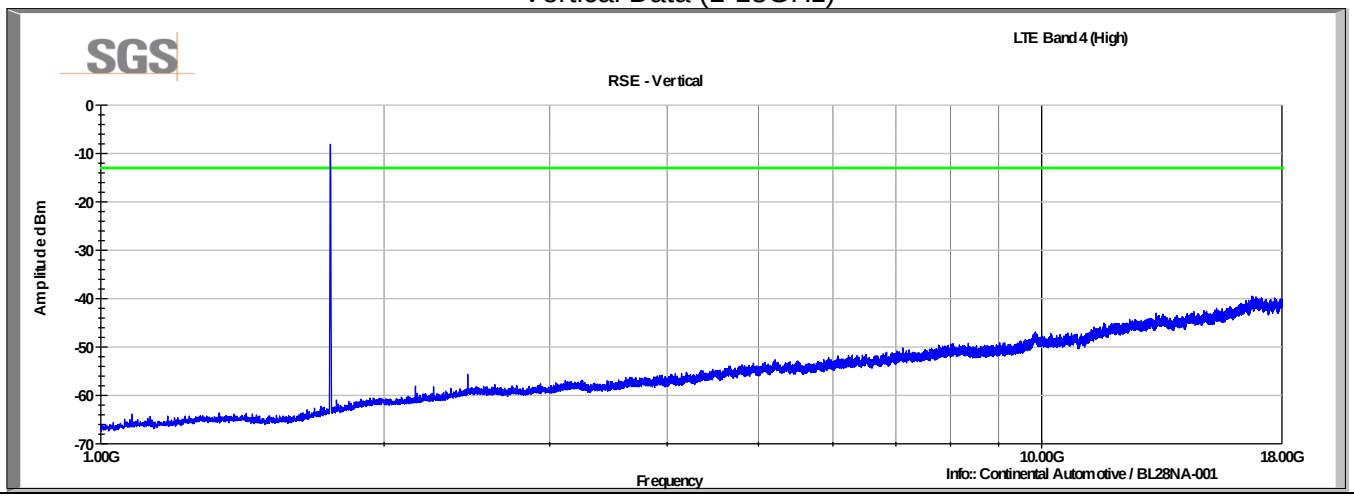
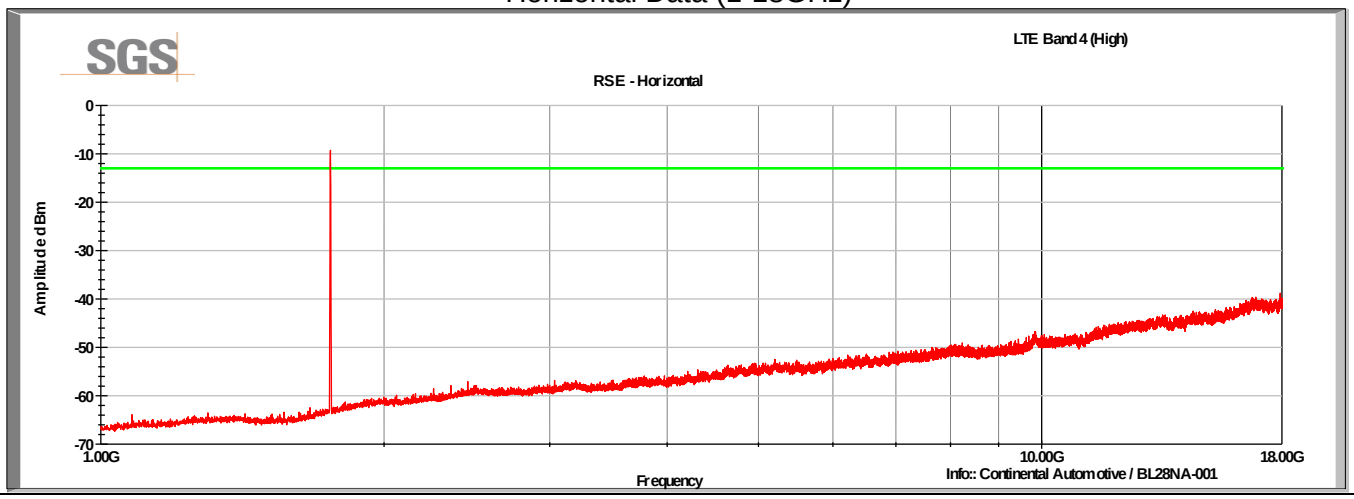
LTE Band 4, QPSK modulation, 1.4MHz
High Channel (20393)
Vertical Data (1-18GHz)



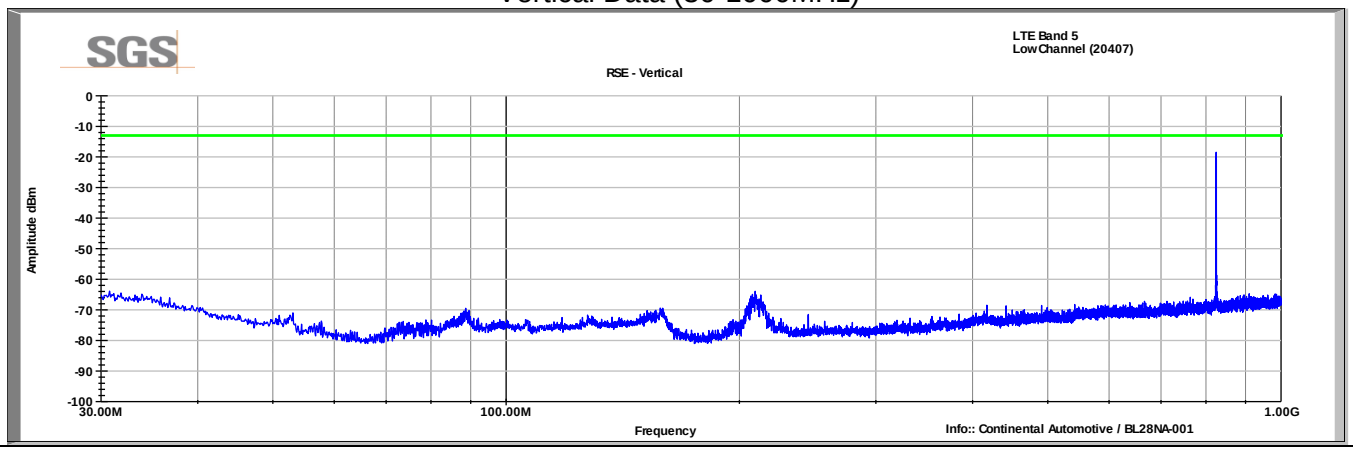
Horizontal Data (1-18GHz)



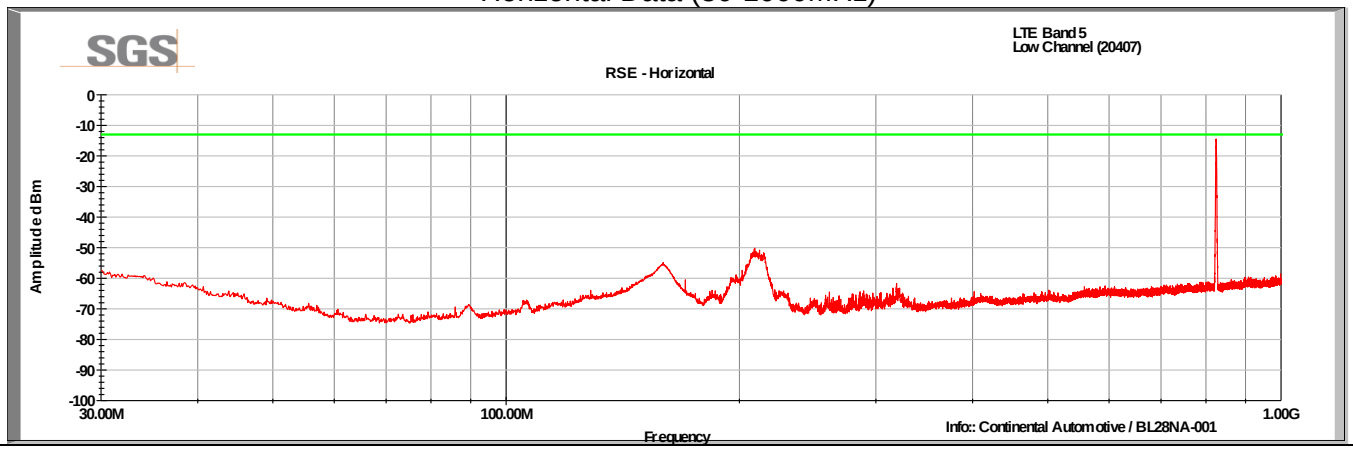
LTE Band 5, QPSK modulation, 1.4MHz

Low Channel (20407)

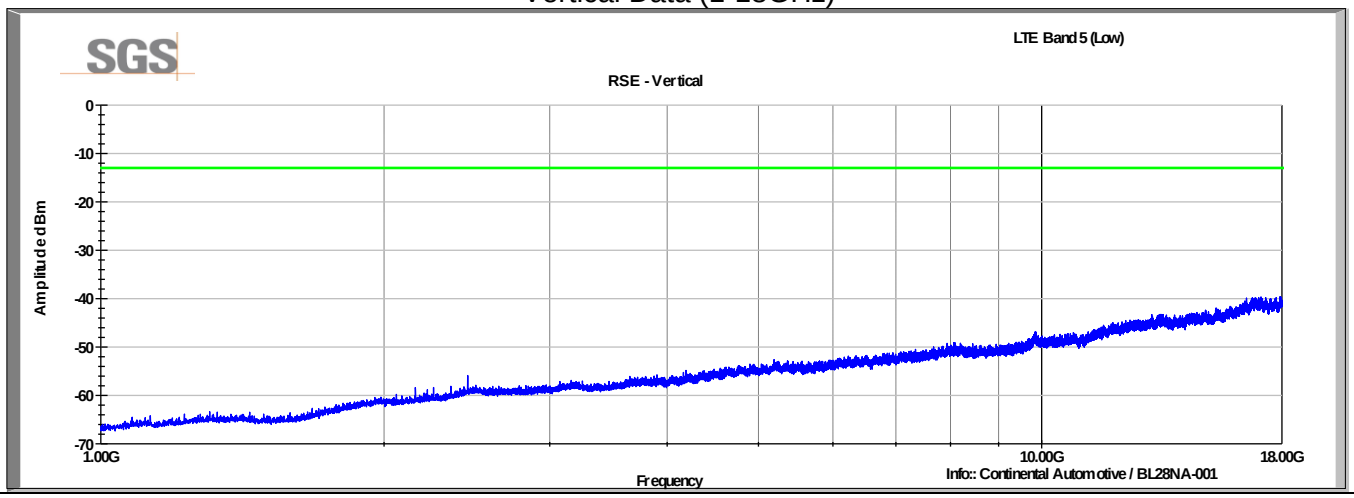
Vertical Data (30-1000MHz)



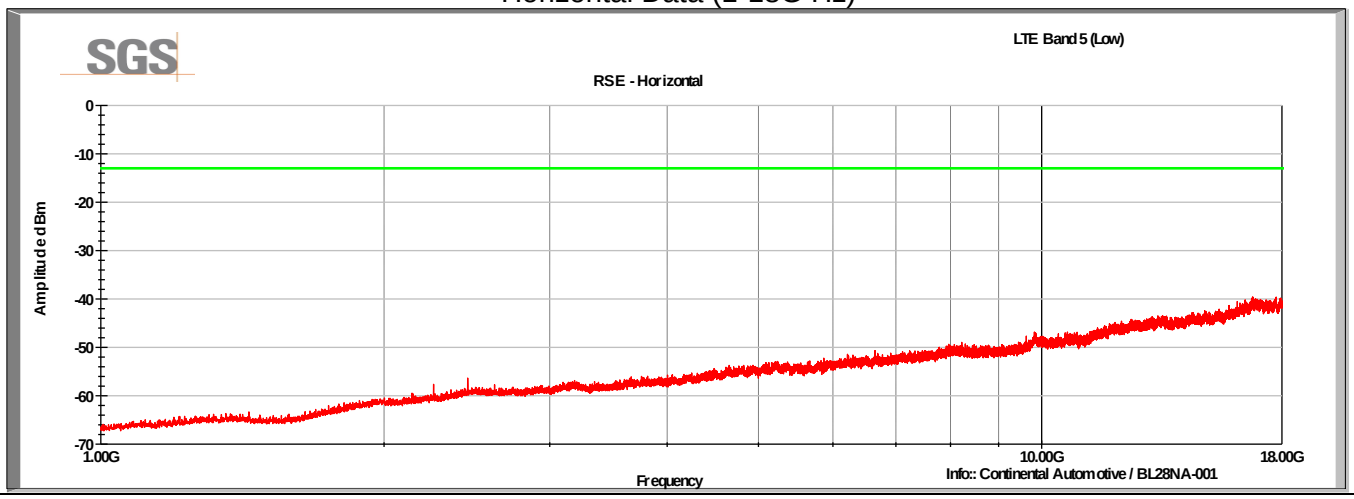
Horizontal Data (30-1000MHz)



LTE Band 5, QPSK modulation, 1.4MHz
Low Channel (20407)
Vertical Data (1-18GHz)



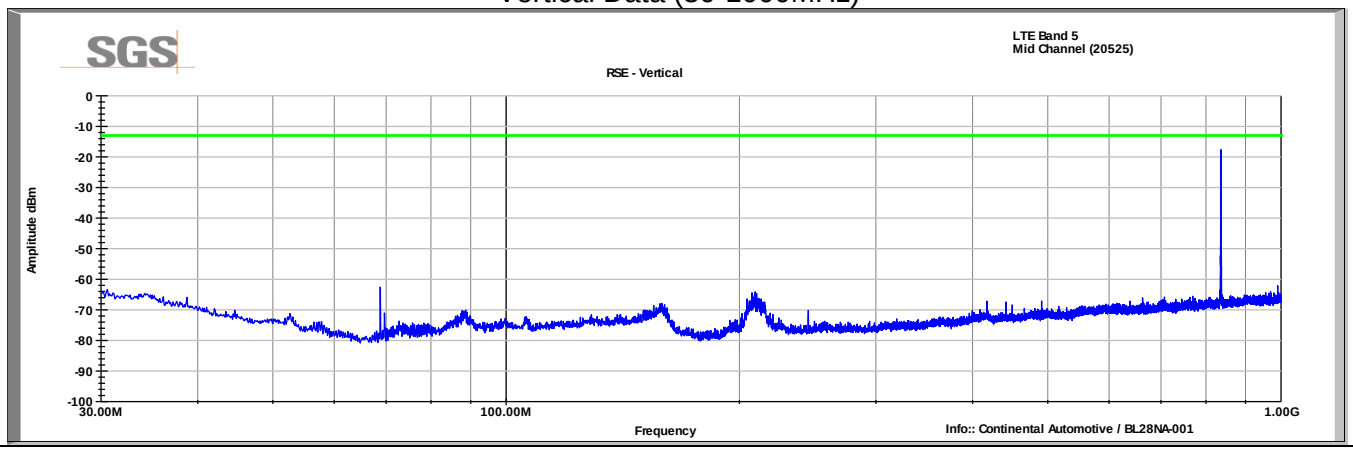
Horizontal Data (1-18G Hz)



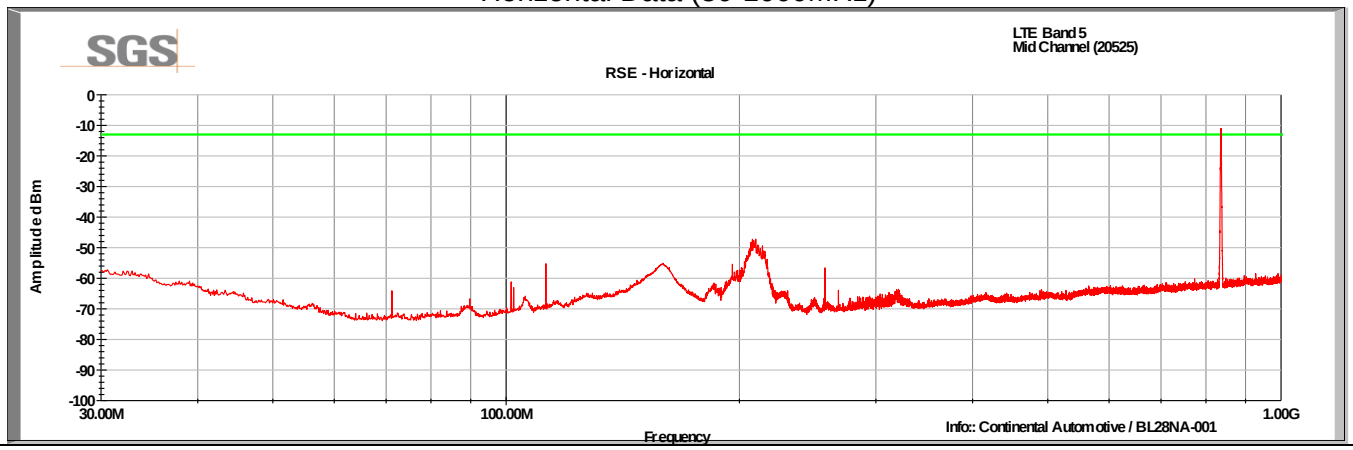
LTE Band 5, QPSK modulation, 1.4MHz

Mid Channel (20525)

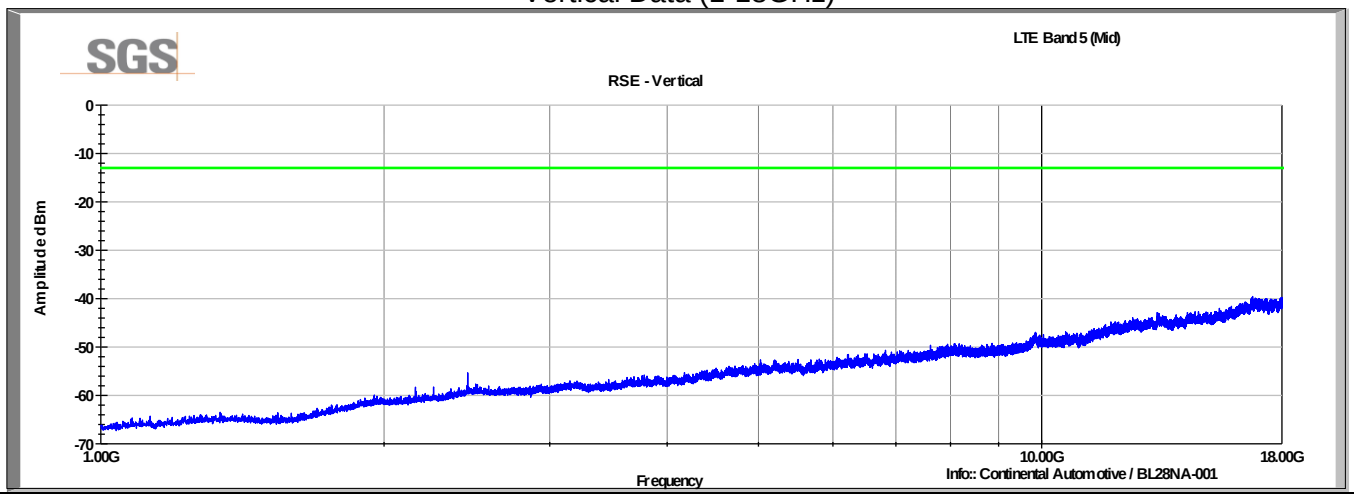
Vertical Data (30-1000MHz)



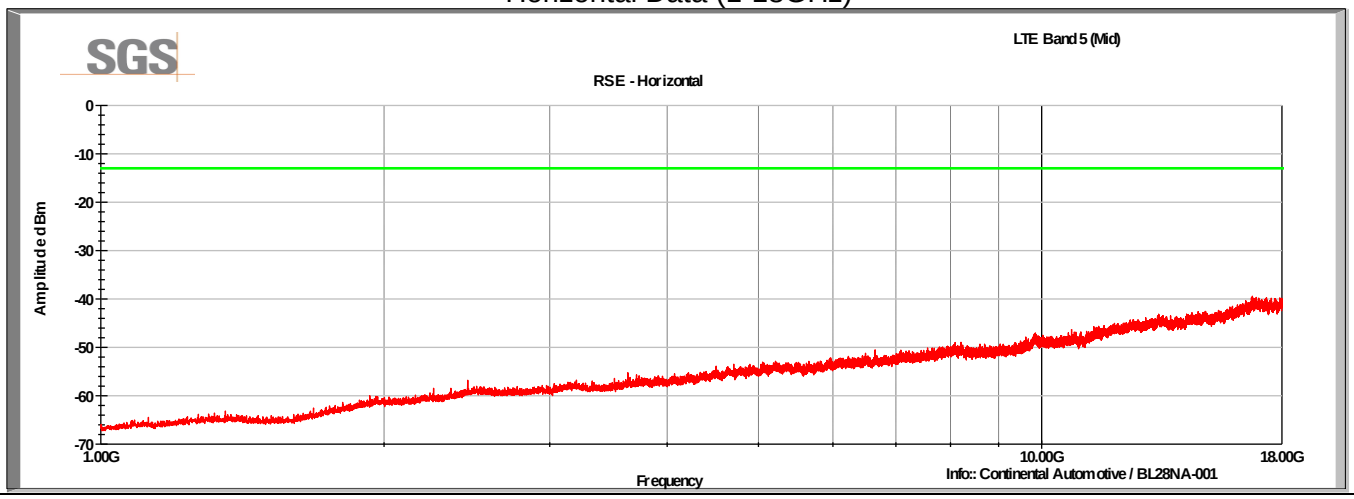
Horizontal Data (30-1000MHz)



LTE Band 5, QPSK modulation, 1.4MHz
Mid Channel (20525)
Vertical Data (1-18GHz)



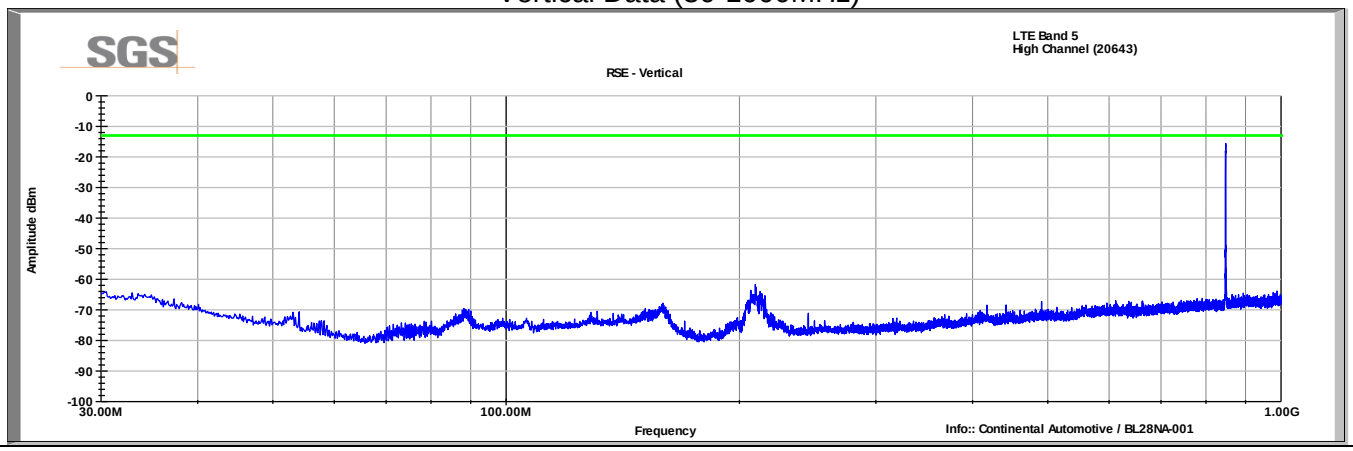
Horizontal Data (1-18GHz)



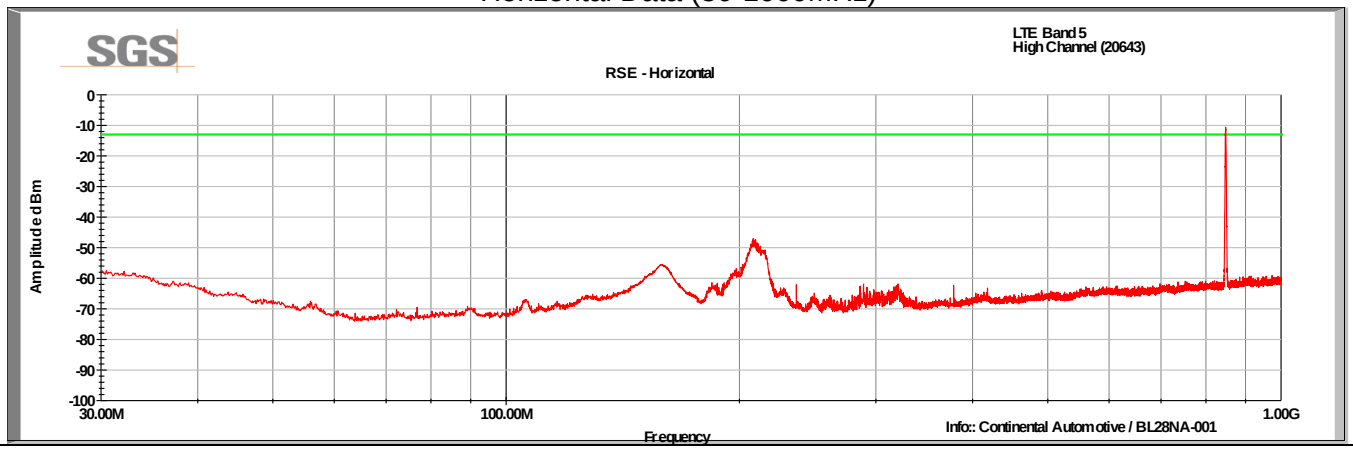
LTE Band 5, QPSK modulation, 1.4MHz

High Channel (20643)

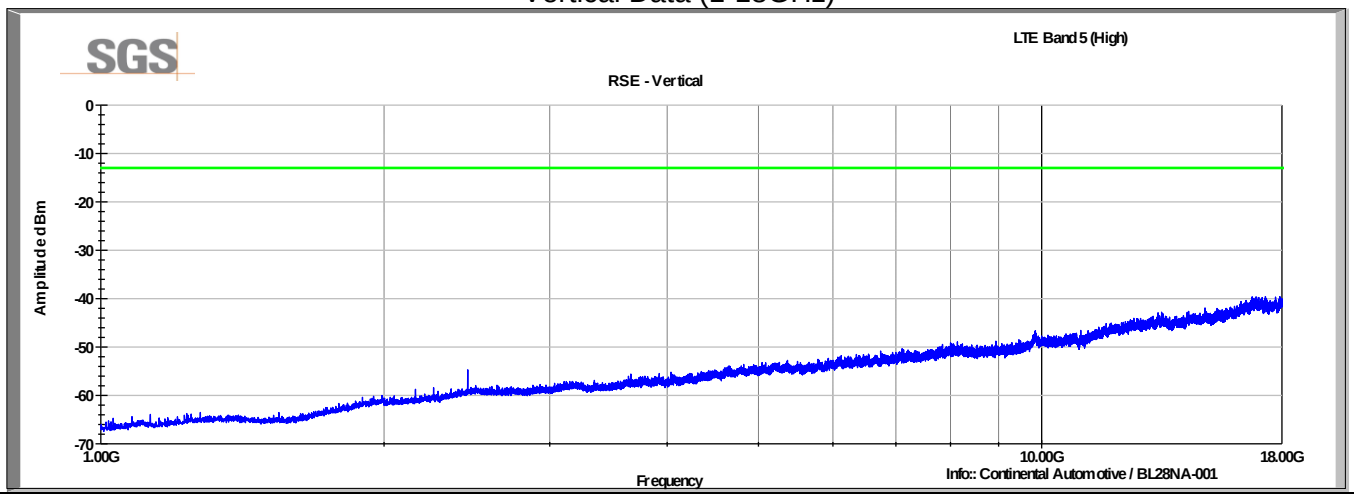
Vertical Data (30-1000MHz)



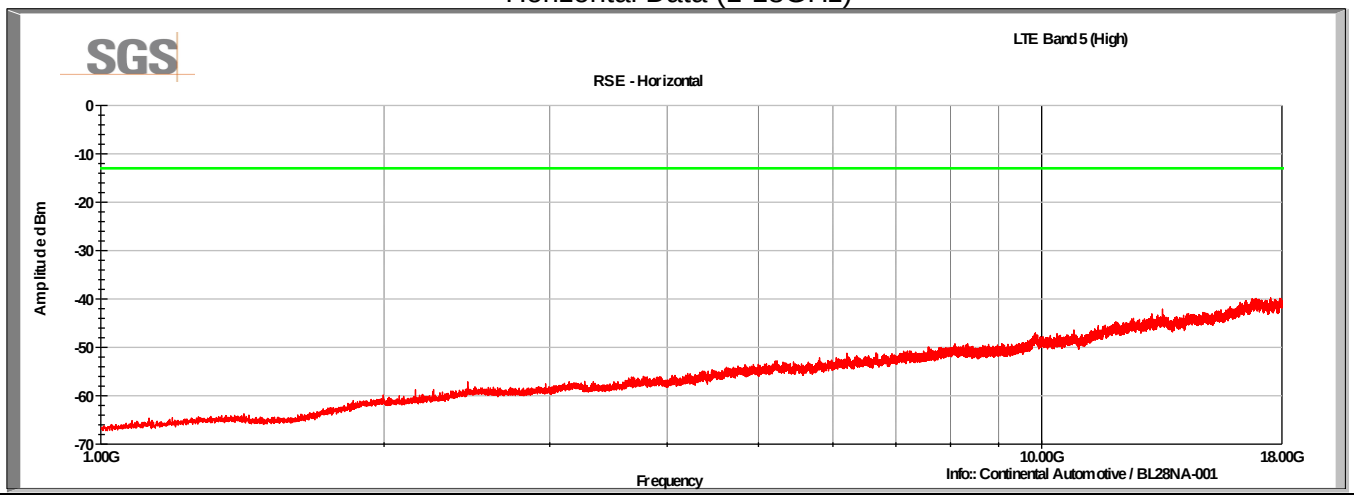
Horizontal Data (30-1000MHz)



LTE Band 5, QPSK modulation, 1.4MHz
High Channel (20643)
Vertical Data (1-18GHz)



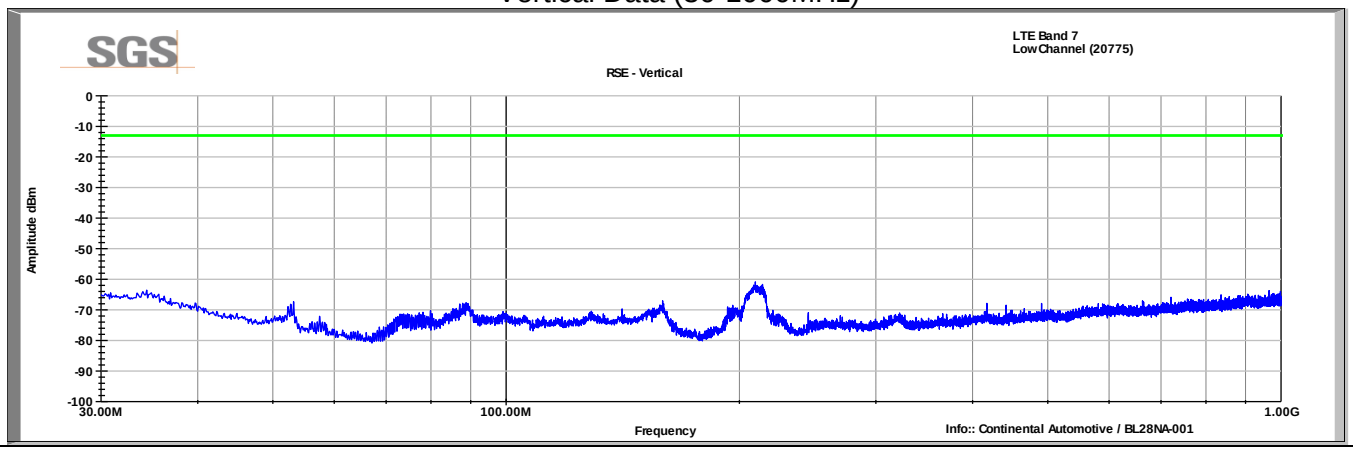
Horizontal Data (1-18GHz)



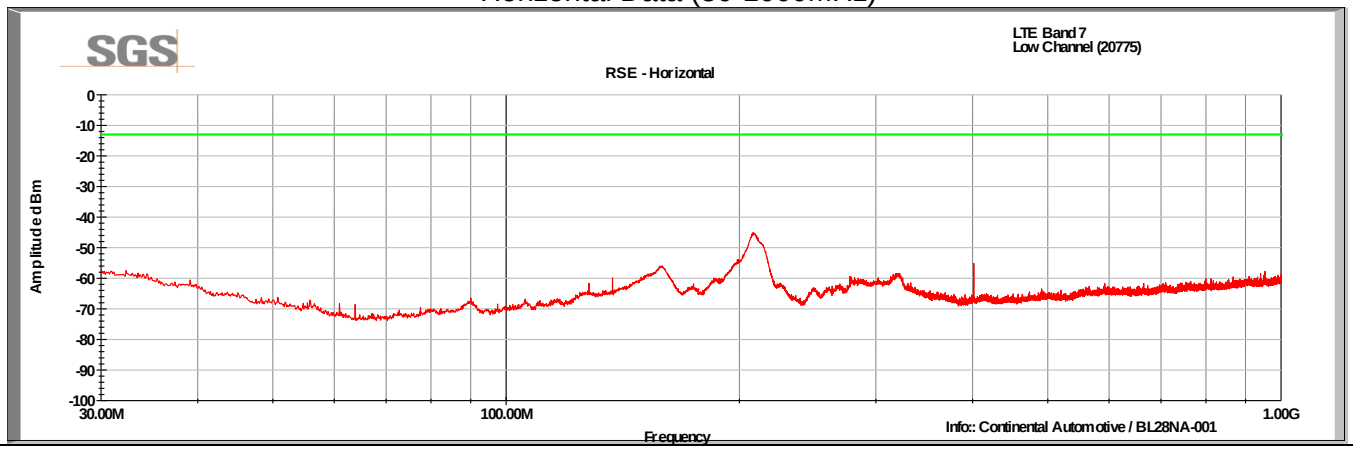
LTE Band 7, QPSK modulation, 5MHz

Low Channel (20775)

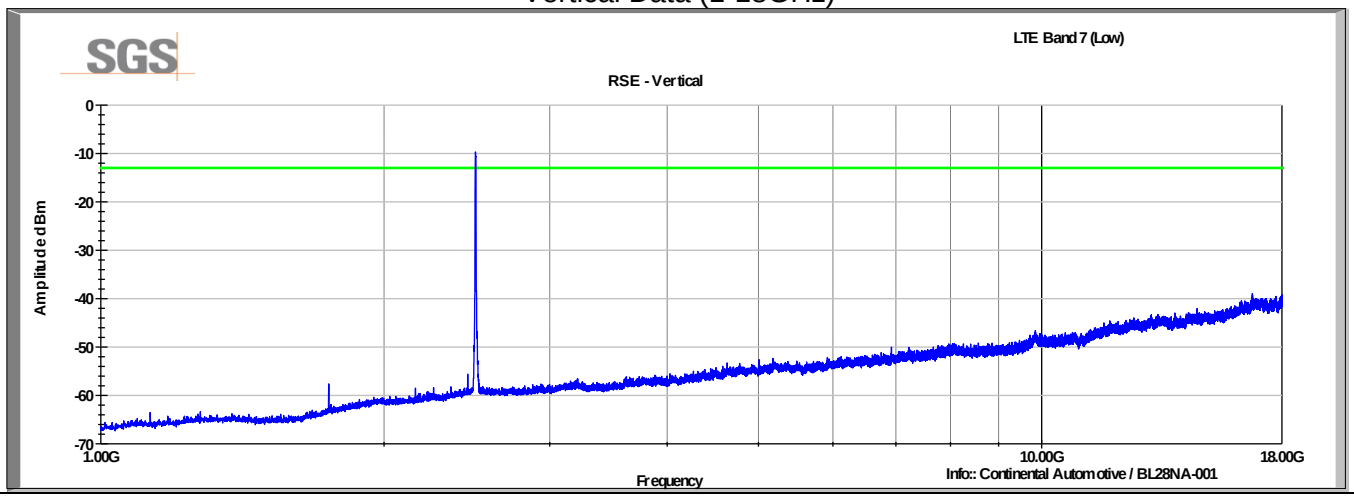
Vertical Data (30-1000MHz)



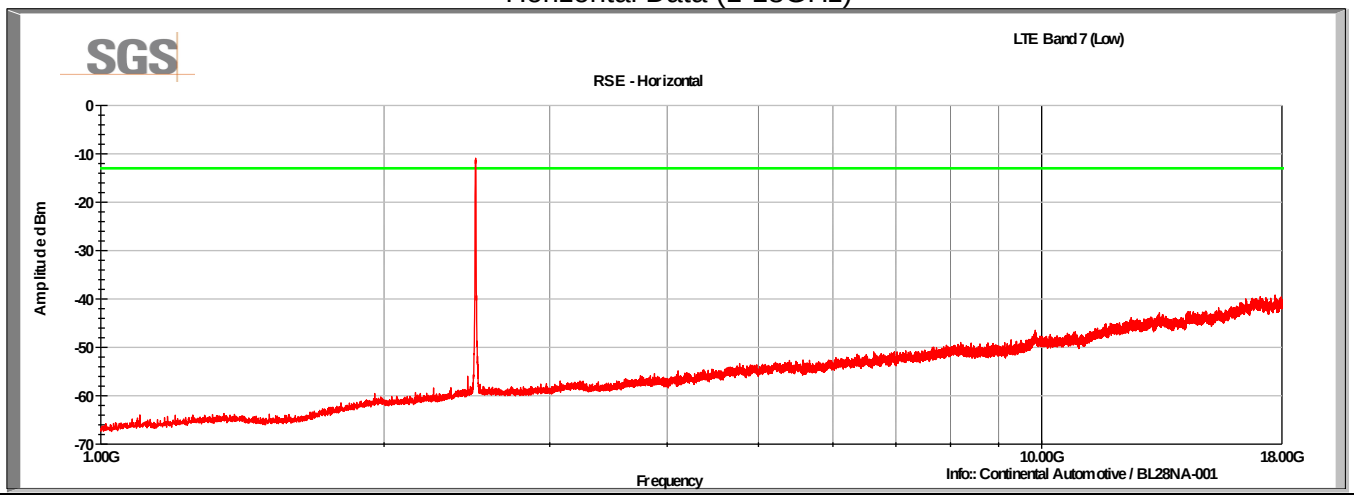
Horizontal Data (30-1000MHz)



LTE Band 7, QPSK modulation, 5MHz
Low Channel (20775)
Vertical Data (1-18GHz)



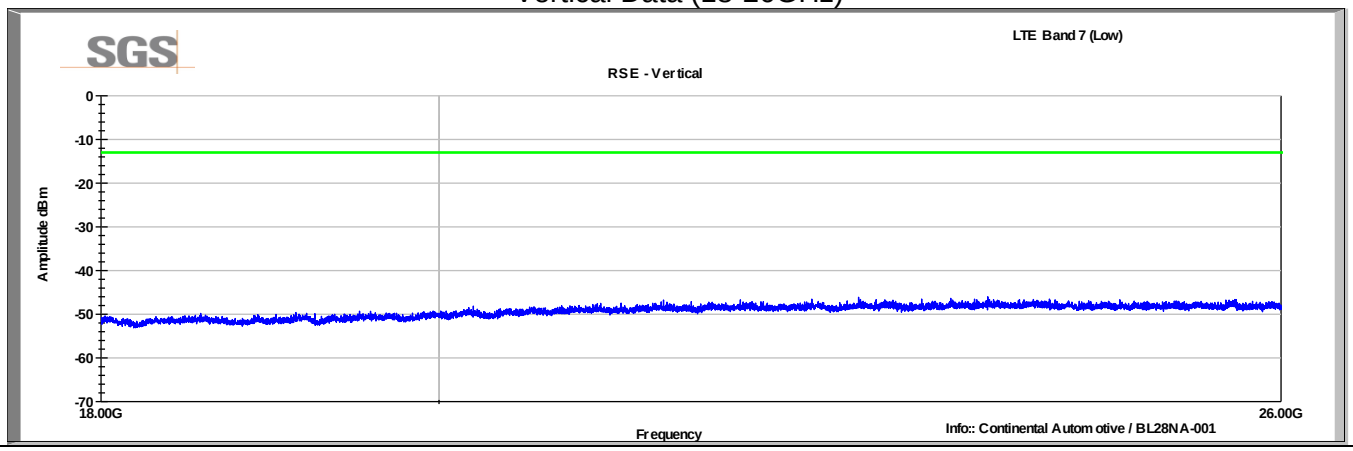
Horizontal Data (1-18GHz)



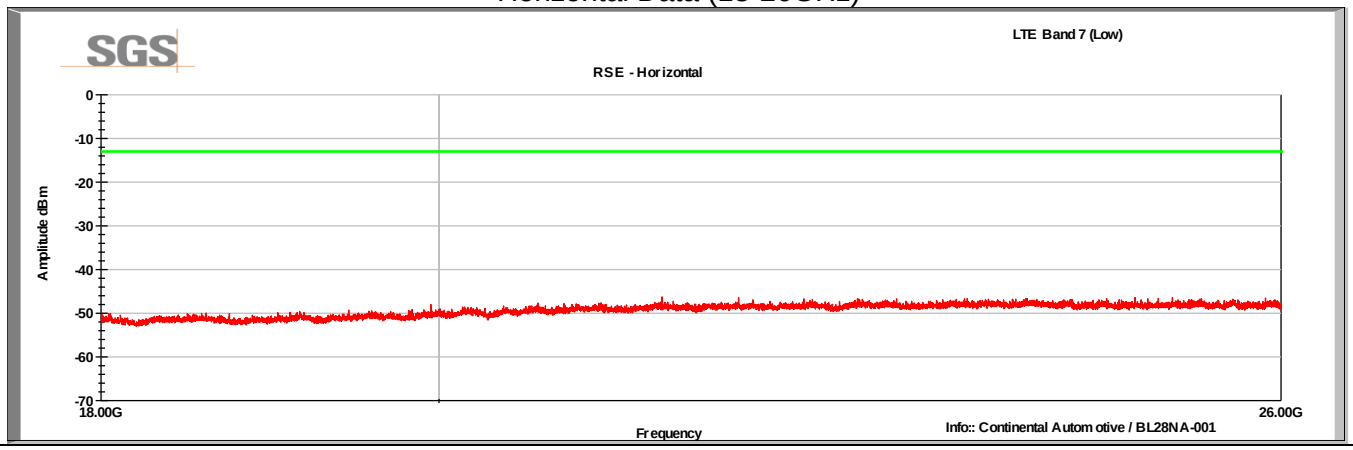
LTE Band 7, QPSK modulation, 5MHz

Low Channel (20775)

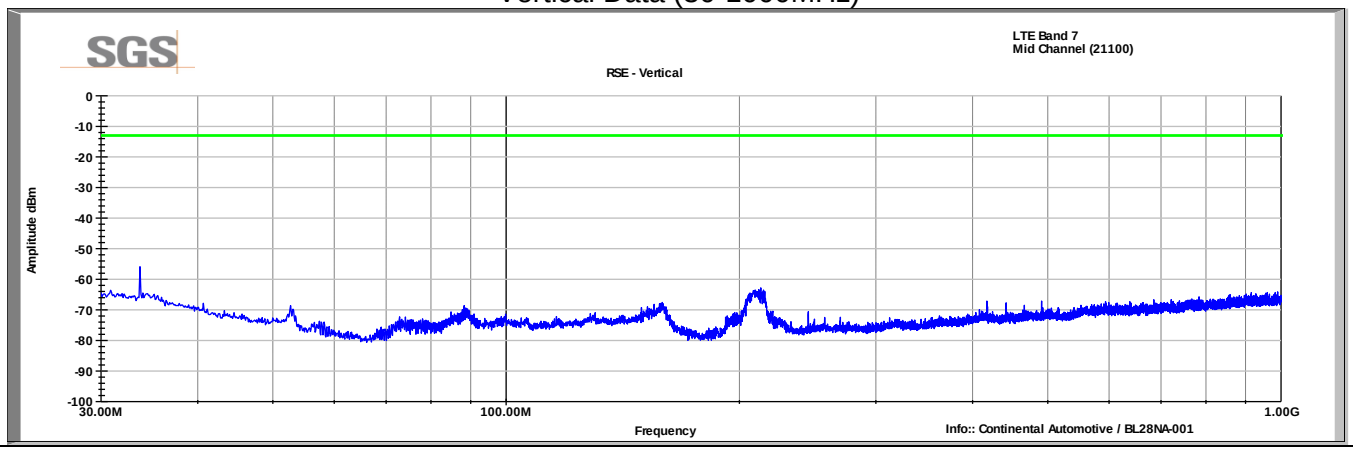
Vertical Data (18-26GHz)



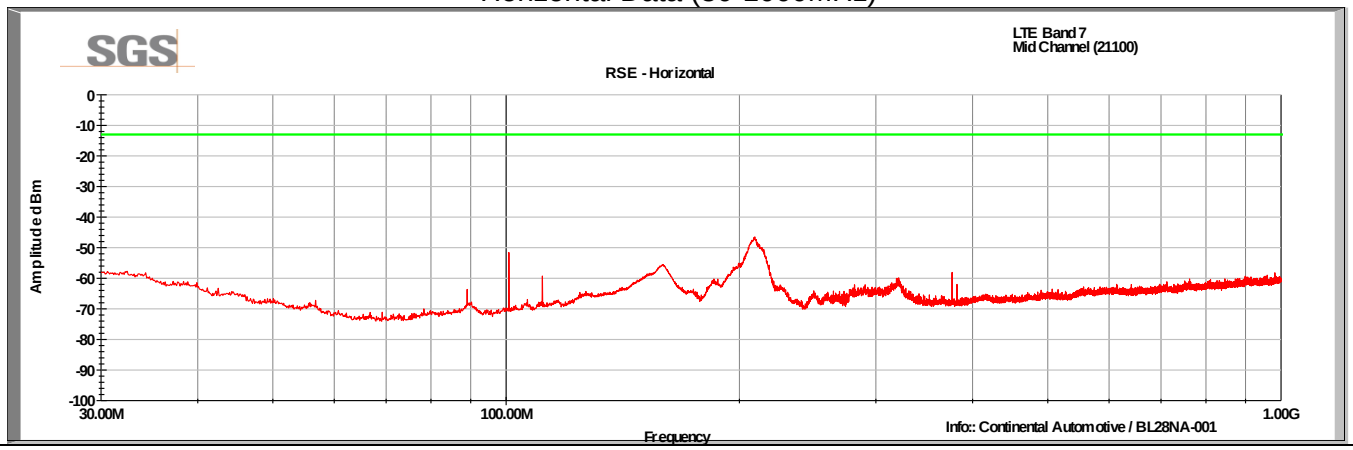
Horizontal Data (18-26GHz)



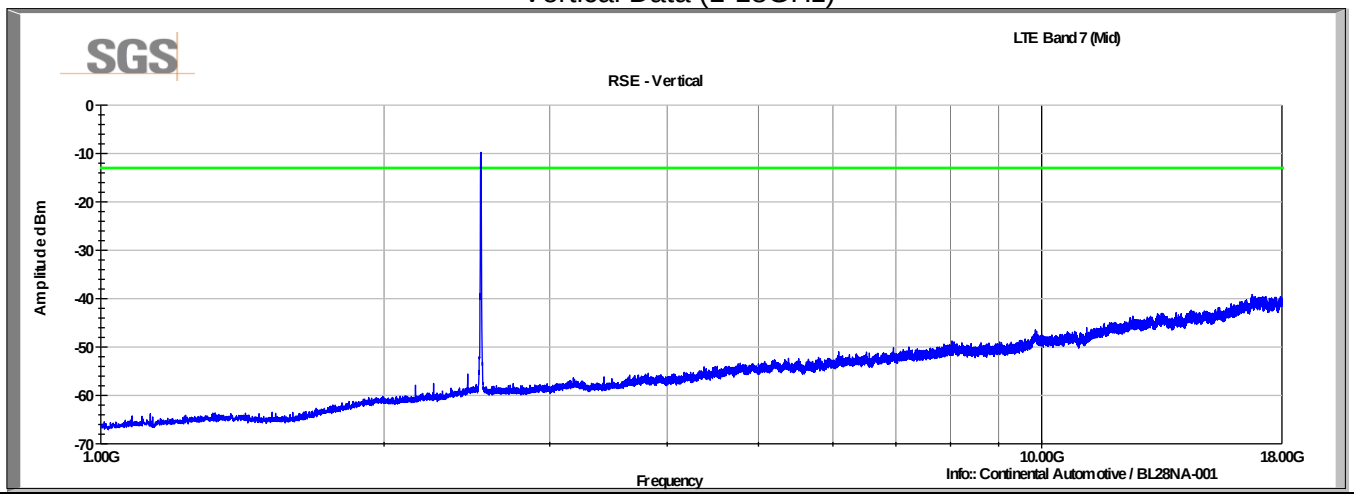
LTE Band 7, QPSK modulation, 5MHz
Mid Channel (21100)
Vertical Data (30-1000MHz)



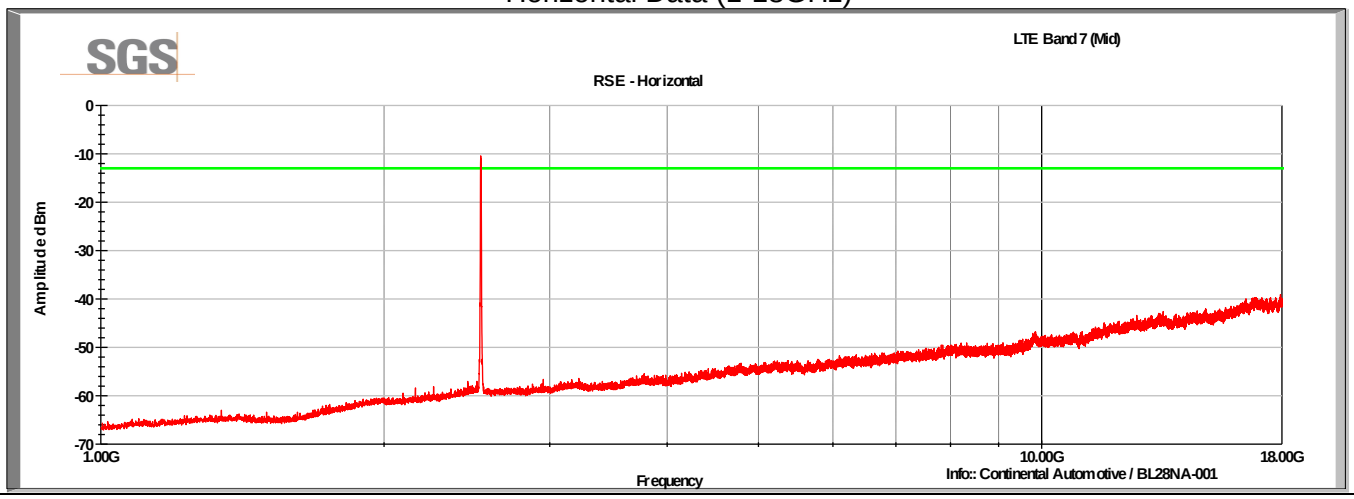
Horizontal Data (30-1000MHz)



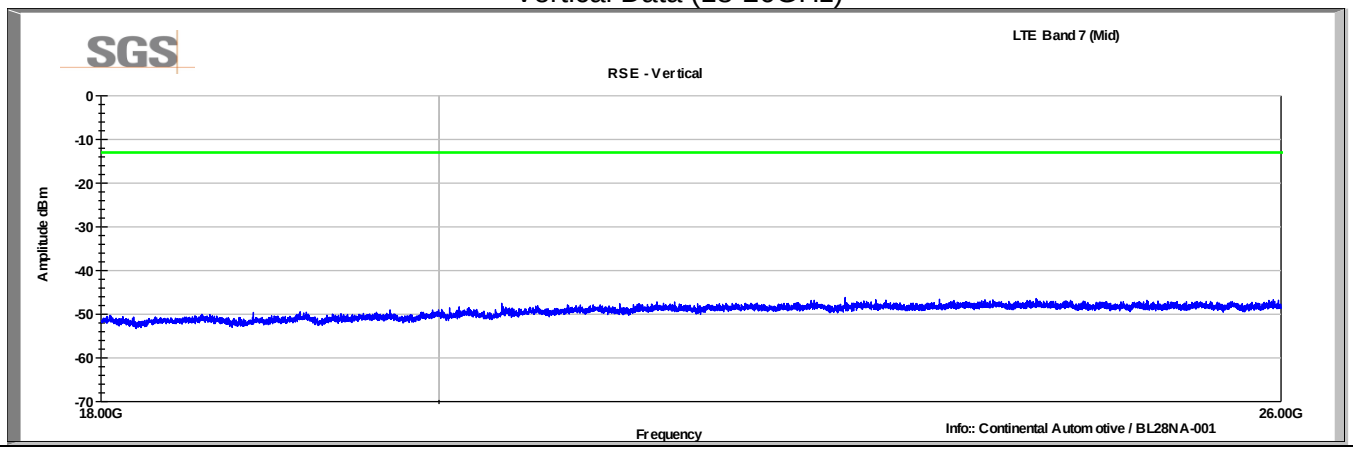
LTE Band 7, QPSK modulation, 5MHz
Mid Channel (21100)
Vertical Data (1-18GHz)



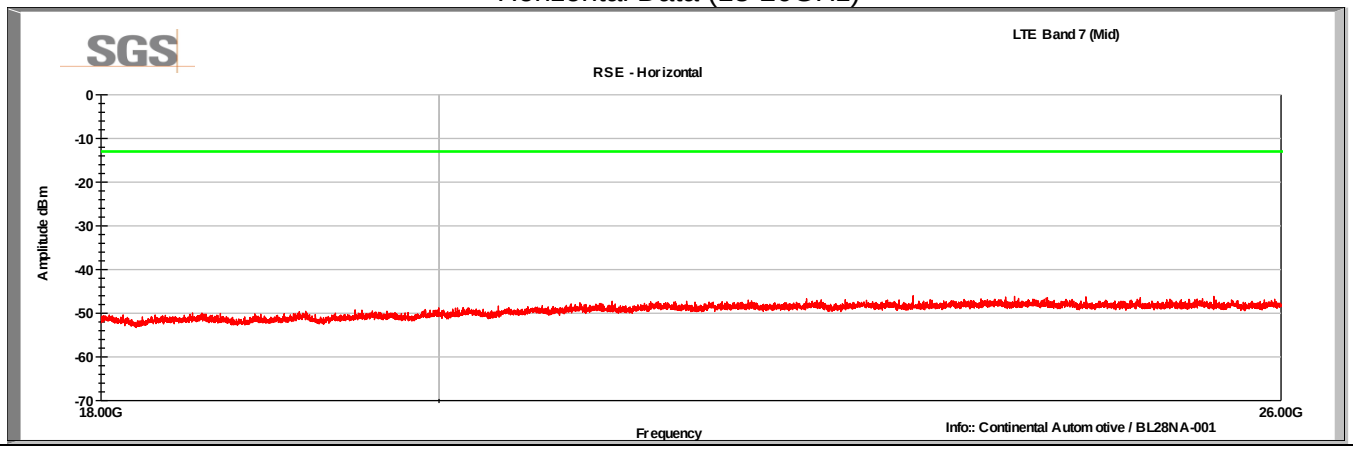
Horizontal Data (1-18GHz)



LTE Band 7, QPSK modulation, 5MHz
Mid Channel (21100)
Vertical Data (18-26GHz)



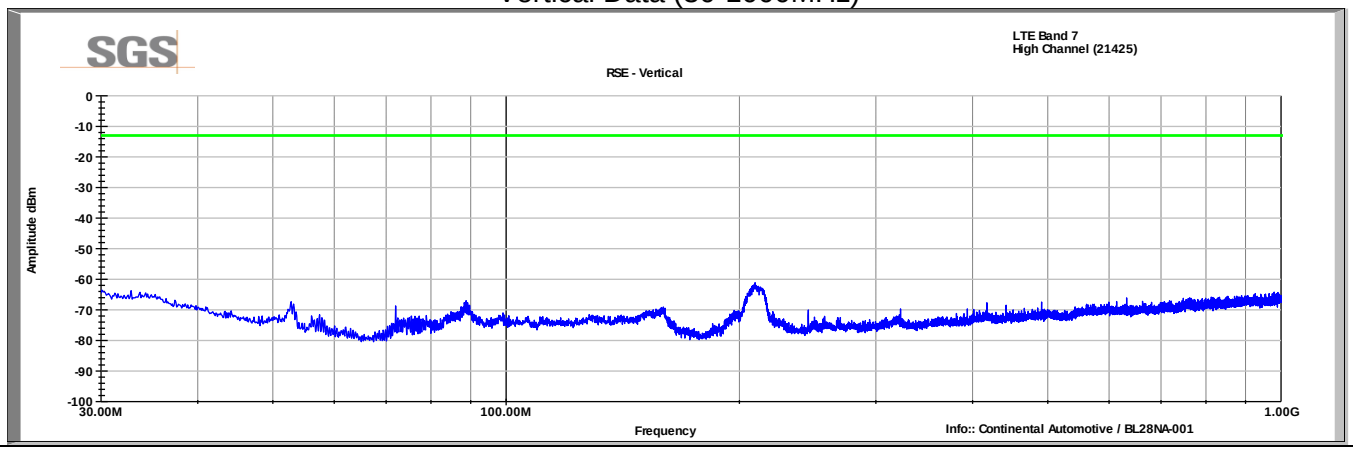
Horizontal Data (18-26GHz)



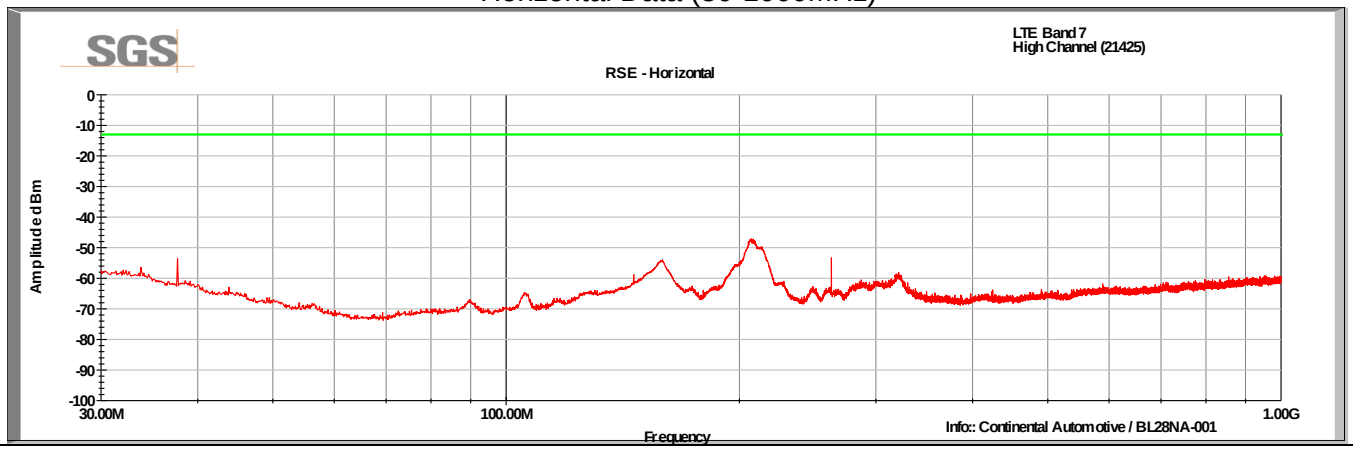
LTE Band 7, QPSK modulation, 5MHz

High Channel (21425)

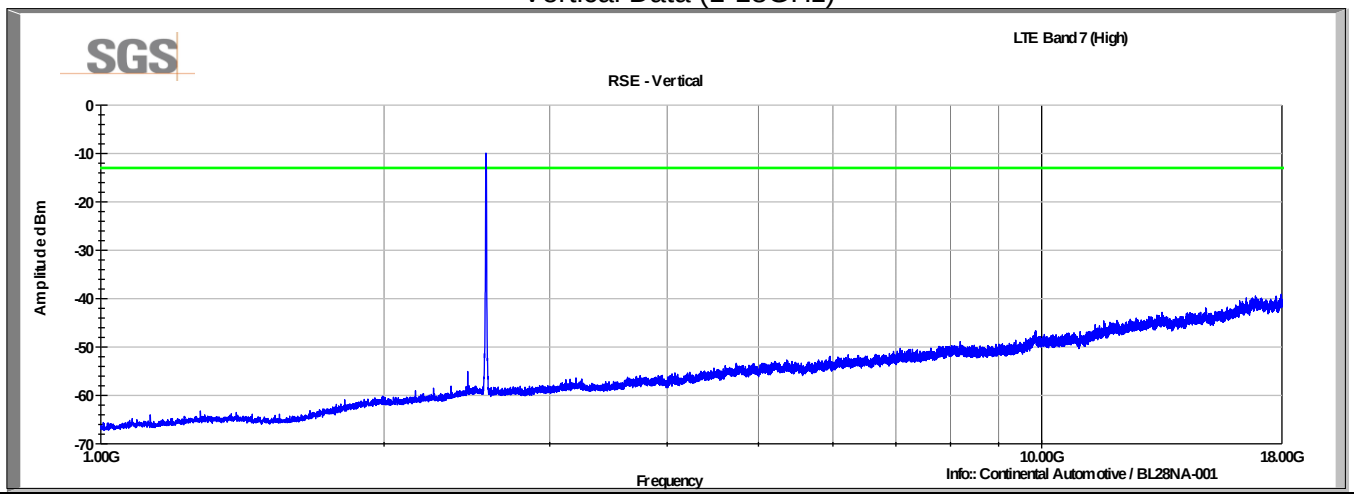
Vertical Data (30-1000MHz)



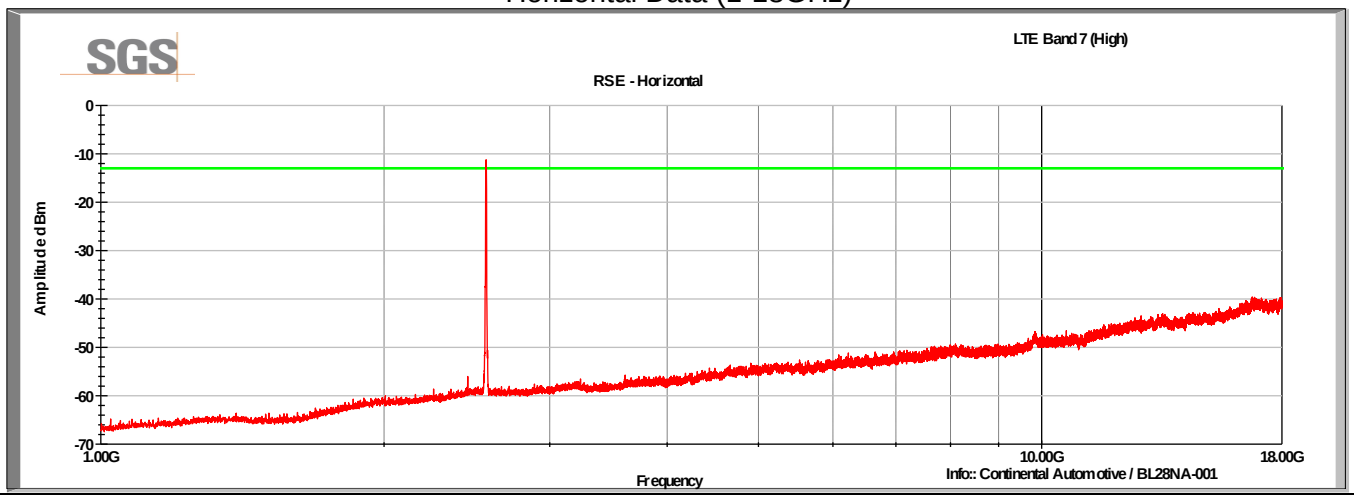
Horizontal Data (30-1000MHz)



LTE Band 7, QPSK modulation, 5MHz
High Channel (21425)
Vertical Data (1-18GHz)



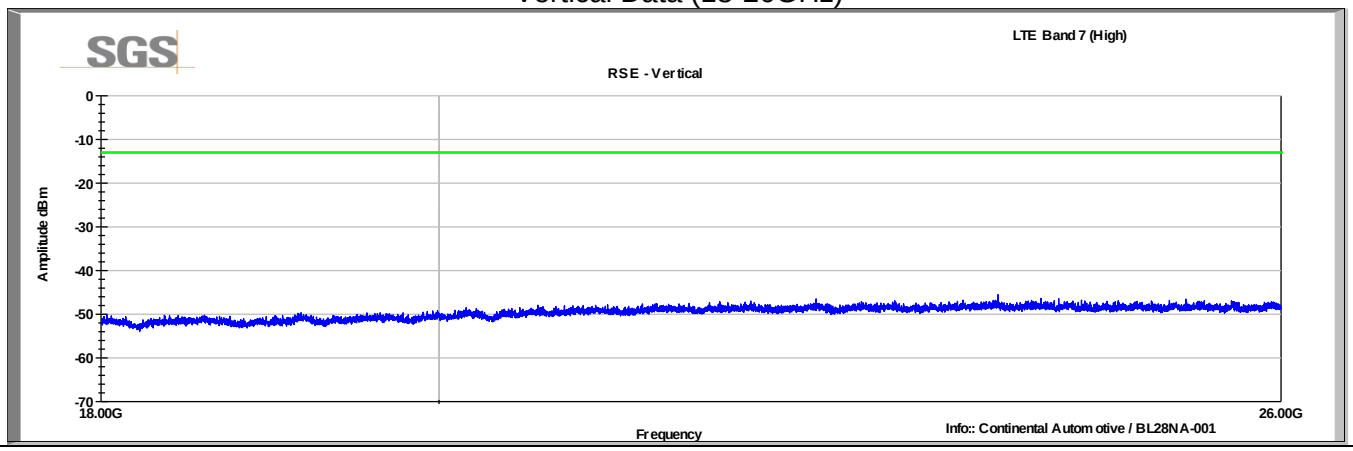
Horizontal Data (1-18GHz)



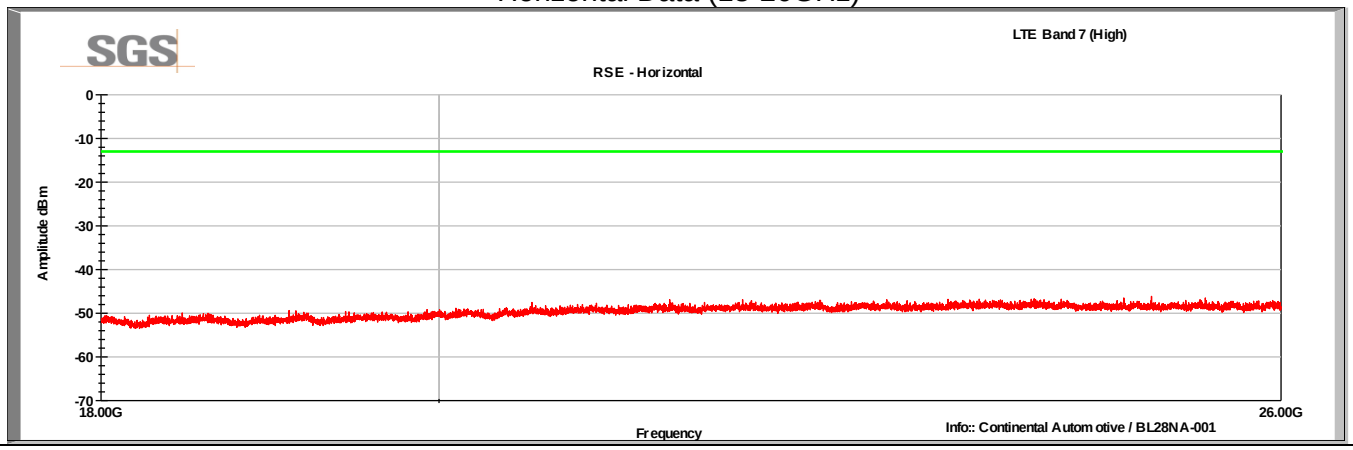
LTE Band 7, QPSK modulation, 5MHz

High Channel (21425)

Vertical Data (18-26GHz)



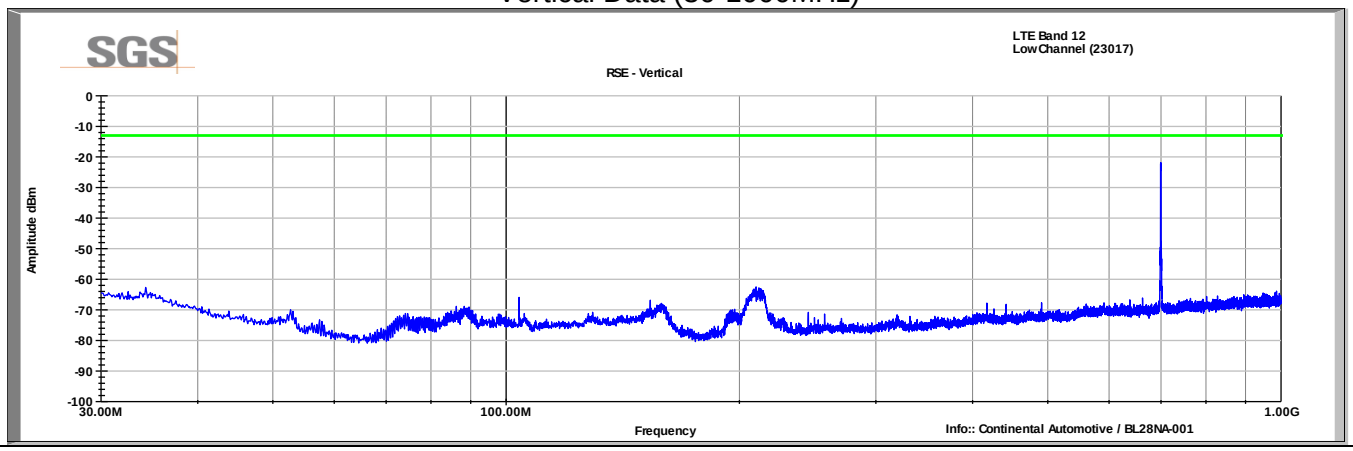
Horizontal Data (18-26GHz)



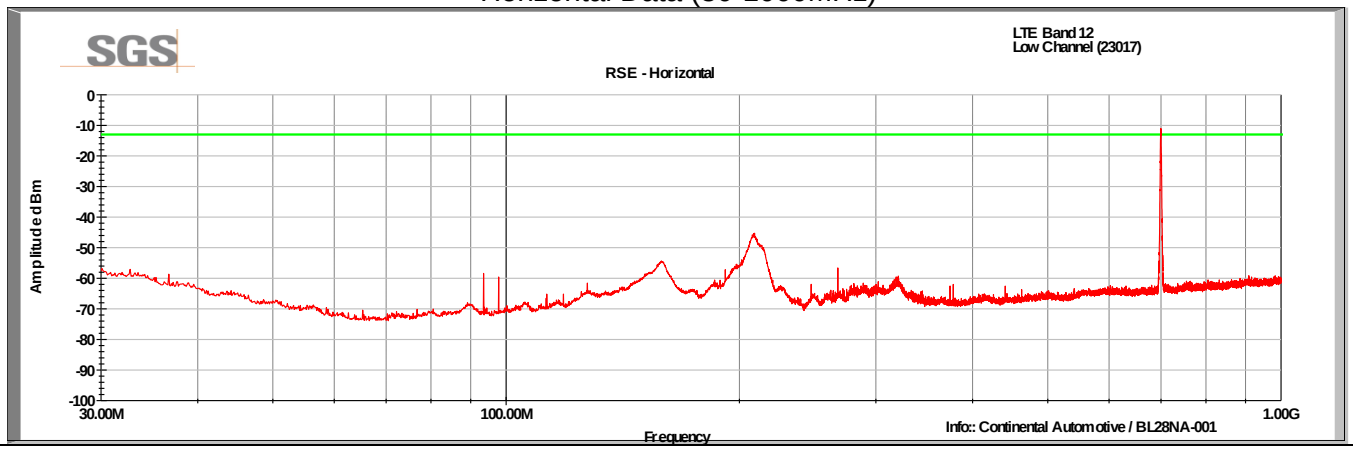
LTE Band 12, QPSK modulation, 1.4MHz

Low Channel (23017)

Vertical Data (30-1000MHz)



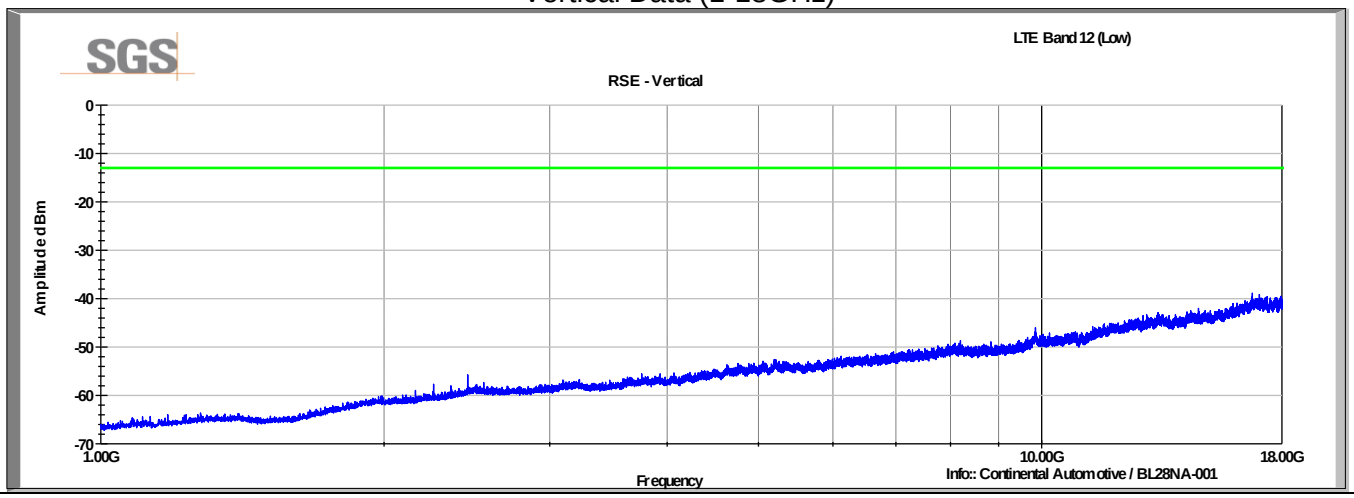
Horizontal Data (30-1000MHz)



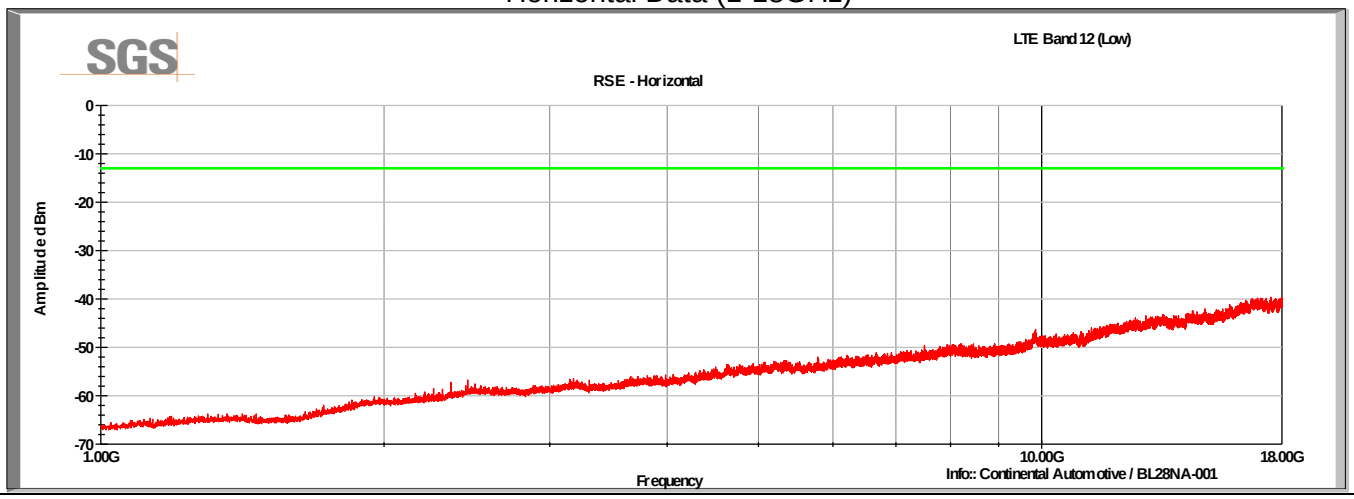
LTE Band 12, QPSK modulation, 1.4MHz

Low Channel (23017)

Vertical Data (1-18GHz)



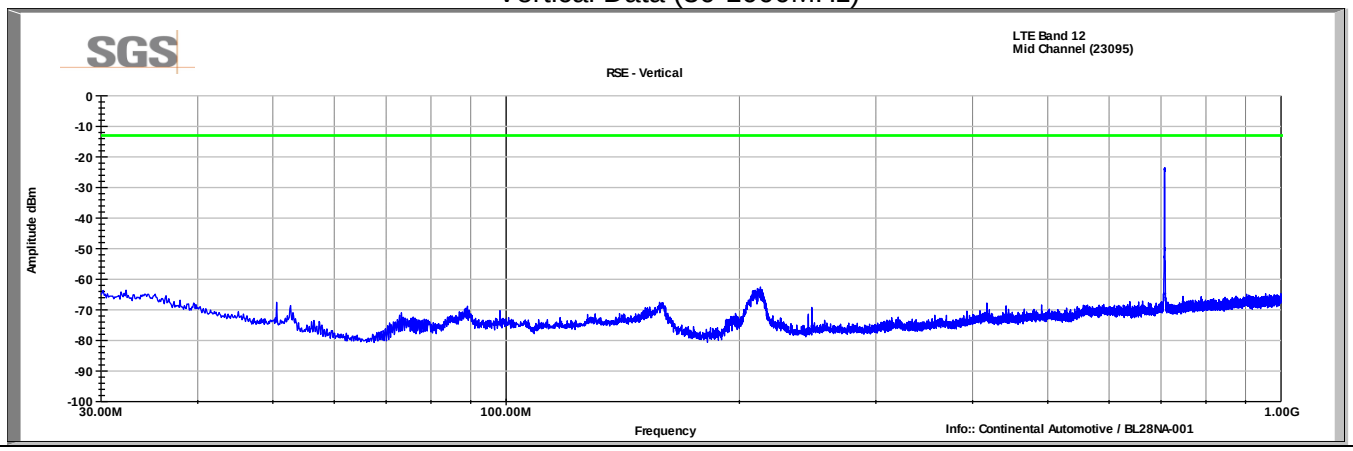
Horizontal Data (1-18GHz)



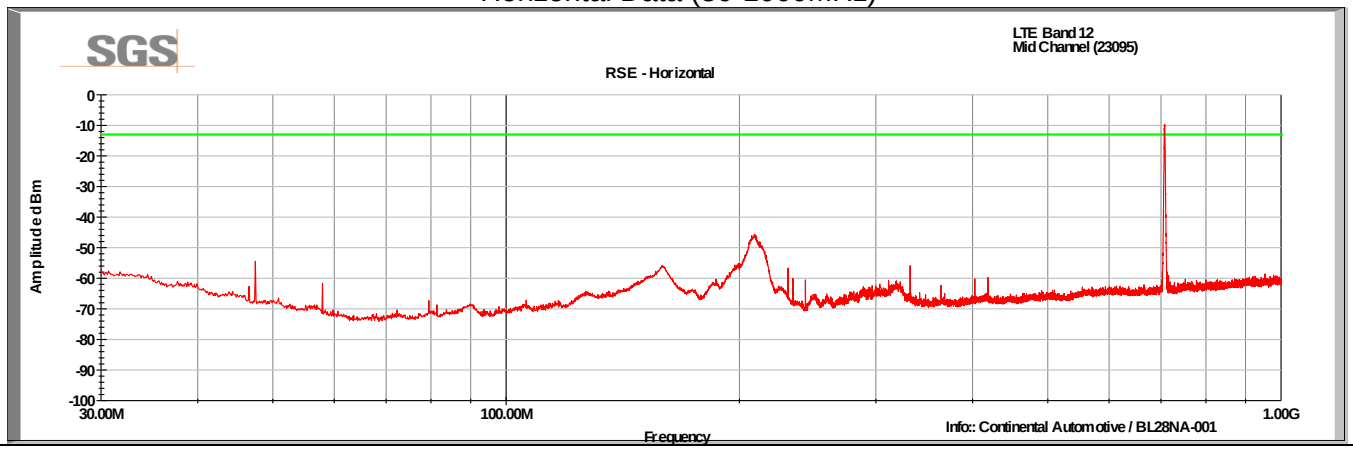
LTE Band 12, QPSK modulation, 1.4MHz

Mid Channel (23095)

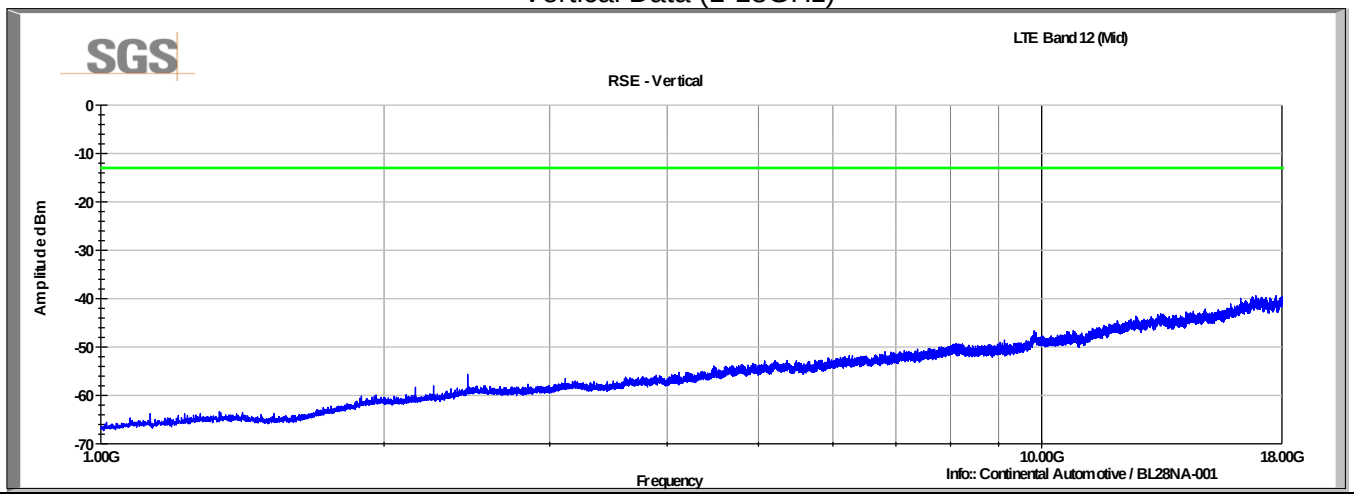
Vertical Data (30-1000MHz)



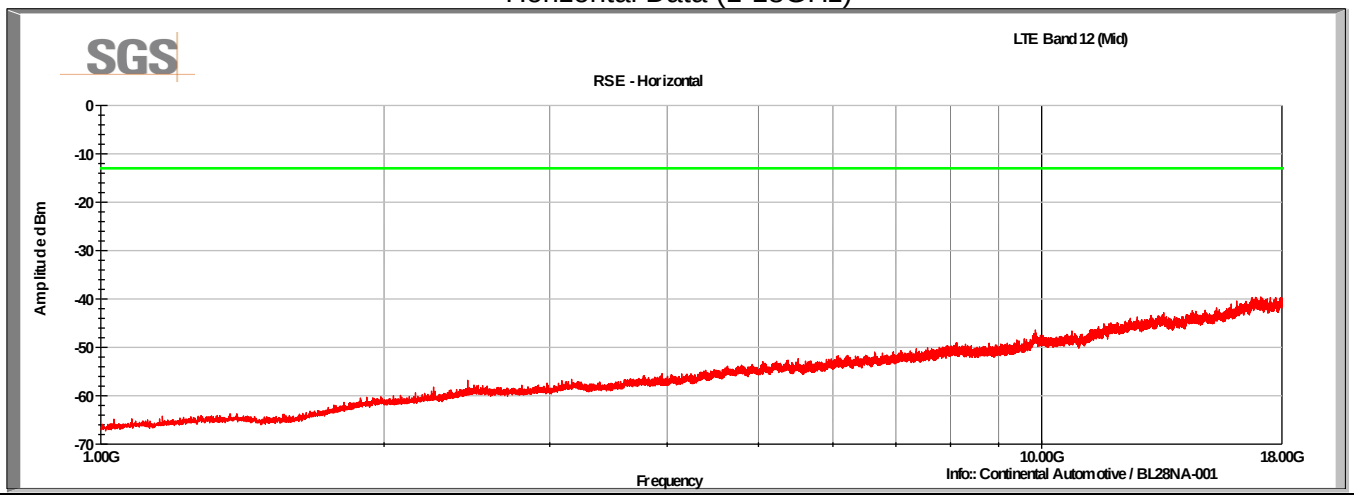
Horizontal Data (30-1000MHz)



LTE Band 12, QPSK modulation, 1.4MHz
Mid Channel (23095)
Vertical Data (1-18GHz)



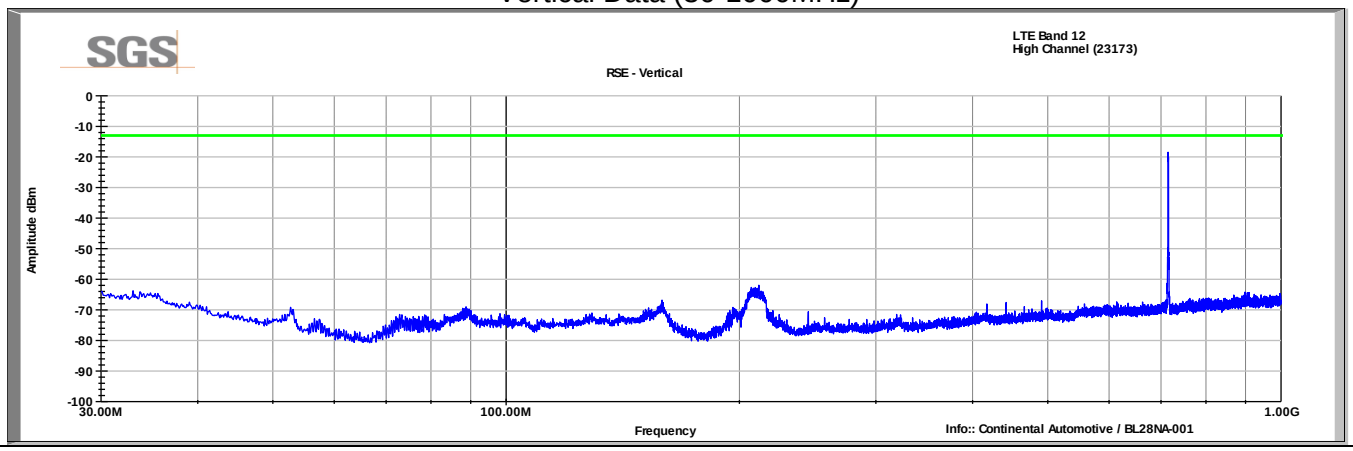
Horizontal Data (1-18GHz)



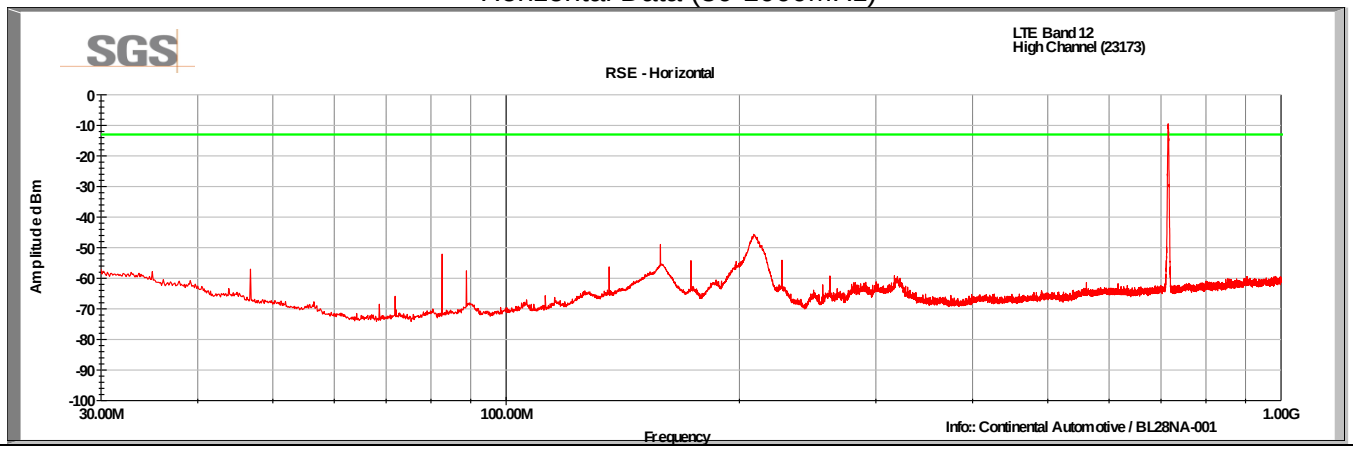
LTE Band 12, QPSK modulation, 1.4MHz

High Channel (23173)

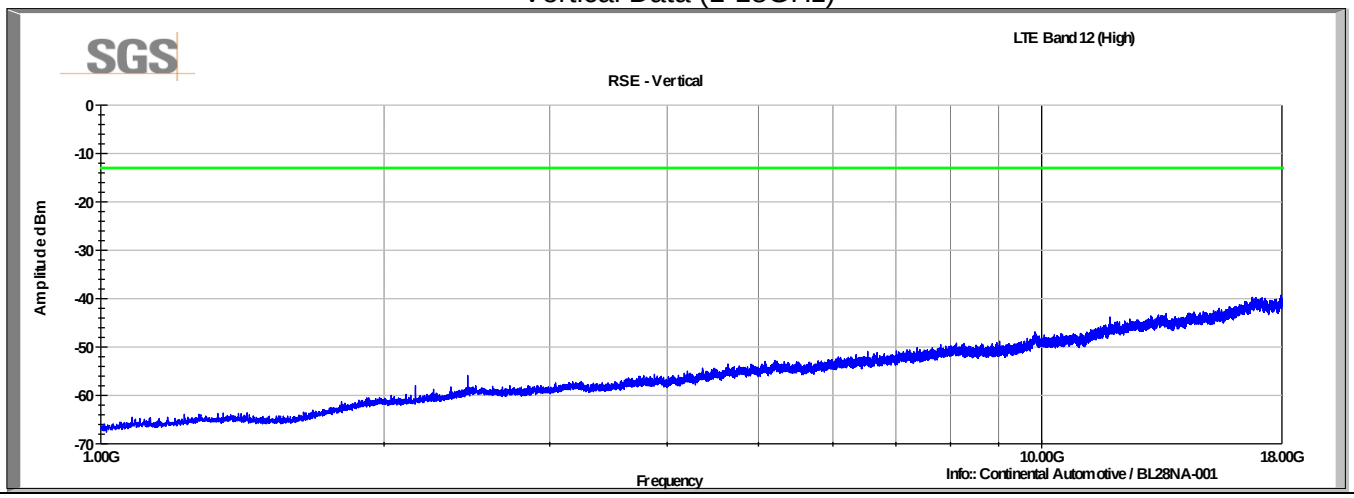
Vertical Data (30-1000MHz)



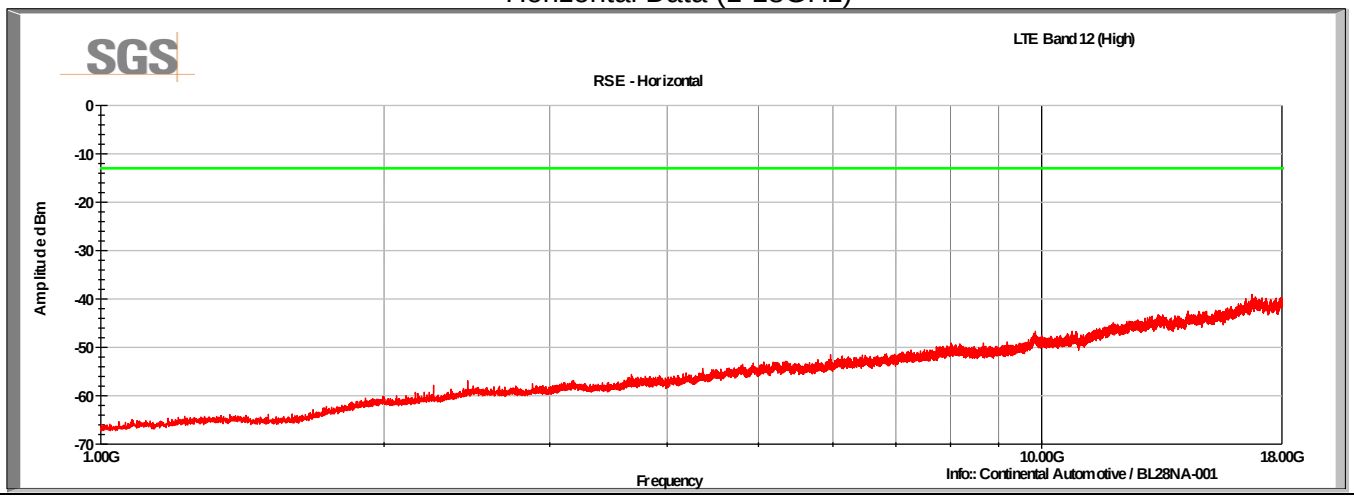
Horizontal Data (30-1000MHz)



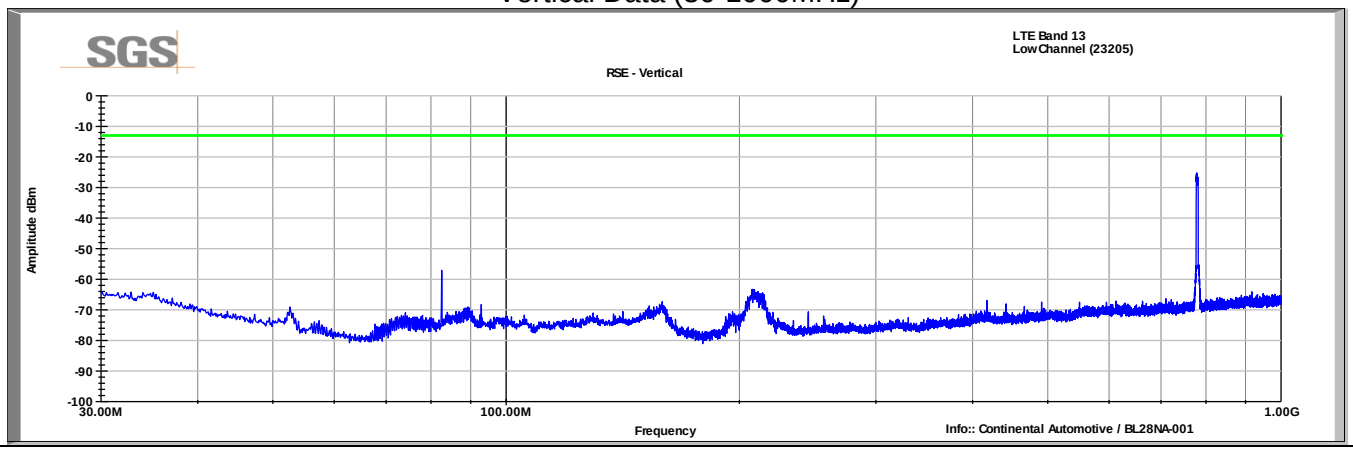
LTE Band 12, QPSK modulation, 1.4MHz
High Channel (23173)
Vertical Data (1-18GHz)



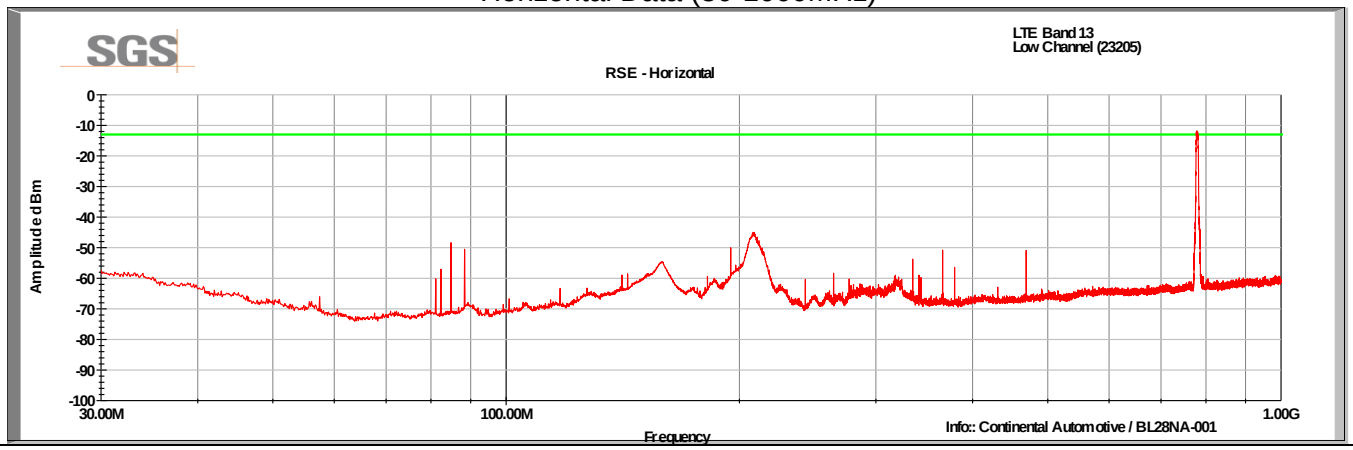
Horizontal Data (1-18GHz)



LTE Band 13, QPSK modulation, 5MHz
Low Channel (23205)
Vertical Data (30-1000MHz)



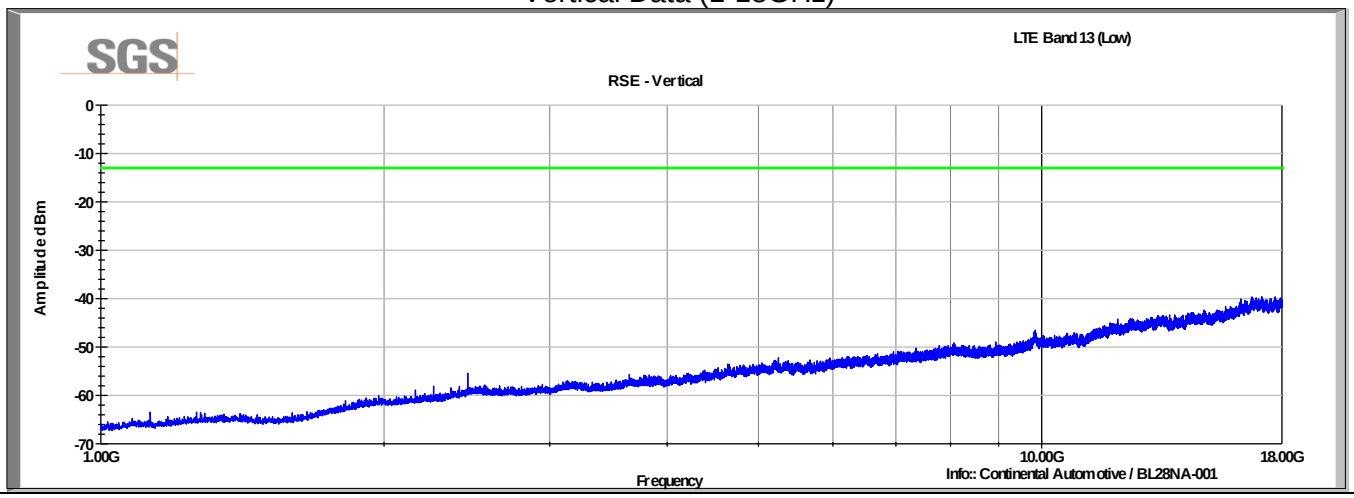
Horizontal Data (30-1000MHz)



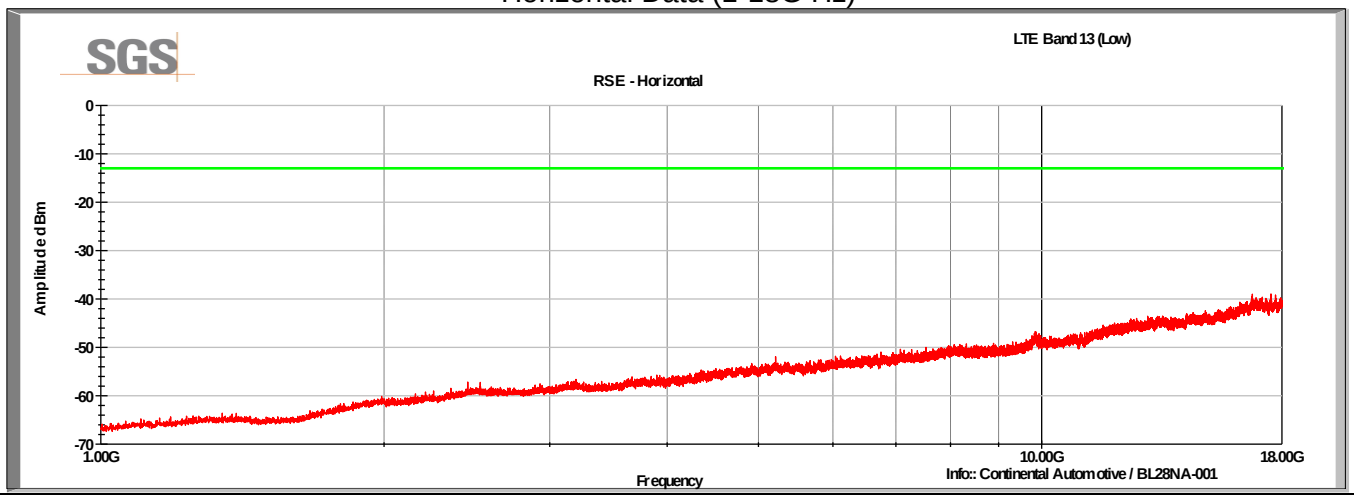
LTE Band 13, QPSK modulation, 5MHz

Low Channel (23205)

Vertical Data (1-18GHz)



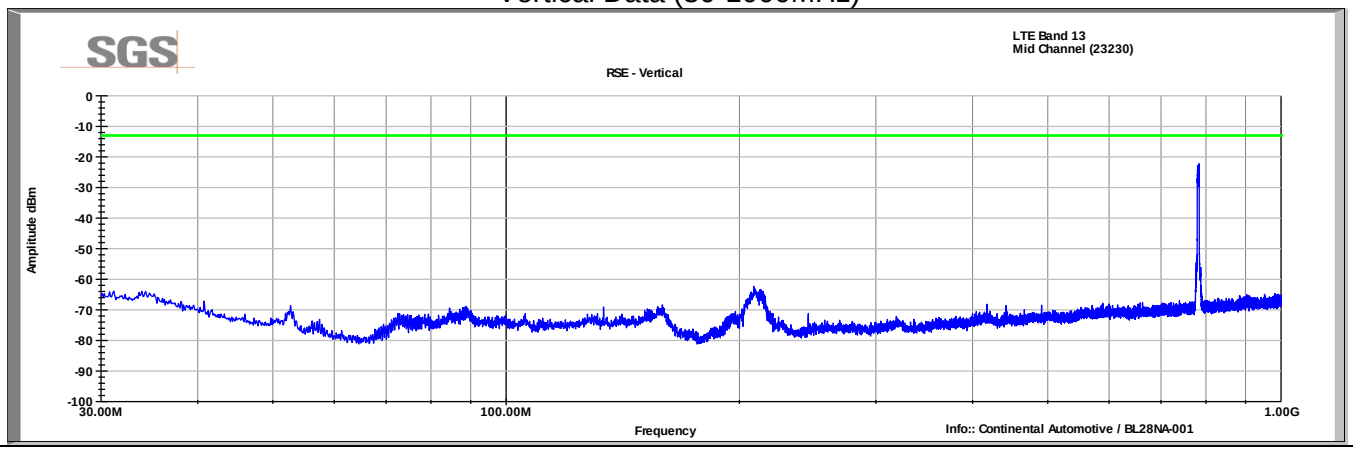
Horizontal Data (1-18G Hz)



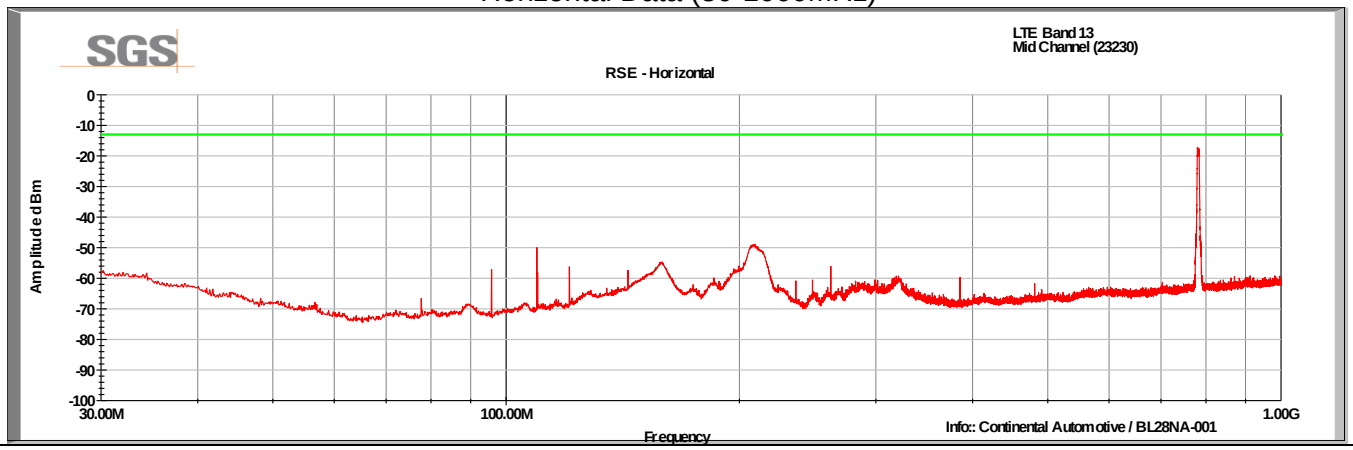
LTE Band 13, QPSK modulation, 5MHz

Mid Channel (23230)

Vertical Data (30-1000MHz)



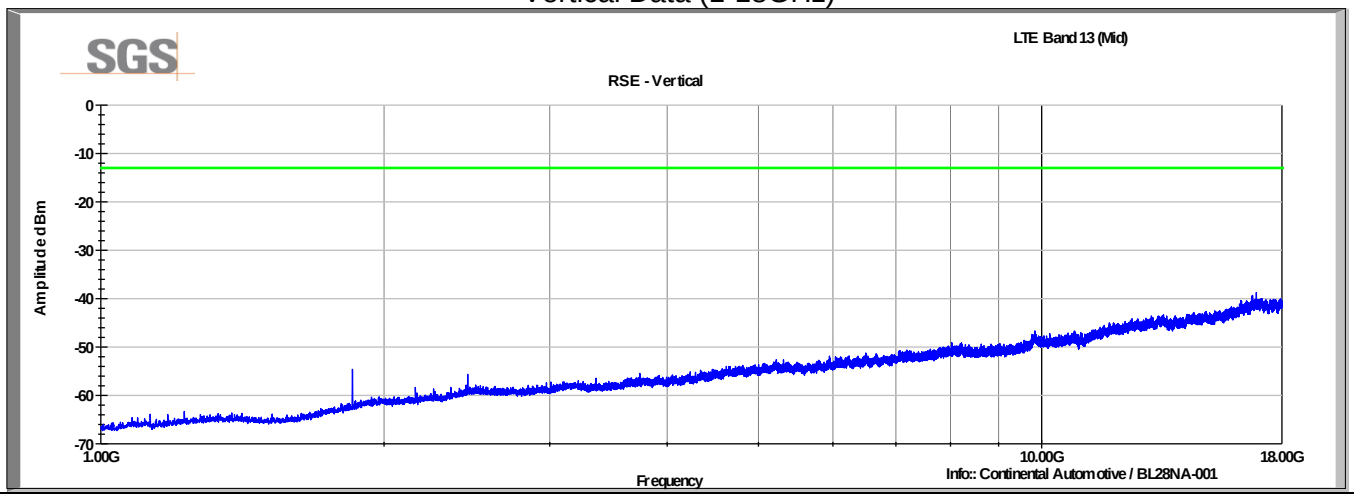
Horizontal Data (30-1000MHz)



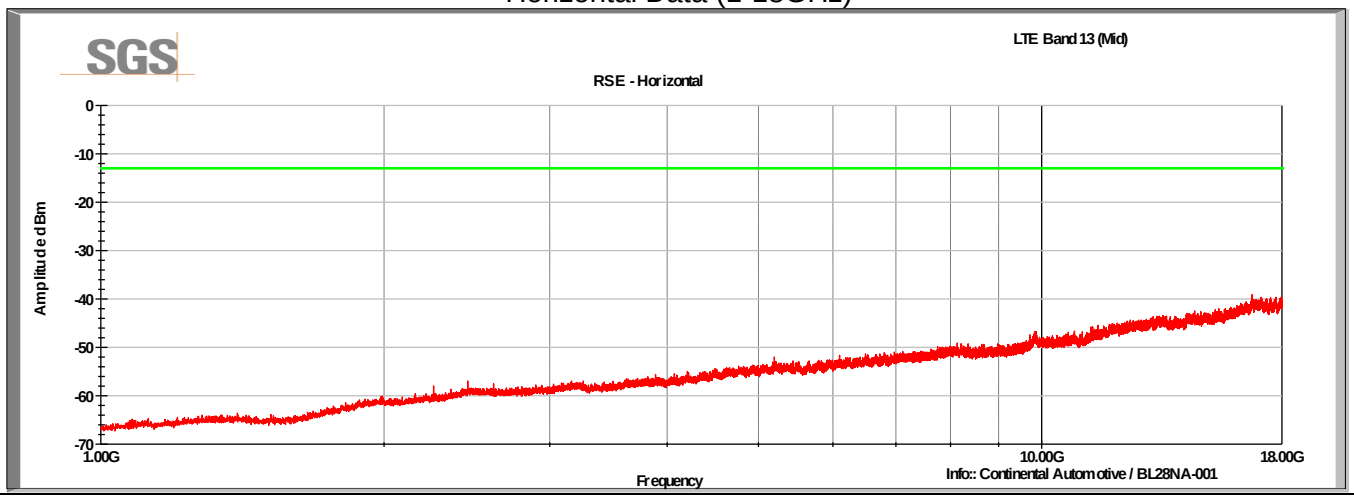
LTE Band 13, QPSK modulation, 5MHz

Mid Channel (23230)

Vertical Data (1-18GHz)



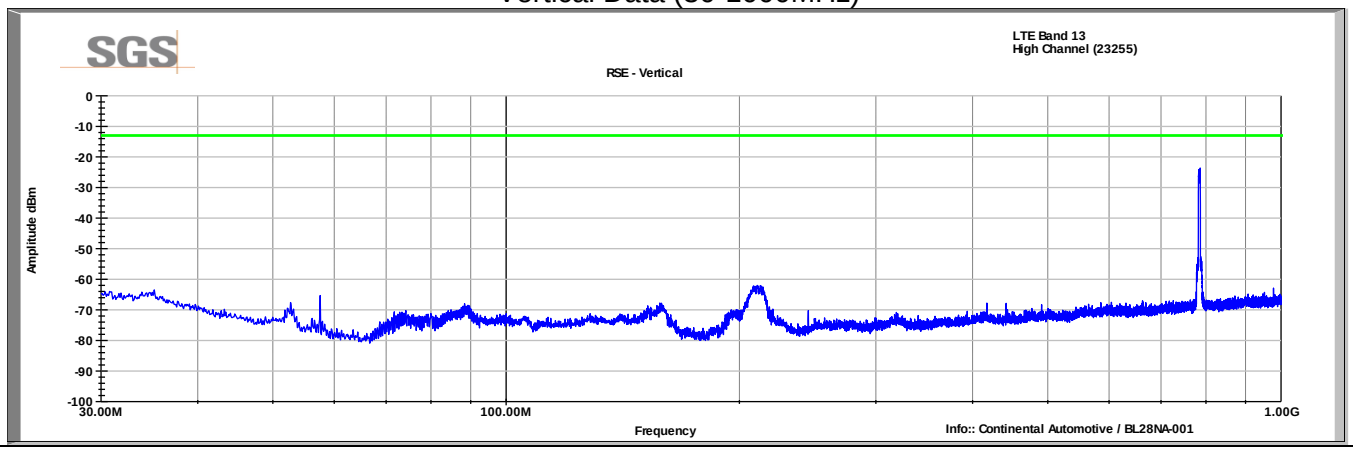
Horizontal Data (1-18GHz)



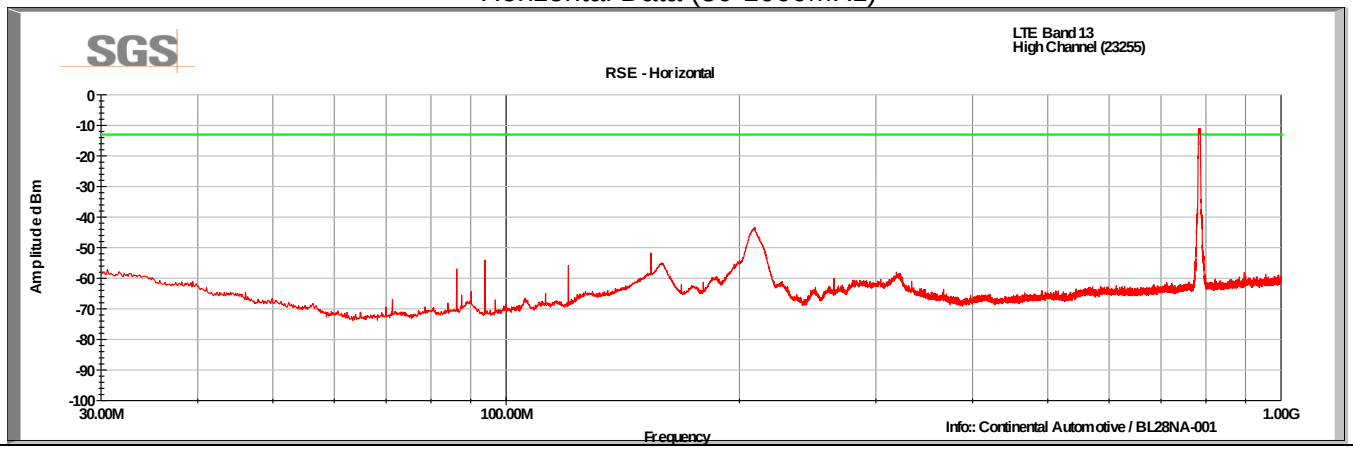
LTE Band 13, QPSK modulation, 5MHz

High Channel (23255)

Vertical Data (30-1000MHz)



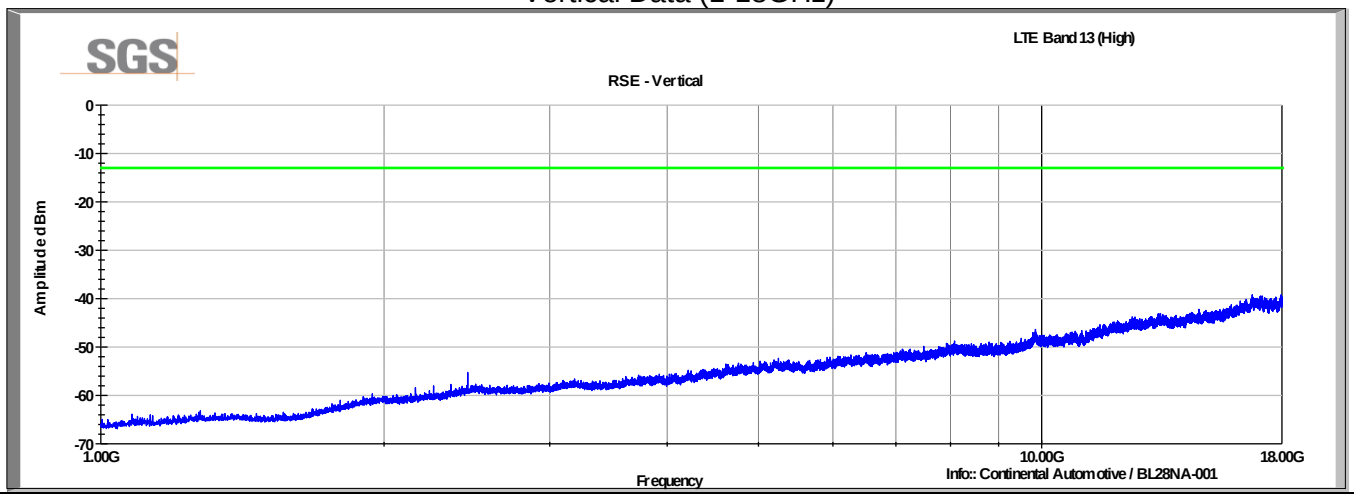
Horizontal Data (30-1000MHz)



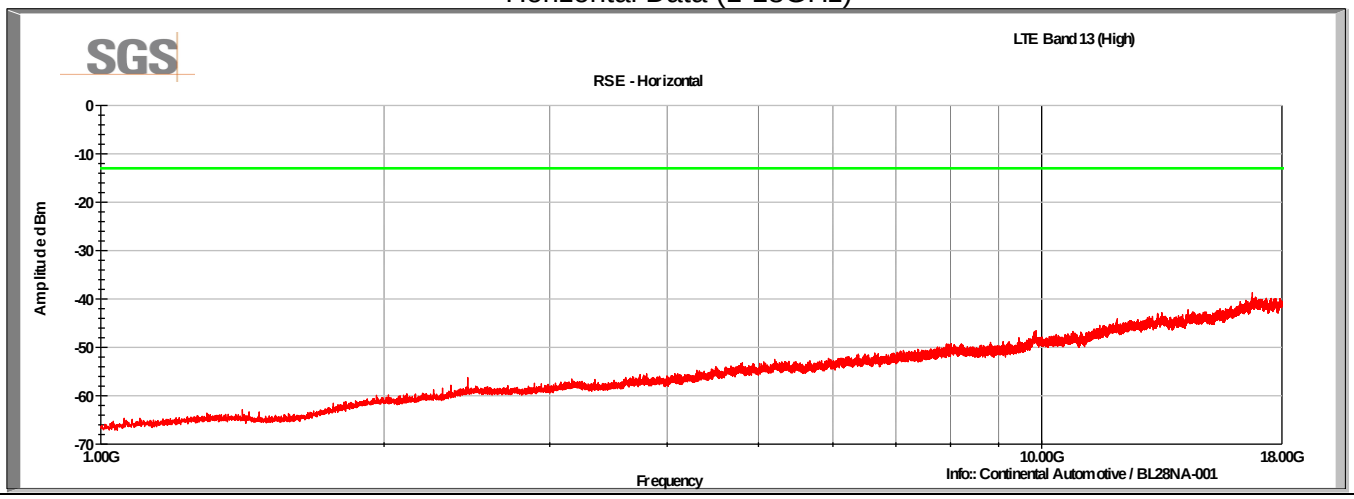
LTE Band 13, QPSK modulation, 5MHz

High Channel (23255)

Vertical Data (1-18GHz)



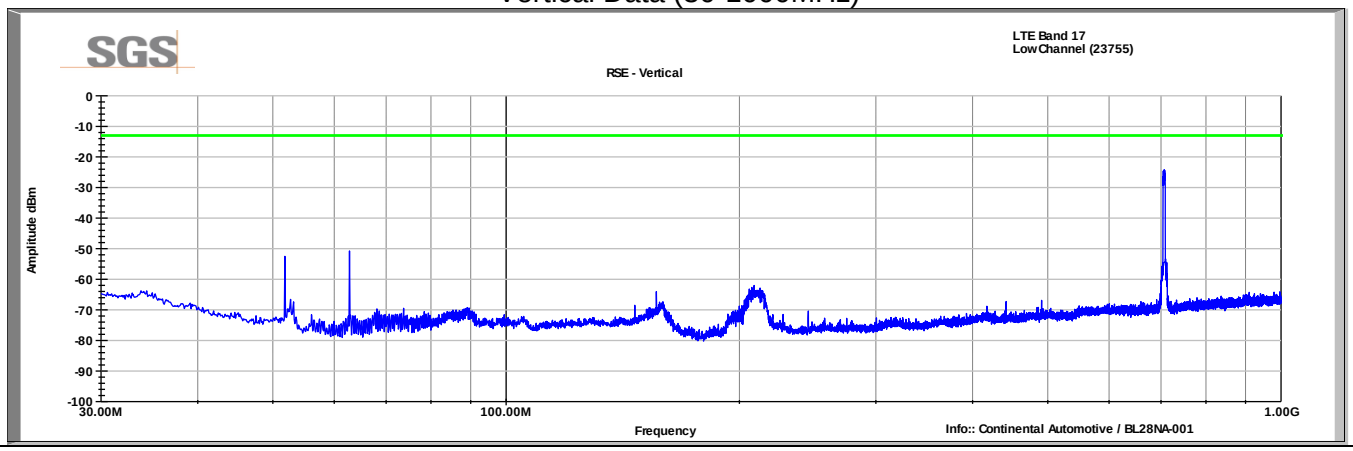
Horizontal Data (1-18GHz)



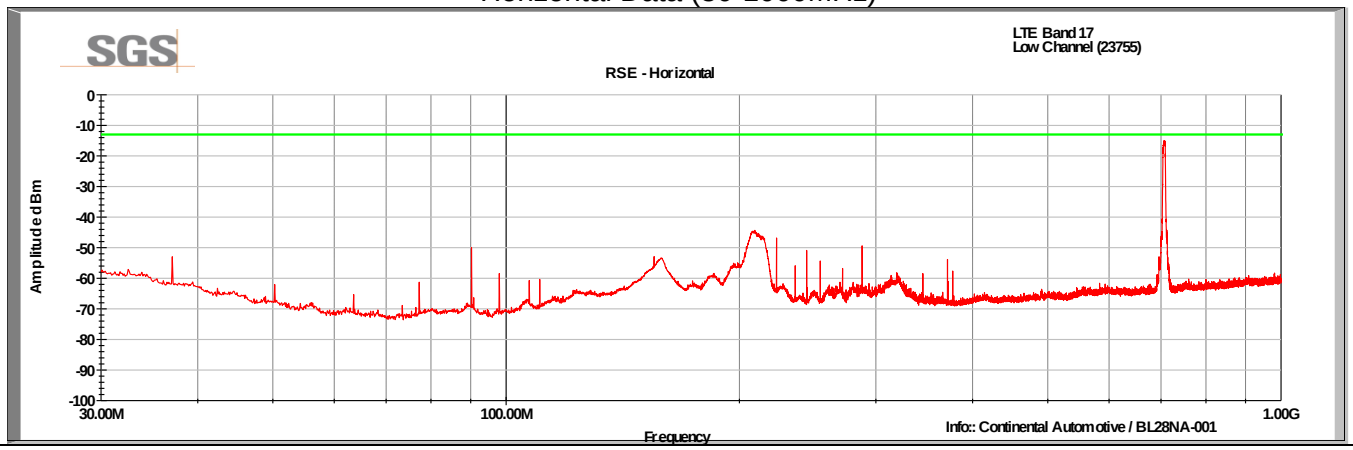
LTE Band 17, QPSK modulation, 5MHz

Low Channel (23755)

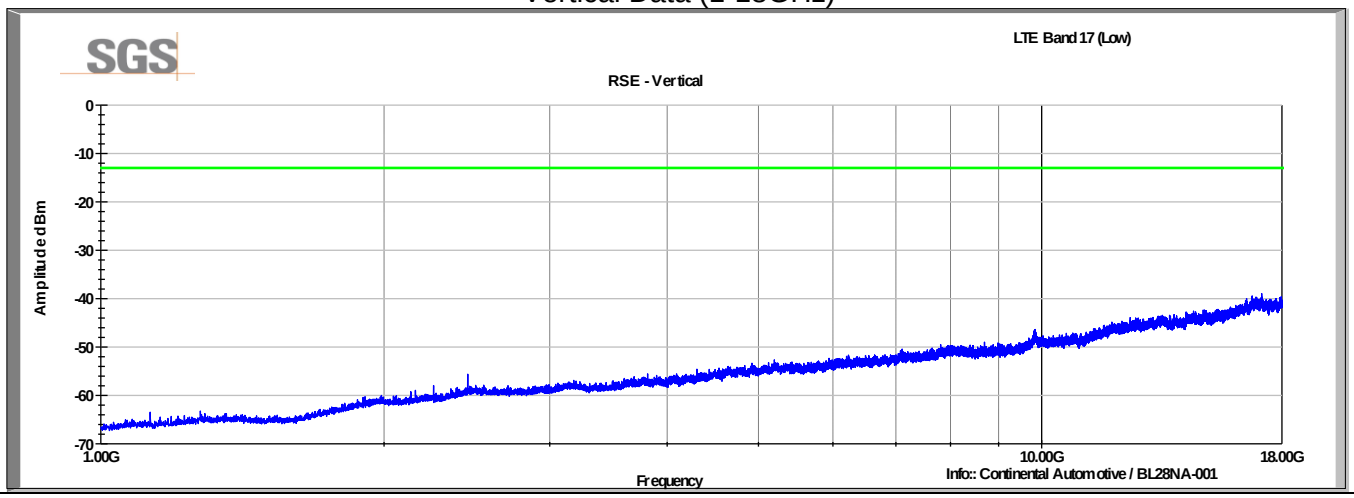
Vertical Data (30-1000MHz)



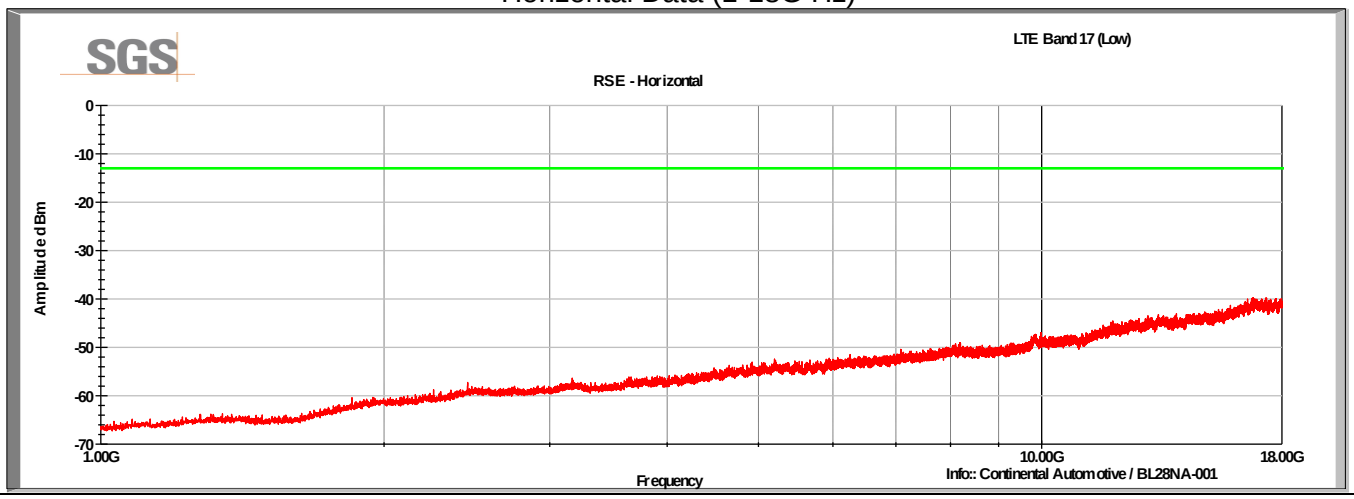
Horizontal Data (30-1000MHz)



LTE Band 17, QPSK modulation, 5MHz
Low Channel (23755)
Vertical Data (1-18GHz)



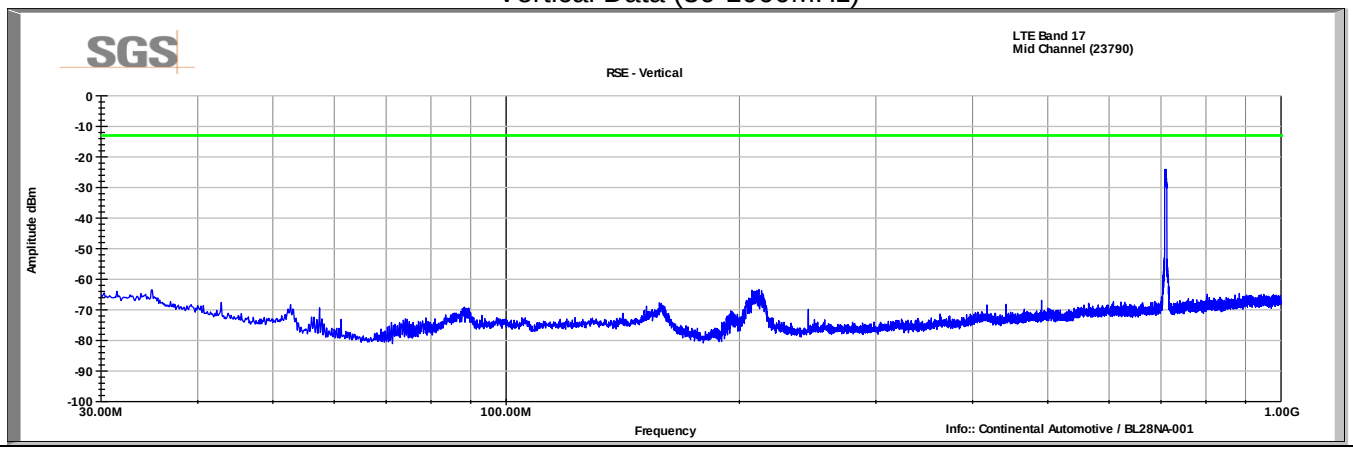
Horizontal Data (1-18G Hz)



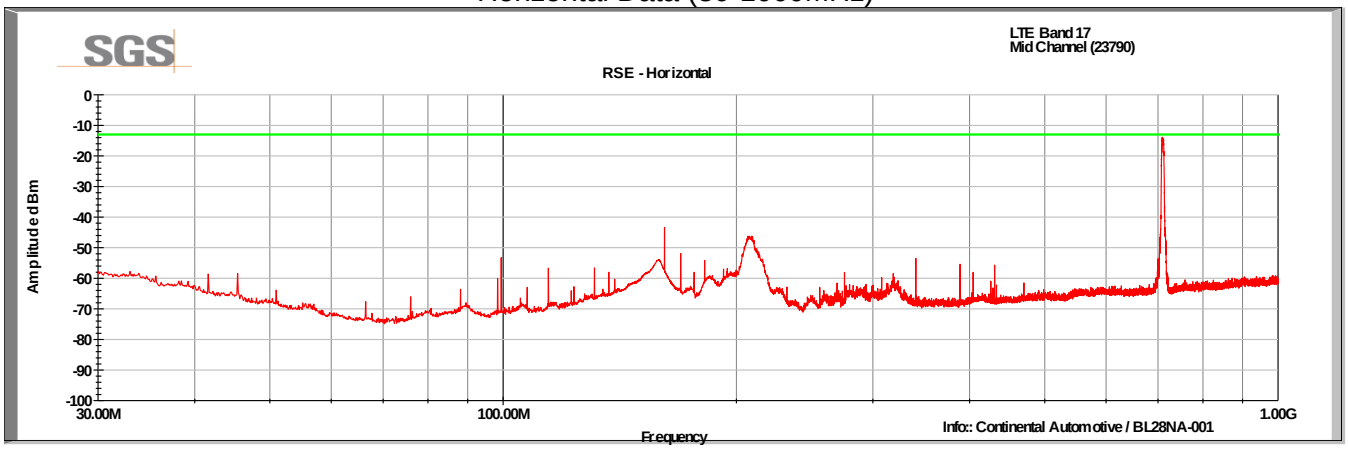
LTE Band 17, QPSK modulation, 5MHz

Mid Channel (23790)

Vertical Data (30-1000MHz)



Horizontal Data (30-1000MHz)

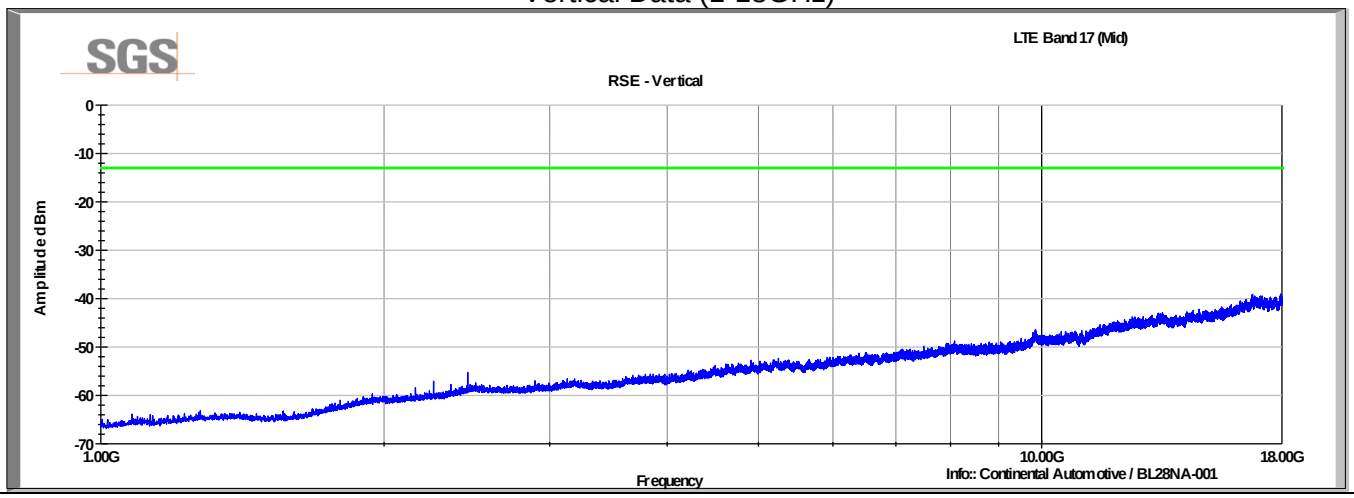


Worst-case spur: -43.4dBm @ 161.532MHz

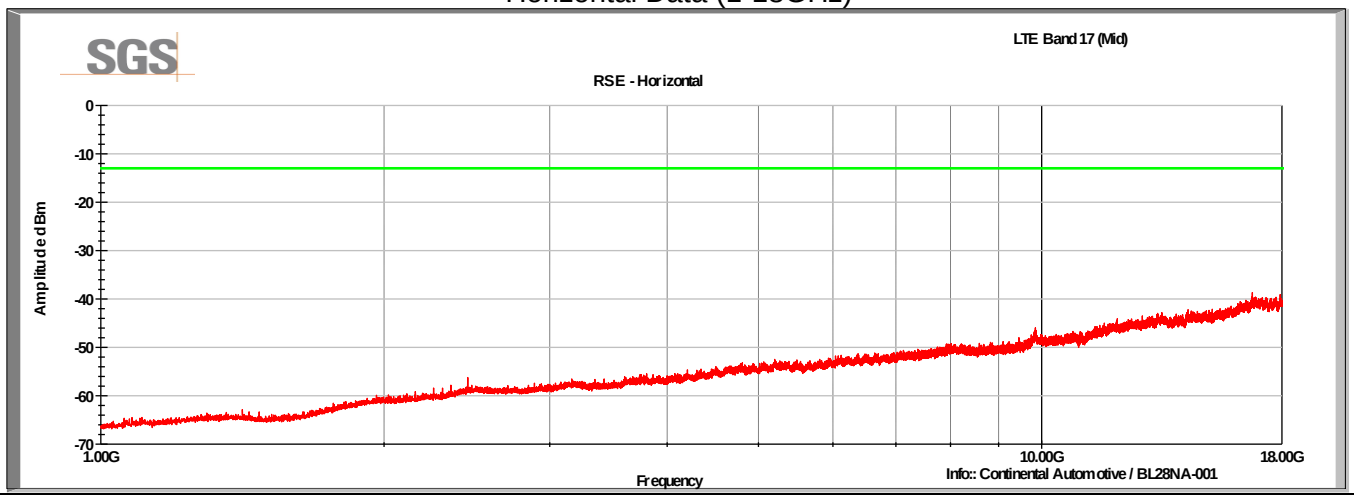
LTE Band 17, QPSK modulation, 5MHz

Mid Channel (23790)

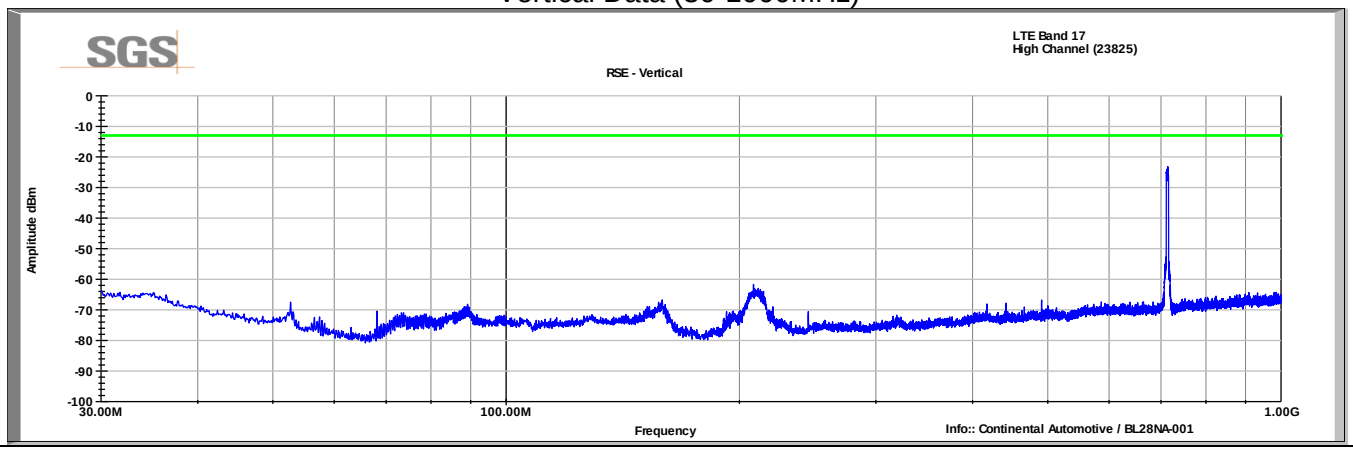
Vertical Data (1-18GHz)



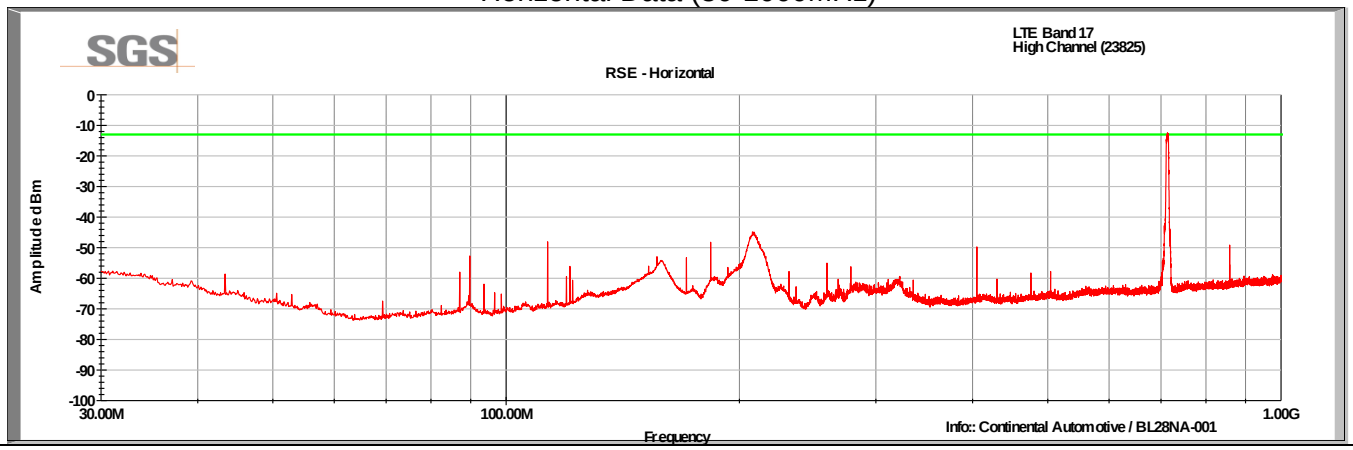
Horizontal Data (1-18GHz)



LTE Band 17, QPSK modulation, 5MHz
High Channel (23825)
Vertical Data (30-1000MHz)



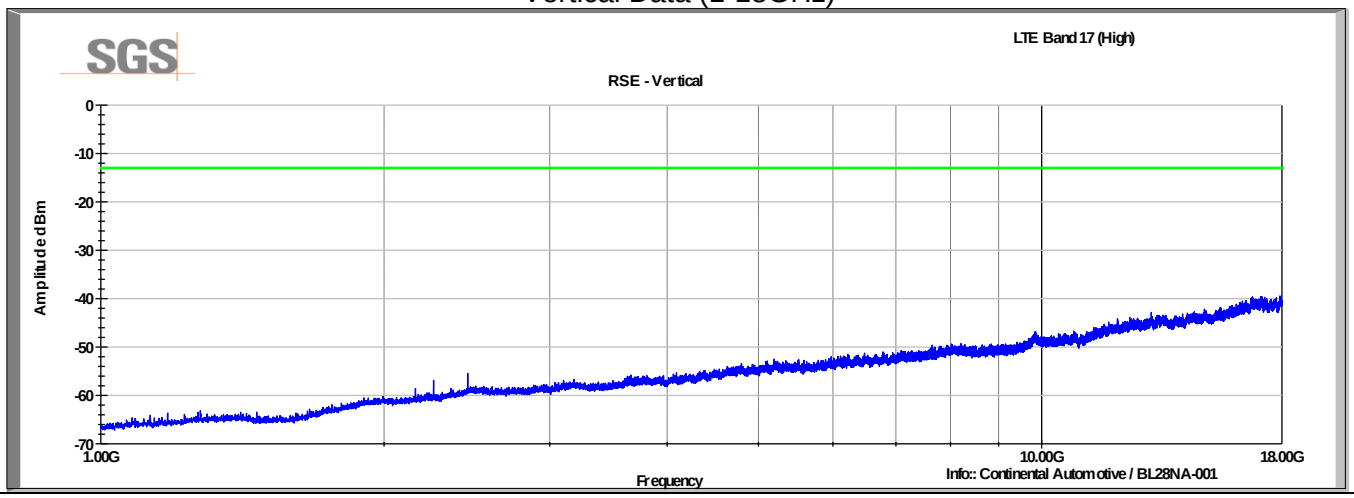
Horizontal Data (30-1000MHz)



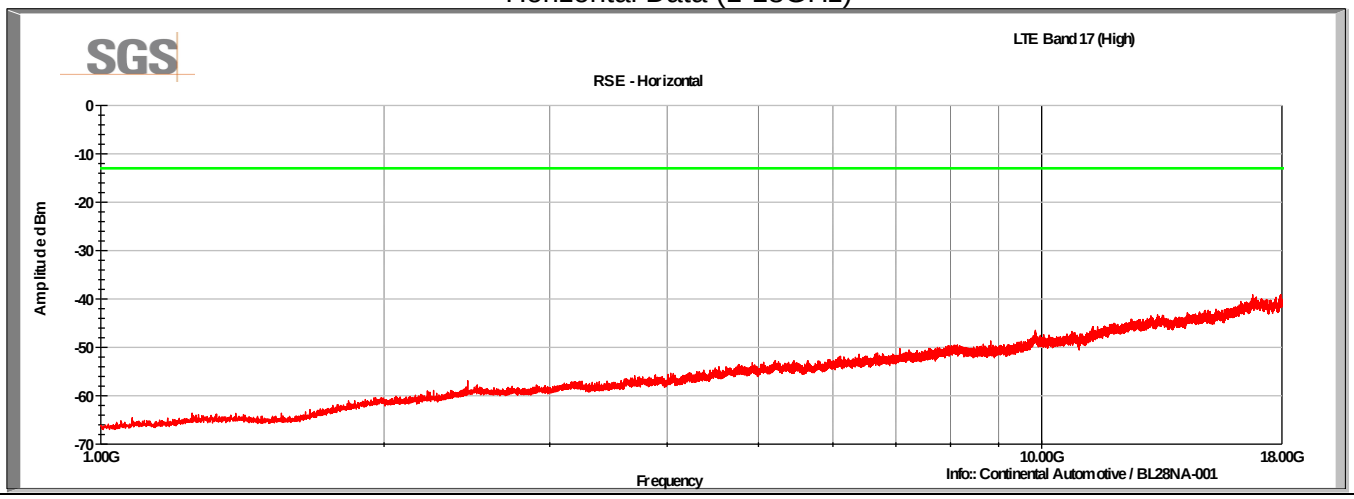
LTE Band 17, QPSK modulation, 5MHz

High Channel (23825)

Vertical Data (1-18GHz)



Horizontal Data (1-18GHz)



9 Frequency Stability

9.1 *Test Result*

Test Description	Basic Standards	Test Result
Frequency Stability	2.1055 22.917(a) 24.238(a) 27.5(b) 27.5(h) 27.54 RSS-GEN (6.11) RSS-130 (4.3) RSS-132 (5.3) RSS-133 (6.3) RSS-139 (6.3)	Compliant

9.2 *Test Method*

The EUT was placed inside the Environmental Chamber and was left inside chamber to stabilize to set temperature for minimum of thirty minutes before any measurements were made. The EUT was tested at the middle channel of Bands 2, 4, 5, 7, 12, 13, and 17.

9.3 *Test Site*

SGS EMC Laboratory, Suwanee, GA

9.4 *Test Equipment*

Test Date: 9-Sep-2016 Tester: JOP

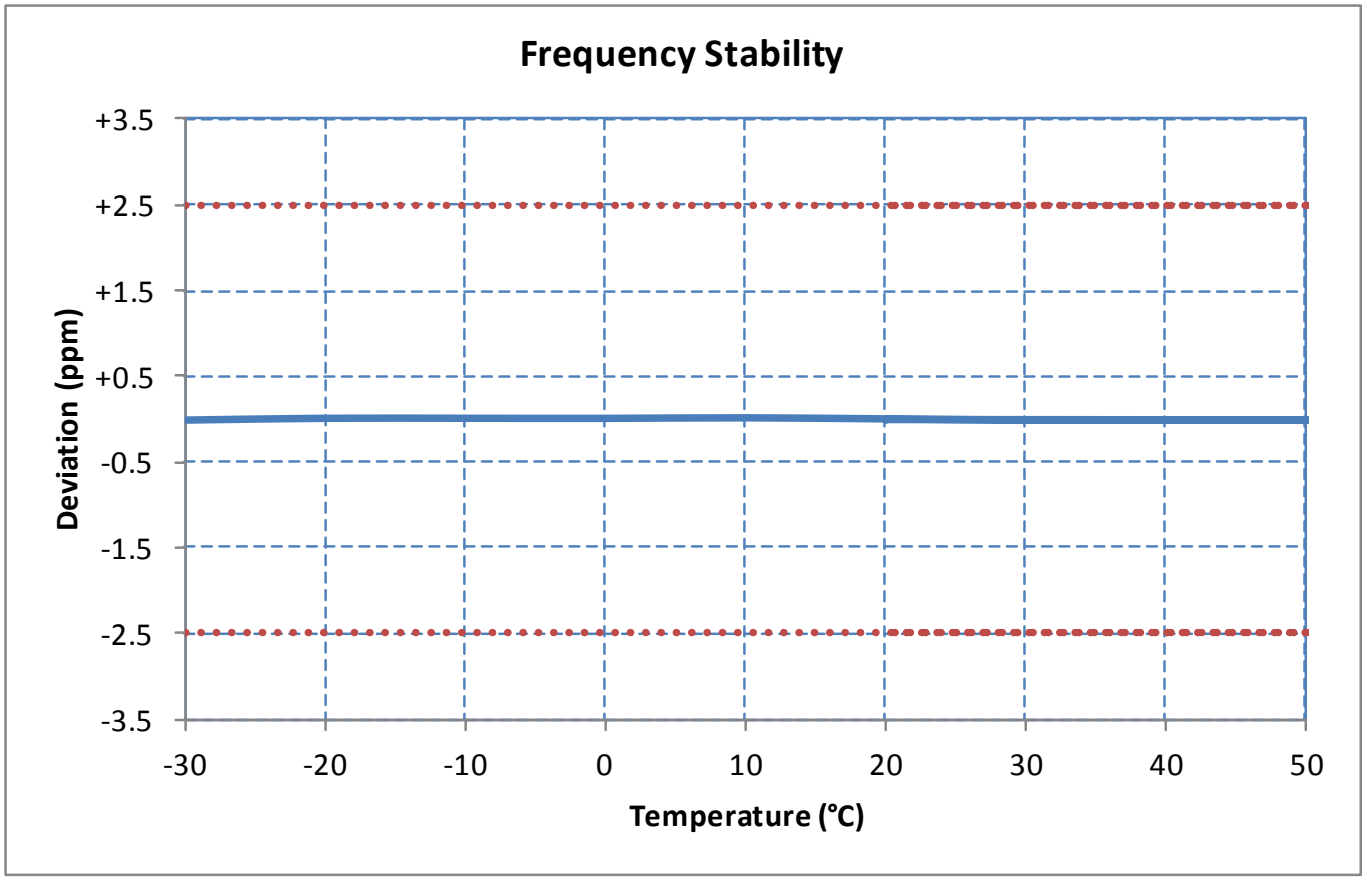
Equipment	Model	Manufacturer	Asset Number	Cal Due Date
WIDEBAND RADIO COMMUNICATION TESTER	CMW500	ROHDE & SCHWARZ	B094874	19-Jan-2018
ENVIRONMENTAL TEST CHAMBER	T2RC	TENNEY ENVIRONMENTAL	B094877	CNR
HANDHELD MULTIMETER	87V	FLUKE	B079676	29-Jul-2017

- Unless otherwise noted, equipment is on a 1 year calibration cycle.
- Based on manufacturer's specifications, the CMW-500 is on a 3 year calibration cycle.

9.5 *Test Data*

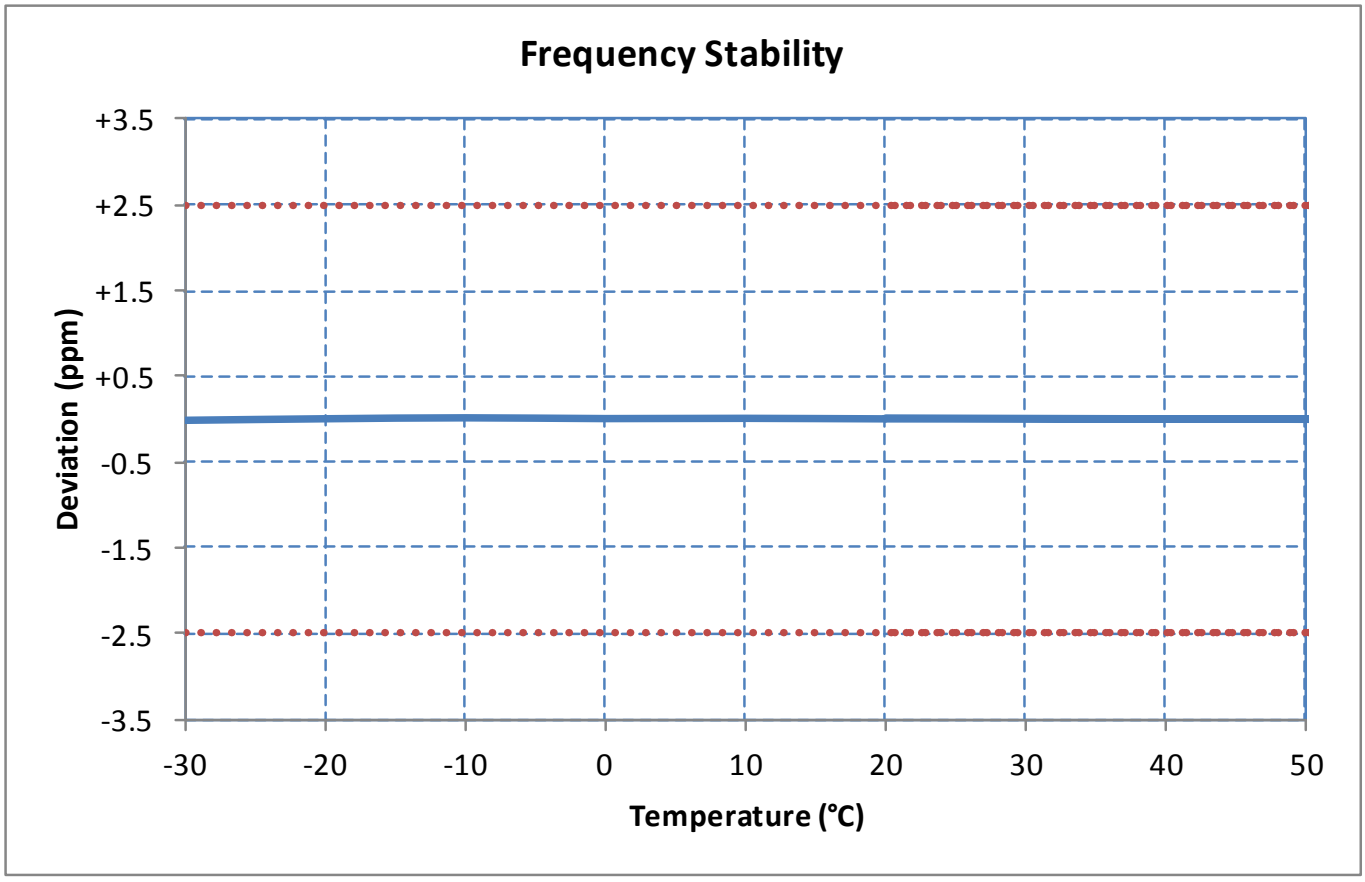
Band 2, Channel 18900

Voltage %	Power V_{DC}	Temp °C	Frequency Hz	Freq Dev	Freq Dev ppm	Deviation %
100%	12.00	+20 (Ref)	1,879,999,999	-1	-0.00	-0.000000
100%	12.00	-30	1,879,999,996	-4	-0.00	-0.000000
100%	12.00	-20	1,880,000,001	+1	+0.00	+0.000000
100%	12.00	-10	1,880,000,001	+1	+0.00	+0.000000
100%	12.00	0	1,880,000,001	+1	+0.00	+0.000000
100%	12.00	+10	1,880,000,002	+2	+0.00	+0.000000
100%	12.00	+20	1,879,999,999	-1	-0.00	-0.000000
100%	12.00	+30	1,879,999,996	-4	-0.00	-0.000000
100%	12.00	+40	1,879,999,997	-3	-0.00	-0.000000
100%	12.00	+50	1,879,999,997	-3	-0.00	-0.000000
100%	12.00	+55	1,879,999,996	-4	-0.00	-0.000000
115%	13.80	+20	1,879,999,998	-2	-0.00	-0.000000
85%	10.20	+20	1,879,999,996	-4	-0.00	-0.000000



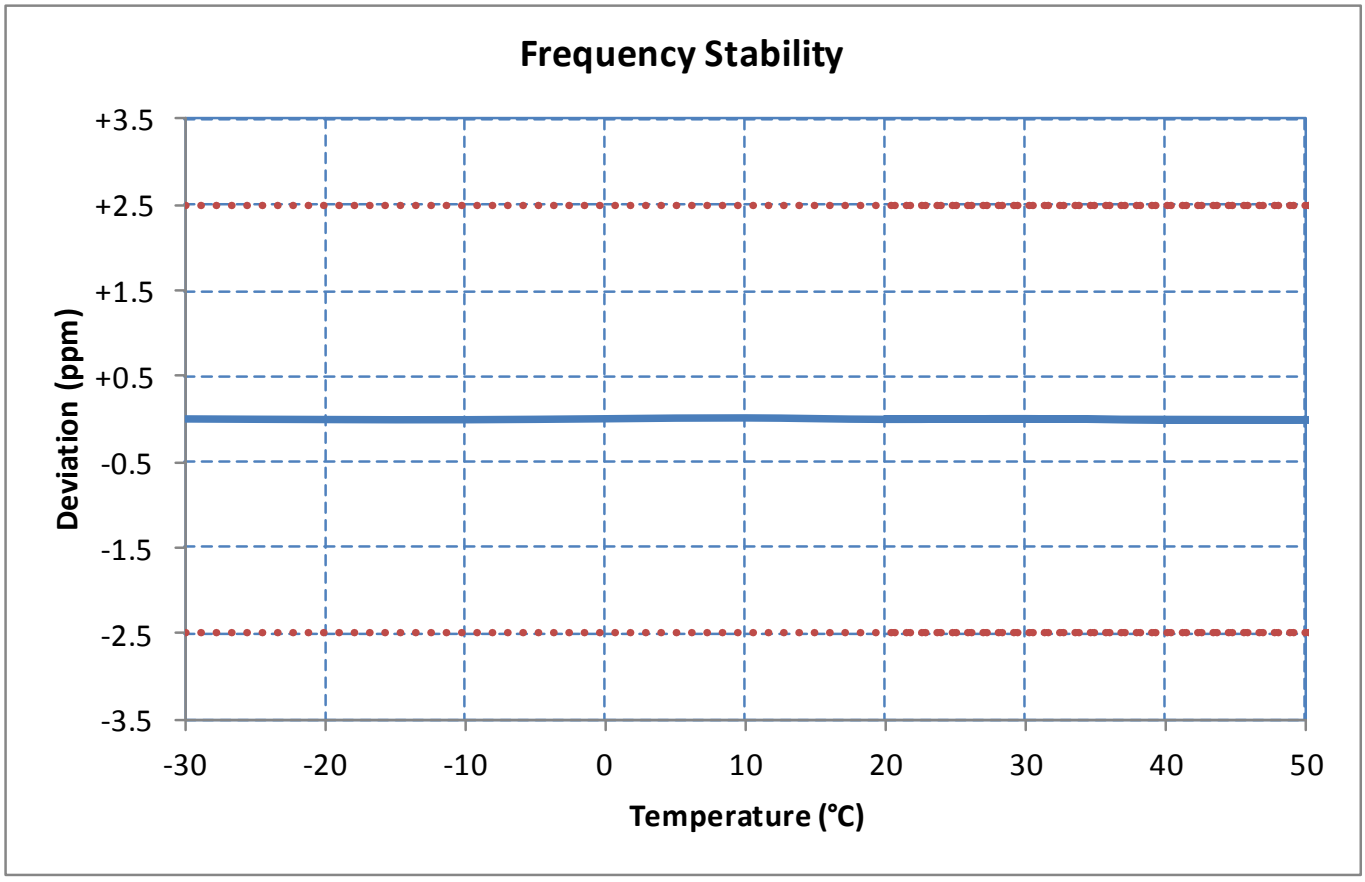
Band 4, Channel 20175

Voltage %	Power V_{DC}	Temp °C	Frequency Hz	Freq Dev	Freq Dev ppm	Deviation %
100%	12.00	+20 (Ref)	1,732,500,000	+0	+0.00	+0.000000
100%	12.00	-30	1,732,499,998	-2	-0.00	-0.000000
100%	12.00	-20	1,732,500,001	+1	+0.00	+0.000000
100%	12.00	-10	1,732,500,002	+2	+0.00	+0.000000
100%	12.00	0	1,732,500,001	+1	+0.00	+0.000000
100%	12.00	+10	1,732,500,001	+1	+0.00	+0.000000
100%	12.00	+20	1,732,500,000	+0	+0.00	+0.000000
100%	12.00	+30	1,732,500,000	+0	+0.00	+0.000000
100%	12.00	+40	1,732,500,000	+0	+0.00	+0.000000
100%	12.00	+50	1,732,500,000	+0	+0.00	+0.000000
100%	12.00	+55	1,732,499,999	-1	-0.00	-0.000000
115%	13.80	+20	1,732,500,002	+2	+0.00	+0.000000
85%	10.20	+20	1,732,500,001	+1	+0.00	+0.000000



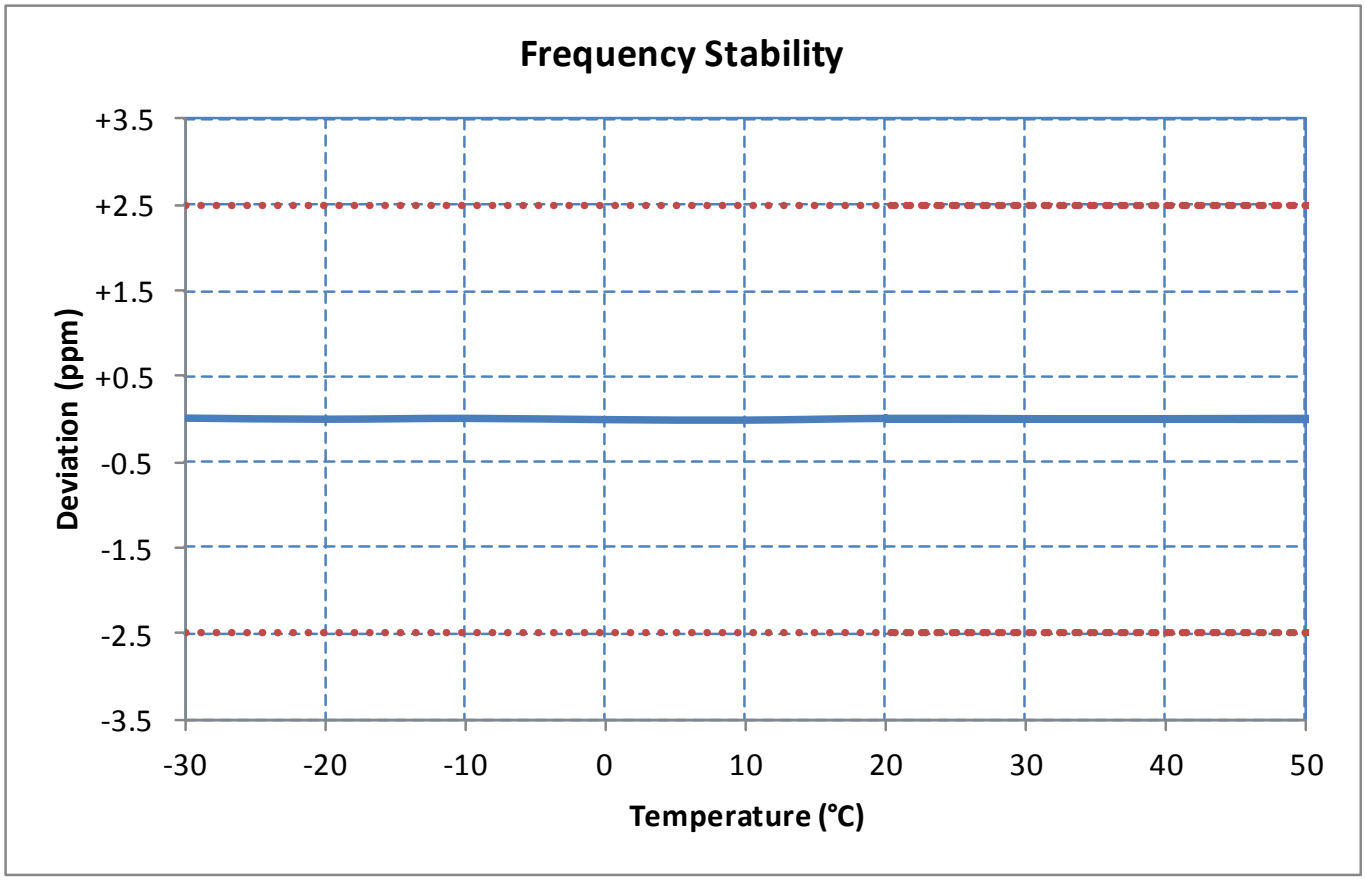
Band 5, Channel 20525

Voltage %	Power V_{DC}	Temp °C	Frequency Hz	Freq Dev Hz	Freq Dev ppm	Deviation %
100%	12.00	+20 (Ref)	836,500,000	+0	+0.00	+0.000000
100%	12.00	-30	836,500,001	+1	+0.00	+0.000000
100%	12.00	-20	836,500,000	-0	-0.00	-0.000000
100%	12.00	-10	836,500,000	-0	-0.00	-0.000000
100%	12.00	0	836,500,001	+1	+0.00	+0.000000
100%	12.00	+10	836,500,002	+2	+0.00	+0.000000
100%	12.00	+20	836,500,000	+0	+0.00	+0.000000
100%	12.00	+30	836,500,001	+1	+0.00	+0.000000
100%	12.00	+40	836,499,999	-1	-0.00	-0.000000
100%	12.00	+50	836,500,000	-0	-0.00	-0.000000
100%	12.00	+55	836,500,000	-0	-0.00	-0.000000
115%	13.80	+20	836,500,001	+1	+0.00	+0.000000
85%	10.20	+20	836,500,001	+1	+0.00	+0.000000



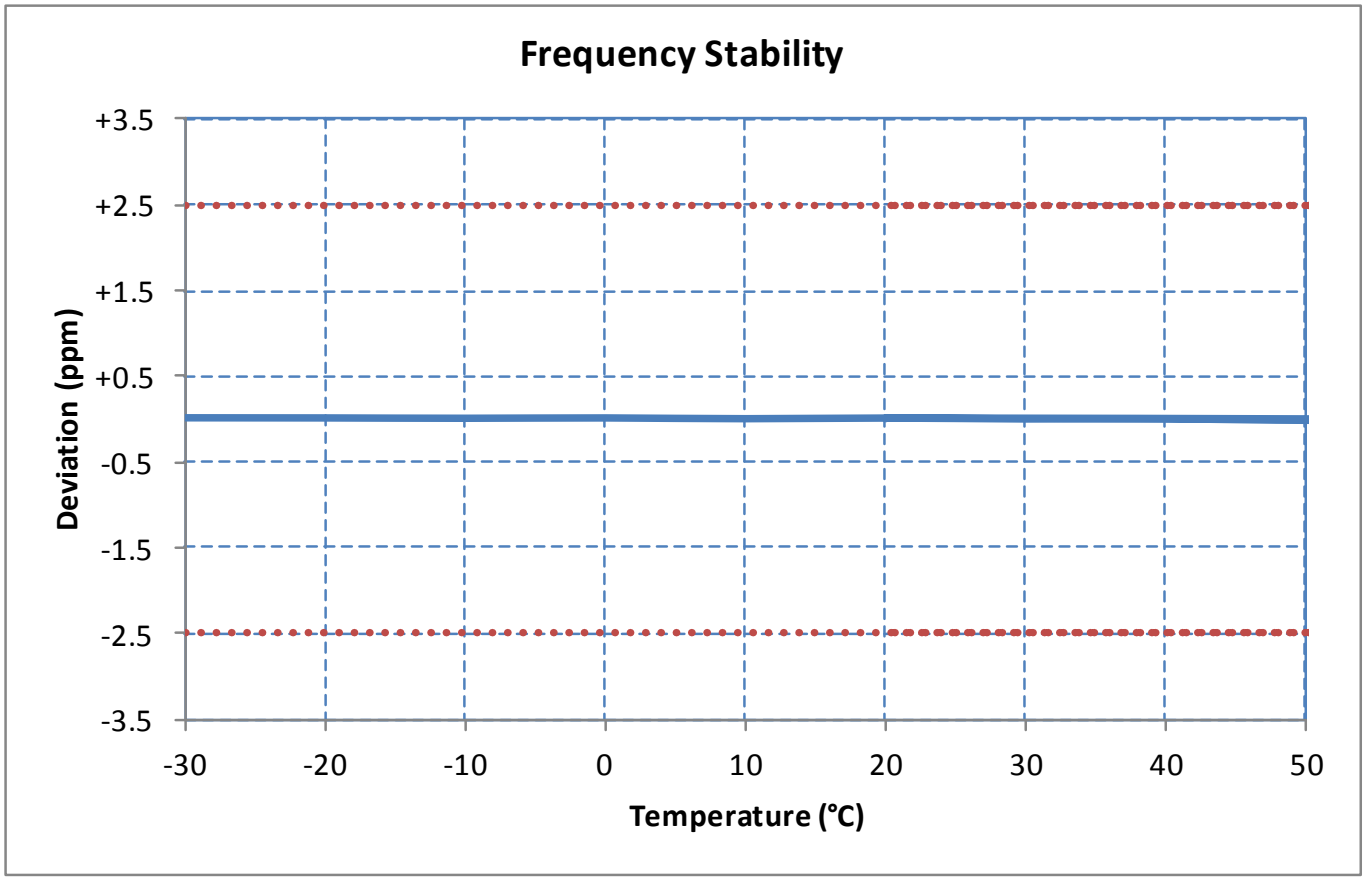
Band 7, Channel 21100

Voltage %	Power V_{DC}	Temp °C	Frequency Hz	Freq Dev Hz	Freq Dev ppm	Deviation %
100%	12.00	+20 (Ref)	2,534,999,998	-2	-0.00	-0.000000
100%	12.00	-30	2,534,999,999	-1	-0.00	-0.000000
100%	12.00	-20	2,534,999,997	-3	-0.00	-0.000000
100%	12.00	-10	2,534,999,998	-2	-0.00	-0.000000
100%	12.00	0	2,534,999,996	-4	-0.00	-0.000000
100%	12.00	+10	2,534,999,995	-5	-0.00	-0.000000
100%	12.00	+20	2,534,999,998	-2	-0.00	-0.000000
100%	12.00	+30	2,534,999,998	-2	-0.00	-0.000000
100%	12.00	+40	2,534,999,997	-3	-0.00	-0.000000
100%	12.00	+50	2,534,999,996	-4	-0.00	-0.000000
100%	12.00	+55	2,534,999,998	-2	-0.00	-0.000000
115%	13.80	+20	2,534,999,997	-3	-0.00	-0.000000
85%	10.20	+20	2,534,999,999	-1	-0.00	-0.000000



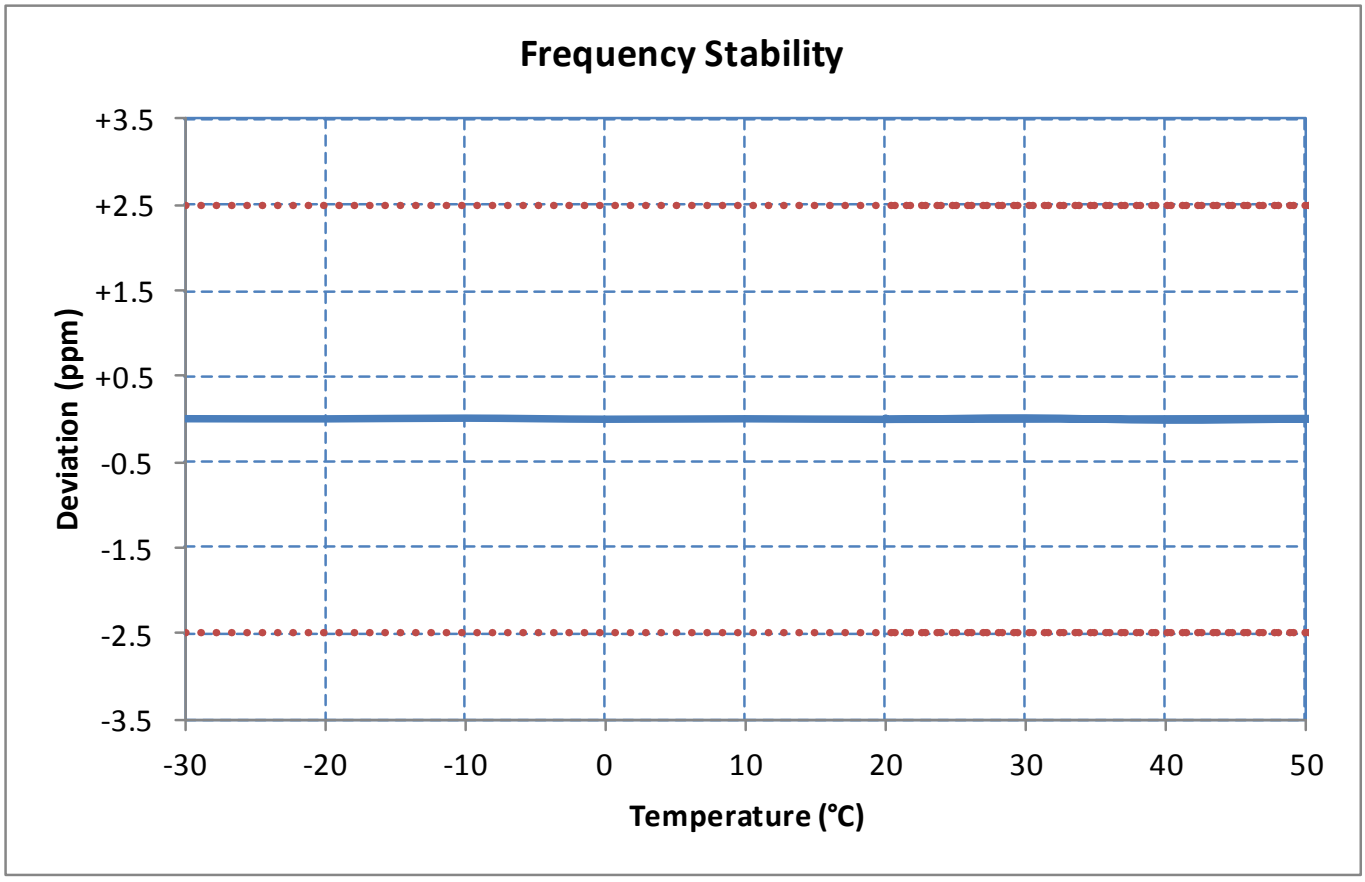
Band 12, Channel 23095

Voltage %	Power V_{DC}	Temp °C	Frequency Hz	Freq Dev Hz	Freq Dev ppm	Deviation %
100%	12.00	+20 (Ref)	707,500,000	+0	+0.00	+0.000000
100%	12.00	-30	707,500,001	+1	+0.00	+0.000000
100%	12.00	-20	707,500,001	+1	+0.00	+0.000000
100%	12.00	-10	707,500,000	+0	+0.00	+0.000000
100%	12.00	0	707,500,001	+1	+0.00	+0.000000
100%	12.00	+10	707,500,000	-0	-0.00	-0.000000
100%	12.00	+20	707,500,000	+0	+0.00	+0.000000
100%	12.00	+30	707,500,000	-0	-0.00	-0.000000
100%	12.00	+40	707,500,000	-0	-0.00	-0.000000
100%	12.00	+50	707,499,998	-2	-0.00	-0.000000
100%	12.00	+55	707,499,999	-1	-0.00	-0.000000
115%	13.80	+20	707,500,001	+1	+0.00	+0.000000
85%	10.20	+20	707,500,000	-0	-0.00	-0.000000



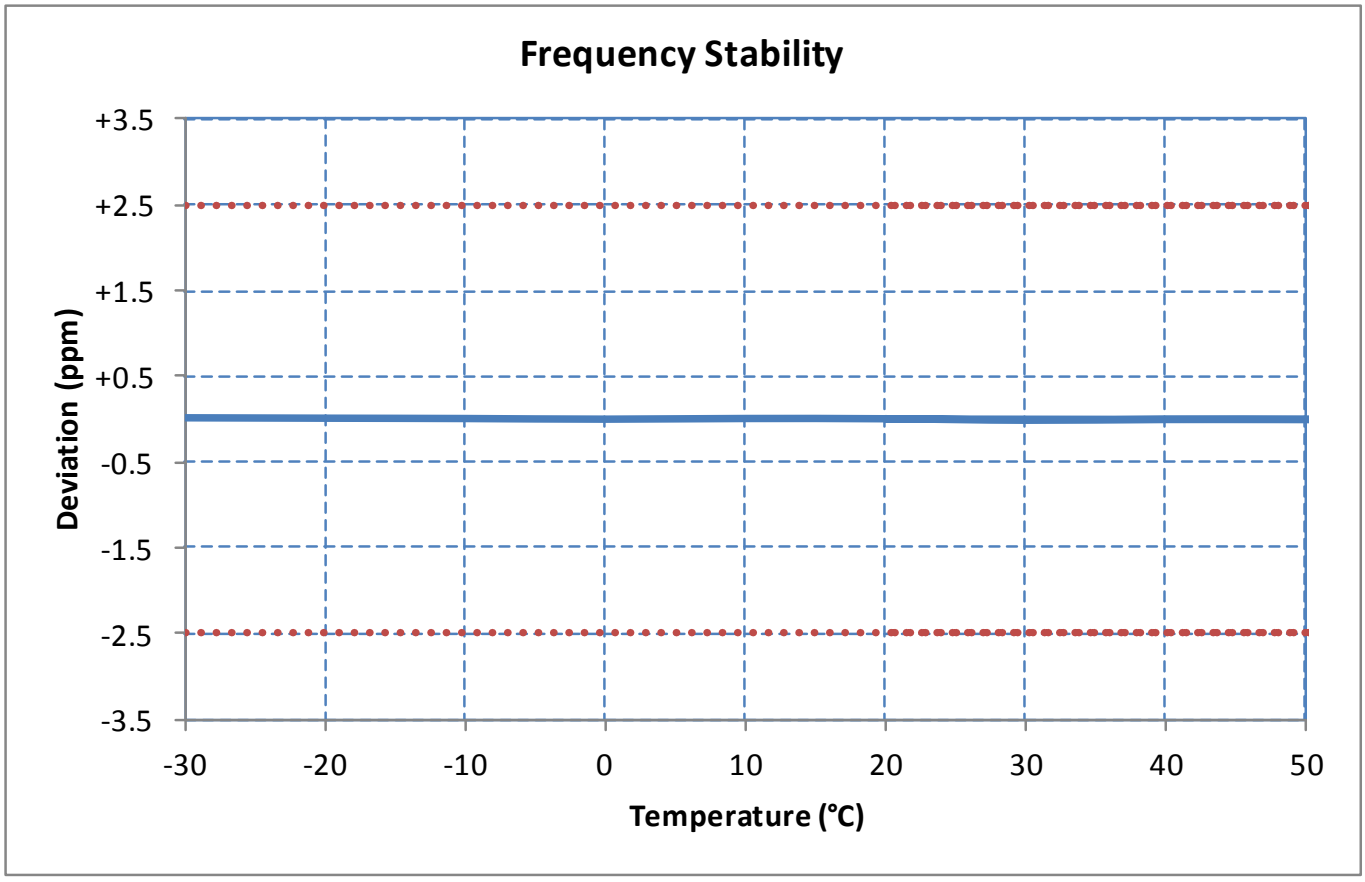
Band 13, Channel 23230

Voltage %	Power V_{DC}	Temp °C	Frequency Hz	Freq Dev Hz	Freq Dev ppm	Deviation %
100%	12.00	+20 (Ref)	782,000,000	-0	-0.00	-0.000000
100%	12.00	-30	782,000,000	+0	+0.00	+0.000000
100%	12.00	-20	782,000,000	-0	-0.00	-0.000000
100%	12.00	-10	782,000,001	+1	+0.00	+0.000000
100%	12.00	0	782,000,000	-0	-0.00	-0.000000
100%	12.00	+10	782,000,000	+0	+0.00	+0.000000
100%	12.00	+20	782,000,000	-0	-0.00	-0.000000
100%	12.00	+30	782,000,001	+1	+0.00	+0.000000
100%	12.00	+40	781,999,999	-1	-0.00	-0.000000
100%	12.00	+50	782,000,000	-0	-0.00	-0.000000
100%	12.00	+55	782,000,000	+0	+0.00	+0.000000
115%	13.80	+20	782,000,000	-0	-0.00	-0.000000
85%	10.20	+20	782,000,001	+1	+0.00	+0.000000



Band 17, Channel 23790

Voltage %	Power V_{DC}	Temp °C	Frequency Hz	Freq Dev Hz	Freq Dev ppm	Deviation %
100%	12.00	+20 (Ref)	710,000,001	+1	+0.00	+0.000000
100%	12.00	-30	710,000,002	+2	+0.00	+0.000000
100%	12.00	-20	710,000,001	+1	+0.00	+0.000000
100%	12.00	-10	710,000,001	+1	+0.00	+0.000000
100%	12.00	0	710,000,000	+0	+0.00	+0.000000
100%	12.00	+10	710,000,001	+1	+0.00	+0.000000
100%	12.00	+20	710,000,001	+1	+0.00	+0.000000
100%	12.00	+30	709,999,999	-1	-0.00	-0.000000
100%	12.00	+40	710,000,000	+0	+0.00	+0.000000
100%	12.00	+50	710,000,000	+0	+0.00	+0.000000
100%	12.00	+55	710,000,000	-0	-0.00	-0.000000
115%	13.80	+20	710,000,000	+0	+0.00	+0.000000
85%	10.20	+20	710,000,001	+1	+0.00	+0.000000



10 Revision History

Revision Level	Description of changes	Revision Date
0	Initial release	12 September 2016