FCC RADIO TEST REPORT

FCC ID	:	UZ7MC27BJ
Equipment	:	Mobile computer
Brand Name	:	Zebra
Model Name	:	MC27BJ
Applicant	:	Zebra Technologies Corporation 1 Zebra Plaza, Holtsville, NY 11742
Manufacturer	:	Zebra Technologies Corporation 1 Zebra Plaza, Holtsville, NY 11742
Standard	:	FCC 47 CFR Part 2, 22(H), 24(E), 27(L)

The product was received on Sep. 22, 2020 and testing was started from Sep. 30, 2020 and completed on Oct. 02, 2020.. We, SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, would like to declare that the tested sample has been evaluated in accordance with the test procedures given in ANSI / TIA-603-E and has been in compliance with the applicable technical standards.

The test results in this variant report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.

Louis Wu

Approved by: Louis Wu

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory
No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)

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History of this test report

Report No.	Version	Description	Issued Date
FG052913-03A	01	This is a variant report for MC27BJ (FCC ID: UZ7MC27BJ), and the differences between this model name and MC27BK (FCC ID: UZ7MC27BK) are NFC and camera. All the test cases were performed on original report which can be referred to Sporton Report Number FG052913-02A as appendix C. Based on the original report, the test cases were verified.	Nov. 06, 2020

Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
-	§2.1046	Conducted Output Power	Not Required	-
	§22.913 (a)(2)	Effective Radiated Power (GSM850) (WCDMA Band V)		
	§24.232 (c)	Equivalent Isotropic Radiated Power (GSM1900) (WCDMA Band II)		
	§27.50 (d)(4)	Equivalent Isotropic Radiated Power (WCDMA Band IV)		
-	§24.232 (d)	Peak-to-Average Ratio	Not Required	-
-	§2.1049 §22.917 (b) §24.238 (b) §27.53 (g)	Occupied Bandwidth (GSM850) (WCDMA Band V) (GSM1900) (WCDMA Band II) (WCDMA Band IV)	Not Required	-
-	§2.1051 §22.917 (a) §24.238 (a) §27.53 (g)	Band Edge Measurement (GSM850) (WCDMA Band V) (GSM1900) (WCDMA Band II) (WCDMA Band IV)	Not Required	-
-	§2.1051 §22.917 (a) §24.238 (a) §27.53 (g)	Conducted Emission (GSM850) (WCDMA Band V) (GSM1900) (WCDMA Band II) (WCDMA Band IV)	Not Required	-
-	§2.1055 §22.355 §24.235 §27.54	Frequency Stability Temperature & Voltage	Not Required	-
3.4	§2.1053 §22.917 (a) §24.238 (a) §27.53 (h)	Field Strength of Spurious Radiation (GSM850) (WCDMA Band V) (GSM1900) (WCDMA Band II) (WCDMA Band IV)	Pass	Under limit 16.14 dB at 2512.000 MHz

Remark: Not required means after assessing, test items are not necessary to carry out.

Declaration of Conformity:
The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.
Comments and Explanations:
The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

Reviewed by: Wii Chang

Report Producer: Dara Chiu

1 General Description

1.1 Product Feature of Equipment Under Test

Product Feature	
Equipment	Mobile computer
Brand Name	Zebra
Model Name	MC27BJ
FCC ID	UZ7MC27BJ
EUT supports Radios application	GSM/EGPRS/WCDMA/HSPA/LTE/GNSS WLAN 11a/b/g/n HT20/HT40 WLAN 11ac VHT20/VHT40/VHT80 Bluetooth BR/EDR/LE
HW Version	EV
SW Version	10-11-31.00-QG-U00-PRD-HEL-04
OS Version	Android 10
MFD	02JUN20
EUT Stage	Engineering sample

Remark: The above EUT's information was declared by manufacturer.

Specification of Accessories				
AC Adapter	**Brand Name**	Zebra	**Part Number**	PWR-WUA5V12W0US
Battery	**Brand Name**	Zebra	**Part Number**	BT-000418-10
USB Cable (TypeA plug to TypeC plug)	**Brand Name**	Zebra	**Part Number**	CBL-TC2X-USBC-01
Trigger Handle	**Brand Name**	Zebra	**Part Number**	TRG-MC2X-SNP1-01
Holster	**Brand Name**	Zebra	**Part Number**	SG-MC2X-HLSTR-01
Holster	**Brand Name**	Zebra	**Part Number**	SG-MC3021212-01R

1.2 Product Specification of Equipment Under Test

Standards-related Product Specification	
Tx Frequency	**GSM:** GSM850: 824.2 MHz ~ 848.8 MHz GSM1900: 1850.2 MHz ~ 1909.8 MHz **WCDMA:** Band V: 826.4 MHz ~ 846.6 MHz Band II: 1852.4 MHz ~ 1907.6 MHz Band IV: 1712.4 MHz ~ 1752.6 MHz
Rx Frequency	**GSM:** GSM850: 869.2 MHz ~ 893.8 MHz GSM1900: 1930.2 MHz ~ 1989.8 MHz **WCDMA:** Band V: 871.4 MHz ~ 891.6 MHz Band II: 1932.4 MHz ~ 1987.6 MHz Band IV: 2112.4 MHz ~ 2152.6 MHz
Antenna Type	PIFA Antenna
Antenna Gain	Cellular Band: 2.20 dBi PCS Band: 1.70 dBi AWS Band: 3.04 dBi
Type of Modulation	GSM / GPRS: GMSK EGPRS: GMSK for MCS 0 ~ 4 & 8PSK for MCS5 ~9 WCDMA: QPSK HSDPA: 64QAM HSUPA: QPSK

1.3 Modification of EUT

No modifications are made to the EUT during all test items.

1.4 Testing Location

Test Site	SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory
Test Site Location	No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.) TEL: +886-3-327-3456 FAX: +886-3-328-4978
Test Site No.	**Sporton Site No.**
	03CH07-HY
Test Engineer	Jesse Wang, Stan Hsieh and Ken Wu
Temperature	23~25°C
Relative Humidity	50~56%

Note: The test site complies with ANSI C63.4 2014 requirement.

FCC Designation No.: TW1190

1.5 Applicable Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- ANSI C63.26-2015
- ANSI / TIA-603-E
- FCC 47 CFR Part 2, 22(H), 24(E), 27(L)
- FCC KDB 971168 D01 Power Meas. License Digital Systems v03r01
- FCC KDB 414788 D01 Radiated Test Site v01r01

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.
3. The TAF code is not including all the FCC KDB listed without accreditation.

2 Test Configuration of Equipment Under Test

2.1 Test Mode

Antenna port conducted and radiated test items were performed according to KDB 971168 D01 Power Meas. License Digital Systems v03r01 with maximum output power.

For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (Y plane) were recorded in this report.

Radiated emissions were investigated as following frequency range:

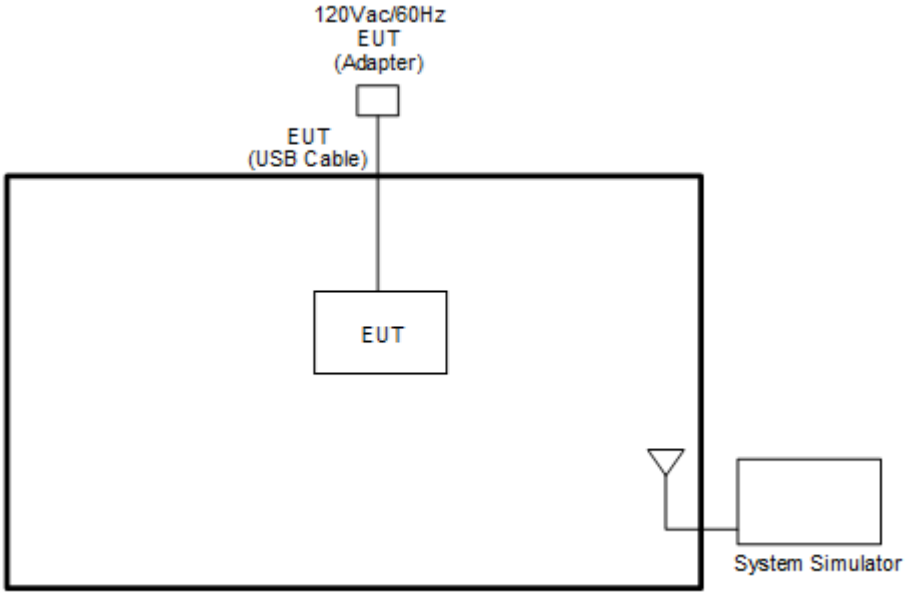
1. 30 MHz to 9000 MHz for GSM850 and WCDMA Band V
2. 30 MHz to 18000 MHz for WCDMA Band IV
3. 30 MHz to 19100 MHz for GSM1900 and WCDMA Band II

All modes and data rates and positions were investigated.

Test modes are chosen to be reported as the worst case configuration below:

Test Modes	
Band	**Radiated TCs**
GSM850	■ GPRS Class 8 Link ■ EDGE Class 8 Link
GSM1900	■ GPRS Class 8 Link ■ EDGE Class 8 Link
WCDMA Band V	■ RMC 12.2Kbps Link
WCDMA Band II	■ RMC 12.2Kbps Link
WCDMA Band IV	■ RMC 12.2Kbps Link

2.2 Connection Diagram of Test System



2.3 Support Unit used in test configuration

Item	Equipment	Brand Name	Model No.	FCC ID	Data Cable	Power Cord
1.	System Simulator	R&S	CMU 200	N/A	N/A	Unshielded, 1.8 m

2.4 Frequency List of Low/Middle/High Channels

Frequency List				
Band	**Channel/Frequency(MHz)**	**Lowest**	**Middle**	**Highest**
GSM850	Channel	128	189	251
	Frequency	824.2	836.4	848.8
WCDMA Band V	Channel	4132	4182	4233
	Frequency	826.4	836.4	846.6
GSM1900	Channel	512	661	810
	Frequency	1850.2	1880.0	1909.8
WCDMA Band II	Channel	9262	9400	9538
	Frequency	1852.4	1880.0	1907.6
WCDMA Band IV	Channel	1312	1413	1513
	Frequency	1712.4	1732.6	1752.6

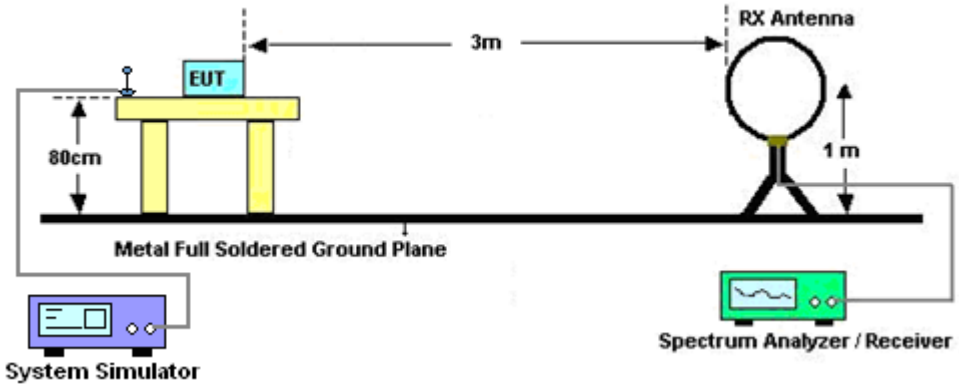
3 Radiated Test Items

3.1 Measuring Instruments

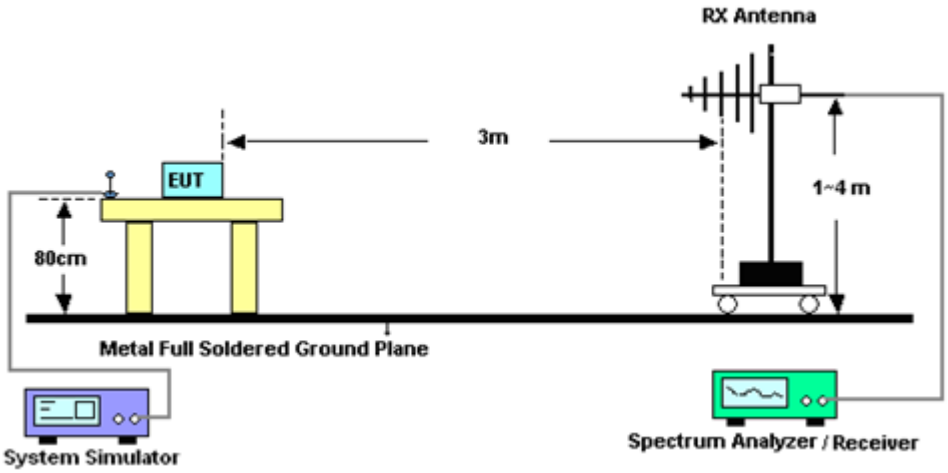
See list of measuring instruments of this test report.

3.2 Test Setup

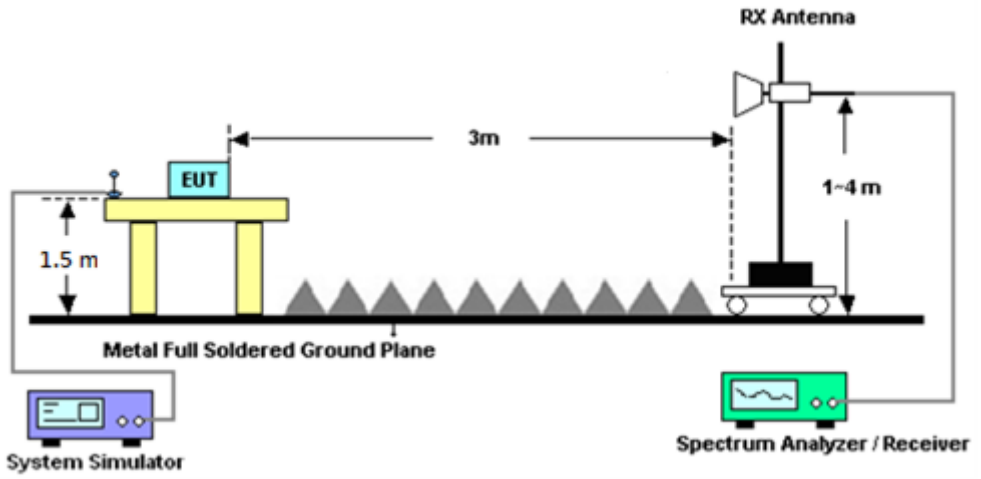
For radiated test below 30MHz



For radiated test from 30MHz to 1GHz



For radiated test above 1GHz



3.3 Test Result of Radiated Test

Please refer to Appendix B.

Note:

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line was not reported.

There is a comparison data of both open-field test site and alternative test site - semi-Anechoic chamber according to 414788 D01 Radiated Test Site v01r01, and the result came out very similar.

3.4 Field Strength of Spurious Radiation Measurement

3.4.1 Description of Field Strength of Spurious Radiated Measurement

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least 43 + 10 log (P) dB. The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic.

3.4.2 Test Procedures

The testing follows FCC KDB 971168 D01 v03r01 Section 7 and ANSI / TIA-603-E Section 2.2.12.

1. The EUT was placed on a rotatable wooden table 0.8 meters for frequency below 1GHz and 1.5 meter for frequency above 1GHz above the ground.
2. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest spurious emission.
4. The height of the receiving antenna is varied between one meter and four meters to search for the maximum spurious emission for both horizontal and vertical polarizations.
5. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking record of maximum spurious emission.
6. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
7. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
8. Taking the record of output power at antenna port.
9. Repeat step 7 to step 8 for another polarization.
10. EIRP (dBm) = S.G. Power – Tx Cable Loss + Tx Antenna Gain
11. ERP (dBm) = EIRP - 2.15
12. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
13. The limit line is derived from 43 + 10log(P) dB below the transmitter power P(Watts)

4 List of Measuring Equipment

Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Bilog Antenna	TESEQ	CBL 6111D & 00800N1D01N -06	35419 & 03	30MHz~1GHz	Apr. 29, 2020	Sep. 30, 2020~ Oct. 02, 2020	Apr. 28, 2021	Radiation (03CH07-HY)
Double Ridge Horn Antenna	ESCO	3117	00075962	1GHz ~ 18GHz	Dec. 06, 2019	Sep. 30, 2020~ Oct. 02, 2020	Dec. 05, 2020	Radiation (03CH07-HY)
EMI Test Receiver	Agilent	N9038A(MXE)	MY53290053	20Hz~26.5GHz	May 21, 2020	Sep. 30, 2020~ Oct. 02, 2020	May 20, 2021	Radiation (03CH07-HY)
Spectrum Analyzer	Agilent	N9030A	MY52350276	3Hz~44GHz	Jun. 09, 2020	Sep. 30, 2020~ Oct. 02, 2020	Jun. 08, 2021	Radiation (03CH07-HY)
Preamplifier	COM-POWER	PA-103A	161241	10MHz~1GHz	May 19, 2020	Sep. 30, 2020~ Oct. 02, 2020	May 18, 2021	Radiation (03CH07-HY)
Preamplifier	Agilent	8449B	3008A02362	1GHz~26.5GHz	Nov. 01, 2019	Sep. 30, 2020~ Oct. 02, 2020	Oct. 31, 2020	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	MY2858/2,80 1606/2	18GHz~40GHz	Feb. 25, 2020	Sep. 30, 2020~ Oct. 02, 2020	Feb. 24, 2021	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY28655/4, MY24971/4, MY15682/4	30MHz~1GHz	Feb. 25, 2020	Sep. 30, 2020~ Oct. 02, 2020	Feb. 24, 2021	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY28655/4, MY24971/4, MY15682/4	1GHz~18GHz	Feb. 25, 2020	Sep. 30, 2020~ Oct. 02, 2020	Feb. 24, 2021	Radiation (03CH07-HY)
Controller	ChainTek	Chaintek 3000	N/A	Control Turn table	N/A	Sep. 30, 2020~ Oct. 02, 2020	N/A	Radiation (03CH07-HY)
Controller	Max-Full	MF7802	MF780208368	Control Ant Mast	N/A	Sep. 30, 2020~ Oct. 02, 2020	N/A	Radiation (03CH07-HY)
Antenna Mast	Max-Full	MFA520BS	N/A	1m~4m	N/A	Sep. 30, 2020~ Oct. 02, 2020	N/A	Radiation (03CH07-HY)
Turn Table	ChainTek	Chaintek 3000	N/A	0~360 Degree	N/A	Sep. 30, 2020~ Oct. 02, 2020	N/A	Radiation (03CH07-HY)
USB Data Logger	TECPEL	TR-32	HE17XB2495	N/A	N/A	Sep. 30, 2020~ Oct. 02, 2020	N/A	Radiation (03CH07-HY)
Horn Antenna	EMCO	3117	00143261	1GHz~18GHz	Jan. 10, 2020	Sep. 30, 2020~ Oct. 02, 2020	Jan. 09, 2021	Radiation (03CH07-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170251	18GHz~40GHz	Nov. 26, 2019	Sep. 30, 2020~ Oct. 02, 2020	Nov. 25, 2020	Radiation (03CH07-HY)
Preamplifier	EMEC	EM18G40G	060715	18GHz~40GHz	Dec. 13, 2019	Sep. 30, 2020~ Oct. 02, 2020	Dec. 12, 2020	Radiation (03CH07-HY)
Software	Audix	E3 6.2009-8-24	N/A	N/A	N/A	Sep. 30, 2020~ Oct. 02, 2020	N/A	Radiation (03CH07-HY)
Signal Generator	Anritsu	MG3710A	6261943042	2G / 3G / LTE / 5G FR1	May. 10, 2020	Sep. 30, 2020~ Oct. 02, 2020	May. 09, 2021	Radiation (03CH07-HY)

5 Uncertainty of Evaluation

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**3.35**

Uncertainty of Radiated Emission Measurement (1 GHz ~ 18 GHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**3.81**

Uncertainty of Radiated Emission Measurement (18 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**4.85**

Appendix A. Test Results of Radiated Test

GPRS850

GPRS 850									
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Lowest	1648	-41.79	-13	-28.79	-53.84	-43.55	0.98	4.89	H
	2472	-32.44	-13	-19.44	-49.69	-34.32	1.28	5.32	H
	3296	-47.62	-13	-34.62	-66.84	-51.03	1.54	7.10	H
	4120	-53.02	-13	-40.02	-73.53	-57.66	1.83	8.62	H
	4944	-54.49	-13	-41.49	-77.47	-59.62	2.30	9.59	H
									H
									H
	1648	-32.43	-13	-19.43	-45.05	-34.19	0.98	4.89	V
	2472	-34.94	-13	-21.94	-52.62	-36.82	1.28	5.32	V
	3296	-49.81	-13	-36.81	-69.55	-53.22	1.54	7.10	V
	4120	-56.05	-13	-43.05	-76.71	-60.69	1.83	8.62	V
	4944	-56.89	-13	-43.89	-79.55	-62.02	2.30	9.59	V
									V
									V

Middle	1672	-36.71	-13	-23.71	-49.18	-38.39	0.99	4.82	H
	2512	-29.14	-13	-16.14	-46.48	-31.11	1.29	5.41	H
	3352	-40.95	-13	-27.95	-60.57	-44.59	1.56	7.35	H
	4184	-46.04	-13	-33.04	-66.51	-50.66	1.87	8.64	H
	5024	-50.46	-13	-37.46	-73.76	-55.66	2.35	9.70	H
									H
									H
	1672	-30.33	-13	-17.33	-43.24	-32.01	0.99	4.82	V
	2512	-34.81	-13	-21.81	-52.52	-36.78	1.29	5.41	V
	3344	-46.42	-13	-33.42	-66.12	-50.03	1.56	7.31	V
	4184	-48.57	-13	-35.57	-69.38	-53.19	1.87	8.64	V
	5024	-54.82	-13	-41.82	-77.98	-60.02	2.35	9.70	V
									V
									V
Highest	1696	-37.81	-13	-24.81	-50.44	-39.41	1.00	4.75	H
	2544	-30.35	-13	-17.35	-47.73	-32.33	1.30	5.44	H
	3392	-42.22	-13	-29.22	-62.11	-46.02	1.57	7.52	H
	4248	-48.62	-13	-35.62	-69.51	-53.22	1.90	8.65	H
	5096	-52.03	-13	-39.03	-75.56	-57.19	2.39	9.70	H
									H
									H
	1696	-29.42	-13	-16.42	-42.25	-31.02	1.00	4.75	V
	2544	-36.34	-13	-23.34	-54.19	-38.32	1.30	5.44	V
	3392	-44.86	-13	-31.86	-64.84	-48.66	1.57	7.52	V
	4248	-48.99	-13	-35.99	-69.99	-53.59	1.90	8.65	V
	5096	-55.85	-13	-42.85	-79.16	-61.01	2.39	9.70	V
									V
									V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

EDGE 850

EDGE 850									
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Lowest	1648	-46.43	-13	-33.43	-58.56	-48.19	0.98	4.89	H
	2472	-32.93	-13	-19.93	-50.15	-34.81	1.28	5.32	H
	3296	-51.85	-13	-38.85	71.34	-55.26	1.54	7.10	H
									H
									H
									H
									H
	1648	-34.25	-13	-21.25	-46.68	-36.01	0.98	4.89	V
	2472	-38.91	-13	-25.91	-56.52	-40.79	1.28	5.32	V
	3296	-57.14	-13	-44.14	-76.83	-60.55	1.54	7.10	V
									V
									V
									V
									V
Middle	1672	-42.91	-13	-29.91	-55.38	-44.59	0.99	4.82	H
	2512	-33.25	-13	-20.25	-50.58	-35.22	1.29	5.41	H
	3344	-51.05	-13	-38.05	-70.68	-54.66	1.56	7.31	H
	4360	-54.47	-13	-41.47	-75.1	-59.02	1.97	8.67	H
									H
									H
									H
	1672	-35.73	-13	-22.73	-48.44	-37.41	0.99	4.82	V
	2512	-39.46	-13	-26.46	-57.24	-41.43	1.29	5.41	V
	3344	-56.61	-13	-43.61	-75.39	-60.22	1.56	7.31	V
	4184	-58.00	-13	-45.00	-78.81	-62.62	1.87	8.64	V
									V
									V
									V

Highest	1696	-39.41	-13	-26.41	-51.94	-41.01	1.00	4.75	H
	2544	-34.18	-13	-21.18	-51.58	-36.16	1.30	5.44	H
	3392	-50.59	-13	-37.59	-70.63	-54.39	1.57	7.52	H
									H
									H
									H
									H
	1696	-32.01	-13	-19.01	-45.06	-33.61	1.00	4.75	V
	2544	-38.57	-13	-25.57	-56.4	-40.55	1.30	5.44	V
	3392	-50.72	-13	-37.72	-70.81	-54.52	1.57	7.52	V
									V
									V
									V
									V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

WCDMA 850

WCDMA 850									
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Lowest	1656	-63.33	-13	-50.33	-75.69	-65.06	0.98	4.86	H
	2480	-59.52	-13	-46.52	-76.74	-61.43	1.28	5.34	H
	3304	-57.57	-13	-44.57	-77.14	-61.01	1.54	7.14	H
									H
									H
									H
									H
	1656	-62.42	-13	-49.42	-75.31	-64.15	0.98	4.86	V
	2480	-59.11	-13	-46.11	-76.82	-61.02	1.28	5.34	V
	3304	-57.54	-13	-44.54	-77.32	-60.98	1.54	7.14	V
									V
									V
									V
									V
Middle	1672	-63.19	-13	-50.19	-75.78	-64.87	0.99	4.82	H
	2512	-59.57	-13	-46.57	-76.94	-61.54	1.29	5.41	H
	3344	-58.21	-13	-45.21	-77.9	-61.82	1.56	7.31	H
									H
									H
									H
									H
	1672	-62.64	-13	-49.64	-75.57	-64.32	0.99	4.82	V
	2512	-59.47	-13	-46.47	-77.3	-61.44	1.29	5.41	V
	3344	-57.91	-13	-44.91	-77.81	-61.52	1.56	7.31	V
									V
									V
									V
									V

Highest	1696	-63.74	-13	-50.74	-76.39	-65.34	1.00	4.75	H
	2536	-59.76	-13	-46.76	-77.14	-61.74	1.30	5.43	H
	3384	-57.76	-13	-44.76	-77.79	-61.53	1.57	7.49	H
									H
									H
									H
									H
	1696	-62.58	-13	-49.58	-75.67	-64.18	1.00	4.75	V
	2536	-59.27	-13	-46.27	-77.14	-61.25	1.30	5.43	V
	3384	-57.67	-13	-44.67	-77.77	-61.44	1.57	7.49	V
									V
									V
									V
									V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

WCDMA 1700

WCDMA 1700									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Lowest	3426	-53.93	-13	-40.93	-73.68	-60.02	1.58	7.67	H
	5136	-47.75	-13	-34.75	-71.48	-55.03	2.42	9.70	H
	6848	-53.04	-13	-40.04	-80.85	-61.02	2.64	10.62	H
									H
									H
									H
									H
	3426	-56.62	-13	-43.62	-77.26	-62.71	1.58	7.67	V
	5136	-51.23	-13	-38.23	-74.91	-58.51	2.42	9.70	V
	6848	-54.35	-13	-41.35	-81.23	-62.33	2.64	10.62	V
									V
									V
									V
									V
Middle	3468	-56.75	-13	-43.75	-77.45	-63.01	1.59	7.86	H
	5196	-50.31	-13	-37.31	-74.44	-57.56	2.45	9.70	H
	6930	-54.26	-13	-41.26	-81.2	-62.36	2.61	10.72	H
									H
									H
									H
									H
	3468	-56.76	-13	-43.76	-77.57	-63.02	1.59	7.86	V
	5196	-51.86	-13	-38.86	-75.82	-59.11	2.45	9.70	V
	6930	-53.96	-13	-40.96	-81.08	-62.06	2.61	10.72	V
									V
									V
									V
									V

Highest	3504	-53.96	-13	-40.96	-75	-60.36	1.61	8.00	H
	5257	-44.35	-13	-31.35	-68.46	-51.56	2.49	9.70	H
	7010	-54.06	-13	-41.06	-81.3	-62.29	2.59	10.82	H
									H
									H
									H
									H
	3504	-55.99	-13	-42.99	-76.9	-62.39	1.61	8.00	V
	5257	-45.85	-13	-32.85	-69.89	-53.06	2.49	9.70	V
	7010	-53.86	-13	-40.86	-81.17	-62.09	2.59	10.82	V
									V
									V
									V
									V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

GPRS 1900

GPRS 1900									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Lowest	3702	-53.73	-13	-40.73	-74.43	-60.3	1.67	8.24	H
	5550	-43.13	-13	-30.13	-67.98	-50.2	2.65	9.72	H
	7400	-53.56	-13	-40.56	-81.18	-62.7	2.46	11.60	H
									H
									H
									H
									H
	3702	-55.83	-13	-42.83	-76.6	-62.4	1.67	8.24	V
	5550	-44.73	-13	-31.73	-69.82	-51.8	2.65	9.72	V
	7400	-53.46	-13	-40.46	-81.19	-62.6	2.46	11.60	V
									V
									V
									V
									V
Middle	3762	-57.57	-13	-44.57	-77.82	-64.2	1.69	8.31	H
	5640	-46.25	-13	-33.25	-71.5	-53.3	2.71	9.76	H
	7520	-53.71	-13	-40.71	-81.16	-63.1	2.42	11.81	H
									H
									H
									H
									H
	3762	-56.17	-13	-43.17	-76.68	-62.8	1.69	8.31	V
	5640	-44.25	-13	-31.25	-68.97	-51.3	2.71	9.76	V
	7520	-54.21	-13	-41.21	-81.97	-63.6	2.42	11.81	V
									V
									V
									V
									V

Highest	3810	-58.35	-13	-45.35	-78.89	-65.02	1.70	8.37	H
	5718	-55.37	-13	-42.37	-80.8	-62.41	2.75	9.79	H
	7626	-53.32	-13	-40.32	-81.26	-62.81	2.39	11.88	H
									H
									H
									H
									H
	3810	-58.35	-13	-45.35	-79.01	-65.02	1.70	8.37	V
	5718	-55.21	-13	-42.21	-80.69	-62.25	2.75	9.79	V
	7626	-52.95	-13	-39.95	-81.13	-62.44	2.39	11.88	V
									V
									V
									V
									V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

EDGE1900

EDGE 1900									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Lowest	3702	-56.72	-13	-43.72	-77.5	-63.29	1.67	8.24	H
	5550	-48.95	-13	-35.95	-73.85	-56.02	2.65	9.72	H
	7398	-53.89	-13	-40.89	-81.32	-63.02	2.46	11.60	H
									H
									H
									H
									H
	3702	-57.44	-13	-44.44	-78.21	-64.01	1.67	8.24	V
	5550	-45.61	-13	-32.61	-70.64	-52.68	2.65	9.72	V
	7398	-53.33	-13	-40.33	-81.01	-62.46	2.46	11.60	V
									V
									V
									V
									V
Middle	3762	-55.65	-13	-42.65	-76.29	-62.28	1.69	8.31	H
	5640	-42.67	-13	-29.67	-67.87	-49.72	2.71	9.76	H
	7518	-53.63	-13	-40.63	-81.2	-63.02	2.42	11.81	H
									H
									H
									H
									H
	3762	-56.03	-13	-43.03	-76.76	-62.66	1.69	8.31	V
	5640	-40.97	-13	-27.97	-66.11	-48.02	2.71	9.76	V
	7518	-53.09	-13	-40.09	-80.99	-62.48	2.42	11.81	V
									V
									V
									V
									V

Highest	3822	-52.91	-13	-39.91	-73.54	-59.59	1.71	8.39	H
	5730	-42.99	-13	-29.99	-68.22	-50.02	2.76	9.79	H
	7638	-43.21	-13	-30.21	-81.16	-52.71	2.38	11.88	H
									H
									H
									H
									H
	3822	-56.34	-13	-43.34	-73.9	-63.02	1.71	8.39	V
	5730	-44.32	-13	-31.32	-69.86	-51.35	2.76	9.79	V
	7638	-53.09	-13	-40.09	-81.24	-62.59	2.38	11.88	V
									V
									V
									V
									V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

WCDMA 1900

WCDMA 1900									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Lowest	3708	-56.86	-13	-43.86	-77.65	-63.44	1.67	8.25	H
	5562	-52.32	-13	-39.32	-77.48	-59.38	2.66	9.72	H
	7416	-53.83	-13	-40.83	-81.31	-63.01	2.46	11.63	H
									H
									H
									H
									H
	3708	-57.53	-13	-44.53	-78.31	-64.11	1.67	8.25	V
	5562	-53.55	-13	-40.55	-78.42	-60.61	2.66	9.72	V
	7416	-53.92	-13	-40.92	-81.53	-63.1	2.46	11.63	V
									V
									V
									V
									V
Middle	3762	-56.59	-13	-43.59	-77.27	-63.22	1.69	8.31	H
	5640	-55.54	-13	-42.54	-80.75	-62.59	2.71	9.76	H
	7518	-53.12	-13	-40.12	-80.81	-62.51	2.42	11.81	H
									H
									H
									H
									H
	3762	-57.76	-13	-44.76	-78.42	-64.39	1.69	8.31	V
	5640	-55.76	-13	-42.76	-81	-62.81	2.71	9.76	V
	7518	-53.26	-13	-40.26	-81.15	-62.65	2.42	11.81	V
									V
									V
									V
									V

Highest	3822	-52.91	-13	-39.91	-73.54	-59.59	1.71	8.39	H
	5730	-42.99	-13	-29.99	-68.22	-50.02	2.76	9.79	H
	7638	-43.21	-13	-30.21	-81.16	-52.71	2.38	11.88	H
									H
									H
									H
									H
	3822	-56.34	-13	-43.34	-73.9	-63.02	1.71	8.39	V
	5730	-44.32	-13	-31.32	-69.86	-51.35	2.76	9.79	V
	7638	-53.09	-13	-40.09	-81.24	-62.59	2.38	11.88	V
									V
									V
									V
									V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

Appendix C. Original Report

Please refer to Sporton report number FG052913-02A as below.