

FCC Radio Test Report

FCC ID: Q78-B820CA15

This report concerns: Original Grant

:	2108H060
:	Hybrid STB
:	ZTE
:	ZXV10 B820C-A15
:	N/A
:	ZTE Corporation
:	ZTE Plaza, Hi-Tech Park, Nanshan District, Shenzhen, Guangdong, P.R.China
•	P.R.China
:	Sep. 03, 2021
:	Sep. 03, 2021~Sep. 23, 2021
:	Sep. 29, 2021
:	R00
:	Engineering Sample No.:
	EUT(MTK7661): SH20210903181-1 for radiated,
	SH20210903181-10 for conducted.
	EUT(MTK7663): SH20210903181 for radiated,
	SH20210903181-9 for conducted.
	Adapter: SH20210903181-6 FCC CFR Title 47, Part 15, Subpart C
•	FCC KDB 558074 D01 15.247 Meas Guidance v05r02
	ANSI C63.10-2013
	::

The above equipment has been tested and found compliance with the requirement of the relative standards by BTL Inc.

Maker Qi

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The information, data and test plan are provided by manufacturer which may affect the validity of results, so it is manufacturer's responsibility to ensure that the apparatus meets the essential requirements of applied standards and in all the possible configurations as representative of its intended use.

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. Please note that the measurement uncertainty is provided for informational purpose only and are not use in determining the Pass/Fail results.



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REPORT ISSUED HISTORY

Report Version	Description	Issued Date
R00	Original Issue.	Sep. 29, 2021



1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standard(s):

FCC CFR Title 47, Part 15, Subpart C					
Standard(s) Section	Test Item	Test Result	Judgment	Remark	
15.207	AC Power Line Conducted Emissions	APPENDIX A	PASS		
15.247(d) 15.205(a) 15.209(a)	Radiated Emissions	APPENDIX B APPENDIX C APPENDIX D	PASS		
15.247(a)(2)	Bandwidth	APPENDIX E	PASS		
15.247(b)(3)	Maximum Output Power	APPENDIX F	PASS		
15.247(d)	Conducted Spurious Emission	APPENDIX G	PASS		
15.247(e)	Power Spectral Density	APPENDIX H	PASS		
15.203	Antenna Requirement		PASS	Note(2)	

Note:

(1) "N/A" denotes test is not applicable to this device.

(2) The device what use a permanently attached antenna were considered sufficient to comply with the provisions of 15.203.



1.1 TEST FACILITY

The test facilities used to collect the test data in this report is at the location of No. 29, Jintang Road, Tangzhen Industry Park, Pudong New Area, Shanghai 201210, China BTL's Test Firm Registration Number for FCC: 476765 BTL's Designation Number for FCC: CN1241

1.2 MEASUREMENT UNCERTAINTY

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2)) The BTL measurement uncertainty as below table:

A. AC power line conducted emissions test:

Test Site	Method	Measurement Frequency Range	U, (dB)
SH-C01	CISPR	150 kHz ~ 30 MHz	2.64

B. Radiated emissions test:

Test Site	Method	Measurement Frequency Range	Ant. H / V	U, (dB)
		9 KHz~30 MHz	-	2.16
		30 MHz~200 MHz	V	4.04
	CISPR	30 MHz~200 MHz	Н	2.90
SH-CB02		200 MHz~1,000 MHz	V	3.76
		200 MHz~1,000 MHz	Н	3.82
		1GHz ~ 6GHz	-	4.56
		6GHz ~ 18GHz	-	4.14
		18 ~ 26.5 GHz	-	3.48

C. Conducted test:

Parameter	U
Output Power	±0.95 dB
Occupied Channel Bandwidth	±3.8 %
Power Spectral Density	±0.86 dB
Conducted Spurious Emission	±2.71 dB
Temperature	±0.08 °C
Humidity	±1.5 %
Supply voltages	±0.3 %

Note: Unless specifically mentioned, the uncertainty of measurement has not been taken into account to declare the compliance or non-compliance to the specification.

1.3 TEST ENVIRONMENT CONDITIONS

Test Item	Temperature	Humidity	Test Voltage	Tested By
AC Power Line Conducted Emissions	22°C	54%	AC 120V/60Hz	Vera Wei
Radiated Emissions-9 kHz to 30 MHz	26°C	61%	AC 120V/60Hz	Forest Li
Radiated Emissions-30 MHz to 1000 MHz	26°C	61%	AC 120V/60Hz	Forest Li
Radiated Emissions-Above 1000 MHz	26°C	61%	AC 120V/60Hz	Forest Li
Bandwidth	26°C	35%	AC 120V/60Hz	Danny Dang
Maximum Output Power	26°C	35%	AC 120V/60Hz	Danny Dang
Conducted Spurious Emission	26°C	35%	AC 120V/60Hz	Danny Dang
Power Spectral Density	26°C	35%	AC 120V/60Hz	Danny Dang



2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Fauinment	
Equipment	Hybrid STB
Brand Name	ZTE
Test Model	ZXV10 B820C-A15
Series Model	N/A
Model Difference(s)	N/A
Power Source	DC Voltage supplied from AC/DC adapter. #1 Brand / Model: Ruide/ RD1201000-C55-35MGD #2 Brand / Model: Castec/ MN012E-L120100
Power Rating	#1 I/P: AC 100-240V~ 50-60Hz 0.6 A MAX O/P: 12V 1.0 A #2 I/P: AC 100-240V~ 50-60Hz 0.6 A MAX O/P: 12.0V 1.0 A
Operation Frequency	2402 MHz ~ 2480 MHz
Modulation Type	GFSK
Bit Rate of Transmitter	1Mbps, 2Mbps
Max. Output Power-	1Mbps: 9.60 dBm (0.0091 W)
MTK7661	2Mbps: 9.63 dBm (0.0092 W)
Max. Output Power-	1Mbps: 9.08 dBm (0.0081 W)
MTK7663	2Mbps: 9.07 dBm (0.0081 W)

Note:

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

2. The equipment have two alternate material (MTK7661 and MTK7663), only used as a separate shipping area, both the two models have been tested.



3. Channel List:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
00	2402	20	2442
01	2404	21	2444
02	2406	22	2446
03	2408	23	2448
04	2410	24	2450
05	2412	25	2452
06	2414	26	2454
07	2416	27	2456
08	2418	28	2458
09	2420	29	2460
10	2422	30	2462
11	2424	31	2464
12	2426	32	2466
13	2428	33	2468
14	2430	34	2470
15	2432	35	2472
16	2434	36	2474
17	2436	37	2476
18	2438	38	2478
19	2440	39	2480

4. Table for Filed Antenna:

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	N/A	N/A	Onboard Antenna	N/A	1.9

Note:

The antenna gain is provided by the manufacturer.



2.2 DESCRIPTION OF TEST MODES

The test system was pre-tested based on the consideration of all possible combinations of EUT operation mode.

Pretest Mode	Description
Mode 1	TX Mode_1Mbps Channel 00/19/39
Mode 2	TX Mode_2Mbps Channel 00/19/39

Following mode(s) was (were) found to be the worst case(s) and selected for the final test.

AC power line conducted emissions test			
Final Test Mode Description			
Mode 1	TX Mode_1Mbps Channel 00		
Mode 2	TX Mode_2Mbps Channel 39		

Radiated emissions test - Below 1GHz			
Final Test Mode Description			
Mode 1	TX Mode_1Mbps Channel 00		
Mode 2	TX Mode_2Mbps Channel 39		

Radiated emissions test - Above 1GHz				
Final Test Mode Description				
Mode 1	TX Mode_1Mbps Channel 00/19/39			
Mode 2 TX Mode_2Mbps Channel 00/19/39				

Conducted test			
Final Test Mode Description			
Mode 1 TX Mode_1Mbps Channel 00/19/39			
Mode 2	TX Mode_2Mbps Channel 00/19/39		

Note:

(1) For AC power line conducted emissions and radiated emissions below 1 GHz test, the 2Mbps Channel 39 of MTK7661 and the 1Mbps Channel 00 of MTK7663 are found to be the worst case and recorded.

(2) For radiated emission below 1 GHz and AC Power Line Conducted Emissions test, all adapters had been pre-tested and in this report only recorded the worst case.



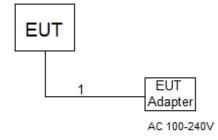
2.3 PARAMETERS OF TEST SOFTWARE

During testing channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level.

Test Software Version	QA TOOL		
Frequency (MHz)	2402	2440	2480
1Mbps	default	default	default
2Mbps	default	default	default



2.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED



2.5 SUPPORT UNITS

ltem	Cable Type	Shielded Type	Ferrite Core	Length
1	DC	N/A	N/A	1M



3. AC POWER LINE CONDUCTED EMISSIONS

3.1 LIMIT

Frequency of Emission (MHz)	Limit (dBµV)		
Frequency of Emission (MHZ)	Quasi-peak	Average	
0.15 - 0.5	66 to 56*	56 to 46*	
0.5 - 5.0	56	46	
5.0 - 30.0	60	50	

Note:

- (1) The tighter limit applies at the band edges.
- (2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

3.2 TEST PROCEDURE

- a. The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipment powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- d. LISN at least 80 cm from nearest part of EUT chassis.
- e. For the actual test configuration, please refer to the related Item -EUT Test Photos.

The following table is the setting of the receiver:

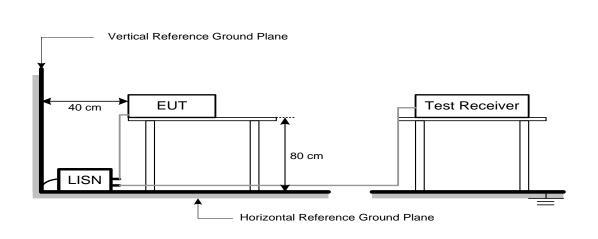
Receiver Parameters	Setting	
Start Frequency	0.15 MHz	
Stop Frequency	30 MHz	
IF Bandwidth	9 kHz	

3.3 DEVIATION FROM TEST STANDARD

No deviation.



3.4 TEST SETUP



3.5 EUT OPERATING CONDITIONS

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

3.6 TEST RESULTS

Please refer to the APPENDIX A.

Remark:

- (1) All readings are QP Mode value unless otherwise stated AVG in column of [Note]. If the QP Mode Measured value compliance with the QP Limits and lower than AVG Limits, the EUT shall be deemed to meet both QP & AVG Limits and then only QP Mode was measured, but AVG Mode didn't perform. In this case, a " * " marked in AVG Mode column of Interference Voltage Measured.
- (2) Measuring frequency range from 150 kHz to 30 MHz.



4. RADIATED EMISSIONS

4.1 LIMIT

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.

LIMITS OF RADIATED EMISSION MEASUREMENT (9 kHz-1000 MHz)

Frequency	Field Strength	Measurement Distance
(MHz)	(microvolts/meter)	(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
Above 960	500	3

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000 MHz)

Frequency (MHz)	(dBuV/m at 3 m)		
Frequency (winz)	Peak	Average	
Above 1000	74	54	

Note:

(1) The limit for radiated test was performed according to FCC CFR Title 47, Part 15, Subpart C.

(2) The tighter limit applies at the band edges.

(3) Emission level (dBuV/m)=20log Emission level (uV/m).



4.2 TEST PROCEDURE

- a. The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter 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 1 GHz)
- b. The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 1.5 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation. (above 1 GHz)
- c. The height of the equipment or of the substitution antenna shall be 0.8m or 1.5m; 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.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights find the maximum reading (used Bore sight function).
- e. The receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz.
- f. The initial step in collecting radiated emission data is a receiver peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- g. 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. (below 1 GHz)
- h. All readings are Peak Mode value unless otherwise stated AVG in column of Note. If the Peak Mode Measured value compliance with the Peak Limits and lower than AVG Limits, the EUT shall be deemed to meet both Peak & AVG Limits and then only Peak Mode was measured, but AVG Mode didn't perform. (above 1 GHz)
- i. For the actual test configuration, please refer to the related Item -EUT Test Photos.

 Inertoniowing table is the setting of the receiver:

 Spectrum Parameters
 Setting

 Start ~ Stop Frequency
 9 kHz~150 kHz for RBW 200 Hz

 Start ~ Stop Frequency
 0.15 MHz~30 MHz for RBW 9 kHz

 Start ~ Stop Frequency
 30 MHz~1000 MHz for RBW 100 kHz

The following t	able is the setting	a of the receiver.	
	מטוב וא נווב אבננווונ		

Spectrum Parameters	Setting
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RBW / VBW	1 MHz / 3 MHz for PK value
(Emission in restricted band)	1 MHz / 1/T Hz for AVG value

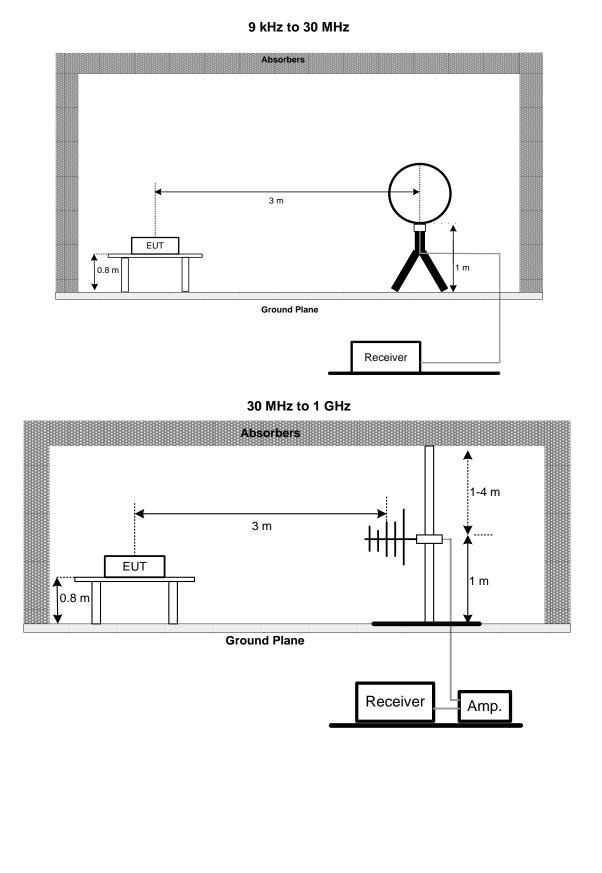
Spectrum Parameters	Setting
Start ~ Stop Frequency	9 kHz~90 kHz for PK/AVG detector
Start ~ Stop Frequency	90 kHz~110 kHz for QP detector
Start ~ Stop Frequency	110 kHz~490 kHz for PK/AVG detector
Start ~ Stop Frequency	490 kHz~30 MHz for QP detector
Start ~ Stop Frequency	30 MHz~1000 MHz for QP detector
Start ~ Stop Frequency	1 GHz~26.5 GHz for PK/AVG detector



4.3 DEVIATION FROM TEST STANDARD

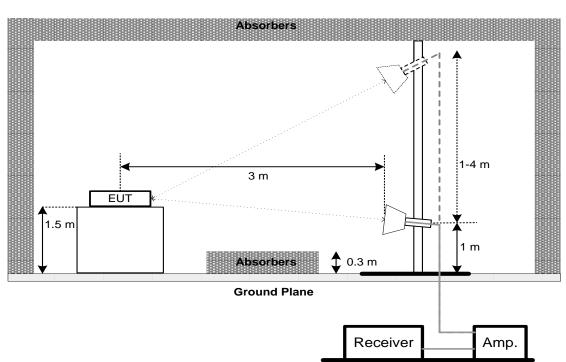
No deviation.

4.4 TEST SETUP



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4.5 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

4.6 TEST RESULT - 9 kHz TO 30 MHz

Please refer to the APPENDIX B.

Remark:

- (1) Distance extrapolation factor = 40 log (specific distance / test distance) (dB).
- (2) Limit line = specific limits (dBuV) + distance extrapolation factor.

4.7 TEST RESULT - 30 MHz TO 1000 MHz

Please refer to the APPENDIX C.

4.8 TEST RESULT - ABOVE 1000 MHz

Please refer to the APPENDIX D.

Remark:

(1) No limit: This is fundamental signal, the judgment is not applicable. For fundamental signal judgment was referred to Peak output test.



5. BANDWIDTH

5.1 LIMIT

Section	Test Item	Limit	
FCC 15.247(a)(2)	6 dB Bandwidth	>= 500 kHz	
	99% Emission Bandwidth	-	

5.2 TEST PROCEDURE

- a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.
- b. The following table is the setting of the spectrum analyzer:

For 6 dB Bandwidth:

Spectrum Parameters	Setting		
Span Frequency	> Measurement Bandwidth		
RBW	100 kHz		
VBW	300 kHz		
Detector	Peak		
Trace	Max Hold		
Sweep Time	Auto		

For 99% Emission Bandwidth:

Spectrum Parameters	Setting		
Span Frequency	Between 1.5 times and 5.0 times the OBW		
RBW	30 kHz		
VBW	100 kHz		
Detector	Peak		
Trace	Max Hold		
Sweep Time	Auto		

5.3 DEVIATION FROM STANDARD

No deviation.

5.4 TEST SETUP



5.5 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

5.6 TEST RESULTS

Please refer to the APPENDIX E.



6. MAXIMUM OUTPUT POWER

6.1 LIMIT

Section	Test Item	Limit	
FCC 15.247(b)(3)	Maximum Output Power	1.0000 watt or 30.00 dBm	

6.2 TEST PROCEDURE

- a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.
- b. The following table is the setting of the spectrum analyzer:

Spectrum Parameters	Setting		
Span Frequency	≥ 3×RBW		
RBW	3 MHz		
VBW	3 MHz		
Detector	Peak		
Trace	Max Hold		
Sweep Time	Auto		

6.3 DEVIATION FROM STANDARD

No deviation.

6.4 TEST SETUP



6.5 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

6.6 TEST RESULTS

Please refer to the APPENDIX F.





7. CONDUCTED SPURIOUS EMISSION

7.1 LIMIT

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak Output Power limits. If the transmitter complies with the Output Power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required.

7.2 TEST PROCEDURE

- a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.
- b. The following table is the setting of the spectrum analyzer:

Spectrum Parameters	Setting
Start Frequency	30 MHz
Stop Frequency	26.5 GHz
RBW	100 kHz
VBW	300 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

7.3 DEVIATION FROM STANDARD

No deviation.

7.4 TEST SETUP



7.5 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

7.6 TEST RESULTS

Please refer to the APPENDIX G.



8. POWER SPECTRAL DENSITY

8.1 LIMIT

Section	Test Item	Limit
FCC 15.247(e)	Power Spectral Density	8 dBm (in any 3 kHz)

8.2 TEST PROCEDURE

a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.

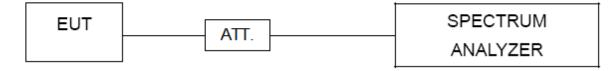
b. The following table is the setting of the spectrum analyzer:

Spectrum Parameters	Setting		
Span Frequency	2 MHz (1 Mbps) / 4 MHz (2 Mbps)		
RBW	3 kHz		
VBW	10 kHz		
Detector	Peak		
Trace	Max Hold		
Sweep Time	Auto		

8.3 DEVIATION FROM STANDARD

No deviation.

8.4 TEST SETUP



8.5 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

8.6 TEST RESULTS

Please refer to the APPENDIX H.



9. MEASUREMENT INSTRUMENTS LIST

	AC Power Line Conducted Emissions					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until	
1	Line Impedance Stabilisation Network	Schwarzbeck	NNLK 8121	8121-822	Mar. 20, 2022	
2	TWO-LINE V-NETWORK	R&S	ENV216	101340	Aug. 23, 2022	
3	Test Cable	emci	EMCRG400-BM-N M-10000	170628	April. 11, 2022	
4	EMI Test Receiver	R&S	ESCI	100082	Mar. 21, 2022	
5	50Ω Terminator	SHX	TF2-1G-A	17051602	Mar. 20, 2022	
6	50Ω coaxial switch	Anritsu	MP59B	6201750902	Mar. 21, 2022	
7	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A	

	Radiated Emissions - 9 kHz to 30 MHz								
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until				
1	Loop Antenna EMCI		EMCI LPA600	275	May. 20, 2022				
2	MXE EMI Receiver	Keysight	N9038A	MY56400088	Mar. 21, 2022				
3	Measurement Software Farad		EZ-EMC N/A Ver.NB-03A1-01		N/A				

	Radiated Emissions - 30 MHz to 1 GHz								
Item	N Kind of Equipment Manufacturer		Type No.	Serial No.	Calibrated until				
1	TRILOG Broadband Antenna	Schwarzbeck	VULB 9160	9160-3233	Mar. 26, 2022				
2	Pre-Amplifier	emci	EMC9135	980401	Mar. 20, 2022				
3	MXE EMI Receiver	Keysight	N9038A	MY56400088	Mar. 21, 2022				
4	Test Cable	emci	EMC104-SM-SM-7 000	181020	Apr. 11, 2022				
5	Test Cable	emci	EMC104-SM-SM-2 500	170618	Apr. 11, 2022				
6	Test Cable emci		EMC104-SM-SM-8 00	170647	Apr. 11, 2022				
7	Measurement Software Farad		EZ-EMC Ver.NB-03A1-01	N/A	N/A				



Radiated Emissions - Above 1 GHz								
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until			
1	Double Ridged Broadband Horn Antenna	Schwarzbeck	BBHA 9120D	9120D-1817	Mar. 26, 2022			
2	Pre-Amplifier	emci	EMC051845SE	980725	Aug. 23, 2022			
3	EXA Spectrum Analyzer	Keysight	N9010A	MY56480579	Mar. 21, 2022			
4	Test Cable emci		EMC104-SM-SM-7 000	181020	Apr. 11, 2022			
5	Test Cable	Test Cable emci		170618	Apr. 11, 2022			
6	Test Cable	emci	EMC104-SM-SM-8 00	170647	Apr. 11, 2022			
7	Double-Ridged Waveguide Horn Antenna	ETS-Lindgren	3116C	00203919	May 19, 2022			
8	Pre-Amplifier	emci	EMC184045B	980265	Apr. 11, 2022			
9	Test Cable	emci	EMC102-SM-SM-8 00	170335	Apr. 11, 2022			
10	Test Cable	Test Cable emci		170627	Apr. 11, 2022			
11	MXE EMI Receiver	Keysight	N9038A	MY5640088	Mar. 21, 2022			
12	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A			

Bandwidth							
Item	Item Kind of Equipment Manufacturer Type No. Serial No. Calibi						
1	Spectrum Analyzer	R&S	FSP40	100626	May 29, 2022		
2	Attenuator	JUK	ATT-2W6G-S-10	N/A	N/A		

	Maximum Output Power								
Item	Kind of Equipment	Serial No.	Calibrated until						
1	Peak Power Analyze	Keysight	8990B	MY51000507	Mar. 21, 2022				
2	Wideband Power Sensor	Keysight	N1923A	MY58310003	Mar. 21, 2022				
3	Attenuator	JUK	ATT-2W6G-S-10	N/A	N/A				

	Antenna Conducted Spurious Emissions								
Item Kind of Equipment Manufacturer Type No. Serial No. Calibr									
1	Spectrum Analyzer	R&S	FSP40	100626	May 29, 2022				
2	2 Attenuator JUK		ATT-2W6G-S-10	N/A	N/A				

	Power Spectral Density								
Item	Item Kind of Equipment Manufacturer Type No. Serial No. Calibra								
1	Spectrum Analyzer R&S		FSP40	100626	May 29, 2022				
2	Attenuator JUK		ATT-2W6G-S-10	N/A	N/A				

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

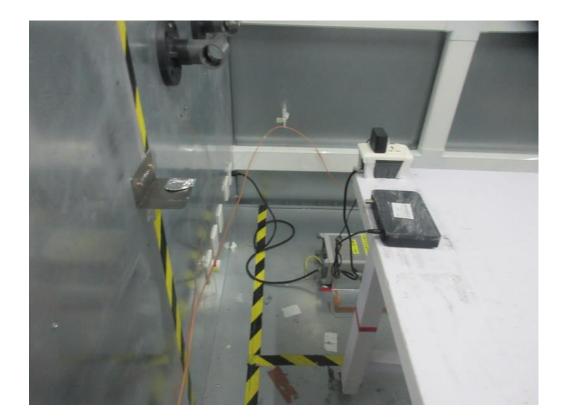
All calibration period of equipment list is one year.

10. EUT TEST PHOTO

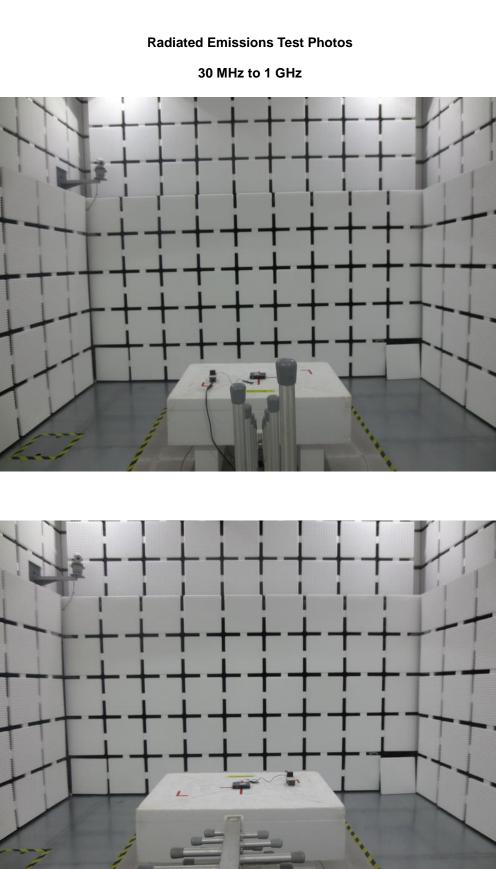
BIL





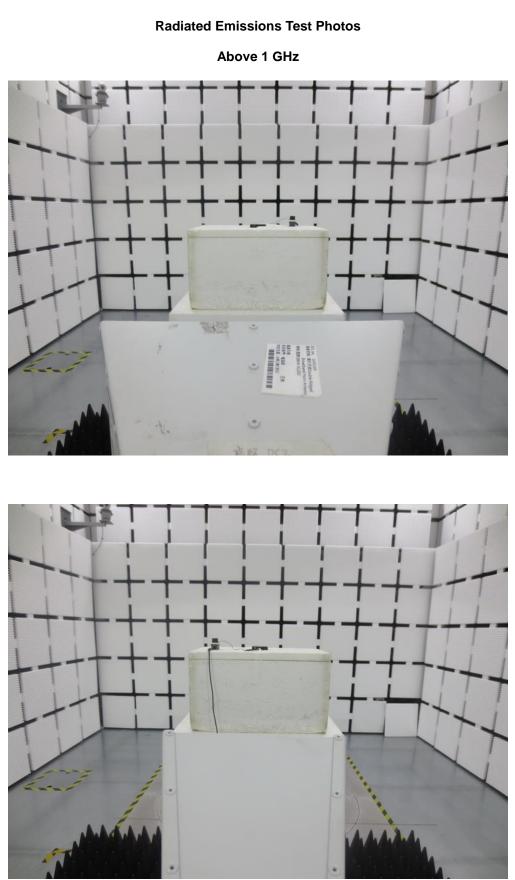










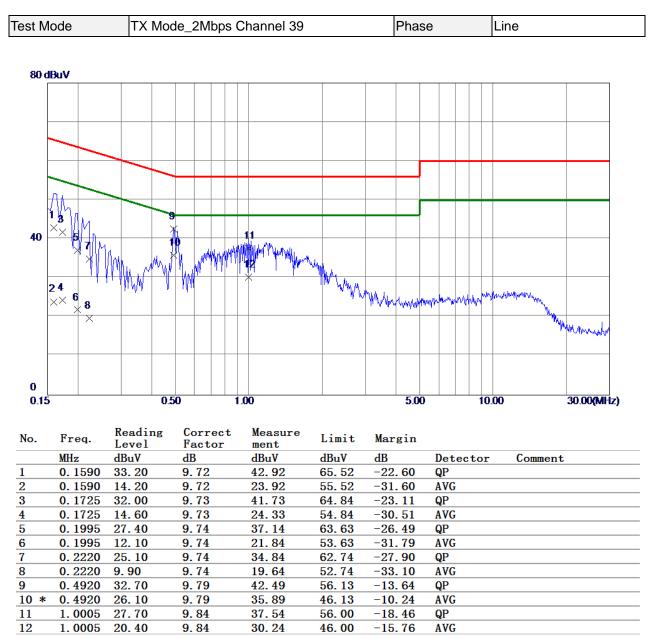




APPENDIX A - AC POWER LINE CONDUCTED EMISSIONS

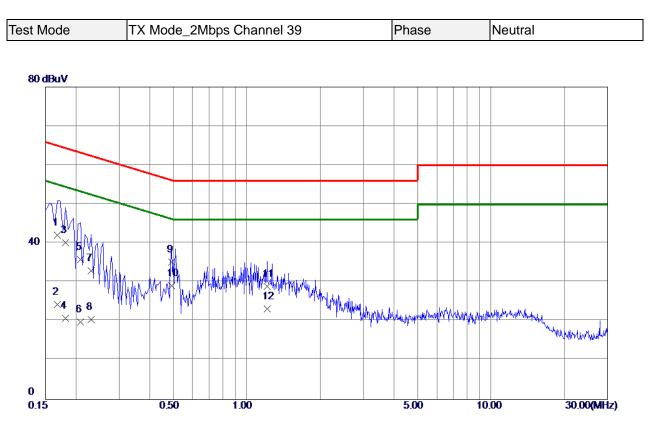


MTK7661



- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value Limit Value.

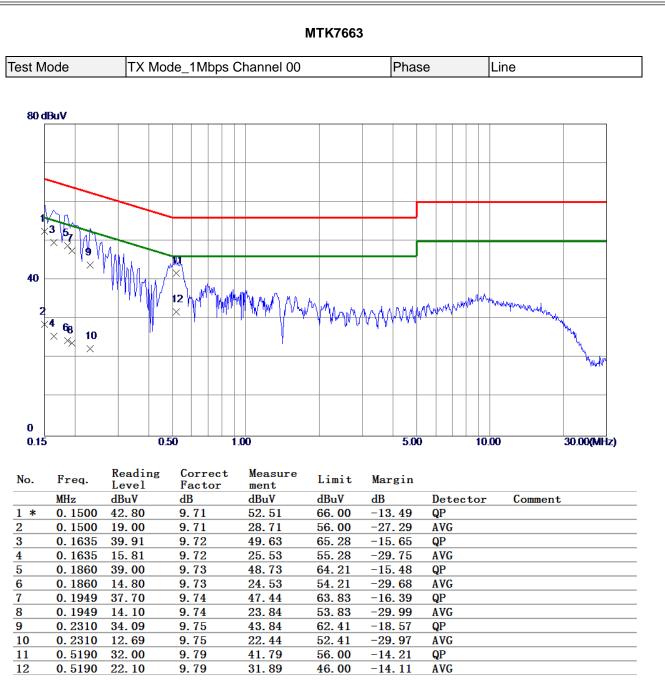




No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	0.1680	32.41	9.69	42.10	65. 0 6	-22. 96	QP	
2	0.1680	14.61	9.69	24.30	55 . 06	-30.76	AVG	
3	0.1815	30.50	9.70	40.20	64.42	-24.22	QP	
4	0.1815	11.10	9.70	20.80	54.42	-33. 62	AVG	
5	0.2085	26.20	9.71	35.91	63.26	-27.35	QP	
6	0.2085	10.10	9.71	19.81	53.26	-33. 45	AVG	
7	0.2310	23.29	9.72	33.01	62.41	-29.40	QP	
8	0.2310	10.79	9.72	20.51	52.41	-31. 90	AVG	
9	0.4920	25.50	9.77	35.27	56.13	-2 0. 86	QP	
10 *	0.4920	19.30	9.77	29.07	46.13	-17.06	AVG	
11	1.2120	19.20	9.83	29.03	56. 00	-26. 97	QP	
12	1.2120	13. 30	9.83	23.13	46.00	-22.87	AVG	

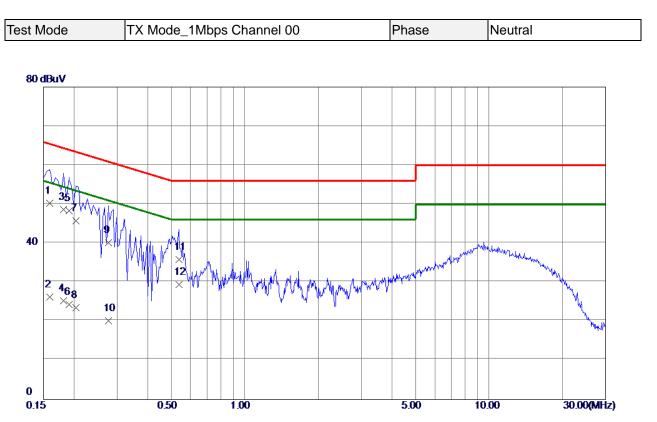
- Measurement Value = Reading Level + Correct Factor.
 Margin Level = Measurement Value Limit Value.

BIL



- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value Limit Value.





No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1 *	0.1590	40.50	9.69	50.19	65.52	-15.33	QP	
2	0.1590	16.50	9.69	26.19	55.52	-29.33	AVG	
3	0. 1815	39.00	9.70	48.70	64.42	-15.72	QP	
4	0 . 1815	15. 60	9.70	25.30	54.42	-29.12	AVG	
5	0.1905	38.60	9.71	48.31	64.01	-15. 70	QP	
6	0.1905	14.60	9.71	24.31	54.01	-29.70	AVG	
7	0.2040	36.00	9.71	45.71	63.45	-17.74	QP	
8	0.2040	13.80	9.71	23.51	53.45	-29.94	AVG	
9	0.2760	30.40	9.73	40.13	60.94	-2 0. 81	QP	
10	0.2760	10.40	9.73	20.13	50.94	-30.81	AVG	
11	0.5370	26.10	9.78	35.88	56. 00	-20.12	QP	
12	0. 5370	19.60	9.78	29.38	46.00	-16.62	AVG	

- Measurement Value = Reading Level + Correct Factor.
 Margin Level = Measurement Value Limit Value.



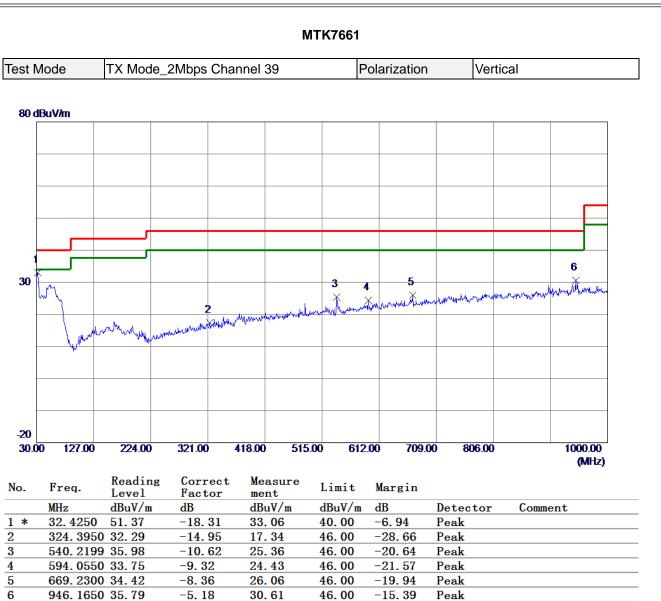
APPENDIX B - RADIATED EMISSION - 9 KHZ TO 30 MHZ

Note: The measured value have enough margin over 20dB than the limit, therefore they are not reported.



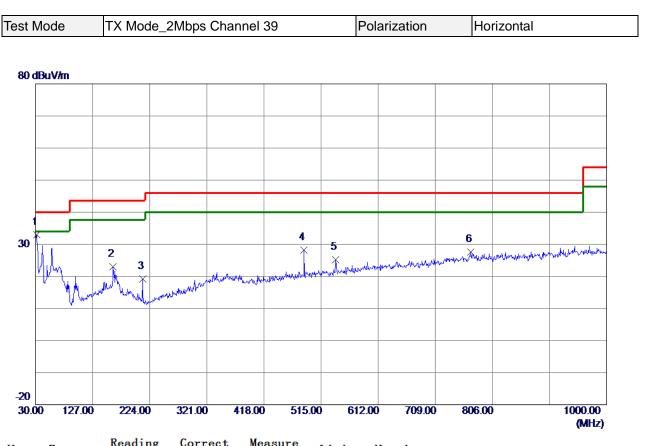
APPENDIX C - RADIATED EMISSION - 30 MHZ TO 1000 MHZ





- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value Limit Value.

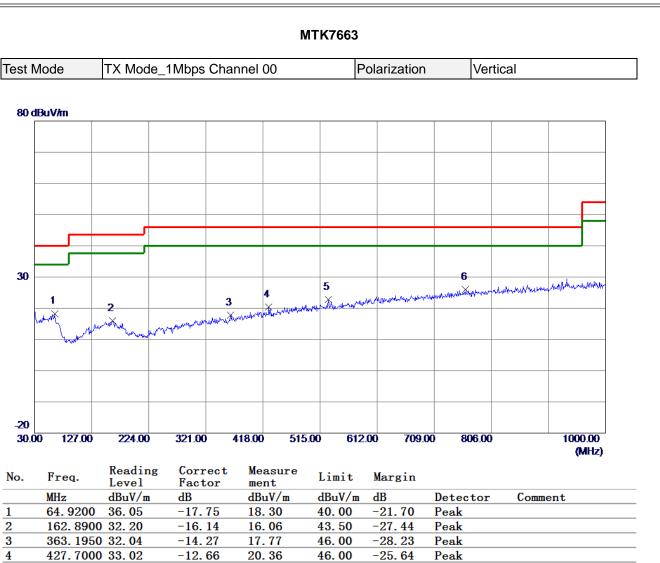




No.	Freq.	Level	Factor	measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	31.9400	51.39	-18.34	33.0 5	40.00	- 6. 9 5	Peak	
2	161.9200	39.04	-16.11	22.93	43.50	-20. 57	Peak	
3	211.8750	38.50	-19.36	19.14	43.50	-24.36	Peak	
4	485. 9000	39.54	-11.43	28.11	46.00	-17.89	Peak	
5	540.2199	35.84	-10.62	25.22	46.00	-20.78	Peak	
6	769.6250	34.51	-6.90	27.61	46.00	-18.39	Peak	

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value Limit Value.





46. 00

46.00

-23.12

-20.03

Peak

Peak

REMARKS:

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6 *

528. 5800 33. 67

762.3500 32.96

(1) Measurement Value = Reading Level + Correct Factor.

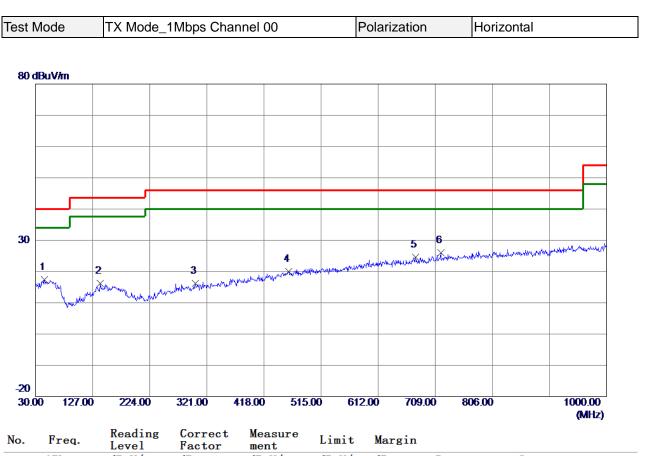
-10.79

-6.99

22.88

25.97





	-	Level	ractor	ment		-		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	45. 5200	34.27	-16.88	17.39	40.00	-22.61	Peak	
2	140.0950	32.95	-16.80	16.15	43.50	-27.35	Peak	
3	302.0850	31.79	-15.59	16.20	46.00	-29.80	Peak	
4	459.7100	31.62	-11.71	19.91	46.00	-26.09	Peak	
5	675. 5349	32.98	-8.30	24.68	46.00	-21.32	Peak	
6 *	718.2150	33.63	-7.72	25.91	46.00	-20.09	Peak	

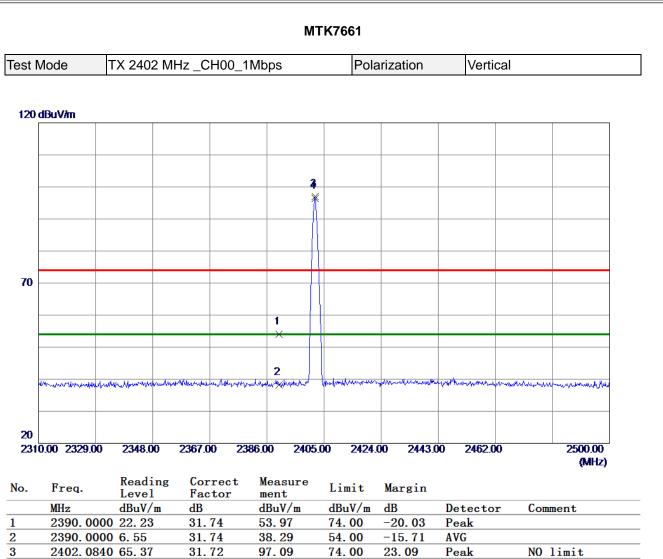
- (1) Measurement Value = Reading Level + Correct Factor.(2) Margin Level = Measurement Value Limit Value.





APPENDIX D - RADIATED EMISSION - ABOVE 1000 MHZ





4 *

2402.0840 64.66

(1) Measurement Value = Reading Level + Correct Factor.

31.72

96.38

54.00

42.38

AVG

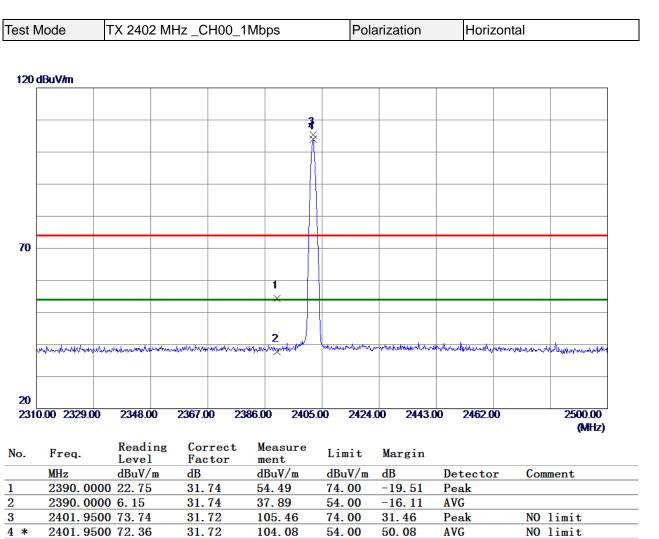
NO limit



est N	Node	TX 2402 M	Hz _CH00_1	Mbps	Pola	arization	Vertical	
6.9 d l	BuV/m				1		1	
ŀ								
-								
		1						
		X						
ł								
13.1	0.00 3550.00	6100.00	8650.00 11	200.00 1375	0.00 1630	0.00 18850).00 21400.00	26500.00
1000		0100.00	000000	200.00 1010	1000		21100.00	(MHz)
lo.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
*	4804.000	0 52.98	-17.01	35. 97	74.00	-38.03	Peak	

- (1) Measurement Value = Reading Level + Correct Factor.
 (2) Margin Level = Measurement Value Limit Value.





- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value Limit Value.



est I	Mode	TX 2402 M	Hz _CH00_1	Mbps	Pola	arization	Horizont	al
6.9 d	lBuV/m							
		1 ×						
13.1	0.00 3550.00	6100.00	8650.00 11	200.00 1375	0.00 1630	0.00 18850	.00 21400.00	26500.00
	0.00 0000.00	0100.00		200.00 1010	0.00 1000		21100.00	(MHz)
r_	R	Reading	Correct	Measure	Limit	W:		
lo.	Freq.	Level	Factor	ment		Margin		
*	MHz 4804.000	dBuV/m	<u>dB</u> -17.01	dBuV/m 34.84	dBuV/m 74.00	dB -39.16	Detector Peak	Comment
· •	4004.000	0 91.09	-17.01	J4. 04	14.00	-39.10	геак	

- (1) Measurement Value = Reading Level + Correct Factor.
 (2) Margin Level = Measurement Value Limit Value.



Test N	Node	TX 2440 M	Hz _CH19_ [·]	1Mbps	Pola	arization	Vertical	
120	dBuV <i>i</i> m							
						×		
						+		
70						+		
				1				5
				~				
				2				6
	manenter	wanger and a south	mmunum	Mar Martin Martine	memberlenserseet	intronomial 1	when the way was a second of the second of t	home and the second and the second
20								
	0.00 2329.00	0 2348.00	2367.00 23	386.00 2405.	00 2424	.00 2443.0	0 2462.00	2500.00
								(MHz)
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		00 22.10	31.74	53.84	74.00	-20.16	Peak	
2 3	2390.00	00 7.45 00 64.91	31.74 31.72	39.19	54.00 74.00	-14.81 22.63	AVG Peak	NO limit
3 4 *		00 63.98	31.72	96.63 95.70	54.00	41.70	AVG	NO limit
-		00 00.00	01.72	55.10	74.00	10.05		III IIII

5

6

2483. 5000 22. 34

2483. 5000 6. 65

(1) Measurement Value = Reading Level + Correct Factor.

31.71

31.71

54. 05

38.36

74.00

54. **00**

-19.95

-15. 64

Peak

AVG



st N	lode	TX 2440 N	MHz_CH1	9_1Mbps		Pola	rization	Vert	ical	
6.9 dl	BuV/m									
Γ										
-										
-										
		1								
-										
13.1 1000	0.00 3550.00	6100.00	8650.00	11200.00	13750.00	16300	.00 18850	0.00 21400	100	26500.00
										(MHz)
No.	Freq.	Reading	g Correc		sure L	imit	Margin			
	MHz	Level dBuV/m	Factor dB	men dBu	τ	BuV/m	dB	Detecto	or or	Comment
*	4880.000		-16.90				-37.52	Peak		C C I I I C I I C I I C I I C I I C I I C I I C I I C I I C I I C I I C I I C I I C I I C I I C I I C I I C I

- (1) Measurement Value = Reading Level + Correct Factor.
 (2) Margin Level = Measurement Value Limit Value.



Test I	Node	TX 2440 MI	Hz_CH19_1	Mbps	Pola	arization	Horizon	tal
120	dBuV/m							
120								
						¥		
						1		
70								
				1				5
				X				X
				2				6
	Mylaphite and Market with the	moundation	monthe Antonia and	mar asperson and	mounderstand	networkshipped for	how we would be not	Manufal where she have been der
20								
231	0.00 2329.00	2348.00	2367.00 23	86.00 2405.	00 2424	.00 2443.	00 2462.00	2500.00 (MHz)
No.	France	Reading	Correct	Measure	Linit	Max-ir		
NO.	Freq.	Level	Factor	ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		00 23.86	31.74	55.60	74.00	-18.40	Peak	
2 3	2390.00		31.74	38.32	54.00	-15.68	AVG	NO 1:-:+
3 4 *		10 73.23	31.72	104.95	74.00	30.95	Peak AVG	NO limit NO limit
4*	2439.94	10 72.28	31.72	104.00	54.00	50.00	AVG	NU 11mit

5

6

2483. 5000 23. 40

2483. 5000 6. 72

(1) Measurement Value = Reading Level + Correct Factor.

31.71

31.71

55.11

38.43

74.00

54. **00**

-18.89

-15.57

Peak

AVG



est N	lode	TX 2440 M	Hz _CH19_1	Mbps	Pola	arization	Horizon	tal
36.9 di	BuV/m					1		
-								
_								
		1						
-		X						
-								
-								
13.1	0.00 3550.00	6100.00	8650.00 11	200.00 13750	0.00 1630	0.00 18850	.00 21400.00	26500.00
1000	100 300000	0100.00	0000.00	200.00 13750	0.00 1630	0.00 18800	21400.00	20500.00 (MHz)
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1 *	4880.000	0 54.34	-16. 90	37.44	74.00	-36.56	Peak	

- (1) Measurement Value = Reading Level + Correct Factor.
 (2) Margin Level = Measurement Value Limit Value.



Test N	t Mode TX 2480 MHz _CH39_1Mbps				Pola	arization	Vertica	al
120	dBuV/m							
70								
								3
								×
	المريكي المحادي المحادي المحاد ال	provident warment	another strange and the	maynamina	Man Arran Manusch	mathymatical	And the preservant from	4
20	0.00.0000.00	001000	0007.00 0	200.00 0405	00 0404	00 0140	0.00000	0500.00
231	0.00 2329.00) 2348.00	2367.00 2	386.00 2405	.00 2424	.00 2443.0	00 2462.00	2500.00 (MHz)
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		40 65.57 40 63.57	31.71 31.71	97.28 95.28	74.00 54.00	23.28 41.28	Peak AVG	NO limit NO limit
2 * 3		40 63.57 00 22.34	31.71	<u>95.28</u> 54.05	<u>54.00</u> 74.00	<u>41.28</u> -19.95	Peak	NU 11m1t
4	0400 50		01.71	00.40	54.00	15.00	AVO	

54.00

-15.60

AVG

REMARKS:

4

2483. 5000 6. 69

(1) Measurement Value = Reading Level + Correct Factor.

31.71

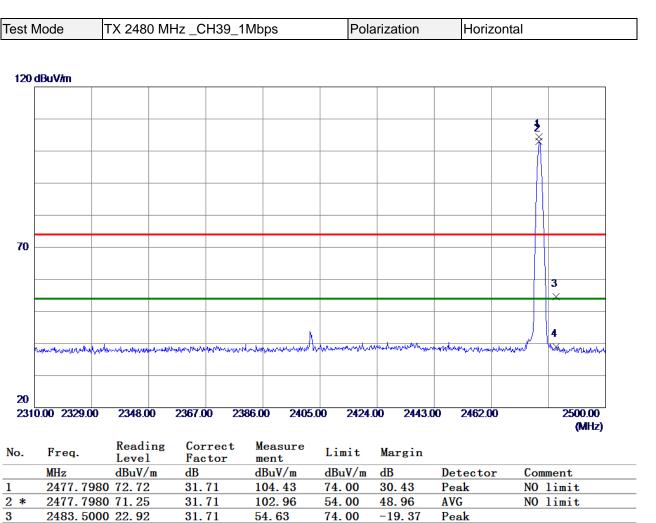
38.40



est N	lode	TX 2480 M	Hz _CH39_	_1Mbps	Pola	arization	Vertical	
6.9 d	BuV/m							
		1						
ł								
ŀ								
13.1								
1000	0.00 3550.00	6100.00	8650.00	1200.00 1375	50.00 1630	0.00 18850	0.00 21400.00	26500.00 (MHz)
lo.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m		Detector	Comment
*	4960.000	0 53.77	-16.63	37.14	74.00	-36.86	Peak	

- (1) Measurement Value = Reading Level + Correct Factor.
 (2) Margin Level = Measurement Value Limit Value.





 3
 2483.5000
 22.92
 31.71
 54.63
 74.00
 -19.37
 Peak

 4
 2483.5000
 7.25
 31.71
 38.96
 54.00
 -15.04
 AVG

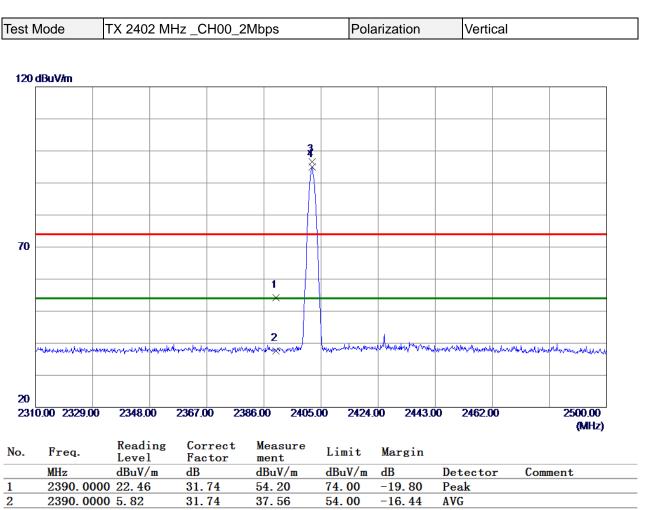
- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value Limit Value.



est N	lode	TX 2480 M	Hz _CH39_^	Mbps	Pola	arization	Horizont	al
6.9 dl	3uV/m							
ſ								
-								
		1 ————————————————————————————————————						
-								
13.1 1000	0.00 3550.00	6100.00	8650.00 11	200.00 1375	0.00 1630	0.00 18850).00 21400.00	26500.00
1000	100 3330.00	0100.00	0000.00 11	200.00 1515	0.00 1000	0.00 10000	21400.00	(MHz)
lo.	Freq.	Reading	Correct	Measure	Limit	Margin		
ιο.		Level	Factor	ment			D ()	<u> </u>
*	MHz 4960.000	<u>dBuV/m</u> 0 53 34	dB -16.63	dBuV/m 36.71	dBuV/m 74.00	<u>dB</u> −37.29	Detector Peak	Comment

- (1) Measurement Value = Reading Level + Correct Factor.
 (2) Margin Level = Measurement Value Limit Value.





2	2390.0000 5.82	31.74	37.56	54.00	-16.44	AVG	
3	2402.0169 64.92	31.72	96.64	74.00	22.64	Peak	NO limit
4 *	2402.0169 63.28	31.72	95.00	54.00	41.00	AVG	NO limit

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value Limit Value.



	1						
00 3550.00	6100.00	8650.00 11	1200.00 1375	0.00 1630	0.00 18850	00 21400.00	26500.00
	0100.00		1200.00 1010	0.00 1000			(MHz)
Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
MHz							Comment
	Freq. MHz	X 0 3550.00 6100.00 Freq. Reading Level	X 10 3550.00 6100.00 8650.00 1 Freq. Reading Correct Level Factor MHz dBuV/m dB	X X 10 3550.00 6100.00 8650.00 11200.00 1375 Freq. Reading Level Factor MHz dBuV/m	X Image: Contract of the state	X Image: Contract Measure Limit Margin MHz Image: Contract Measure Limit Ma	X Image: Content of the state

- (1) Measurement Value = Reading Level + Correct Factor.
 (2) Margin Level = Measurement Value Limit Value.



NO limit

Test N	Node	TX 2402 M	Hz _CH00_2	2Mbps	Pola	arization	Horizon	ital
120	dBuV/m							
					a			
					3 4 *			
					X			
					(1)			
70								
				1				
				- X				
				2				
	whentyten white	montenserver	water the and the second states and the second s		Wanness (AMM	er www.	and more thank the	multiperson polymour
20								
231	0.00 2329.0	0 2348.00	2367.00 23	86.00 240	5.00 2424	.00 2443.	00 2462.00	2500.00
								(MHz)
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
L		00 22.07	31.74	53.81	74.00	-20.19	Peak	
1 2 3	2390.00		31.74	38.31	54.00	-15.69	AVG Peak	NO limit
) • ••		20 73.51	31.72	105.23	74.00	31.23	Peak	NO limit

REMARKS:

4 *

2401. 9220 70. 30

(1) Measurement Value = Reading Level + Correct Factor.

31.72

102.02

54. **00**

48.02

AVG



Test N	lodo	TX 2402 M	/Hz_CH00	2Mbps	Pol	arization	Horizont	
iest iv	noue	17 2402 1		_210005	F OI	anzalion	1101120111	ai
86.9 dl T	BuV/m							
-								
[3					
-		1	2 >	<				
		×	×					
-								
-								
-								
-								
-13.1								
	0.00 3550.00	6100.00	8650.00	11200.00 137	50.00 1630	0.00 18850	.00 21400.00	26500.00
		0100.00	0000.00	11200.00 101		0.00 10000	21100.00	(MHz)
		Reading	Correc	t Measure				
No.	Freq.	Level	Factor	ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	4804.000		-17.01	40.25	74.00	-33.75	Peak	
2	7207.975		-12.90	43.23	74.00	-30.77	Peak	
3*	9607.525	50 57.65	-10.71	46.94	74.00	-27.06	Peak	

- Measurement Value = Reading Level + Correct Factor.
 Margin Level = Measurement Value Limit Value.



Node	TX 2440 M	Hz _CH19_	2Mbps	Pola	arization	Vertic	al	
dBuV <i>i</i> m								
					3			
					4			
					+			
					\parallel \parallel			
			1					5
			X					×
			2					6
manuthant	nonnonnon	manhousedenterstanting		www.www.www.www.	wowwww	hallow more thank	manpagementer	
0.00 2329.00	0 2348.00	2367.00 2	2386.00 2405.	00 2424	.00 2443.0	00 2462.00	I	2500.00
								(MHz)
Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin			
MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Сот	ment
					-19.13			
							NO	limit
	40 62.82	31.72	94.54	54.00	40. 54	AVG		limit
	dBuV/m 0.00 2329.00 Freq. MHz 2390.00 2390.00	dBuV/m dBuV/m	dBuV/m dBuV/m D.00 2329.00 2348.00 2367.00 2 Freq. Reading Correct Freq. Reading Correct Freq. Reading Correct MHz dBuV/m dB 2390.0000 23.13 31.74	dBuV/m dBuV/m 1 1 1 2 1 1	dBuV/m dBuV/m	dBuV/m dBuV/m 1 2 1 2	dBuV/m dBuV/m 1 2 1 2 1 2 1 2	dBuV/m dBuV/m 1

5

6

2483. 5000 22. 44

2483. 5000 6. 29

(1) Measurement Value = Reading Level + Correct Factor.

31.71

31.71

54.15

38.00

74.00

54. **00**

-19.85

-16.00

Peak

AVG



est N	Node	TX 2440 M	Hz _CH19_2	2Mbps	Pola	arization	Vertical	
6.9 d	BuV/m							
		1 ————————————————————————————————————						
13.1								
	0.00 3550.00	6100.00	8650.00 11	1200.00 13750	0.00 1630	0.00 18850	0.00 21400.00	26500.00 (MHz)
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m		Detector	Comment
*	4880.000	00 53.60	-16. 90	36.70	74.00	-37.30	Peak	

- (1) Measurement Value = Reading Level + Correct Factor.
 (2) Margin Level = Measurement Value Limit Value.



Test N	Vode	TX 2440 MI	Hz _CH19_2	Mbps	Pola	arization	Horizor	ital
120	dBuV/m							
						34		
						X		
70								
~~								
				1				5
				×		+ + +		×
				2				e
	multipotentities	un manager and the	mon de antide antide antide	untransformer and	websternet where the a	www.asht	Muchannan	when when you when the same
20								
231	0.00 2329.00	2348.00	2367.00 23	86.00 2405.	.00 2424.	.00 2443	.00 2462.00	2500.00 (MHz)
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
		00 21.70	31.74	53.44	74.00	-20.56	Peak	
2	2390.00		31.74	37.61	54.00	-16. 39	AVG	
3		80 73.40	31.72	105.12	74.00	31.12	Peak	NO limit
1 *	2440.008	80 71.32	31.72	103.04	54.00	49.04	AVG	NO limit

5

6

2483. 5000 21. 86

2483. 5000 4. 99

(1) Measurement Value = Reading Level + Correct Factor.

31.71

31.71

53. 57

36.70

74.00

54. **00**

-20.43

-17.30

Peak

AVG



est M	ode	TX 2440 M	Hz _CH19_2	2Mbps	Pola	arization	Horizont	al
6.9 dE	uV/m							
Γ								
-								
-								
-		1						
		×						
13.1	.00 3550.00	6100.00	8650.00 11	200.00 1375	0.00 1630	0.00 18850	0.00 21400.00	26500.00
1000		0100.00	0000.00	1200.00 1515	0.00 1000	0.00 100.00	214030	(MHz)
-	-	Reading	Correct	Measure				
lo.	Freq.	Level	Factor	ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
*	4879.825	0 58.71	-16. 90	41.81	74.00	-32.19	Peak	

- (1) Measurement Value = Reading Level + Correct Factor.
 (2) Margin Level = Measurement Value Limit Value.



Test	Mode	TX 2480 M	Hz _CH39_	2Mbns	Pol	arization	Vertical		
1001	nouo		0.100_	Linopo	1.01		Ventioal		
	IS 14								
120	dBuV/m								
								1	
								2	
70									
									3
									×
					the true to a shire b	104-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-	Holer Underson and the second		4
	when white a state of the state	a have a second and the second	ለ _{ተ-} በ፦-ግምጎ _ጉ ለዋገዙባ ስ ለሌሎሌስ	olymolyn laeren i dwerten i draeth	anter and a second s	ah da mada marking kan bawa	anter and the start of the star	and when	how have been been and have been been been been been been been be
20									
231	0.00 2329.00	0 2348.00	2367.00 2	386.00 2403	5.00 2424.	.00 2443.	00 2462.00		2500.00
									(MHz)
lo.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin			
	MHz	dBuV/m	<u>dB</u>	dBuV/m	dBuV/m	dB	Detector		ment
l 2 *		30 65.96 30 62.71	31.71 31.71	97.67 94.42	74.00 54.00	23.67 40.42	Peak AVG		limit limit
<u>2</u> ~ 3		00 22. 54	31.71	54.25	74.00	-19.75	Peak	NU	TIMIC
	0400 50		01 71	07.40	54.00	10.50	100		

3 4

2483. 5000 5. 77

(1) Measurement Value = Reading Level + Correct Factor.

31.71

37.48

54.00

-16. 52

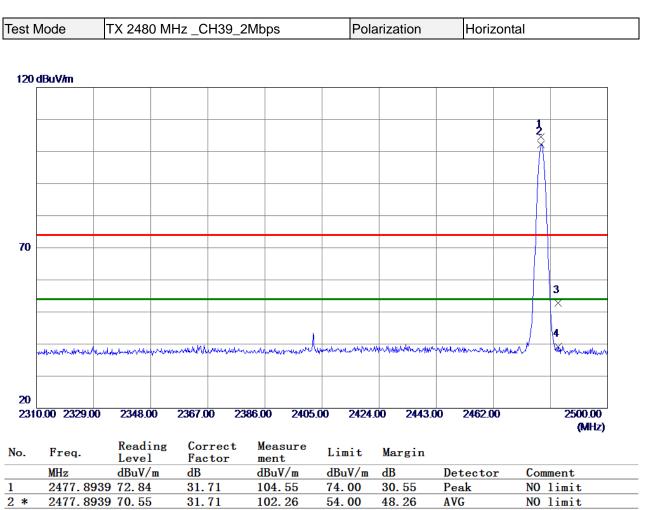
AVG



est N	Node	TX 2480 M	Hz _CH39_2	2Mbps	Pola	arization	Vertical	
6.9 d	BuV/m							
		1 						
3.1								
	0.00 3550.00	6100.00	8650.00 11	1200.00 1375	0.00 1630	0.00 18850	0.00 21400.00	26500.00
								(MHz)
о.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
*	4960.000	0 53.65	-16.63	37.02	74.00	-36.98	Peak	

- (1) Measurement Value = Reading Level + Correct Factor.
 (2) Margin Level = Measurement Value Limit Value.





 2 *
 2477.8939 70.55
 31.71
 102.26
 54.00
 48.26
 AVG
 NO limit

 3
 2483.5000 21.00
 31.71
 52.71
 74.00
 -21.29
 Peak

 4
 2483.5000 7.44
 31.71
 39.15
 54.00
 -14.85
 AVG

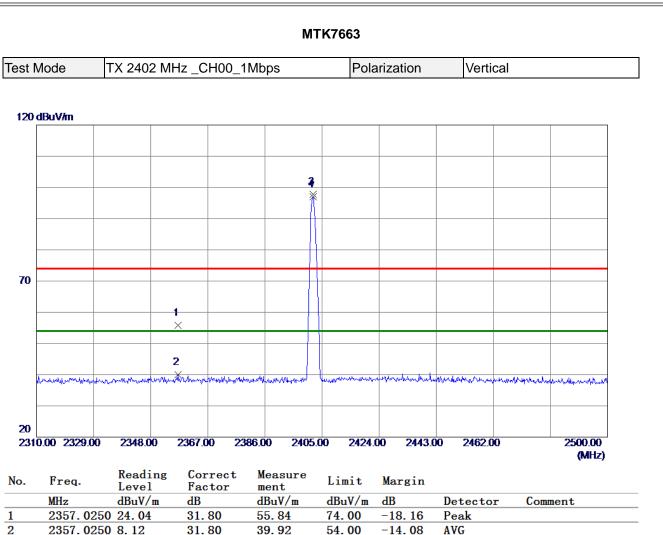
- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value Limit Value.



est Mode	1	TX 2480 N	MHz _CH39_	_2Mbps	Pol	arization	al	
6.9 dBuV/m	<u> </u>							
			3	L				
		-1		, 				
		×	×					
3.1 1000.00 3	550.00	6100.00	8650.00	11200.00 1375	0.00 1630	0.00 18850	0.00 21400.00	26500.00
1000.00		0100.00	0000.00	11200.00 1513	0.00 1000	0.00 10000	21400.00	(MHz)
		Reading	g Correct	Measure				
o. Fre	eq.	Level	Factor	ment	Limit	Margin		
MH2		dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
	6. 3250		-16.65	42.11	74.00	-31.89	Peak	
	8. 1500		-12.78	42.13	74.00	-31.87	Peak	
* 991	2. 2500	57.36	-10. 20	47.16	74.00	-26.84	Peak	

- Measurement Value = Reading Level + Correct Factor.
 Margin Level = Measurement Value Limit Value.





74.00

54.00

23.78

42.98

Peak

AVG

NO Limit

NO Limit

REMARKS:

3

4 *

2401.9600 66.06

2401.9600 65.26

(1) Measurement Value = Reading Level + Correct Factor.

31.72

31.72

97.78

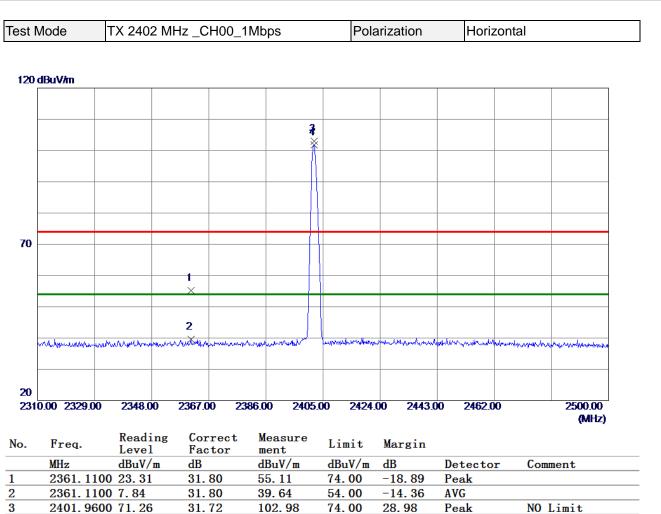
96.98





- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value Limit Value.





54.00

101.83

47.83

AVG

NO Limit

REMARKS:

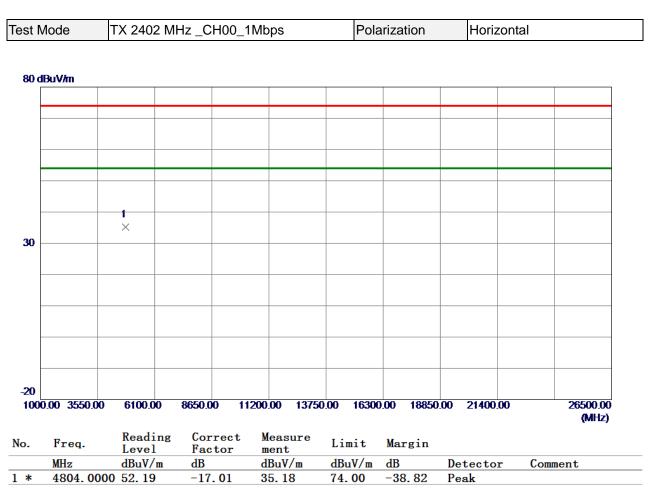
4 *

2401.9600 70.11

(1) Measurement Value = Reading Level + Correct Factor.

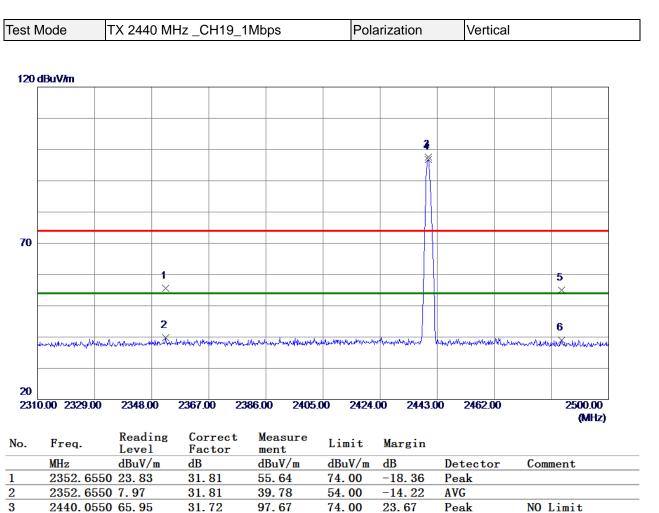
31.72





- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value Limit Value.





54.00

74.00

54.00

42.86

-18.95

-14.91

AVG

Peak

AVG

NO Limit

REMARKS:

4 *

5

6

2440.0550 65.14

2484. 3250 23. 34

2484.3250 7.38

(1) Measurement Value = Reading Level + Correct Factor.

31.72

31.71

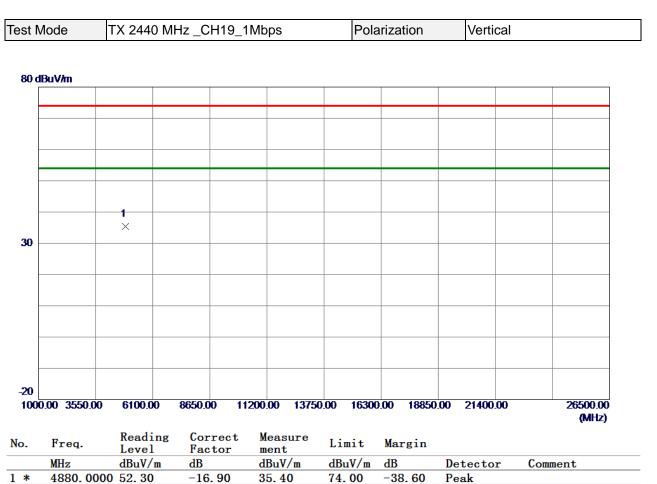
31.71

96.86

55. 05

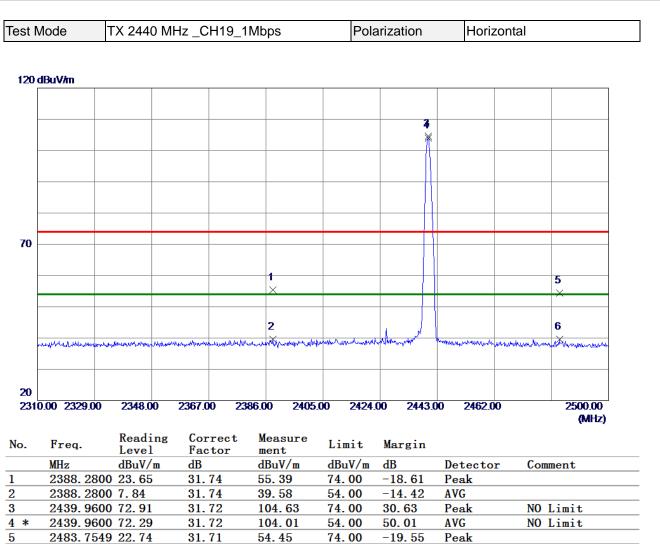
39.09





- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value Limit Value.





39.56

54.00

31.71

AVG

-14.44

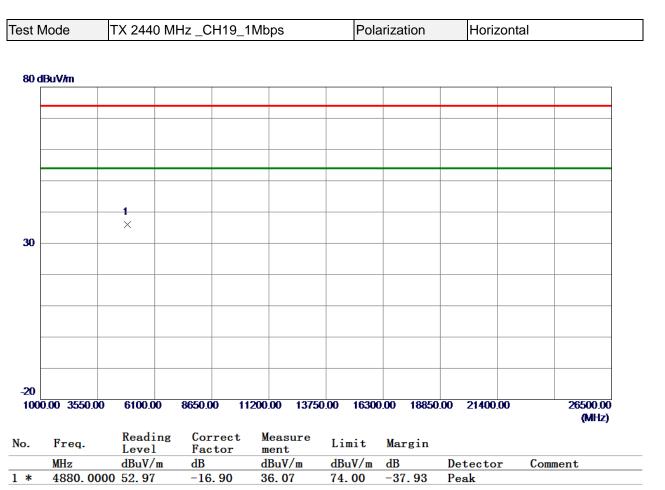
REMARKS:

6

2483.7549 7.85

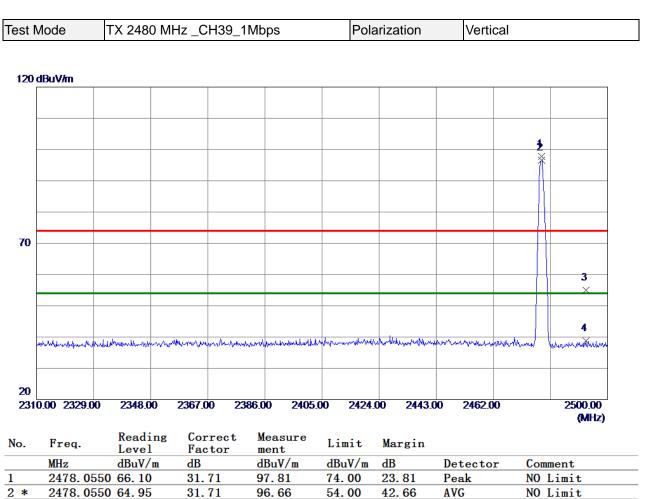
- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value Limit Value.





- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value Limit Value.





54.00

-18.92

-15.23

Peak

AVG

REMARKS:

3

4

2492.7800 23.37

2492.7800 7.06

(1) Measurement Value = Reading Level + Correct Factor.

31.71

31.71

55. **0**8

38.77

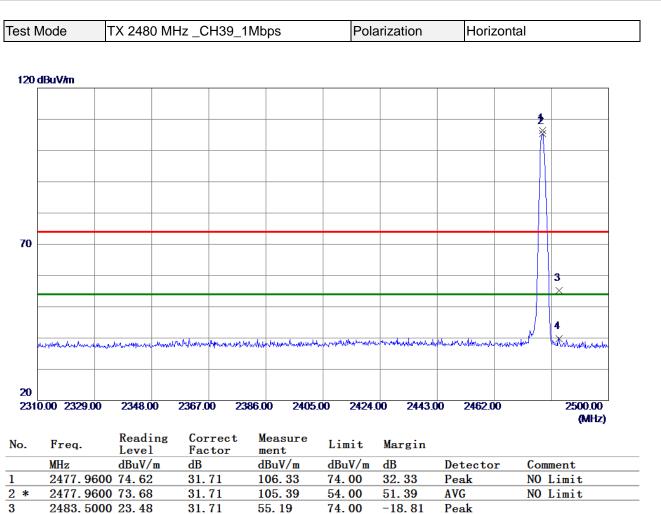
(2) Margin Level = Measurement Value - Limit Value.





- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value Limit Value.





AVG

-14.29

39.71

31.71

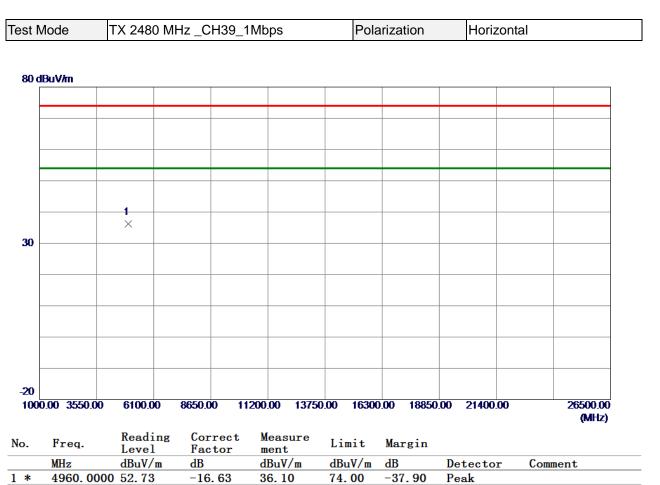
REMARKS:

4

2483. 5000 8. 00

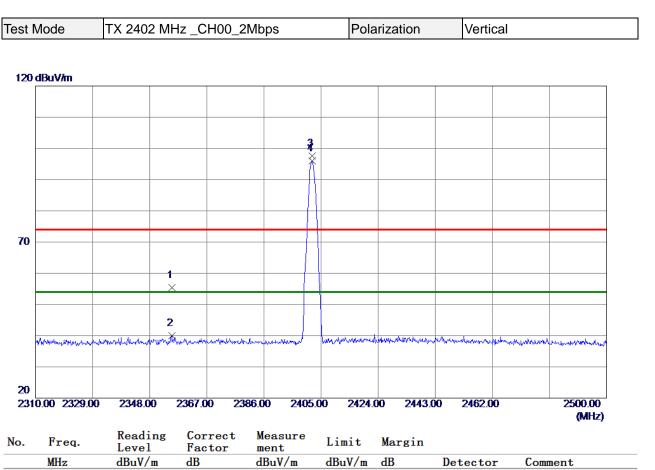
- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value Limit Value.





- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value Limit Value.

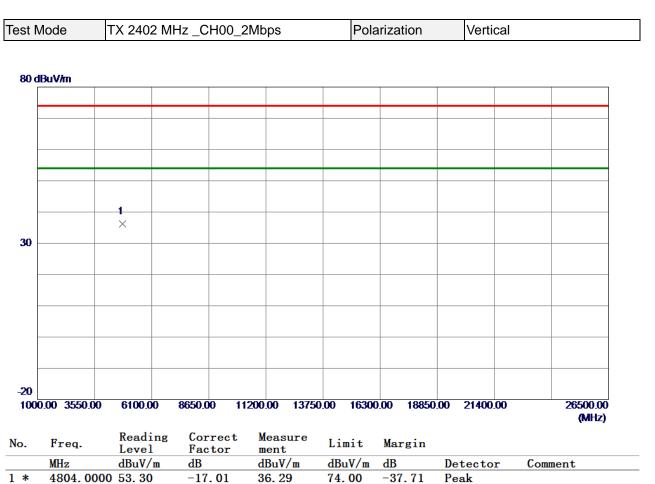




	MHz	dBuV/m	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	2355. 3150	23.66	31.81	55.47	74.00	-18.53	Peak	
2	2355. 3150	8.27	31.81	40.08	54.00	-13. 92	AVG	
3	2402.0550	65.86	31.72	97.58	74.00	23.58	Peak	NO Limit
4 *	2402.0550	64.20	31.72	95.92	54.00	41.92	AVG	NO Limit

Measurement Value = Reading Level + Correct Factor.
 Margin Level = Measurement Value - Limit Value.





- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value Limit Value.



Test I	Node	TX 2402 M	Hz_CH00_2	2Mbps	Pola	arization	Horizont	tal
120	dBuV/m							
				3				
				3				
70								
			×					
		and and a stand of the second stand of the sec	2		The the sector sector sec	b 0 . 4 . 4 4 4		ware here the state of the
	nmanyilaanadaddahah	and the area and the second and the second and the second s	and the second second		and adding the design of		ann an ann ann an air ann ann ann ann ann ann ann ann ann an	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
20								
231	0.00 2329.0	0 2348.00	2367.00 2	386.00 2405.	00 2424.	.00 2443.0	0 2462.00	2500.00 (MHz)
No.	Freq.	Reading Level	Correct Factor	Measure ment	Limit	Margin		
1	MHz	dBuV/m	<u>dB</u>	dBuV/m	dBuV/m	dB	Detector	Comment
1 2		99 22.66 99 8.45	31.78 31.78	54.44 40.23	74.00 54.00	-19.56 -13.77	Peak AVG	

2 3

4 *

2402.0550 71.22

2402.0550 68.99

(1) Measurement Value = Reading Level + Correct Factor.(2) Margin Level = Measurement Value - Limit Value.

31.72

31.72

102.94

100.71

74.00

54. **00**

28.94

46.71

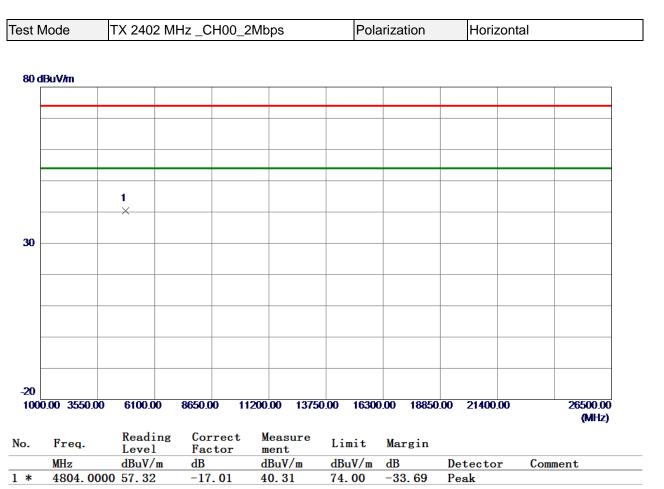
Peak

AVG

NO Limit

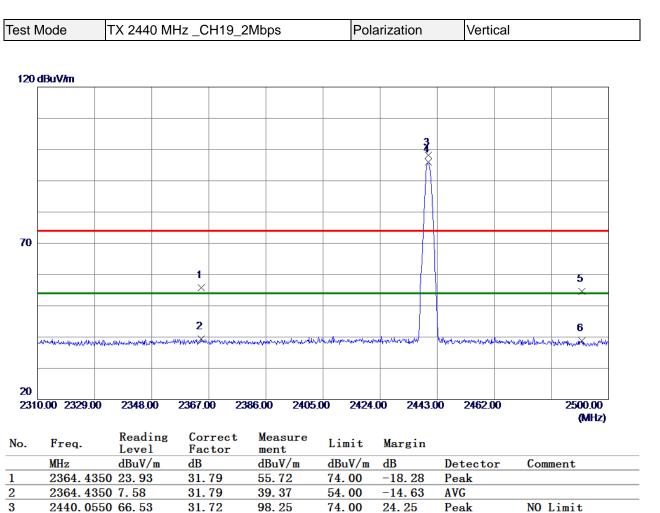
NO Limit





- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value Limit Value.





74.00

54.00

42.09

-19.41

-15.12

AVG

Peak

AVG

NO Limit

REMARKS:

4 *

5

6

2440.0550 64.37

2491.0700 22.88

2491.0700 7.17

(1) Measurement Value = Reading Level + Correct Factor.

31.72

31.71

31.71

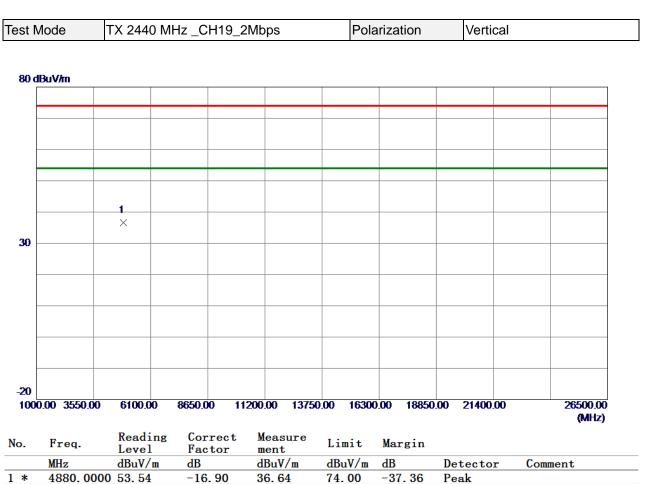
96.09

54.59

38.88

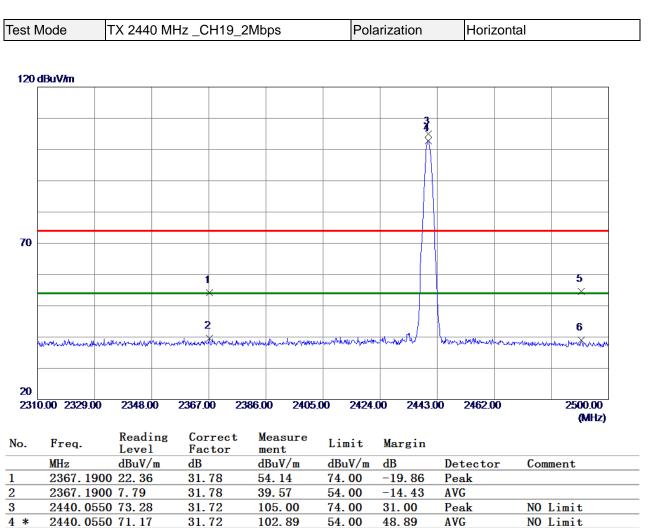
(2) Margin Level = Measurement Value - Limit Value.





- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value Limit Value.





54.00

-19.49

-14.93

Peak

AVG

REMARKS:

5

6

2490.9750 22.80

2490.9750 7.36

(1) Measurement Value = Reading Level + Correct Factor.

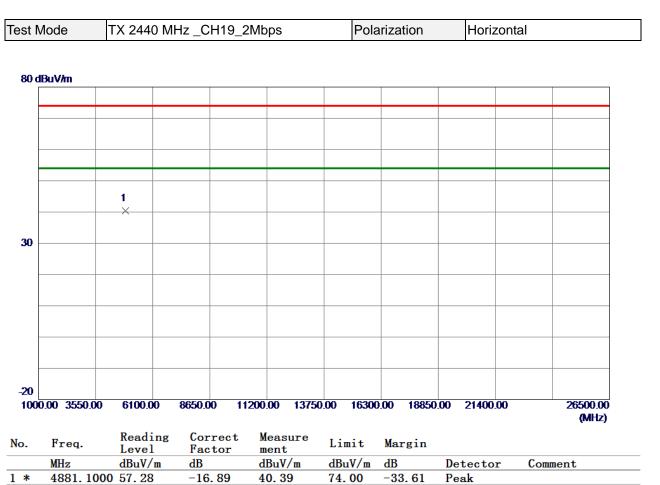
31.71

31.71

54.51 39.07

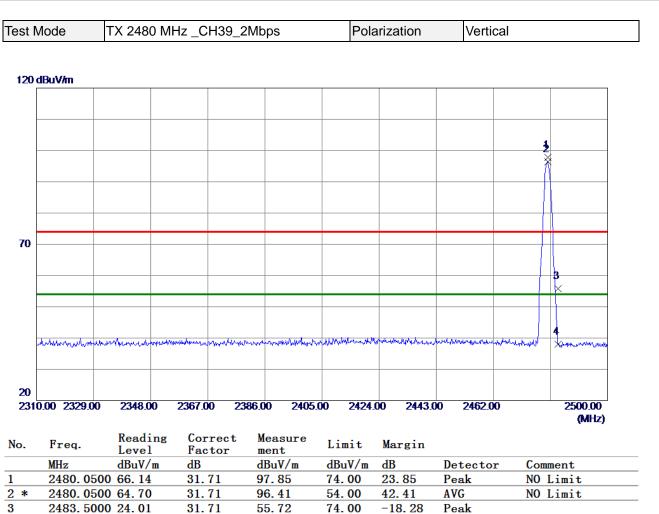
(2) Margin Level = Measurement Value - Limit Value.





- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value Limit Value.





-16.05

AVG

37.95

31.71

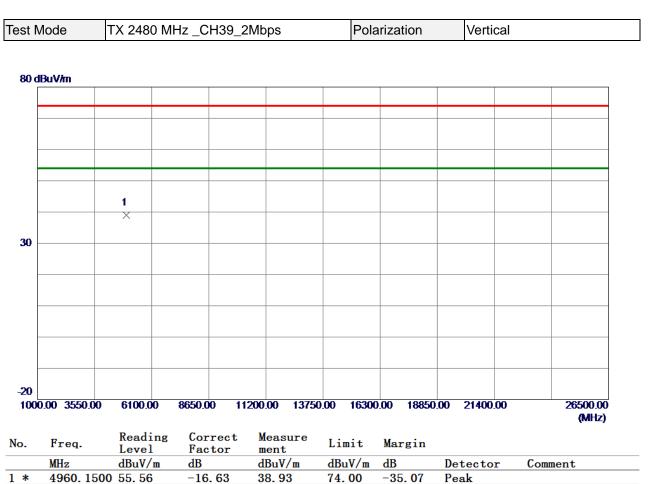
REMARKS:

4

2483. 5000 6. 24

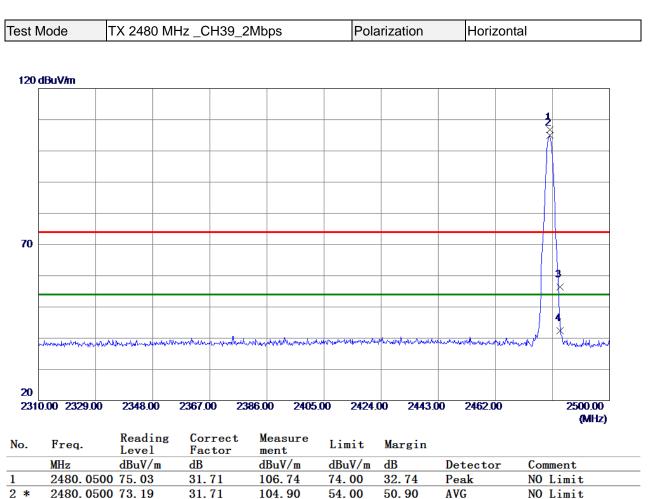
- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value Limit Value.





- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value Limit Value.





54.00

-17.63

-11.58

Peak

AVG

REMARKS:

3

4

2483.5000 24.66

2483.5000 10.71

(1) Measurement Value = Reading Level + Correct Factor.

31.71

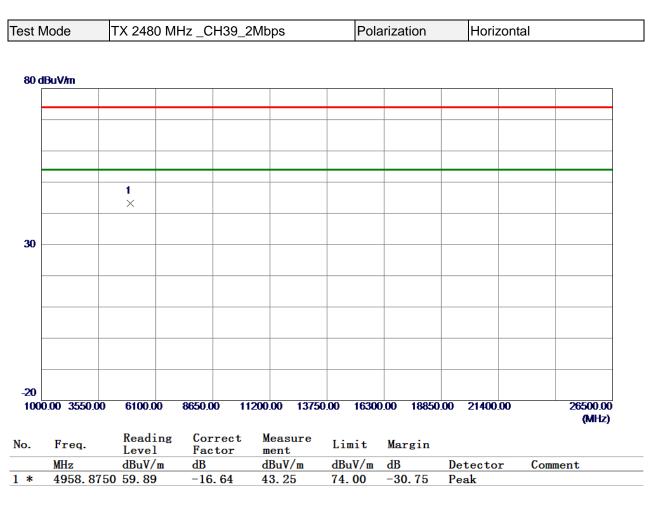
31.71

56.37

42.42

(2) Margin Level = Measurement Value - Limit Value.





- (1) Measurement Value = Reading Level + Correct Factor.(2) Margin Level = Measurement Value Limit Value.

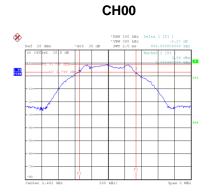


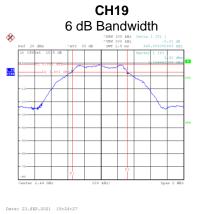


APPENDIX E - BANDWIDTH

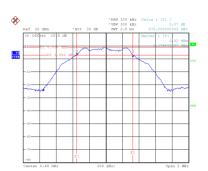


Т	Test Mode TX Mode _1Mbps									
	Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	99 % Occupied Bandwidth (MHz)	6 dB Bandwidth Min. Limit (MHz)	Test Result				
	00	2402	0.686	1.040	0.5	Pass				
	19	2440	0.666	1.032	0.5	Pass				
	39	2480	0.676	1.044	0.5	Pass				

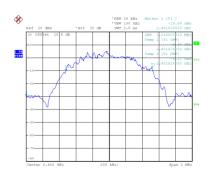




CH39

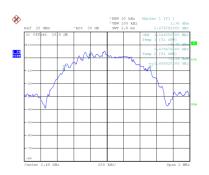


Date: 23.SEP.2021 18:19:23



99 % Occupied Bandwidth

Date: 24.SEP.2021 12:18:46



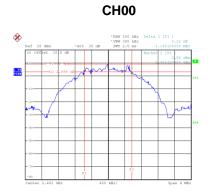
Date: 23.SEP.2021 18:18:46

Date: 23.SEP.2021 18:24:33

Date: 24.SEP.2021 12:18:51

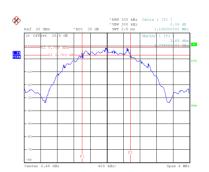


Т	Test Mode _2Mbps									
	Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	99 % Occupied Bandwidth (MHz)	6 dB Bandwidth Min. Limit (MHz)	Test Result				
	00	2402	1.140	2.072	0.5	Pass				
	19	2440	1.248	2.440	0.5	Pass				
	39	2480	1.166	2.479	0.5	Pass				

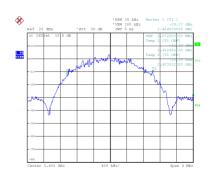




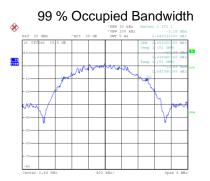
CH39



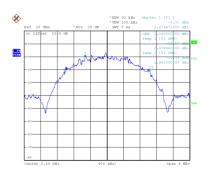
Date: 24.SEP.2021 12:16:43



Date: 23.SEP.2021 18:27:44



Date: 23.SEP.2021 18:29:37



Date: 24.SEP.2021 12:22:56

Date: 23.SEP.2021 18:27:49

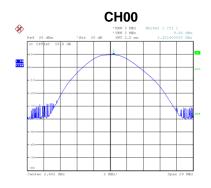
Date: 23.SEP.2021 18:29:42

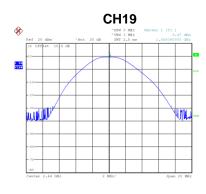


APPENDIX F - MAXIMUM OUTPUT POWER



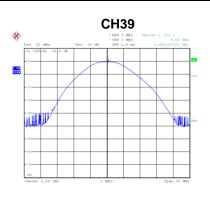
			MTK766	1			
Test	Mode	TX Mode _1Mbp	S				
	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Max. Limit (dBm)	Max. Limit (W)	Test Result	
	2402	9.52	0.0090	30.00	1.0000	Pass	
	2440	9.42	0.0087	30.00	1.0000	Pass	
	2480	9.60	0.0091	30.00	1.0000	Pass	
10 10 10 10 10 10 10 10 10 10		2-61166600 002 	CHEND A A A A A A A A A A A A A A A A A A	и конструкций конструки	La 20 000 000 000 000 000 000 000 000 000	MHz Narker 1 [71]	
Test	Test Mode TX Mode _2Mbps						
	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Max. Limit (dBm)	Max. Limit (W)	Test Result	
	2402	9.56	0.0090	30.00	1.0000	Pass	
	2440	9.47	0.0089	30.00	1.0000	Pass	





30.00

0.0092



Pass

1.0000

Date: 23.SEP.2021 18:30:28

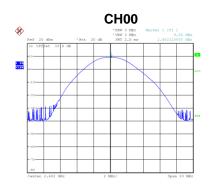
Date: 23.SEP.2021 18:26:38

2480

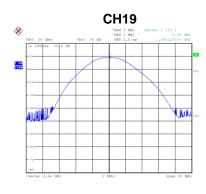
Date: 23.SEP.2021 18:28:35



	MTK7663						
Te	est Mode	TX Mode _1Mbp	S				
	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Max. Limit (dBm)	Max. Limit (W)	Test Result	
	2402	9.08	0.0081	30.00	1.0000	Pass	
	2440	8.93	0.0078	30.00	1.0000	Pass	
	2480	9.02	0.0080	30.00	1.0000	Pass	
Ða	Ref 20 dBm *Att 30 dB	2/ 2/ 2019 002 	CHEN9	алан 23 Калан 24 Калан 25 Кал		MHz Marker 1 [71]	
Te	Test Mode _2Mbps						
	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Max. Limit (dBm)	Max. Limit (W)	Test Result	
	2402	9.04	0.0080	30.00	1.0000	Pass	
	1				1	1 1	



9.07

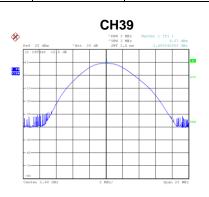


0.0079

0.0081

30.00

30.00



1.0000

1.0000

Date: 23.SEP.2021 18:45:15

Pass

Pass

Date: 23.SEP.2021 18:44:34

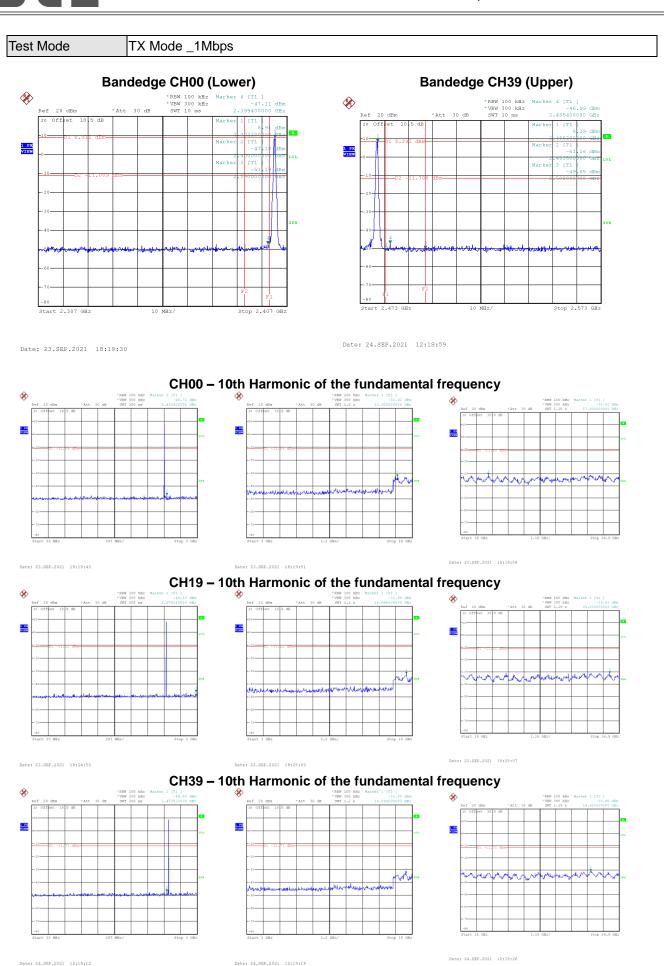
2440

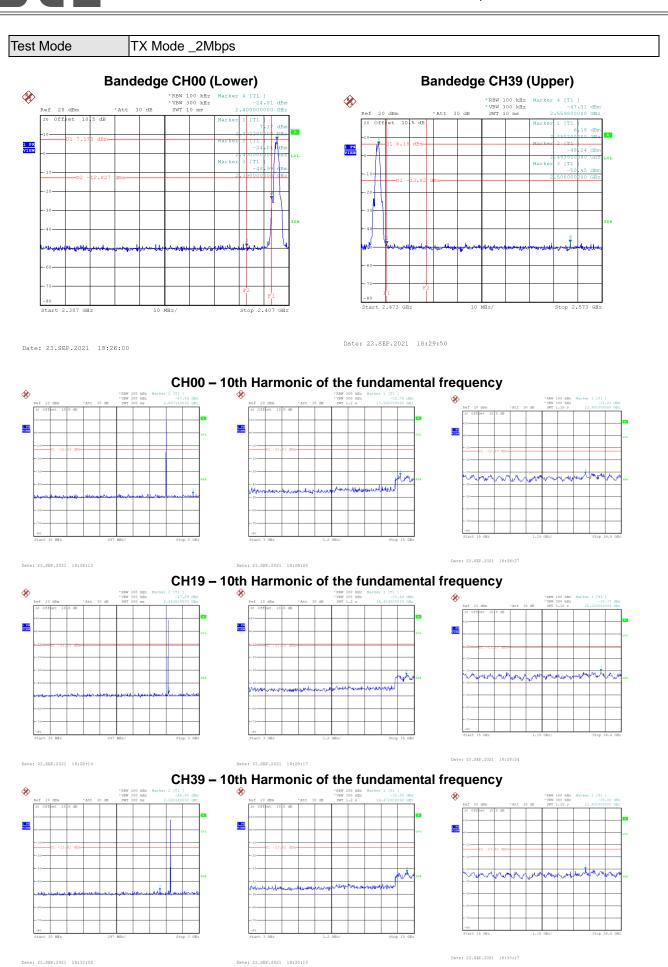
2480

Date: 23.SEP.2021 18:44:54



APPENDIX G - CONDUCTED SPURIOUS EMISSION



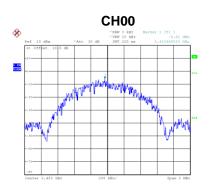


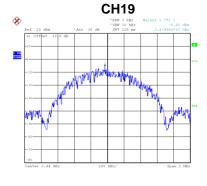


APPENDIX H - POWER SPECTRAL DENSITY



Test Mode TX Mode _1Mbps Power Spectral Density Frequency Max. Limit Channel Test Result (MHz) (dBm/3 kHz) (dBm/3 kHz) 00 2402 -5.61 8.00 Pass 19 2440 -5.48 8.00 Pass 39 2480 -5.55 8.00 Pass







Date: 23.SEP.2021 18:20:03

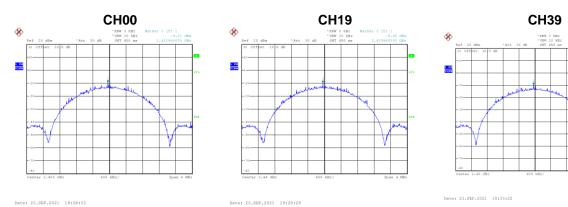
Test Mode

TX Mode _2Mbps

		-
Channel	Frequency	Power Spectral Density
Channel		$(dDm)(2 k _{T})$

Date: 23.SEP.2021 18:25:13

Channel	Frequency (MHz)	Power Spectral Density (dBm/3 kHz)	Max. Limit (dBm/3 kHz)	Test Result
00	2402	-9.31	8.00	Pass
19	2440	-9.46	8.00	Pass
39	2480	-9.51	8.00	Pass



End of Test Report