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Confidential Report

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Quotation	Q23-0604-1
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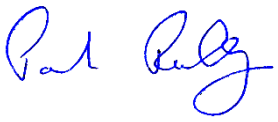
Test Report By	Michael Kirby
Date Received	7th Jul 2023
Issue Date	14th Aug 2023
EUT Description	Radar Level Sensor
EUT Model	TEK880
Test Standard (s)	EN 301 908-1 EN 300 328
Authorised by	**Paul Reilly**
Authorised Signature :	

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14. In IEC standards measurement uncertainty is already incorporated into the specifications. Statements of conformity in the CEI test report follow these decision rules: Pass – Results within the stated limit, Fail – Results outside the stated limit.
15. The test results presented in this report relate only to the object tested.

1 Equipment Under Test (EUT)

1.1 Identification of EUT

Manufacturer:	Tekelek
Model Number:	TEK880

1.2 Description of E.U.T.

The TEK 880 level sensor product was a battery powered (Lithium thionyl chloride cell 3.6V) Radar level sensor
The application is for tank level monitoring and reporting level of liquid in a tank to a remote end server.
It had a BG95-M3 Quectel LTE module (FCC-ID XMR201910BG95M3) that supports 2G, NB-IoT, CAT-M cellular communications.
There is a radar module (XM132) that supports a 60.5Ghz Radar IC (A111) and allows the sensor to make level measurements.
The sensor also has a small BLE module (FCC-ID/2ATPO-PB03) that is only used for installation purposes to setup the sensor.

1.3 Modifications

There were no modifications on the EUT

1.4 Date of Test

Tests were performed on dates of the 4th , 5th , 6th ,14th ,17th Jul 2023.

1.5 Environmental Conditions

	Temperature	**Relative Humidity**
Test	°C	%
Radiated Emissions <1GHz	21	39
Radiated Emissions >1GHz	24	47

1.6 Test execution

The tests were performed manually and no special software was used for the tests.

2 Test Specification, Methods and Procedures

ETSI EN 301 908-1 V15.1.1 (2019-11)

IMT cellular networks;
Harmonised Standard for access to the radio spectrum
Part 1: Introduction and common requirements

ETSI EN 300 328 V2.2.2 (2019-07)

Wideband transmission equipment operating in the 2,4 GHz band;
Harmonised Standard for access to radio spectrum

3 Operation of E.U.T. During Testing

3.1 Operating Environment

The EUT was powered from its internal battery.

3.2 Operating Mode:

The EUT was operated in a mode where it was repeatedly transmitting in order to assess the emissions for transmit mode.
It was operated with all radios on except for idle mode test.
The Radar, while active during the tests does not form part of this test report.

4 Results Summary

Standard	Section	Description	Comment	Result
EN 301 908-1	**4.2.2**	Radiated emissions (UE)		**Pass**
EN 301 908-1	**4.2.4**	Control and monitoring functions		**Pass**
EN 300 328-1	**4.3.2.2**	Carrier power		**Pass**
EN 300 328-1	**4.3.2.9**	Radiated Spurious		**Pass**

Table 1: Test Carried Out on EUT

Test Result: Pass

Note the test results relate only to the device tested

5 Results

5.1 Radiated Spurious Emissions

For the spurious measurements, below 300MHz, the receiving antenna was set up at a 3-metre distance from the EUT, in a Semi-Anechoic Chamber. The EUT was rotated 360 degrees azimuth and the search antenna height varied 1 to 4m in order to maximize the emissions.
For measurements between above 300MHz the receive antenna was set up at a 3 metre distance from the EUT, in a fully anechoic chamber. The EUT was rotated 360 degrees azimuth in order to maximize the emissions.
Significant peaks from the EUT were then recorded to determine margin to the limits.

4.2.2.2 Limits

The frequency boundary and reference bandwidths for the detailed transitions of the limits between the requirements for out-of-band emissions and spurious emissions are based on Recommendations ITU-R SM.329-12 [1] and SM.1539-1 [i.6].

The requirements shown in table 4.2.2.2-1 are only applicable for frequencies in the spurious domain.

Table 4.2.2.2-1: Radiated spurious emissions requirements (UE)

Frequency	Minimum requirement (e.r.p.)/ reference bandwidth idle mode	Minimum requirement (e.r.p.)/ reference bandwidth traffic mode	Applicability
30 MHz ≤ f < 1 000 MHz	-57 dBm/100 kHz	-36 dBm/100 kHz	All
1 GHz ≤ f < 12,75 GHz	-47 dBm/1 MHz	-30 dBm/1 MHz	All
12,75 GHz ≤ f < 5th harmonic of the upper frequency edge of the Uplink operating band in GHz	-47 dBm/1 MHz	-30 dBm/1 MHz	All (note 3)
12,75 GHz < f < 26 GHz	-47 dBm/1 MHz	-30 dBm/1 MHz	All (note 4)
fc - 2,5 × 5 MHz < f < fc + 2,5 × 5 MHz (note 1 and note 2)	Not defined	Not defined	UTRA FDD, UTRA TDD, 3,84 Mcps option, cdma2000, spreading rate 3
fc - 2,5 × $BW_{Channel}$ MHz < f < fc + 2,5 × $BW_{Channel}$ MHz (note 1 and note 2)	Not defined	Not defined	E-UTRA FDD, E-UTRA TDD, Mobile WiMAX™
fc - (1,5 x $BW_{Channel}$ + 5) MHz < f < fc + (1,5 x $BW_{Channel}$ + 5) MHz (note 1)	Not defined	Not defined	NR operating in FR1
fc - 2,5 × 10 MHz < f < fc + 2,5 × 10 MHz (note 1 and note 2)	Not defined	Not defined	UTRA TDD, 7,68 Mcps option
fc - 4 MHz < f < fc + 4 MHz (note 1 and note 2)	Not defined	Not defined	UTRA TDD, 1,28 Mcps option cdma2000, spreading rate 1
NOTE 1: fc is the UE transmit centre frequency. NOTE 2: This frequency range is not in the spurious domain, no requirement is then defined for this frequency range. NOTE 3: Applies for Band that the upper frequency edge of the Uplink Band more than 2,69 GHz. NOTE 4: Applies for Band that the upper frequency edge of the Uplink Band more than 5,2 GHz.			

5.1.1 Results NBIOT Band 20 Transmit mode

Frequency	Level	Spurious emission limit	Antenna Polarity	EUT orient	Δ Limit	Pass / Fail
MHz	dBm	dBm	V/H		dB	P/F
1674	-47.7	-30	Vertical	O1	17.7	Pass
4804	-48.6	-30	Vertical	O1	18.6	Pass
4185	-55.5	-30	Vertical	O1	25.5	Pass
5072	-54.9	-30	Vertical	O1	24.9	Pass
5859	-54.1	-30	Vertical	O1	24.1	Pass
6696	-52.3	-30	Vertical	O1	22.3	Pass
7533	-50.8	-30	Vertical	O1	20.8	Pass
8370	-49.0	-30	Vertical	O1	19.0	Pass
9608	-50.5	-30	Vertical	O1	20.5	Pass
1674	-53.0	-30	Vertical	O1	23.0	Pass
4804	-48.6	-30	Horizontal	O1	18.6	Pass
4185	-57.0	-30	Horizontal	O1	27.0	Pass
5072	-54.9	-30	Horizontal	O1	24.9	Pass
5859	-53.8	-30	Horizontal	O1	23.8	Pass
6696	-52.1	-30	Horizontal	O1	22.1	Pass
7533	-50.5	-30	Horizontal	O1	20.5	Pass
8370	-49.2	-30	Horizontal	O1	19.2	Pass
9608	-50.5	-30	Horizontal	O1	20.5	Pass

Test Result: Pass

5.1.2 Results NBIOT Band 8 Transmit mode

Frequency	Level	Spurious emission limit	Antenna Polarity	EUT orient	Δ Limit	Pass / Fail
MHz	dBm	dBm	V/H		dB	P/F
4485	-56.4	-30	Vertical	O1	26.4	Pass
5382	-54.4	-30	Vertical	O1	24.4	Pass
6299	-53.7	-30	Vertical	O1	23.7	Pass
7176	-51.8	-30	Vertical	O1	21.8	Pass
8073	-47.0	-30	Vertical	O1	17.0	Pass
8970	-49.9	-30	Vertical	O1	19.9	Pass
4960	-49.6	-30	Vertical	O1	19.6	Pass
9290	-49.9	-30	Vertical	O1	19.9	Pass
4485	-56.8	-30	Horizontal	O1	26.8	Pass
5382	-54.3	-30	Horizontal	O1	24.3	Pass
6299	-53.2	-30	Horizontal	O1	23.2	Pass
7176	-51.3	-30	Horizontal	O1	21.3	Pass
8073	-46.4	-30	Horizontal	O1	16.4	Pass
8970	-49.4	-30	Horizontal	O1	19.4	Pass
4960	-50.3	-30	Horizontal	O1	20.3	Pass
9290	-50.0	-30	Horizontal	O1	20.0	Pass

Test Result: Pass

5.1.3 Results CATM1 Band 8 Transmit mode

Frequency	Level	Spurious emission limit	Antenna Polarity	EUT orient	Δ Limit	Pass / Fail
MHz	dBm	dBm	V/H		dB	P/F
4485	-57.0	-30	Vertical	O1	27.0	Pass
5382	-54.7	-30	Vertical	O1	24.7	Pass
6279	-53.9	-30	Vertical	O1	23.9	Pass
7176	-52.7	-30	Vertical	O1	22.7	Pass
8073	-47.0	-30	Vertical	O1	17.0	Pass
8970	-49.9	-30	Vertical	O1	19.9	Pass
4485	-57.3	-30	Horizontal	O1	27.3	Pass
5382	-55.4	-30	Horizontal	O1	25.4	Pass
6279	-54.1	-30	Horizontal	O1	24.1	Pass
7176	-52.1	-30	Horizontal	O1	22.1	Pass
8073	-47.0	-30	Horizontal	O1	17.0	Pass
8970	-49.7	-30	Horizontal	O1	19.7	Pass

Test Result: Pass

5.1.4 Results CATM1 Band 1 Transmit mode

Frequency	Level	Spurious emission limit	Antenna Polarity	EUT orient	Δ Limit	Pass / Fail
MHz	dBm	dBm	V/H		dB	P/F
1705	-64.7	-30	Vertical	O1	34.7	Pass
1844	-62.9	-30	Vertical	O1	32.9	Pass
2107	-64.0	-30	Vertical	O1	34.0	Pass
2239	-62.0	-30	Vertical	O1	32.0	Pass
2837	-60.5	-30	Vertical	O1	30.5	Pass
2938	-59.6	-30	Vertical	O1	29.6	Pass
3950	-36.3	-30	Vertical	O1	6.3	Pass
5925	-43.9	-30	Vertical	O1	13.9	Pass
7900	-50.4	-30	Vertical	O1	20.4	Pass
1705	-64.2	-30	Horizontal	O1	34.2	Pass
1844	-61.6	-30	Vertical	O1	31.6	Pass
2107	-62.6	-30	Vertical	O1	32.6	Pass
2239	-61.0	-30	Vertical	O1	31.0	Pass
3950	-39.0	-30	Vertical	O1	9.0	Pass
5925	-38.0	-30	Horizontal	O1	8.0	Pass
7900	-50.5	-30	Horizontal	O1	20.5	Pass

Test Result: Pass

5.1.5 Results GSM 1800

Frequency	Level	Spurious emission limit	Antenna Polarity	EUT orient	Δ Limit	Pass / Fail
MHz	dBm	dBm	V/H		dB	P/F
3511	-38.2	-30	Vertical	O1	8.2	Pass
3614	-48.4	-30	Vertical	O1	18.4	Pass
3702	-46.6	-30	Vertical	O1	16.6	Pass
5267	-46.3	-30	Vertical	O1	16.3	Pass
7023	-48.0	-30	Vertical	O1	18.0	Pass
8779	-48.8	-30	Vertical	O1	18.8	Pass
4804	-47.3	-30	Vertical	O1	17.3	Pass
7206	-52.2	-30	Vertical	O1	22.2	Pass
3511	-36.4	-30	Horizontal	O1	6.4	Pass
3614	-51.7	-30	Horizontal	O1	21.7	Pass
3702	-48.5	-30	Horizontal	O1	18.5	Pass
5267	-44.0	-30	Horizontal	O1	14.0	Pass
7023	-46.5	-30	Horizontal	O1	16.5	Pass
8779	-43.8	-30	Horizontal	O1	13.8	Pass
4804	-48.4	-30	Horizontal	O1	18.4	Pass
7206	-52.2	-30	Horizontal	O1	22.2	Pass

Test Result: Pass

5.1.6 Idle mode

The EUT was placed in idle mode for this test.

Frequency	Level	Spurious emission limit	Antenna Polarity	EUT orient	Δ Limit	Pass / Fail
MHz	dBm	dBm	V/H		dB	P/F
168	-68.6	-57	Vertical	O1	11.6	Pass
216	-77.7	-57	Vertical	O1	20.7	Pass
39.075	-96.2	-57	Vertical	O1	39.2	Pass
265.575	-92.7	-57	Vertical	O1	35.7	Pass
91.325	-87.2	-57	Horizontal	O1	30.2	Pass
93.475	-80.8	-57	Horizontal	O1	23.8	Pass
168	-82.5	-57	Horizontal	O1	25.5	Pass
1946	-62.9	-47	Vertical	O1	15.9	Pass
3395	-57.5	-47	Horizontal	O1	10.5	Pass
1865	-62.4	-47	Horizontal	O1	15.4	Pass
3410	-57.1	-47	Horizontal	O1	10.1	Pass

Test Result: Pass

5.2 Carrier power

The test was performed as a radiated test, with the test antenna at 3 metres from the EUT in a fully anechoic chamber. The EUT was rotated through 360 degrees azimuth and the maximum level was recorded.
A substitution measurement was performed where the EUT was replaced by an antenna connected to a signal generator. The signal generator level was adjusted to match the recorded level at the receiver. The signal generator level, adjusted for the cable losses and substitution antenna gain resulted in the power in dBm from the EUT.

Results

5.2.1 Band 20 NBIOT

Frequency	Level	Power Limit	Antenna Polarity	EUT orient	Δ Limit	Pass / Fail
MHz	dBm	dBm	V/H		dB	P/F
837	20.96	24	Horizontal	O1	3.0	Pass
837	14.27	24	Vertical	O1	9.7	Pass

Test Result: Pass

5.2.2 Band 8 NBIOT

Frequency	Level	Power Limit	Antenna Polarity	EUT orient	Δ Limit	Pass / Fail
MHz	dBm	dBm	V/H		dB	P/F
897	18.2	24	Vertical	O1	5.8	Pass
897	21.42	24	Horizontal	O1	2.6	Pass

Test Result: Pass

5.2.3 Band 8 CATM1

Frequency	Level	Power Limit	Antenna Polarity	EUT orient	Δ Limit	Pass / Fail
MHz	dBm	dBm	V/H		dB	P/F
897	14.4	24	Vertical	O1	9.6	Pass
897	19.85	24	Vertical	O1	4.2	Pass

Test Result: Pass

5.2.3 Band 1 CATM1

Frequency	Level	Power Limit	Antenna Polarity	EUT orient	Δ Limit	Pass / Fail
MHz	dBm	dBm	V/H		dB	P/F
1975	19.46	24	Vertical	O1	4.5	Pass
1975	19.89	24	Vertical	O1	4.1	Pass

Test Result: Pass

5.2.4 GSM 1800

Frequency	Level	Power Limit	Antenna Polarity	EUT orient	Δ Limit	Pass / Fail
MHz	dBm	dBm	V/H		dB	P/F
1755.8	24.74	30	Vertical	O1	5.3	Pass
1755.8	26.38	30	Horizontal	O1	3.6	Pass

5.2.5 BLE

Frequency	Level	Power Limit	Antenna Polarity	EUT orient	Δ Limit	Pass / Fail
MHz	dBm	dBm	V/H		dB	P/F
2402	3.61	20	Vertical	O1	16.4	Pass
2426	3.43	20	Vertical	O1	16.6	Pass
2480	3.71	20	Vertical	O1	16.3	Pass
2402	3.42	20	Horizontal	O1	16.6	Pass
2426	2.88	20	Horizontal	O1	17.1	Pass
2480	1.02	20	Horizontal	O1	19.0	Pass

Test Result: Pass

5.3 Control Signalling Cellular Module

This requirement verifies that the control and monitoring functions of the UE prevent it from transmitting in the absence of a valid network.

Limit = -30dBm

Test method

The EUT was powered up in the absence of a base station signal and the radiated power from the EUT was monitored

This test was performed as a Radiated test in Vertical and Horizontal polarisation.

Results

The scans show field strength levels in dBµV/m.

Note BLE is active in the scans.
The maximum (Non BLE related) signal detected is -60.5 dBm @ 2.711GHz
using the substitution measurement method.

Ref Scans on the following page

Test Result: Pass

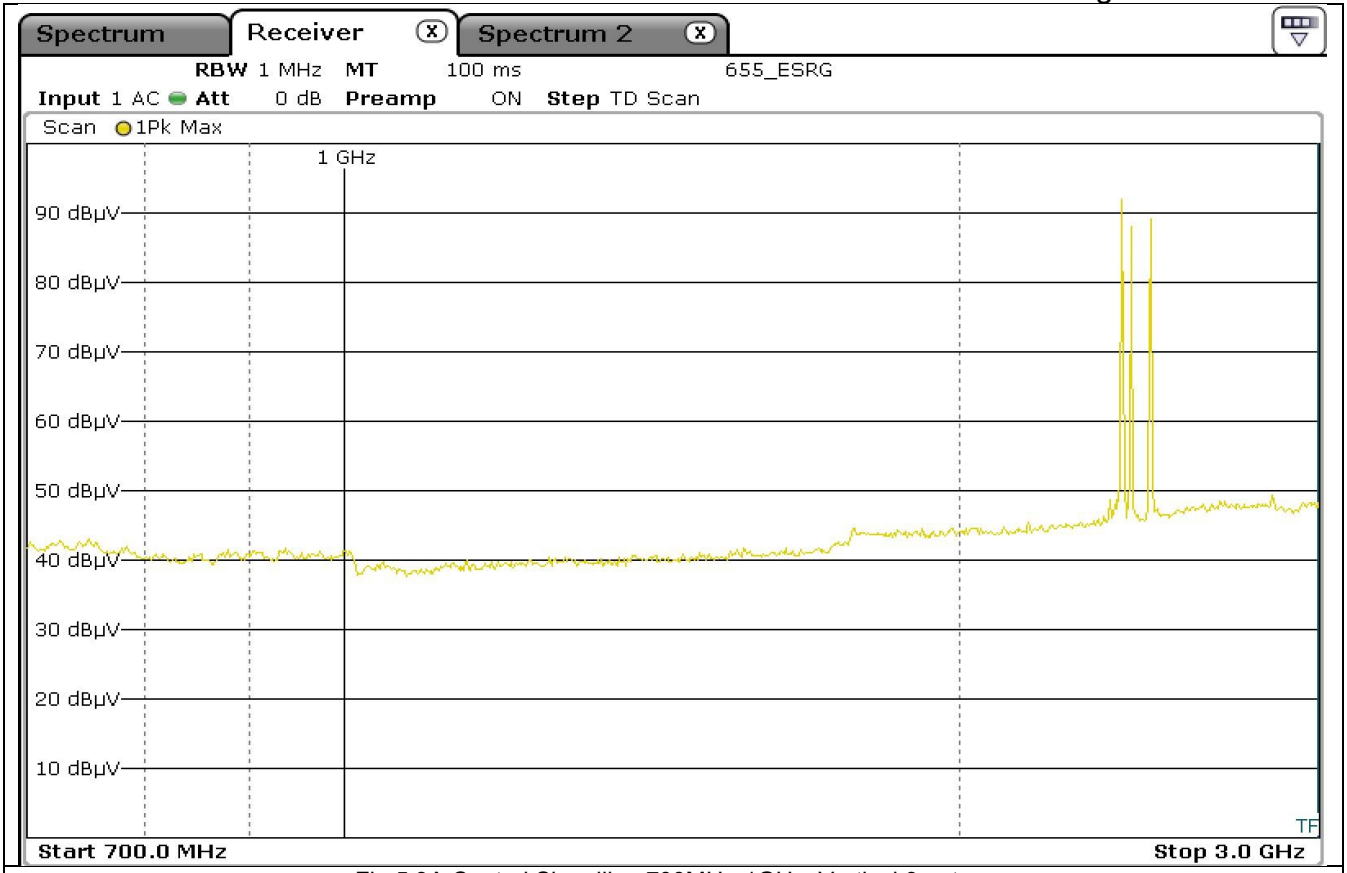

Fig 5.3A Control Signalling 700MHz-1GHz Vertical 3metres

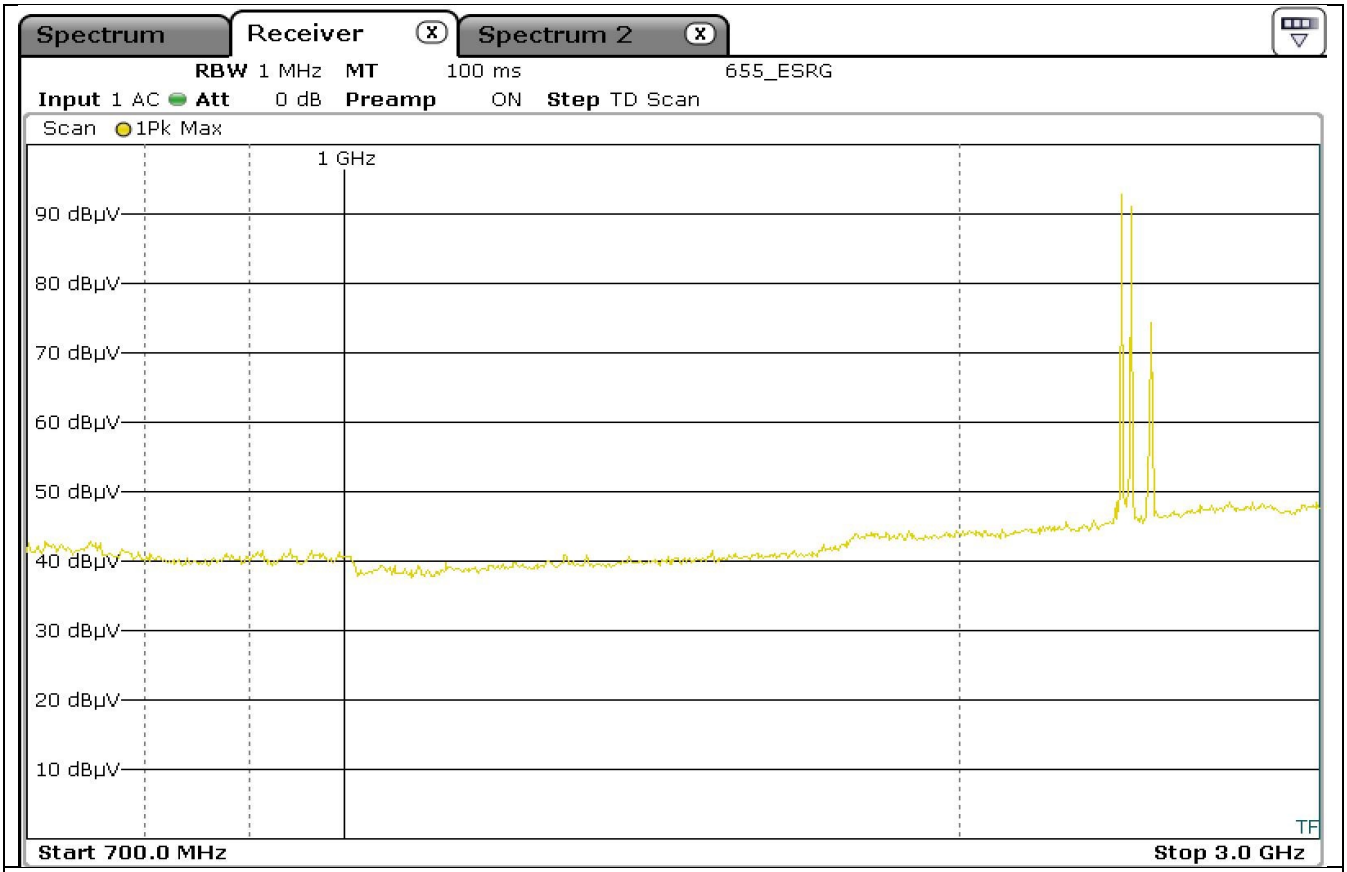

Fig 5.3B Control Signalling 700MHz-1GHz Horizontal 3metres

6 Measurement Uncertainty

Measurement	Uncertainty
Radio Frequency	+/- $5x10^{-7}$
Maximum Frequency Deviation	+/- 1.7 %
Radiated Emission 30MHz-100MHz	+/- 5.3 dB
Radiated Emission 100MHz-300MHz	+/- 4.7 dB
Radiated Emission 300MHz-1GHz	+/- 3.9 dB
Radiated Emission 1GHz-6GHz	+/- 3.8 dB

The measurement uncertainties stated were calculated with a k=2 for a confidence level of 95.45%.

Appendix A Scans for Radiated Spurious Emissions NBIOT Band 8 and BLE

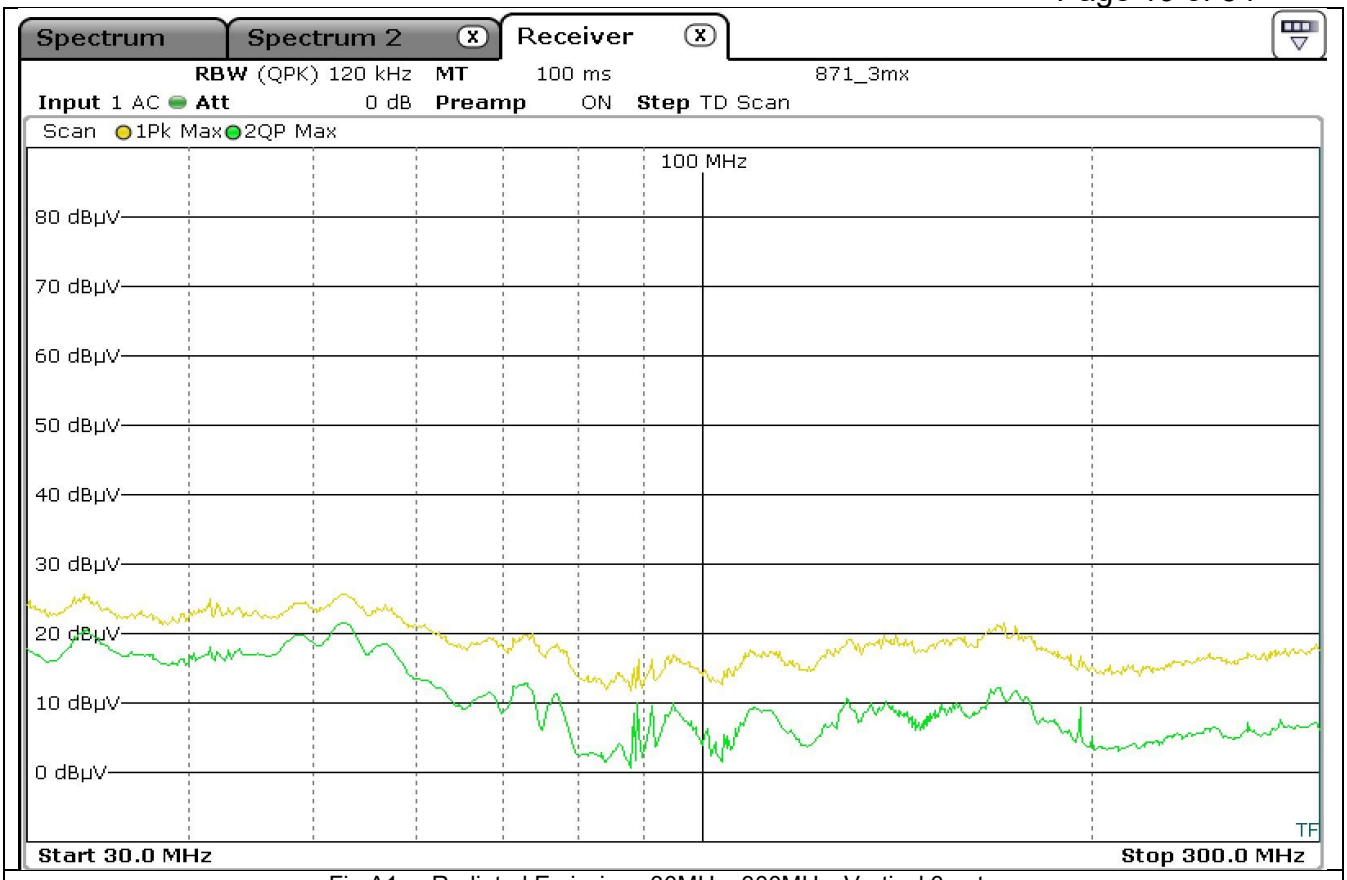

Fig A1 Radiated Emissions 30MHz -300MHz Vertical 3metres

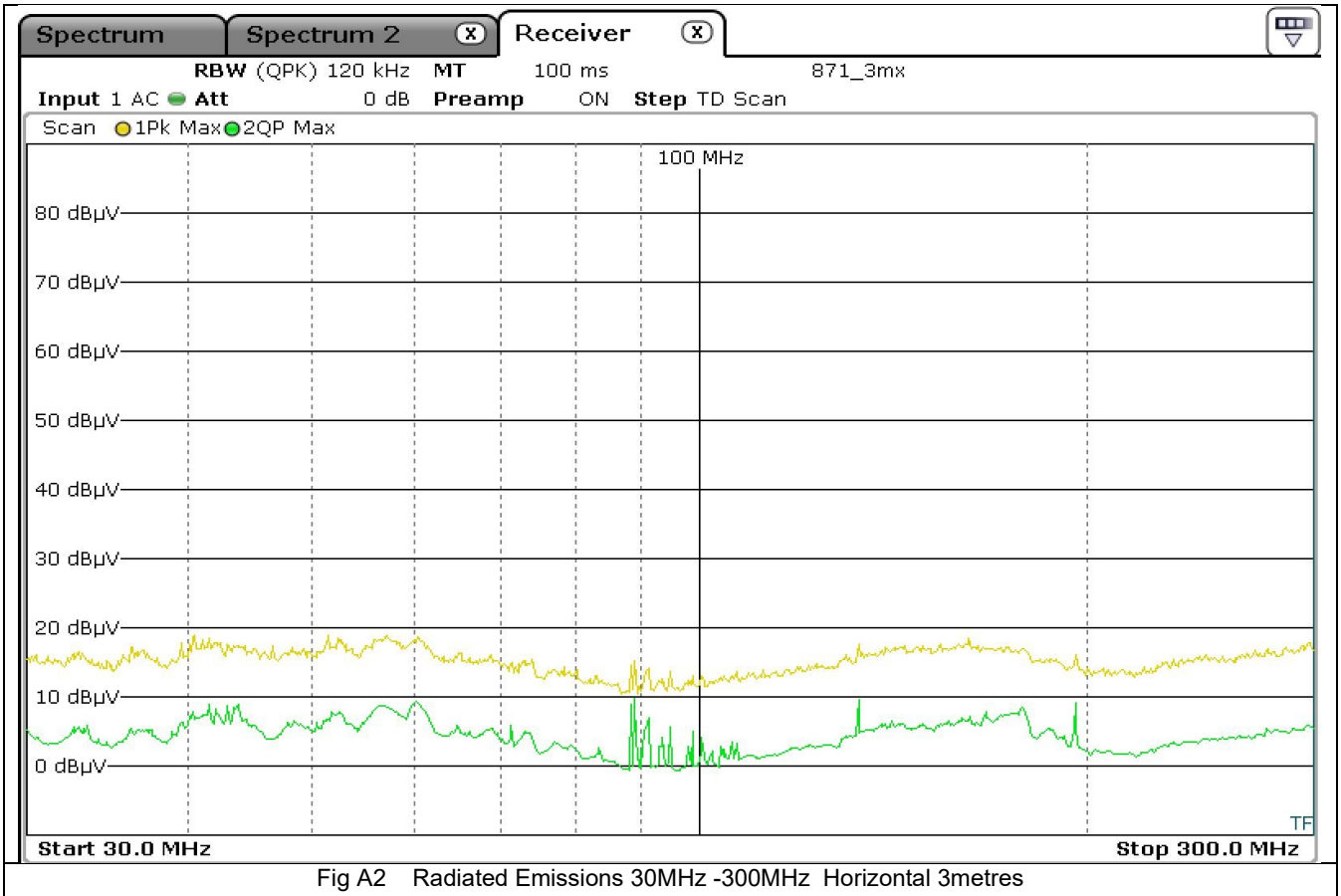

Fig A2 Radiated Emissions 30MHz -300MHz Horizontal 3metres

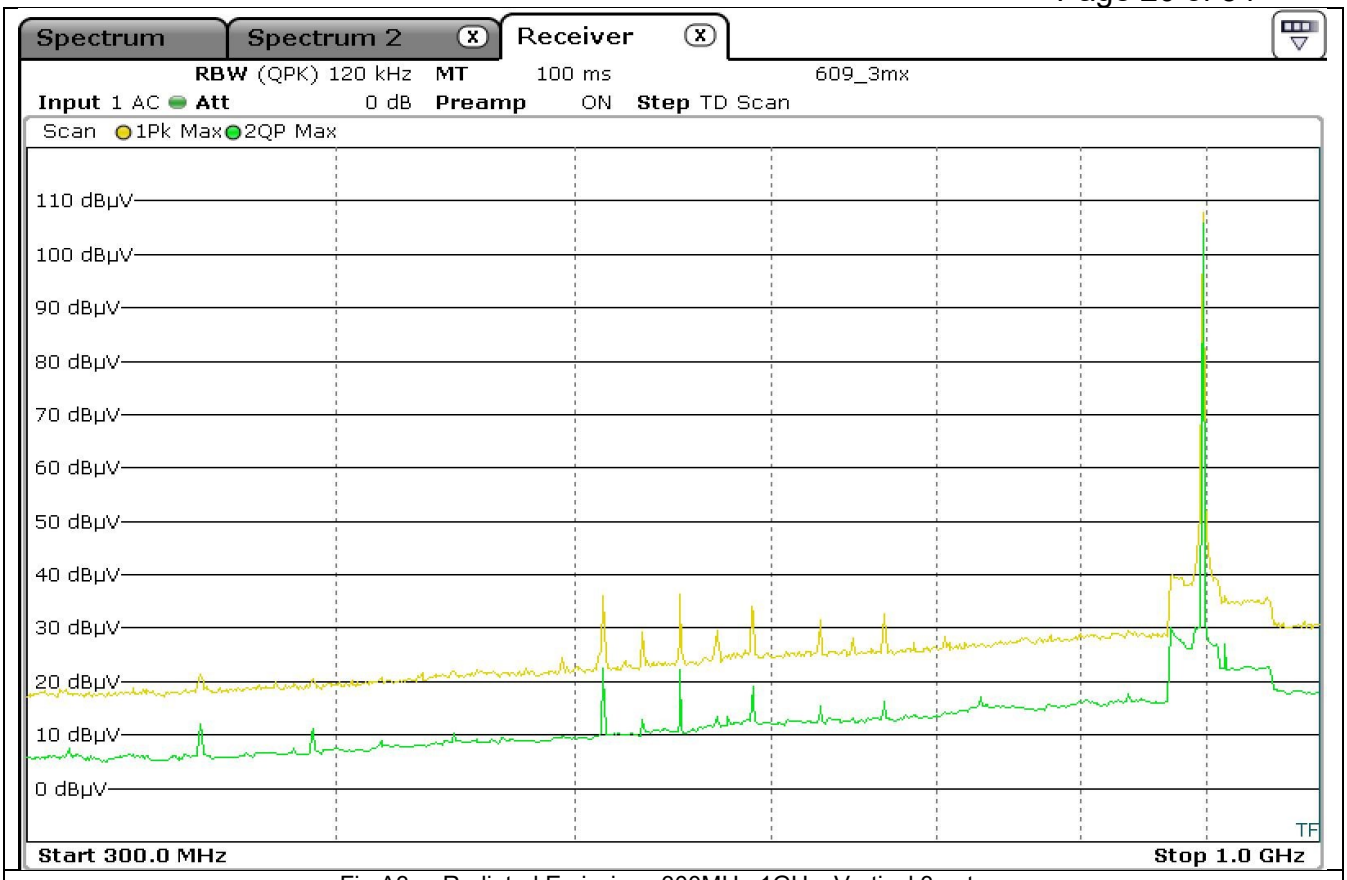

Fig A3 Radiated Emissions 300MHz-1GHz Vertical 3metres

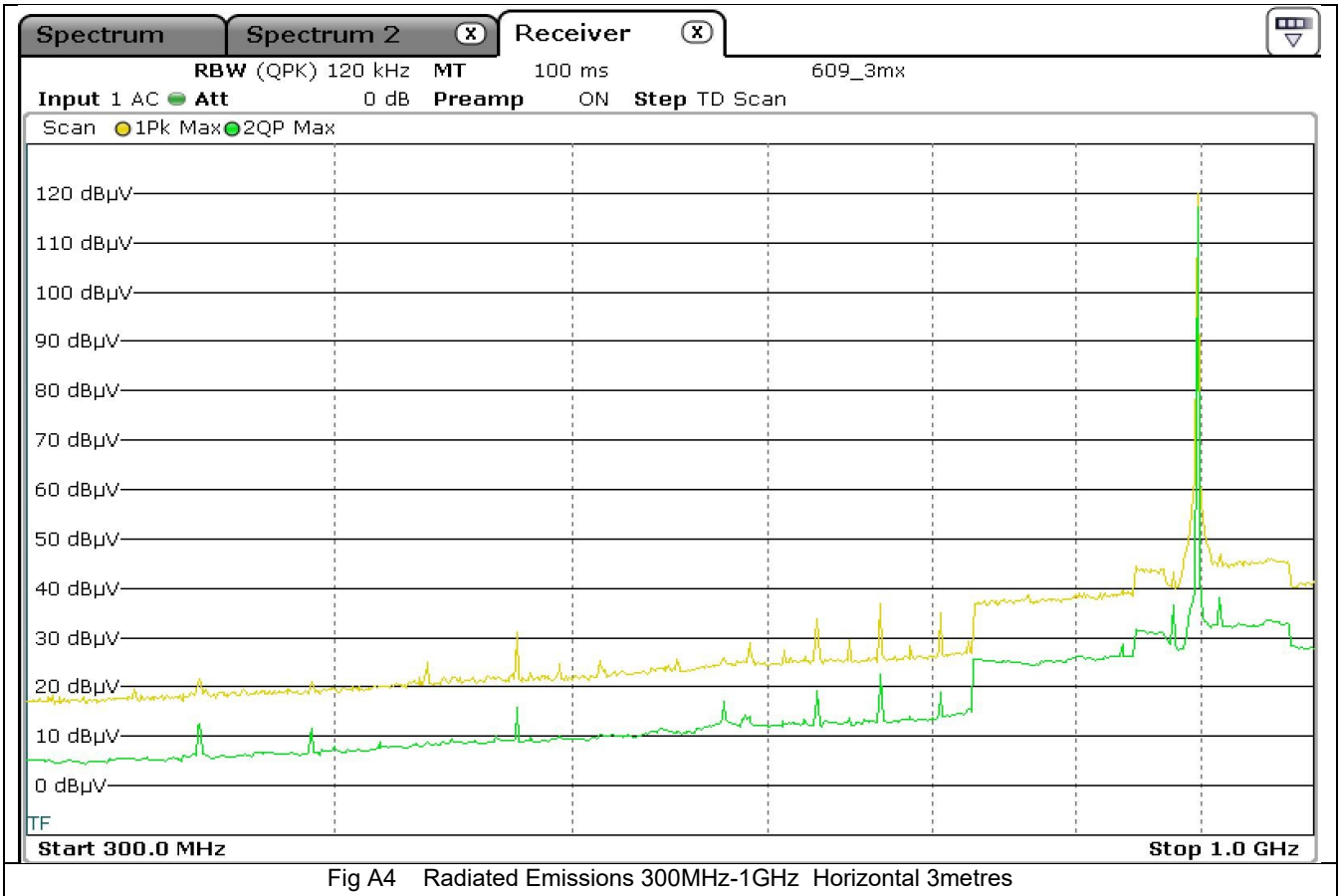

Fig A4 Radiated Emissions 300MHz-1GHz Horizontal 3metres

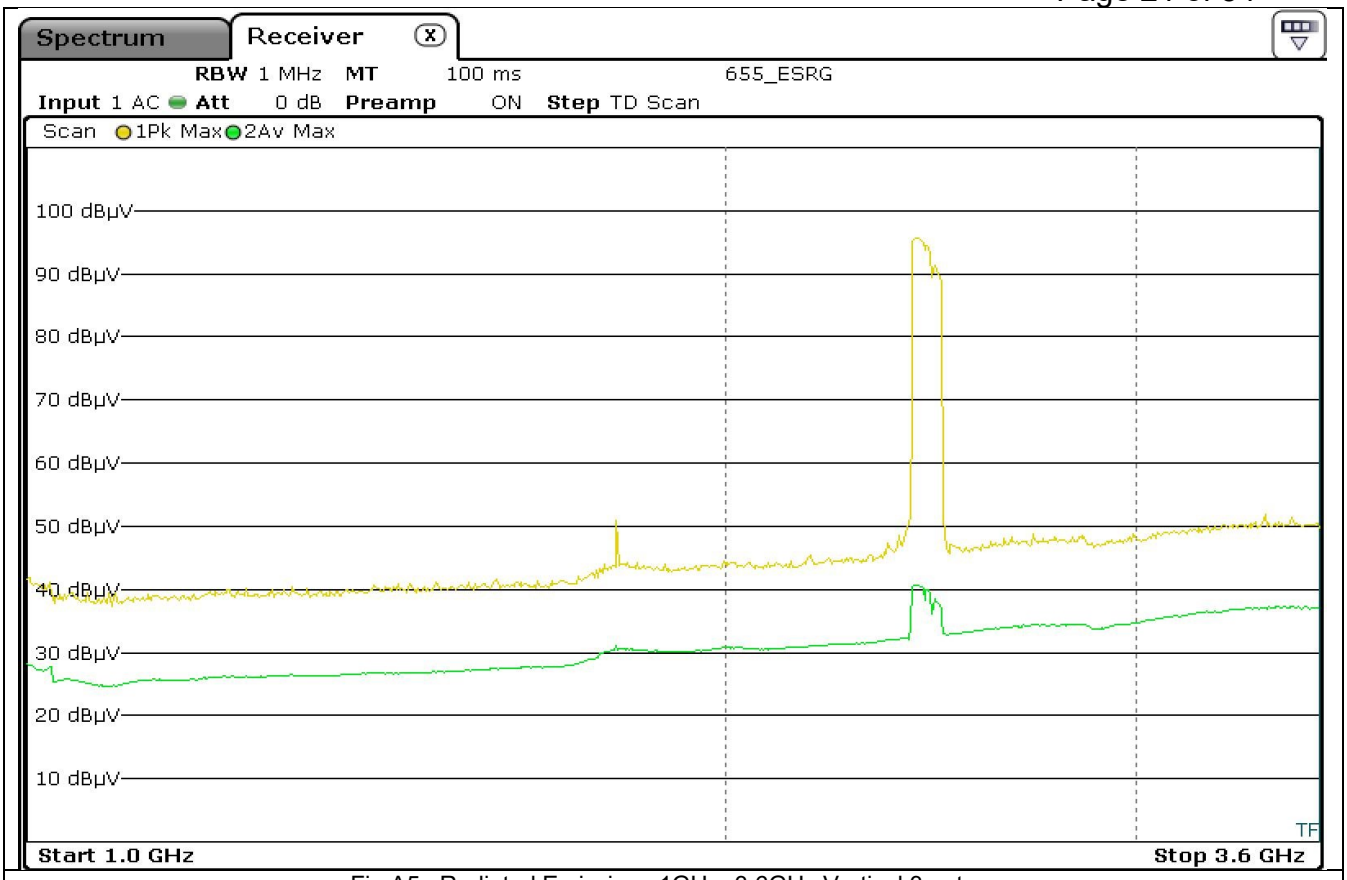

Fig A5 Radiated Emissions 1GHz -3.6GHz Vertical 3metres

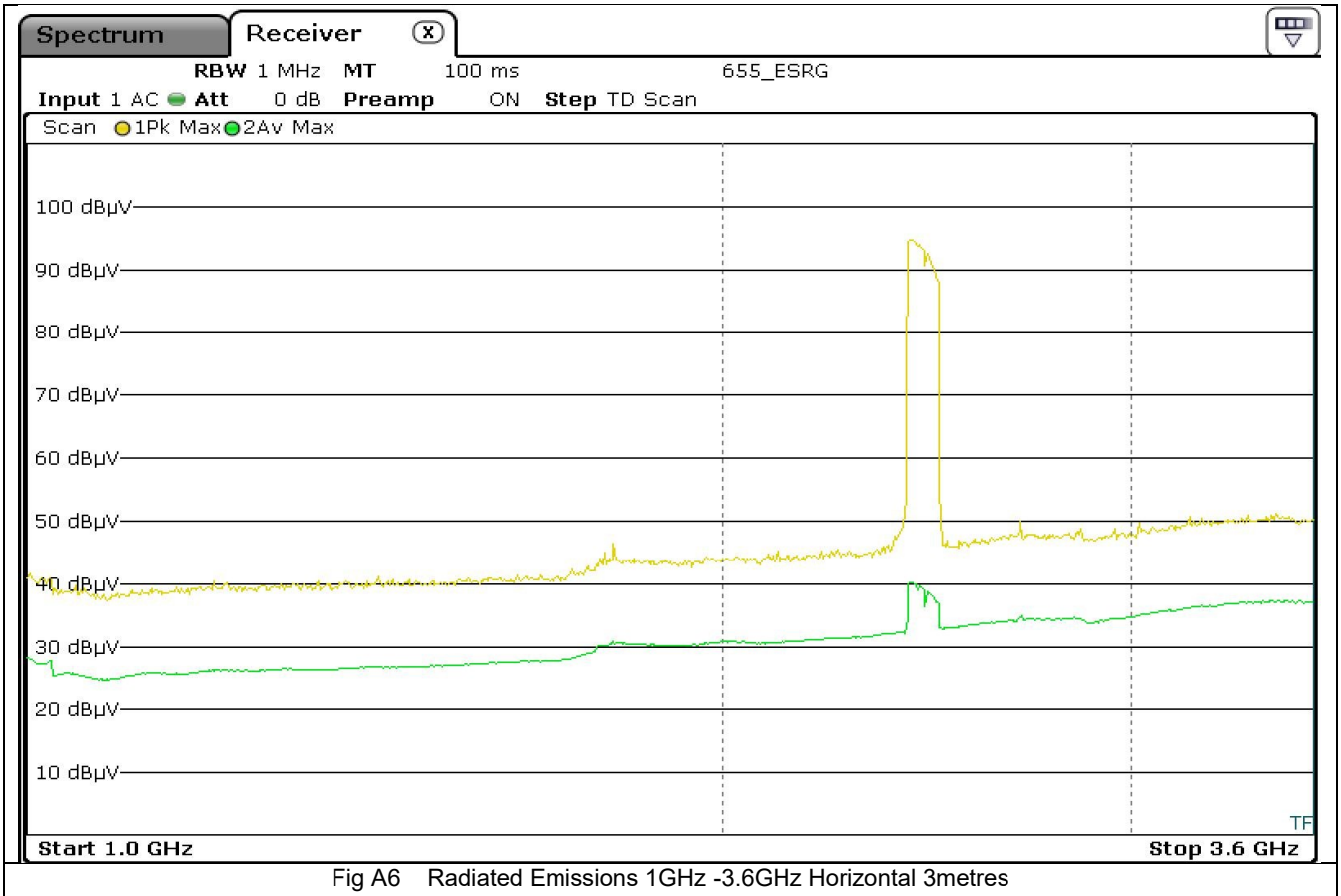

Fig A6 Radiated Emissions 1GHz -3.6GHz Horizontal 3metres

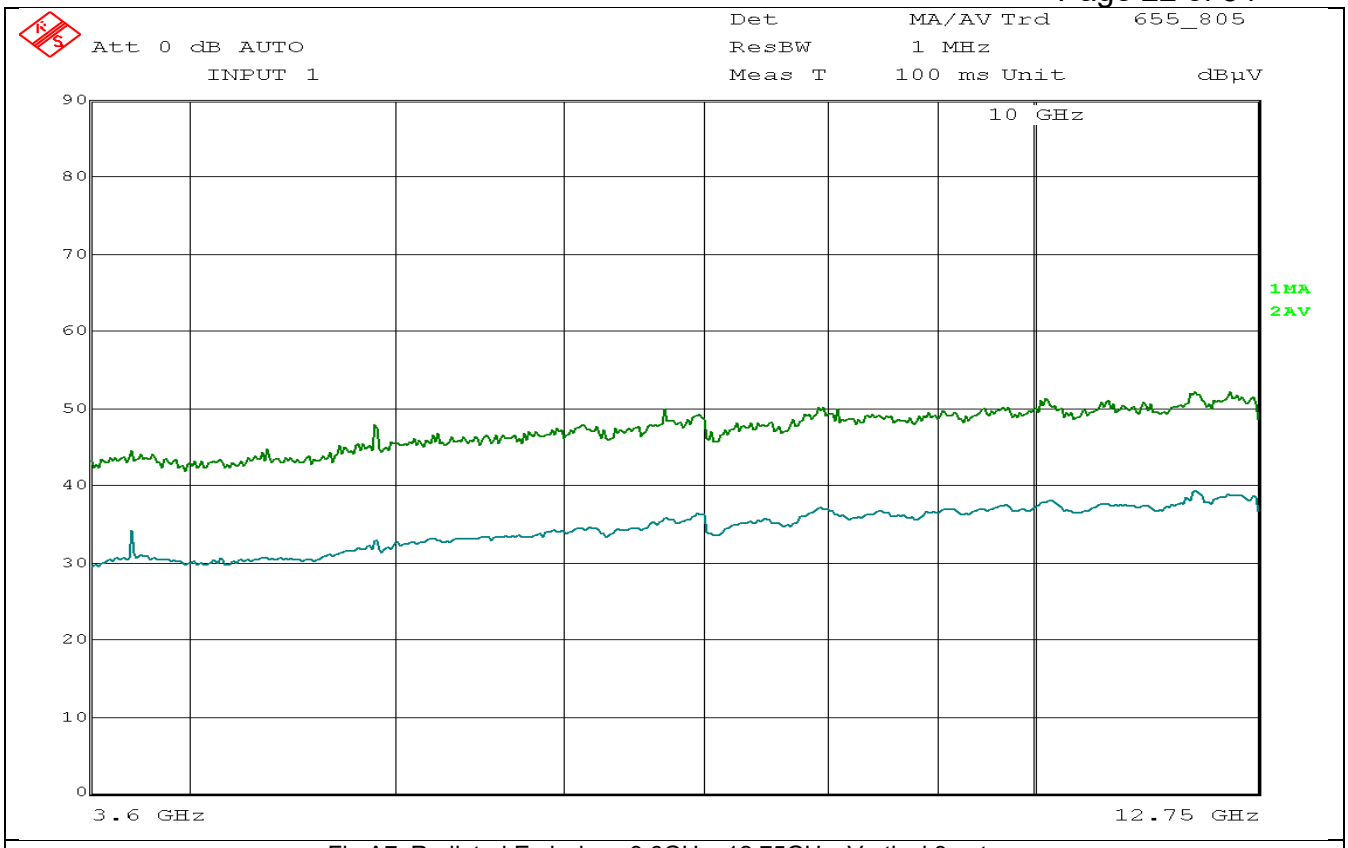

Fig A7 Radiated Emissions 3.6GHz -12.75GHz Vertical 3metres

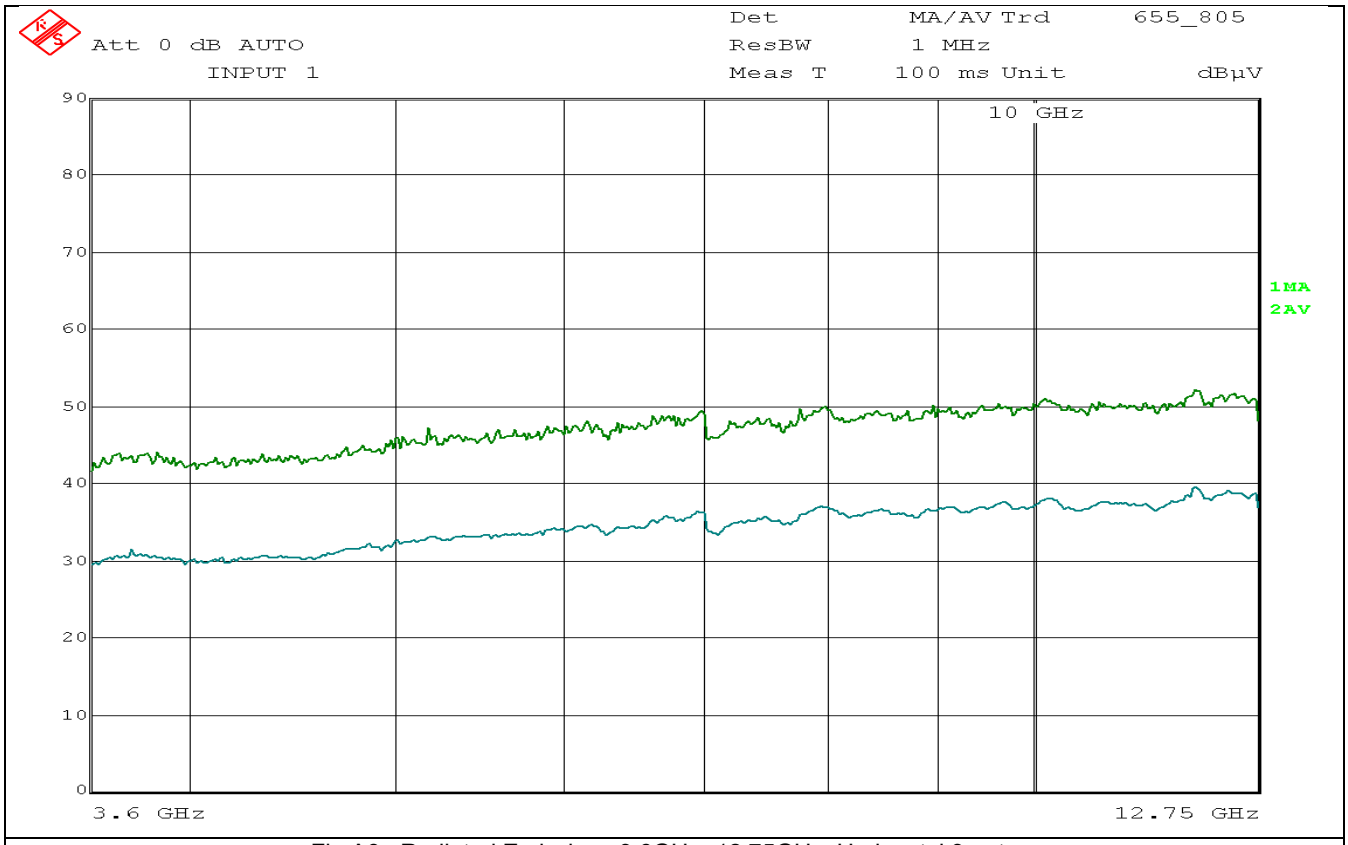

Fig A8 Radiated Emissions 3.6GHz -12.75GHz Horizontal 3metres

Appendix B Scans for Radiated Spurious Emissions NBIOT Band20 and BLE

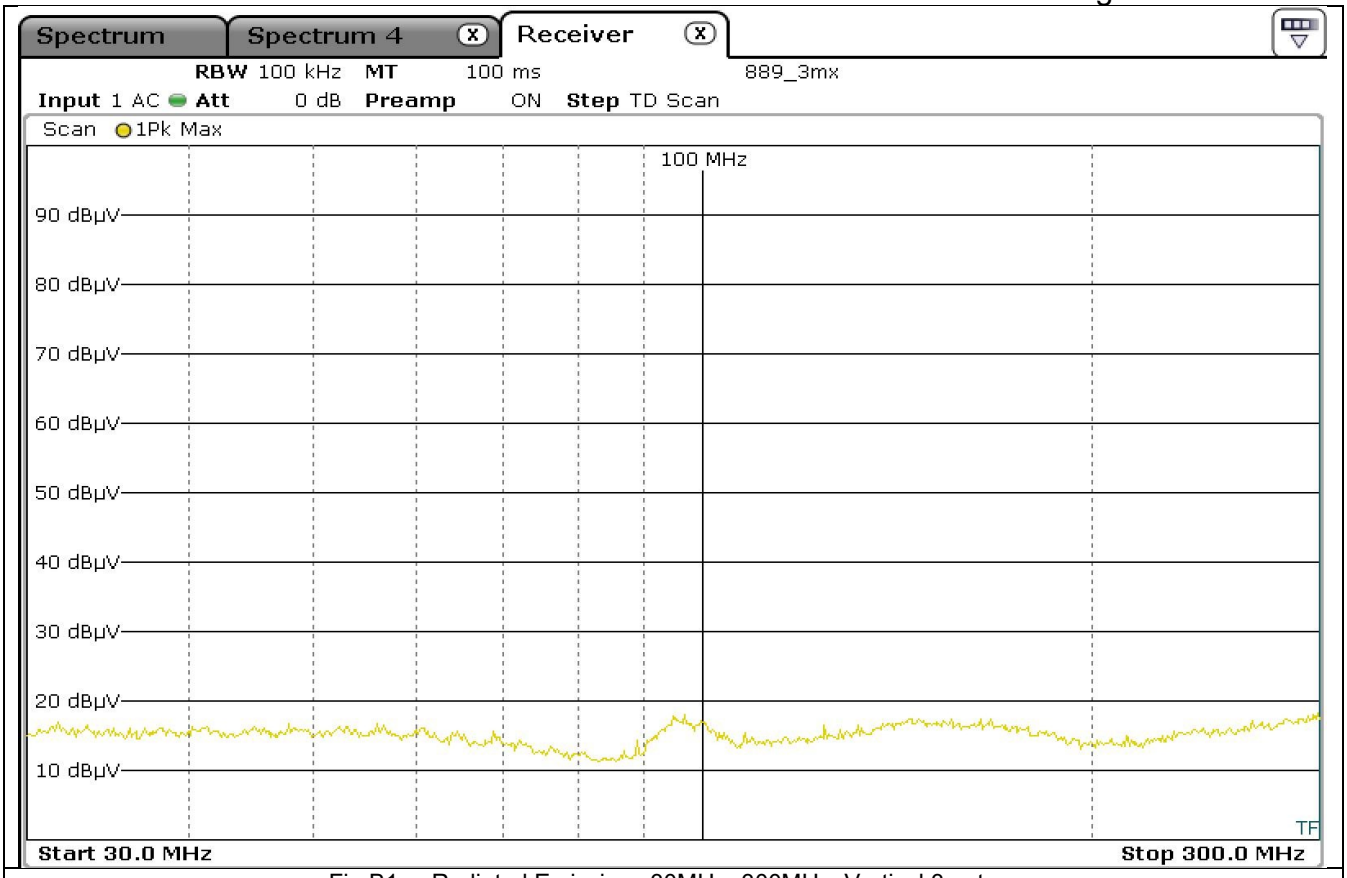

Fig B1 Radiated Emissions 30MHz -300MHz Vertical 3metres

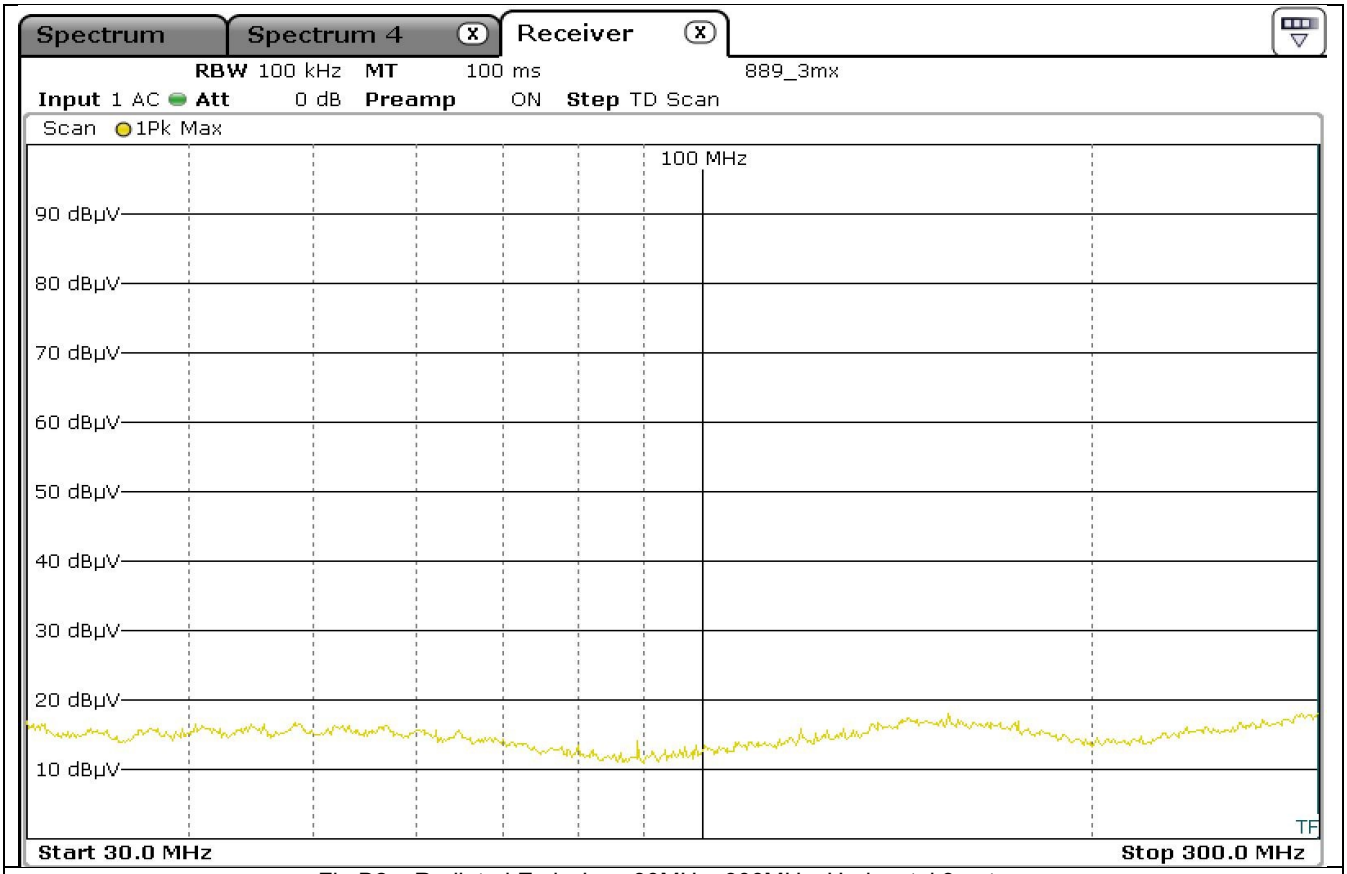

Fig B2 Radiated Emissions 30MHz -300MHz Horizontal 3metres

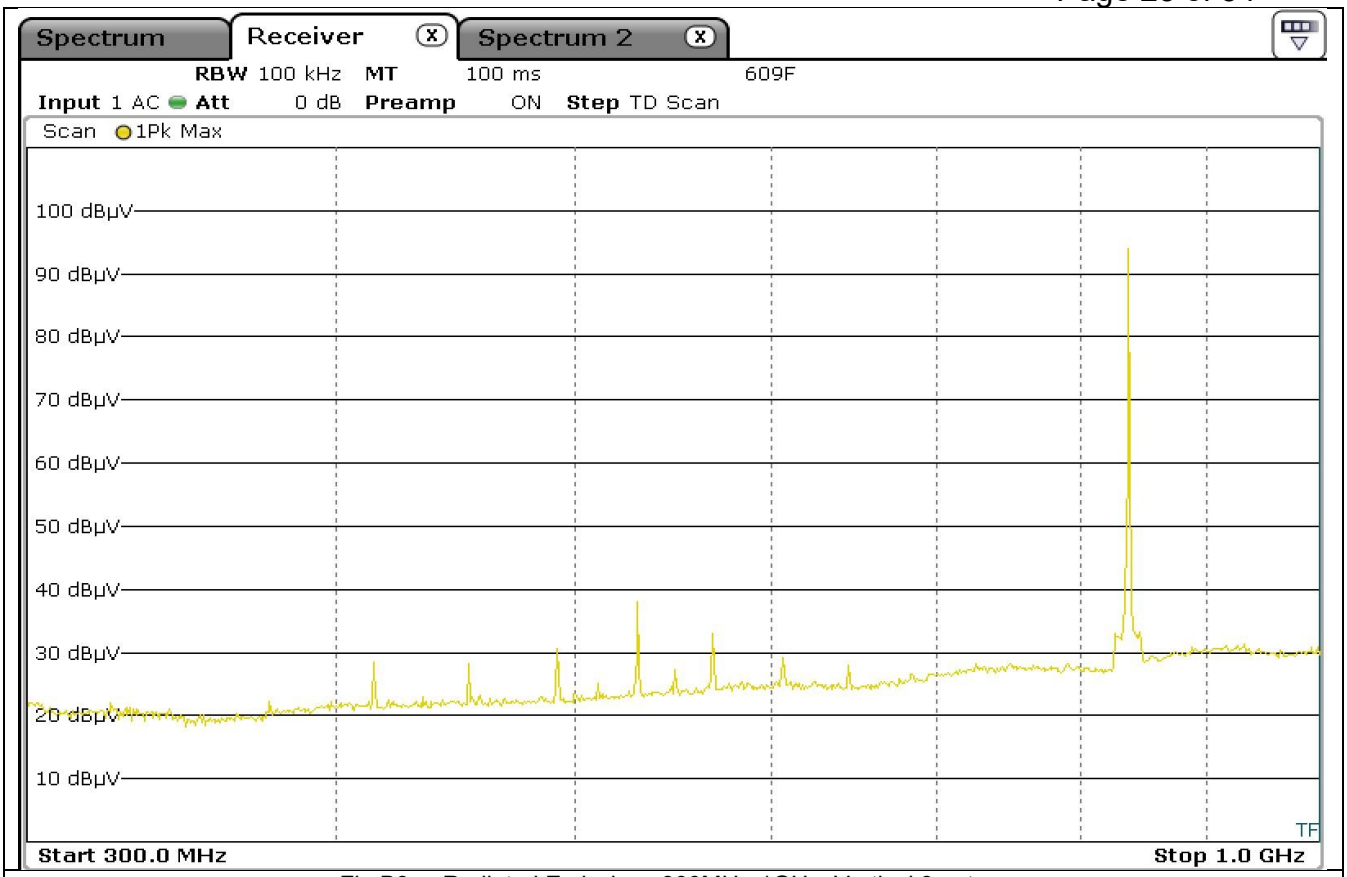

Fig B3 Radiated Emissions 300MHz-1GHz Vertical 3metres

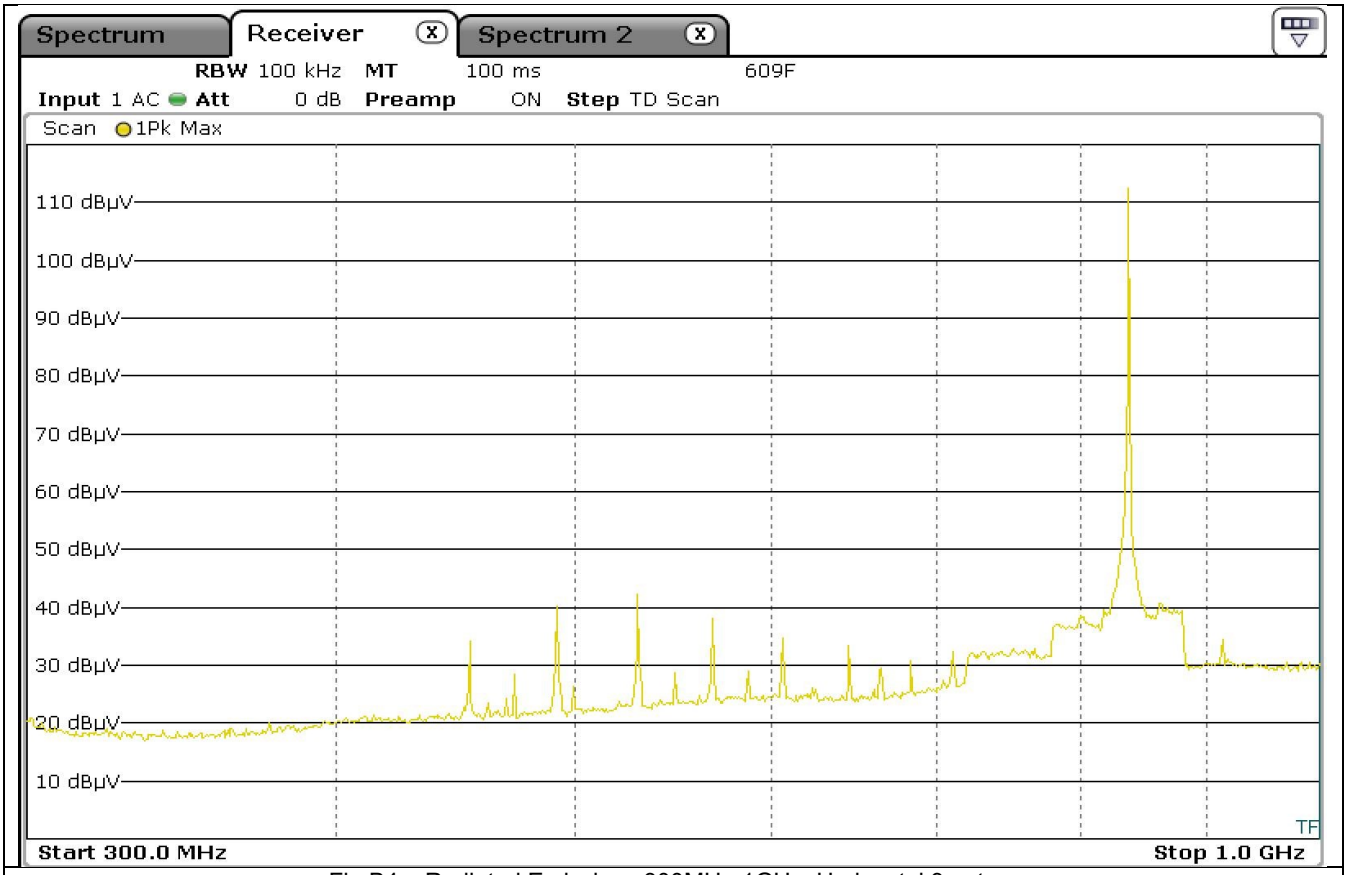

Fig B4 Radiated Emissions 300MHz-1GHz Horizontal 3metres

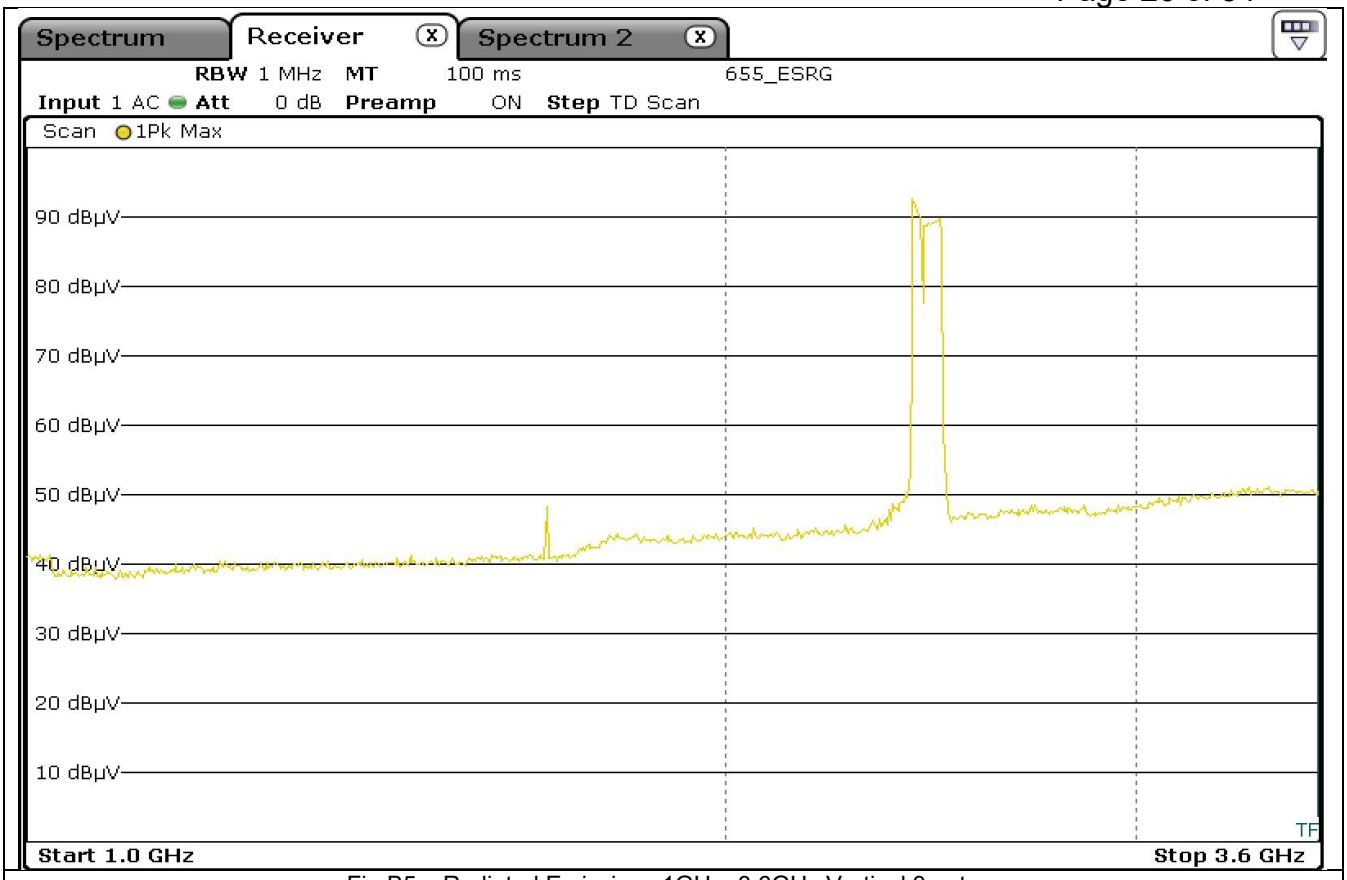

Fig B5 Radiated Emissions 1GHz -3.6GHz Vertical 3metres

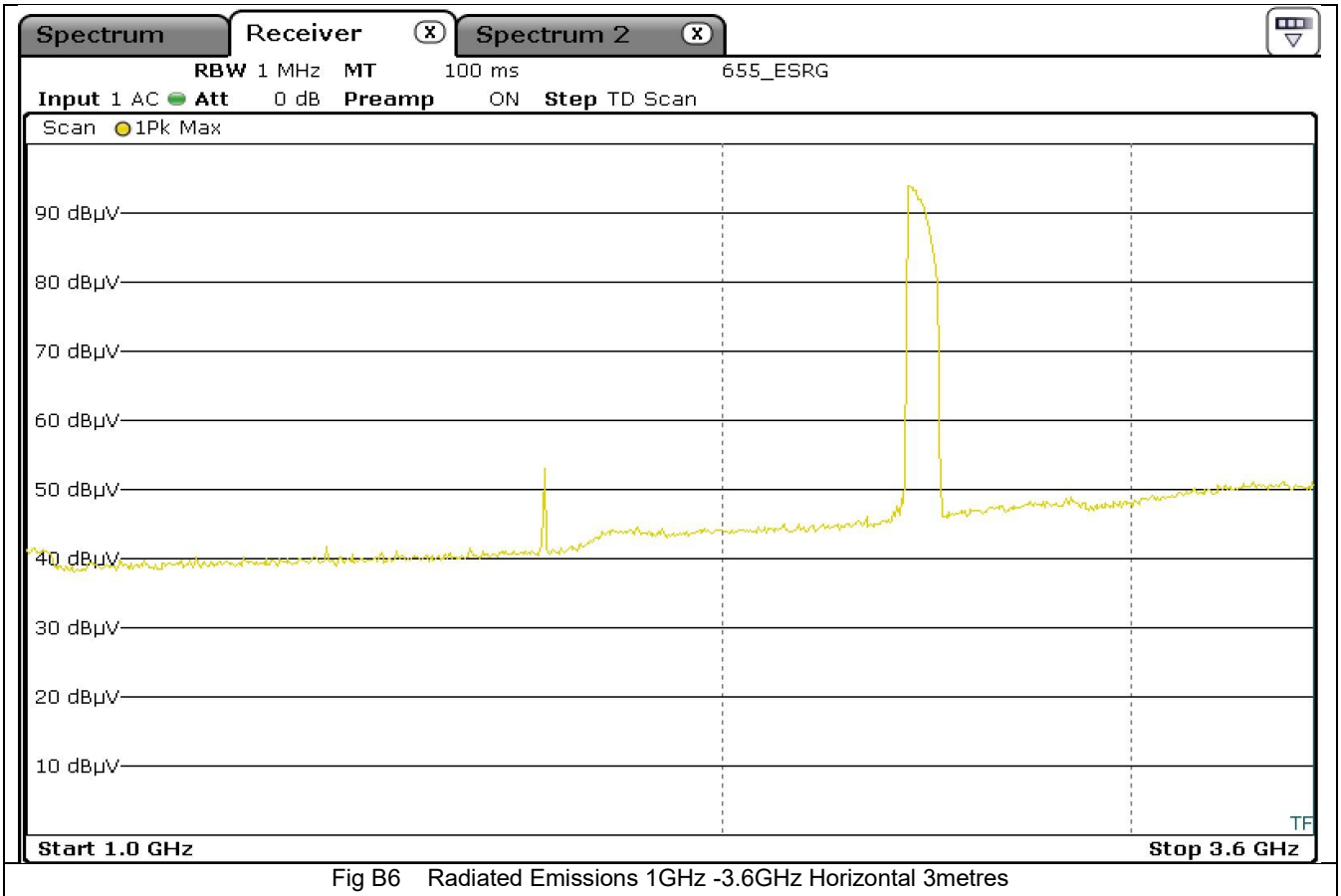

Fig B6 Radiated Emissions 1GHz -3.6GHz Horizontal 3metres

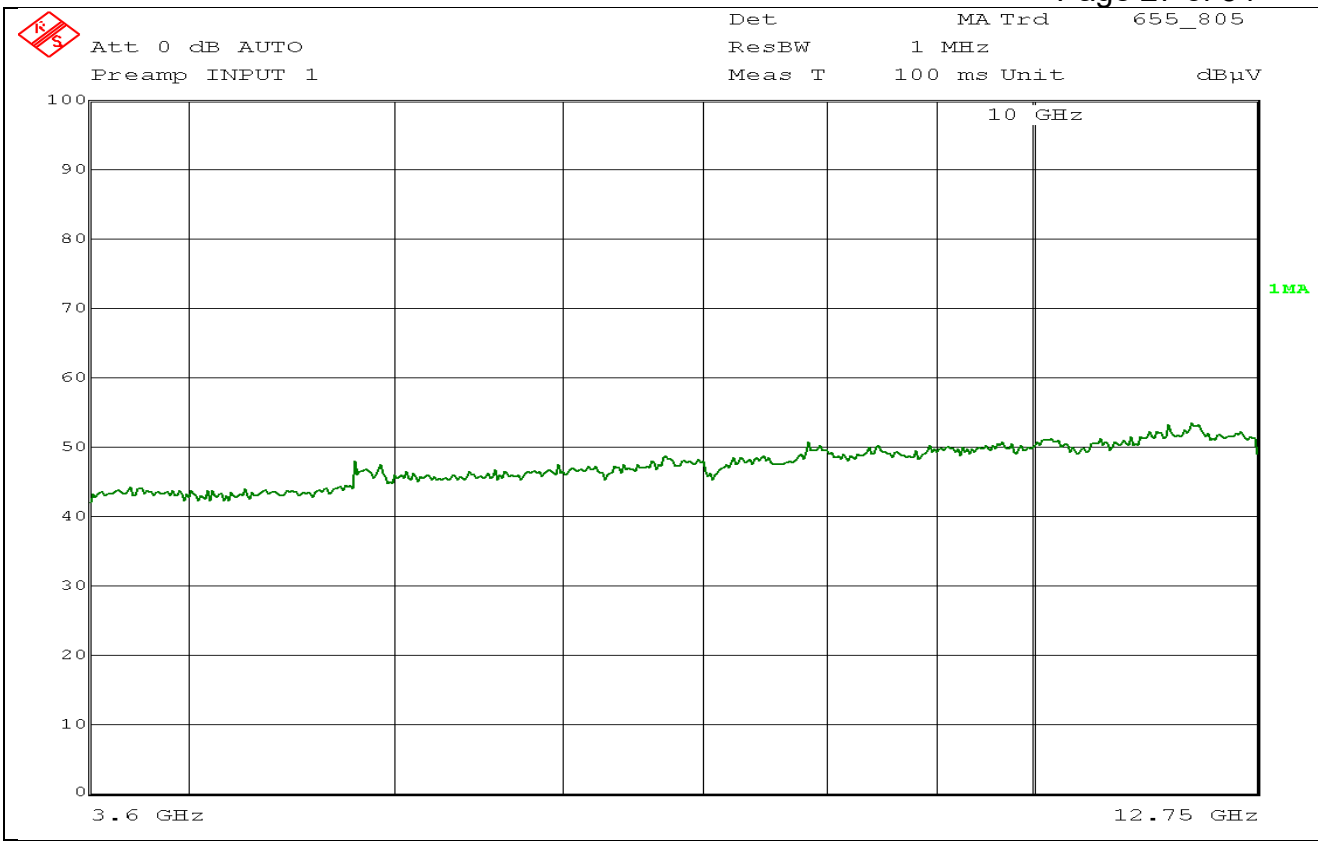

Fig B7 Radiated Emissions 3.6GHz -12.75GHz Vertical 3metres

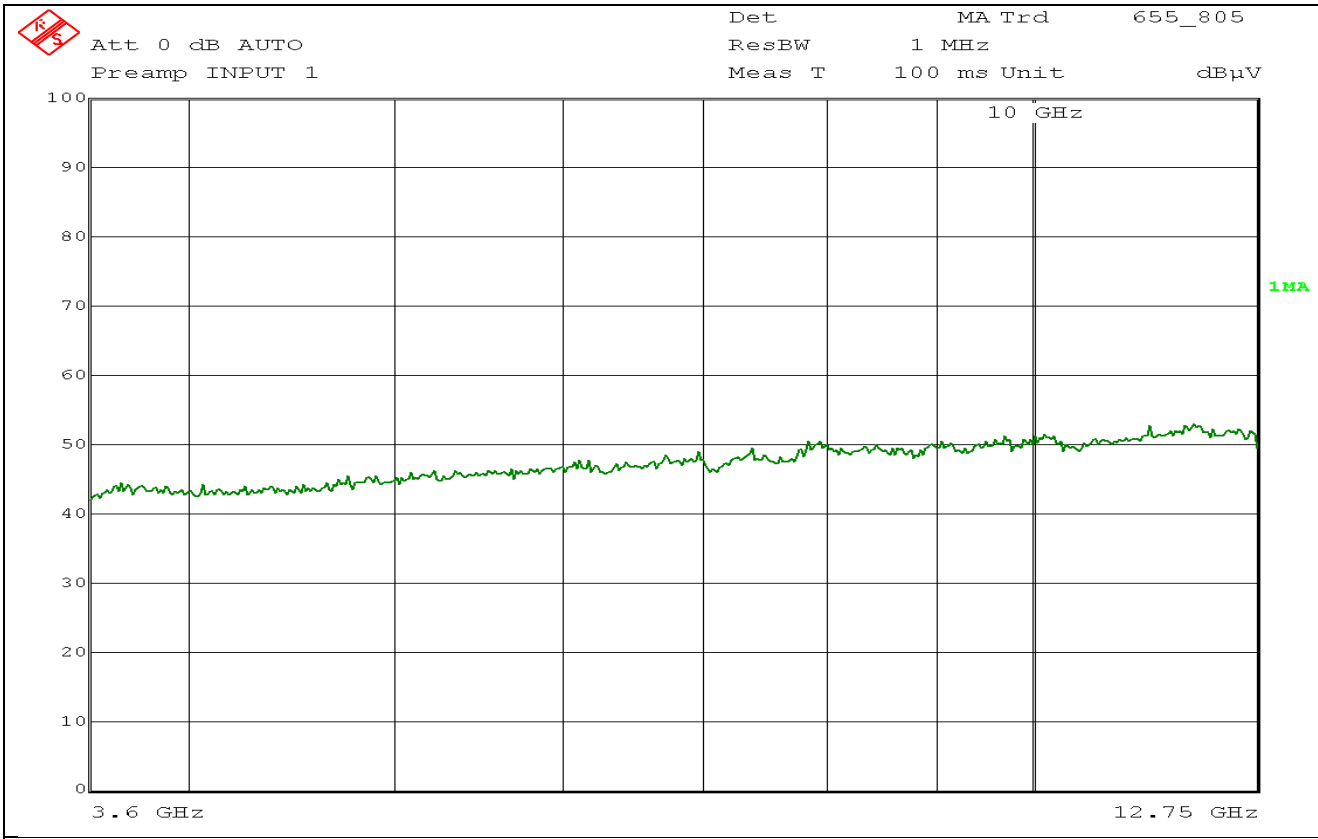

Fig B8 Radiated Emissions 3.6GHz -12.75GHz Horizontal 3metres

Appendix C Scans for Radiated Spurious Emissions CAT M1 Band 8 and BLE

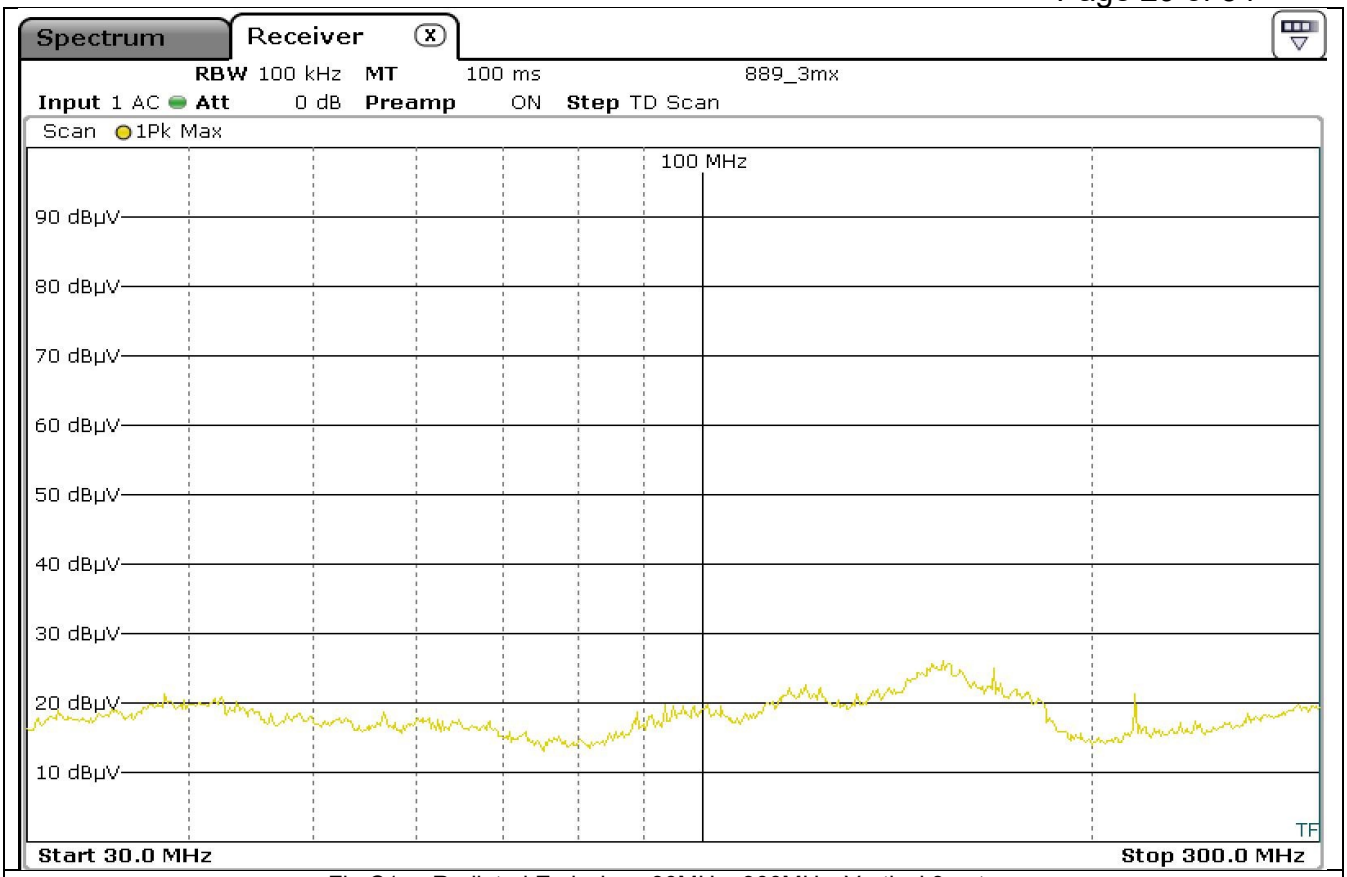

Fig C1 Radiated Emissions 30MHz -300MHz Vertical 3metres

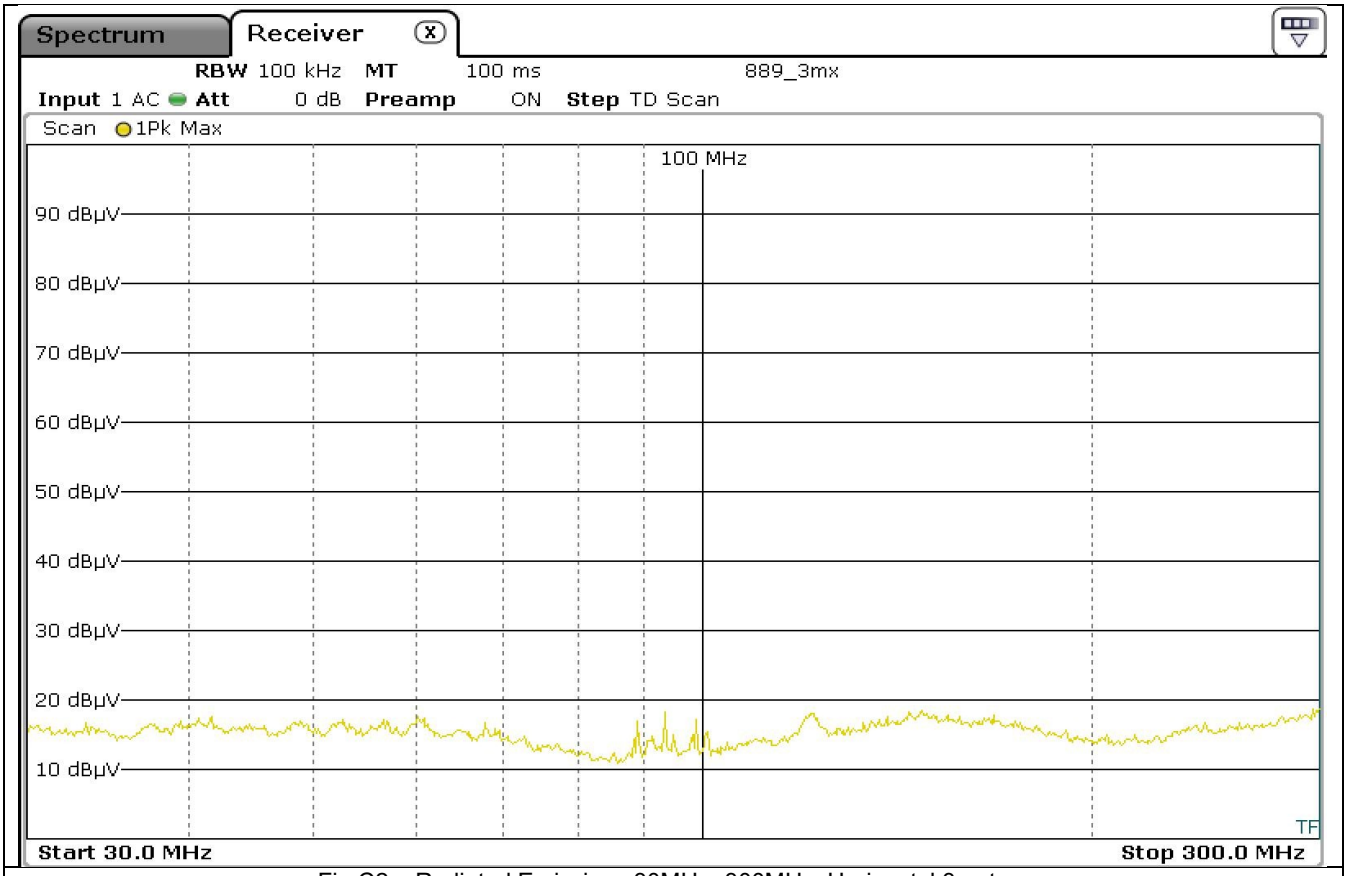

Fig C2 Radiated Emissions 30MHz -300MHz Horizontal 3metres

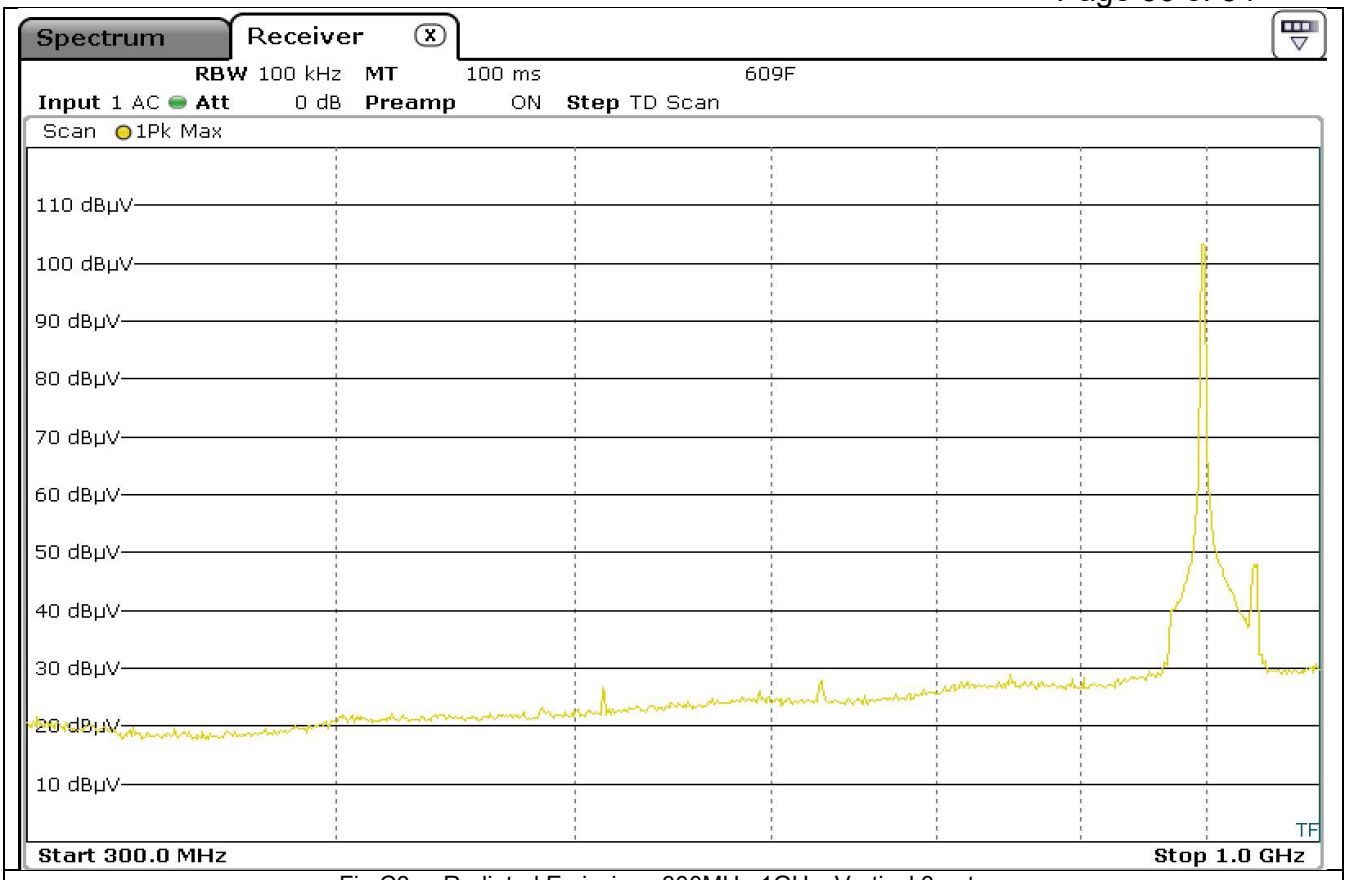

Fig C3 Radiated Emissions 300MHz-1GHz Vertical 3metres

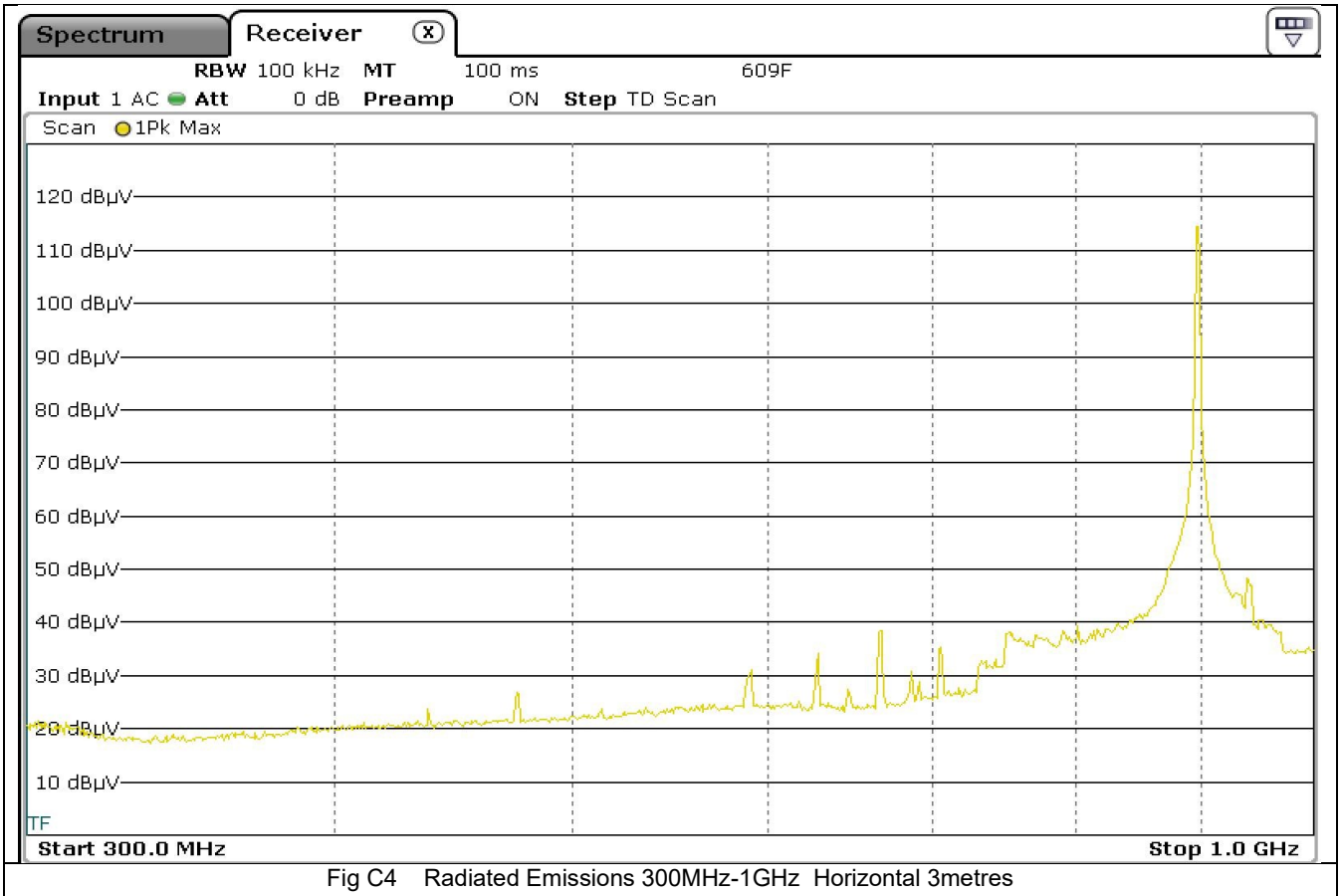

Fig C4 Radiated Emissions 300MHz-1GHz Horizontal 3metres

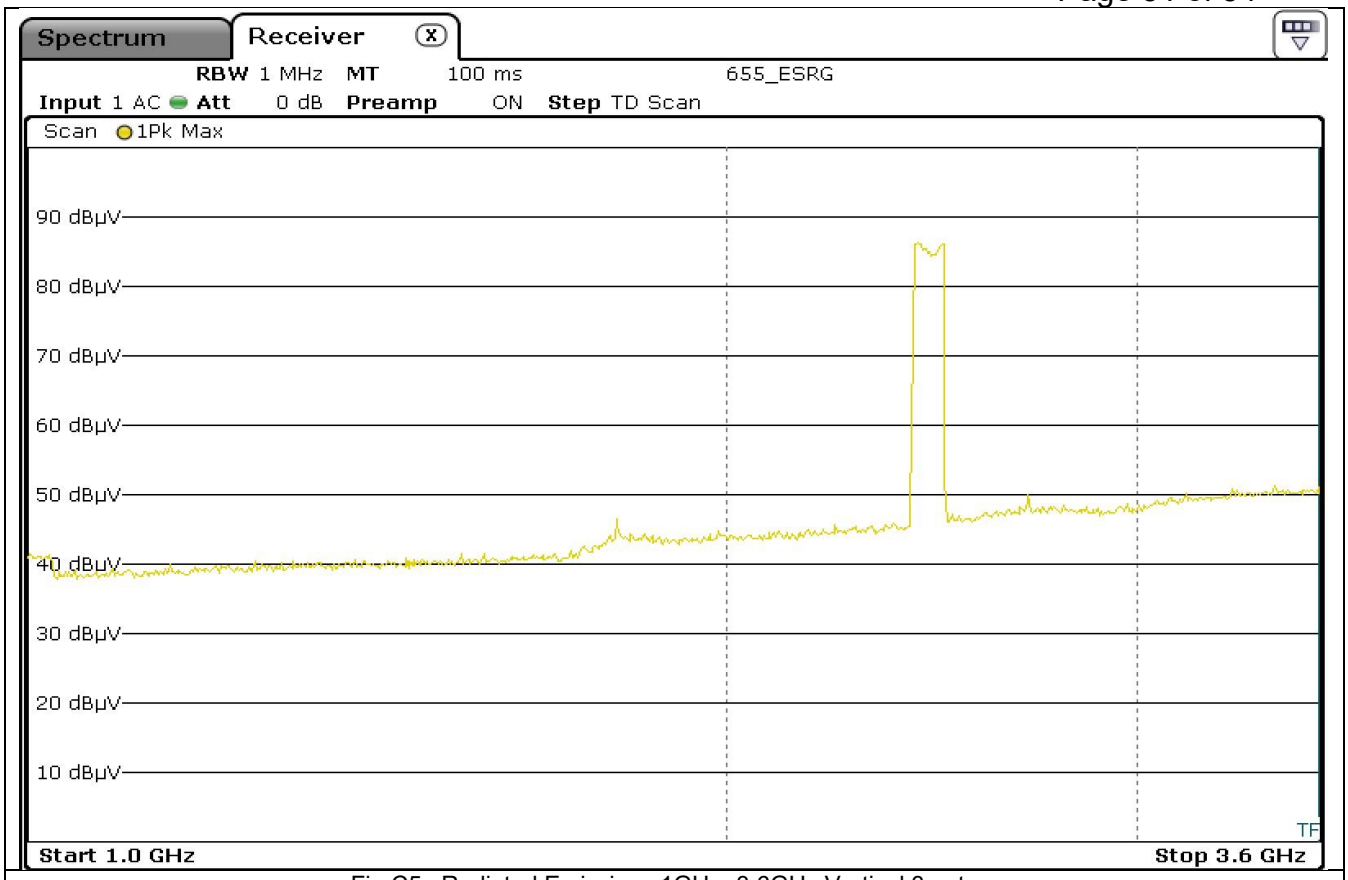

Fig C5 Radiated Emissions 1GHz -3.6GHz Vertical 3metres

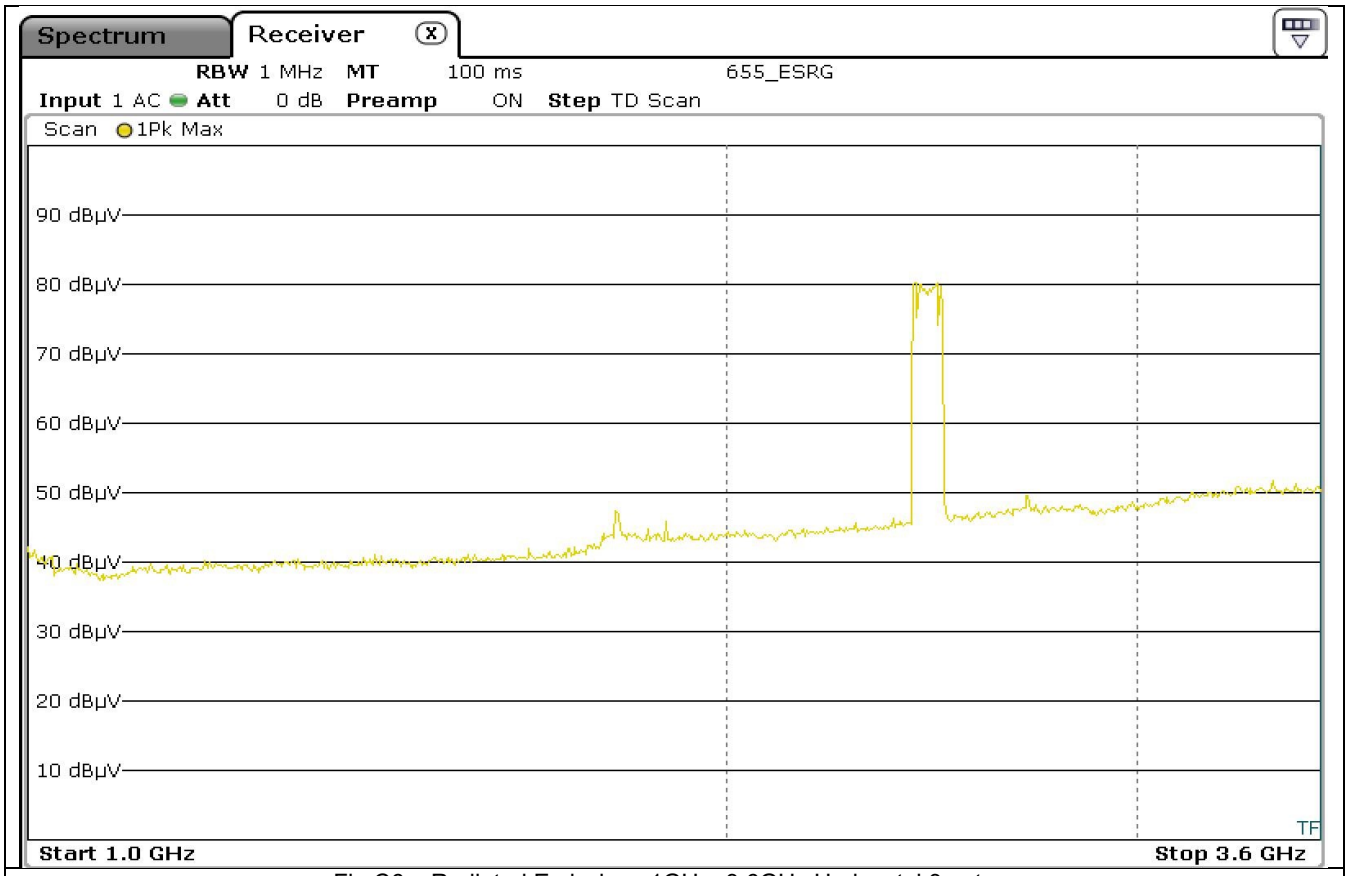

Fig C6 Radiated Emissions 1GHz -3.6GHz Horizontal 3metres

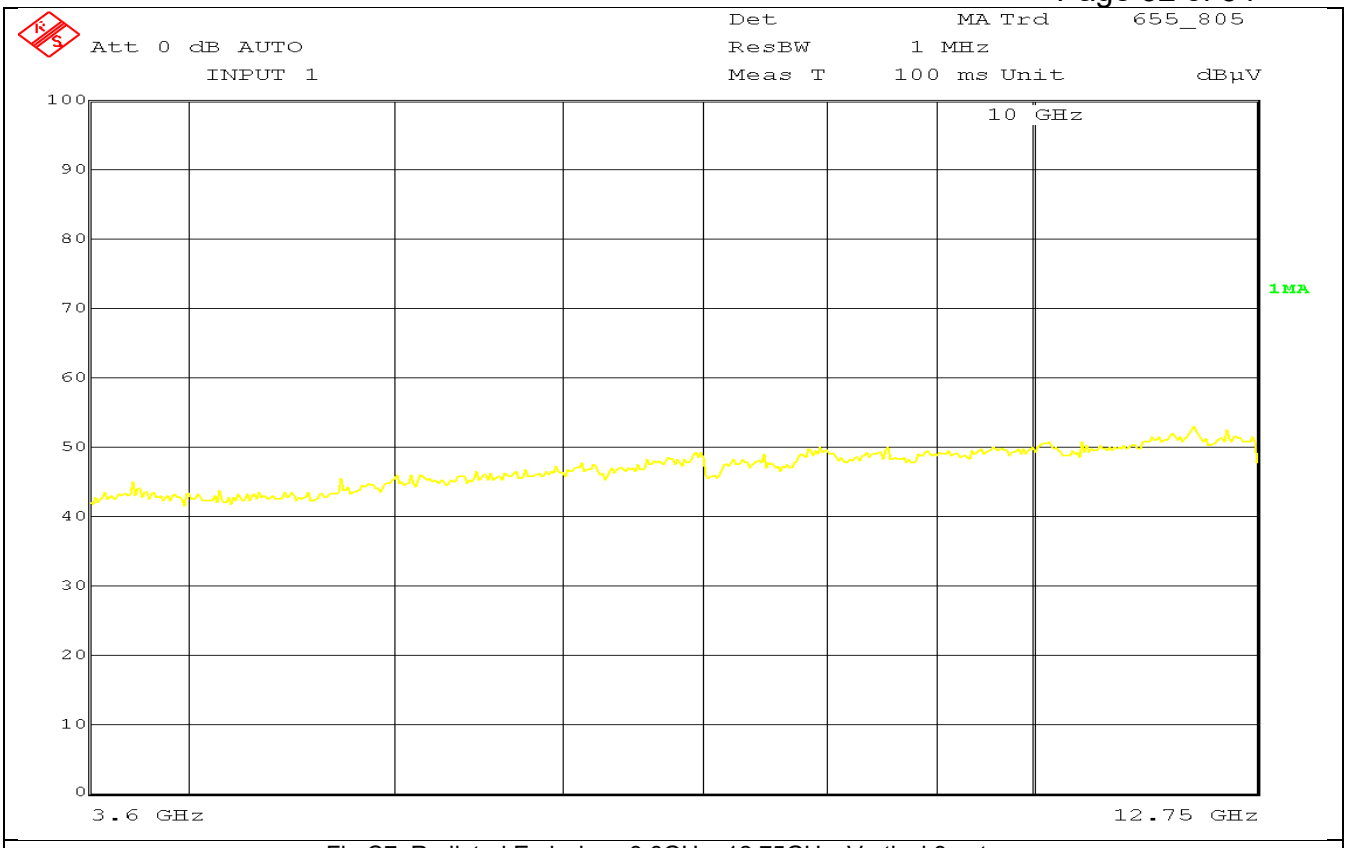

Fig C7 Radiated Emissions 3.6GHz -12.75GHz Vertical 3metres

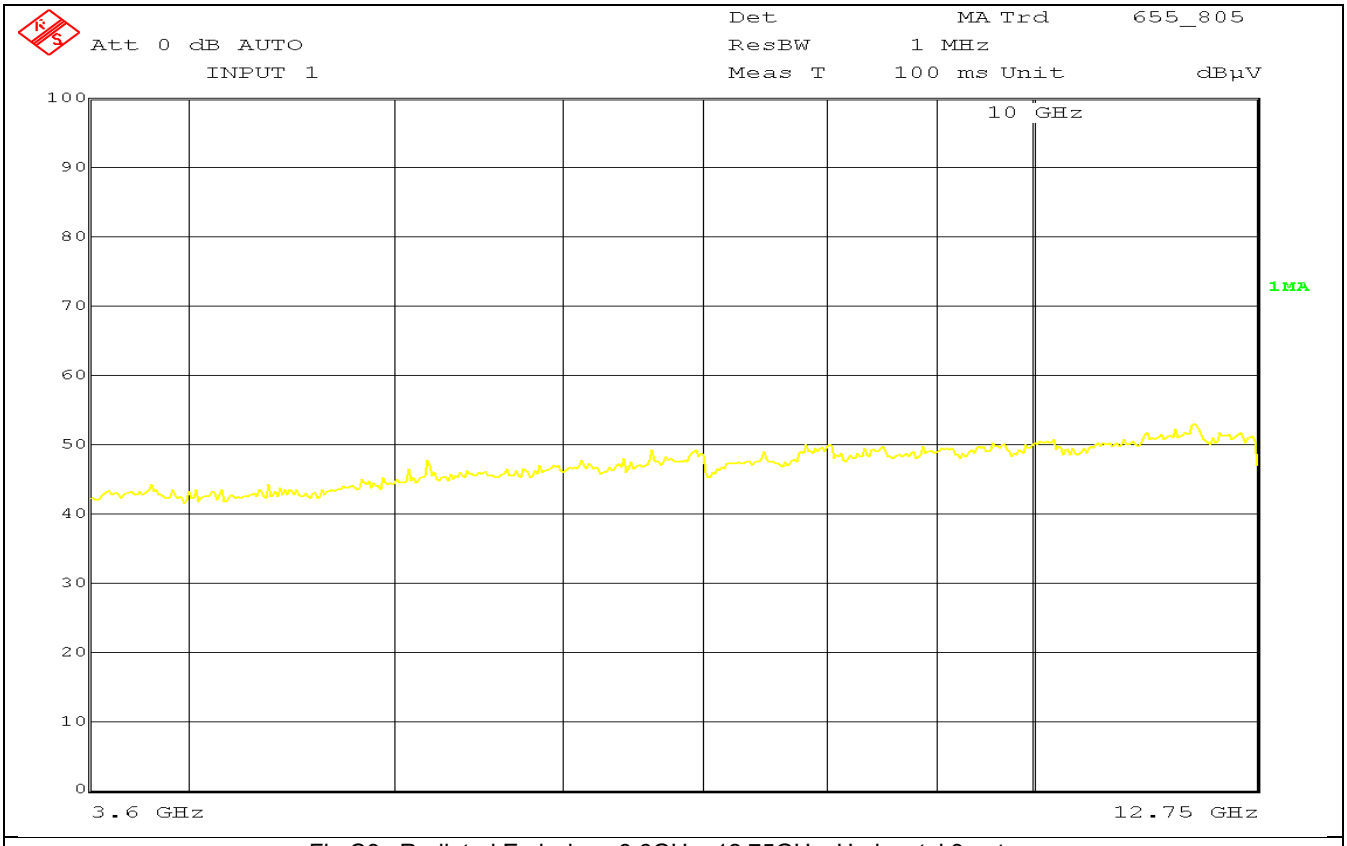

Fig C8 Radiated Emissions 3.6GHz -12.75GHz Horizontal 3metres

Appendix D Scans for Radiated Spurious Emissions CAT M1 Band 20 and BLE

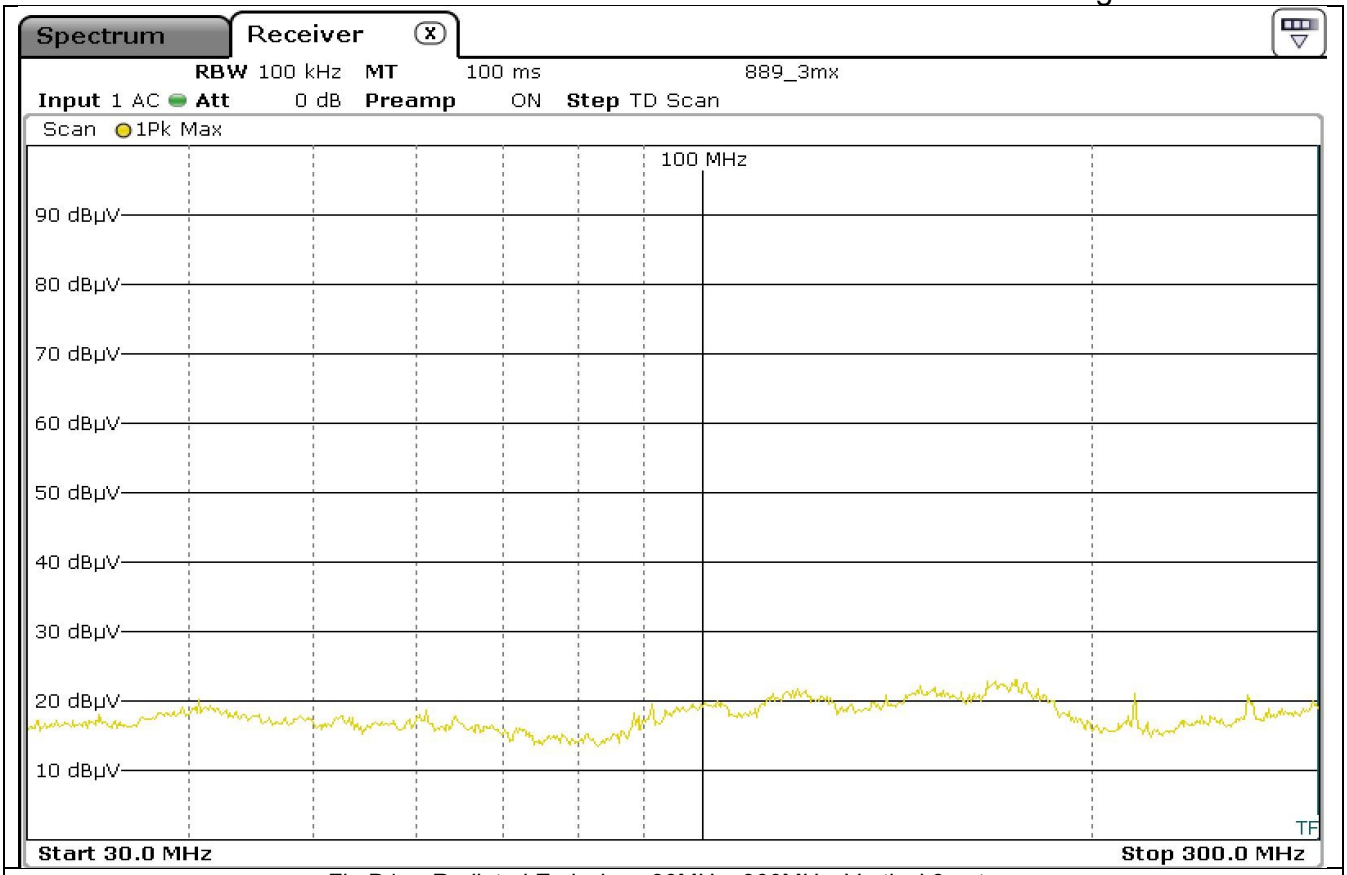

Fig D1 Radiated Emissions 30MHz -300MHz Vertical 3metres

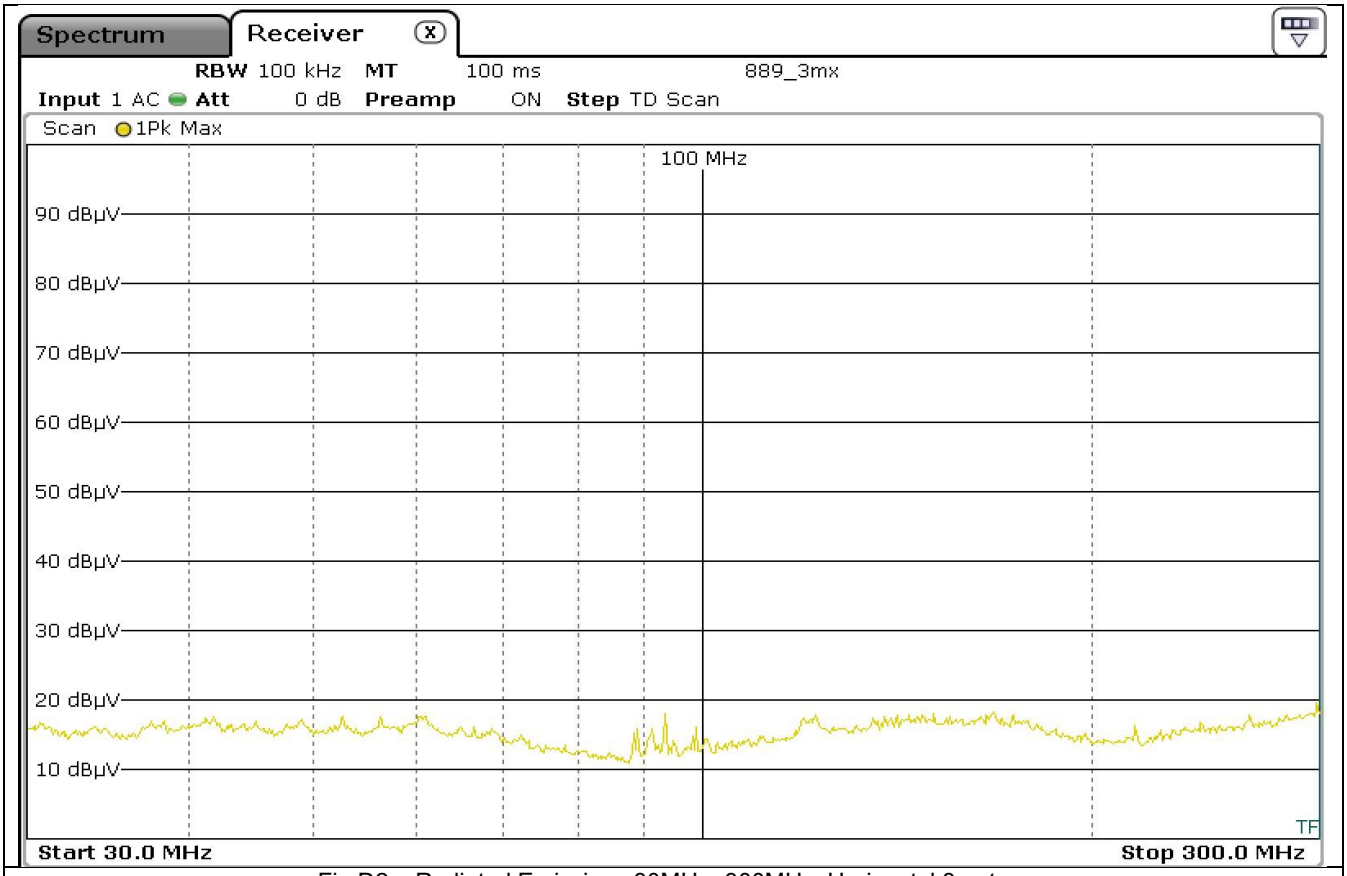

Fig D2 Radiated Emissions 30MHz -300MHz Horizontal 3metres

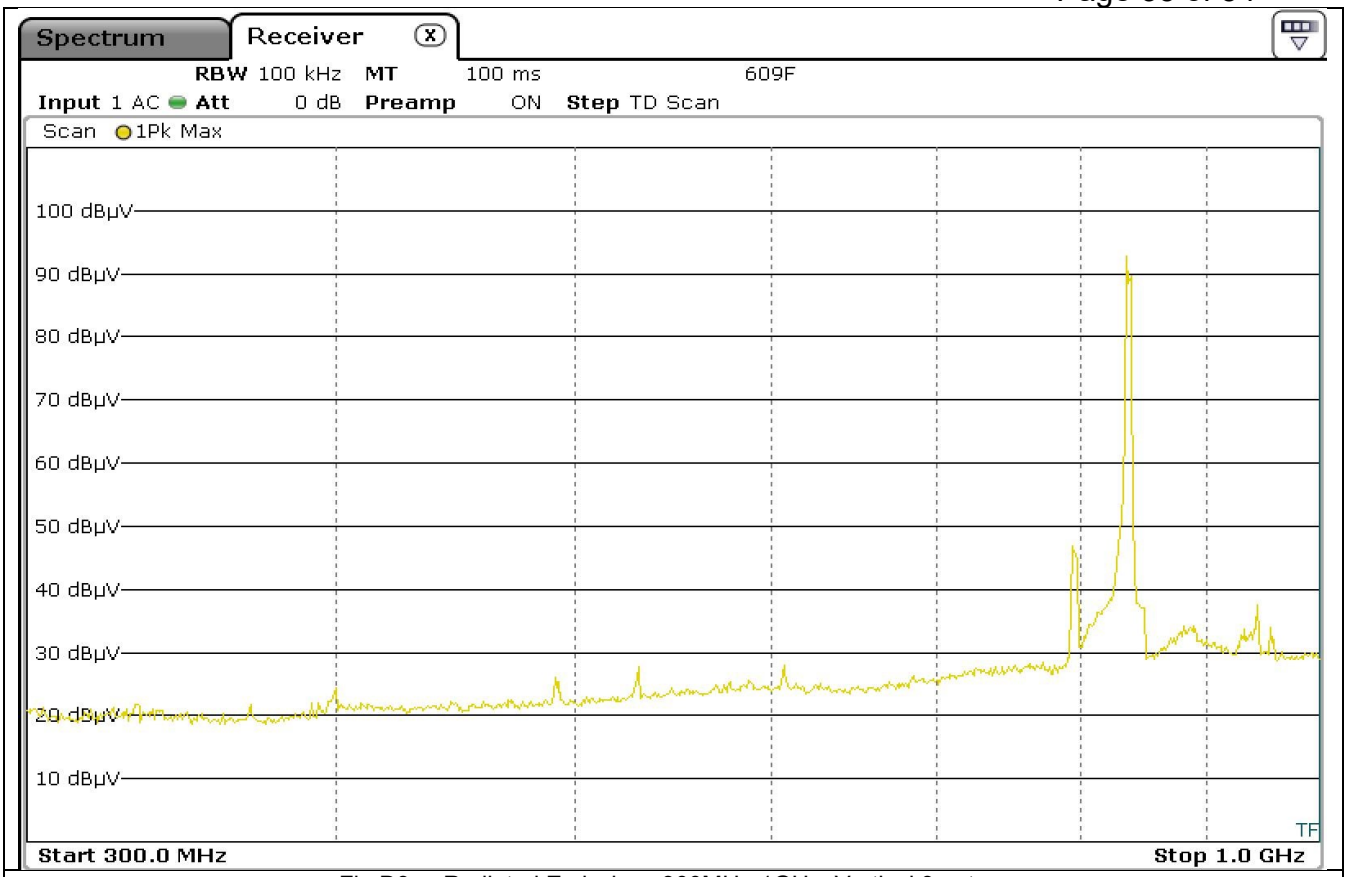

Fig D3 Radiated Emissions 300MHz-1GHz Vertical 3metres

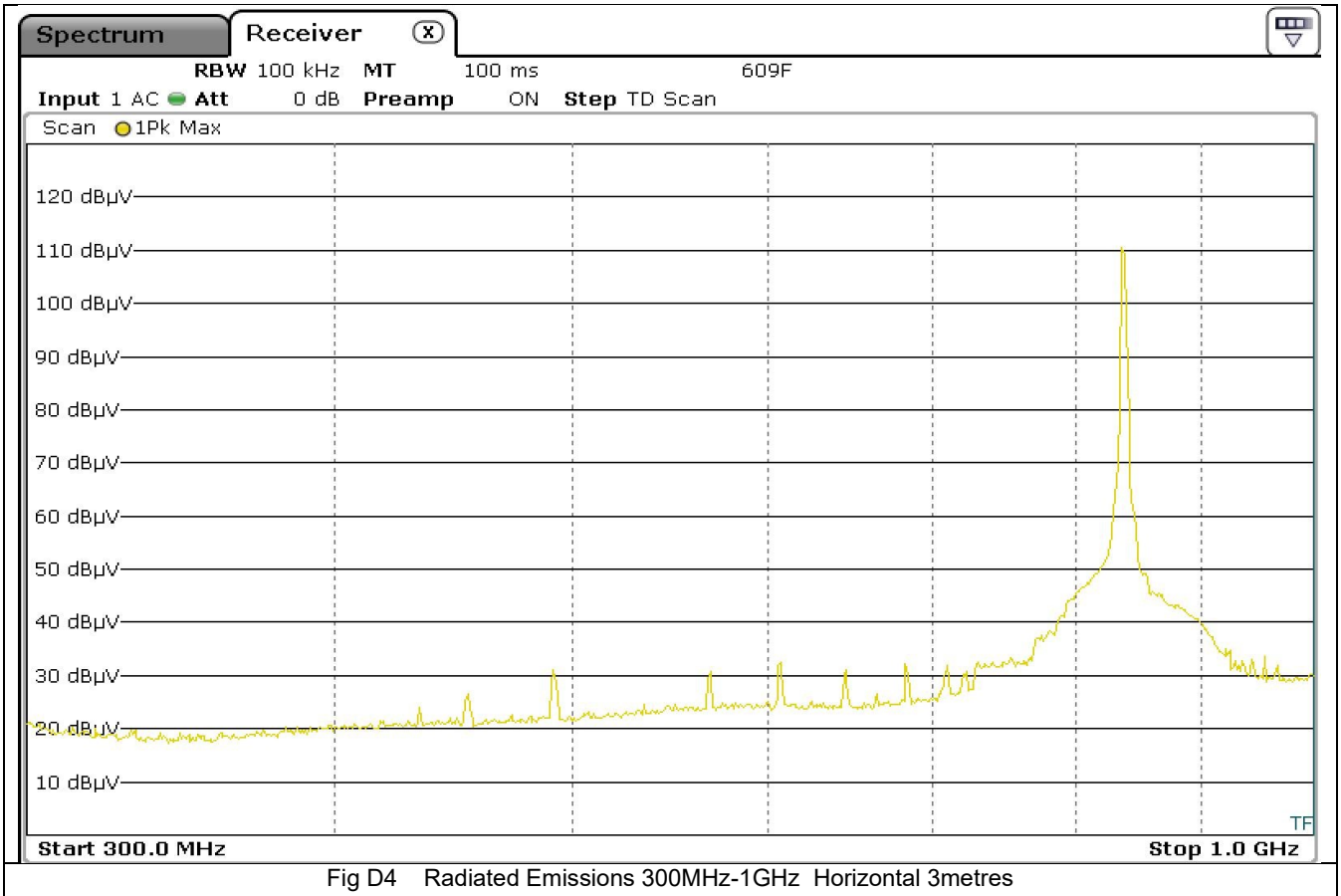

Fig D4 Radiated Emissions 300MHz-1GHz Horizontal 3metres

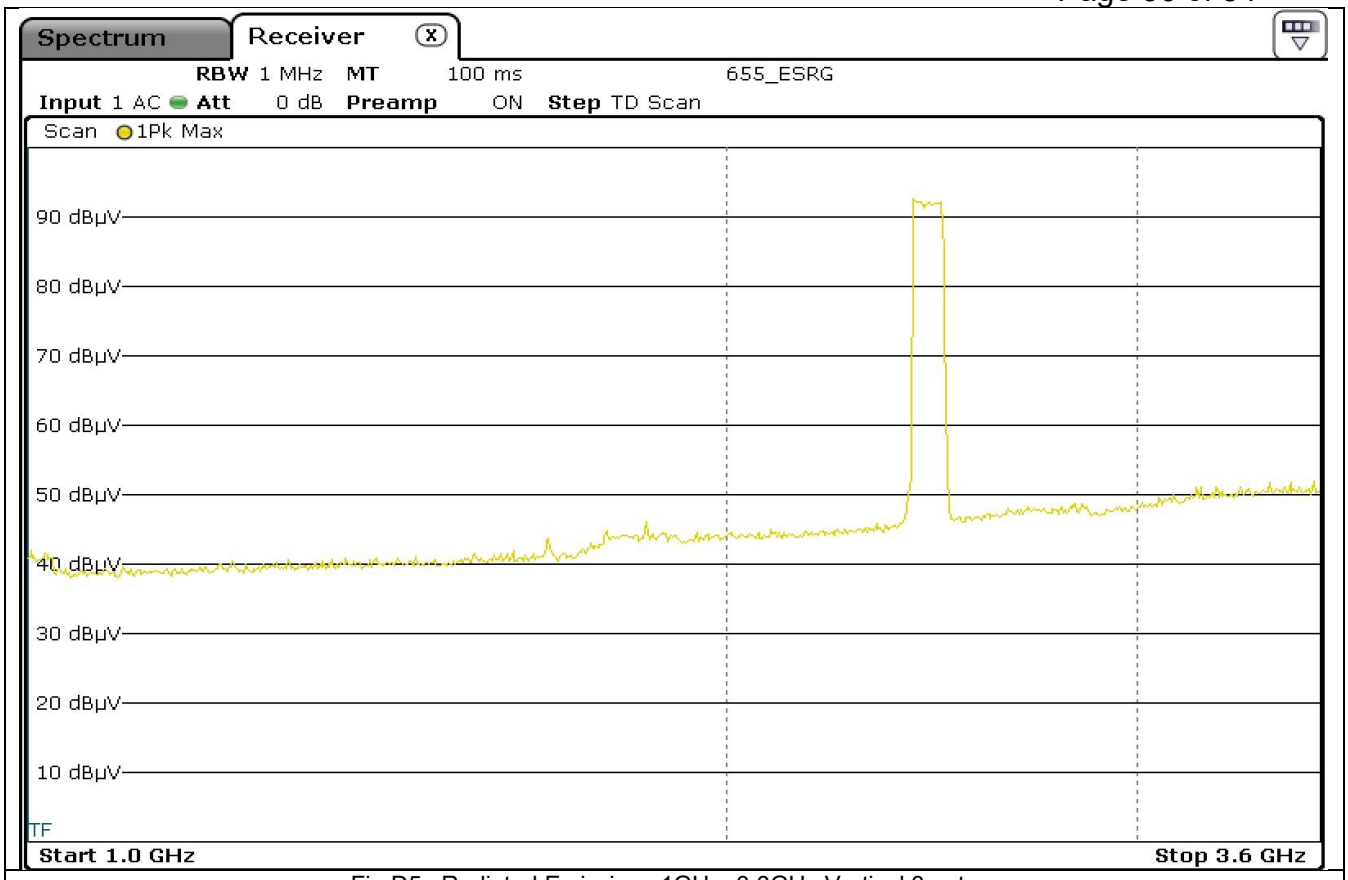

Fig D5 Radiated Emissions 1GHz -3.6GHz Vertical 3metres

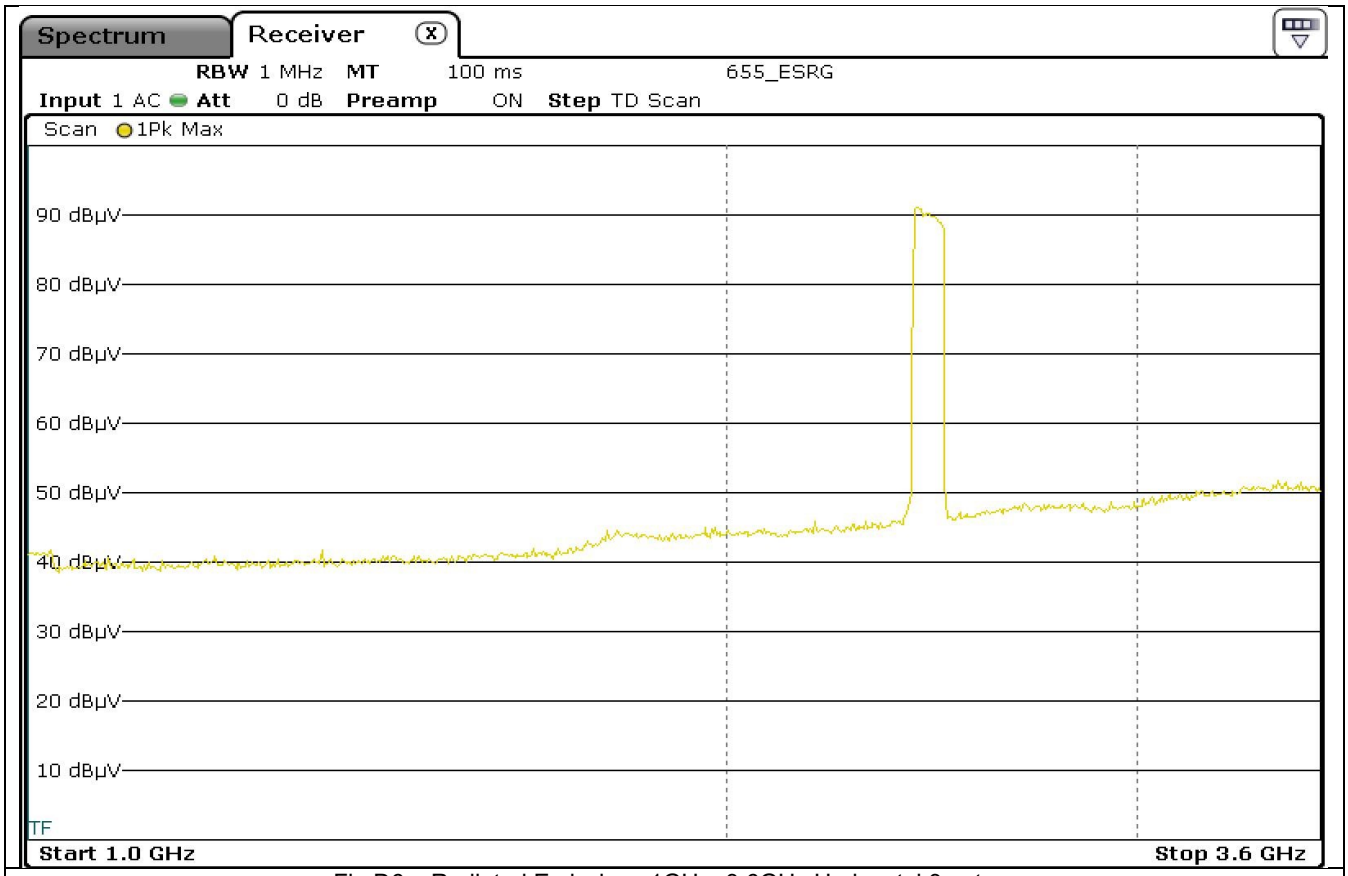

Fig D6 Radiated Emissions 1GHz -3.6GHz Horizontal 3metres

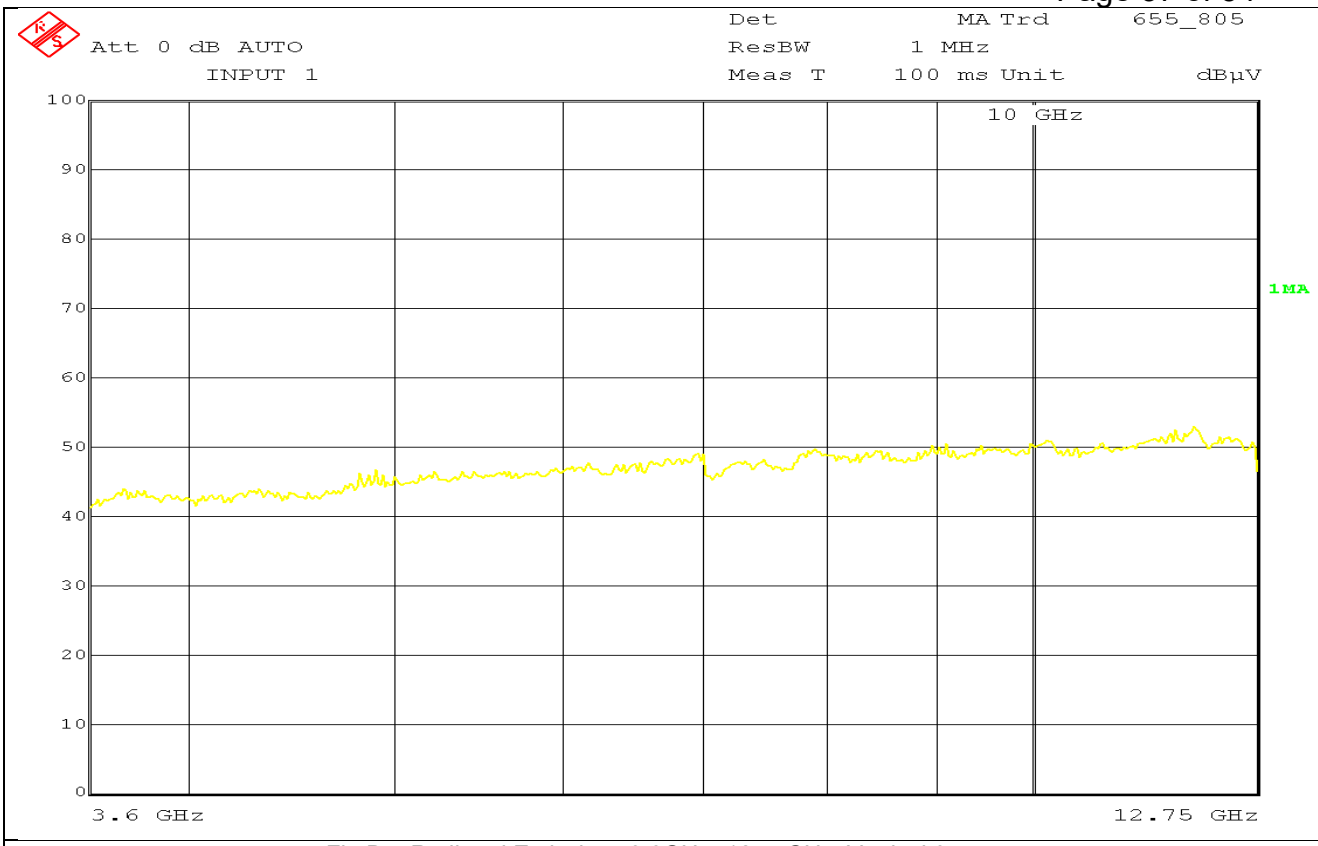

Fig D7 Radiated Emissions 3.6GHz -12.75GHz Vertical 3metres

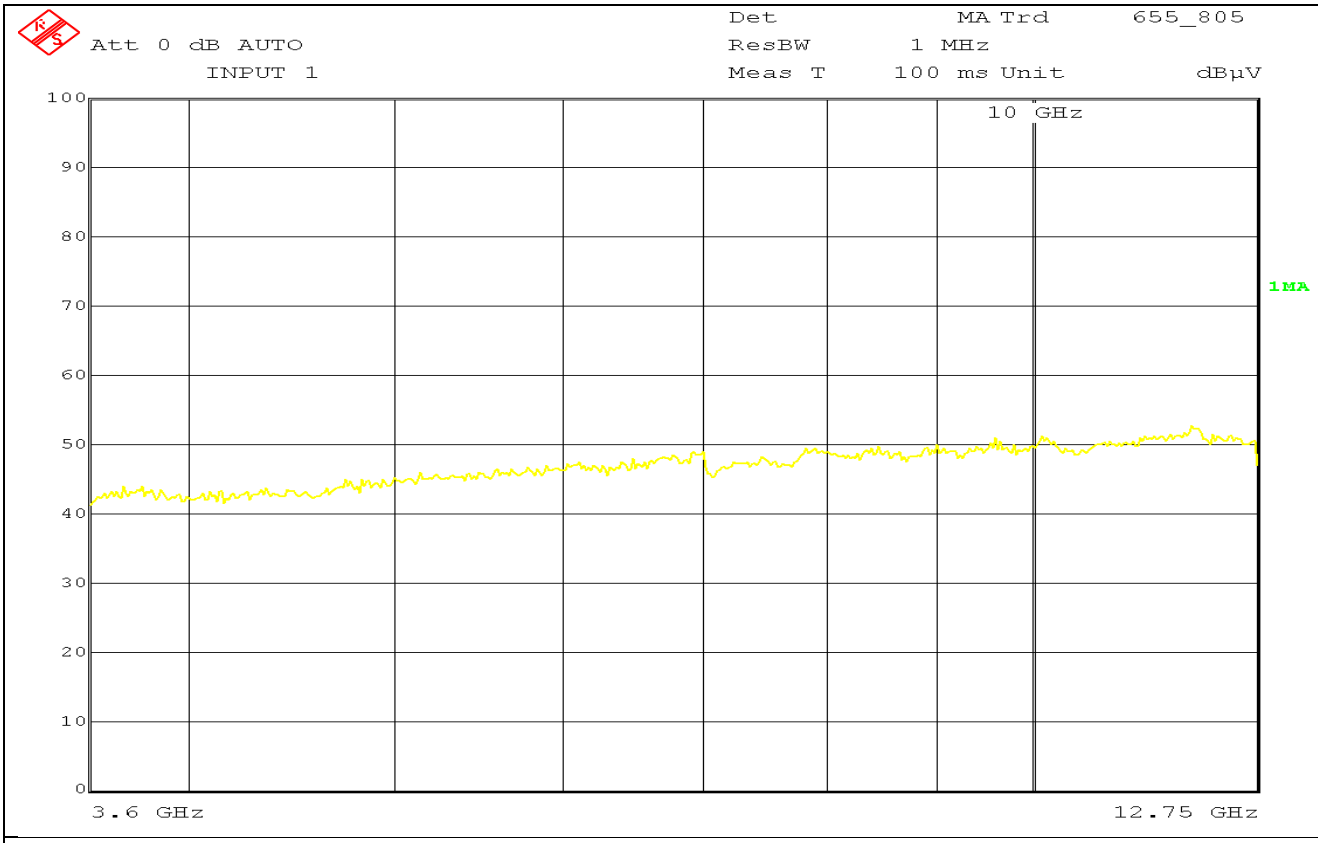

Fig D8 Radiated Emissions 3.6GHz -12.75GHz Horizontal 3metres

Appendix E Scans for Radiated Spurious Emissions CAT M1 Band 1 and BLE

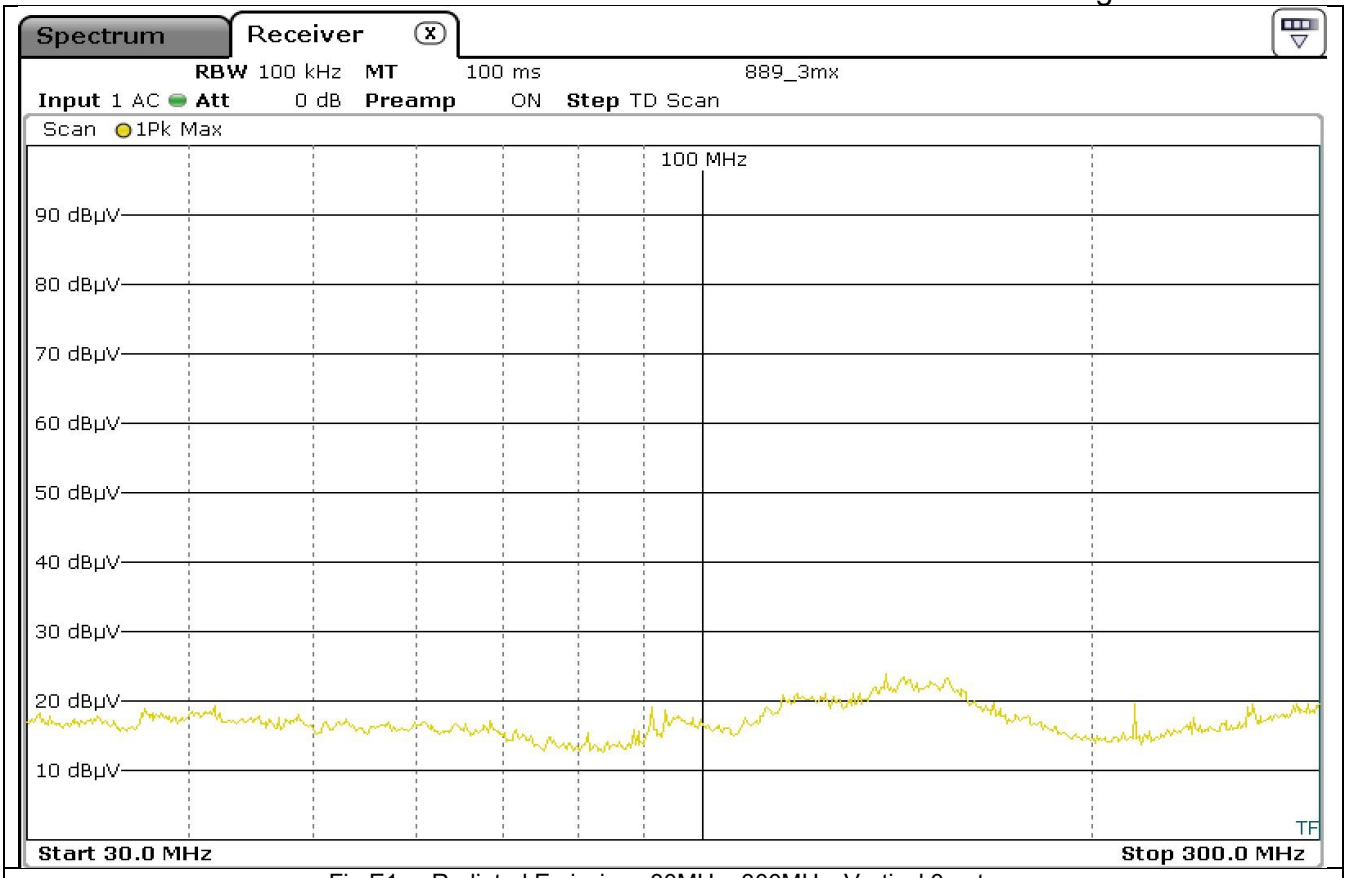

Fig E1 Radiated Emissions 30MHz -300MHz Vertical 3metres

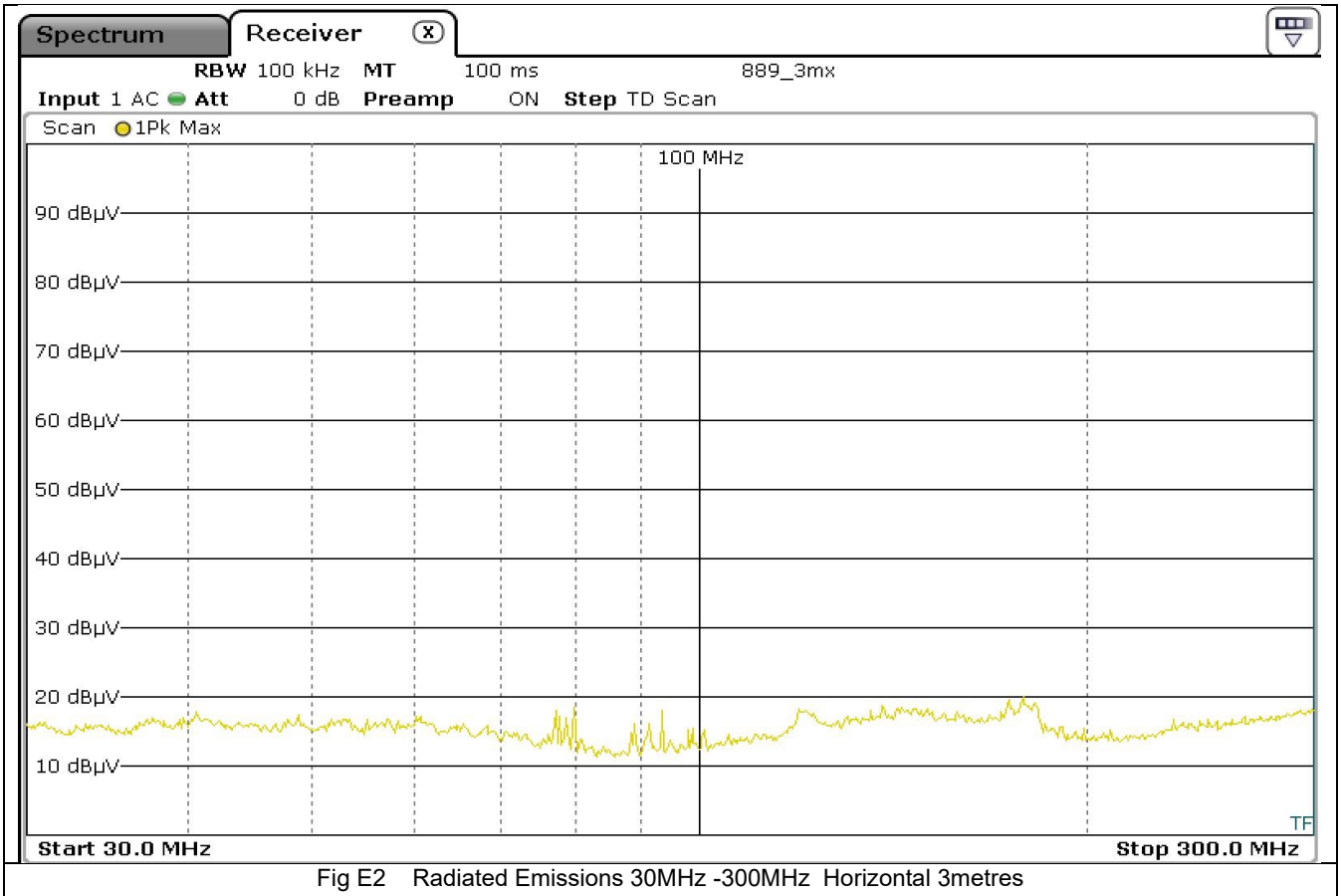

Fig E2 Radiated Emissions 30MHz -300MHz Horizontal 3metres

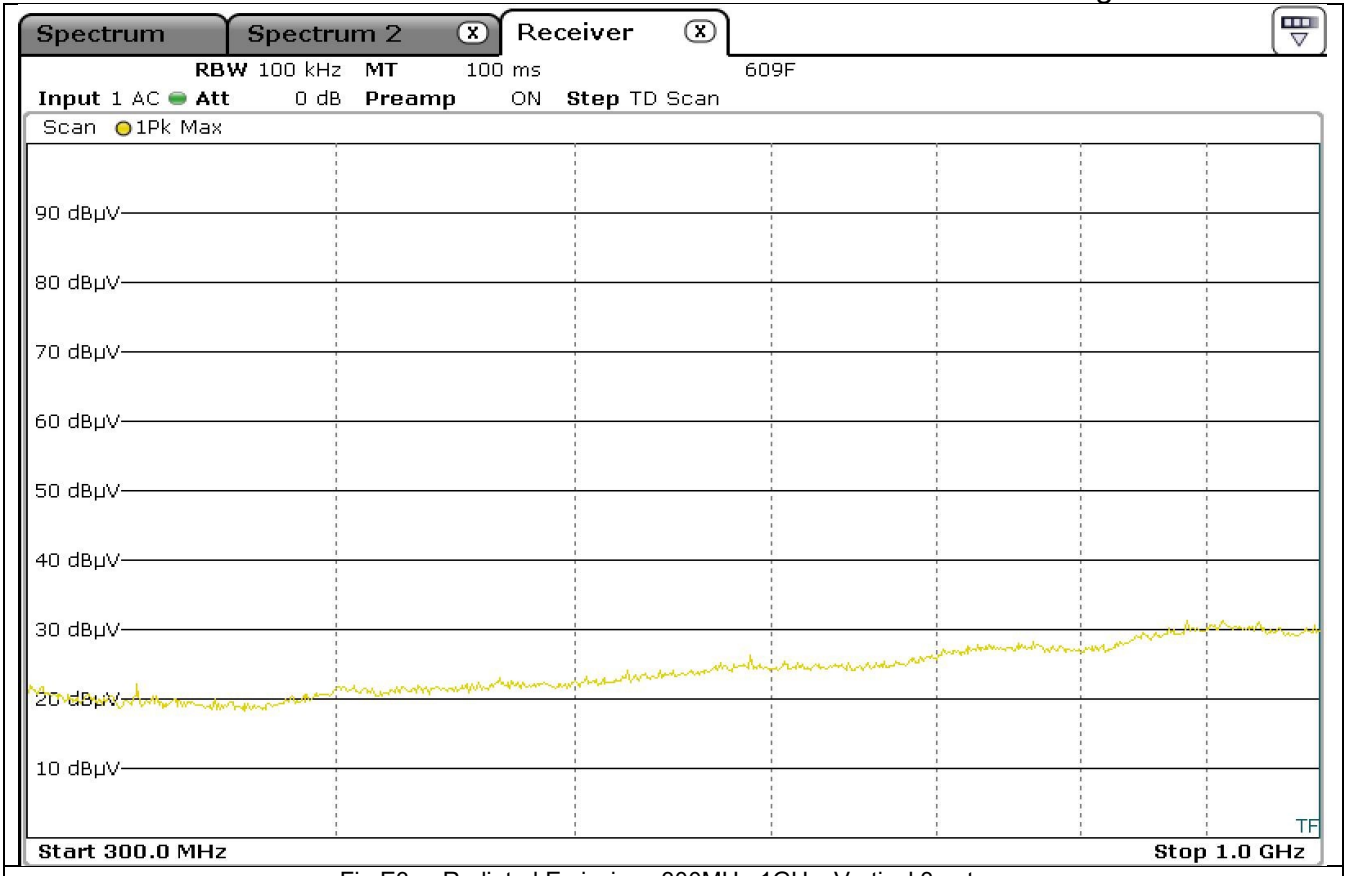

Fig E3 Radiated Emissions 300MHz-1GHz Vertical 3metres

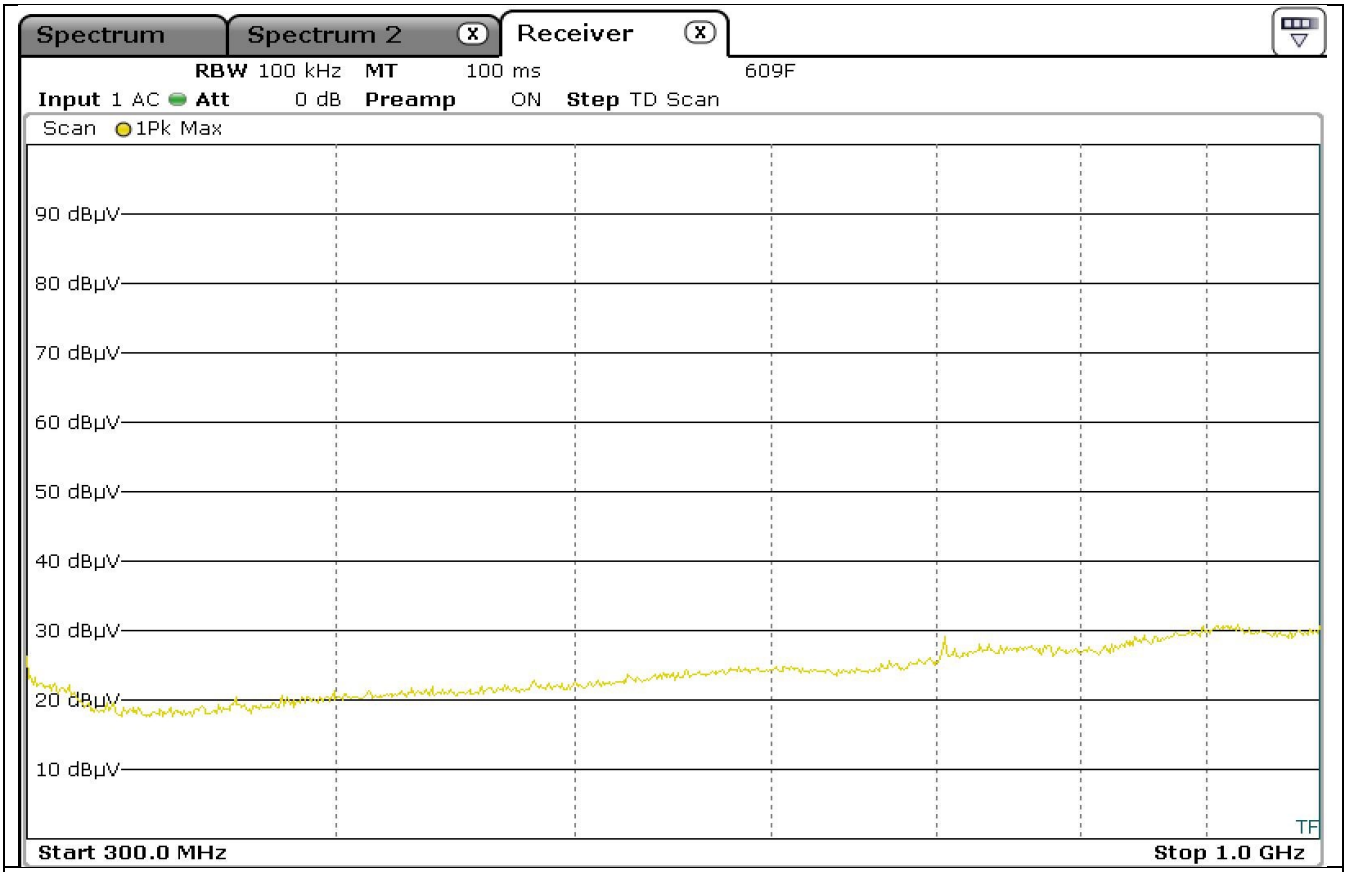

Fig E4 Radiated Emissions 300MHz-1GHz Horizontal 3metres

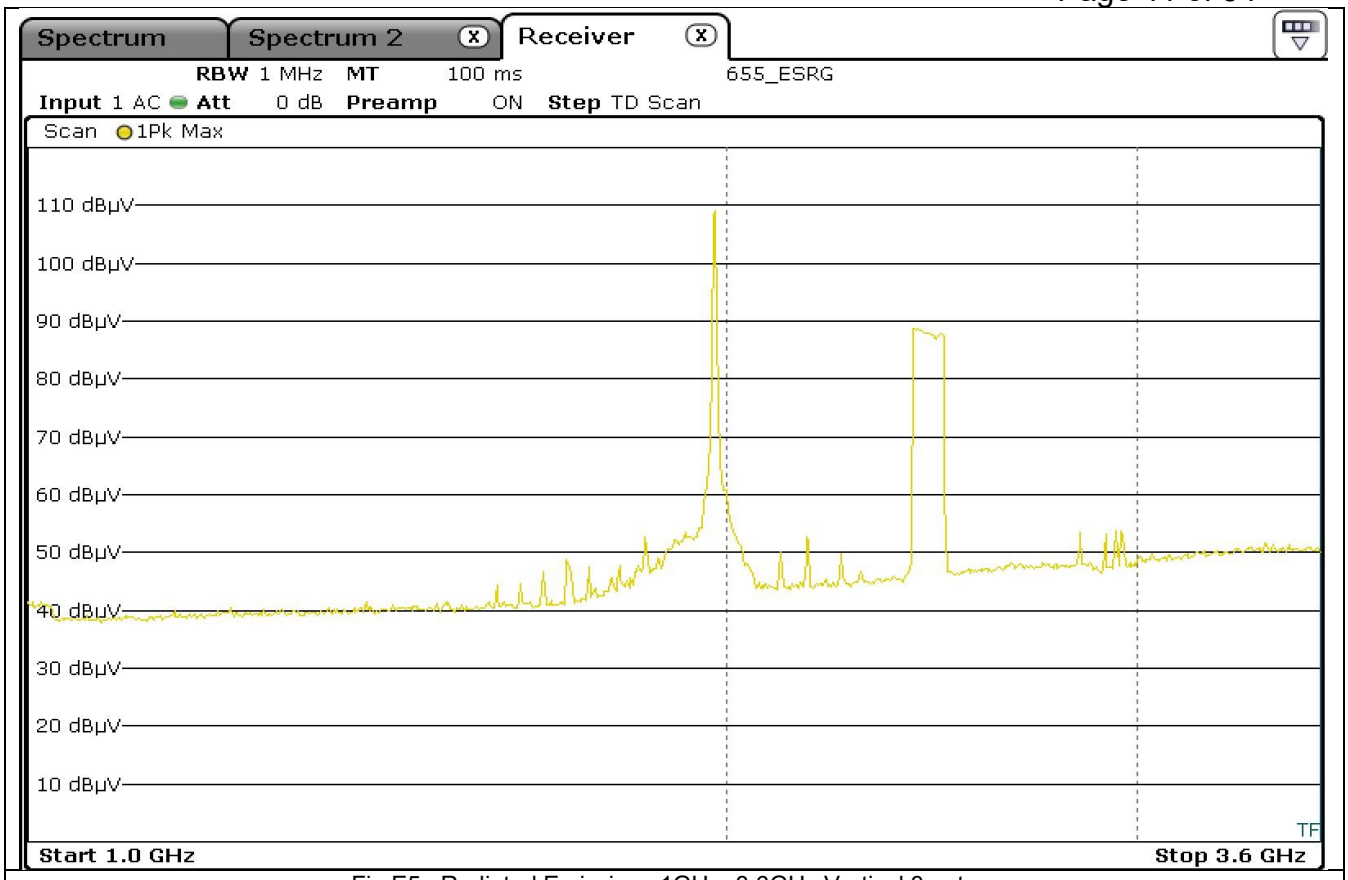

Fig E5 Radiated Emissions 1GHz -3.6GHz Vertical 3metres

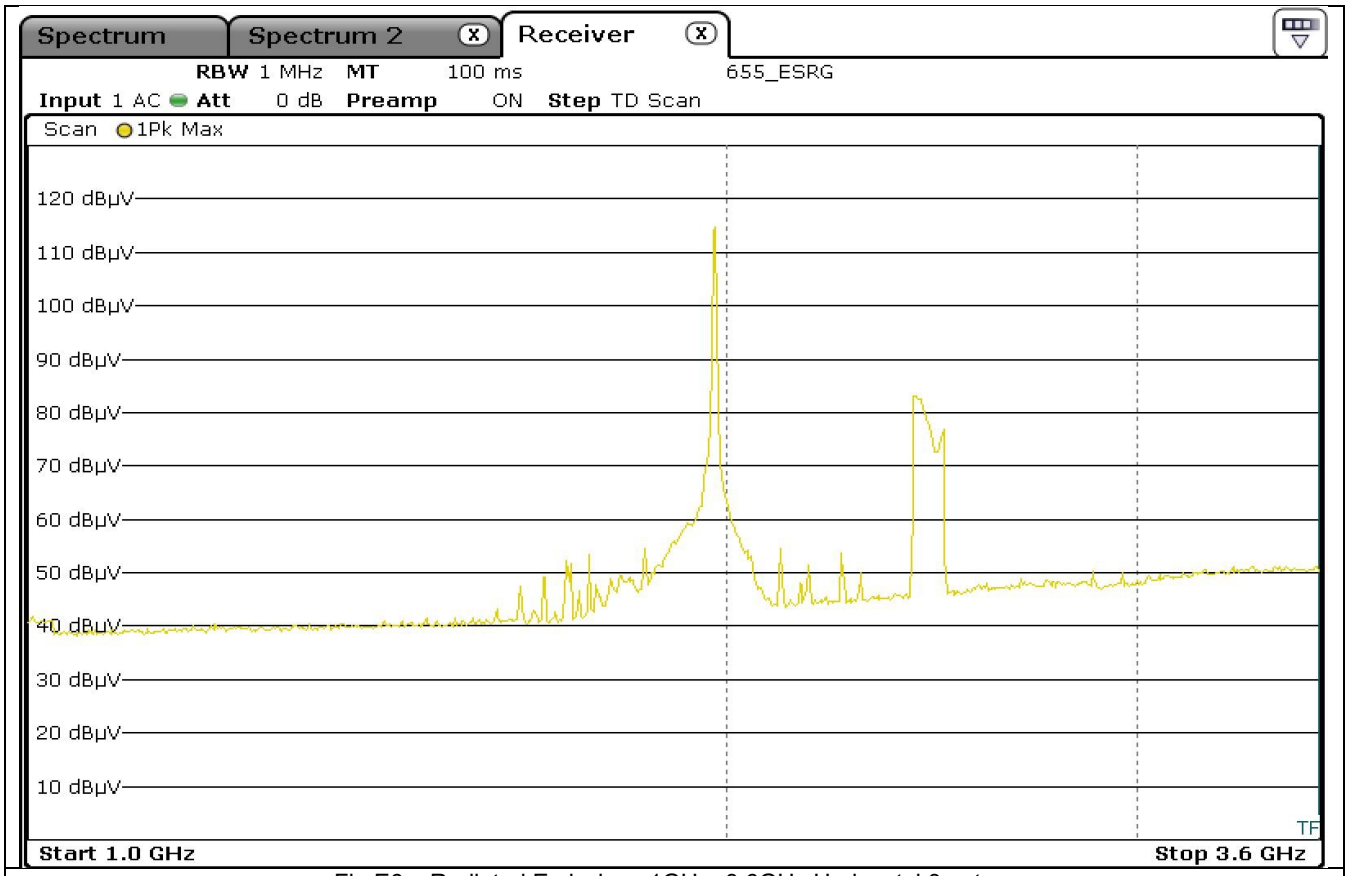

Fig E6 Radiated Emissions 1GHz -3.6GHz Horizontal 3metres

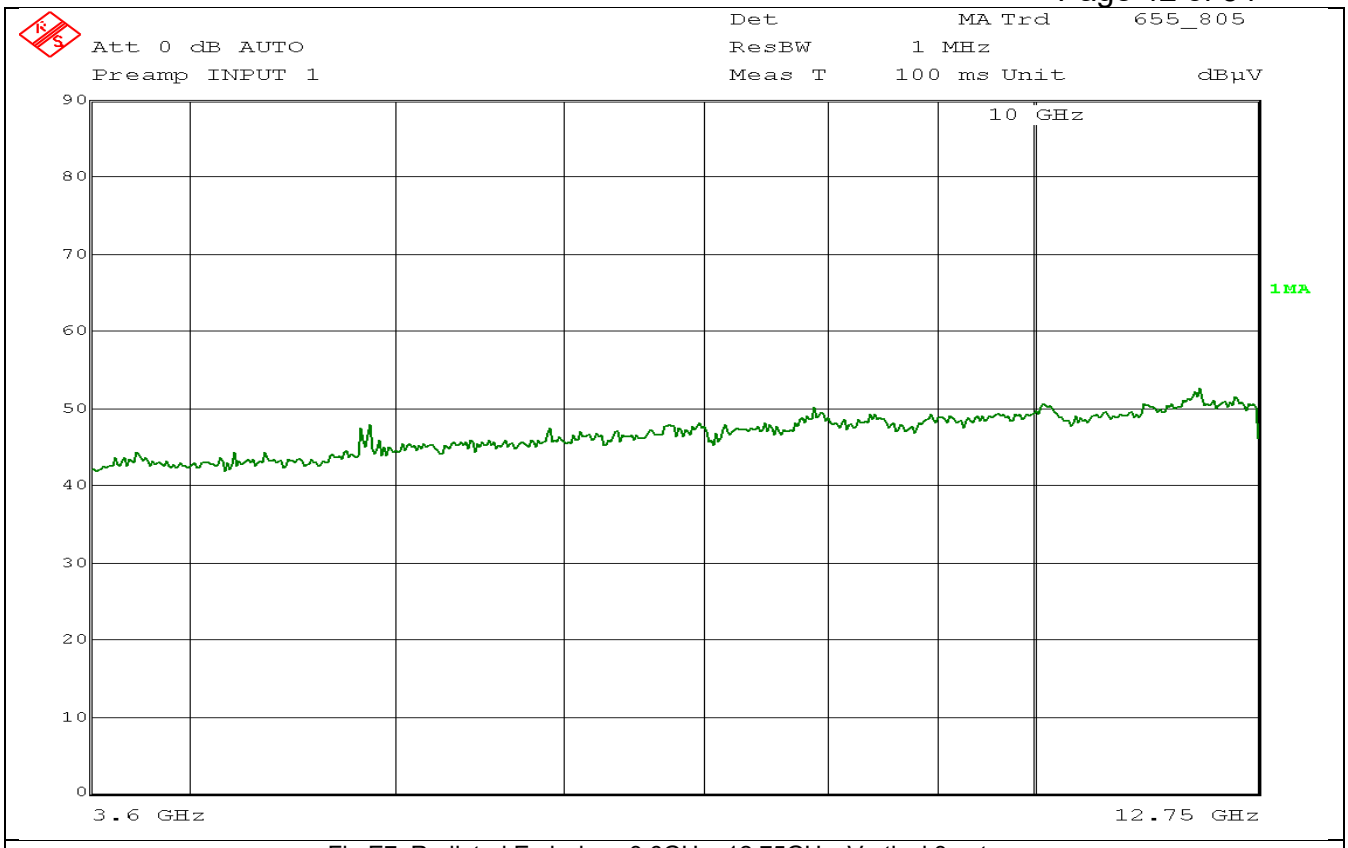

Fig E7 Radiated Emissions 3.6GHz -12.75GHz Vertical 3metres

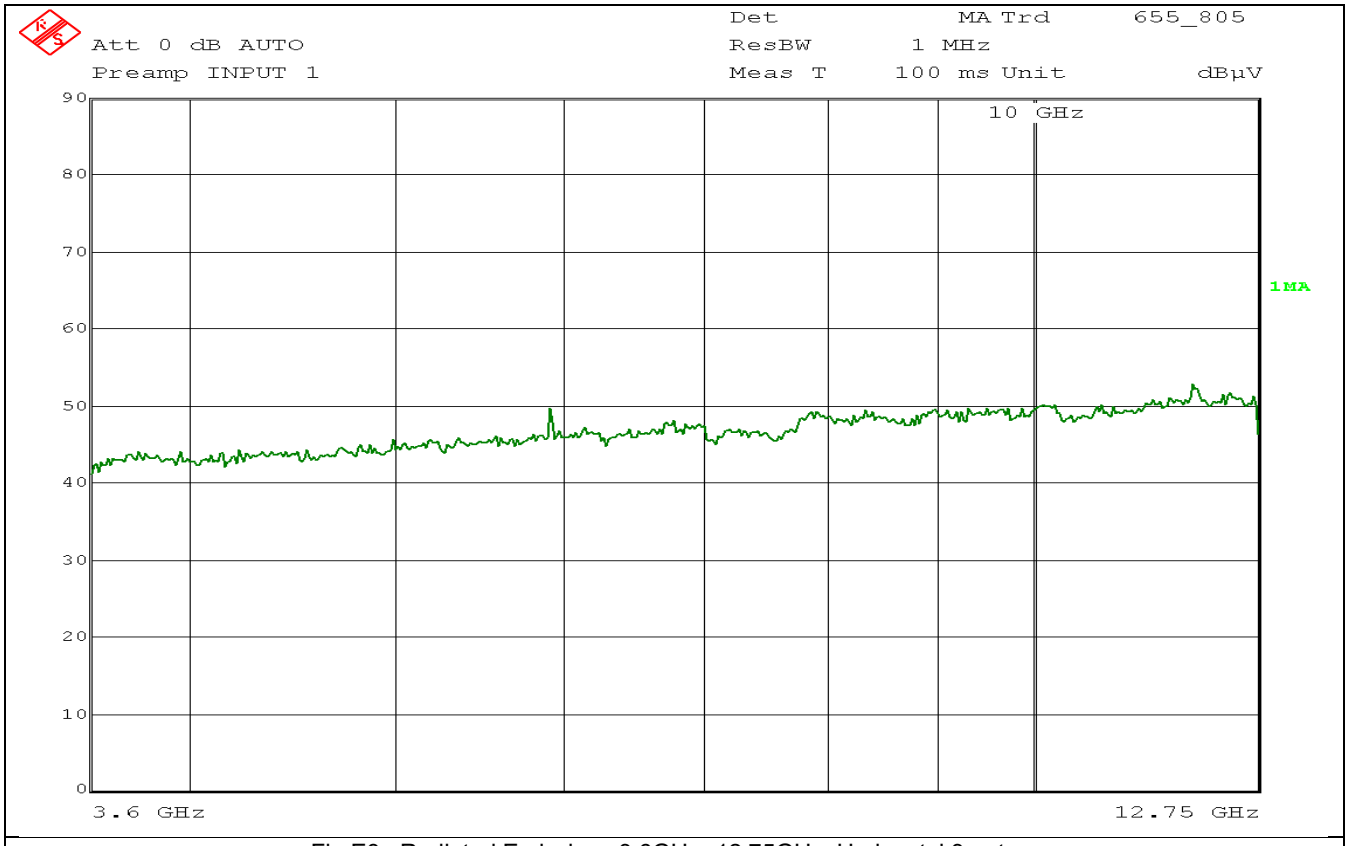

Fig E8 Radiated Emissions 3.6GHz -12.75GHz Horizontal 3metres

Appendix F Scans for Radiated Spurious Emissions GSM 1800 and BLE

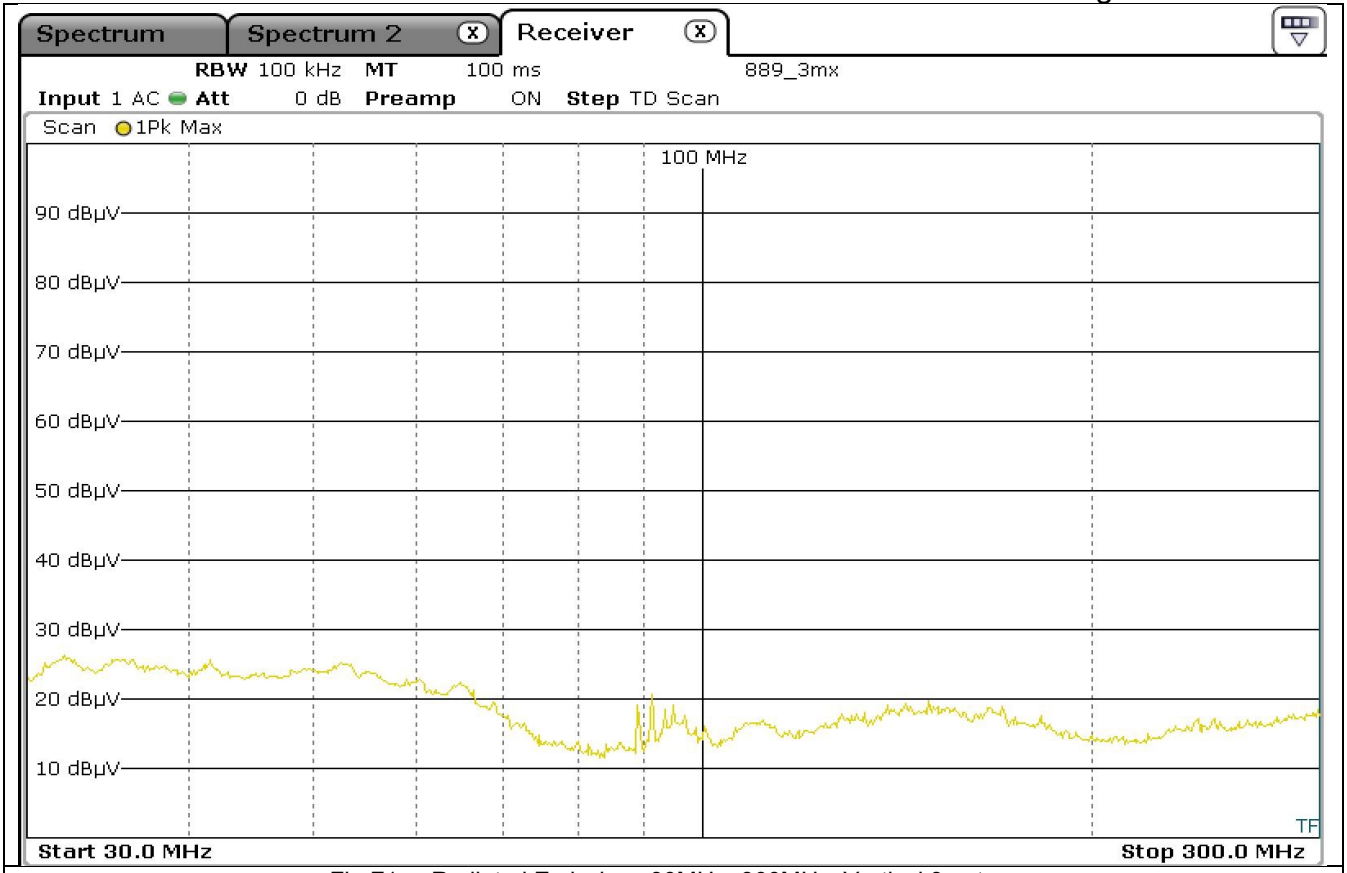

Fig F1 Radiated Emissions 30MHz -300MHz Vertical 3metres

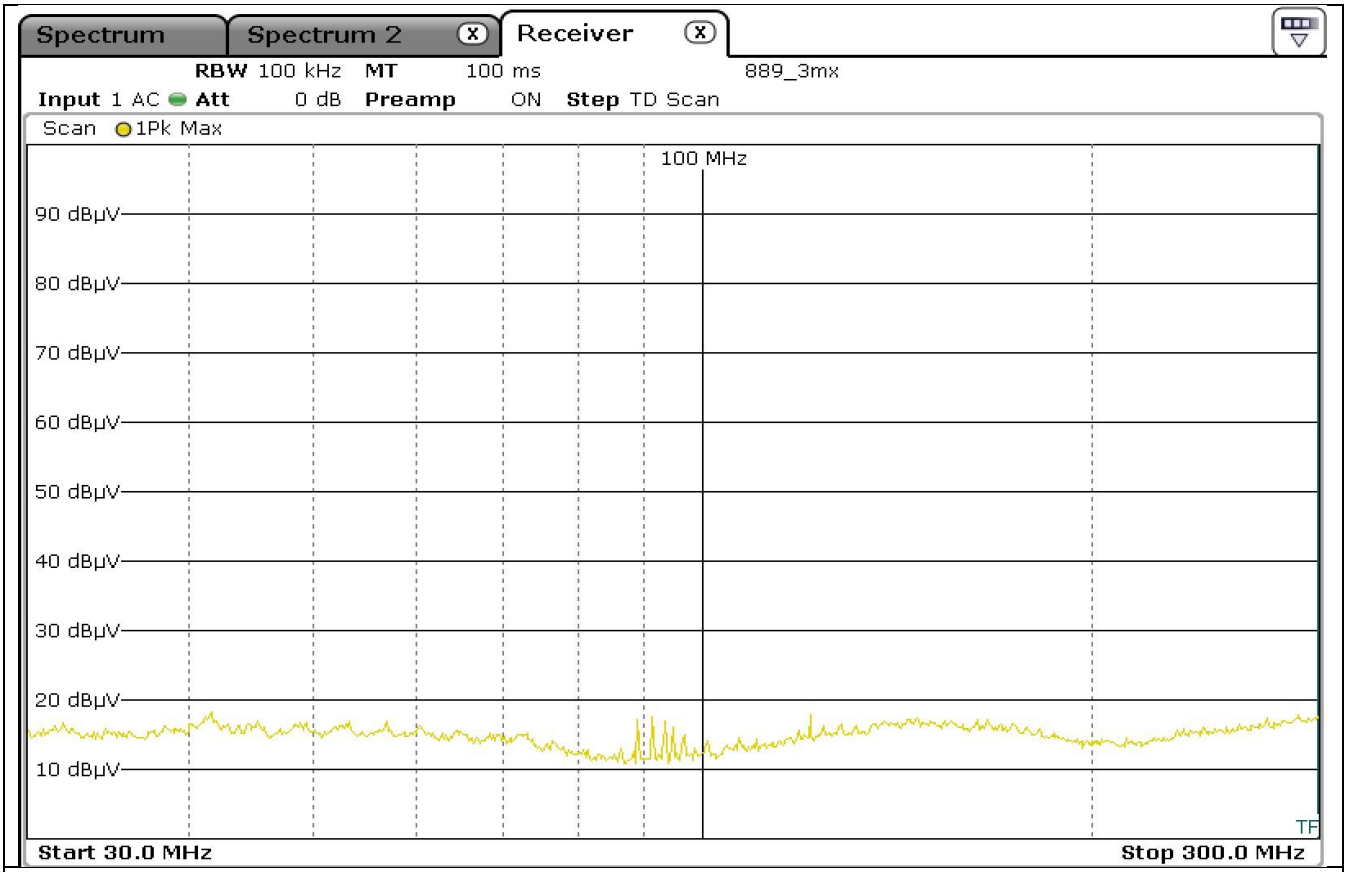

Fig F2 Radiated Emissions 30MHz -300MHz Horizontal 3metres

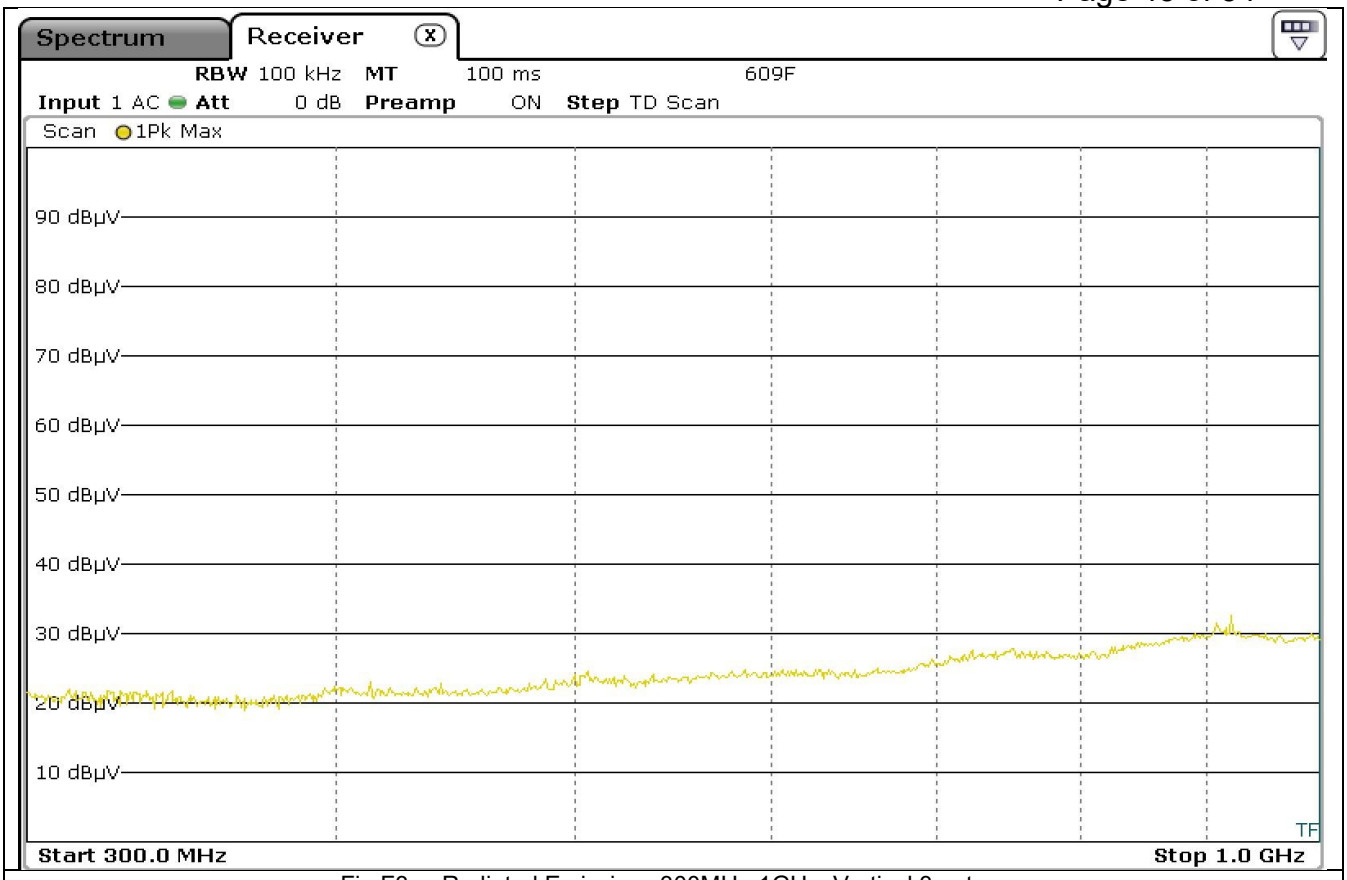

Fig F3 Radiated Emissions 300MHz-1GHz Vertical 3metres

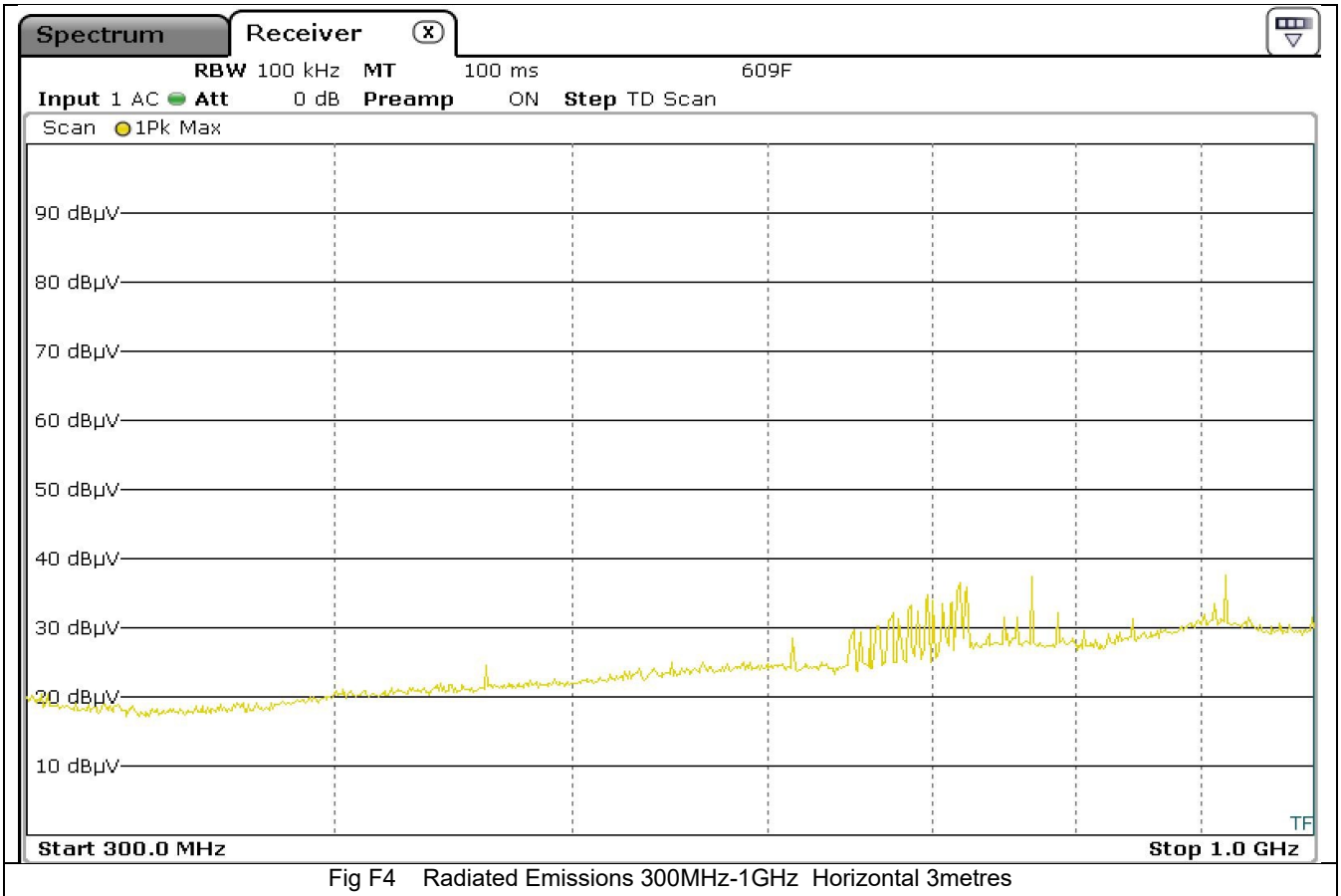

Fig F4 Radiated Emissions 300MHz-1GHz Horizontal 3metres

Fig F5 Radiated Emissions 1GHz -3.6GHz Vertical 3metres

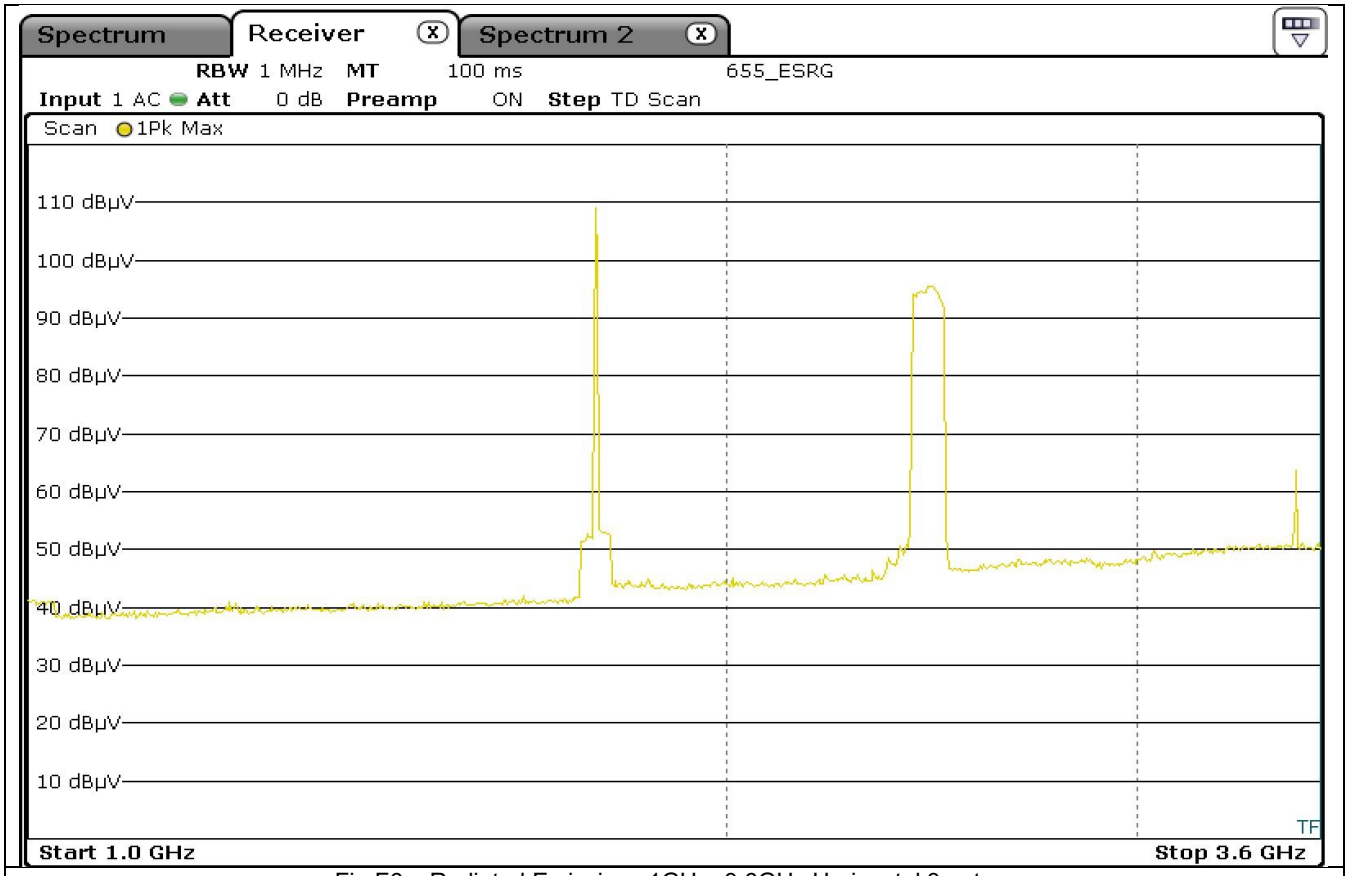

Fig F6 Radiated Emissions 1GHz -3.6GHz Horizontal 3metres

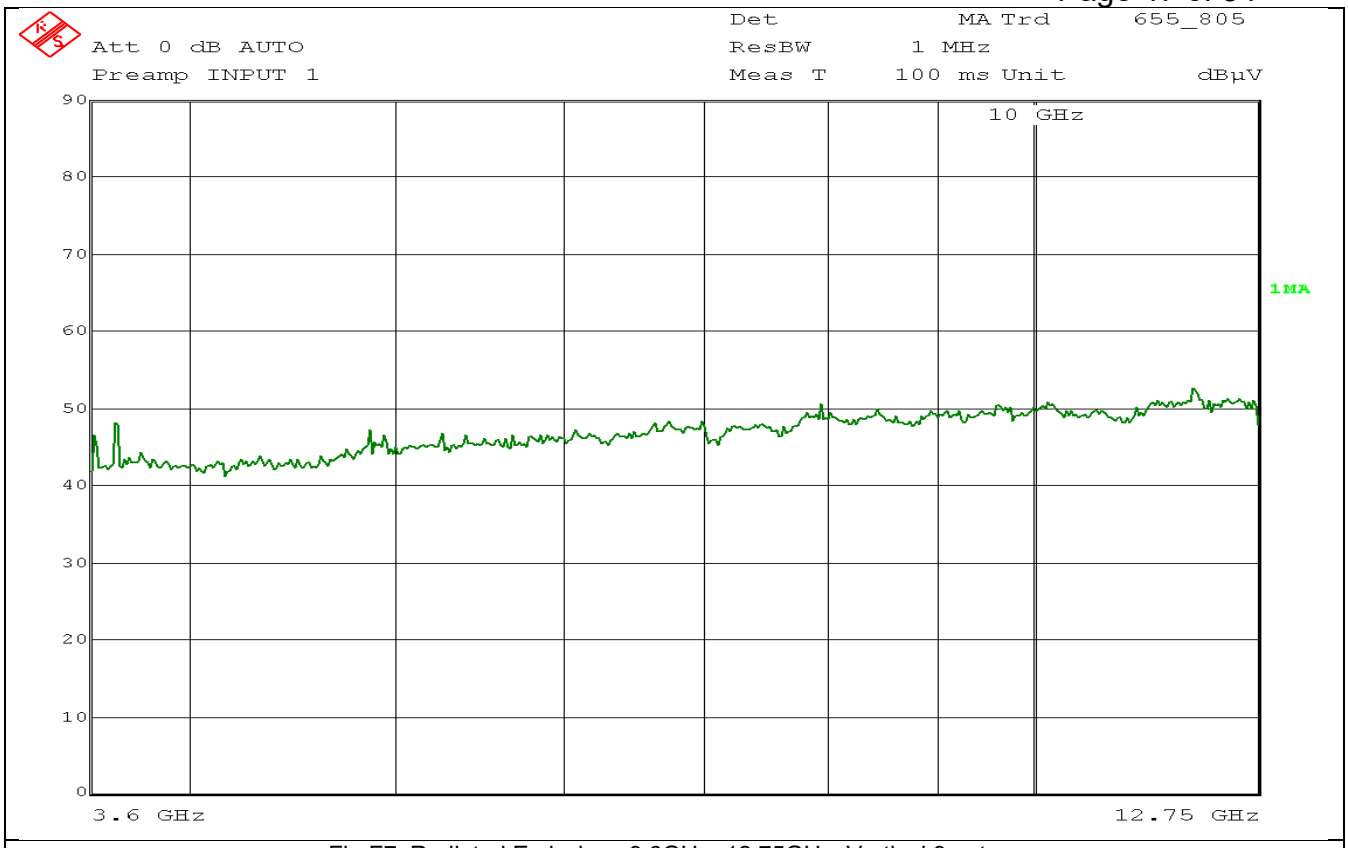

Fig F7 Radiated Emissions 3.6GHz -12.75GHz Vertical 3metres

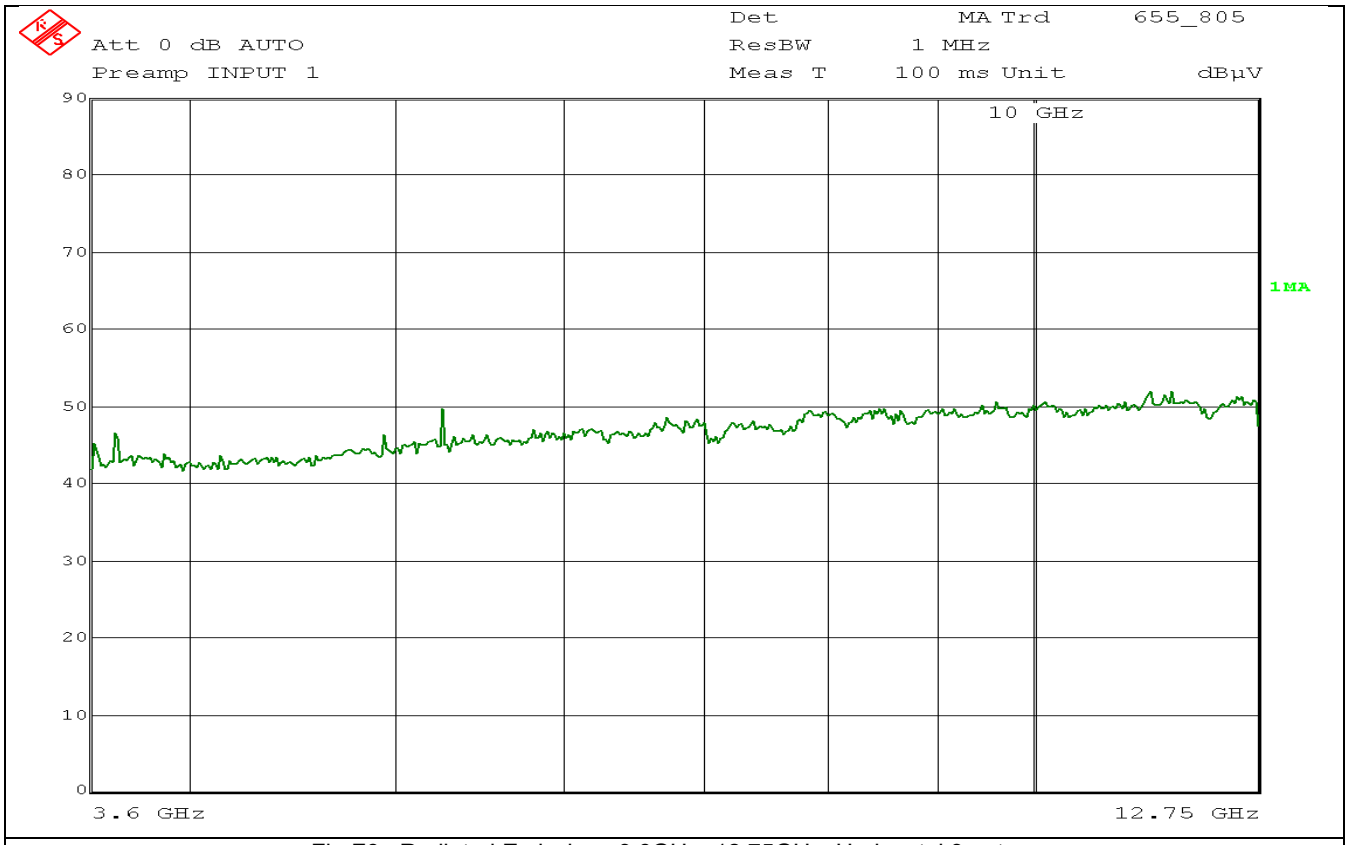

Fig F8 Radiated Emissions 3.6GHz -12.75GHz Horizontal 3metres

Appendix G Scans for Radiated Spurious Emissions Idle Mode

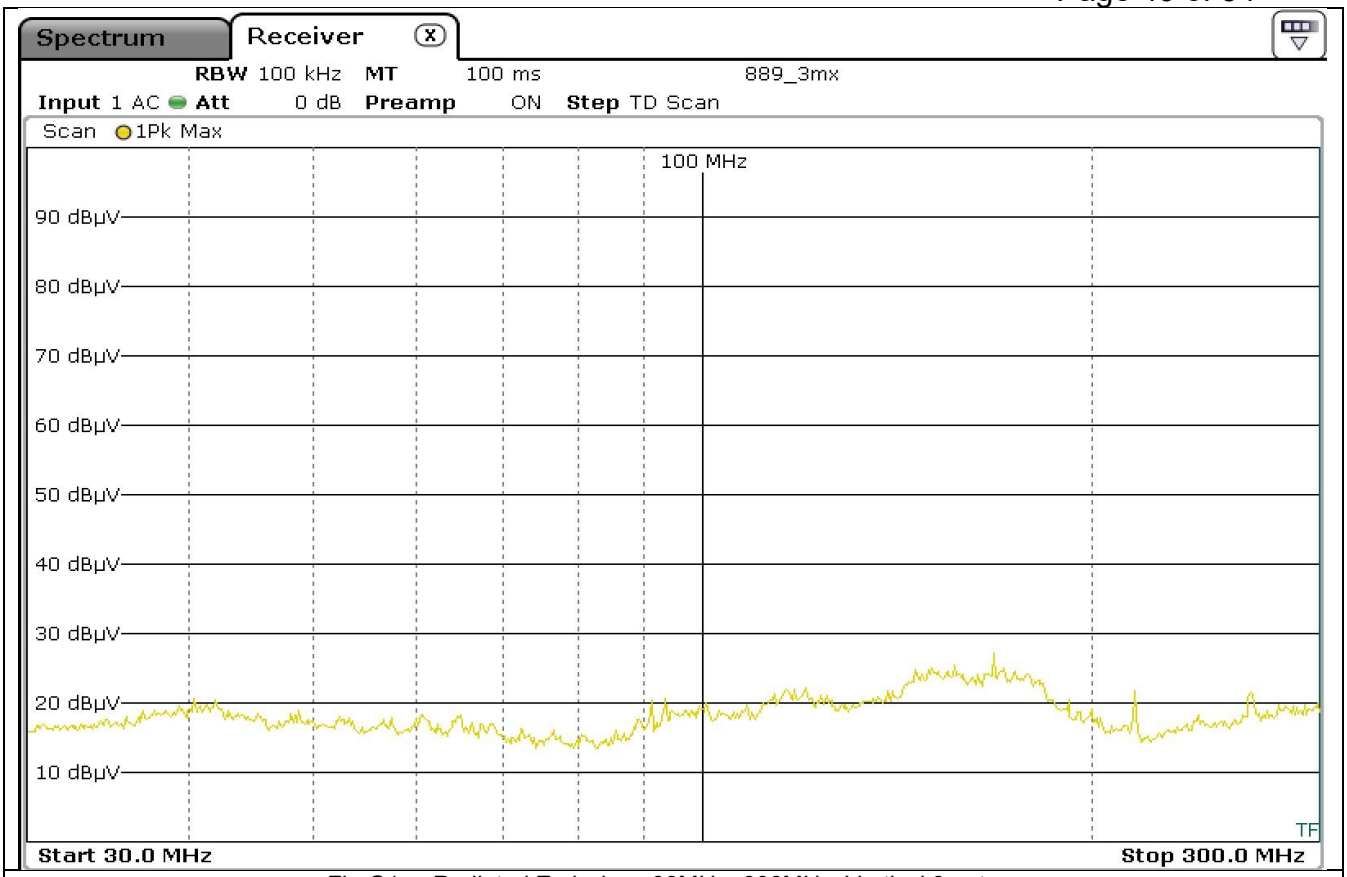

Fig G1 Radiated Emissions 30MHz -300MHz Vertical 3metres

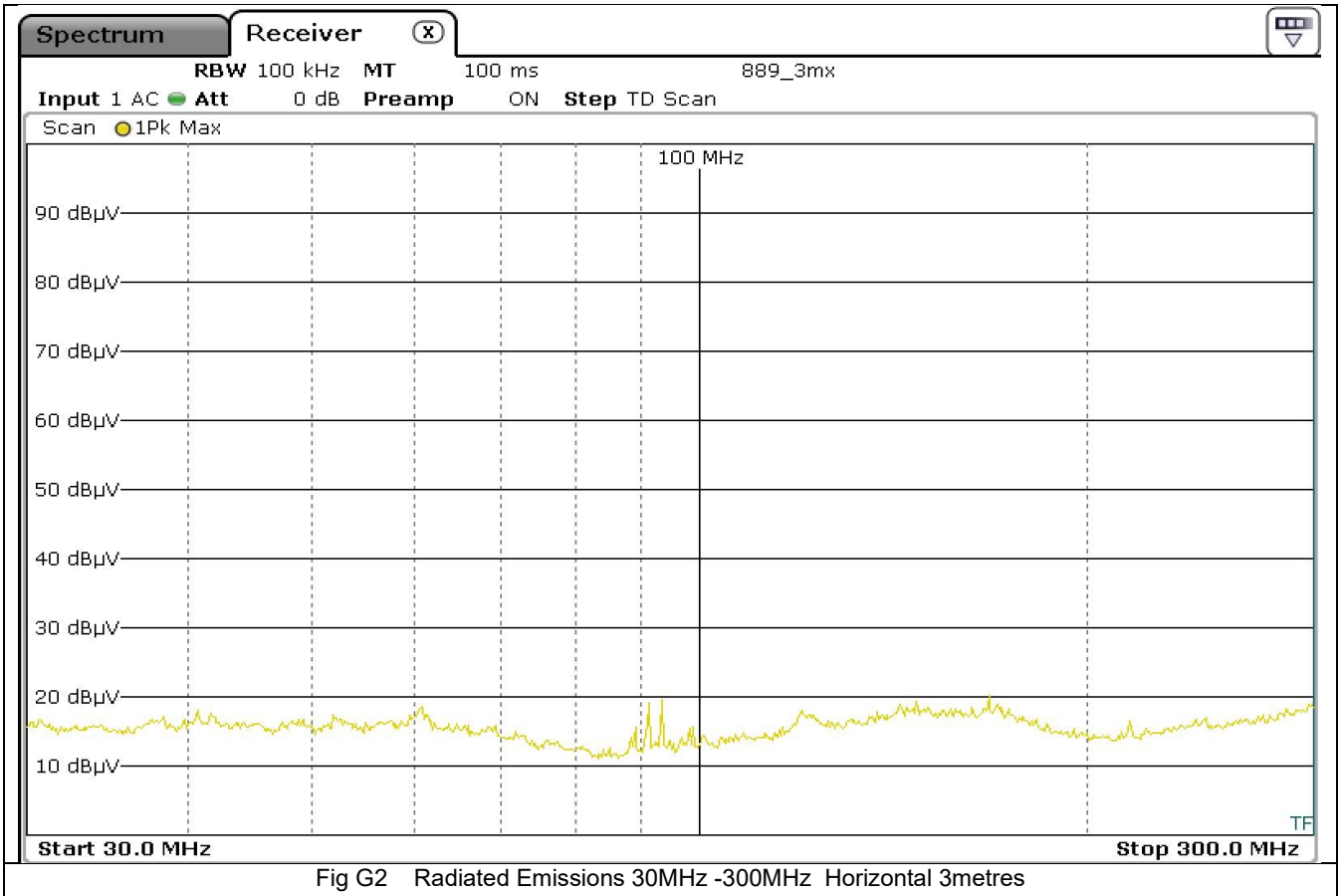

Fig G2 Radiated Emissions 30MHz -300MHz Horizontal 3metres

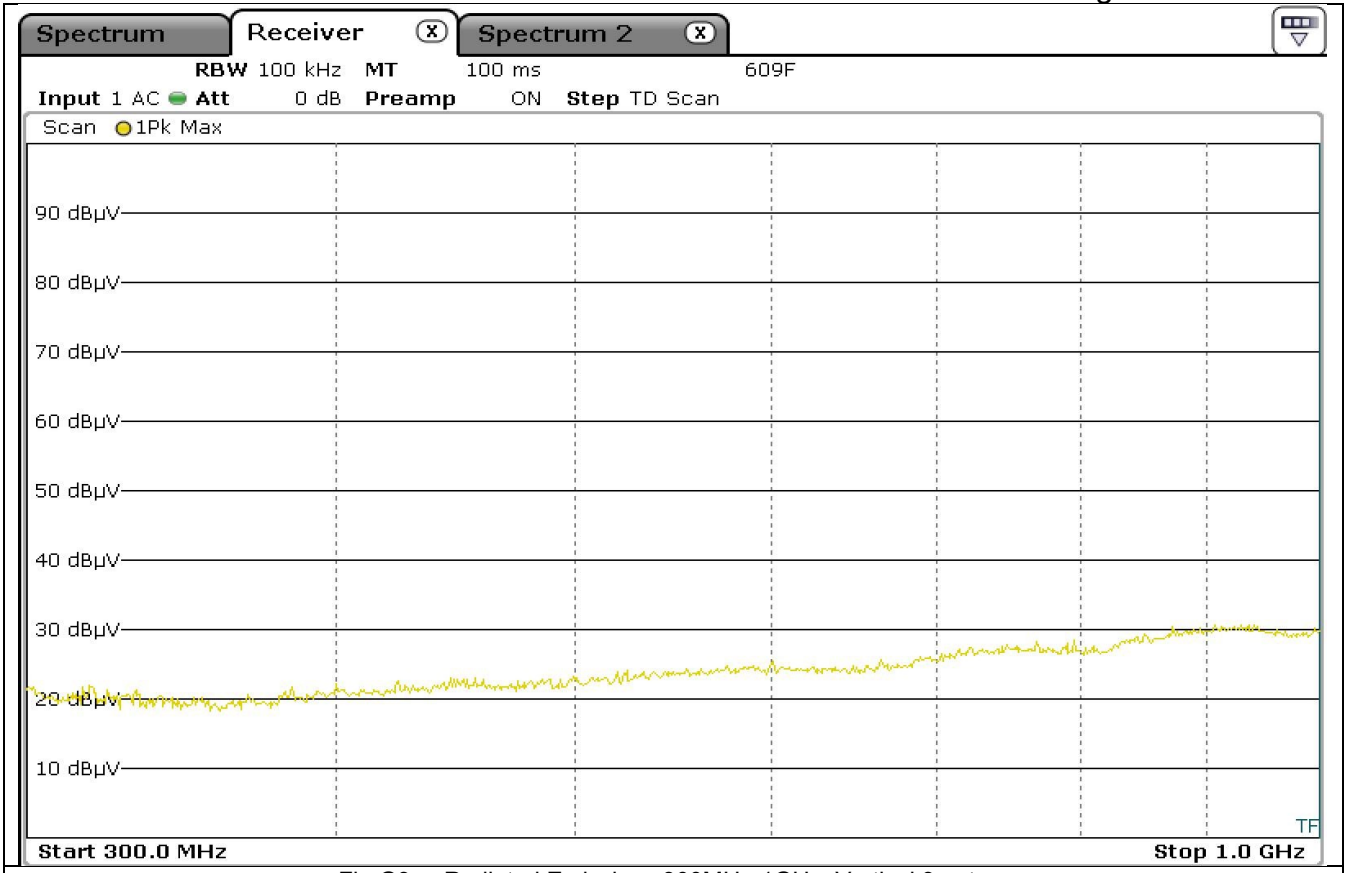

Fig G3 Radiated Emissions 300MHz-1GHz Vertical 3metres

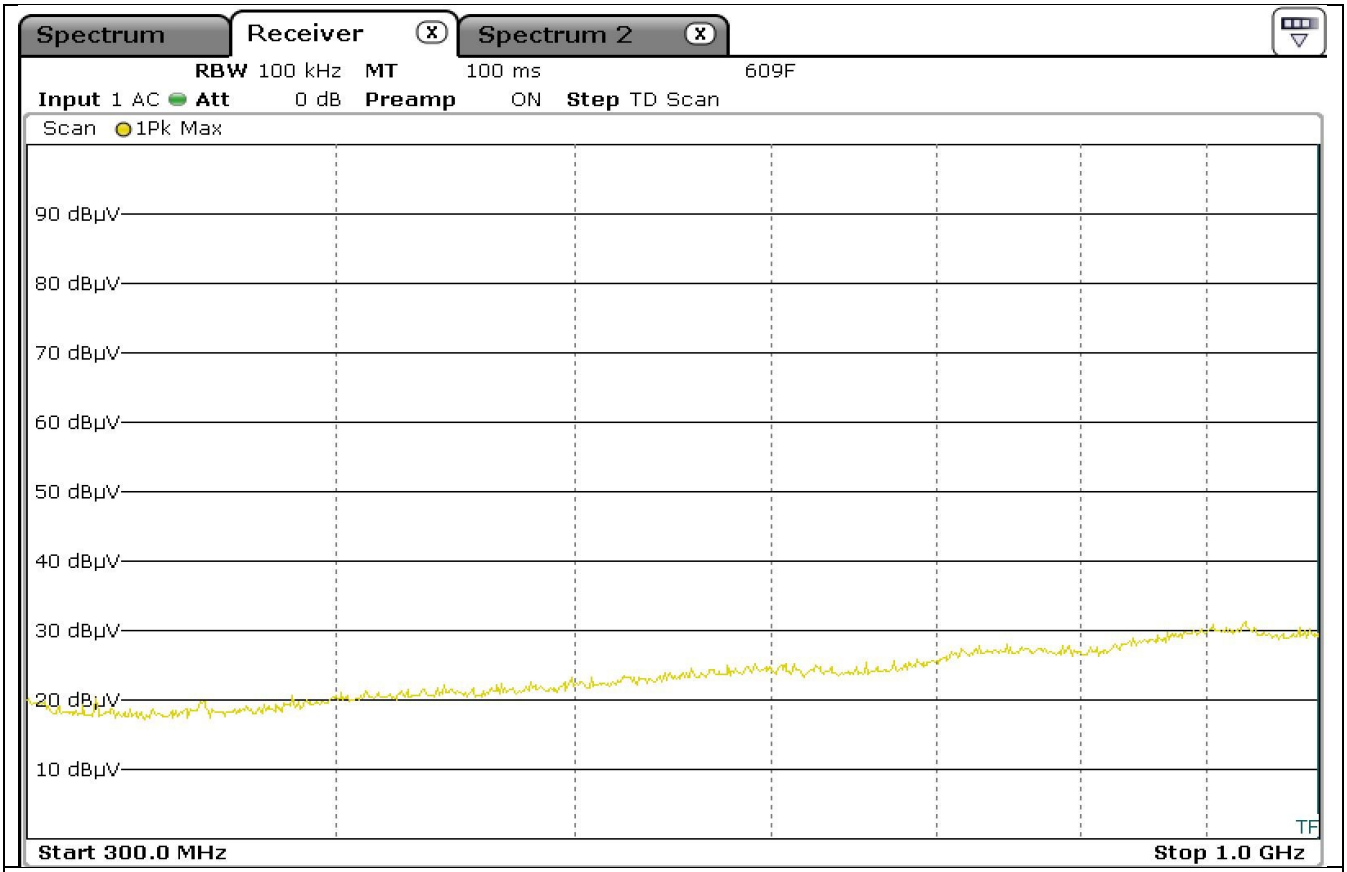

Fig G4 Radiated Emissions 300MHz-1GHz Horizontal 3metres

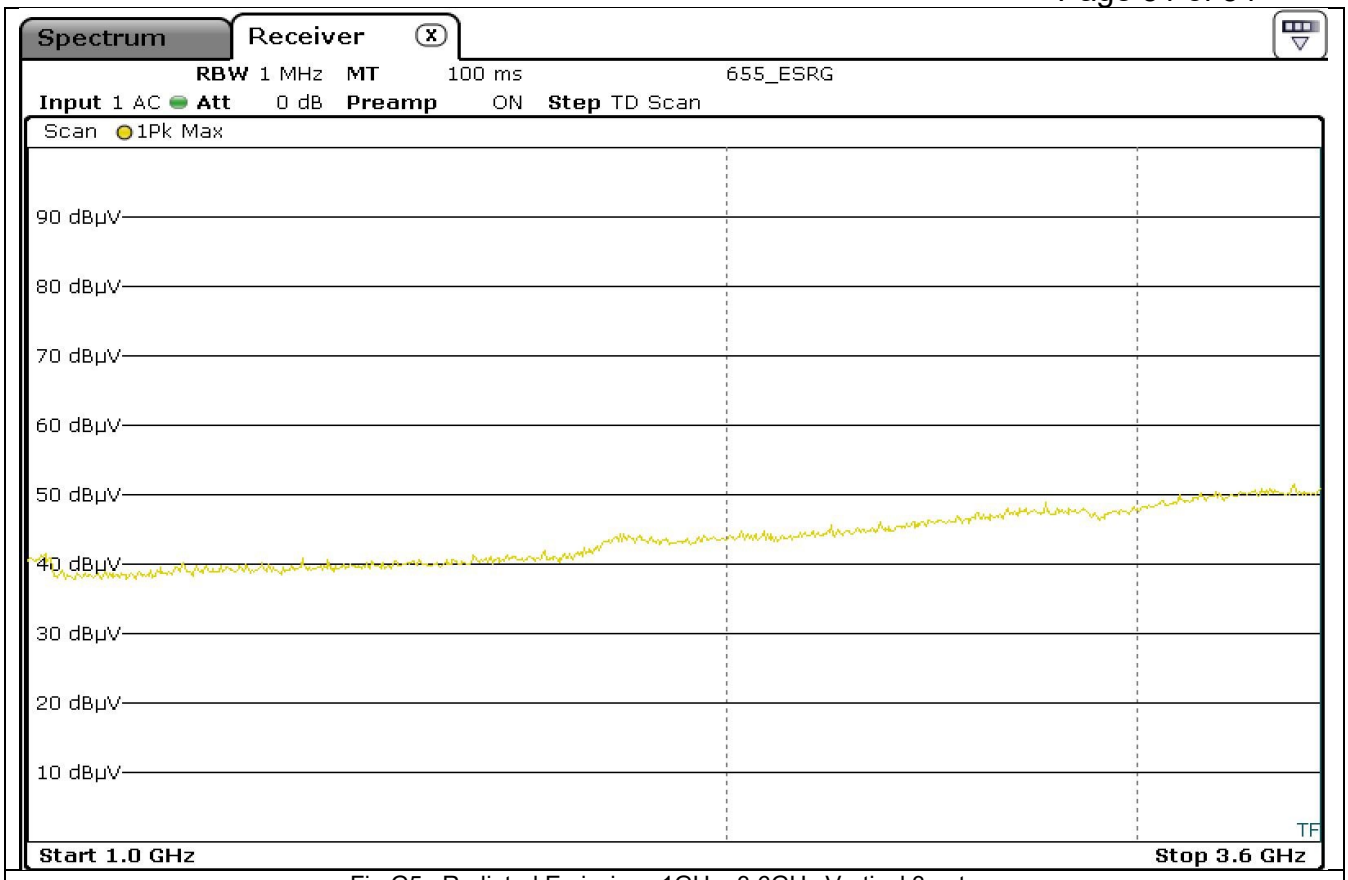

Fig G5 Radiated Emissions 1GHz -3.6GHz Vertical 3metres

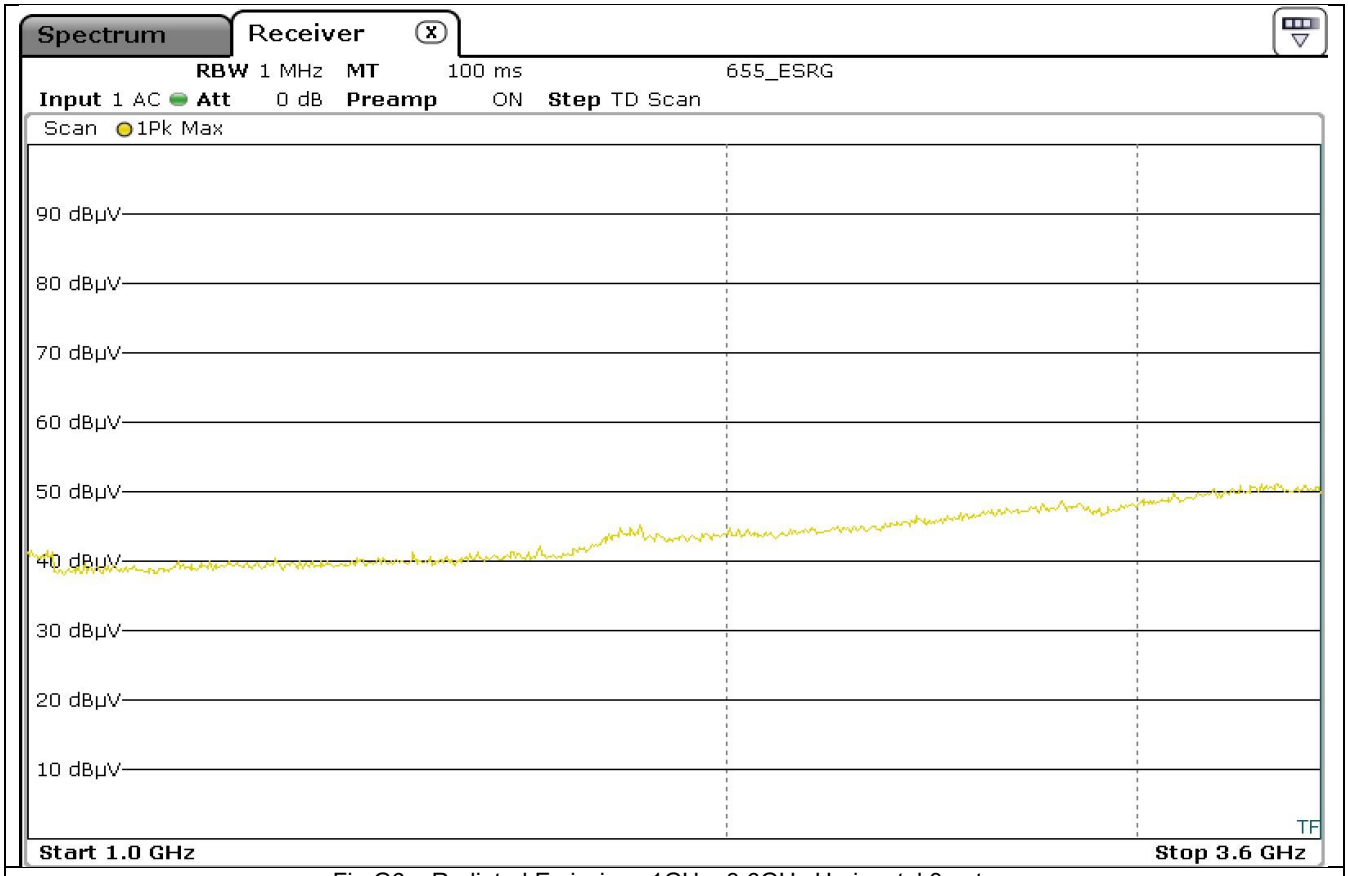

Fig G6 Radiated Emissions 1GHz -3.6GHz Horizontal 3metres

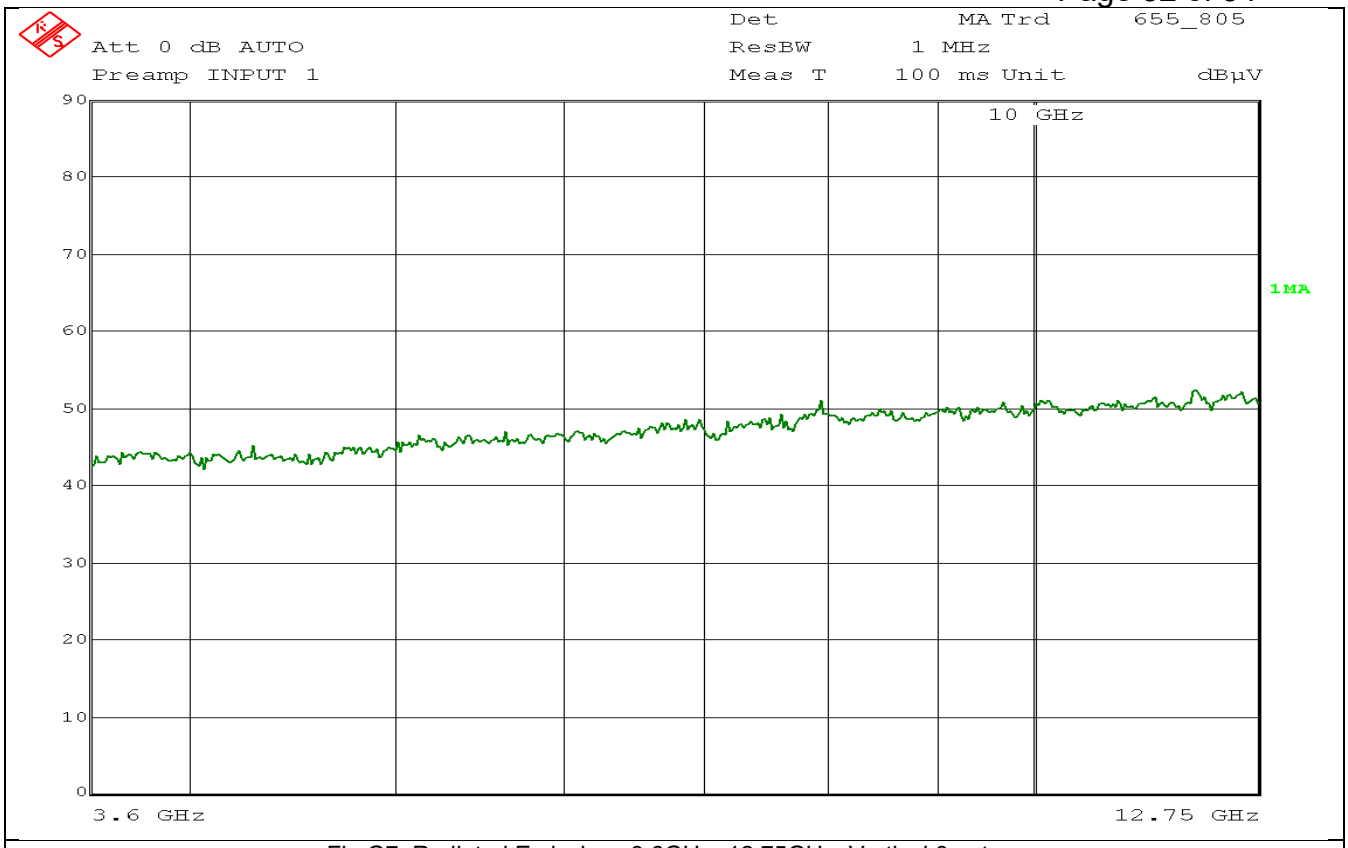

Fig G7 Radiated Emissions 3.6GHz -12.75GHz Vertical 3metres

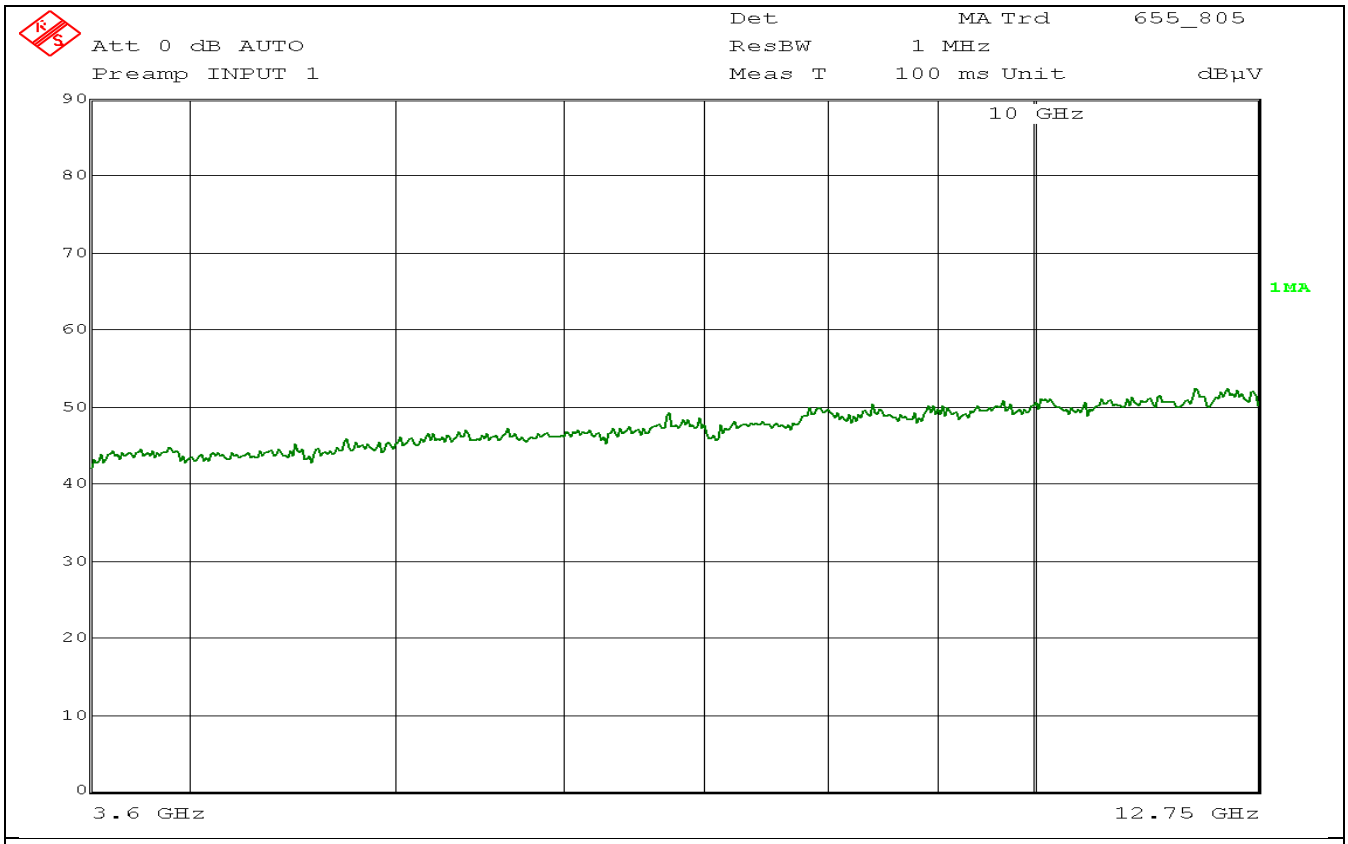

Fig G8 Radiated Emissions 3.6GHz -12.75GHz Horizontal 3metres

Appendix H Test Equipment Used:

Instrument	Manufacturer	Model	Serial Num	CEI Ref	Cal Due Date	Cal Interval Months
Microwave Preamplifier	Hewlett Packard	83017A	3123A00175	805	30-Sep-23	12
Spectrum Analyser 30Hz-40GHz	Rohde & Schwarz	FSP40	100053	850	10-Dec-24	36
Test Receiver 3.6GHz	Rohde & Schwarz	ESR	1316.3003k03-101625-s	869	23-May-26	36
Receiver N9038A EMI 3Hz - 8.4 GHz	Keysight	MXE N9038A	MX60320104	1204	27-Feb-26	36
Antenna Horn	EMCO	3115	9905-5809	655	21-Jan-25	36
Fully Anechoic Chamber	CEI	FAR 3M	906	906	29-Jul-25	36
Anechoic Chamber	CEI	SAR 10M	845	845	12-Sep-25	12
Antenna Biconical	Schwarzbeck	VHBB 9124	9124 667	871	06-Oct-24	36
Antenna Log Periodic	Chase	UPA6108	1072	609	09-Sep-24	36
Cable 20m				1213	15-May-24	12
Cable purple Ktype 1.8m				917	29-Jul-23	12
Cable Ntype 10m				914	29-Jul-23	12
Cable HF Ktype 1.5m				705	29-Jul-23	12

Appendix I Test Configurations:

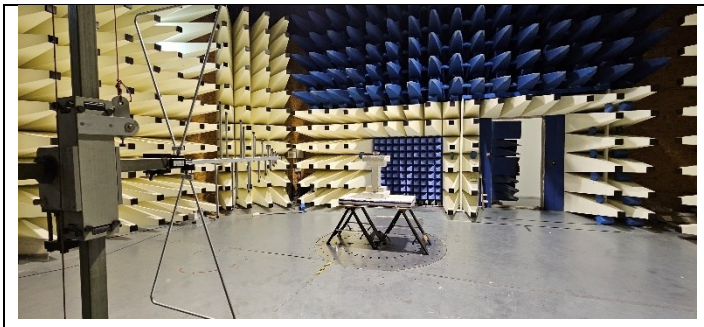

Fig I1 Radiated Emissions 30MHz-300MHz 3 metres

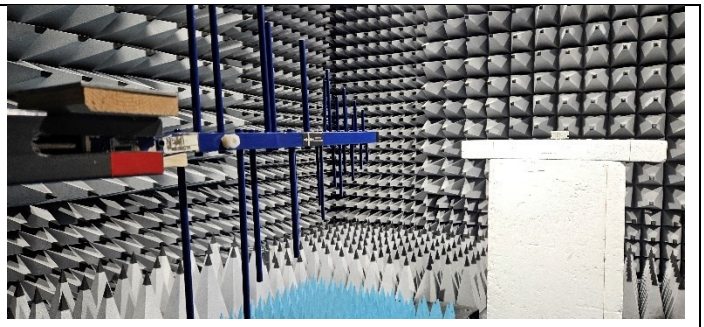

Fig I2 Radiated Emissions 300MHz -1GHz 3metres

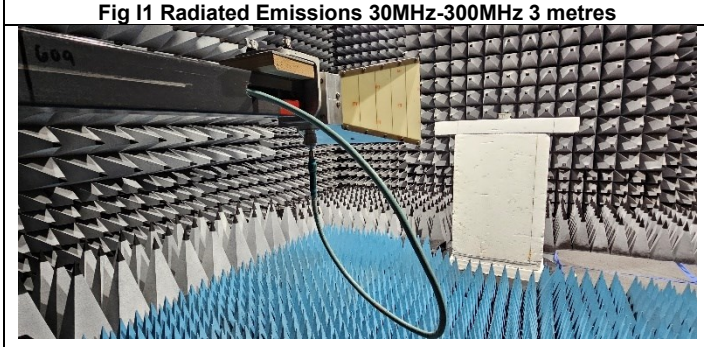

Fig I3 Radiated Emissions 1GHz -18GHz 3metres

Fig I4 Radiated Emissions EUT Close up

Fig I5 EUT orientation “O1”

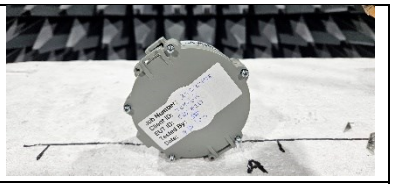

Fig I6 EUT orientation “O2”

Orientations for Radiated Emissions

End of Report