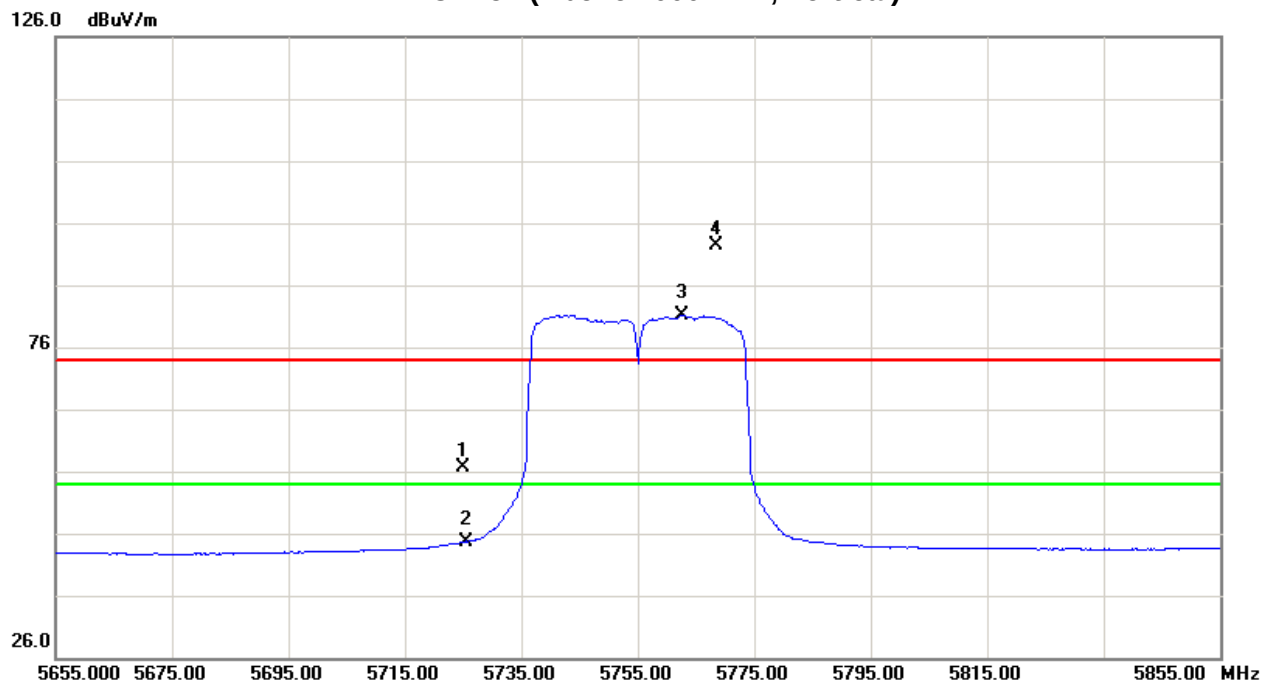
Test Mode : TX AC-40M MODE 5795MHz

Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
5792.60	V	49.60	37.45	44.58	94.18	82.03			X/F
#5850.00	V	12.36	-1.21	44.78	57.14	43.57	74.18	62.03	X/E
11590.61	V	32.38	21.53	18.72	51.10	40.25	74.00	54.00	X/H

Freq.	Ant.Pol.	Reading		Ant./CF	Act.		Limit		Note
		Peak	AV		Peak	AV	Peak	AV	
(MHz)	H/V	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	
5790.40	H	42.43	31.61	44.57	87.00	76.18			X/F
#5850.00	H	12.74	-1.23	44.78	57.52	43.55	67.00	56.18	X/E
11591.65	H	33.64	24.53	18.72	52.36	43.25	74.00	54.00	X/H

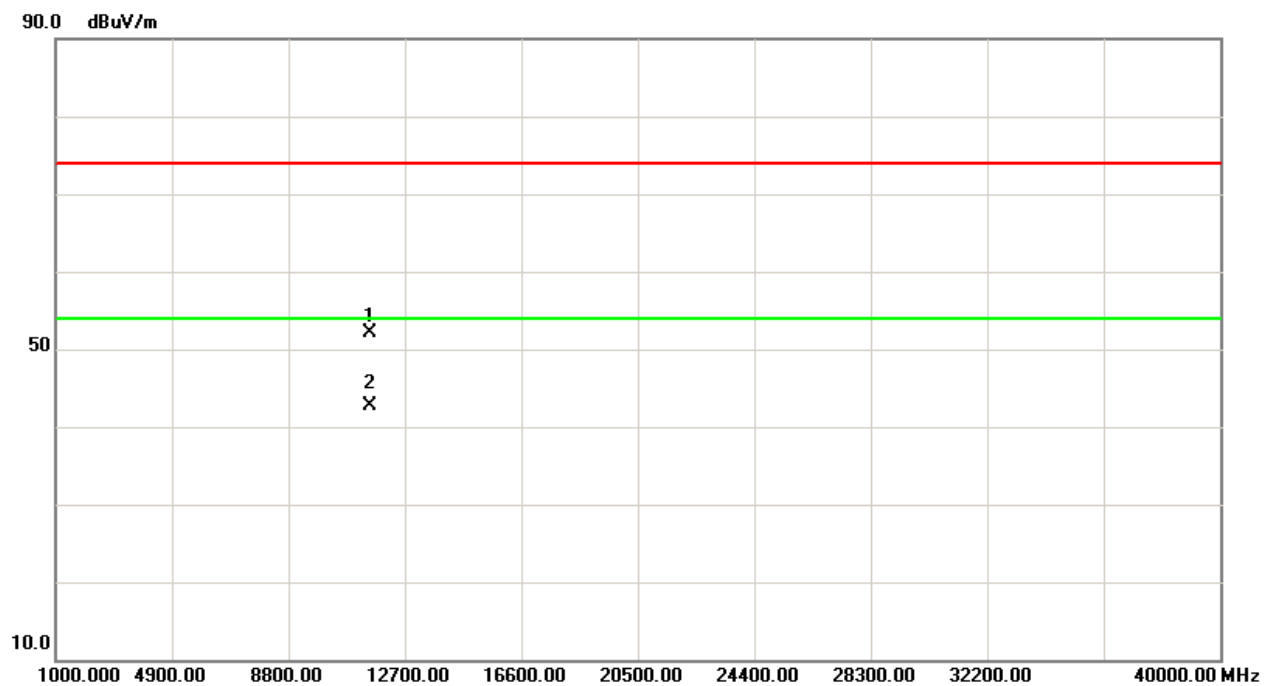
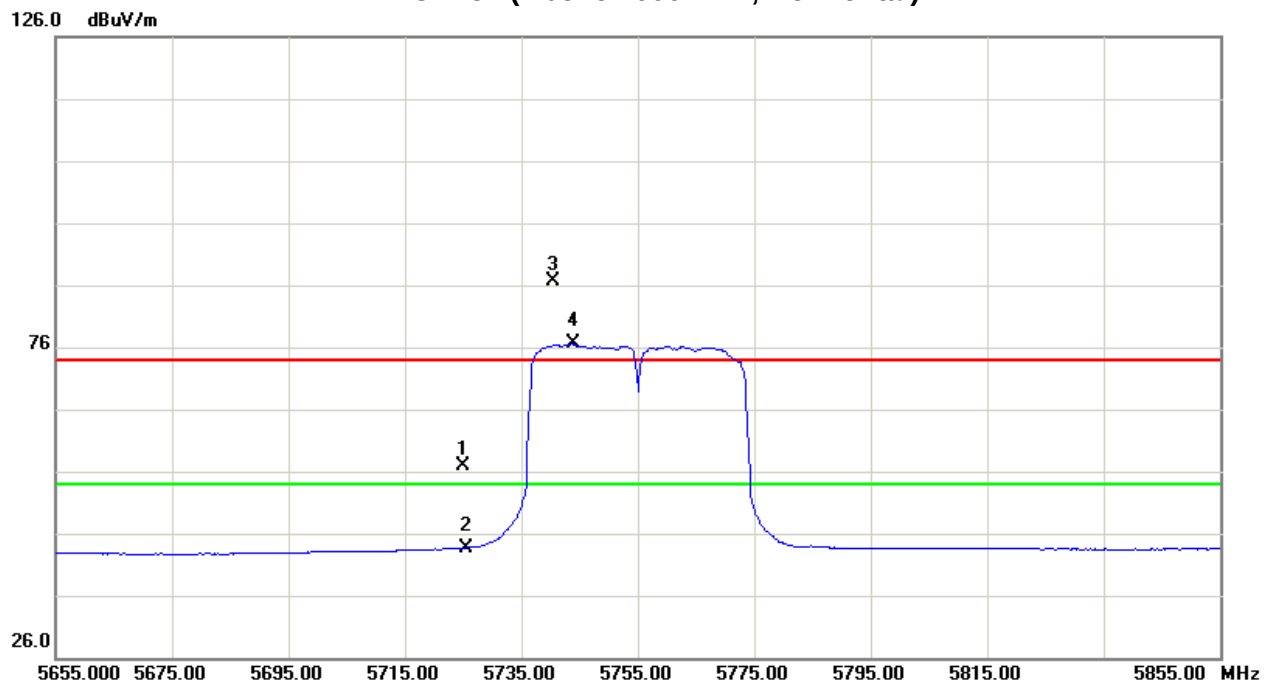


TX CH151 (Above 1000 MHz, Vertical)



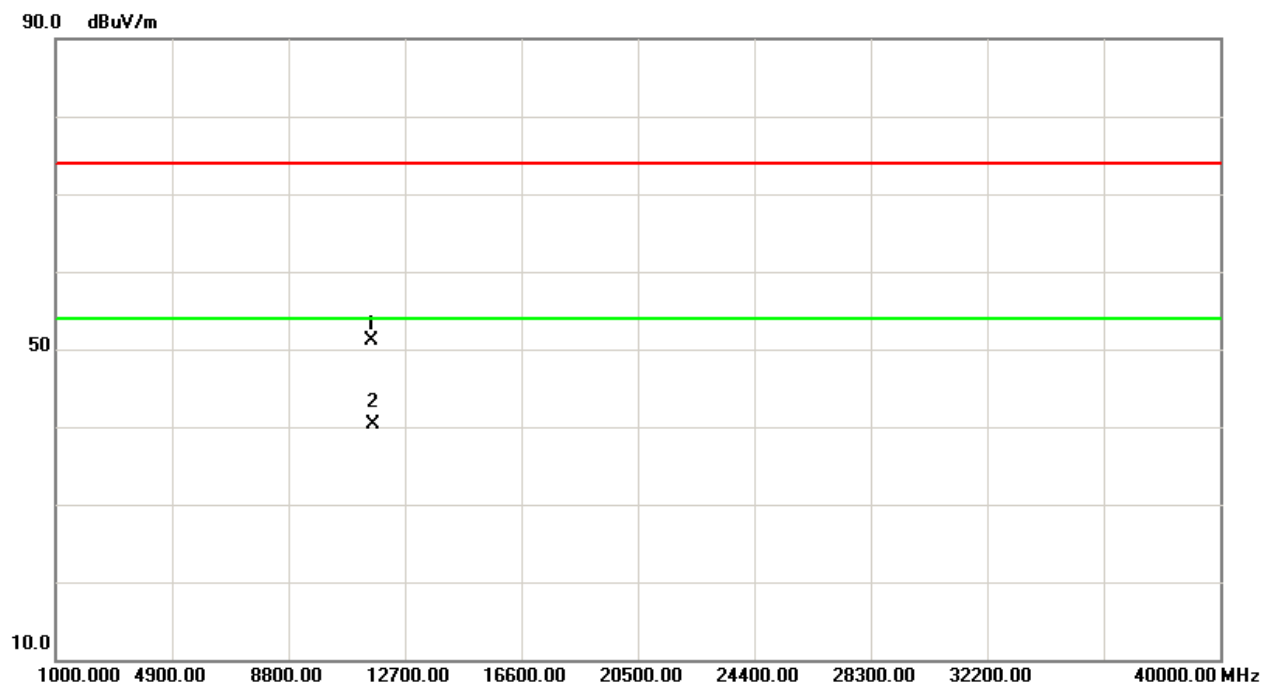
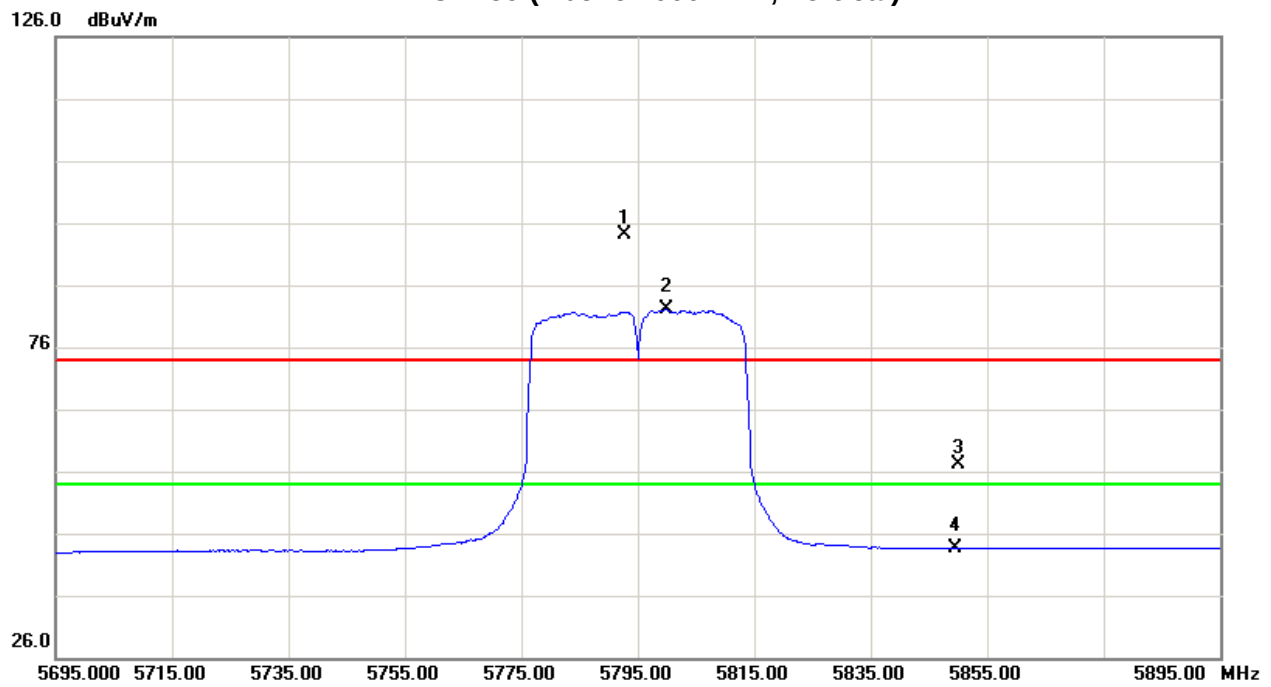


TX CH151 (Above 1000 MHz, Horizontal)



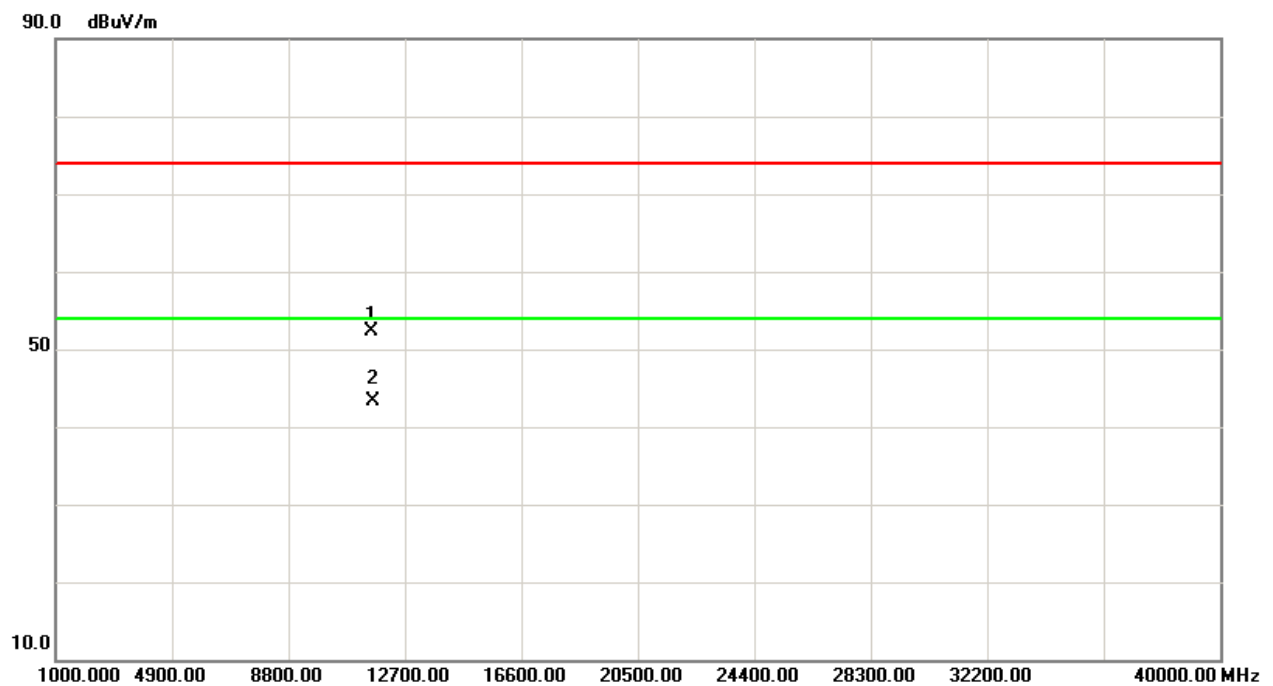
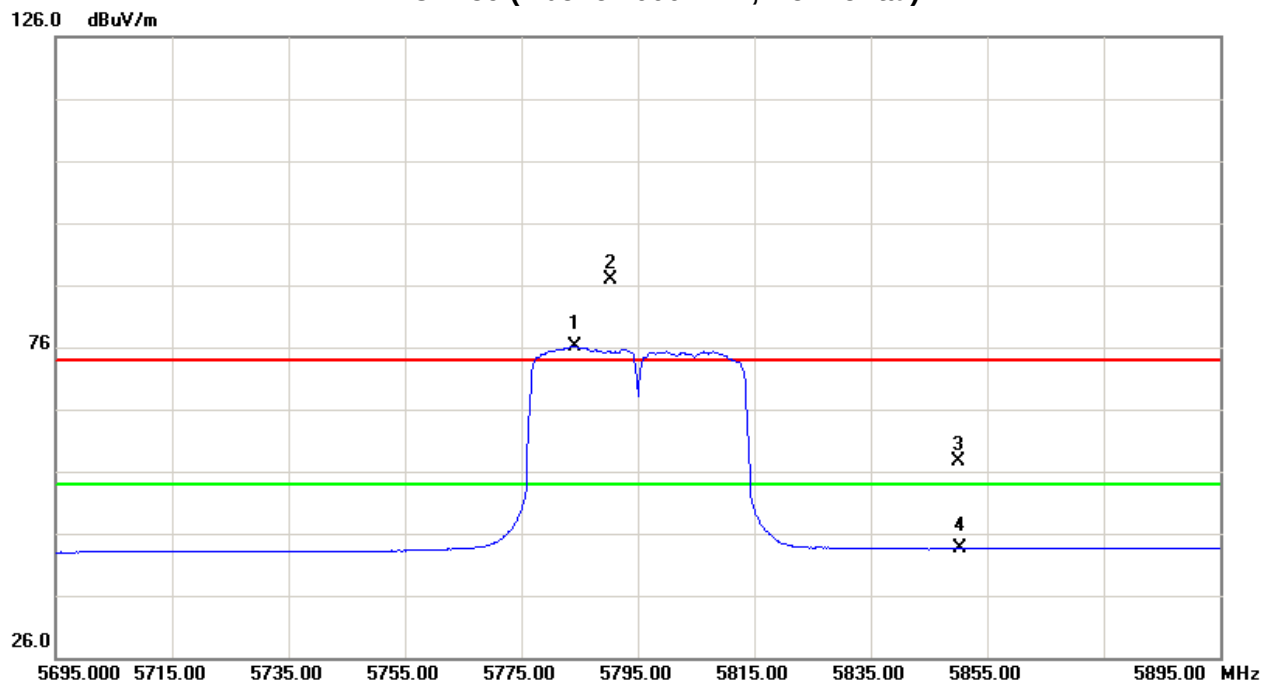


TX CH159 (Above 1000 MHz, Vertical)





TX CH159 (Above 1000 MHz, Horizontal)





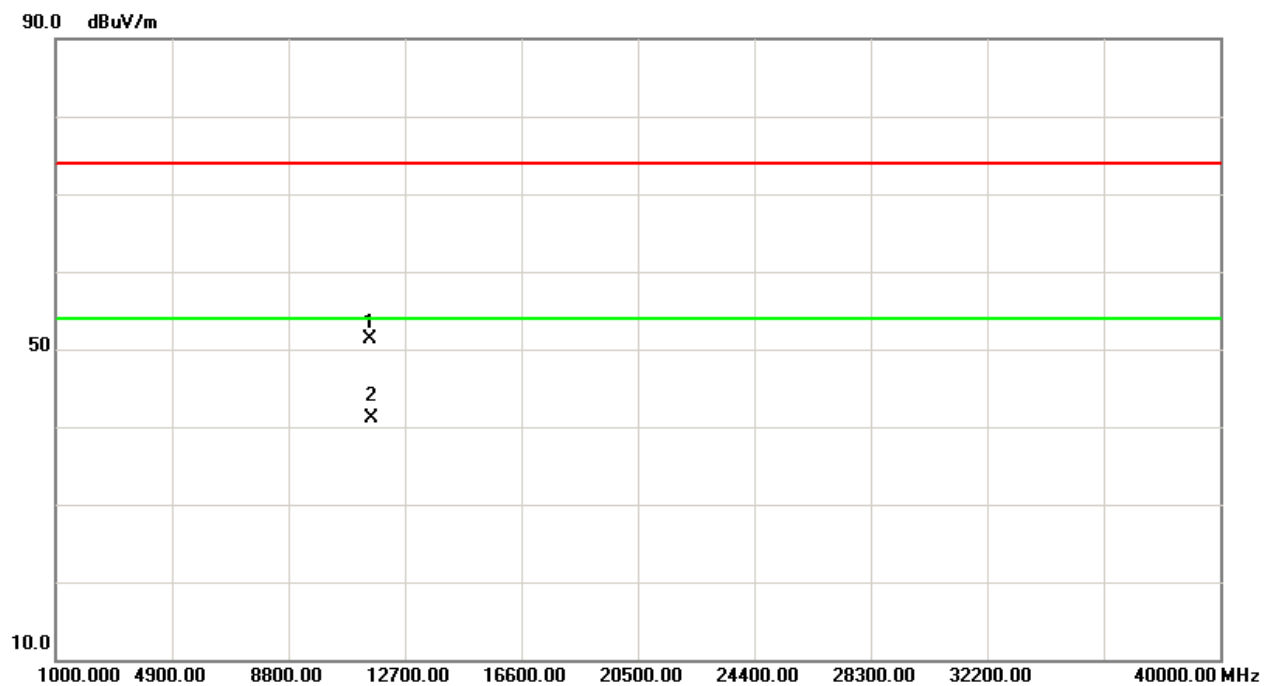
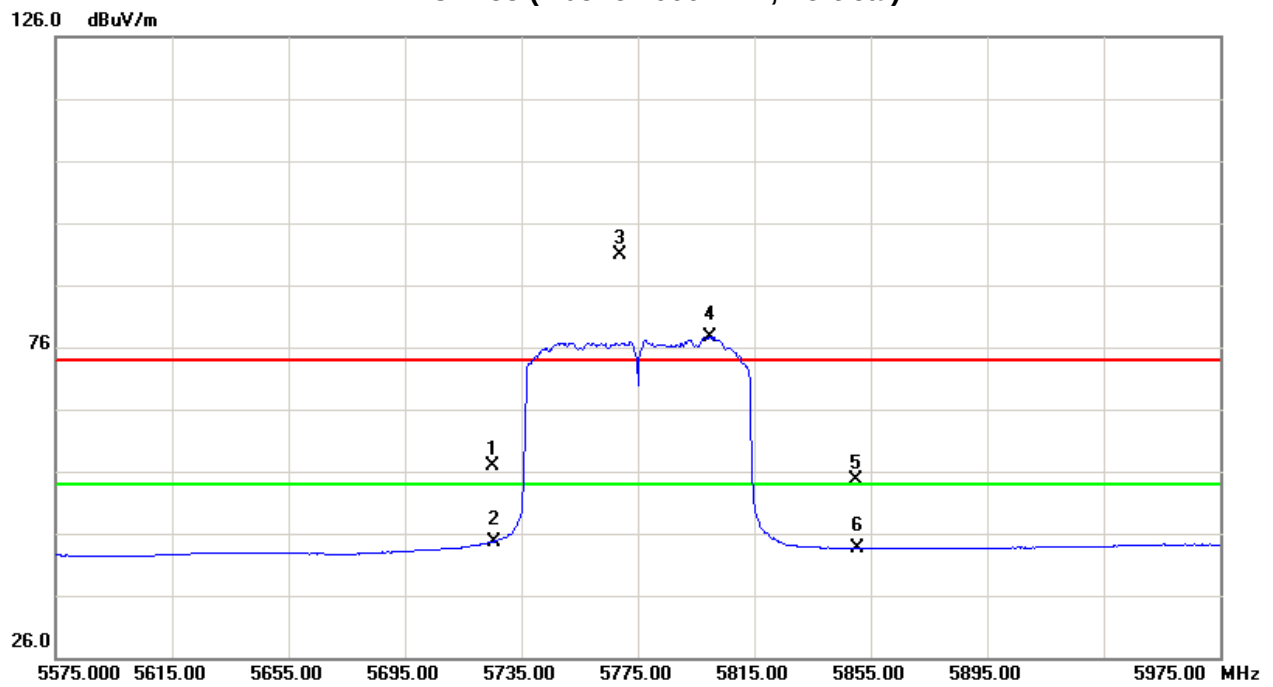
Test Mode : TX AC-80M MODE 5775MHz

Freq. (MHz)	Ant.Pol. H/V	Reading		Ant./CF CF(dB)	Act.		Limit		Note
		Peak (dBuV)	AV (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Peak (dBuV/m)	AV (dBuV/m)	
#5725.00	V	12.44	0.21	44.34	56.78	44.55	70.82	57.60	X/E
5768.60	V	46.32	33.10	44.50	90.82	77.60			X/F
5850.00	V	9.83	-1.13	44.78	54.61	43.65	31.30	21.15	X/E
11550.35	V	32.68	22.53	18.62	51.30	41.15	74.00	54.00	X/H

Freq. (MHz)	Ant.Pol. H/V	Reading		Ant./CF CF(dB)	Act.		Limit		Note
		Peak (dBuV)	AV (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Peak (dBuV/m)	AV (dBuV/m)	
#5725.00	H	12.37	-0.58	44.34	56.71	43.76	63.46	51.00	X/E
5749.00	H	39.03	26.57	44.43	83.46	71.00			X/F
5850.00	H	10.36	-1.23	44.78	55.14	43.55	32.56	23.11	X/E
11551.35	H	33.94	24.49	18.62	52.56	43.11	74.00	54.00	X/H



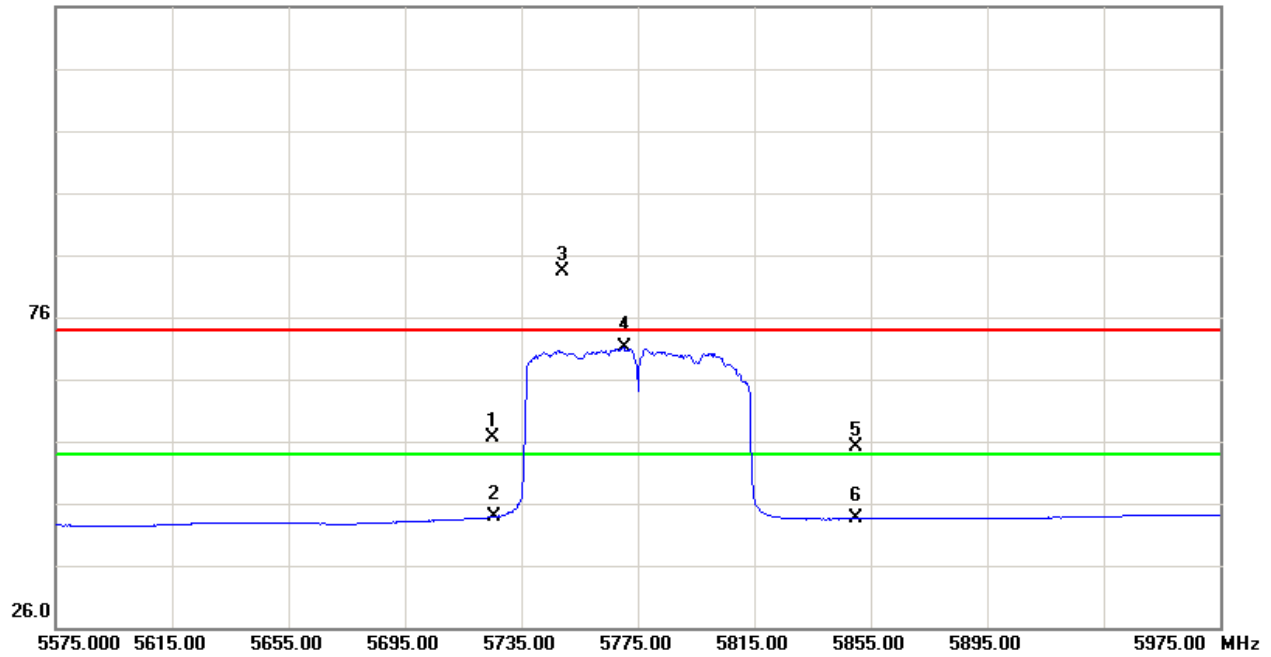
TX CH155 (Above 1000 MHz, Vertical)



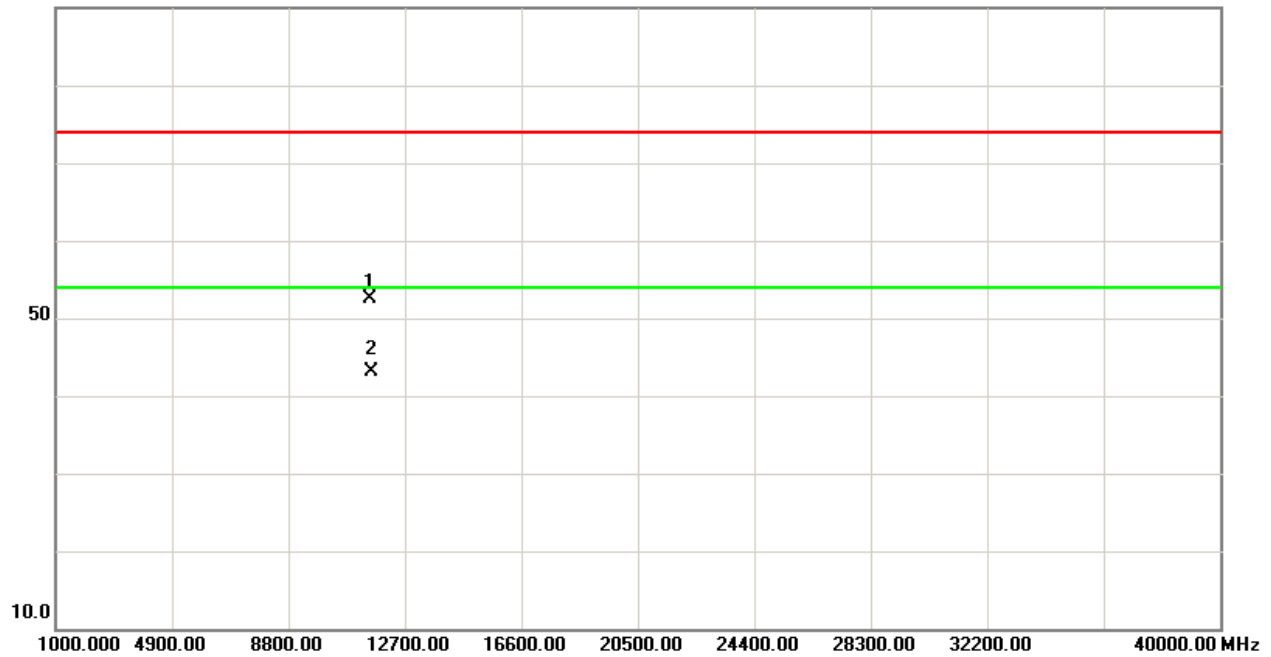


TX CH155 (Above 1000 MHz, Horizontal)

126.0 dBuV/m



90.0 dBuV/m





5. MEASUREMENT INSTRUMENTS LIST

Radiated Emission Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Antenna	Schwarbeck	VULB9160	9160-3232	Apr. 25, 2014
2	Amplifier	HP	8447D	2944A09673	Apr. 25, 2014
3	Test Receiver	R&S	ESCI	100382	Apr. 25, 2014
4	Test Cable	N/A	C-01_CB03	N/A	Jul. 02, 2014
5	Antenna	ETS	3115	00075789	Apr. 25, 2014
6	Amplifier	Agilent	8449B	3008A02274	Apr. 25, 2014
7	Spectrum	Agilent	E4408B	US39240143	Nov. 09, 2014
8	Test Cable	HUBER+SUHNER	C-45	N/A	Apr. 30, 2014
9	Controller	CT	SC100	N/A	N/A
10	Horn Antenna	EMCO	3115	9605-4803	Apr. 25, 2014
11	Active Loop Antenna	R&S	HFH2-Z2	830749/020	Apr. 25, 2014
12	Broad-Band Horn Antenna	Schwarzbeck	BBHA 9170	9170319	Oct. 22, 2014

Remark: "N/A" denotes no model name, serial no. or calibration specified.

All calibration period of equipment list is one year.



6. EUT TEST PHOTO

**Radiated Measurement Photos
9K~30MHz**





**Radiated Measurement Photos
30~1000MHz**



**Radiated Measurement Photos
Above 1000MHz**

