RF Test Report

Report Number:	208729-3 **Revision Level:** 2
Client:	Trackonomy Systems, Inc.
	214 Devcon Dr. San Jose, CA 95112
Equipment Under Test:	Multifunctional IoT Platform Sensor Device
Model:	FBO-2005
FCC ID:	2AXA8-FBO-2005
IC:	27299-FBO2005
Applicable Standards:	FCC Part 22 / RSS-132
	FCC Part 24 / RSS-133
	FCC Part 27
	FCC Part 2.1053
Report issued on:	June 13, 2024
Test Result:	Compliant

FOR THE SCOPE OF ACCREDITATION UNDER CERTIFICATE NUMBER: 1935.01
This report must not be used by the client to claim product certification, approval, or endorsement by A2LA, NIST, or any agency of the Federal Government.

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Reviewed by: Andreas Gillmeier, Sr. Engineer, Wireless

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1 Summary of Test Results

Test Description	Test Specification		Test Result
Transmitter Conducted Output Power (E.R.P. / E.I.R.P.)	*Part 2.1046, Part 22.913(a)(5)* *Part 2.1046, Part 24.232(c)* *Part 2.1046, Part 27.1507(a)(4)* *Part 2.1046, Part 27.50(h)(2)*	*RSS-132(5.4)* *RSS-133(4.1)(4.6)*	Compliant
Radiated Spurious Emissions	*Part 15.205(a)* *Part 2.1053* Part 22.917(a)	RSS-132 (5.5)	Compliant
Radiated Spurious Emissions	*Part 15.205(a)* *Part 2.1053* Part 24.238(a)	RSS-133 (6.5)	Compliant
Radiated Spurious Emissions	*Part 15.205(a)* Part 27.53(g) Part 27.53(h)(1) *Part 27.53(f)* *Part 27.53(m)(4)* *Part 2.1053*	RSS-130 (4.7) RSS-139 (5.6)	Compliant

(1) The device used a certified cell module, but different antenna. Output power spot check verified on the worst-case scenario and reported in this report. The Radiated Spurious Emissions performed on worst-case of each band.

1.1 *Modifications Required for Compliance*

Description of Modification	Modified By	Date of Modification
1) Removed of traces associated with on board GPS antenna, removal and use of GPS antenna off board	Trackonomy Systems	5/3/2024
2) Improved ground trace	Trackonomy Systems	5/3/2024

2 General Information

2.1 *Client Information*

Company Name: Trackonomy Systems, Inc.
Address: 214 Devcon Dr.
City, State, Zip, Country: San Jose, CA 95132

2.2 *Test Laboratory*

Name: SGS North America, Inc.
Address: 12310 World Trade Drive, Suite 106/107
City, State, Zip, Country: San Diego, CA 92128
Accrediting Body: A2LA
Type of lab: Testing Laboratory
Certificate Number: 1935.01
Designation ID US1346
CAB ID: US0236

2.3 *General Information of EUT*

Equipment Under Test: Multifunctional IoT Platform Sensor Device
Model: FBO-2005
Serial Numbers: *Sample 1* (Conducted Sample x 1)
Sample 2 (Radiated Sample x 1)
FCC ID: 2AXA8-FBO-2005
IC: 27299-FBO2005
Frequency Band Range:

Technology	Band	Range
LTE	2	1850 MHz – 1910 MHz
	4	1710 MHz – 1755 MHz
	5/26	824 MHz– 849 MHz
	7	2500 MHz– 2570 MHz
	8	880 MHz– 915 MHz
	12	699 MHz– 716 MHz
	13	777 MHz– 787 MHz
	25	1850 MHz – 1915 MHz
GPRS	850	824.2 MHz – 848.8 MHz
	1900	1850.2 MHz – 1909.8 MHz
EGPRS	850	824.2 MHz – 848.8 MHz
	1900	1850.2 MHz – 1909.8 MHz
WCDMA	2	1850 MHz – 1910 MHz
	5	824 MHz – 849 MHz

Note: LTE Band 7 will be disable when marketing in Canada

Data Modes:	QPSK as worst case
Antenna Manufacturer:	ignion
Antenna Model:	NN02-220
Antenna Gain*:	2.3dBi (698-960MHz) 3.1dBi (1710-2690MHz)
Rated Voltage:	*3.0*V_{DC} Battery powered device
Test Voltage:	4.1V_{DC} (via external power source for Radiated Measurements)
Sample Received Date:	March 15, 2024
Dates of testing:	March 27 – June 12, 2024

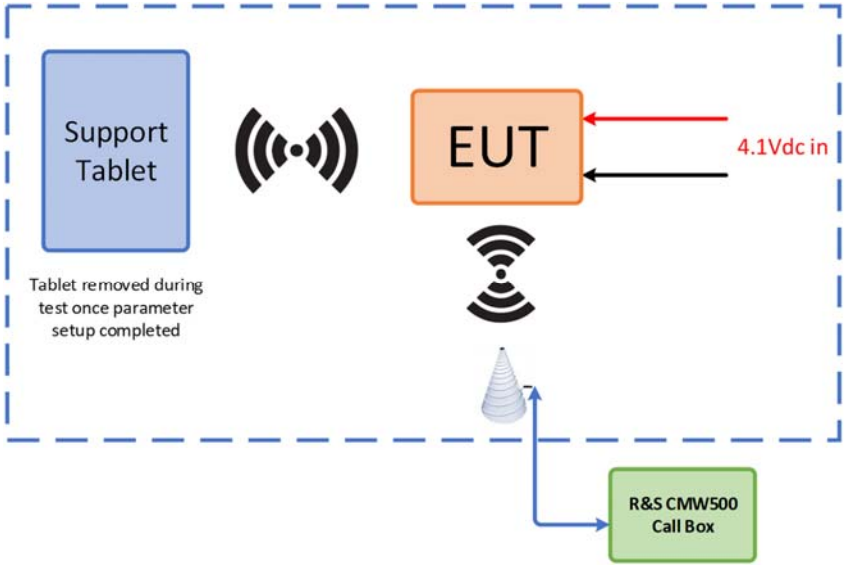
*Data was not measured by SGS laboratory and therefore SGS is not responsible for accuracy. Data obtained via customer, specification sheet, previous filing or other.

2.4 *Operating Modes and Conditions*

The EUT was running test mode via a support tablet which allowed the following:

1) Selecting the communication mode and power level as used in normal operation, but with >98% duty cycle;
2) Selecting the channels, modulation, bandwidth and RB sizes via R&S call box
3) The maximum power setting of 4 was used for all tests.

2.5 *EUT Connection Block Diagram – Radiated Measurements*

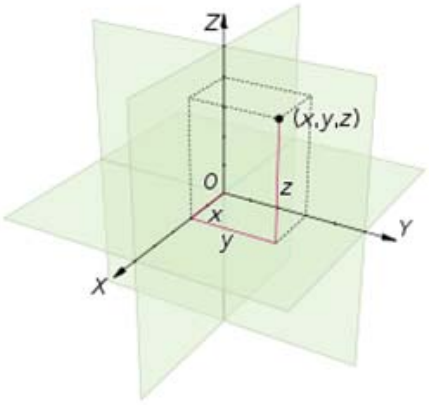


2.6 *System Configurations*

Manufacturer	Description	Model Number
Samsung	To set parameter on the EUT	SM-T387T

2.7 *Worst-case Configuration*

Based on the physical of the EUT possible usage or installation, EUT was evaluated X, Y, and Z to determine the worst-case of EUT orientation. For radiated measurements verification performed using "X" configuration as worst-case.



3 Transmitter Conducted Output Power

3.1 *Test Method*

The maximum Effective Isotropic Radiated Power (EIRP) is calculated by adding the declared maximum antenna gain (dBi)

EIRP = Conducted Power(dBm) + Antenna Gain(dBi)

The maximum Effective Radiated Power (ERP) is calculated from the maximum Effective Isotropic Radiated Power (EIRP) by subtracting 2.15dB

ERP = EIRP – 2.15dB

3.2 *Test Limit*

Technology	Limit (dBm)
GSM/GPRS(850MHz)	38.45
GSM/GPRS(1900MHz)	33.00
WCDMA Band II	33.00
WCDMA Band V	38.45
LTE Band 2	33.00
LTE Band 4	30.00
LTE Band 5/26	38.45
LTE Band 7	33.00
LTE Band 8	34.77
LTE Band 12	34.77
LTE Band 13	34.77
LTE Band 25	33.00

3.3 *Test date and test engineer(s)*

June 12, 2024

3.4 *Test Site*

SGS EMC Laboratory, San Diego, CA

Environmental Conditions

Temperature: 17 °C
Relative Humidity: 64 %
Atmospheric Pressure: 101.7 kPa

3.5 *Additional Observation*

Per customer's declaration no changes had been made of the cellular power setting. The Conducted Power is referenced from the original module reports. All modes of operation were investigated and the worst-case configuration results are in this section of the report

3.6 *Test Equipment*

Asset	Manufacturer	Equipment	Model	Serial No.	Cal Date	Cal Due Date
2013	Keysight	Single Channel PK Power Meter	N1911A	MY62310007	01/29/2024	01/29/2025
1177	Wideband Radio Communication Tester	CMW500	1201.0002K50-135388-Em	Rhode&Schwarz	11/10/2021	8/10/2024
2015	Keysight	Wideband Power Sensor	N1921A	MY62220017	01/29/2024	01/29/2025
2018	Shenzhen Sky Toppower Tech.	DC Power Supply	STP3020	N/A	N.C.R.	
-	*Weinschel*	*20dB attenuator*	*3M-20*	*116459*	*Verified*	
-	*ENS Microwave, LLC*	*RF cable*	*S190-320-MNS-MNS*	-	*Verified*	

3.7 *Test results*

Technology	*Band*	*Mode*	*Frequency Band (MHz)*	*Max Power (dBm)*	*Antenna (dBi)*	*ERP (dBm)*	*EIRP (dBm)*	*Limit (dBm)*
LTE	*2*	*QPSK*	*1882.5*	*23.89*	*3.1*	*24.84*	*26.99*	*33.00*
	4		*1732.5*	*23.62*	*3.1*	*24.57*	*26.72*	*30.00*
	5/26		*829*	*23.48*	*2.3*	*23.63*	*25.78*	*38.45*
	7		*2535*	*23.81*	*3.1*	*24.76*	*26.91*	*33.00*
	8		*898.2*	*23.63*	*2.3*	*23.78*	*25.93*	*34.77*
	12		*707.5*	*23.71*	*2.3*	*23.86*	*26.01*	*34.77*
	13		*782*	*23.52*	*2.3*	*23.67*	*25.82*	*34.77*
	25		*1882.5*	*23.89*	*3.1*	*24.84*	*26.99*	*33.00*
GSM	*850*	*GPRS*	*848.8*	*32.18*	*2.3*	*32.33*	*34.48*	*38.45*
	1900		*1909.8*	*29.76*	*3.1*	*30.71*	*32.86*	*33.00*
	850	*EDGE*	*824.2*	*26.99*	*2.3*	*27.14*	*29.29*	*38.45*
	1900		*1909.8*	*25.95*	*3.1*	*26.9*	*29.05*	*33.00*
WCDMA	*2*	*RMC*	*1852.4*	*24.31*	*3.1*	*25.26*	*27.41*	*33.00*
	5		*836.6*	*23.93*	*2.3*	*24.08*	*26.23*	*38.45*

4 Radiated Spurious Emissions

4.1 *Test Method*

Out of band emissions.

Standards	***Band***
Part 2.1053, Part 22.917(a) / RSS-132(5.5)	*LTE Band 26/5, GPRS/EDGE (800MHz band), WCDMA Band V*
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.	

Standards	***Band***
Part 2.1053, Part 24.238(a) / RSS-133(6.5)	*LTE Band 25/2, GPRS/EDGE (1900MHz band), WCDMA Band II*
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.	

Standards	***Band***
Part 2.1053, Part 27.53(m)(4) / RSS-199(4.5)	*LTE Band 7*
For mobile digital stations, the attenuation factor shall be not less than 40 + 10 log (P) dB on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10 log (P) dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less that 43 + 10 log (P) dB on all frequencies between 2490.5 MHz and 2496 MHz and 55 + 10 log (P) dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.	

Standards	***Band***
Part 2.1053, Part 27.53(m)(4)	*LTE Band 4, 8, 12 and WCDMA Band II*
For mobile digital stations, the attenuation factor shall be not less than 40 + 10 log (P) dB on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10 log (P) dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less that 43 + 10 log (P) dB on all frequencies between 2490.5 MHz and 2496 MHz and 55 + 10 log (P) dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.	

Standards	***Band***
Part 2.1053, Part 27.53(f)	*LTE Band 13*
For operations in the 746-758 MHz, 775-788 MHz, and 805-806 MHz bands, emissions in the band 1559-1610 MHz shall be limited to −70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and −80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.	

Radiated emissions in restricted frequency bands were used and defined in ANSI C63.10 clause 11.12 as worst-case limits.

Test distances for radiated tests:

- *30MHz to 18GHz - The EUT to measurement antenna distance was 3 meters*
- *The low frequency band started from 9kHz to 30MHz was pre-scanned at 3 meters and the results was 20dB lower than the limit per 15.31(o); therefore, no data was presented in this test report.*
- *The high frequency band beyond 18GHz was pre-scanned at 3 meters and the results was 20dB lower than the limit; therefore, no data was presented in this test report.*

Limits within restricted bands of operation:

Frequency	Limits(1)		Peak Limits dBuV/m
	Microvolts/m	dBuV/m	
30 - 88 MHz	100	40 (2)	--
88 - 216 MHz	150	43.5 (2)	--
216 - 960 MHz	200	46 (2)	--
960 - 1000 MHz	500	54 (2)	--
1 - 40 GHz	500	54 (3)	74

(1) These limits are applicable to emissions outside of the intentional transmit frequency band.
(2) Quasi-peak limit
(3) Average limit

4.2 *Test date and test engineer(s)*

March 27 – May 21, 2024 / AC and AG

4.3 *Test Site*

SGS EMC Laboratory, San Diego, CA

Environmental Conditions

Temperature:	17 °C
Relative Humidity:	64 %
Atmospheric Pressure:	101.7 kPa

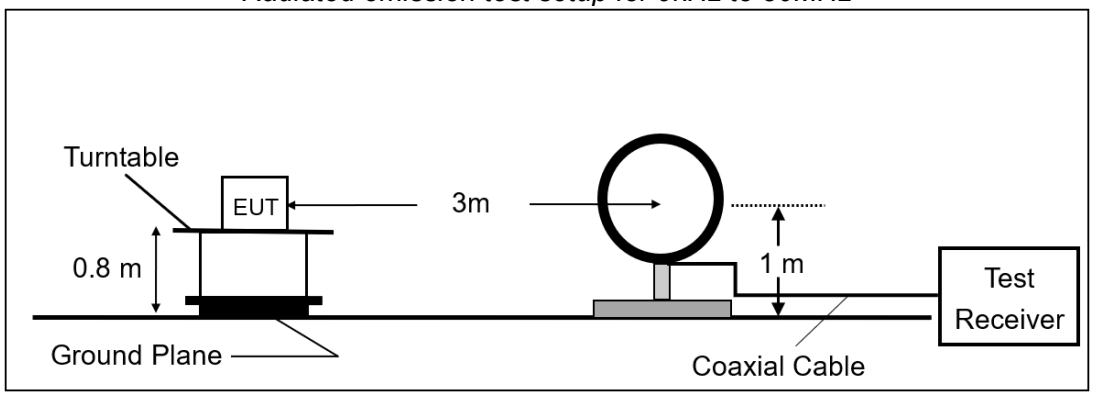
4.4 *Test Equipment*

Asset	Manufacturer	Equipment	Model	Serial No.	Cal Date	Cal Due Date
2034	ETS Lindgren	Biconilog Antenna 26M-6000MHz	3142E	00243882	06/29/2023	06/29/2025
2017	Keysight	EMI Receiver	N9038B	MY59050132	10/24/2023	10/24/2024
1177	Wideband Radio Communication Tester	CMW500	1201.0002K50-135388-Em	Rhode&Schwarz	11/10/2021	8/10/2024
2032	ETS Lindgren	DRG Horn Antenna 10-40GHz	3116C	00251668	06/16/2022	06/16/2024
2029	ETS Lindgren	Loop Antenna, H-Field	6512	00249642	08/31/2022	08/31/2024
-	*ENS Microwave, LLC*	*RF cable*	*S190-320-MNS-MNS*	-	*Verified*	
-	*Micro-Tronics*	*2.97GHz High pass filter*	*HPM16182*	*G015*	*Verified*	
-	*Micro-Tronics*	*1GHz High pass filter*	*HPM17669*	*G006*	*Verified*	
-	*Micro-Tronics*	*6GHz High pass filter*	*HPM50112*	*G086*	*Verified*	
2026	RF-Lambda	RF Microwave Systems Amplifier	RAMP00M45GA	00089204010	*06/01/2023*	*06/01/2024*
2033	ETS Lindgren	DRG Horn Antenna 1G-18GHz	3117	00251986	07/27/2022	07/27/2024
2018	Shenzhen Sky Toppower Tech.	DC Power Supply	STP3020	N/A	N.C.R.	

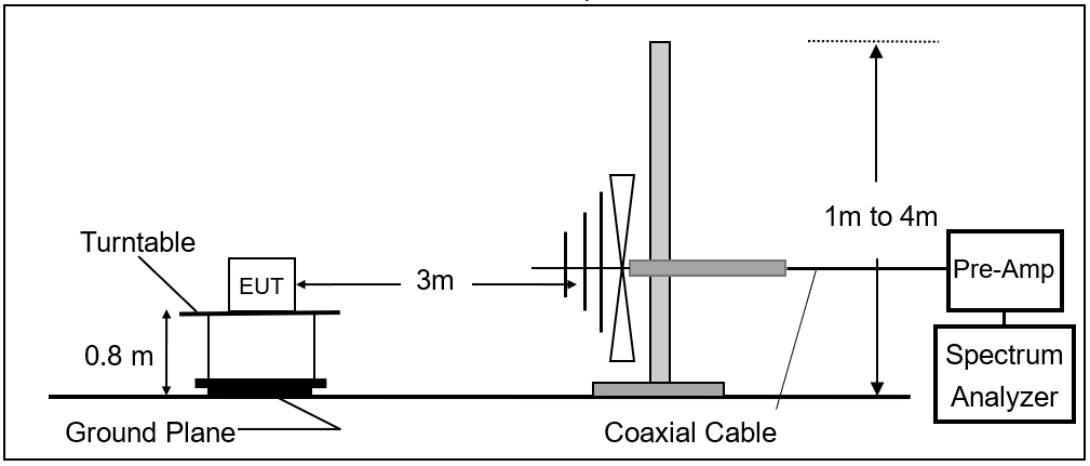
4.5 *Test Setup*

Refer to Section 2.5 in this test report of EUT setup.

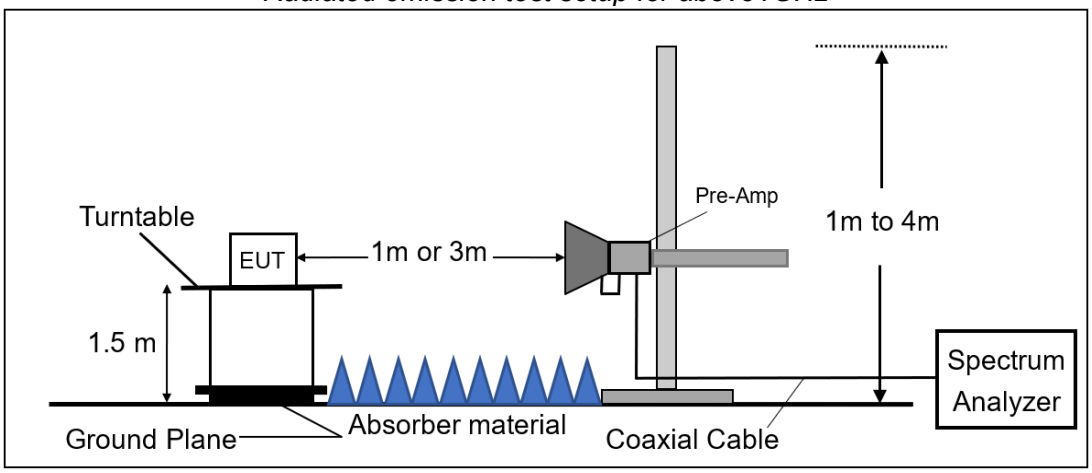
Radiated emission test setup for 9kHz to 30MHz



Radiated emission test setup for 30MHz to 1GHz



Radiated emission test setup for above1GHz



4.6 *Field Strength Calculation*

The total correction factor is calculated by adding the Antenna Factor, Cable Factor and subtracting the Amplifier Gain and Duty Cycle Correction Factor (if any).
The basic equation with a sample calculation as follows:

$$TC = AF + CL - AG$$

Where *TC = Total Correction* *CL = Cable Loss*
AG = Amplifier Gain
AF = Antenna Factor

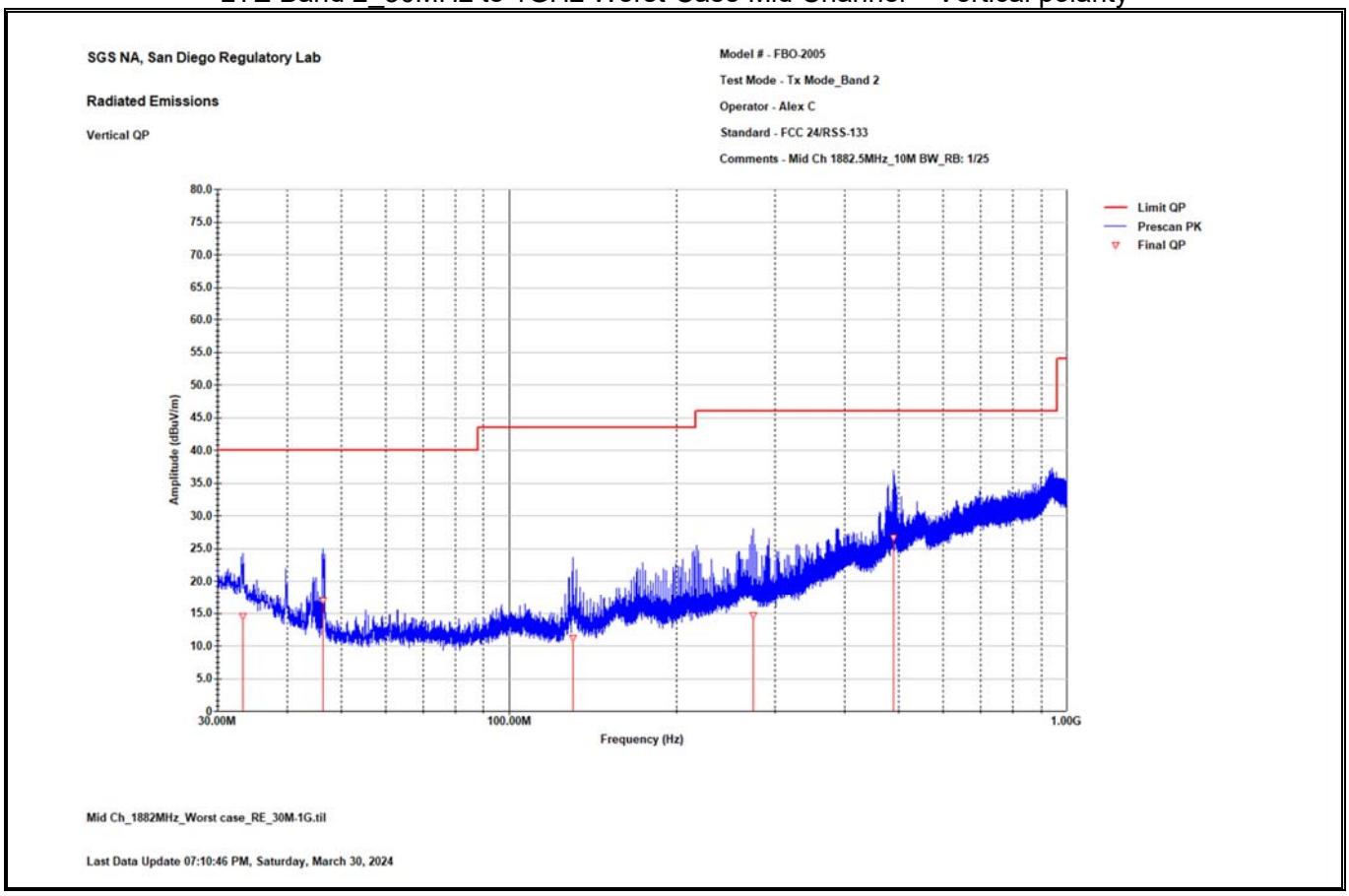
The Final reading had been calculated internally by the test software by adding the Measurement Reading from the receiver and Total Correction factor.
The basic equation with a sample calculation as follows:

$$Final = MR + TC$$

Where *TC = Total Correction* *MR = Measurement Reading*

4.7 *Test Data*

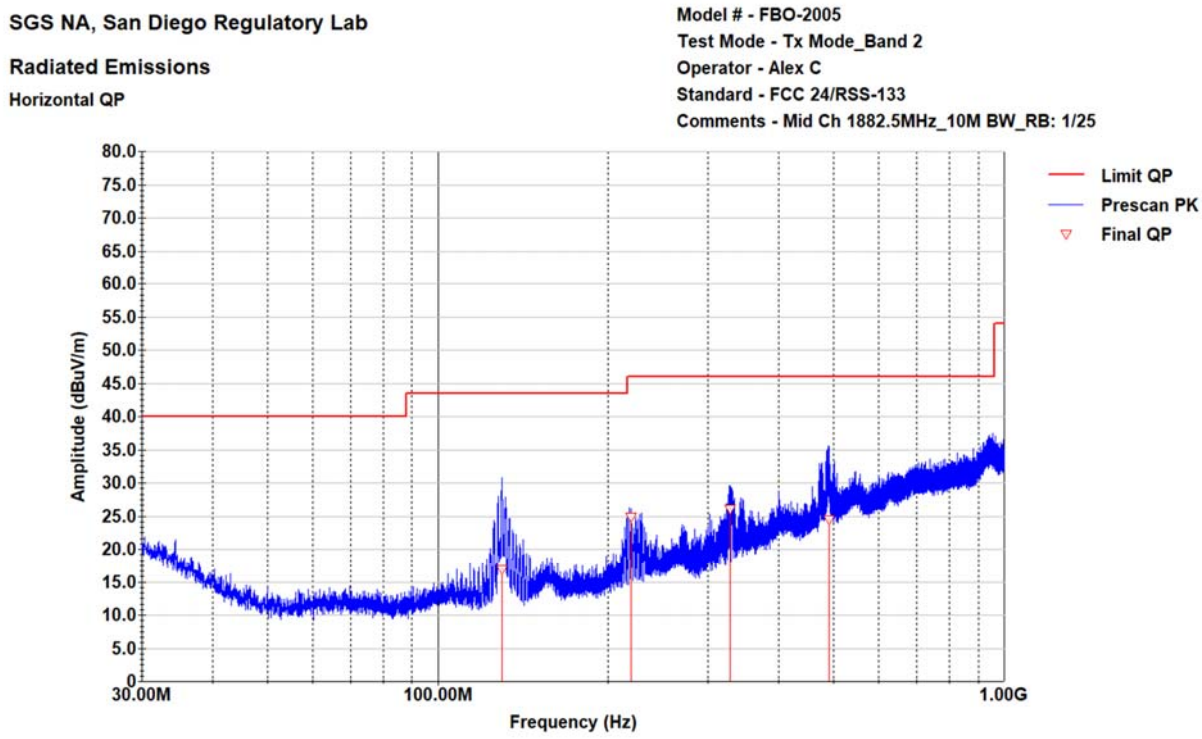
LTE Band 2_30MHz to 1GHz Worst-Case Mid Channel – Vertical polarity



Quasi-Peak Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
33.298	14.5	19.81	-25.5	40	225	37
46.296	16.92	13.33	-23.08	40	100	37
130.007	11.16	13.39	-32.36	43.52	250	106
274.003	14.61	19.2	-31.39	46	100	320
489.004	26.67	25.21	-19.33	46	114	273

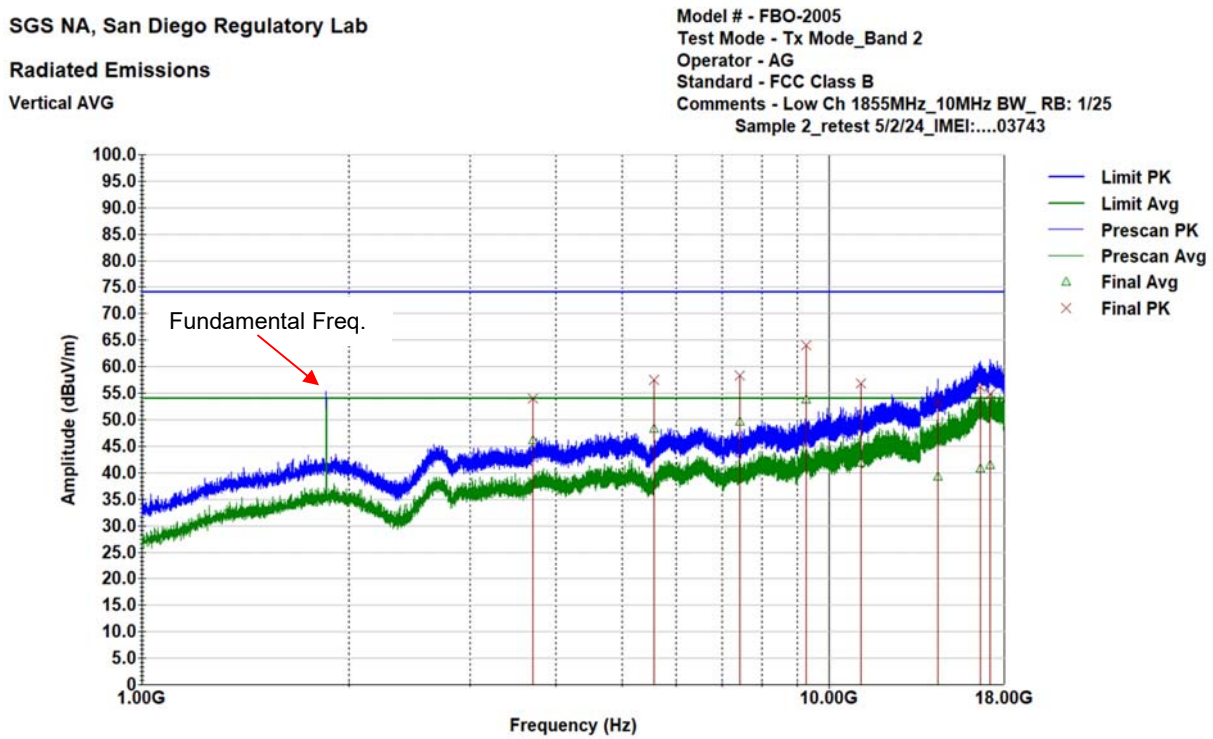
LTE Band 2_30MHz to 1GHz Worst-Case Mid Channel – Horizontal polarity



Quasi-Peak Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
129.571	16.87	13.36	-26.65	43.52	297	347
219.49	24.96	16.62	-21.04	46	145	197
328.251	26.09	20.02	-19.91	46	130	17
490.92	24.58	25.27	-21.42	46	233	155

LTE Band 2_1GHz to 18GHz Low Channel – Vertical polarity



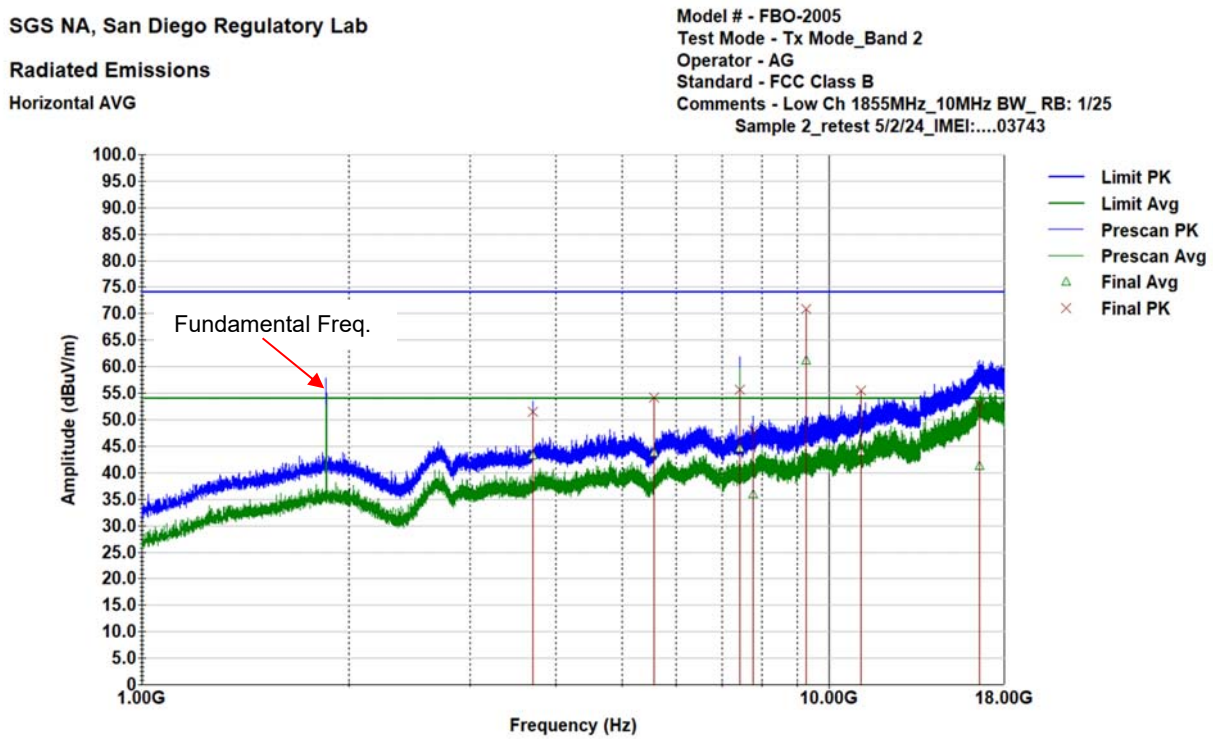
Peak Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
3710.225	54.06	3.22	-19.94	74	241	118
5565.35	57.55	8.18	-16.45	74	210	159
7420.475	58.27	13.09	-15.73	74	150	146
9275.6	64.06	17.92	-9.94	74	150	189
11130.3	56.77	22.63	-17.23	74	372	173
14406.2	53.55	27.16	-20.45	74	287	178
16592.83	56.12	33.5	-17.88	74	240	-6
17189.1	54.76	32.8	-19.24	74	303	-14

Average Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
3710.225	46.19	3.22	-7.81	54	241	118
5565.35	48.3	8.18	-5.7	54	210	159
7420.475	49.68	13.09	-4.32	54	150	146
9275.6	53.78	17.92	-0.22	54	150	189
11130.3	42.05	22.63	-11.95	54	372	173
14406.2	39.34	27.16	-14.66	54	287	178
16592.83	40.89	33.5	-13.11	54	240	-6
17189.1	41.55	32.8	-12.45	54	303	-14

LTE Band 2_1GHz to 18GHz Low Channel – Horizontal polarity



Peak Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
3709.8	51.54	3.22	-22.46	74	255	209
5564.925	54.16	8.18	-19.84	74	171	136
7420.475	55.71	13.09	-18.29	74	163	242
7764.25	48.01	14.27	-25.99	74	308	374
9275.175	70.84	17.92	-3.16	74	240	81
11130.3	55.52	22.63	-18.48	74	150	227
16563.08	52.79	33.37	-21.21	74	171	210

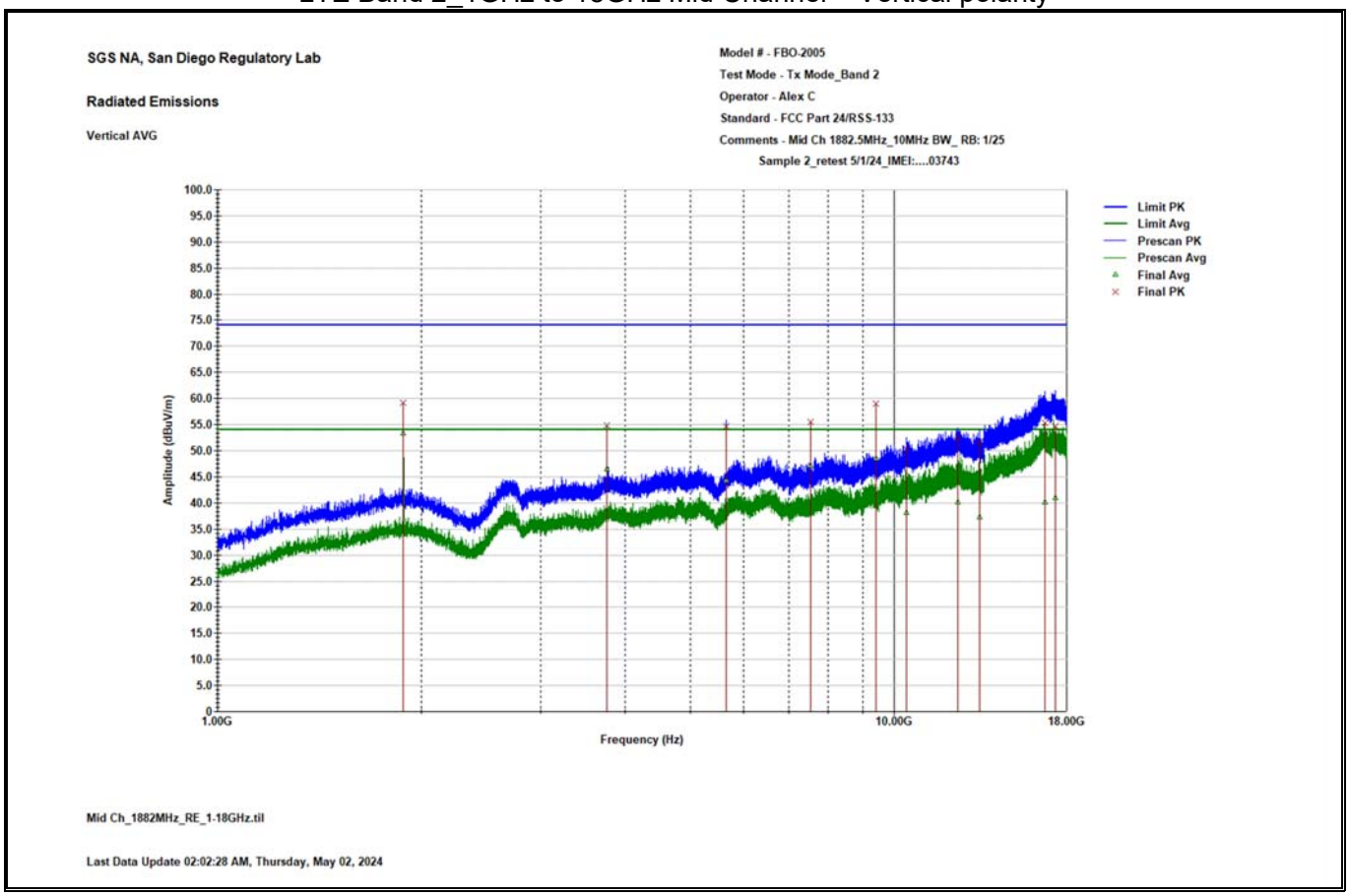
Average Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
3709.8	43.27	3.22	-10.73	54	255	209
5564.925	43.77	8.18	-10.23	54	171	136
7420.475	44.74	13.09	-9.26	54	163	242
7764.25	36.07	14.27	-17.93	54	308	374
*9275.175	61.22	17.92	-21.01	82.23	240	81
11130.3	44.01	22.63	-9.99	54	150	227
16563.08	41.29	33.37	-12.71	54	171	210

* Note: This frequency is outside of FCC 15.205 restricted band. The limit of this frequency is -13dBm that equal 82.23 dBµV/m field strength. Therefore, it complies the requirement.

FCC Part 24.238(a):
Out of band emissions:
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB

LTE Band 2_1GHz to 18GHz Mid Channel – Vertical polarity



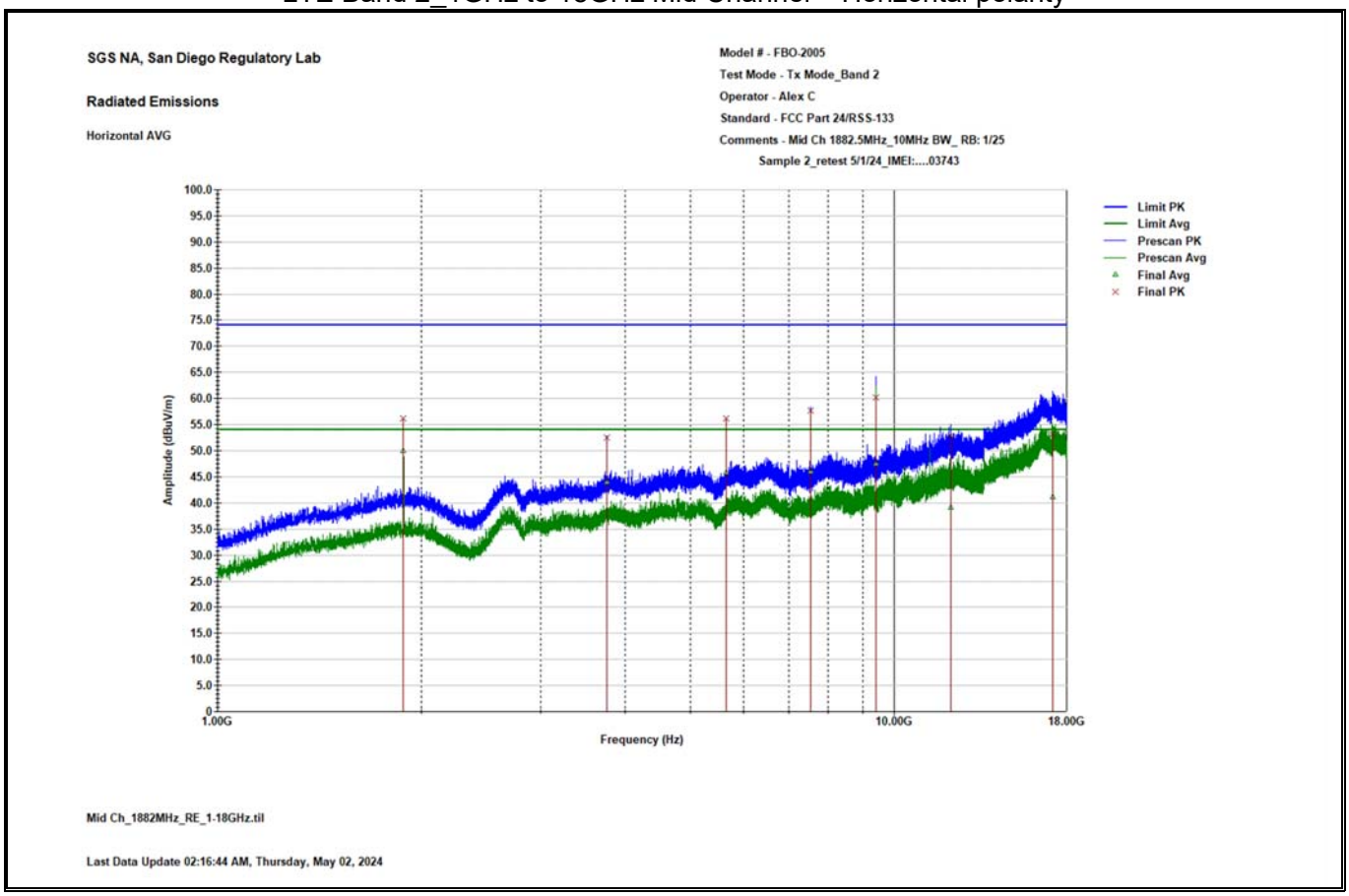
Peak Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
1882.725	59.23	-2.63	-14.77	74	150	283
3765.05	54.8	3.58	-19.2	74	150	118
5647.375	54.68	8.89	-19.32	74	305	185
7530.125	55.45	13.56	-18.55	74	156	154
9412.875	58.95	18.1	-15.05	74	150	190
10432.03	50.36	20.46	-23.64	74	150	132
12424	52.51	25.95	-21.49	74	316	177
13395.98	51.64	26.05	-22.36	74	338	298
16697.38	55.39	33.61	-18.61	74	150	248
17340.4	54.65	32.41	-19.35	74	336	253

Average Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
1882.725	53.32	-2.63	-0.68	54	150	283
3765.05	46.57	3.58	-7.43	54	150	118
5647.375	44.36	8.89	-9.64	54	305	185
7530.125	47.18	13.56	-6.82	54	156	154
9412.875	48.44	18.1	-5.56	54	150	190
10432.03	38.08	20.46	-15.92	54	150	132
12424	40.11	25.95	-13.89	54	316	177
13395.98	37.37	26.05	-16.63	54	338	298
16697.38	40.14	33.61	-13.86	54	150	248
17340.4	41.04	32.41	-12.96	54	336	253

LTE Band 2_1GHz to 18GHz Mid Channel – Horizontal polarity



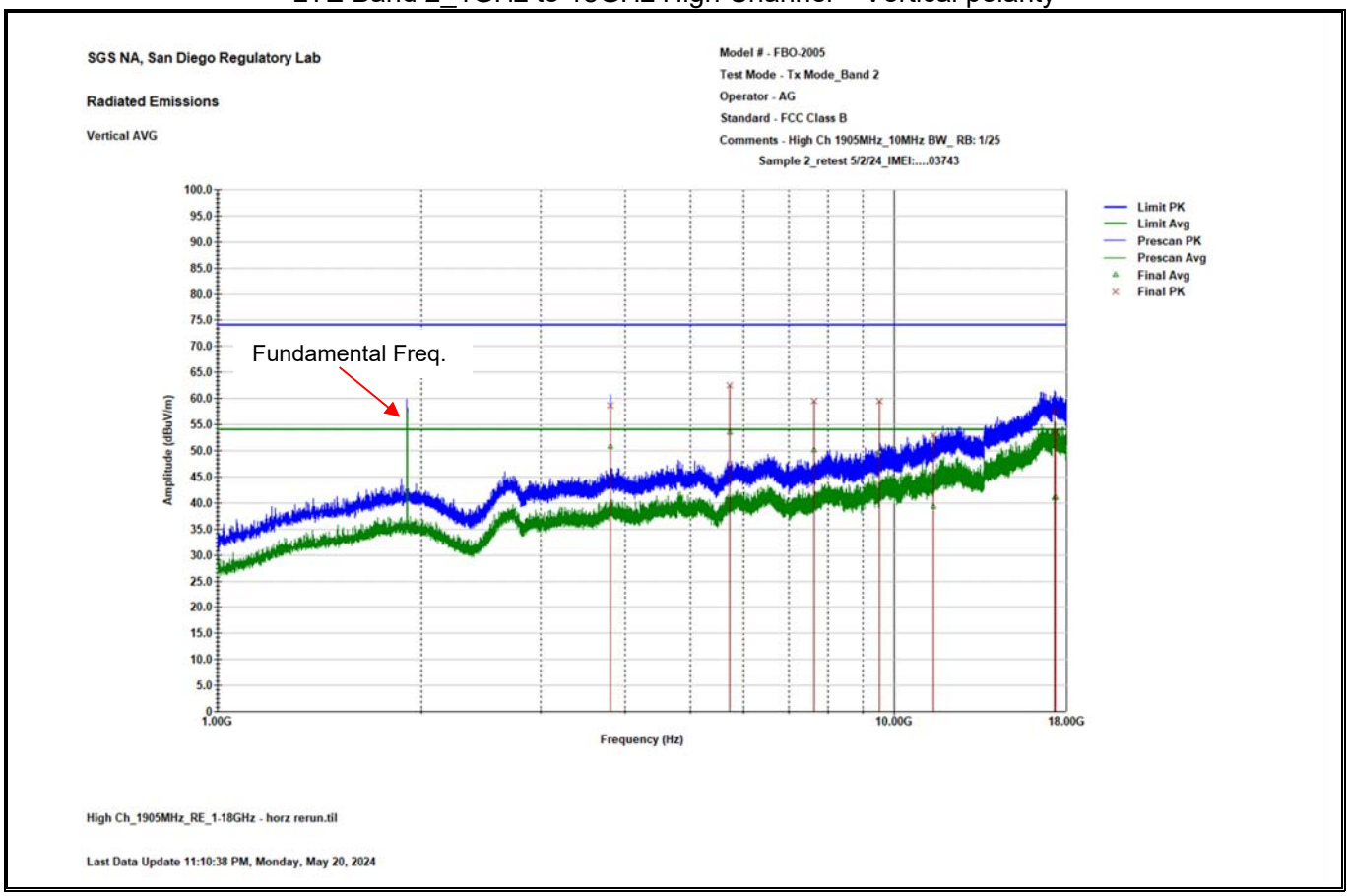
Peak Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
1882.3	56.12	-2.63	-17.88	74	150	227
3765.475	52.53	3.58	-21.47	74	165	166
5647.8	56.1	8.89	-17.9	74	155	126
7530.125	57.63	13.56	-16.37	74	261	101
9412.45	60.13	18.09	-13.87	74	207	224
12150.72	52.76	25.58	-21.24	74	207	331
17146.18	53.2	32.79	-20.8	74	197	244

Average Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
1882.3	50.01	-2.63	-3.99	54	150	227
3765.475	43.97	3.58	-10.03	54	165	166
5647.8	45.76	8.89	-8.24	54	155	126
7530.125	45.95	13.56	-8.05	54	261	101
9412.45	47.56	18.09	-6.44	54	207	224
12150.72	39.18	25.58	-14.82	54	207	331
17146.18	41.24	32.79	-12.76	54	197	244

LTE Band 2_1GHz to 18GHz High Channel – Vertical polarity



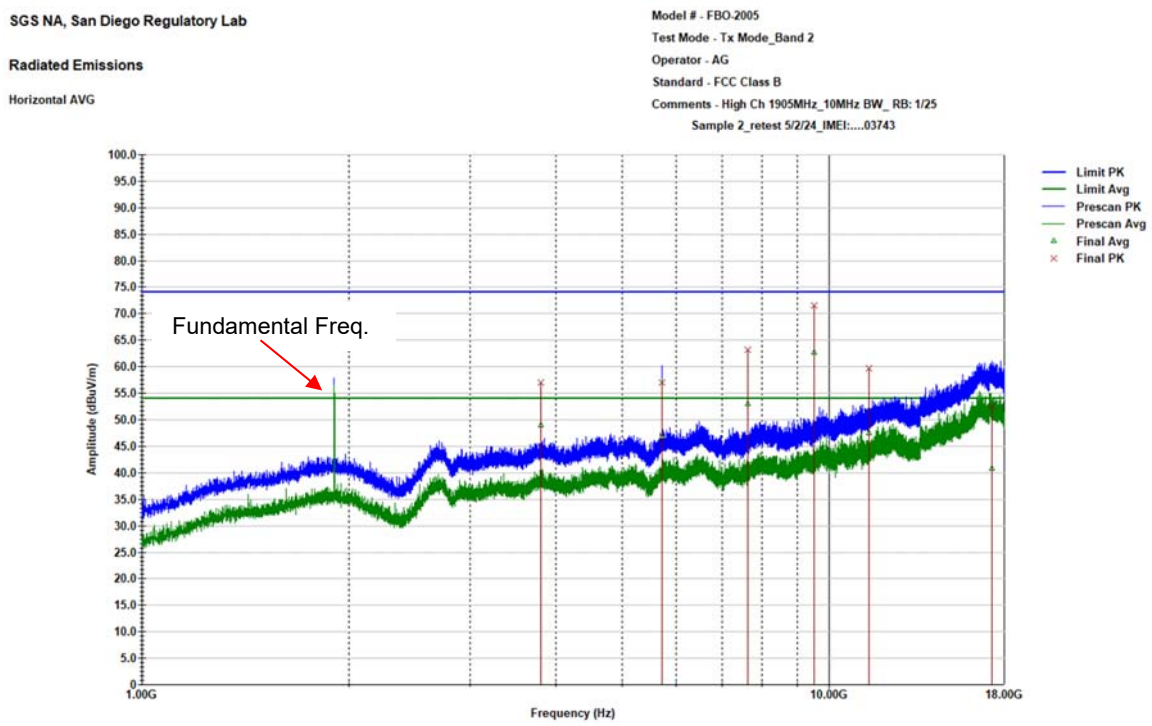
Peak Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
3810.1	58.73	3.69	-15.27	74	150	181
5715.375	62.45	9.15	-11.55	74	400	380
7620.225	59.57	13.81	-14.43	74	257	351
9525.5	59.52	18.58	-14.48	74	225	82
11430.77	52.93	23.97	-21.07	74	349	167
17291.95	57.58	32.54	-16.42	74	256	-2
17337.43	53.68	32.42	-20.32	74	197	244

Average Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
3810.1	50.89	3.69	-3.11	54	150	181
5715.375	53.41	9.15	-0.59	54	400	380
7620.225	50.17	13.81	-3.83	54	257	351
9525.5	49.75	18.58	-4.25	54	225	82
11430.77	39.31	23.97	-14.69	54	349	167
17291.95	40.99	32.54	-13.01	54	256	-2
17337.43	41.1	32.42	-12.9	54	197	244

LTE Band 2_1GHz to 18GHz High Channel – Horizontal polarity



Peak Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
3810.1	57.05	3.69	-16.95	74	232	161
5715.375	56.92	9.15	-17.08	74	155	131
7620.225	63.21	13.81	-10.79	74	256	-20
9525.5	71.5	18.58	-2.5	74	255	53
11430.77	59.61	23.97	-14.39	74	193	120
17291.95	52.51	32.54	-21.49	74	332	114

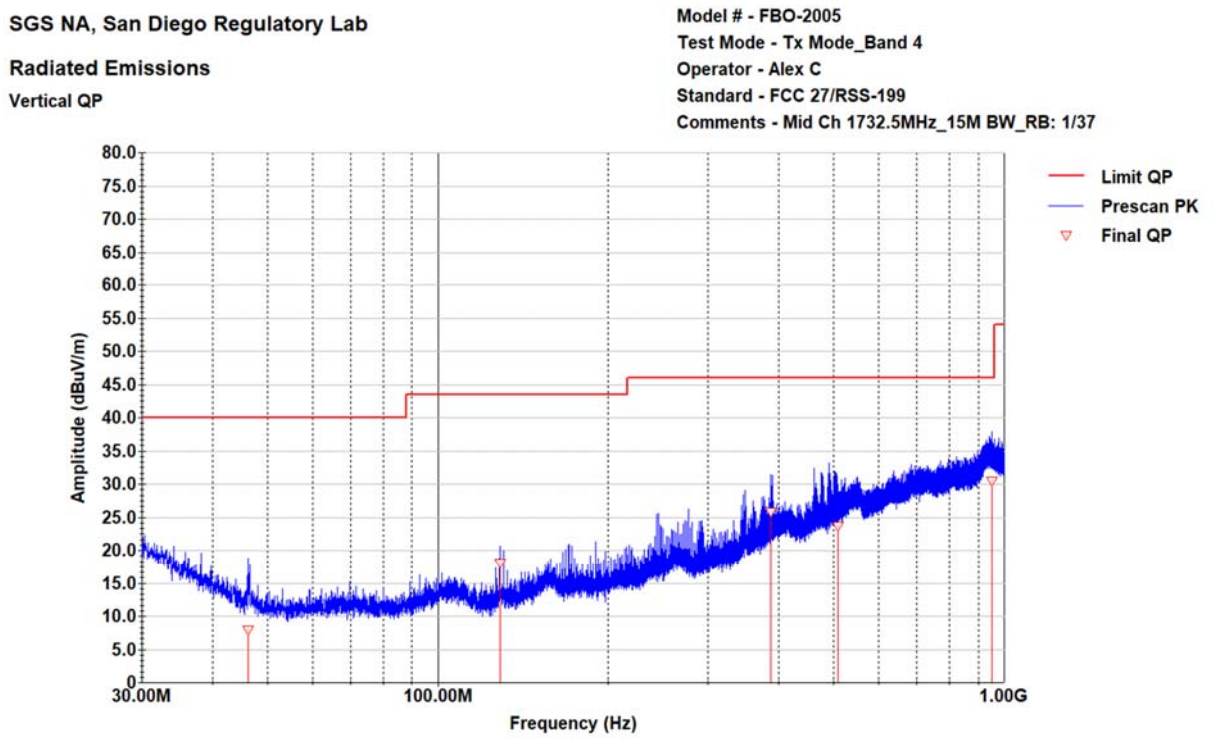
Average Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
3810.1	48.97	3.69	-5.03	54	232	161
5715.375	46.77	9.15	-7.23	54	155	131
7620.225	52.97	13.81	-1.03	54	256	-20
*9525.5	62.67	18.58	-19.56	82.23	255	53
11430.77	47.47	23.97	-6.53	54	193	120
17291.95	40.78	32.54	-13.22	54	332	114

* Note: This frequency is outside of FCC 15.205 restricted band. The limit of this frequency is -13dBm that equal 82.23 dBµV/m field strength. Therefore, it complies the requirement.

FCC Part 24.238(a):
Out of band emissions:
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB

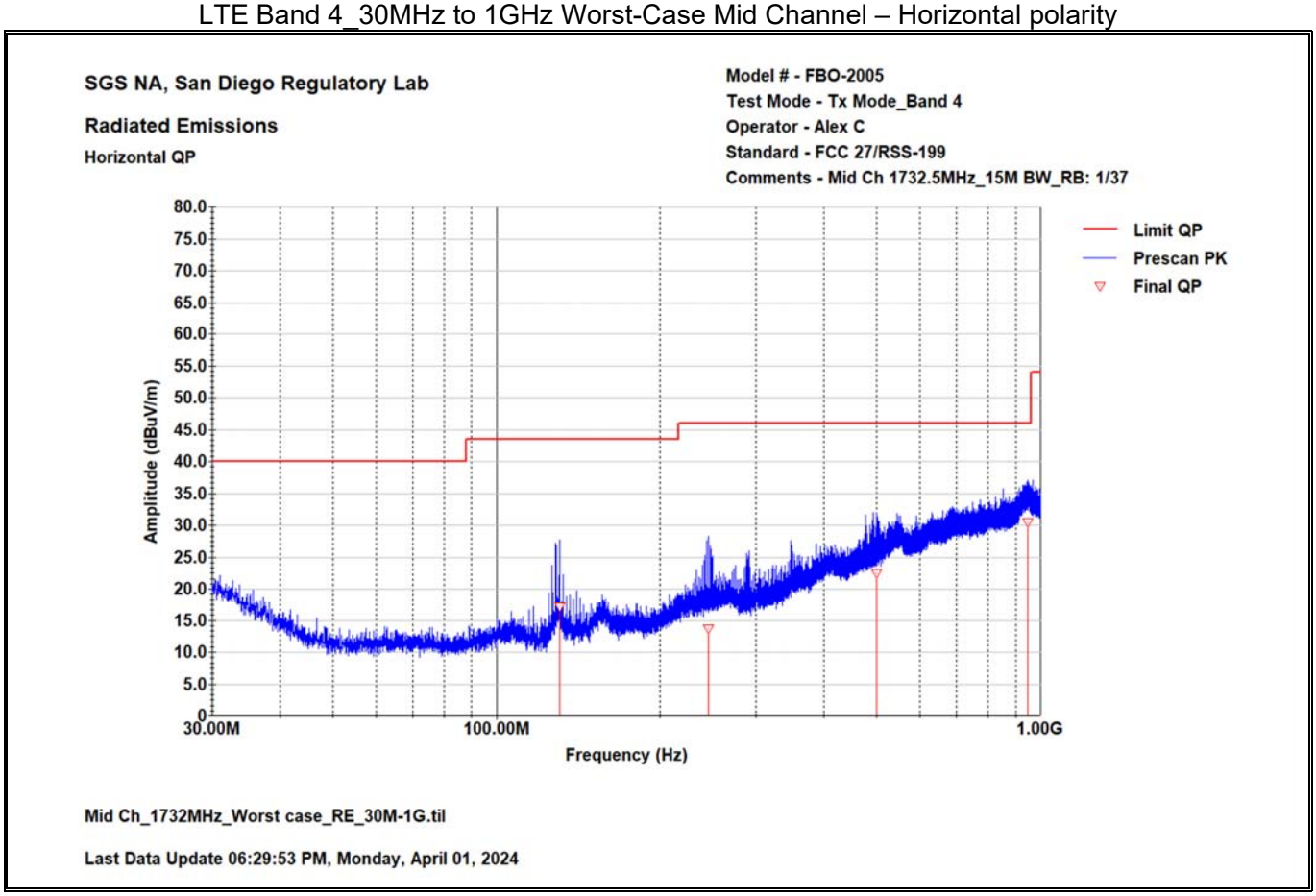
LTE Band 4_30MHz to 1GHz Worst-Case Mid Channel – Vertical polarity



Quasi-Peak Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
46.151	7.94	13.37	-32.06	40	305.4	160.8
128.604	18.17	13.3	-25.34	43.52	100	75.8
387.712	25.84	23.34	-20.16	46	113.8	300.8
508.453	23.71	26.32	-22.29	46	100.3	295.7
949.899	30.56	34.13	-15.44	46	179.3	187.2

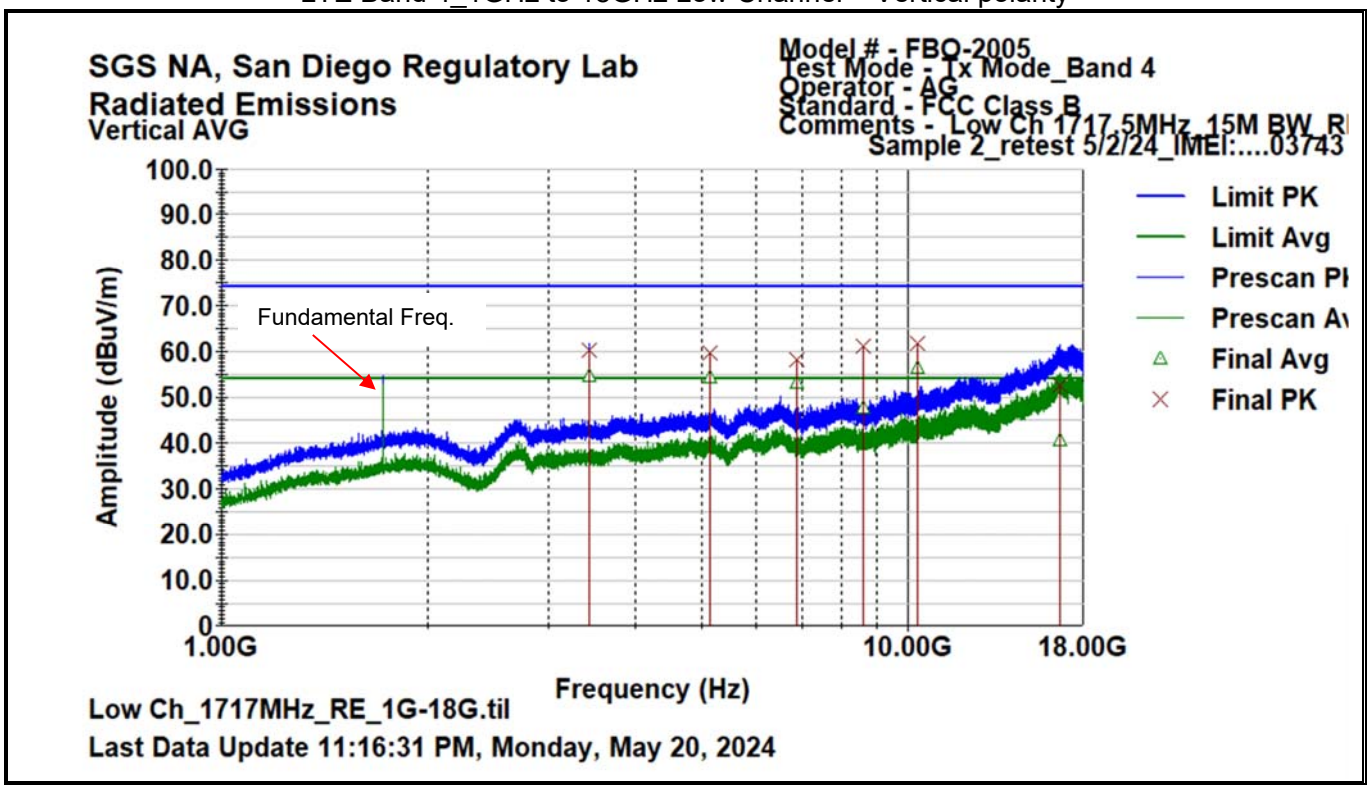
LTE Band 4_30MHz to 1GHz Worst-Case Mid Channel – Horizontal polarity



Quasi-Peak Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
130.516	17.22	13.45	-26.3	43.52	256	380
245.267	13.75	18.16	-32.25	46	217	93
500.329	22.47	25.76	-23.53	46	224	52
946.844	30.55	34.19	-15.45	46	146	256

LTE Band 4_1GHz to 18GHz Low Channel – Vertical polarity



Peak Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
3434.825	60.18	2.69	-13.82	74	150	212
5152.25	59.65	7.23	-14.35	74	171	176
6870.1	58.13	11.67	-15.87	74	264	243
8587.525	61.15	16.21	-12.85	74	210	178
10304.95	61.63	20.16	-12.37	74	287	267
16628.95	52.36	33.63	-21.64	74	271	302

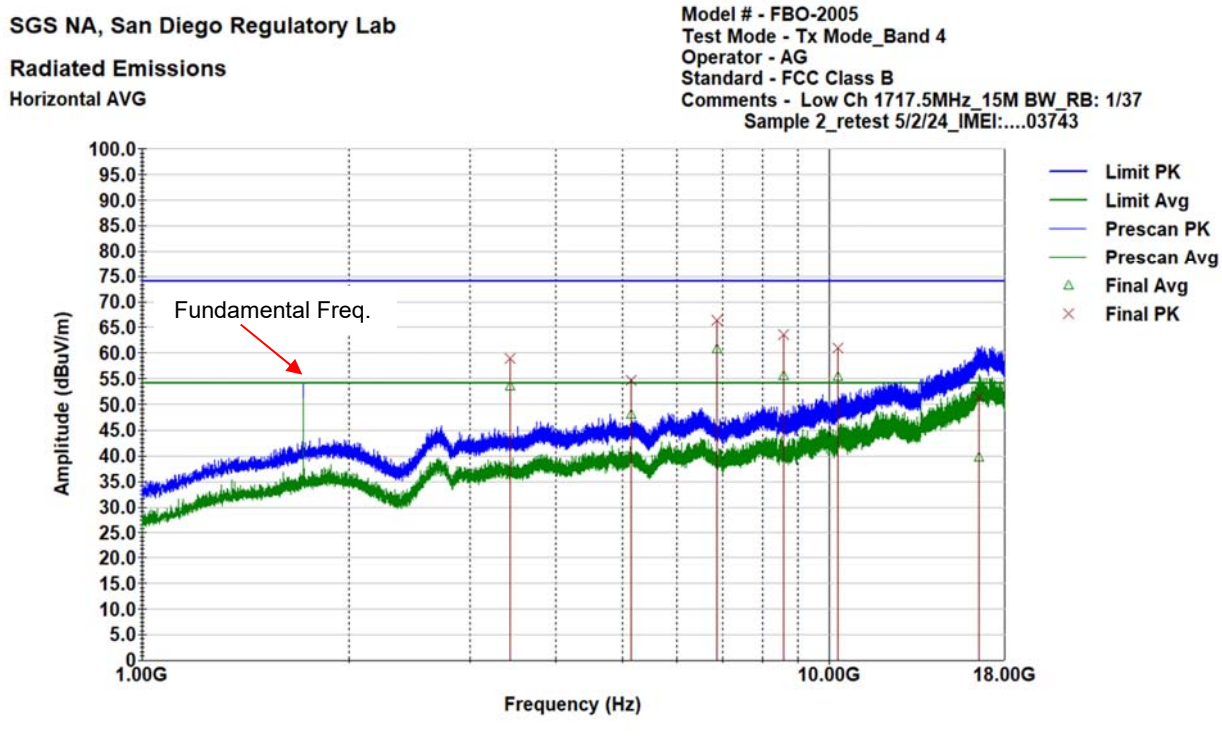
Average Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
*3434.825	54.58	2.69	-27.65	82.23	150	212
*5152.25	54.3	7.23	-27.93	82.23	171	176
6870.1	53.15	11.67	-0.85	54	264	243
8587.525	47.76	16.21	-6.24	54	210	178
*10304.95	56.22	20.16	-26.01	82.23	287	267
16628.95	40.77	33.63	-13.23	54	271	302

* Note: This frequency is outside of FCC 15.205 restricted band. The limit of this frequency is -13dBm that equal 82.23 dBµV/m field strength. Therefore, it complies the requirement.

FCC Part 27.53(m)(4):
For mobile digital stations, the attenuation factor shall be not less than 40 + 10 log (P) dB on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10 log (P) dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less that 43 + 10 log (P) dB on all frequencies between 2490.5 MHz and 2496 MHz and 55 + 10 log (P) dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

LTE Band 4_1GHz to 18GHz Low Channel – Horizontal polarity



Peak Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
3434.825	58.95	2.69	-15.05	74	228	144
5152.675	54.58	7.23	-19.42	74	150	131
6870.1	66.31	11.67	-7.69	74	279	64
8587.1	63.57	16.21	-10.43	74	263	297
10304.95	60.89	20.16	-13.11	74	224	207
16519.5	51.44	33.19	-22.56	74	233	355

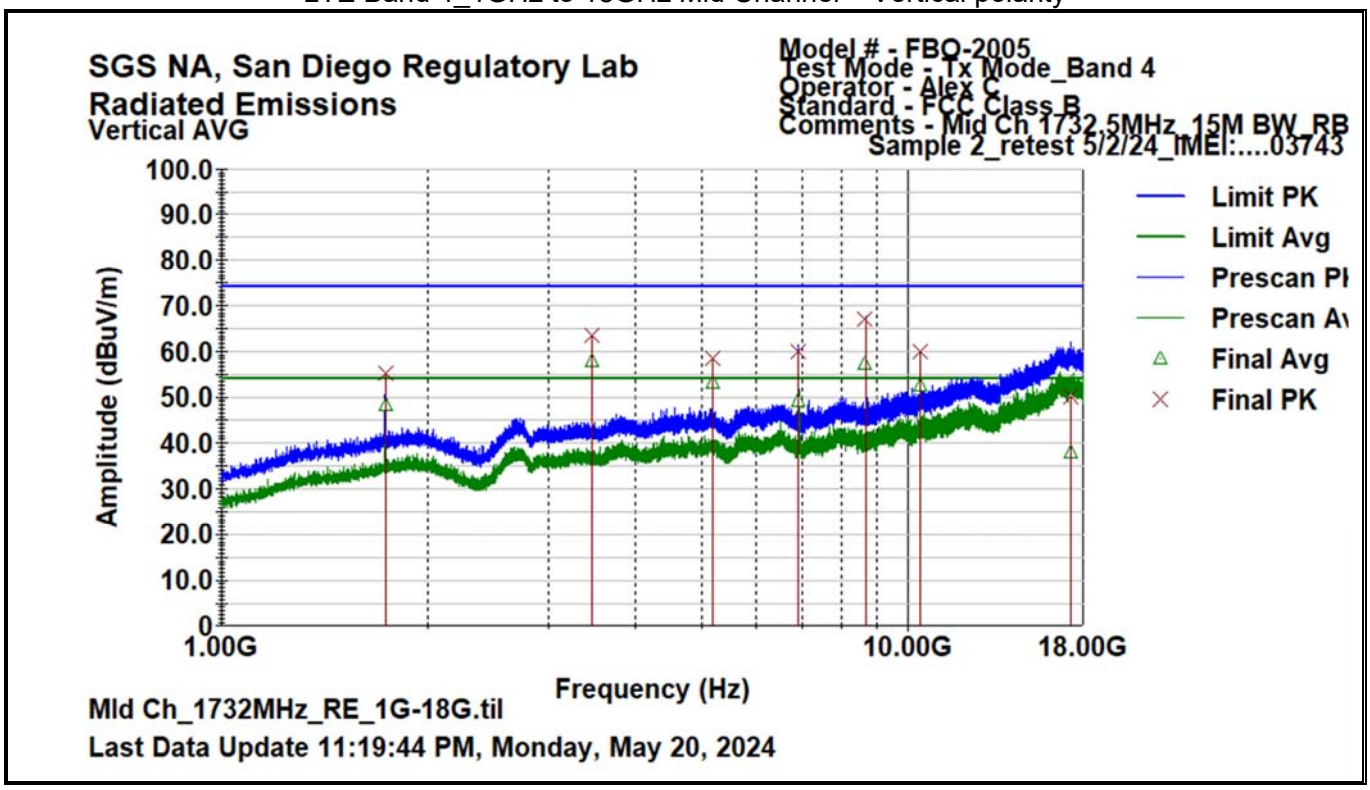
Average Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
3434.825	53.52	2.69	-0.48	54	228	144
5152.675	48.2	7.23	-5.8	54	150	131
*6870.1	60.73	11.67	-21.5	82.23	279	64
*8587.1	55.61	16.21	-26.62	82.23	263	297
*10304.95	55.31	20.16	-26.92	82.23	224	207
16519.5	39.77	33.19	-14.23	54	233	355

* Note: This frequency is outside of FCC 15.205 restricted band. The limit of this frequency is -13dBm that equal 82.23 dBµV/m field strength. Therefore, it complies the requirement.

FCC Part 27.53(m)(4):
For mobile digital stations, the attenuation factor shall be not less than 40 + 10 log (P) dB on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10 log (P) dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less that 43 + 10 log (P) dB on all frequencies between 2490.5 MHz and 2496 MHz and 55 + 10 log (P) dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

LTE Band 4_1GHz to 18GHz Mid Channel – Vertical polarity



Peak Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
1732.275	55.17	-4.2	-18.83	74	205	286
3465	63.5	2.78	-10.5	74	150	175
5197.725	58.39	7.36	-15.61	74	163	185
6929.6	59.97	11.73	-14.03	74	150	155
8662.75	67.11	16.09	-6.89	74	186	188
10395.05	59.86	20.39	-14.14	74	210	220
17230.32	50.03	32.72	-23.97	74	150	380

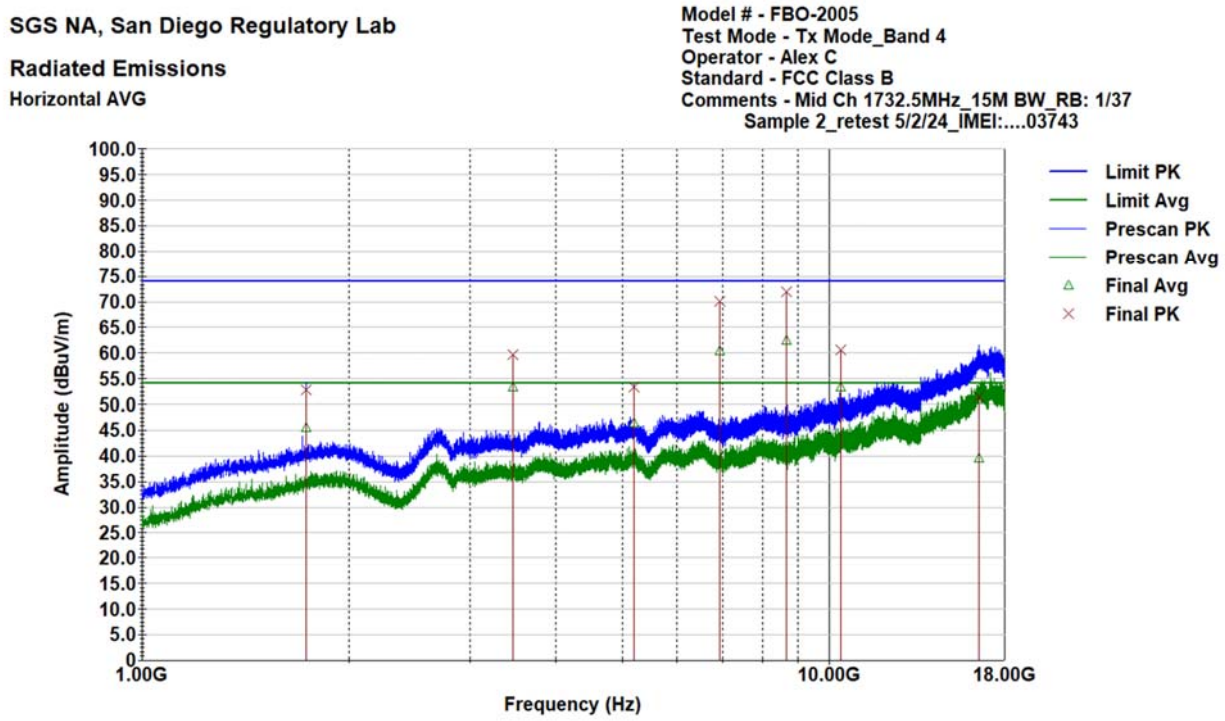
Average Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
1732.275	48.49	-4.2	-5.51	54	205	286
*3465	57.82	2.78	-24.41	82.23	150	175
5197.725	52.98	7.36	-1.02	54	163	185
6929.6	49.22	11.73	-4.78	54	150	155
*8662.75	57.33	16.09	-24.9	82.23	186	188
10395.05	52.48	20.39	-1.52	54	210	220
17230.32	37.91	32.72	-16.09	54	150	380

* Note: This frequency is outside of FCC 15.205 restricted band. The limit of this frequency is -13dBm that equal 82.23 dBµV/m field strength. Therefore, it complies the requirement.

FCC Part 27.53(m)(4):
For mobile digital stations, the attenuation factor shall be not less than 40 + 10 log (P) dB on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10 log (P) dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less that 43 + 10 log (P) dB on all frequencies between 2490.5 MHz and 2496 MHz and 55 + 10 log (P) dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

LTE Band 4_1GHz to 18GHz Mid Channel – Horizontal polarity



Peak Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
1732.7	52.81	-4.19	-21.19	74	150	126
3464.575	59.63	2.78	-14.37	74	280	134
5197.725	53.38	7.36	-20.62	74	150	131
6929.6	70.03	11.73	-3.97	74	279	49
8662.75	71.87	16.09	-2.13	74	271	305
10395.05	60.51	20.39	-13.49	74	240	200
16549.9	51.44	33.32	-22.56	74	301	-13

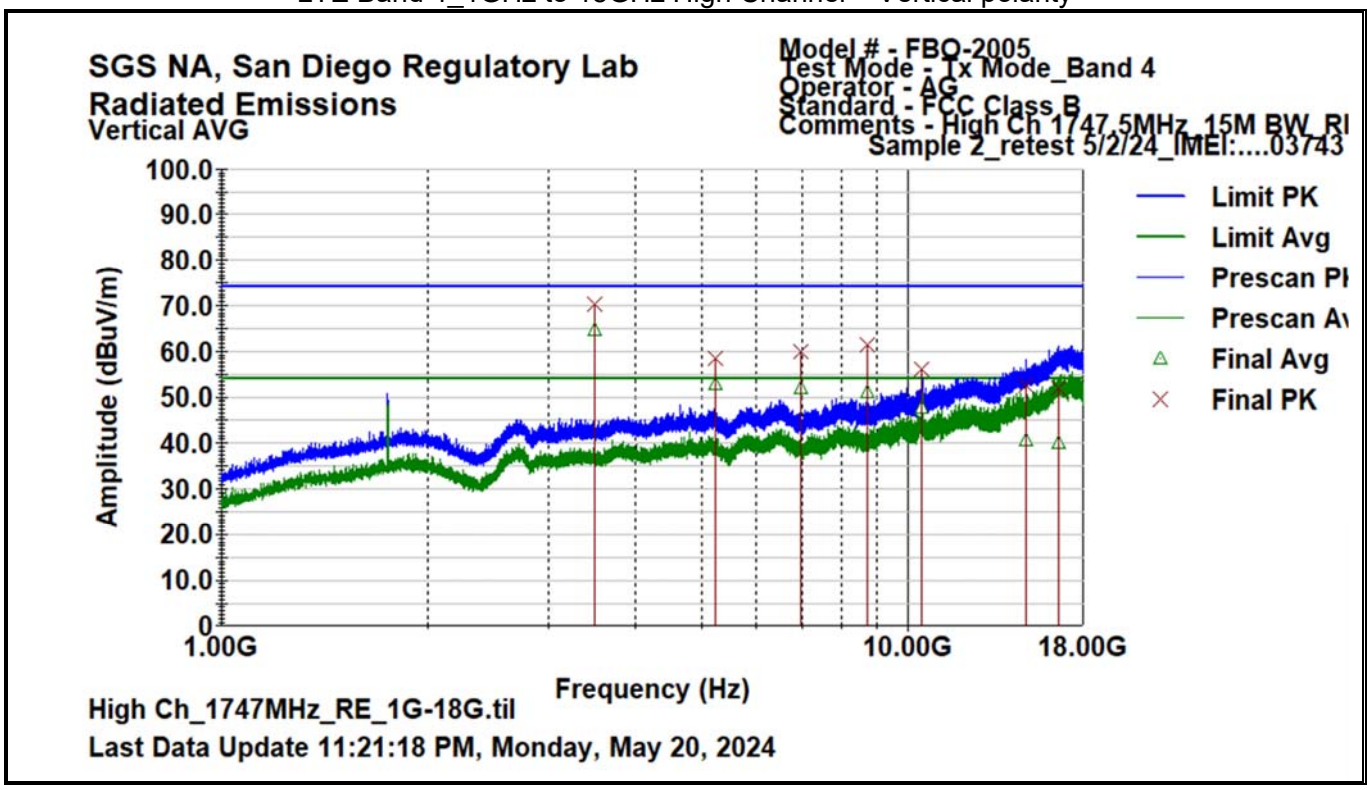
Average Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
1732.7	45.46	-4.19	-8.54	54	150	126
3464.575	53.36	2.78	-0.64	54	280	134
5197.725	46.46	7.36	-7.54	54	150	131
*6929.6	60.49	11.73	-21.74	82.23	279	49
*8662.75	62.4	16.09	-19.83	82.23	271	305
10395.05	53.38	20.39	-0.62	54	240	200
16549.9	39.64	33.32	-14.36	54	301	-13

* Note: This frequency is outside of FCC 15.205 restricted band. The limit of this frequency is -13dBm that equal 82.23 dBµV/m field strength. Therefore, it complies the requirement.

FCC Part 27.53(m)(4):
For mobile digital stations, the attenuation factor shall be not less than 40 + 10 log (P) dB on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10 log (P) dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less that 43 + 10 log (P) dB on all frequencies between 2490.5 MHz and 2496 MHz and 55 + 10 log (P) dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

LTE Band 4_1GHz to 18GHz High Channel – Vertical polarity



Peak Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
3494.75	70.13	2.83	-3.87	74	180	151
5242.35	58.55	7.41	-15.45	74	194	147
6989.95	59.79	11.8	-14.21	74	155	177
8737.55	61.44	16.31	-12.56	74	156	223
10484.72	55.99	20.54	-18.01	74	163	189
14819.73	52.51	28.04	-21.49	74	335	374
16522.27	52.05	33.2	-21.95	74	373	122

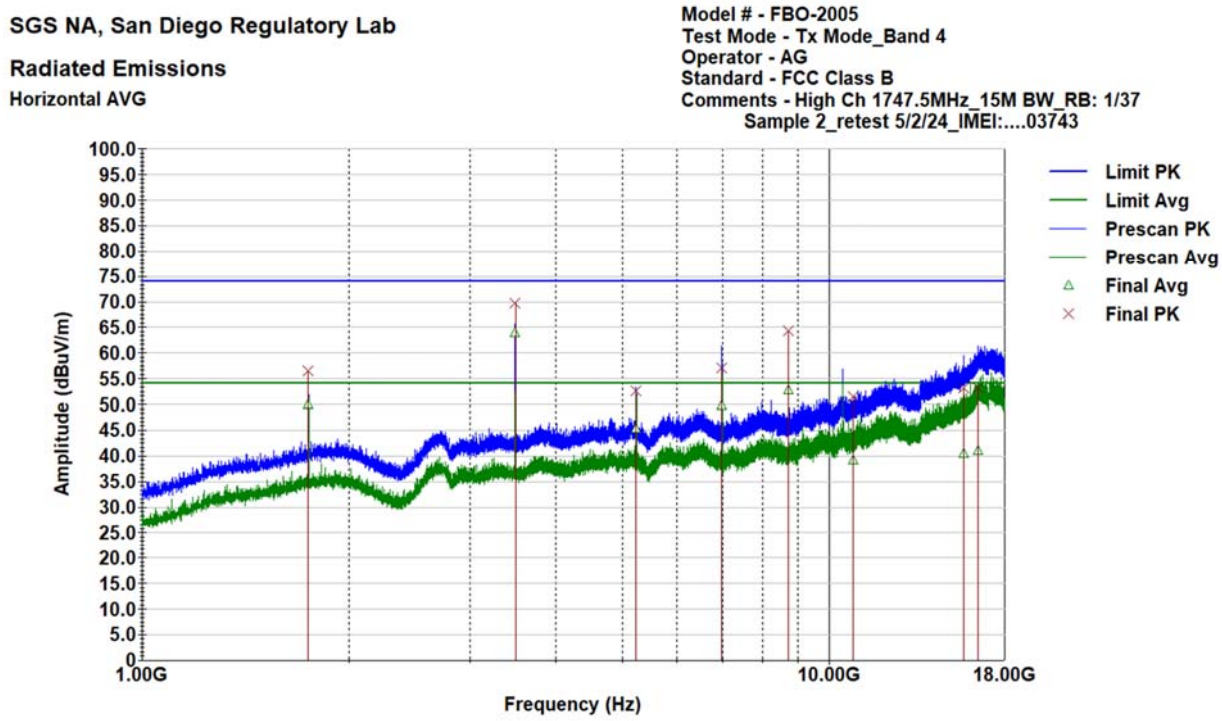
Average Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
*3494.75	64.56	2.83	-17.67	82.23	180	151
5242.35	52.73	7.41	-1.27	54	194	147
6989.95	51.86	11.8	-2.14	54	155	177
8737.55	51.16	16.31	-2.84	54	156	223
10484.72	47.63	20.54	-6.37	54	163	189
14819.73	40.59	28.04	-13.41	54	335	374
16522.27	39.98	33.2	-14.02	54	373	122

* Note: This frequency is outside of FCC 15.205 restricted band. The limit of this frequency is -13dBm that equal 82.23 dBµV/m field strength. Therefore, it complies the requirement.

FCC Part 27.53(m)(4):
For mobile digital stations, the attenuation factor shall be not less than 40 + 10 log (P) dB on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10 log (P) dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less that 43 + 10 log (P) dB on all frequencies between 2490.5 MHz and 2496 MHz and 55 + 10 log (P) dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

LTE Band 4_1GHz to 18GHz High Channel – Horizontal polarity



Peak Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
1747.575	56.6	-4.04	-17.4	74	212	270
3495.175	69.68	2.83	-4.32	74	244	142
5242.775	52.55	7.41	-21.45	74	150	131
6989.95	57.14	11.8	-16.86	74	194	183
8737.125	64.41	16.31	-9.59	74	271	311
10848.47	51.47	21.6	-22.53	74	279	3
15702.45	53.15	30.11	-20.85	74	150	105
16474.68	53.08	32.99	-20.92	74	150	116

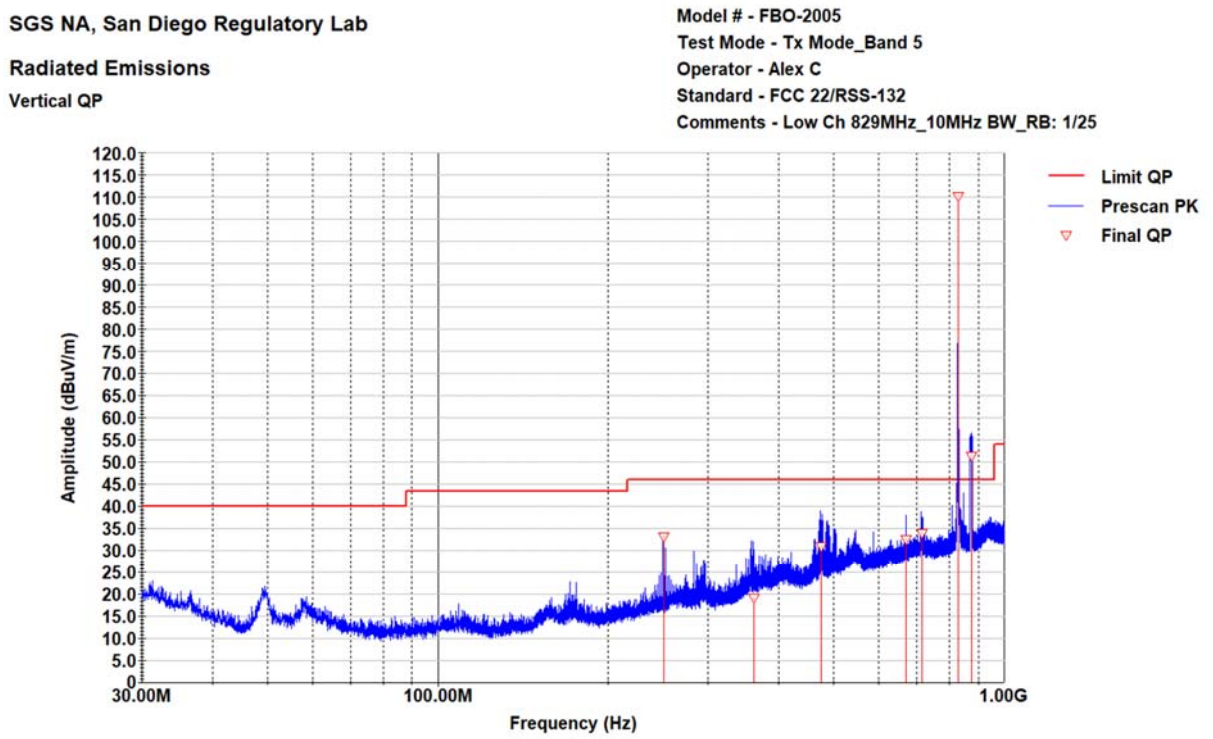
Average Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
1747.575	49.96	-4.04	-4.04	54	212	270
*3495.175	64.03	2.83	-18.2	82.23	244	142
5242.775	45.26	7.41	-8.74	54	150	131
6989.95	49.71	11.8	-4.29	54	194	183
8737.125	52.81	16.31	-1.19	54	271	311
10848.47	39.18	21.6	-14.82	54	279	3
15702.45	40.45	30.11	-13.55	54	150	105
16474.68	41.11	32.99	-12.89	54	150	116

* Note: This frequency is outside of FCC 15.205 restricted band. The limit of this frequency is -13dBm that equal 82.23 dBµV/m field strength. Therefore, it complies the requirement.

FCC Part 27.53(m)(4):
For mobile digital stations, the attenuation factor shall be not less than 40 + 10 log (P) dB on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10 log (P) dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less that 43 + 10 log (P) dB on all frequencies between 2490.5 MHz and 2496 MHz and 55 + 10 log (P) dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

LTE Band 5/26_30MHz to 1GHz Worst-Case Low Channel – Vertical polarity

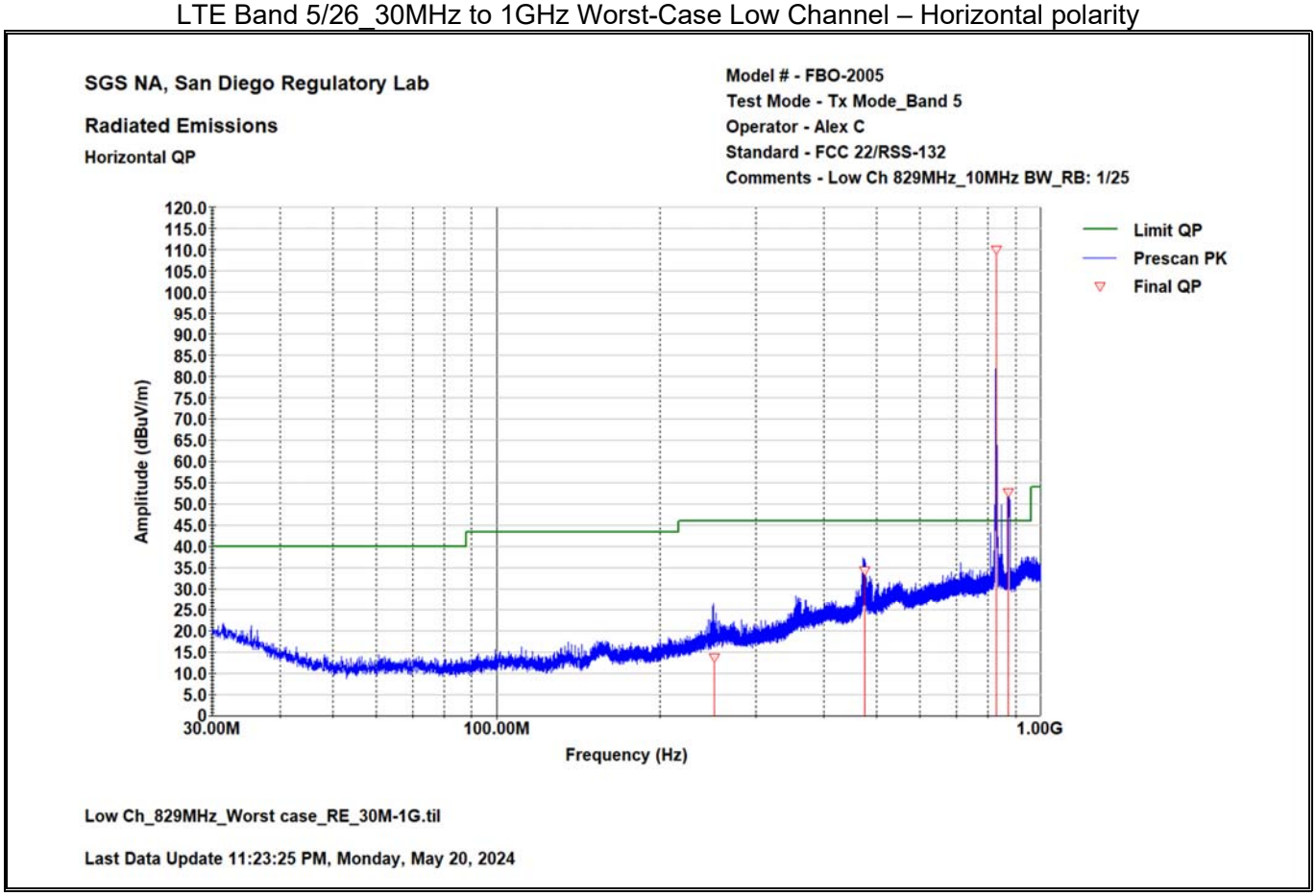


Quasi-Peak Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
250.006	33.28	18.31	-12.72	46	100	-1.3
360.828	19.09	22.22	-26.91	46	209.9	346.1
474.293	31	24.97	-15	46	100	226.3
671.911	32.6	29.63	-13.4	46	100.4	249.7
714.968	34.02	30.38	-11.98	46	166.1	214.3
829.062	110.11	1)				
875.378	51.31	2)				

1) Note: Fundamental uplink frequency, not subject to this test limit. Data provided only for information purpose.
2) Note: Fundamental downlink frequency, not subject to this test limit. Data provided only for information purpose.

LTE Band 5/26_30MHz to 1GHz Worst-Case Low Channel – Horizontal polarity

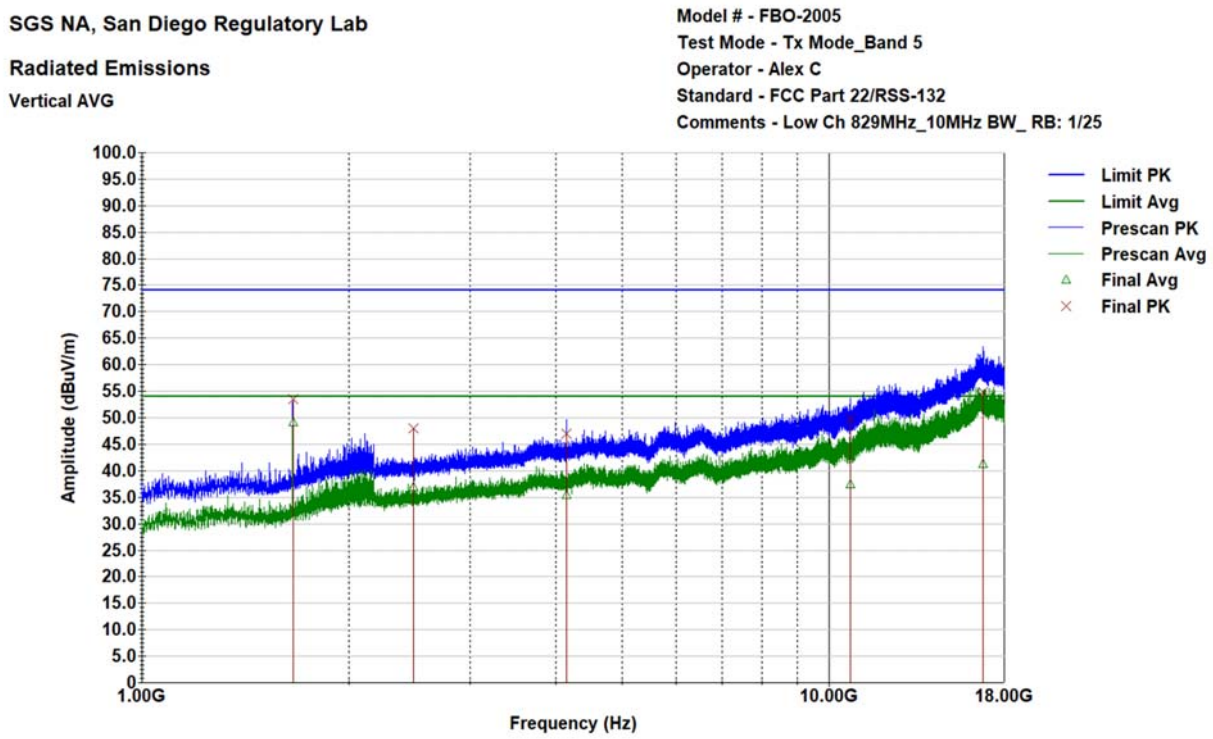


Quasi-Peak Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
251.122	13.89	18.43	-32.11	208	330	251.122
474.741	34.3	24.98	-11.7	217	366	474.741
829.081	110.05	1)				
873.482	52.84	2)				

1) Note: Fundamental uplink frequency, not subject to this test limit. Data provided only for information purpose.
2) Note: Fundamental downlink frequency, not subject to this test limit. Data provided only for information purpose.

LTE Band 5/26_1GHz to 18GHz Low Channel – Vertical polarity



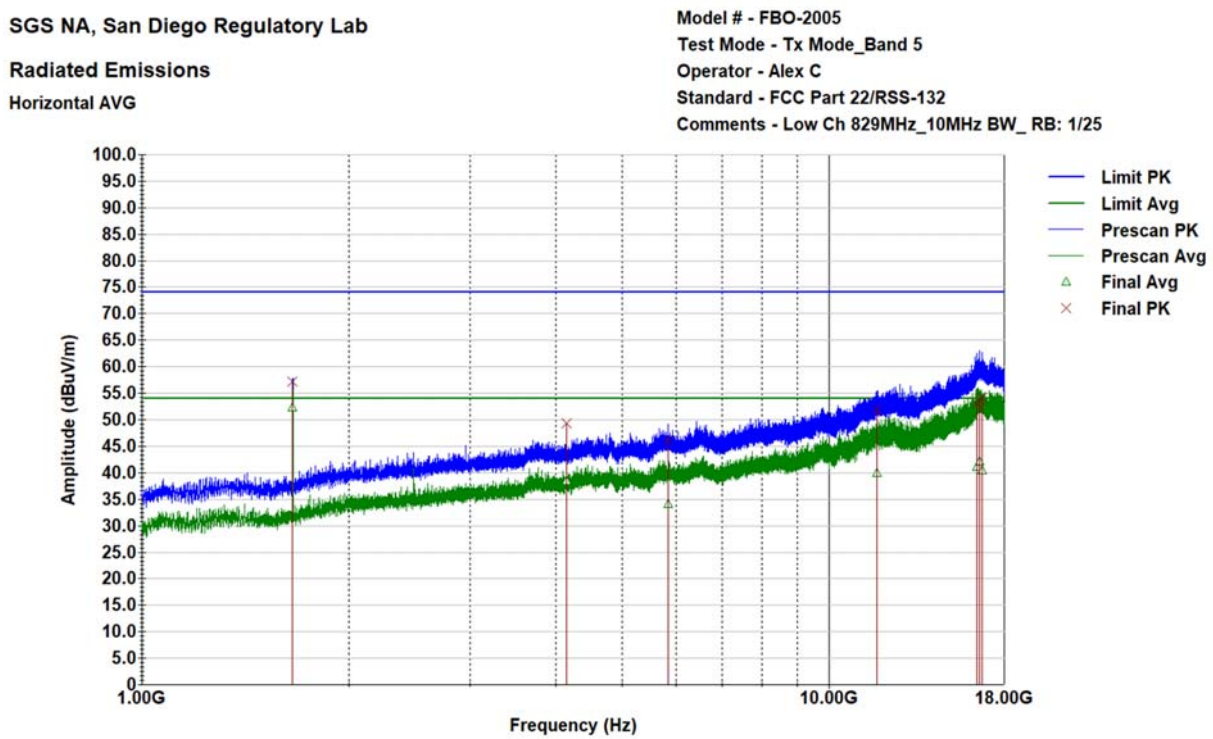
Peak Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
1658.325	53.54	-5.17	-20.46	74	180	105
2487.075	47.99	-0.1	-26.01	74	301	128
4145.425	46.93	4.82	-27.07	74	310	-20
10763.95	49.83	21.32	-24.17	74	225	174
16750.92	54.74	33.57	-19.26	74	349	156

Average Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
1658.325	49.17	-5.17	-4.83	54	180	105
2487.075	37	-0.1	-17	54	301	128
4145.425	35.44	4.82	-18.56	54	310	-20
10763.95	37.51	21.32	-16.49	54	225	174
16750.92	41.29	33.57	-12.71	54	349	156

LTE Band 5/26_1GHz to 18GHz Low Channel – Horizontal polarity



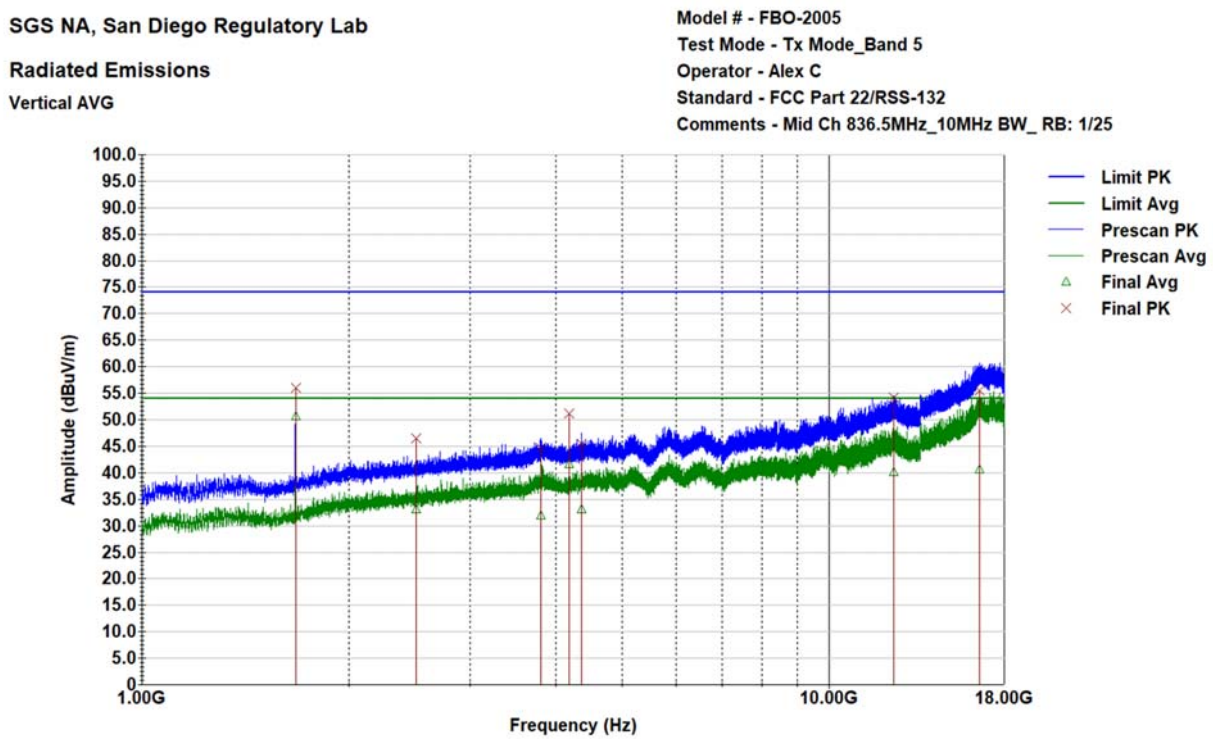
Peak Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
1657.9	57.12	-5.17	-16.88	74	268	217
4145.425	49.36	4.82	-24.64	74	194	191
5828.425	46.4	9.4	-27.6	74	186	59
11731.68	51.96	24.69	-22.04	74	279	98
16397.74	53.04	32.64	-20.96	74	320	217
16553.3	53.81	33.33	-20.19	74	362	228
16732.22	54.09	33.59	-19.91	74	400	363

Average Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
1657.9	52.25	-5.17	-1.75	54	268	217
4145.425	38.52	4.82	-15.48	54	194	191
5828.425	34.1	9.4	-19.9	54	186	59
11731.68	39.95	24.69	-14.05	54	279	98
16397.74	41.22	32.64	-12.78	54	320	217
16553.3	42.22	33.33	-11.78	54	362	228
16732.22	40.48	33.59	-13.52	54	400	363

LTE Band 5/26_1GHz to 18GHz Mid Channel – Vertical polarity



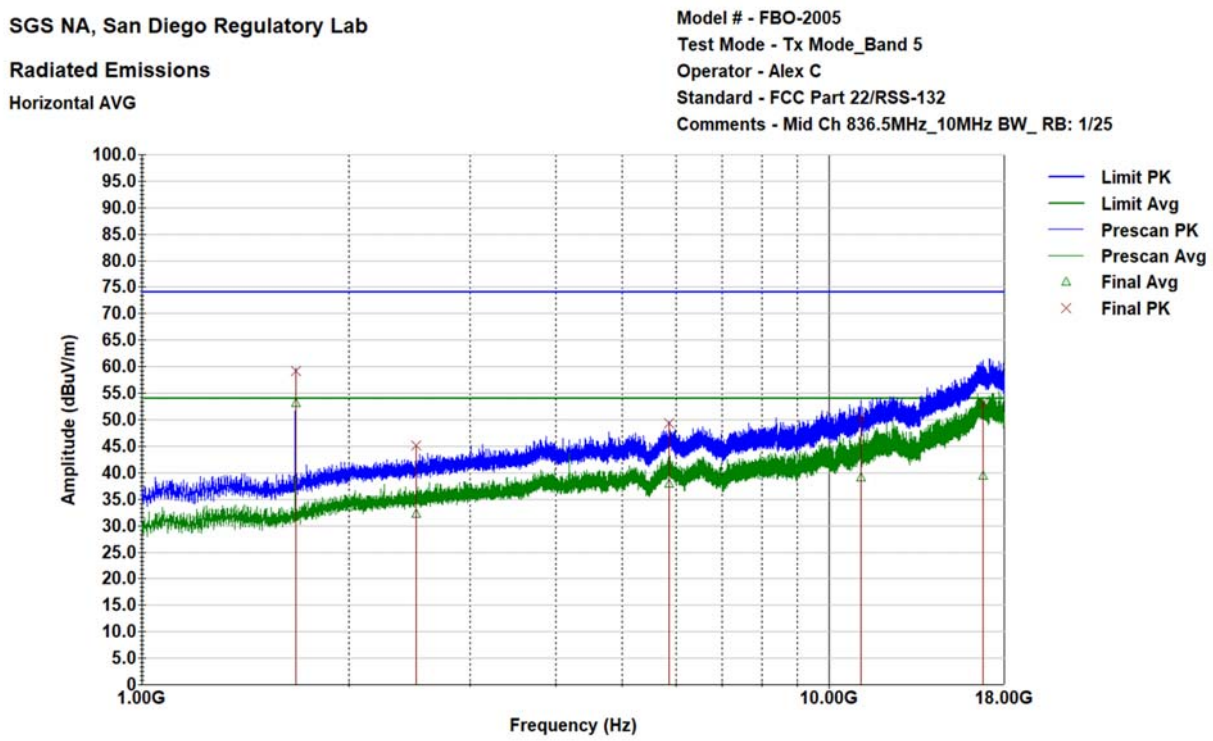
Peak Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
1673.2	56.05	-5.06	-17.95	74	342	101
2510.025	46.43	0	-27.57	74	180	163
3811.375	44.64	3.68	-29.36	74	194	326
4182.825	51.12	5.02	-22.88	74	209	156
4370.675	45.54	5.49	-28.46	74	320	235
12441.85	54.19	25.97	-19.81	74	280	380
16579.22	55.5	33.44	-18.5	74	359	-9

Average Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
1673.2	50.68	-5.06	-3.32	54	342	101
2510.025	33.08	0	-20.92	54	180	163
3811.375	32.05	3.68	-21.95	54	194	326
4182.825	41.7	5.02	-12.3	54	209	156
4370.675	33.08	5.49	-20.92	54	320	235
12441.85	40.15	25.97	-13.85	54	280	380
16579.22	40.64	33.44	-13.36	54	359	-9

LTE Band 5/26_1GHz to 18GHz Mid Channel – Horizontal polarity



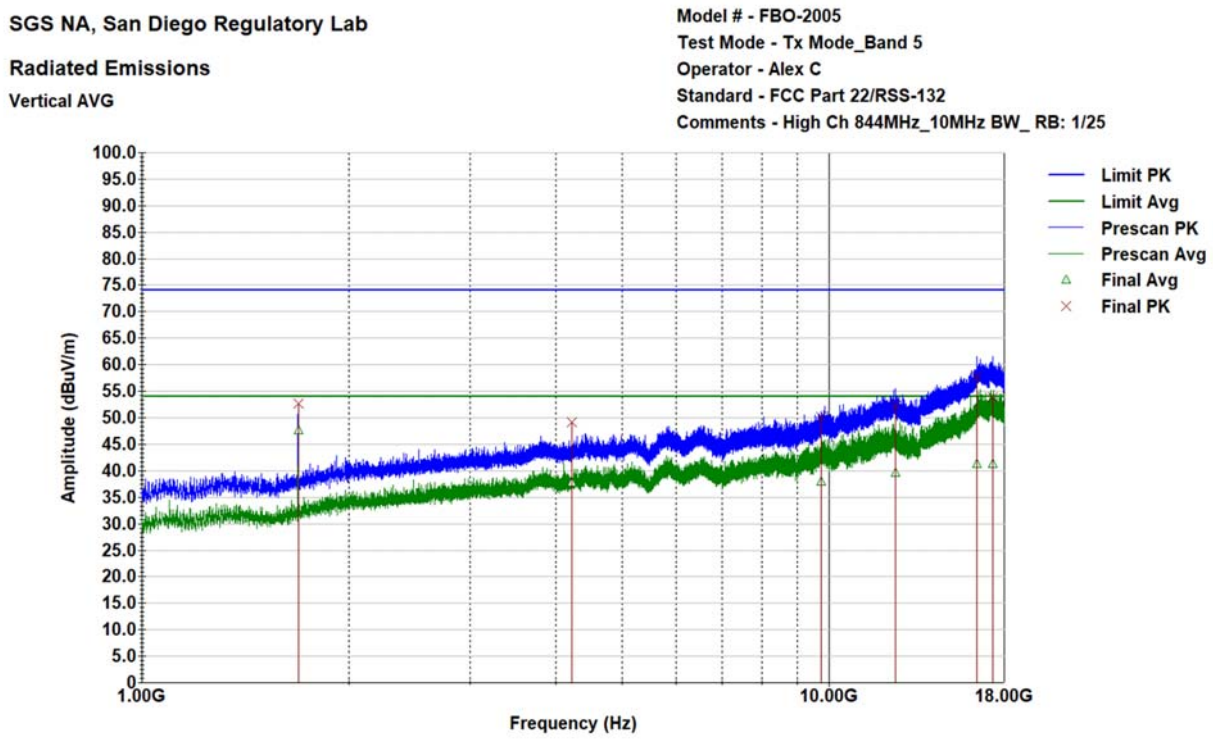
Peak Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
1673.2	59.13	-5.06	-14.87	74	400	223
2509.6	45.08	0	-28.92	74	372	242
5856.475	49.35	9.6	-24.65	74	179	186
11137.52	50.42	22.66	-23.58	74	262	380
16769.2	53.05	33.56	-20.95	74	150	212

Average Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
1673.2	53.1	-5.06	-0.9	54	400	223
2509.6	32.36	0	-21.64	54	372	242
5856.475	38.04	9.6	-15.96	54	179	186
11137.52	39.09	22.66	-14.91	54	262	380
16769.2	39.5	33.56	-14.5	54	150	212

LTE Band 5/26_1GHz to 18GHz High Channel – Vertical polarity



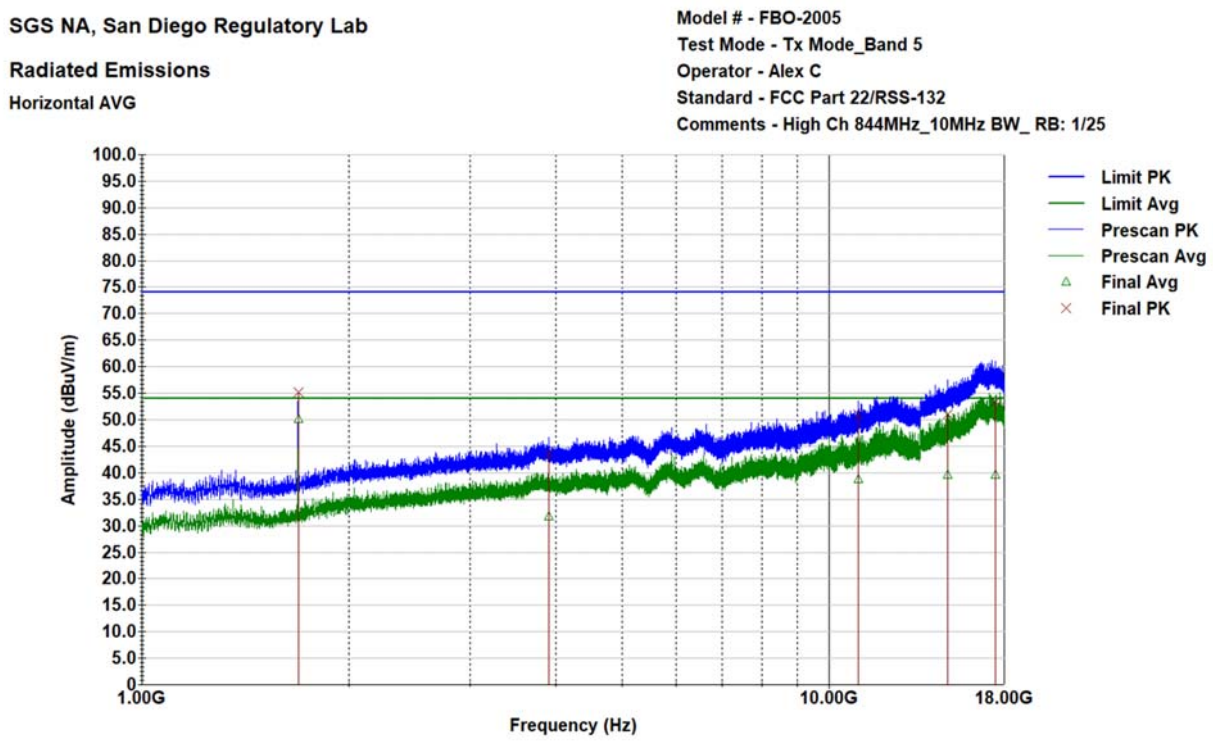
Peak Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
1688.075	52.7	-4.83	-21.3	74	350	133
4220.65	49.23	5.21	-24.77	74	179	145
9759.675	50.08	19.15	-23.92	74	400	268
12520.8	52.34	26.03	-21.66	74	400	137
16430.05	57.87	32.78	-16.13	74	334	380
17304.7	53.85	32.5	-20.15	74	241	370

Average Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
1688.075	47.6	-4.83	-6.4	54	350	133
4220.65	37.78	5.21	-16.22	54	179	145
9759.675	38	19.15	-16	54	400	268
12520.8	39.61	26.03	-14.39	54	400	137
16430.05	41.26	32.78	-12.74	54	334	380
17304.7	41.25	32.5	-12.75	54	241	370

LTE Band 5/26_1GHz to 18GHz High Channel – Horizontal polarity



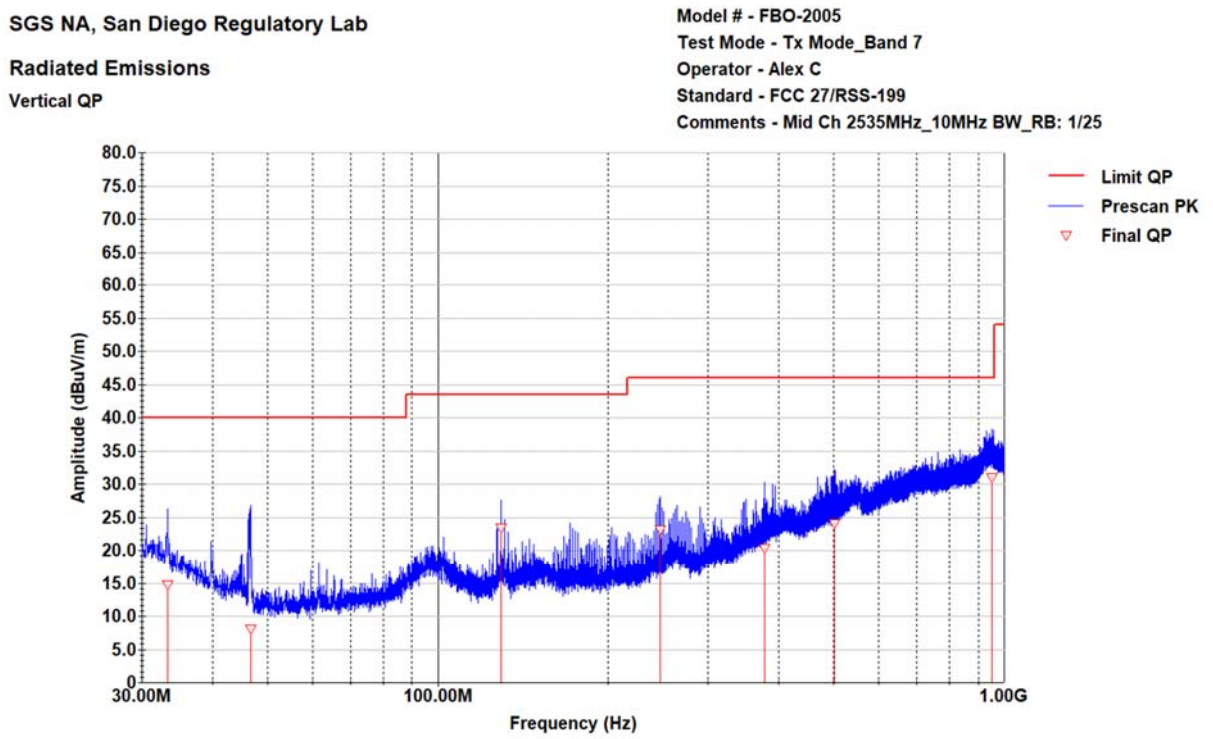
Peak Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
1688.075	55.11	-4.83	-18.89	74	156	230
3915.075	43.65	3.9	-30.35	74	270	329
11035.53	51	22.1	-23	74	294	-10
14906	51.06	28.24	-22.94	74	194	-20
17466.62	53.34	32.15	-20.66	74	178	317

Average Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
1688.075	50.19	-4.83	-3.81	54	156	230
3915.075	31.89	3.9	-22.11	54	270	329
11035.53	38.86	22.1	-15.14	54	294	-10
14906	39.61	28.24	-14.39	54	194	-20
17466.62	39.69	32.15	-14.31	54	178	317

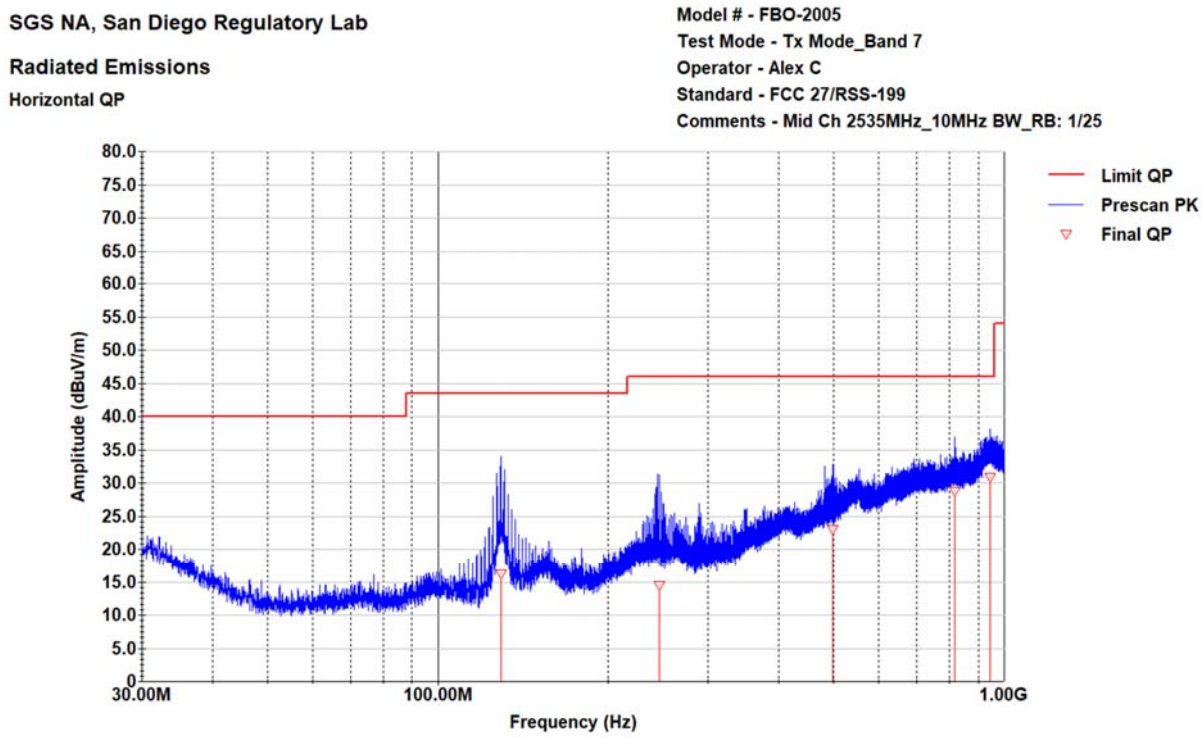
LTE Band 7_30MHz to 1GHz Worst-Case Mid Channel – Vertical polarity



Quasi-Peak Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
33.298	14.82	19.81	-25.18	40	161	33
46.684	8.14	13.24	-31.86	40	345	29
129.207	23.51	13.35	-20	43.52	100	91
246.504	23.2	18.2	-22.8	46	106	315
377.527	20.34	22.65	-25.66	46	146	128
500.887	24.14	25.8	-21.86	46	100	332
952.203	31.08	34.03	-14.92	46	400	280

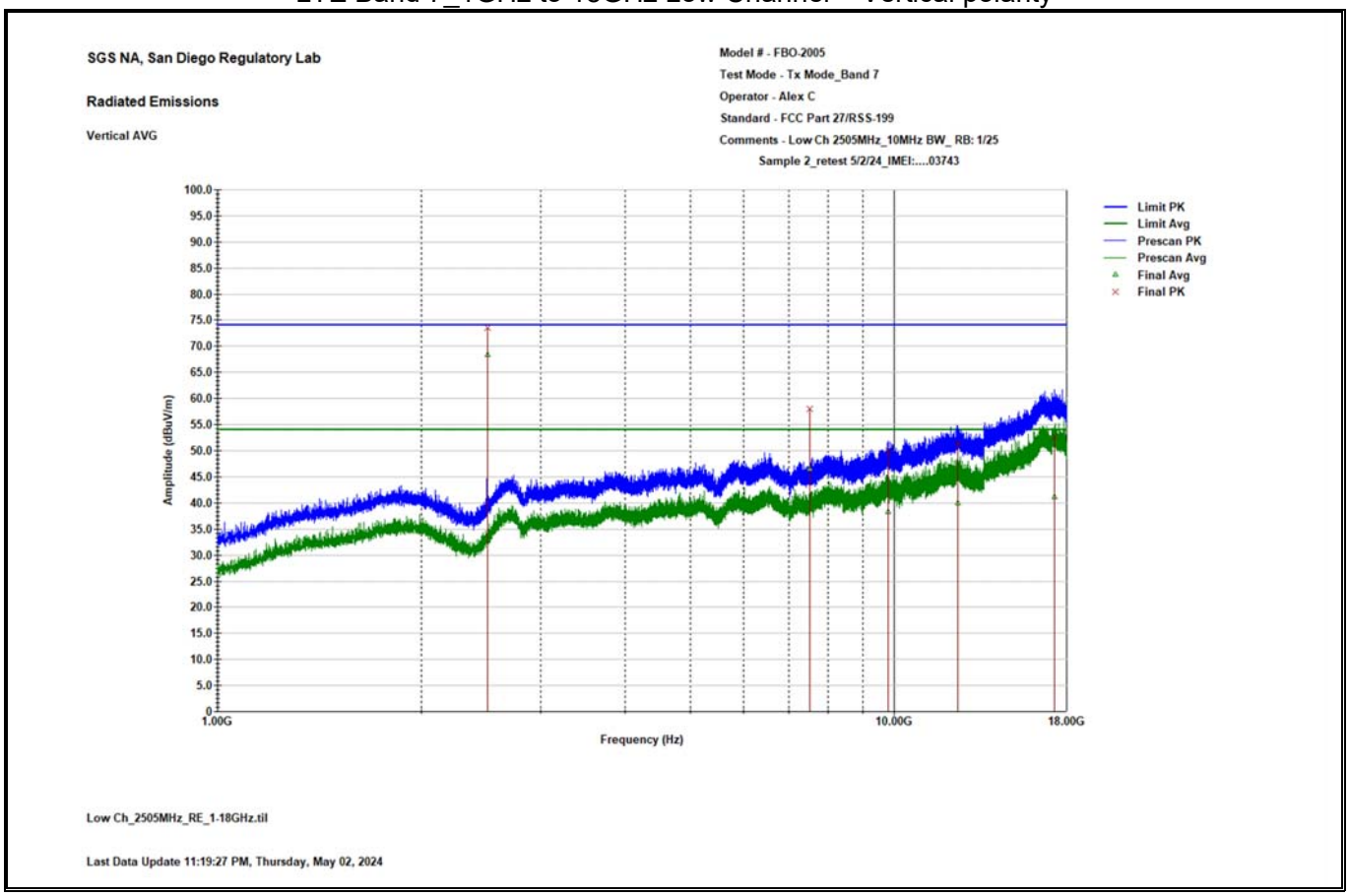
LTE Band 7_30MHz to 1GHz Worst-Case Mid Channel – Horizontal polarity



Quasi-Peak Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
129.086	16.28	13.34	-27.24	43.52	130	209
246.019	14.52	18.18	-31.48	46	193	213
498.195	23.08	25.63	-22.92	46	209	333
817.737	28.85	31.38	-17.15	46	328	159
944.177	30.94	34.22	-15.06	46	383	76
129.086	16.28	13.34	-27.24	43.52	130	209

LTE Band 7_1GHz to 18GHz Low Channel – Vertical polarity



Peak Data

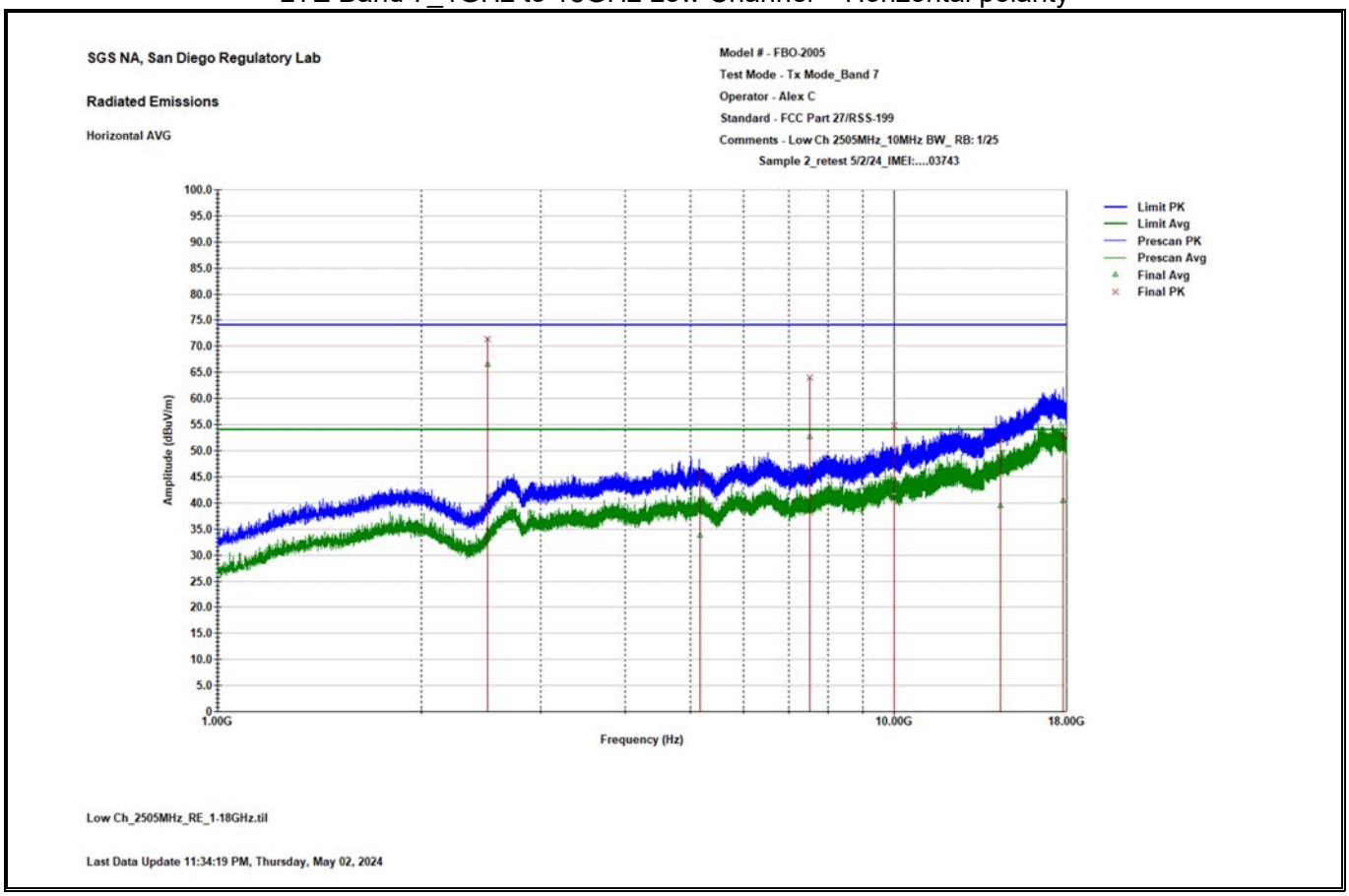
Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
2504.925	73.42	-0.03	-0.58	74	276	123
7515.25	58.07	13.49	-15.93	74	241	95
9792.825	49.95	19.17	-24.05	74	156	-20
12427.4	51.55	25.95	-22.45	74	195	289
17269	52.69	32.61	-21.31	74	195	164

Average Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
2504.925	68.36	1)				
7515.25	46.51	13.49	-7.49	54	241	95
9792.825	38.31	19.17	-15.69	54	156	-20
12427.4	39.92	25.95	-14.08	54	195	289
17269	41.17	32.61	-12.83	54	195	164

1) Note: Fundamental uplink frequency, not subject to this test limit. Data provided only for information purpose

LTE Band 7_1GHz to 18GHz Low Channel – Horizontal polarity



Peak Data

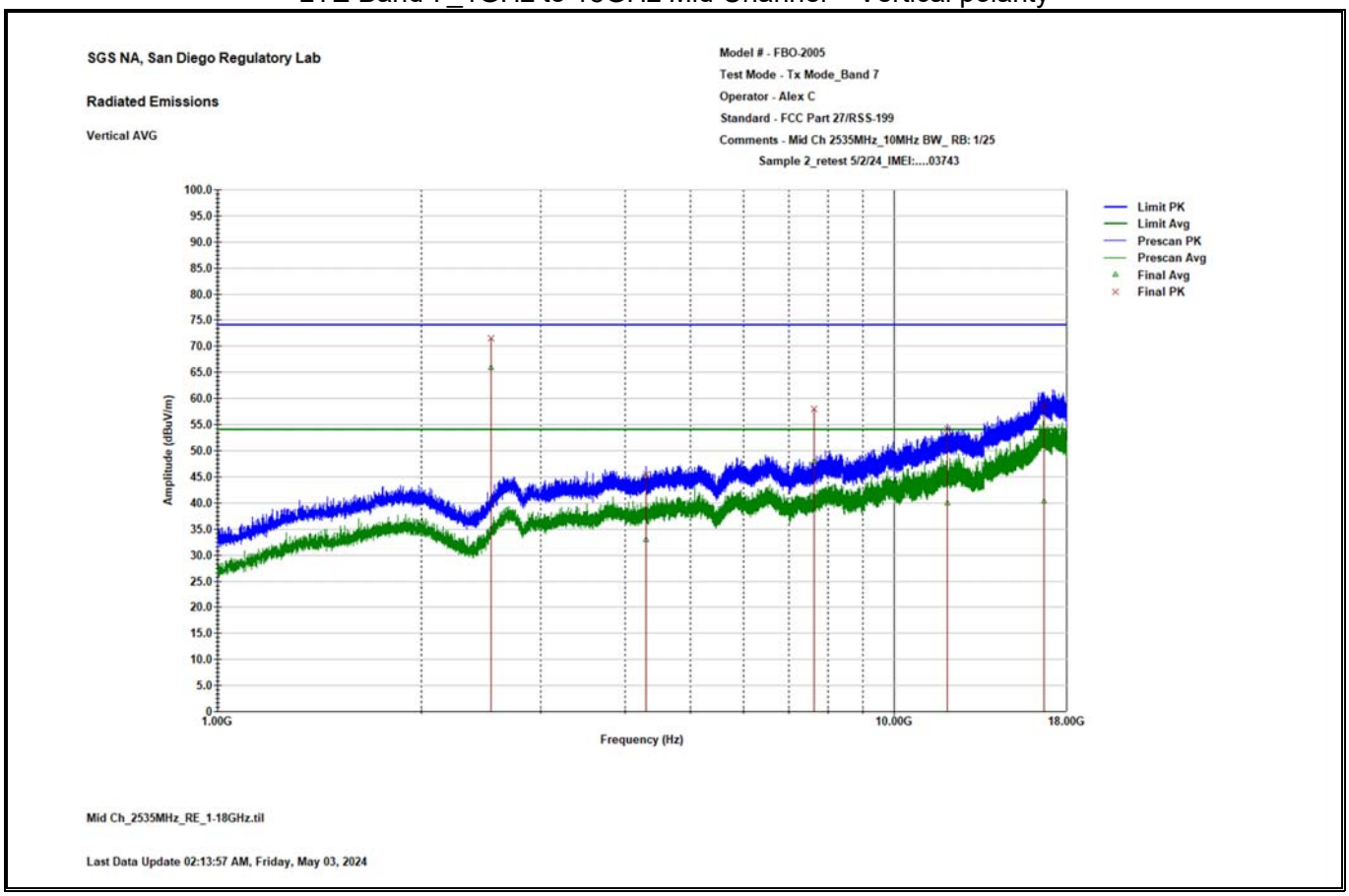
Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
2504.925	71.4	-0.03	-2.6	74	268	167
5165	45.67	7.29	-28.33	74	355	1
7515.25	64.05	13.49	-9.95	74	286	104
10020.63	54.81	19.64	-19.19	74	217	230
14368.37	52.01	27.13	-21.99	74	347	30
17773.9	52.92	31.86	-21.08	74	400	318

Average Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
2504.925	66.47	1)				
5165	33.81	7.29	-20.19	54	355	1
7515.25	52.65	13.49	-1.35	54	286	104
10020.63	41.89	19.64	-12.11	54	217	230
14368.37	39.43	27.13	-14.57	54	347	30
17773.9	40.53	31.86	-13.47	54	400	318

1) Note: Fundamental uplink frequency, not subject to this test limit. Data provided only for information purpose

LTE Band 7_1GHz to 18GHz Mid Channel – Vertical polarity



Peak Data

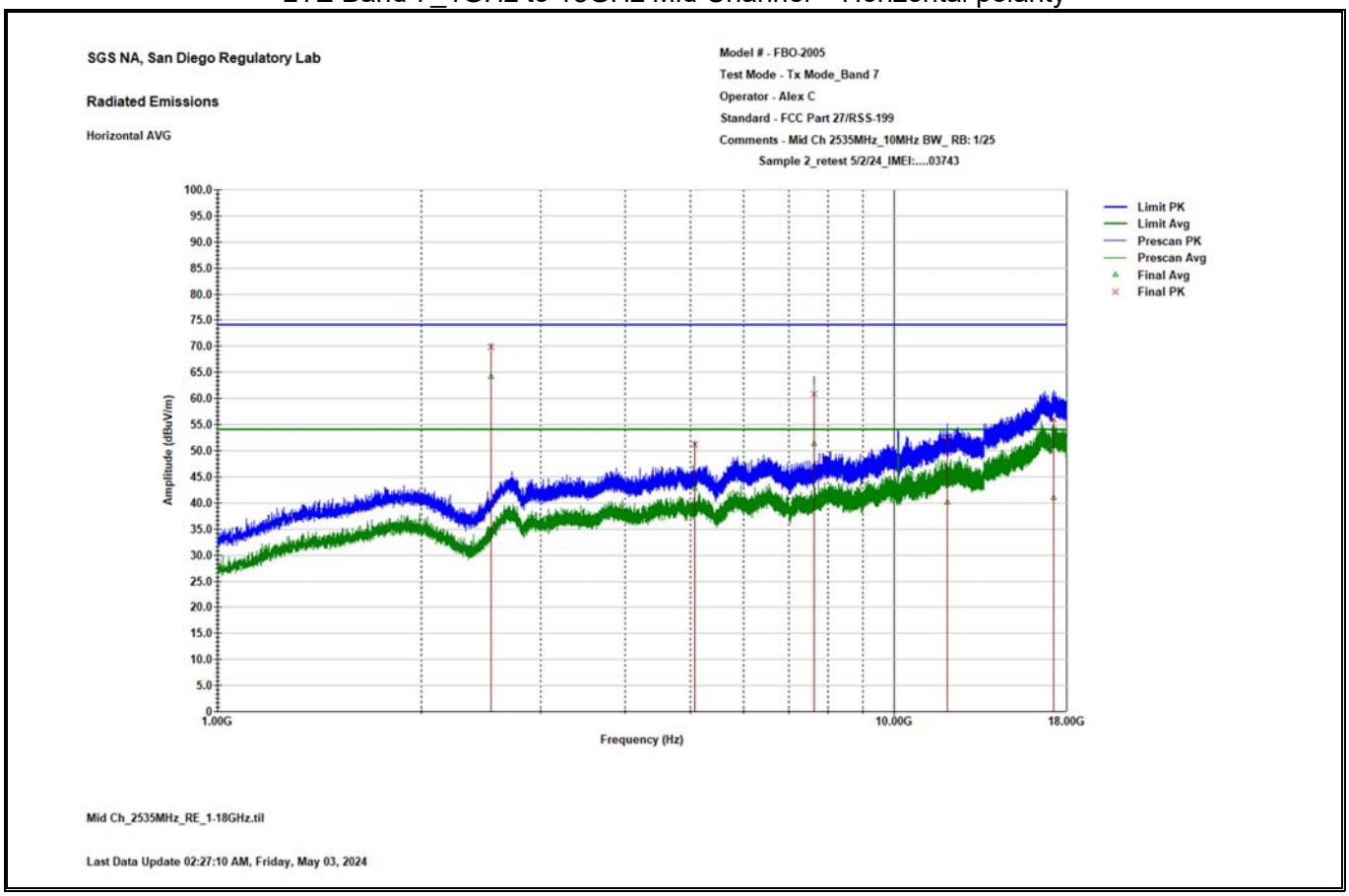
Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
2537.225	71.56	0.21	-2.44	74	196	120
4300.125	45.42	5.37	-28.58	74	279	250
7611.725	58.04	13.79	-15.96	74	256	354
11984.12	54.17	25.19	-19.83	74	256	25
16646.38	58.81	33.63	-15.19	74	202	-20

Average Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
2537.225	65.89	1)				
4300.125	32.96	5.37	-21.04	54	279	250
7611.725	47.94	13.79	-6.06	54	256	354
11984.12	39.95	25.19	-14.05	54	256	25
16646.38	40.26	33.63	-13.74	54	202	-20

1) Note: Fundamental uplink frequency, not subject to this test limit. Data provided only for information purpose

LTE Band 7_1GHz to 18GHz Mid Channel – Horizontal polarity



Peak Data

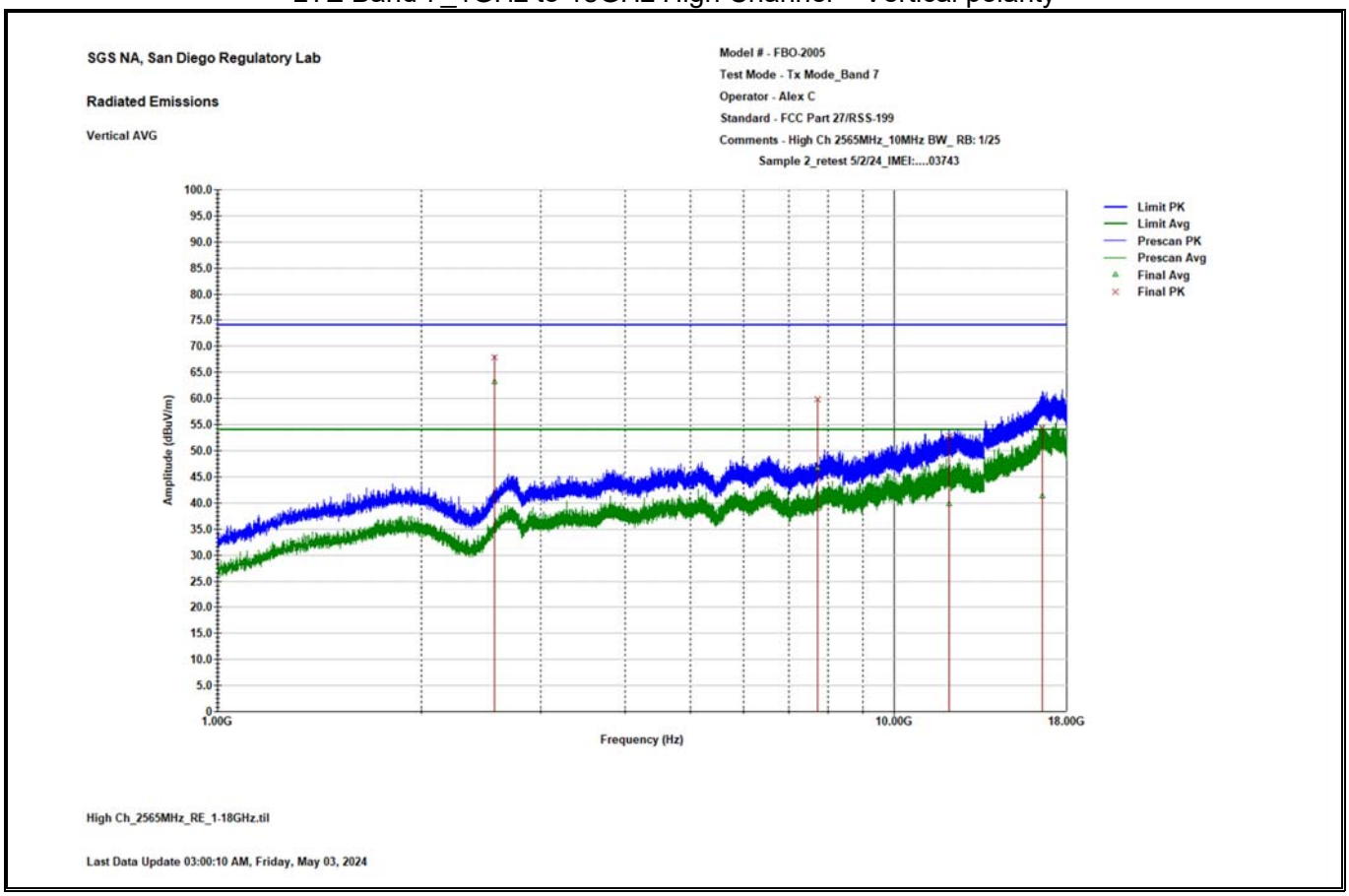
Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
2537.225	69.81	0.21	-4.19	74	300	168
5074.475	51.19	6.55	-22.81	74	340	284
7611.3	60.87	13.79	-13.13	74	247	300
12007.07	52.47	25.22	-21.53	74	247	266
17240.1	55.99	32.69	-18.01	74	371	366

Average Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
2537.225	64.13	1)				
5074.475	42.86	6.55	-11.14	54	340	284
7611.3	51.33	13.79	-2.67	54	247	300
12007.07	40.08	25.22	-13.92	54	247	266
17240.1	41.04	32.69	-12.96	54	371	366

1) Note: Fundamental uplink frequency, not subject to this test limit. Data provided only for information purpose

LTE Band 7_1GHz to 18GHz High Channel – Vertical polarity



Peak Data

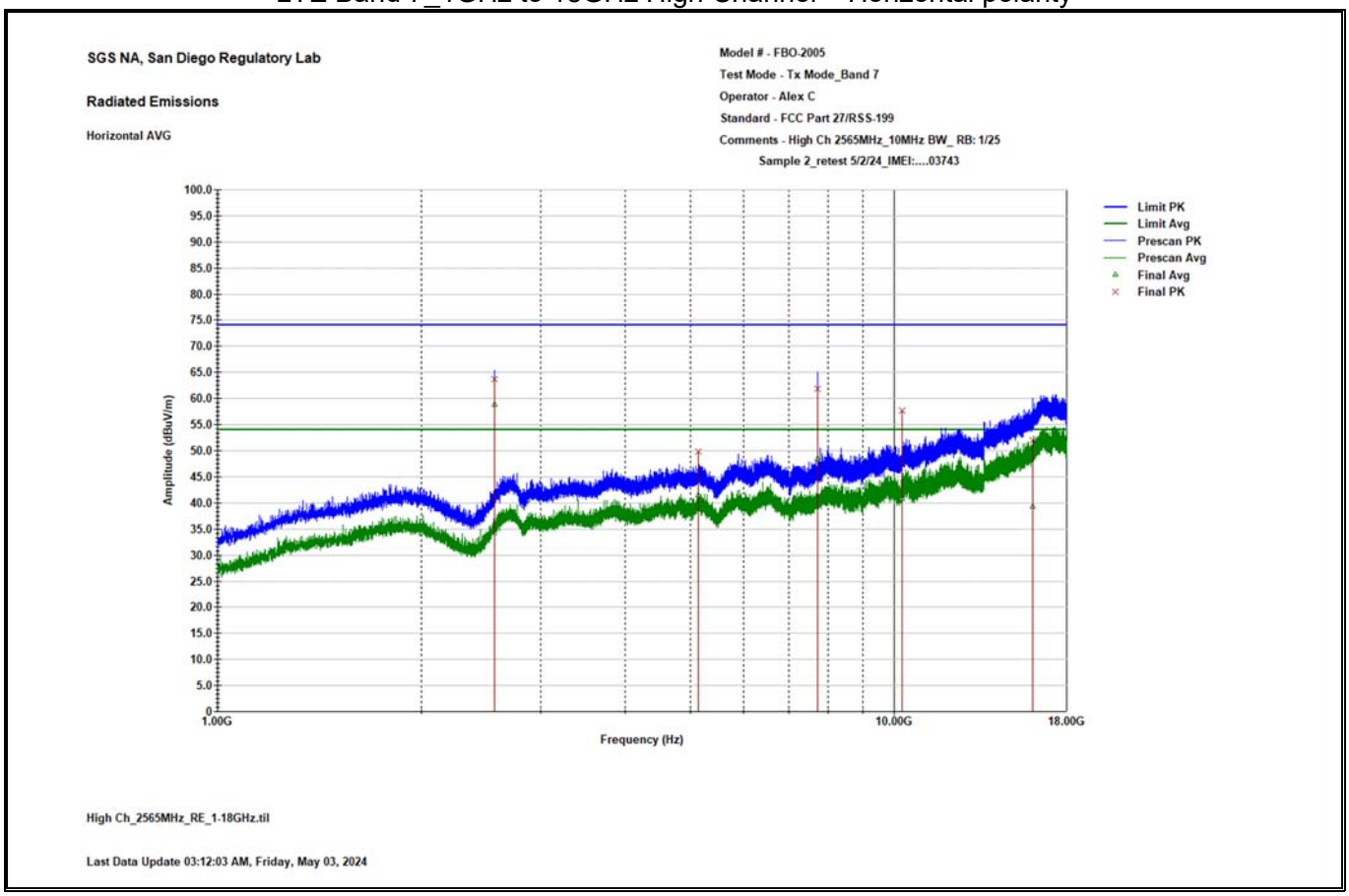
Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
2569.525	67.8	0.38	-6.2	74	156	130
7708.2	59.9	14.03	-14.1	74	256	-20
12051.7	52.88	25.34	-21.12	74	400	372
16583.48	54.24	33.46	-19.76	74	373	76

Average Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
2569.525	63.12			1)		
7708.2	46.62	14.03	-7.38	54	256	-20
12051.7	39.84	25.34	-14.16	54	400	372
16583.48	41.29	33.46	-12.71	54	373	76

1) Note: Fundamental uplink frequency, not subject to this test limit. Data provided only for information purpose

LTE Band 7_1GHz to 18GHz High Channel – Horizontal polarity



Peak Data

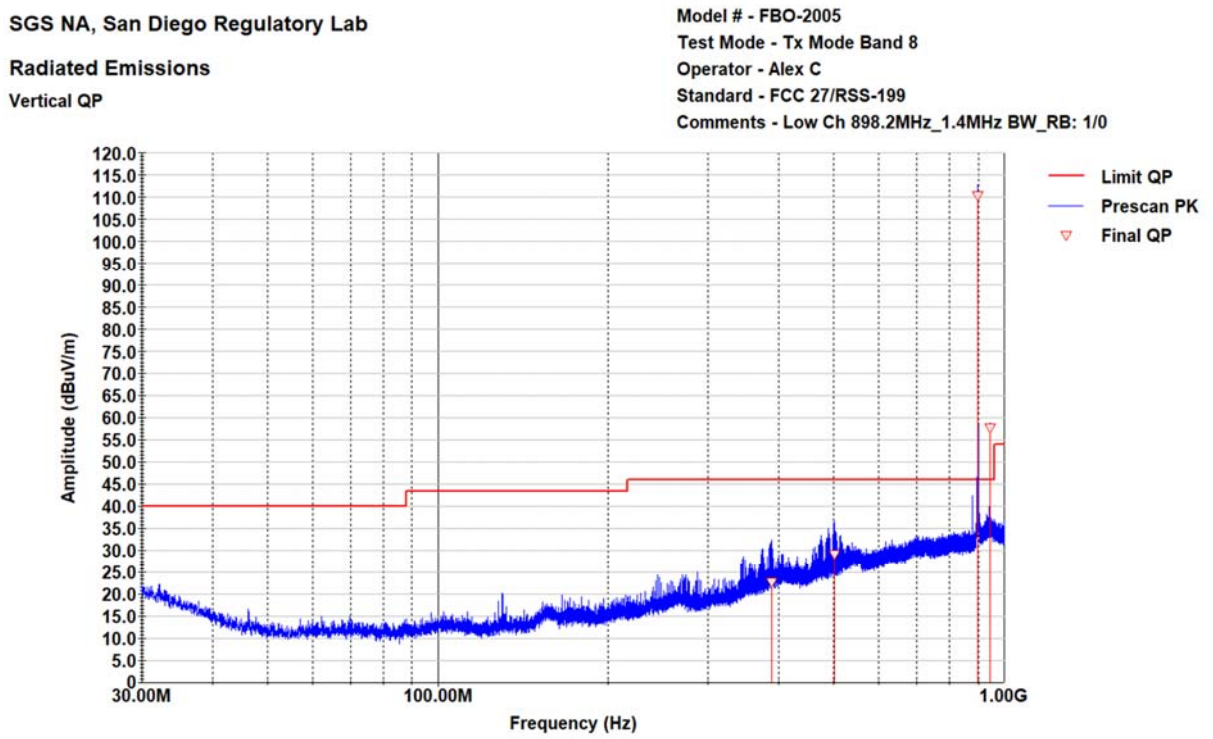
Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
2569.1	63.65	0.38	-10.35	74	172	168
5139.075	49.8	7.13	-24.2	74	336	301
7708.2	61.75	14.03	-12.25	74	255	281
10277.32	57.65	20.04	-16.35	74	248	120
16050.52	51.94	31.21	-22.06	74	355	380

Average Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
2569.1	58.8	1)				
5139.075	41.48	7.13	-12.52	54	336	301
7708.2	48.43	14.03	-5.57	54	255	281
10277.32	40.83	20.04	-13.17	54	248	120
16050.52	39.28	31.21	-14.72	54	355	380

1) Note: Fundamental uplink frequency, not subject to this test limit. Data provided only for information purpose

LTE Band 8_30MHz to 1GHz Worst-Case Low Channel – Vertical polarity

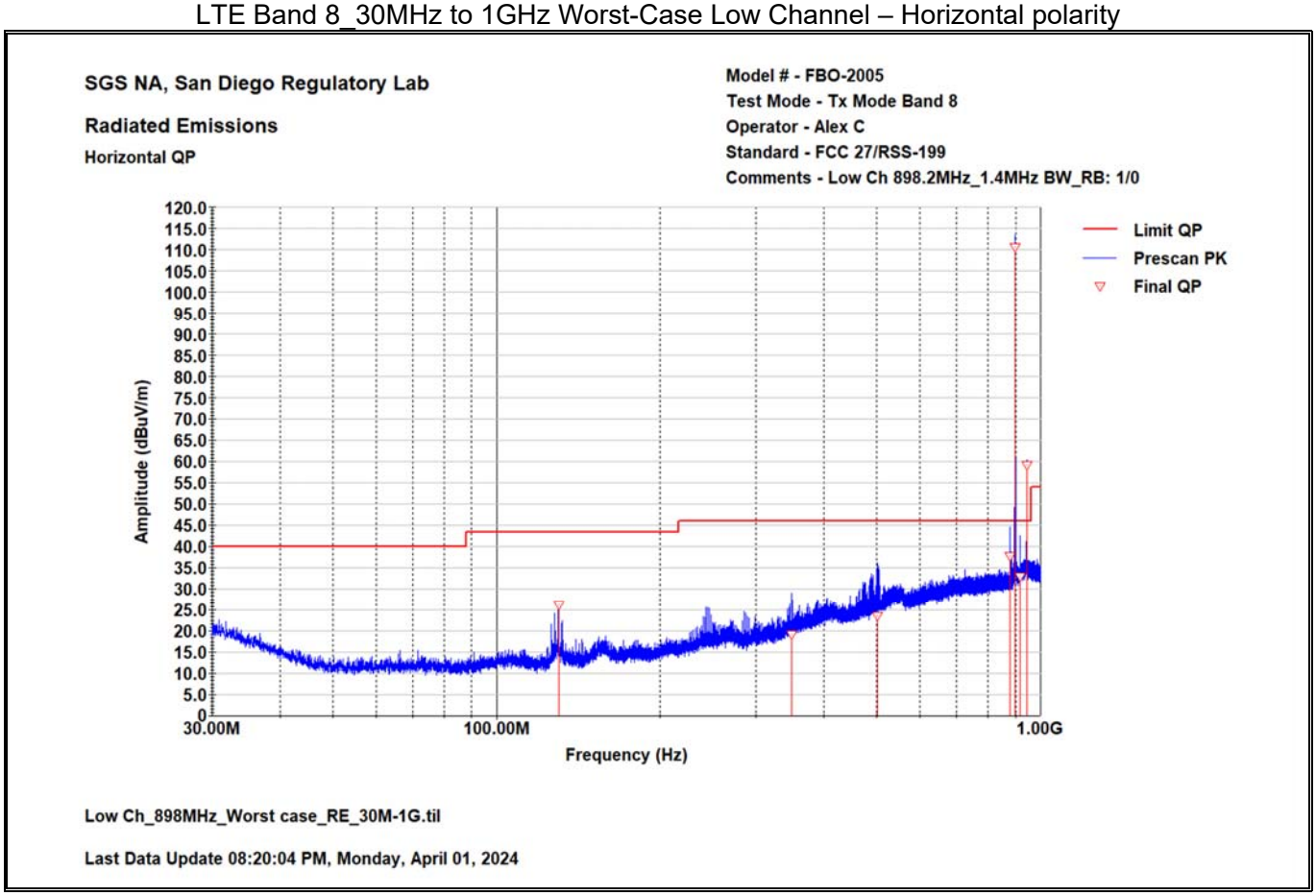


Quasi-Peak Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
387.785	22.84	23.34	-23.16	46	138	292
502.075	29.24	25.87	-16.76	46	265	287
897.786	110.32	1)				
943.013	57.8	2)				

1) Note: Fundamental uplink frequency, not subject to this test limit. Data provided only for information purpose.
2) Note: Fundamental downlink frequency, not subject to this test limit. Data provided only for information purpose

LTE Band 8_30MHz to 1GHz Worst-Case Low Channel – Horizontal polarity

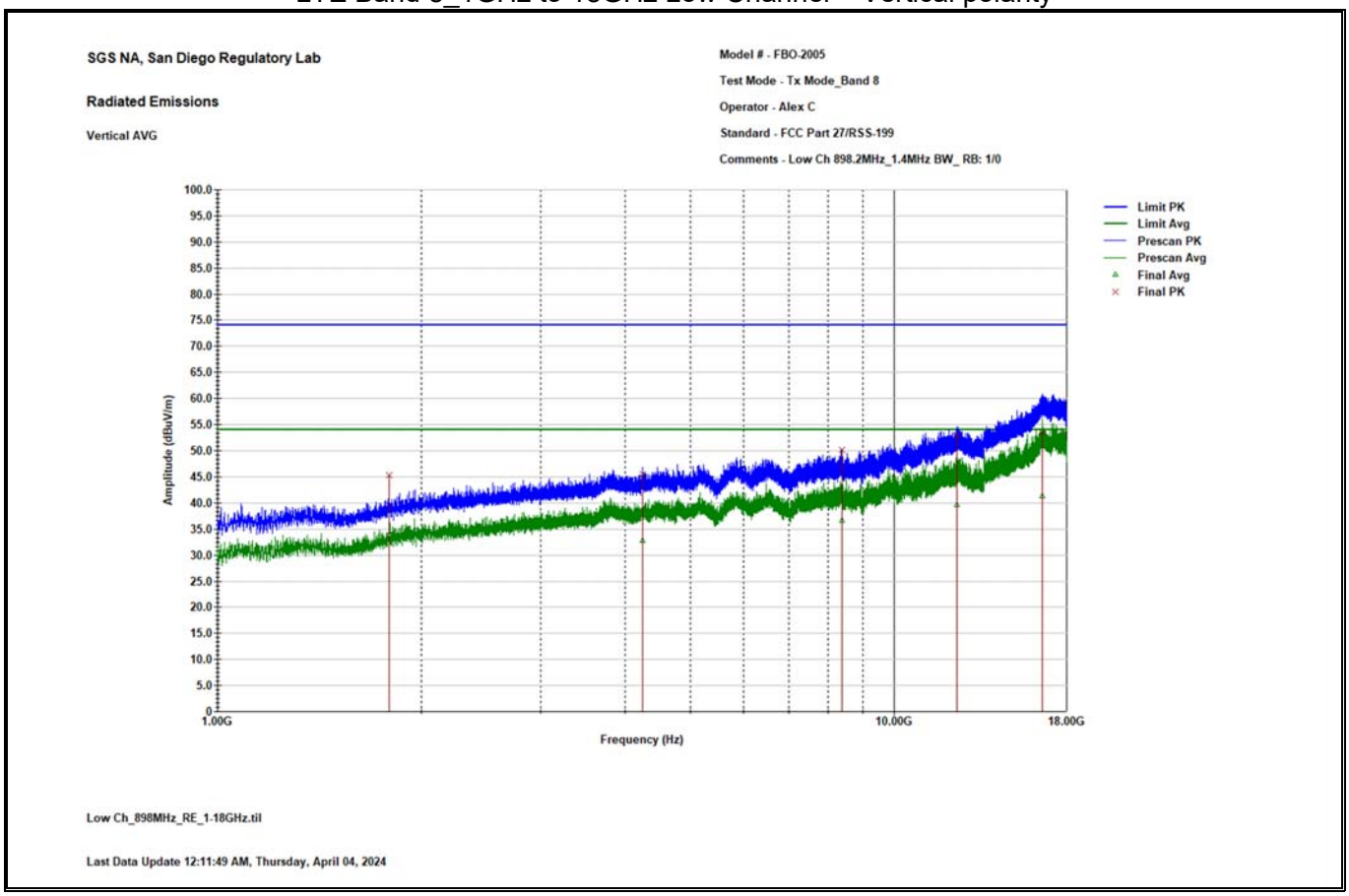


Quasi-Peak Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
129.934	26.2	13.38	-17.32	43.52	281	351
348.451	19.2	21.61	-26.8	46	114	366
501.978	23.65	25.87	-22.35	46	256	354
878.435	37.88	31.35	-8.12	46	100	-20
897.786	110.67			1)		
916.895	33.03	33.13	-12.97	46	101	-20
942.819	59.11			2)		

1) Note: Fundamental uplink frequency, not subject to this test limit. Data provided only for information purpose.
2) Note: Fundamental downlink frequency, not subject to this test limit. Data provided only for information purpose

LTE Band 8_1GHz to 18GHz Low Channel – Vertical polarity



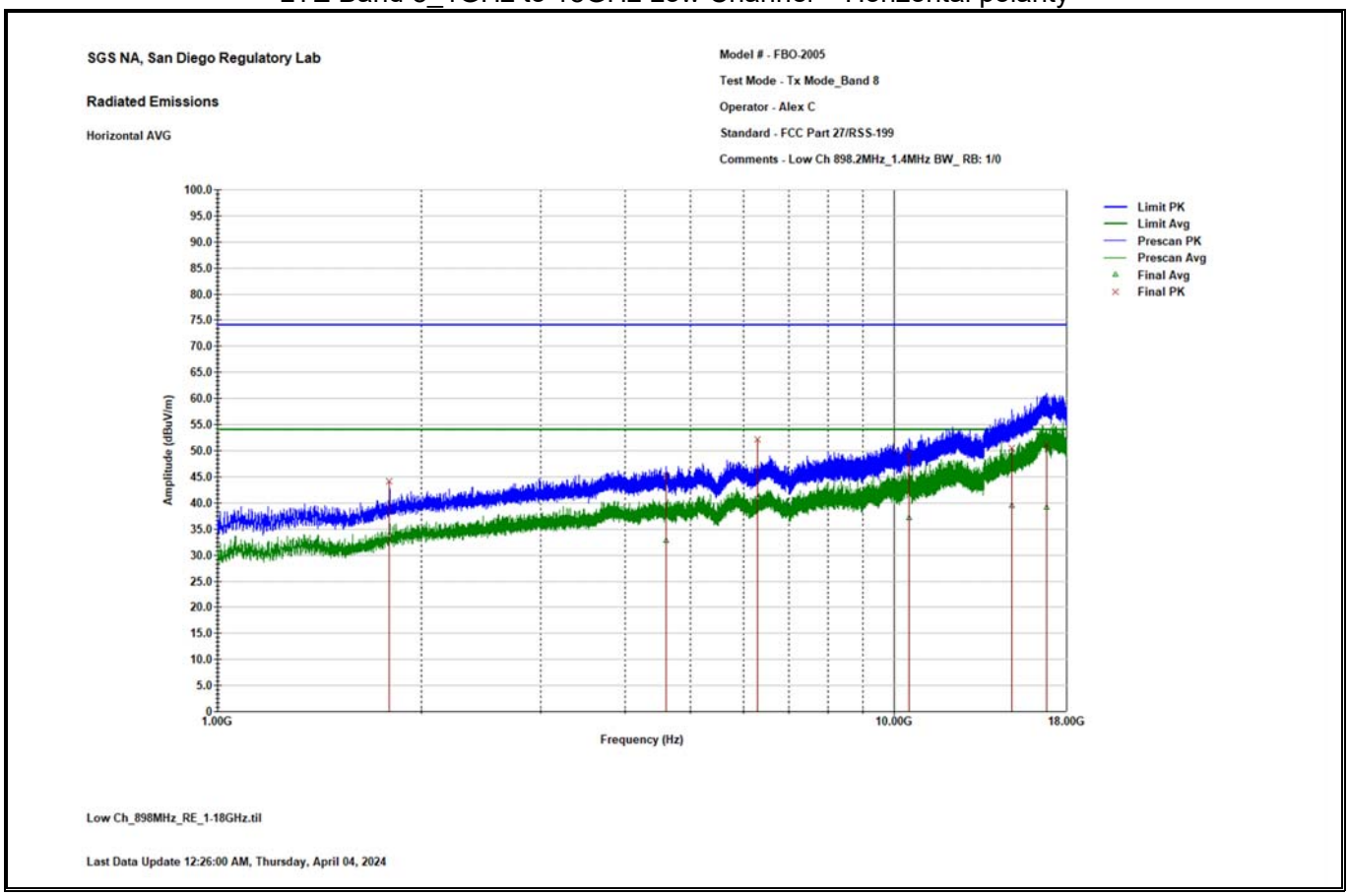
Peak Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
1795.6	45.34	-3.51	-28.66	74	150	184
4254.225	45.54	5.32	-28.46	74	150	61
8373.74	50.1	15.67	-23.9	74	155	9
12373.85	53.06	25.91	-20.94	74	349	252
16545.64	53.52	33.3	-20.48	74	150	340

Average Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
1795.6	34.08	-3.51	-19.92	54	150	184
4254.225	32.81	5.32	-21.19	54	150	61
8373.74	36.6	15.67	-17.4	54	155	9
12373.85	39.58	25.91	-14.42	54	349	252
16545.64	41.36	33.3	-12.64	54	150	340

LTE Band 8_1GHz to 18GHz Low Channel – Horizontal polarity



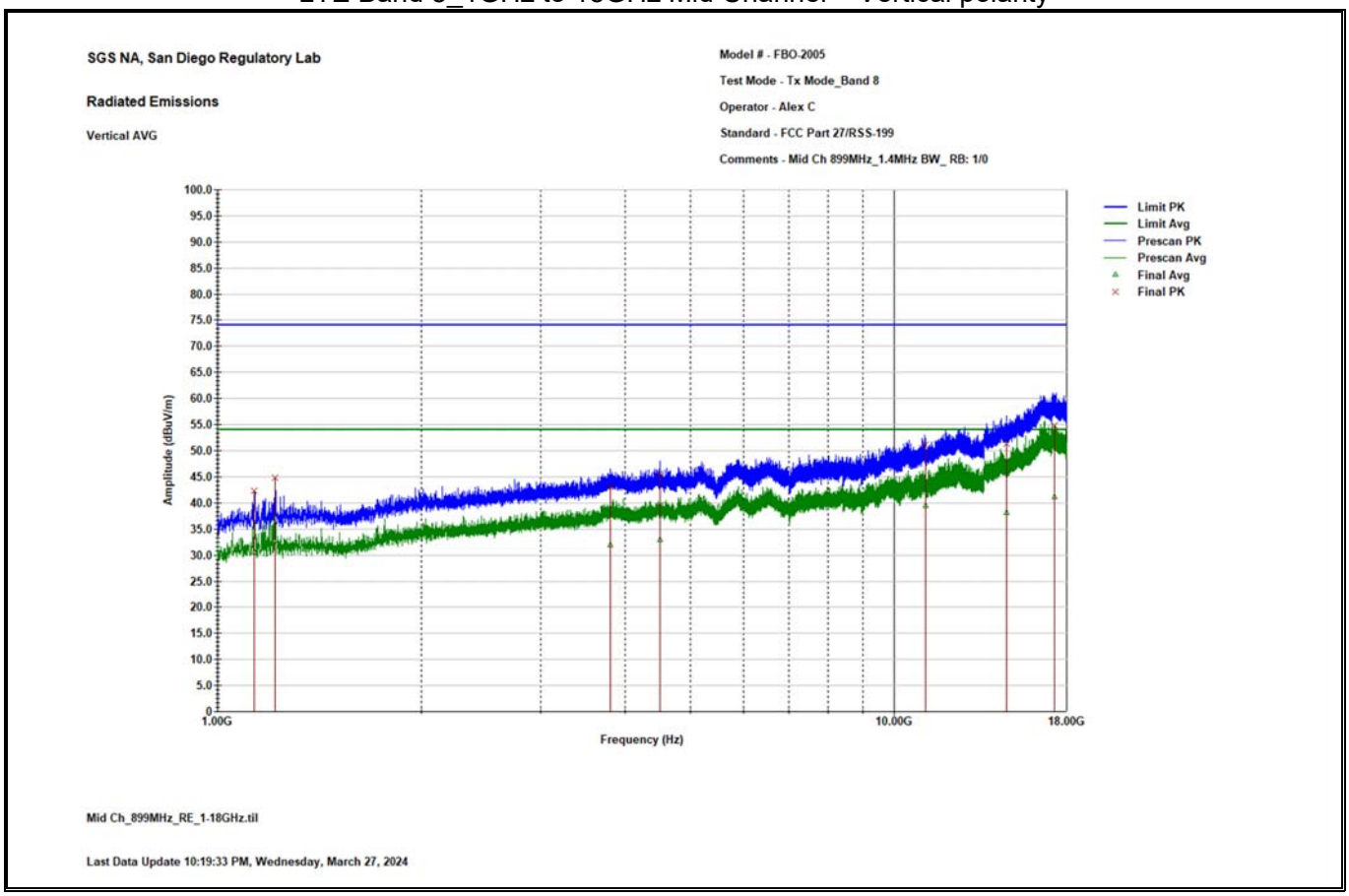
Peak Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
1795.6	44.22	-3.51	-29.78	74	260	164
4609.525	45.34	6.02	-28.66	74	283	142
6284.025	52.08	10.37	-21.92	74	194	175
10539.12	49.37	20.58	-24.63	74	248	367
14913.65	50.51	28.26	-23.49	74	400	298
16799.38	51.08	33.54	-22.92	74	309	237

Average Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
1795.6	33.86	-3.51	-20.14	54	260	164
4609.525	32.85	6.02	-21.15	54	283	142
6284.025	41.02	10.37	-12.98	54	194	175
10539.12	37.22	20.58	-16.78	54	248	367
14913.65	39.46	28.26	-14.54	54	400	298
16799.38	39.24	33.54	-14.76	54	309	237

LTE Band 8_1GHz to 18GHz Mid Channel – Vertical polarity



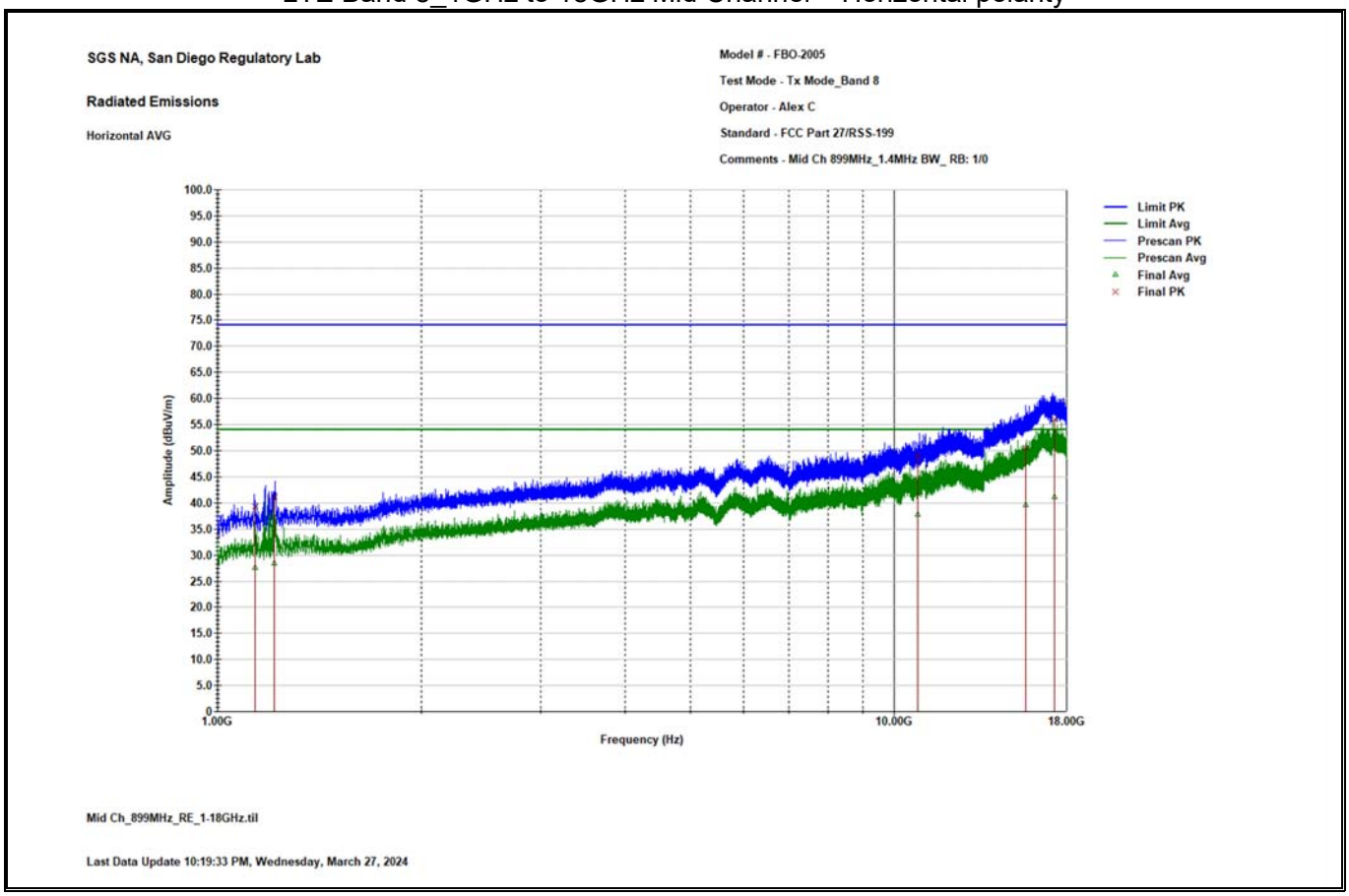
Peak Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
1133.974	42.31	-7.4	-31.67	74	222	173
1217.685	44.86	-6.76	-29.12	74	223	34
3811.784	43.18	3.68	-30.8	74	383	291
4511.083	45.74	5.77	-28.24	74	400	181
11124.13	51.12	22.61	-22.86	74	400	69
14657.8	51.28	27.72	-22.7	74	400	170
17248.01	54.77	32.67	-19.21	74	400	343

Average Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
1133.974	30.67	-7.4	-23.31	54	222	173
1217.685	32.79	-6.76	-21.19	54	223	34
3811.784	32.04	3.68	-21.94	54	383	291
4511.083	32.91	5.77	-21.07	54	400	181
11124.13	39.47	22.61	-14.51	54	400	69
14657.8	38.11	27.72	-15.87	54	400	170
17248.01	41.21	32.67	-12.77	54	400	343

LTE Band 8_1GHz to 18GHz Mid Channel – Horizontal polarity



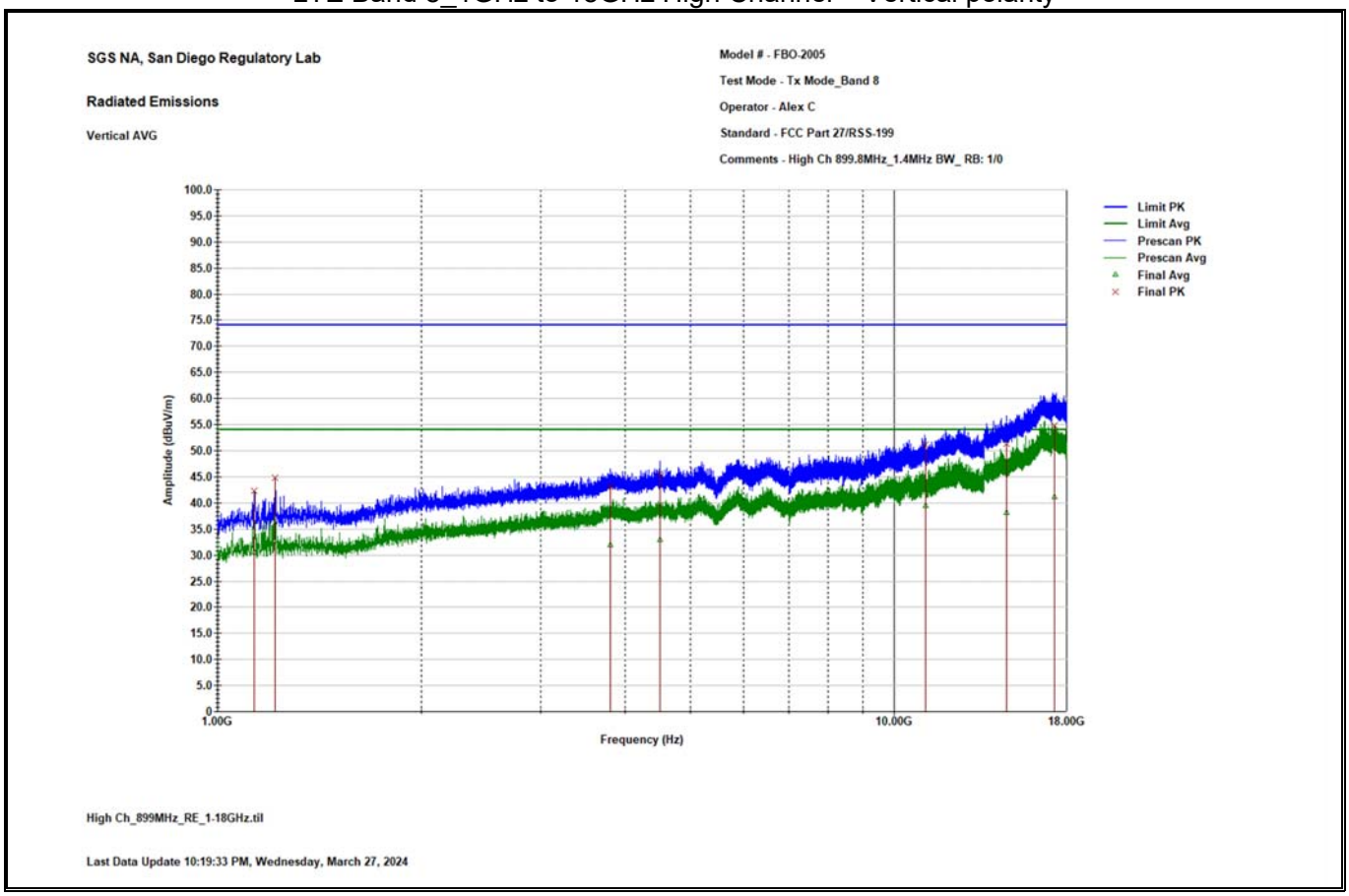
Peak Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
1135.129	39.37	-7.38	-34.61	74	400	117
1214.339	41.11	-6.75	-32.87	74	400	234
10857.67	49.18	21.64	-24.8	74	400	232
15647.38	50.48	30	-23.5	74	400	322
17261.9	56.02	32.63	-17.96	74	400	109

Average Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
1135.129	27.68	-7.38	-26.3	54	400	117
1214.339	28.42	-6.75	-25.56	54	400	234
10857.67	37.76	21.64	-16.22	54	400	232
15647.38	39.61	30	-14.37	54	400	322
17261.9	41.24	32.63	-12.74	54	400	109

LTE Band 8_1GHz to 18GHz High Channel – Vertical polarity



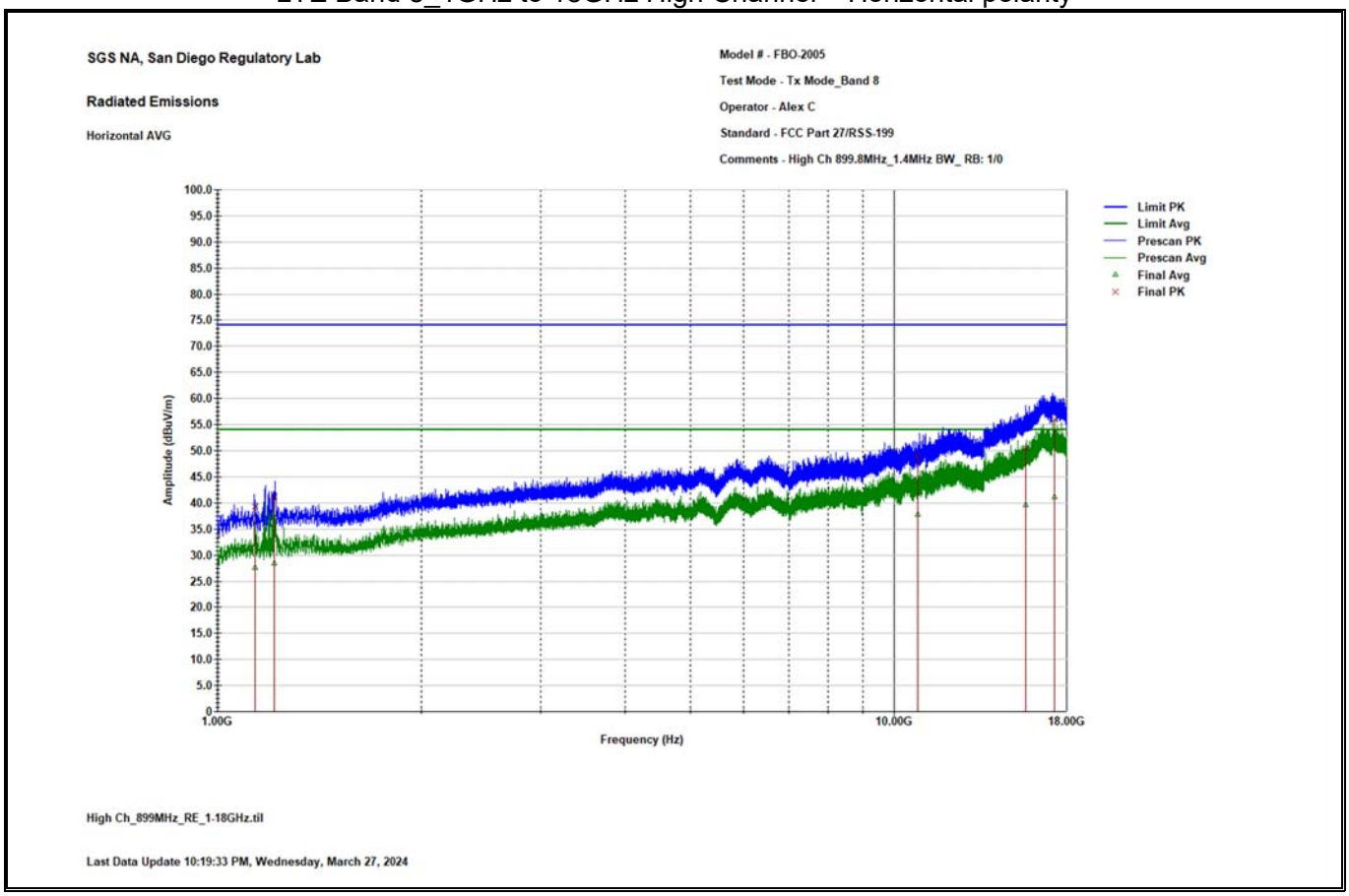
Peak Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
1133.974	42.31	-7.4	-31.67	74	222	173
1217.685	44.86	-6.76	-29.12	74	223	34
3811.784	43.18	3.68	-30.8	74	383	291
4511.083	45.74	5.77	-28.24	74	400	181
11124.13	51.12	22.61	-22.86	74	400	69
14657.8	51.28	27.72	-22.7	74	400	170
17248.01	54.77	32.67	-19.21	74	400	343

Average Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
1133.974	30.67	-7.4	-23.31	54	222	173
1217.685	32.79	-6.76	-21.19	54	223	34
3811.784	32.04	3.68	-21.94	54	383	291
4511.083	32.91	5.77	-21.07	54	400	181
11124.13	39.47	22.61	-14.51	54	400	69
14657.8	38.11	27.72	-15.87	54	400	170
17248.01	41.21	32.67	-12.77	54	400	343

LTE Band 8_1GHz to 18GHz High Channel – Horizontal polarity



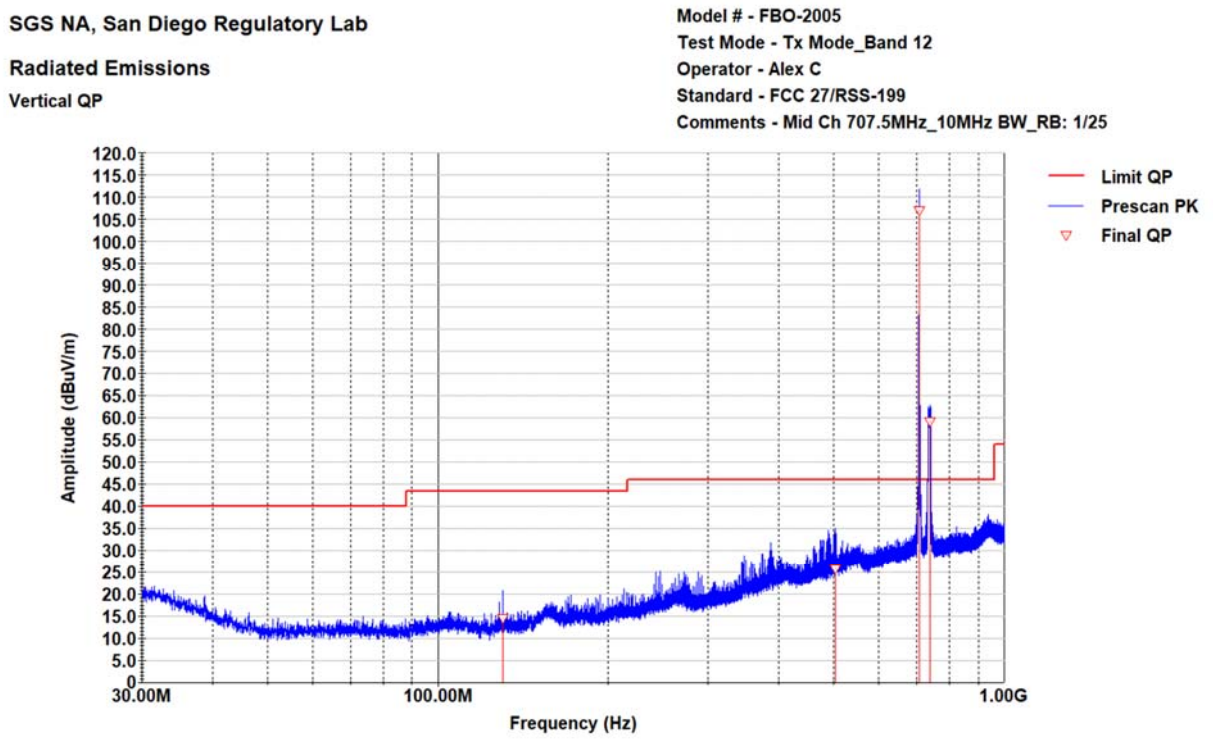
Peak Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
1135.129	39.37	-7.38	-34.61	74	400	117
1214.339	41.11	-6.75	-32.87	74	400	234
10857.67	49.18	21.64	-24.8	74	400	232
15647.38	50.48	30	-23.5	74	400	322
17261.9	56.02	32.63	-17.96	74	400	109

Average Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
1135.129	27.68	-7.38	-26.3	54	400	117
1214.339	28.42	-6.75	-25.56	54	400	234
10857.67	37.76	21.64	-16.22	54	400	232
15647.38	39.61	30	-14.37	54	400	322
17261.9	41.24	32.63	-12.74	54	400	109

LTE Band 12_30MHz to 1GHz Worst-Case Mid Channel – Vertical polarity

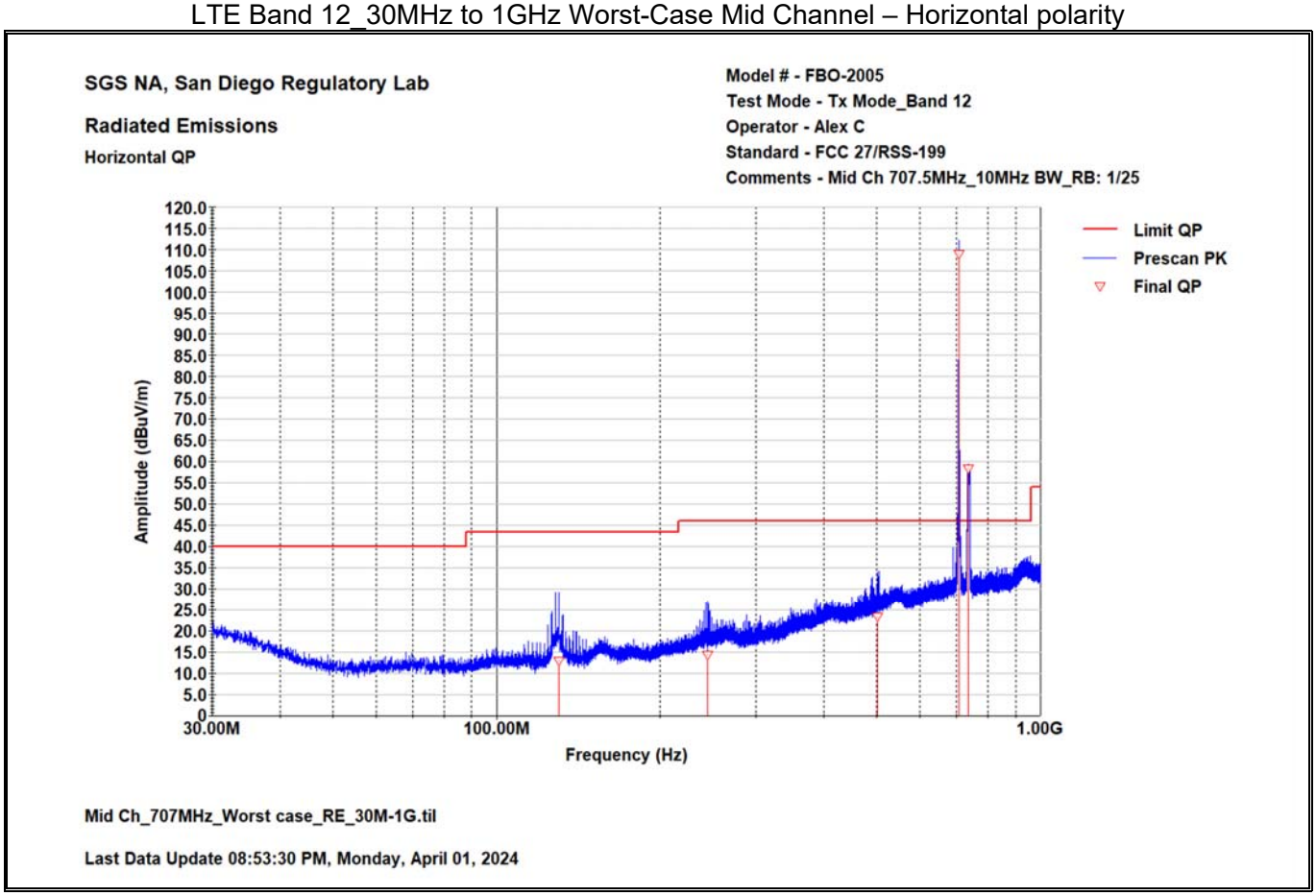


Quasi-Peak Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
130.225	14.7	13.41	-28.82	43.52	194	107
503.36	25.78	25.96	-20.22	46	100	278
707.521	106.98	1)				
738.173	59.27	2)				

1) Note: Fundamental uplink frequency, not subject to this test limit. Data provided only for information purpose.
2) Note: Fundamental downlink frequency, not subject to this test limit. Data provided only for information purpose

LTE Band 12_30MHz to 1GHz Worst-Case Mid Channel – Horizontal polarity

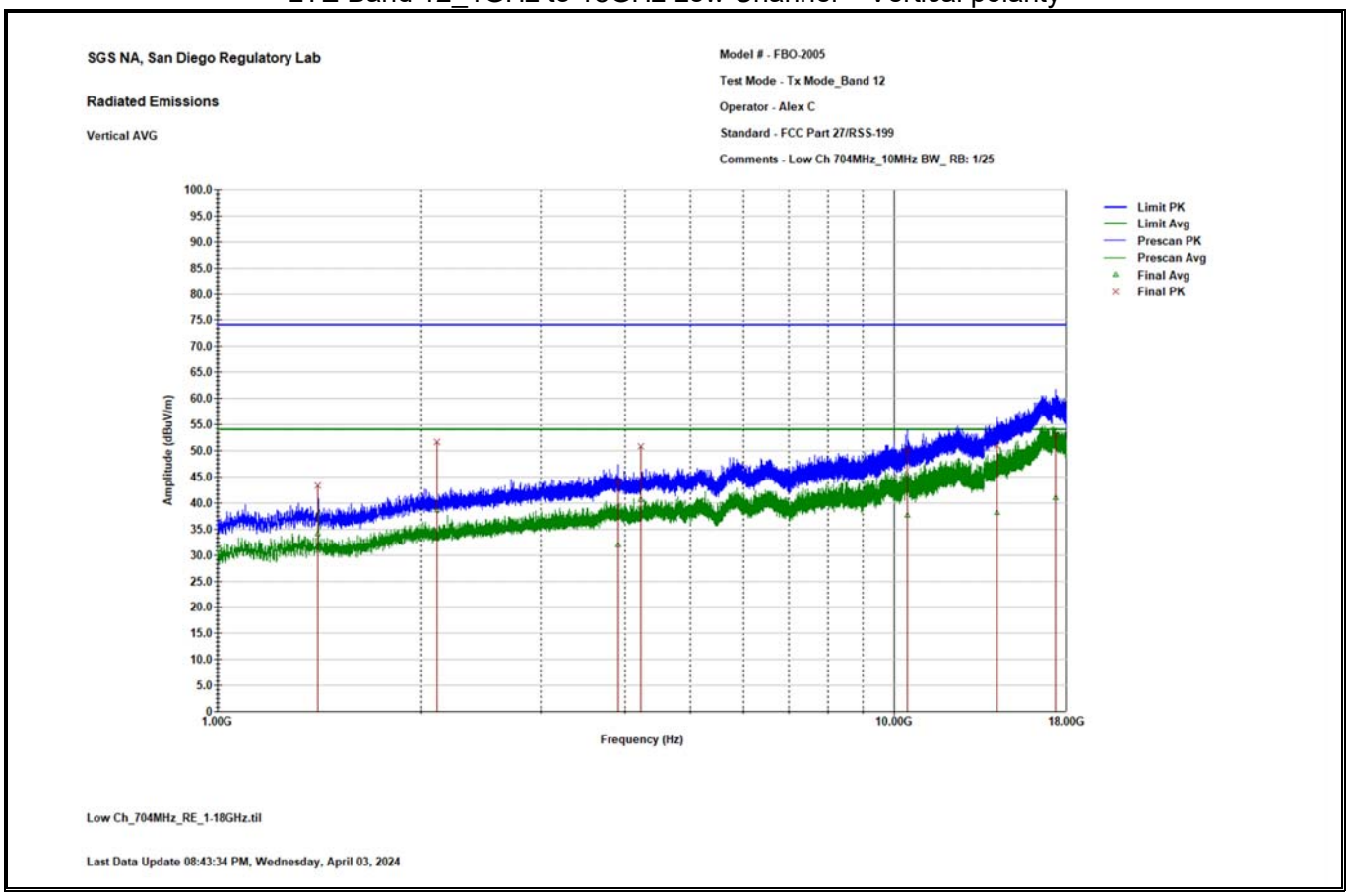


Quasi-Peak Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
130.177	13.04	13.41	-30.48	43.52	281	177
244.588	14.46	18.15	-31.54	46	100	29
501.178	23.3	25.82	-22.7	46	256	-10
707.521	108.94	1)				
736.621	58.42	2)				

1) Note: Fundamental uplink frequency, not subject to this test limit. Data provided only for information purpose.
2) Note: Fundamental downlink frequency, not subject to this test limit. Data provided only for information purpose

LTE Band 12_1GHz to 18GHz Low Channel – Vertical polarity



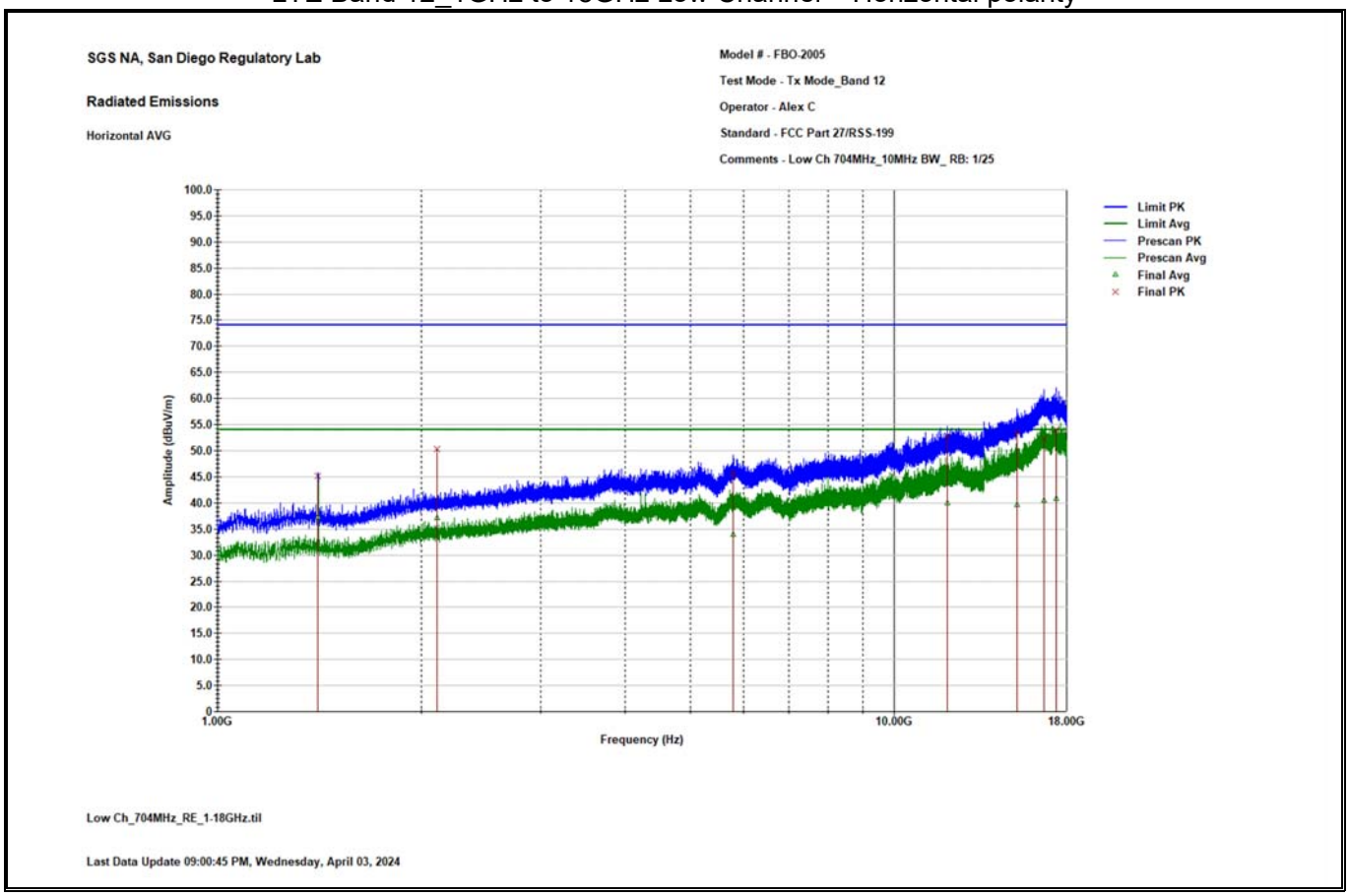
Peak Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
1408	43.33	-6.35	-30.67	74	342	263
2112.225	51.65	-1.73	-22.35	74	232	141
3906.575	44.2	3.85	-29.8	74	335	73
4224.475	50.77	5.22	-23.23	74	179	118
10472.4	50.19	20.52	-23.81	74	187	-6
14201.78	51.04	26.91	-22.96	74	357	46
17314.05	53.07	32.48	-20.93	74	318	219

Average Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
1408	34.15	-6.35	-19.85	54	342	263
2112.225	38.61	-1.73	-15.39	54	232	141
3906.575	31.92	3.85	-22.08	54	335	73
4224.475	40.73	5.22	-13.27	54	179	118
10472.4	37.6	20.52	-16.4	54	187	-6
14201.78	38.19	26.91	-15.81	54	357	46
17314.05	41	32.48	-13	54	318	219

LTE Band 12_1GHz to 18GHz Low Channel – Horizontal polarity



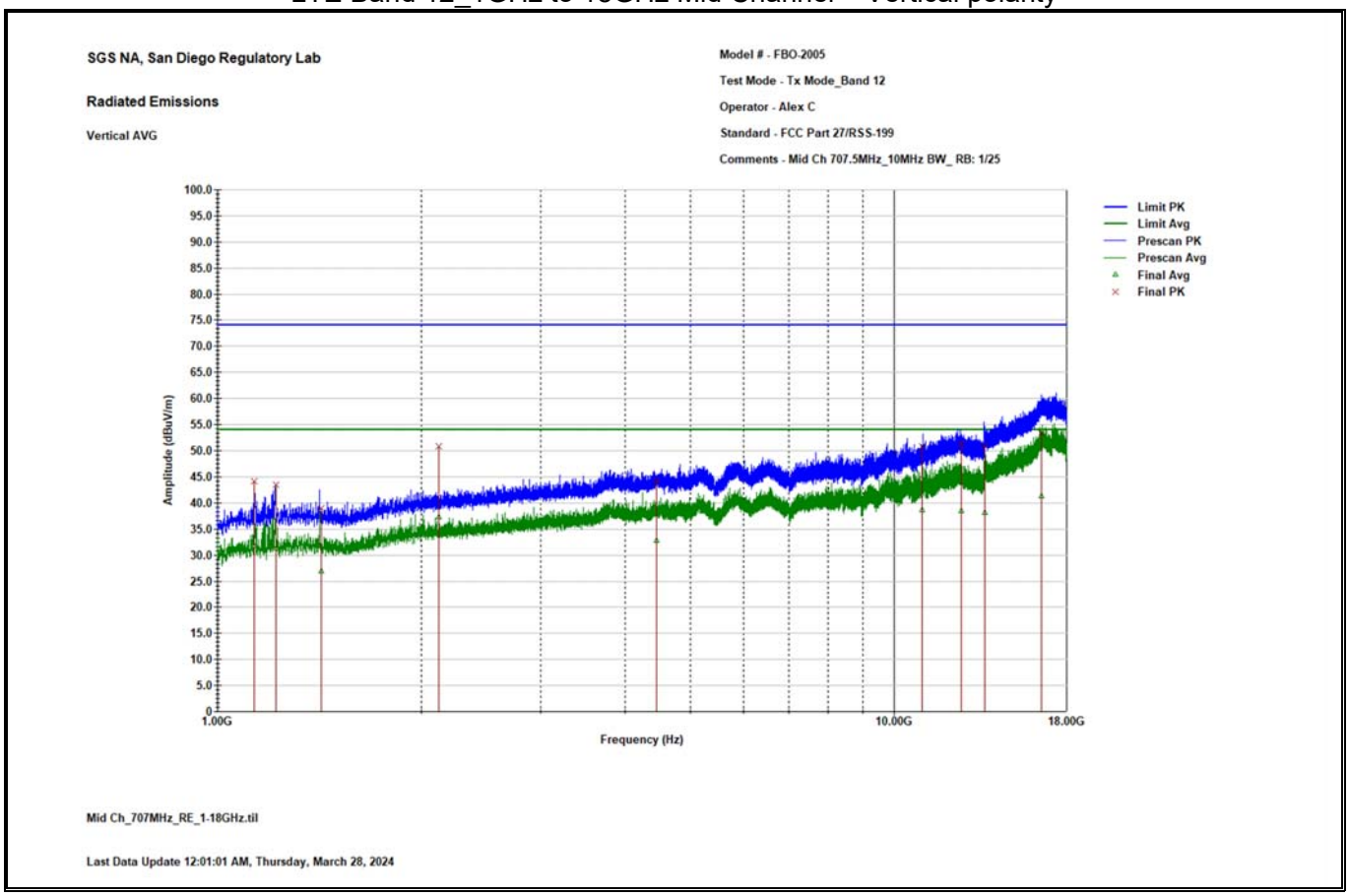
Peak Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
1408	45.18	-6.35	-28.82	74	156	222
2112.225	50.3	-1.73	-23.7	74	356	230
5779.125	45.9	9.19	-28.1	74	225	154
11998.15	52.87	25.2	-21.13	74	263	135
15220.93	53.44	28.92	-20.56	74	317	369
16676.12	52.38	33.62	-21.62	74	163	281
17368.45	54.02	32.34	-19.98	74	232	237

Average Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
1408	37.38	-6.35	-16.62	54	156	222
2112.225	37.09	-1.73	-16.91	54	356	230
5779.125	34.07	9.19	-19.93	54	225	154
11998.15	39.9	25.2	-14.1	54	263	135
15220.93	39.66	28.92	-14.34	54	317	369
16676.12	40.56	33.62	-13.44	54	163	281
17368.45	40.8	32.34	-13.2	54	232	237

LTE Band 12_1GHz to 18GHz Mid Channel – Vertical polarity



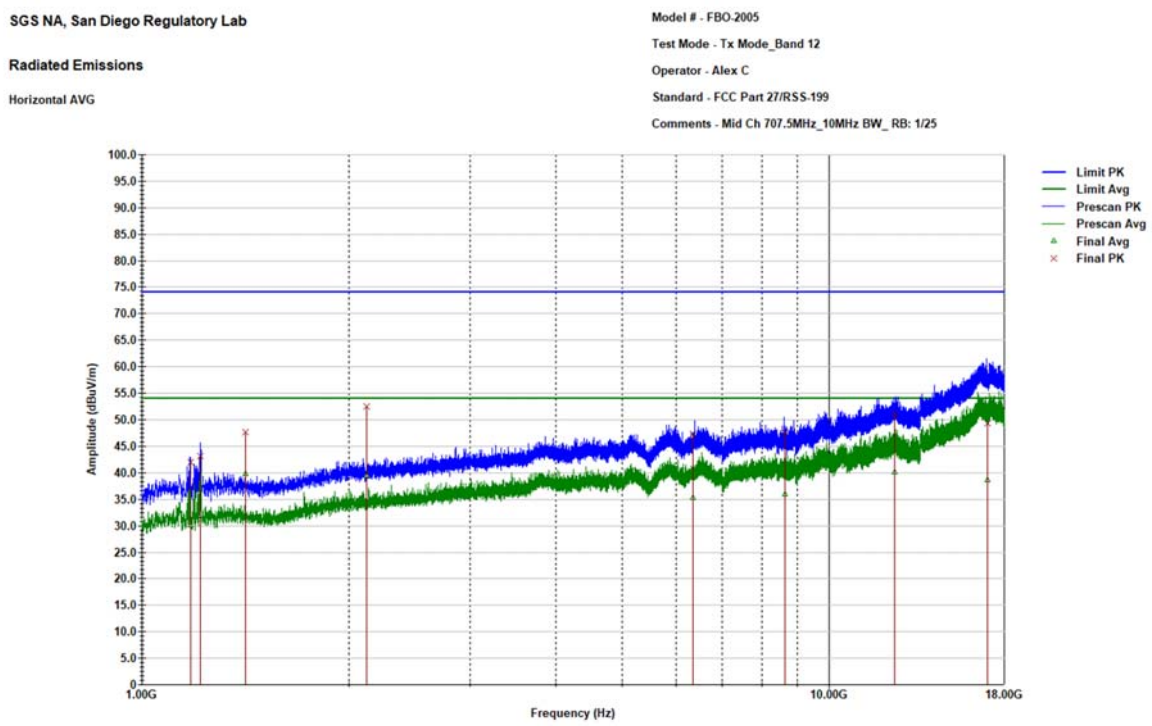
Peak Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
1134.11	44.24	-7.39	-29.76	74	200	168
1218.762	43.45	-6.76	-30.55	74	200	172
1422.301	38.95	-6.4	-35.05	74	368	182
2122.813	50.77	-1.67	-23.23	74	400	49
4460.714	44.3	5.67	-29.7	74	400	355
11021.41	50.86	22.01	-23.14	74	400	317
12573.48	51.36	26.07	-22.64	74	400	141
13607.4	50.91	26.29	-23.09	74	400	207
16533.87	53.35	33.25	-20.65	74	400	116

Average Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
1134.11	31.85	-7.39	-22.15	54	200	168
1218.762	31.37	-6.76	-22.63	54	200	172
1422.301	27.06	-6.4	-26.94	54	368	182
2122.813	37.36	-1.67	-16.64	54	400	49
4460.714	32.82	5.67	-21.18	54	400	355
11021.41	38.61	22.01	-15.39	54	400	317
12573.48	38.53	26.07	-15.47	54	400	141
13607.4	38.22	26.29	-15.78	54	400	207
16533.87	41.32	33.25	-12.68	54	400	116

LTE Band 12_1GHz to 18GHz Mid Channel – Horizontal polarity



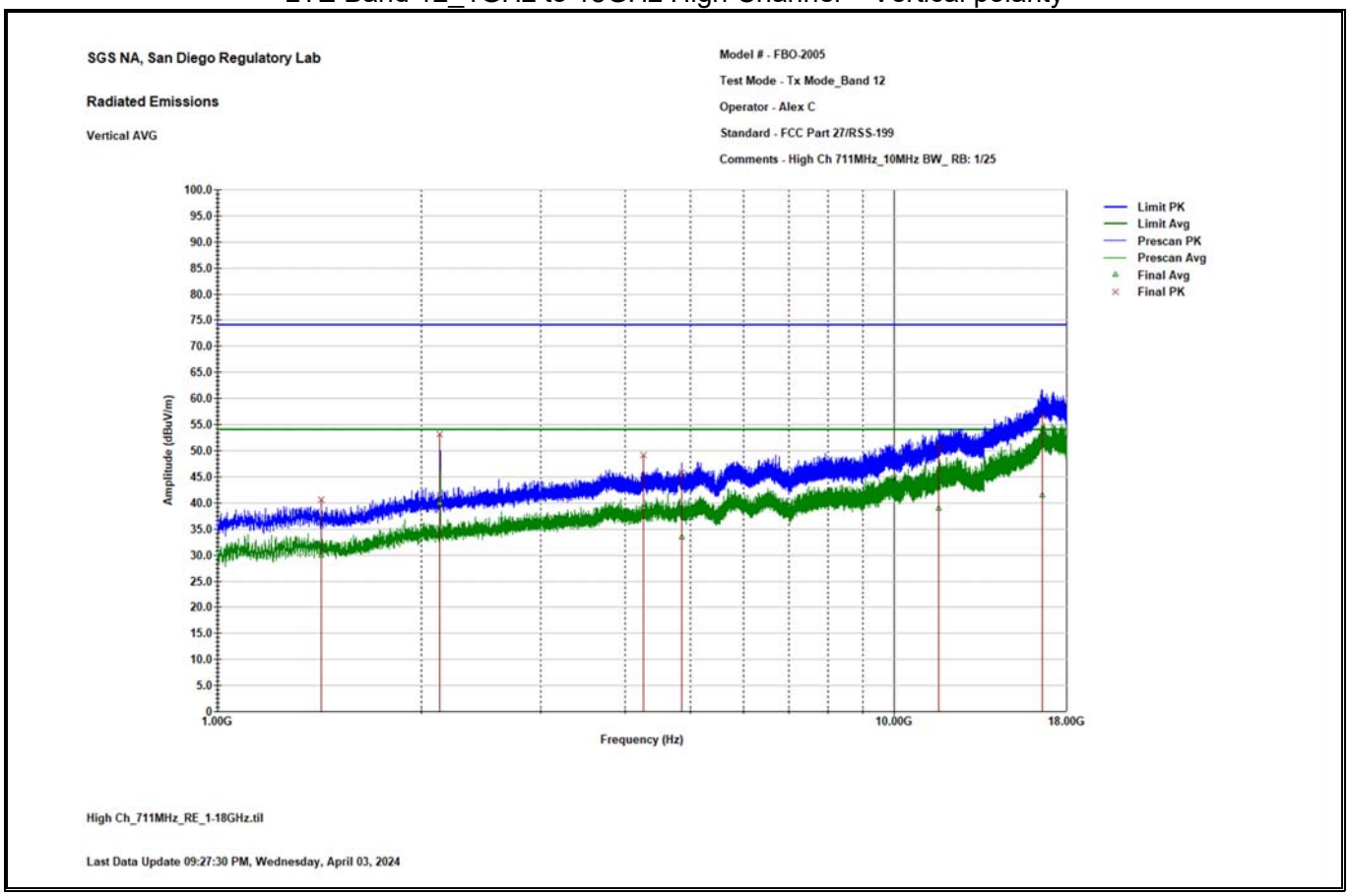
Peak Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
1175.647	42.06	-7.07	-31.94	74	400	232
1217.185	43.21	-6.76	-30.79	74	400	245
1415.149	47.69	-6.38	-26.31	74	400	346
2122.813	52.42	-1.67	-21.58	74	400	319
6345.177	47.27	10.55	-26.73	74	400	181
8635.638	47.58	16.14	-26.42	74	400	32
12461.08	51.14	25.98	-22.86	74	400	161
17035.05	49.35	33	-24.65	74	400	194

Average Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
1175.647	30.13	-7.07	-23.87	54	400	232
1217.185	31.37	-6.76	-22.63	54	400	245
1415.149	39.89	-6.38	-14.11	54	400	346
2122.813	39.46	-1.67	-14.54	54	400	319
6345.177	35.26	10.55	-18.74	54	400	181
8635.638	35.99	16.14	-18.01	54	400	32
12461.08	40.08	25.98	-13.92	54	400	161
17035.05	38.68	33	-15.32	54	400	194

LTE Band 12_1GHz to 18GHz High Channel – Vertical polarity



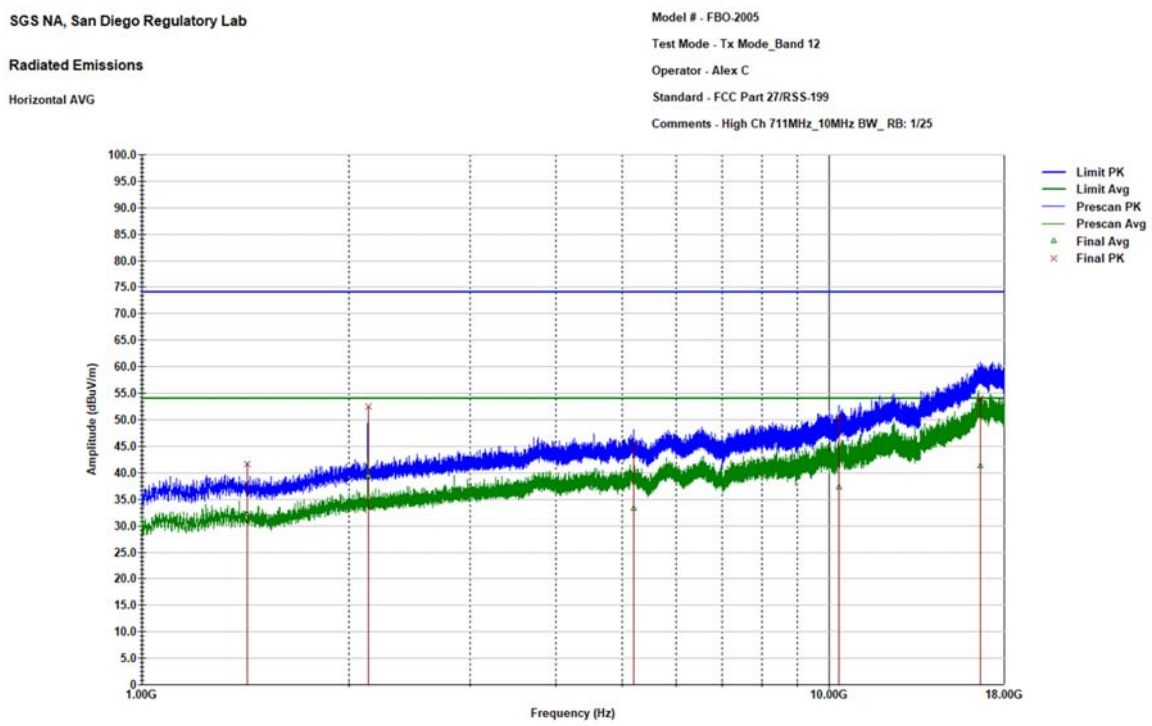
Peak Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
1422.025	40.71	-6.4	-33.29	74	156	186
2133.05	53.09	-1.64	-20.91	74	229	142
4266.54	49.16	5.34	-24.84	74	150	122
4857.3	45.88	6.85	-28.12	74	179	143
11632.65	50.89	24.35	-23.11	74	380	47
16581.35	56.58	33.45	-17.42	74	295	54

Average Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
1422.025	30.01	-6.4	-23.99	54	156	186
2133.05	40.01	-1.64	-13.99	54	229	142
4266.54	39.13	5.34	-14.87	54	150	122
4857.3	33.46	6.85	-20.54	54	179	143
11632.65	38.97	24.35	-15.03	54	380	47
16581.35	41.49	33.45	-12.51	54	295	54

LTE Band 12_1GHz to 18GHz High Channel – Horizontal polarity



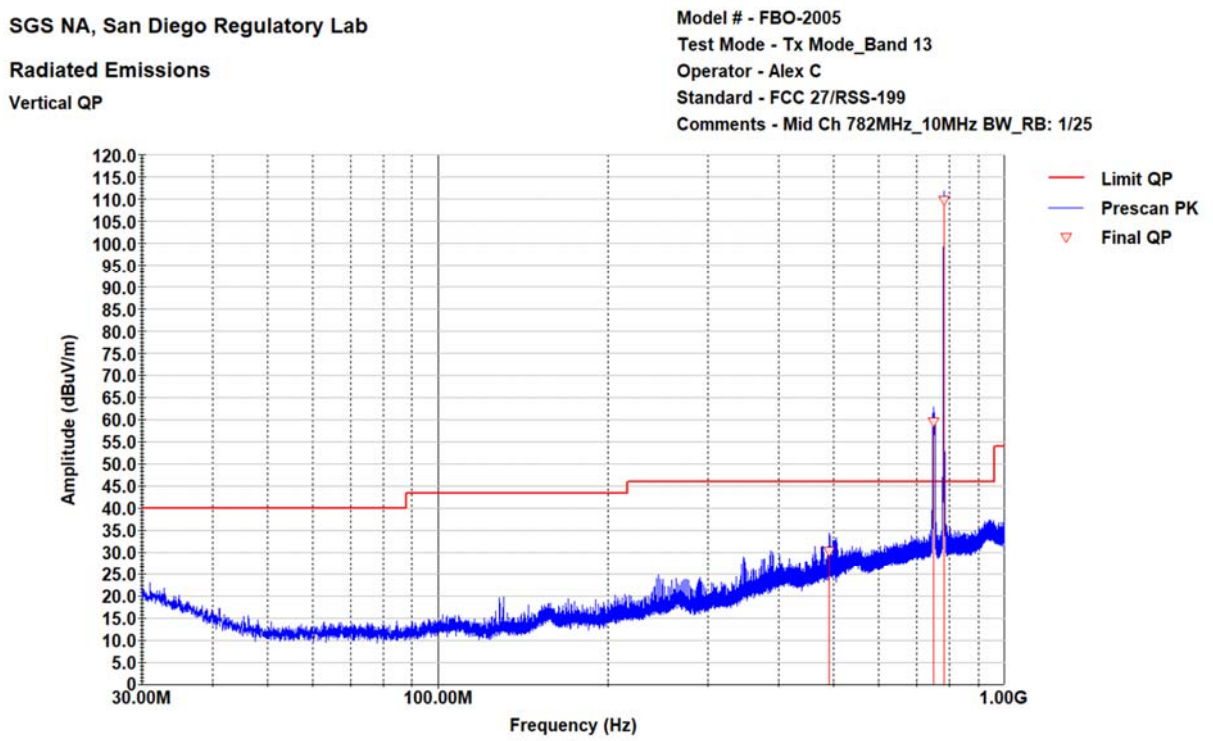
Peak Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
1422.025	41.61	-6.4	-32.39	74	355	215
2133.475	52.43	-1.64	-21.57	74	336	226
5196.44	45.02	7.36	-28.98	74	186	-20
10355.52	50.5	20.29	-23.5	74	194	-17
16609.82	54.05	33.57	-19.95	74	179	258

Average Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
1422.025	32.35	-6.4	-21.65	54	355	215
2133.475	39.48	-1.64	-14.52	54	336	226
5196.44	33.26	7.36	-20.74	54	186	-20
10355.52	37.33	20.29	-16.67	54	194	-17
16609.82	41.32	33.57	-12.68	54	179	258

LTE Band 13_30MHz to 1GHz Worst-Case Mid Channel – Vertical polarity

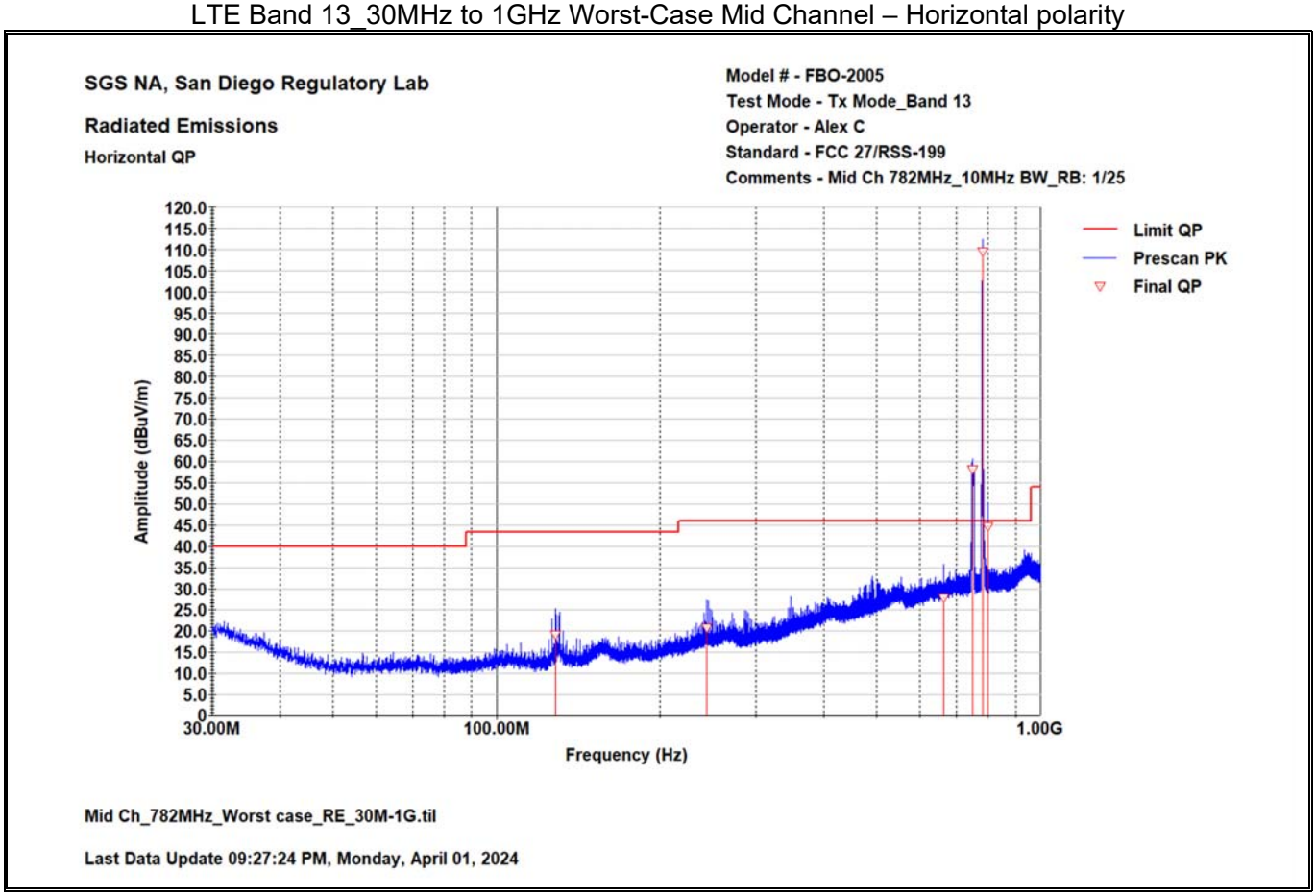


Quasi-Peak Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
490.386	30.42	25.25	-15.58	46	106	370
749.304	59.52	2)				
782.09	109.79	1)				

1) Note: Fundamental uplink frequency, not subject to this test limit. Data provided only for information purpose.
2) Note: Fundamental downlink frequency, not subject to this test limit. Data provided only for information purpose

LTE Band 13_30MHz to 1GHz Worst-Case Mid Channel – Horizontal polarity

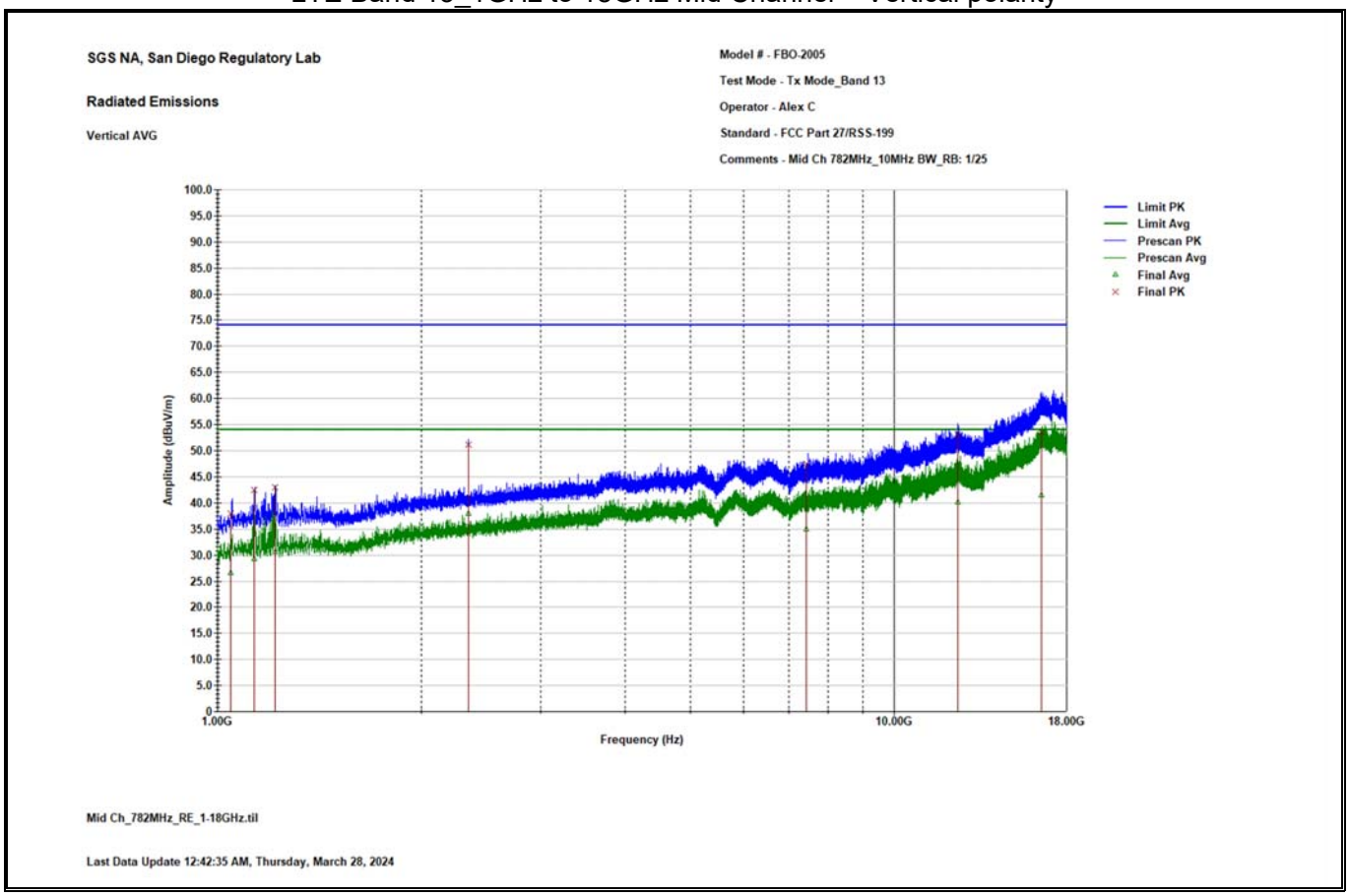


Quasi-Peak Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
128.407	19.13	13.28	-24.39	43.52	304	369
243.036	20.84	18.16	-25.16	46	114	201
664.622	28.07	29.37	-17.93	46	146	242
750.831	58.27	2)				
782.114	109.55	1)				
801.223	44.8	31.11	-1.2	46	100	182

1) Note: Fundamental uplink frequency, not subject to this test limit. Data provided only for information purpose.
2) Note: Fundamental downlink frequency, not subject to this test limit. Data provided only for information purpose

LTE Band 13_1GHz to 18GHz Mid Channel – Vertical polarity



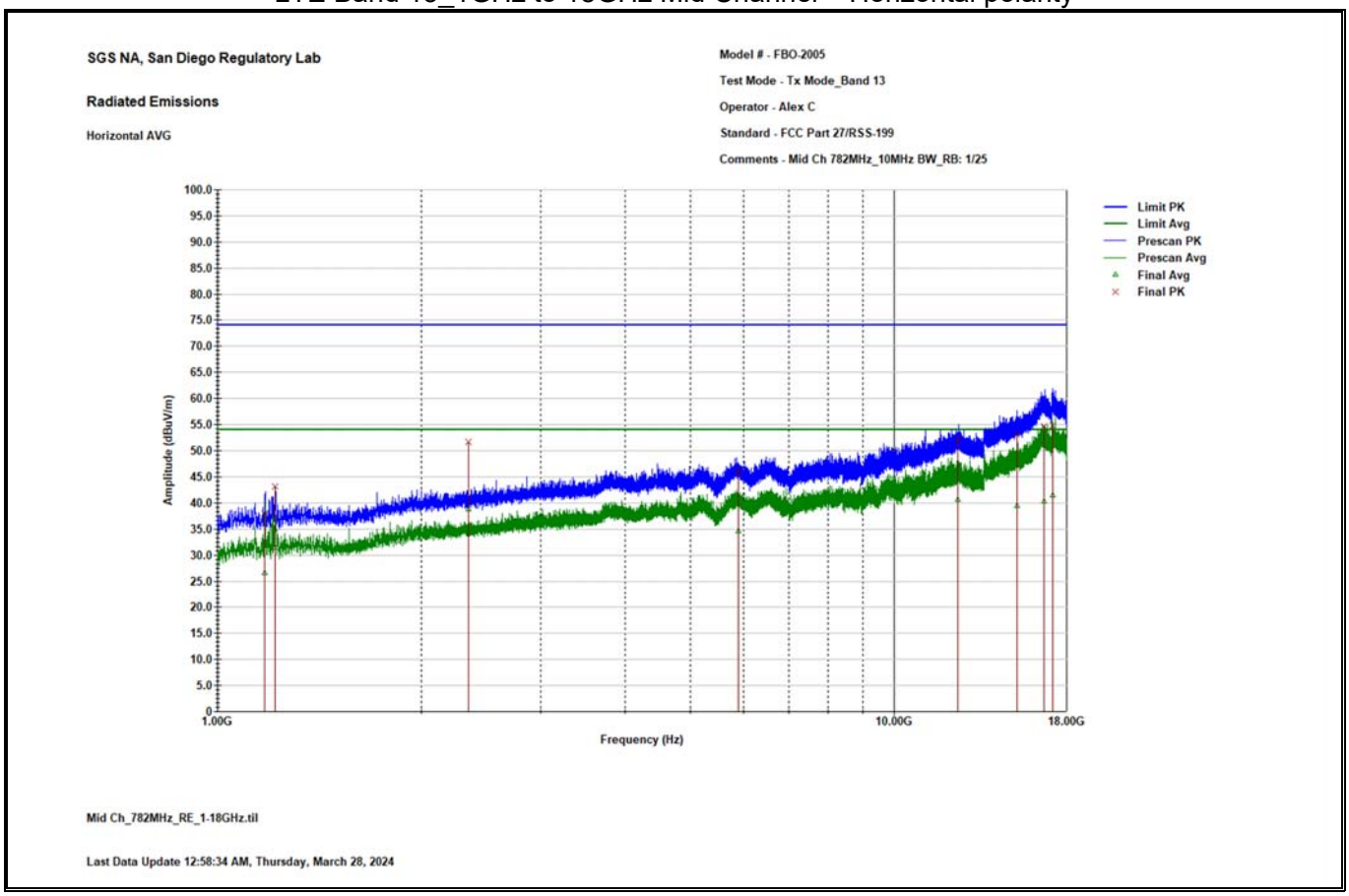
Peak Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
1046.862	38.05	-7.96	-35.95	74	200	174
1132.551	42.46	-7.41	-31.54	74	200	182
1215.666	43.04	-6.76	-30.96	74	256	186
2346.418	51.1	-0.79	-22.9	74	400	136
7422.681	47.44	13.1	-26.56	74	400	46
12424.62	53.09	25.95	-20.91	74	400	305
16523.15	53.53	33.2	-20.47	74	400	149

Average Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
1046.862	26.74	-7.96	-27.26	54	200	174
1132.551	29.39	-7.41	-24.61	54	200	182
1215.666	30.63	-6.76	-23.37	54	256	186
2346.418	38.04	-0.79	-15.96	54	400	136
7422.681	35.04	13.1	-18.96	54	400	46
12424.62	40.24	25.95	-13.76	54	400	305
16523.15	41.51	33.2	-12.49	54	400	149

LTE Band 13_1GHz to 18GHz Mid Channel – Horizontal polarity



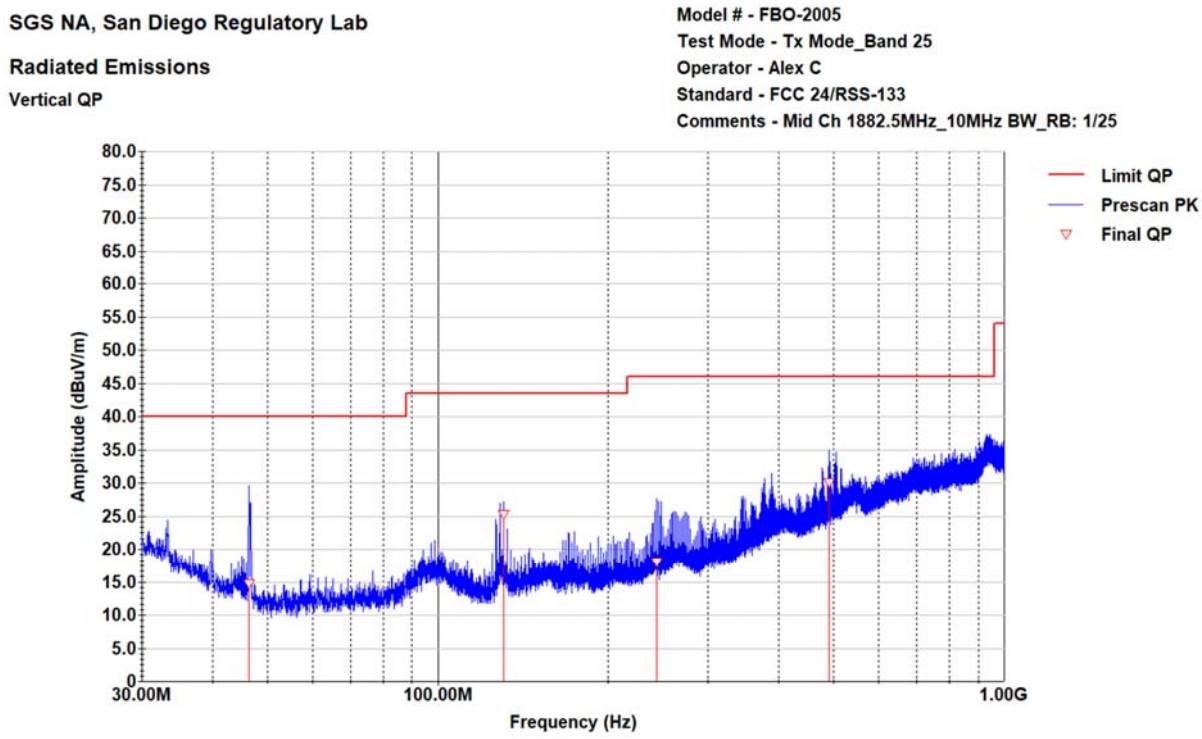
Peak Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
1173.743	38.03	-7.09	-35.97	74	400	226
1217.512	43.14	-6.76	-30.86	74	400	246
2346.168	51.64	-0.79	-22.36	74	400	320
5888.594	46.14	9.8	-27.86	74	400	183
12434.49	52.2	25.96	-21.8	74	400	289
15210.49	53.1	28.88	-20.9	74	400	26
16645.89	54.6	33.63	-19.4	74	400	132
17169.89	54.75	32.8	-19.25	74	400	246

Average Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
1173.743	26.6	-7.09	-27.4	54	400	226
1217.512	31.57	-6.76	-22.43	54	400	246
2346.168	38.84	-0.79	-15.16	54	400	320
5888.594	34.7	9.8	-19.3	54	400	183
12434.49	40.69	25.96	-13.31	54	400	289
15210.49	39.47	28.88	-14.53	54	400	26
16645.89	40.33	33.63	-13.67	54	400	132
17169.89	41.46	32.8	-12.54	54	400	246

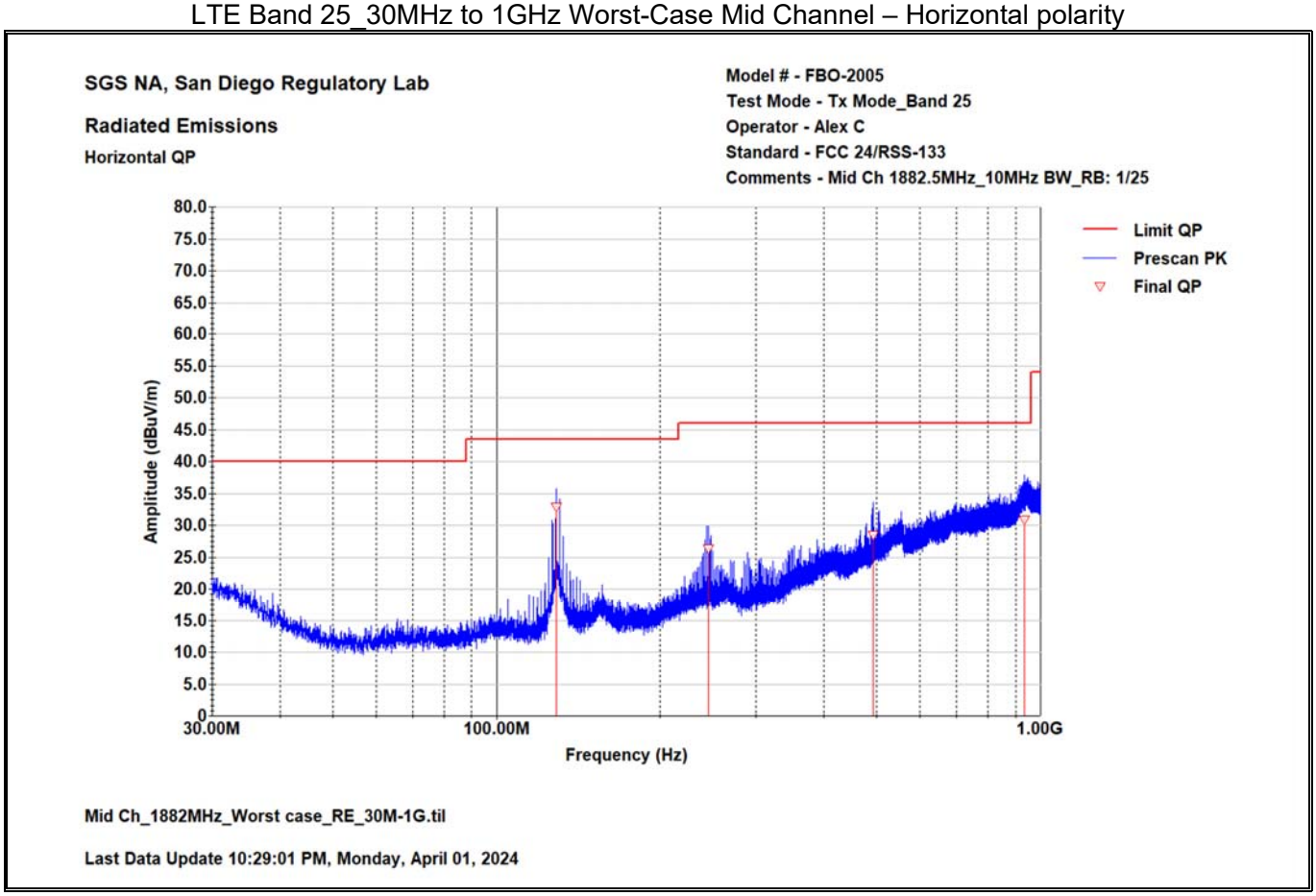
LTE Band 25_30MHz to 1GHz Worst-Case Mid Channel – Vertical polarity



Quasi-Peak Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
46.344	14.8	13.32	-25.2	40	100	322
130.565	25.29	13.45	-18.23	43.52	100	71
243.448	18.13	18.15	-27.87	46	100	248
490.75	30.16	25.26	-15.84	46	100	1

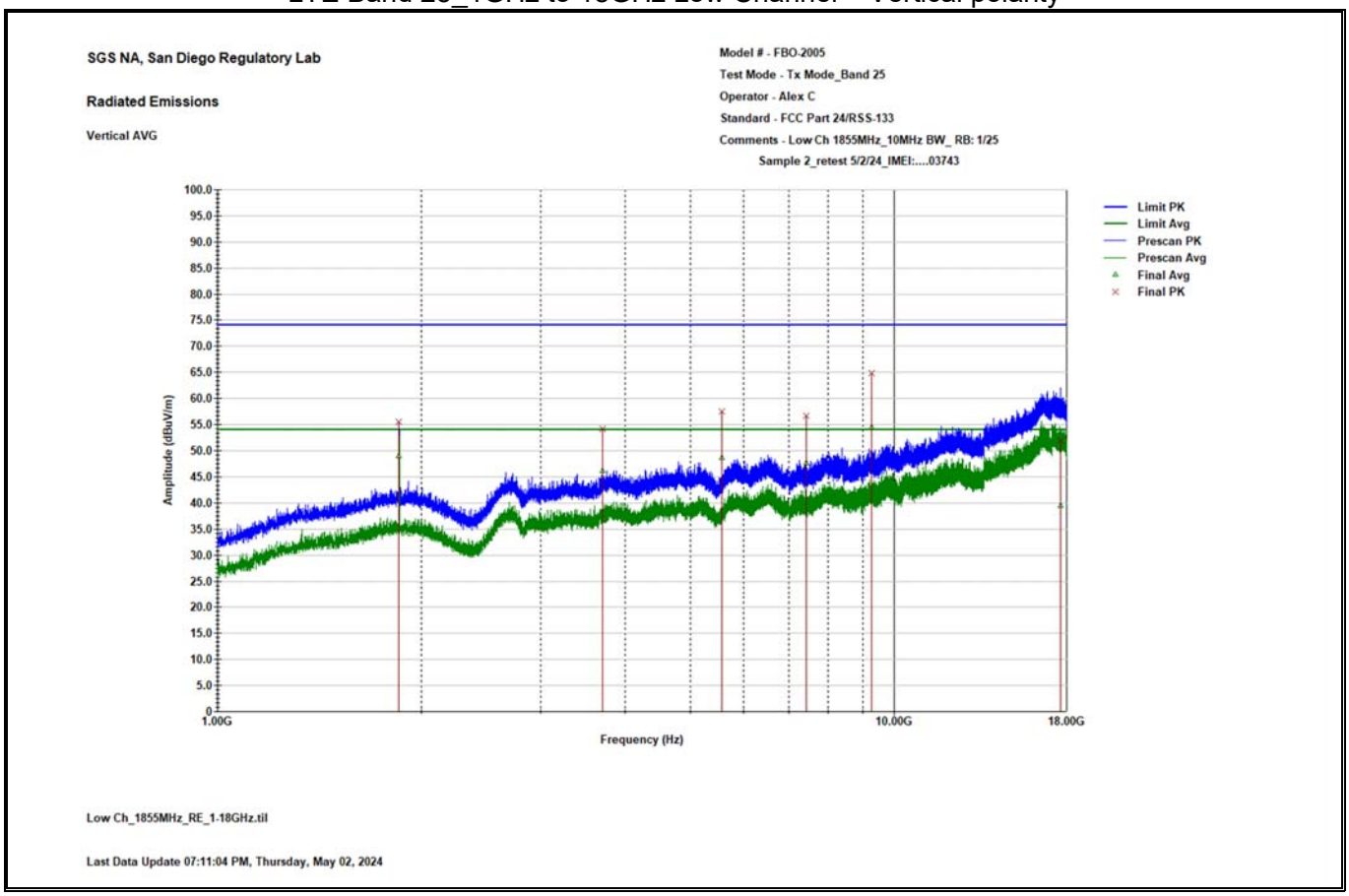
LTE Band 25_30MHz to 1GHz Worst-Case Mid Channel – Horizontal polarity



Quasi-Peak Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
128.601	32.95	13.3	-10.56	43.52	267	343
245.292	26.42	18.16	-19.58	46	185	366
492.714	28.57	25.34	-17.43	46	100	-2
932.876	30.91	34.13	-15.09	46	205	94

LTE Band 25_1GHz to 18GHz Low Channel – Vertical polarity



Peak Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
1855.1	55.41	-2.86	-18.59	74	359	284
3710.225	54.14	3.22	-19.86	74	334	130
5565.35	57.57	8.18	-16.43	74	287	181
7420.475	56.58	13.09	-17.42	74	171	149
9275.6	64.81	17.92	-9.19	74	163	189
17650.23	51.96	32	-22.04	74	350	8

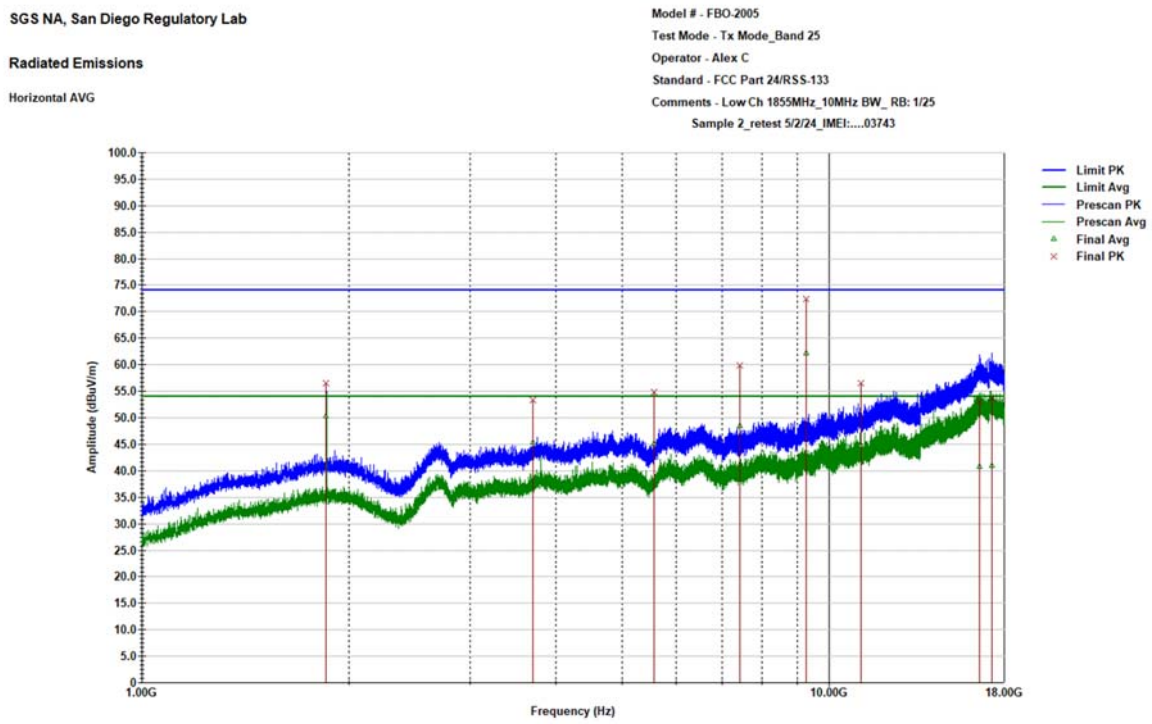
Average Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
1855.1	48.96	-2.86	-5.04	54	359	284
3710.225	46.12	3.22	-7.88	54	334	130
5565.35	48.71	8.18	-5.29	54	287	181
7420.475	47.58	13.09	-6.42	54	171	149
*9275.6	54.44	17.92	-27.79	82.23	163	189
17650.23	39.47	32	-14.53	54	350	8

* Note: This frequency is outside of FCC 15.205 restricted band. The limit of this frequency is -13dBm that equal 82.23 dBµV/m field strength. Therefore, it complies the requirement.

FCC Part 24.238(a):
Out of band emissions:
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB

LTE Band 25_1GHz to 18GHz Low Channel – Horizontal polarity



Peak Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
1855.1	56.49	-2.86	-17.51	74	150	218
3710.225	53.27	3.22	-20.73	74	217	165
5565.35	54.79	8.18	-19.21	74	150	131
7420.475	59.81	13.09	-14.19	74	271	97
9275.175	72.37	17.92	-1.63	74	248	75
11130.73	56.45	22.63	-17.55	74	150	229
16577.52	53.23	33.44	-20.77	74	356	315
17257.53	53.66	32.64	-20.34	74	224	288

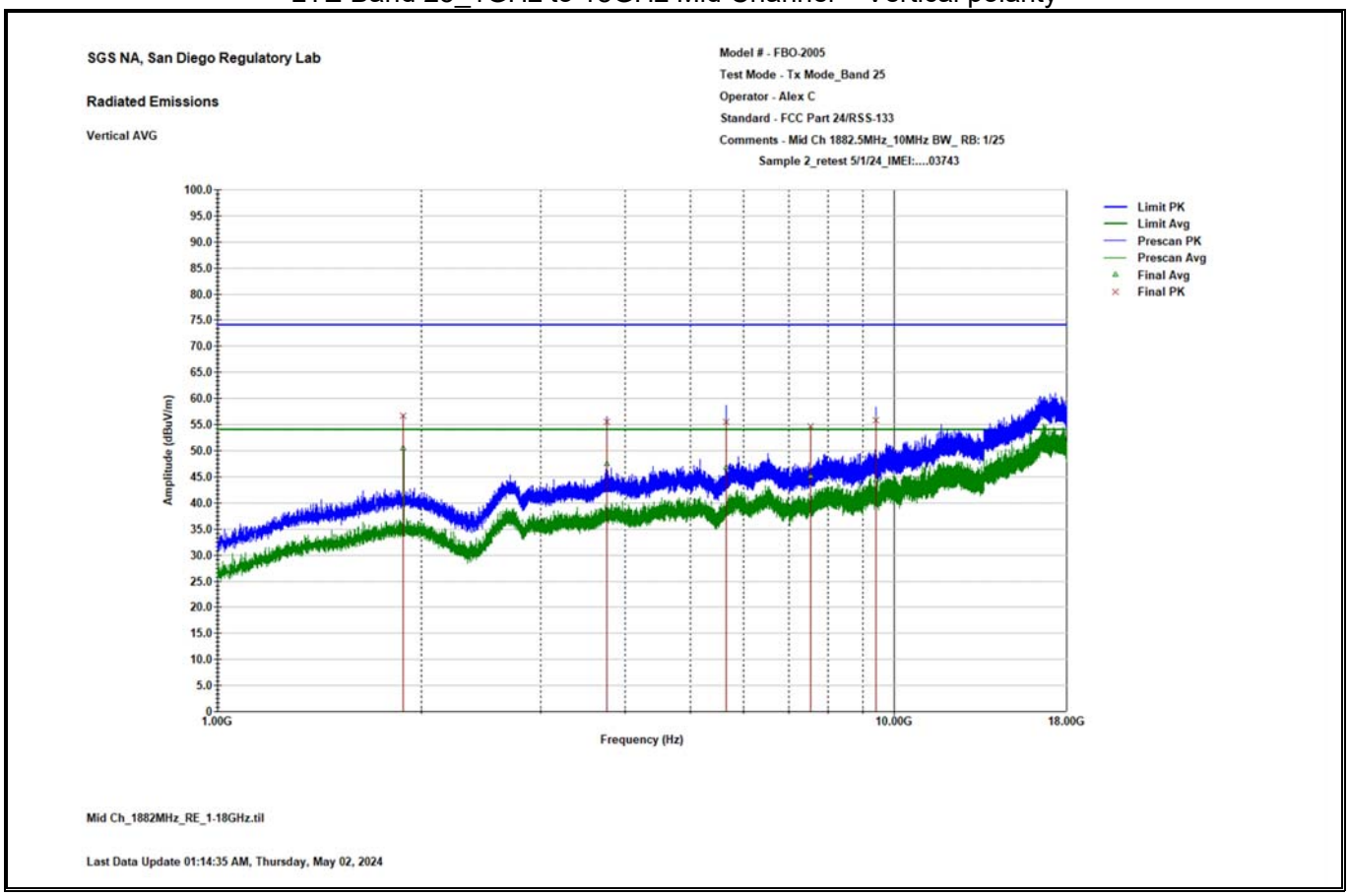
Average Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
1855.1	50.34	-2.86	-3.66	54	150	218
3710.225	45.25	3.22	-8.75	54	217	165
5565.35	45.14	8.18	-8.86	54	150	131
7420.475	48.43	13.09	-5.57	54	271	97
*9275.175	62.09	17.92	-20.14	82.23	248	75
11130.73	44.79	22.63	-9.21	54	150	229
16577.52	40.85	33.44	-13.15	54	356	315
17257.53	41.01	32.64	-12.99	54	224	288

* Note: This frequency is outside of FCC 15.205 restricted band. The limit of this frequency is -13dBm that equal 82.23 dBµV/m field strength. Therefore, it complies the requirement.

FCC Part 24.238(a):
Out of band emissions:
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB

LTE Band 25_1GHz to 18GHz Mid Channel – Vertical polarity



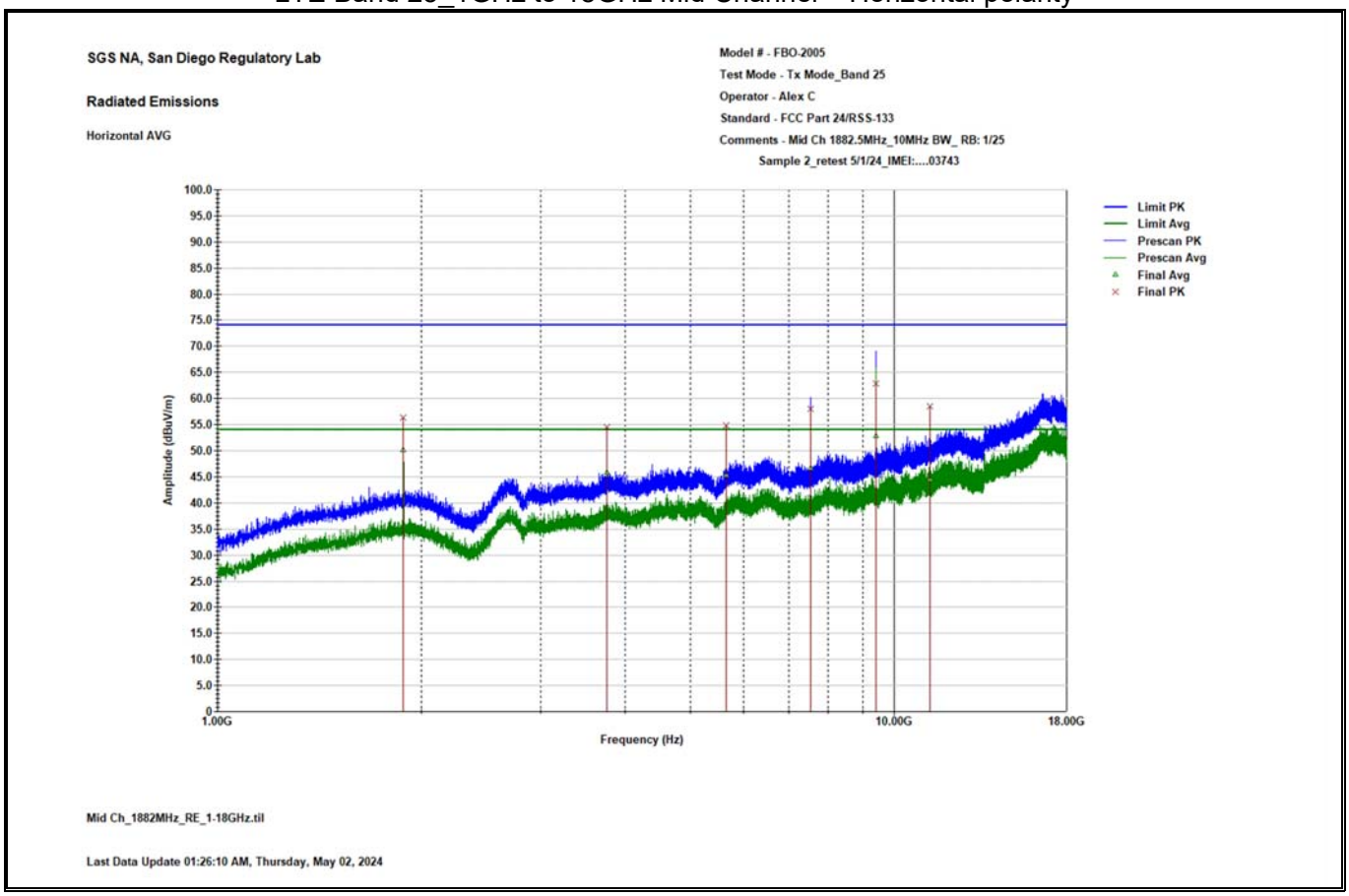
Peak Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
1882.725	56.63	-2.63	-17.37	74	345	296
3765.05	55.49	3.58	-18.51	74	150	189
5647.8	55.44	8.89	-18.56	74	400	380
7530.125	54.71	13.56	-19.29	74	219	154
9412.575	55.9	18.09	-18.1	74	150	187

Average Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
1882.725	50.5	-2.63	-3.5	54	345	296
3765.05	47.41	3.58	-6.59	54	150	189
5647.8	46.79	8.89	-7.21	54	400	380
7530.125	45.22	13.56	-8.78	54	219	154
9412.575	44.55	18.09	-9.45	54	150	187

LTE Band 25_1GHz to 18GHz Mid Channel – Horizontal polarity



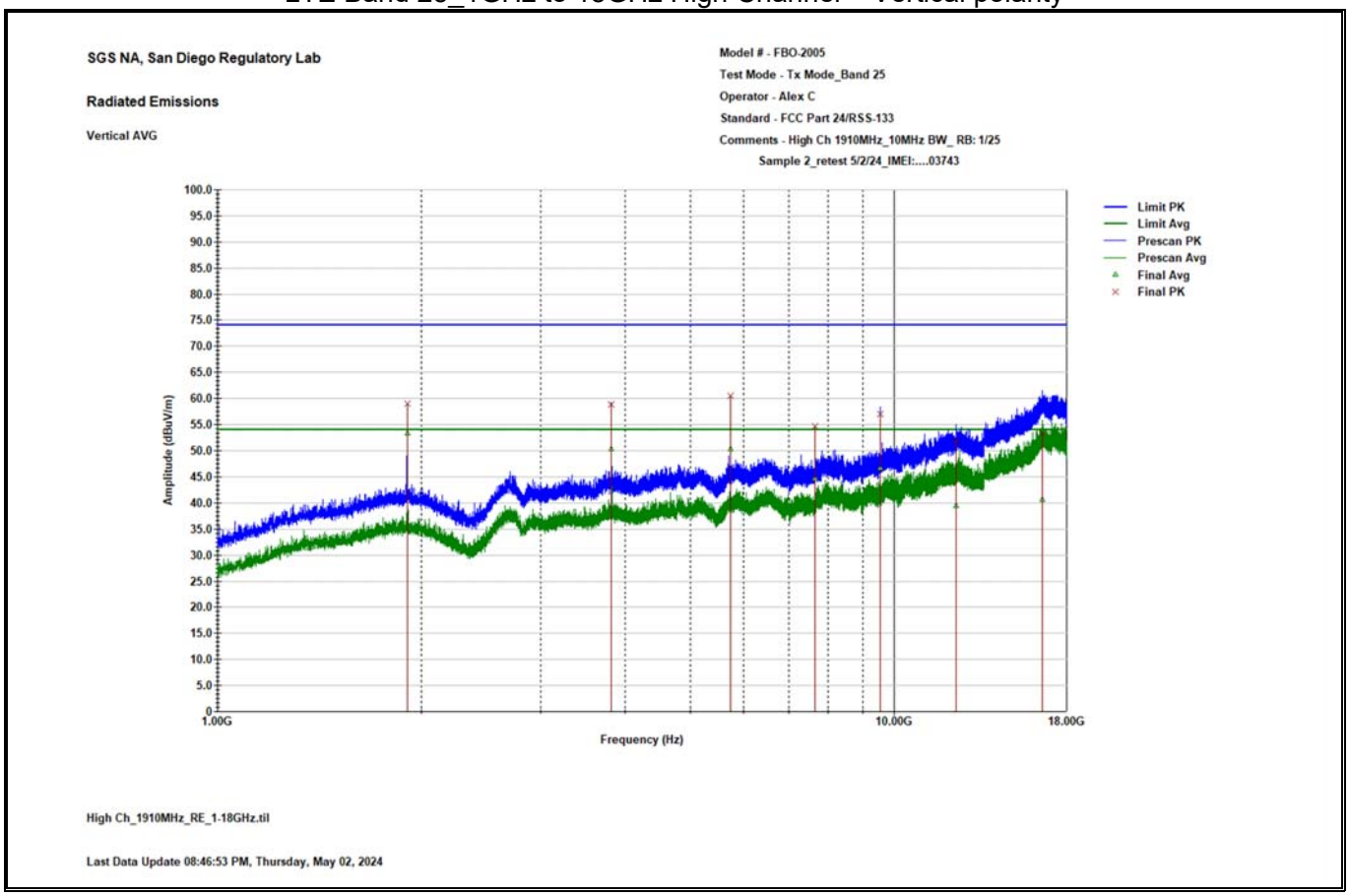
Peak Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
1882.3	56.31	-2.63	-17.69	74	150	227
3765.05	54.41	3.58	-19.59	74	365	170
5647.8	54.82	8.89	-19.18	74	155	122
7530.55	58.02	13.56	-15.98	74	272	107
9413.3	62.85	18.1	-11.15	74	250	230
11295.63	58.43	23.4	-15.57	74	400	130

Average Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
1882.3	50.19	-2.63	-3.81	54	150	227
3765.05	45.78	3.58	-8.22	54	365	170
5647.8	45.29	8.89	-8.71	54	155	122
7530.55	46.7	13.56	-7.3	54	272	107
9413.3	52.79	18.1	-1.21	54	250	230
11295.63	44.56	23.4	-9.44	54	400	130

LTE Band 25_1GHz to 18GHz High Channel – Vertical polarity



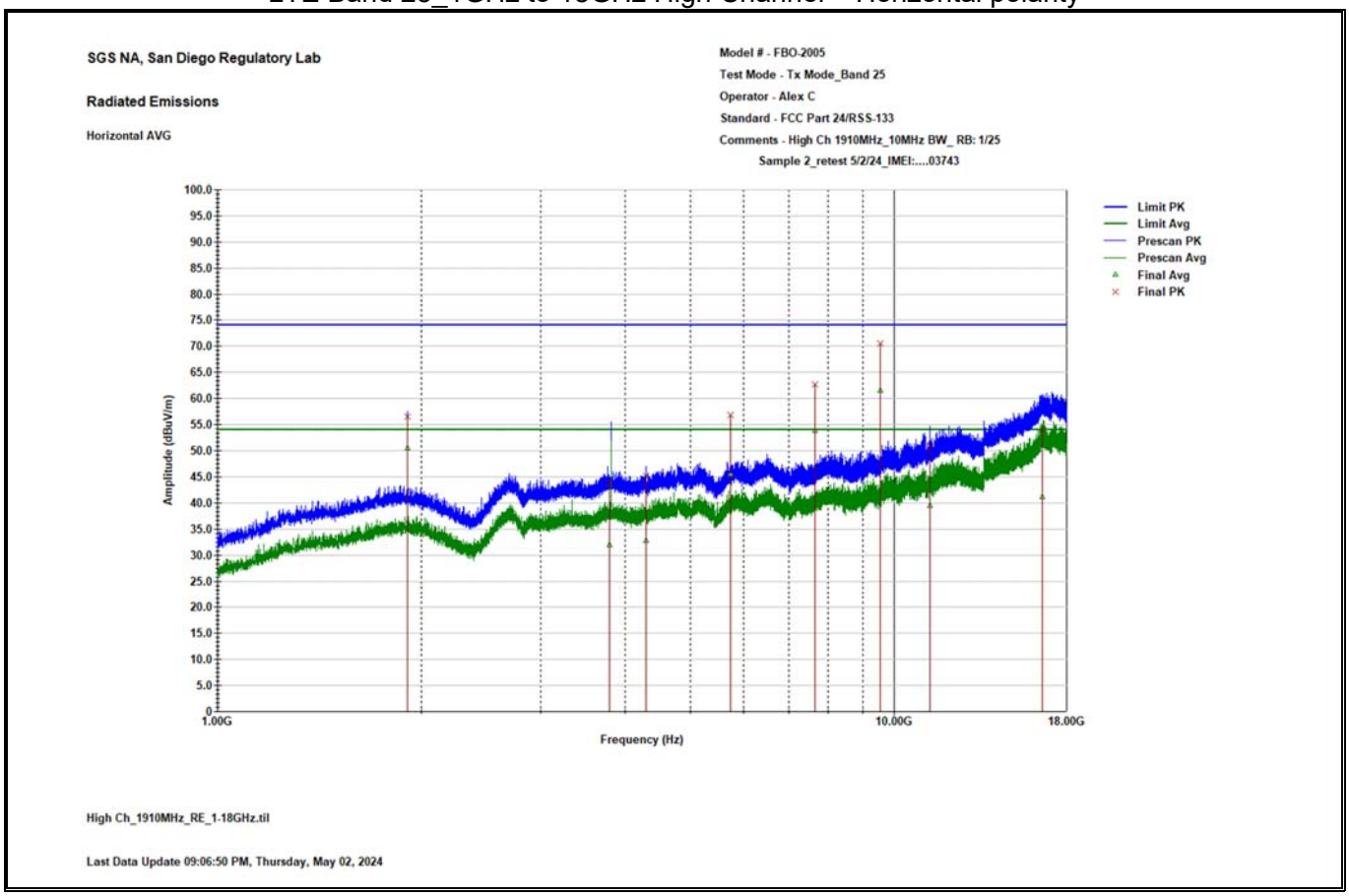
Peak Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
1909.925	58.92	-2.38	-15.08	74	391	268
3820.3	58.9	3.65	-15.1	74	150	118
5730.25	60.43	9.15	-13.57	74	302	181
7640.625	54.66	13.86	-19.34	74	150	183
9550.575	57.04	18.61	-16.96	74	326	101
12345.37	51.95	25.91	-22.05	74	326	267
16589.84	53.39	33.49	-20.61	74	163	16

Average Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
1909.925	53.24	-2.38	-0.76	54	391	268
3820.3	50.3	3.65	-3.7	54	150	118
5730.25	50.26	9.15	-3.74	54	302	181
7640.625	44.6	13.86	-9.4	54	150	183
9550.575	46.69	18.61	-7.31	54	326	101
12345.37	39.49	25.91	-14.51	54	326	267
16589.84	40.75	33.49	-13.25	54	163	16

LTE Band 25_1GHz to 18GHz High Channel – Horizontal polarity



Peak Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
1910.35	56.47	-2.37	-17.53	74	150	225
3802.3	43.91	3.72	-30.09	74	316	4
4299.6	45.21	5.37	-28.79	74	386	178
5730.25	56.85	9.15	-17.15	74	202	134
7640.2	62.69	13.86	-11.31	74	263	49
9550.575	70.43	18.61	-3.57	74	264	60
11307.53	51.07	23.46	-22.93	74	363	204
16562.65	54.21	33.37	-19.79	74	331	-5

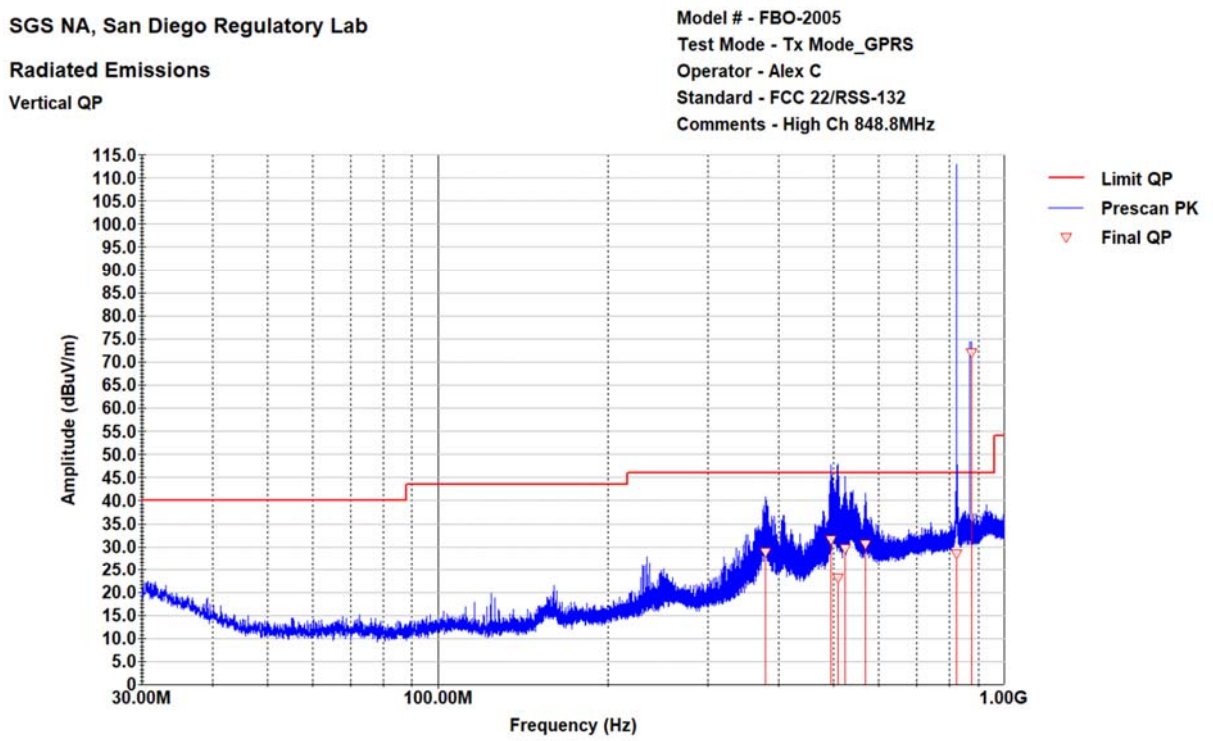
Average Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
1910.35	50.49	-2.37	-3.51	54	150	225
3802.3	31.95	3.72	-22.05	54	316	4
4299.6	32.83	5.37	-21.17	54	386	178
5730.25	45.56	9.15	-8.44	54	202	134
7640.2	53.76	13.86	-0.24	54	263	49
*9550.575	61.42	18.61	-20.81	82.23	264	60
11307.53	39.46	23.46	-14.54	54	363	204
16562.65	41.24	33.37	-12.76	54	331	-5

* Note: This frequency is outside of FCC 15.205 restricted band. The limit of this frequency is -13dBm that equal 82.23 dBµV/m field strength. Therefore, it complies the requirement.

FCC Part 24.238(a):
Out of band emissions:
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB

GPRS 850_30MHz to 1GHz Worst-Case High Channel – Vertical polarity

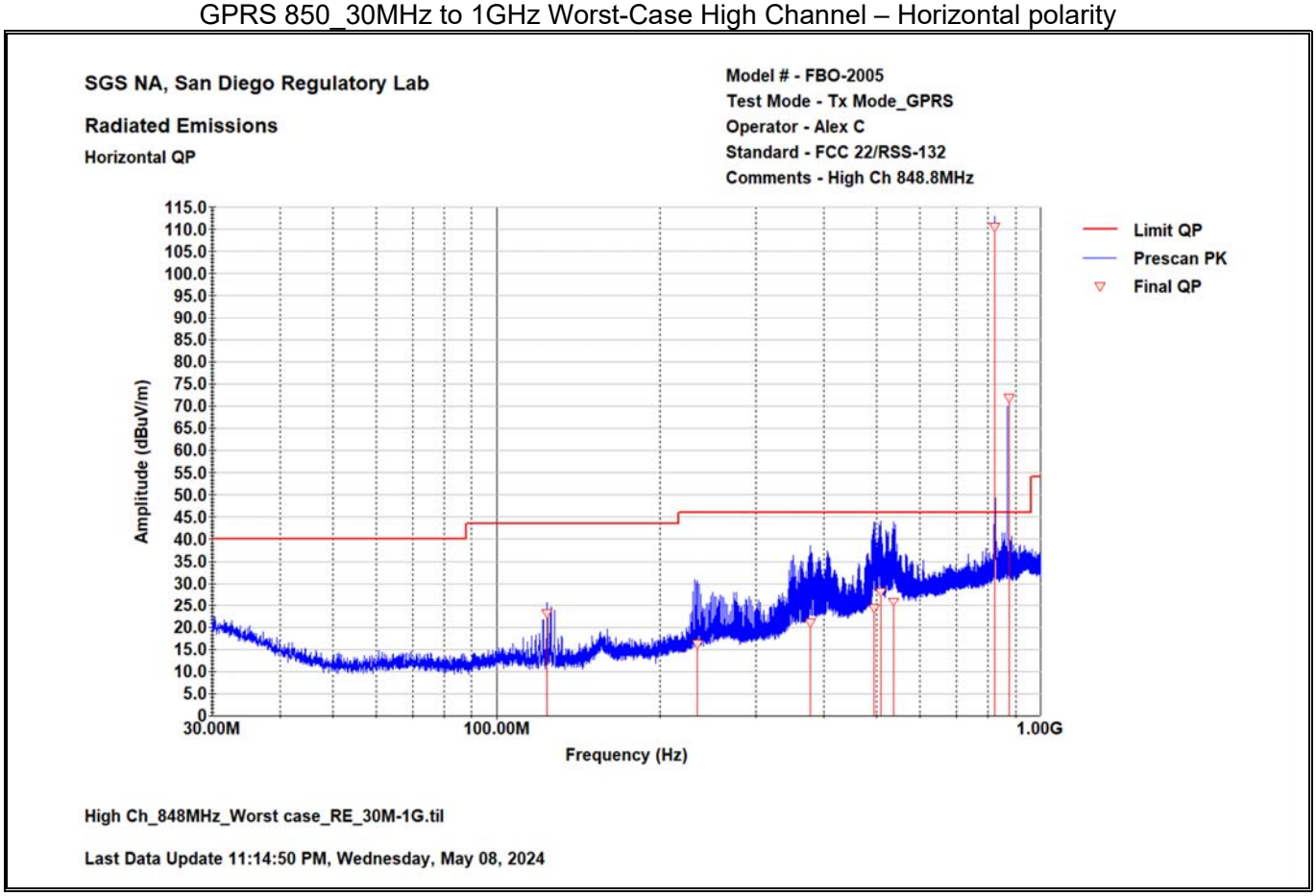


Quasi-Peak Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
378.424	28.88	22.69	-17.12	46	122	102
494.387	31.64	25.4	-14.36	46	100	284
508.743	23.09	26.34	-22.91	46	369	380
522.76	29.79	27.45	-16.21	46	130	53
569.102	30.73	27.28	-15.27	46	106	-20
824.188	28.57	1)				
875.986	72.07	2)				

1) Note: Fundamental uplink frequency, not subject to this test limit. Data provided only for information purpose.
2) Note: Fundamental downlink frequency, not subject to this test limit. Data provided only for information purpose

GPRS 850_30MHz to 1GHz Worst-Case High Channel – Horizontal polarity

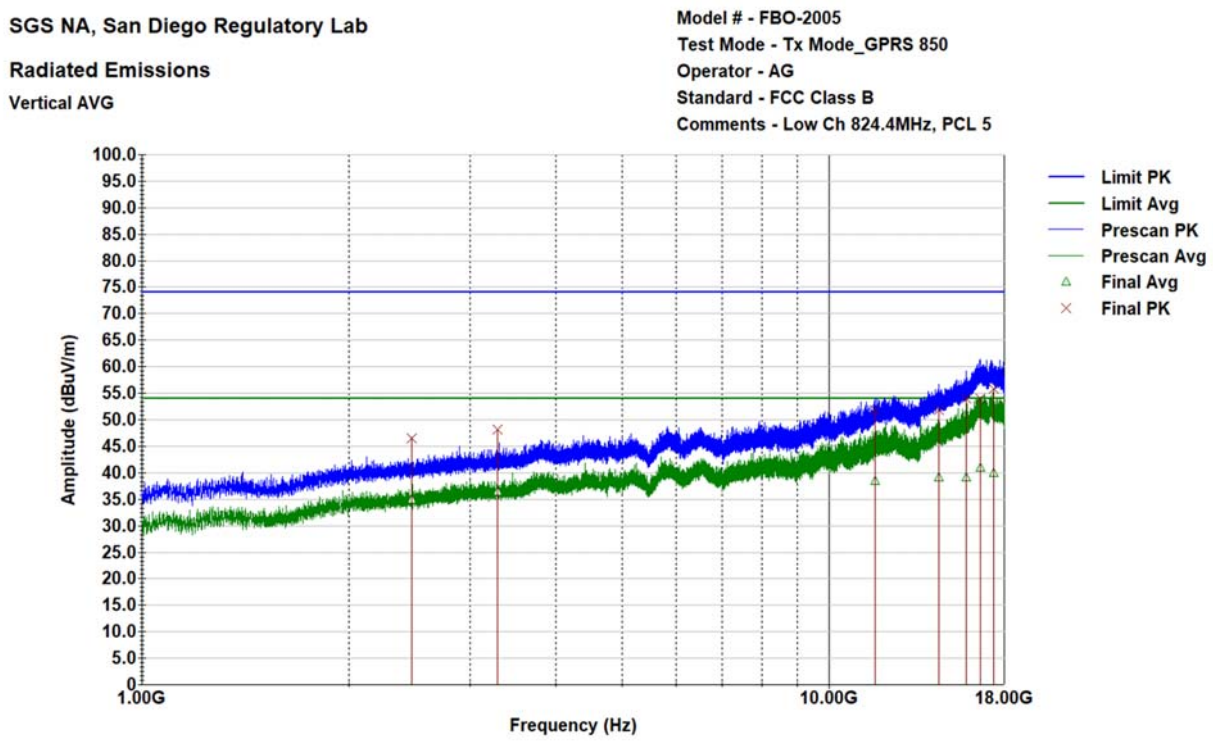


Quasi-Peak Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
123.896	23.16	12.95	-20.35	43.51	169	296
233.676	16.39	17.66	-29.61	46	121	266
377.502	21.11	22.65	-24.89	46	106	186
493.563	24.24	25.37	-21.76	46	367	68
508.065	28.07	26.29	-17.93	46	376	239
536.049	25.92	28.38	-20.08	46	201	166
824.26	110.66	1)				
876.058	71.78	2)				

1) Note: Fundamental uplink frequency, not subject to this test limit. Data provided only for information purpose.
2) Note: Fundamental downlink frequency, not subject to this test limit. Data provided only for information purpose

GPRS 850_1GHz to 18GHz Low Channel – Vertical polarity



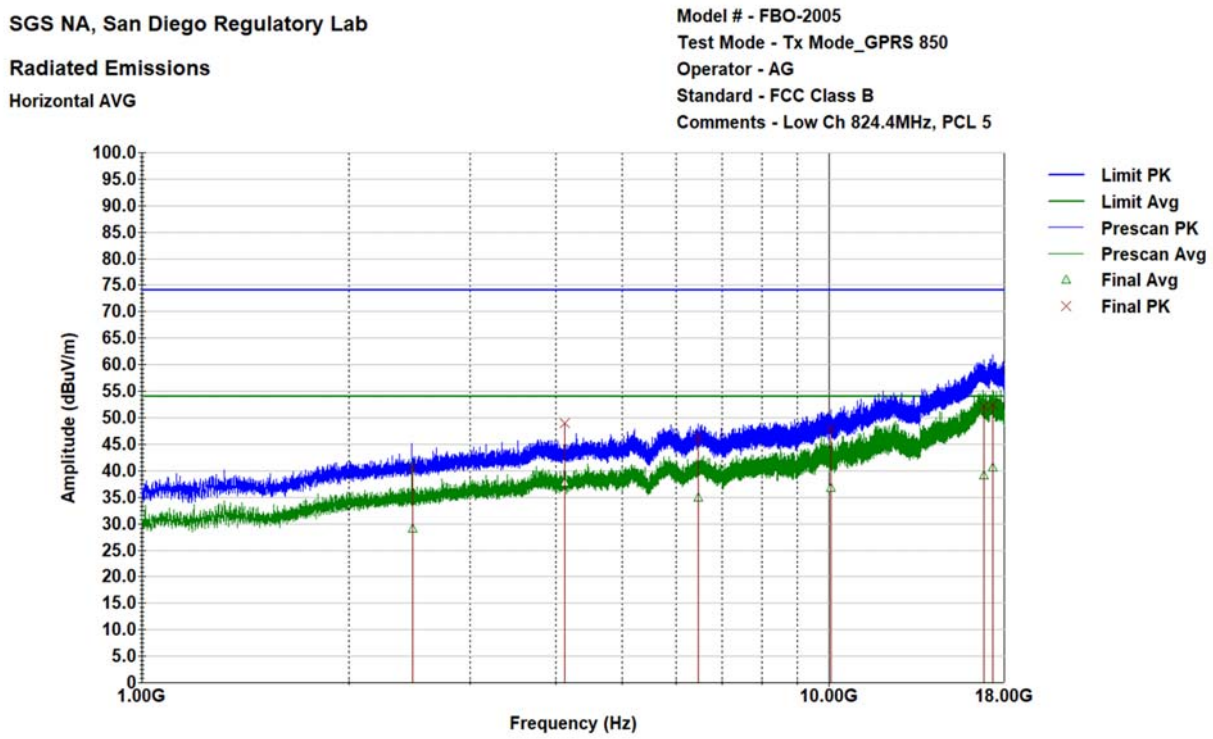
Peak Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
2473.05	46.44	-0.16	-27.56	74	150	103
3297.125	48.11	2.49	-25.89	74	350	81
11688.75	51.86	24.54	-22.14	74	279	369
14469.53	51.74	27.32	-22.26	74	279	203
15864.38	54.06	30.59	-19.94	74	163	198
16635.33	54.06	33.63	-19.94	74	334	2
17382.9	55.81	32.3	-18.19	74	150	114

Average Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
2473.05	34.98	-0.16	-19.02	54	150	103
3297.125	36.55	2.49	-17.45	54	350	81
11688.75	38.48	24.54	-15.52	54	279	369
14469.53	39.12	27.32	-14.88	54	279	203
15864.38	39.13	30.59	-14.87	54	163	198
16635.33	40.99	33.63	-13.01	54	334	2
17382.9	40.04	32.3	-13.96	54	150	114

GPRS 850_1GHz to 18GHz Low Channel – Horizontal polarity



Peak Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
2477	40.59	-0.14	-33.41	74	252	-2
4120.775	49.06	4.75	-24.94	74	225	351
6453.175	46.41	10.79	-27.59	74	240	5
10061	48.03	19.68	-25.97	74	374	135
16837.62	52.11	33.5	-21.89	74	400	380
17326.8	52.54	32.45	-21.46	74	386	136

Average Data

Freq. (MHz)	Final QP (dBµV/m)	Total Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Ant. Height (cm)	Azimuth (deg.)
2477	29.16	-0.14	-24.84	54	252	-2
4120.775	37.86	4.75	-16.14	54	225	351
6453.175	35.03	10.79	-18.97	54	240	5
10061	36.82	19.68	-17.18	54	374	135
16837.62	39.1	33.5	-14.9	54	400	380
17326.8	40.63	32.45	-13.37	54	386	136