Test Result Report

Date 2019/07/08

Test Laboratory	Address	No.1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen 518057 China
	Name of corporation	SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen Branch
	Position	Manager
	Name of responsible	Keny Xu

Signature

Type of specified radio equipment	Radio equipment according to Certification Ordinance Article 2 Section 1 No.
Model name	Wine Dispenser with Bluetooth without external adaptor
Manufacturer	Simatelex Manufactory Co., Ltd
Serial Number	N/A
Number of test sample	Model 11
Class of emissions, Assigned frequency and Antenna power	F1D, 2402MHz-2480MHz (2MHz separation, 40CH) 0.00009929W
Name of test person	Darren. yuan
Qualifications or conditions of test person	Test Engineer
Test Date Temperature/Humidity	See attached test report
Measuring Instruments	See attached test report
Test Method	Notification No.88 of MIC, Appendix
Test Result	Pass / Fail See attached test report
Remarks	

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Test result and instruments about Type certificate

Bluetooth Low Energy

1. General

Model name	Model 11	**Date**	2019/6/5
Serial number	N/A	**Place**	RE 2# chamber
Class of emissions, Assigned frequency and Antenna power	F1D, 2402-2480MHz, (2MHz step 40ch), 0.00009929W	**Remarks**	

2. Measuring Instruments

Equipment list

Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date	Calibration body	Classification
DC Power Supply	ZhaoXin	RXN-305D	SEM011-02	2018/9/25	2019/9/24	CEPREI	(c)
Signal Generator (9kHz-40GHz)	KEYSIGHT	N5173B	SEM006-05	2018/9/27	2019/9/26	CEPREI	(c)
Multimeter	FLUKE	Fluke 73III	SEM022-01	2019/4/3	2020/4/2	CEPREI	(c)
Universal Radio Communication Tester	Rohde & Schwarz	CMW 500	SEM010-03	2019/4/2	2020/4/1	CEPREI	(c)
Humidity/ Temperature Indicator	Shanghai Meteorological Industry Factory	ZJ1-2B	SEM002-03	2018/9/27	2019/9/26	CEPREI	(c)
Barometer	Changchun Meteorological Industry Factory	DYM3	SEM002-01	2019/4/4	2020/4/3	CEPREI	(c)
EXA Signal Analyzer (10Hz-44GHz)	Agilent Technologies Inc	N9010A	SEM004-12	2019/4/12	2020/4/11	GRGTEST	(c)
Horn Antenna (1-18GHz)	Rohde & Schwarz	HF907	SEM003-07	2018/4/13	2021/4/12	GRGTEST	(c)
Horn Antenna (1-18GHz)	Rohde & Schwarz	HF907	SEM003-06	2018/6/8	2021/6/7	GRGTEST	(c)
Pre-Amplifier (0.1-26.5GHz)	Compliance Directions Systems Inc.	PAP-0126	SEM004-11	2018/11/12	2019/11/11	CEPREI	(c)
MXE EMI Receiver (20Hz-8.4GHz)	Agilent Technologies	N9038A	SEM004-05	2018/9/25	2019/9/24	CEPREI	(c)
Pre-amplifier (0.1-1300MHz)	Agilent Technologies	8447D	SEM005-01	2019/4/1	2020/3/31	CEPREI	(c)
BiConiLog Antenna (26-3000MHz)	ETS-LINDGREN	3142C	SEM003-01	2017/6/27	2020/6/26	NIM	(c)
BiConiLog Antenna (26-3000MHz)	ETS-LINDGREN	3142C	SEM003-02	2019/5/24	2022/5/23	NIM	(c)

Remark:
(a) Calibration conducted by the National Institute of Information and Communications Technology (NICT) in Japan (hereinafter referred to as "NICT") or a designated calibration agency under Article 102-18 paragraph (1) in JRL.
(b) Correction conducted pursuant to the provisions of Article 135 or Article 144 of the Measurement Act (Act No. 51 of 1992) .
(c) Calibration conducted in countries except Japan, which shall be equivalent to the calibration conducted by the NICT or a designated calibration agency under Article 102-18 paragraph (1).
(d) Calibration, etc. conducted by using measuring instruments and other equipment listed in the right column of appended table No. 3, which shall have been given any type of calibration, etc. listed above from (a) to (c). From JRL Article 24-2, paragraph 4, Item 2

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3. Test Result

Condition	Test Items		Unit	Normal Voltage + 10% (V)			Normal Voltage (3.8 V)			Normal Voltage - 10% (V)			Judgment	Limit	Remarks
				2402MHz	2440MHz	2480MHz	2402MHz	2440MHz	2480MHz	2402MHz	2440MHz	2480MHz			
Normal (23.4° C, 43.2 %)	Frequency		MHz				2401.983	2439.980	2480.021				Pass	50ppm	
			ppm				-7.286	-8.325	-9.073						
	Occupied Bandwidth		MHz				1.0885	1.0862	1.086				Pass	26MHz	
	Spurious Emissions	30MHz-2387MHz	dBm				-54.817	-56.127	-56.216				Pass	-26dBm	
			MHz				2352.15	2123.12	1715.35						
		2387MHz-2400MHz	dBm				-56.644	-55.437	-55.153				Pass	-16dBm	
			MHz				2387.2925	2391.428	2394.9788						
		2483.5MHz-2496.5MHz	dBm				-55.324	-55.275	-55.273				Pass	-16dBm	
			MHz				2493.3914	2492.6699	2493.7621						
		2496.5MHz-12.5GHz	dBm				-52.356	-52.885	-53.347				Pass	-26dBm	
			MHz				5131.6	5127.8	3770.5						
	Antenna Power		W				0.00009929	0.00004502	0.00004307				Pass	0.01W	
			%				0.00	-54.66	-56.62					+20 ~ -80%	
	Secondary Radiated Emissions	30MHz-1GHz	dBm				-61.72	-62.065	-62.329				Pass	-54dBm	
			MHz				31.210	40.550	46.610						
		1GHz-12.5GHz	dBm				-54.18	-54.588	-54.454				Pass	-47dBm	
			MHz				5584.400	4801.400	5754.300						
	Interference Prevention Function	D0:CF:5E:66:23:91											Pass		

Note:

2.1 Details of E.U.T.

Power supply:	Lithium Ion Battery: 3.8V 490mAh rechargeable battery which charged by USB port
Test voltage:	DC 3.8V
Cable:	USB cable: 100cm unshield
Operation Frequency:	2402MHz to 2480MHz
Bluetooth Version:	V4.2 LE
Modulation Type:	GFSK
Number of Channels:	40
Channel Spacing:	2MHz
Antenna Type:	2.4GHz ceramic antenna
Antenna Gain:	1dBi

2.2 Test Conditions

Power Supply	Lithium Ion Battery: 3.8V 490mAh rechargeable battery which charged by USB port	
	The RF unit is supplied DC3.3V. The fluctuation of input voltage to the circuit of RF unit of test equipment is under ±1%, when input voltage from DC3.8V to the test equipment is fluctuated by ±10%, So, all measurement has been conducted by only rated voltage.	
	The measurement result of the voltage fluctuation at RF circuit when	
	DC3.8V +/- 10%.	
	DC Input	DC3V30
	4.18V	3.32V
	3.8V	3.30V
	3.42V	3.28V

Temperature:	0 -45.0 °C
Humidity:	45-85 % RH
Atmospheric Pressure:	1000 -1010 mbar
	Note:
	VN: Normal Voltage
	TN: Normal Temperature
	TL: Low Extreme Test Temperature
	TH: High Extreme Test Temperature

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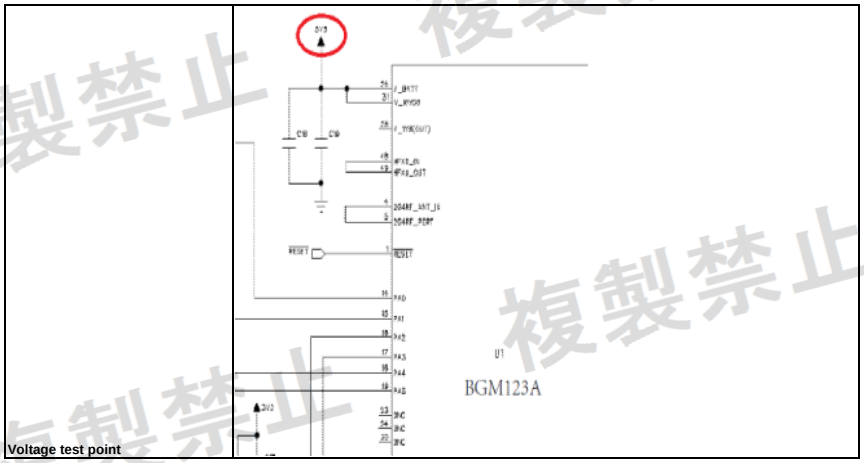

Voltage test point

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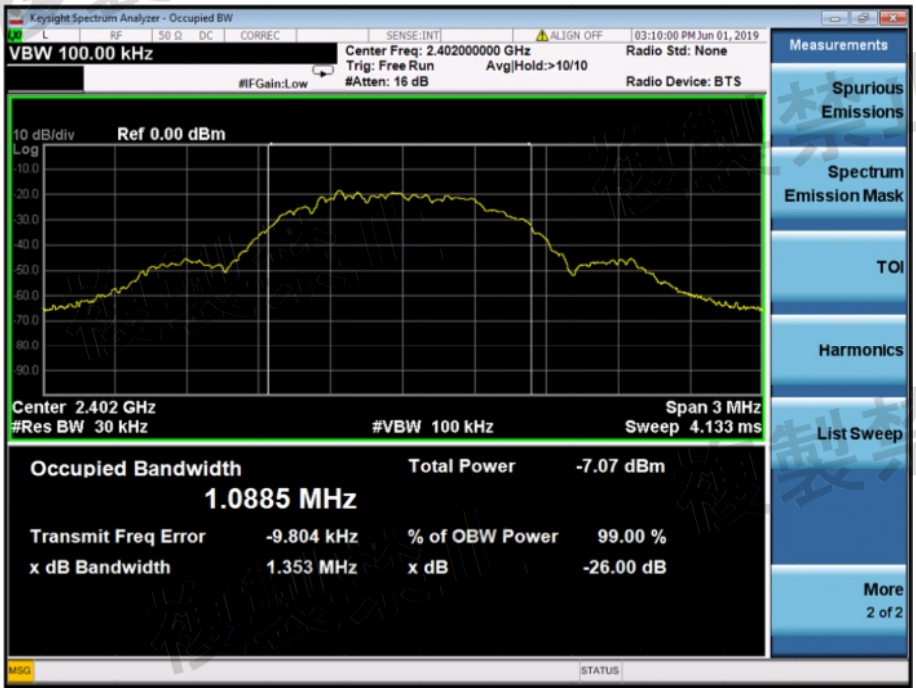
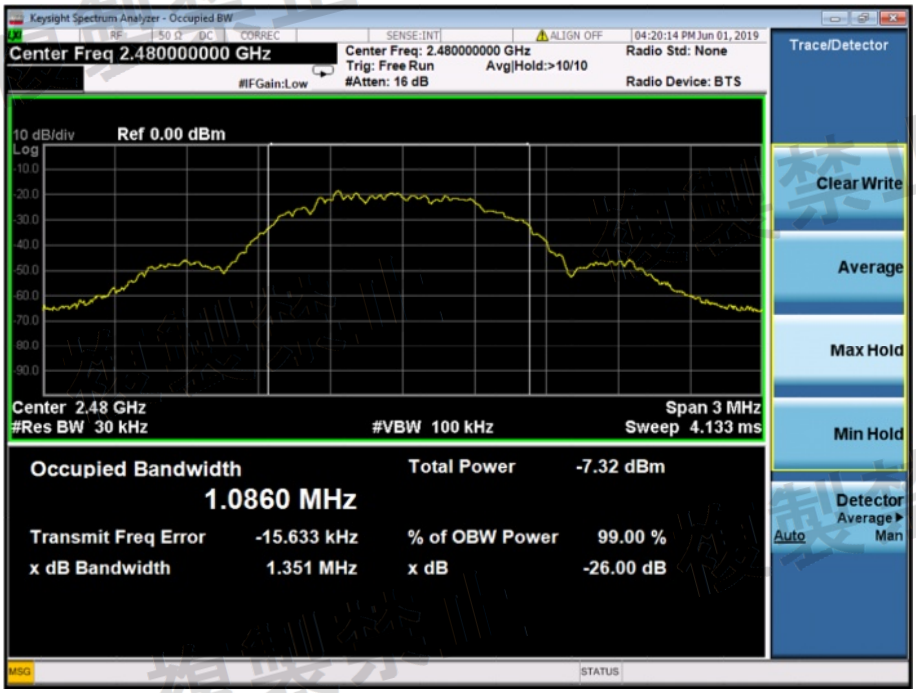
OBW

2402MHz



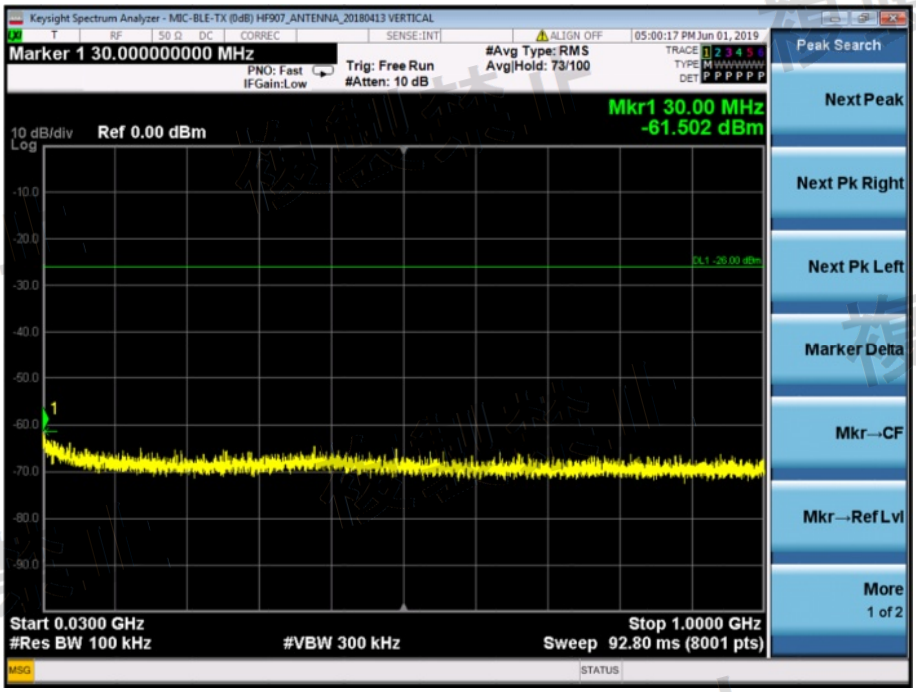
2442MHz

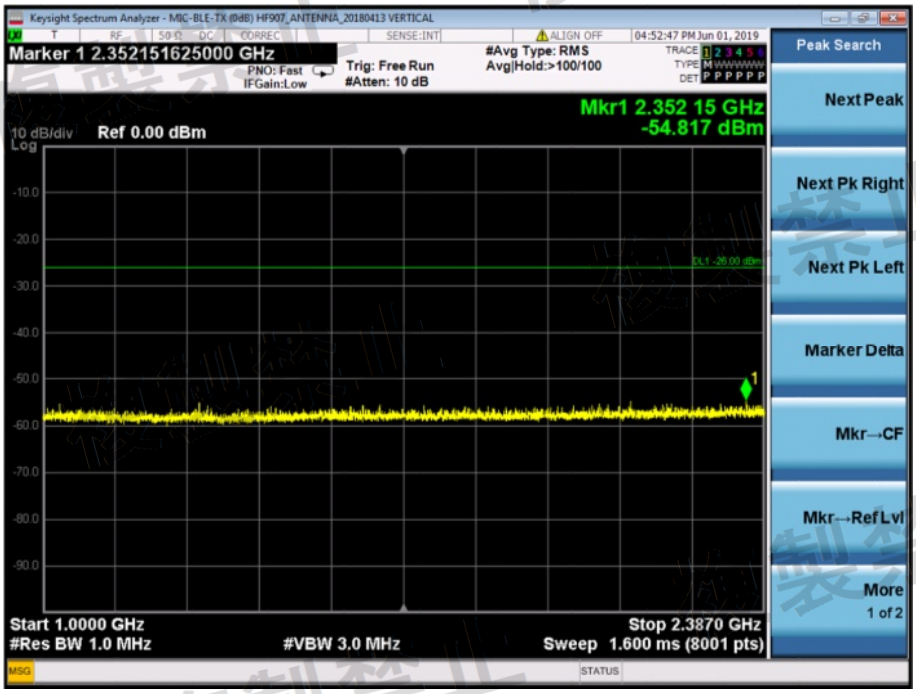
2480MHz

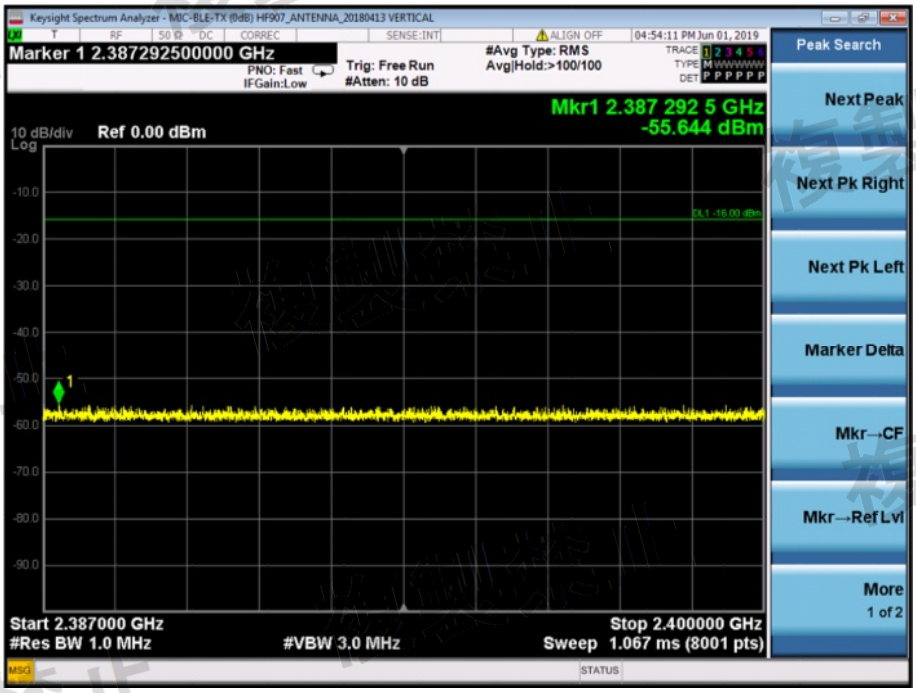


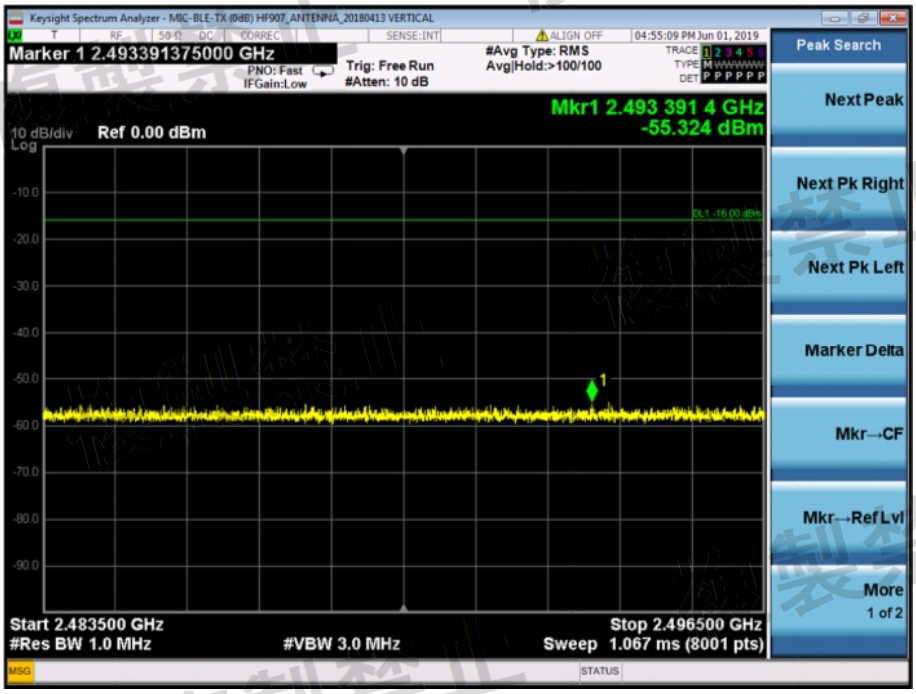
Tx Spurious

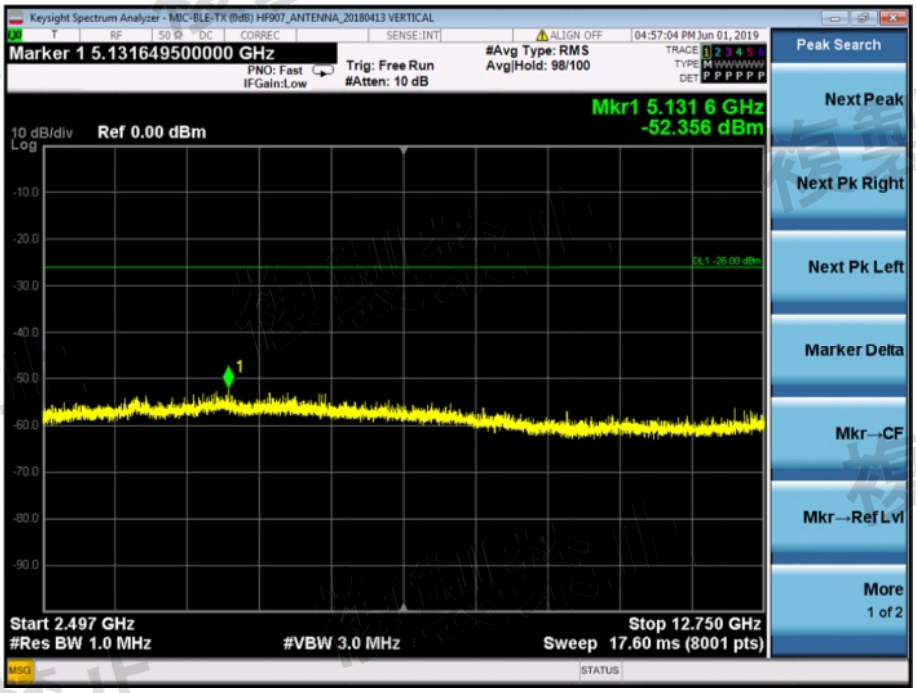
2402MHz



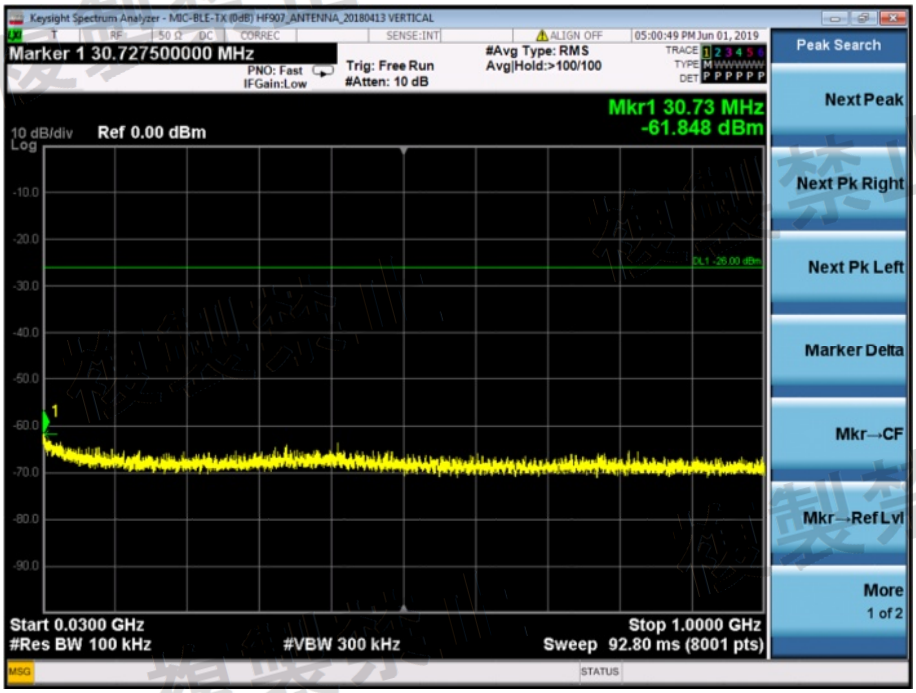

Keysight Spectrum Analyzer - MIC-BLE-TX (0dB) HF907_ANTENNA_20180413 VERTICAL
Marker 1 2.352151625000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 10 dB
#Avg Type: RMS
Avg|Hold:>100/100
04:52:47 PM Jun 01, 2019
Mkr1 2.352 15 GHz
-54.817 dBm
10 dB/div
Log
Ref 0.00 dBm
Start 1.0000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 2.3870 GHz
Sweep 1.600 ms (8001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

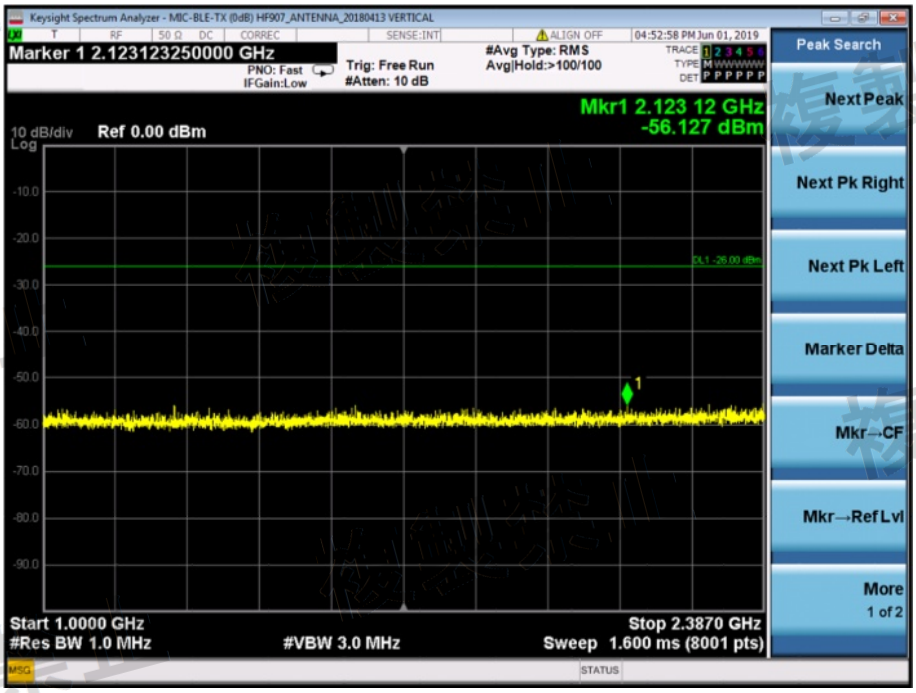

Keysight Spectrum Analyzer - MIC-BLE-TX (0dB) HF907_ANTENNA_20180413 VERTICAL
Marker 1 2.387292500000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 10 dB
#Avg Type: RMS
Avg|Hold:>100/100
04:54:11 PM Jun 01, 2019
Mkr1 2.387 292 5 GHz
-55.644 dBm
10 dB/div
Log
Ref 0.00 dBm
Start 2.387000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 2.400000 GHz
Sweep 1.067 ms (8001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

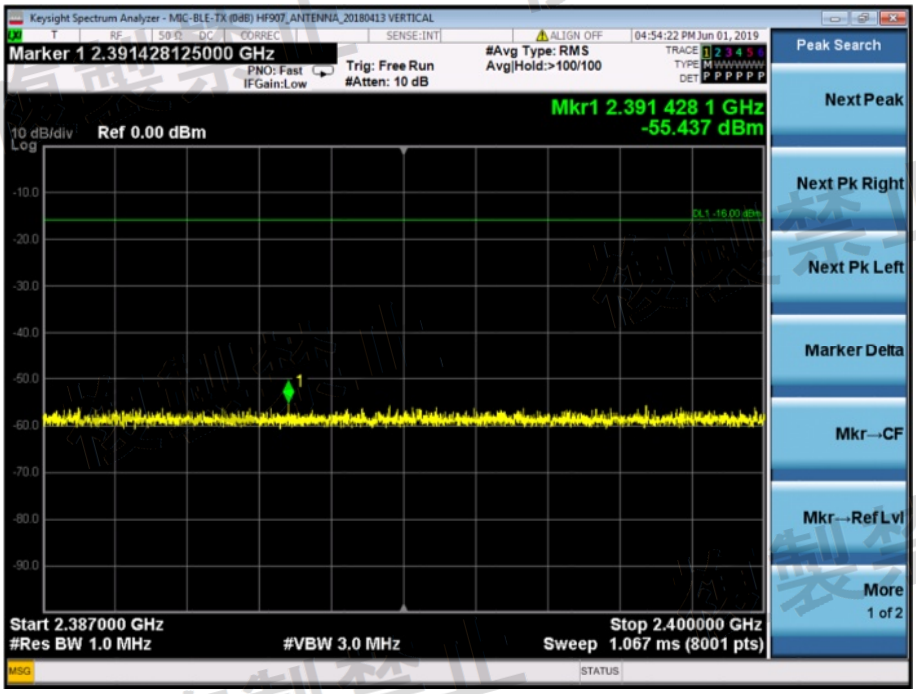

Keysight Spectrum Analyzer - MIC-BLE-TX (0dB) HF907_ANTENNA_20180413 VERTICAL
Marker 1 2.493391375000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 10 dB
#Avg Type: RMS
Avg|Hold:>100/100
04:55:09 PM Jun 01, 2019
Mkr1 2.493 391 4 GHz
-55.324 dBm
10 dB/div
Ref 0.00 dBm
Log
Start 2.483500 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 2.496500 GHz
Sweep 1.067 ms (8001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

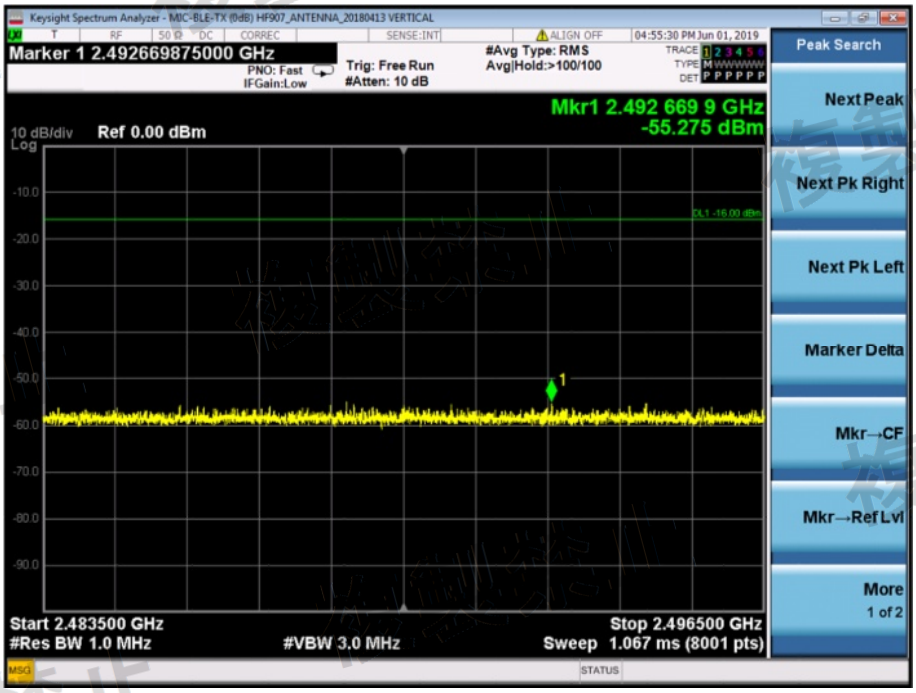

Keysight Spectrum Analyzer - MIC-BLE-TX (0dB) HF907_ANTENNA_20180413 VERTICAL
Marker 1 5.131649500000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 10 dB
#Avg Type: RMS
Avg|Hold: 98/100
04:57:04 PM Jun 01, 2019
Mkr1 5.131 6 GHz
-52.356 dBm
10 dB/div
Ref 0.00 dBm
Log
Start 2.497 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 12.750 GHz
Sweep 17.60 ms (8001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

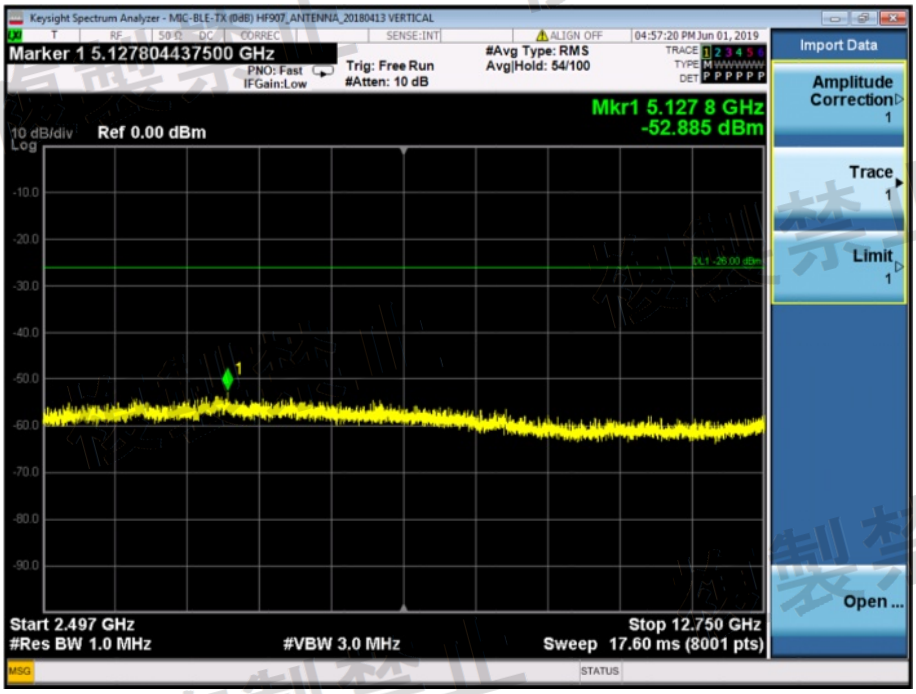
2440MHz


Keysight Spectrum Analyzer - MIC-BLE-TX (0dB) HF907_ANTENNA_20180413 VERTICAL
Marker 1 30.727500000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 10 dB
#Avg Type: RMS
Avg|Hold:>100/100
05:00:49 PM Jun 01, 2019
Mkr1 30.73 MHz
-61.848 dBm
10 dB/div
Log
Ref 0.00 dBm
Start 0.0300 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 1.0000 GHz
Sweep 92.80 ms (8001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

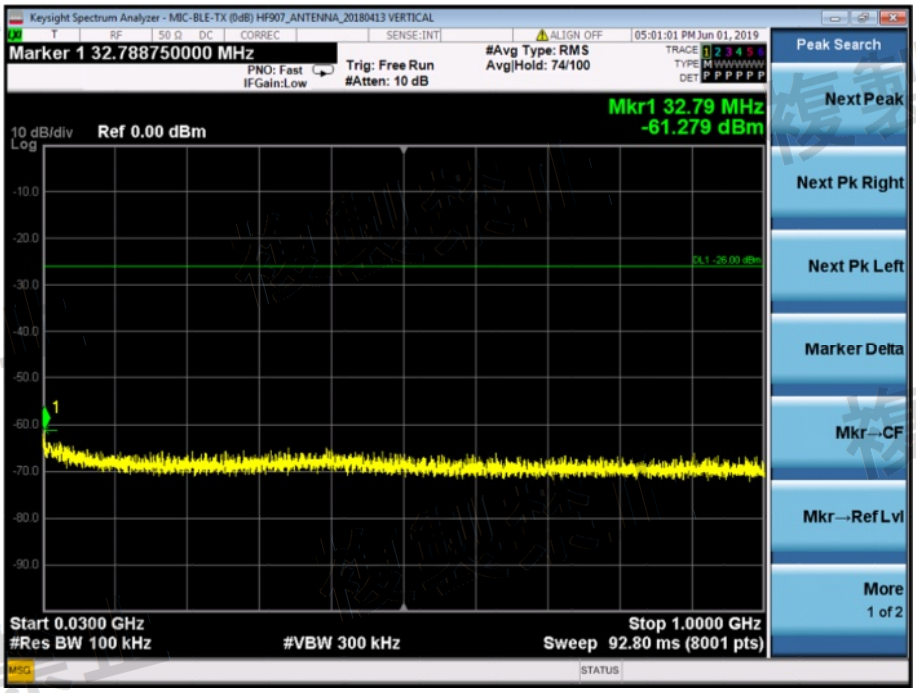

Keysight Spectrum Analyzer - MIC-BLE-TX (0dB) HF907_ANTENNA_20180413 VERTICAL
Marker 1 2.123123250000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 10 dB
#Avg Type: RMS
Avg|Hold:>100/100
04:52:58 PM Jun 01, 2019
Mkr1 2.123 12 GHz
-56.127 dBm
10 dB/div
Log
Ref 0.00 dBm
Start 1.0000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 2.3870 GHz
Sweep 1.600 ms (8001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

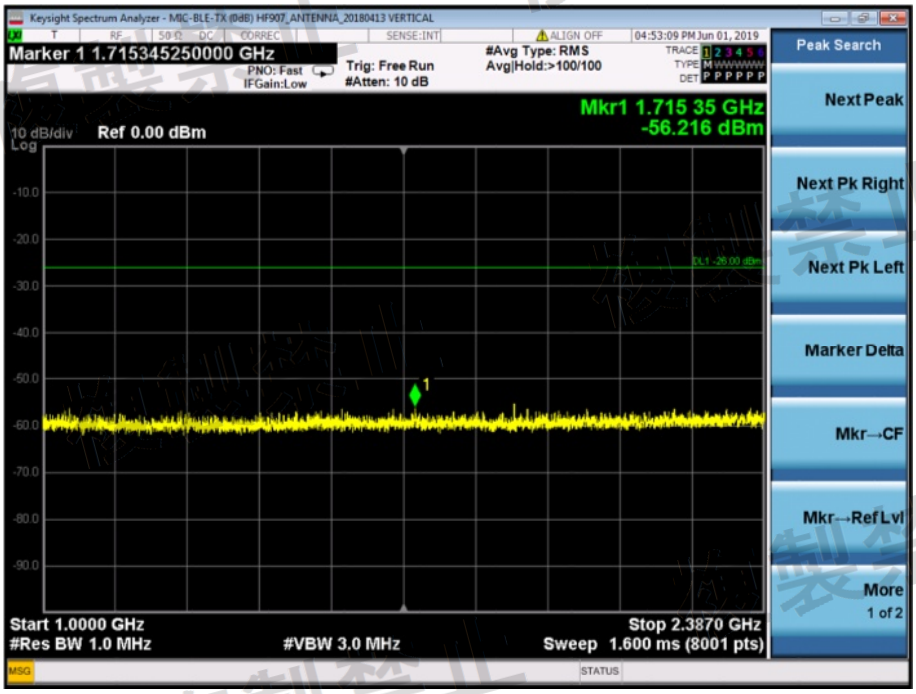

Keysight Spectrum Analyzer - MIC-BLE-TX (0dB) HF907_ANTENNA_20180413 VERTICAL
Marker 1 2.391428125000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 10 dB
#Avg Type: RMS
Avg|Hold:>100/100
04:54:22 PM Jun 01, 2019
Mkr1 2.391 428 1 GHz
-55.437 dBm
10 dB/div
Ref 0.00 dBm
Log
Start 2.387000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 2.400000 GHz
Sweep 1.067 ms (8001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

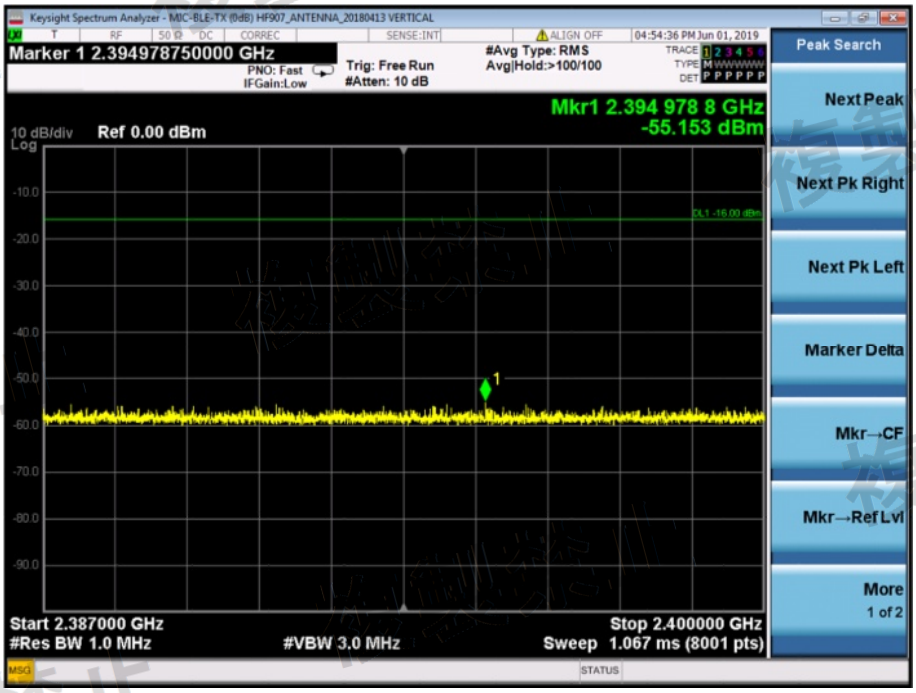

Keysight Spectrum Analyzer - MIC-BLE-TX (0dB) HF907_ANTENNA_20180413 VERTICAL
Marker 1 2.492669875000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 10 dB
#Avg Type: RMS
Avg|Hold:>100/100
04:55:30 PM Jun 01, 2019
Mkr1 2.492 669 9 GHz
-55.275 dBm
10 dB/div
Ref 0.00 dBm
Log
Start 2.483500 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 2.496500 GHz
Sweep 1.067 ms (8001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

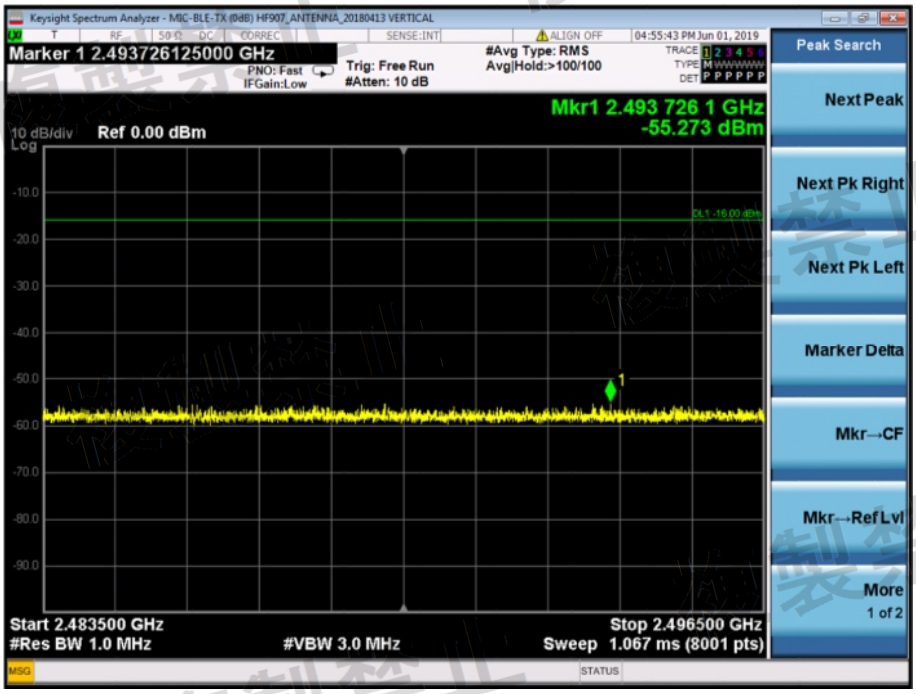

Keysight Spectrum Analyzer - MIC-BLE-TX (0dB) HF907_ANTENNA_20180413 VERTICAL
Marker 1 5.127804437500 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 10 dB
#Avg Type: RMS
Avg|Hold: 54/100
04:57:20 PM Jun 01, 2019
Mkr1 5.127 8 GHz
-52.885 dBm
10 dB/div
Log
Ref 0.00 dBm
Start 2.497 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 12.750 GHz
Sweep 17.60 ms (8001 pts)
Import Data
Amplitude Correction
Trace
Limit
Open ...

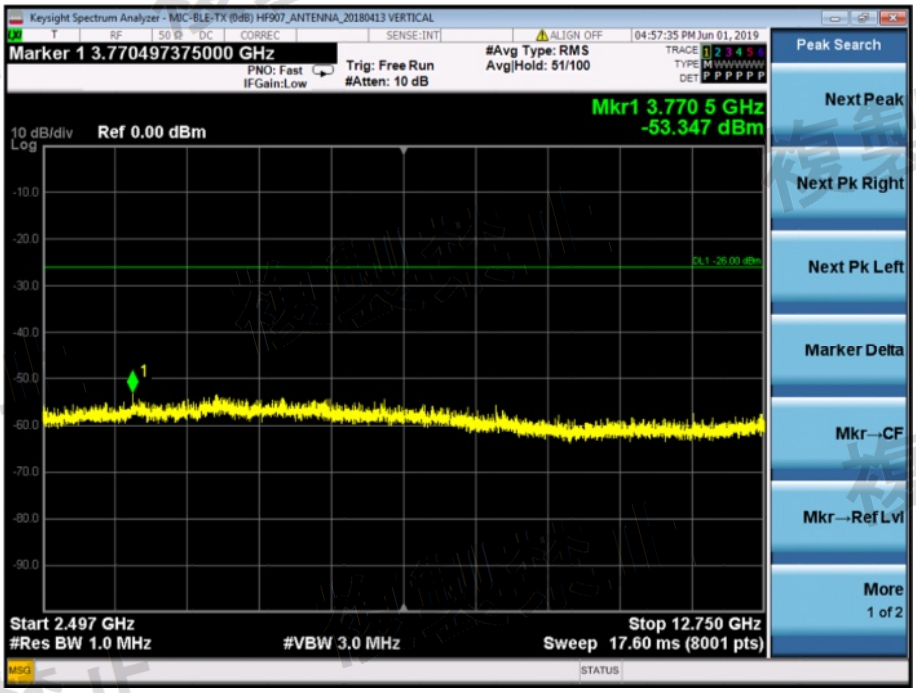
2480MHz


Keysight Spectrum Analyzer - MIC-BLE-TX (0dB) HF907_ANTENNA_20180413 VERTICAL
Marker 1 32.788750000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 10 dB
#Avg Type: RMS
Avg|Hold: 74/100
05:01:01 PM Jun 01, 2019
Mkr1 32.79 MHz
-61.279 dBm
10 dB/div
Log
Ref 0.00 dBm
Start 0.0300 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 1.0000 GHz
Sweep 92.80 ms (8001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2


Keysight Spectrum Analyzer - MIC-BLE-TX (0dB) HF907_ANTENNA_20180413 VERTICAL
Marker 1 1.715345250000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 10 dB
#Avg Type: RMS
Avg|Hold:>100/100
04:53:09 PM Jun 01, 2019
Mkr1 1.715 35 GHz
-56.216 dBm
10 dB/div
Ref 0.00 dBm
Log
Start 1.0000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 2.3870 GHz
Sweep 1.600 ms (8001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

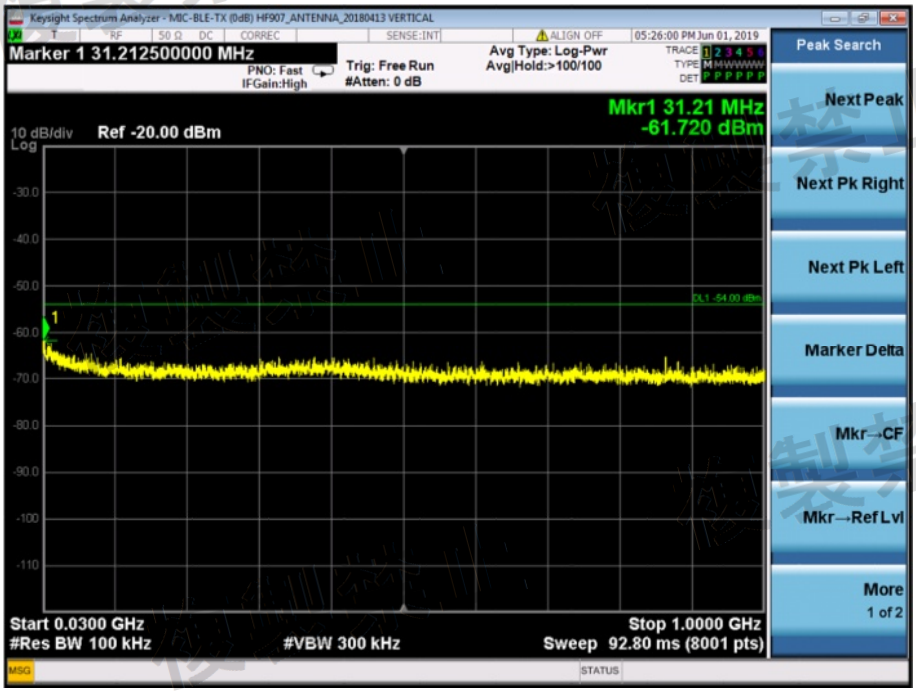

Keysight Spectrum Analyzer - MIC-BLE-TX (0dB) HF907_ANTENNA_20180413 VERTICAL
Marker 1 2.394978750000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 10 dB
#Avg Type: RMS
Avg|Hold:>100/100
04:54:36 PM Jun 01, 2019
Mkr1 2.394 978 8 GHz
-55.153 dBm
10 dB/div
Ref 0.00 dBm
Log
Start 2.387000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 2.400000 GHz
Sweep 1.067 ms (8001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

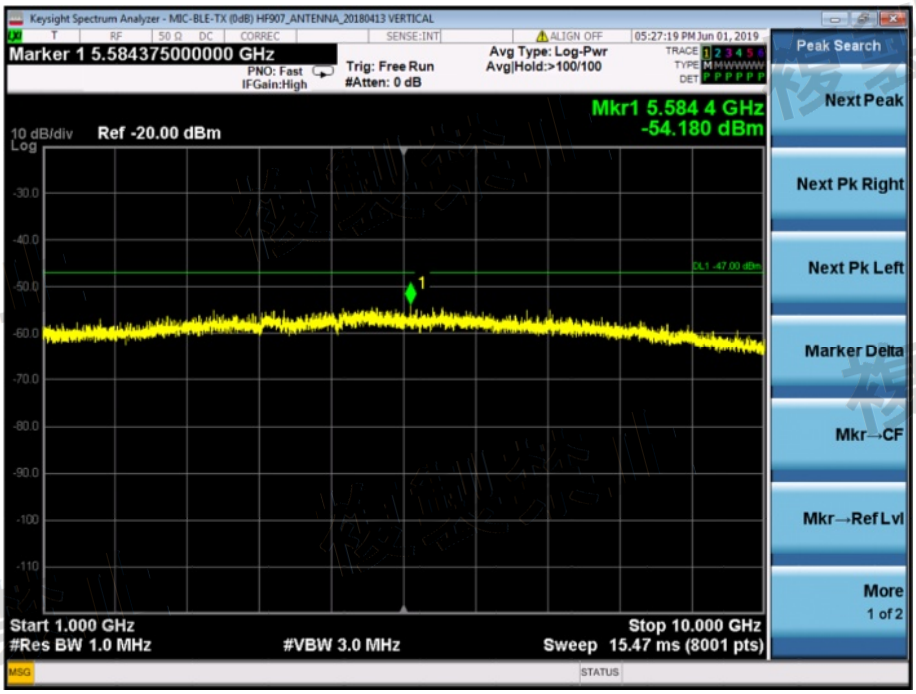

Keysight Spectrum Analyzer - MIC-BLE-TX (0dB) HF907_ANTENNA_20180413 VERTICAL
Marker 1 2.493726125000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 10 dB
#Avg Type: RMS
Avg|Hold:>100/100
04:55:43 PM Jun 01, 2019
Mkr1 2.493 726 1 GHz
-55.273 dBm
10 dB/div
Ref 0.00 dBm
Log
Start 2.483500 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 2.496500 GHz
Sweep 1.067 ms (8001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

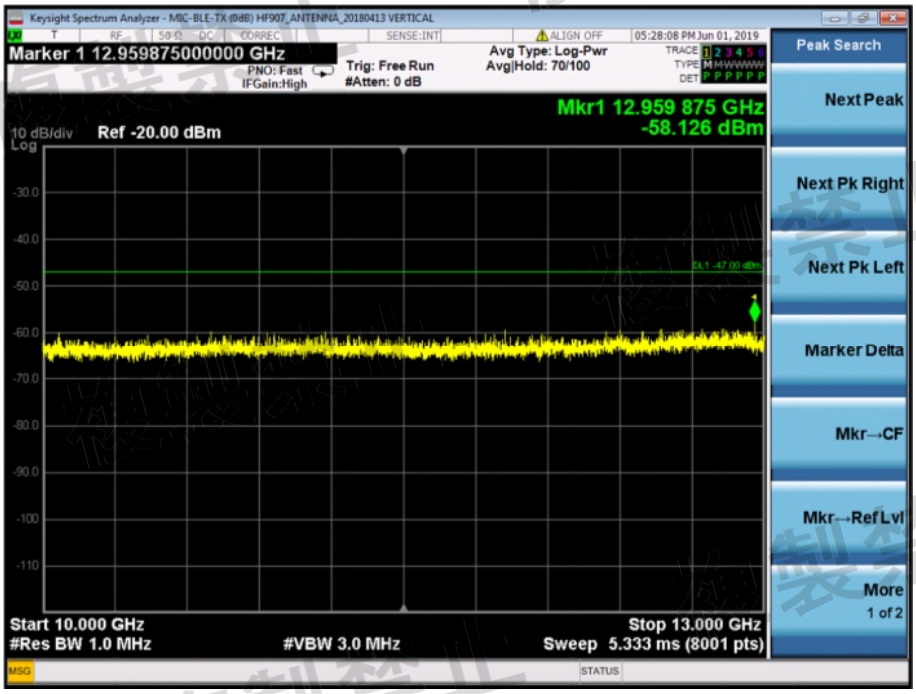

Keysight Spectrum Analyzer - MIC-BLE-TX (0dB) HF907_ANTENNA_20180413 VERTICAL
Marker 1 3.770497375000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 10 dB
#Avg Type: RMS
Avg|Hold: 51/100
04:57:35 PM Jun 01, 2019
Mkr1 3.770 5 GHz
-53.347 dBm
10 dB/div
Ref 0.00 dBm
Log
Start 2.497 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 12.750 GHz
Sweep 17.60 ms (8001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

Rx Spurious

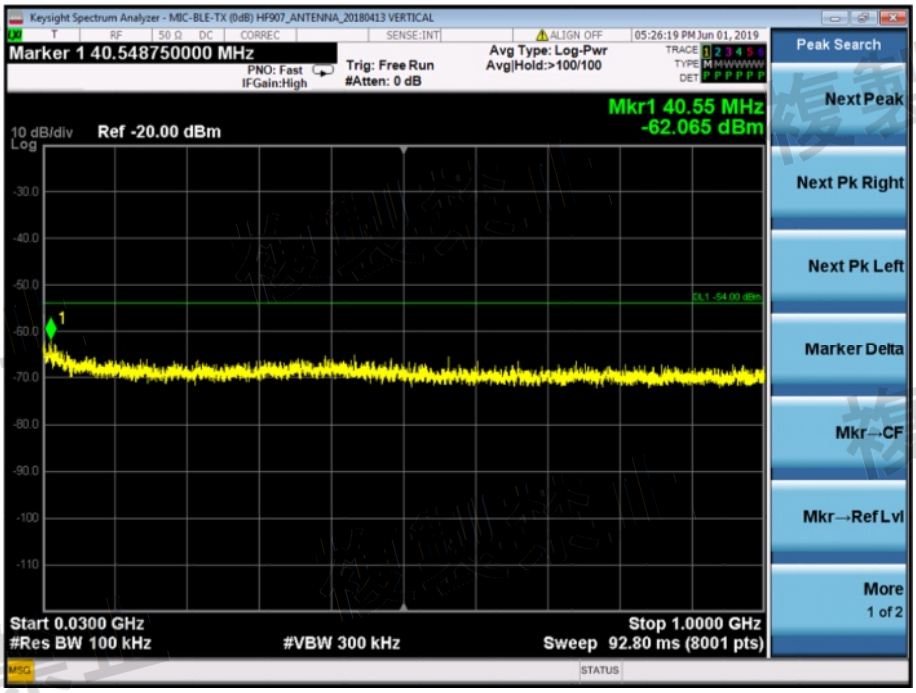
2402MHz

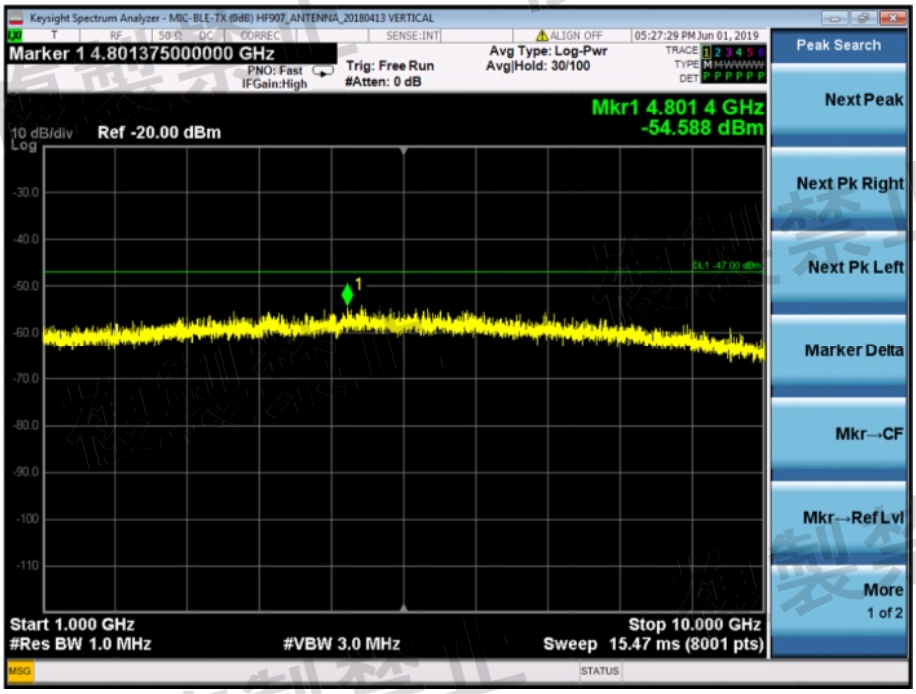


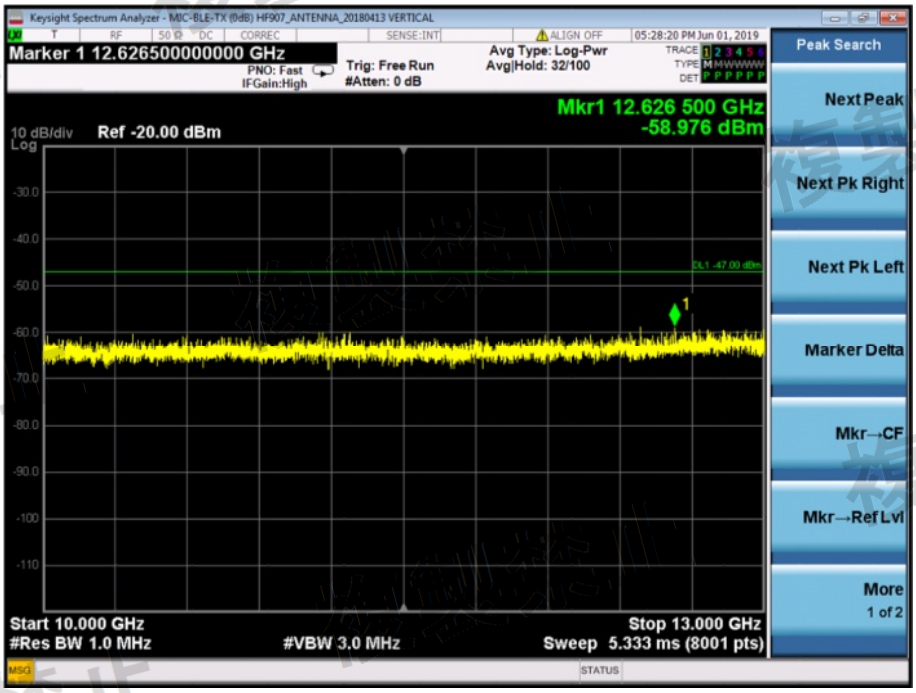



Keysight Spectrum Analyzer - MIC-BLE-TX (0dB) HF907_ANTENNA_20180413 VERTICAL
Marker 1 12.959875000000 GHz
PNO: Fast
IFGain:High
Trig: Free Run
#Atten: 0 dB
Avg Type: Log-Pwr
Avg|Hold: 70/100
05:28:08 PM Jun 01, 2019
Mkr1 12.959 875 GHz
-58.126 dBm
10 dB/div
Log
Ref -20.00 dBm
Start 10.000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 13.000 GHz
Sweep 5.333 ms (8001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

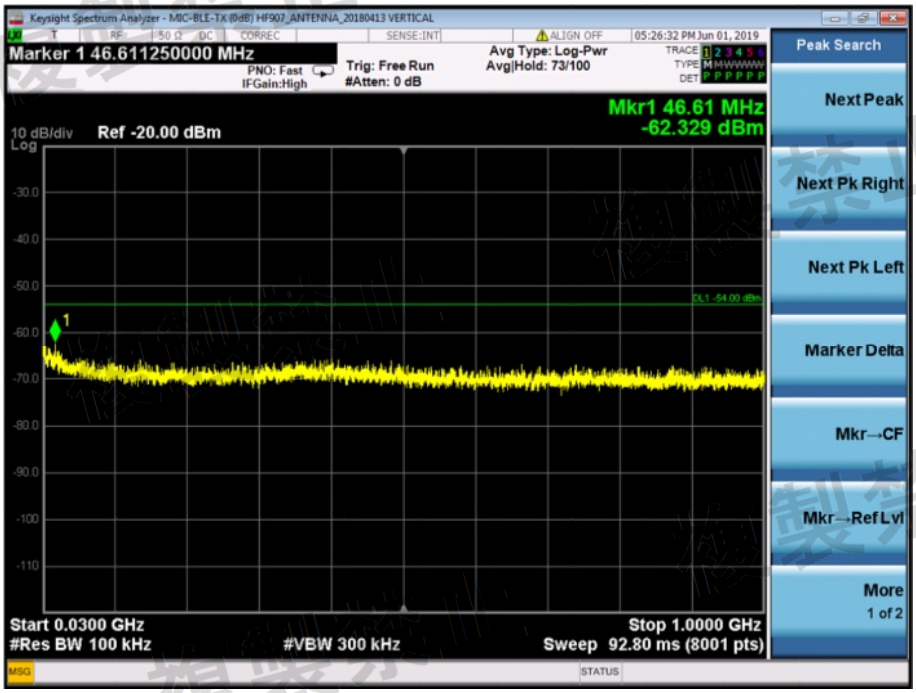
2440MHz

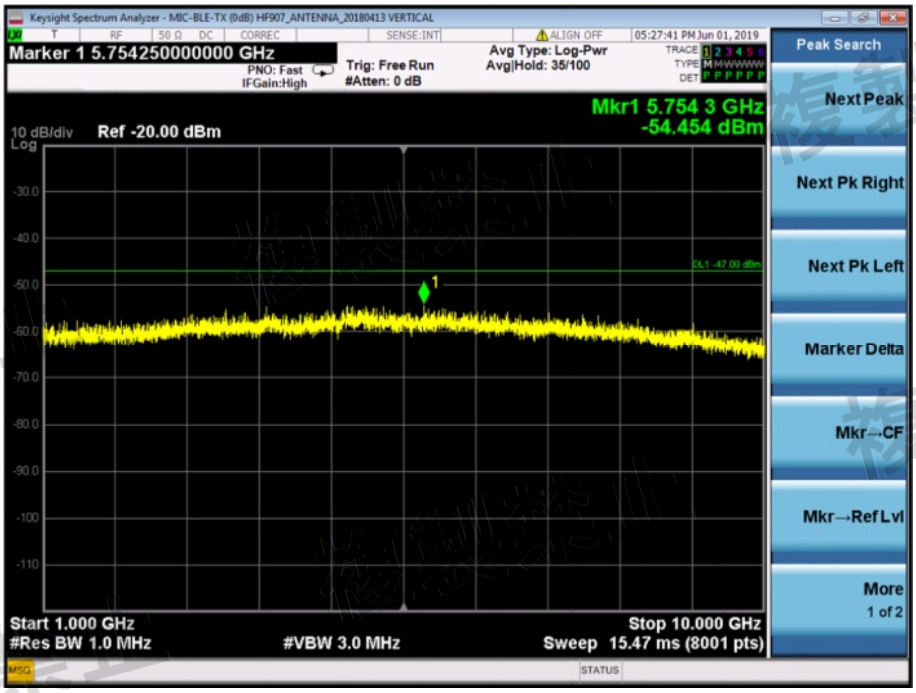

Keysight Spectrum Analyzer - MIC-BLE-TX (0dB) HF907_ANTENNA_20180413 VERTICAL
Marker 1 40.548750000 MHz
PNO: Fast
IFGain:High
Trig: Free Run
#Atten: 0 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
05:26:19 PM Jun 01, 2019
Mkr1 40.55 MHz
-62.065 dBm
10 dB/div
Log
Ref -20.00 dBm
Start 0.0300 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 1.0000 GHz
Sweep 92.80 ms (8001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

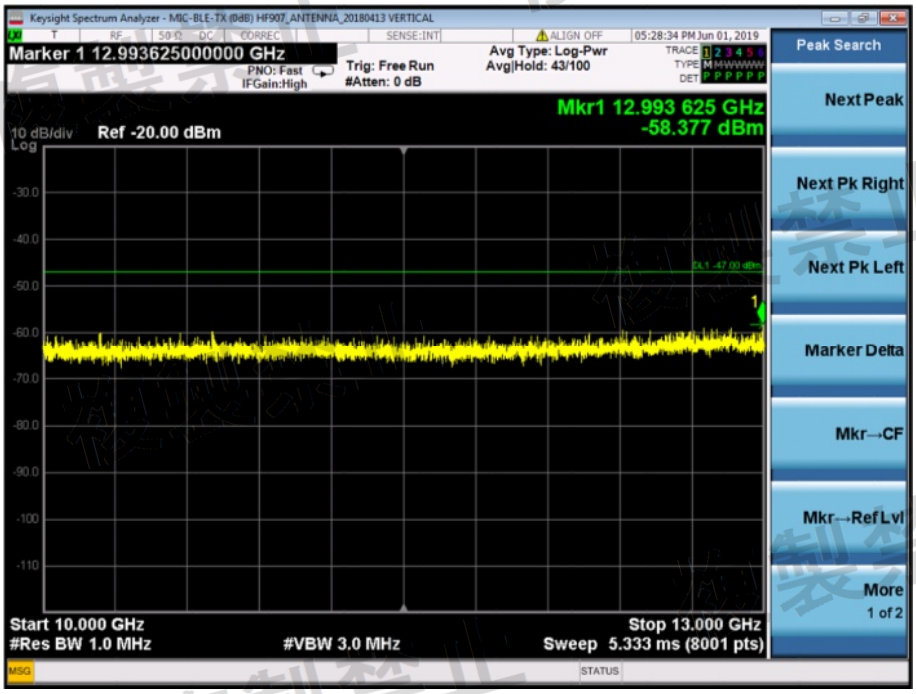

Keysight Spectrum Analyzer - MIC-BLE-TX (0dB) HF907_ANTENNA_20180413 VERTICAL
Marker 1 4.801375000000 GHz
PNO: Fast
IFGain:High
Trig: Free Run
#Atten: 0 dB
Avg Type: Log-Pwr
Avg|Hold: 30/100
05:27:29 PM Jun 01, 2019
Mkr1 4.801 4 GHz
-54.588 dBm
10 dB/div
Log
Ref -20.00 dBm
Start 1.000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 10.000 GHz
Sweep 15.47 ms (8001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2


Keysight Spectrum Analyzer - MIC-BLE-TX (0dB) HF907_ANTENNA_20180413 VERTICAL
Marker 1 12.626500000000 GHz
PNO: Fast
IFGain:High
Trig: Free Run
#Atten: 0 dB
Avg Type: Log-Pwr
Avg|Hold: 32/100
05:28:20 PM Jun 01, 2019
Mkr1 12.626 500 GHz
-58.976 dBm
10 dB/div
Log
Ref -20.00 dBm
Start 10.000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 13.000 GHz
Sweep 5.333 ms (8001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

2480MHz


Keysight Spectrum Analyzer - MIC-BLE-TX (0dB) HF907_ANTENNA_20180413 VERTICAL
Marker 1 46.611250000 MHz
PNO: Fast
IFGain:High
Trig: Free Run
#Atten: 0 dB
Avg Type: Log-Pwr
Avg|Hold: 73/100
05:26:32 PM Jun 01, 2019
Mkr1 46.61 MHz
-62.329 dBm
10 dB/div
Log
Ref -20.00 dBm
Start 0.0300 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 1.0000 GHz
Sweep 92.80 ms (8001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2


Keysight Spectrum Analyzer - MIC-BLE-TX (0dB) HF907_ANTENNA_20180413 VERTICAL
Marker 1 5.754250000000 GHz
PNO: Fast
IFGain:High
Trig: Free Run
#Atten: 0 dB
Avg Type: Log-Pwr
Avg|Hold: 35/100
05:27:41 PM Jun 01, 2019
Mkr1 5.754 3 GHz
-54.454 dBm
10 dB/div
Log
Ref -20.00 dBm
Start 1.000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 10.000 GHz
Sweep 15.47 ms (8001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2


Keysight Spectrum Analyzer - MIC-BLE-TX (0dB) HF907_ANTENNA_20180413 VERTICAL
Marker 1 12.993625000000 GHz
PNO: Fast
IFGain:High
Trig: Free Run
#Atten: 0 dB
Avg Type: Log-Pwr
Avg|Hold: 43/100
05:28:34 PM Jun 01, 2019
Mkr1 12.993 625 GHz
-58.377 dBm
10 dB/div
Log
Ref -20.00 dBm
Start 10.000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 13.000 GHz
Sweep 5.333 ms (8001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2