



SHENZHEN MOST ELECTRONICS CO., LTD.  
Tel: (86) 755-26825180 Fax: (86) 755-86170310  
Http:// www. szmost.com Email: szmost@szmost.com

### **Test Report**

Product Name: Bluetooth Headset

FCC ID: UKF-FULLJOIN-004  
MODEL NO. : FJ990

Applicant:

SHENZHEN FULL-JOIN TECHNOLOGY CO., LTD.  
5/F, B2, LIANHE INDUSTRIAL ZONE, EMERSON ROAD, HE PING, FUYONG  
Shenzhen City, Guang Dong Province

Date Received: 10/13/2006-10/16/2006

Date Tested: 10/16/2006

APPLICANT: SHENZHEN FULL-JOIN TECHNOLOGY CO., LTD.  
FCC ID: UKF-FULLJOIN-004

Cover Sheet



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**FCC ID:** UKF-FULLJOIN-004

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## EMC Equipment List

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
EMI Test Receiver	ROHDE&SCHWARZ	ESCS30	100307	Mar 20,2006	1 Year
LISN	ROHDE&SCHWARZ	ESH3-Z5	100305	Mar 20,2006	1Year
Pulse Limiter	ROHDE&SCHWARZ	ESH3-Z2	100305	Mar 20,2006	1Year
50 Coaxial Switch	ANRITSU CORP	MP59B	6200283933	Mar 20,2006	1 Year
Spectrum Analyzer	ANRITSU	MS2651B	6200238856	Mar 20,2006	1 Year
Horn Antenna	ROHDE&SCHWARZ	HF906	1000023	Mar 20,2006	1 Year
Bilog Antenna	SCHWARZBECK	VULB 9163	9163-194	Mar 20,2006	1 Year
50 Coaxial Switch	ANRITSU CORP	MP59B	6200283933	Mar 20,2006	1 Year
Cable	Resenberger	N/A	NO.1	Mar 20,2006	1 Year
Cable	SCHWARZBECK	N/A	NO.2	Mar 20,2006	1 Year
Cable	SCHWARZBECK	N/A	NO.3	Mar 20,2006	1 Year
DC Power Filter	DuoJi	DL2×30B	N/A	N/A	N/A
Single Phase Power Line Filter	DuoJi	FNF 202B30	N/A	N/A	N/A
3 Phase Power Line Filter	DuoJi	FNF 402B30	N/A	N/A	N/A
AC Power Source	California Instruments	5001iX-400	55689	Mar 20,2006	1Year
Test analyzer	California Instruments	PACS-1	72254	Mar 20,2006	1Year
ESD Tester	HAEFELY	PESD 1610	H4001552	Mar 20,2006	1 Year
Signal Generator	IFR	2032	203002/100	Mar 20,2006	1 Year
Amplifier	A&R	150W1000	301584	NCR	NCR
Dual Directional Coupler	A&R	DC6080	301508	Mar 20,2006	1 Year
Power Head	A&R	PH2000	301193	Mar 20,2006	1 Year
Power Meter	A&R	PM2002	302799	Mar 20,2006	1 Year
Field Monitor	A&R	FM5004	300329	Mar 20,2006	1 Year
Field Probe	A&R	FP5000	300221	Mar 20,2006	1 Year
EMC PRO System	Thermo	RO-BASE	0403271	Mar 20,2006	1 Year
Capacitive Clamp	Thermo	PRO-CCL	0403272	Mar 20,2006	1 Year
EMC PRO System	Thermo	PRO-BASE	0403271	Mar 20,2006	1 Year
Coupler decoupler for telecom lines	Thermo	CM-TEL-CD	0403273	Mar 20,2006	1 Year
Signal Generator	IFR	2032	203002/100	Mar 20,2006	1 Year
Amplifier	A&R	150W1000	301584	NCR	NCR
EMC PRO System	Thermo	PRO-BASE	0403271	Mar 20,2006	1 Year

Remark:

Test Firm Name: ACCURATE TECHNOLOGY CO. LTD

Test Firm Address: F1, Bldg. A, Changyuan New Material Port, Keyuan Rd. Science & Industry Park, Nanshan  
Shenzhen Guangdong China

FCC Registered Test Site Number: 253065

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## TEST PROCEDURE

**GENERAL:** This report shall NOT be reproduced except in full without the written approval of SHENZHEN MOST ELECTRONICS CO., LTD. The EUT was transmitting a test signal during the testing.

**POWER LINE CONDUCTED INTERFERENCE:** The test procedure used was ANSI Standard C63.4-2003 using a 50 UH LISN. Both Lines were observed. The bandwidth of the receiver was 10kHz with an appropriate sweep speed. The ambient temperature of the EUT was 25 with a humidity of 58%.

**RADIATION INTERFERENCE:** The test procedure used was ANSI Standard C63.4-2003 using a ANRITSU spectrum analyzer with a pre-selector. The analyzer was calibrated in dB above a micro volt at the output of the antenna. The resolution bandwidth was 100 kHz and the video bandwidth was 300 kHz up to 1 GHz and 1 MHz with a video BW of 3 MHz above 1 GHz. The ambient temperature of the EUT was 25 with a humidity of 58%.

**FORMULA OF CONVERSION FACTORS:** The Field Strength at 3m was established by adding the meter reading of the spectrum analyzer (which is set to read in units of dBuV) to the antenna correction factor supplied by the antenna manufacturer. The antenna correction factors are stated in terms of dB. The gain of the Pre-selector was accounted for in the Spectrum Analyzer Meter Reading.

Example:

Freq (MHz) METER READING + ACF = FS

33                      20 dBuV + 10.36 dB = 30.36 dBuV/m @ 3m

**ANSI STANDARD C63.4-2003 10.1.7 MEASUREMENT PROCEDURES:** The EUT was placed on a table 80 cm high and with dimensions of 1m by 1.5m. The EUT was placed in the center of the table (1.5m side). The table used for radiated measurements is capable of continuous rotation.

When an emission was found, the table was rotated to produce the maximum signal strength. At this point, the antenna was raised and lowered from 1m to 4m. The antenna was placed in both the horizontal and vertical planes.

The situation was similar for the conducted measurement except that the table did not rotate. The EUT was setup as described in ANSI Standard C63.4-2003 10.1.7 with the EUT 40 cm from the vertical ground wall.



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**APPLICANT:** SHENZHEN FULL-JOIN TECHNOLOGY CO., LTD.

**FCC ID:** UKF-FULLJOIN-004

**NAME OF TEST:** POWER LINE CONDUCTED INTERFERENCE

**RULES PART NUMBER:** 15.107

<b>MINIMUM REQUIREMENTS:</b>	<b>FREQUENCY</b>	<b>LEVEL</b>
	<b>MHz</b>	<b>UV</b>
	0.150-30	250

**TEST PROCEDURE:** ANSI STANDARD C63.4-2003

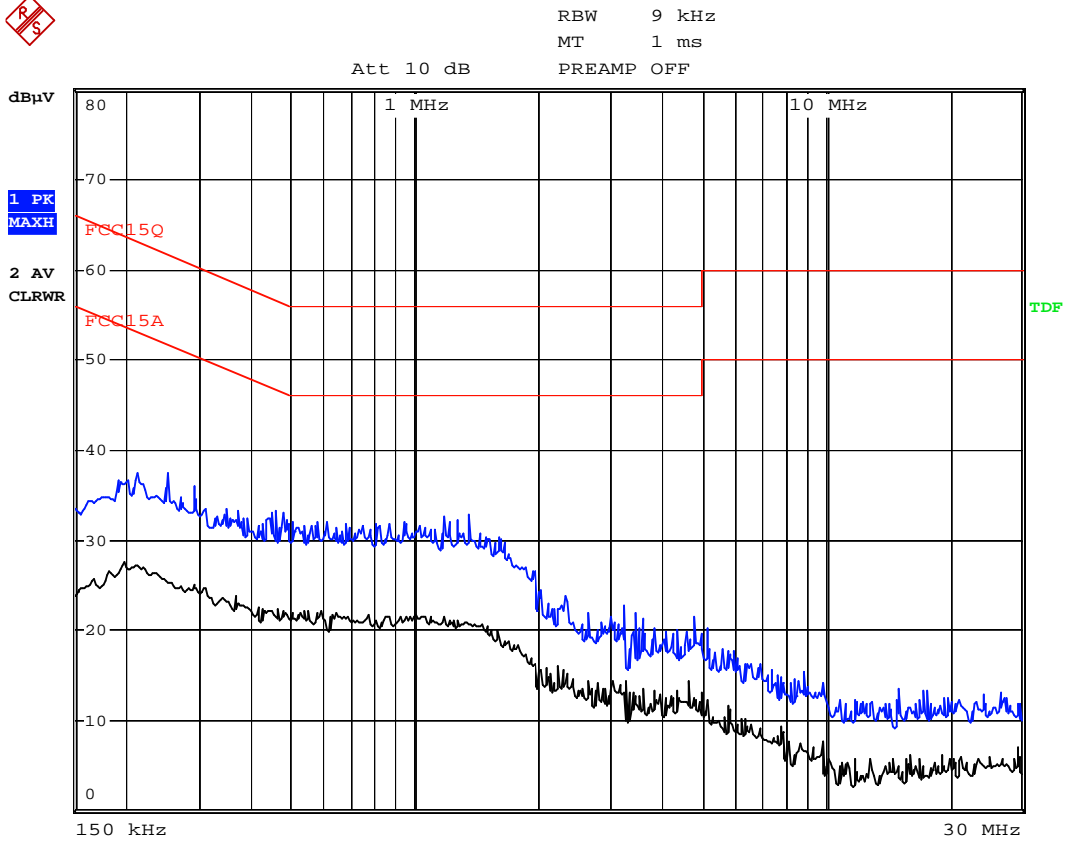
THE HIGHEST EMISSION READ FOR LINE 1 WAS 29.0 uV @ 490kHz.

THE HIGHEST EMISSION READ FOR LINE 2 WAS 28.5 uV @ 490kHz.

THE PLOTS ON THE NEXT PAGE REPRESENT THE EMISSIONS READ FOR POWER LINE CONDUCTED FOR THIS DEVICE.



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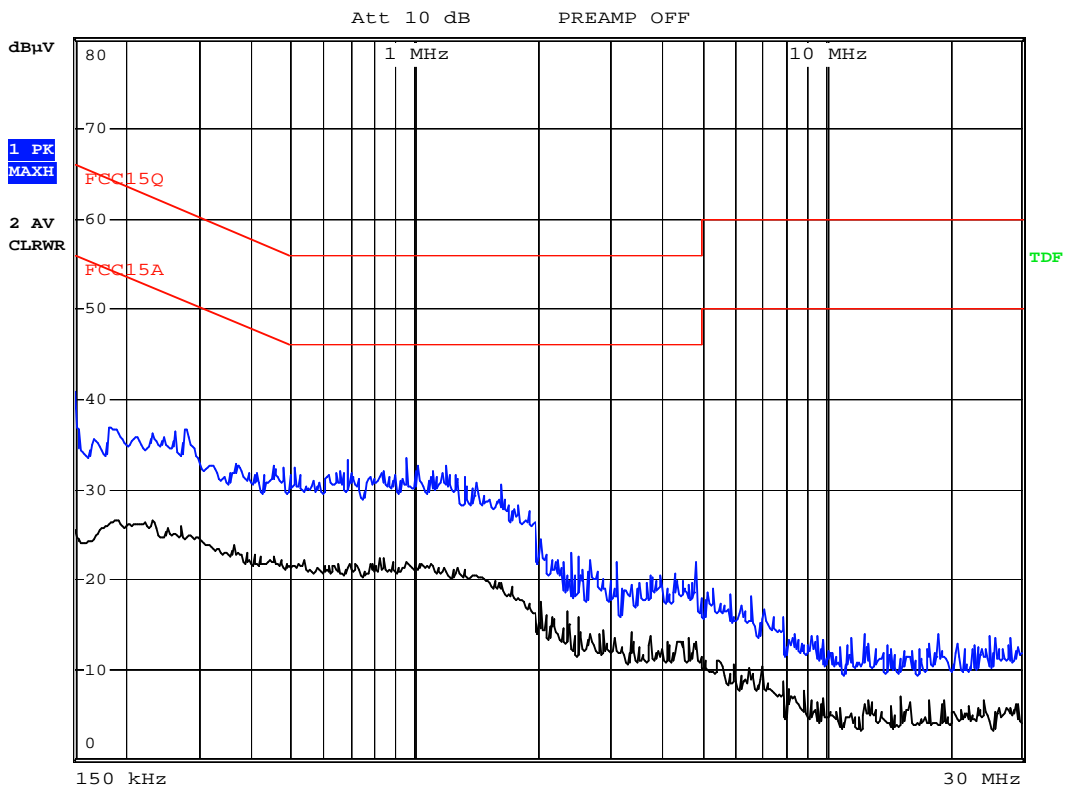
Date: 02.NOV.2006 11:01:53 L Line



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RBW 9 kHz  
MT 10 ms  
PREAMP OFF



Date: 02.NOV.2006 11:05:15 N Line



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**APPLICANT:** SHENZHEN FULL-JOIN TECHNOLOGY CO., LTD.

**FCC ID:** UKF-FULLJOIN-004

**NAME OF TEST:** RADIATION INTERFERENCE

**RULES PART NUMBER:** 15.249, 15.209

**REQUIREMENTS:**

FIELD STRENGTH of Fundamental:	FIELD STRENGTH of Harmonics	S15.209
902-928 MHZ		30 -88 MHz 40 dBuV/m @3M
2.4-2.4835 GHz		88 - 216 MHz 43.5
		216 - 960 MHz 46
94 dBuV/m @3m	54 dBuV/m @3m	ABOVE 960 MHz 54dBuV/m

EMISSIONS RADIATED OUTSIDE OF THE SPECIFIED FREQUENCY BANDS, EXCEPT FOR HARMONICS, SHALL BE ATTENUATED BY AT LEAST 50 dB BELOW THE LEVEL OF THE FUNDAMENTAL OR TO THE GENERAL RADIATED EMISSION LIMITS IN 15.209, WHICHEVER IS THE LESSER ATTENUATION.

Frequency (MHz)	Antenna Polarization	Emission Level (dBuV/m)	FCC 15 Subpart C Limit (dBuV/m)
Low frequency(2402.00 MHz)			
175.10	Vertical	31.40	43.5
322.05	Vertical	32.60	46.0
2402.00	Vertical	71.05	94.0
4804.00	Vertical	31.50	54.0
7206.15	Vertical	31.55	54.0
12010.20	Vertical	32.25	54.0
177.25	Horizontal	32.43	43.5
326.10	Horizontal	31.20	46.0
2402.00	Horizontal	71.20	94.0
4804.00	Horizontal	30.20	54.0
7206.15	Horizontal	32.30	54.0
12010.17	Horizontal	31.05	54.0
Middle frequency(2441.00 MHz)			
178.30	Vertical	31.10	43.5
2441.00	Vertical	71.65	94.0
4882.10	Vertical	32.13	54.0
7323.50	Vertical	33.45	54.0
181.06	Horizontal	32.40	43.5
2441.00	Horizontal	71.85	94.0
7323.98	Horizontal	32.05	54.0
12206.00	Horizontal	31.01	54.0

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**FCC ID:** UKF-FULLJOIN-004

**NAME OF TEST:** RADIATION INTERFERENCE

**RULES PART NUMBER:** 15.249, 15.209

**REQUIREMENTS:**

FIELD STRENGTH of Fundamental:	FIELD STRENGTH of Harmonics	S15.209
902-928 MHZ		30 -88 MHZ 40 dBuV/m @3M
2.4-2.4835 GHz		88 - 216 MHZ 43.5
		216 - 960 MHZ 46
94 dBuV/m @3m	54 dBuV/m @3m	ABOVE 960 MHZ 54 dBuV/m

EMISSIONS RADIATED OUTSIDE OF THE SPECIFIED FREQUENCY BANDS, EXCEPT FOR HARMONICS, SHALL BE ATTENUATED BY AT LEAST 50 dB BELOW THE LEVEL OF THE FUNDAMENTAL OR TO THE GENERAL RADIATED EMISSION LIMITS IN 15.209, WHICHEVER IS THE LESSER ATTENUATION.

**Continued:**

Frequency (MHz)	Antenna Polarization	Emission Level (dBuV/m)	FCC 15 Subpart C Limit (dBuV/m)
High frequency(2480.0 MHz)			
179.30	Vertical	31.45	43.5
2480.00	Vertical	71.85	94.0
4960.10	Vertical	31.55	54.0
7440.25	Vertical	32.30	54.0
12410.20	Vertical	31.15	54.0
179.90	Horizontal	32.15	43.5
2480.00	Horizontal	71.76	94.0
4960.10	Horizontal	32.31	54.0
7440.30	Horizontal	32.20	54.0
12410.20	Horizontal	32.13	54.0

TEST PROCEDURE: ANSI Standard C63.4-2003 using a ANRITSU spectrum analyzer with a pre-selector and an appropriate antenna. The resolution bandwidth of spectrum analyzer was 100 kHz below 1 GHz and 1 MHz above 1 GHz. An appropriate sweep speed was used. When an emission was found, the table was rotated to produce the maximum signal strength. The antenna was placed in both the horizontal and vertical planes and the worse case emissions were reported. The spectrum was searched to at least the tenth (10) harmonic of the fundamental.

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**APPLICANT:** SHENZHEN FULL-JOIN TECHNOLOGY CO., LTD.  
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**NAME OF TEST:** Occupied Bandwidth and Band Edge Compliance  
**RULES PART NUMBER:** 15.249

**REQUIREMENTS:** The field strength of any emissions appearing outside the band edges and up to 10 kHz above and below the band edges shall be attenuated at least 50 dB below the level of the carrier or to the general limits of 15.249.

Band edge emissions plots are included on the following pages

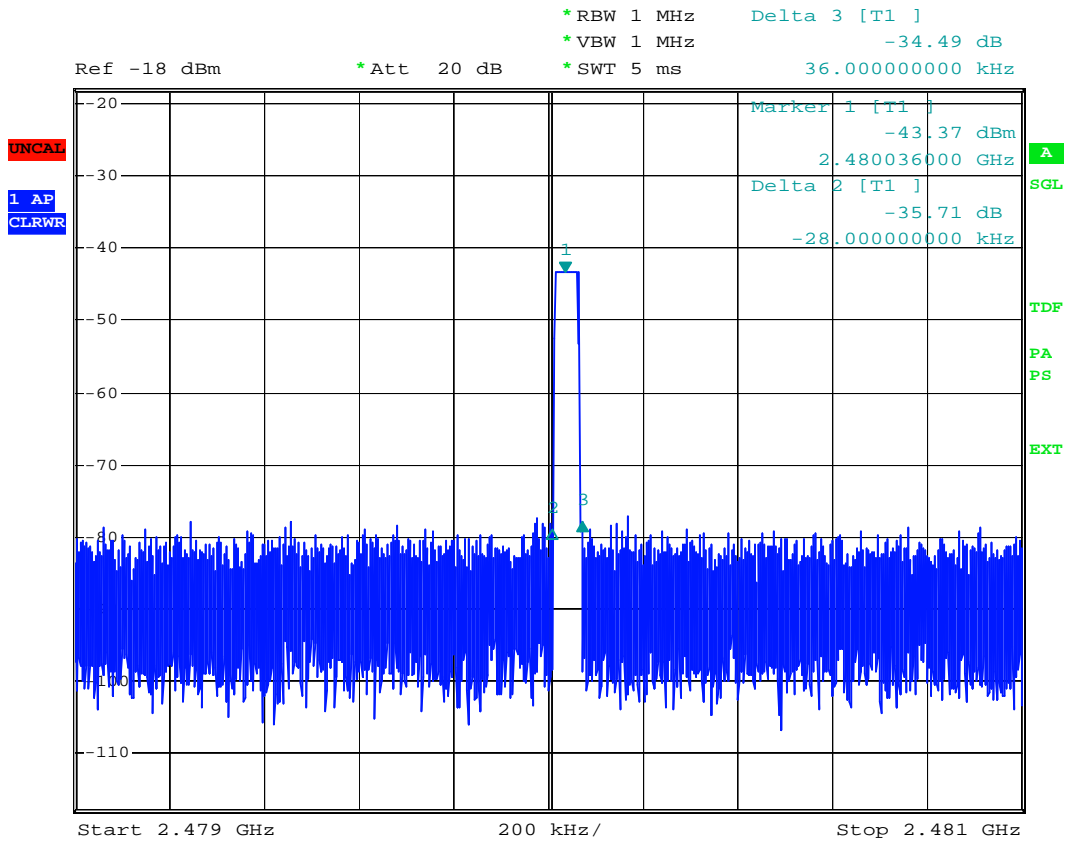
**METHOD OF MEASUREMENT:** A small sample of the transmitter output was fed into the spectrum analyzer and the attached plot was printed. The vertical scale is set to -10 dB per division.

**TEST RESULTS:** The unit DOES meet the FCC requirements.



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High

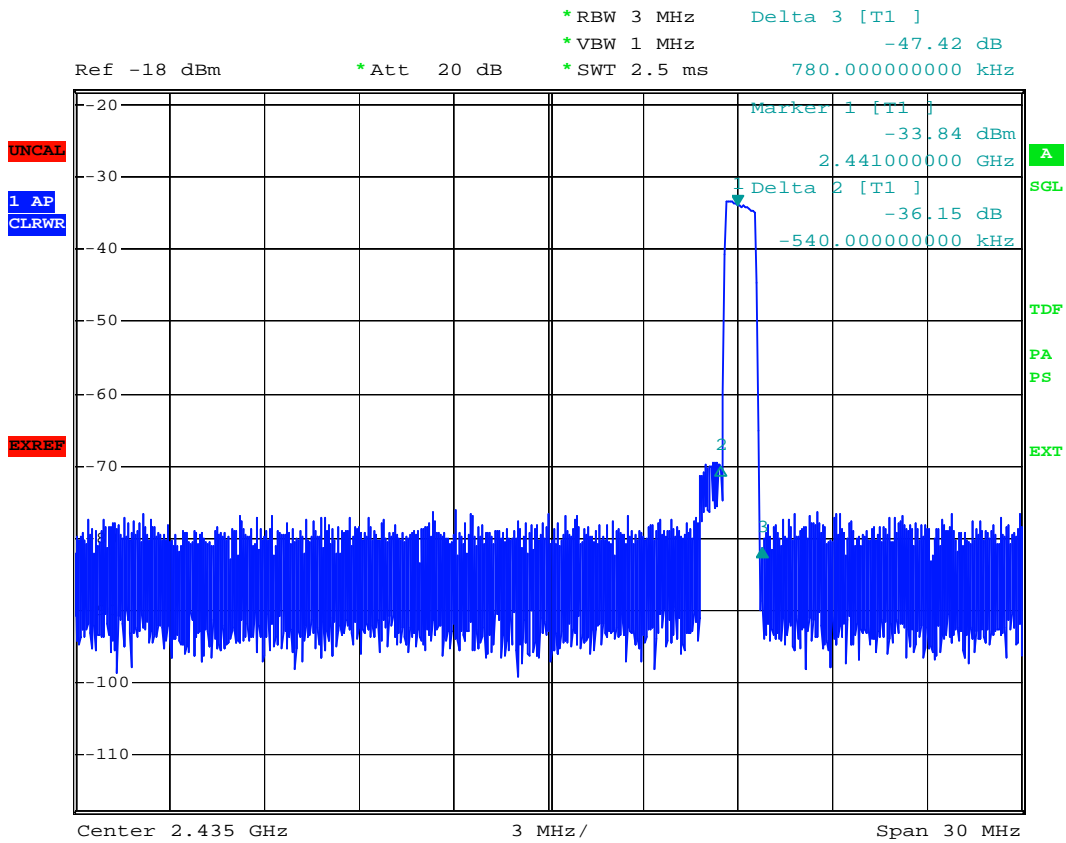


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Middle

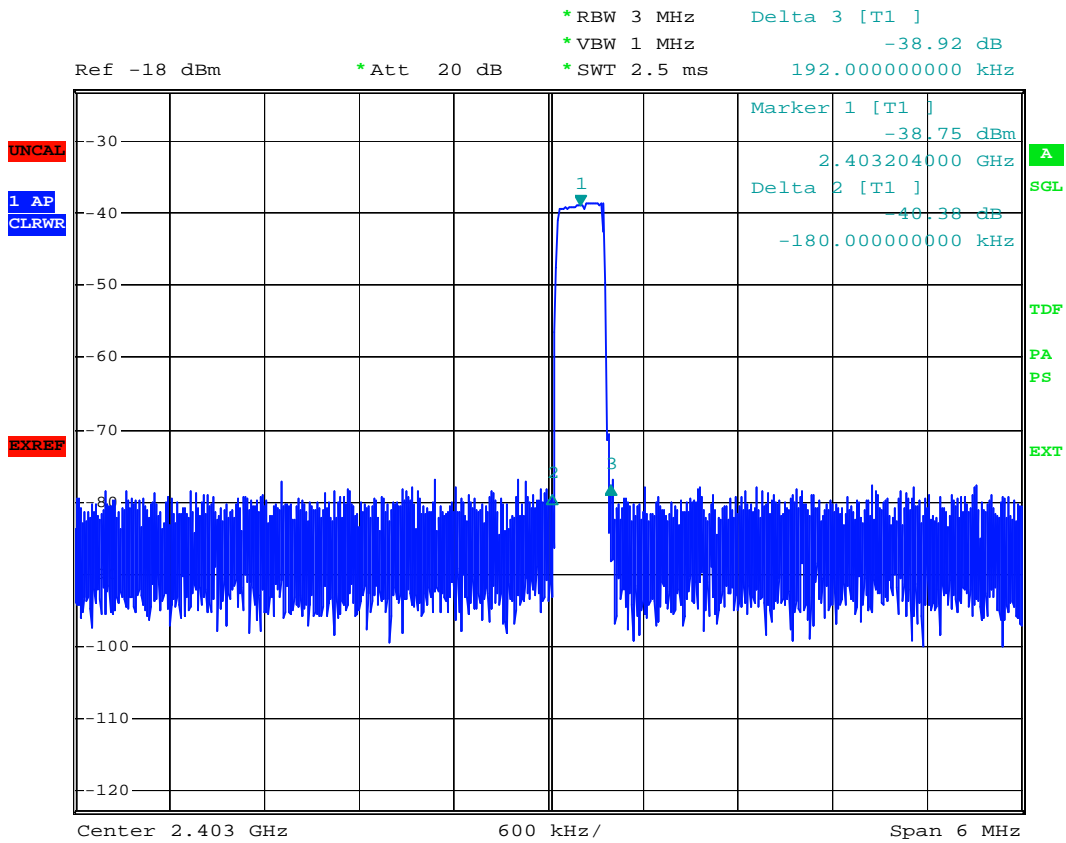


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Low



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