

**Radio equipment according to Certification
Ordinance Article 2 Section 1 No.19
According to MIC Notice No. 88 Appendix 43
for
GPS enabled cycling computer
Model No.: Aero 60**

of

Applicant: Bryton Inc.
Address: 3F-1., No.79-1, Zhouzi St., Neihu Dist., Taipei City 114,
Taiwan

Tested and Prepared

by

Worldwide Testing Services (Taiwan) Co., Ltd.

FCC Registration No.: TW1477, TW0020, TW1072

Industry Canada filed test laboratory Reg. No. IC 5679A-1, IC 5107A-1

A2LA Accredited No.: 2732.01



Report No.: W6M21806-18161-J-1

6F, NO. 58, LANE 188, RUEY-KUANG RD., NEIHU TAIPEI 114, TAIWAN, R.O.C.
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1 General Information

1.1 Notes

The purpose of conformity testing is to increase the probability of adherence to the essential requirements or conformity specifications, as appropriate.

The complexity of the technical specifications, however, means that full and thorough testing is impractical for both technical and economic reasons.

Furthermore, there is no guarantee that a test sample, which has passed all the relevant tests conforms to a specification.

Neither is there any guarantee that such a test sample will interwork with other genuinely open systems.

The existence of the tests nevertheless provides the confidence that the test sample possesses the qualities as maintained and that its performance generally conforms to representative cases of communications equipment.

The test results of this test report relate exclusively to the item tested as specified in 1.5.

The test report may only be reproduced or published in full.

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Tester:

June 28, 2018

Spencer Yang

Spencer

Date

WTS-Lab.

Name

Signature

Technical responsibility for area of testing:

June 28, 2018

Kevin Wang

Kevin Wang

Date

WTS

Name

Signature



Worldwide Testing Services(Taiwan) Co., Ltd.

1.2 Testing laboratory

1.2.1 Location

OATS

No.5-1, Lishui, Shuang Sing Village,
Wanli Dist., New Taipei City 207,
Taiwan (R.O.C.)

Company

Worldwide Testing Services (Taiwan) Co., Ltd.
6F, NO. 58, LANE 188, RUEY-KUANG RD.
NEIHU, TAIPEI 114, TAIWAN R.O.C.
Tel : +886-2-66068877
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1.2.2 Details of accreditation status

Accredited testing laboratory

A2LA accredited number: 2732.01

FCC filed test laboratory Reg. No. TW1477, TW0020, TW1072

Industry Canada filed test laboratory Reg. No. IC 5679A-1, IC 5107A-1

Test location, where different from Worldwide Testing Services (Taiwan) Co., Ltd. :

Name: ./.
Accredited number: ./.
Street: ./.
Town: ./.
Country: ./.
Telephone: ./.
Fax: ./.



1.3 Details of applicant

Name : Bryton Inc.
Street : 3F-1., No.79-1, Zhouzi St., Neihu Dist.,
City : Taipei City 114,
Country : Taiwan
Telephone : +886-2-2657-9888
Fax : +886-2-2657-1295

1.4 Application details

Date of receipt of test item : June 12, 2018
Date of test : from June 13, 2018 to June 28, 2018

1.5 Equipment information

Description of test item : GPS enabled cycling computer
Type identification : Aero 60
Brand name : Bryton
Modulation Type : DSSS, OFDM, GFSK
Frequency range : 2.4 GHz - 2.4835 GHz
Tested frequencies : WLAN: 2412 – 2472 MHz
Bluetooth Low Energy: 2402 – 2480 MHz
Frequency of the used channel : WLAN 802.11 b/g/n 20 MHz:
Frequency (ch 1) : 2412 MHz
Frequency (ch 7) : 2442 MHz
Frequency (ch 13) : 2472 MHz
Bluetooth Low Energy:
Frequency (ch 0) : 2402 MHz
Frequency (ch 19) : 2440 MHz
Frequency (ch 39) : 2480 MHz
ANT+ (RX only):
Frequency (ch 1) : 2457 MHz
Type of Antenna : WiFi: Chip Antenna, BLE: PCB Antenna
Antenna gain : WiFi: 2 dBi, BLE: 0 dBi
Rated output power : 802.11b/g n 20 MHz: 5 mW/MHz
Bluetooth Low Energy: 0.5 mW
EIRP : 802.11b: 9.3 dBm/MHz
802.11g:: 9.16 dBm/MHz
802.11n 20 MHz: 7.4 dBm/MHz



Manufacturer: (if different from applicant)

Name : Pan-international Precision Electronic Co., Ltd
Street : Xinlian Indl. Area, Hu-men, Dongguan,
City : Guangdong, China
Country : China

1.6 Assembly

Special screw will be used for preventing access RF part directly. For this EUT is opening only by destroying the equipment have been taken to satisfy sample requirement.

1.7 Test method

According to MIC Notice No. 88 Appendix 43.

2 Technical Test

2.1 Summary of test results

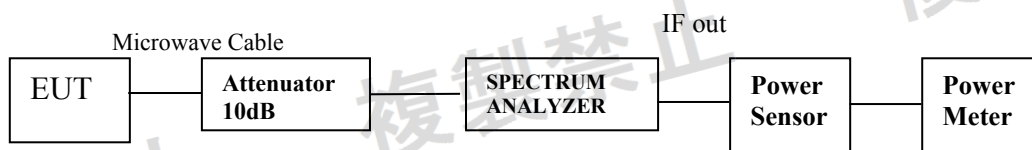
No deviations from the technical specifications were ascertained in the course of the test performed.

2.2 Test environment

Temperature	:	5° C - 35 ° C
Relative humidity content	:	45% - 85%
Air pressure	:	990 - 1300 hPa
Details of power supply	:	USB 5 Vd.c. Battery: 3.7 Vd.c., 3.15 Wh for Aero 60 Battery: 3.7 Vd.c., 3.145 Wh for Rider 450
Other parameter	:	./.
Extreme conditions parameters	:	V _{nom} : 3.7 VDC V _{min} : -- VDC V _{max} : -- VDC
Additional information	:	There are 4 testing modes in the test report. Mode A: IEEE 802.11b Mode B: IEEE 802.11g Mode C: IEEE 802.11n 20 MHz Mode D: Bluetooth Low Energy

2.3 Test setup

WLAN Antenna power



Frequency tolerance, Occupied bandwidth, Spreading bandwidth and Spurious emission





2.4 Test equipment utilized

No.	Test equipment	Type	Serial No.	Manufacturer	Cal. Date	Next Cal. Date
ETSTW-CE 001	EMI TEST RECEIVER	ESHS10	842121/013	R&S	2018/5/30	2019/5/29
ETSTW-CE 003	AC POWER SOURCE	APS-9102	D161137	GW	Function Test	
ETSTW-CE 004	ZWEILEITER-V-NETZNACHBILDUNG TWO-LINE V-NETWORK	ESH3-Z5	840731/011	R&S	2017/10/26	2018/10/25
ETSTW-CE 005	Line-Impedance Stabilisation Network	NNBM 8126D	137	Schwarzbeck	2018/3/23	2019/3/22
ETSTW-CE 006	IMPULSBEGRENZER PULSE LIMITER	ESH3-Z2	100226	R&S	2017/8/22	2018/8/21
ETSTW-CE 008	HF-EICHLEITUNG RF STEP ATTENUATOR 139dB DPSP	334.6010.02	844581/024	R&S	Function Test	
ETSTW-CE 009	TEMP.&HUMIDITY CHAMBER	GTH-225-40-1P-U	MAA0305-009	GIANT FORCE	2017/7/14	2018/7/13
ETSTW-CE 013	CISPR 22 TWO BALANCED TELECOM PAIRS IMPEDANCE STABILIZATION NETWORK	FCC-TLISN-T4-02	20242	FCC	2017/9/1	2018/8/31
ETSTW-CE 016	TWO-LINE V-NETWORK	ENV216	100050	R&S	2017/8/31	2018/8/30
ETSTW-CE 024	IMPEDANCE STABILIZATION NETWORK	ISN T800	29454	TESEQ	2018/6/15	2019/6/14
ETSTW-CE 027	COUPLING AND DECOUPLING NETWORK	CDN ST08AS	38087	TESEQ	Function Test	
ETSTW-CE 028	MXE EMI Receiver	N9038A	MY53220110	Agilent	2017/7/11	2018/7/10
ETSTW-CE 030	CISPR Passive probe	PMM SHC-1-1000	1021X30803	Narda S.T.S/PMM	2018/3/9	2019/3/8
ETSTW-CS 004	COUPLING AND DECOUPLING NETWORK	CDN M016	20053	SCHAFFNER	2017/8/7	2018/8/6
ETSTW-CS 005	RF Power Amplifier	100A250A	306547	AR	Function Test	
ETSTW-CS 010	6 dB Attenuator	SA3N1007-06	None	AISI	Function test	
ETSTW-CS 011	ESG Analog Signal Generator	E4428C	MY45280875	AGILENT	2017/7/11	2018/7/10
ETSTW-RE 003	EMI TEST RECEIVER	ESI 26	831438/001	R&S	2018/5/30	2019/5/29
ETSTW-RE 004	EMI TEST RECEIVER	ESI 40	832427/004	R&S	2018/5/21	2019/5/20
ETSTW-RE 005	EMI TEST RECEIVER	ESVS10	843207/020	R&S	2017/8/25	2018/8/24
ETSTW-RE 010	ABSORBING CLAMP	MDS 21	03469	Schwarzbeck	2017/9/18	2018/9/17
ETSTW-RE 012	TUNABLE BANDREJECT FILTER	D.C 0309	146	K&L	Function Test	
ETSTW-RE 013	TUNABLE BANDREJECT FILTER	D.C 0336	397	K&L	Function Test	
ETSTW-RE 019	MICROWAVE HORN ANTENNA	22240-25	121074	FM	2018/4/19	2019/4/18
ETSTW-RE 020	MICROWAVE HORN ANTENNA	AT4002A	306915	AR	Function Test	
ETSTW-RE 027	Passive Loop Antenna	6512	00034563	ETS-Lindgren	2017/7/3	2018/7/2
ETSTW-RE 028	Log-Periodic Dipole Array Antenna	3148	34429	ETS-Lindgren	Function Test	
ETSTW-RE 029	Biconical Antenna	3109	33524	ETS-Lindgren	Function Test	
ETSTW-RE 030	Double-Ridged Guide Horn Antenna	3117	00035224	ETS-Lindgren	2018/3/26	2019/3/25
ETSTW-RE 032	Millivoltmeter	URV 55	849086/013	R&S	2017/9/8	2018/9/7
ETSTW-RE 033	WaveRunner 6000A Serise Oscilloscope	WAVERUNNER 6100A	LCRY0604P14508	LeCroy	2017/7/17	2018/7/16



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ETSTW-RE 034	Power Sensor	URV5-Z4	839313/006	R&S	2017/9/8	2018/9/7
ETSTW-RE 042	Biconical Antenna	HK116	100172	R&S	2018/1/23	2019/1/22
ETSTW-RE 043	Log-Periodic Dipole Antenna	HL223	100166	R&S	2018/4/13	2019/4/12
ETSTW-RE 044	Log-Periodic Antenna	HL050	100094	R&S	2018/4/26	2019/4/25
ETSTW-RE 045	ESA-E SERIES SPECTRUM ANALYZER	E4404B	MY45111242	Agilent	Pre-test Use	
ETSTW-RE 048	Triple Loop Antenna	HXYZ 9170	HXYZ 9170-134	Schwarzbeck	2017/12/14	2018/12/13
ETSTW-RE 050	Attenuator 10dB	50HF-010-1	None	JFW	2018/3/1	2019/2/28
ETSTW-RE 051	Attenuator 6dB	50HF-006-1	None	JFW	2018/3/1	2019/2/28
ETSTW-RE 053	Attenuator 3dB	50HF-003-1	None	JFW	2018/3/1	2019/2/28
ETSTW-RE 055	SPECTRUM ANALYZER	FSU 26	200074	R&S	2018/3/6	2019/3/5
ETSTW-RE 060	Attenuator 30dB	5015-30	F651012z-01	ATM	2018/3/1	2019/2/28
ETSTW-RE 061	Amplifier Module	CHC 1	None	ETS	2018/5/9	2019/5/8
ETSTW-RE 062	Amplifier Module	CHC 2	None	KMIC	2018/3/30	2019/3/29
ETSTW-RE 064	Bluetooth Test Set	MT8852B-042	6K00005709	Anritsu	Function Test	
ETSTW-RE 065	Amplifier	AMF-6F-18002650-25-10P	941608	MITEQ	2018/3/30	2019/3/29
ETSTW-RE 069	Double-Ridged Guide Horn Antenna	3117	00069377	ETS-Lindgren	Function Test	
ETSTW-RE 072	CELL SITE TEST SET	8921A	3339A00375	HP	2017/9/11	2018/9/10
ETSTW-RE 073	Power Meter	N1911A	MY45100769	Agilent	2018/1/22	2019/1/21
ETSTW-RE 074	Power Sensor	N1921A	MY45241198	Agilent	2018/1/22	2019/1/21
ETSTW-RE 091	Match Pad	MDCS1500	None	WOKEN	2018/4/16	2019/4/15
ETSTW-RE 099	DC Block	50DB-007-1	None	JFW	2018/2/23	2019/2/22
ETSTW-RE 112	AC POWER SOURCE	TFC-1005	T-0A023536	T-Power	Function test	
ETSTW-RE 115	2.4GHz Notch Filter	N0124411	473874	MICROWAVE CIRCUITS	2018/1/15	2019/1/14
ETSTW-RE 120	RF Player	MP9200	MP9210-111022	ADIVIC	Function test	
ETSTW-RE 122	SIGNAL GENERATOR	SMF100A	102149	R&S	2018/5/29	2019/5/28
ETSTW-RE 125	5GHz Notch filter	5NSL11-5200/E221.3-O/O	1	K&L Microwave	2017/8/9	2018/8/8
ETSTW-RE 126	5GHz Notch filter	5NSL12-5800/E221.3-O/O	1	K&L Microwave	2017/8/9	2018/8/8
ETSTW-RE 127	RF Switch Box	RFS-01	None	WTS	2018/2/27	2019/2/26
ETSTW-RE 128	5.3GHz Notch filter	N0153001	SN487233	Microwave Circuits	2017/8/9	2018/8/8
ETSTW-RE 129	5.5GHz Notch filter	N0555984	SN487234	Microwave Circuits	2017/8/9	2018/8/8
ETSTW-RE 130	Handheld RF Spectrum Analyzer	N9340A	CN0147000204	Agilent	Pre-test Use	
ETSTW-RE 133	EXA Signal Analyzer	N9010A	MY53470566	Agilent	2018/4/20	2019/4/19
ETSTW-RE 134	MXG Vector Signal Generator	N5182B	MY53050664	Agilent	2018/4/19	2019/4/18
ETSTW-RE 135	EXG Analog Signal Generator	N5171B	MY53050476	Agilent	2018/4/19	2019/4/18
ETSTW-RE 136	USB Wideband Power Sensor	U2021XA	MY54070006	Agilent	2018/4/24	2019/4/23
ETSTW-RE 137	USB Wideband Power Sensor	U2021XA	MY54020004	Agilent	2018/4/24	2019/4/23



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ETSTW-RE 138	USB Wideband Power Sensor	U2021XA	MY54110003	Agilent	2018/4/24	2019/4/23
ETSTW-RE 139	USB Wideband Power Sensor	U2021XA	MY54110004	Agilent	2018/4/24	2019/4/23
ETSTW-RE 140	Simultaneous sampling DAQ	U2531A	TW56143501	Agilent	Function Test	
ETSTW-RE 142	Amplifier	8447D	2805A03378	Agilent	2018/3/30	2019/3/29
ETSTW-RE 146	Preamplifier	JPA-10M1G	15090004	JPT	2018/6/9	2019/6/8
ETSTW-RE 147	Bi-log Hybrid Antenna	MCTD 2786B	BLB16M04005	ETC	2018/3/23	2019/3/22
ETSTW-RE 148	Bi-log Hybrid Antenna	MCTD 2786B	BLB16M04006	ETC	2018/6/5	2019/6/4
ETSTW-RE 149	Blocking Test System	AD211	TW5451133	Keysight	Function Test	
ETSTW-RE 150	Blocking Test System	AD211	TW5451133	Keysight	Function Test	
ETSTW-RE 151	Thermohygrometer	608-h1	45104376	TESTO	2017/8/30	2018/8/29
ETSTW-EMI 001	HARMONICS 1000	HAR1000-1P	093	EMC-PARTNER	2018/2/6	2019/2/5
ETSTW-EMI 010	AC Power Source	PS3	0219	EMC PARTNER	2018/2/7	2019/2/6
ETSTW-EMI 011	USB Compact Modulator	SFC-U	101689	R&S	2018/5/10	2019/5/9
ETSTW-EMS 001	BASELSTRASSE 160 CH-4242 LAUFEN	CN-EFT1000	354	EMC-PARTNER	Function Test	
ETSTW-EMS 002	Frequency Converter	YF-6020	0308014	None	Function Test	
ETSTW-EMS 003	EMC Immunity Test System	TRA2000IN6	579	EMC-PARTNER	2017/8/31	2018/8/30
ETSTW-EMS 009	Magnetic Field Antenna	MF1000-1	104	EMC-PARTNER	Function Test	
ETSTW-EMS 010	Coupling De-coupling Network	CDN-UTP8	014	EMC-PARTNER	Function Test	
ETSTW-EMS 012	EM Injection Clamp	F-2031-23MM	476	FCC	2018/6/15	2019/6/14
ETSTW-EMS 016	EMF Tester	I390	071208732	TES	2017/8/28	2018/8/27
ETSTW-EMS 017	Multimeter	DM-1220	518614	HILA	2017/8/18	2018/8/17
ETSTW-EMS 019	Electrostatic Discharge Simulator	ESS-2002	ESS06Y6300	NoiseKen	2017/9/13	2018/9/12
ETSTW-EMS 022	Transient Test System	TRANSIENT -3000 S	1303	EMC-PARTNER	2017/8/28	2018/8/27
ETSTW-EMS 023	Electrostatic Discharge Simulator	NSG 435	6984	TESEQ	2018/6/15	2019/6/14
ETSTW-EMS 024	Humidity Temperature Meter	TES-1260	160304437	TES	2017/8/18	2018/8/17
ETSTW-EMS 025	10/700 Surge Generator	SG-728G	EC0631106	3Ctest	2017/8/30	2018/8/29
ETSTW-RS 003	RF Power Amplifier	30S1G3	306933	AR	Function Test	
ETSTW-RS 007	14" COLOR VIDEO MONITOR	HS-CM145A	0512011548	None	Function Test	
ETSTW-RS 009	SIGNAL GENERATOR	8648C	3642U01656	HP	2018/1/18	2019/1/17
ETSTW-RS 010	Broadband Field Meter	NBM-520	C-0195	Narda	2017/11/8	2018/11/7
ETSTW-RS 011	RF Power Amplifier	150W1000	0464490	AR	Function Test	
ETSTW-RS 012	Log-Periodic Antenna	ATL80M1G	0348244	AR	Function Test	
ETSTW-RS 013	Stacked Log Periodic Antenna	STLP9149	473	RS	Function Test	
ETSTW-RS 014	Power Amplifier	AS0860B	1078553	MILMEGA	Function Test	
ETSTW-RS 015	SIGNAL GENERATOR	ITS6006B	37669	TESEQ	2018/3/16	2019/3/15
ETSTW-RS 016	Power sensor	PMR6006	75617	TESEQ	2018/3/16	2019/3/15
ETSTW-RS 017	Power sensor	PMR6006	75618	TESEQ	2018/3/16	2019/3/15



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ETSTW-GSM 002	Universal Radio Communication Tester	CMU 200	109439	R&S	2018/2/27	2019/2/26
ETSTW-GSM 003	Radio Communication Analyzer	MT8820C	6201342073	Anritsu	2018/3/2	2019/3/1
ETSTW-GSM 004	Wideband Radio Communication Tester	CMW500	128092	R&S	2017/10/16	2018/10/15
ETSTW-GSM 019	Band Reject Filter	WRCTF824/849-822/851-40/12+9SS	3	WI	2018/1/15	2019/1/14
ETSTW-GSM 020	Band Reject Filter	WRCD1747/1748-1743/1752-32/5SS	1	WI	2018/1/15	2019/1/14
ETSTW-GSM 021	Band Reject Filter	WRCD1879.5/1880.5-1875.5/1884.5-32/5SS	3	WI	2018/1/15	2019/1/14
ETSTW-GSM 022	Band Reject Filter	WRCT901.9/903.1-904.25-50/8SS	1	WI	2018/1/15	2019/1/14
ETSTW-GSM 023	Power Divider	4901.19.A	None	SUHNER	2017/9/13	2018/9/12
ETSTW-GSM 024	Radio Communication Analyzer	MT8821C	None	Anritsu	2018/3/7	2019/3/6
ETSTW-Cable 002	Microwave Cable	SUCOFLEX 104 (S Cable 7)	238093	HUBER+SUHNER	2018/5/9	2019/5/8
ETSTW-Cable 003	Microwave Cable	SUCOFLEX 104 (S Cable 11)	209953	HUBER+SUHNER	2018/5/9	2019/5/8
ETSTW-Cable 063	N type Cable (5m)	RG214/U	1249271	HUBER+SUHNER	Function Test	
ETSTW-Cable 016	BNC Cable	Switch Box	B Cable 1	Schwarz beck	2018/2/22	2019/2/21
ETSTW-Cable 017	BNC Cable	X Cable	B Cable 2	Schwarz beck	2018/2/22	2019/2/21
ETSTW-Cable 018	BNC Cable	Y Cable	B Cable 3	Schwarz beck	2018/2/22	2019/2/21
ETSTW-Cable 019	BNC Cable	Z Cable	B Cable 4	Schwarz beck	2018/2/22	2019/2/21
ETSTW-Cable 020	N TYPE Cable	OATS Cable 1	N30N30-L335-15M	JYE BAO CO.,LTD.	2017/7/3	2018/7/2
ETSTW-Cable 023	BNC Cable	BNC Cable 3	None	JYE BAO CO.,LTD.	Function Test	
ETSTW-Cable 024	BNC Cable	BNC Cable 4	None	JYE BAO CO.,LTD.	Function Test	
ETSTW-Cable 025	BNC Cable	BNC Cable 5	None	JYE BAO CO.,LTD.	Function Test	
ETSTW-Cable 026	Microwave Cable	SUCOFLEX 104	279075	HUBER+SUHNER	2018/2/27	2019/2/26
ETSTW-Cable 027	Microwave Cable	SUCOFLEX 104	279083	HUBER+SUHNER	2018/5/9	2019/5/8
ETSTW-Cable 030	Microwave Cable	SUCOFLEX 104 (S Cable 9)	279067	HUBER+SUHNER	2018/2/27	2019/2/26
ETSTW-Cable 031	Microwave Cable	SUCOFLEX 104 (S Cable 10)	238092	HUBER+SUHNER	2018/3/30	2019/3/29
ETSTW-Cable 039	Microwave Cable	SUCOFLEX 104	316739	HUBER+SUHNER	2018/5/9	2019/5/8
ETSTW-Cable 042	Microwave Cable	SUCOFLEX 104 (S Cable 22)	279847	HUBER+SUHNER	Function Test	
ETSTW-Cable 043	Microwave Cable	SUCOFLEX 104	317576	HUBER+SUHNER	2018/3/30	2019/3/29
ETSTW-Cable 048	Microwave Cable	SUCOFLEX 104	325519	HUBER+SUHNER	2018/3/30	2019/3/29
ETSTW-Cable 051	BNC Cable	BNC Cable 6	None	JYE BAO CO.,LTD.	2018/3/7	2019/3/6
ETSTW-Cable 052	BNC Cable	Clamp Cable	None	Schwarz beck	2018/3/7	2019/3/6
ETSTW-Cable 058	Microwave Cable	SUCOFLEX 104	none	HUBER+SUHNER	2018/6/9	2019/6/8
ETSTW-Cable 065	N type Cable (5m)	RG214	None	DRAKA	Function Test	
ETSTW-Cable 066	SMA type cable	32022	None	ASTROLAB	2017/8/31	2018/8/30
ETSTW-Cable 067	BNC Cable (1m)	RG213	None	ALLTESTEK	Function Test	



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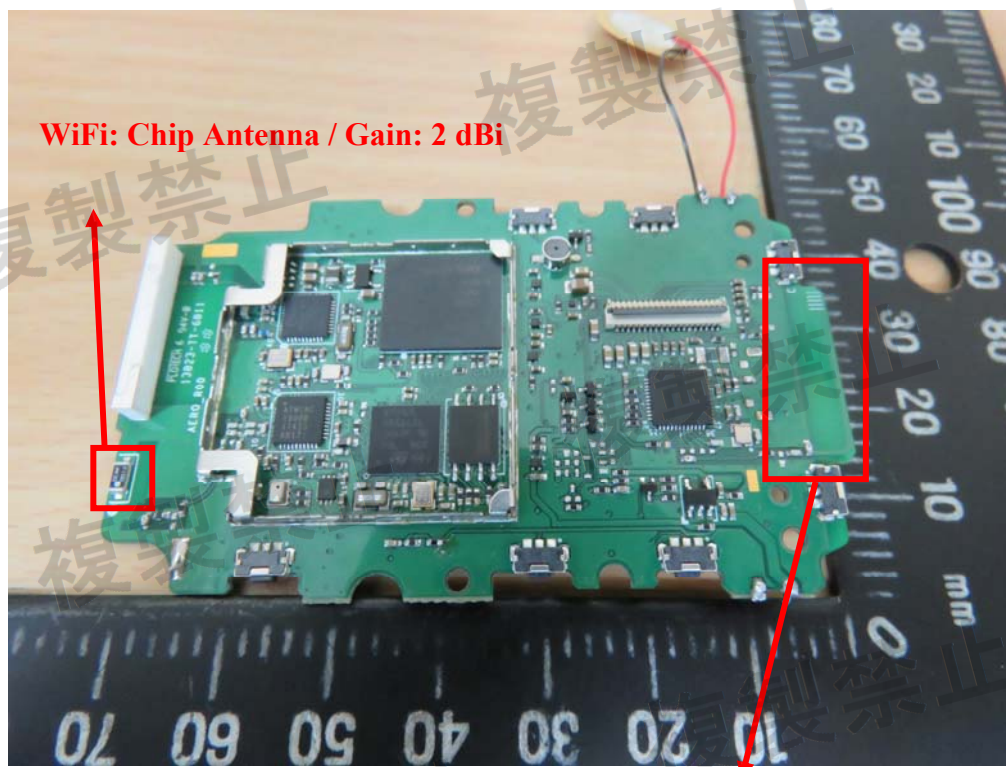
ETSTW-Cable 071	N TYPE CABLE	EMCCFD400-NM-NM-25000	170239	EMCI	2018/6/9	2019/6/8
WTSTW-SW 001	EMI TEST SOFTWARE	Harmonics-1000	None	EMC PARTNER	HARCS Version 4.20 Firmware Version 2.20	
WTSTW-SW 002	EMI TEST SOFTWARE	EZ EMC	None	Farad	Version ETS-03A1	
WTSTW-SW 003	EMS TEST SOFTWARE	i2	None	AUDIX	Version 3.2007-8-17b	
WTSTW-SW 005	GSM Fading Level Correction	GSMFadLevCor	None	R&S	Version 1.66	
WTSTW-SW 006	EMI TEST SOFTWARE	e3	None	AUDIX	Version 9.161014	
WTSTW-SW 007	Keysight.EN300328.V191.Test	Keysight	None	Keysight	Version 1.0.0.0	
WTSTW-SW 008	Signal studio	Agilent	None	AUDIX	Version 2.0.0.1	

3 Test results (enclosure)

☒ 1st test ☐ test after modification ☐ production test

Test case	Subclause	Required	Status
<i>General provisions</i>			
Frequency tolerance	5	☒	C
Occupied bandwidth	6	☒	C
Spurious emissions	7	☒	C
<i>Transmitting equipment</i>			
Antenna power	14	☒	C
SAR	14.2	☐	NA
Frequency stabilization	15	☒	C
<i>Transmitter antenna</i>			
Type, configuration, etc. of transmitting antenna	20	☒	C
Directional pattern of transmitting antenna	22	☒	C
<i>Receiving equipment</i>			
Spurious emission of receiver	24	☒	C
Refer to all articles for transmitter antenna	26	☒	C
<i>Operating frequency 2400-2483.5MHz</i>			
High Frequency/modulation section cannot be opened easily	49.20(1); a	☒	C
Communication method	49.20(1); b	☒	C
Modulation method	49.20(1); c	☒	C
Spread spectrum method	49.20(1); d	☒	C
Antenna power	49.20(1); e	☒	C
Absolute gain of transmitting antenna	49.20(1); f(1)	☒	C
Angular width of principal radiation (AWPR)	49.20(1); f(2)	☒	C
Number of carriers within 1 MHz bandwidth in OFDM	49.20(1); g	☒	C
Diffusion bandwidth	49.20(1); h	☒	C
Spreading factor	49.20(1); i	☒	C
Frequency retention time (FH employed)	49.20(1); j	☐	NA
Carrier sensing function	49.20(1); k	☐	C
Note 1: C = Conform NC = Not Conform NT = Not Tested NA = Not Applicable			

3.1 Antenna specifications



BLE: PCB Antenna / Gain: 0 dBi

3.2 Voltage variation

Test Condition	Voltage Condition	Voltage Input(V)	Voltage Output(V)	Tolerance (%)
DC 3.7V	Normal	3.7	3.28	--
	Low	3.33	3.27	0.01
	High	4.07	3.27	0.01

The influence of input voltage to output voltage is within 1%. Therefore we performed test under normal voltage DC 3.7V.

3.3 Frequency Tolerance

Tolerance from nominal frequency:

Mode A ~ Mode C

Test conditions		2412 MHz	2442 MHz	2472 MHz
$V_{nom} = 3.7 \text{ V}$	Carrier frequency (GHz)	2411.990385	2441.990385	2471.990385
	Frequency tolerance (ppm)	-3.986	-3.937	-3.890
Measurement uncertainty		$\pm 6.09 \text{ Hz}$		

Mode D

Test conditions		2402 MHz	2440 MHz	2480 MHz
$V_{nom} = 3.7 \text{ V}$	Carrier frequency (GHz)	2401.999679	2439.999679	2479.999679
	Frequency tolerance (ppm)	-0.134	-0.132	-0.129
Measurement uncertainty		$\pm 6.09 \text{ Hz}$		

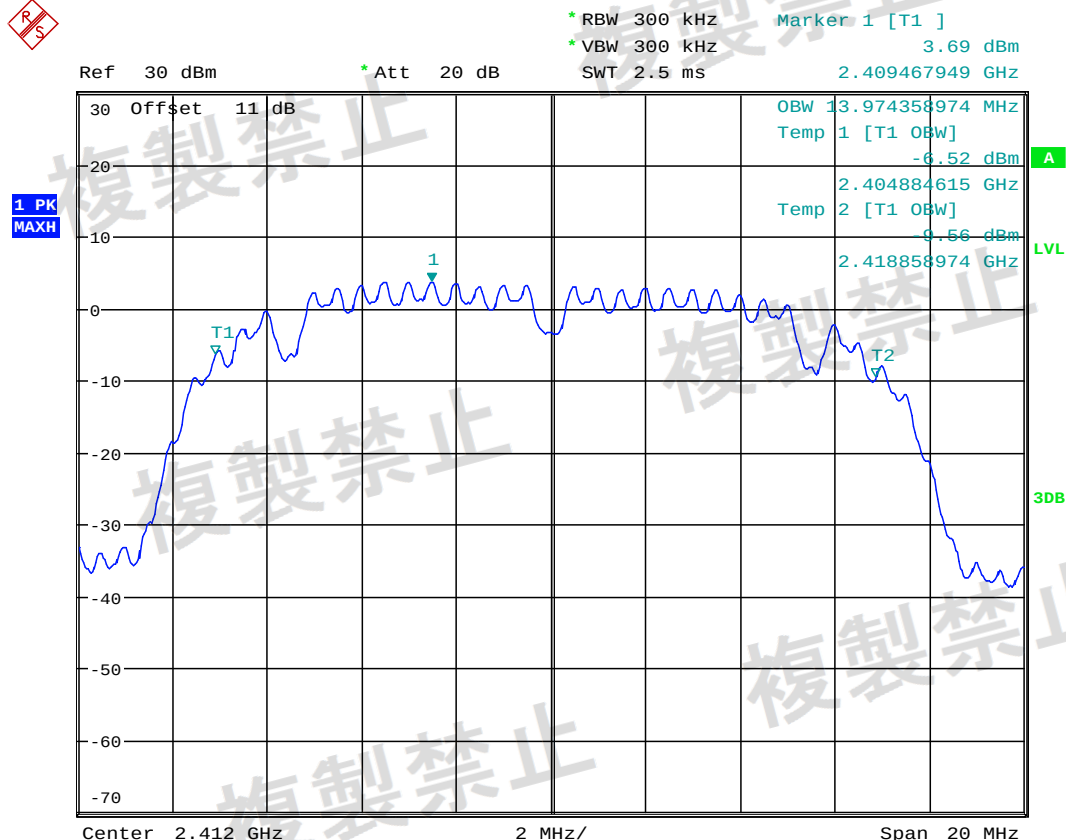
Test equipment used: ETSTW-RE 050, ETSTW-RE 055

Limits: < 50 ppm under all test conditions



3.4 Occupied Bandwidth (99% channel power bandwidth)

Mode A



OCCUPIED BANDWIDTH 802.11B CH1

Date: 15.JUN.2018 10:11:35



P.S.

* RBW 300 kHz

Marker 1 [T1]

* VBW 300 kHz

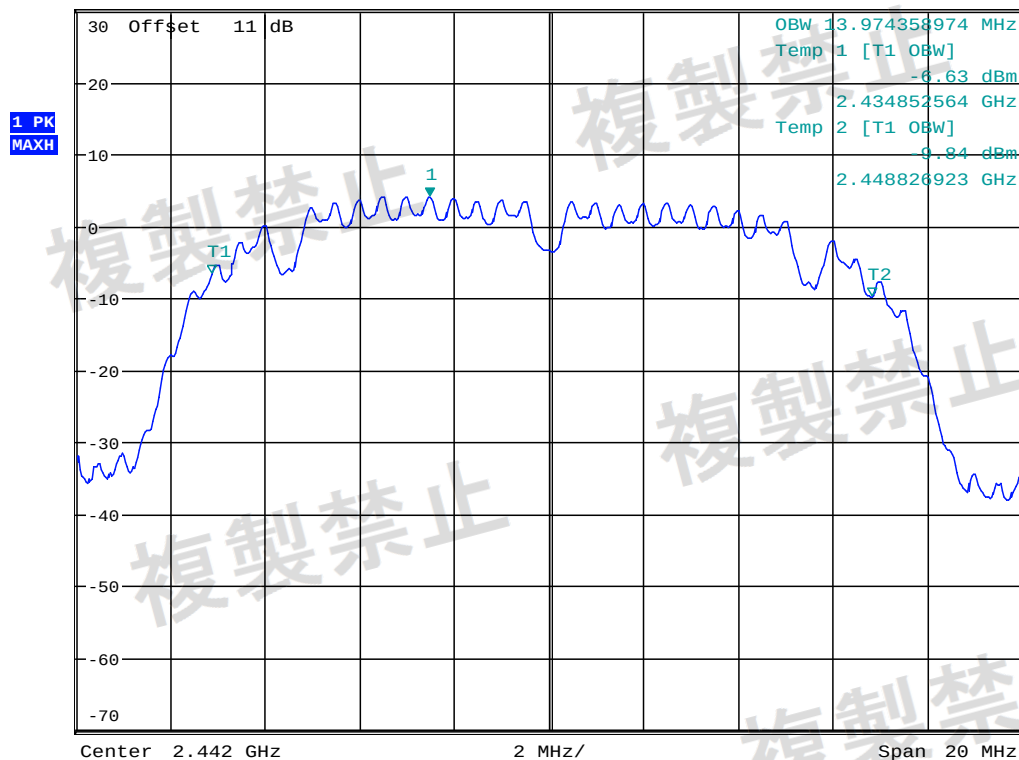
4.01 dBm

SWT 2.5 ms

2.439467949 GHz

Ref 30 dBm

* Att 20 dB



OCCUPIED BANDWIDTH 802.11B CH7

Date: 15.JUN.2018 10:12:10



複製禁止

Ref 30 dBm

* Att 20 dB

SWT 2.5 ms

Marker 1 [T1]

2.80 dBm

2.469467949 GHz

OBW 13.974358974 MHz

Temp 1 [T1 OBW]

-7.78 dBm

2.464852564 GHz

Temp 2 [T1 OBW]

-11.13 dBm

2.478826923 GHz

3dB

LVL

A

1 PK

MAXH

Offset 11 dB

30

20

10

0

-10

-20

-30

-40

-50

-60

-70

Center 2.472 GHz

2 MHz/

Span 20 MHz

1

T1

T2

3dB

LVL

A

1 PK

MAXH

Offset 11 dB

30

20

10

0

-10

-20

-30

-40

-50

-60

-70

Center 2.472 GHz

2 MHz/

Span 20 MHz

1

T1

T2

3dB

LVL

A

1 PK

MAXH

Offset 11 dB

30

20

10

0

-10

-20

-30

-40

-50

-60

-70

Center 2.472 GHz

2 MHz/

Span 20 MHz

1

T1

T2

3dB

LVL

A

1 PK

MAXH

Offset 11 dB

30

20

10

0

-10

-20

-30

-40

-50

-60

-70

Center 2.472 GHz

2 MHz/

Span 20 MHz

1

T1

T2

3dB

LVL

A

1 PK

MAXH

Offset 11 dB

30

20

10

0

-10

-20

-30

-40

-50

-60

-70

Center 2.472 GHz

2 MHz/

Span 20 MHz

1

T1

T2

3dB

LVL

A

1 PK

MAXH

Offset 11 dB

30

20

10

0

-10

-20

-30

-40

-50

-60

-70

Center 2.472 GHz

2 MHz/

Span 20 MHz

1

T1

T2

3dB

LVL

A

1 PK

MAXH

Offset 11 dB

30

20

10

0

-10

-20

-30

-40

-50

-60

-70

Center 2.472 GHz

2 MHz/

Span 20 MHz

1

T1

T2

3dB

LVL

A

1 PK

MAXH

Offset 11 dB

30

20

10

0

-10

-20

-30

-40

-50

-60

-70

Center 2.472 GHz

2 MHz/

Span 20 MHz

1

T1

T2

3dB

LVL

A

1 PK

MAXH

Offset 11 dB

30

20

10

0

-10

-20

-30

-40

-50

-60

-70

Center 2.472 GHz

2 MHz/

Span 20 MHz

1

T1

T2

3dB

LVL

A

1 PK

MAXH

Offset 11 dB

30

20

10

0

-10

-20

-30

-40

-50

-60

-70

Center 2.472 GHz

2 MHz/

Span 20 MHz

1

T1

T2

3dB

LVL

A

1 PK

MAXH

Offset 11 dB

30

20

10

0

-10

-20

-30

-40

-50

-60

-70

Center 2.472 GHz

2 MHz/

Span 20 MHz

1

T1

T2

3dB

LVL

A

1 PK

MAXH

Offset 11 dB

30

20

10

0

-10

-20

-30

-40

-50

-60

-70

Center 2.472 GHz

2 MHz/

Span 20 MHz

1

T1

T2

3dB

LVL

A

1 PK

MAXH

Offset 11 dB

30

20

10

0

-10

-20

-30

-40

-50

-60

-70

Center 2.472 GHz

2 MHz/

Span 20 MHz

1

T1

T2

3dB

LVL

A

1 PK

MAXH

Offset 11 dB

30

20

10

0

-10

-20

-30

-40

-50

-60

-70

Center 2.472 GHz

2 MHz/

Span 20 MHz

1

T1

T2

3dB

LVL

A

1 PK

MAXH

Offset 11 dB

30

20

10

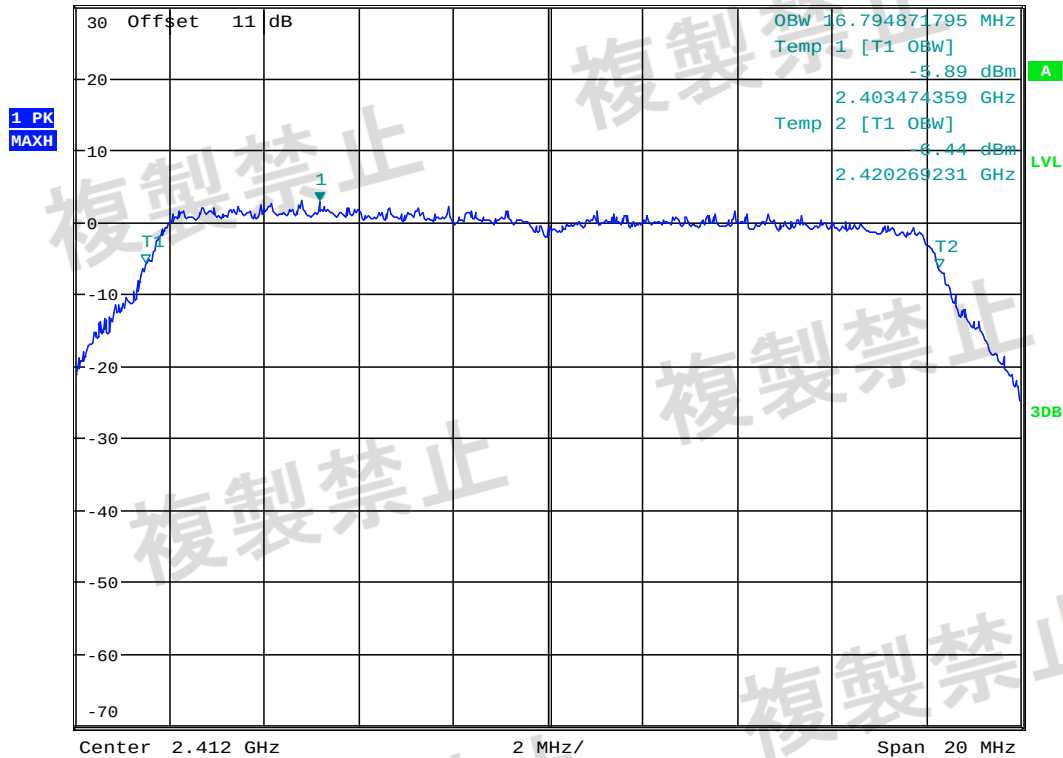
</



Mode B



Ref 30 dBm * Att 20 dB * RBW 300 kHz * VBW 300 kHz SWT 2.5 ms Marker 1 [T1] 2.72 dBm 2.407160256 GHz



OCCUPIED BANDWIDTH 802.11G CH1

Date: 15.JUN.2018 10:15:19



P.S.

* RBW 300 kHz

Marker 1 [T1]

* VBW 300 kHz

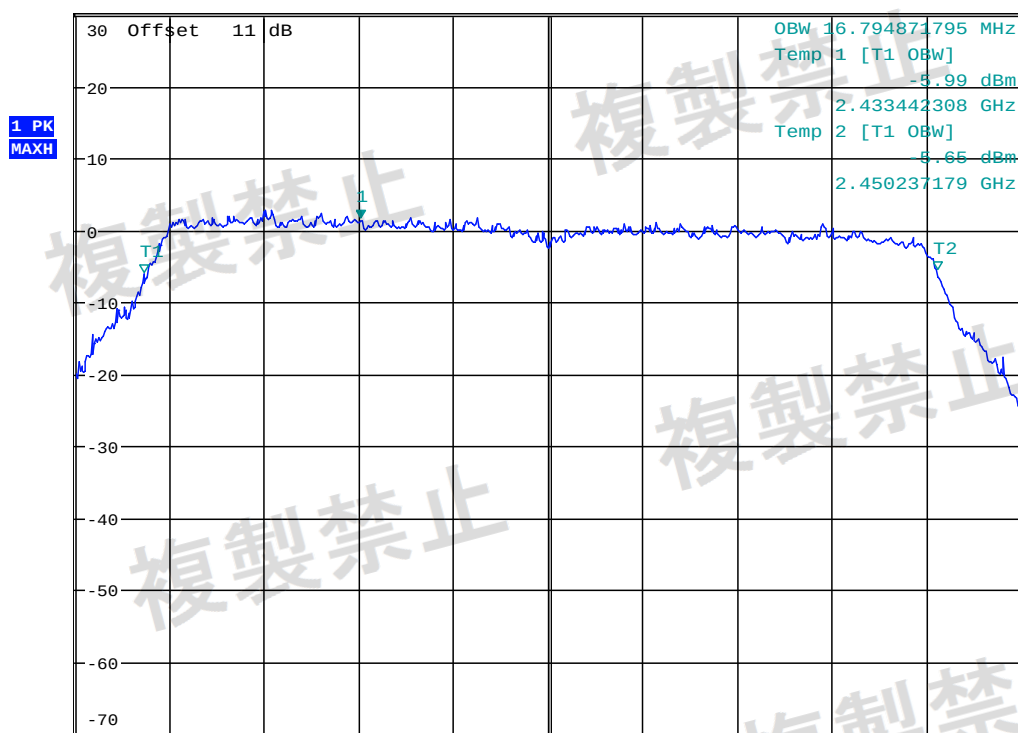
1.62 dBm

SWT 2.5 ms

2.438025641 GHz

Ref 30 dBm

* Att 20 dB



OCCUPIED BANDWIDTH 802.11G CH7

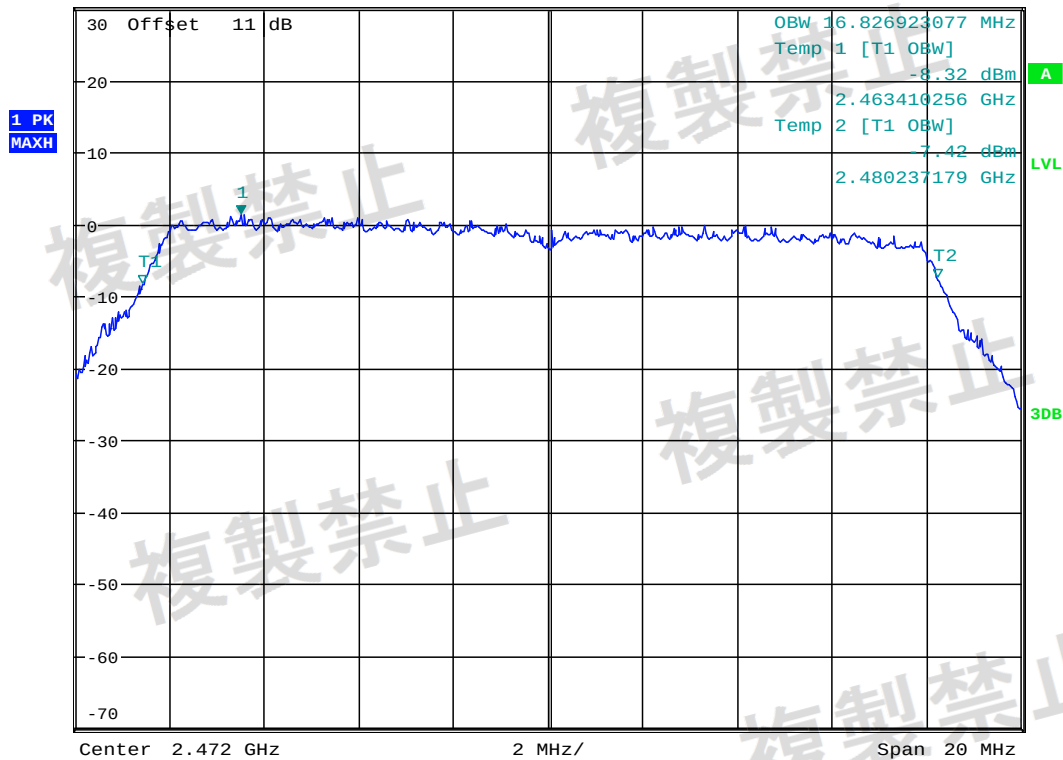
Date: 15.JUN.2018 10:14:56



Worldwide Testing Services(Taiwan) Co., Ltd.



Ref 30 dBm * Att 20 dB RBW 300 kHz VBW 300 kHz SWT 2.5 ms Marker 1 [T1] 1.35 dBm 2.465493590 GHz



OCCUPIED BANDWIDTH 802.11G CH13

Date: 15.JUN.2018 10:14:34



Mode C



* RBW 300 kHz
* VBW 300 kHz
SWT 2.5 ms

Marker 1 [T1]

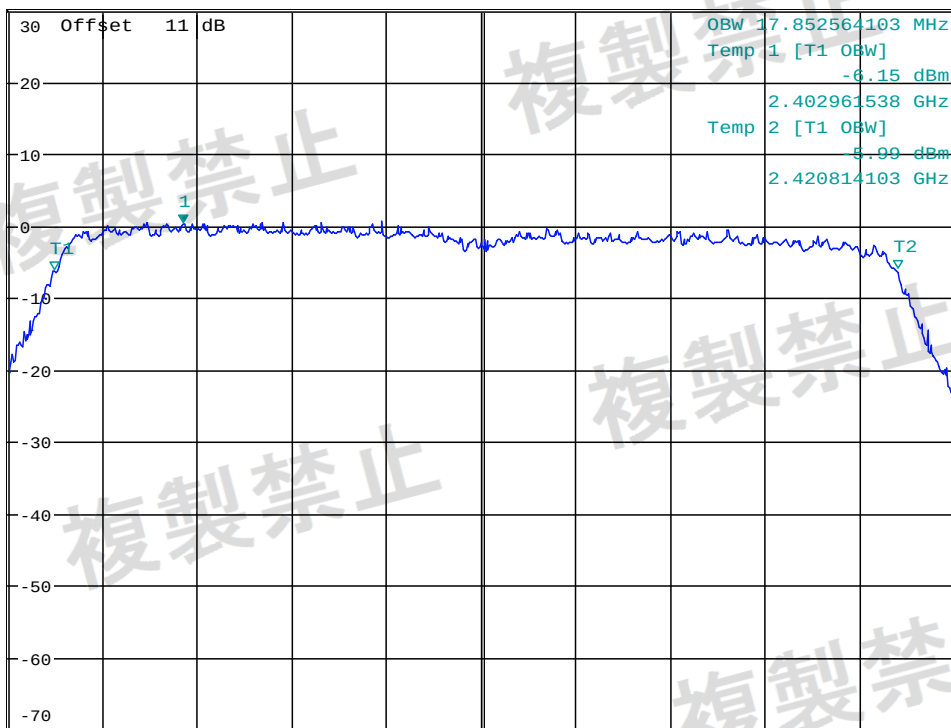
0.25 dBm

2.405685897 GHz

Ref 30 dBm

* Att 20 dB

1 PK
MAXH



Center 2.412 GHz

2 MHz/

Span 20 MHz

OCCUPIED BANDWIDTH 802.11N 20MHZ CH1

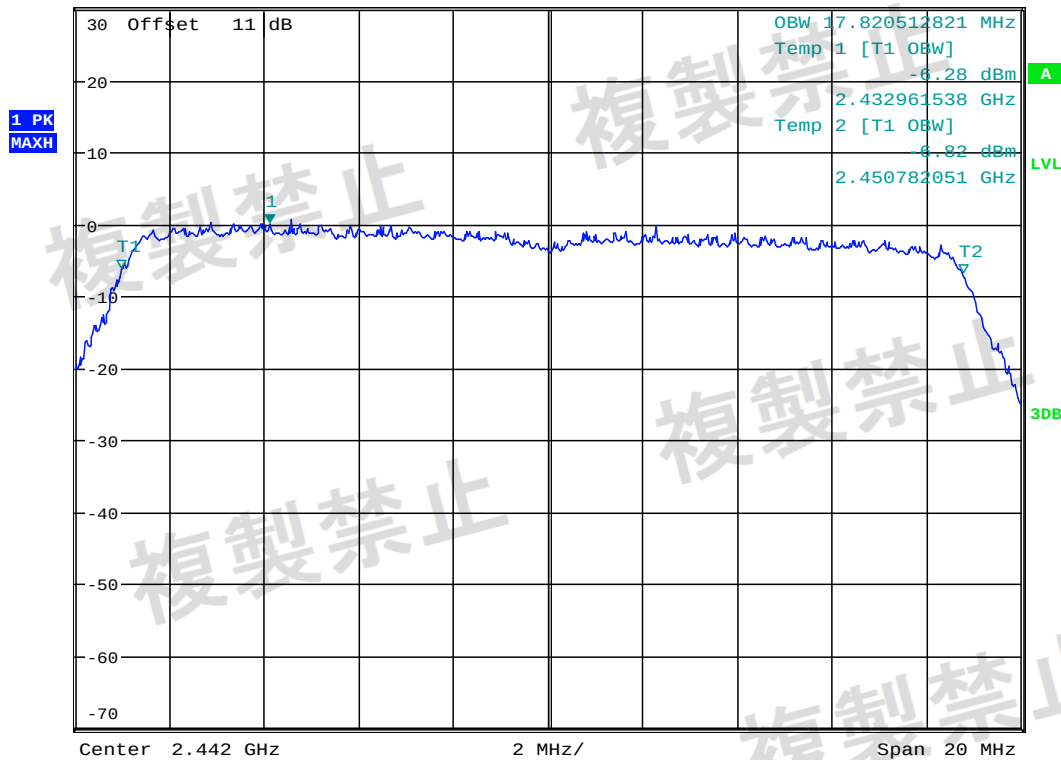
Date: 15.JUN.2018 10:16:09



Worldwide Testing Services(Taiwan) Co., Ltd.

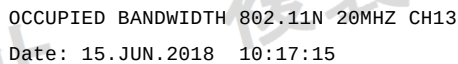


Ref 30 dBm * Att 20 dB * RBW 300 kHz Marker 1 [T1] 0.09 dBm
* VBW 300 kHz SWT 2.5 ms 2.436102564 GHz



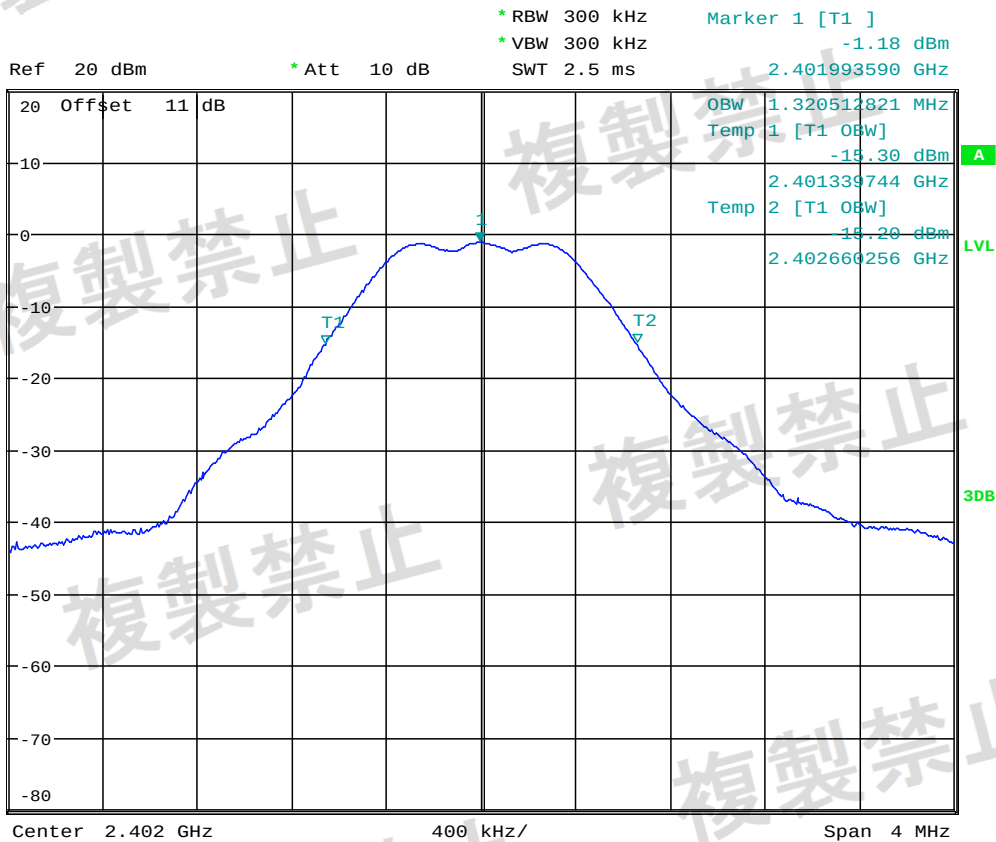
OCCUPIED BANDWIDTH 802.11N 20MHZ CH7

Date: 15.JUN.2018 10:16:49





Mode D



OCCUPIED BANDWIDTH CH0

Date: 17.JUN.2018 16:54:38



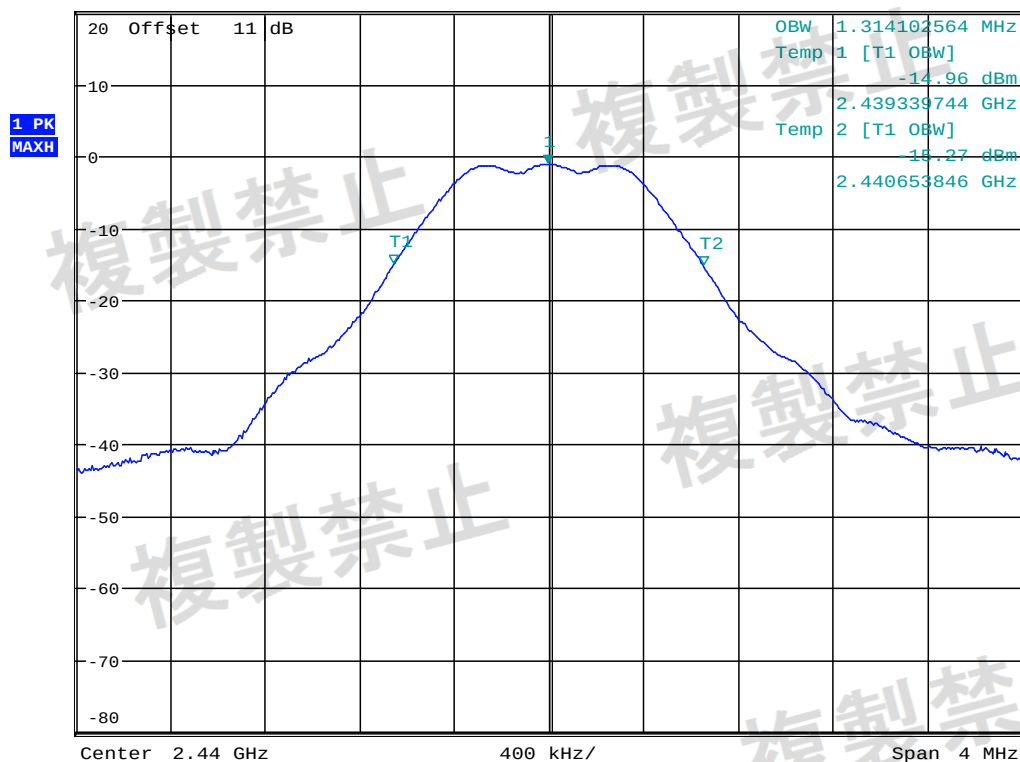
複製禁止

* RBW 300 kHz
* VBW 300 kHz
SWT 2.5 ms

Marker 1 [T1]
-1.07 dBm
2.439993590 GHz

Ref 20 dBm

* Att 10 dB



OCCUPIED BANDWIDTH CH19

Date: 17.JUN.2018 16:56:36



P.S.

1 PK
MAXH

Ref 20 dBm

* Att 10 dB

* RBW 300 kHz

* VBW 300 kHz

SWT 2.5 ms

Marker 1 [T1]

-0.84 dBm

2.480000000 GHz

OBW 1.314102564 MHz

Temp 1 [T1 OBW]

-14.76 dBm

2.479339744 GHz

Temp 2 [T1 OBW]

-16.06 dBm

2.480653846 GHz

3dB

LVL

A

Center 2.48 GHz

400 kHz/

Span 4 MHz

Offset 11 dB

20

-10

0

-10

-20

-30

-40

-50

-60

-70

-80

T1

T2

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

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269

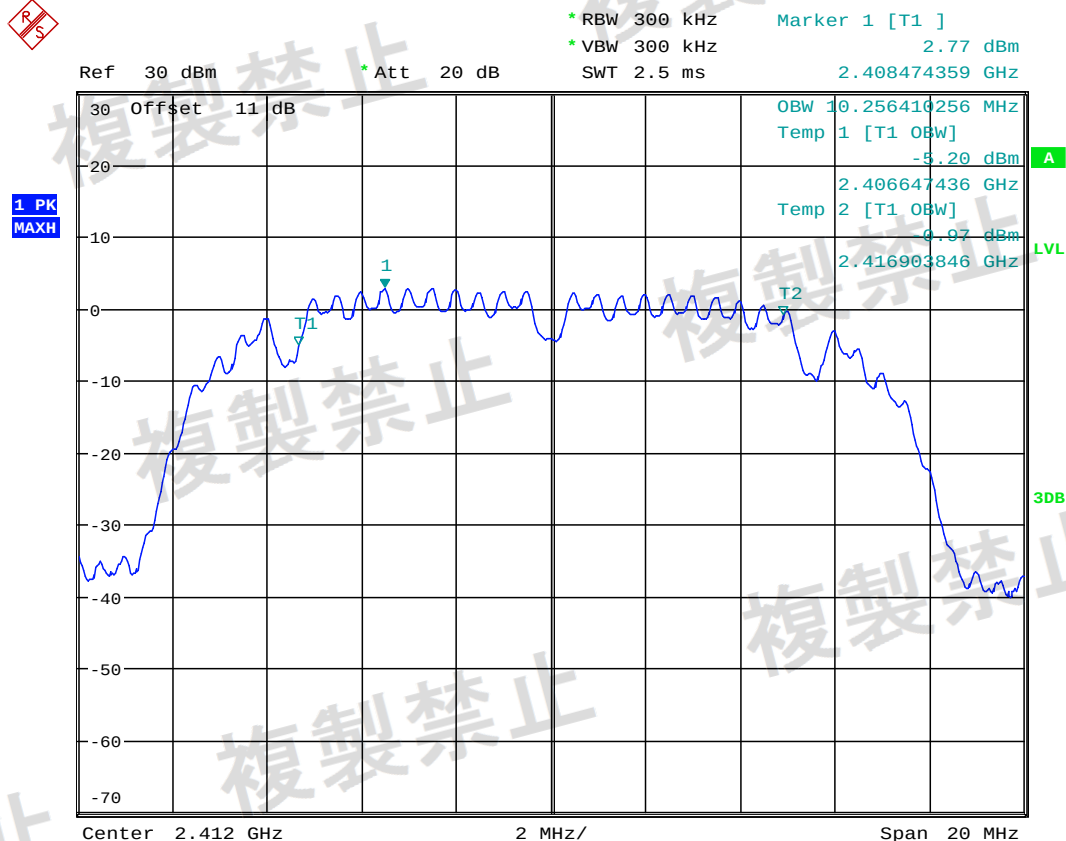
27



3.5 Spreading Bandwidth & Spreading Factor

3.5.1 Spreading Bandwidth

Mode A

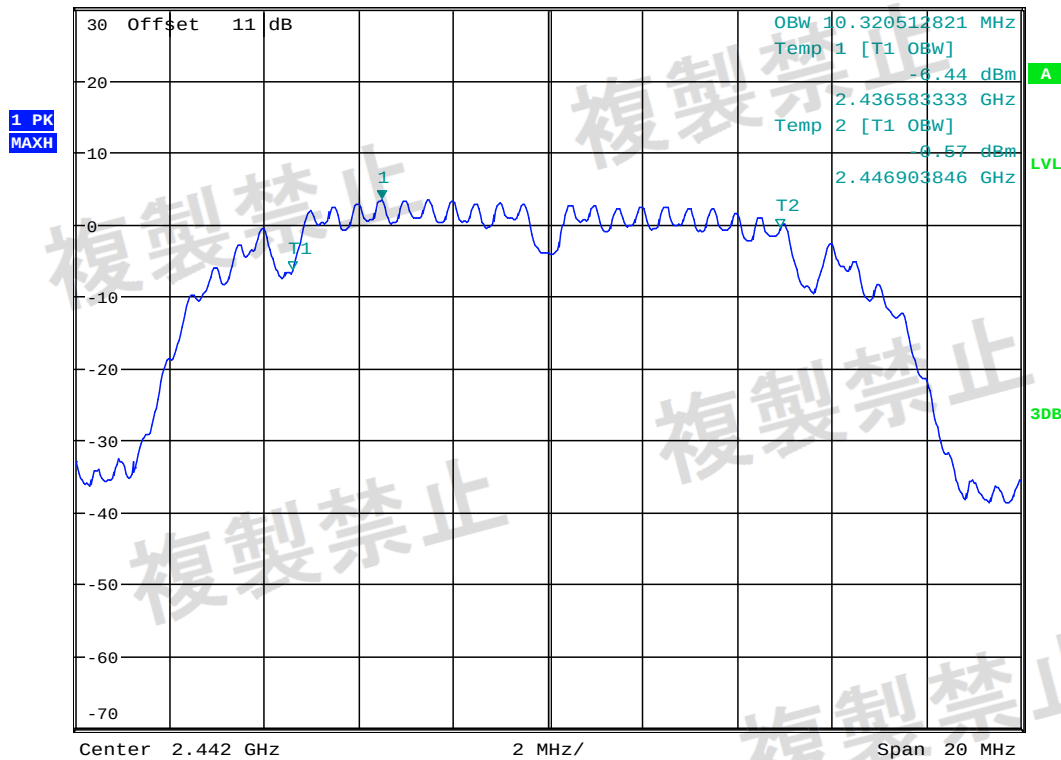


SPREADING BANDWIDTH 802.11B CH1

Date: 15.JUN.2018 10:25:38

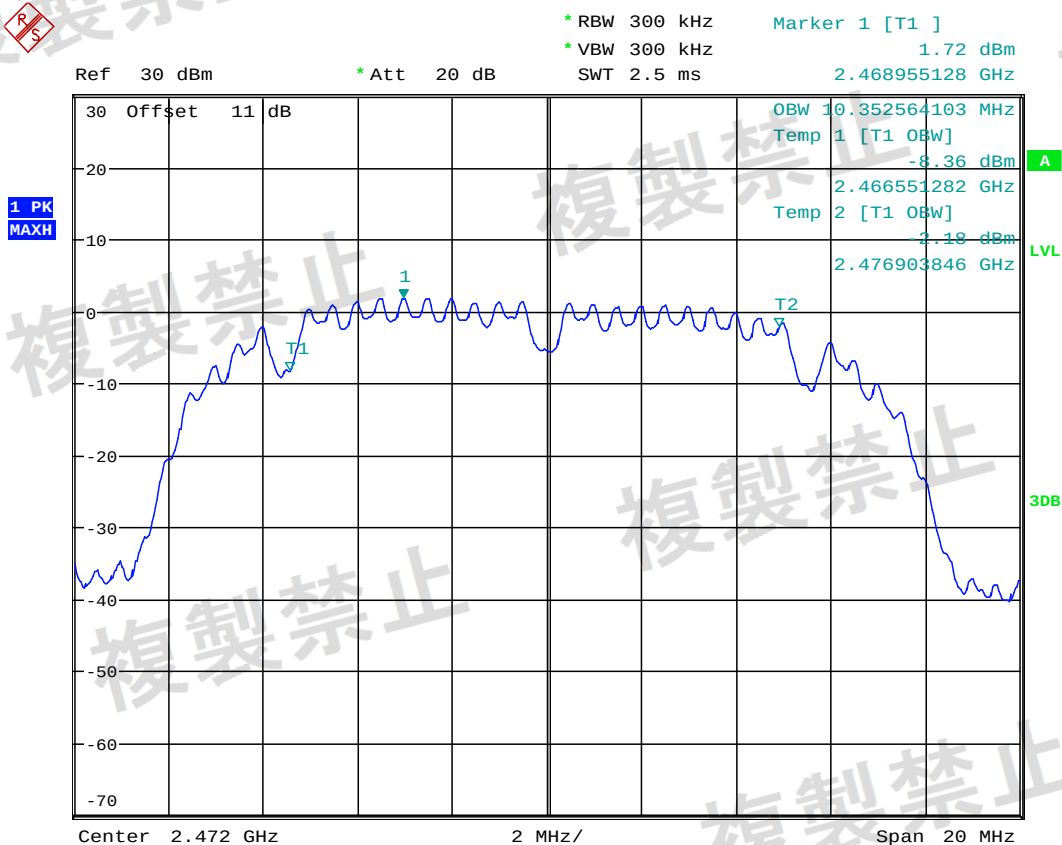


Ref 30 dBm * Att 20 dB RBW 300 kHz VBW 300 kHz SWT 2.5 ms Marker 1 [T1] 3.34 dBm 2.438474359 GHz



SPREADING BANDWIDTH 802.11B CH7

Date: 15.JUN.2018 10:25:19



SPREADING BANDWIDTH 802.11B CH13

Date: 15.JUN.2018 10:24:58



Mode B

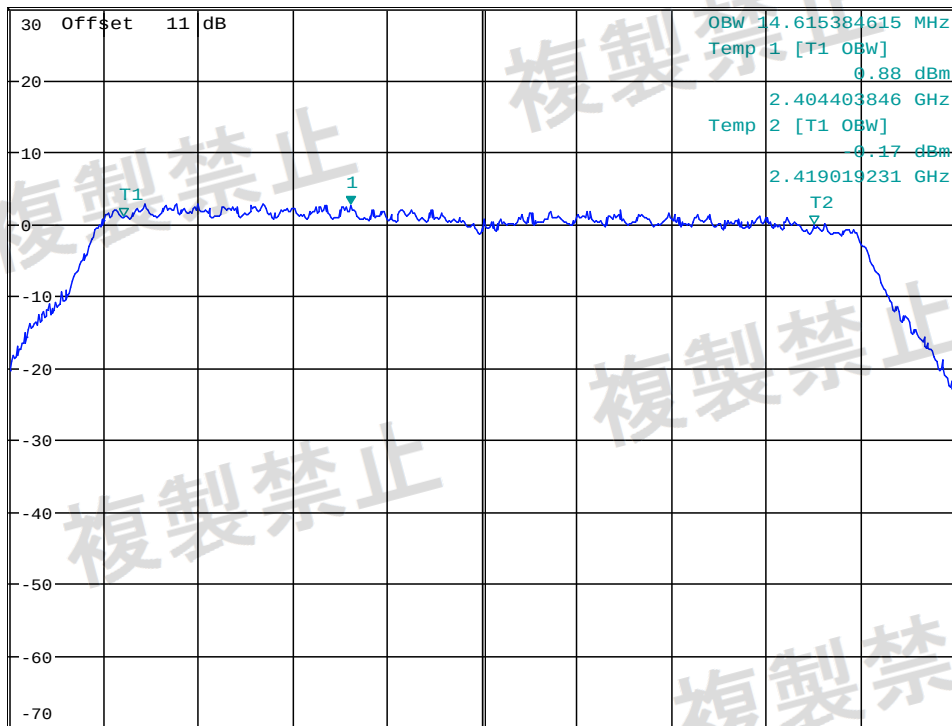


* RBW 300 kHz Marker 1 [T1]
* VBW 300 kHz 2.55 dBm
SWT 2.5 ms 2.409211538 GHz

Ref 30 dBm

* Att 20 dB

1 PK
MAXH



Center 2.412 GHz

2 MHz/

Span 20 MHz

SPREADING BANDWIDTH 802.11G CH1

Date: 15.JUN.2018 10:22:54



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複製禁止

* RBW 300 kHz
* VBW 300 kHz
SWT 2.5 ms

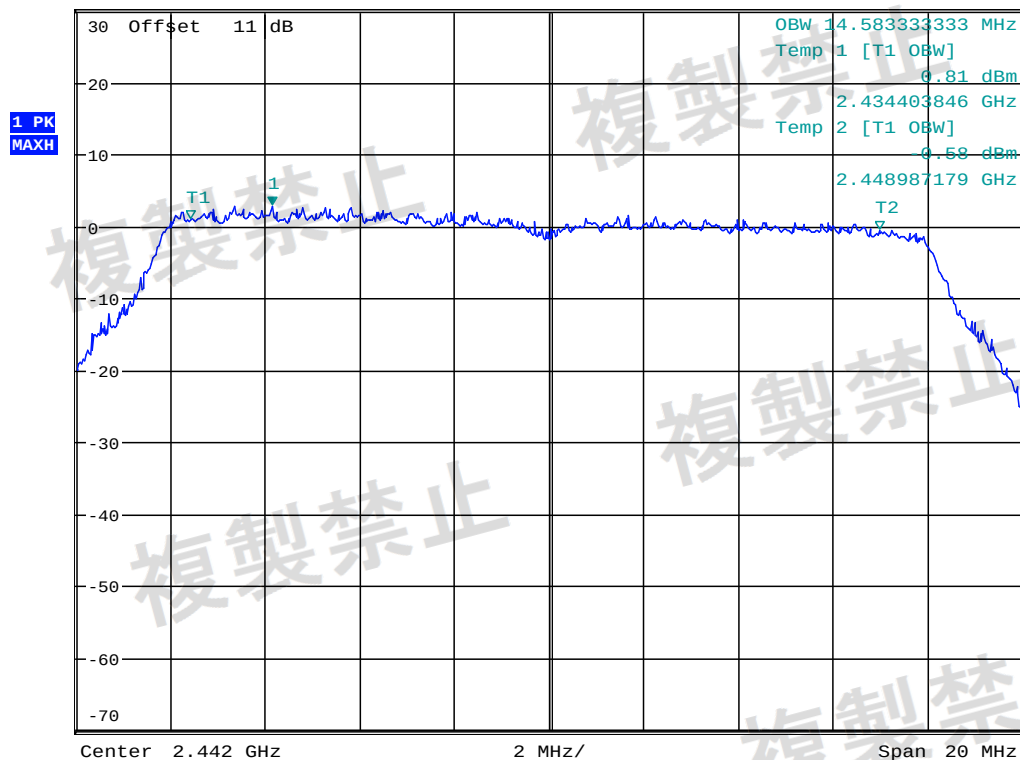
Marker 1 [T1]

2.87 dBm

2.436134615 GHz

Ref 30 dBm

* Att 20 dB

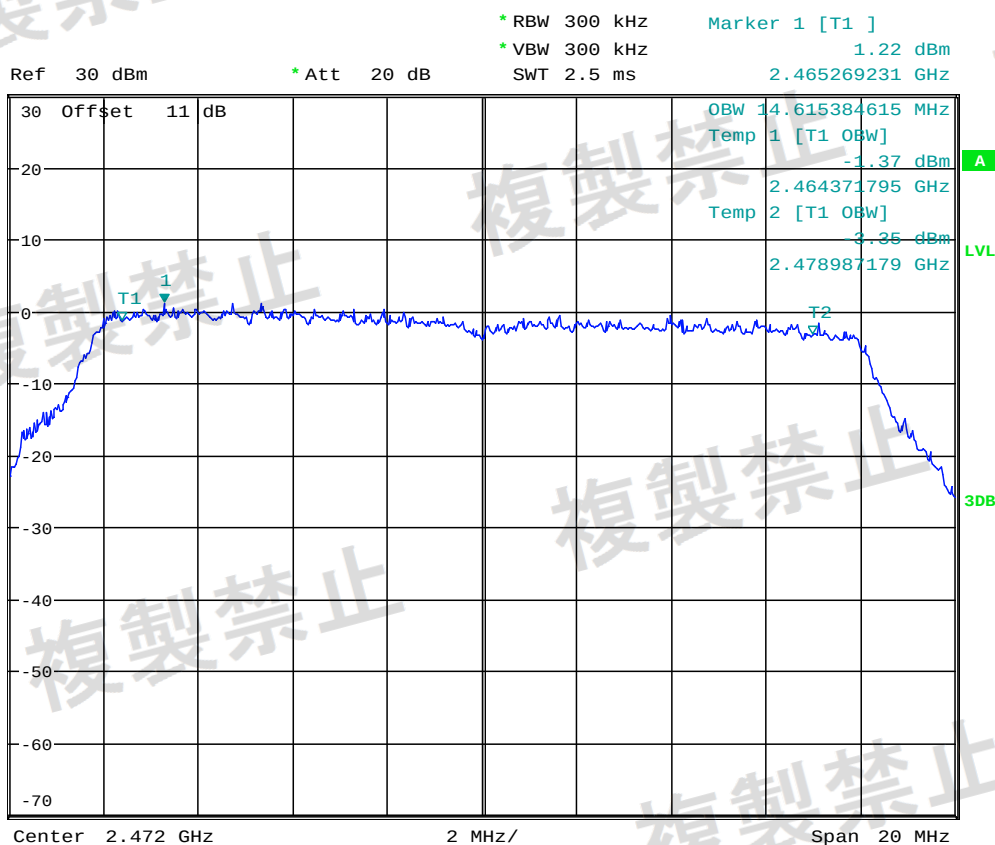


SPREADING BANDWIDTH 802.11G CH7

Date: 15.JUN.2018 10:23:18



1 PK
MAXH



SPREADING BANDWIDTH 802.11G CH13

Date: 15.JUN.2018 10:23:41



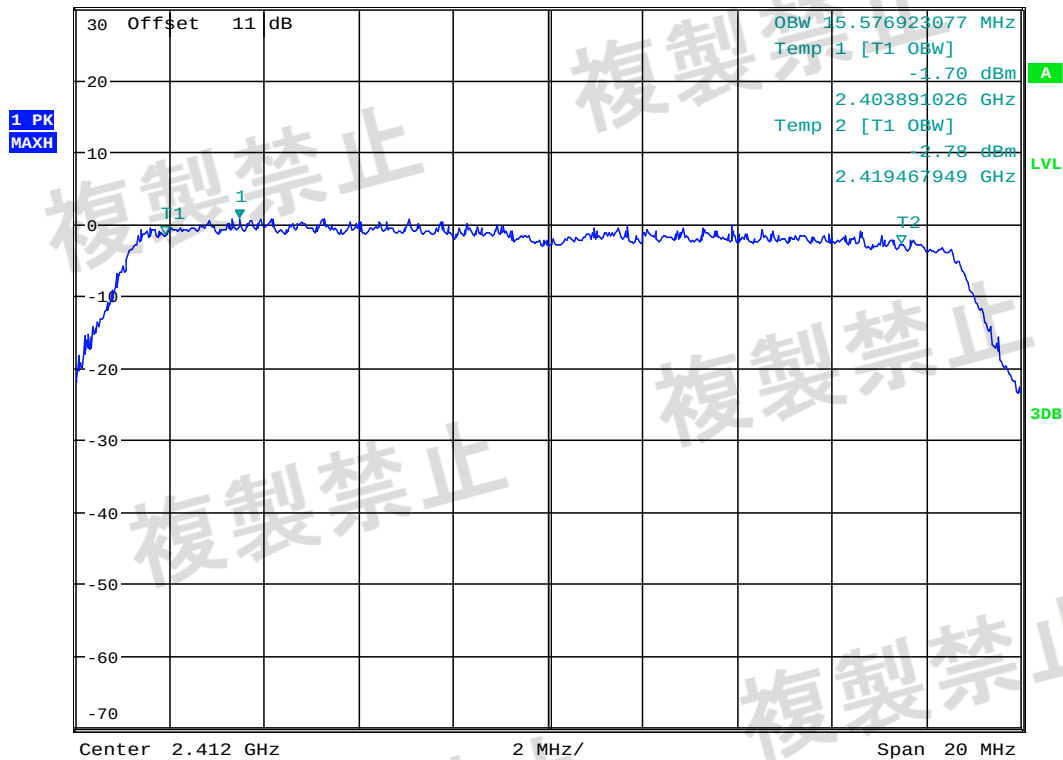
Mode C



* RBW 300 kHz Marker 1 [T1]
* VBW 300 kHz 0.68 dBm
SWT 2.5 ms 2.405461538 GHz

Ref 30 dBm

* Att 20 dB

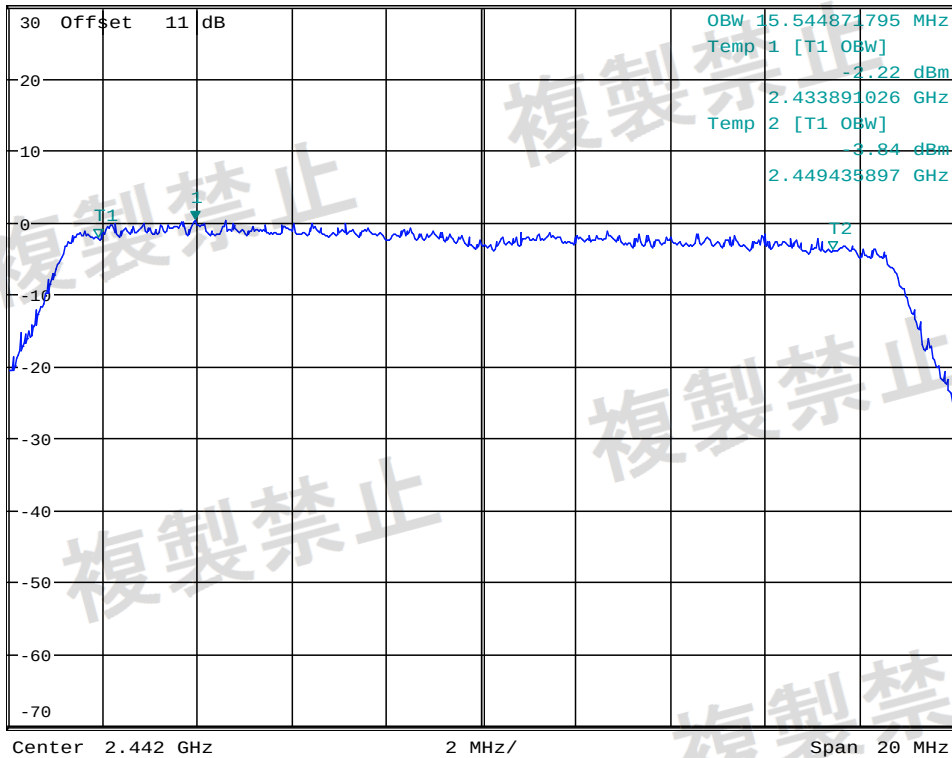


SPREADING BANDWIDTH 802.11N 20MHZ CH1

Date: 15.JUN.2018 10:21:18

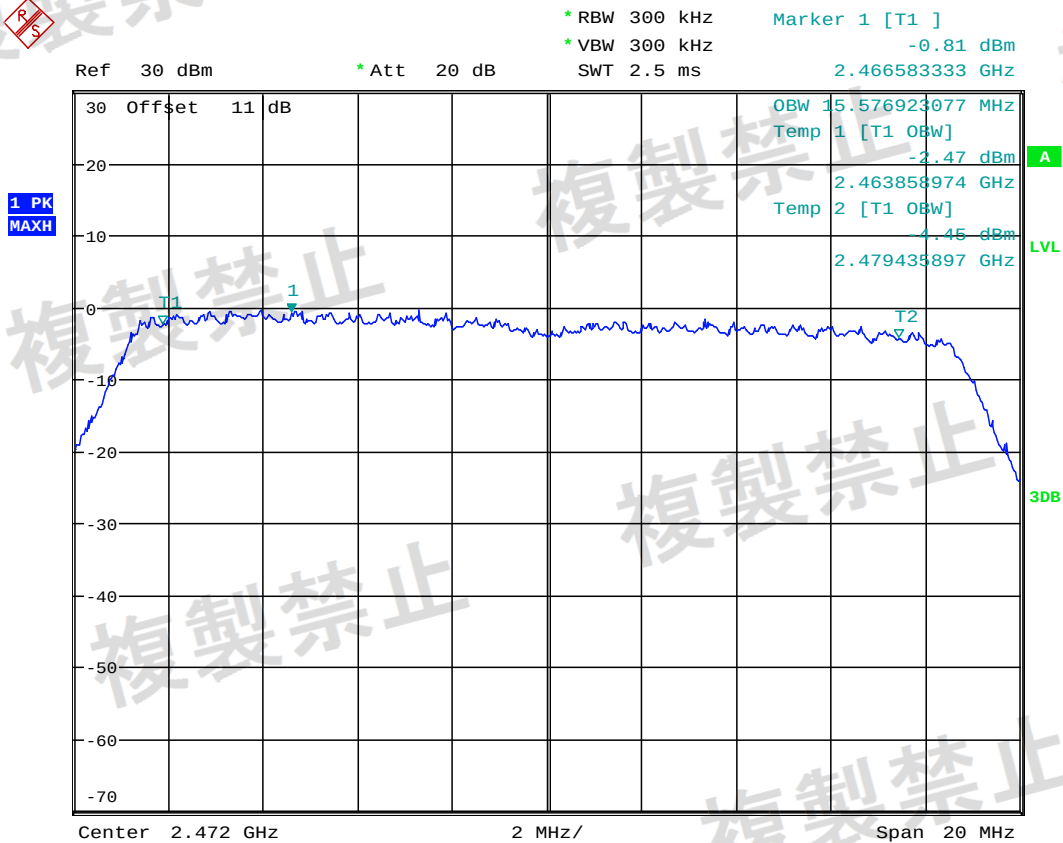


Ref 30 dBm * Att 20 dB RBW 300 kHz Marker 1 [T1]
VBW 300 kHz 0.36 dBm
SWT 2.5 ms 2.435942308 GHz



SPREADING BANDWIDTH 802.11N 20MHZ CH7

Date: 15.JUN.2018 10:20:56

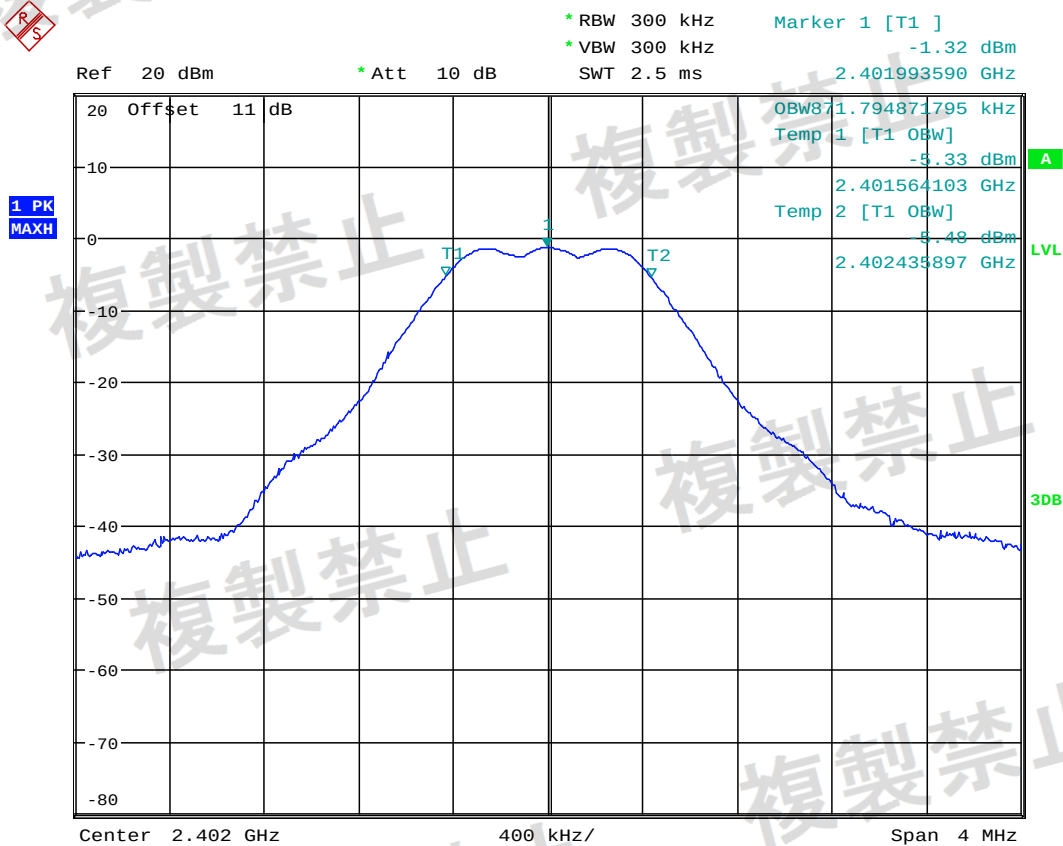


SPREADING BANDWIDTH 802.11N 20MHZ CH13

Date: 15.JUN.2018 10:20:31



Mode D



SPREADING BANDWIDTH CH0

Date: 17.JUN.2018 16:58:55



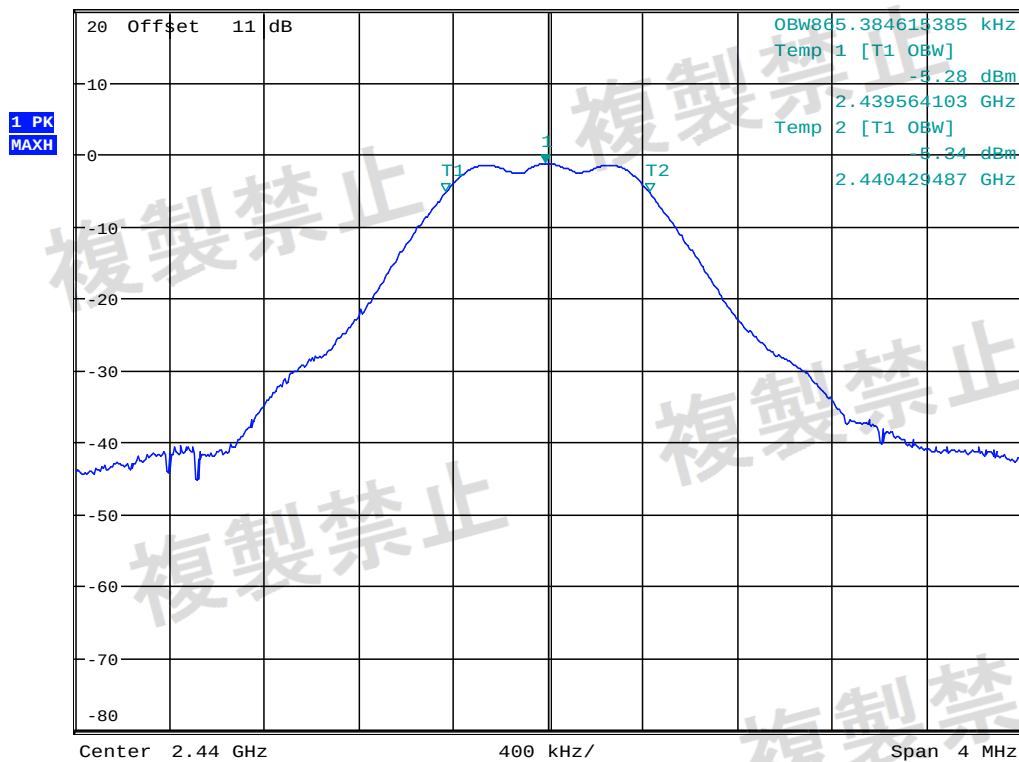
複製禁止

* RBW 300 kHz
* VBW 300 kHz
SWT 2.5 ms

Marker 1 [T1]
-1.31 dBm
2.439987179 GHz

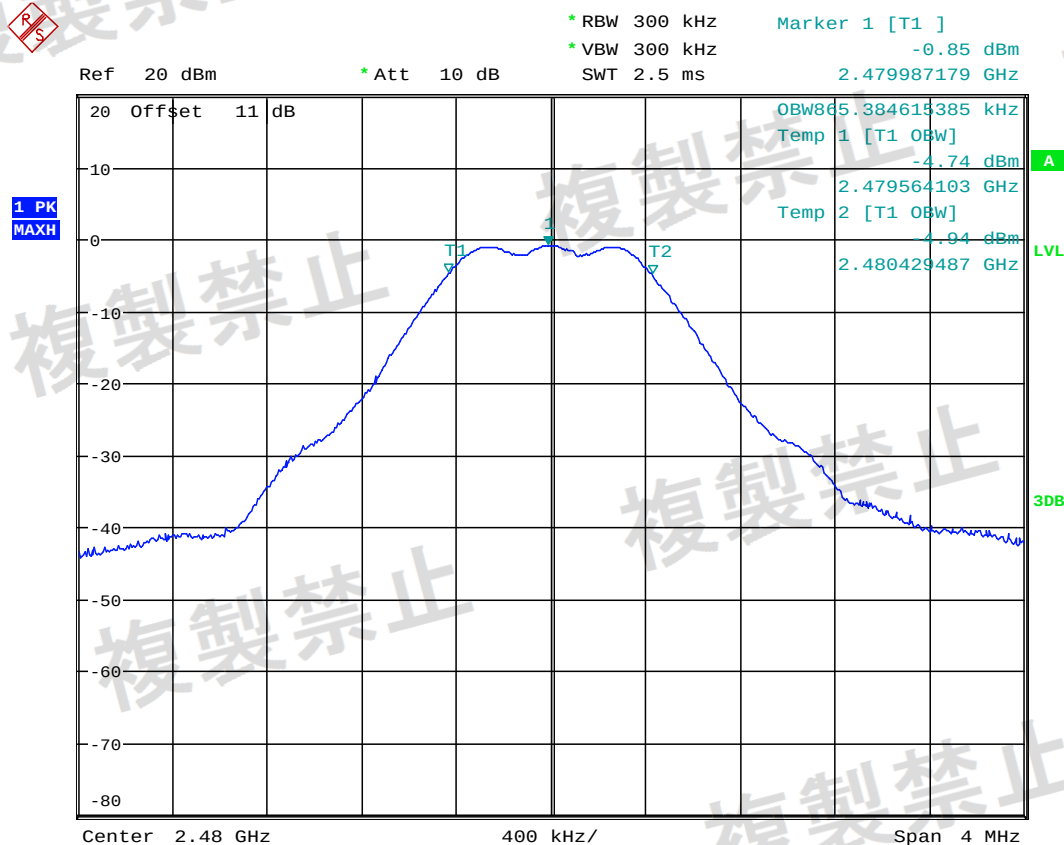
Ref 20 dBm

* Att 10 dB



SPREADING BANDWIDTH CH19

Date: 17.JUN.2018 16:58:33



SPREADING BANDWIDTH CH39
Date: 17.JUN.2018 16:58:10

Measurement uncertainty: ± 0.45 kHz

Limits:

Under all test conditions	DS, FH, FH+DS, FH+OFDM : 500kHz or more
---------------------------	---

Test equipment used: ETSTW-RE 050, ETSTW-RE 055



3.5.2 Spreading Factor

Spreading Factor	
Mode A (802.11b)	7.5291

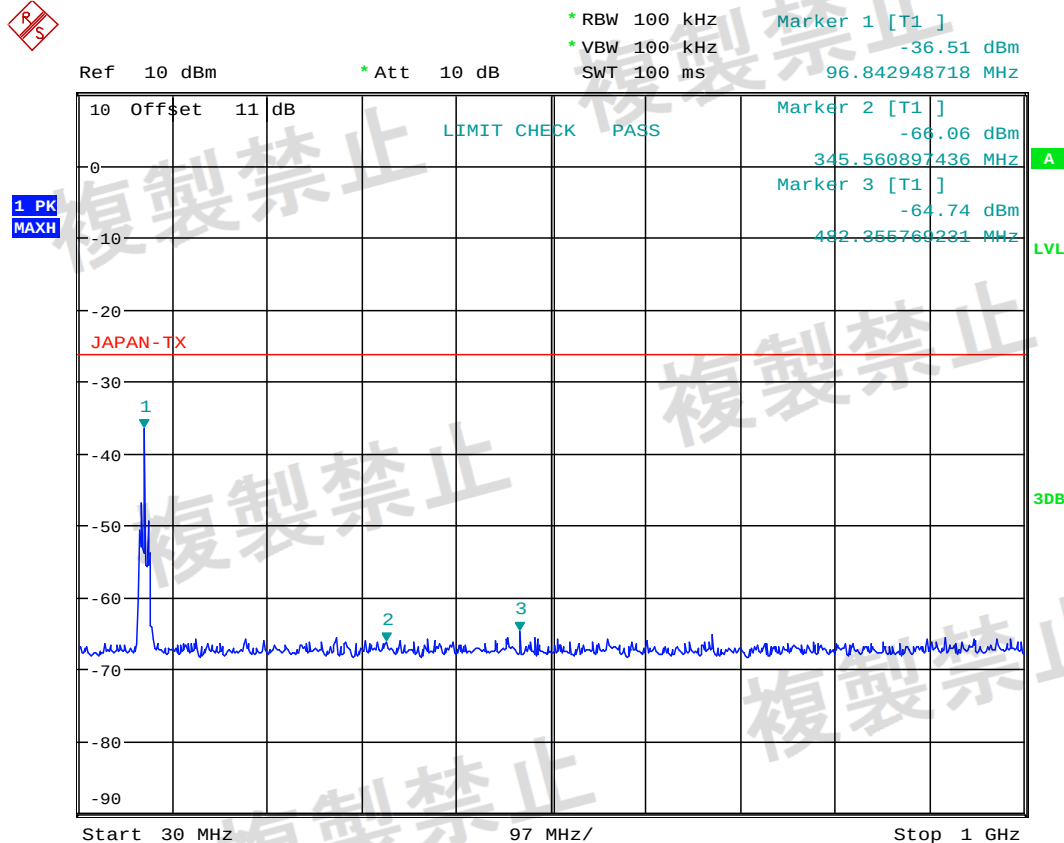
Spreading factor: Spreading bandwidth / throughput (1.375 Msps)

Under all test conditions	Operating frequency 2400 – 2483 MHz: ≥ 5
	Operating frequency 2471 – 2497 MHz: ≥ 10



3.6 Spurious emissions transmitter

Mode A



SPURIOUS EMISSION TX 802.11B CH1

Date: 15.JUN.2018 10:40:09

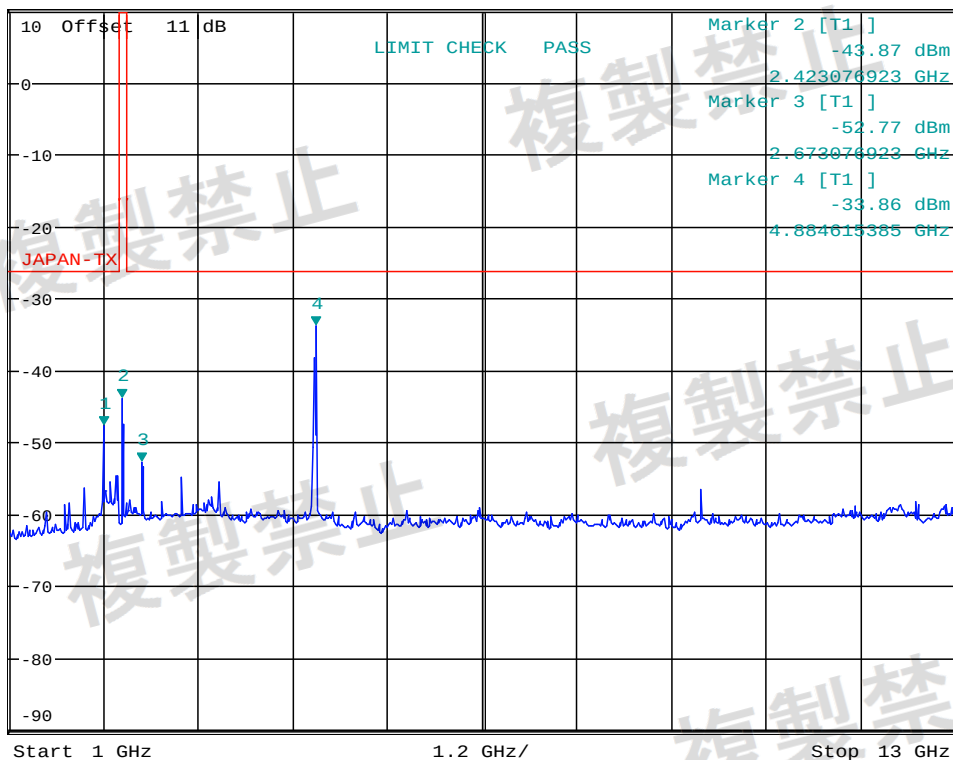






1 PK
MAXH

Ref 10 dBm * Att 10 dB * RBW 1 MHz Marker 1 [T1] -47.72 dBm
* VBW 1 MHz SWT 70 ms 2.192307692 GHz



SPURIOUS EMISSION TX 802.11B CH7

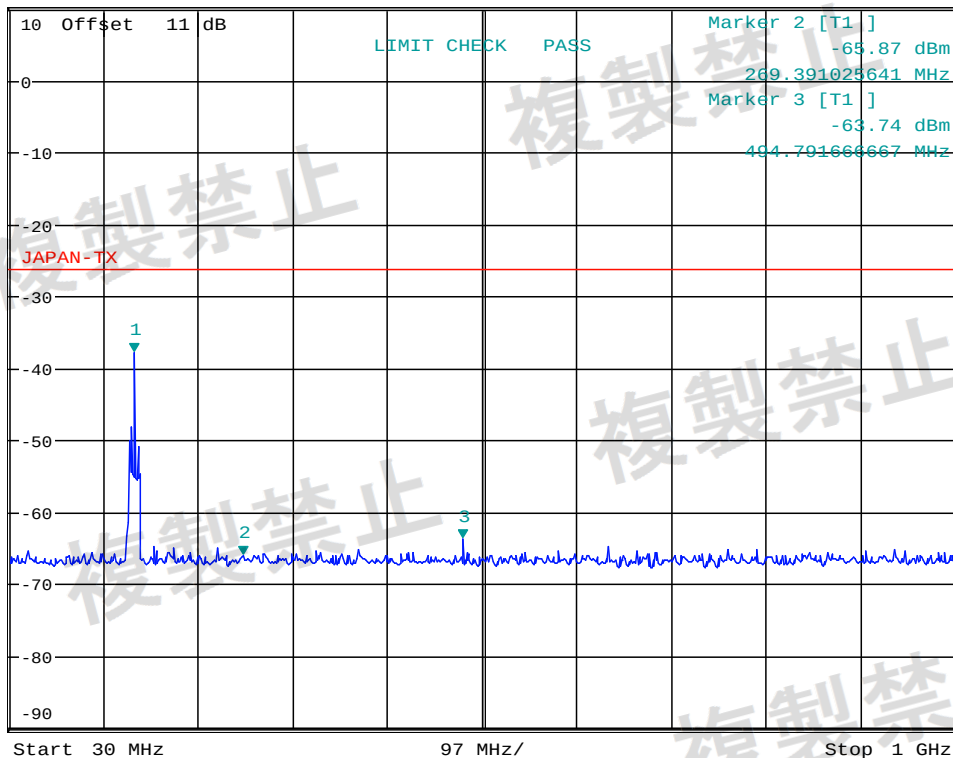
Date: 15.JUN.2018 11:09:46



複製禁止

1 PK
MAXH

Ref 10 dBm * Att 10 dB * RBW 100 kHz Marker 1 [T1] -37.70 dBm
* VBW 100 kHz SWT 100 ms 157.467948718 MHz

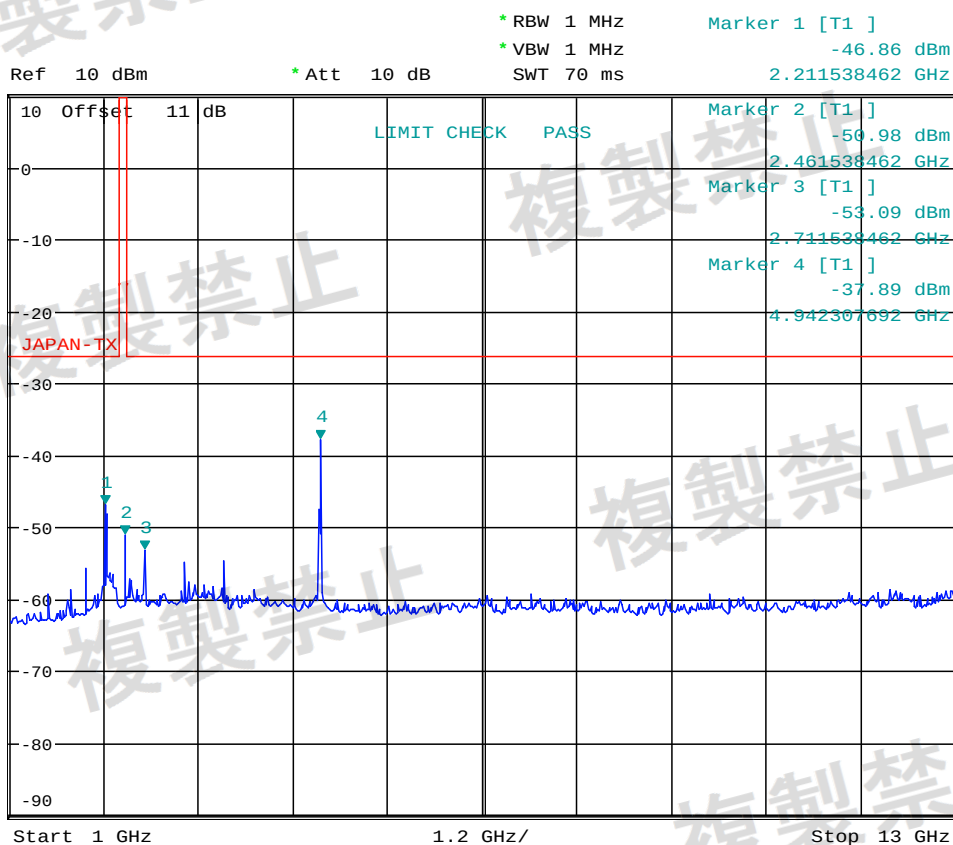


SPURIOUS EMISSION TX 802.11B CH13

Date: 15.JUN.2018 10:38:45



1 PK
MAXH



SPURIOUS EMISSION TX 802.11B CH13

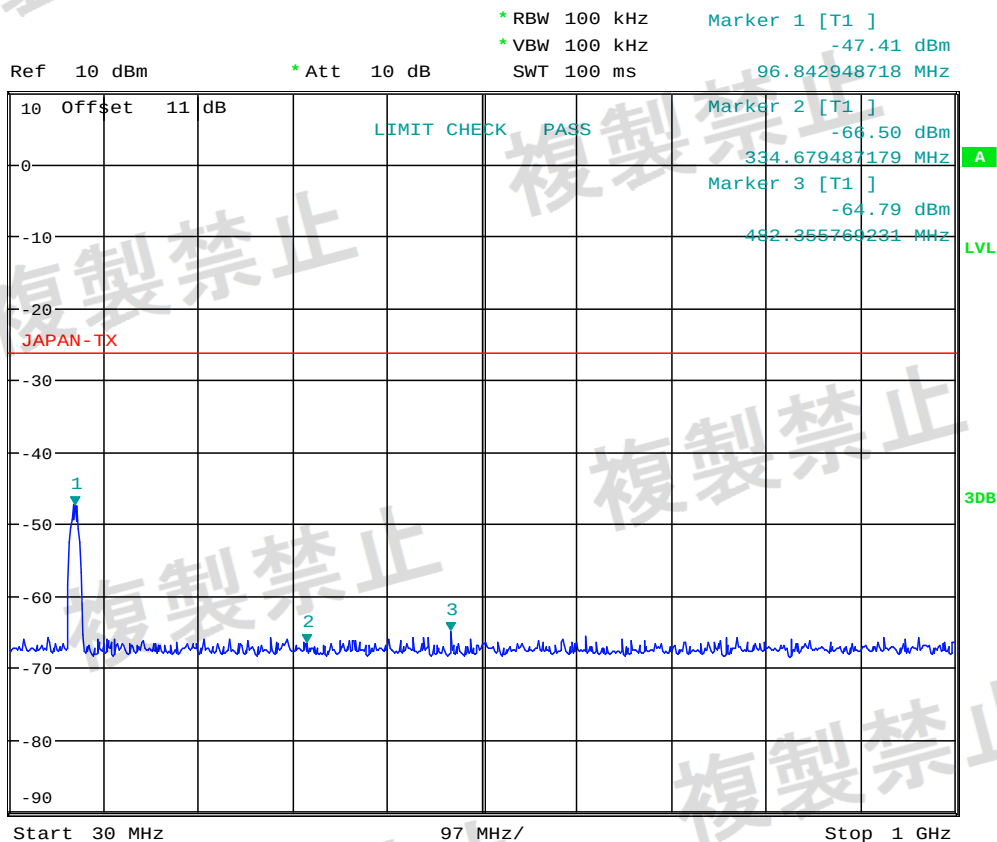
Date: 15.JUN.2018 11:10:33



Mode B



1 PK
MAXH



SPURIOUS EMISSION TX 802.11G CH1

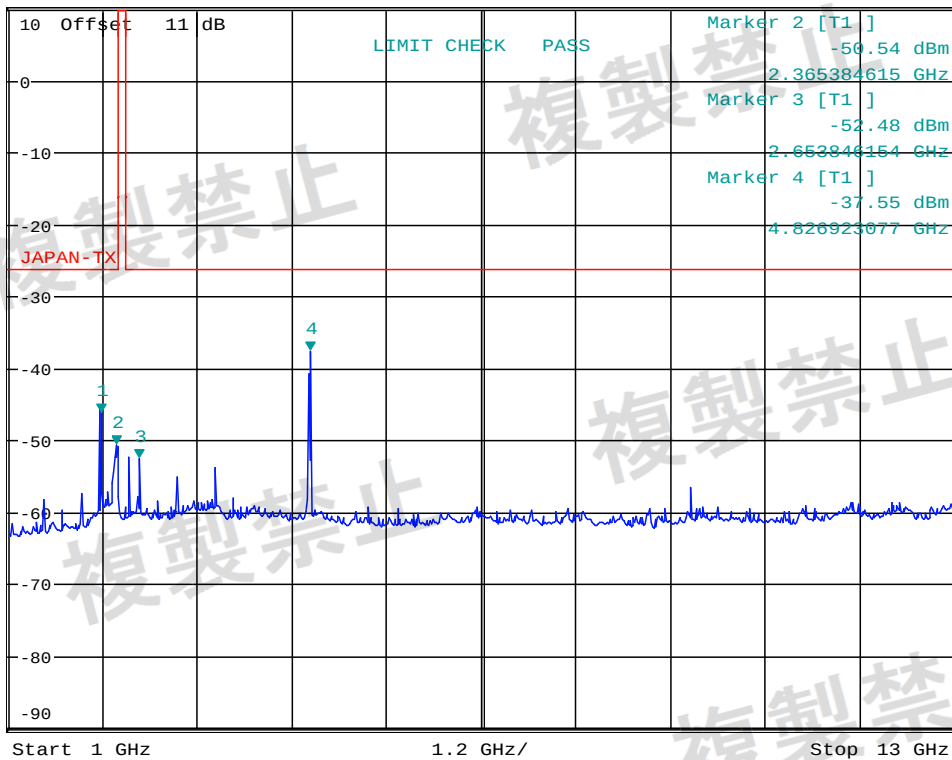
Date: 15.JUN.2018 10:42:17



複製禁止

1 PK
MAXH

Ref 10 dBm * Att 10 dB * RBW 1 MHz * VBW 1 MHz SWT 70 ms
Marker 1 [T1] -46.10 dBm 2.173076923 GHz



SPURIOUS EMISSION TX 802.11G CH1

Date: 15.JUN.2018 11:07:16



複製禁止

Ref 10 dBm

* Att 10 dB

SWT 100 ms

Marker 1 [T1]

-45.81 dBm

126.378205128 MHz

Marker 2 [T1]

-64.21 dBm

488.573717949 MHz

Marker 3 [T1]

-64.10 dBm

567.852564103 MHz

LIMIT CHECK PASS

1 PK

MAXH

JAPAN-TX

3DB

LVL

Start 30 MHz

97 MHz/

Stop 1 GHz

Offset 11 dB

10

11

dB

0

-10

-20

-30

-40

-50

-60

-70

-80

-90

10

11

dB

0

-10

-20

-30

-40

-50

-60

-70

-80

-90

10

11

dB

0

-10

-20

-30

-40

-50

-60

-70

-80

-90

10

11

dB

0

-10

-20

-30

-40

-50

-60

-70

-80

-90

10

11

dB

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-10

-20

-30

-40

-50

-60

-70

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-90

10

11

dB

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-10

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-10

-20

-30

-40

-50

-60

-70

-80

-90

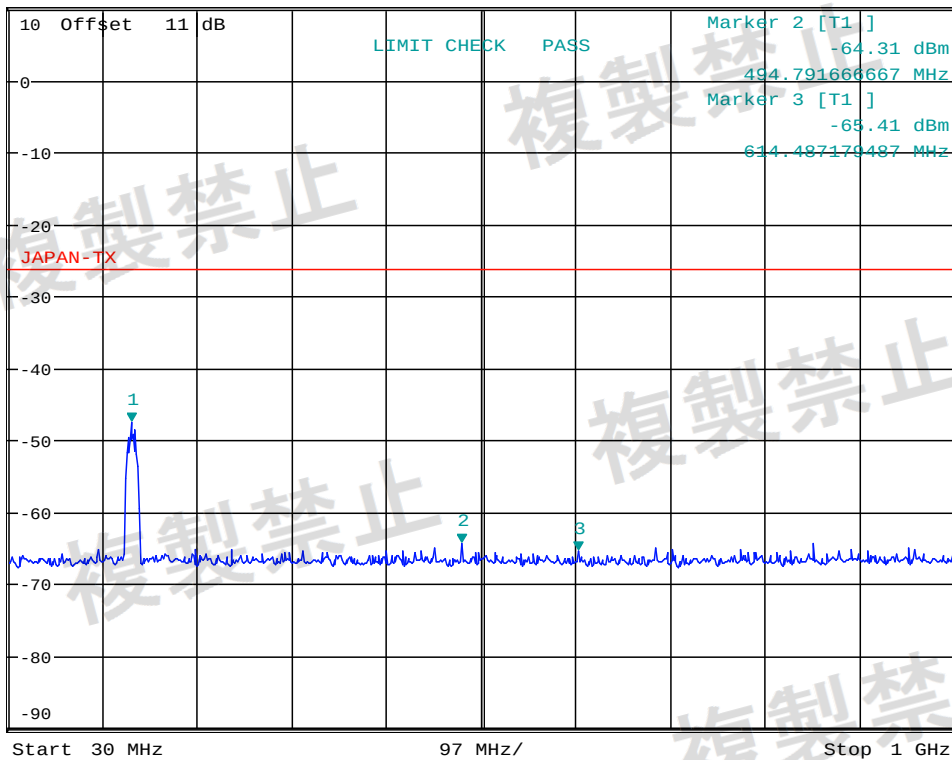




複製禁止

1 PK
MAXH

Ref 10 dBm * Att 10 dB RBW 100 kHz Marker 1 [T1]
* VBW 100 kHz -47.48 dBm
SWT 100 ms 155.913461538 MHz



SPURIOUS EMISSION TX 802.11G CH13

Date: 15.JUN.2018 10:45:15



複製禁止

Ref 10 dBm

* Att 10 dB

SWT 70 ms

Marker 1 [T1]

-45.66 dBm

2.211538462 GHz

Marker 2 [T1]

-48.64 dBm

2.461538462 GHz

Marker 3 [T1]

-53.52 dBm

2.711538462 GHz

Marker 4 [T1]

-34.96 dBm

4.942307692 GHz

LIMIT CHECK PASS

1 PK

MAXH

JAPAN-TX

3DB

LVL

A

Offset 11 dB

10

0

-10

-20

-30

-40

-50

-60

-70

-80

-90

Start 1 GHz

1.2 GHz/

Stop 13 GHz

SPURIOUS EMISSION TX 802.11G CH13

Date: 15.JUN.2018 11:03:54

Registration number: W6M21806-18161-J-1

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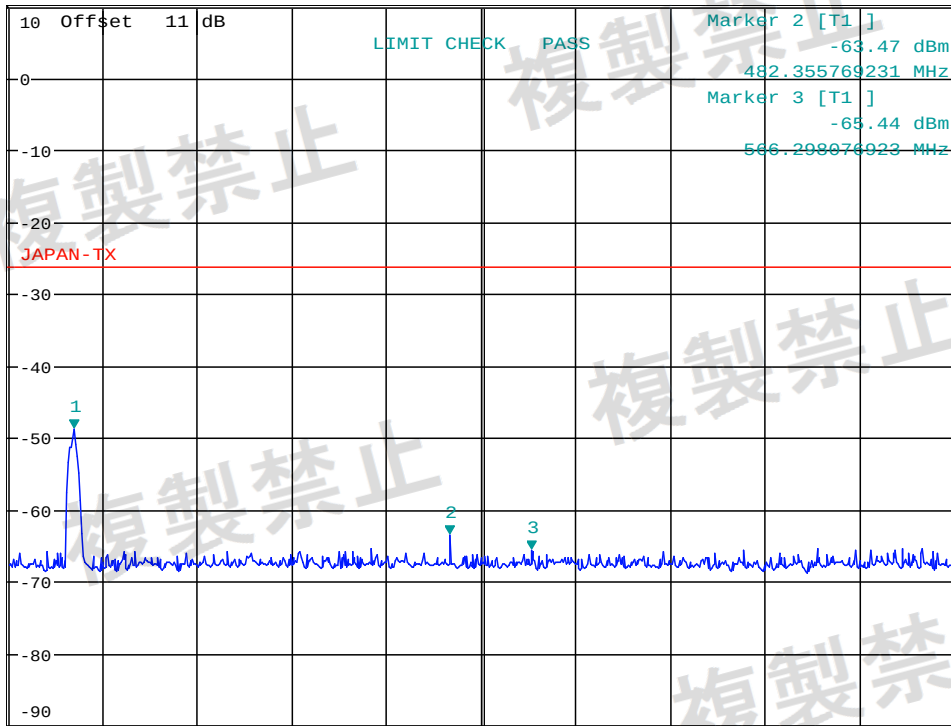
Mode C



* RBW 100 kHz Marker 1 [T1]
* VBW 100 kHz -48.71 dBm
SWT 100 ms 96.842948718 MHz

Ref 10 dBm

* Att 10 dB



Start 30 MHz

97 MHz/

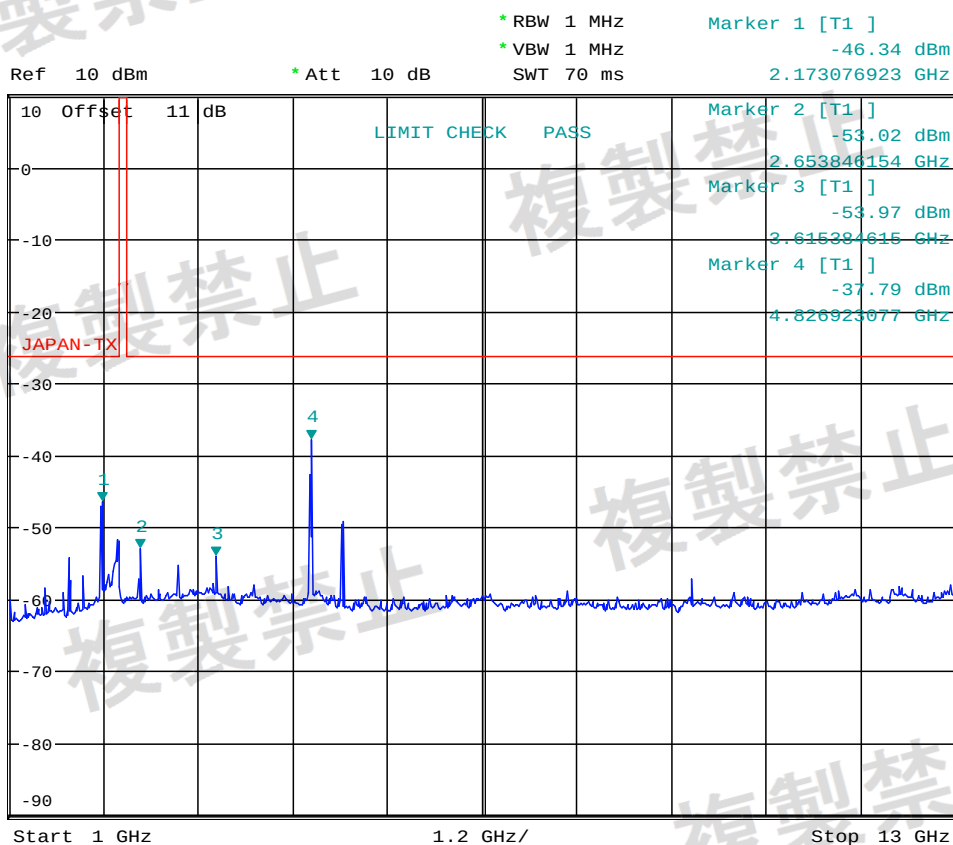
Stop 1 GHz

SPURIOUS EMISSION TX 802.11N 20MHZ CH1

Date: 15.JUN.2018 10:48:10



1 PK
MAXH



SPURIOUS EMISSION TX 802.11N 20MHZ CH1

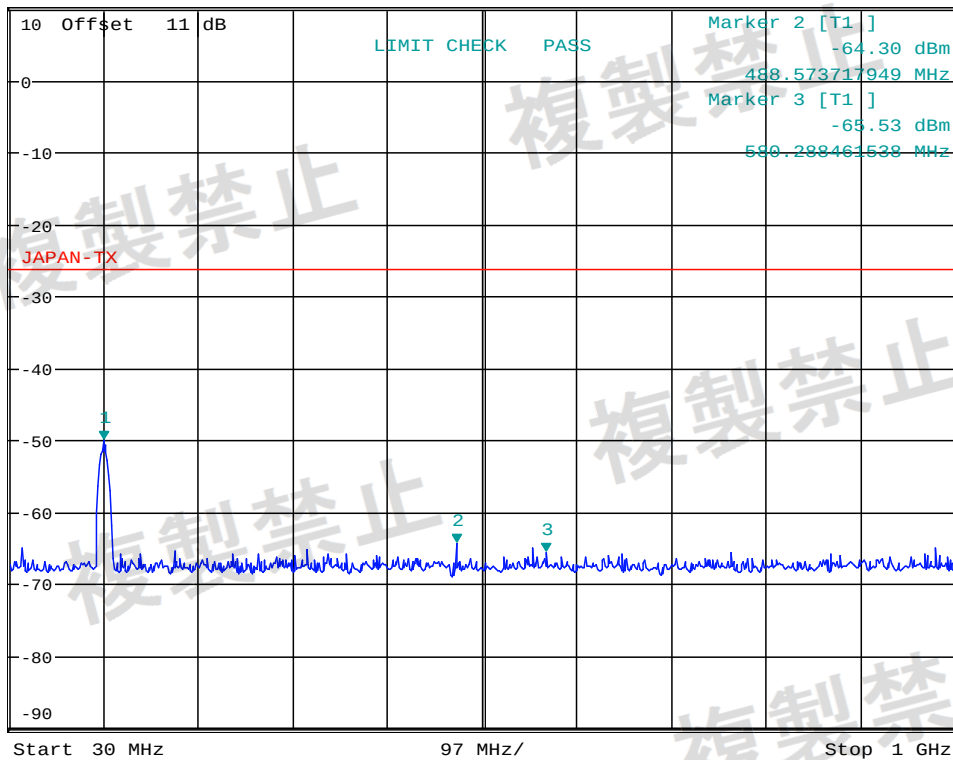
Date: 15.JUN.2018 10:58:30



複製禁止

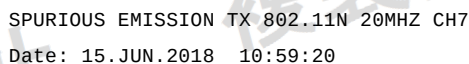
1 PK
MAXH

Ref 10 dBm * Att 10 dB * RBW 100 kHz Marker 1 [T1] -50.01 dBm
* VBW 100 kHz SWT 100 ms 126.378205128 MHz



SPURIOUS EMISSION TX 802.11N 20MHZ CH7

Date: 15.JUN.2018 10:47:37

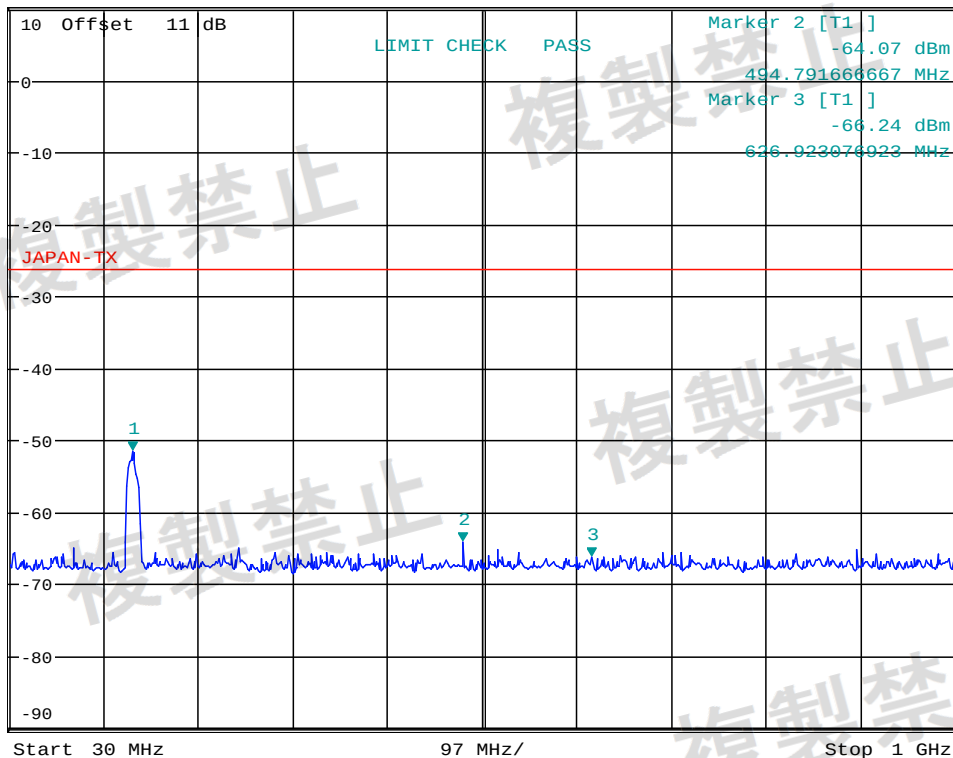




複製禁止

1 PK
MAXH

Ref 10 dBm * Att 10 dB * RBW 100 kHz Marker 1 [T1] -51.50 dBm
* VBW 100 kHz SWT 100 ms 155.913461538 MHz



SPURIOUS EMISSION TX 802.11N 20MHZ CH13

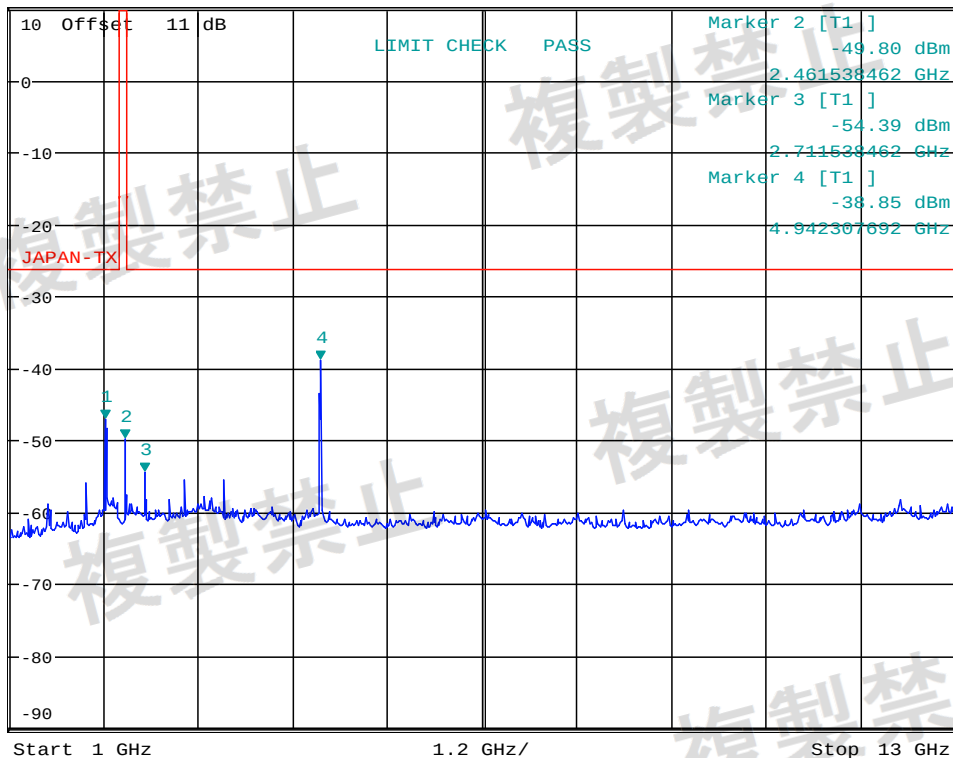
Date: 15.JUN.2018 10:47:07



複製禁止

1 PK
MAXH

Ref 10 dBm * Att 10 dB * RBW 1 MHz * VBW 1 MHz SWT 70 ms Marker 1 [T1]
-47.03 dBm
2.211538462 GHz



SPURIOUS EMISSION TX 802.11N 20MHZ CH13

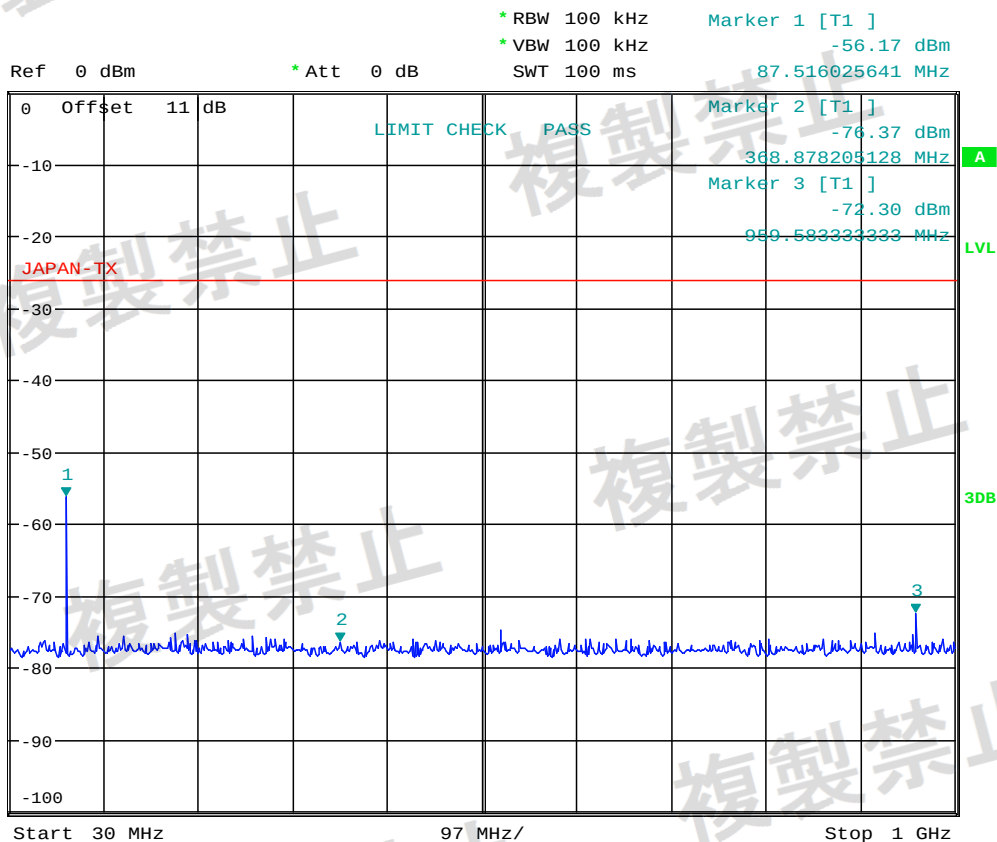
Date: 15.JUN.2018 11:00:23



Mode D



1 PK
MAXH

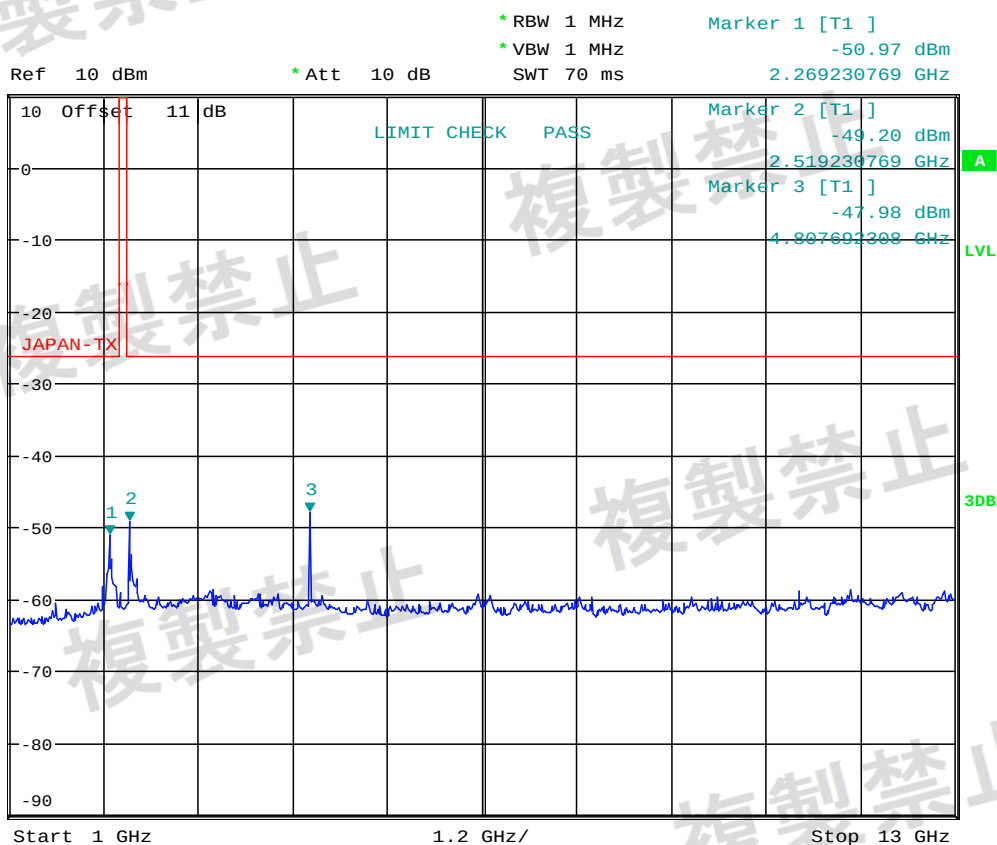


CONDUCTED SPURIOUS EMISSION TX CH0

Date: 17.JUN.2018 17:17:15



1 PK
MAXH



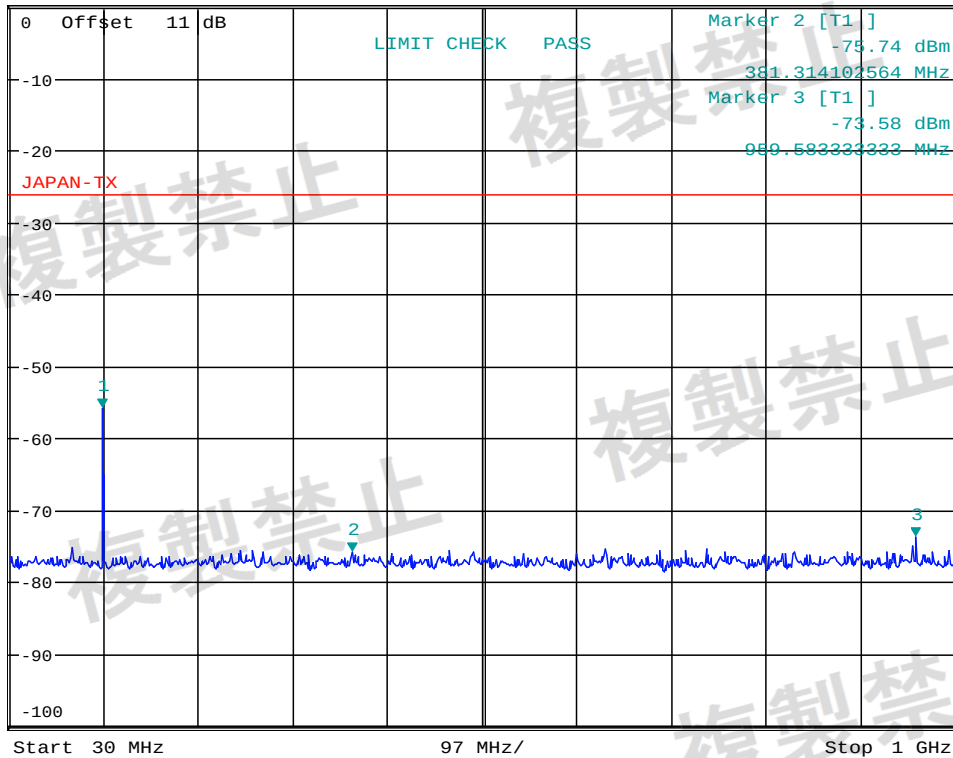
CONDUCTED SPURIOUS EMISSION TX CH0

Date: 17.JUN.2018 17:19:36



1 PK
MAXH

Ref 0 dBm * Att 0 dB * RBW 100 kHz Marker 1 [T1] -55.81 dBm
SWT 100 ms 124.823717949 MHz



CONDUCTED SPURIOUS EMISSION TX CH19

Date: 17.JUN.2018 17:16:45



複製禁止

Ref 10 dBm

* Att 10 dB

SWT 70 ms

Marker 1 [T1]

-50.77 dBm

2.307692308 GHz

Marker 2 [T1]

-51.00 dBm

2.557692308 GHz

Marker 3 [T1]

-44.53 dBm

4.884618385 GHz

LIMIT CHECK PASS

1 PK

MAXH

JAPAN-TX

3DB

LVL

Start 1 GHz

1.2 GHz/

Stop 13 GHz

CONDUCTED SPURIOUS EMISSION TX CH19

Date: 17.JUN.2018 17:20:05

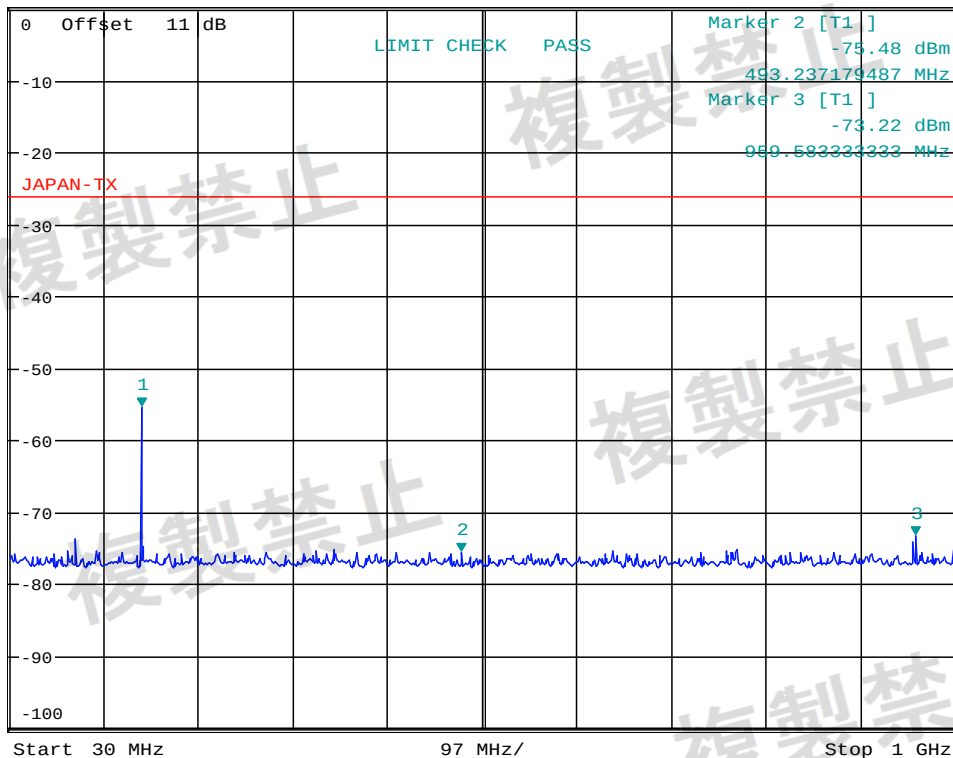
Registration number: W6M21806-18161-J-1

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1 PK
MAXH

Ref 0 dBm * Att 0 dB * RBW 100 kHz Marker 1 [T1] -55.28 dBm
* VBW 100 kHz 165.240384615 MHz
SWT 100 ms



CONDUCTED SPURIOUS EMISSION TX CH39

Date: 17.JUN.2018 17:16:05



CONDUCTED SPURIOUS EMISSION TX CH39
Date: 17.JUN.2018 17:20:36

Measurement uncertainty: ± 1.01 dB

Limits:

Transmitting operating	Operating frequency 2400 – 2483 MHz: Below 2387MHz : 2.5μW/MHz(-26 dBm) 2387 to 2400MHz : 25μW/MHz (-16 dBm) 2483.5 through 2496.5MHz : 25μW/MHz Over 2496.5MHz : 2.5μW/MHz
------------------------	---

Test equipment used: ETSTW-RE 050, ETSTW-RE 055

3.7 Antenna Power

Mode A

Max Output Power (Unit in mW/MHz)			
	802.11b		
	Low	Mid	High
	2412MHz	2442MHz	2472MHz
Vnormal = 3.7V	4.72	5.37	3.85

Mode B

Max Output Power (Unit in mW/MHz)			
	802.11g		
	Low	Mid	High
	2412MHz	2442MHz	2472MHz
Vnormal = 3.7V	5.01	5.20	3.72

Mode C

Max Output Power (Unit in mW/MHz)			
	802.11n 20 MHz		
	Low	Mid	High
	2412MHz	2442MHz	2472MHz
Vnormal = 3.7V	3.47	3.24	2.69

Mode D

Max Output Power (Unit in mW)			
	BLE		
	Low	Mid	High
	2402MHz	2442MHz	2480MHz
Vnormal = 3.7V	0.44	0.55	0.58

Measurement uncertainty: ± 1.01 dB

Rated output power	Tolerance
5 mW/MHz (802.11b)	7.4 %
5 mW/MHz (802.11g)	4 %
5 mW/MHz (802.11 n 20MHz)	-30.6 %
0.5 mW (Bluetooth Low Energy)	16 %



Limits:

Under all test conditions	Conducted	(1) FH, FH+DS, FH+OFDM 3mW/MHz (used in the range of 2427-2470.75MHz)
		(2) Other than (1) of OFDM & DS : 10mW/MHz
		(3) Other than (1) & (2) : 10mW
		(4) 802.11n 40 MHz: 5 mW/MHz
		Tolerance: +20%,-80%

Test equipment used: ETSTW-RE 050, ETSTW-RE 073, ETSTW-RE 074

3.8 Angular width of principal radiation (AWPR)

A represents the value determined by dividing an equivalent isotropically radiated power by the value obtained by applying an antenna power with the mean power of 10 mW to the transmitting antenna with its absolute gain being 2.14 dB, and shall be 1 when it is lower than 1.

802.11B

Highest Antenna Power	mW/MHz	dBm/MHz
	5.37	7.30

Maximum Antenna gain(dBi)	Highest Antenna Power (dBm/MHz)	EIRP (dBm/MHz)
2.00	7.30	9.30

802.11G

Highest Antenna Power	mW/MHz	dBm/MHz
	5.20	7.16

Maximum Antenna gain(dBi)	Highest Antenna Power (dBm/MHz)	EIRP (dBm/MHz)
2.00	7.16	9.16

802.11n 20 MHz

Highest Antenna Power	mW/MHz	dBm/MHz
	3.47	5.40

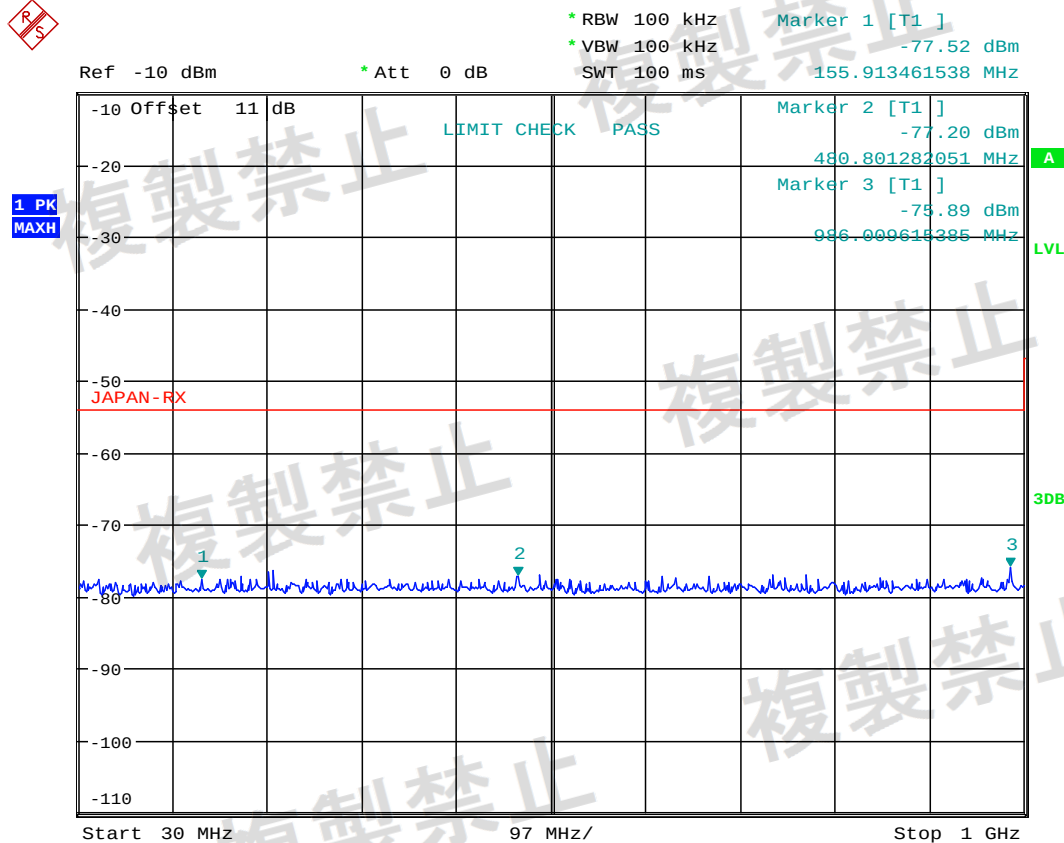
Maximum Antenna gain(dBi)	Highest Antenna Power (dBm/MHz)	EIRP (dBm/MHz)
2.00	5.4	7.40

Both EIRP values are lower than 12.14 dBm/MHz, so there is no need to calculate a half power beamwidth for the antenna. It is allowed to have an antenna with an Omni characteristic (360 degrees)



3.9 Spurious emission receiver

Mode A



SPURIOUS EMISSION RX 802.11B CH1

Date: 15.JUN.2018 11:45:49



* RBW 1 MHz

Marker 1 [T1]

-66.14 dBm

* VBW 1 MHz

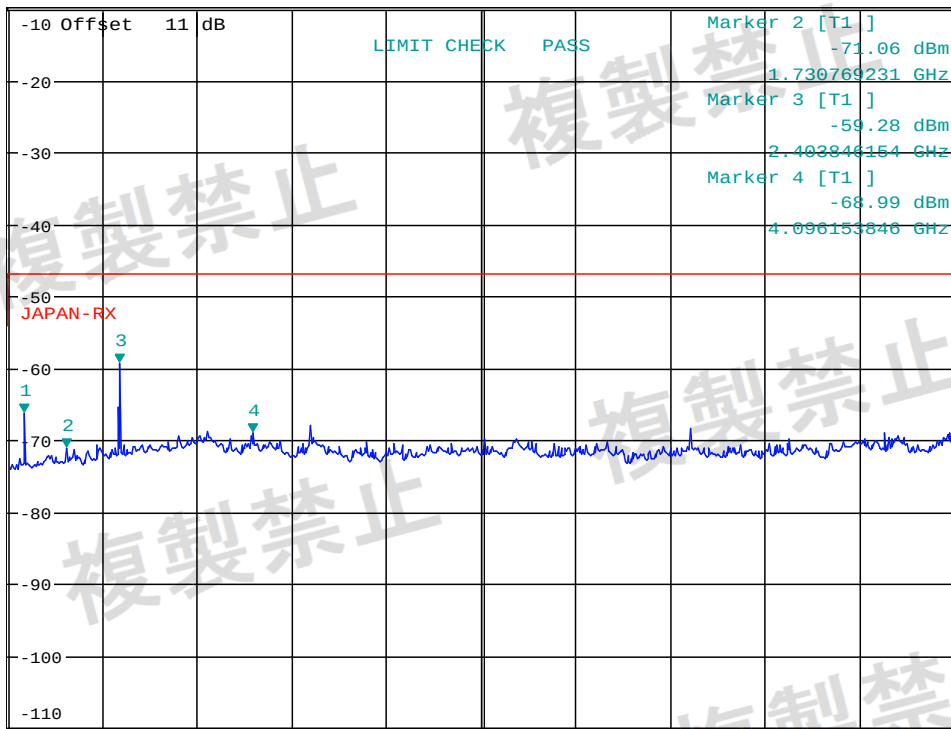
1.192307692 GHz

SWT 70 ms

Ref -10 dBm

* Att 0 dB

1 PK
MAXH



Start 1 GHz

1.2 GHz/

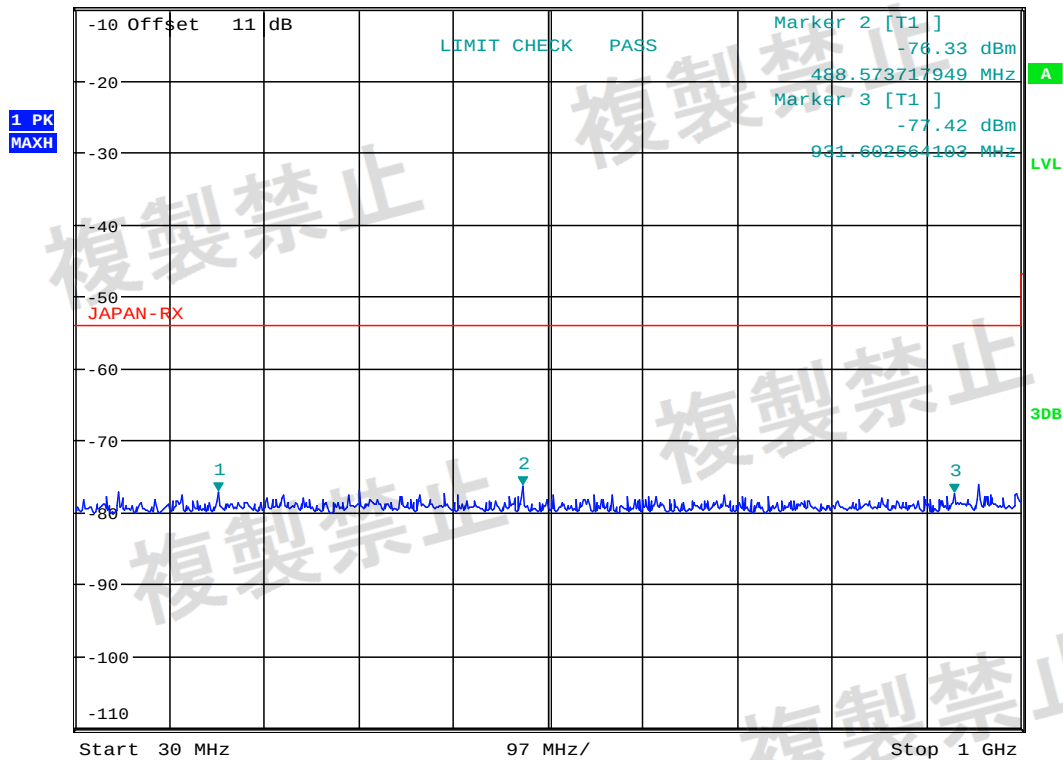
Stop 13 GHz

SPURIOUS EMISSION RX 802.11B CH1

Date: 15.JUN.2018 11:23:01



Ref -10 dBm * Att 0 dB * RBW 100 kHz Marker 1 [T1] -77.04 dBm
* VBW 100 kHz 176.121794872 MHz
SWT 100 ms



SPURIOUS EMISSION RX 802.11B CH7

Date: 15.JUN.2018 11:46:28



P.S.

* RBW 1 MHz

Marker 1 [T1]

-65.83 dBm

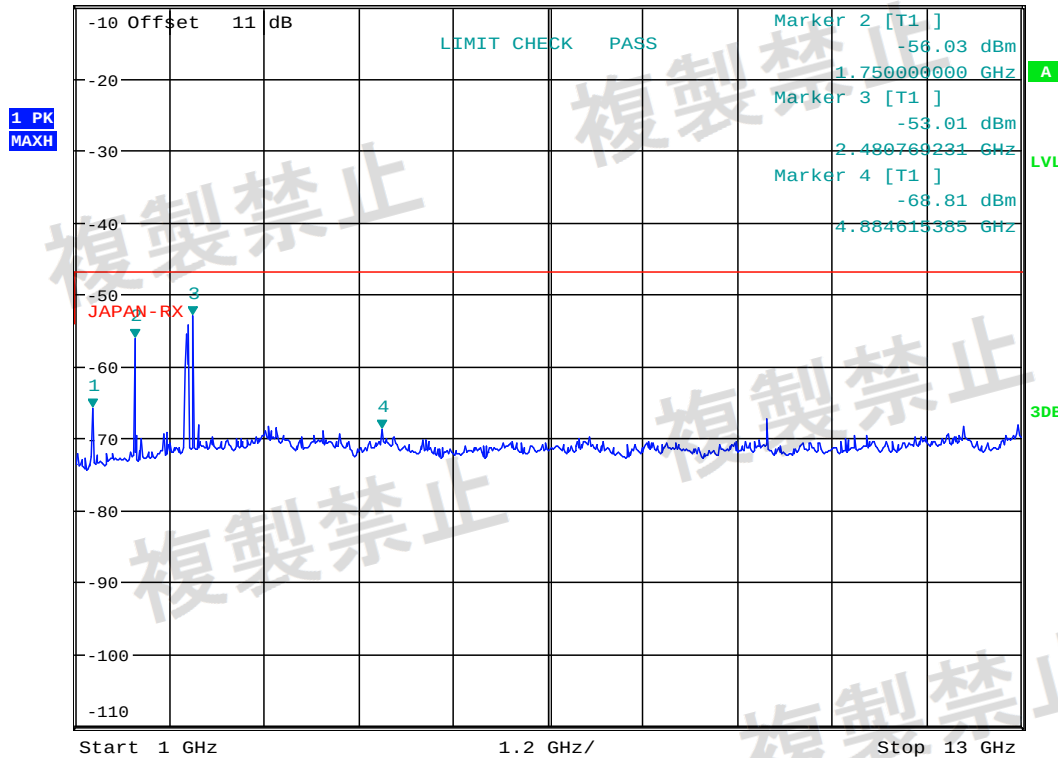
* VBW 1 MHz

1.211538462 GHz

SWT 70 ms

Ref -10 dBm

* Att 0 dB

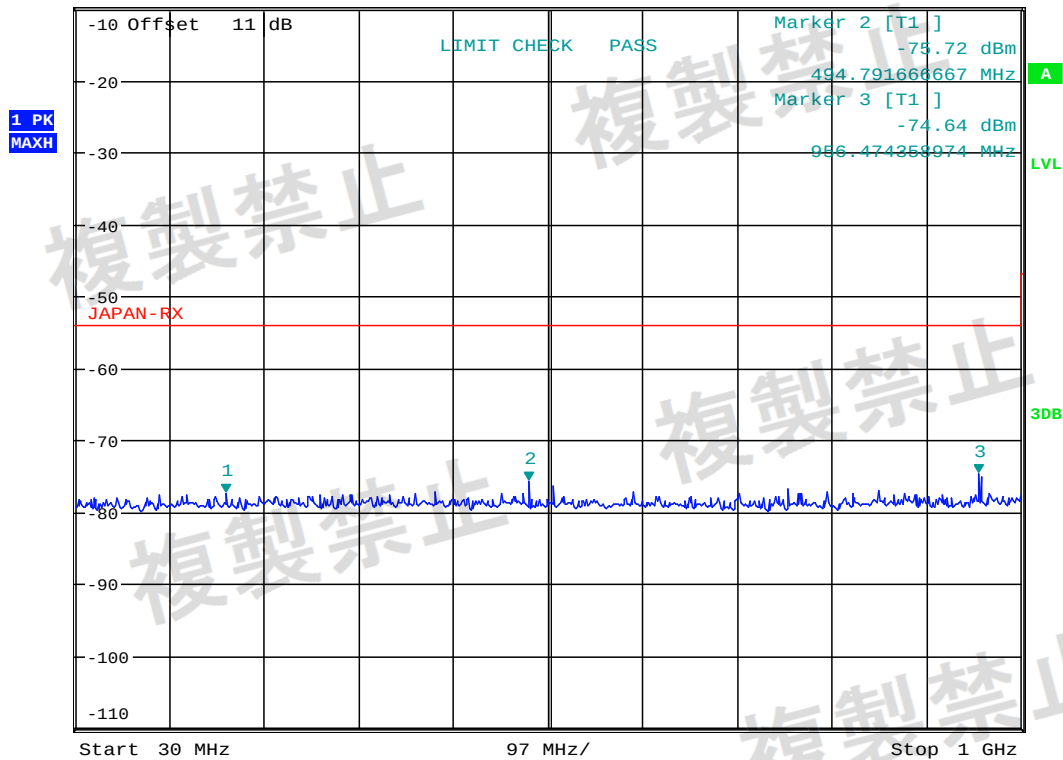


SPURIOUS EMISSION RX 802.11B CH7

Date: 15.JUN.2018 11:22:28



Ref -10 dBm * Att 0 dB * RBW 100 kHz Marker 1 [T1] -77.23 dBm
* VBW 100 kHz 183.894230769 MHz
SWT 100 ms



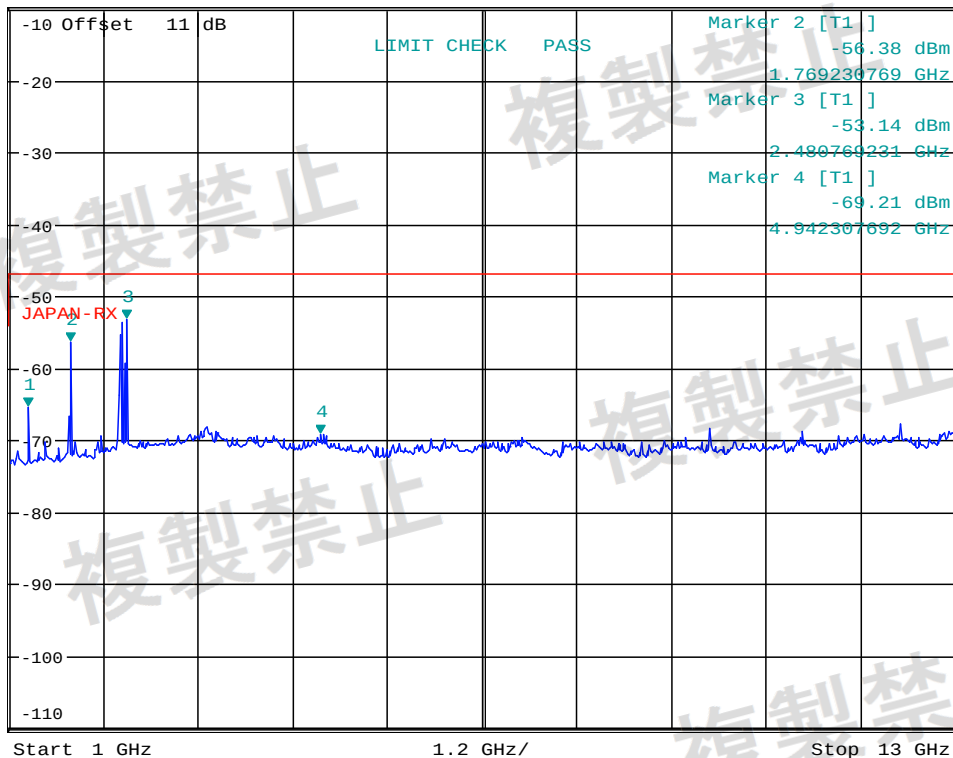
SPURIOUS EMISSION RX 802.11B CH13

Date: 15.JUN.2018 11:48:05



1 PK
MAXH

Ref -10 dBm * Att 0 dB * RBW 1 MHz * VBW 1 MHz SWT 70 ms Marker 1 [T1] -65.44 dBm 1.230769231 GHz



SPURIOUS EMISSION RX 802.11B CH13

Date: 15.JUN.2018 11:21:43



Mode B

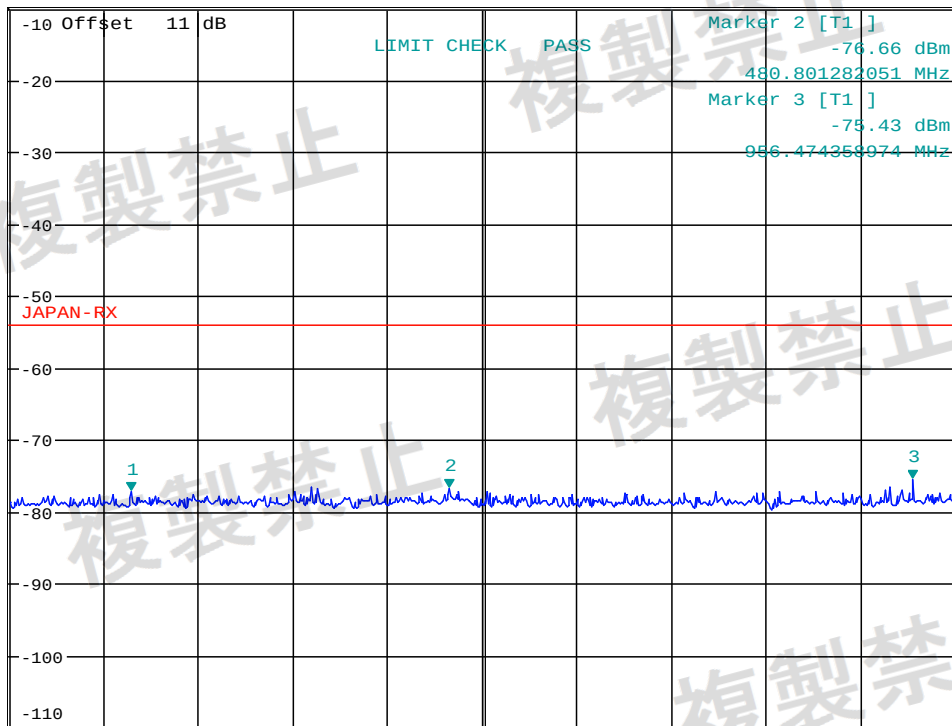


* RBW 100 kHz Marker 1 [T1] -77.17 dBm
* VBW 100 kHz 154.358974359 MHz
SWT 100 ms

Ref -10 dBm

* Att 0 dB

1 PK
MAXH



Start 30 MHz

97 MHz/

Stop 1 GHz

SPURIOUS EMISSION RX 802.11G CH1

Date: 15.JUN.2018 11:44:20



複製禁止

Ref -10 dBm

* Att 0 dB

SWT 70 ms

Marker 1 [T1]

-66.07 dBm

1.192307692 GHz

Marker 2 [T1]

-52.37 dBm

1.750000000 GHz

Marker 3 [T1]

-51.53 dBm

2.480769231 GHz

Marker 4 [T1]

-68.17 dBm

3.615384615 GHz

LIMIT CHECK PASS

1 PK

MAXH

-10 Offset 11 dB

JAPAN-RX

3DB

Start 1 GHz

1.2 GHz/

Stop 13 GHz

SPURIOUS EMISSION RX 802.11G CH1

Date: 15.JUN.2018 11:24:05

Registration number: W6M21806-18161-J-1

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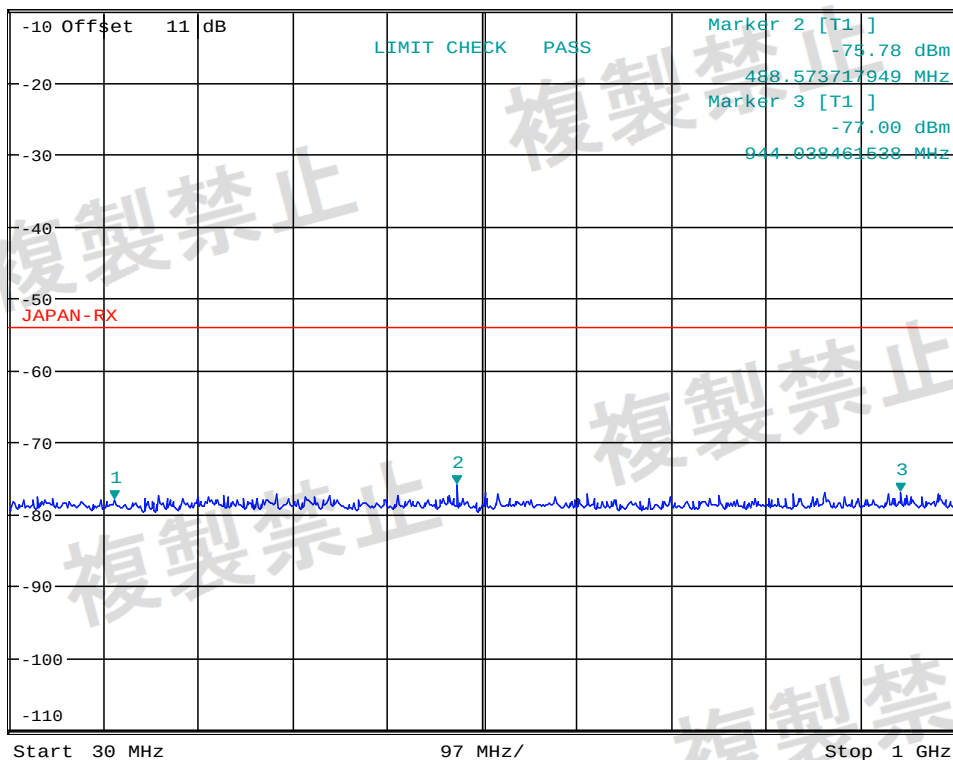


Worldwide Testing Services(Taiwan) Co., Ltd.



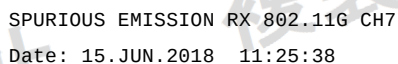
1 PK
MAXH

Ref -10 dBm * Att 0 dB * RBW 100 kHz Marker 1 [T1] -77.92 dBm
* VBW 100 kHz 137.259615385 MHz
SWT 100 ms



SPURIOUS EMISSION RX 802.11G CH7

Date: 15.JUN.2018 11:42:22

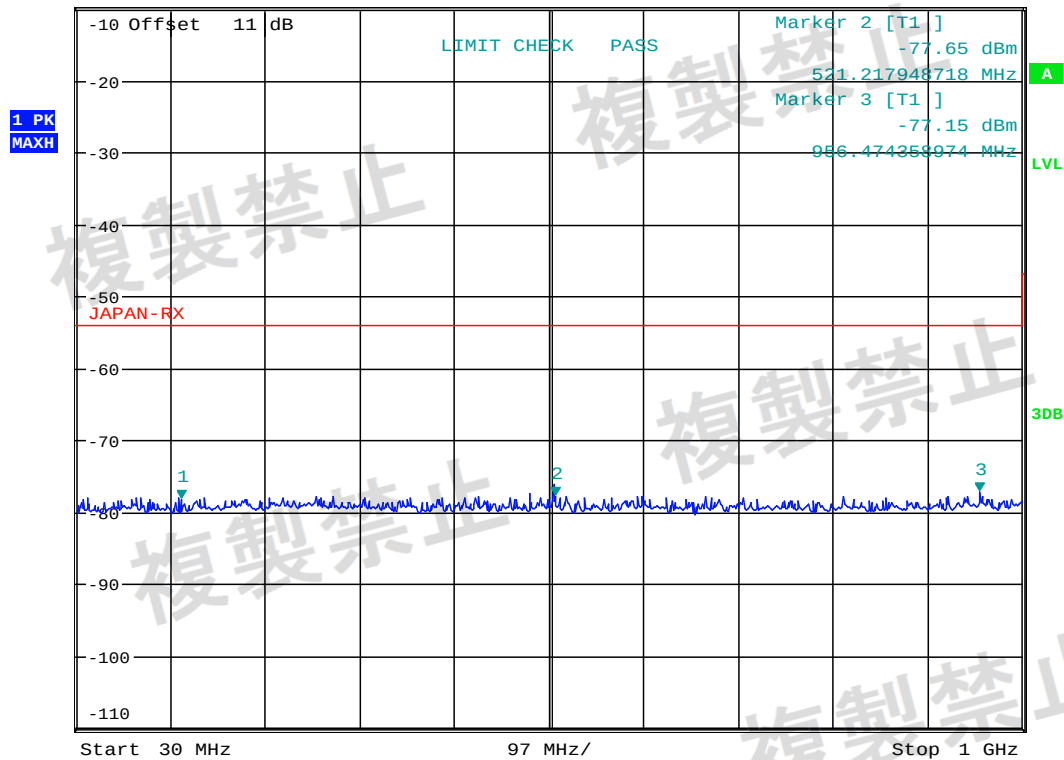




Worldwide Testing Services(Taiwan) Co., Ltd.

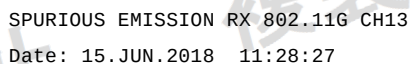


Ref -10 dBm * Att 0 dB * RBW 100 kHz Marker 1 [T1] -78.20 dBm
* VBW 100 kHz 137.259615385 MHz
SWT 100 ms



SPURIOUS EMISSION RX 802.11G CH13

Date: 15.JUN.2018 11:40:39





Mode C

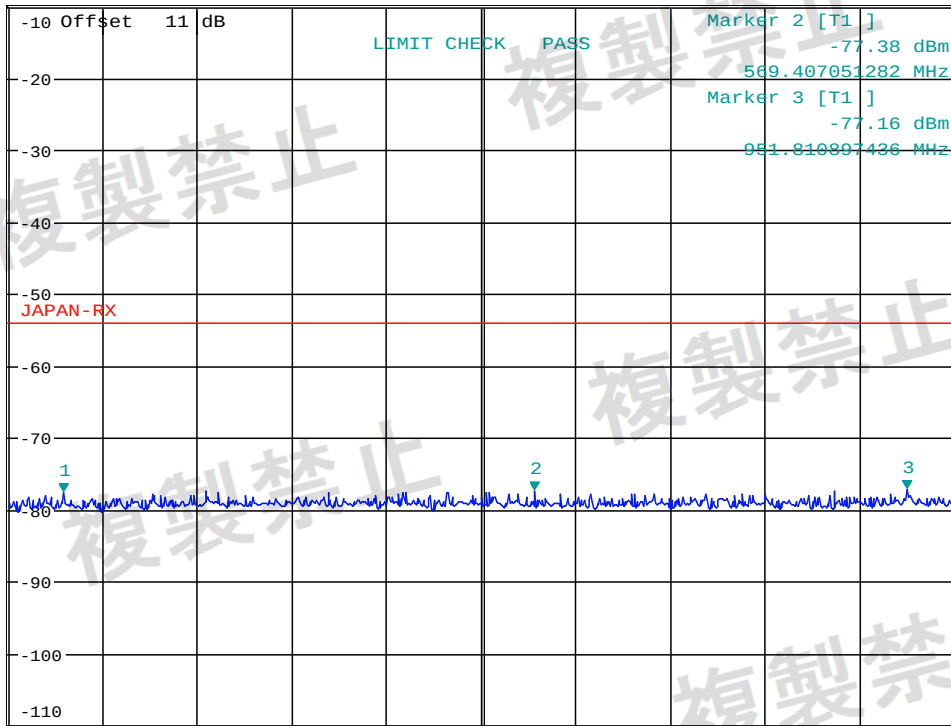


* RBW 100 kHz Marker 1 [T1]
* VBW 100 kHz -77.50 dBm
SWT 100 ms 85.961538462 MHz

Ref -10 dBm

* Att 0 dB

1 PK
MAXH



Start 30 MHz

97 MHz/

Stop 1 GHz

SPURIOUS EMISSION RX 802.11N 20MHZ CH1

Date: 15.JUN.2018 11:36:05



P.S.

* RBW 1 MHz

Marker 1 [T1]

* VBW 1 MHz

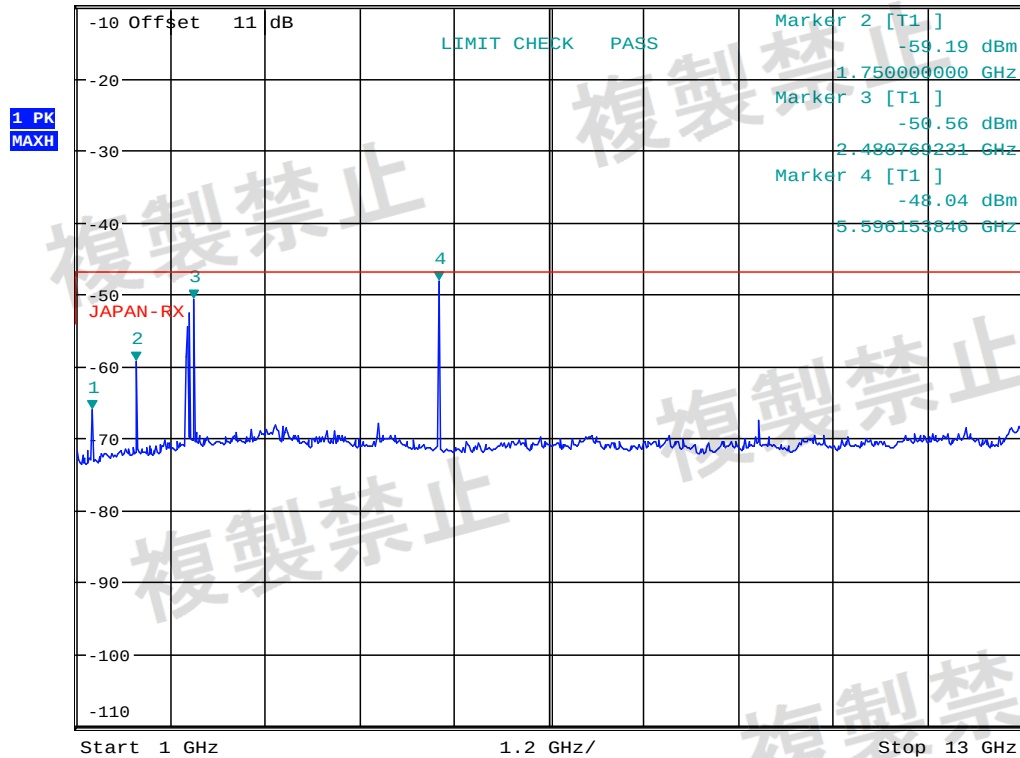
-66.09 dBm

SWT 70 ms

1.192307692 GHz

Ref -10 dBm

* Att 0 dB



SPURIOUS EMISSION RX 802.11N 20MHZ CH1

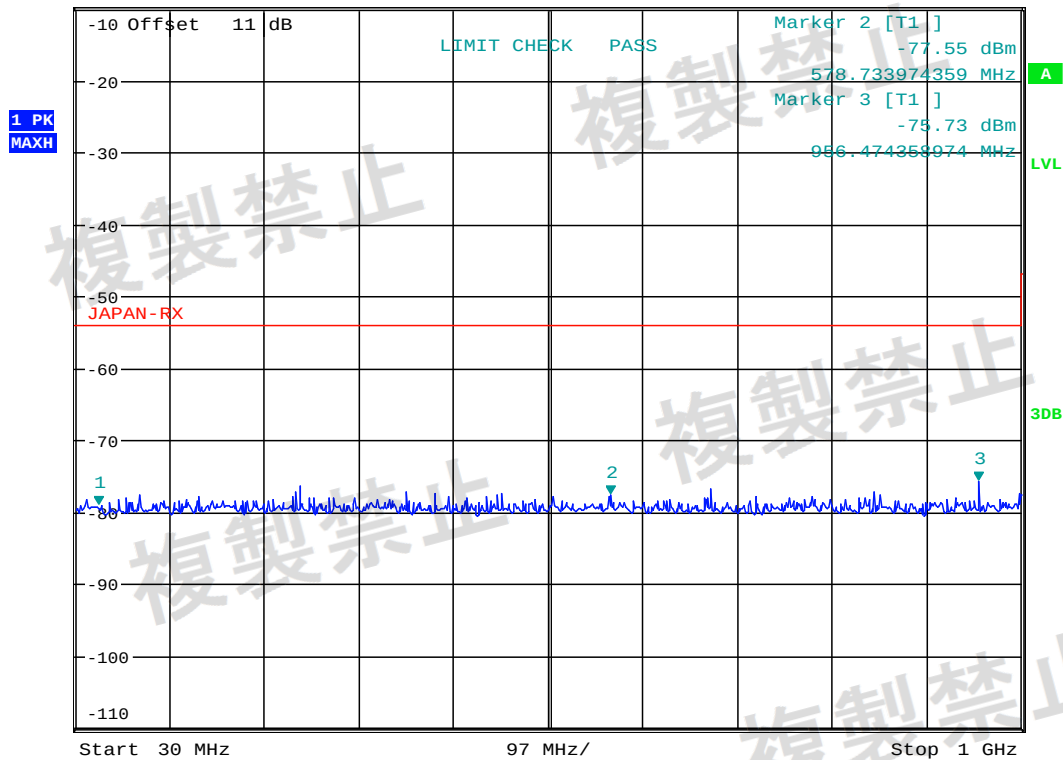
Date: 15.JUN.2018 11:34:06



Worldwide Testing Services(Taiwan) Co., Ltd.



Ref -10 dBm * Att 0 dB * RBW 100 kHz Marker 1 [T1] -79.03 dBm
* VBW 100 kHz SWT 100 ms 53.317307692 MHz



SPURIOUS EMISSION RX 802.11N 20MHZ CH7

Date: 15.JUN.2018 11:37:38



P.S.

* RBW 1 MHz

Marker 1 [T1]

-65.66 dBm

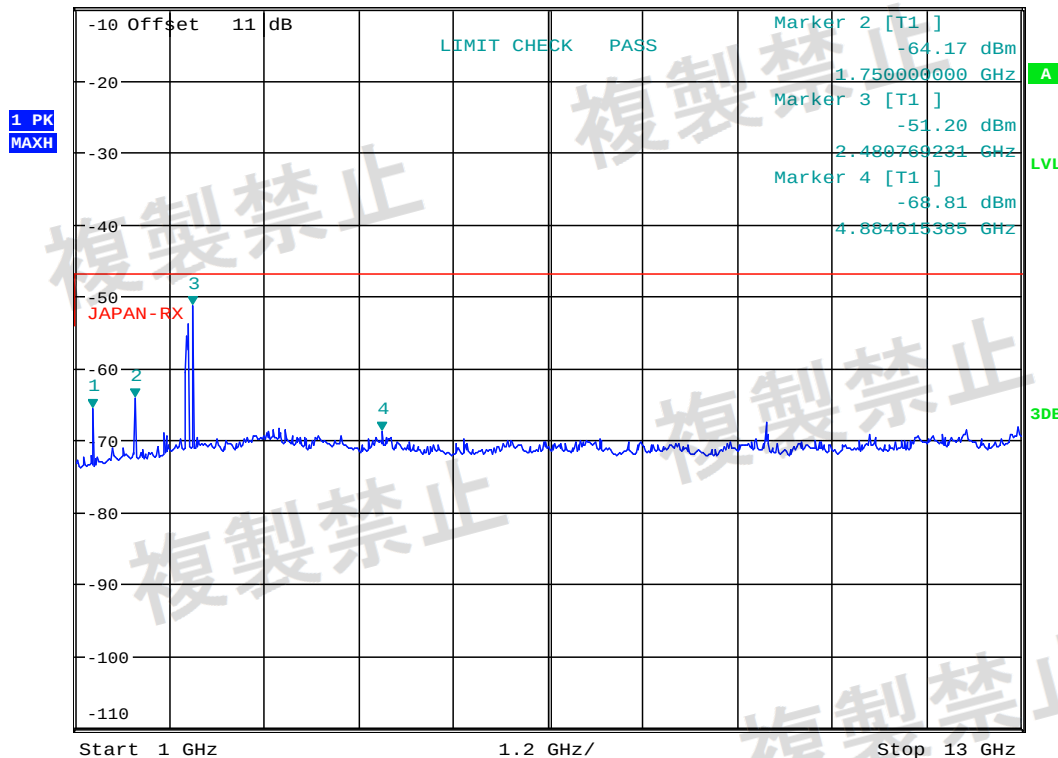
* VBW 1 MHz

1.211538462 GHz

SWT 70 ms

Ref -10 dBm

* Att 0 dB

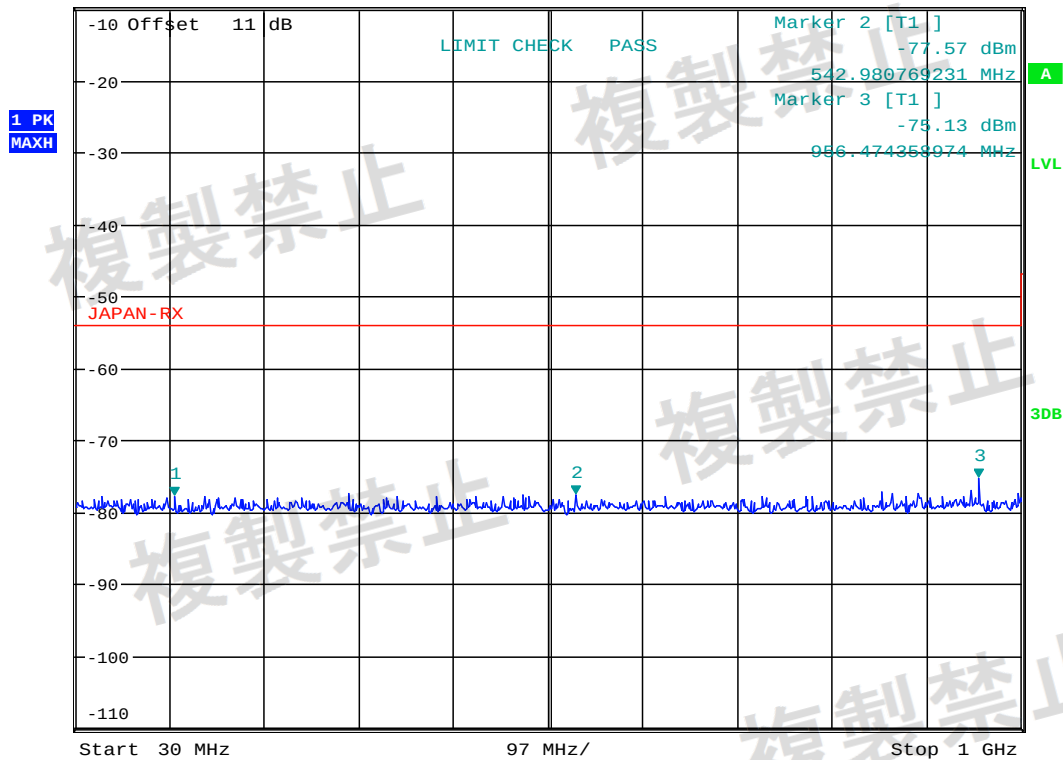


SPURIOUS EMISSION RX 802.11N 20MHZ CH7

Date: 15.JUN.2018 11:31:51



Ref -10 dBm * Att 0 dB * RBW 100 kHz Marker 1 [T1] -77.83 dBm
* VBW 100 kHz 131.041666667 MHz
SWT 100 ms



SPURIOUS EMISSION RX 802.11N 20MHZ CH13

Date: 15.JUN.2018 11:38:17



P.S.

* RBW 1 MHz

Marker 1 [T1]

* VBW 1 MHz

-65.21 dBm

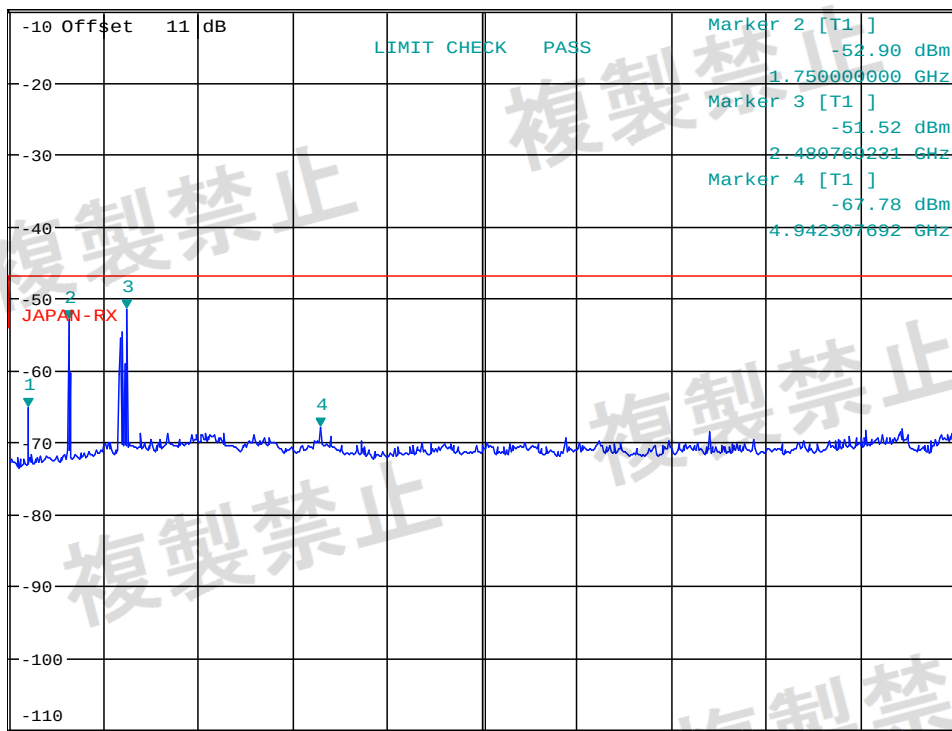
SWT 70 ms

1.230769231 GHz

Ref -10 dBm

* Att 0 dB

1 PK
MAXH



Start 1 GHz

1.2 GHz/

Stop 13 GHz

SPURIOUS EMISSION RX 802.11N 20MHZ CH13

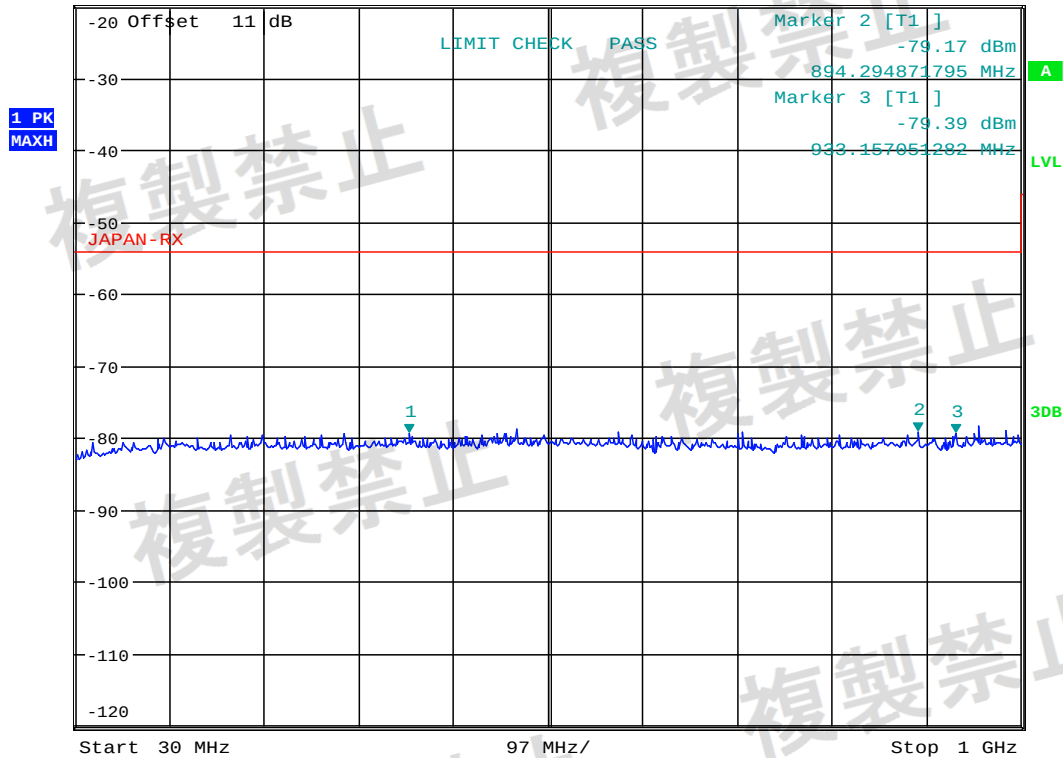
Date: 15.JUN.2018 11:30:23



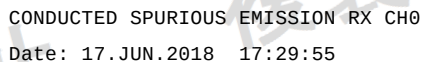
Mode D



Ref -20 dBm * Att 0 dB * RBW 100 kHz Marker 1 [T1] -79.43 dBm
* VBW 100 kHz 371.987179487 MHz
SWT 100 ms

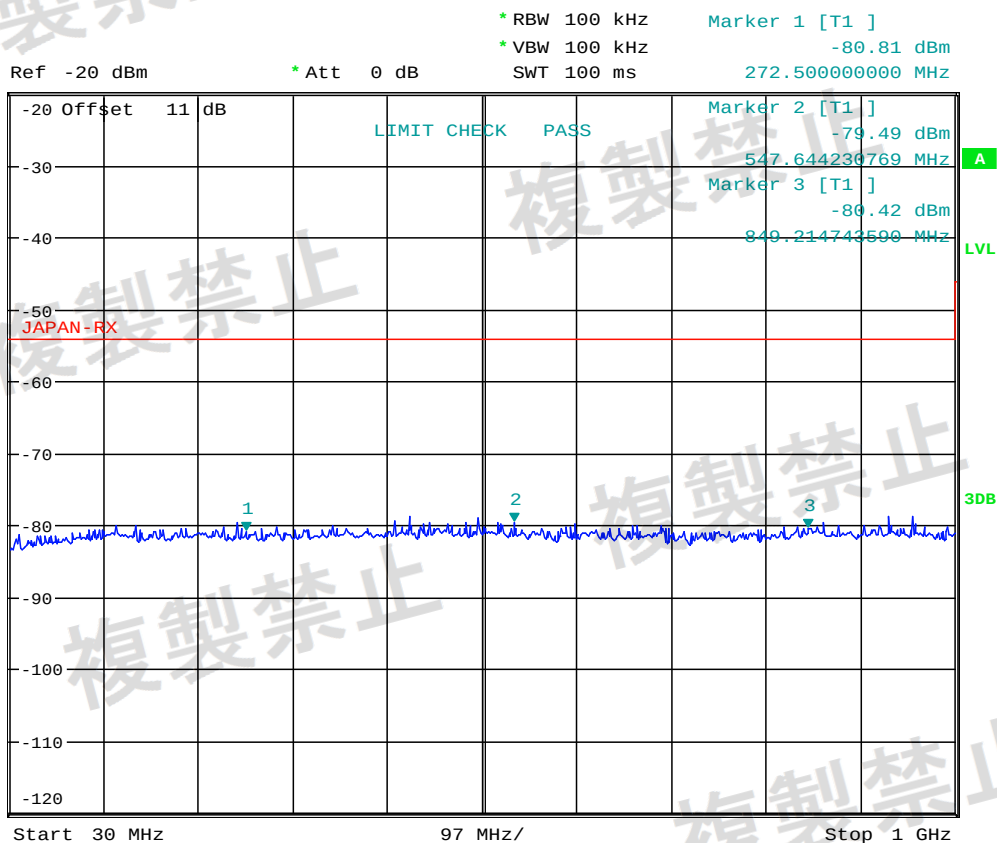


CONDUCTED SPURIOUS EMISSION RX CH0
Date: 28.JUN.2018 09:36:37





1 PK
MAXH



CONDUCTED SPURIOUS EMISSION RX CH19

Date: 28.JUN.2018 09:37:24

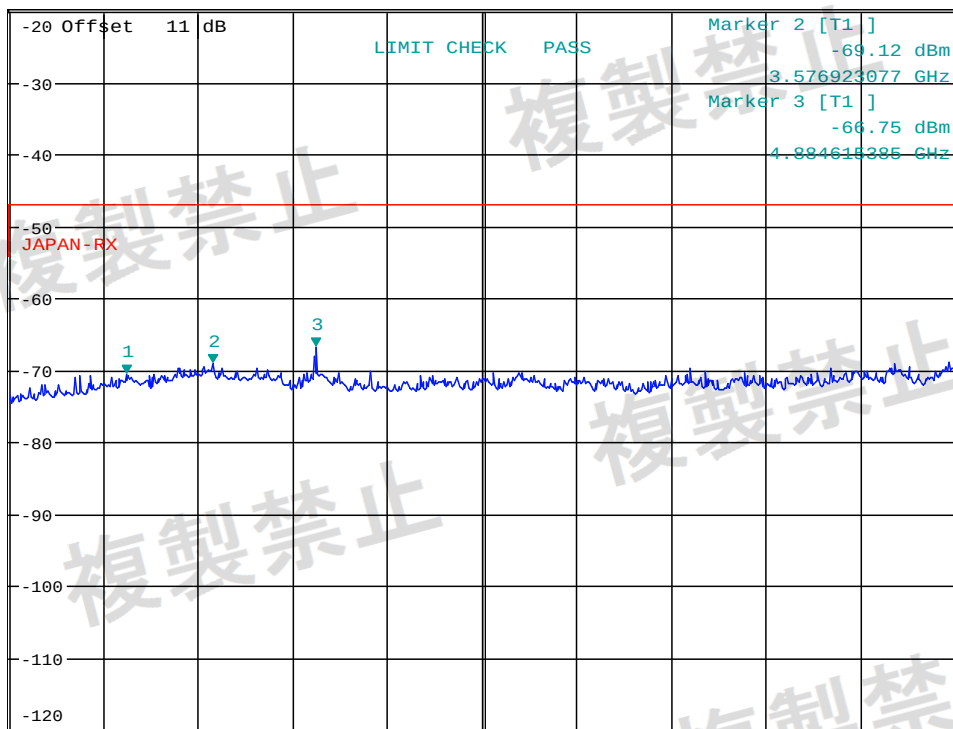


Worldwide Testing Services(Taiwan) Co., Ltd.



1 PK
MAXH

Ref -20 dBm * Att 0 dB * RBW 1 MHz * VBW 1 MHz SWT 70 ms Marker 1 [T1] -70.42 dBm 2.480769231 GHz



Start 1 GHz 1.2 GHz/ Stop 13 GHz

CONDUCTED SPURIOUS EMISSION RX CH19

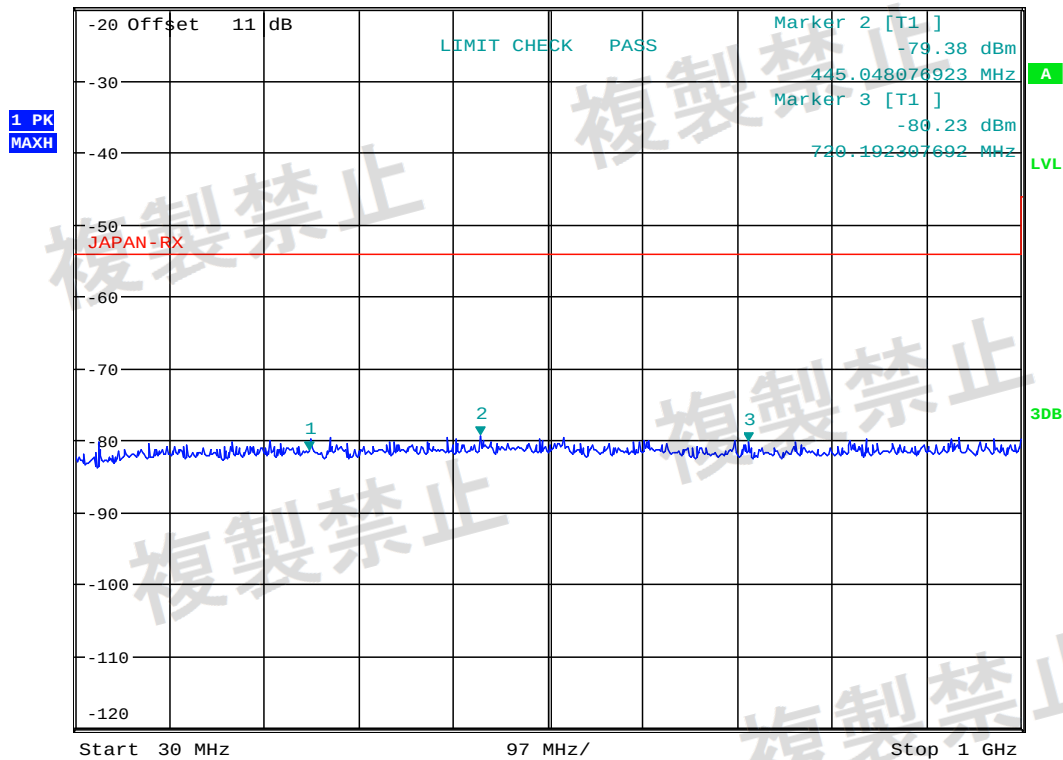
Date: 17.JUN.2018 17:29:24



Worldwide Testing Services(Taiwan) Co., Ltd.



Ref -20 dBm * Att 0 dB * RBW 100 kHz Marker 1 [T1] -81.36 dBm
* VBW 100 kHz SWT 100 ms 269.391025641 MHz



CONDUCTED SPURIOUS EMISSION RX CH39

Date: 28.JUN.2018 09:37:57



複製禁止

* RBW 1 MHz

Marker 1 [T1]

* VBW 1 MHz

-70.07 dBm

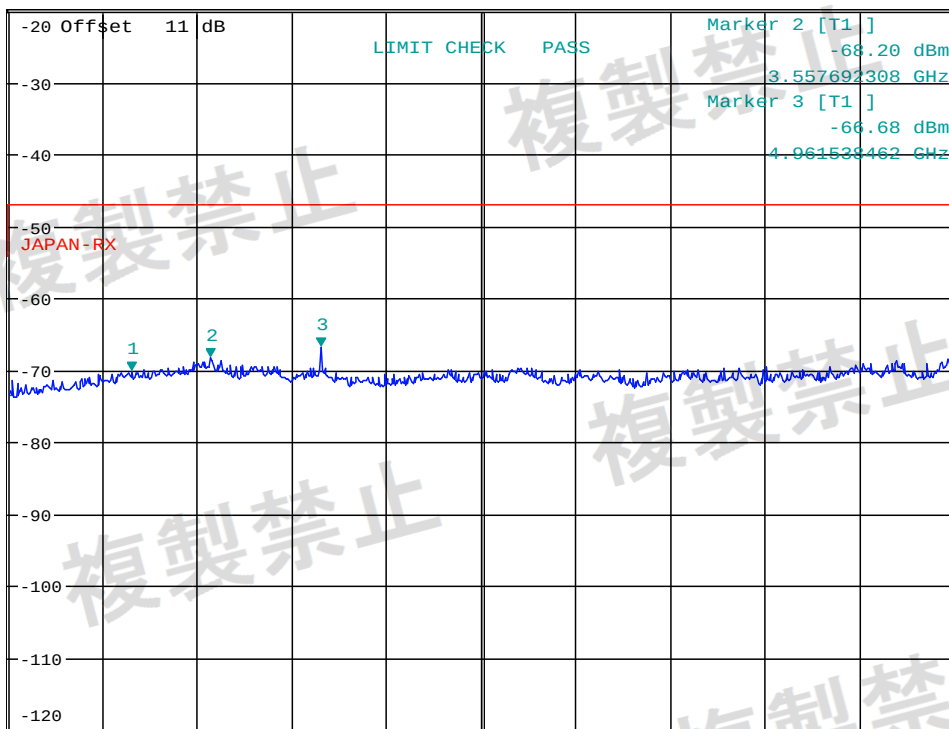
SWT 70 ms

2.557692308 GHz

Ref -20 dBm

* Att 0 dB

1 PK
MAXH



Start 1 GHz

1.2 GHz/

Stop 13 GHz

CONDUCTED SPURIOUS EMISSION RX CH39

Date: 17.JUN.2018 17:28:49

Measurement uncertainty: ± 1.01 dB

Limit values:

Receiver operating	≤ 1000 MHz: ≤ 4 nW (-54 dBm)
	≥ 1000 MHz: ≤ 20 nW (-47 dBm)

Test equipment used: ETSTW-RE 050, ETSTW-RE 055

3.10 Carrier sensing function

Frequency (MHz)	Max. Antenna Gain (dBi)	Input Level (dBm)
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Explanation: This test is not required.

Limit: Shall not transmit radio wave when receiving over 100mV/m

Test equipment used: ETSTW-RE 050, ETSTW-RE 055, ETSTW-RE 122