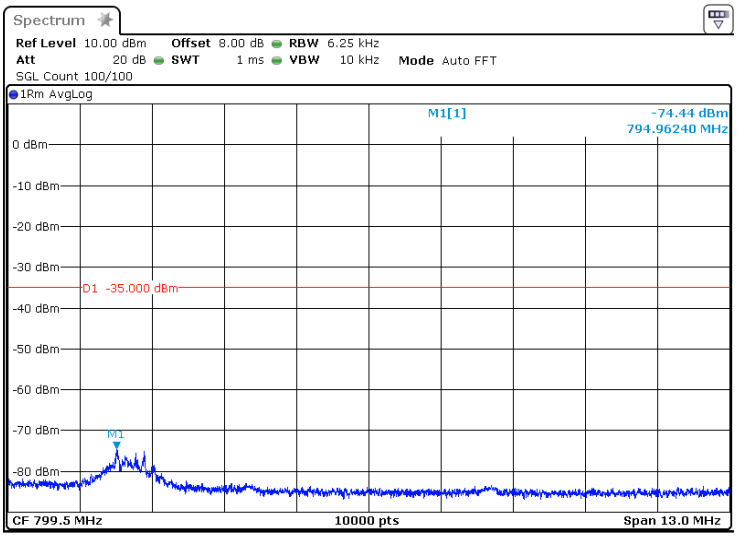
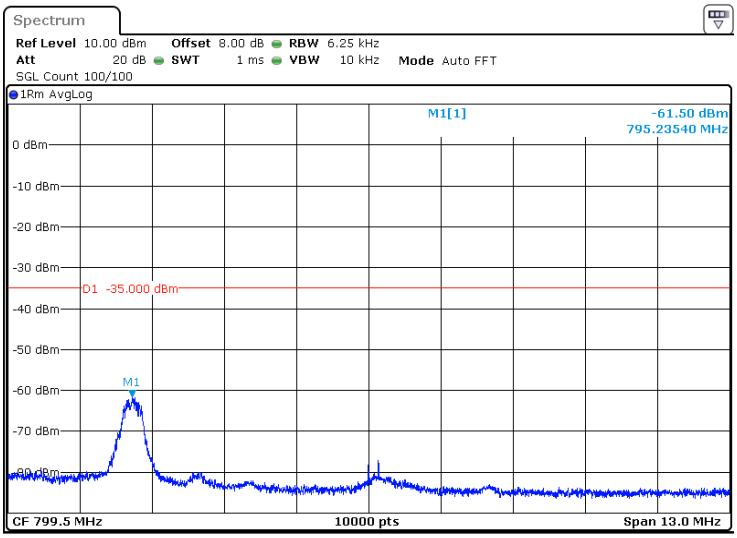
QPSK, 793 – 806 ㎒ (10 ㎒ Bandwidth)

782 ㎒

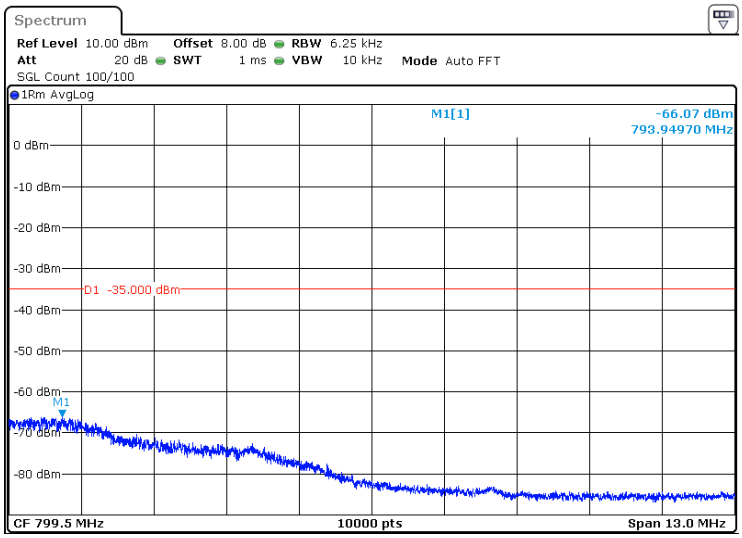
RB 1/0



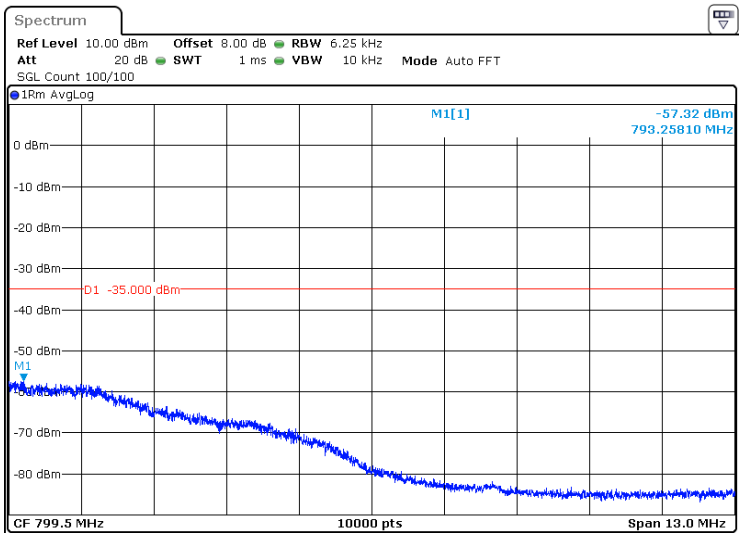
RB 1/49



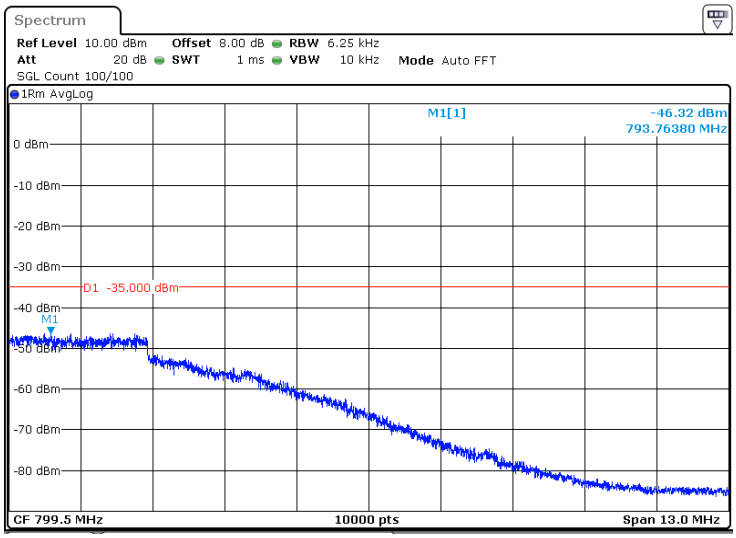
RB 25/0



RB 25/25



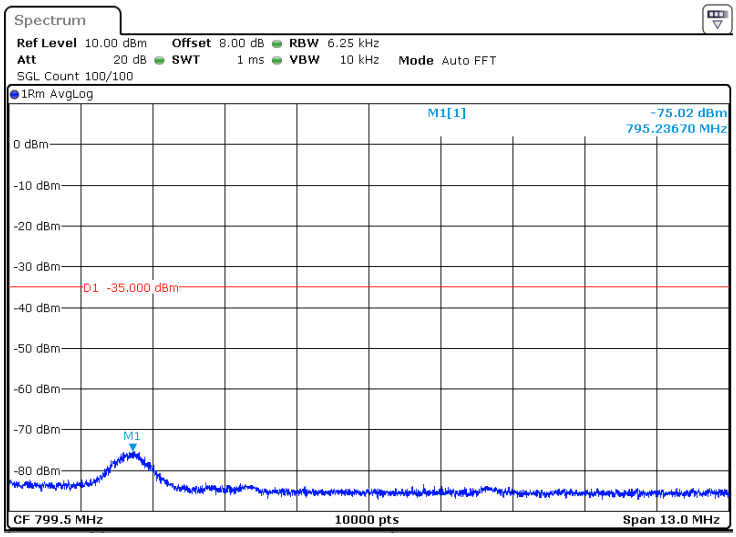
RB 50/0



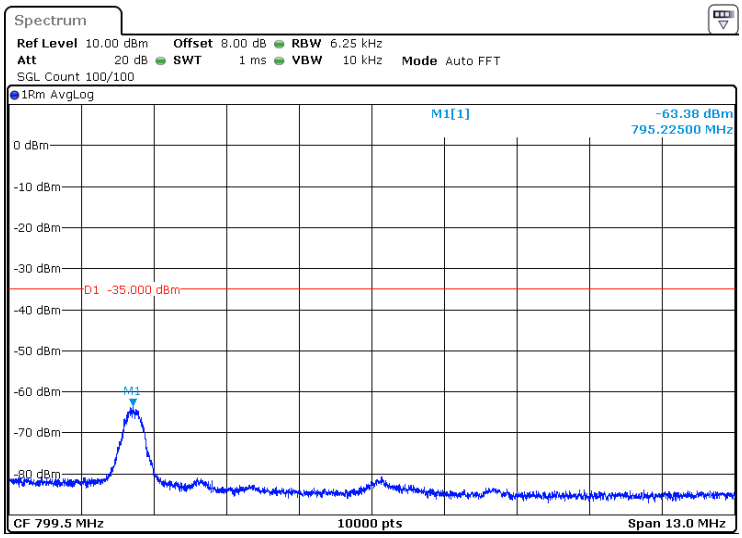
16QAM 793 – 806 ㎒ (5 ㎒ Bandwidth)

782 ㎒

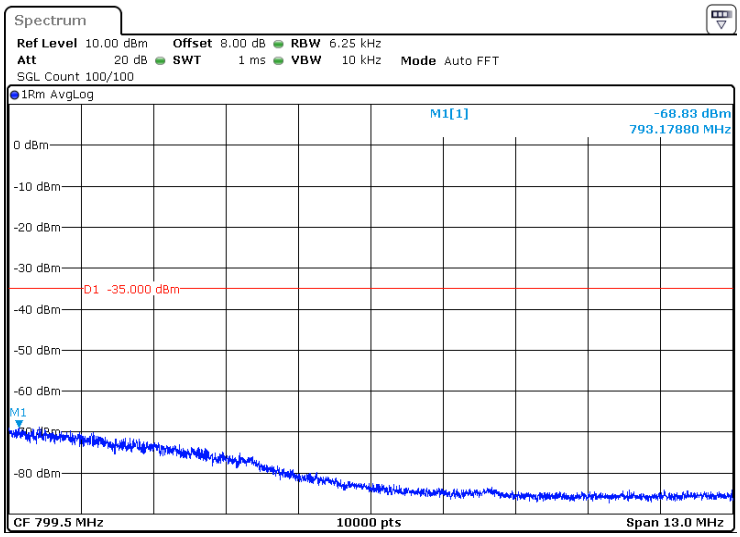
RB 1/0



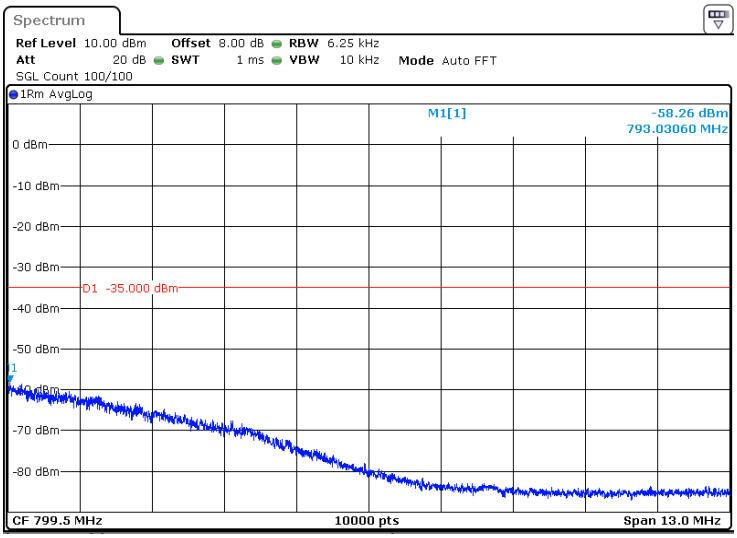
RB 1/49



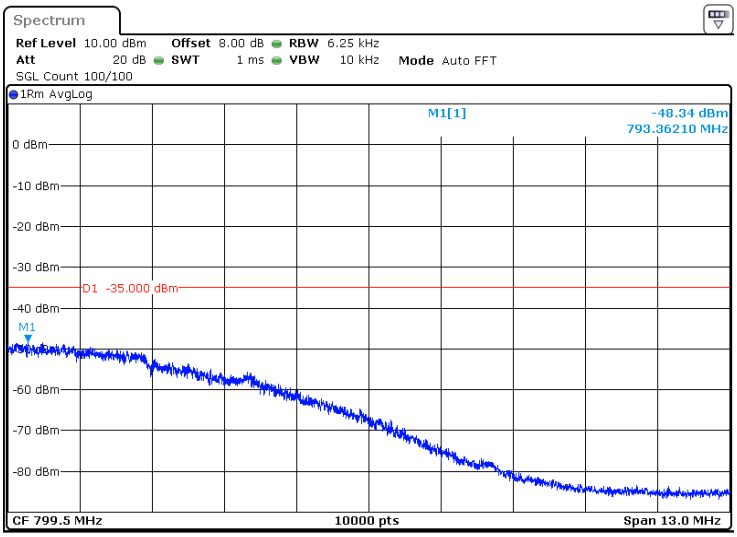
RB 25/0



RB 25/25



RB 50/0

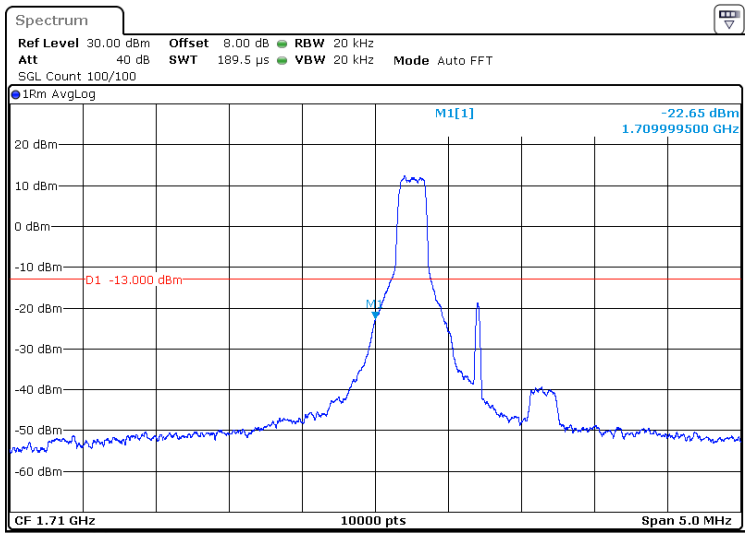


Band 4

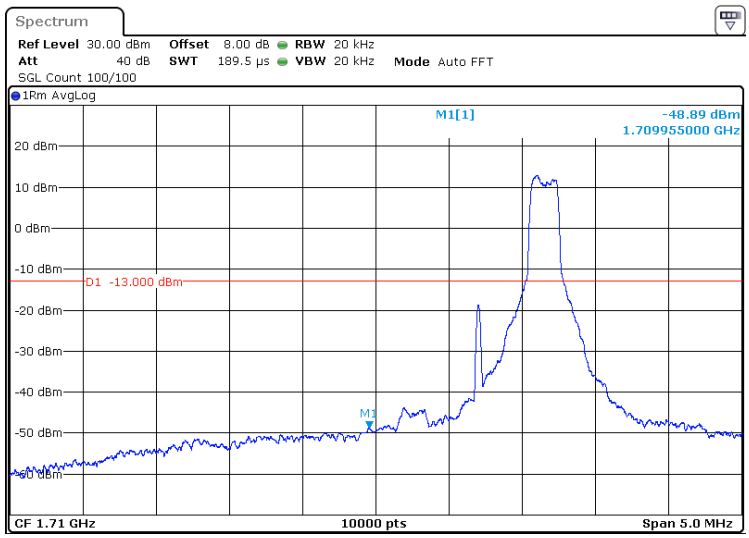
QPSK (1.4 ㎒ Bandwidth)

LOW

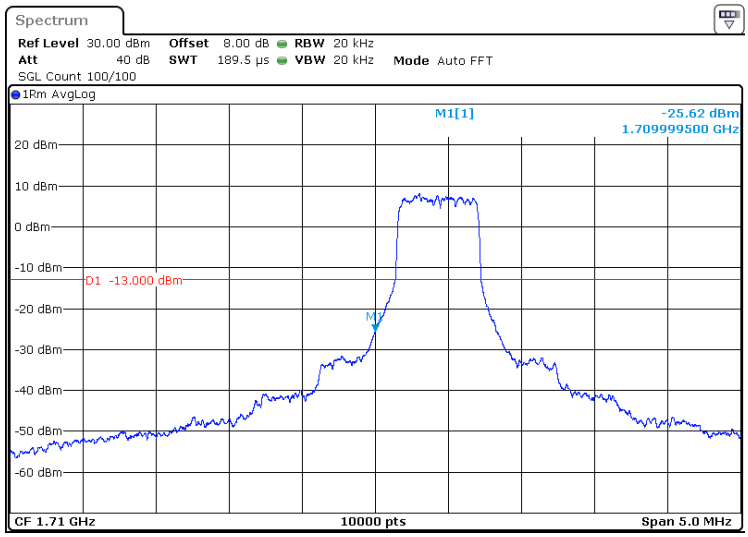
RB 1/0



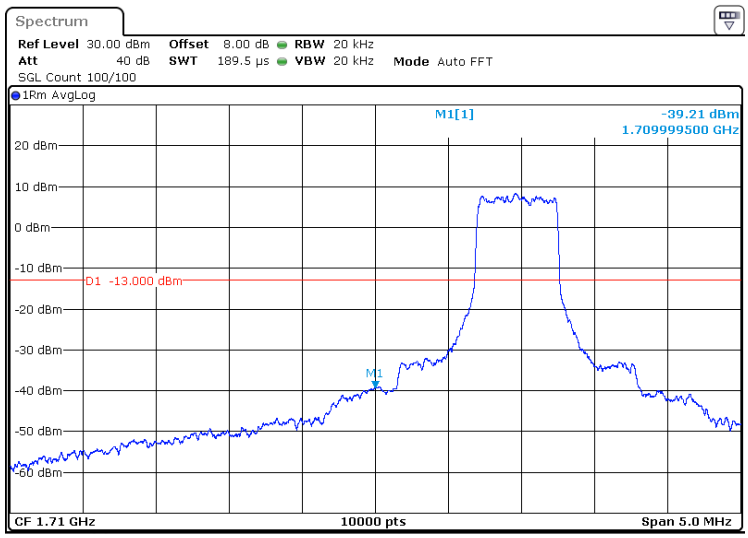
RB 1/5



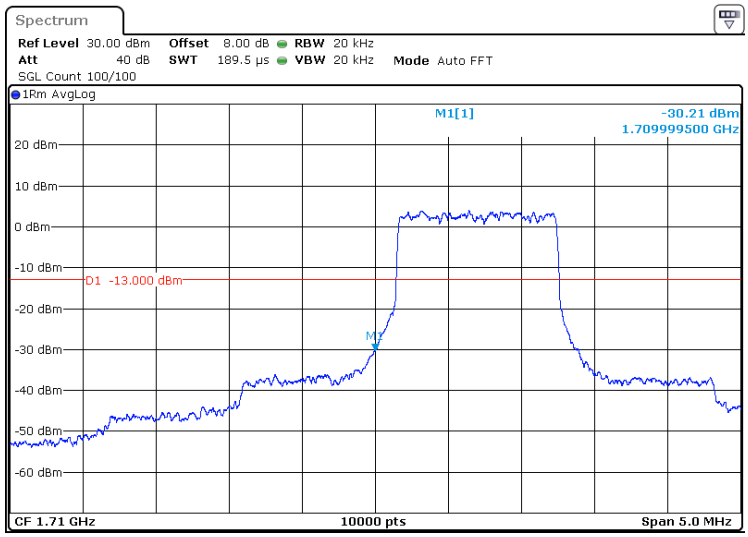
RB 3/0



RB 3/3

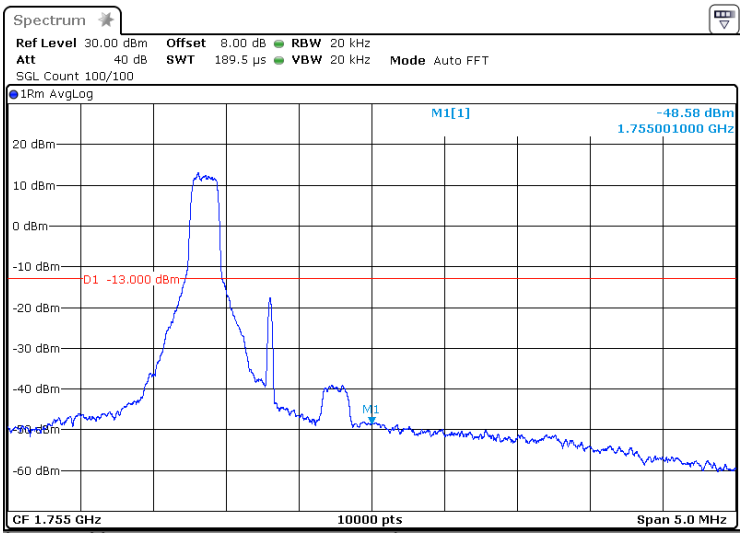


RB 6/0

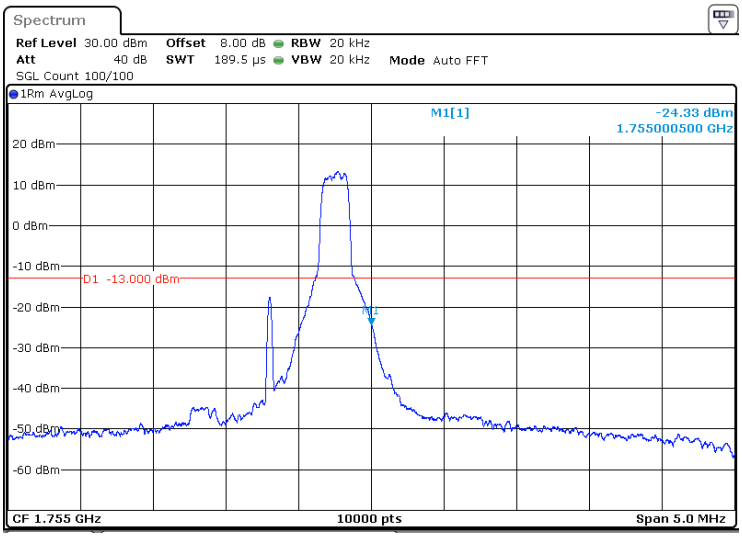


HIGH

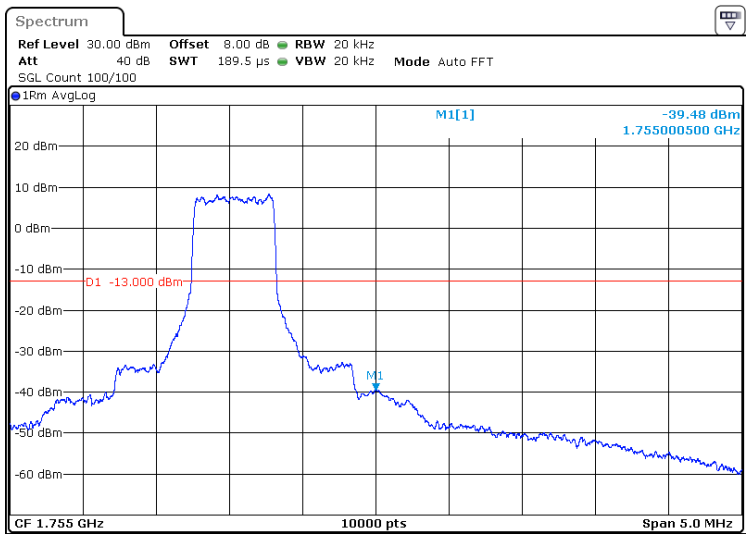
RB 1/0



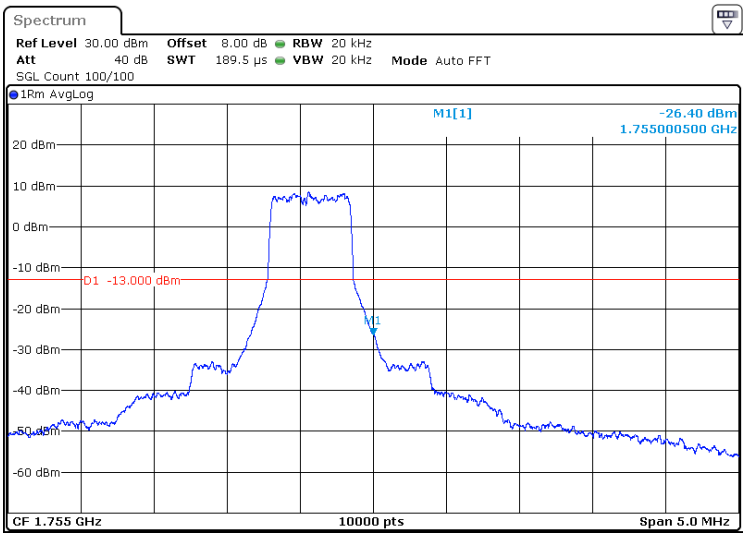
RB 1/5



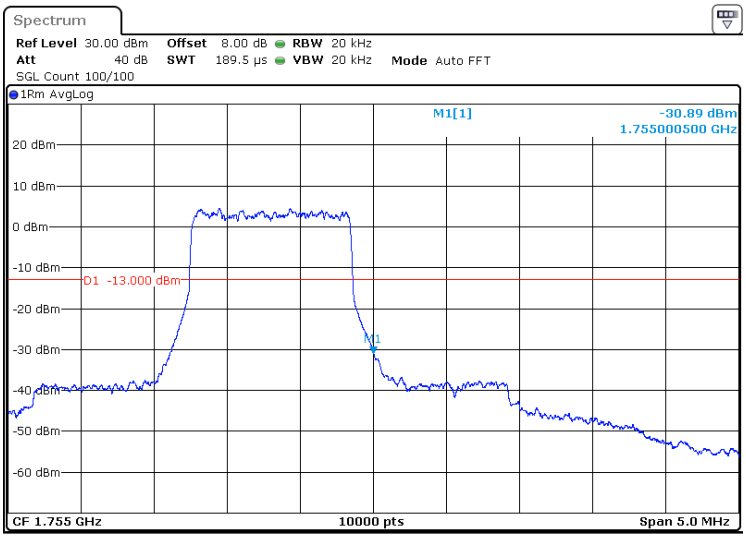
RB 3/0



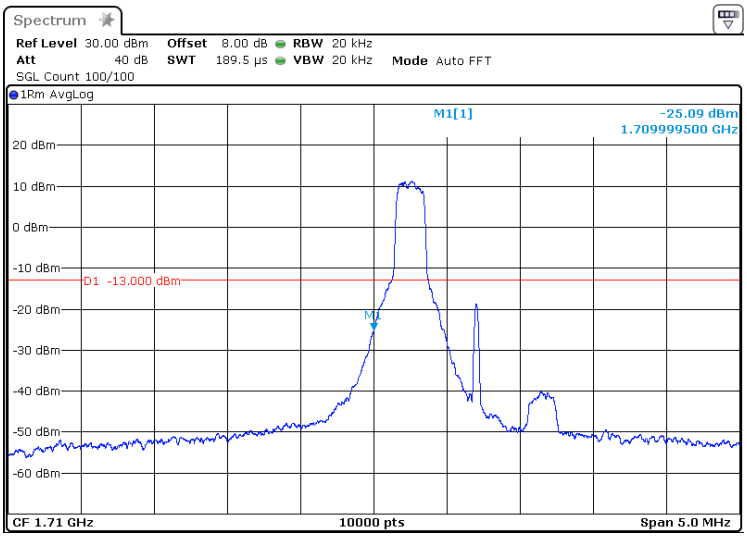
RB 3/3



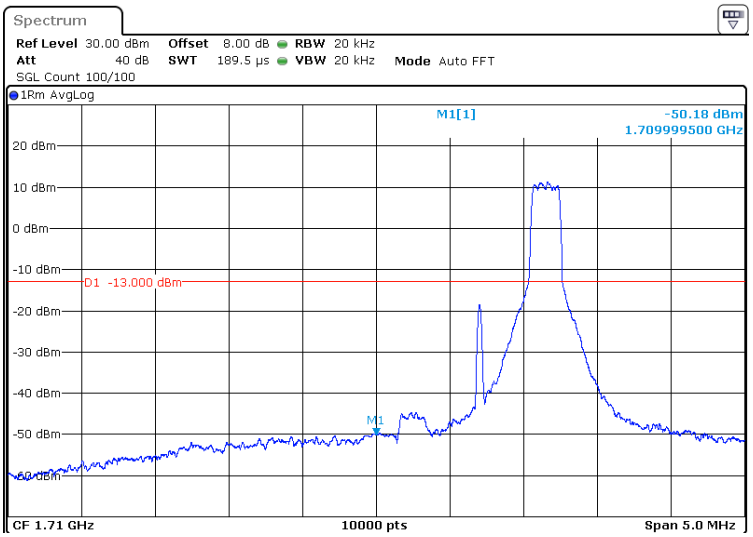
RB 6/0



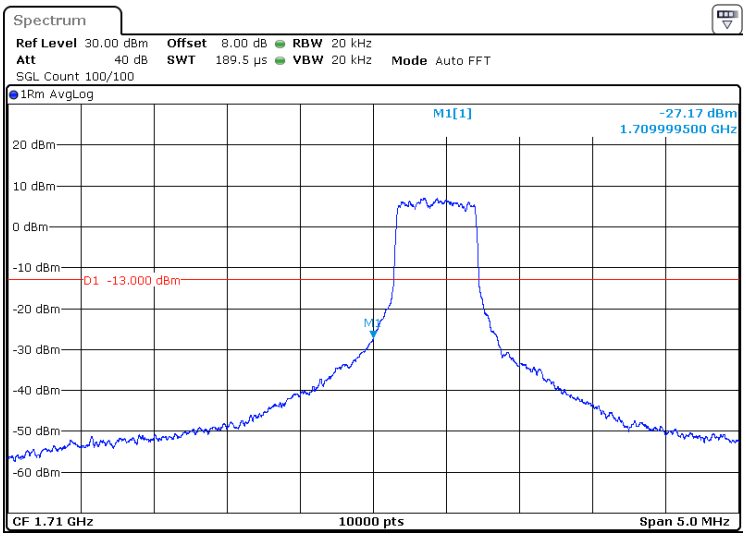
16QAM (1.4 ㎒ Bandwidth)
LOW
RB 1/0



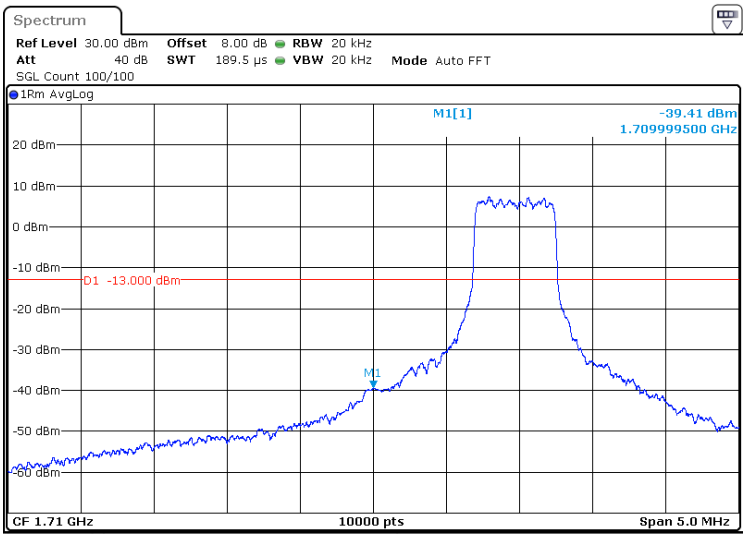
RB 1/5



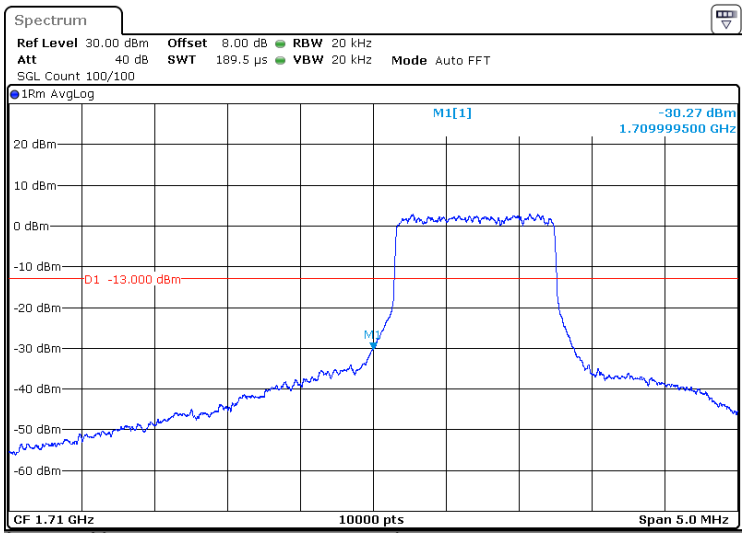
RB 3/0



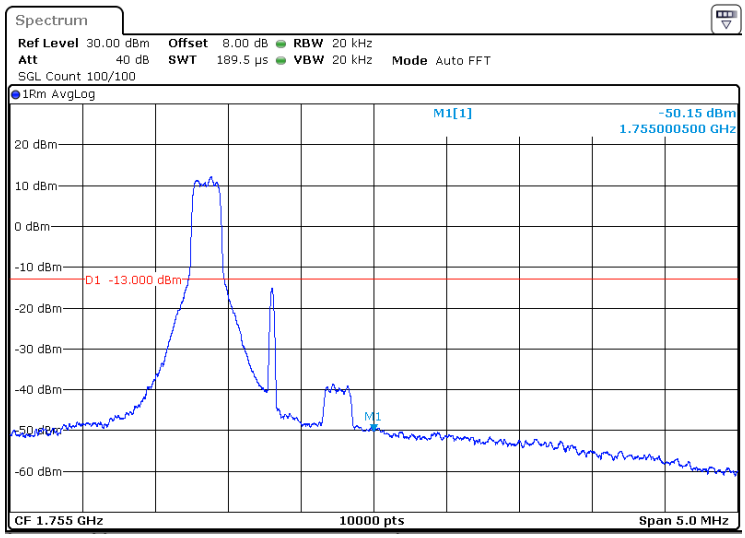
RB 3/3



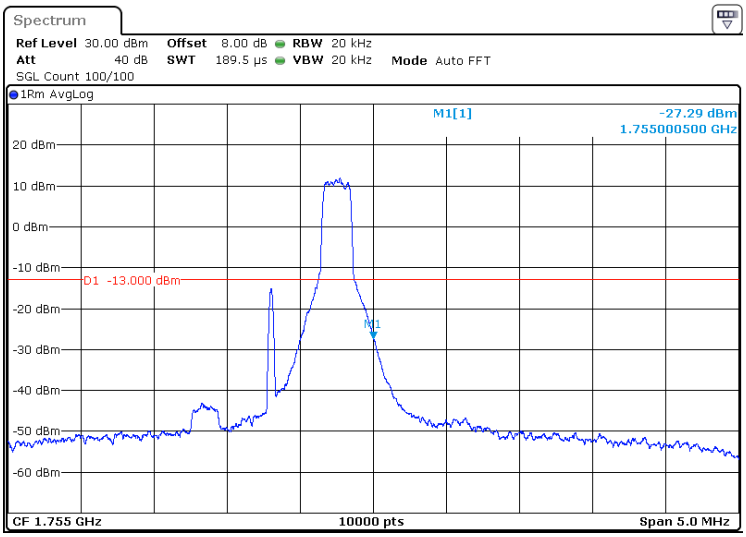
RB 6/0



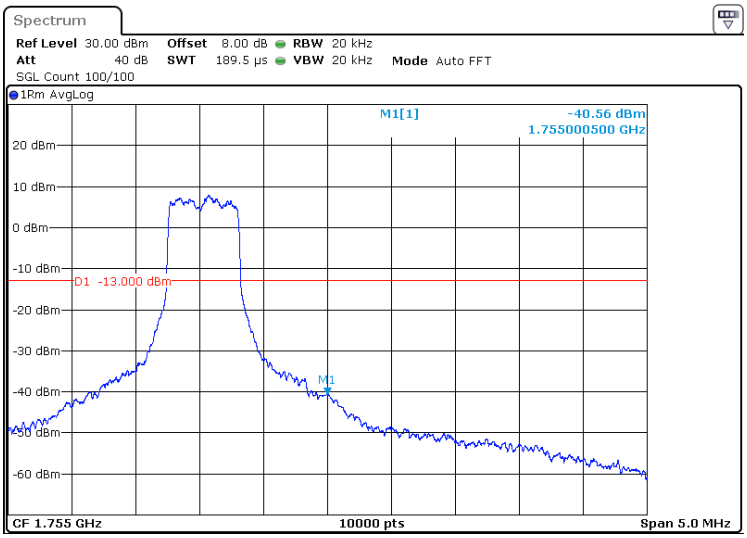
HIGH
RB 1/0



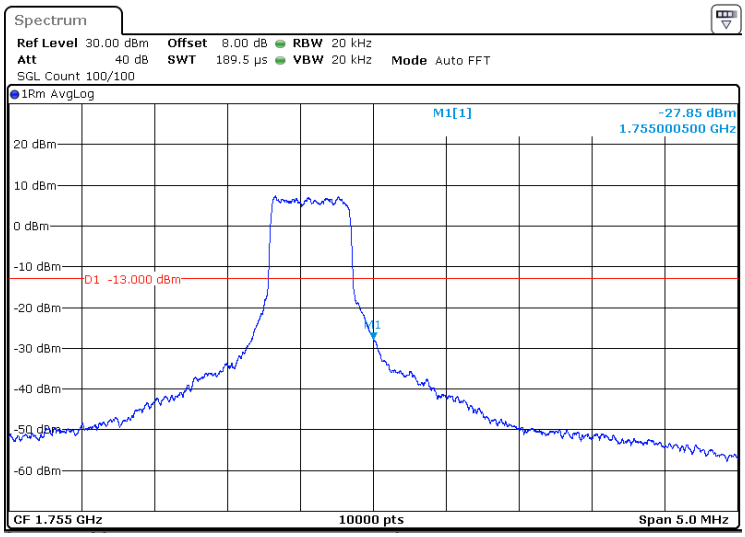
RB 1/5



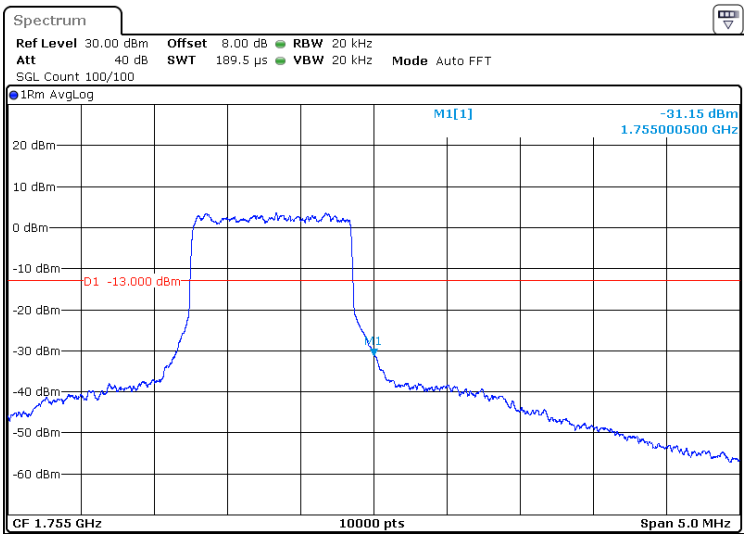
RB 3/0



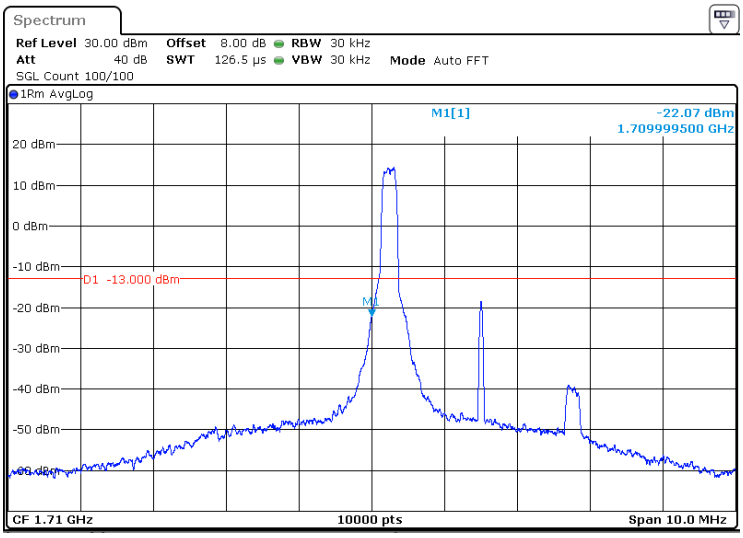
RB 3/3



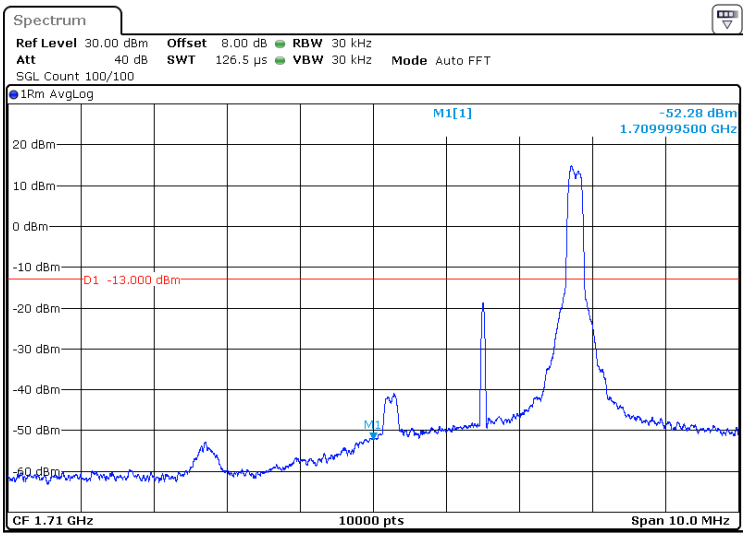
RB 6/0



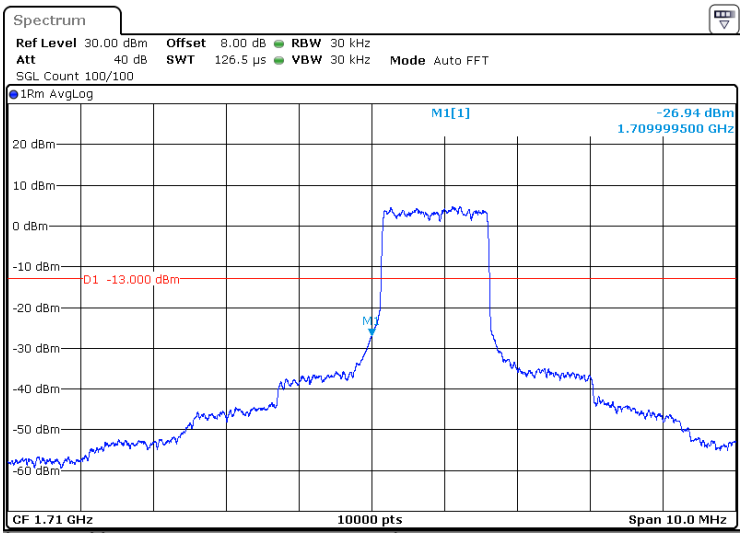
QPSK (3 ㎒ Bandwidth)
LOW
RB 1/0



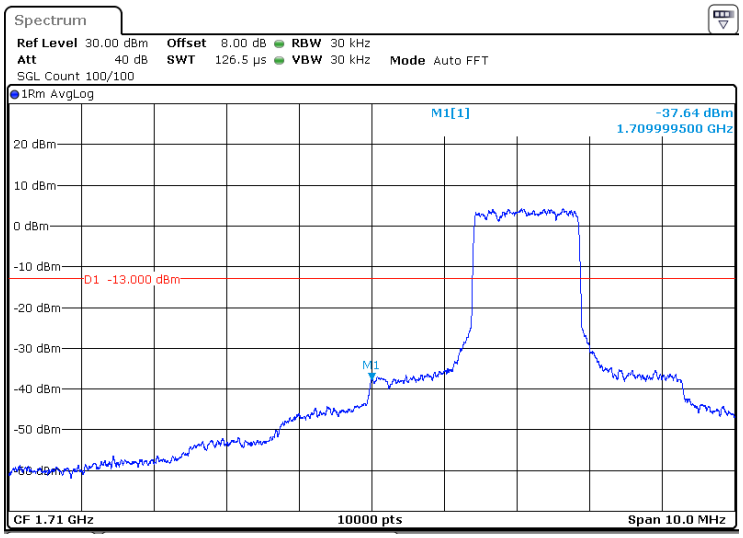
RB 1/14



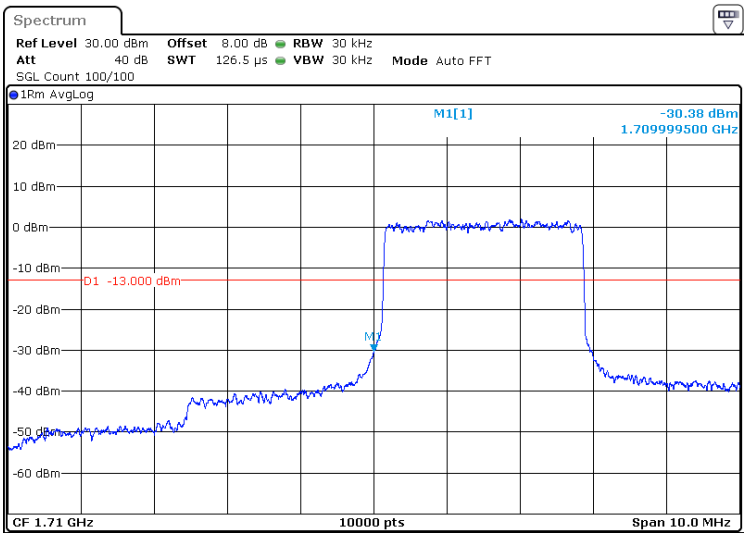
RB 8/0



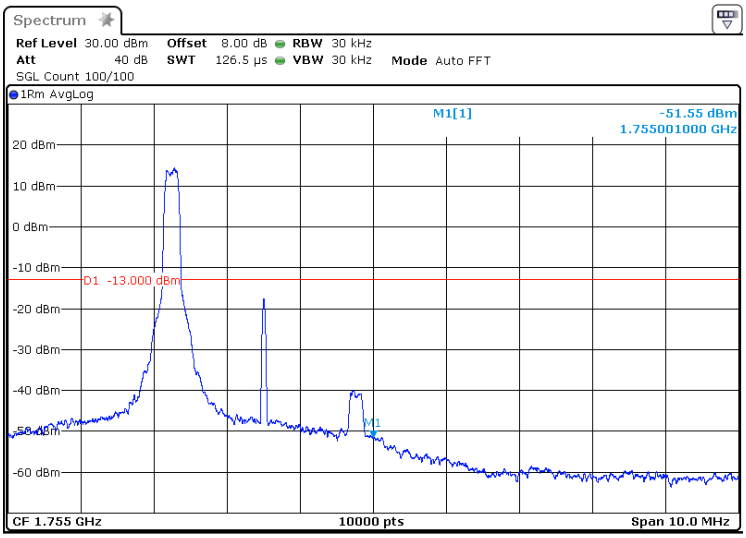
RB 8/7



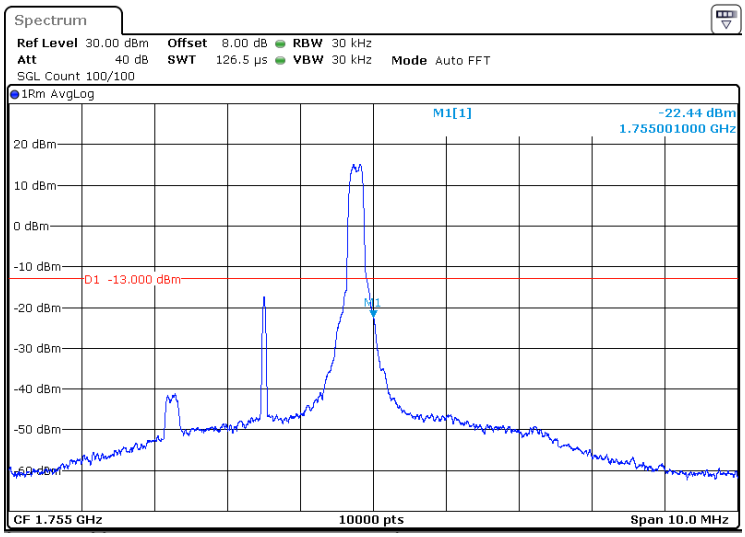
RB 15/0



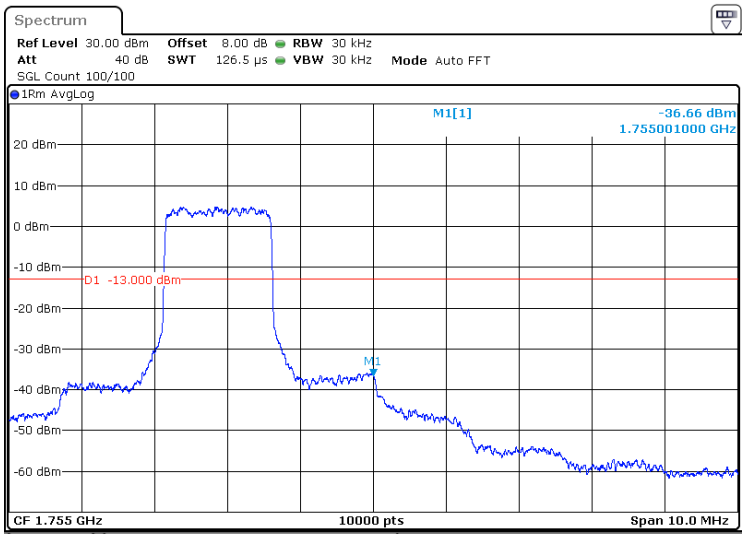
HIGH
RB 1/0



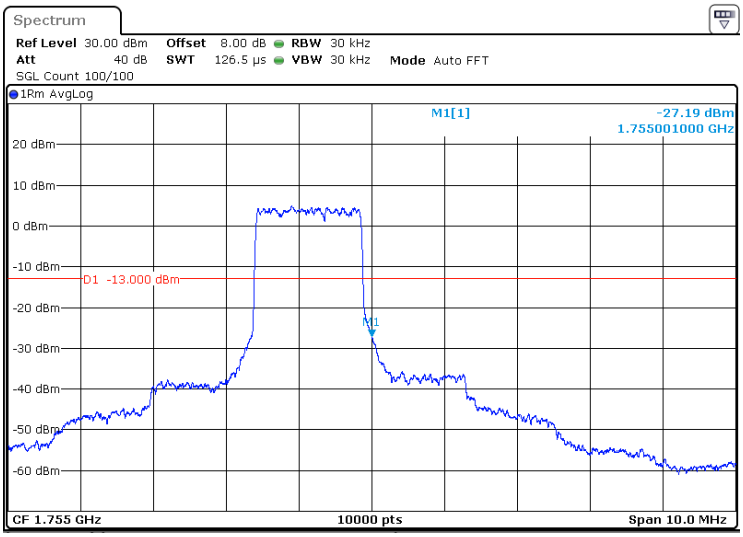
RB 1/14



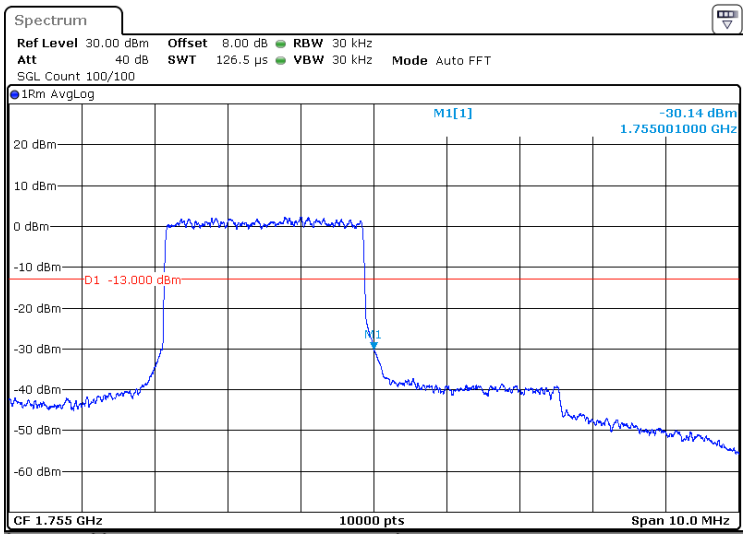
RB 8/0



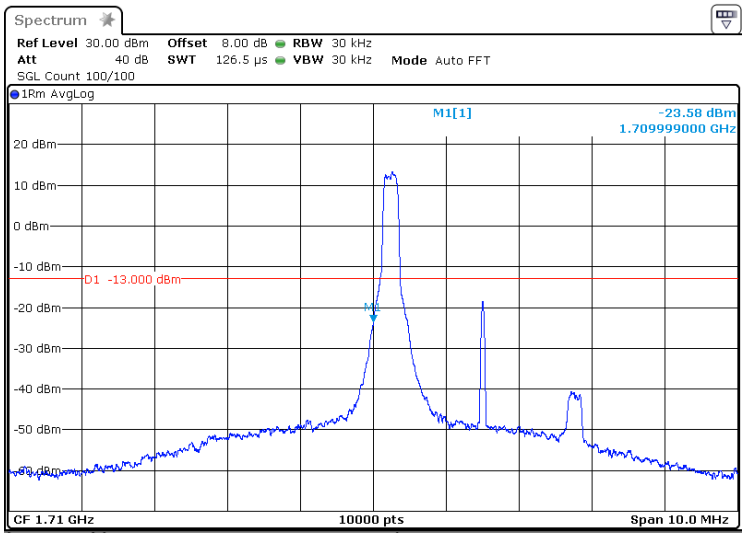
RB 8/7



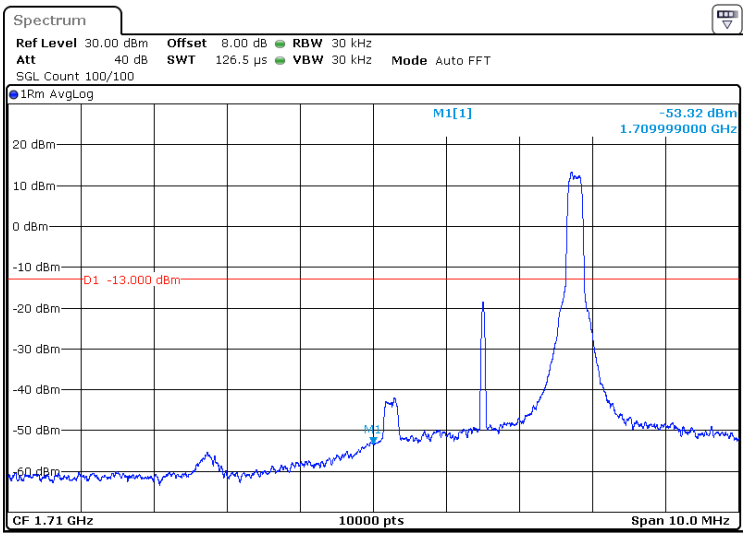
RB 15/0



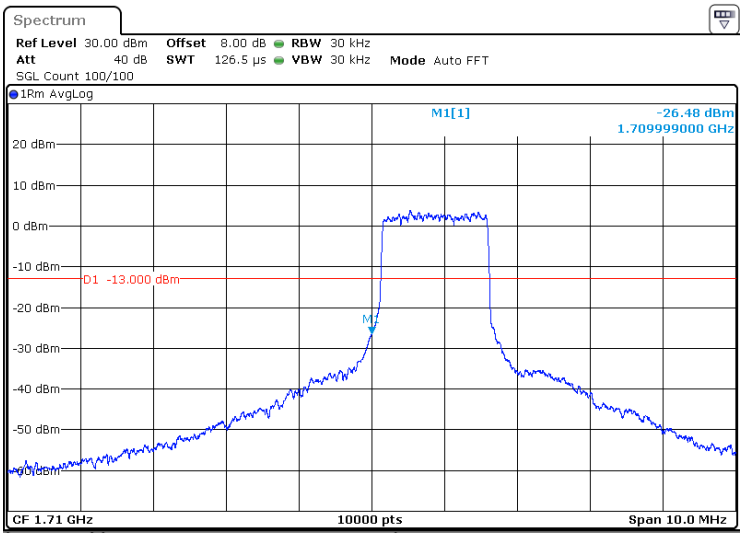
16QAM (3 ㎒ Bandwidth)
LOW
RB 1/0



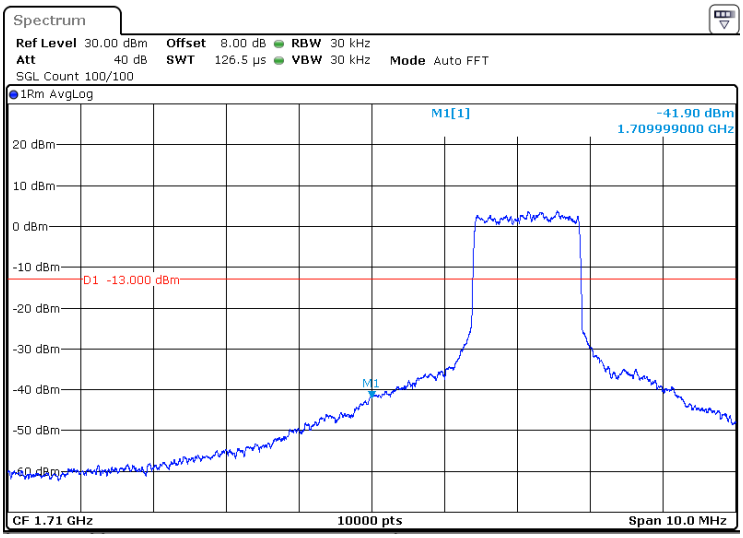
RB 1/14



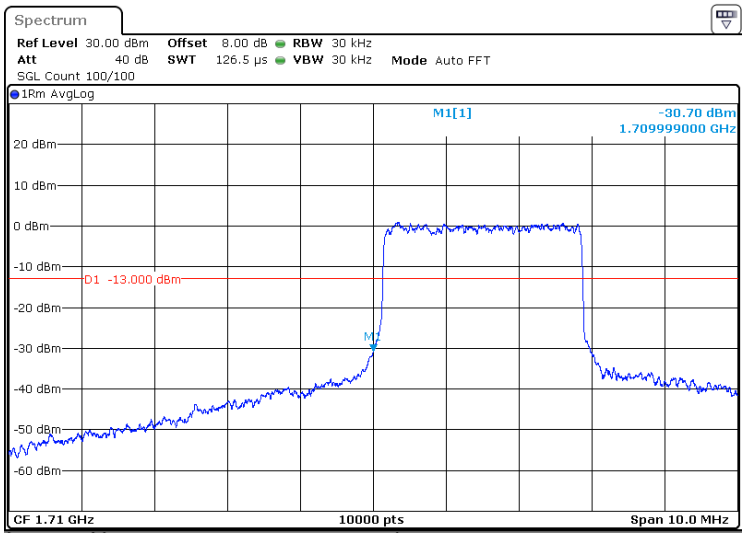
RB 8/0



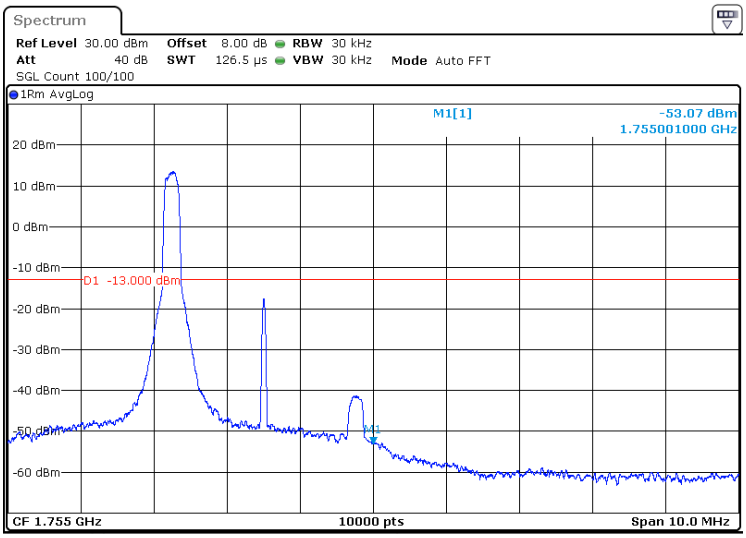
RB 8/7



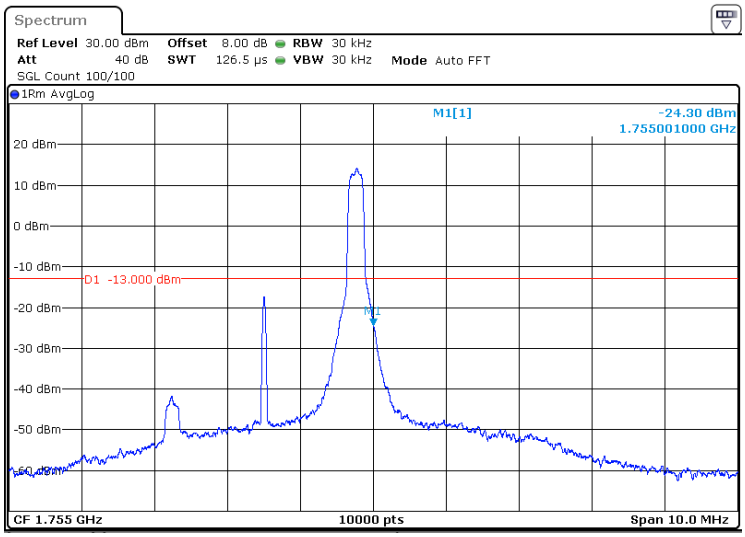
RB 15/0



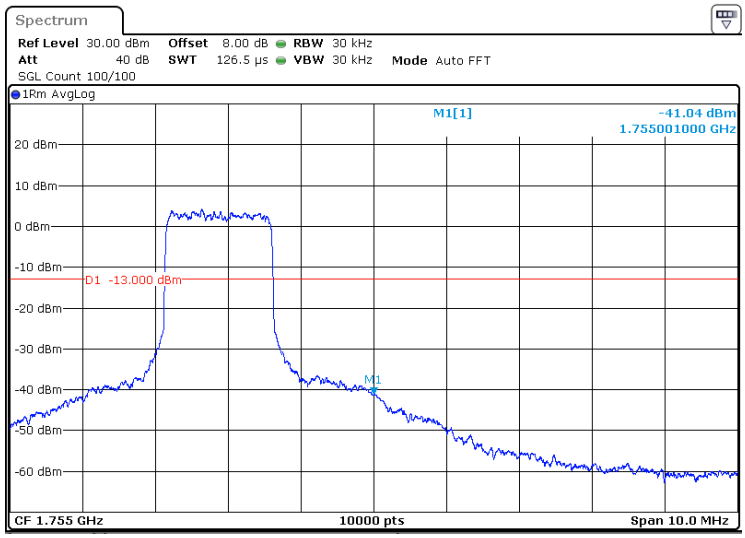
HIGH
RB 1/0



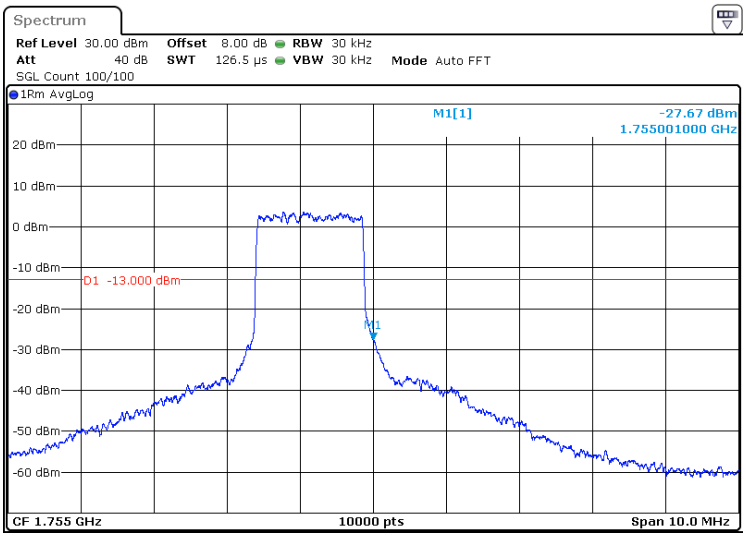
RB 1/14



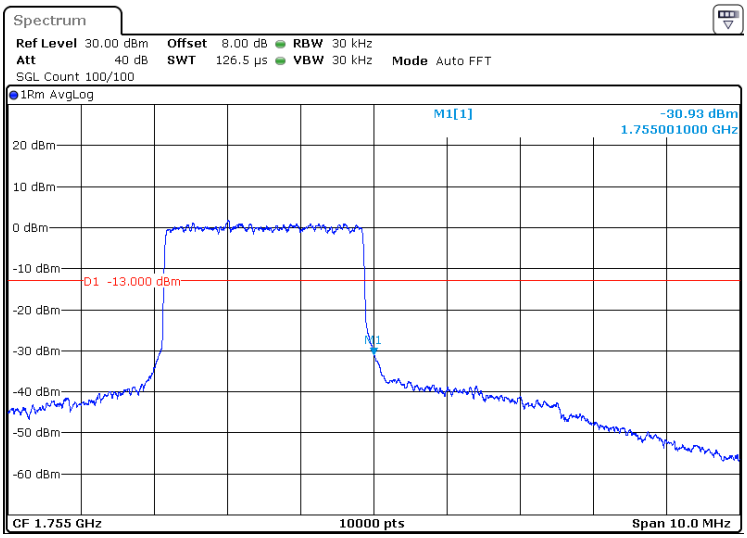
RB 8/0



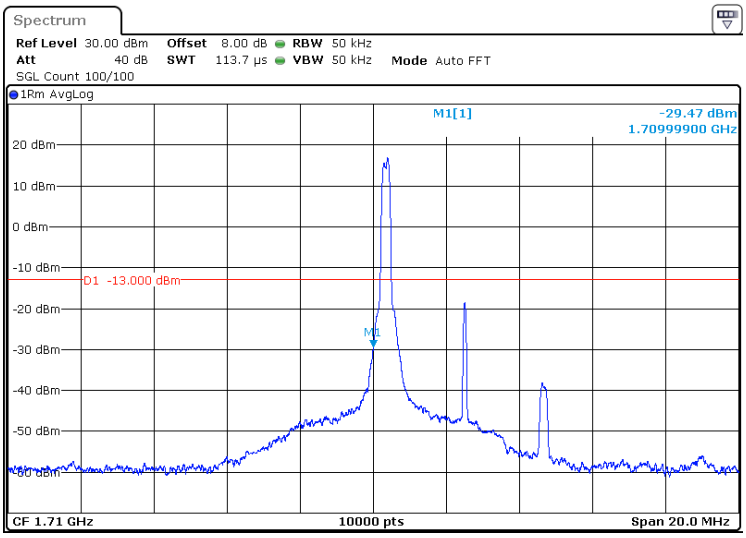
RB 8/7



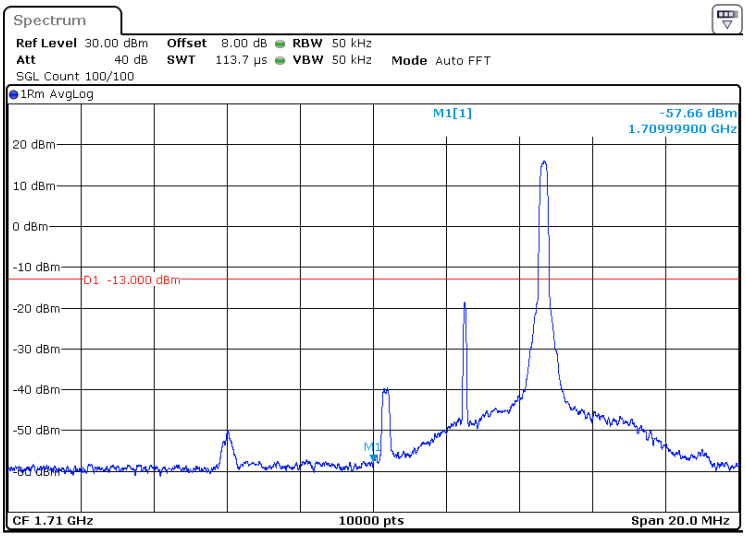
RB 15/0



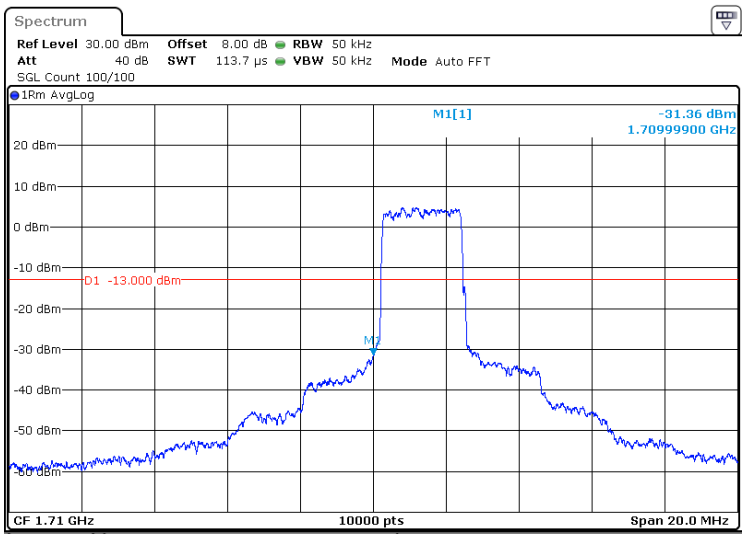
QPSK (5 ㎒ Bandwidth)
LOW
RB 1/0



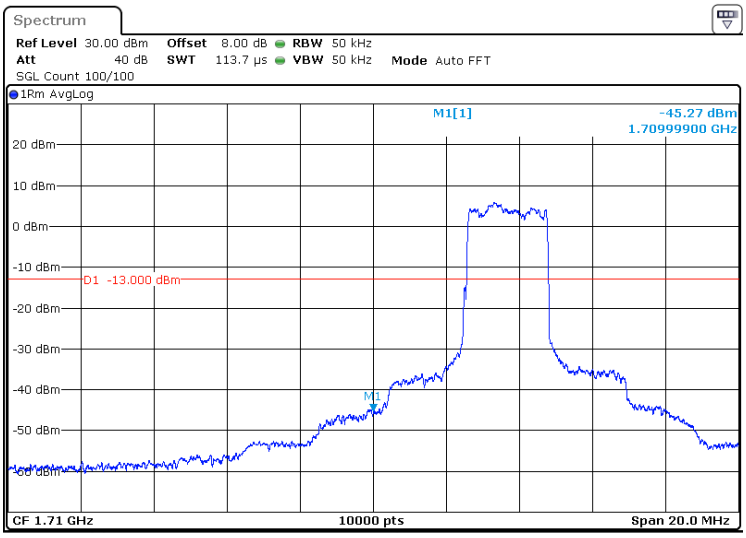
RB 1/24



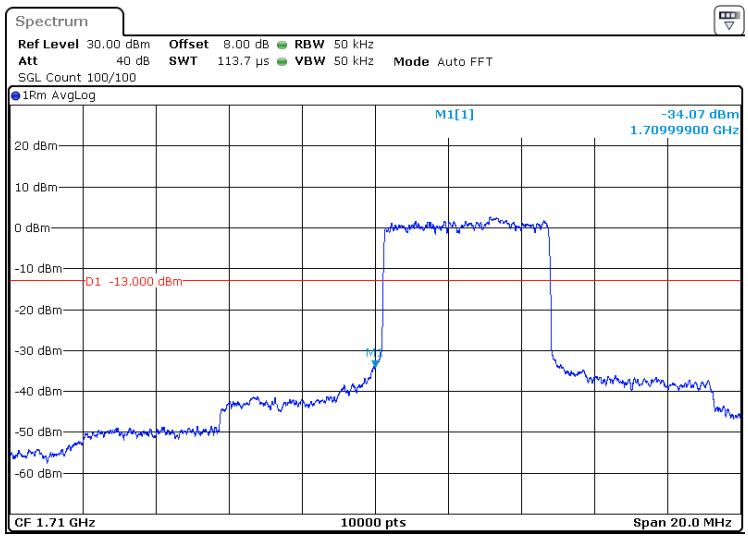
RB 12/0



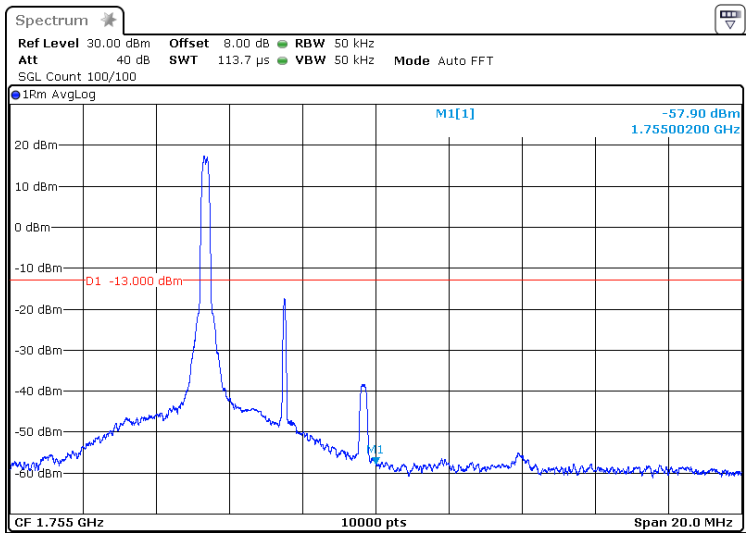
RB 12/13



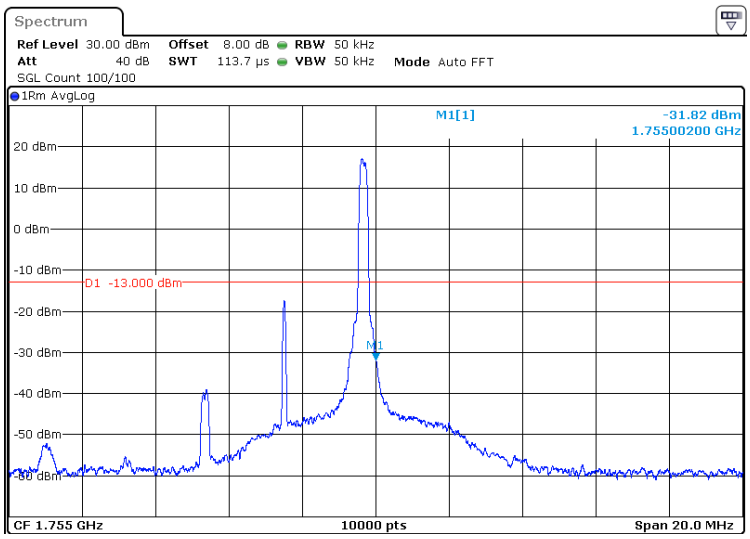
RB 25/0



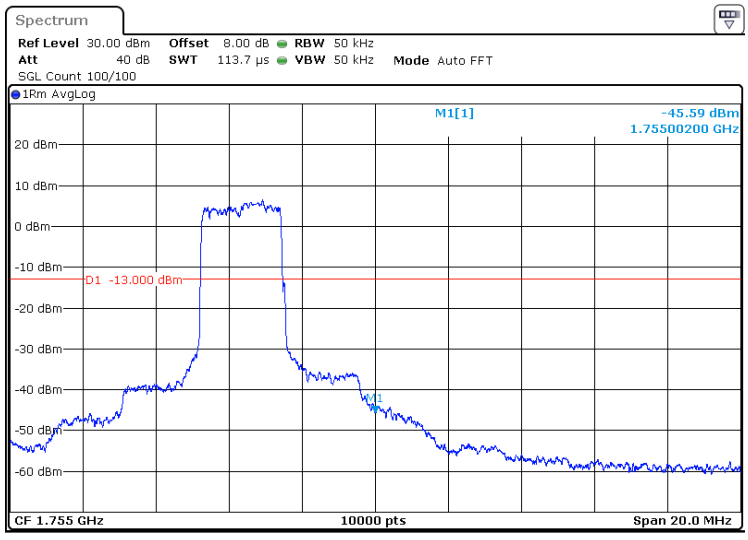
HIGH
RB 1/0



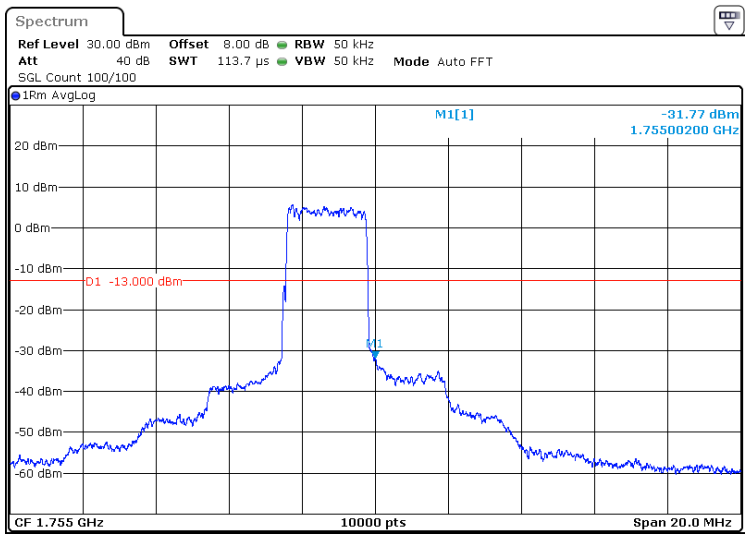
RB 1/24



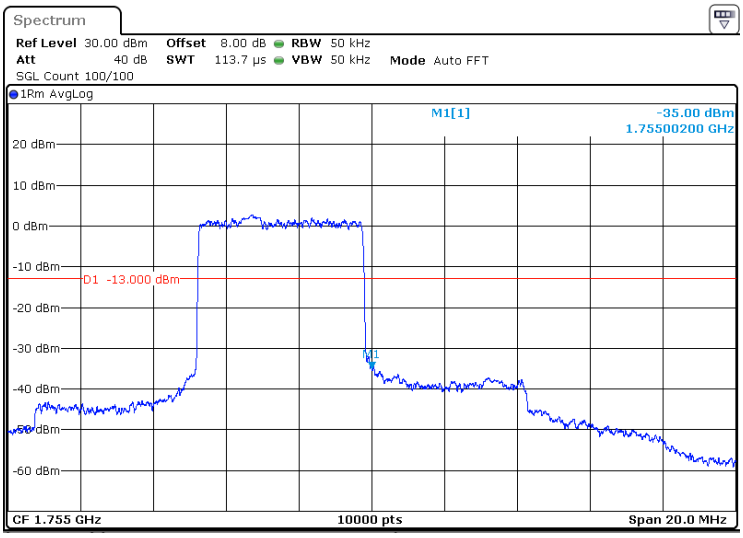
RB 12/0



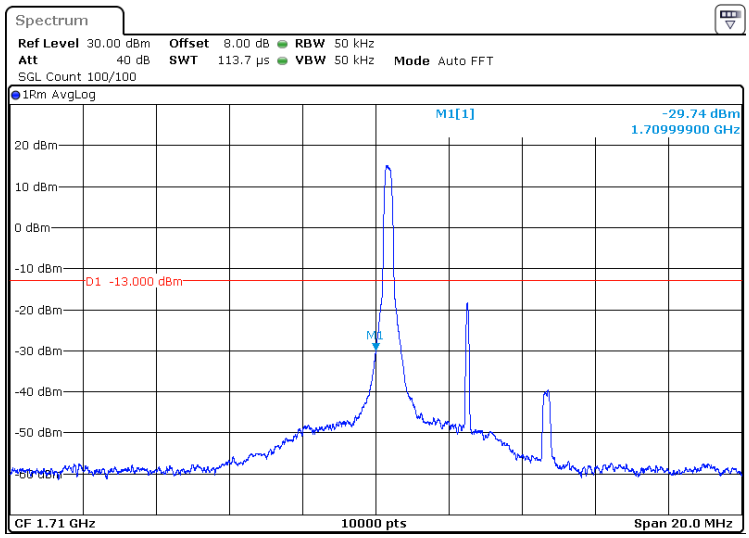
RB 12/13



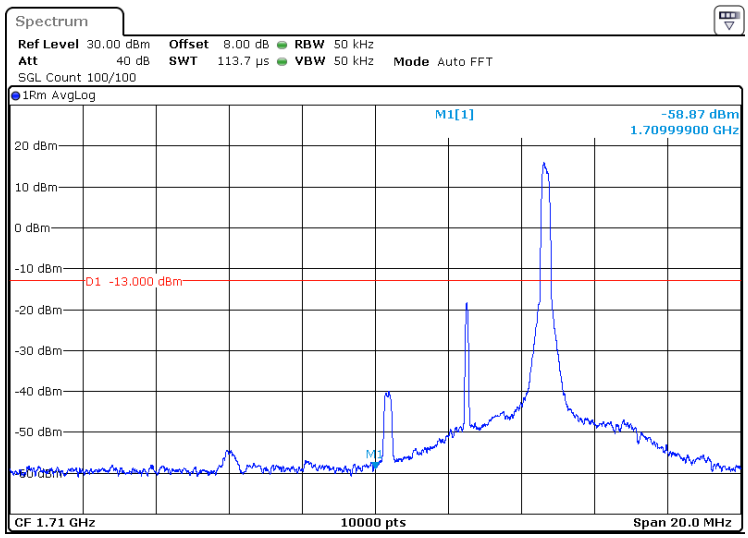
RB 25/0



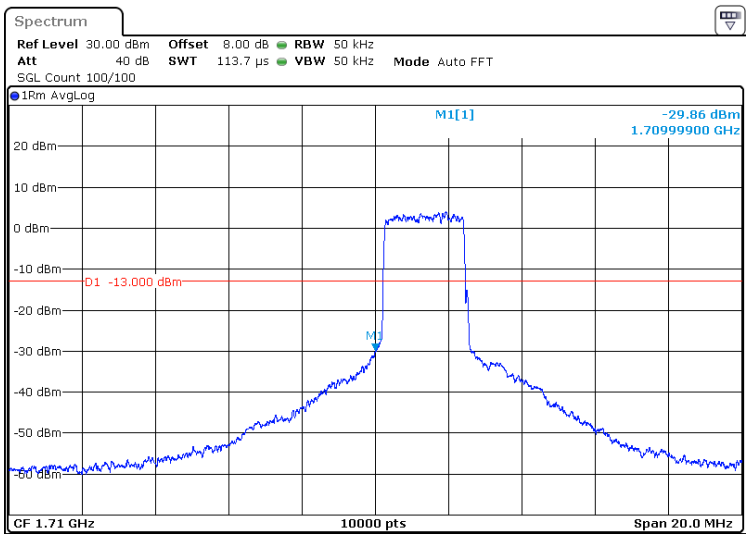
16QAM (5 ㎒ Bandwidth)
LOW
RB 1/0



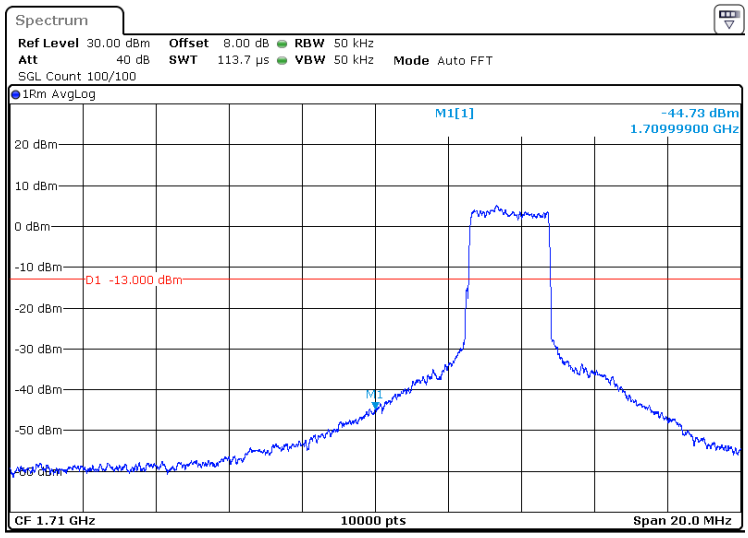
RB 1/24



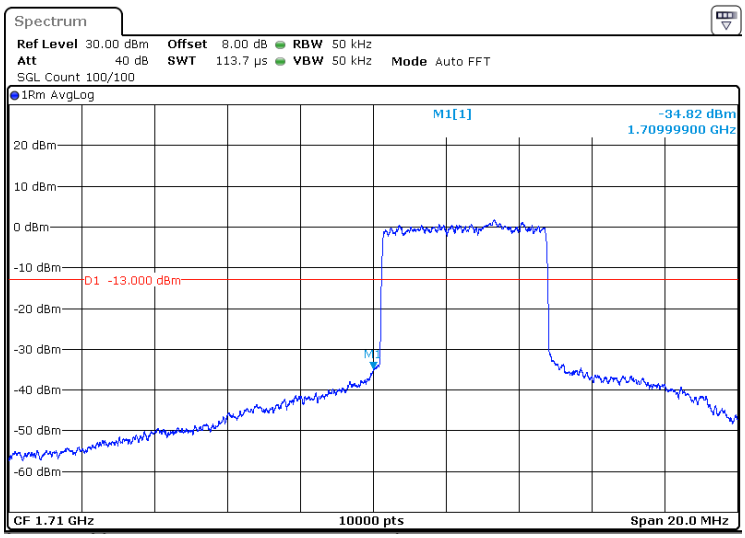
RB 12/0



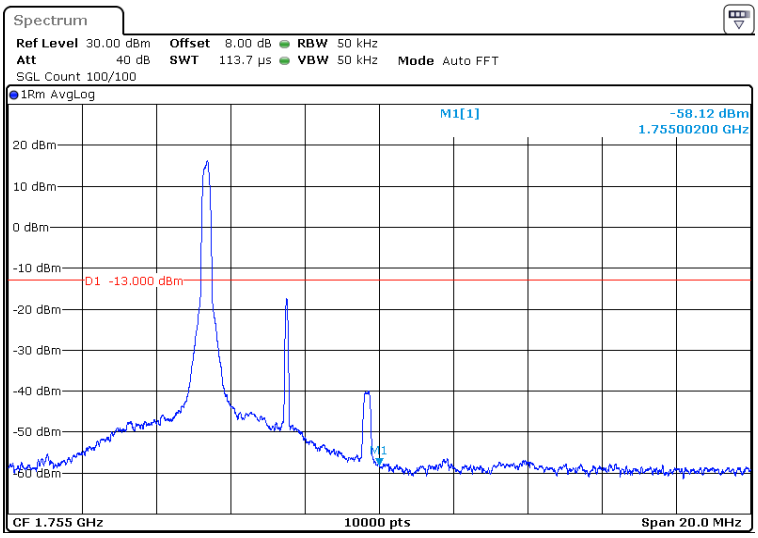
RB 12/13



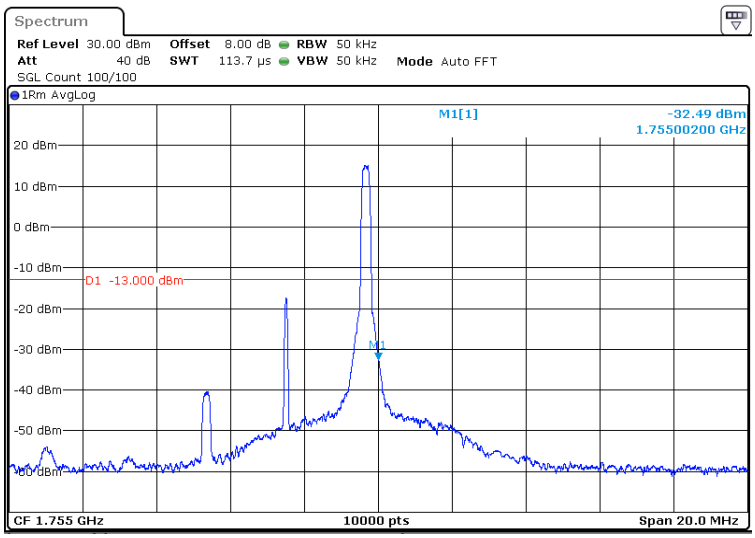
RB 25/0



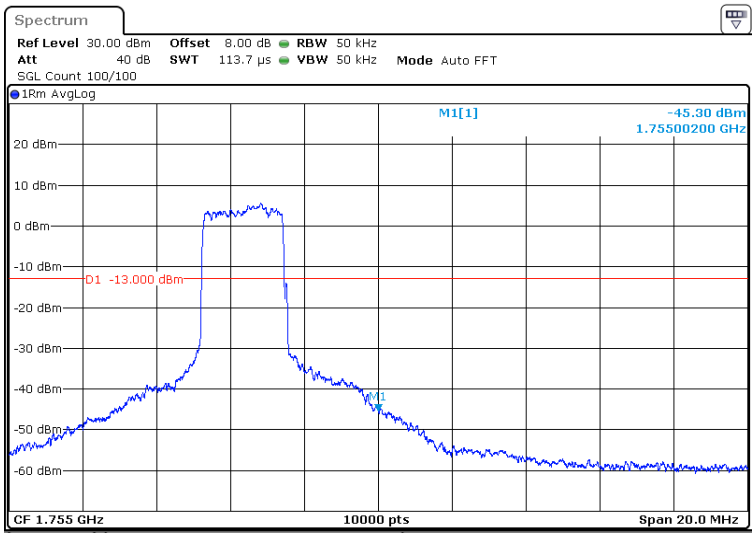
HIGH
RB 1/0



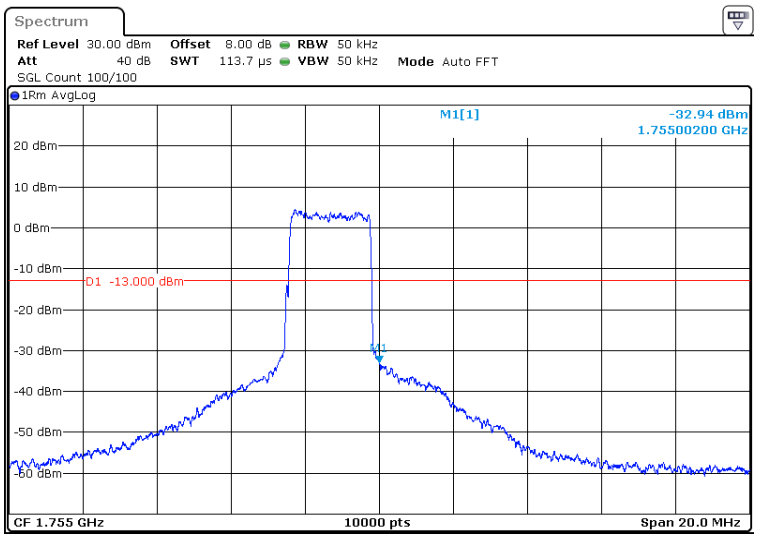
RB 1/24



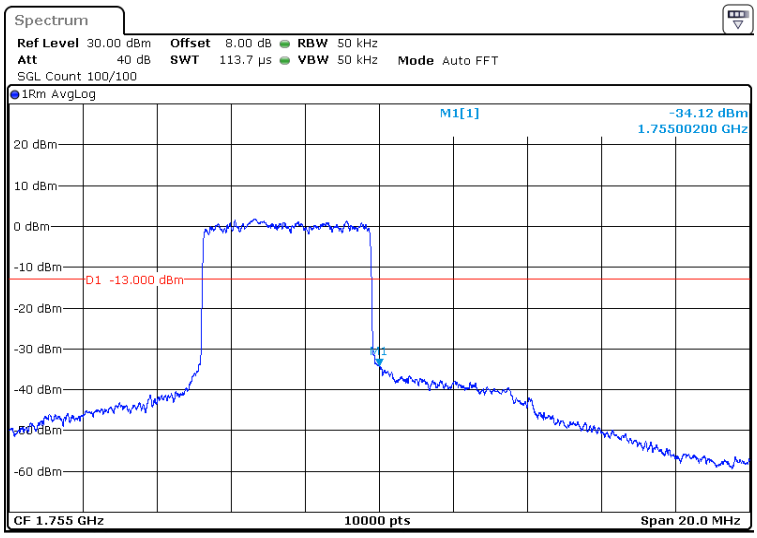
RB 12/0



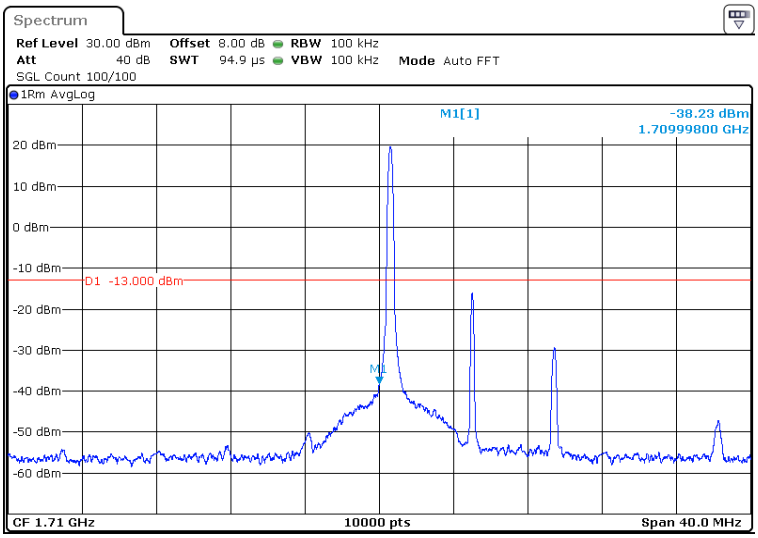
RB 12/13



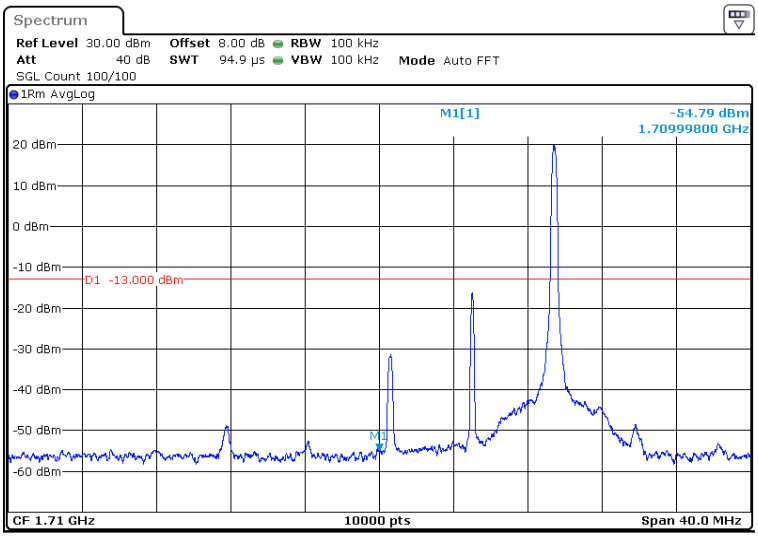
RB 25/0



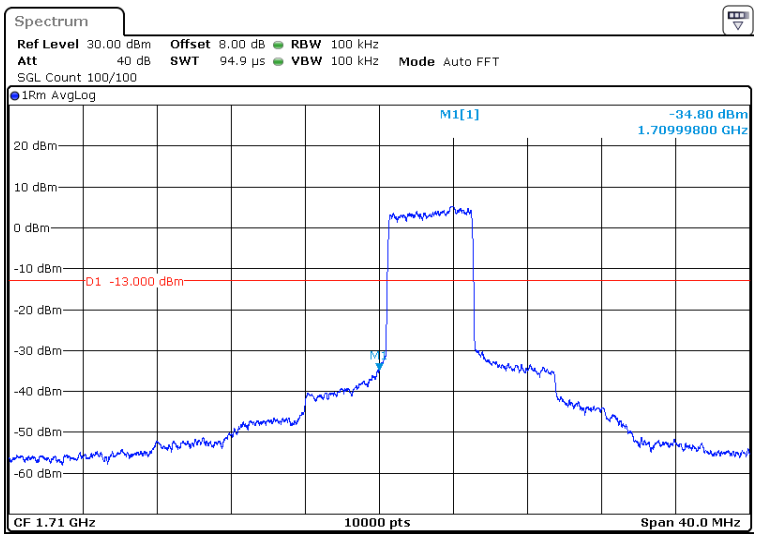
QPSK (10 ㎒ Bandwidth)
LOW
RB 1/0



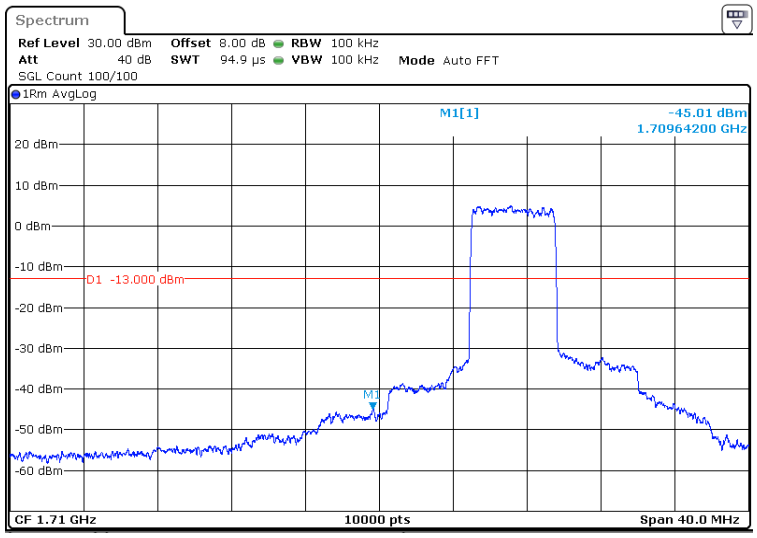
RB 1/49



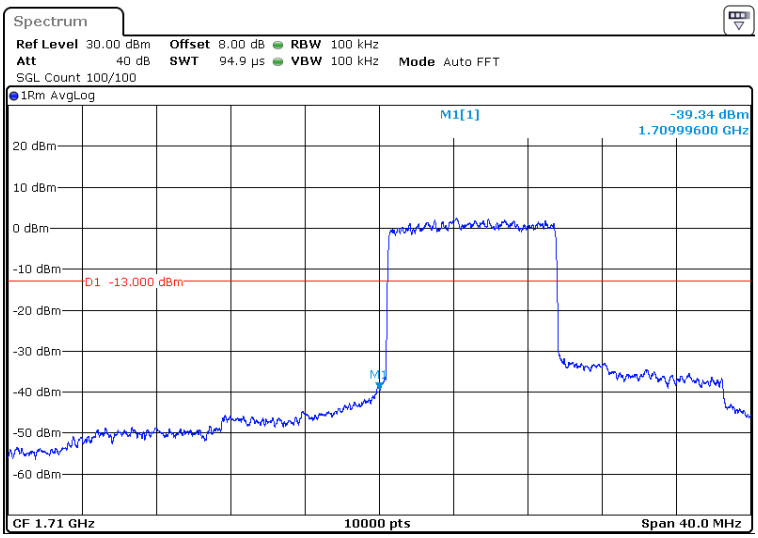
RB 25/0



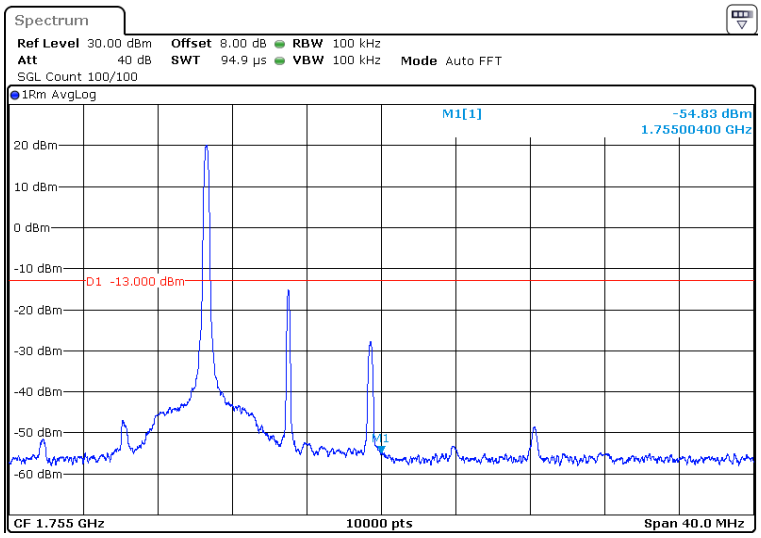
RB 25/25



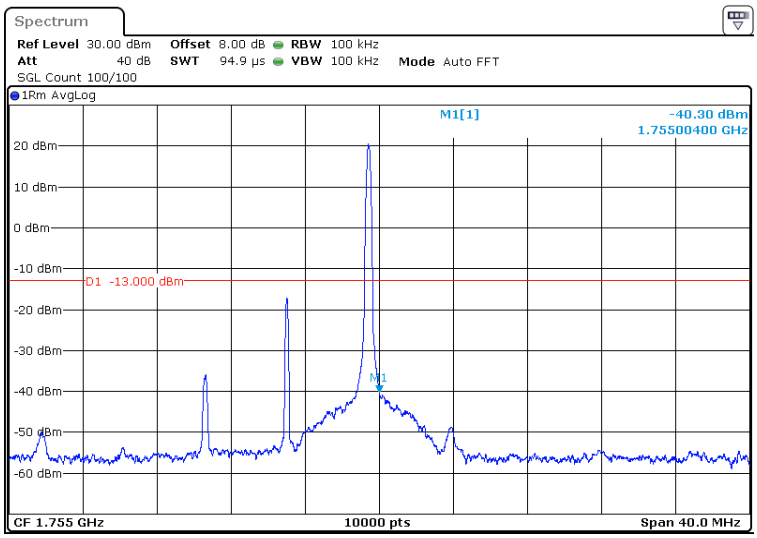
RB 50/0



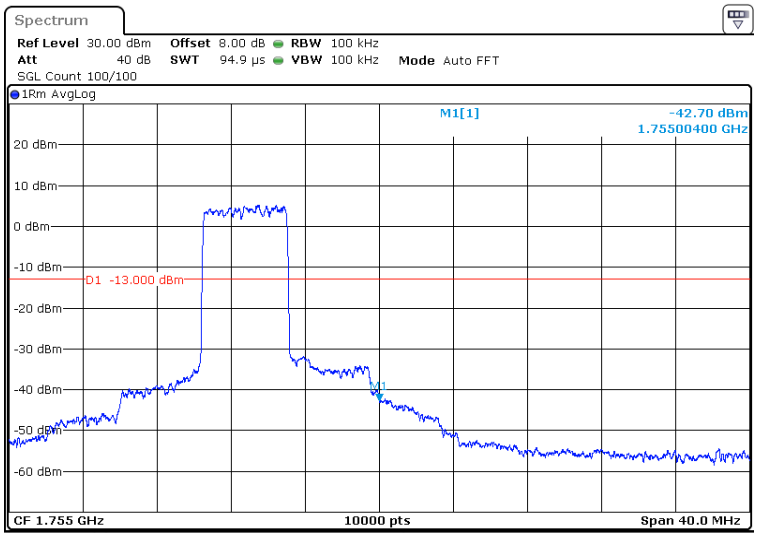
HIGH
RB 1/0



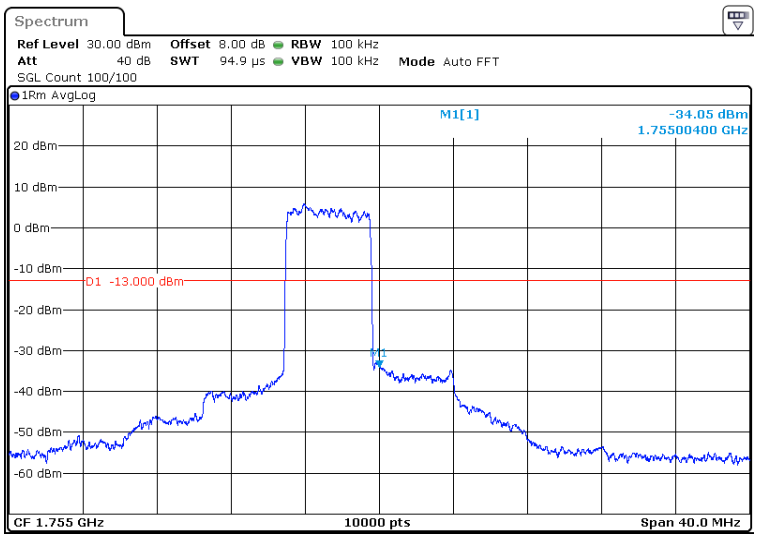
RB 1/49



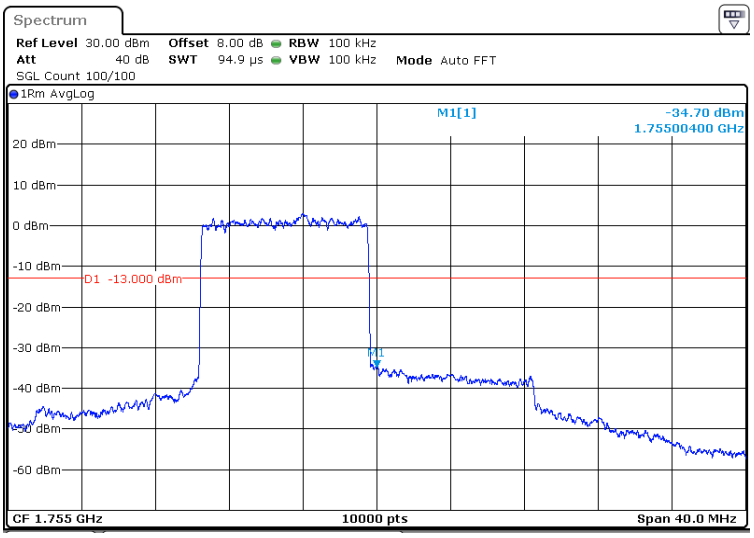
RB 25/0



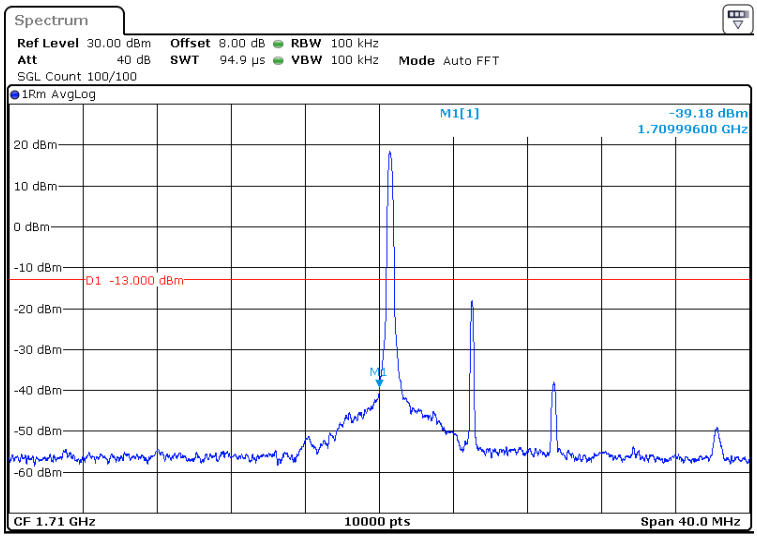
RB 25/25



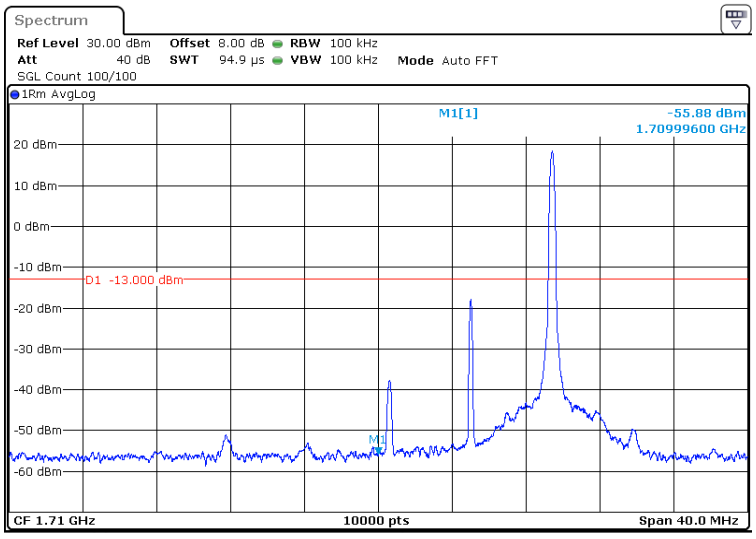
RB 50/0



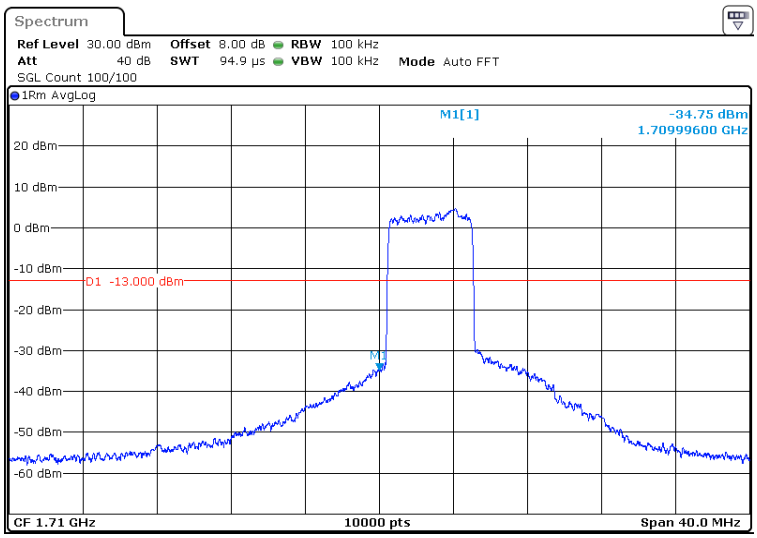
16QAM (10 ㎒ Bandwidth)
LOW
RB 1/0



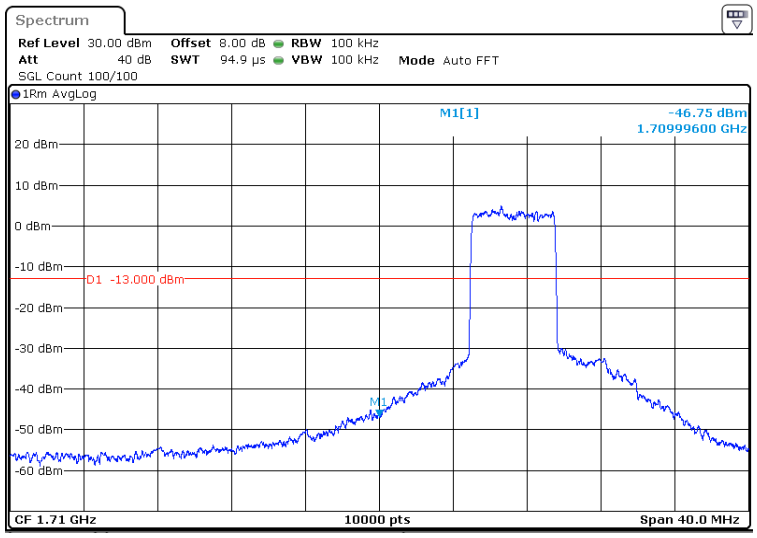
RB 1/49



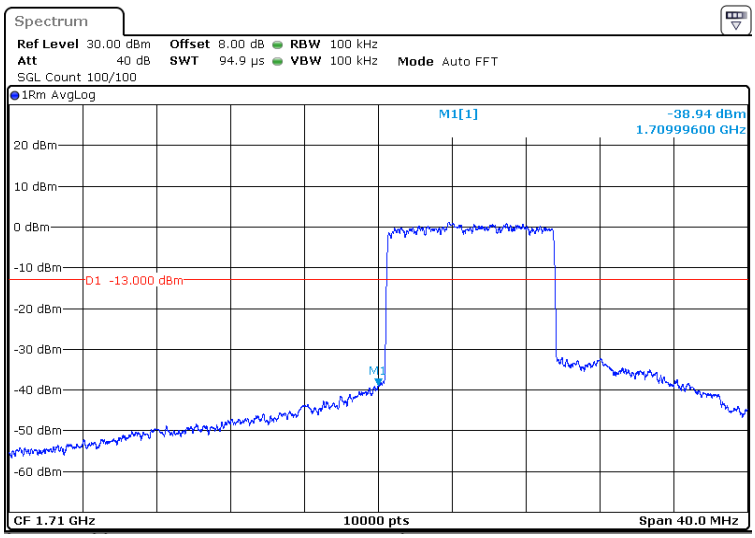
RB 25/0



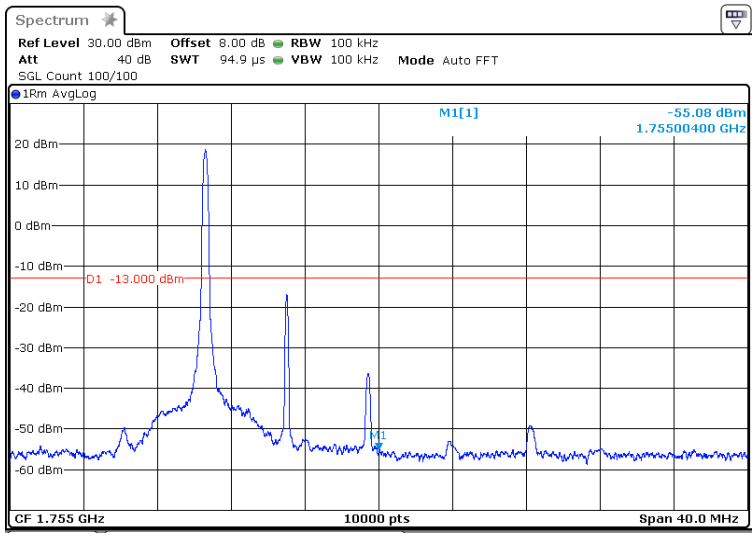
RB 25/25



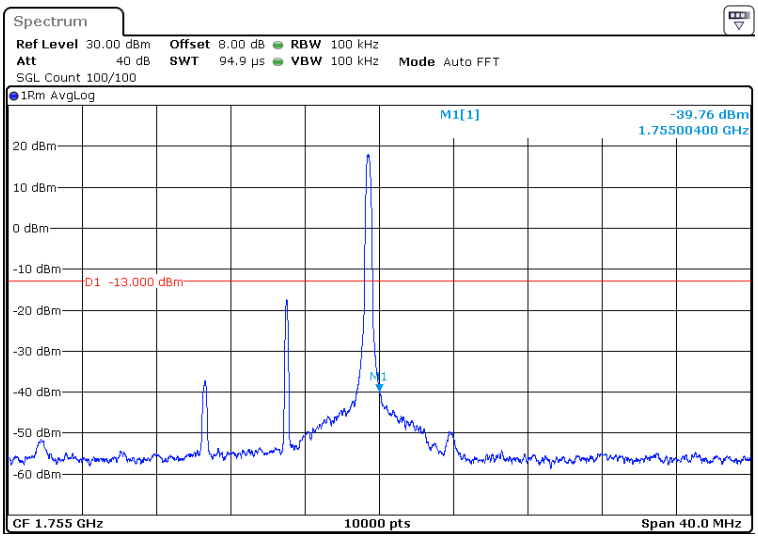
RB 50/0



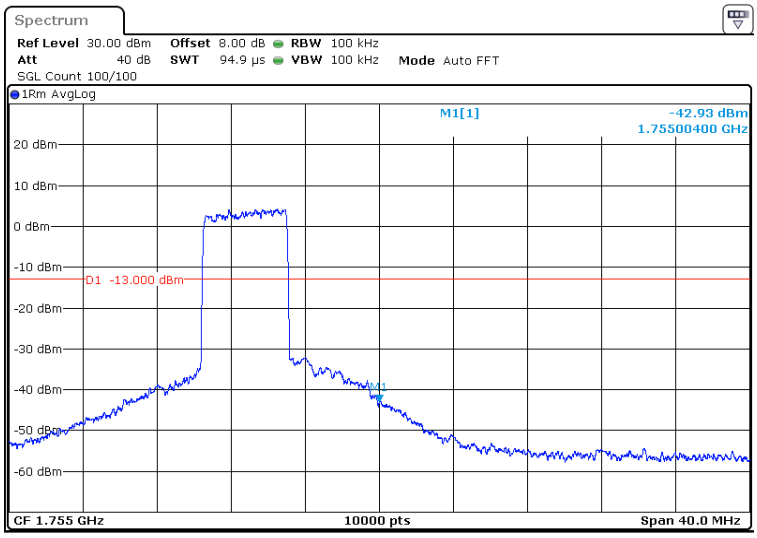
HIGH
RB 1/0



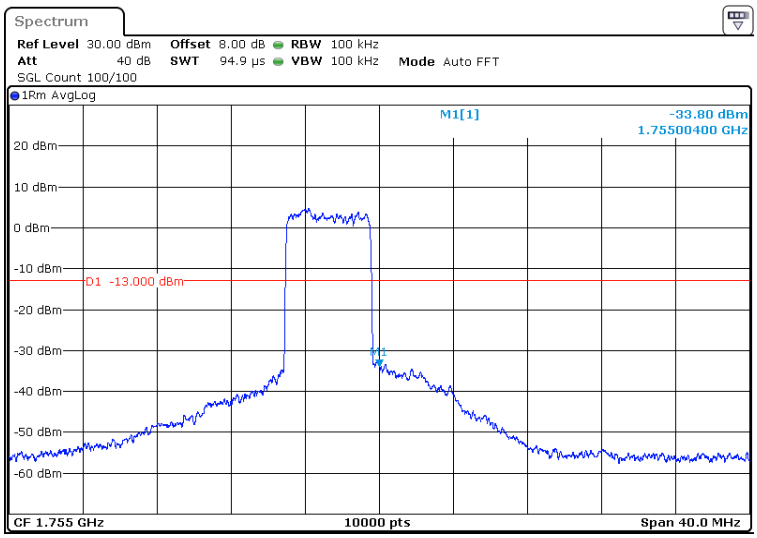
RB 1/49



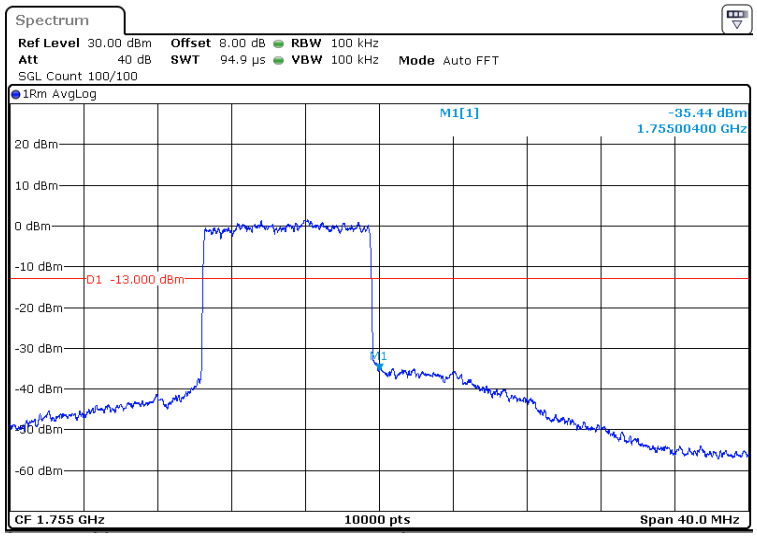
RB 25/0



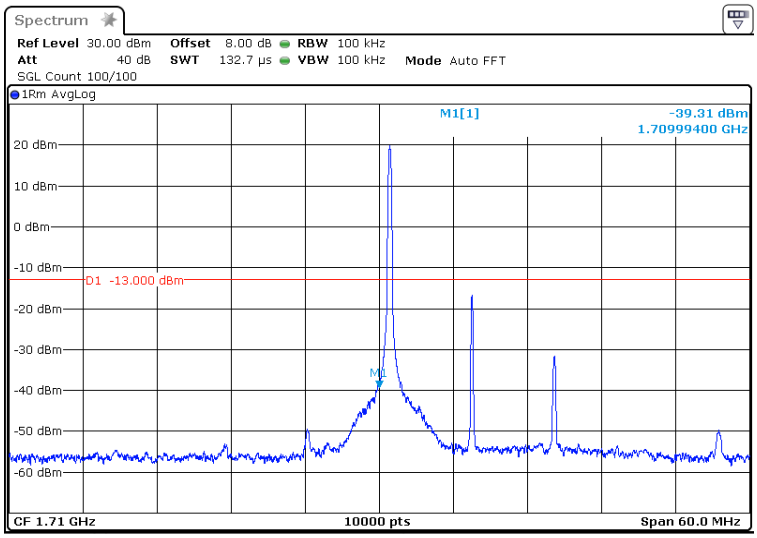
RB 25/25



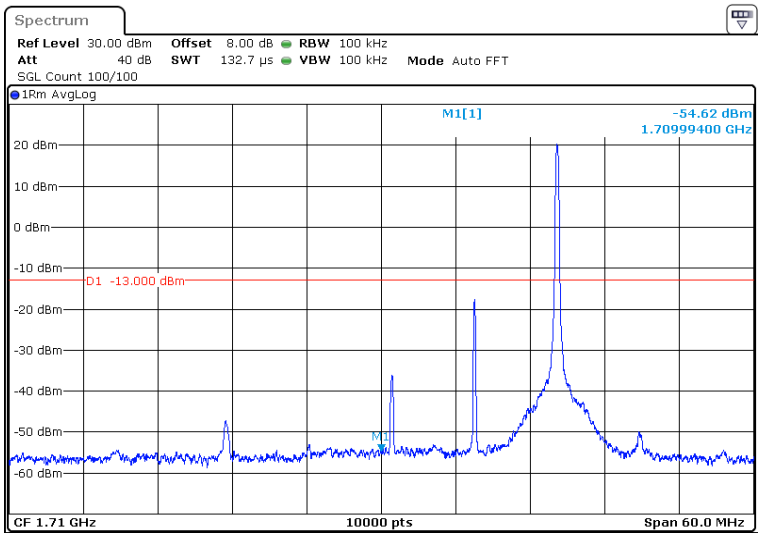
RB 50/0



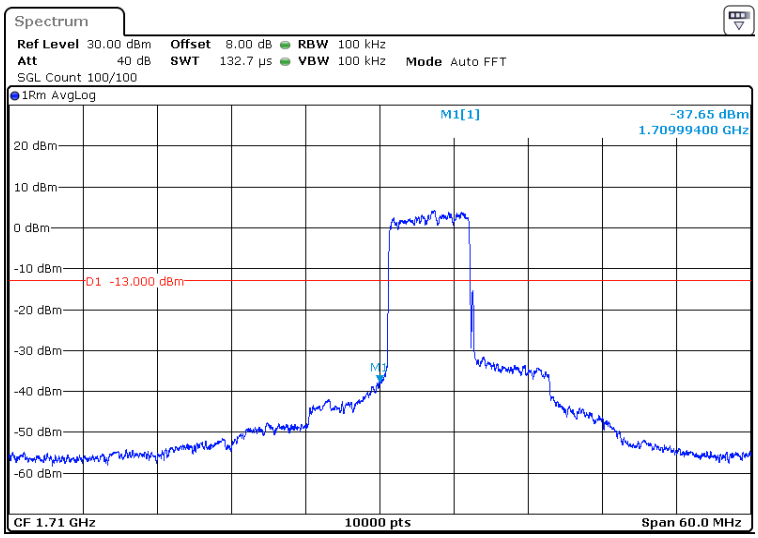
QPSK (15 ㎒ Bandwidth)
LOW
RB 1/0



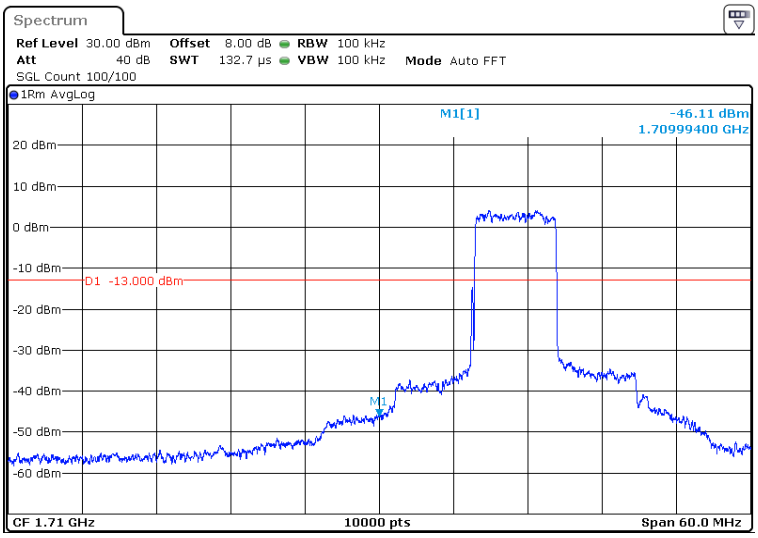
RB 1/74



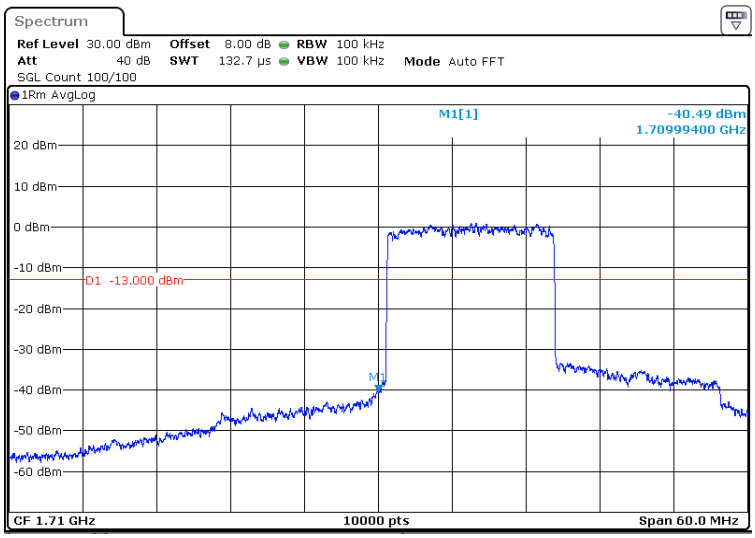
RB 36/0



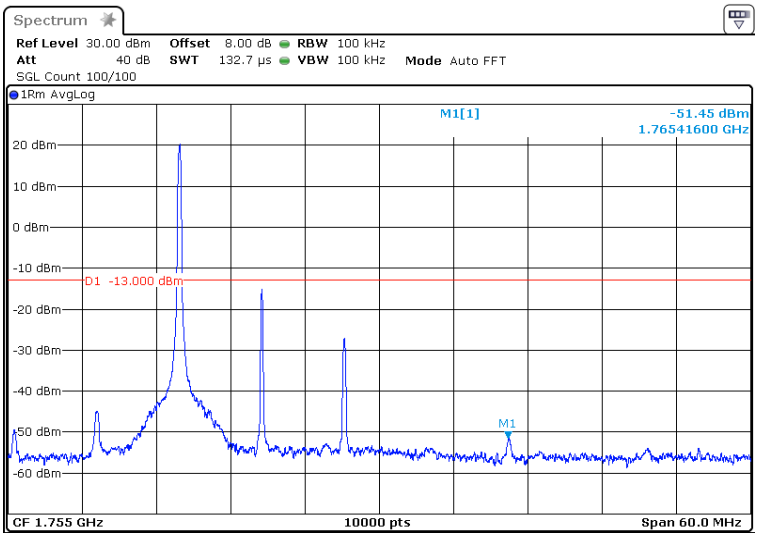
RB 36/39



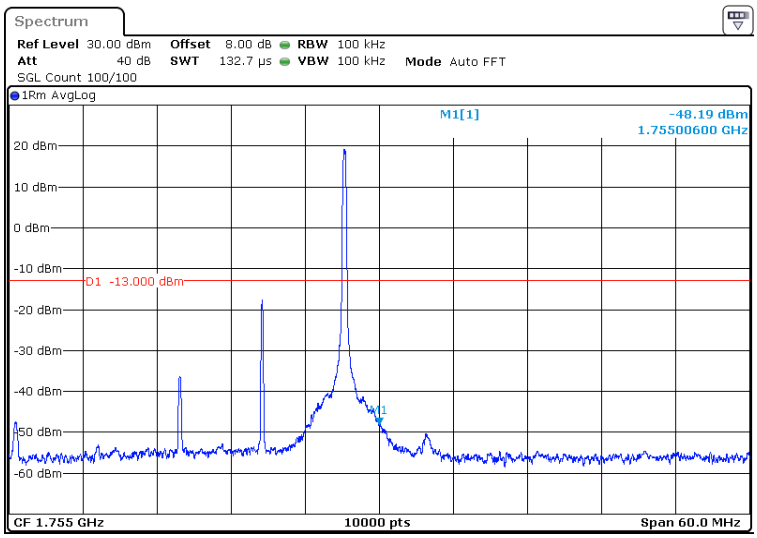
RB 75/0



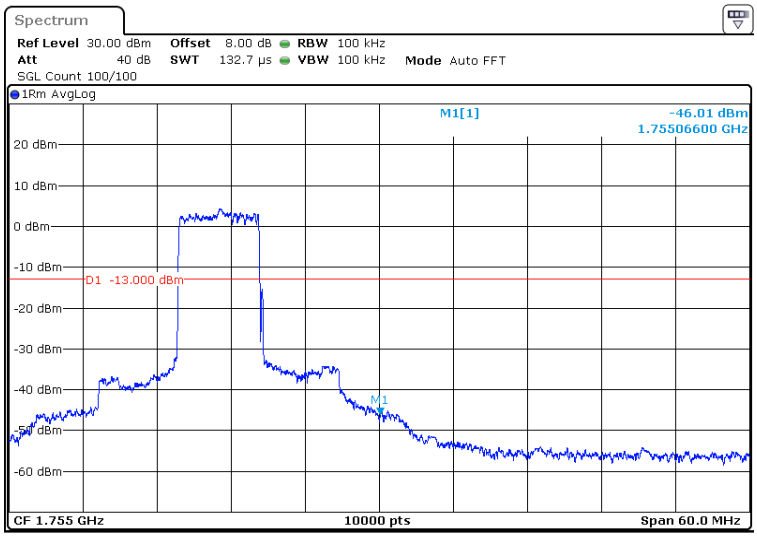
HIGH
RB 1/0



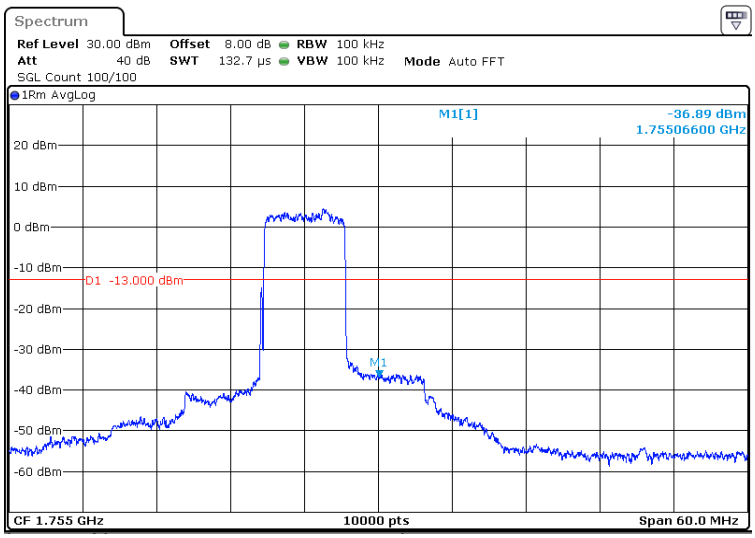
RB 1/74



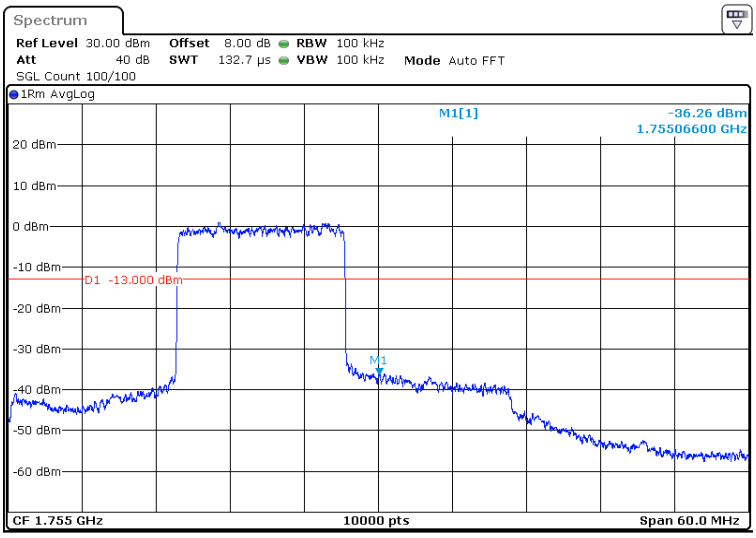
RB 36/0



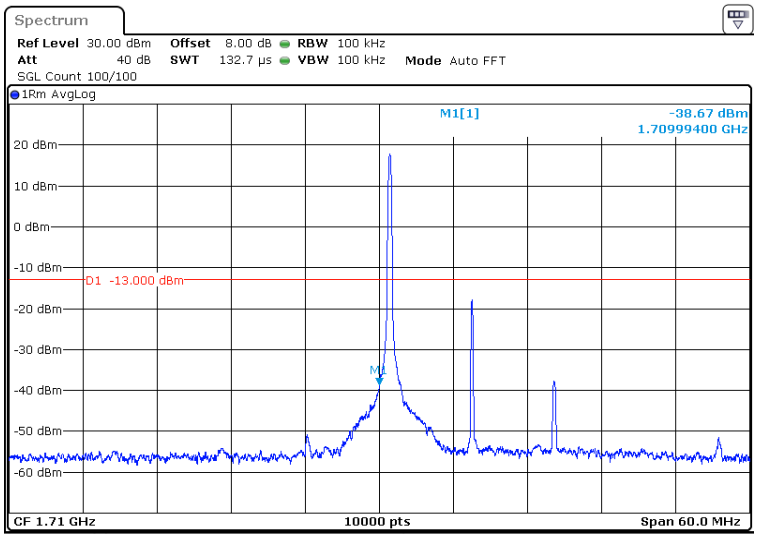
RB 36/39



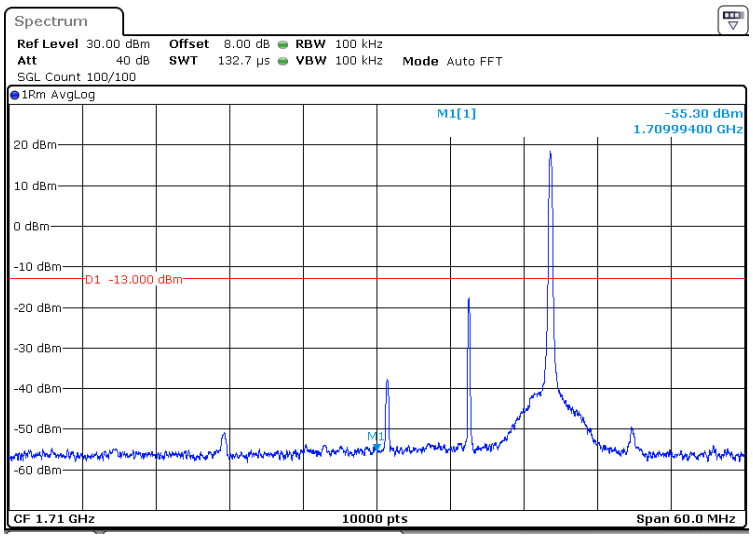
RB 75/0



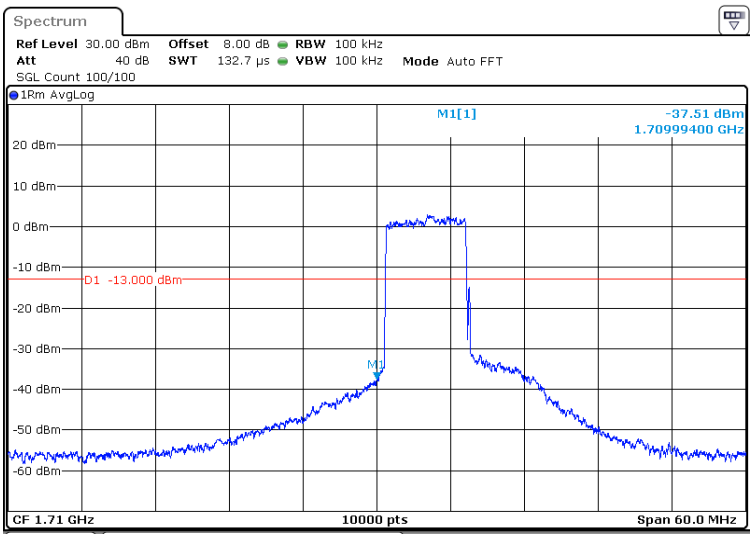
16QAM (15 ㎒ Bandwidth)
LOW
RB 1/0



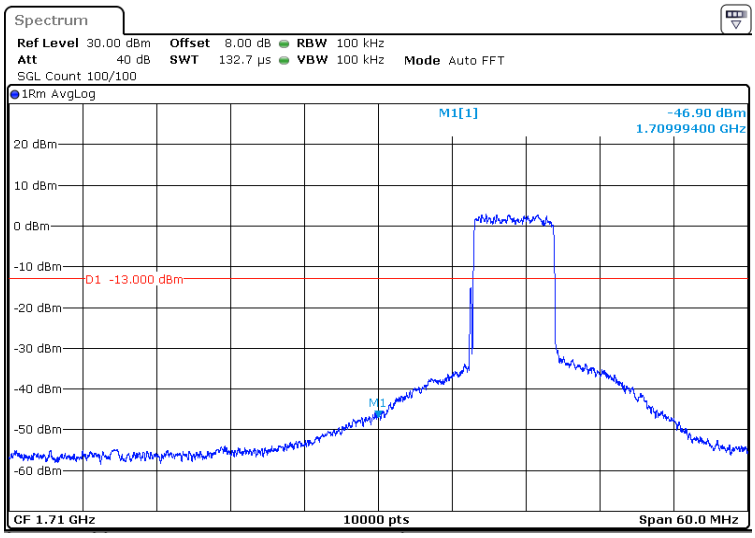
RB 1/74



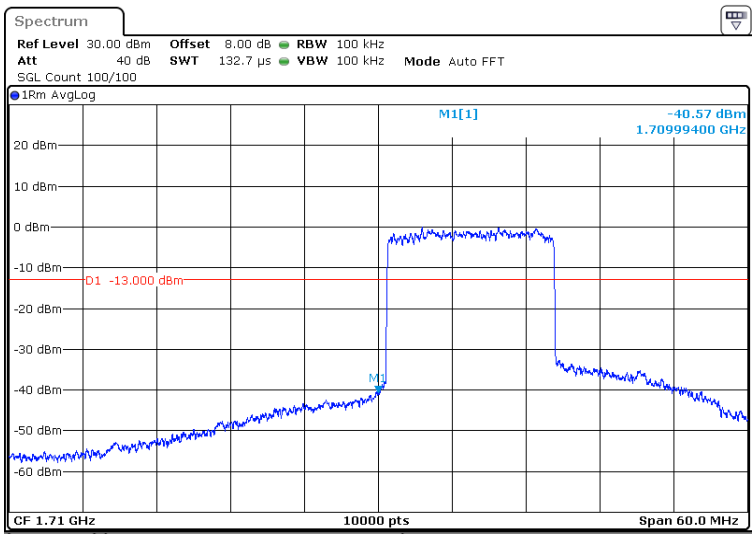
RB 36/0



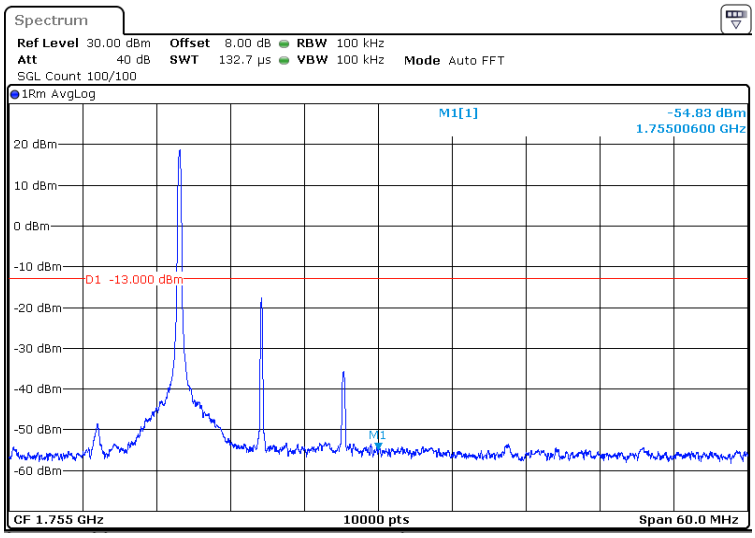
RB 36/39



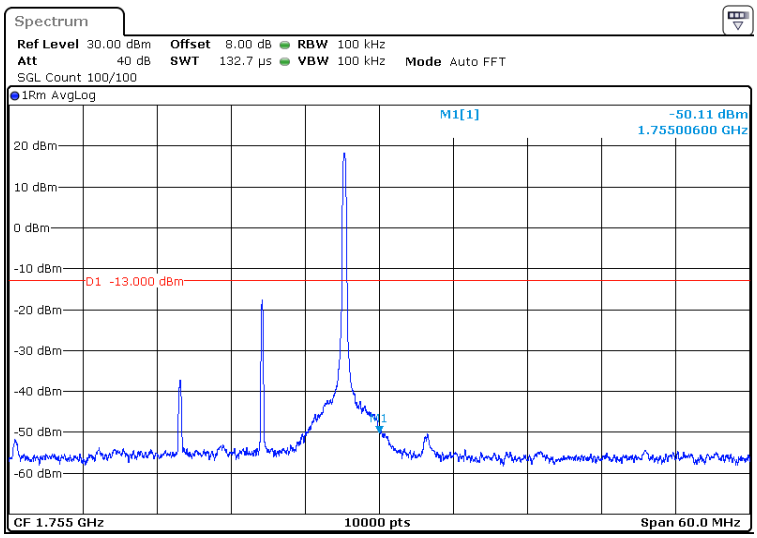
RB 75/0



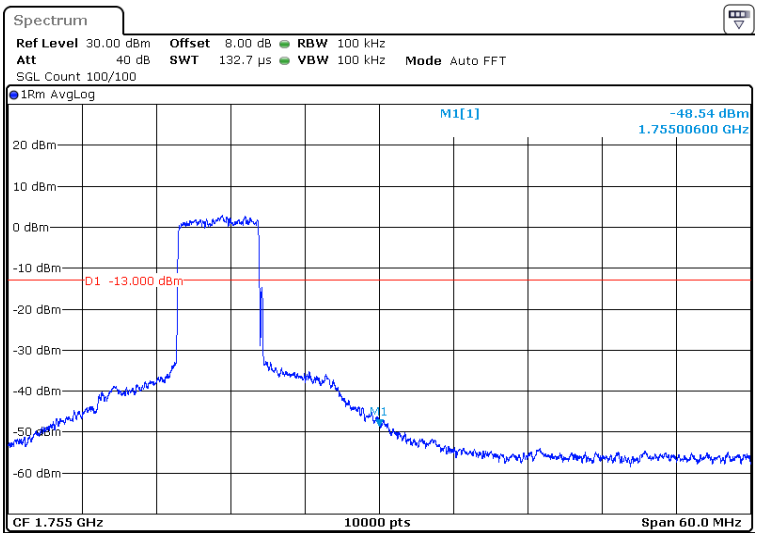
HIGH
RB 1/0



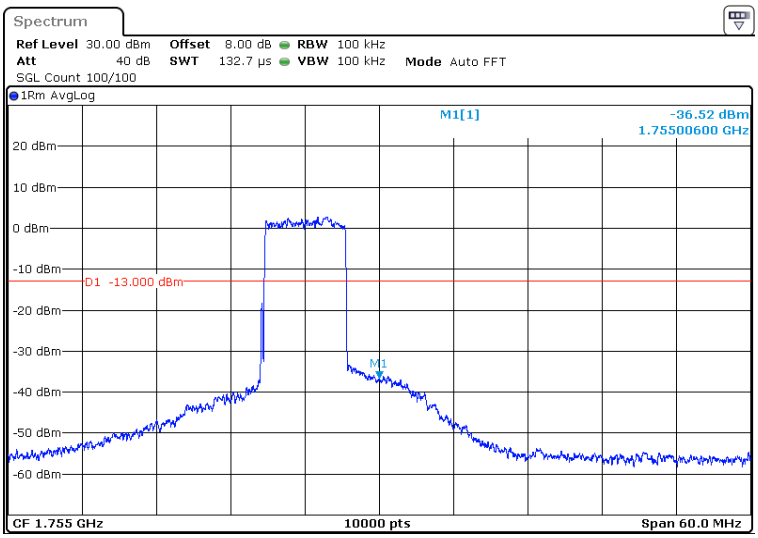
RB 1/74



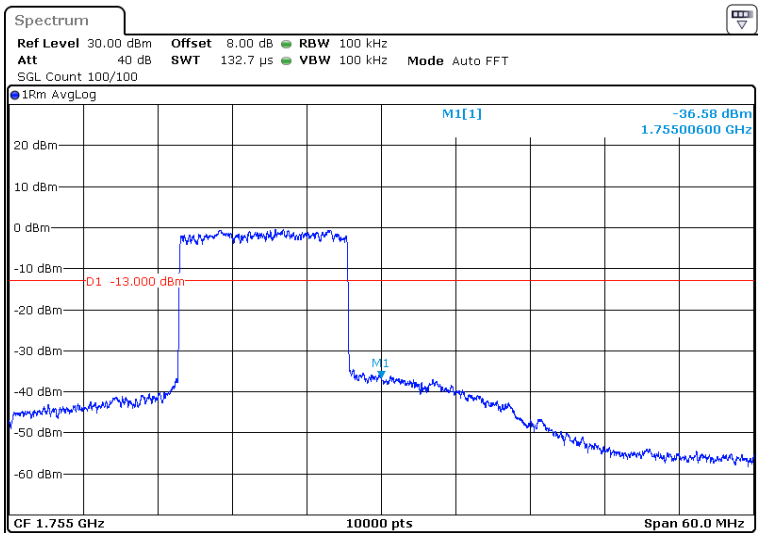
RB 36/0



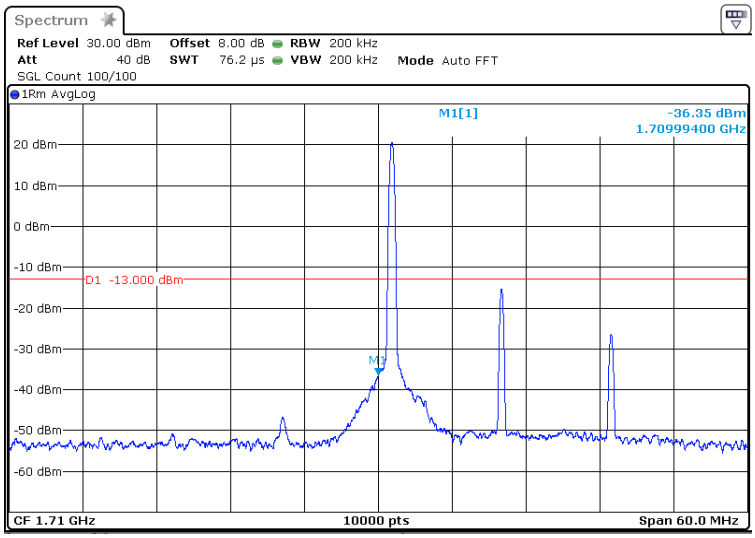
RB 36/39



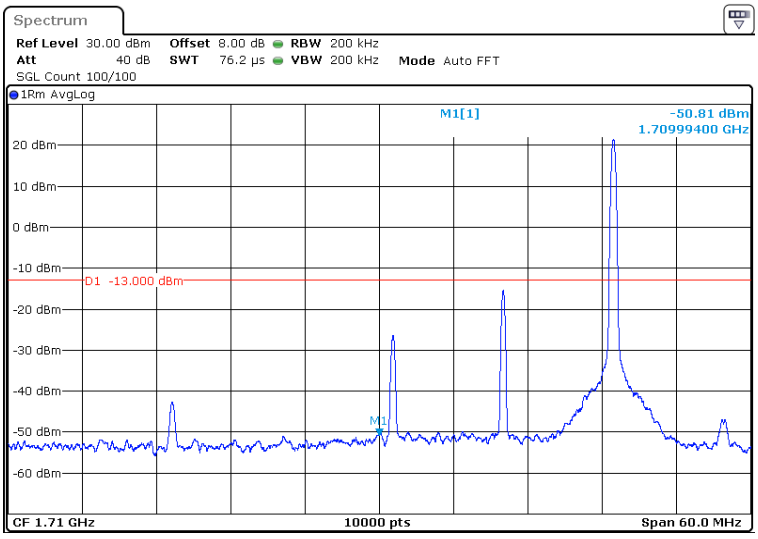
RB 75/0



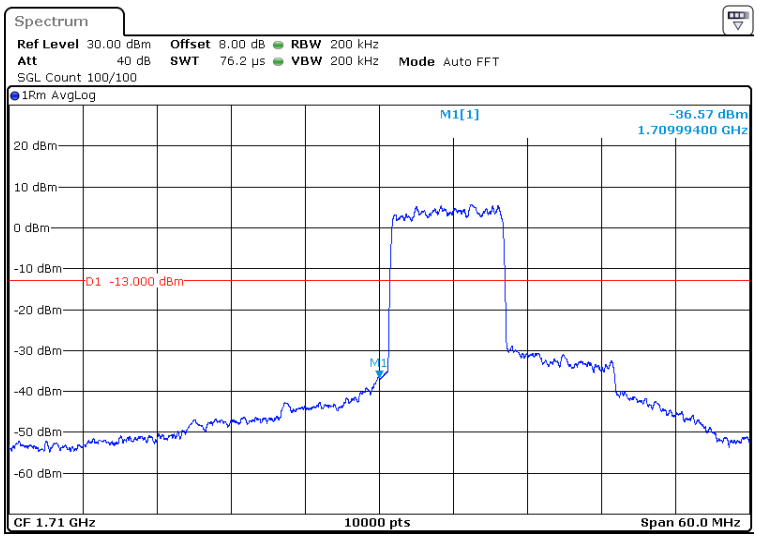
QPSK (20 ㎒ Bandwidth)
LOW
RB 1/0



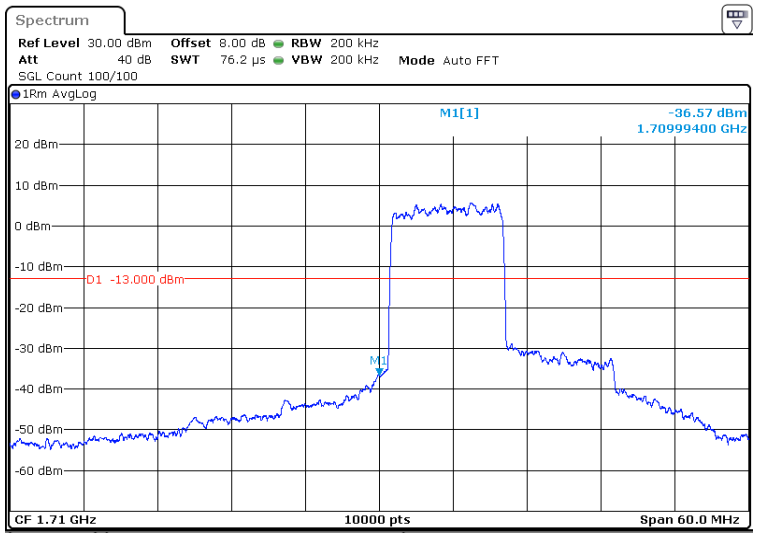
RB 1/99



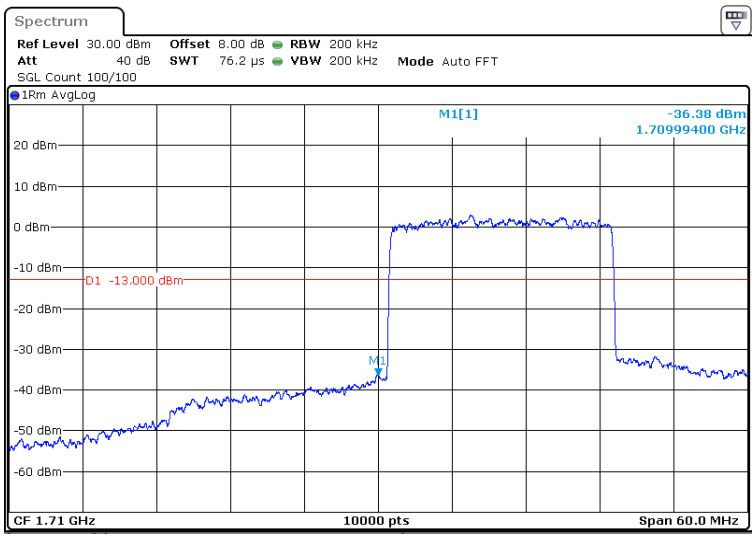
RB 50/0



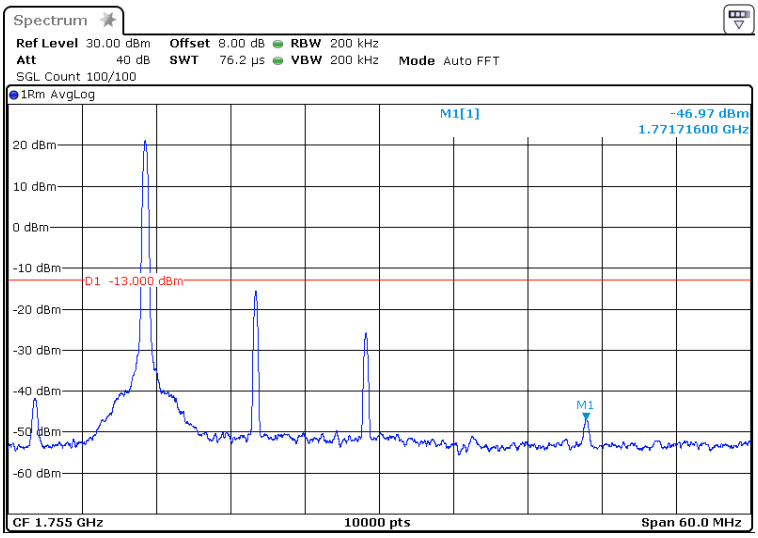
RB 50/50



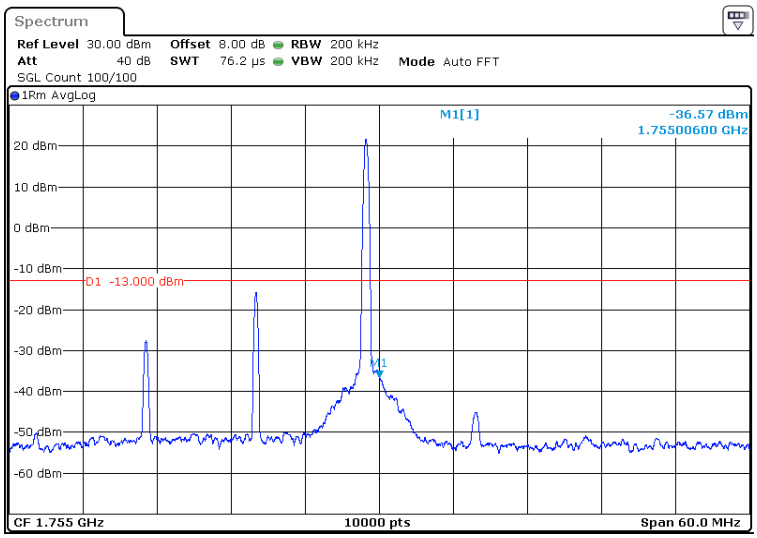
RB 100/0



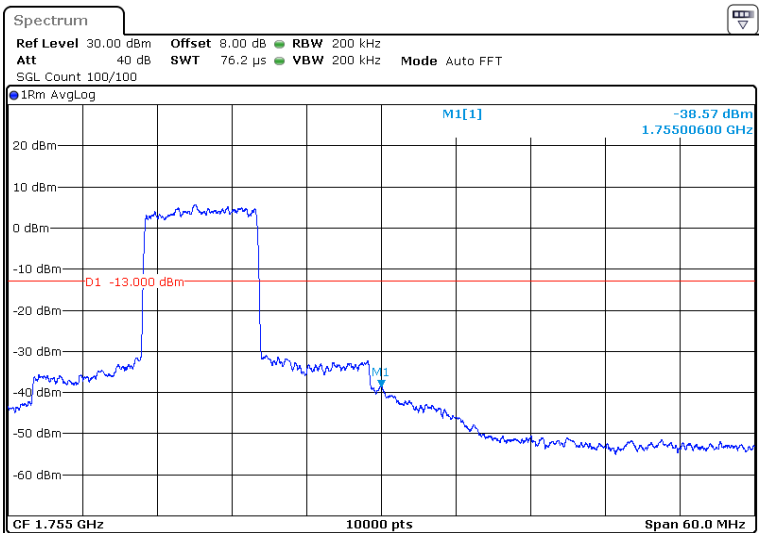
HIGH
RB 1/0



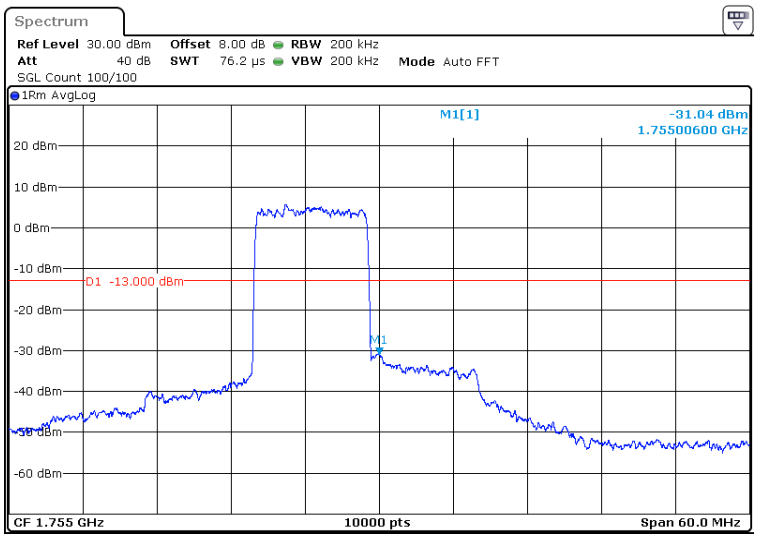
RB 1/99



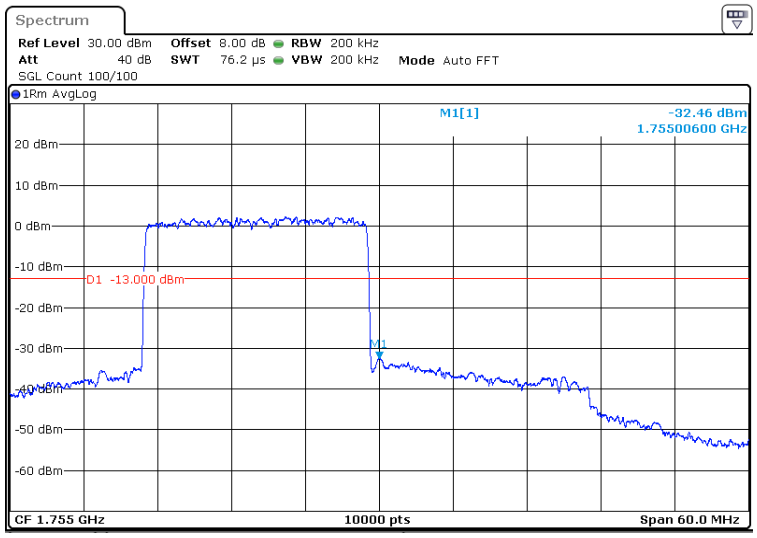
RB 50/0



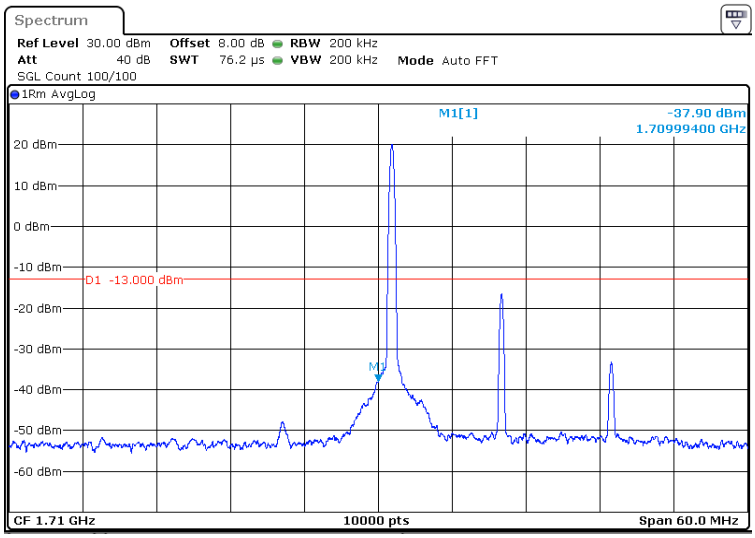
RB 50/50



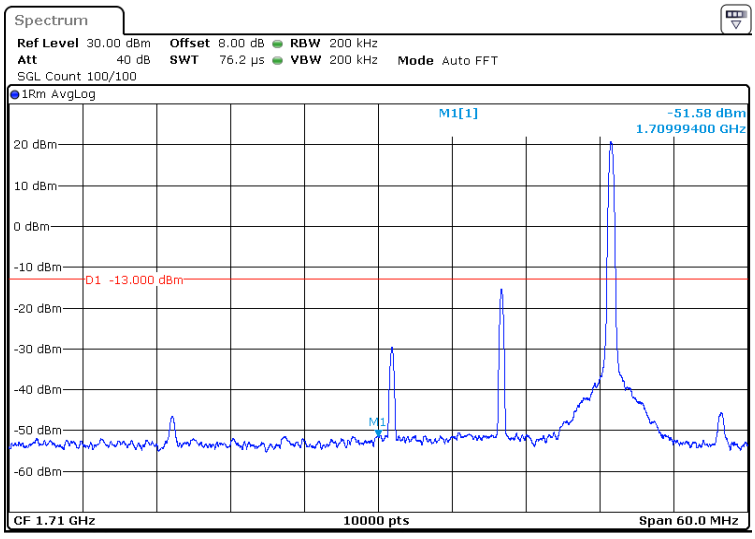
RB 100/0



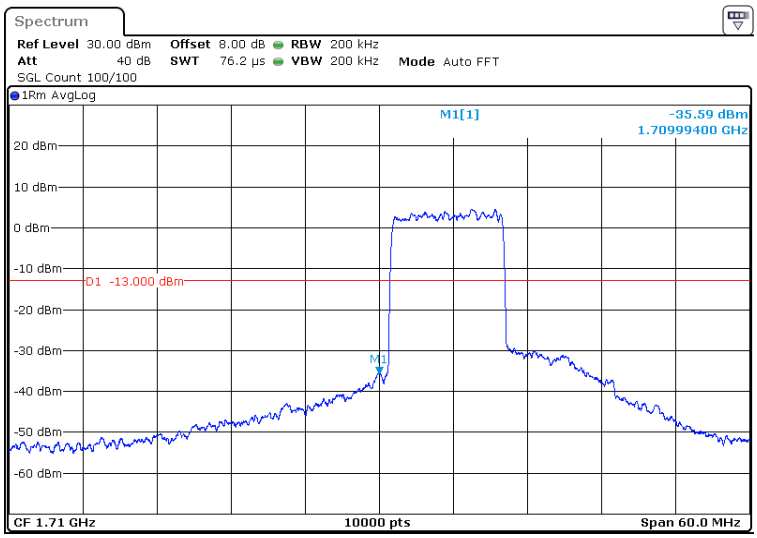
16QAM (20 ㎒ Bandwidth)
LOW
RB 1/0



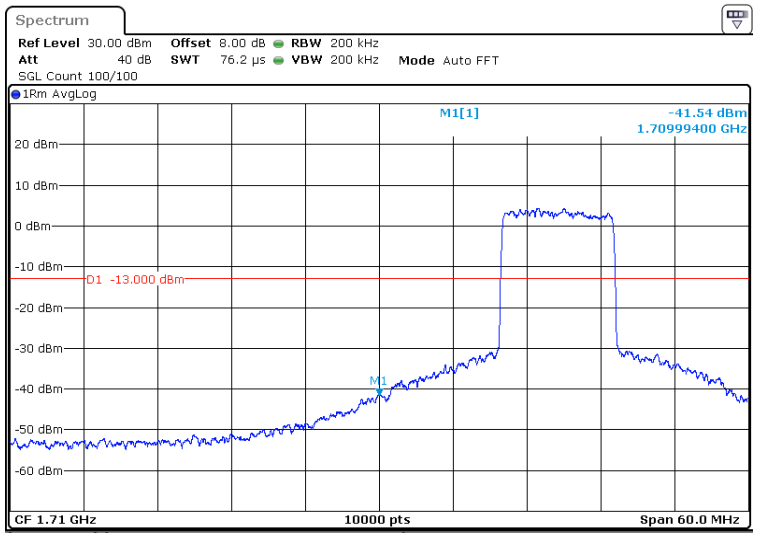
RB 1/99



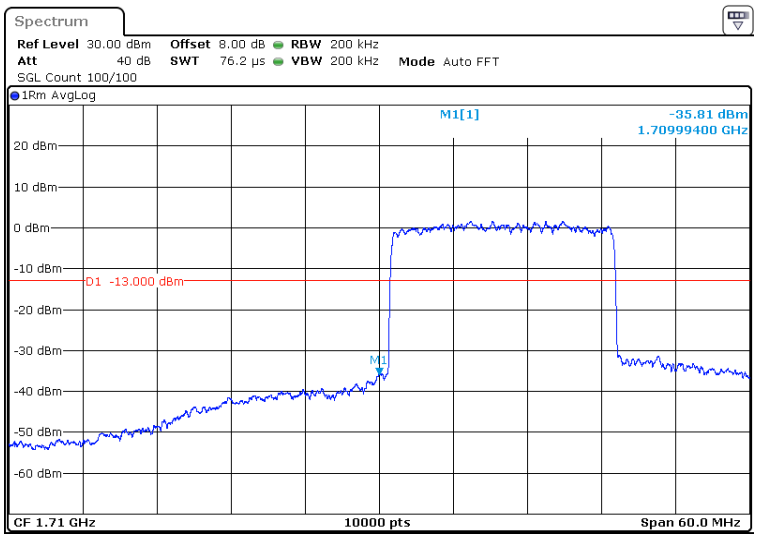
RB 50/0



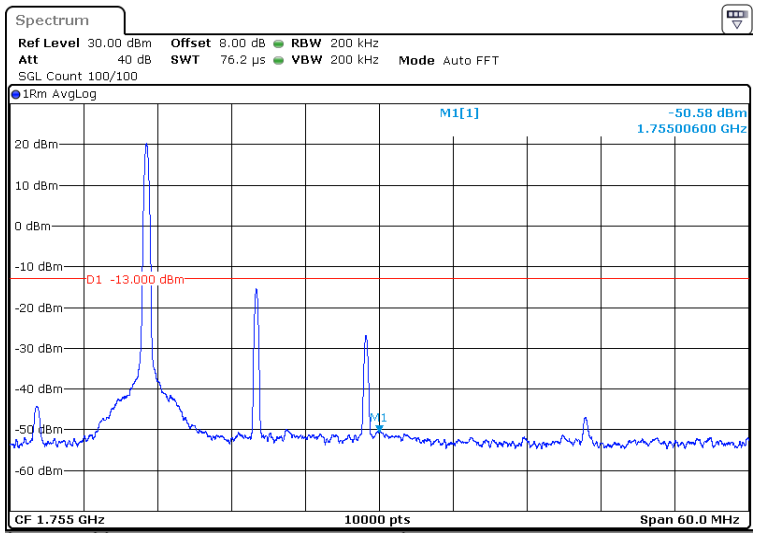
RB 50/50



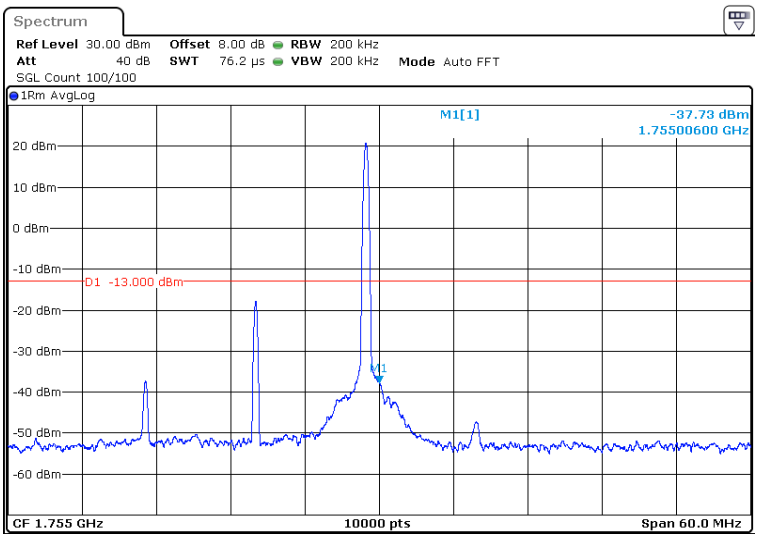
RB 100/0



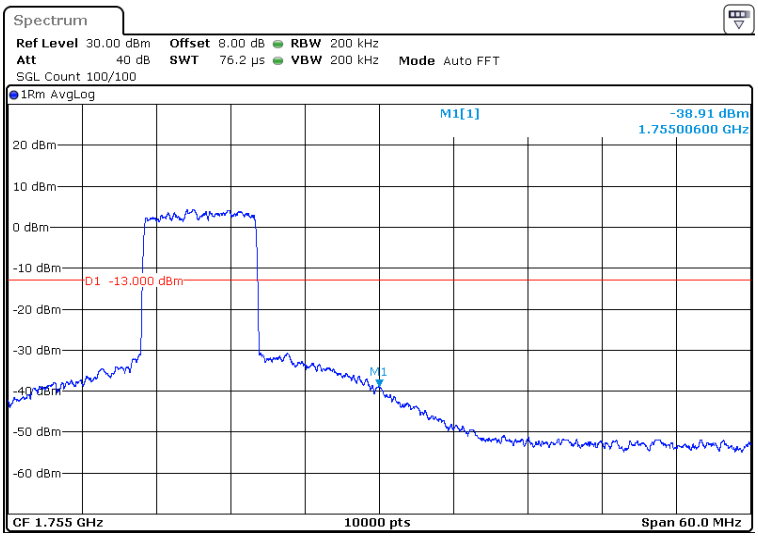
HIGH
RB 1/0



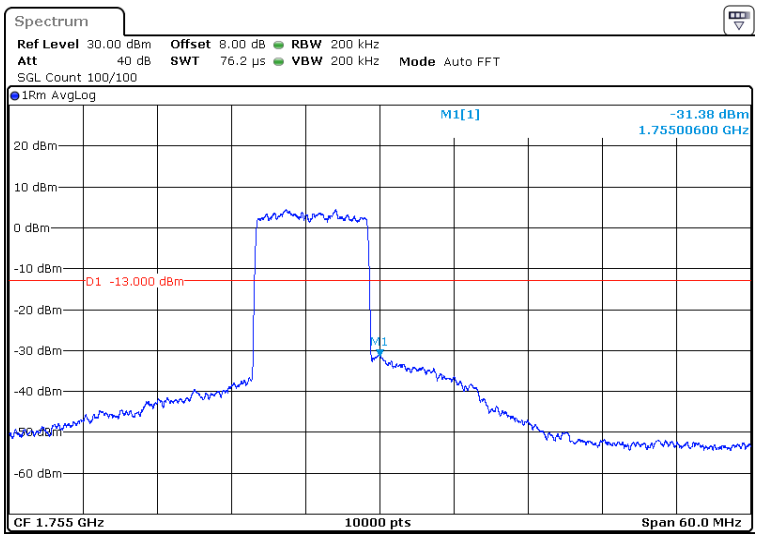
RB 1/99



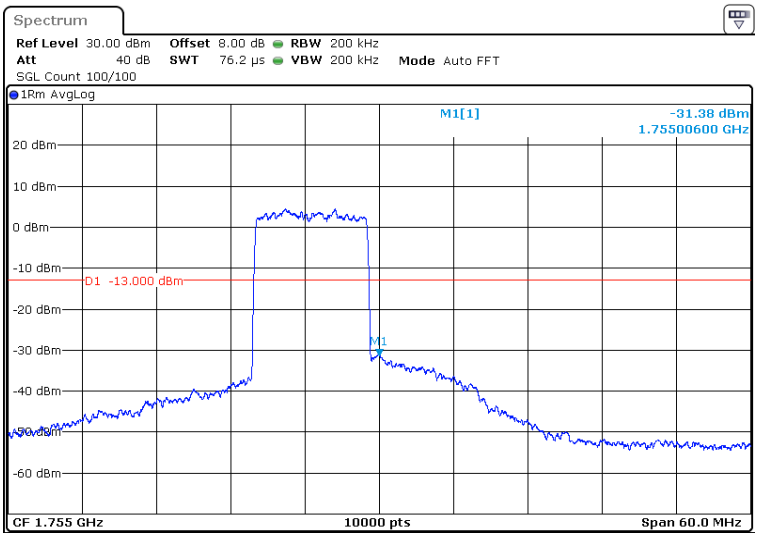
RB 50/0



RB 50/50



RB 100/0



5.4.2 all out-of-band emissions

5.4.2.1 Measurement Procedure

The RF output of the transmitter was connected to a spectrum analyzer through a calibrated coaxial cable. Sufficient scans were taken to show the out-of-band Emissions, if any, up to 10th harmonic. Multiple sweeps were recorded in maximum hold mode using a peak detector to ensure that the worst-case emissions were caught.

5.4.2.2 Limit

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.

5.4.2.3 Test Result

Band 13

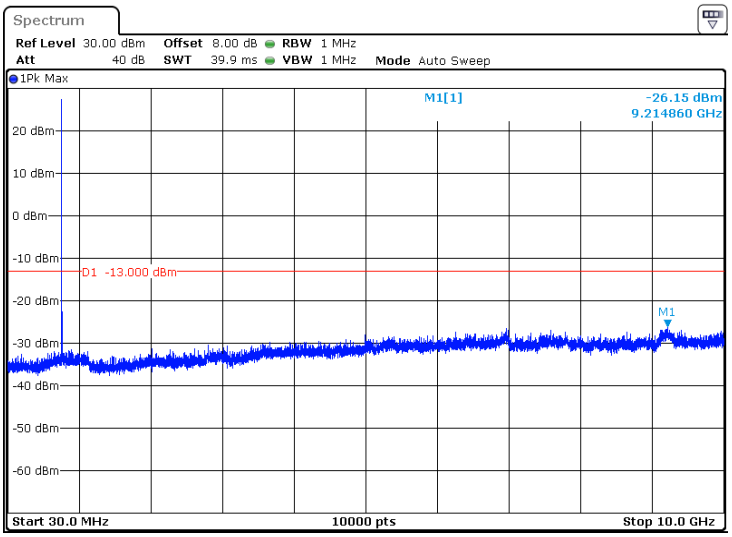
QPSK (5 ㎒ Bandwidth)

LOW RB 1/0

Limit = 43+10log(P) dB = 40.69 dBc

(P = 27.69 dBm = 0.587 W)

*Result = 53.84 dBc

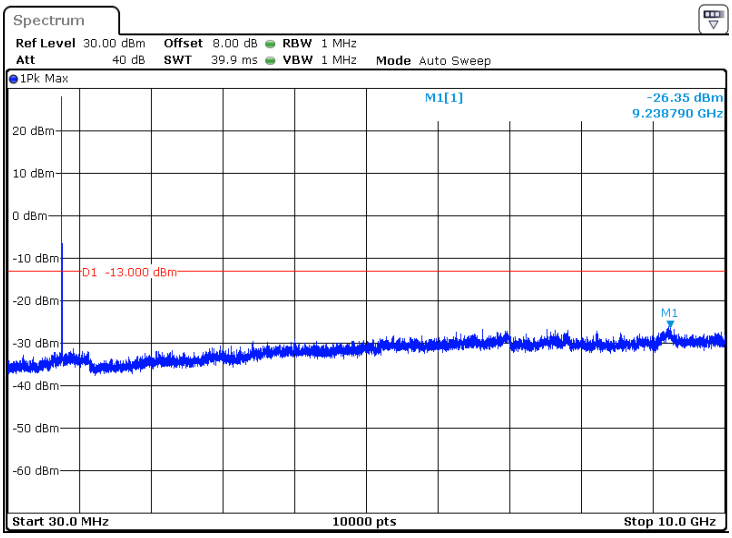


MID RB 1/0

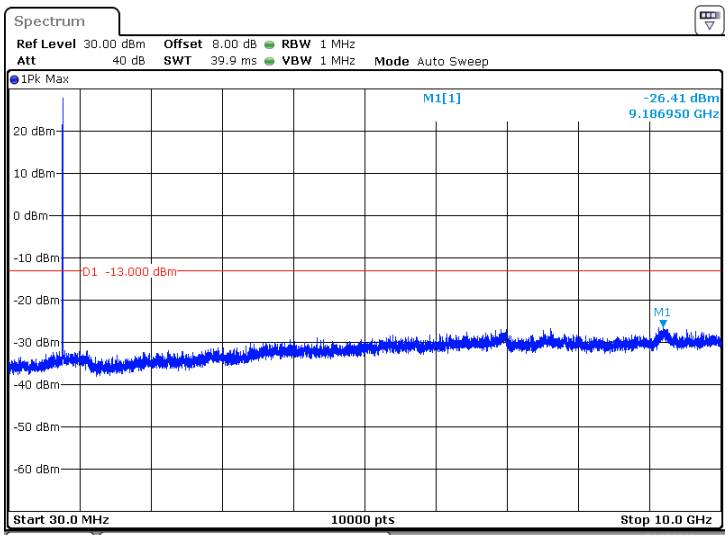
Limit = 43+10log(P) dB = 40.91 dBc

(P = 27.91 dBm = 0.618 W)

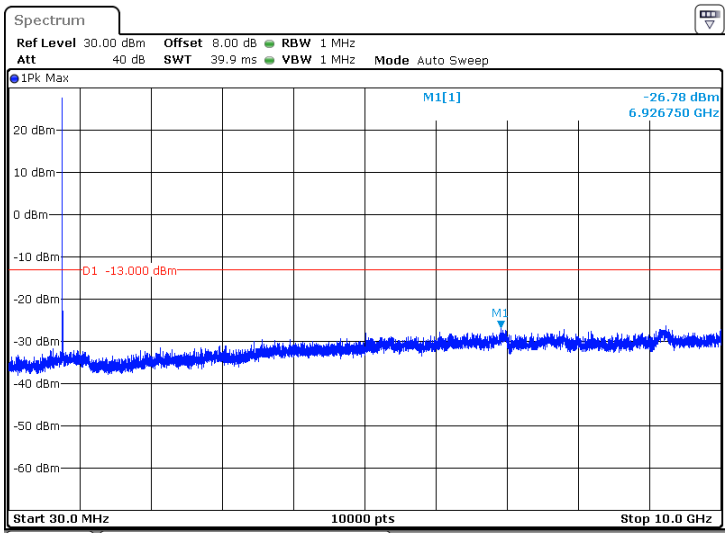
*Result = 54.26 dBc



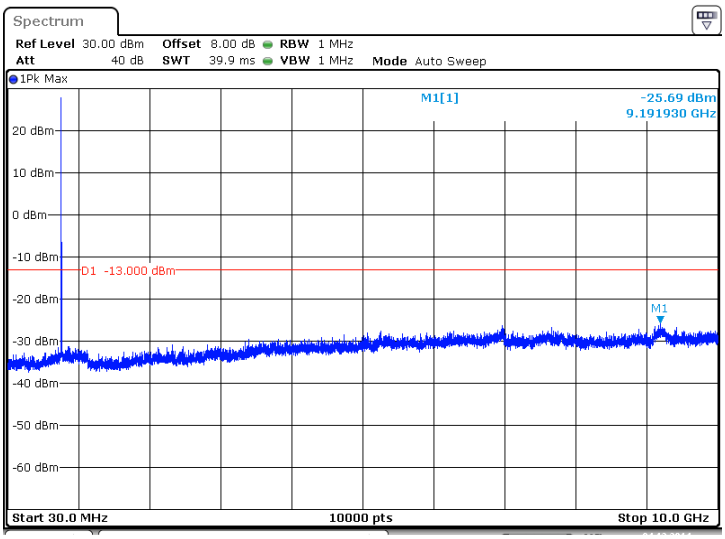
HIGH RB 1/0
Limit = 43+10log(P) dB = 41.35 dBc
(P = 28.35 dBm = 0.684 W)
*Result = 54.76 dBc



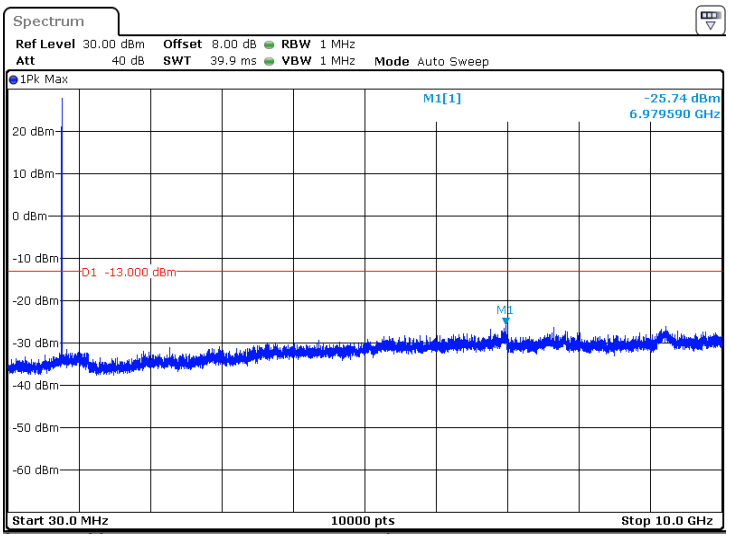
16QAM (5 ㎒ Bandwidth)
LOW RB 1/0
Limit = 43+10log(P) dB = 40.78 dBc
(P = 27.78 dBm = 0.600 W)
*Result = 54.56 dBc



MID RB 1/0
Limit = 43+10log(P) dB = 41.06 dBc
(P = 28.06 dBm = 0.640 W)
*Result = 53.75 dBc



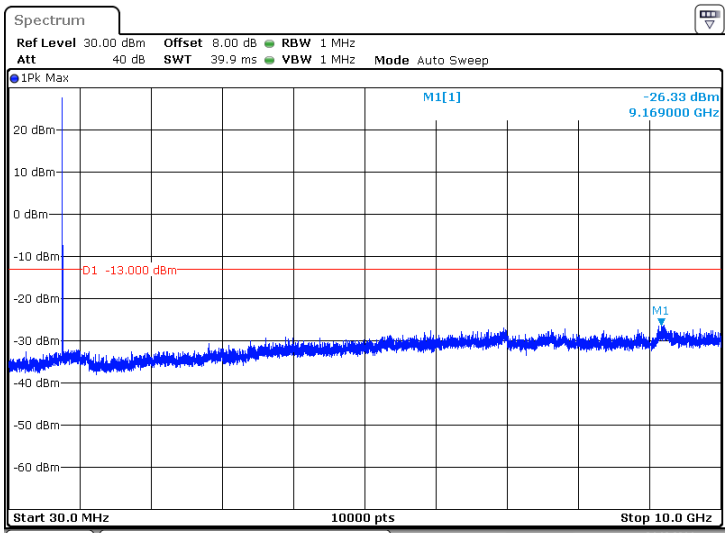
HIGH RB 1/0
Limit = 43+10log(P) dB = 41.56 dBc
(P = 28.56 dBm = 0.718 W)
*Result = 54.30 dBc



QPSK (10 ㎒ Bandwidth)

RB 1/0

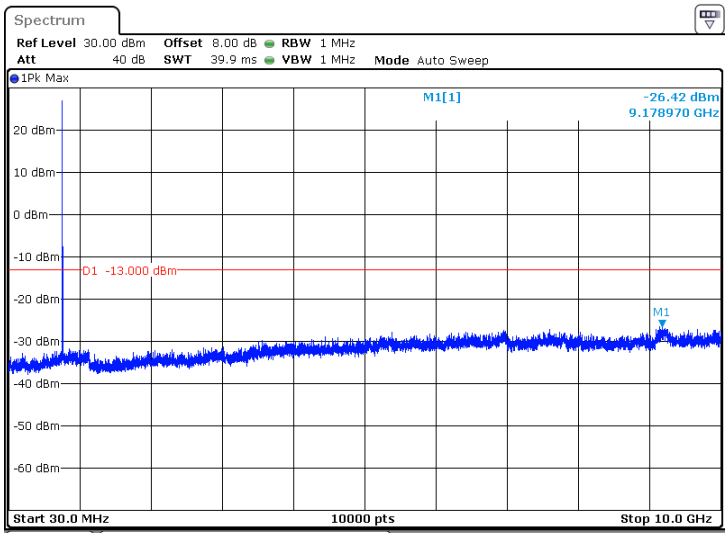
Limit = 43+10log(P) dB = 40.62 dBc
(P = 27.62 dBm = 0.578 W)
*Result = 53.95 dBc



16QAM (10 ㎒ Bandwidth)

RB 1/0

Limit = 43+10log(P) dB = 40.76 dBc
(P = 27.76 dBm = 0.597 W)
*Result = 54.18 dBc

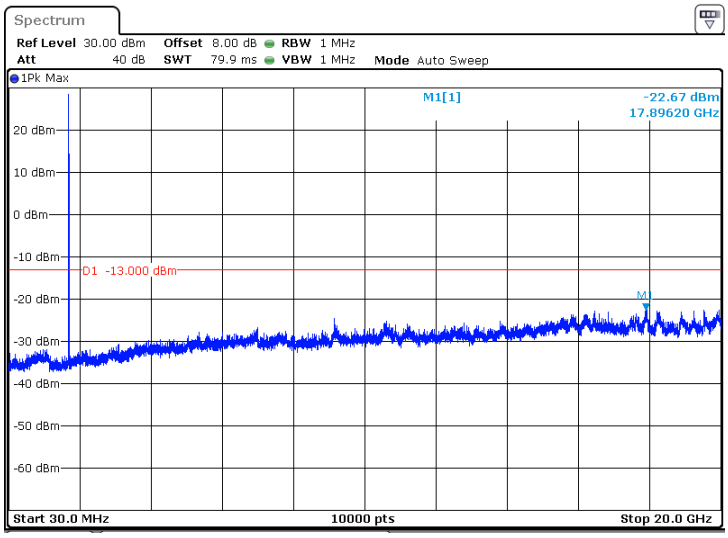


Band 4

QPSK (1.4 ㎒ Bandwidth)

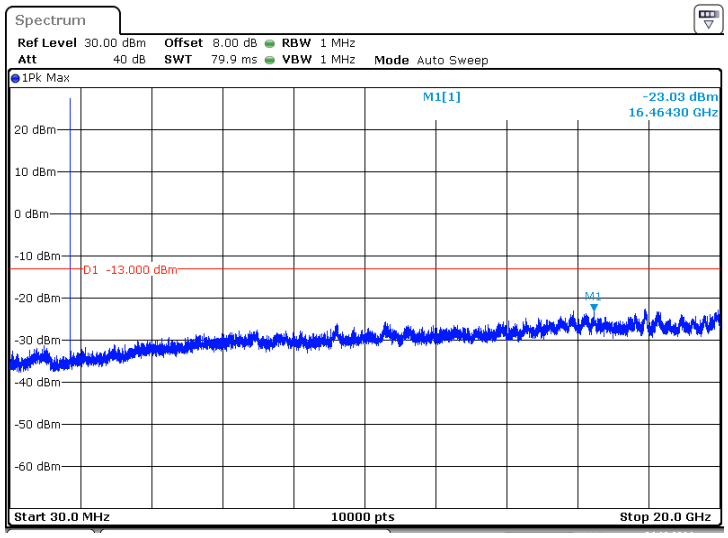
LOW RB 1/0

Limit = 43+10log(P) dB = 41.75 dBc
(P = 28.75 dBm = 0.750 W)
*Result = 51.42 dBc

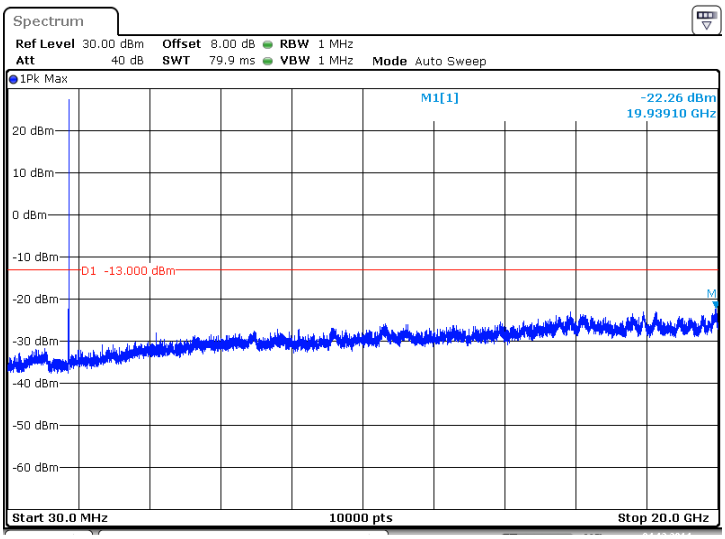


MID RB 1/0

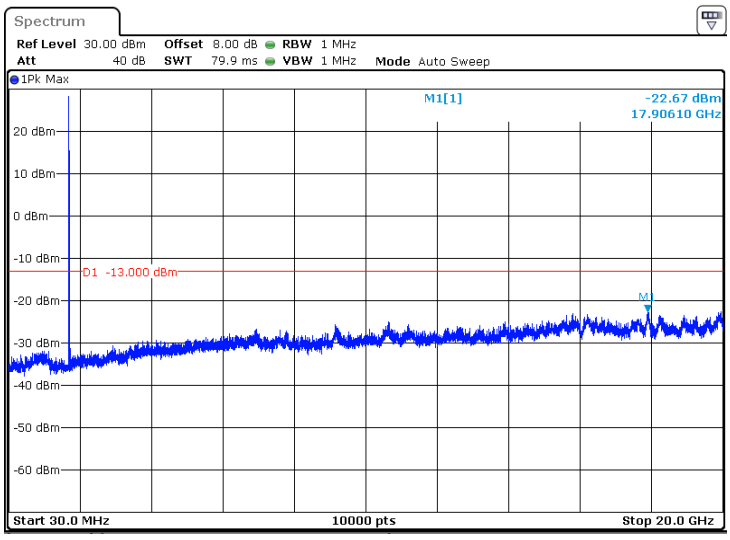
Limit = 43+10log(P) dB = 41.70 dBc
(P = 28.70 dBm = 0.741 W)
*Result = 51.73 dBc



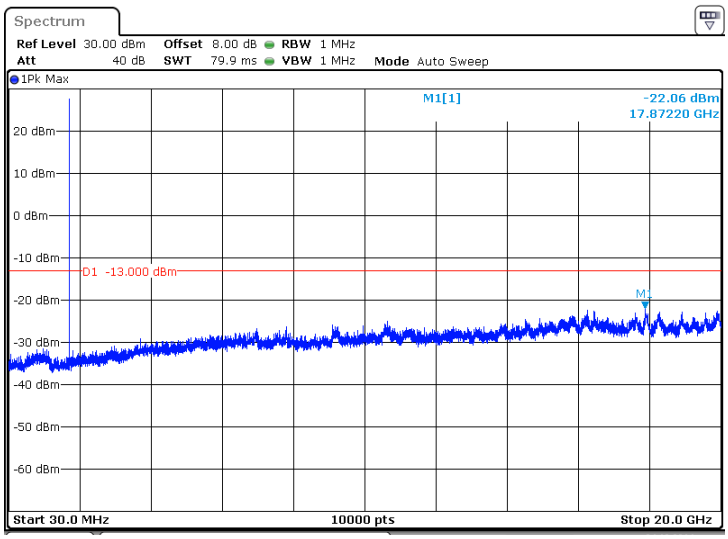
HIGH RB 1/0
Limit = 43+10log(P) dB = 42.46 dBc
(P = 29.46 dBm = 0.883 W)
*Result = 51.72 dBc



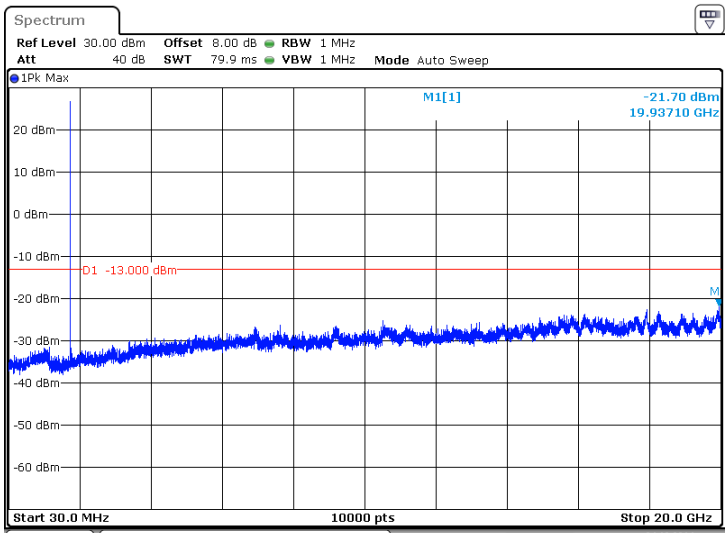
16QAM (1.4 ㎒ Bandwidth)
LOW RB 1/0
Limit = 43+10log(P) dB = 42.04 dBc
(P = 29.04 dBm = 0.802 W)
*Result = 51.71 dBc



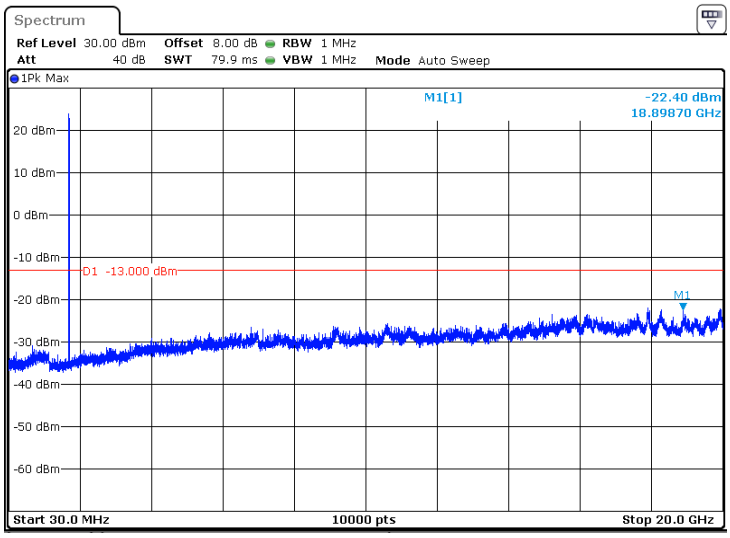
MID RB 1/0
Limit = 43+10log(P) dB = 41.92 dBc
(P = 28.92 dBm = 0.780 W)
*Result = 50.98 dBc



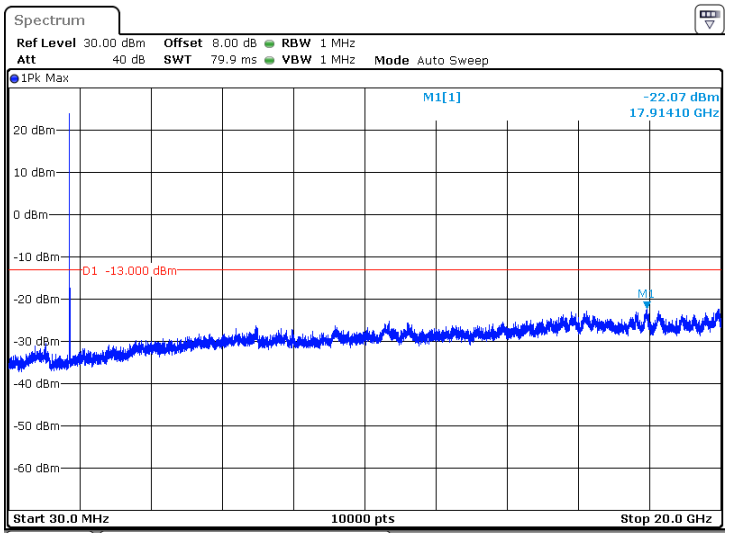
HIGH RB 1/0
Limit = 43+10log(P) dB = 42.90 dBc
(P = 29.90 dBm = 0.977 W)
*Result = 51.60 dBc



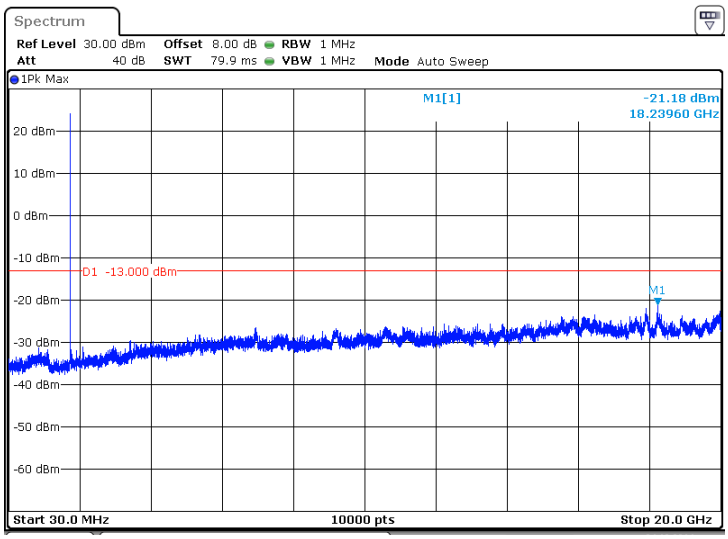
QPSK (3 ㎒ Bandwidth)
LOW RB 1/0
Limit = 43+10log(P) dB = 41.88 dBc
(P = 28.88 dBm = 0.773 W)
*Result = 51.28 dBc



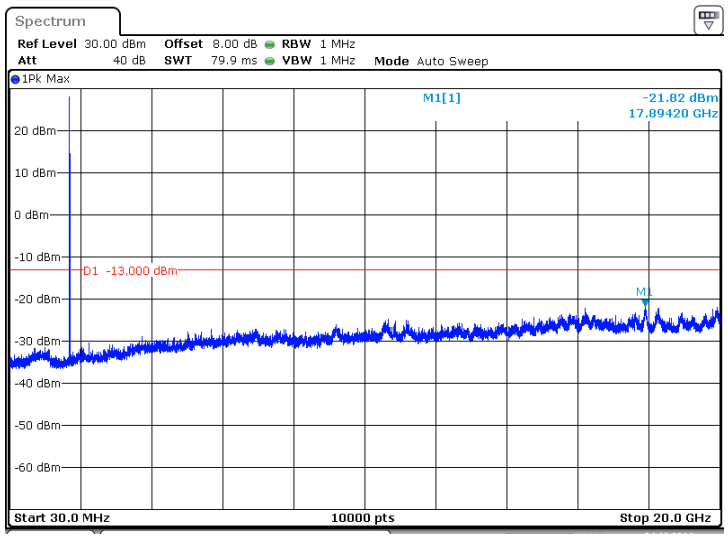
MID RB 1/0
Limit = 43+10log(P) dB = 41.71 dBc
(P = 28.71 dBm = 0.743 W)
*Result = 50.78 dBc



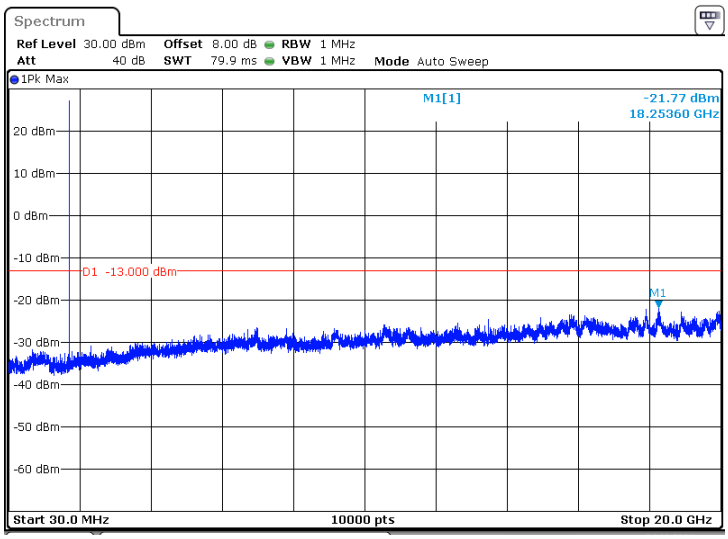
HIGH RB 1/0
Limit = 43+10log(P) dB = 42.41 dBc
(P = 29.41 dBm = 0.872 W)
*Result = 50.59 dBc



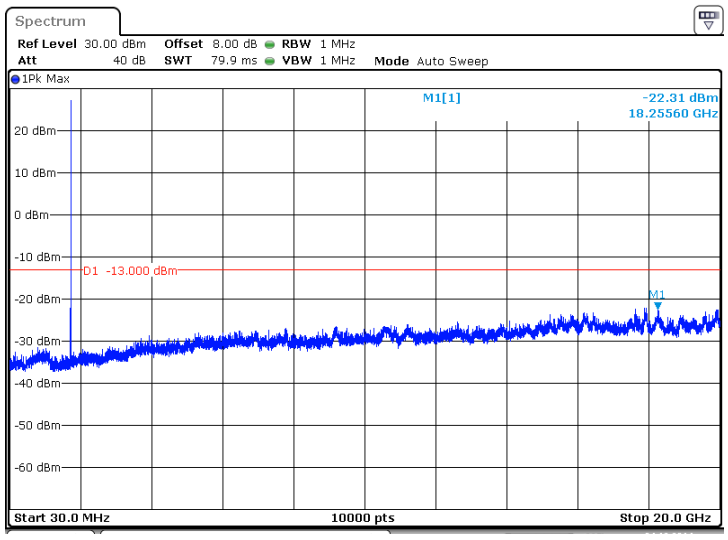
16QAM (3 ㎒ Bandwidth)
LOW RB 1/0
Limit = 43+10log(P) dB = 42.06 dBc
(P = 29.06 dBm = 0.805 W)
*Result = 50.88 dBc



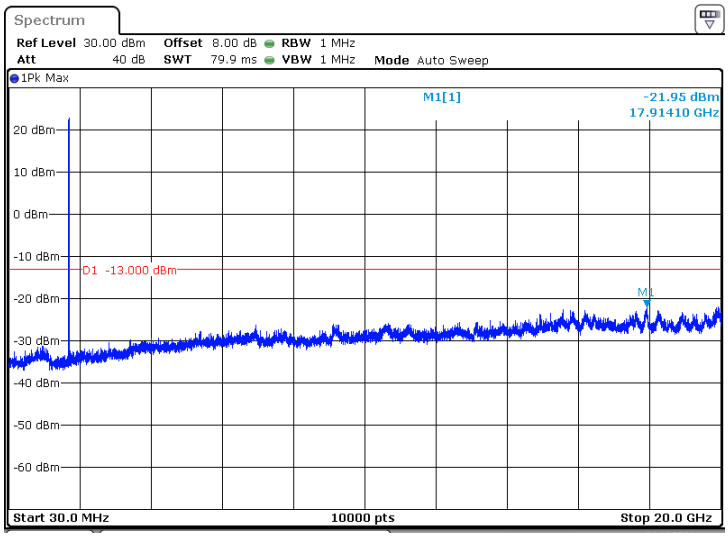
MID RB 1/0
Limit = 43+10log(P) dB = 41.94 dBc
(P = 28.94 dBm = 0.783 W)
*Result = 50.71 dBc



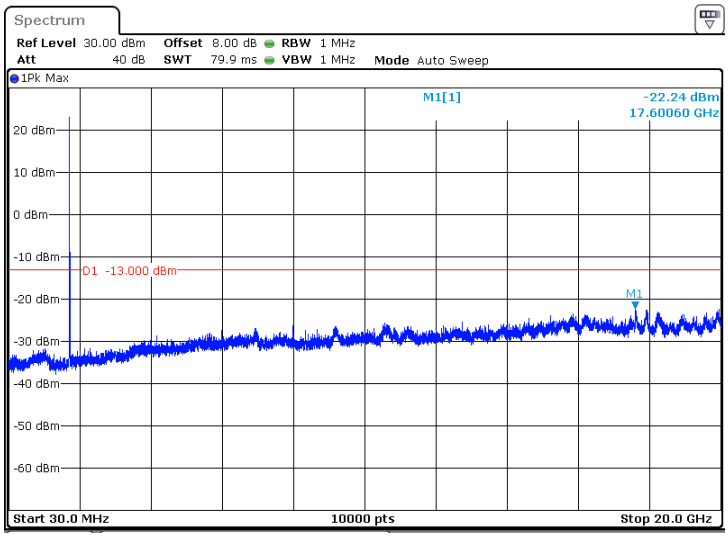
HIGH RB 1/0
Limit = 43+10log(P) dB = 42.81 dBc
(P = 29.81 dBm = 0.957 W)
*Result = 52.12 dBc



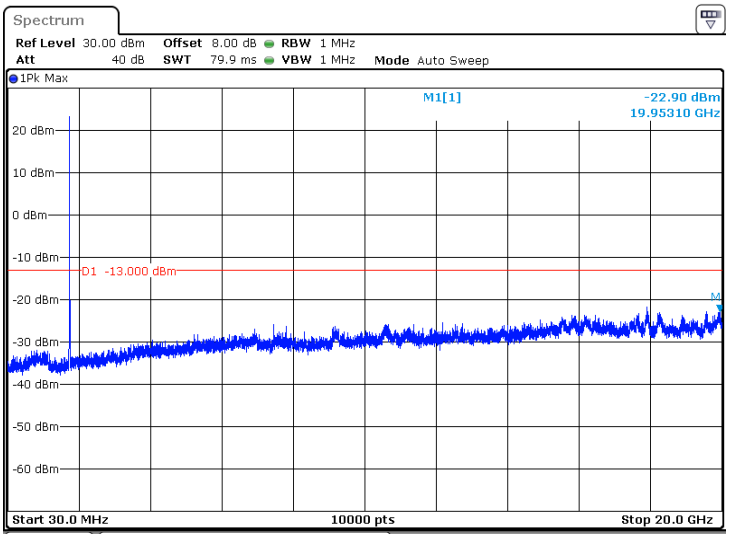
QPSK (5 ㎒ Bandwidth)
LOW RB 1/0
Limit = 43+10log(P) dB = 42.30 dBc
(P = 29.30 dBm = 0.851 W)
*Result = 51.25 dBc



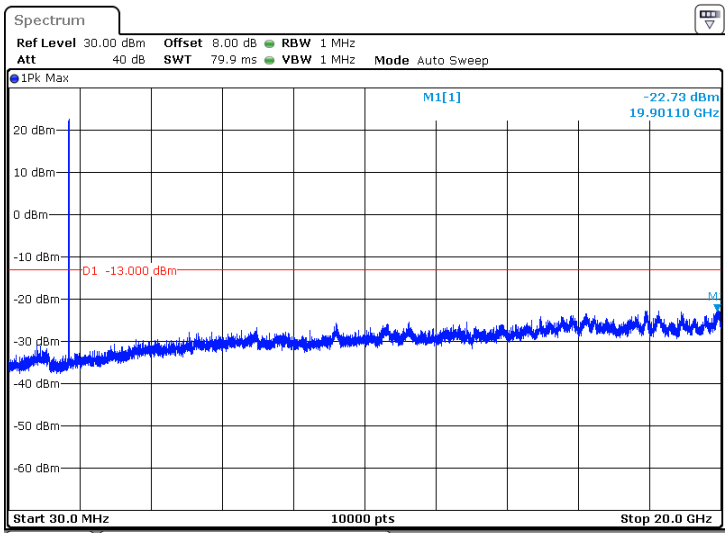
MID RB 1/0
Limit = 43+10log(P) dB = 41.87 dBc
(P = 28.87 dBm = 0.771 W)
*Result = 51.11 dBc



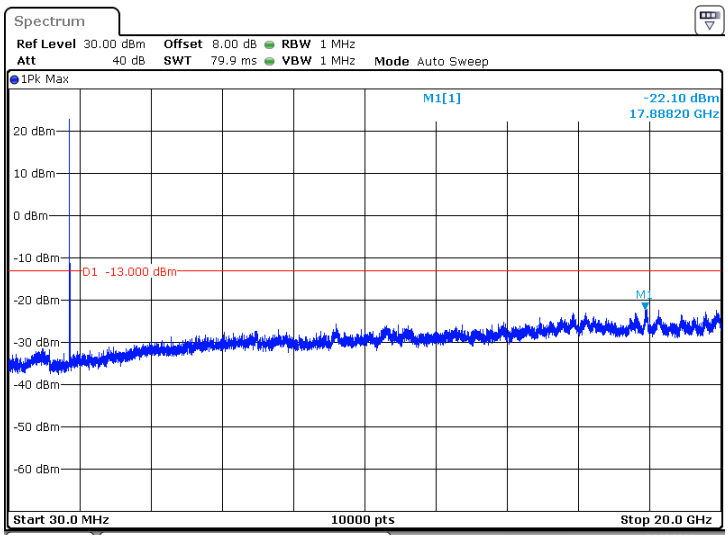
HIGH RB 1/0
Limit = 43+10log(P) dB = 42.30 dBc
(P = 29.30 dBm = 0.851 W)
*Result = 52.20 dBc



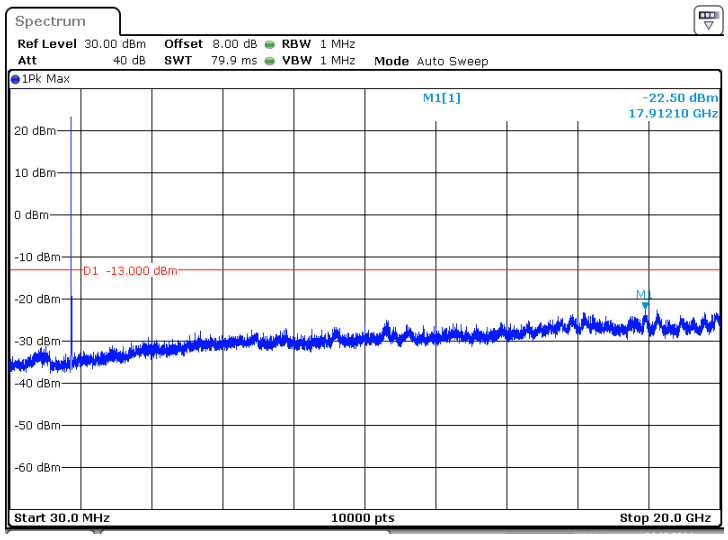
16QAM (5 ㎒ Bandwidth)
LOW RB 1/0
Limit = 43+10log(P) dB = 42.13 dBc
(P = 29.13 dBm = 0.818 W)
*Result = 51.86 dBc



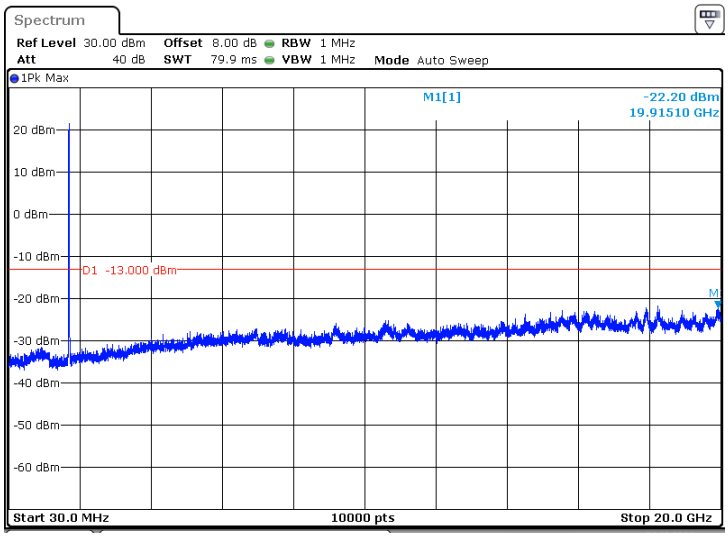
MID RB 1/0
Limit = 43+10log(P) dB = 42.13 dBc
(P = 29.13 dBm = 0.818 W)
*Result = 51.23 dBc



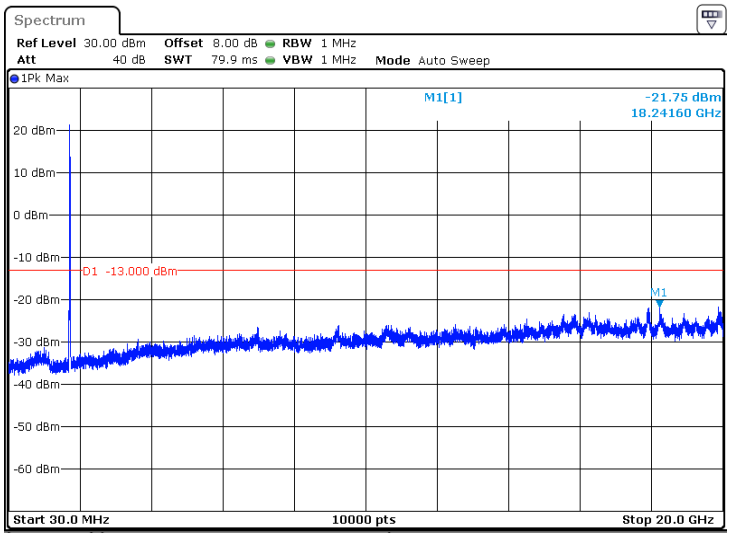
HIGH RB 1/0
Limit = 43+10log(P) dB = 42.56 dBc
(P = 29.56 dBm = 0.904 W)
*Result = 52.06 dBc



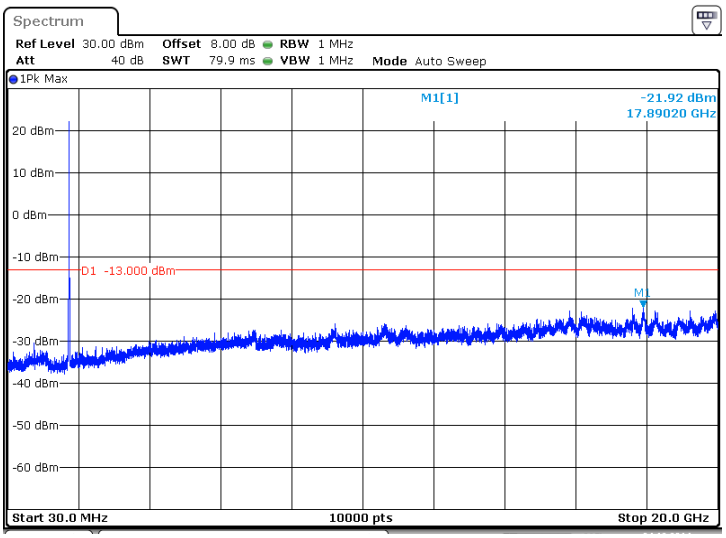
QPSK (10 ㎒ Bandwidth)
LOW RB 1/0
Limit = 43+10log(P) dB = 41.94 dBc
(P = 28.94 dBm = 0.783 W)
*Result = 51.14 dBc



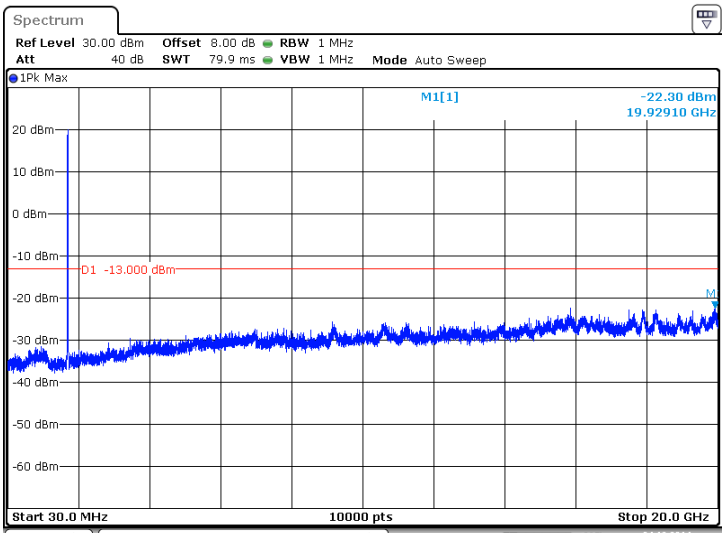
MID RB 1/0
Limit = 43+10log(P) dB = 42.11 dBc
(P = 29.11 dBm = 0.815 W)
*Result = 50.86 dBc



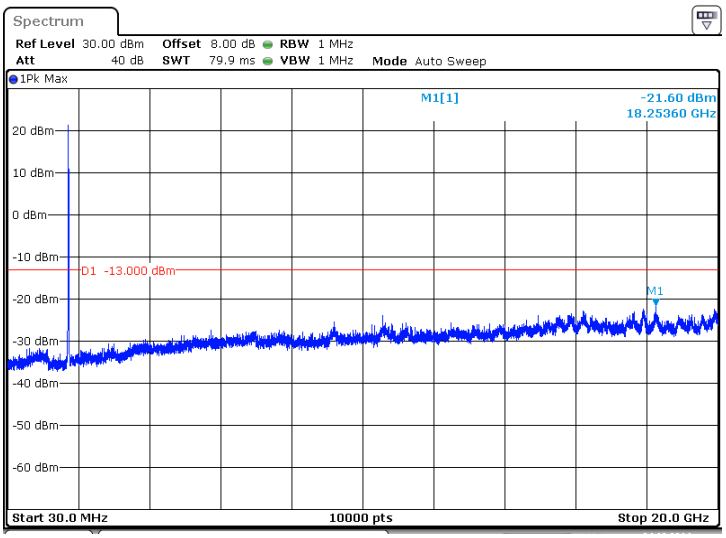
HIGH RB 1/0
Limit = 43+10log(P) dB = 41.99 dBc
(P = 28.99 dBm = 0.793 W)
*Result = 50.91 dBc



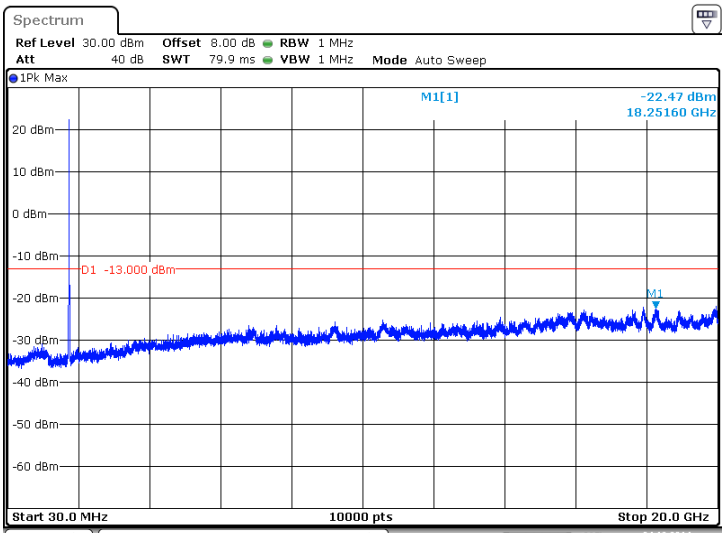
16QAM (10 ㎒ Bandwidth)
LOW RB 1/0
Limit = 43+10log(P) dB = 42.17 dBc
(P = 29.17 dBm = 0.826 W)
*Result = 51.47 dBc



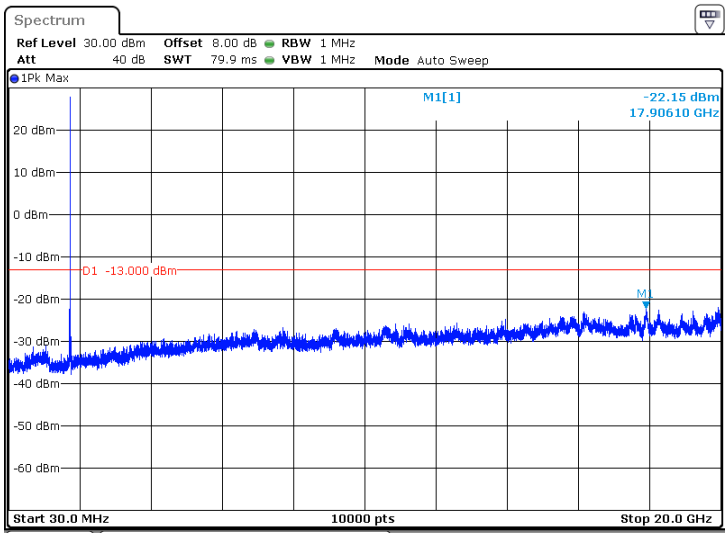
MID RB 1/0
Limit = 43+10log(P) dB = 42.42 dBc
(P = 29.42 dBm = 0.875 W)
*Result = 51.02 dBc



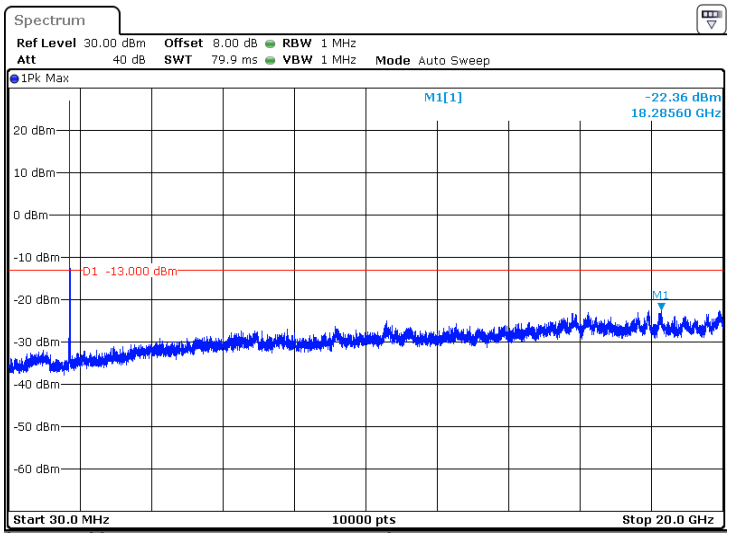
HIGH RB 1/0
Limit = 43+10log(P) dB = 42.32 dBc
(P = 29.32 dBm = 0.855 W)
*Result = 51.79 dBc



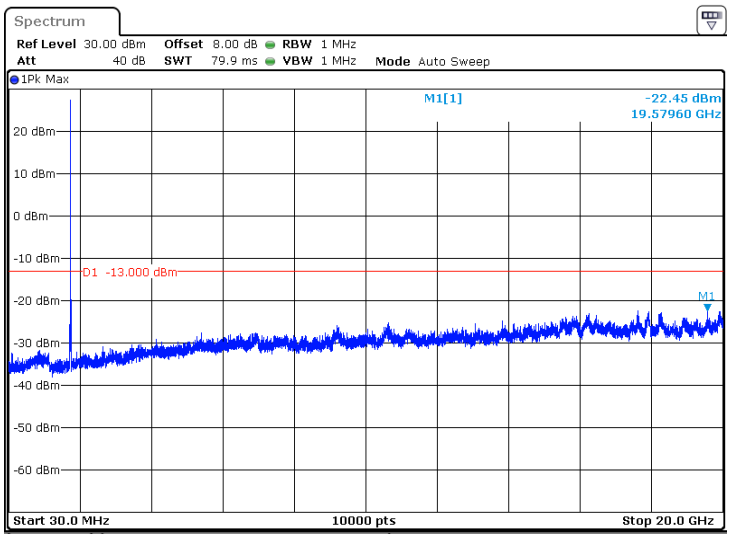
QPSK (15 ㎒ Bandwidth)
LOW RB 1/0
Limit = 43+10log(P) dB = 41.93 dBc
(P = 28.93 dBm = 0.782 W)
*Result = 51.08 dBc



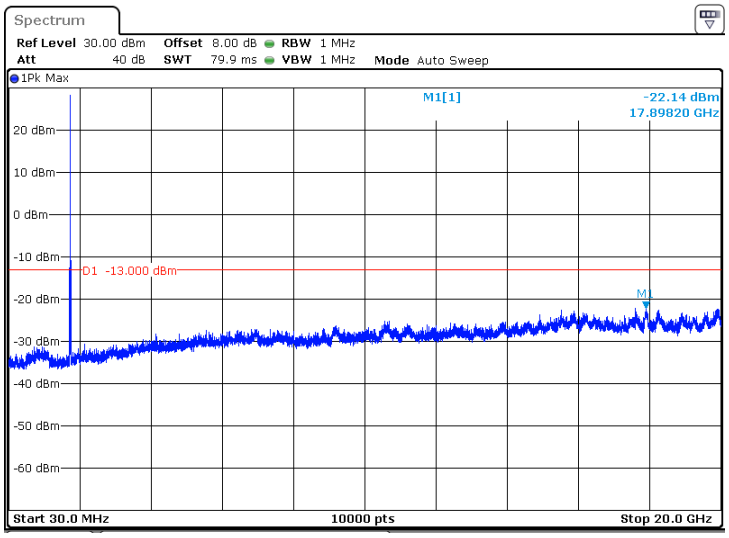
MID RB 1/0
Limit = 43+10log(P) dB = 42.11 dBc
(P = 29.11 dBm = 0.815 W)
*Result = 51.47 dBc



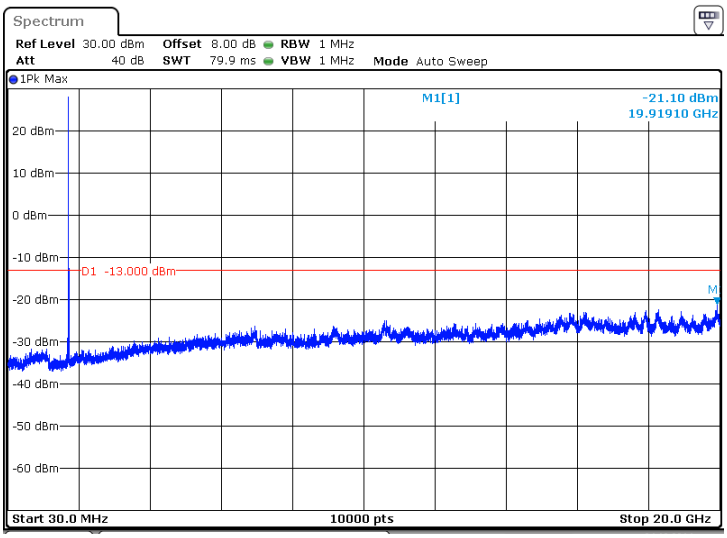
HIGH RB 1/0
Limit = 43+10log(P) dB = 41.42 dBc
(P = 28.42 dBm = 0.695 W)
*Result = 50.87 dBc



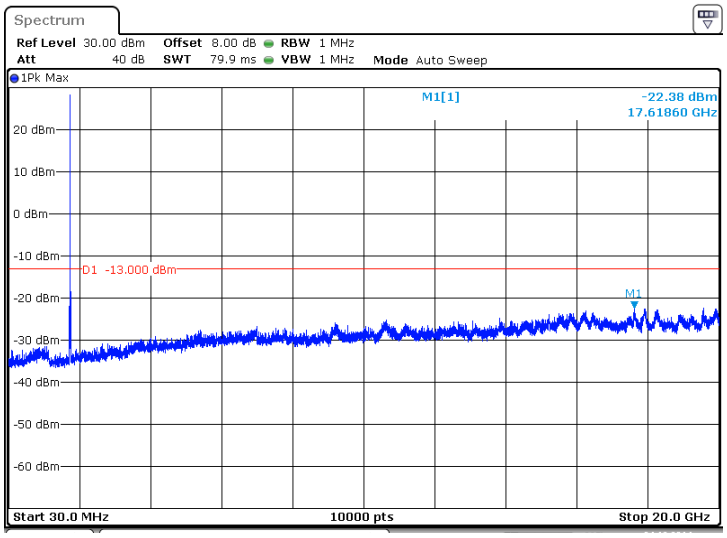
16QAM (15 ㎒ Bandwidth)
LOW RB 1/0
Limit = 43+10log(P) dB = 42.24 dBc
(P = 29.24 dBm = 0.839 W)
*Result = 51.38 dBc



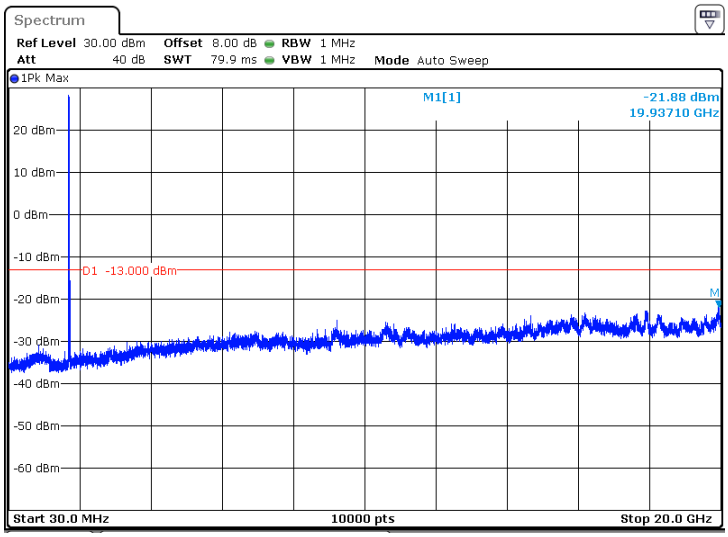
MID RB 1/0
Limit = 43+10log(P) dB = 42.43 dBc
(P = 29.43 dBm = 0.877 W)
*Result = 50.53 dBc



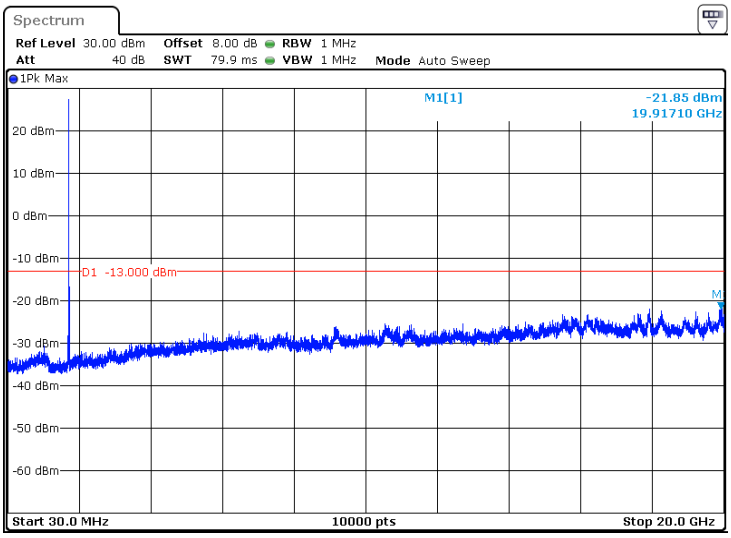
HIGH RB 1/0
Limit = 43+10log(P) dB = 41.61 dBc
(P = 28.61 dBm = 0.726 W)
*Result = 50.99 dBc



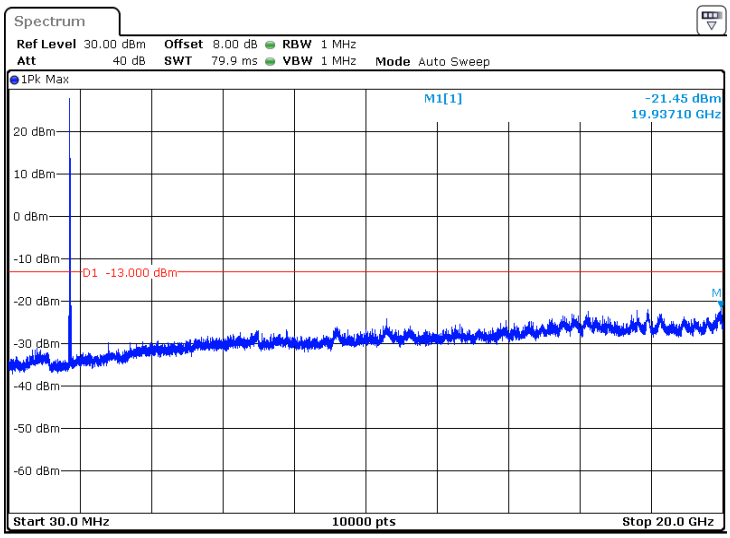
QPSK (20 ㎒ Bandwidth)
LOW RB 1/0
Limit = 43+10log(P) dB = 42.05 dBc
(P = 29.05 dBm = 0.804 W)
*Result = 50.93 dBc



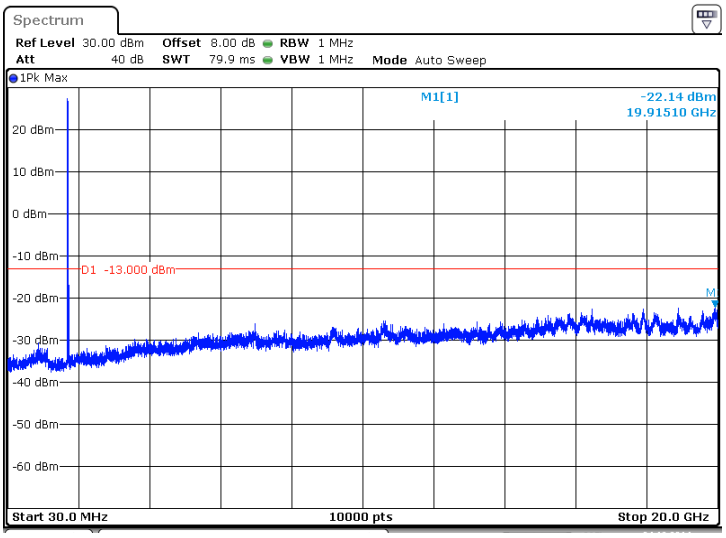
MID RB 1/0
Limit = 43+10log(P) dB = 42.41 dBc
(P = 29.41 dBm = 0.873 W)
*Result = 51.26 dBc



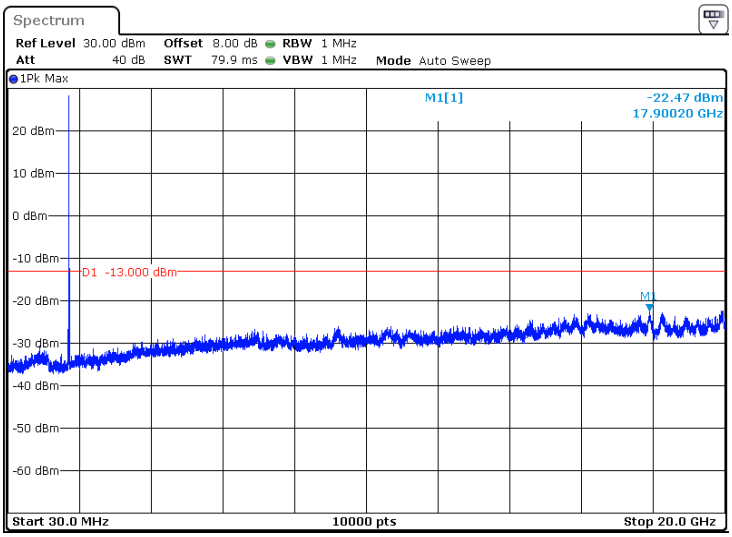
HIGH RB 1/0
Limit = 43+10log(P) dB = 41.48 dBc
(P = 28.48 dBm = 0.705 W)
*Result = 49.93 dBc



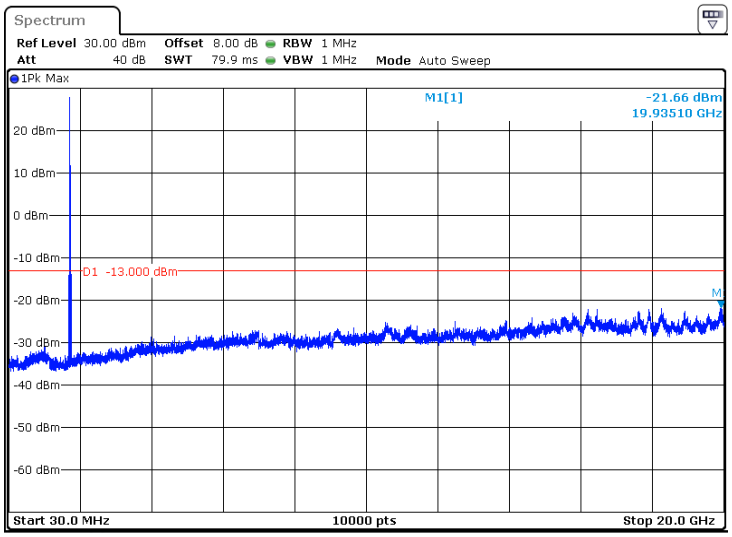
16QAM (20 ㎒ Bandwidth)
LOW RB 1/0
Limit = 43+10log(P) dB = 42.17 dBc
(P = 29.17 dBm = 0.826 W)
*Result = 51.31 dBc



MID RB 1/0
Limit = 43+10log(P) dB = 42.48 dBc
(P = 29.48 dBm = 0.887 W)
*Result = 51.95 dBc



HIGH RB 1/0
Limit = 43+10log(P) dB = 41.72 dBc
(P = 28.72 dBm = 0.745 W)
*Result = 50.38 dBc



5.5 Frequency Stability

5.5.1 Measurement Procedure

The EUT is place inside a temperature chamber. The chamber is set to 20℃ and allowed to stabilize.

After sufficient soak time, the teansmitting frequency error is measured. The temperature is increased by 10 degress, allowed to stabilize and soak, and then the measurement is repeated. This is repeated until +50℃ is reached.

The peak frequency error is recorded (worst-case).

5.5.2 Limit

Requirements: FCC § 2.1055 (a), § 2.1055 (d) & following:
According to §27.54, The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

5.5.3 Test Result

Band 13

QPSK (5 ㎒ Bandwidth)

782 ㎒

Voltage (%)	power (VAC)	Temp. (°C)	Limit (Hz)	Reading Freqyency (Hz)	Frequency Error (Hz)	Frequency Error (%)	Frequency Error (ppm)
100	12.0	20	782000000	781999990	-10	-0.000001	-0.01
100		-30	782000000	782000040	40	0.000005	0.05
100		-20	782000000	782000020	20	0.000003	0.03
100		-10	782000000	782000040	40	0.000005	0.05
100		0	782000000	782000030	30	0.000004	0.04
100		10	782000000	782000020	20	0.000003	0.03
100		30	782000000	782000060	60	0.000008	0.08
100		40	782000000	782000060	60	0.000008	0.08
100		50	782000000	782000040	40	0.000005	0.05
85	10.2	20	782000000	782000010	10	0.000001	0.01
115	13.8	20	782000000	782000000	0	0.000000	0.00

16QAM (5 ㎒ Bandwidth)

782 ㎒

Voltage (%)	power (VAC)	Temp. (°C)	Limit (Hz)	Reading Freqyency (Hz)	Frequency Error (Hz)	Frequency Error (%)	Frequency Error (ppm)
100	12.0	20	782000000	782000010	10	0.000001	0.01
100		-30	782000000	782000030	30	0.000004	0.04
100		-20	782000000	782000010	10	0.000001	0.01
100		-10	782000000	782000020	20	0.000003	0.03
100		0	782000000	782000030	30	0.000004	0.04
100		10	782000000	781999970	-30	-0.000004	-0.04
100		30	782000000	782000030	30	0.000004	0.04
100		40	782000000	781999990	-10	-0.000001	-0.01
100		50	782000000	782000030	30	0.000004	0.04
85	10.2	20	782000000	781999980	-20	-0.000003	-0.03
115	13.8	20	782000000	781999970	-30	-0.000004	-0.04

Band 4

QPSK (1.4 ㎒ Bandwidth)

1732.5 ㎒

Voltage (%)	power (VAC)	Temp. (°C)	Limit (Hz)	Reading Freqyency (Hz)	Frequency Error (Hz)	Frequency Error (%)	Frequency Error (ppm)
100	12	20	1732500000	1732500020	20	0.000001	0.01
100		-30	1732500000	1732500010	10	0.000001	0.01
100		-20	1732500000	1732500040	40	0.000002	0.02
100		-10	1732500000	1732500020	20	0.000001	0.01
100		0	1732500000	1732499990	-10	-0.000001	-0.01
100		10	1732500000	1732500020	20	0.000001	0.01
100		30	1732500000	1732499990	-10	-0.000001	-0.01
100		40	1732500000	1732500030	30	0.000002	0.02
100		50	1732500000	1732500040	40	0.000002	0.02
85	10.2	20	1732500000	1732500030	30	0.000002	0.02
115	13.8	20	1732500000	1732500020	20	0.000001	0.01

16QAM (1.4 ㎒ Bandwidth)

1732.5 ㎒

Voltage (%)	power (VAC)	Temp. (°C)	Limit (Hz)	Reading Freqyency (Hz)	Frequency Error (Hz)	Frequency Error (%)	Frequency Error (ppm)
100	12	20	1732500000	1732500020	20	0.000001	0.01
100		-30	1732500000	1732499990	-10	-0.000001	-0.01
100		-20	1732500000	1732500010	10	0.000001	0.01
100		-10	1732500000	1732499980	-20	-0.000001	-0.01
100		0	1732500000	1732499990	-10	-0.000001	-0.01
100		10	1732500000	1732500020	20	0.000001	0.01
100		30	1732500000	1732499990	-10	-0.000001	-0.01
100		40	1732500000	1732500030	30	0.000002	0.02
100		50	1732500000	1732500020	20	0.000001	0.01
85	10.2	20	1732500000	1732500040	40	0.000002	0.02
115	13.8	20	1732500000	1732500030	30	0.000002	0.02

5.6 Effective Radiated Power

5.6.1 Measurement Procedure

ANSI/TIA/EIA 603C Clause 2.2.17
KDB 971168 v02r02 Radiated measurement consideration for RF output power.
KDB 971168 D1 Power Meas License Digial Systems v02r02, “Measurement Guidance for Certification of Licensed Digial Transmetters”

5.6.2 Limit

27.50 (b)(10) Portable stations (hand-held devices) transmitting in the 746-757 MHz, 776-788 MHz, and 805-806 MHz bands are limited to 3 watts ERP.

27.50 (d)(4) Fixed, mobile, and portable (hand-held) stations operating in the 1710-1755 MHz band and mobile and portable stations operating in the 1695-1710 MHz and 1755-1780 MHz bands are limited to 1 watt EIRP. Fixed stations operating in the 1710-1755 MHz band are limited to a maximum antenna height of 10 meters above ground. Mobile and portable stations operating in these bands must employ a means for limiting power to the minimum necessary for successful communications.

5.6.3 Test Result

Band 13

5 ㎒ Bandwidth

Mode	RB/RB SIZE	Frequency (㎒)	ERP (Average)	EIRP (Average)	
			dB(μV/m)	dBm	W
5 MHz Band QPSK	6/0	779.5	112.20	17.00	0.05
		782.0	112.40	17.20	0.05
		784.5	112.20	17.00	0.05
5 MHz Band 16QAM	6/0	779.5	112.40	17.20	0.05
		782.0	112.60	17.40	0.05
		784.5	112.10	16.90	0.05

10 ㎒ Bandwidth

Mode	RB/RB SIZE	Frequency (㎒)	ERP (Average)	EIRP (Average)	
			dB(μV/m)	dBm	W
10 MHz Band QPSK	15/0	782.0	112.3	17.1	0.05
10 MHz Band 16QAM	15/0	782.0	112.7	17.5	0.06

Band 4

1.4 ㎒ Bandwidth

Mode	RB/RB SIZE	Frequency (㎒)	ERP (Average)	EIRP (Average)	
			dB(μV/m)	dBm	W
1.4 MHz Band QPSK	6/0	1710.7	112.60	19.6	0.090
		1732.5	114.40	21.4	0.136
		1754.3	114.80	21.8	0.150
1.4 MHz Band 16QAM	6/0	1710.7	112.70	19.7	0.092
		1732.5	114.80	21.8	0.150
		1754.3	115.00	22.0	0.157

3 ㎒ Bandwidth

Mode	RB/RB SIZE	Frequency (㎒)	ERP (Average)	EIRP (Average)	
			dB(μV/m)	dBm	W
3 MHz Band QPSK	15/0	1711.5	111.90	18.9	0.08
		1732.5	114.40	21.4	0.14
		1753.5	114.90	21.9	0.15
3 MHz Band 16QAM	15/0	1711.5	111.60	18.6	0.07
		1732.5	114.10	21.1	0.13
		1753.5	114.80	21.8	0.15

5 ㎒ Bandwidth

Mode	RB/RB SIZE	Frequency (㎒)	ERP (Average)	EIRP (Average)	
			dB(μV/m)	dBm	W
5 MHz Band QPSK	25/0	1712.5	111.60	18.6	0.07
		1732.5	114.40	21.4	0.14
		1752.5	114.70	21.7	0.15
5 MHz Band 16QAM	25/0	1712.5	112.00	19.0	0.08
		1732.5	114.10	21.1	0.13
		1752.5	114.60	21.6	0.14

10 ㎒ Bandwidth

Mode	RB/RB SIZE	Frequency (㎒)	ERP (Average)	EIRP (Average)	
			dB(μV/m)	dBm	W
10 MHz Band QPSK	50/0	1712.5	112.70	19.7	0.09
		1732.5	114.40	21.4	0.14
		1752.5	114.60	21.6	0.14
10 MHz Band 16QAM	50/0	1712.5	112.80	19.8	0.09
		1732.5	114.40	21.4	0.14
		1752.5	114.50	21.5	0.14

15 ㎒ Bandwidth

Mode	RB/RB SIZE	Frequency (㎒)	ERP (Average)	EIRP (Average)	
			dB(μV/m)	dBm	W
15 MHz Band QPSK	75/0	1712.5	113.00	20.0	0.10
		1732.5	114.30	21.3	0.13
		1752.5	114.60	21.6	0.14
15 MHz Band 16QAM	75/0	1712.5	113.20	20.2	0.10
		1732.5	114.50	21.5	0.14
		1752.5	114.10	21.1	0.13

20 ㎒ Bandwidth

Mode	RB/RB SIZE	Frequency (㎒)	ERP (Average)	EIRP (Average)	
			dB(μV/m)	dBm	W
20 MHz Band QPSK	100/0	1720.0	112.10	19.1	0.08
		1732.5	114.40	21.4	0.14
		1745.0	112.60	19.6	0.09
20 MHz Band 16QAM	100/0	1720.0	112.40	19.4	0.09
		1732.5	114.10	21.1	0.13
		1745.0	113.80	20.8	0.12

5.7 Undesirable emissions (Radiated)

5.7.1 Measurement Procedure

1. On a test site, the EUT shall be placed at 80 cm height on a turn table, and in the position close to normal use as declared by the applicant.
2. The test antenna shall be oriented initially for vertical polarization located 3 m from EUT to correspond to the fundamental frequency of the transmitter.
3. The output of the test antenna shall be connected to the measuring receiver and the peak detector is used for the measurement.
4. During the measurement of the EUT, the resolution bandwidth was to 3 MHz and the video bandwidth was set to 3 MHz.
5. The transmitter shall be switched on, the measuring receiver shall be tuned to the frequency of the transmitter under test.
6. The test antenna shall be raised and lowered through the specified range of height until the maximum signal level is detected by the measuring receiver.
7. The transmitter shall be rotated through 360° in the horizontal plane, until the maximum signal level is detected by the measuring receiver.
8. The test antenna shall be raised and lowered again through the specified range of height until the maximum signal level is detected by the measuring receiver.
9. The maximum signal level detected by the measuring receiver shall be noted.
10. The EUT was replaced by half-wave dipole or horn antenna connected to a signal generator.
11. In necessary, the input attenuator setting on the measuring receiver shall be adjusted in order to increase the sensitivity of the measuring receiver.
12. The test antenna shall be raised and lowered through the specified range of height to ensure that the maximum signal is received.
13. The input signal to the substitution antenna shall be adjusted to the level that produces a level detected by the measuring received, which is equal to the level noted while the transmitter radiated power was measured, corrected for the change of input attenuator setting of the measuring receiver.
14. The input level to the substitution antenna shall be recorded as power level in dBm, corrected for any change of input attenuator setting of the measuring receiver.
15. The measurement shall be repeated with the test antenna and the substitution antenna orientated for horizontal polarization.

5.7.2 Limit

27.53 (c)(2) On any frequency outside the 776-788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least 43 + 10 log (P) dB.

27.53 (h) For operations in the 1710-1755 MHz and 2110-2155 MHz bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least 43 + 10 log (P) dB.

5.7.2 Test Result

Undesirable emissions (Band 13)

Bandwidth [㎒]	Test Freq, [㎒]	RB/ Offset Size	Test Mode	Freq, [㎒]	Ant Pol [H/V]	Level [dBuV/m]	Result e.i.r.p. [dBm]	Margin [dB]	Limit [dBm]
5.0	779.5	0/1	QPSK	748.8	V	45.8	-47.3	34.3	-13
				1554.6	V	54.7	-38.4	25.4	-13
				2211.6	V	48.7	-44.4	31.4	-13
				3145.4	V	51.7	-41.4	28.4	-13
	782	0/1	QPSK	750.0	V	44.7	-48.4	35.4	-13
				1559.1	V	55.7	-37.4	24.4	-13
				2211.6	V	48.1	-45.0	32.0	-13
				3145.4	V	51.9	-41.2	28.2	-13
	784.5	0/1	QPSK	754.0	H	45.3	-47.8	34.8	-13
				1563.6	V	56.1	-37.0	24.0	-13
				2211.6	H	49.6	-43.5	30.5	-13
				3145.4	V	51.9	-41.2	28.2	-13
10.0	782	0/1	QPSK	749.0	H	47.2	-45.9	32.9	-13
				1554.6	V	53.6	-39.5	26.5	-13
				2210.5	V	48.6	-44.5	31.5	-13
				3145.4	V	51.7	-41.4	28.4	-13

Note 1: This device was tested under all modulations, RB size and RB offsets and the worst case data are reported in the table above. (The worst case mode is the QPSK modulation type with RB Size 1)

Note 2: No other spurious and harmonic emissions were reported greater than listed emissions above table.

Undesirable emissions in 763 ~ 775 ㎒ & 793 ~ 805 ㎒ (Band 13)

Bandwidth [㎒]	Test Freq, [㎒]	RB/ Offset Size	Test Mode	Freq, [㎒]	Ant Pol [H/V]	Level [dBuV/m]	Result e.i.r.p. [dBm]	Margin [dB]	Limit [dBm]
5.0	779.5	0/1	QPSK	775.0	V	53.1	-40.0	5.0	-35
				800.0	V	31.1	-62.0	27.0	-35
	782	0/1	QPSK	768.0	V	29.1	-64.0	29.0	-35
				800.0	V	30.0	-63.1	28.1	-35
	784.5	0/1	QPSK	768.0	V	28.2	-64.9	29.9	-35
				800.0	V	27.9	-65.2	30.2	-35
10.0	782	0/1	QPSK	773.2	V	53.5	-39.6	4.6	-35
				800.0	V	29.0	-64.1	29.1	-35

Note 1 : This device was tested under all modulations, RB size and RB offsets and the worst case data are reported in the table above. (The worst case mode is the QPSK modulation type with RB Size 1)

Note 2 : For part 27.53(c)(4) measurement, the FCC limit is 65 + 10log10(P[Watts])= -35dBm in a 6.25kHz bandwidth. Since it was not possible to set the resolution bandwidth to 6.25kHz with the available equipment, a bandwidth of 10kHz was used instead to show compliance. By using a 10kHz bandwidth, the result was adjusted by 10log10 (10kHz/6.25kHz) = 2.04dB.

Note 3 : No other spurious and harmonic emissions were reported greater than listed emissions above table.

Undesirable emissions in 1 559 ~ 1 610 ㎒ (Band 13)

Bandwidth [㎒]	Test Freq, [㎒]	RB/ Offset Size	Test Mode	Freq, [㎒]	Ant Pol [H/V]	Level [dBuV/m]	Result e.i.r.p. [dBm]	Margin [dB]	Limit [dBm]
5.0	779.5	0/1	QPSK	1595.7	V	42.2	-50.9	10.9	-40
	782	0/1	QPSK	1595.8	V	43.1	-50.0	10.0	-40
	784.5	0/1	QPSK	1595.7	V	43.2	-49.9	9.9	-40
10.0	782	0/1	QPSK	1595.9	V	42.3	-50.8	10.8	-40

Note 1 : This device was tested under all modulations, RB size and RB offsets and the worst case data are reported in the table above. (The worst case mode is the QPSK modulation type with RB Size 1 and Full RB)

Note 2 : No other spurious and harmonic emissions were reported greater than listed emissions above table.

Undesirable emissions (Band 4)

Bandwidth [㎒]	Test Freq, [㎒]	RB/ Offset Size	Test Mode	Freq, [㎒]	Ant Pol [H/V]	Level [dBuV/m]	Result e.i.r.p. [dBm]	Margin [dB]	Limit [dBm]
1.4	1710.7	0/1	QPSK	2111.0	V	58.7	-36.5	23.5	-13
				2211.0	V	50.0	-45.2	32.2	-13
	1732.5	0/1	QPSK	2133.0	V	56.7	-38.5	25.5	-13
				2212.0	V	59.8	-35.4	22.4	-13
	1754.3	0/1	QPSK	2154.5	V	56.2	-39.0	26.0	-13
				2211.8	V	49.5	-45.7	32.7	-13
3.0	1711.5	0/1	QPSK	2111.5	V	59.4	-35.8	22.8	-13
				2211.8	V	49.6	-45.6	32.6	-13
	1732.5	0/1	QPSK	2132.5	V	56.4	-38.8	25.8	-13
				2211.0	V	49.5	-45.7	32.7	-13
	1753.5	0/1	QPSK	2153.8	V	55.6	-39.6	26.6	-13
				2211.8	V	49.4	-45.8	32.8	-13
				2425.0	H	51.7	-43.5	30.5	-13
5.0	1712.5	0/1	QPSK	2112.5	V	56.5	-38.7	25.7	-13
				2211.3	V	49.8	-45.4	32.4	-13
	1732.5	0/1	QPSK	2132.5	V	58.4	-36.8	23.8	-13
				2211.8	V	49.5	-45.7	32.7	-13
	1752.5	0/1	QPSK	2153.3	V	60.1	-35.1	22.1	-13
				2211.0	V	49.5	-45.7	32.7	-13
				2426.0	H	47.4	-47.8	34.8	-13
10.0	1715.0	0/1	QPSK	2114.3	V	60.2	-35.0	22.0	-13
				2211.0	V	49.5	-45.7	32.7	-13
	1732.5	0/1	QPSK	1769.3	V	69.0	-26.2	13.2	-13
				2134.8	V	59.4	-35.8	22.8	-13
				2211.8	V	49.7	-45.5	32.5	-13
	1750.0	0/1	QPSK	1763.0	V	49.5	-45.7	32.7	-13
				2149.8	V	60.0	-35.2	22.2	-13
				2212.0	H	49.4	-45.8	32.8	-13
15.0	1717.5	0/1	QPSK	2119.8	V	60.3	-34.9	21.9	-13
				2211.0	V	49.1	-46.1	33.1	-13
	1732.5	0/1	QPSK	2429.0	H	47.8	-47.4	34.4	-13
				2136.5	V	61.2	-34.0	21.0	-13
				2211.8	V	49.7	-45.5	32.5	-13
	1747.5	0/1	QPSK	2430.3	H	49.1	-46.1	33.1	-13
				1767.5	V	69.6	-25.6	12.6	-13
				2150.3	V	60.5	-34.7	21.7	-13
20.0	1720.0	0/1	QPSK	2117.8	V	60.8	-34.4	21.4	-13
				2210.8	V	49.1	-46.1	33.1	-13
	1732.5	0/1	QPSK	2138.8	V	61.4	-33.8	20.8	-13
				2211.8	V	49.6	-45.6	32.6	-13
	1745.0	0/1	QPSK	1770.3	V	60.9	-34.3	21.3	-13
				2114.0	V	60.6	-34.6	21.6	-13
				2212.3	V	49.3	-45.9	32.9	-13
				2430.5	H	47.6	-47.6	34.6	-13

Note 1 : This device was tested under all modulations, RB size and RB offsets and the worst case data are reported in the table above. (The worst case mode is the QPSK modulation type with RB Size 1 and Full RB)

Note 2 : No other spurious and harmonic emissions were reported greater than listed emissions above table.

6. Test equipment used for test

Description	Manufacture	Model No.	Serial No.	Next Cal Date.
WIDEBAND POWER SENSOR	R & S	NRP-Z81	100677	15.05.28
Attenuator	HP	8491A	18591	15.05.08
Spectrum Analyzer	R&S	FSV40	100989	15.01.29
DC POWER SUPPLY	AGILENT	E3632A	MY400088000	15.12.11
Signal generator	R & S	SMR40	100007	15.06.10
SPECTRUM ANALYZER	R & S	FSV40	100988	15.01.29
Amplifier	Sonoma Instrument	310N	293004	15.09.25
Turn Table	Innco Systems	DT2000S-1t	79	-
Antenna Mast	Innco Systems	MA4000-EP	303	-
Loop Antenna	R&S	HFH2-Z2	100355	15.06.19
Bi-Log Antenna	Schwarzbeck	VULB9163	552	16.05.14
Horn Antenna	ETS-LINDGREN	3117	155787	15.02.26
Broadband Preamplifier	Schwarzbeck	BBV9718	216	15.04.22
Attenuator	HP	8491A	16861	15.07.01
Highpass Filter	Wainwright Instruments GmbH	WHKX3.0/ 18G-12SS	44	15.02.05
EMI Test Receiver	R&S	ESCI	100001	15.06.24
Bluetooth Tester	TESCOM	TC-3000A	3000A310047	15.04.10
POWER DIVIDER	Aeroflex/ Weinschel,Inc	1580-1	RM987	15.04.08
SPIRAL antenna	COBHAM	PSA-75301R/170	406827-0001	N/A
Horn antenna	ETS.lindgren	3116	00086632	15.10.20
Broadband Preamplifier	SCHWARZBECK	BBV9721	2	15.05.09
Radio Communication Analyzer	Anritsu	MT8820C	6201010005	15.11.12