



Radio Test Report

Report No.: RJ170217C22F

Test Model: SN10-13

Received Date: Nov. 03, 2017

Test Date: Nov. 23, 2017

Issued Date: Oct. 23, 2018

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Release Control Record

Issue No.	Description	Date Issued
RJ170217C22F	Original release	Oct. 23, 2018



1 Certificate of Conformity

Product: SIGFOX Module

Brand: InnoComm

Test Model: SN10-13

Sample Status: ENGINEERING SAMPLE

Applicant: InnoComm Mobile Technology Corp.

Test Date: Nov. 23, 2017

Standards: ARIB STD-T108

Measurement was conducted by the temporary test method which submitted to the Minister for Internal Affairs and Communications based on the Ordinance Concerning Technical Regulations Conformity Certification etc. of Specified Radio Equipment in Annex 1, the Ministry of Internal Affairs and Communication notification in Article 88, Paragraph 2.

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

Prepared by : Mary Ko , **Date:** Oct. 23, 2018
Mary Ko / Specialist

Approved by : May Chen , **Date:** Oct. 23, 2018
May Chen / Manager

2 Summary of Test Results

The EUT has been tested according to the following specifications:

Notice 88 Reference	ARIB STD-T108 REF. (Part 2)	REPORT REFERENCE	PARAMETER	TEST RESULTS (NOTE)
GENERAL PROVISIONS				
Appendix 22 3rd	3.2.4	4.1	Frequency tolerance	C
Appendix 22 3rd	3.2.6	4.2	Occupied bandwidth	C
Appendix 1	3.2.8	4.3	Spurious emissions	C
TRANSMITTING EQUIPMENT				
Appendix 22 3rd	3.2.1	4.5	Antenna power	C
-	-	-	SAR	NA
TRANSMITTING ANTENNA				
-	-	3.5	Type, configuration, etc. of transmitting antenna	C
-	-	3.5	Direction pattern of transmitting antenna	C
RECEIVING EQUIPMENT				
Appendix 22 3rd	3.3	4.6	Spurious emissions of receiver	C
-	-	3.5	Refer to all articles for transmitting antenna	C
OPERATING FREQUENCY 920MHz-BAND				
-	3.5	3.4	High frequency/modulation section cannot be opened easily	C
-	3.1.1	3.1	Communication method	C
-	3.2.5	3.1	Modulation method	C
-	3.7	4.5	Absolute gain of transmitting antenna	C
Appendix 22 3rd	3.4.1	4.7	Transmission time control equipment	C
Appendix 22 3rd	3.2.7	4.4	Adjacent channel leakage power	C
Appendix 22 3rd	3.4.2	4.8	Carrier Sense Capability	C
Appendix 22 3rd	3.4.3	-	Skipping carrier sense in a response	NA
-	3.4.4	4.9	Interference Prevention Function	C
NOTE: C = Conform NC = Not Conform NT = Not Tested NA = Not Applicable				

2.1 Test Instruments

Description & Manufacturer	Model no.	Serial No.	Calibrated Date	Calibrated Until	Calibration Authority
Spectrum Analyzer R&S	FSV40	100964	July 1, 2017	June 30, 2018	ETC
ESG Vector signal generator Agilent	E4438C	MY45094468/005 506 602 UK6 UNJ	Nov. 25, 2016	Nov. 24, 2017	ETC
Detector Narda	4503A	0306	NA	NA	NA
Power Meter Anritsu	ML2495A	1014008	May 11, 2017	May 10, 2018	ETC
Power Sensor Anritsu	MA2411B	0917122	May 11, 2017	May 10, 2018	ETC
Digital Oscilloscope R&S	RTO1012	300053	June 28, 2017	June 27, 2018	ETC
DC Power Supply Topward	6603D	795558	NA	NA	NA
True RMS Clamp Meter FLUKE	325	31130711WS	May 29, 2017	May 28, 2018	ETC

- NOTE:**
1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
 2. Tested Date: Nov. 23, 2017

2.2 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in TR 100 028-1.

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$.

Parameter	Uncertainty
Occupied Bandwidth	1620.33Hz
Spurious emissions	2.52dB
Output power density	1.37dB
Adjacent Channel Leakage Power	0.71 dB
Out of band radiated power	2.52 dB
Frequency Tolerance	1620.33Hz
Transmission Time	2.23ms

2.3 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	SIGFOX Module
Brand	InnoComm
Test Model	SN10-13
Status of EUT	ENGINEERING SAMPLE
Nominal Voltage	DC 3.3V from host equipment
Modulation Type	TX: DBPSK , RX: 2GFSK
Operating Frequency	TX: 923.2 MHz , RX: 922.2 MHz
Number of Channel	1
Rated RF Output Power	19 mW
Conducted RF Output Power	15.241 mW
Radiated RF Output Power	30.131 mW
Antenna Type	Refer to section 3.5
Antenna Connector	Refer to section 3.5
Accessory Device	NA
Data Cable Supplied	NA

Note:

1. This is a supplementary report of Report No.: RJ170217C22D. The differences between them are as below information:

- ◆ Add one new antenna.

Original

Ant No.	Chain No.	Brand	Model	Antenna Net Gain(dBi)	Frequency range (MHz)	Antenna Type	Connector Type	Cable Length (mm)
1	Chain 0	STAF corporation	T13-047-1039	2.54	860 - 928	Monopole	SMA--P	-
2	Chain 0	STAF corporation	T13-047-1040	2.54	860 - 928	Monopole	SMA--P	-
3	Chain 0	InnoComm	Orbit	-0.16	868 ~ 930	Chip	PCB	-
4	Chain 0	STAF corporation	T13-047-1041	2.76	860 - 928	Monopole	SMA--P	-
5	Chain 0	BJTEK NAVIGATION,INC.	TH-81E	1.12	850~930	Monopole	SMA-Male	-
6	Chain 0	BJTEK NAVIGATION,INC.	TH900E	2.62	868~928	Monopole	SMA-Male	-
7	Chain 0	Gaobotech	GA17-06B0500000-109	2.64	868~930	Monopole	SMA-Male	-
8	Chain 0	Walsin	RFDPA131000SMRB802	2.96	863~928	Monopole	SMA-Male	-
9	Chain 0	Jieng Tai	1615Y0318	0.13	868~930	Monopole	SMA-Male	-
10	Chain 0	TDK	ANT160920ST-1204A1	0.5	902~930	Chip	NA	-
11	Chain 0	ACX	AT7020-BR90HAAT/LF	-1.00	902~928	Chip	NA	-
12	Chain 0	OneWave	WAN1003F039M03	1.32	910~930	Chip	NA	-
13	Chain 0	JC ANTENNA	JCG015	2	880~960	Monopole	SMA-Male	-
14	Chain 0	JC ANTENNA	JCG059	2	824~960	Dipole	I-PEX	-
15	Chain 0	JC ANTENNA	JCG104	2	824~960	Monopole	I-PEX	-
16	Chain 0	JC ANTENNA	JCG401	2	880~960	Monopole	SMA-Male	-
17	Chain 0	JC ANTENNA	JCG402	2	880~960	Monopole	SMA-Male	-
18	Chain 0	Staf	T13-023-1043	1.82	815~960	Dipole	U.FL	-
19	Chain 0	Staf	T13-047-1038	1.86	860~928	Monopole	SMA-Male	-
20	Chain 0	Staf	T15-030-1042	2.39	860~928	Monopole	U.FL	-
21	Chain 0	Staf	T16-062-1022	-0.29	814~960	Dipole	U.FL	-
22	Chain 0	Staf	T16-062-1024	-0.32	814~960	Dipole	MHF4L	-
23	Chain 0	Staf	T16-062-1025	0.33	814~960	Dipole	MHF	-
24	Chain 0	Staf	T16-068-1021	1.61	860~928	Monopole	SMA-Male	-
25	Chain 0	Staf	T16-068-1037	1.75	860~928	Monopole	SMA-Male	-
26	Chain 0	Nippon Antenna	DP-920-INF1-100	-1.0	915.9~928.1	Dipole	U.FL	100
27	Chain 0	Nippon Antenna	DP-920-INF2-100	2.3	915.9~928.1	Dipole	U.FL	100
28	Chain 0	Nippon Antenna	DP-920-INF3-100	1.8	915.9~928.1	Dipole	U.FL	100

Newly

Ant. No.	Chain No.	Brand	Model	Antenna Net Gain(dBi)	Frequency range (MHz)	Antenna Type	Connector Type	Cable Length (mm)
29	Chain 0	InnoComm	Cruiser	-0.25	868~930	Dipole	I-PEX	60

2. According to above conditions, there is no addition test has to be performed. All test data was copied from the original test report (Report No.: RJ170217C22D). And all data was verified to meet the requirements.
3. The above EUT information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.

3.2 Description of Test Modes

1 channel is provided to this EUT:

Channel	Freq. (MHz)
37	923.2

By means of test software (HyperTerminal paste_SN10 Sigfox test guideline_RCZ3_for MIC_20171031.pptx command) provided by manufacture, the power levels during the tests were set according to the following codes:

Channel	Power setting
37	0

3.3 Test Conditions

Test Conditions		Voltage (Vdc)
V_{normal}		3.3
$V_{max.}$	+10%	3.63
$V_{min.}$	-10%	2.97

3.4 Assembly

The EUT is constructed as a SIGFOX Module. The RF circuit was covered by metal shielding case, and the metal shielding case was soldered on PCB.

3.5 Antenna Specifications

3.5.1 Antenna Gain

Ant No.	Chain No.	Brand	Model	Antenna Net Gain(dBi)	Frequency range (MHz)	Antenna Type	Connector Type	Cable Length (mm)
1	Chain 0	STAF corporation	T13-047-1039	2.54	860 - 928	Monopole	SMA--P	-
2	Chain 0	STAF corporation	T13-047-1040	2.54	860 - 928	Monopole	SMA--P	-
3	Chain 0	InnoComm	Orbit	-0.16	868 ~ 930	Chip	PCB	-
4	Chain 0	STAF corporation	T13-047-1041	2.76	860 - 928	Monopole	SMA--P	-
5	Chain 0	BJTEK NAVIGATION,INC.	TH-81E	1.12	850~930	Monopole	SMA-Male	-
6	Chain 0	BJTEK NAVIGATION,INC.	TH900E	2.62	868~928	Monopole	SMA-Male	-
7	Chain 0	Gaobotech	GA17-06B0500000-109	2.64	868~930	Monopole	SMA-Male	-
8	Chain 0	Walsin	RFDPA131000SMRB802	2.96	863~928	Monopole	SMA-Male	-
9	Chain 0	Jieng Tai	1615Y0318	0.13	868~930	Monopole	SMA-Male	-
10	Chain 0	TDK	ANT160920ST-1204A1	0.5	902~930	Chip	NA	-
11	Chain 0	ACX	AT7020-BR90HAAT/LF	-1.00	902~928	Chip	NA	-
12	Chain 0	OneWave	WAN1003F039M03	1.32	910~930	Chip	NA	-
13	Chain 0	JC ANTENNA	JCG015	2	880~960	Monopole	SMA-Male	-
14	Chain 0	JC ANTENNA	JCG059	2	824~960	Dipole	I-PEX	-
15	Chain 0	JC ANTENNA	JCG104	2	824~960	Monopole	I-PEX	-
16	Chain 0	JC ANTENNA	JCG401	2	880~960	Monopole	SMA-Male	-
17	Chain 0	JC ANTENNA	JCG402	2	880~960	Monopole	SMA-Male	-
18	Chain 0	Staf	T13-023-1043	1.82	815~960	Dipole	U.FL	-
19	Chain 0	Staf	T13-047-1038	1.86	860~928	Monopole	SMA-Male	-
20	Chain 0	Staf	T15-030-1042	2.39	860~928	Monopole	U.FL	-
21	Chain 0	Staf	T16-062-1022	-0.29	814~960	Dipole	U.FL	-
22	Chain 0	Staf	T16-062-1024	-0.32	814~960	Dipole	MHF4L	-
23	Chain 0	Staf	T16-062-1025	0.33	814~960	Dipole	MHF	-
24	Chain 0	Staf	T16-068-1021	1.61	860~928	Monopole	SMA-Male	-
25	Chain 0	Staf	T16-068-1037	1.75	860~928	Monopole	SMA-Male	-
26	Chain 0	Nippon Antenna	DP-920-INF1-100	-1.0	915.9~928.1	Dipole	U.FL	100
27	Chain 0	Nippon Antenna	DP-920-INF2-100	2.3	915.9~928.1	Dipole	U.FL	100
28	Chain 0	Nippon Antenna	DP-920-INF3-100	1.8	915.9~928.1	Dipole	U.FL	100
29	Chain 0	InnoComm	Cruiser	-0.25	868 ~930	Dipole	I-PEX	60

3.5.2 Antenna Pattern

Please refer to the attached file (Antenna pattern).

4 Test Results

4.1 Frequency Tolerance Measurement

4.1.1 Limits of Frequency Tolerance Measurement

It shall be within 20×10^{-6}

4.1.2 Test Setup



4.1.3 Test Results

Environmental Conditions		25 deg.C, 60% RH					
Channel	Frequency (MHz)	Voltage _{normal}		Voltage _{max}		Voltage _{min}	
		Carrier frequency (MHz)	Frequency tolerance (ppm)	Carrier frequency (MHz)	Frequency tolerance (ppm)	Carrier frequency (MHz)	Frequency tolerance (ppm)
37	923.2	923.20080	0.87	923.20080	0.87	923.20080	0.87

4.2 Occupied Bandwidth Measurement (99% power bandwidth)

4.2.1 Limits of Occupied Bandwidth Measurement

It shall be (200 x n) kHz or less. (n is a number of unit radio channels constituting the radio channel and is an integer from 1 to 5.)

4.2.2 Test Setup

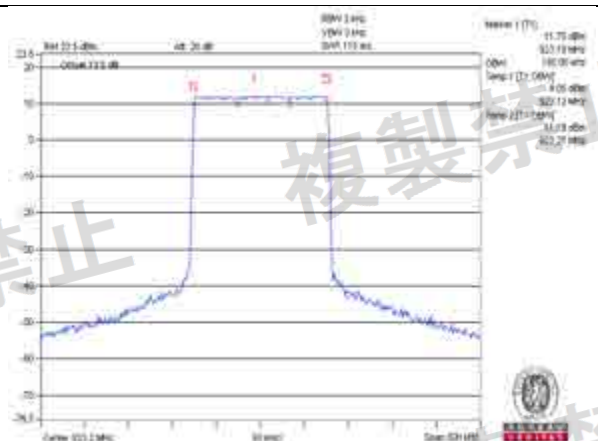


4.2.3 Test Results

Environmental Conditions		25 deg.C, 60% RH		
Channel	Frequency (MHz)	V_{normal}	V_{max}	V_{min}
		Occupied Bandwidth (kHz)	Occupied Bandwidth (kHz)	Occupied Bandwidth (kHz)
37	923.2	150	150	150

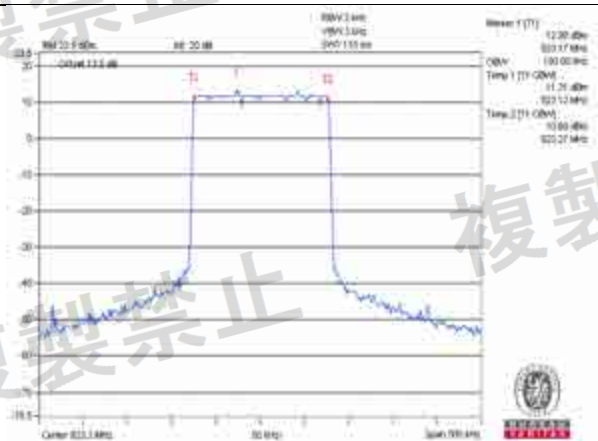
Note: For the test plots please refer to the below pages.

V_{normal}



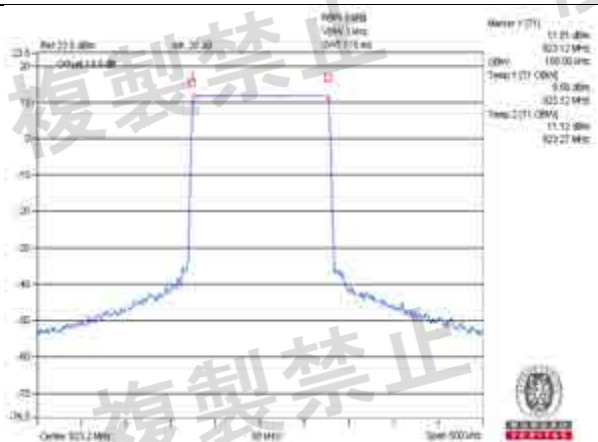
923.2MHz

V_{max}.



923.2MHz

V_{min}.



923.2MHz

4.3 Spurious Emissions for Transmitter Measurement

4.3.1 Limits of Spurious Emissions

Frequencies (MHz)	Limit (dBm)	RBW
$f \leq 710 \text{ MHz}$	-36	100kHz
$710 \text{ MHz} < f \leq 900 \text{ MHz}$	-55	1MHz
$900 \text{ MHz} < f \leq 915 \text{ MHz}$	-55	100kHz
$915 \text{ MHz} < f \leq 930 \text{ MHz}^*$ (Except for $ f-f_c \leq (200+100 \times n) \text{ kHz}$ if bandwidth of unit radio channel is 200 kHz, except for $ f-f_c \leq (100+50 \times n) \text{ kHz}$ if bandwidth of unit radio channel is 100 kHz. Except for $ f-f_c \leq (100+100 \times n) \text{ kHz}$ If frequency band is $915.9 \text{ MHz} \leq f \leq 916.9 \text{ MHz}$ and $920.5 \text{ MHz} \leq f \leq 922.3 \text{ MHz}$. Where n is a number of unit radio channels constituting the radio channel and is an integer from 1 to 5)	-36	100kHz
$930 \text{ MHz} < f \leq 1000 \text{ MHz}$	-55	100kHz
$1000 \text{ MHz} < f \leq 1,215 \text{ MHz}$	-45	1MHz
$1,215 \text{ MHz} < f$	-30	1MHz

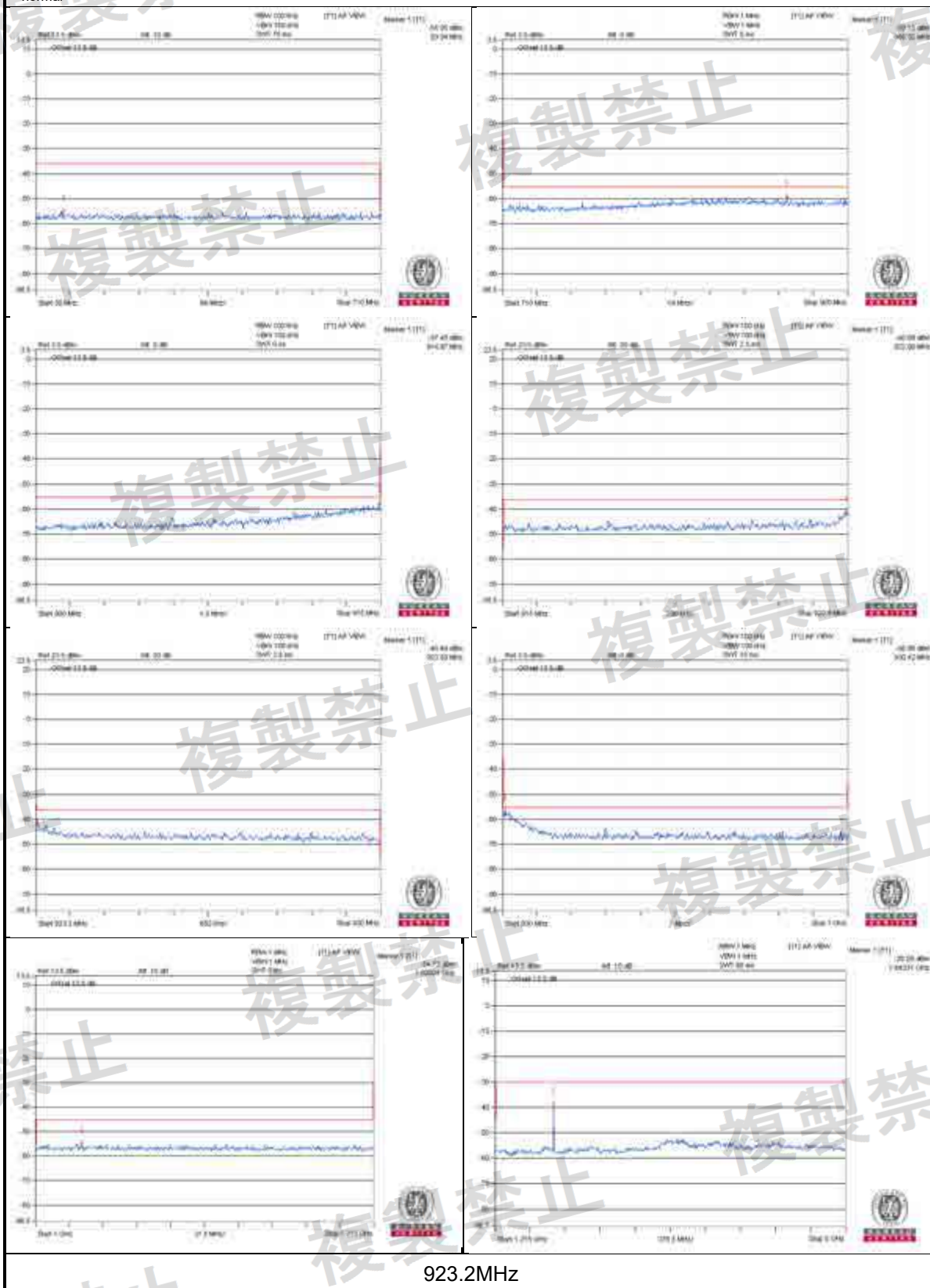
4.3.2 Test Setup



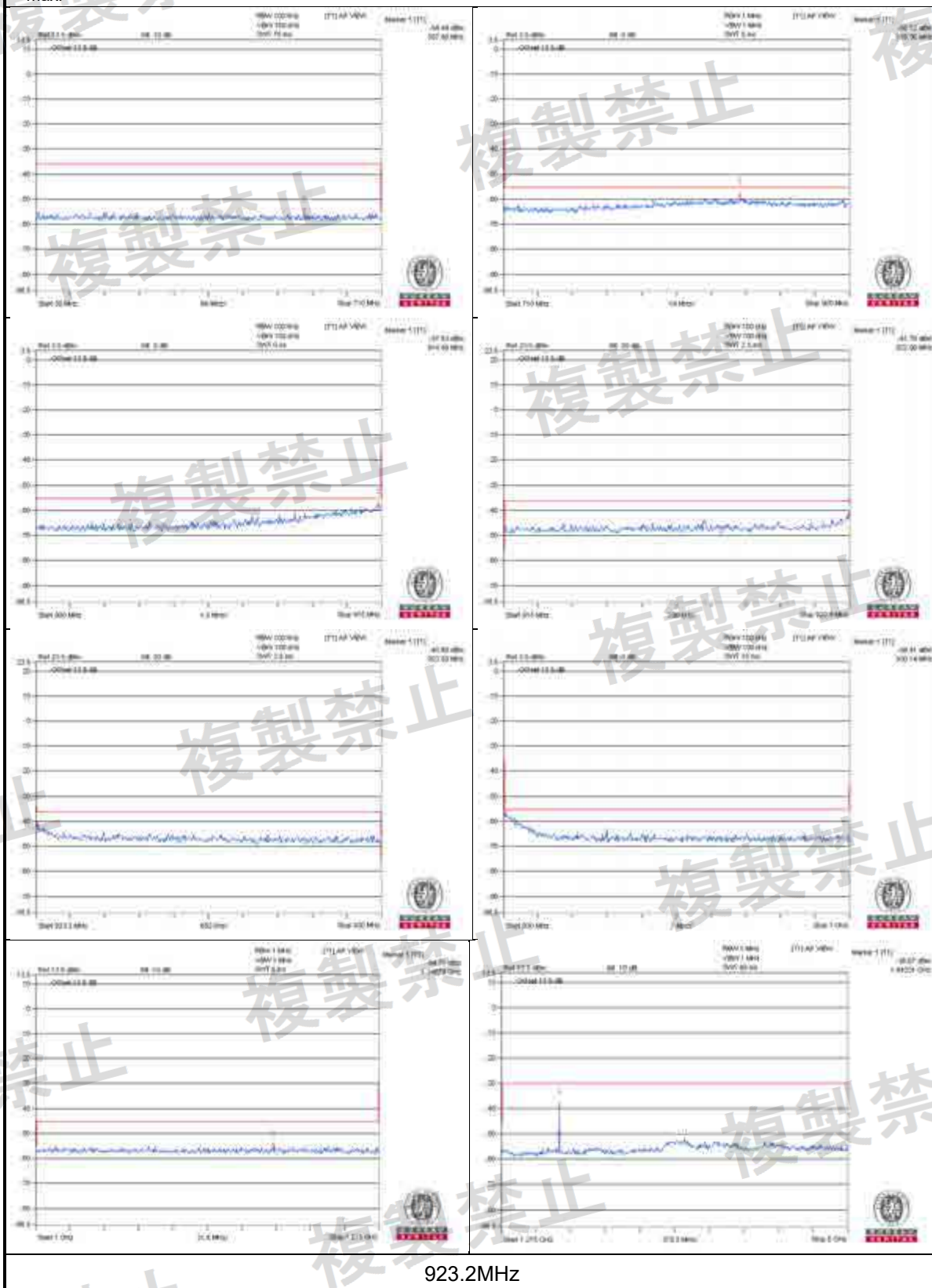
4.3.3 Test Results

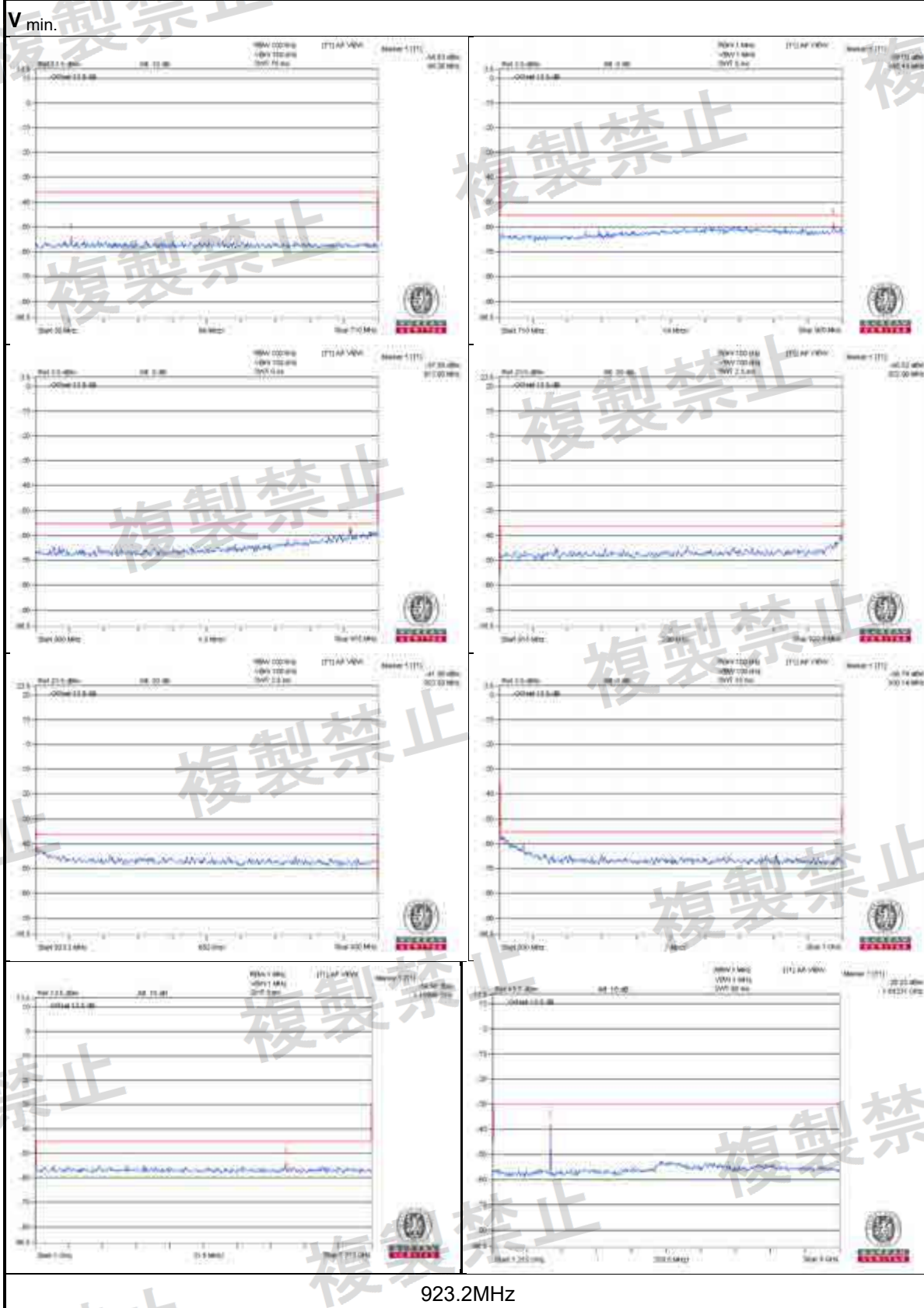
TEST CHANNEL		923.2MHz		LIMIT	RESULT
TEST CONDITION	FREQUENCY RANGE	FREQUENCY (MHz)	MEASURE. VALUE		
Vnormal	30MHz to 710MHz	83.04	-55.05	-36	PASS
	710MHz to 900MHz	866.56	-59.1	-55	PASS
	900MHz to 915MHz	914.97	-57.45	-55	PASS
	915MHz to CF-300kHz	922.88	-40.89	-36	PASS
	CF+300kHz to 930MHz	923.5	-40.64	-36	PASS
	930MHz to 1000MHz	930.42	-56.88	-55	PASS
	1000MHz to 1215MHz	1029.24	-54.73	-45	PASS
	1215MHz to 5000MHz	1843.31	-38.69	-30	PASS
Vmax.	30MHz to 710MHz	557.68	-54.49	-36	PASS
	710MHz to 900MHz	839.96	-58.52	-55	PASS
	900MHz to 915MHz	914.88	-57.53	-55	PASS
	915MHz to CF-300kHz	922.9	-41.76	-36	PASS
	CF+300kHz to 930MHz	923.5	-40.68	-36	PASS
	930MHz to 1000MHz	930.14	-56.41	-55	PASS
	1000MHz to 1215MHz	1148.78	-54.71	-45	PASS
	1215MHz to 5000MHz	1843.31	-38.67	-30	PASS
Vmin.	30MHz to 710MHz	99.36	-54.83	-36	PASS
	710MHz to 900MHz	895.44	-59.09	-55	PASS
	900MHz to 915MHz	913.8	-57.59	-55	PASS
	915MHz to CF-300kHz	922.9	-40.52	-36	PASS
	CF+300kHz to 930MHz	923.5	-41.98	-36	PASS
	930MHz to 1000MHz	930.14	-56.74	-55	PASS
	1000MHz to 1215MHz	1159.96	-54.59	-45	PASS
	1215MHz to 5000MHz	1843.31	-38.83	-30	PASS

V normal



V max.





4.4 Adjacent Channel Leakage Power

4.4.1 Limits of Adjacent Channel Leakage Power

FREQUENCIES (MHz) 922.3MHz TO 928.1MHz (Antenna power is more than 1mW and 20mW or less.)	LIMIT
ADJACENT UNIT CHANNEL	-15dBm or less

4.4.2 Test Setup

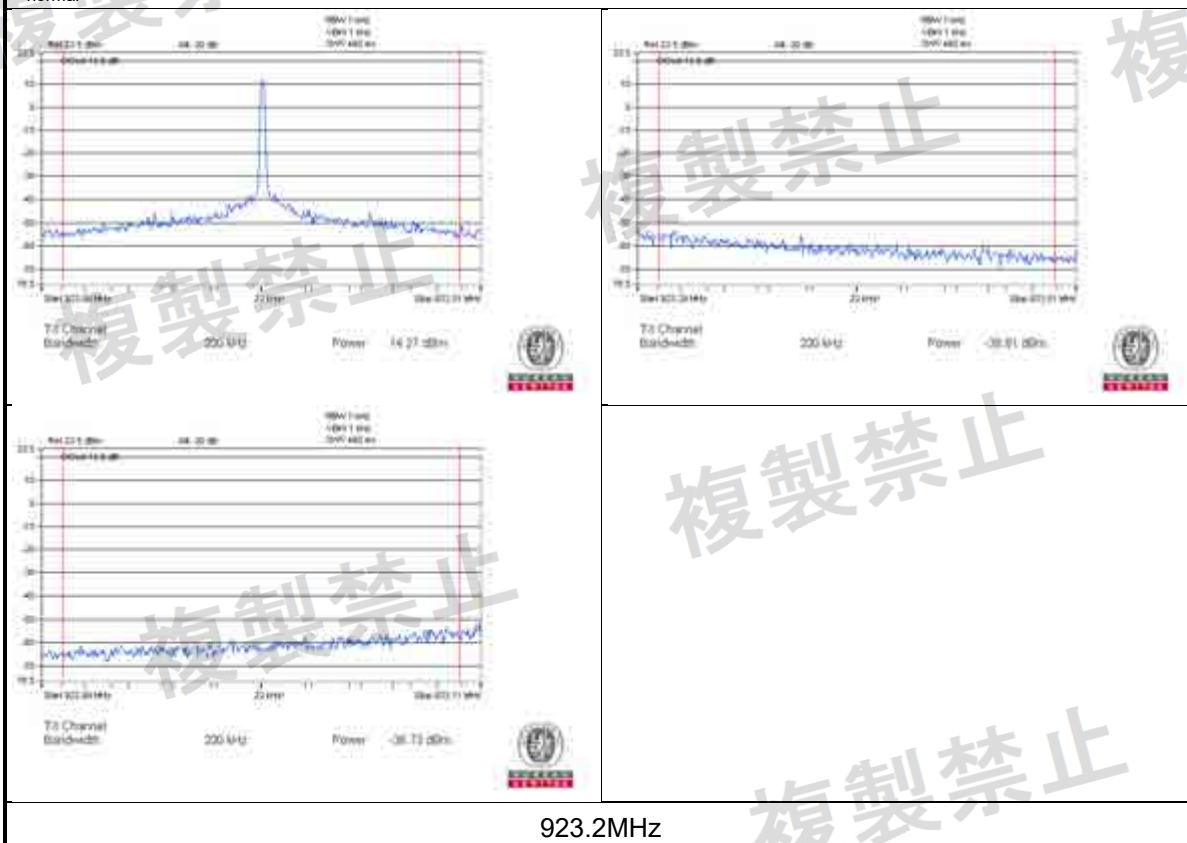


4.4.3 Test Results

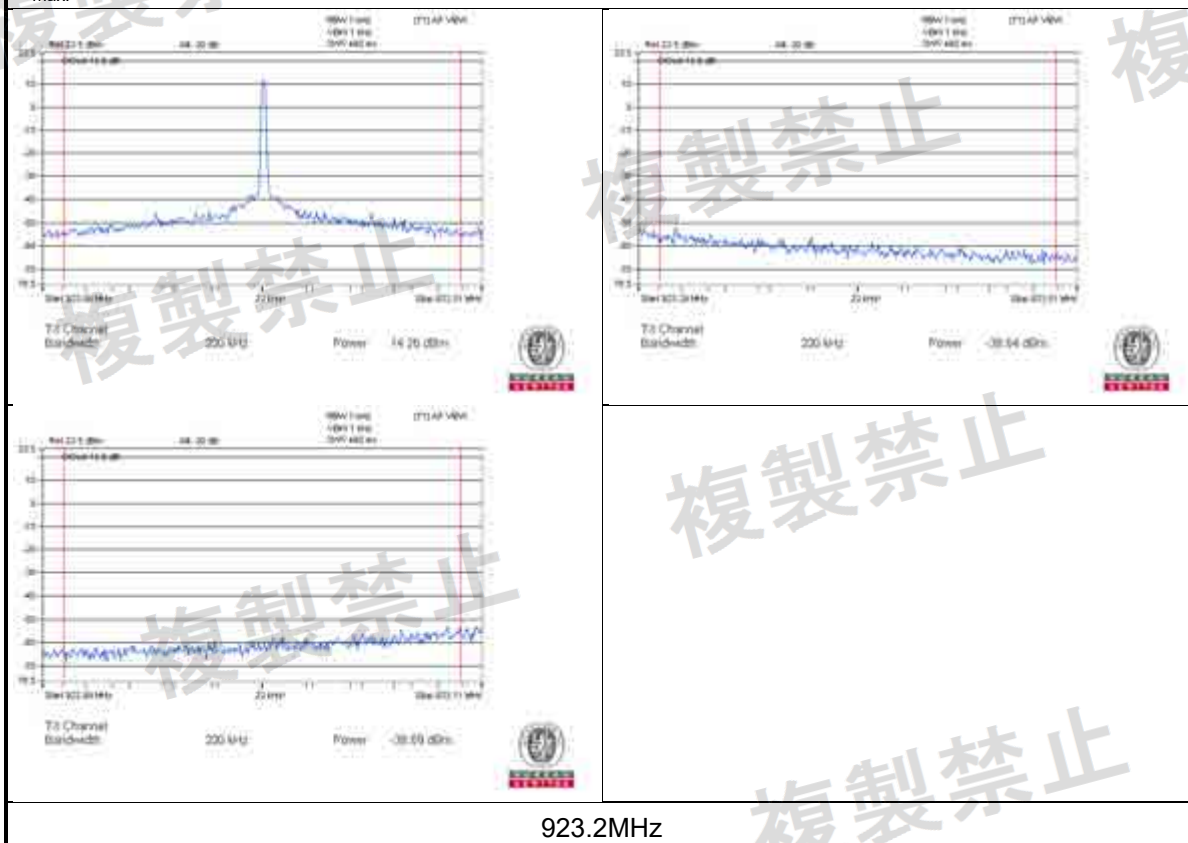
ENVIRONMENTAL CONDITIONS		25 deg.C, 60% RH	
VOLTAGE	FREQUENCY (MHz)	923.2MHz	MAX. LIMIT (dBm)
V _{nom}	Mean Power of carrier (dBm)	14.27	-
	Mean Power +0.2 MHz distance of carrier (dBm)	-36.81	-15
	Mean Power -0.2 MHz distance of carrier (dBm)	-36.73	-15
V _{max.}	Mean Power of carrier (dBm)	14.26	-
	Mean Power +0.2 MHz distance of carrier (dBm)	-36.64	-15
	Mean Power -0.2 MHz distance of carrier (dBm)	-36.69	-15
V _{min.}	Mean Power of carrier (dBm)	14.27	-
	Mean Power +0.2 MHz distance of carrier (dBm)	-36.71	-15
	Mean Power -0.2 MHz distance of carrier (dBm)	-36.81	-15

NOTE: 1. The spectrum plots are attached on the following pages.

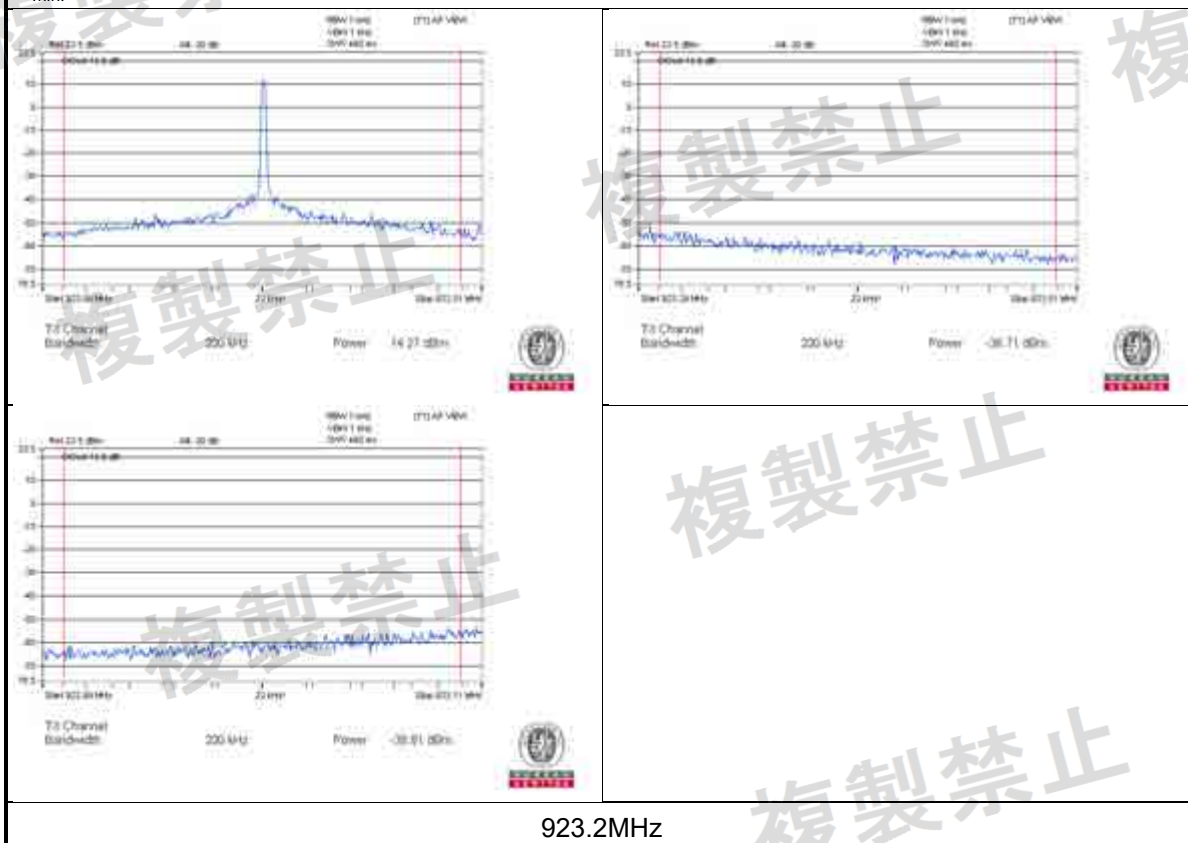
V normal



V_{max}



V min.



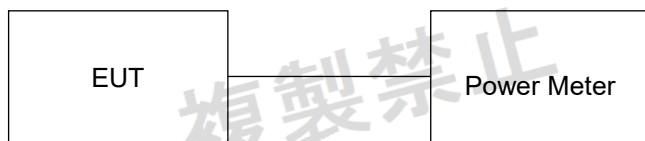
4.5 Antenna Power Measurement

4.5.1 Limits of Antenna Power

Application	Antenna Power	Applied CH number	Unit CH bandwidth	CH used in a bundle
	1mW or less	1-5	200kHz	1~5 ch
		62-77	100kHz	1~5 ch
V	20mW or less	24-38	200kHz	1~5 ch
		33-61	200kHz	1ch
				2ch
				3~5ch

Tolerance of antenna power shall be +20% (upper value) and -80% (lower value).

4.5.2 Test Setup



4.5.3 Test Results

Environmental Conditions	25 deg.C, 60% RH	
Test Condition	Conducted RF Output Power (mW)	
	Channel 37 923.2MHz	Max. Limit (mW)
V_{normal}	15.241	20
$V_{max.}$	15.031	20
$V_{min.}$	14.894	20
RATED POWER	19	
TOLERANCE OF ANTENNA POWER	3.8~22.8	

Monopole antenna with antenna gain: 2.96dBi

Environmental Conditions	25 deg.C, 60% RH	
Test Condition	Radiated RF Output Power Density (mW)	
	Channel 37 923.2MHz	Max. Limit (mW)
V_{normal}	30.131	39.902
$V_{max.}$	29.716	39.902
$V_{min.}$	29.445	39.902

4.6 Spurious Emissions for Receiver

4.6.1 Limits of Spurious Emissions for Receiver

Frequency Band	Limit on Secondary Radiated Emissions, etc. (Antenna input)	Reference bandwidth
$f \leq 710 \text{ MHz}$	-54 dBm	100kHz
$710 \text{ MHz} < f \leq 900 \text{ MHz}$	-55 dBm	1MHz
$900 \text{ MHz} < f \leq 915 \text{ MHz}$	-55 dBm	100kHz
$915 \text{ MHz} < f \leq 930 \text{ MHz}$	-54 dBm	100kHz
$930 \text{ MHz} < f \leq 1000 \text{ MHz}$	-55 dBm	100kHz
$1000 \text{ MHz} < f$	-47 dBm	1MHz

4.6.2 Test Setup

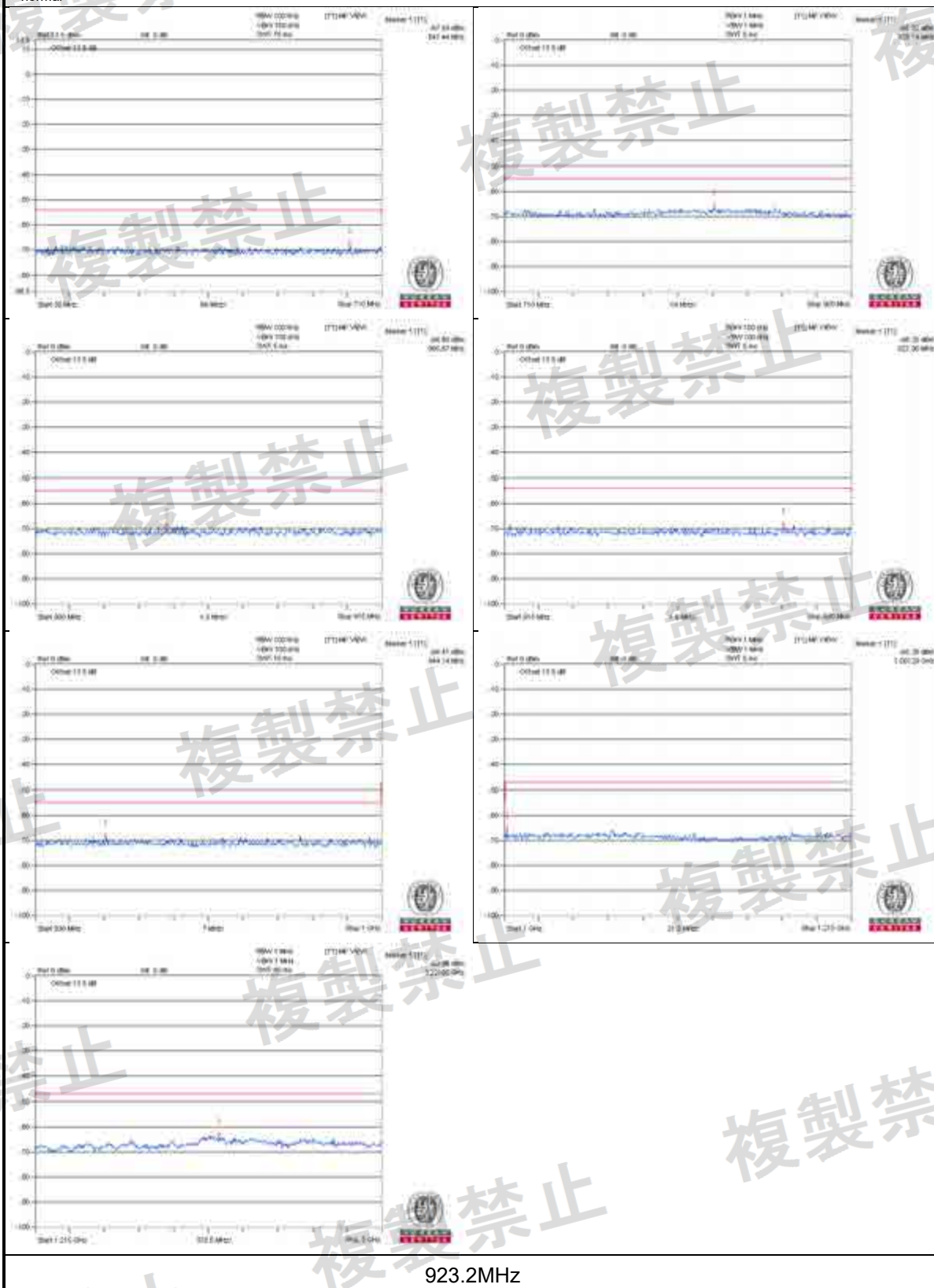


4.6.3 Test Result

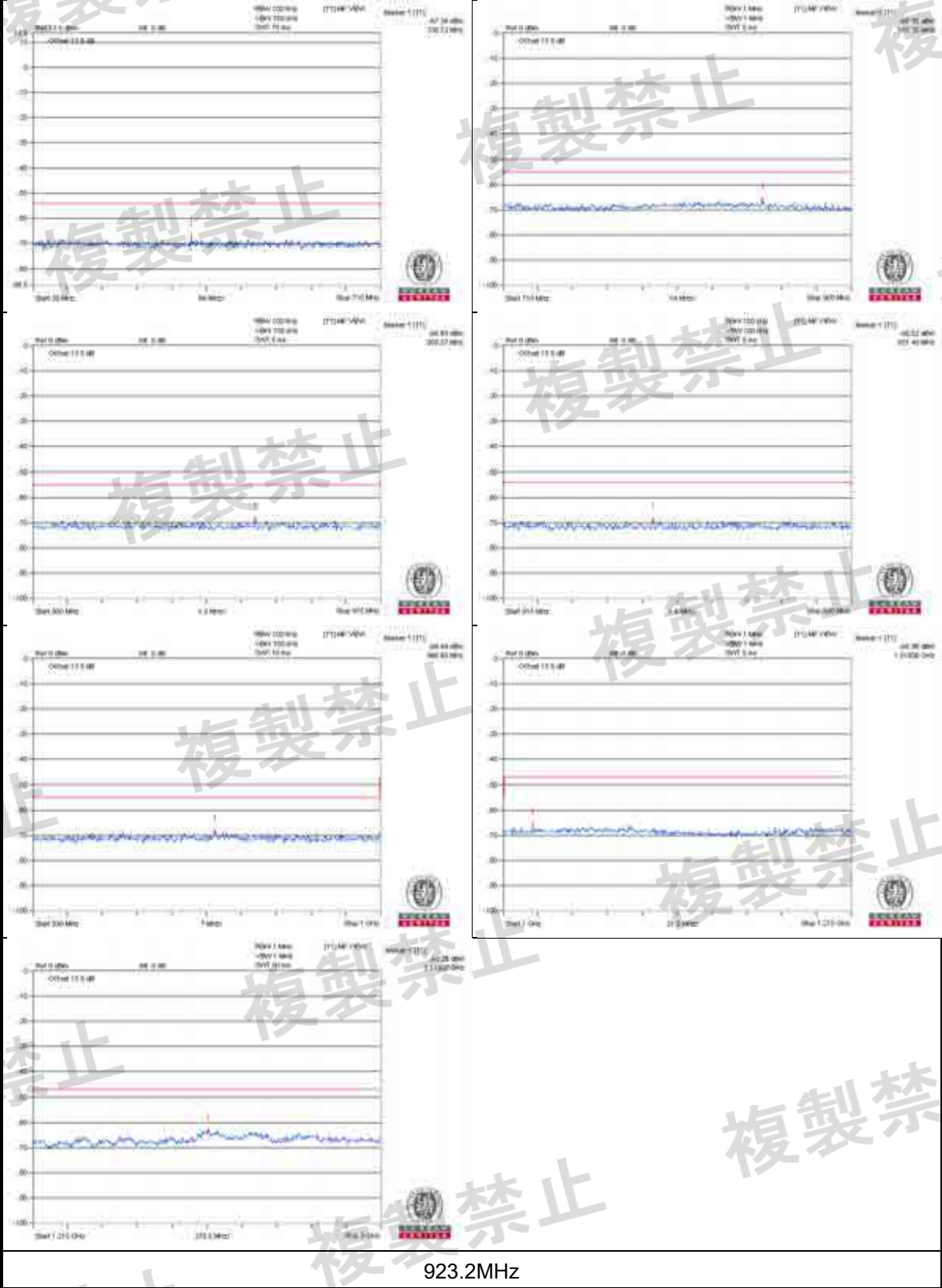
TEST CHANNEL		CH37 (923.2MHz)		LIMIT	RESULT
TEST CONDITION	FREQUENCY RANGE	FREQ. (MHz)	MEASURE. VALUE		
Vnormal	30MHz Peak 710MHz	647.44	-67.54	-54	PASS
	710MHz Peak 900MHz	825.14	-65.92	-55	PASS
	900MHz Peak 915MHz	905.67	-68.9	-55	PASS
	915MHz Peak 930MHz	927.06	-68.35	-54	PASS
	930MHz Peak 1000MHz	944.14	-68.41	-55	PASS
	1000MHz Peak 1215MHz	1001.29	-65.38	-47	PASS
	1215MHz Peak 5000MHz	3221.05	-62.96	-47	PASS
Vmax.	30MHz Peak 710MHz	338.72	-67.34	-54	PASS
	710MHz Peak 900MHz	851.36	-65.99	-55	PASS
	900MHz Peak 915MHz	909.57	-68.65	-55	PASS
	915MHz Peak 930MHz	921.45	-68.82	-54	PASS
	930MHz Peak 1000MHz	966.68	-68.44	-55	PASS
	1000MHz Peak 1215MHz	1018.06	-65.98	-47	PASS
	1215MHz Peak 5000MHz	3115.07	-63.28	-47	PASS
Vmin.	30MHz Peak 710MHz	365.92	-66.75	-54	PASS
	710MHz Peak 900MHz	828.56	-65.98	-55	PASS
	900MHz Peak 915MHz	902.37	-68.65	-55	PASS
	915MHz Peak 930MHz	917.19	-68.38	-54	PASS
	930MHz Peak 1000MHz	987.26	-68.28	-55	PASS
	1000MHz Peak 1215MHz	1082.99	-66.08	-47	PASS
	1215MHz Peak 5000MHz	2418.63	-58.94	-47	PASS

NOTE: 1. The spectrum plots are attached on the following pages.

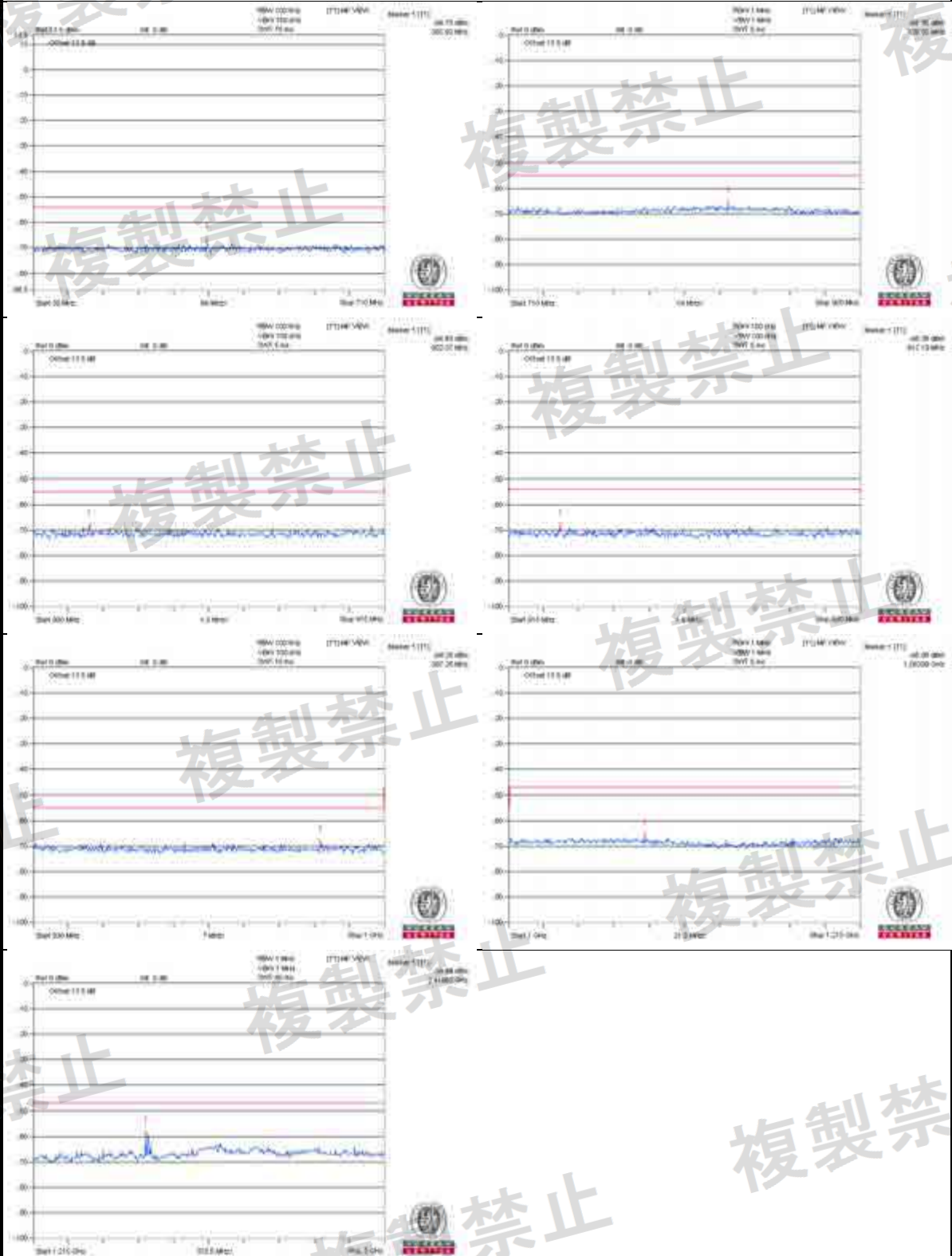
V normal



V_{max}



V min.



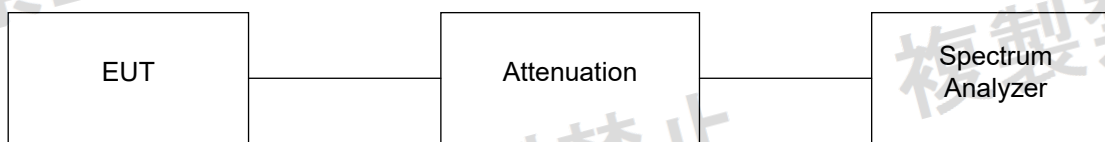
923.2MHz

4.7 Transmission Time Control

4.7.1 Limits of Transmission Time Control

Application	Antenna Power	Applied CH number	Unit CH bandwidth	CH used in a bundle	Sending duration	Pause duration	The sum of emission time per arbitrary one hour
	1mW or less	1-5	200kHz	1~5 ch	100ms or less	100ms	3.6sec
		62-77	100kHz	1~5 ch	50ms or less	50ms	None
V	20mW or less	24-38	200kHz	1~5 ch	4s	50ms	None
		33-61	200kHz	1ch	More than 200ms, and 400ms or less	Ten times or more of the former sending time	360sec or less
					More than 6ms, and 200ms or less	2ms	
					6ms or less	None	
				2ch	More than 3ms, and 200ms or less	2ms	
					3ms or less	None	
				3~5ch	More than 2ms, and 100ms or less	2ms	
					2ms or less	None	

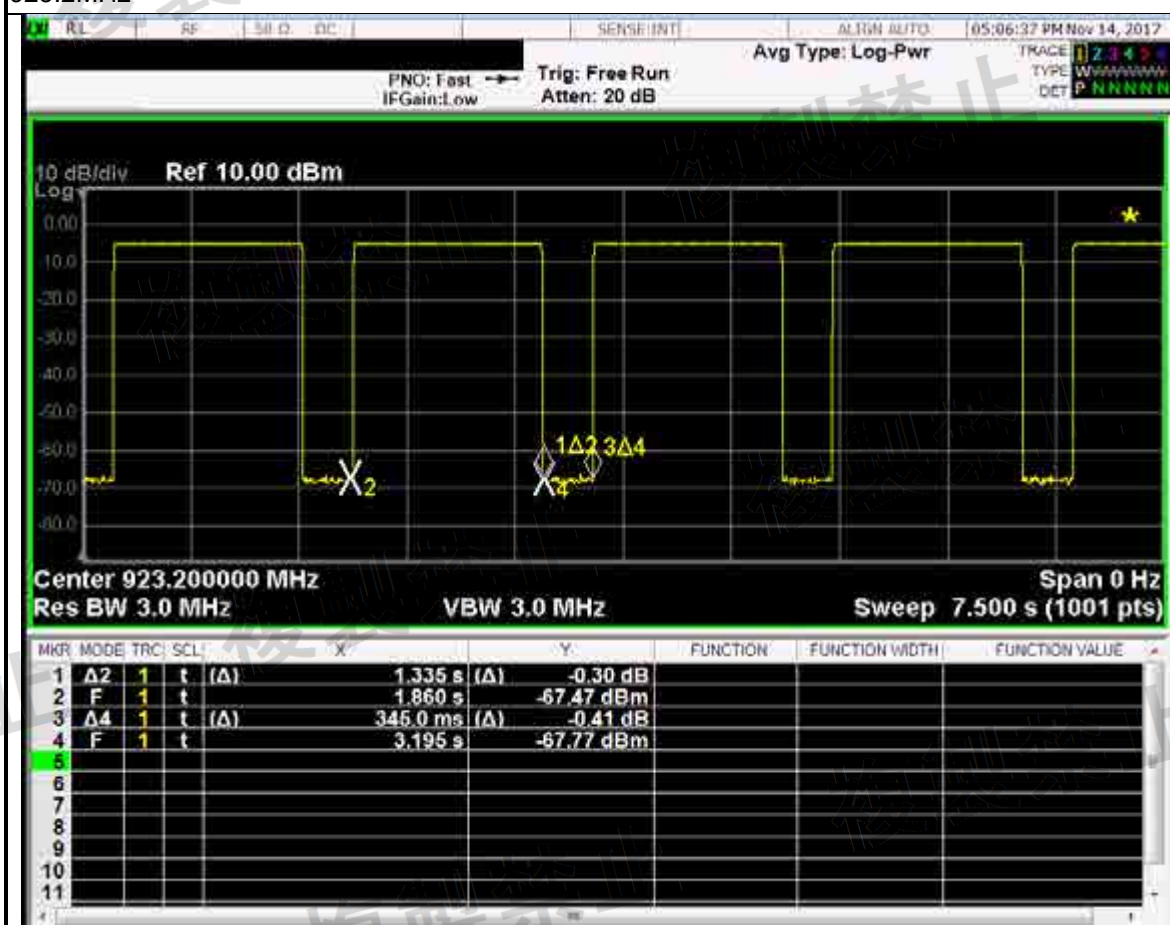
4.7.2 Test Setup



4.7.3 Test Results

Transmission Time Control				
Frequency (MHz)	Sending Duration		Pause Duration	
	Test Result (ms)	Limit	Test Result (ms)	Min. Limit
923.2	1335	4s	345	50ms

923.2MHz

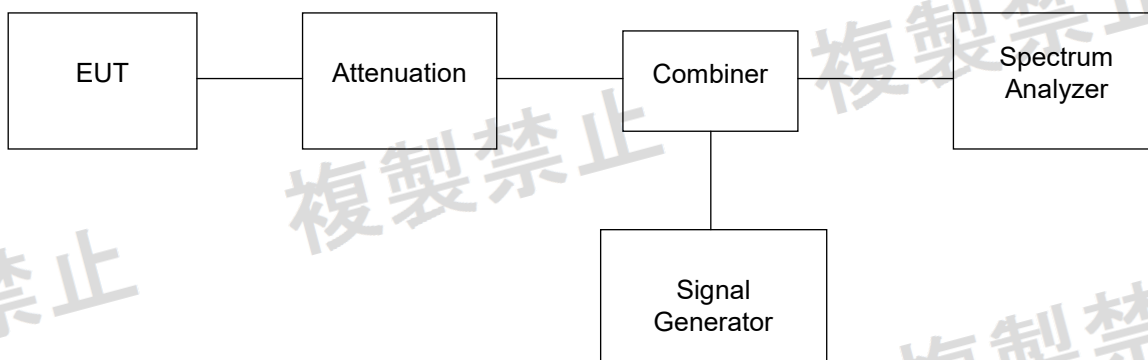


4.8 Carrier Sense

4.8.1 Limits of Carrier Sense

Application	Antenna Power	Applied CH number	Unit CH bandwidth	CH used in a bundle	Carrier sense time
	1mW or less	1-5	200kHz	1~5 ch	None
		62-77	100kHz	1~5 ch	
V	20mW or less	24-38	200kHz	1~5 ch	5ms or more
		33-61	200kHz	1ch	128us or more
				2ch	
				3~5ch	

4.8.2 Test Setup



4.8.3 Test Results

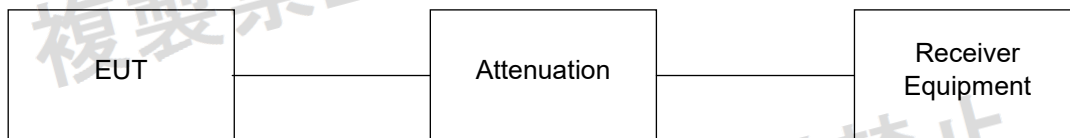
Carrier Sense		
Frequency (MHz)	Can transmit condition	Can not transmit condition
	EUT can transmit after 5ms that pulse signal in the off time	EUT cannot transmit anyway
923.2	PASS	PASS

4.9 Interference Prevention Function

4.9.1 Limits of Interference Prevention Function

The radio equipment shall automatically transmit/receive identification codes.

4.9.2 Test Setup



4.9.3 Test Results

Environmental Conditions	25 deg.C, 60% RH
Link Mode	Test Result
Normal	Pass

5 Photographs of the Test Configuration





Appendix - Information on the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

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Web Site: www.bureauveritas-adt.com

The address and road map of all our labs can be found in our web site also.

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