

Test result and instruments about Type certificate

1. General

Model name	Shooting Star Communicator modem	Date	2019/10/22
Serial number	SSDVT1IF2019420	Place	SGS Fimko Ltd, Karakaarenkuja 4, FI-02610 ESP00
Class of emissions, Assigned frequency and Antenna power	G1D, 2402.5 - 2477.5 MHz, 0.20 mW/MHz	Remarks	Antenna Port 2, data rate 1.2 Mbps

2. Measuring Instruments

Equipment type	Model number	Serial number	Manufacturer	Calibrated Date	Calibration Authority	Remarks
Spectrum analyzer	FSV40	101838	Rohde & Schwarz	7 February 2019	Rohde & Schwarz	(c) SGS Inv. 10881
Frequency standard	GPS-88	SM 968615	Pendulum	-	-	GPS Referenced
Attenuator	-	A2	Inmet	1 April 2019	SGS	(c) SGS Inv. 10347
Cable	EM40-3131-59	1,153,209,001	Megaphase	-	-	SGS Inv. C118

3. Test Result

Condition	Test Items		Unit	Normal Voltage +10% (52.8 V)			Normal Voltage (48.00 V)			Normal Voltage -10% (43.2 V)			Judgment	Limit	Remarks	
				2402.5	2439.5	2477.5	2402.5	2439.5	2477.5	2402.5	2439.5	2477.5				
Normal (21.7 °C, 40.9 %)	Frequency		MHz	-	-	-	2402.500281	2439.500406	2477.500625	-	-	-	PASS	50ppm		
			ppm	-	-	-	0.116961498	0.166427547	0.252270434	-	-	-				
	Occupied Bandwidth		MHz	-	-	-	75.36764476			-	-	-	PASS	83.5MHz		
	Spread Bandwidth		MHz	-	-	-	67.83788007			-	-	-	PASS	500kHz		
	Spread Rate			-	-	-	67.83788007			-	-	-	PASS	5		
	Spurious Emission Intensity		30MHz-2387MHz	dBm	-	-	-	-43.64			-	-	-	PASS	-26dBm	
				MHz	-	-	-	2340.193			-	-	-			
			2387MHz-2400MHz	dBm	-	-	-	-34.12			-	-	-	PASS	-16dBm	
				MHz	-	-	-	2399.9998			-	-	-			
			2483.5MHz-2496.5MHz	dBm	-	-	-	-37.48			-	-	-	PASS	-16dBm	
				MHz	-	-	-	2484.07381			-	-	-			
			2496.5MHz-12.5GHz	dBm	-	-	-	-46.11			-	-	-	PASS	-26dBm	
				MHz	-	-	-	2517.91			-	-	-			
	Antenna Power		mW/MHz	-	-	-	0.12460278			-	-	-	PASS	3mW/MHz		
			%	-	-	-	-37.69860996			-	-	-		+20 ~ -80%		
	Secondary Radiated Emissions		30MHz-1GHz	dBm	-	-	-	-77.31	-76.36	-76.24	-	-	-	PASS	-54dBm	
				MHz	-	-	-	904.746	967.885	968.4	-	-	-		-47dBm	
			1GHz-12.5GHz	dBm	-	-	-	-58.98	-59.12	-59.39	-	-	-	PASS	-47dBm	
				MHz	-	-	-	11829.25	12471.79	12494.43	-	-	-			
	Dwell Time		Transmit ON Time	s	-	-	-	-	0.0186595	-	-	-	-	PASS	0.05s	
			Burst Cycle	s	-	-	-	-	0.0332755	-	-	-	-	PASS		
	Interference Prevention Function		Function was checked by connecting the EUT to PC, and obtaining its serial number with manufacturer's software.										PASS			

Note

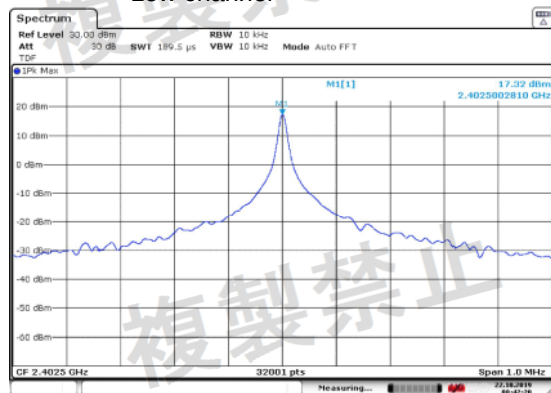
Voltage fluctuation

	Input[V]	RF in [V]	[%]
Normal	48.00	3.291	-
High(+10%)	52.80	3.299	0.24
Low(-10%)	43.20	3.299	0.24

Screen Shot at normal voltage

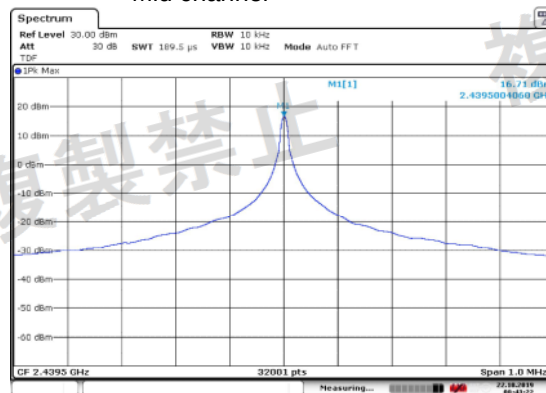
Frequency

Low channel



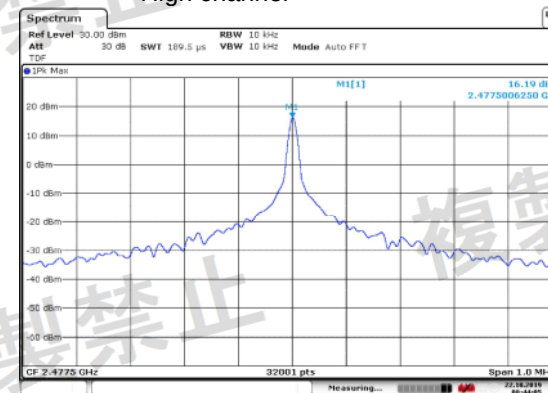
Date: 22.OCT.2019 08:42:20

Mid channel



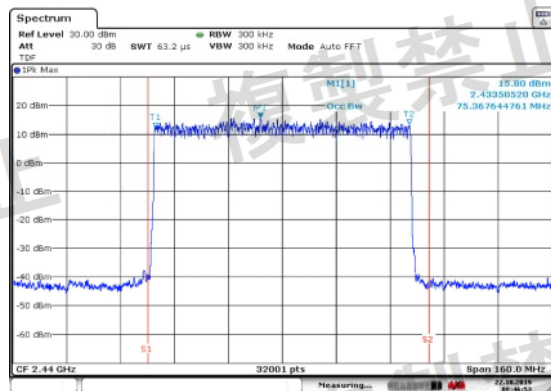
Date: 22.OCT.2019 08:43:22

High channel



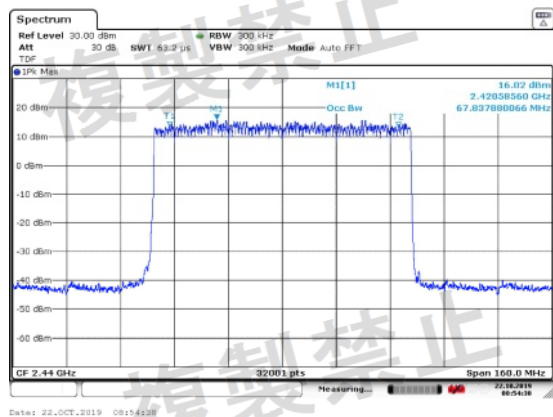
Date: 22.OCT.2019 08:44:05

Occupied Bandwidth

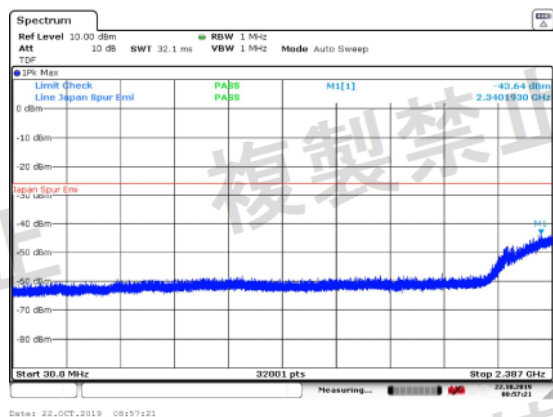


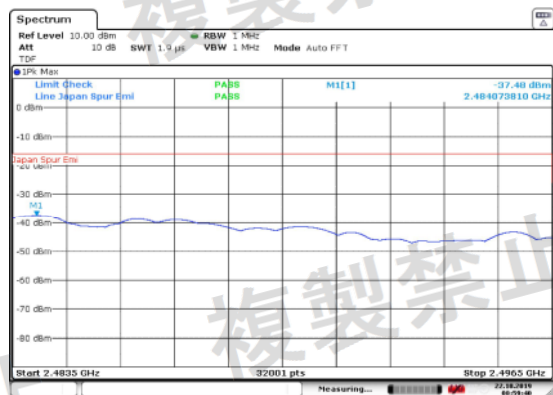
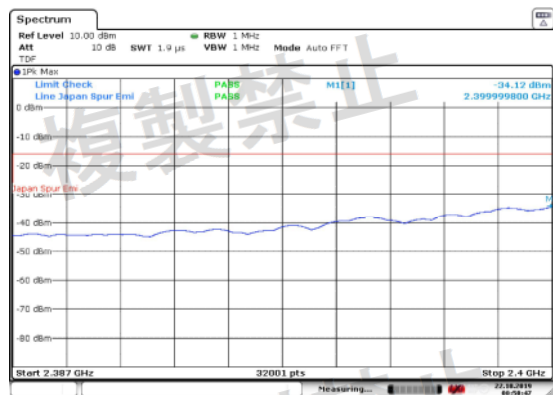
Date: 22.OCT.2019 08:46:52

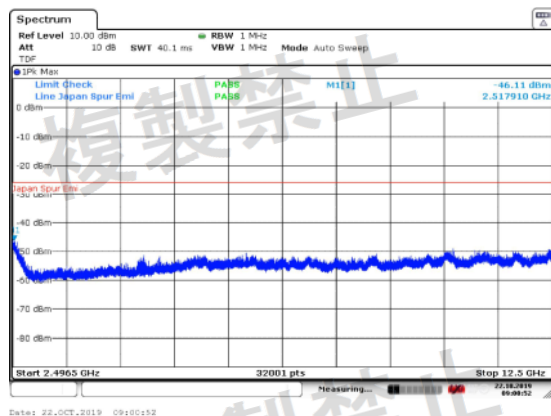
Spread Bandwidth



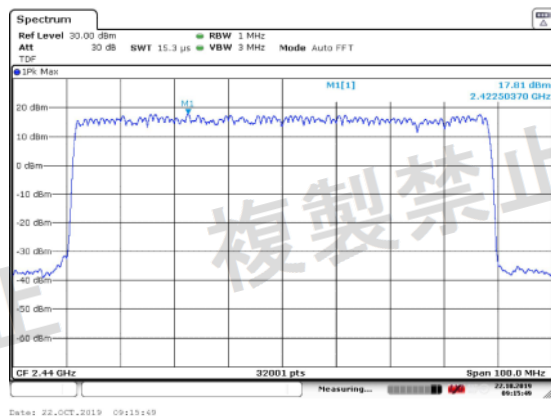
Spurious Emission Intensity

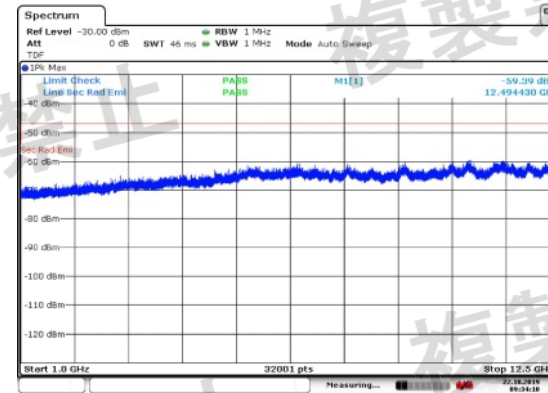
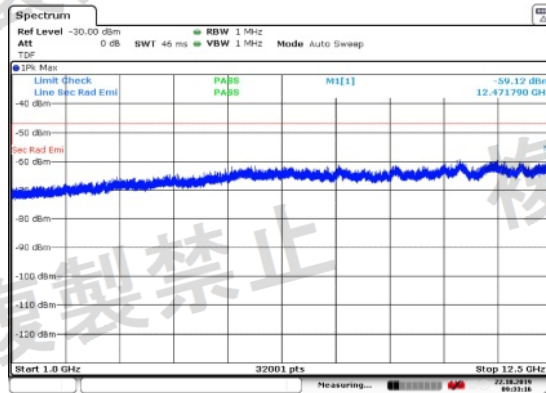
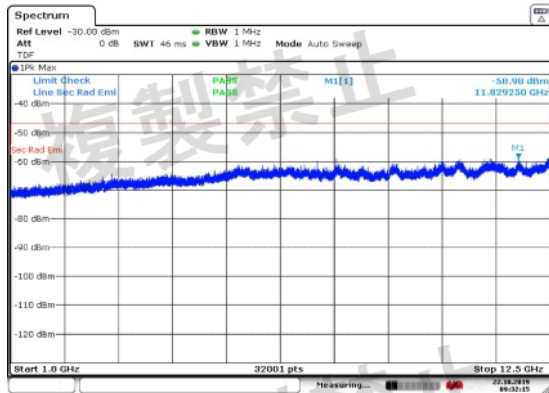






Antenna Power





Dwell Time



Test result and instruments about Type certificate

1. General

Model name	Shooting Star Communicator modem	Date	2019/10/22
Serial number	SSDVT1IF2019420	Place	SGS Fimko Ltd, Karakaarenkuja 4, FI-02610 ESP00
Class of emissions, Assigned frequency and Antenna power	G1D, 2402.5 - 2477.5 MHz, 0.20 mW/MHz	Remarks	Antenna Port 2, data rate 2.4 Mbps

2. Measuring Instruments

Equipment type	Model number	Serial number	Manufacturer	Calibrated Date	Calibration Authority	Remarks
Spectrum analyzer	FSV40	101838	Rohde & Schwarz	7 February 2019	Rohde & Schwarz (c)	SGS Inv. 10881
Frequency standard	GPS-88	SM 968615	Pendulum	-	-	GPS Referenced
Attenuator	-	A2	Inmet	1 April 2019	SGS (c)	SGS Inv. 10347
Cable	EM40-3131-59	1,153,209,001	Megaphase	-	-	SGS Inv. C118

3. Test Result

Condition	Test Items	Unit	Normal Voltage +10% (52.8 V)			Normal Voltage (48.00 V)			Normal Voltage -10% (43.2 V)			Judgment	Limit	Remarks
			2402.5	2439.5	2477.5	2402.5	2439.5	2477.5	2402.5	2439.5	2477.5			
Normal (21.7 °C, 40.9 %)	Frequency	MHz	-	-	-	2402.500281	2439.500406	2477.500625	-	-	-	PASS	50ppm	
		ppm	-	-	-	0.116961498	0.166427547	0.252270434	-	-	-			
	Occupied Bandwidth	MHz	-	-	-	75.36264492	-	-	-	-	-	PASS	83.5MHz	
	Spread Bandwidth	MHz	-	-	-	68.27786632	-	-	-	-	-	PASS	500kHz	
	Spread Rate		-	-	-	68.27786632	-	-	-	-	-	PASS	5	
	Spurious Emission Intensity	30MHz-2387MHz	dBm	-	-	-	-42.6	-	-	-	-	PASS	-26dBm	
			MHz	-	-	-	2340.782	-	-	-	-		-16dBm	
		2387MHz-2400MHz	dBm	-	-	-	-35.63	-	-	-	-	PASS	-16dBm	
			MHz	-	-	-	2398.00273	-	-	-	-		-16dBm	
		2483.5MHz-2496.5MHz	dBm	-	-	-	-37.4	-	-	-	-	PASS	-16dBm	
			MHz	-	-	-	2486.52261	-	-	-	-		-16dBm	
		2496.5MHz-12.5GHz	dBm	-	-	-	-45.89	-	-	-	-	PASS	-26dBm	
			MHz	-	-	-	2501.35	-	-	-	-		-26dBm	
	Antenna Power		mW/MHz	-	-	-	0.173668102	-	-	-	-	PASS	3mW/MHz	
			%	-	-	-	-13.16594878	-	-	-	-		+20 ~ -80%	
	Secondary Radiated Emissions	30MHz-1GHz	dBm	-	-	-	-76.89	-76.23	-77	-	-	PASS	-54dBm	
			MHz	-	-	-	951.971	914.476	845.214	-	-		-47dBm	
		1GHz-12.5GHz	dBm	-	-	-	-59.49	-58.58	-58.92	-	-	PASS	-47dBm	
			MHz	-	-	-	12439.09	11209.7	10616.39	-	-		-47dBm	
	Dwell Time	Transmit ON Time Burst Cycle	s	-	-	-	-	0.0277465	-	-	-	PASS	0.05s	
			s	-	-	-	-	0.0333325	-	-	-	PASS		
	Interference Prevention Function			Function was checked by connecting the EUT to PC, and obtaining its serial number with manufacturer's software.								PASS		

Note

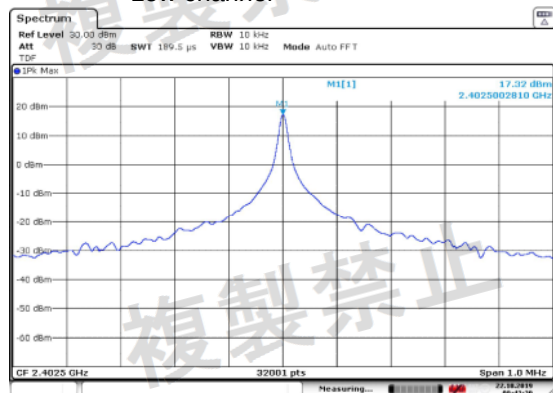
Voltage fluctuation

	Input[V]	RF in [V]	[%]
Normal	48.00	3.291	-
High(+10%)	52.80	3.299	0.24
Low(-10%)	43.20	3.299	0.24

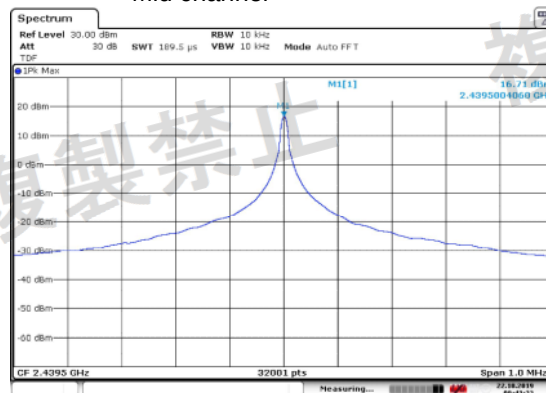
Screen Shot at normal voltage

Frequency

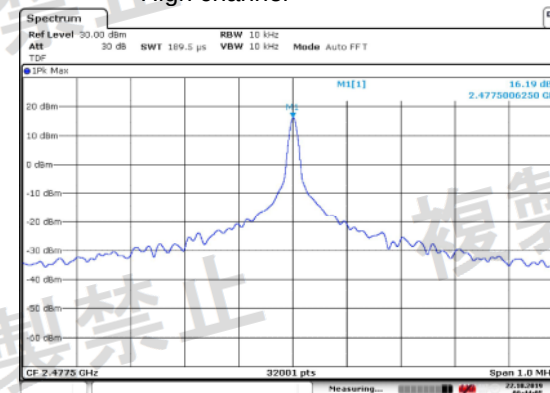
Low channel



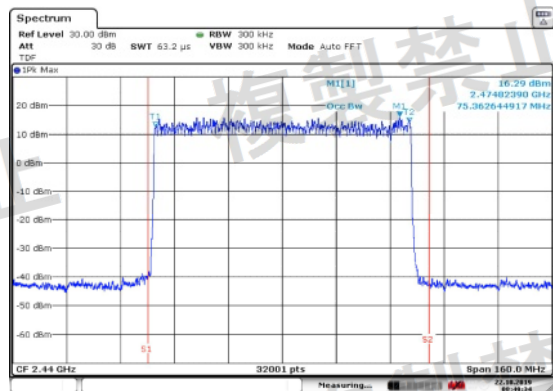
Mid channel



High channel



Occupied Bandwidth



Spectrum

Ref Level 30.00 dBm
 Att 30 dB
 TDF
 RBW 300 kHz
 VBW 300 kHz
 Mode Auto FFT

15.90 dBm
 2.43243510 GHz
 68.277965317 MHz

M1[1]
 Occ Bw

CF 2.44 GHz
 32001 pts
 Span 160.0 MHz

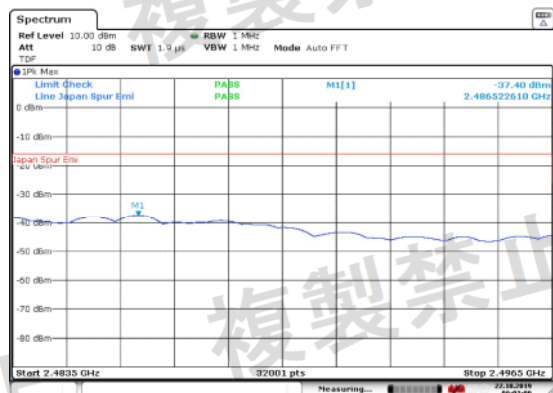
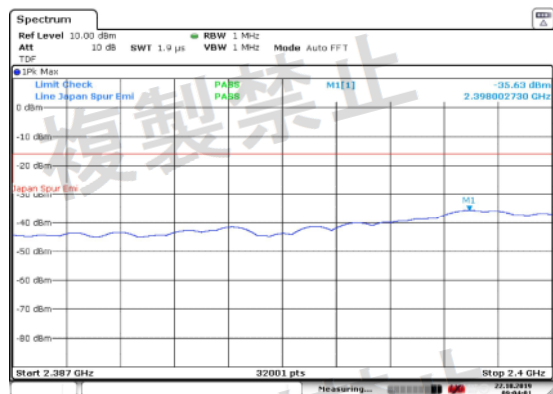
Measuring...

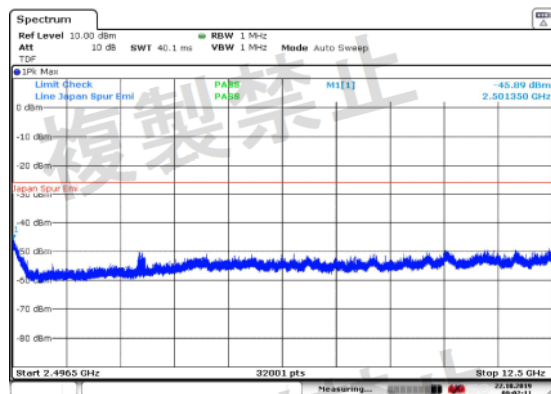
Date: 22_OCT_2019 09:56:29

Spectrum

Ref Level 10.00 dBm
Att 10 dB SWF 32.1 ms RBW 1 MHz VBW 1 MHz Mode Auto Sweep
TDF

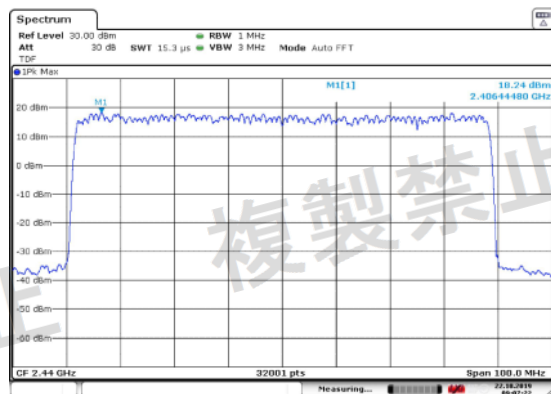
3P% Max
Limit Check
Line Japan Spur Elim
PA%B
PASS
M1[1]
-42.6 dBm
2.307820 GHz
Japan Spur Elim
-30.00 dBm
3200.1 MHz
3200.1 pts
Stop 2.307 GHz
Measuring...
22.10.2019
09:04:55



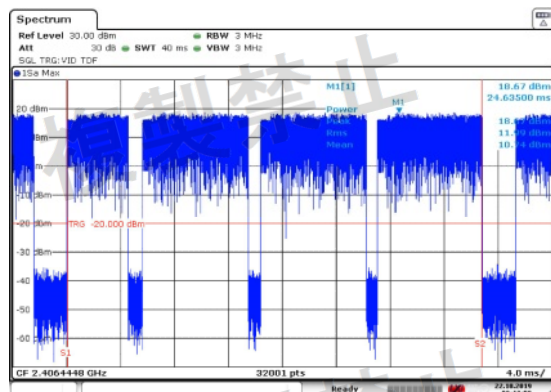


Date: 22.OCT.2019 09:02:11

Antenna Power

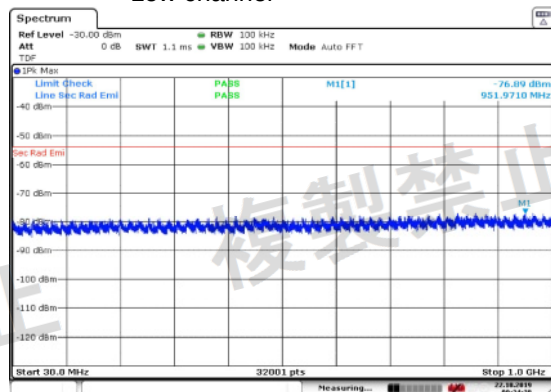


Date: 22.OCT.2019 09:07:22

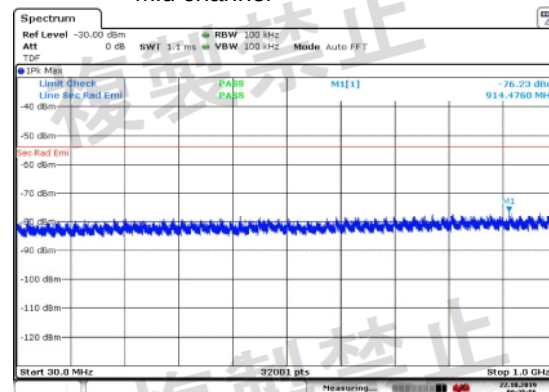


Secondary Radiated Emissions

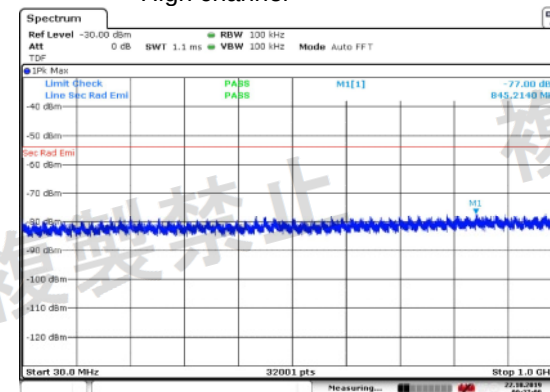
Low channel

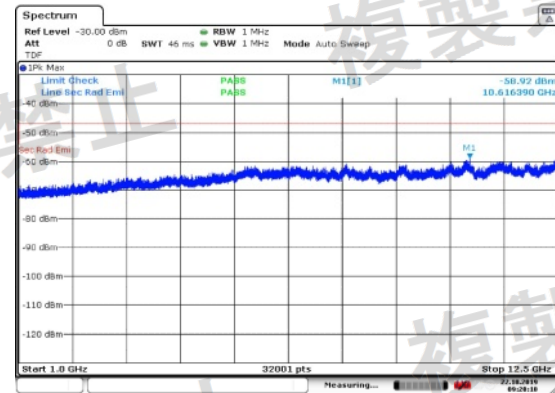
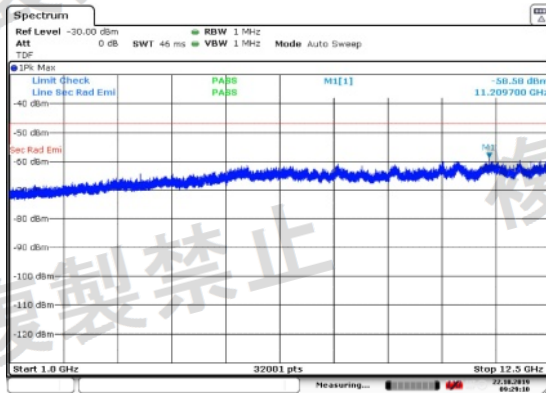
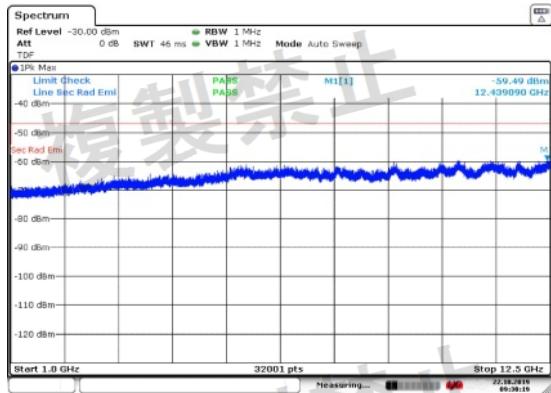


Mid channel



High channel





Dwell Time

