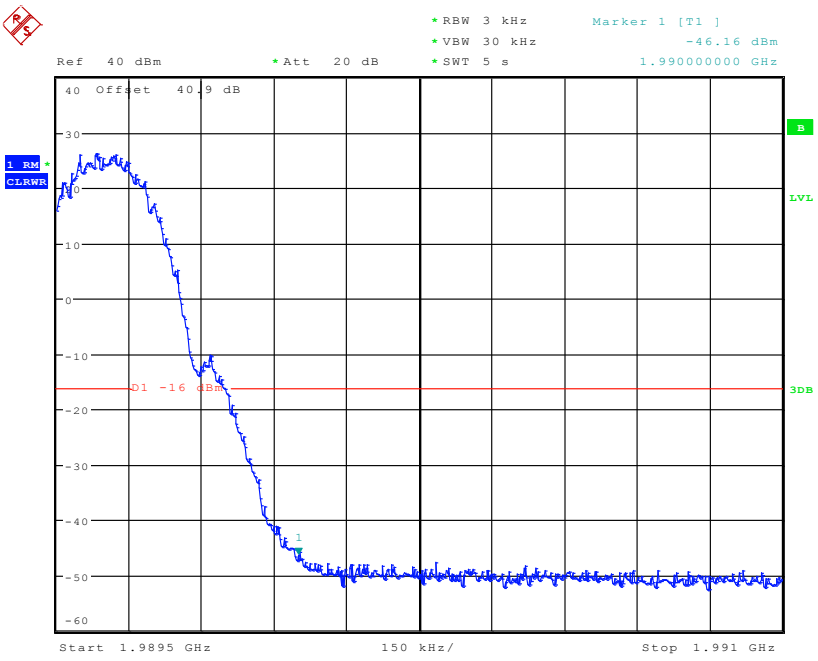
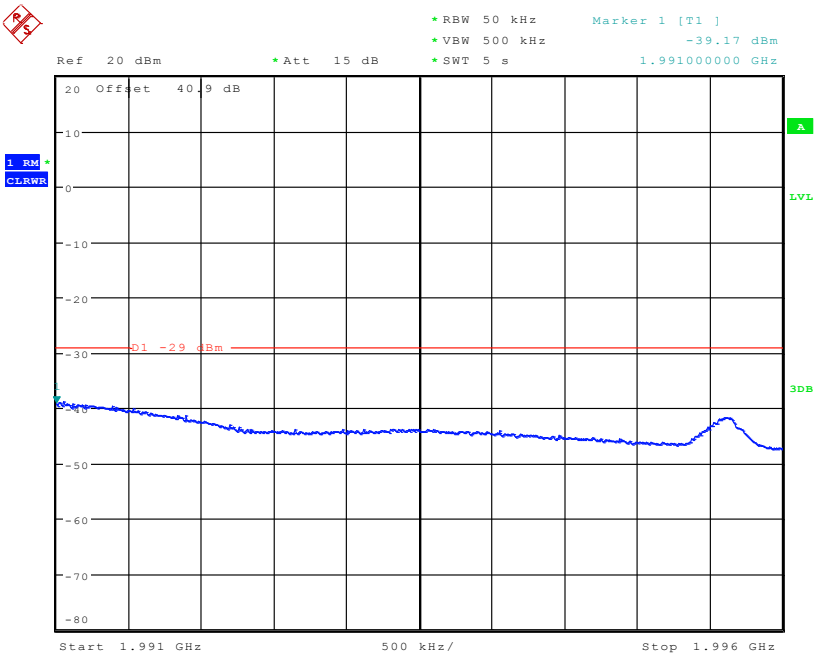
Channel Position T_{RFBW} - GSM GMSK / LTE QPSK: Bandwidth 3.0MHz



Date: 6.JUN.2014 15:33:22



Date: 6.JUN.2014 15:34:03

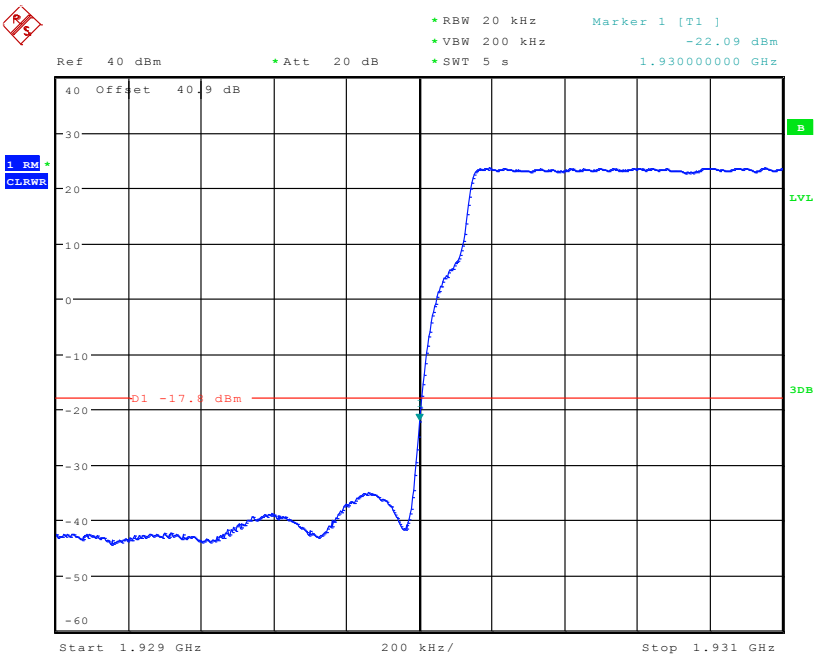
Configuration W+L-MIMO-MC 1 (1L + 1W)

Maximum Output Power 44.8dBm per carrier

Band Edge Frequency	Edge Test with modulation (L) QPSK / 3.0MHz Bandwidth + (W) 16QAM Channel Frequencies
Channel Position B_{RFBW} 1930.0 MHz	Port A: (L) 1931.5MHz + (W) 1935.4MHz Port B: (L) 1931.5MHz + (W) 1935.4MHz
Channel Position T_{RFBW} 1990.0 MHz	Port A: (L) 1988.5MHz + (W) 1984.6MHz Port B: (L) 1988.5MHz + (W) 1984.6MHz

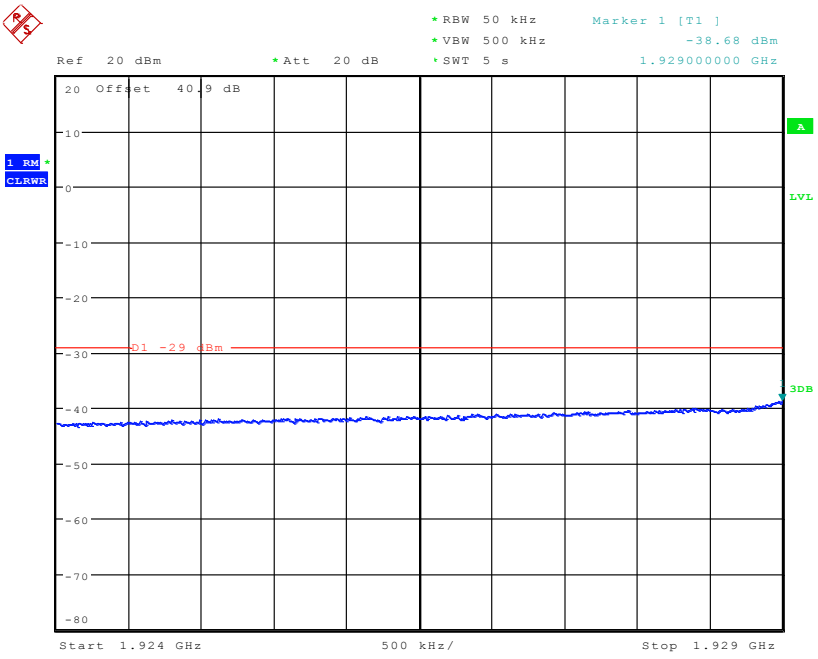
Note: For LTE, the channels shown in the table above are the minimum and maximum channels that can be used in the authorised frequency ranges to maintain compliance. Channels outside of the ranges shown in the above tables shall not be made available to the end user.

Channel Position B_{RFBW} - LTE QPSK: Bandwidth 3.0MHz / WCDMA 16QAM



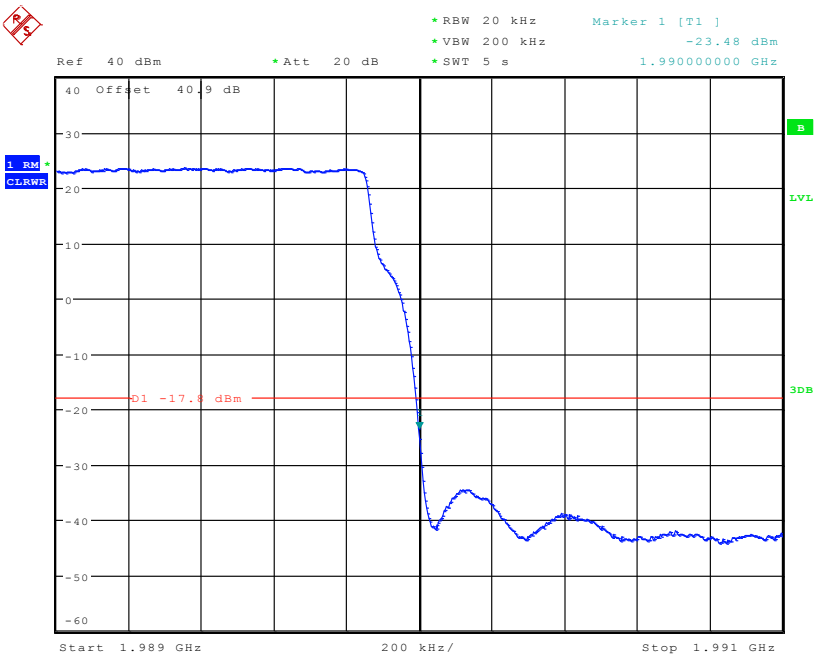
Date: 6.JUN.2014 15:57:09

Note: A resolution bandwidth of 20kHz was used. 20kHz is <1% of the Emission Bandwidth of LTE (2.96MHz), to compensate for the reduced measurement bandwidth, the limit was adjusted from -16dBm (-13dBm -3dB [10Log(2)]) to -17.8dBm.



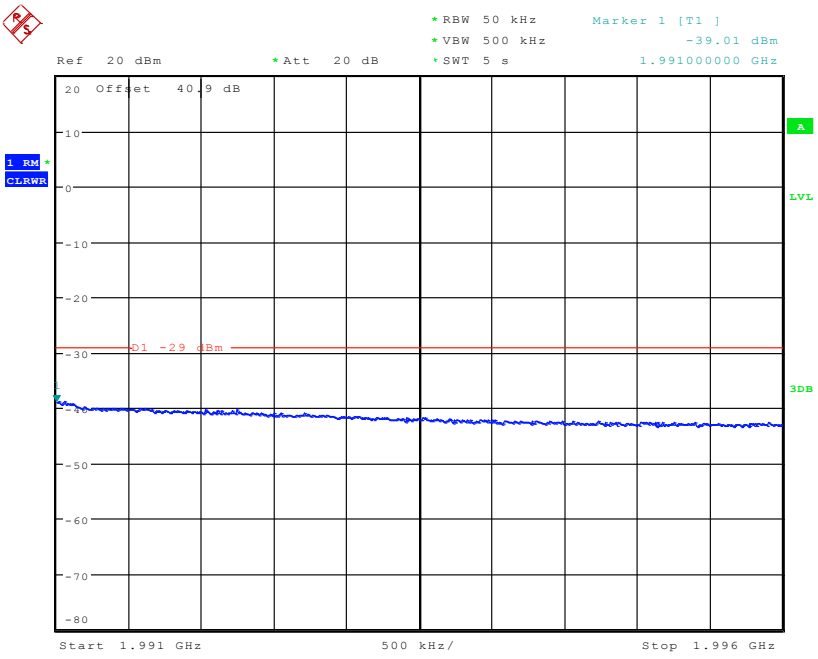
Date: 6.JUN.2014 15:50:18

Channel Position T_{RFBW} - LTE QPSK: Bandwidth 3.0MHz / WCDMA 16QAM



Date: 6.JUN.2014 16:03:07

Note: A resolution bandwidth of 20kHz was used. 20kHz is <1% of the Emission Bandwidth of LTE (2.96MHz), to compensate for the reduced measurement bandwidth, the limit was adjusted from -16dBm (-13dBm -3dB [10Log(2)]) to -17.8dBm.



Date: 6.JUN.2014 16:01:29

Limit	-13 dBm

2.4 RADIATED SPURIOUS EMISSIONS

2.4.1 Specification Reference

FCC CFR 47 Part 2, Clause 2.1053
FCC CFR 47 Part 24, Clause 24.238 (a)
Industry Canada RSS-133, Clause 6.5.1

2.4.2 Equipment Under Test

RRUS 12 B2, KRC 161 299/2, S/N: CB4S987897

2.4.3 Date of Test and Modification State

30 May and 03 to 13 June 2014 - Modification State 0

2.4.4 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

2.4.5 Environmental Conditions

Ambient Temperature	25.0 – 26.5°C
Relative Humidity	27.0 – 29.6%

2.4.6 Test Method

The test was applied in accordance with test method requirements of FCC Part 24 and RSS 133 and TIA-603-C-2004.

A preliminary profile of the Spurious Radiated Emissions was obtained by operating the EUT on a remotely controlled turntable within the chamber. Measurements of emissions from the EUT were obtained with the Measurement Antenna in both Horizontal and Vertical Polarisations.

Emissions identified within the range 30MHz – 20GHz were then formally measured using a Peak detector as the worst case. The measurement outside a licensee's frequency band(s) of operation used a resolution bandwidth of 1MHz.

The EUT was measured with the antenna height varied between 1 and 4m with the turntable rotated between 0 and 360 degree. The emission of any outside a licensee's frequency within 10 dB of the limit were measured with the substitution method used according to the standard.

The limit for outside a licensee's frequency band(s) of operation the power of the Spurious Emissions have been calculated, as shown below using the following formula:

Field Strength of Carrier - (43 + 10Log (P)) dB

Where:
Field Strength is measured in dBµV/m
P is measured Transmitter Power in Watts

Determination of Spurious Emission Limit

As the EUT does not have an integral antenna, the field strength of the carrier has been calculated assuming that the power is to be fed to a half-wave tuned dipoles as per 2.1053 (a).

$E_{(v/m)}=(30 \times G_i \times P_o)^{0.5} / d$

Where G_i is the antenna gain of ideal half-wave dipoles,
P_o is the power out of the transceiver in W,
d is the measurement distance in meter.

Therefore at 3m measurement distance the field strength using the lowest transceiver output power would be:

$E_{(v/m)}=(30 \times 1.64 \times 24.72)^{0.5} / 3 = 11.62V/m = 141.33dB\mu V/m$

As per 24.238(a) the spurious emission must be attenuated by 43 + 10log (P_o) dB this gives:

43 + 10log(24.72) = 56.93dB

Therefore the limit at 3m measurement distance is:

141.33 – 56.93 = 84.4 dBµV/m

This limit has been used to determine Pass or Fail for the harmonics measured and detailed in the following results.

The results are shown in the plots below.

2.4.7 Test Results

Note: Only the worst case results plots have been included as all of the emissions are greater than 20dB below the limit.

Configuration G-SC

Maximum Output Power 47.8dBm per carrier

Channel Position M	1960.0MHz

Channel Position M - GMSK - 30MHz – 20GHz

No emissions were detected within 20dB of the limit.

Configuration W-SC

Maximum Output Power 47.0dBm per carrier

Channel Position M	1960.0MHz

Channel Position M - QPSK - 30MHz – 20GHz

No emissions were detected within 20dB of the limit.

Configuration W-MIMO-SC

Maximum Output Power 47.0dBm per carrier

Channel Position M	1960.0MHz

Channel Position M - 16QAM - 30MHz – 20GHz

No emissions were detected within 20dB of the limit.

Configuration L-MIMO-SC

Maximum Output Power 47.8dBm per carrier, LTE Bandwidth 1.4MHz

Channel Position	Channel Frequencies
Channel Position B_{RFBW}	1930.7MHz
Channel Position M_{RFBW}	1960.0MHz
Channel Position T_{RFBW}	1989.3MHz

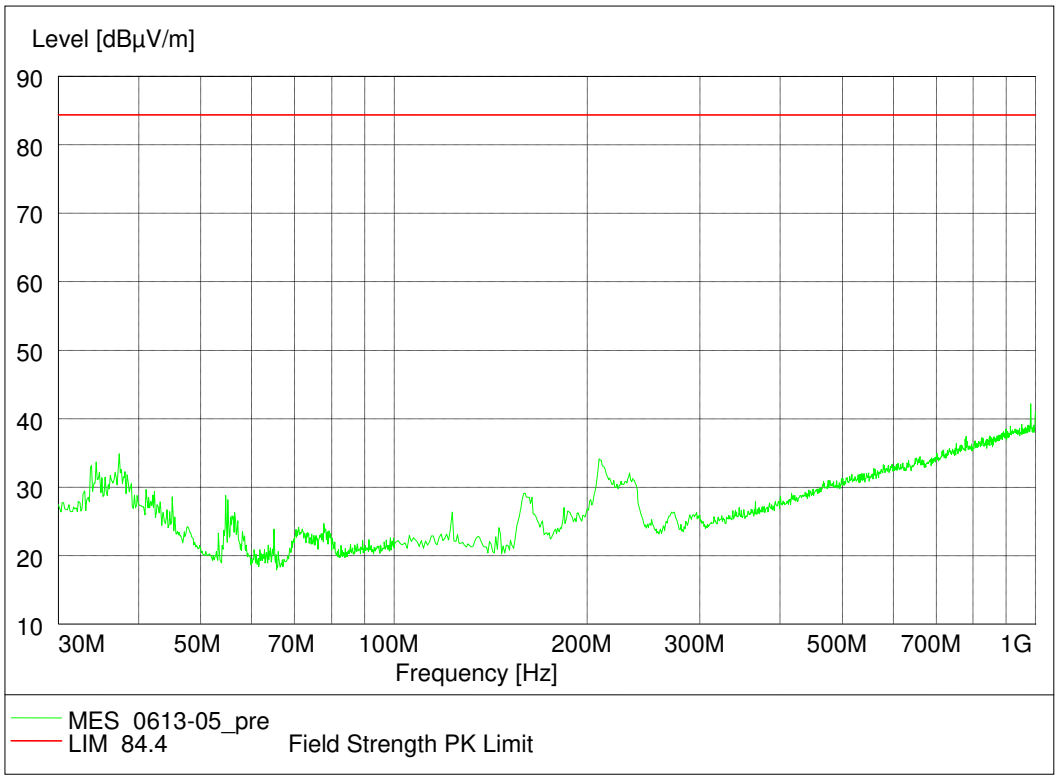
Channel Position B - LTE QPSK: Bandwidth 1.4MHz - 30MHz – 20GHz

No emissions were detected within 20dB of the limit.

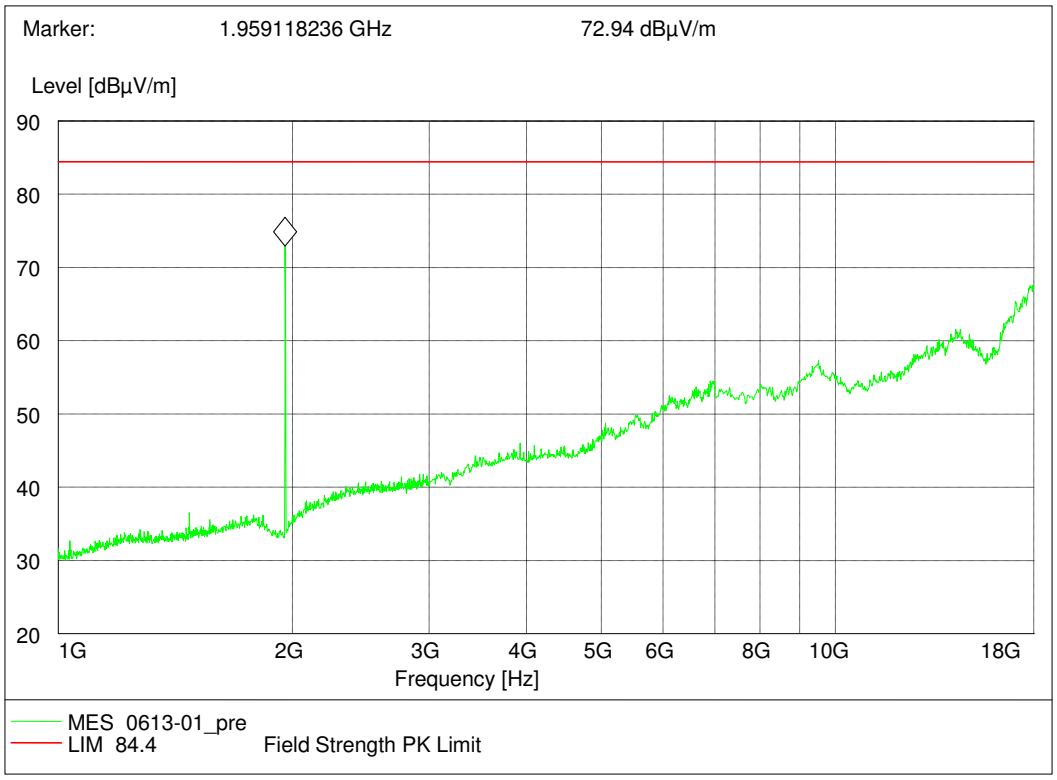
Channel Position T - LTE QPSK: Bandwidth 1.4MHz - 30MHz – 20GHz

No emissions were detected within 20dB of the limit.

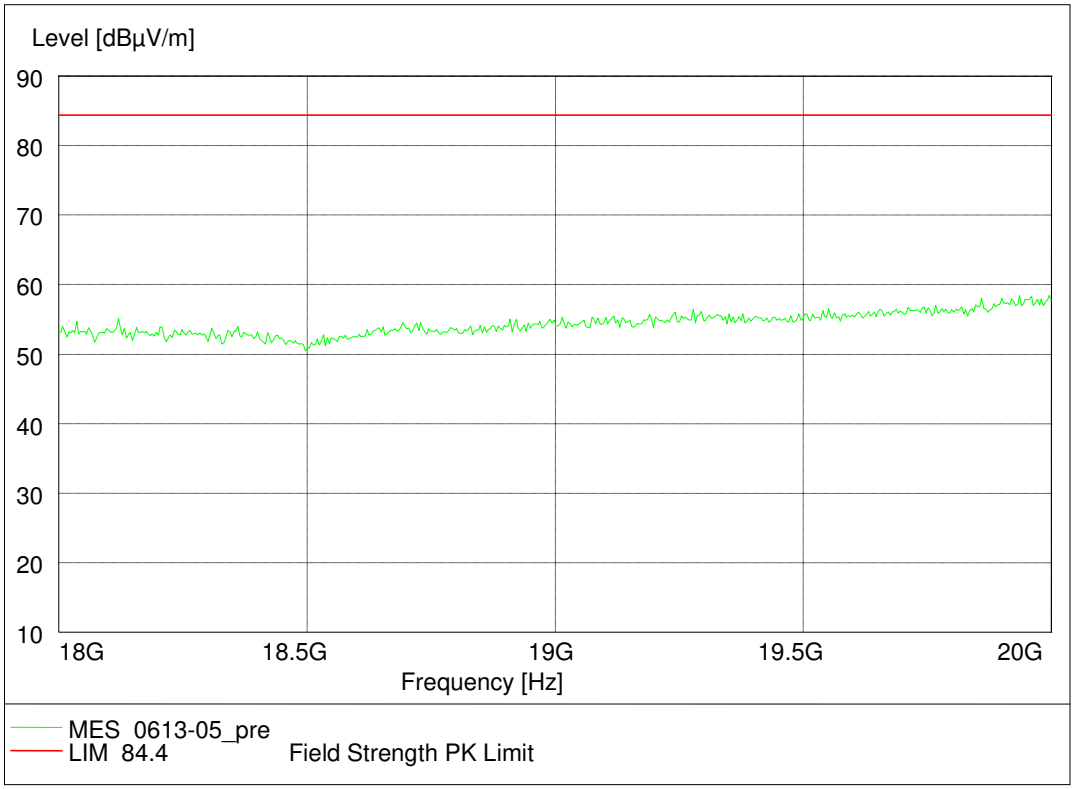
Channel Position M_{RFBW} - LTE QPSK: Bandwidth 1.4MHz - 30MHz – 1GHz



Channel Position M_{RFBW} - LTE QPSK: Bandwidth 1.4MHz - 1GHz - 18GHz



Channel Position M_{RFBW} - LTE QPSK: Bandwidth 1.4MHz - 18GHz -20GHz



Configuration L-MIMO-MC 1 (2C)

Maximum Output Power 44.8dBm per carrier

Channel Position M	1940.7MHz + 1979.3MHz

Channel Position M - LTE QPSK: Bandwidth 1.4MHz - 30MHz – 20GHz

No emissions were detected within 20dB of the limit.

Configuration L-MIMO-MC 2 (3C)

Maximum Output Power 43.0dBm per carrier

Channel Position M	1940.7MHz + 1942.1MHz+ 1979.3MHz

Channel Position M - LTE QPSK: Bandwidth 1.4MHz - 30MHz – 20GHz

No emissions were detected within 20dB of the limit.

Configuration G+W-MIMO-MC 1 (1G+1W)

Maximum Output Power 44.8dBm per carrier

Channel Position M_{RFBW}	Port A: (G) 1940.2MHz + (W) 1977.6MHz
	Port B: (G) 1940.8MHz + (W) 1977.6MHz

Channel Position M_{RFBW} - GSM GMSK / WCDMA 16QAM - 30MHz – 20GHz

No emissions were detected within 20dB of the limit.

Configuration G+W-MIMO-MC 3 (2G+1W)

Maximum Output Power 43.0dBm per carrier

Channel Position M_{RFBW}	Port A: (G) 1940.2MHz + (G) 1941.8MHz + (W) 1977.6MHz
	Port B: (G) 1940.8MHz + (G) 1942.4MHz + (W) 1977.6MHz

Channel Position M_{RFBW} - GSM GMSK / WCDMA 16QAM - 30MHz – 20GHz

No emissions were detected within 20dB of the limit.

Configuration G+W-MIMO-MC 2 (2G+4W)

Maximum Output Power 40.0dBm per carrier

Channel Position M_{RFBW}	Port A: (G) 1940.2MHz + (W) 1952.4MHz + (W) 1957.4MHz + (W) 1962.4MHz + (W) 1967.4MHz + (G) 1979.8MHz
	Port B: (G) 1940.8MHz + (W) 1952.4MHz + (W) 1957.4MHz + (W) 1962.4MHz + (W) 1967.4MHz + (G) 1979.2MHz

Channel Position M_{RFBW} - GSM GMSK / WCDMA 16QAM - 30MHz – 20GHz

No emissions were detected within 20dB of the limit.

Configuration G+L-MIMO-MC 1 (1G+1L)

Maximum Output Power 44.8dBm per carrier

Channel Position M_{RFBW}	Port A: (G) 1940.2MHz + (L) 1979.3MHz
	Port B: (G) 1940.8MHz + (L) 1979.3MHz

Channel Position M_{RFBW} - GSM GMSK / LTE QPSK: Bandwidth 3.0MHz - 30MHz – 20GHz

No emissions were detected within 20dB of the limit.

Configuration G+L-MIMO-MC 3 (2G+1L)

Maximum Output Power 44.8dBm per carrier

Channel Position M_{RFBW}	Port A: (G) 1940.2MHz + (G) 1941.8MHz + (L) 1979.3MHz
	Port B: (G) 1940.8MHz + (G) 1942.4MHz + (L) 1979.3MHz

Channel Position M_{RFBW} - GSM GMSK / LTE QPSK: Bandwidth 3.0MHz - 30MHz – 20GHz

No emissions were detected within 20dB of the limit.

Configuration W+L-MIMO-MC 1 (1W+1L)

Maximum Output Power 44.8dBm per carrier

Channel Position M_{RFBW}	Port A: (W) 1942.4MHz + (L) 1979.3MHz
	Port B: (W) 1942.4MHz + (L) 1979.3MHz

Channel Position M_{RFBW} - WCDMA 16QAM / LTE QPSK: Bandwidth 3.0MHz - 30MHz – 20GHz

No emissions were detected within 20dB of the limit.

Configuration W+L-MIMO-MC 3 (2W+1L)

Maximum Output Power 43.0dBm per carrier

Channel Position M_{RFBW}	Port A: (W) 1942.4MHz + (W) 1947.4MHz + (L) 1979.3MHz
	Port B: (W) 1942.4MHz + (W) 1947.4MHz + (L) 1979.3MHz

Channel Position M_{RFBW} - WCDMA 16QAM / LTE QPSK: Bandwidth 3.0MHz - 30MHz – 20GHz

No emissions were detected within 20dB of the limit.

Limit	-13dBm / 84.4dBµV/m

Remarks

The EUT does not exceed -13dBm / 84.4dBµV/m at the measured frequencies.

2.5 CONDUCTED SPURIOUS EMISSIONS

2.5.1 Specification Reference

FCC CFR 47 Part 2, Clause 2.1051
FCC CFR 47 Part 24, Clause 24.238 (a)
Industry Canada RSS-133, Clause 6.5.1

2.5.2 Equipment Under Test

RRUS 12 B2, KRC 161 299/2, S/N: CB4S987897

2.5.3 Date of Test and Modification State

09 to 11 June 2014 - Modification State 0

2.5.4 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

2.5.5 Environmental Conditions

Ambient Temperature	23.3 – 25.5°C
Relative Humidity	22.5 – 23.5%

2.5.6 Test Method

In accordance with FCC CFR 47 Part 2, Clause 2.1051, the spurious emissions from the antenna terminal were measured. In accordance with FCC CFR 47 Part 24, Clause 24.238 and Industry Canada RSS-133, Clause 6.5, any emissions outside of the block edges shall be attenuated by at least 43 + 10 log (P).

The EUT was set to transmit at its maximum rated output power. The path loss between the Spectrum Analyser and the EUT was measured with the worst case level being entered as a Reference Level Offset. In accordance with 24.238 (b), the RBW was set to 1MHz and a Peak detector with the trace set to Max Hold was used. The frequency spectrum was then investigated between 9kHz and 20GHz. Testing was carried out on the Bottom, Middle and Top channels.

For MIMO mode configurations, the limit was adjusted with a correction of -3dB [10Log2] by using the Measure and Add 10Log(N) dB technique according to FCC KDB662911 D01 accounting for simultaneous transmission from antenna ports RF A and RF B.

The measurements were performed on the output connector RF A. Limited complementary measurement were done at output conector RF B to verify identical performance for both transmitter chains in MIMO mode

The results are shown in the plots below.

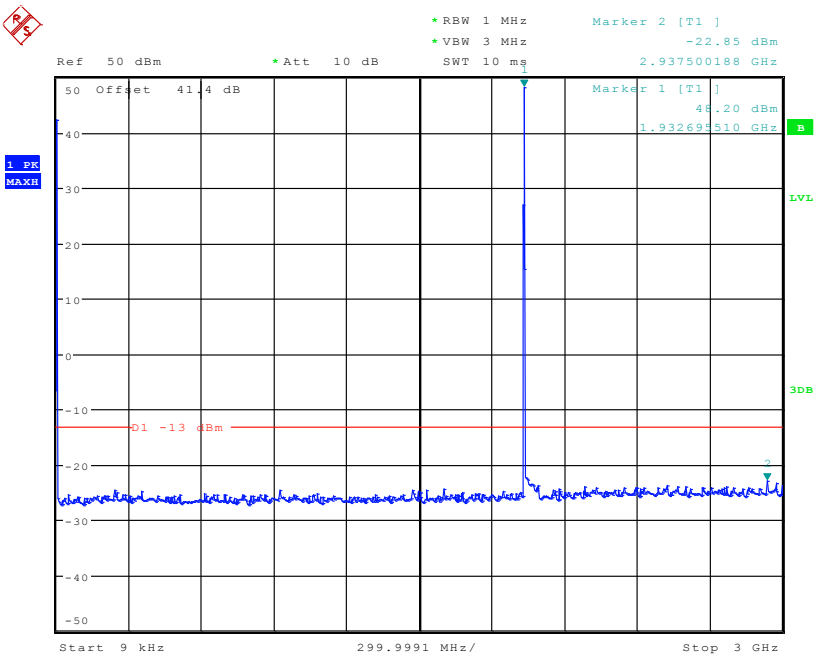
2.5.7 Test Results

Configuration G-SC

Maximum Output Power 47.8dBm per carrier

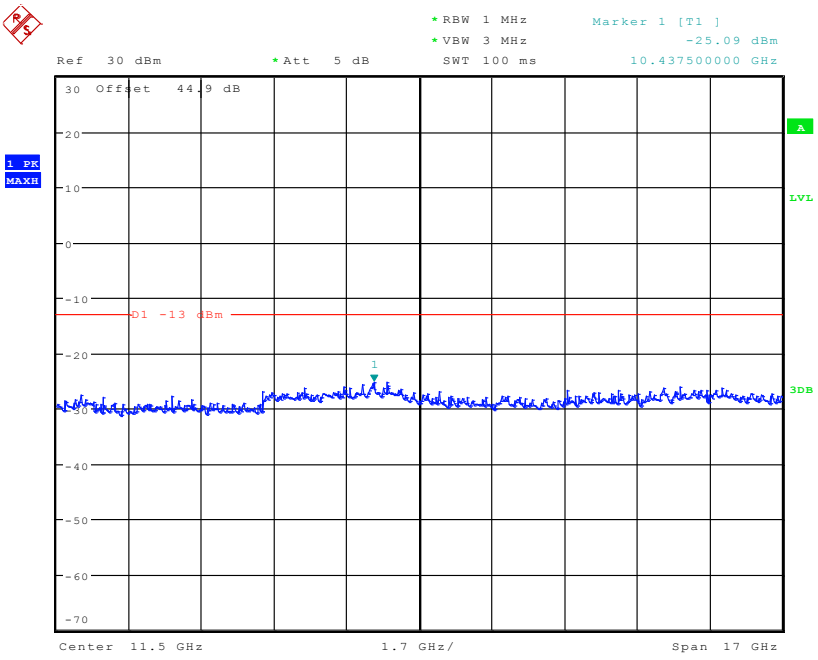
Channel Position	Channel Frequencies
Channel Position B	Port A: 1930.4MHz Port B: 1931.0MHz
Channel Position M	Port A: 1960.0MHz Port B: 1960.6MHz
Channel Position T	Port A: 1989.6MHz Port B: 1988.0MHz

Channel Position B - GMSK - 9kHz – 3GHz



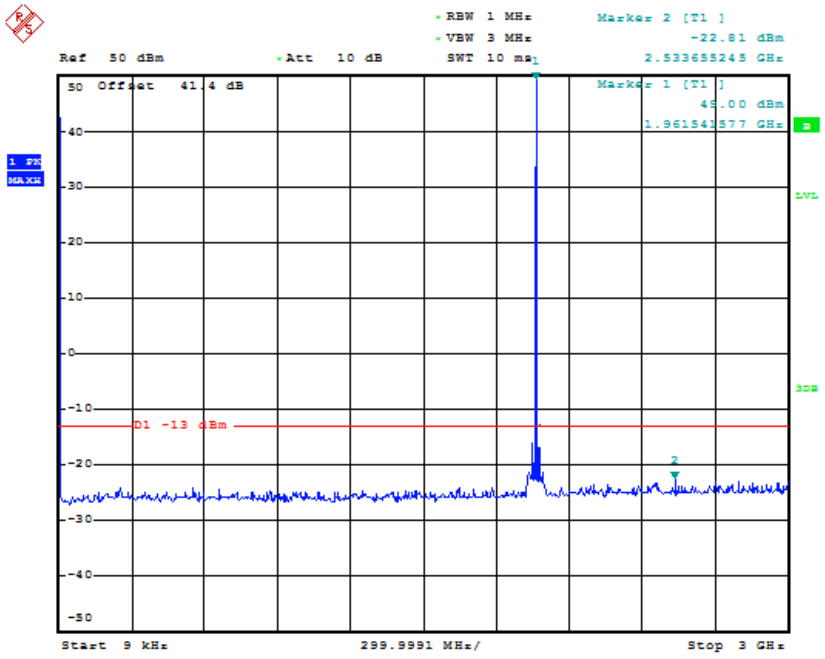
Date: 10.JUN.2014 15:49:59

Channel Position B - GMSK – 3GHz – 20GHz



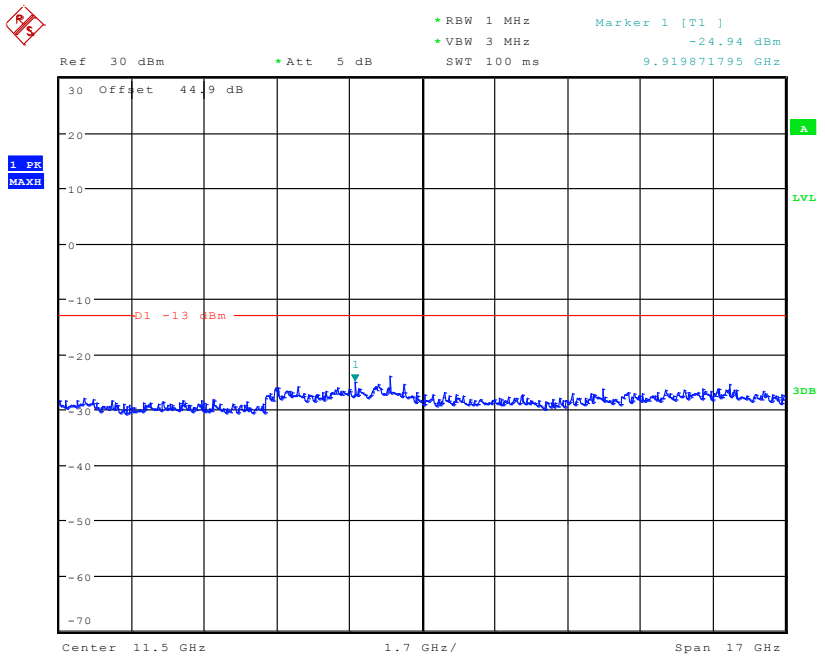
Date: 10.JUN.2014 13:15:51

Channel Position M - GMSK - 9kHz – 3GHz



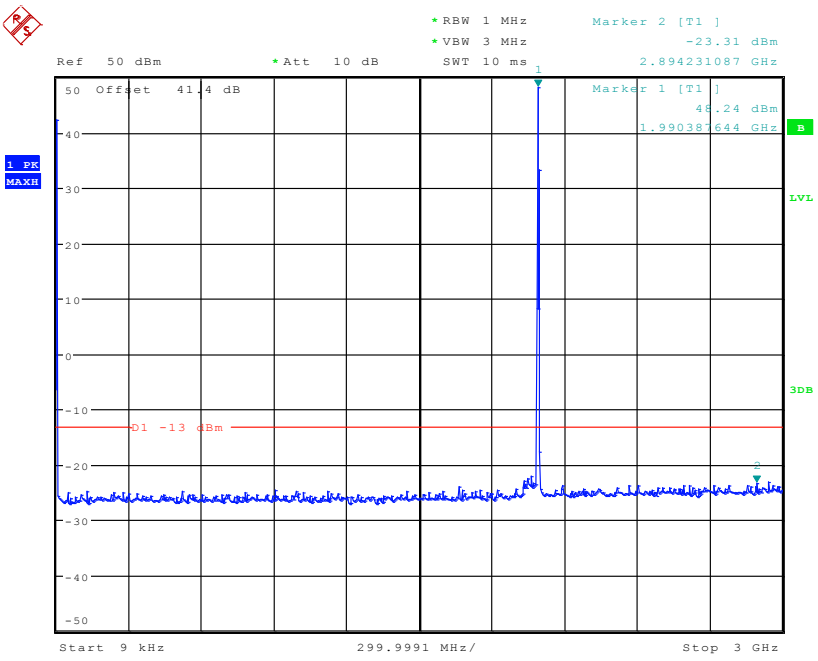
Date: 10.JUN.2014 15:52:22

Channel Position M - GMSK - 3GHz – 20GHz



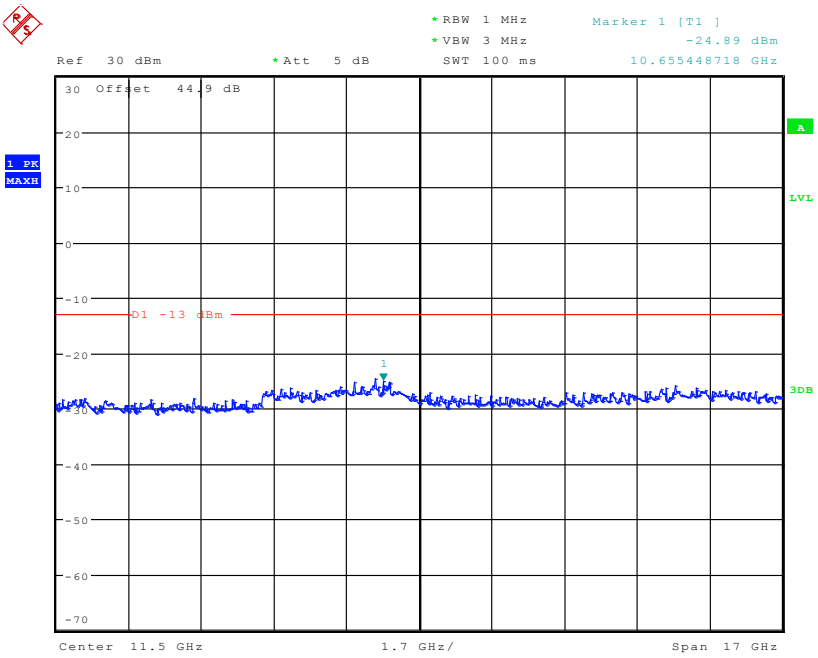
Date: 10.JUN.2014 13:20:31

Channel Position T - GMSK - 9kHz – 3GHz



Date: 10.JUN.2014 15:54:13

Channel Position T - GMSK - 3GHz – 20GHz



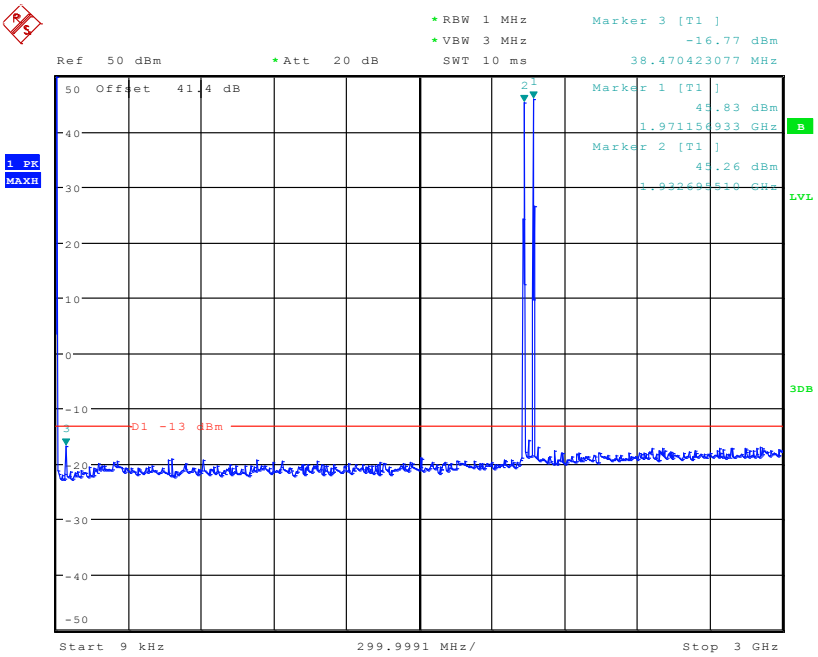
Date: 10.JUN.2014 13:22:48

Configuration G-MC 1 (2C)

Maximum Output Power 44.8dBm per carrier

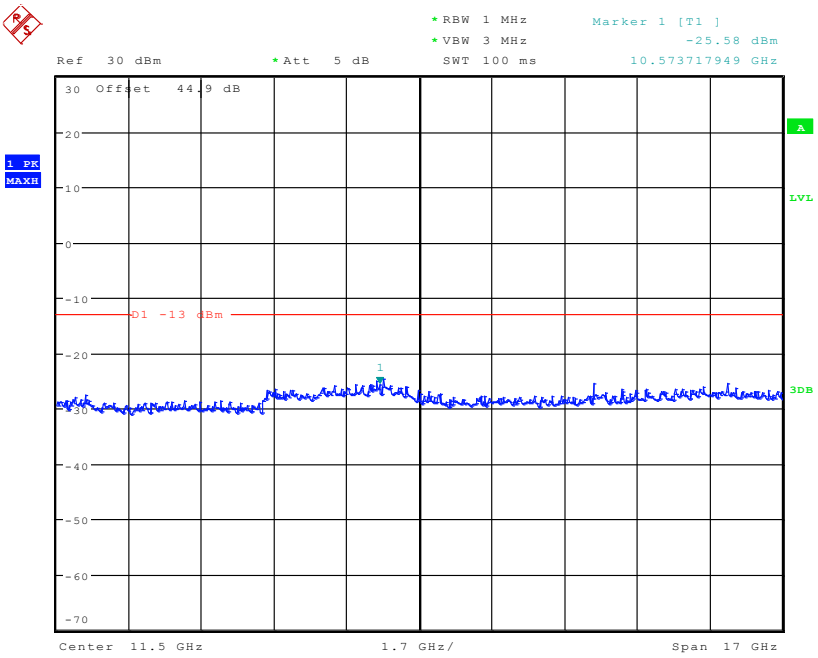
Channel Position	Channel Frequencies
Channel Position B	Port A: 1930.4MHz + 1969.8MHz Port B: 1931.0MHz + 1969.2MHz
Channel Position M	Port A: 1940.2MHz + 1979.8MHz Port B: 1940.8MHz + 1979.2MHz
Channel Position T	Port A: 1950.2MHz + 1989.6MHz Port B: 1950.8MHz + 1989.0MHz

Channel Position B - GMSK - 9kHz – 3GHz



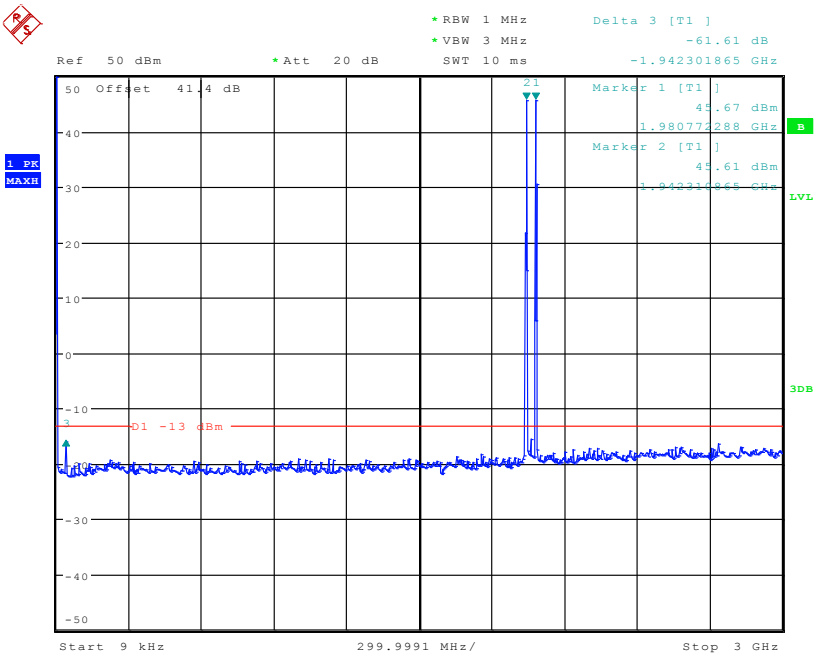
Date: 10.JUN.2014 16:05:58

Channel Position B - GMSK - 3GHz – 20GHz



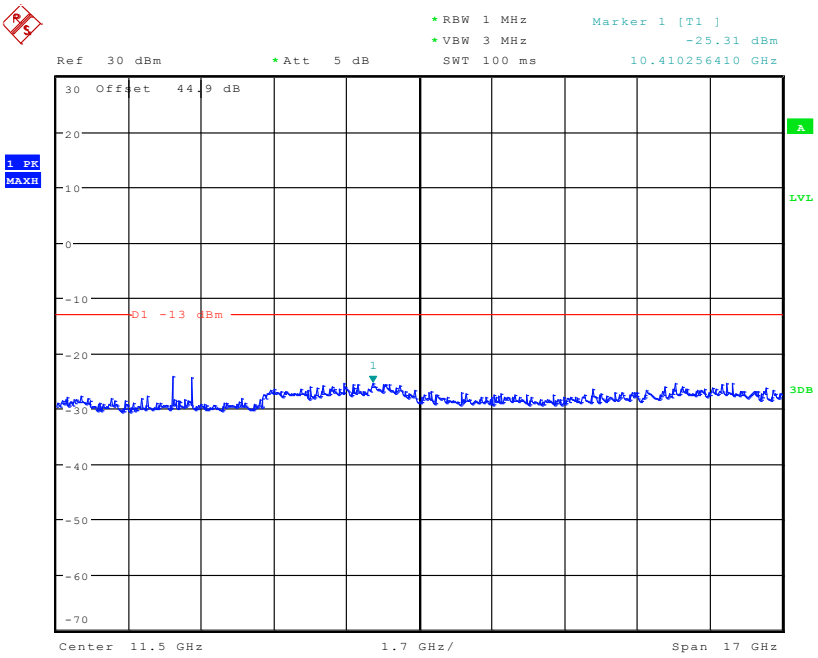
Date: 10.JUN.2014 13:25:17

Channel Position M - GMSK - 9kHz – 3GHz



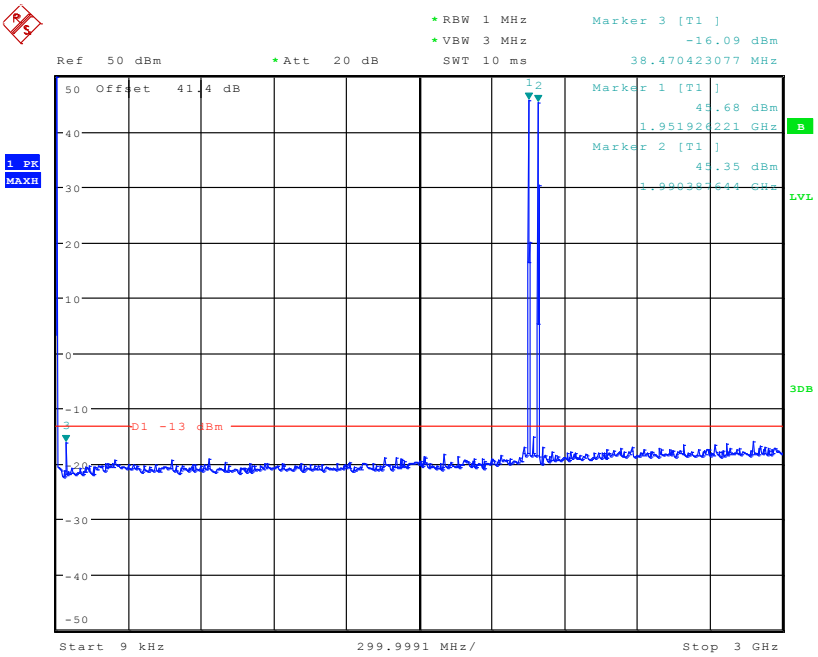
Date: 10.JUN.2014 16:16:21

Channel Position M - GMSK - 3GHz – 20GHz



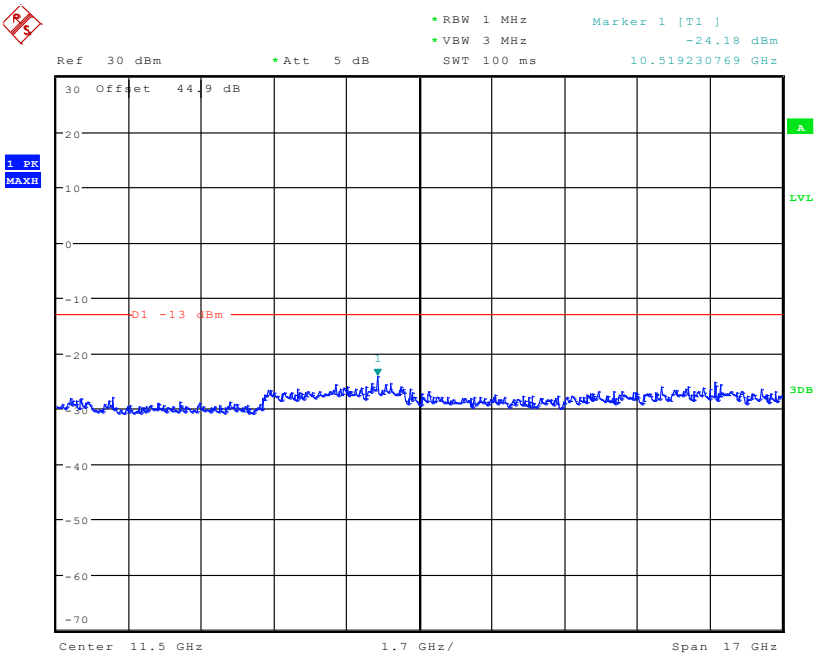
Date: 10.JUN.2014 13:28:36

Channel Position T - GMSK - 9kHz – 3GHz



Date: 10.JUN.2014 16:09:20

Channel Position T - GMSK - 3GHz – 20GHz



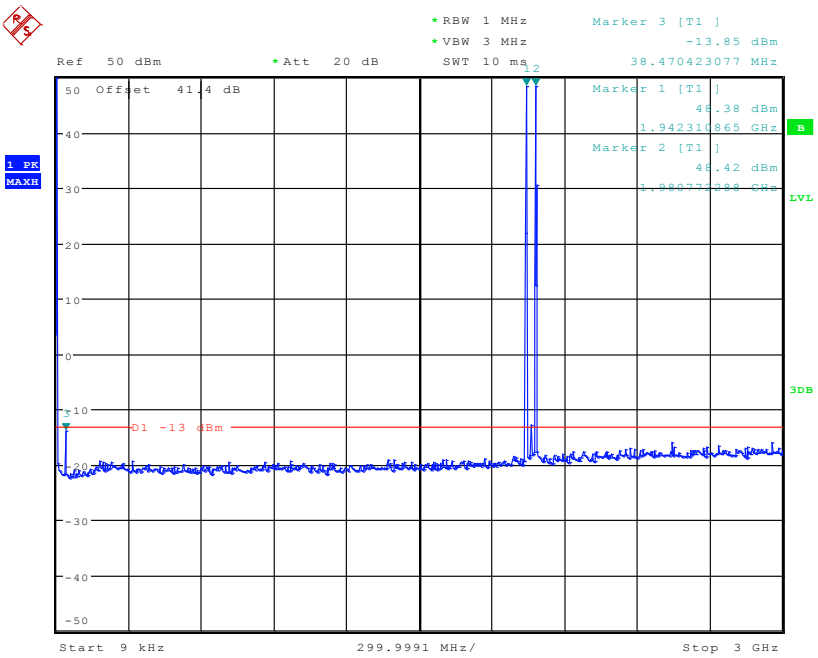
Date: 10.JUN.2014 13:30:23

Configuration G-MC 3 (4C)

Maximum Output Power 41.8dBm per carrier

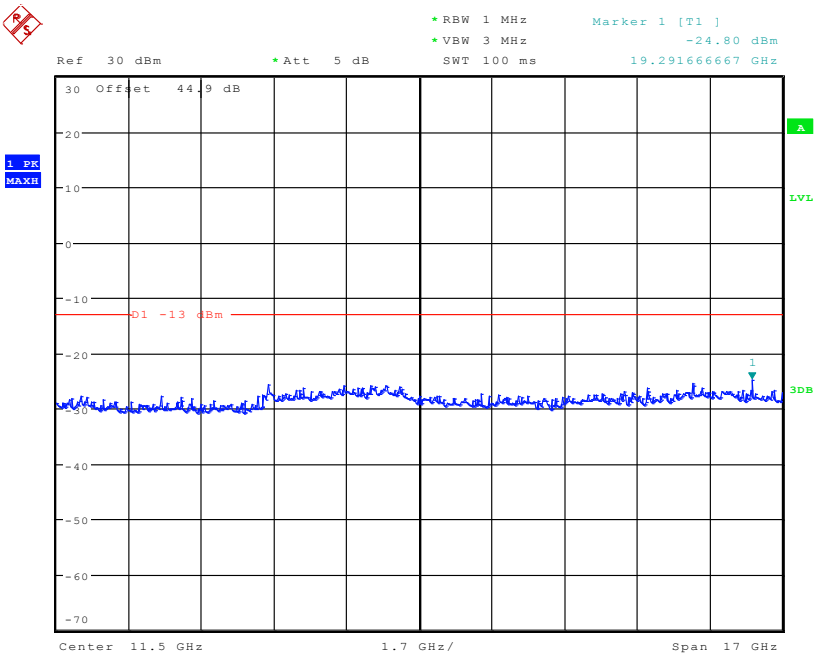
Channel Position	Channel Frequencies
Channel Position B	Port A: 1930.4MHz + 1930.8MHz + 1969.4MHz + 1969.8MHz Port B: 1931.0MHz + 1931.4MHz + 1968.8MHz + 1969.2MHz
Channel Position M	Port A: 1940.2MHz + 1940.6MHz + 1979.4MHz + 1979.8MHz Port B: 1940.8MHz + 1941.2MHz + 1978.8MHz + 1979.2MHz
Channel Position T	Port A: 1950.2MHz + 1950.6MHz + 1989.2MHz + 1989.6MHz Port B: 1950.8MHz + 1951.2MHz + 1988.6MHz + 1989.0MHz

Channel Position B - GMSK - 9kHz – 3GHz



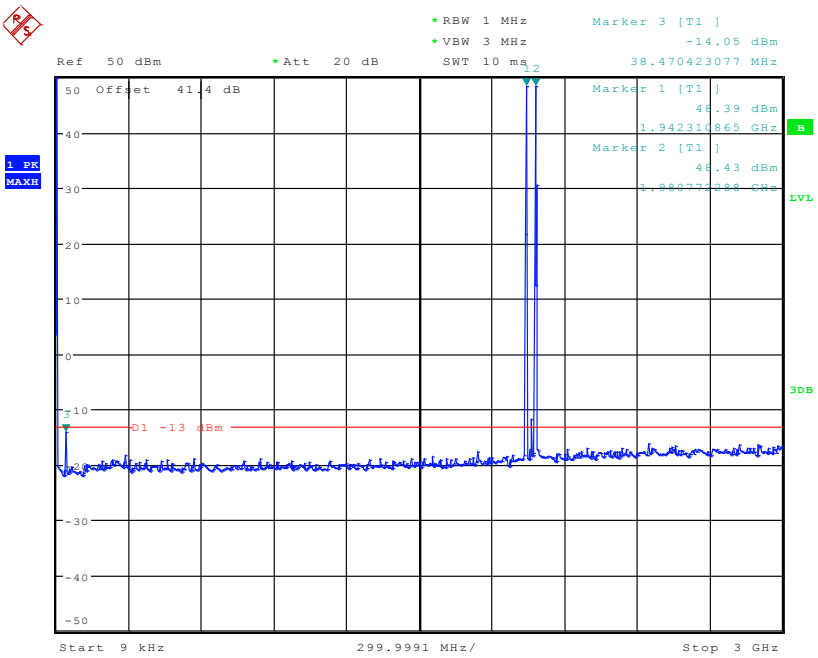
Date: 10.JUN.2014 16:31:09

Channel Position B - GMSK - 3GHz – 20GHz



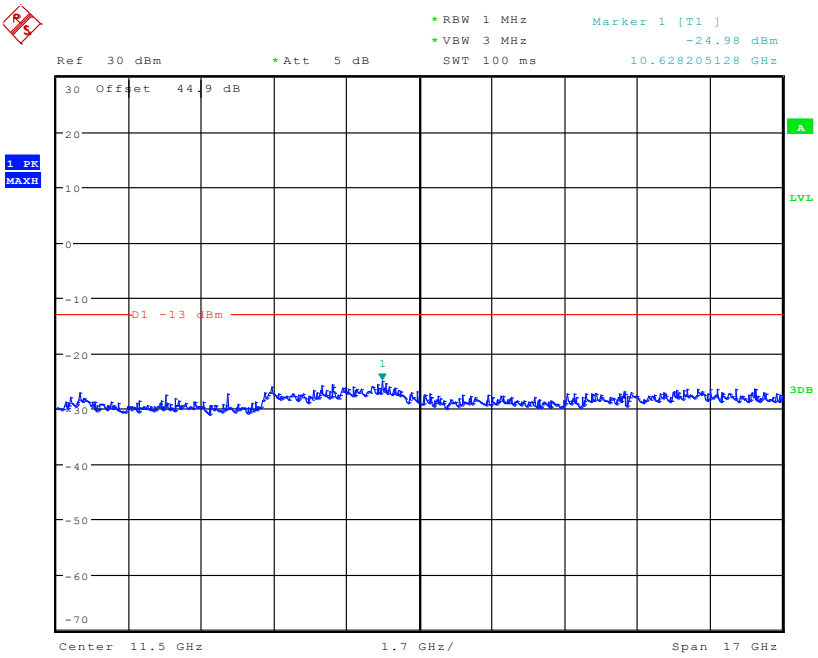
Date: 10.JUN.2014 14:05:20

Channel Position M - GMSK - 9kHz – 3GHz



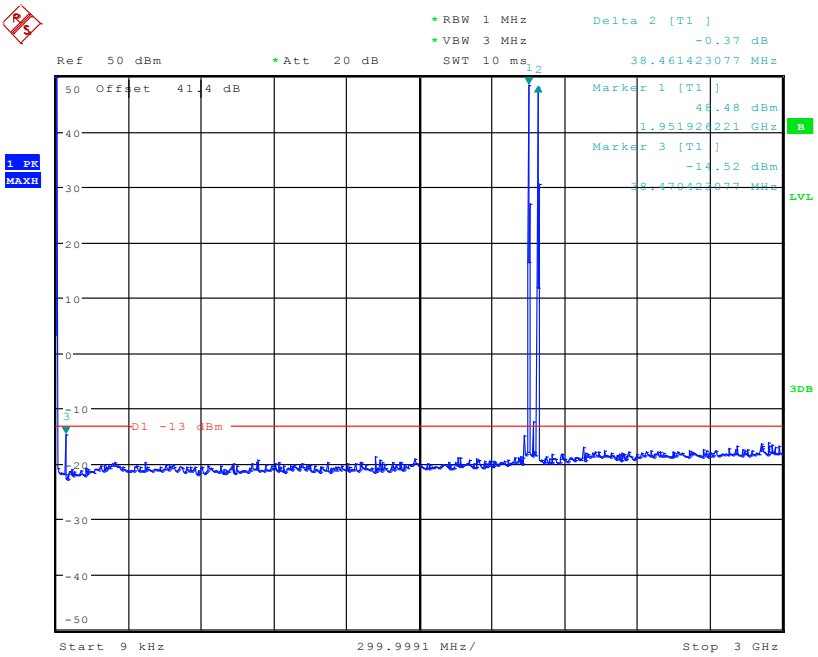
Date: 10.JUN.2014 16:33:47

Channel Position M - GMSK - 3GHz – 20GHz



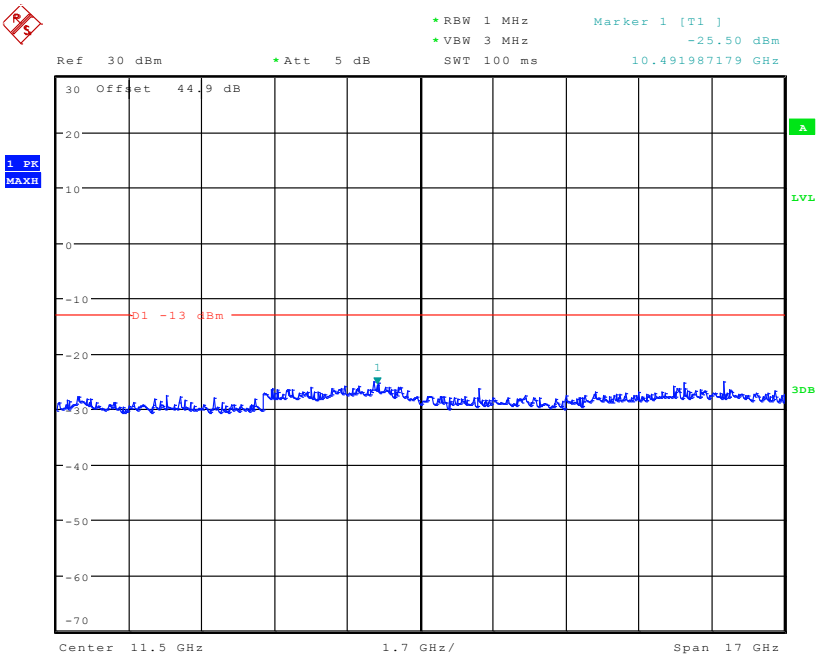
Date: 10.JUN.2014 14:10:16

Channel Position T - GMSK - 9kHz – 3GHz



Date: 10.JUN.2014 16:35:49

Channel Position T - GMSK - 3GHz – 20GHz



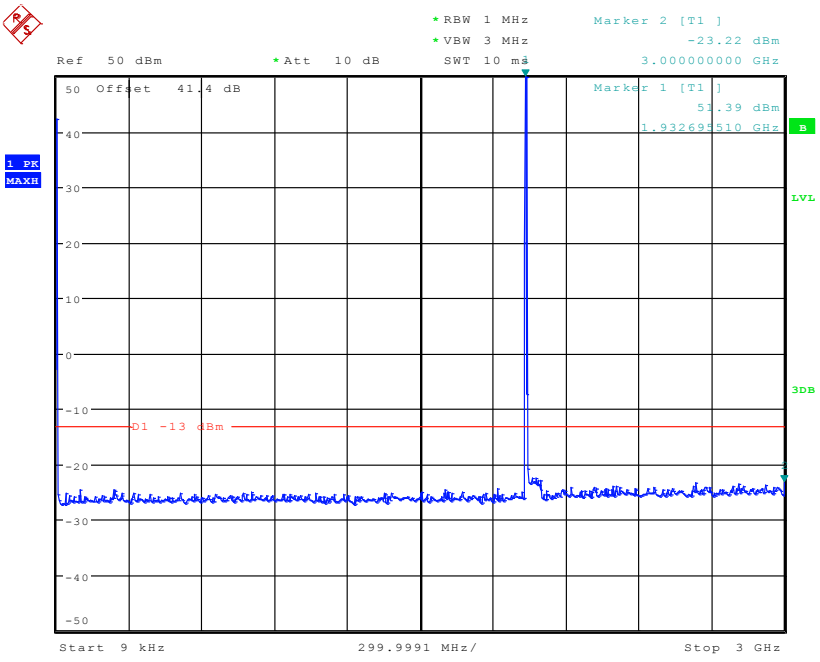
Date: 10.JUN.2014 14:12:10

Configuration W-SC

Maximum Output Power 47.0dBm per carrier

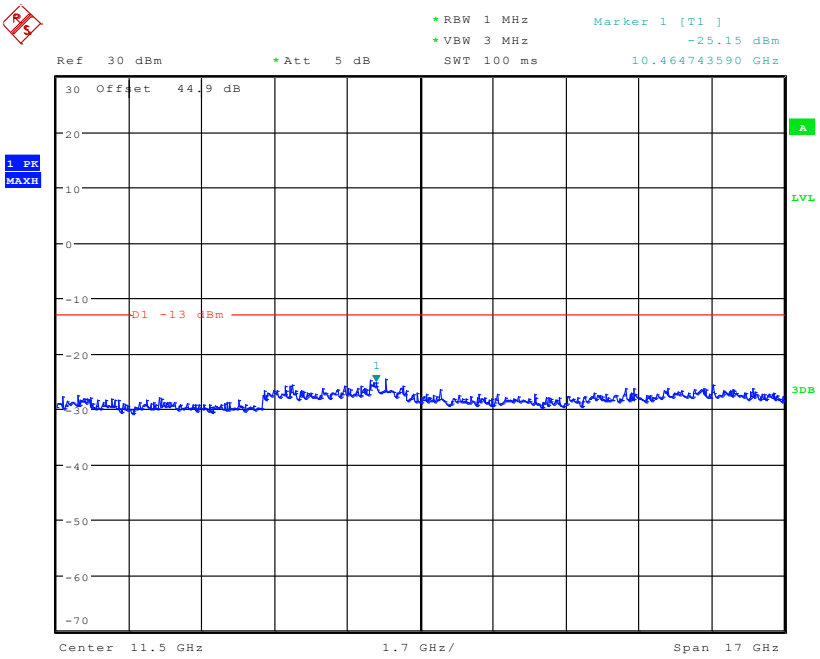
Channel Position	Channel Frequency
Channel Position B	1932.4MHz
Channel Position M	1960.0MHz
Channel Position T	1987.6MHz

Channel Position B - QPSK - 9kHz – 3GHz



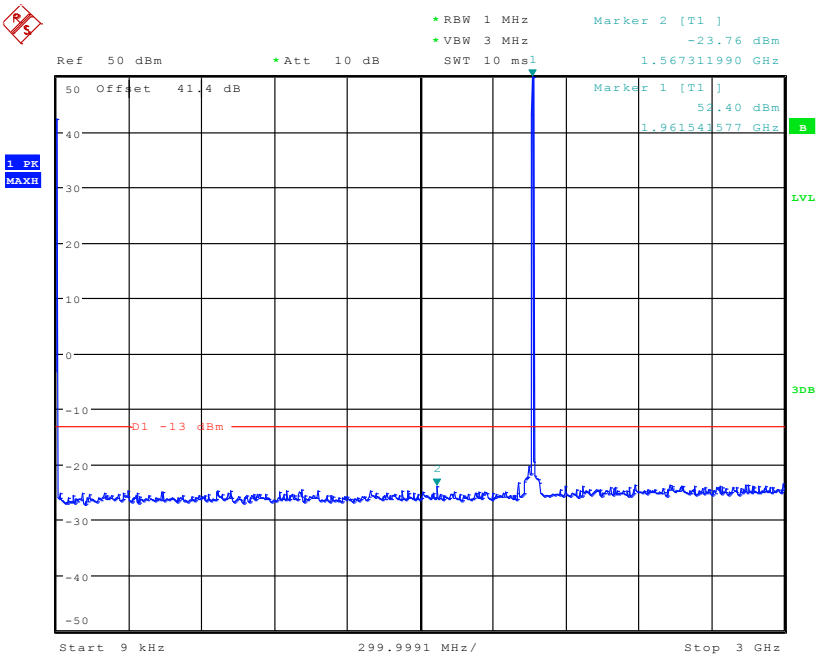
Date: 10.JUN.2014 16:38:05

Channel Position B - QPSK - 3GHz – 20GHz



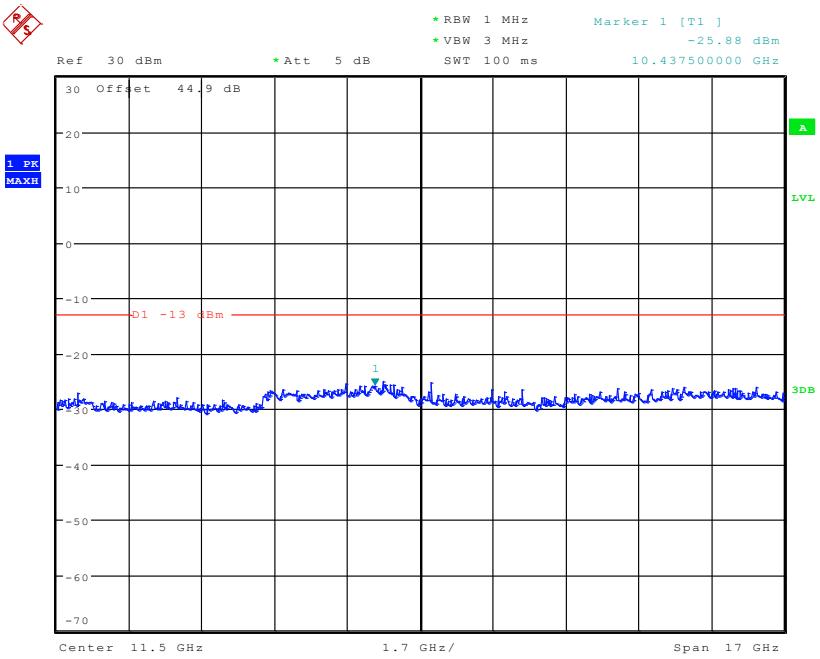
Date: 10.JUN.2014 14:15:03

Channel Position M - QPSK - 9kHz – 3GHz



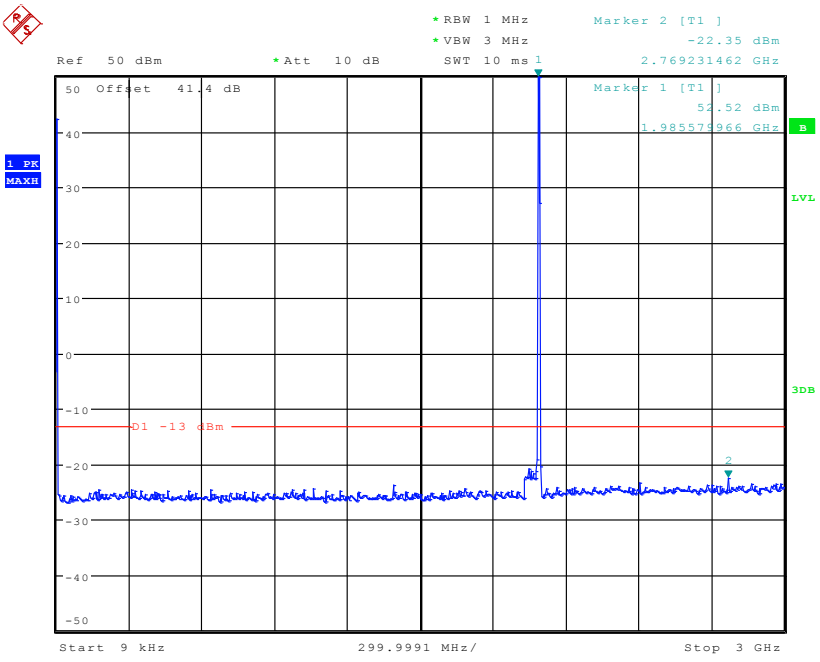
Date: 10.JUN.2014 16:39:47

Channel Position M - QPSK - 3GHz – 20GHz



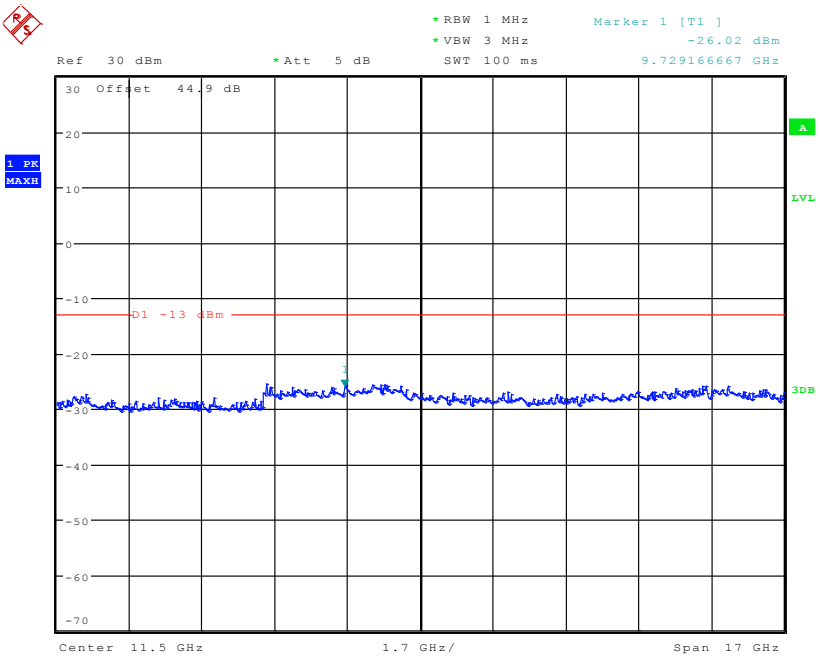
Date: 10.JUN.2014 14:17:01

Channel Position T - QPSK - 9kHz – 3GHz



Date: 10.JUN.2014 16:41:45

Channel Position T - QPSK - 3GHz – 20GHz



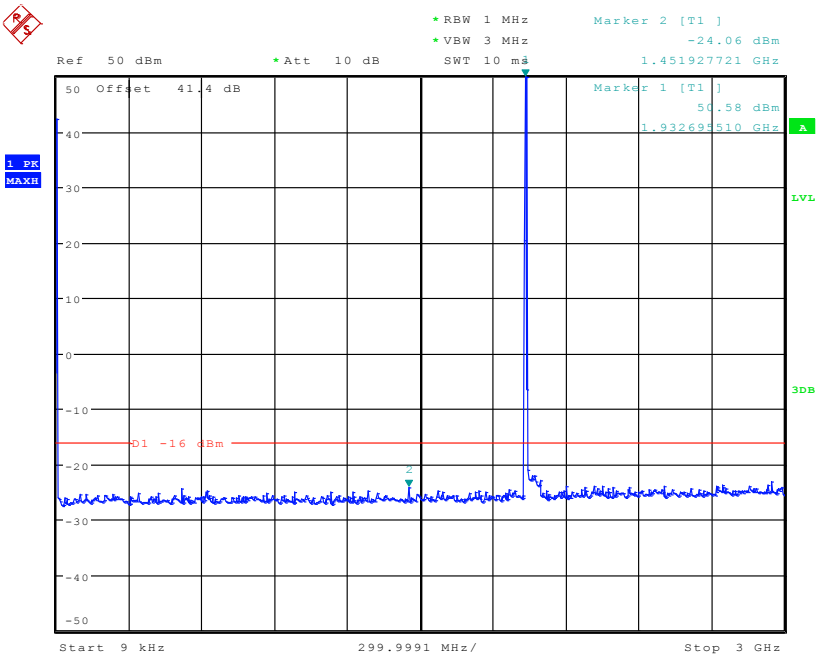
Date: 10.JUN.2014 14:19:15

Configuration W-MIMO-SC

Maximum Output Power 47.0dBm per carrier

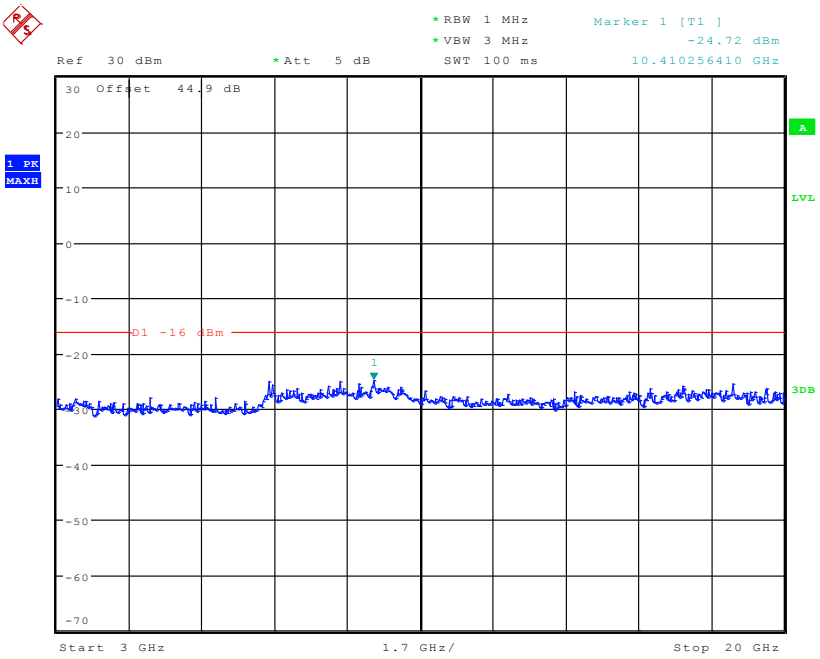
Channel Position	Channel Frequency
Channel Position B	1932.4MHz
Channel Position M	1960.0MHz
Channel Position T	1987.6MHz

Channel Position B - 16QAM - 9kHz – 3GHz



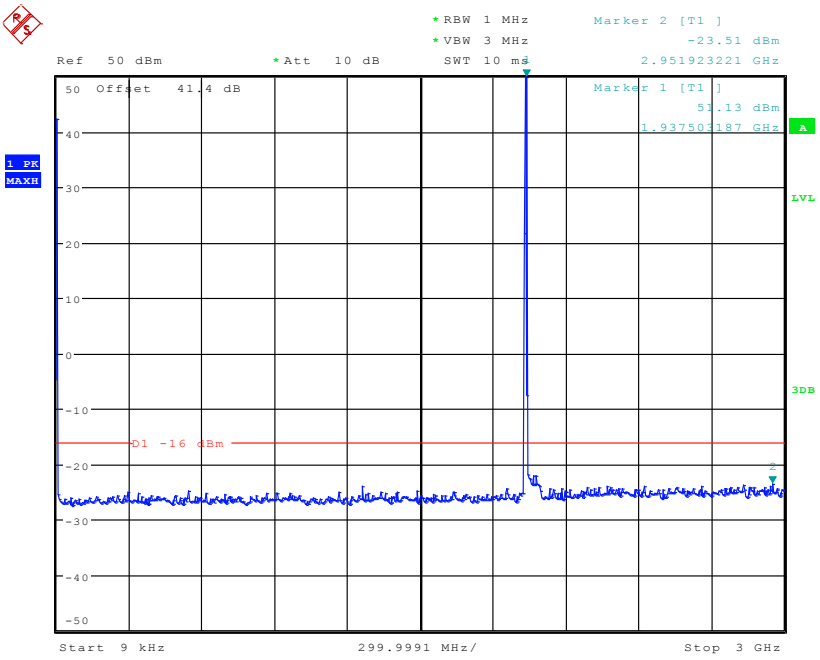
Date: 9.JUN.2014 15:20:29

Channel Position B - 16QAM - 3GHz – 20GHz



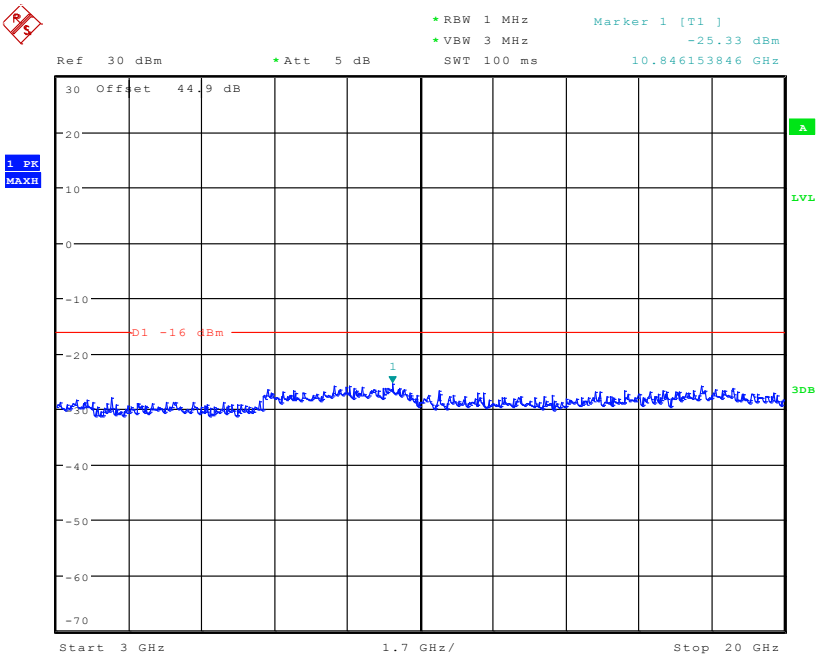
Date: 9.JUN.2014 15:21:27

Channel Position M - 16QAM - 9kHz – 3GHz



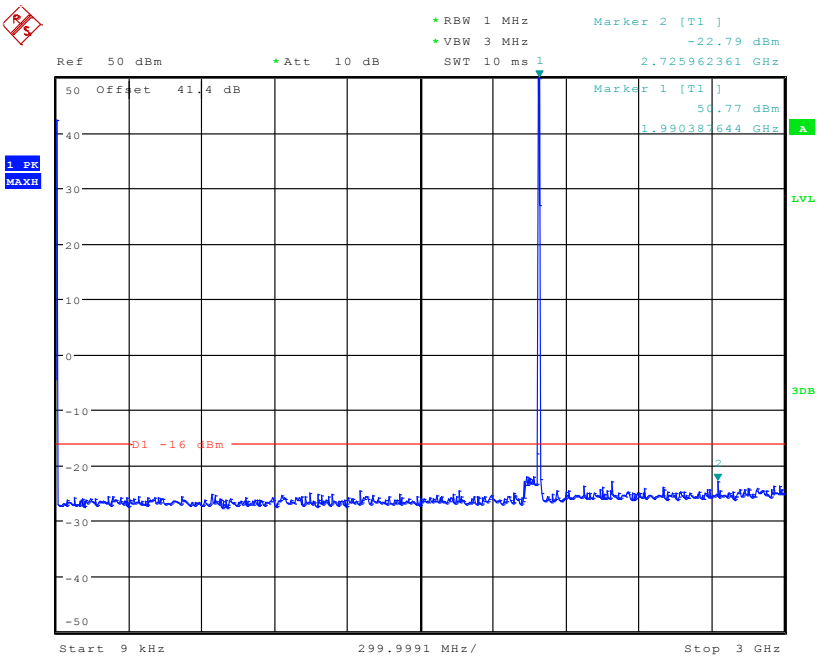
Date: 9.JUN.2014 15:42:15

Channel Position M - 16QAM - 3GHz – 20GHz



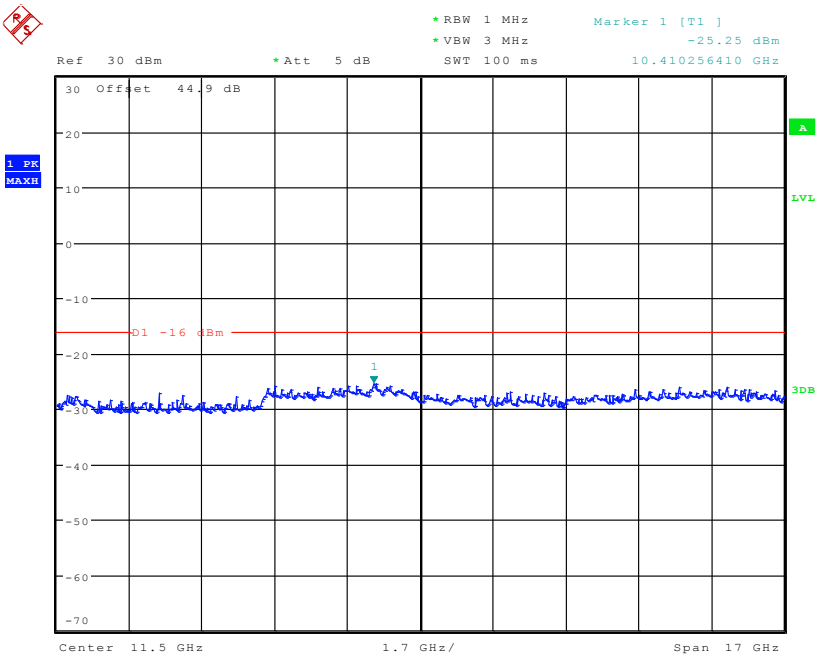
Date: 9.JUN.2014 15:22:57

Channel Position T - 16QAM - 9kHz – 3GHz



Date: 9.JUN.2014 15:39:20

Channel Position T - 16QAM - 3GHz – 20GHz



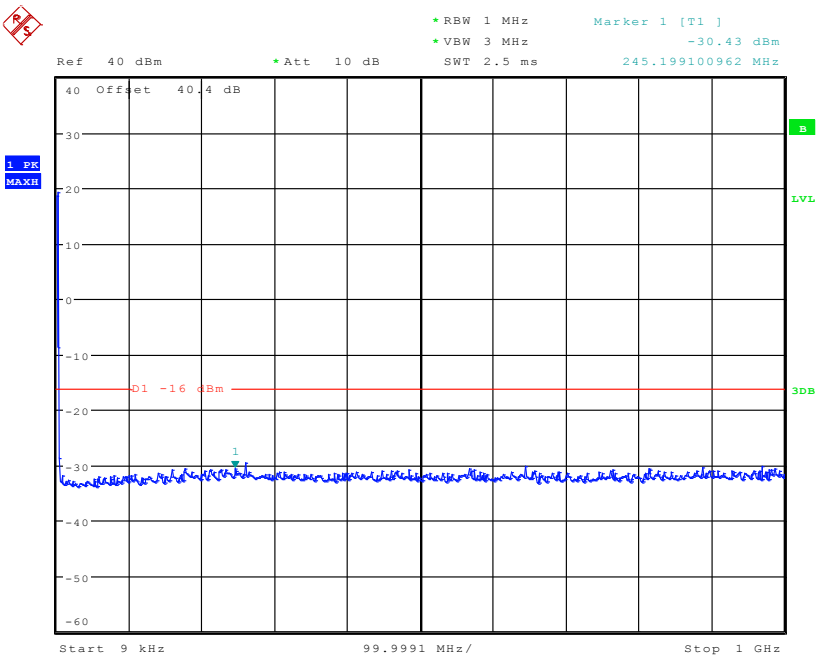
Date: 9.JUN.2014 15:40:30

Configuration W-MIMO-MC 1 (2C)

Maximum Output Power 44.8dBm per carrier

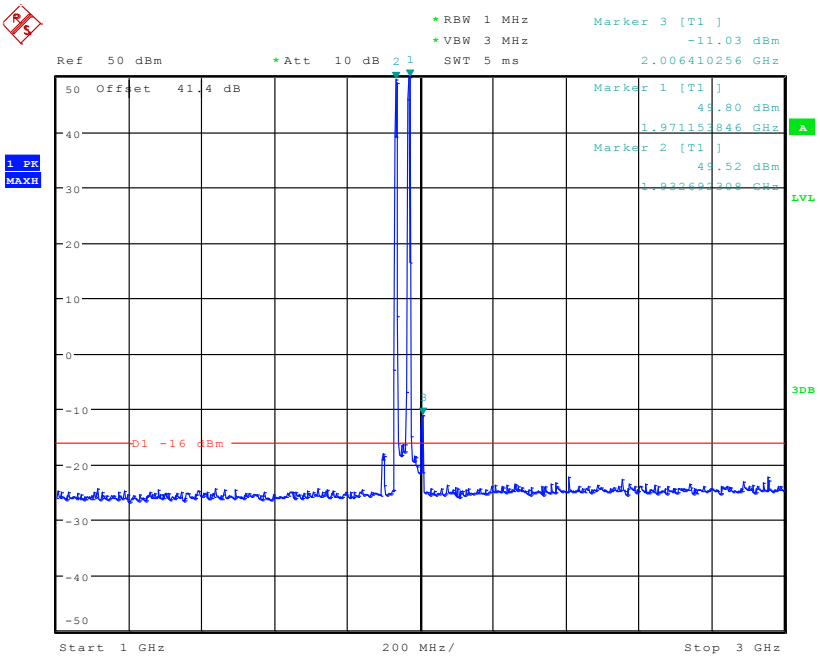
Channel Position	Channel Frequencies
Channel Position B	1932.4MHz + 1967.6MHz
Channel Position M	1942.4MHz + 1977.6MHz
Channel Position T	1952.4MHz + 1987.6MHz

Channel Position B - 16QAM - 9kHz – 1GHz



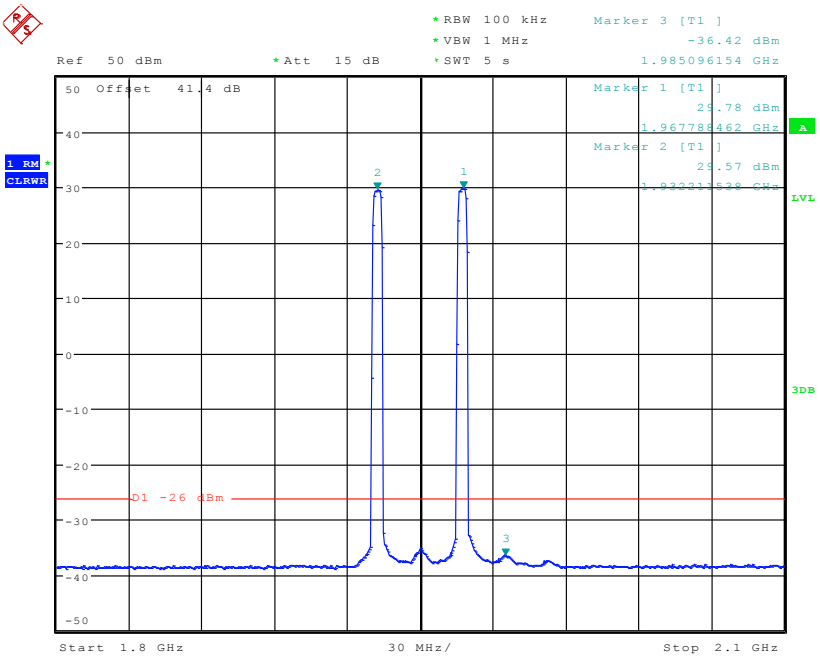
Date: 12.JUN.2014 14:02:45

Channel Position B - 16QAM - 1GHz – 3GHz



Date: 9.JUN.2014 15:51:11

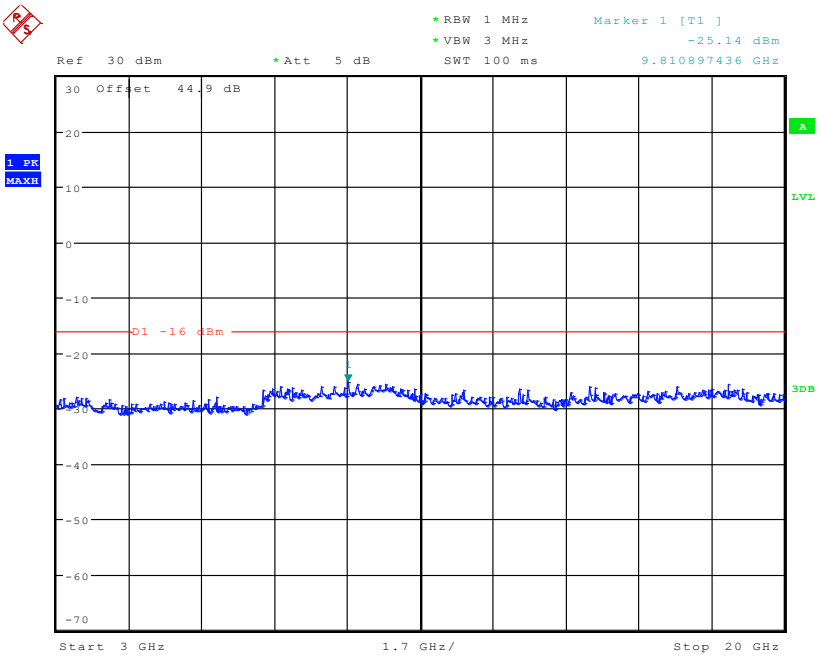
Channel Position B - 16QAM - 1.8GHz – 2.1GHz



Date: 9.JUN.2014 15:53:00

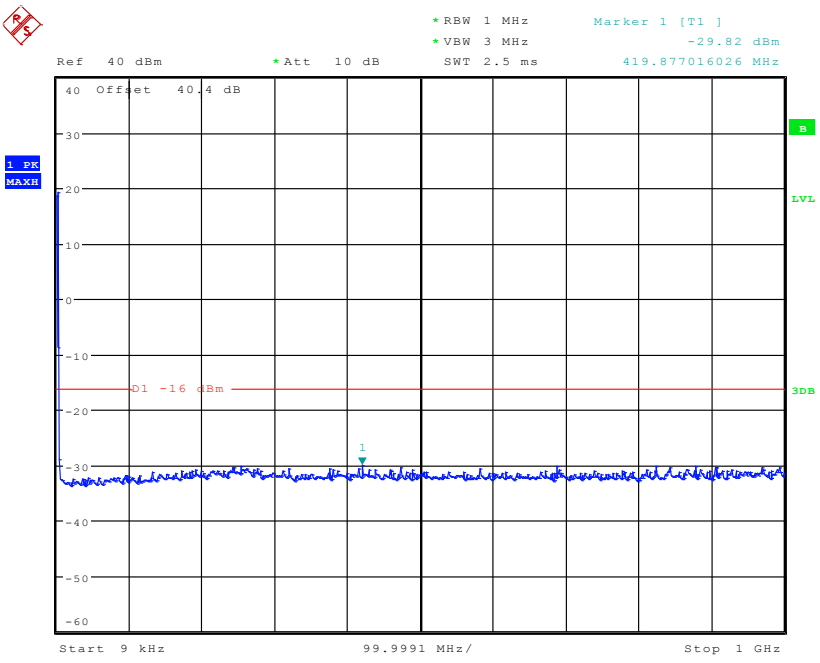
Note: A resolution bandwidth of 100 kHz is used, to compensate for this, the limit has been reduced by a further 10dB [10log(1000/100)] to – 26 dBm. The spectrum analyser was also configured with an RMS detector and in accordance with KDB 971168 D01 any spurious emission components were measured as the output power was also measured in this fashion.

Channel Position B - 16QAM - 3GHz – 20GHz



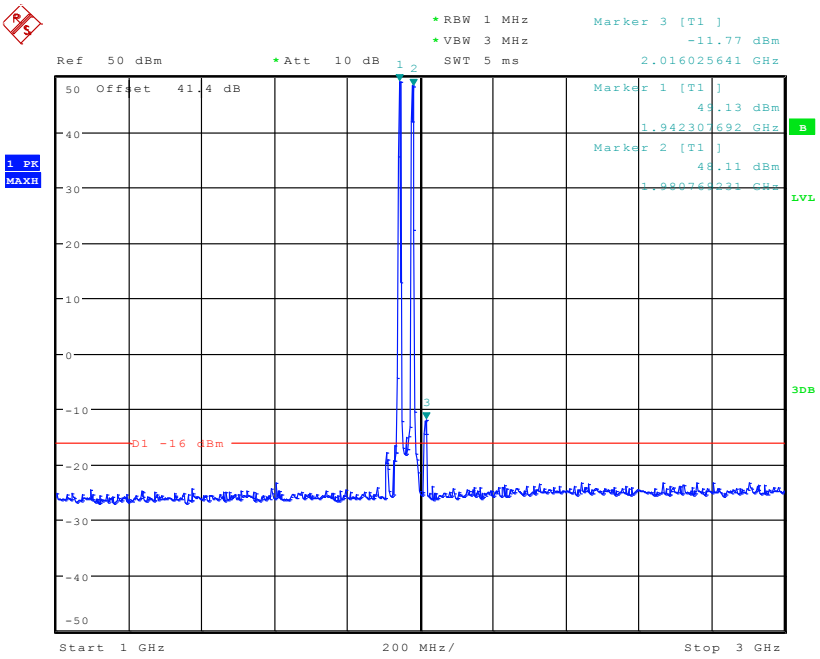
Date: 9.JUN.2014 15:53:56

Channel Position M - 16QAM - 9kHz – 1GHz



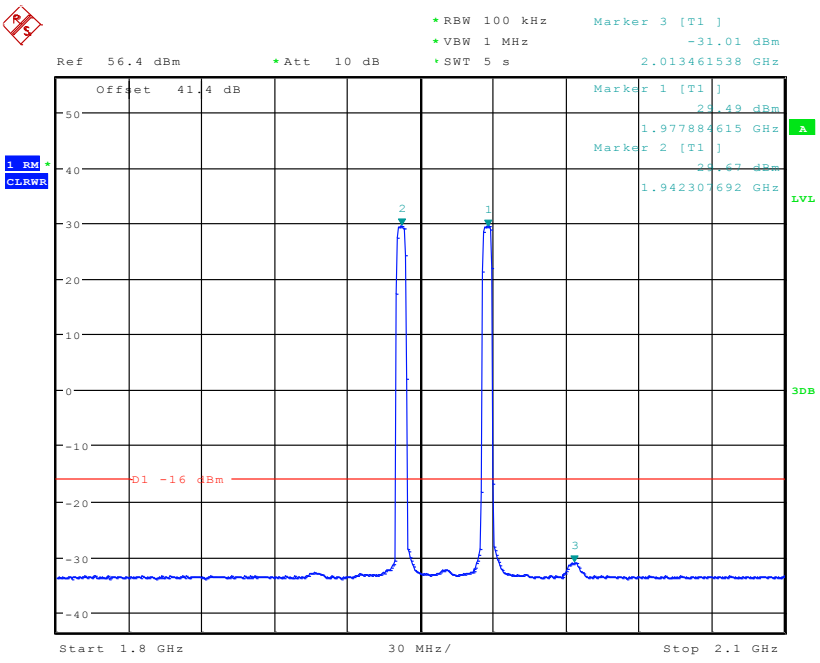
Date: 12.JUN.2014 14:04:30

Channel Position M - 16QAM - 1GHz – 3GHz



Date: 9.JUN.2014 16:03:16

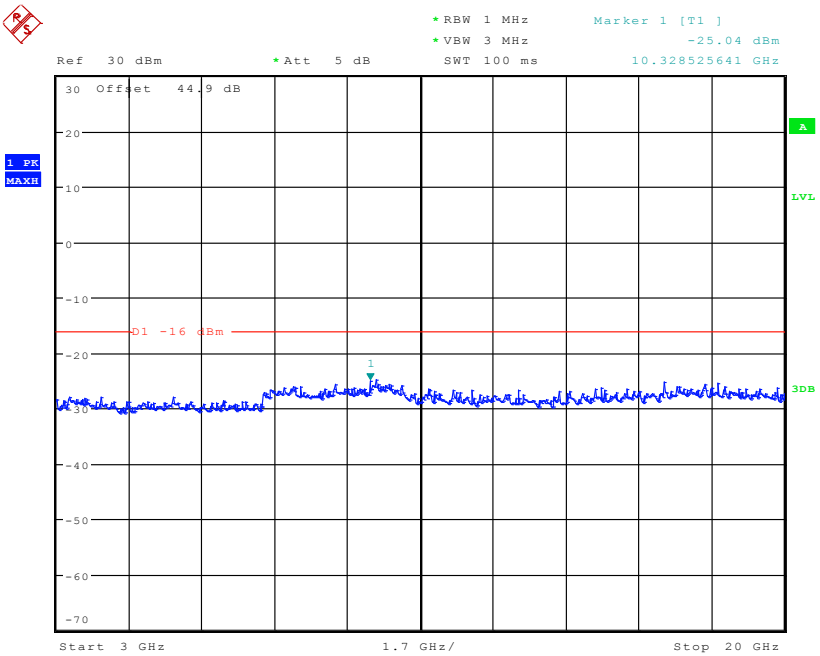
Channel Position M - 16QAM - 1.8GHz – 2.1GHz



Date: 9.JUN.2014 16:07:03

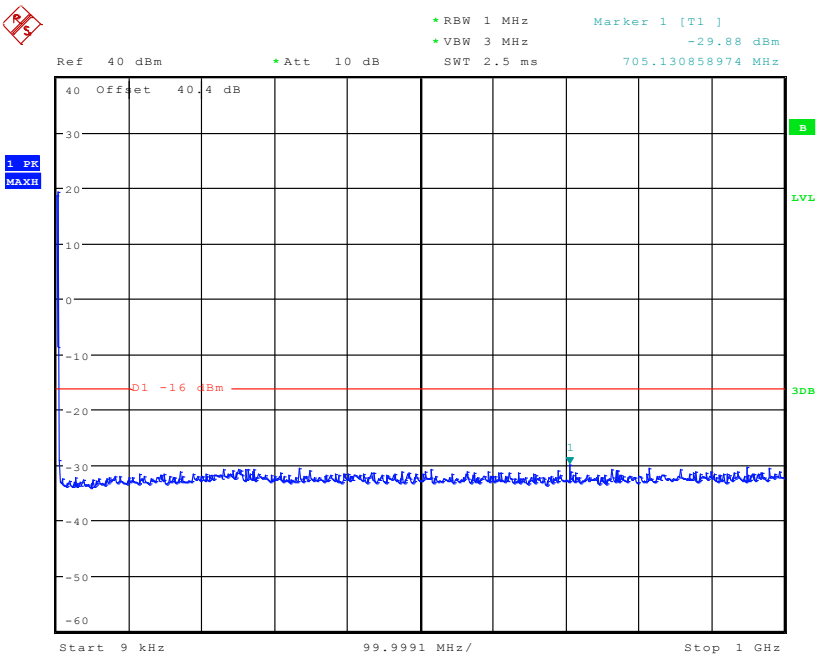
Note: A resolution bandwidth of 100 kHz is used, to compensate for this, the limit has been reduced by a further 10dB [10log(1000/100)] to – 26 dBm. The spectrum analyser was also configured with an RMS detector and in accordance with KDB 971168 D01 any spurious emission components were measured as the output power was also measured in this fashion.

Channel Position M - 16QAM - 3GHz – 20GHz



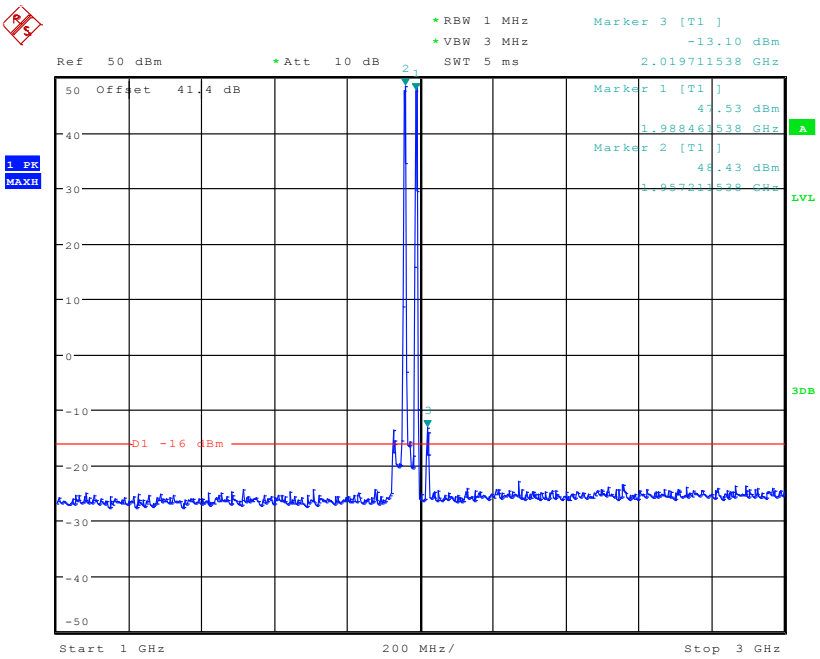
Date: 9.JUN.2014 16:00:54

Channel Position T - 16QAM - 9kHz – 1GHz



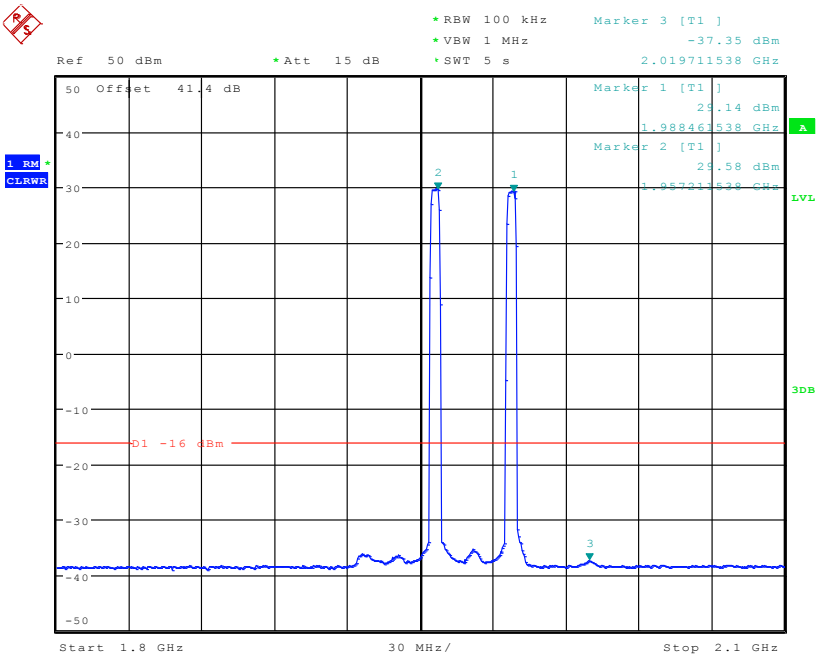
Date: 12.JUN.2014 14:06:01

Channel Position T - 16QAM - 1GHz – 3GHz



Date: 9.JUN.2014 16:10:02

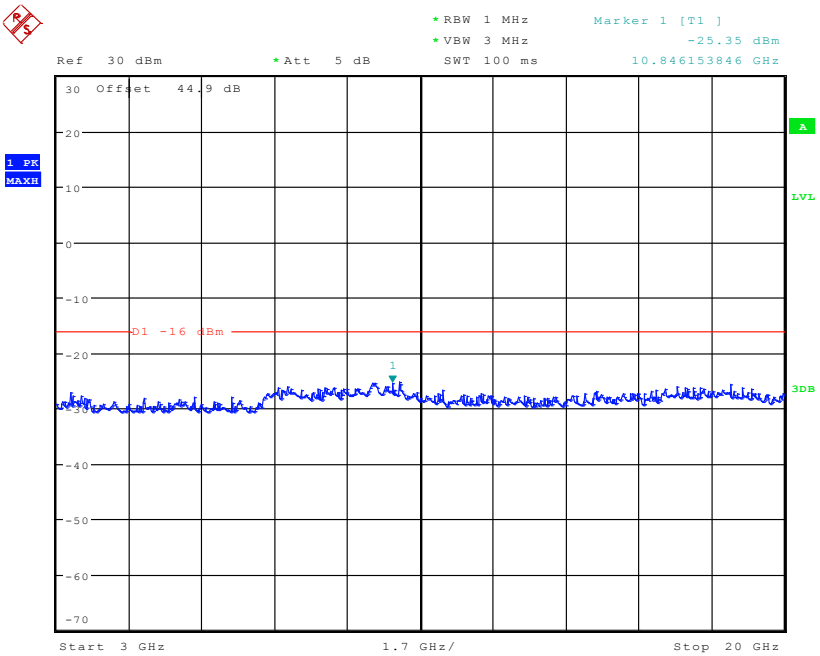
Channel Position T - 16QAM - 1.8GHz – 2.1GHz



Date: 9.JUN.2014 16:09:04

Note: A resolution bandwidth of 100 kHz is used, to compensate for this, the limit has been reduced by a further 10dB [10log(1000/100)] to – 26 dBm. The spectrum analyser was also configured with an RMS detector and in accordance with KDB 971168 D01 any spurious emission components were measured as the output power was also measured in this fashion.

Channel Position T - 16QAM - 3GHz – 20GHz



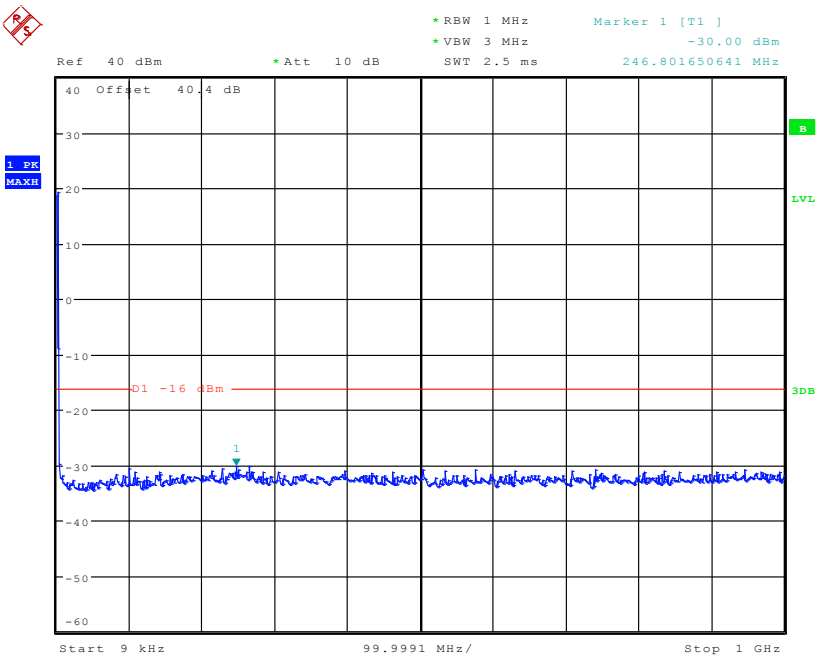
Date: 9.JUN.2014 16:11:16

Configuration W-MIMO-MC 2 (4C)

Maximum Output Power 41.8dBm per carrier

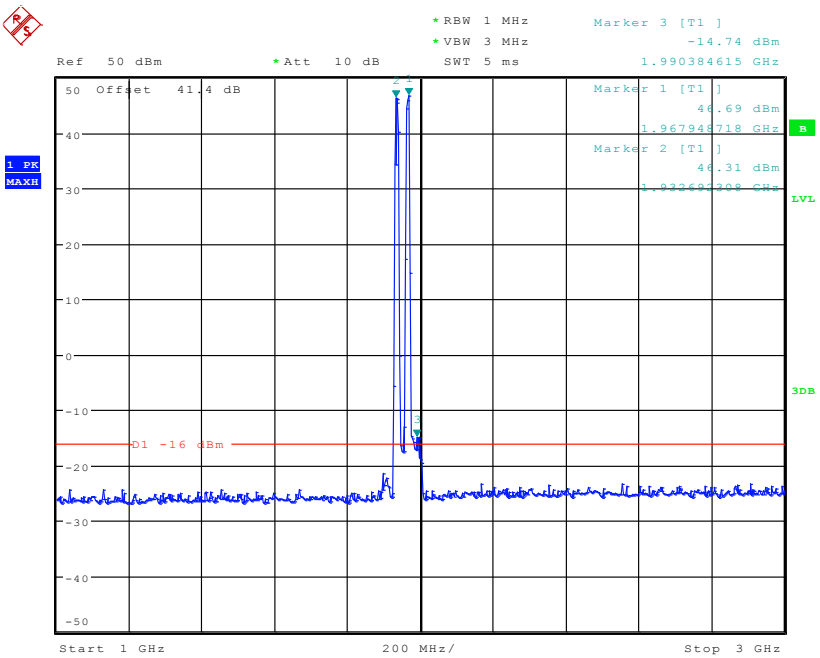
Channel Position	Channel Frequencies
Channel Position B	1932.4MHz + 1937.4MHz + 1962.6MHz + 1967.6MHz
Channel Position M	1942.4MHz + 1947.4MHz + 1972.6MHz + 1977.6MHz
Channel Position T	1952.4MHz + 1957.4MHz + 1982.6MHz + 1987.6MHz

Channel Position B - 16QAM - 9kHz – 1GHz



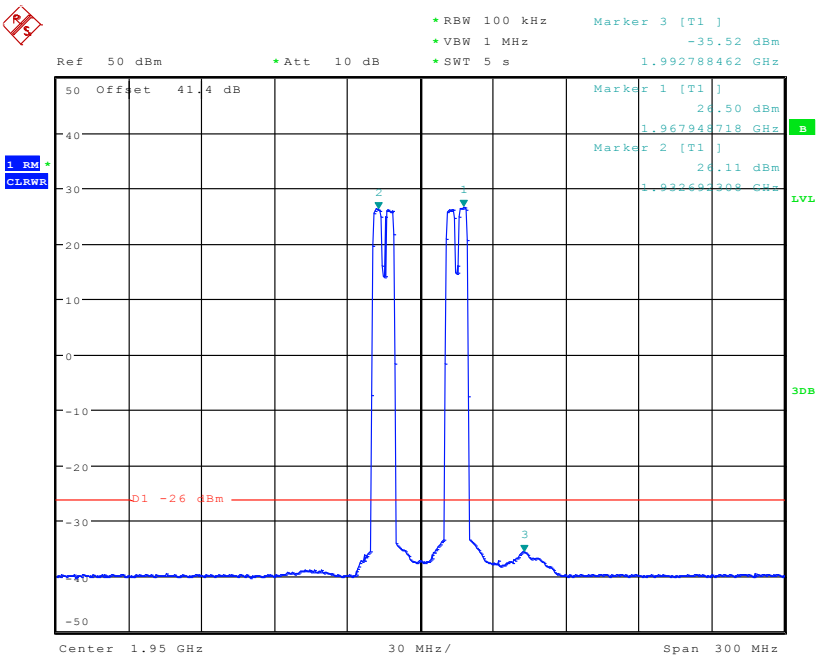
Date: 12.JUN.2014 14:12:27

Channel Position B - 16QAM - 1GHz – 3GHz



Date: 9.JUN.2014 16:40:48

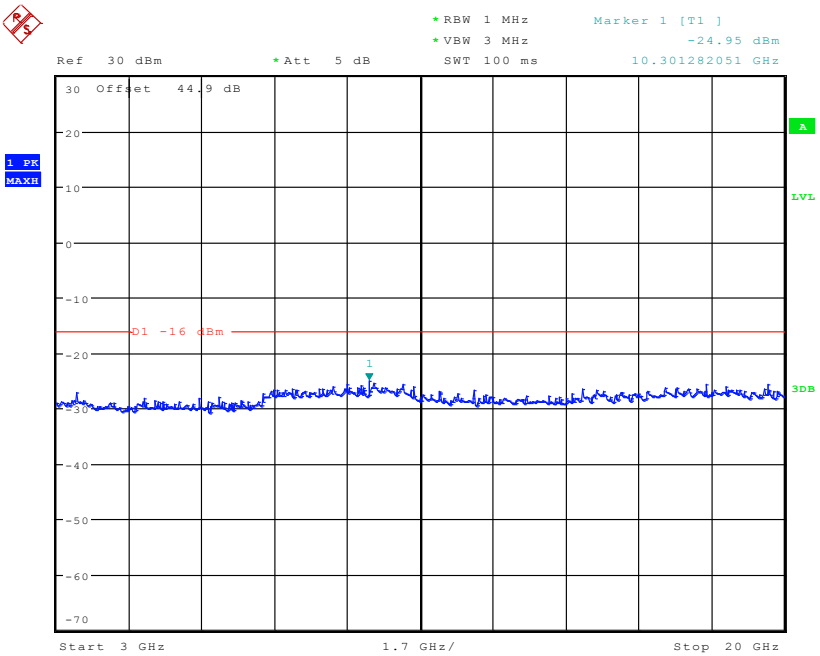
Channel Position B - 16QAM - 1.8GHz – 2.1GHz



Date: 9.JUN.2014 16:41:46

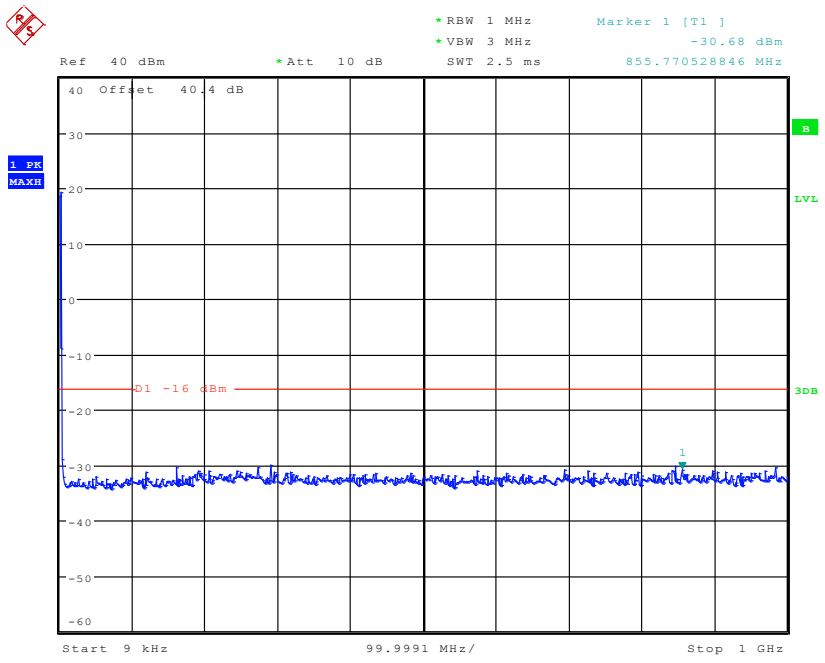
Note: A resolution bandwidth of 100 kHz is used, to compensate for this, the limit has been reduced by a further 10dB [10log(1000/100)] to – 26 dBm. The spectrum analyser was also configured with an RMS detector and in accordance with KDB 971168 D01 any spurious emission components were measured as the output power was also measured in this fashion.

Channel Position B - 16QAM - 3GHz – 20GHz



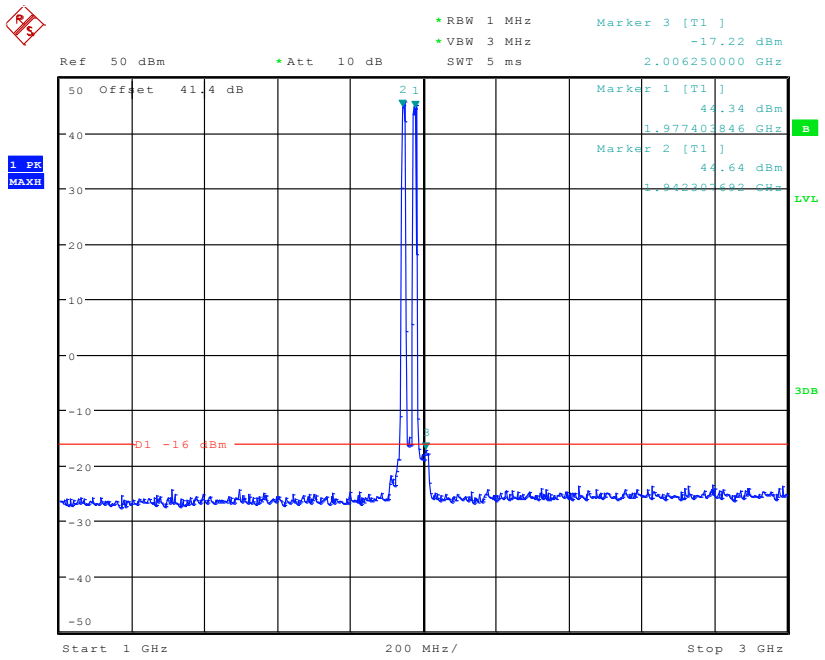
Date: 9.JUN.2014 16:37:17

Channel Position M - 16QAM - 9kHz – 1GHz



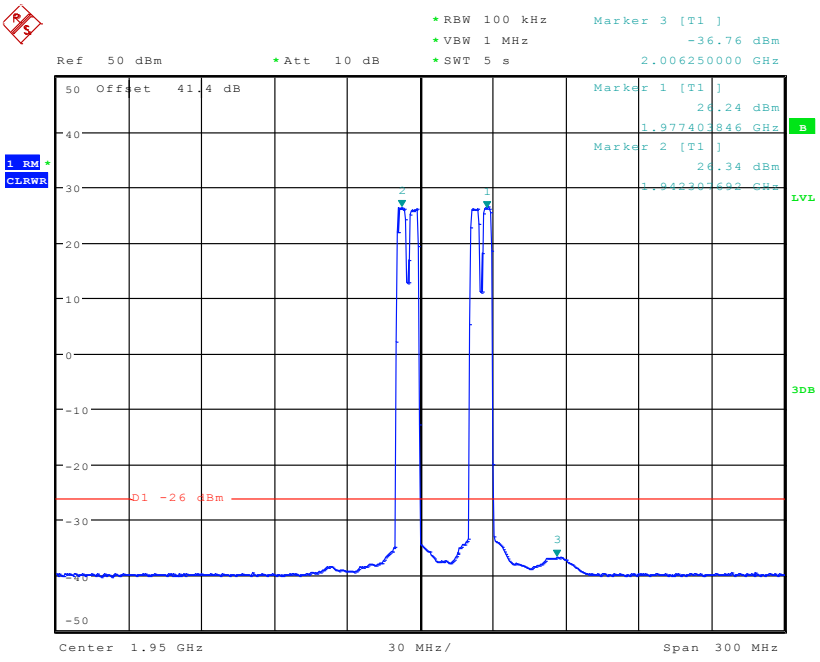
Date: 12.JUN.2014 14:13:43

Channel Position M - 16QAM - 1GHz – 3GHz



Date: 9.JUN.2014 16:44:04

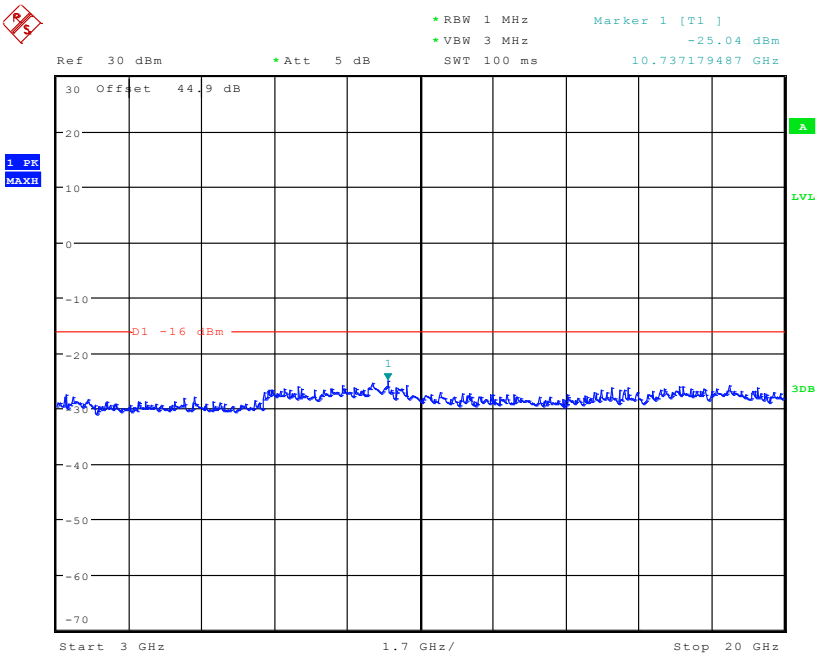
Channel Position M - 16QAM - 1.8GHz – 2.1GHz



Date: 9.JUN.2014 16:43:26

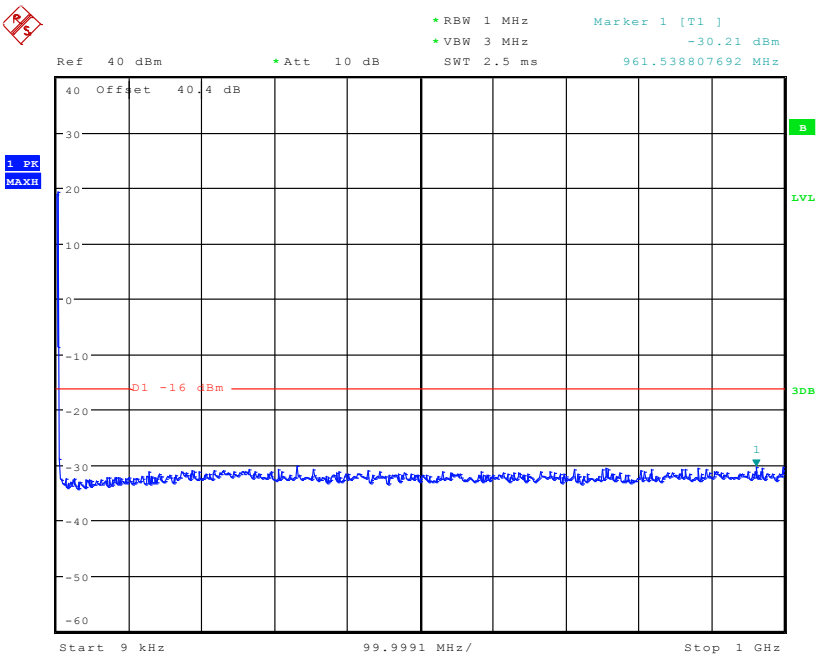
Note: A resolution bandwidth of 100 kHz is used, to compensate for this, the limit has been reduced by a further 10dB [10log(1000/100)] to – 26 dBm. The spectrum analyser was also configured with an RMS detector and in accordance with KDB 971168 D01 any spurious emission components were measured as the output power was also measured in this fashion.

Channel Position M - 16QAM - 3GHz – 20GHz



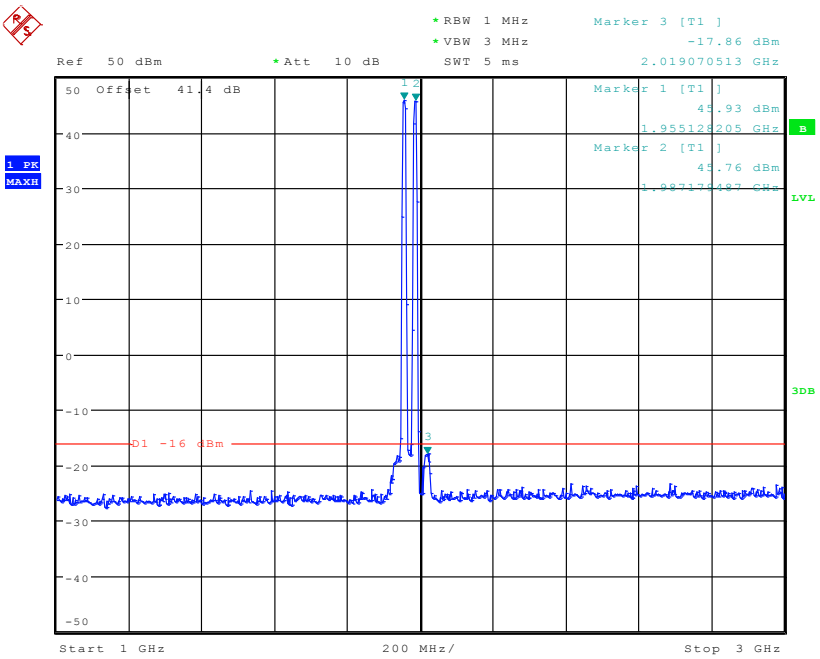
Date: 9.JUN.2014 16:44:22

Channel Position T - 16QAM - 9kHz – 1GHz



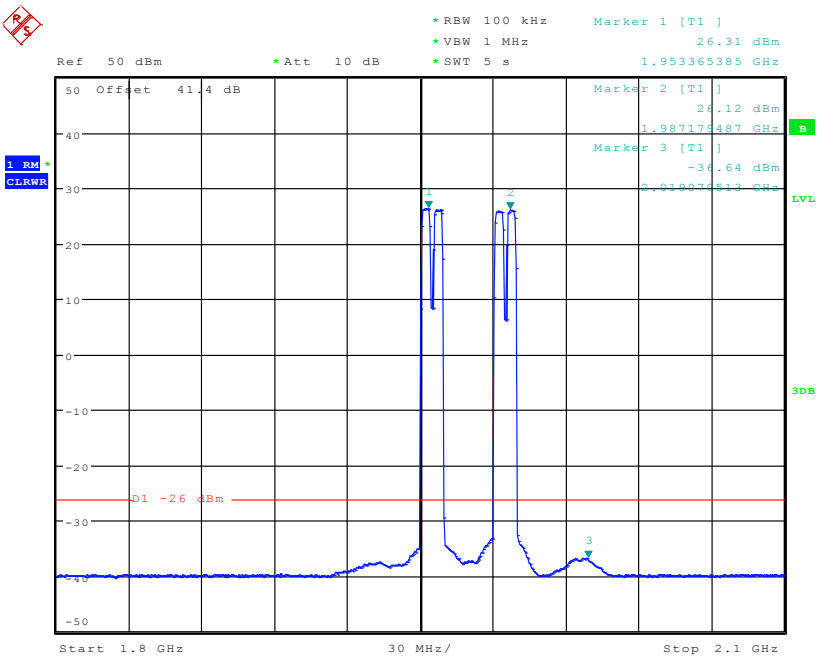
Date: 12.JUN.2014 14:16:28

Channel Position T - 16QAM - 1GHz – 3GHz



Date: 9.JUN.2014 16:46:09

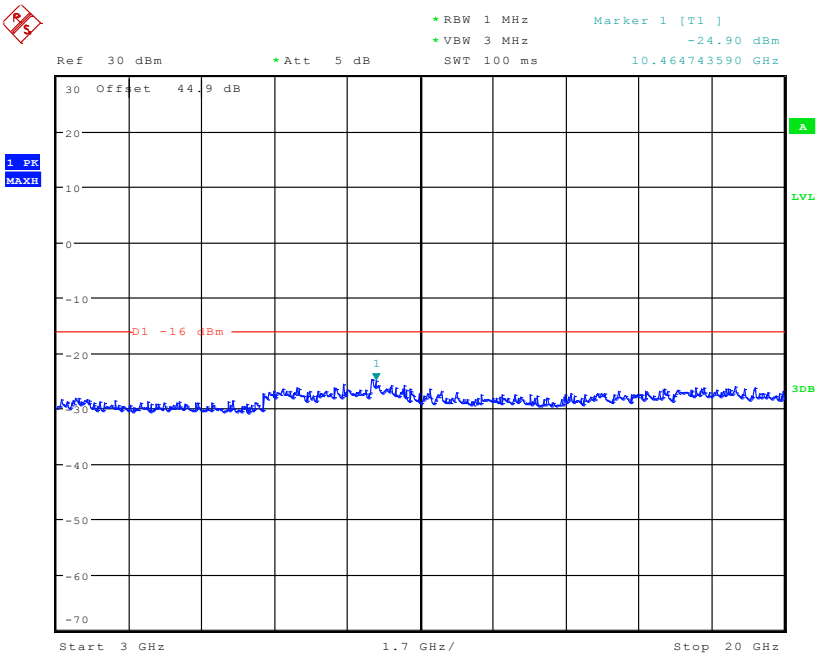
Channel Position T - 16QAM - 1.8GHz – 2.1GHz



Date: 9.JUN.2014 16:47:04

Note: A resolution bandwidth of 100 kHz is used, to compensate for this, the limit has been reduced by a further 10dB [10log(1000/100)] to – 26 dBm. The spectrum analyser was also configured with an RMS detector and in accordance with KDB 971168 D01 any spurious emission components were measured as the output power was also measured in this fashion.

Channel Position T - 16QAM - 3GHz – 20GHz



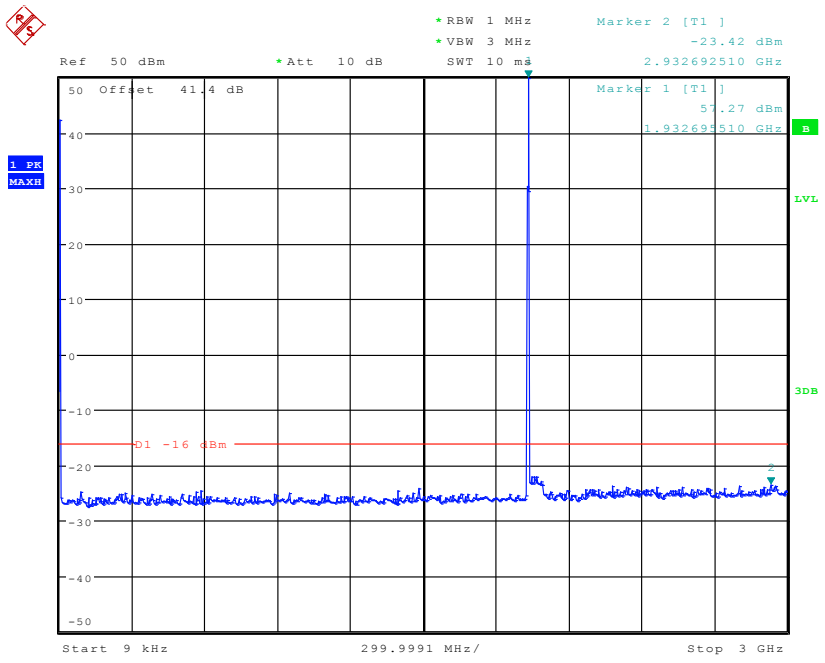
Date: 9.JUN.2014 16:47:20

Configuration L-MIMO-SC

Maximum Output Power 47.8dBm per carrier

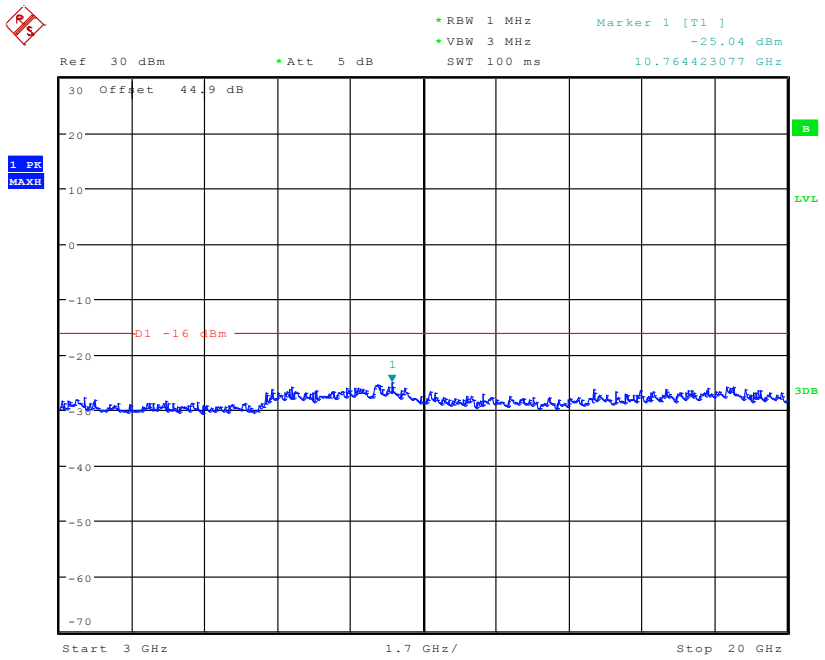
Channel Position	Bandwidth	Channel Frequency
Channel Position B	1.4MHz	1930.7MHz
	20.0MHz	1940.0MHz
Channel Position M	1.4MHz	1960.0MHz
	20.0MHz	
Channel Position T	1.4MHz	1989.3MHz
	20.0MHz	1980.0MHz

Channel Position B - QPSK / Bandwidth 1.4MHz - 9kHz – 3GHz



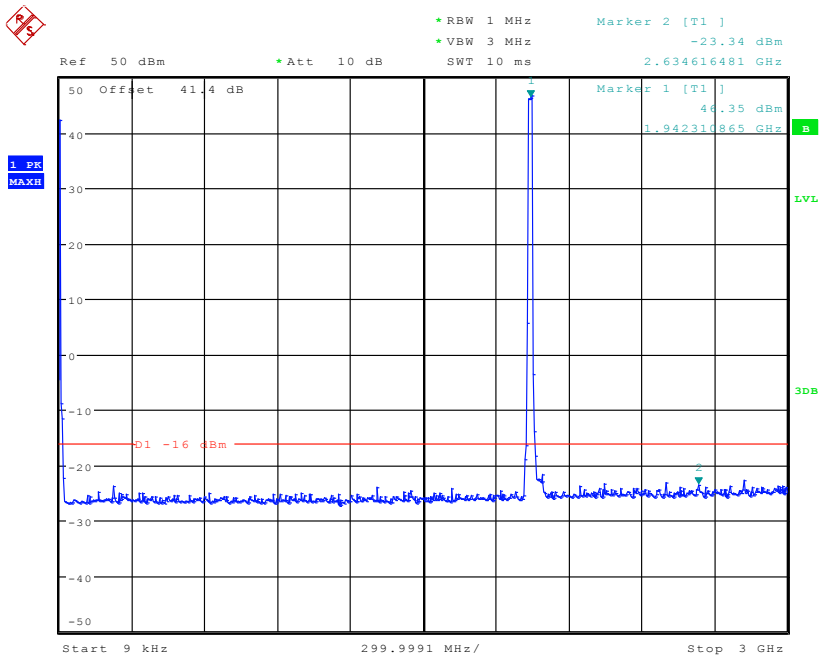
Date: 9.JUN.2014 09:18:30

Channel Position B - QPSK / Bandwidth 1.4MHz - 3GHz – 20GHz



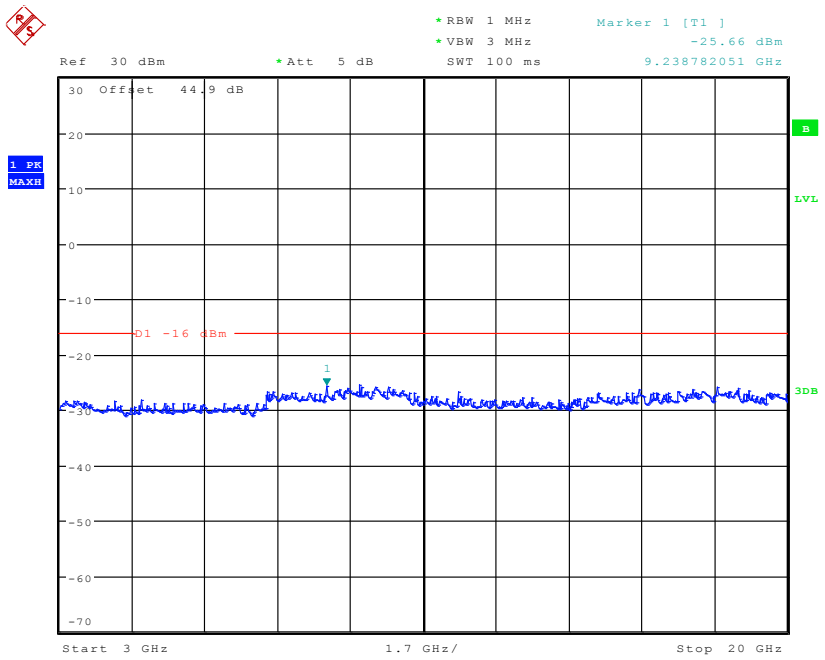
Date: 9.JUN.2014 09:21:35

Channel Position B - QPSK / Bandwidth 20.0MHz - 9kHz – 3GHz



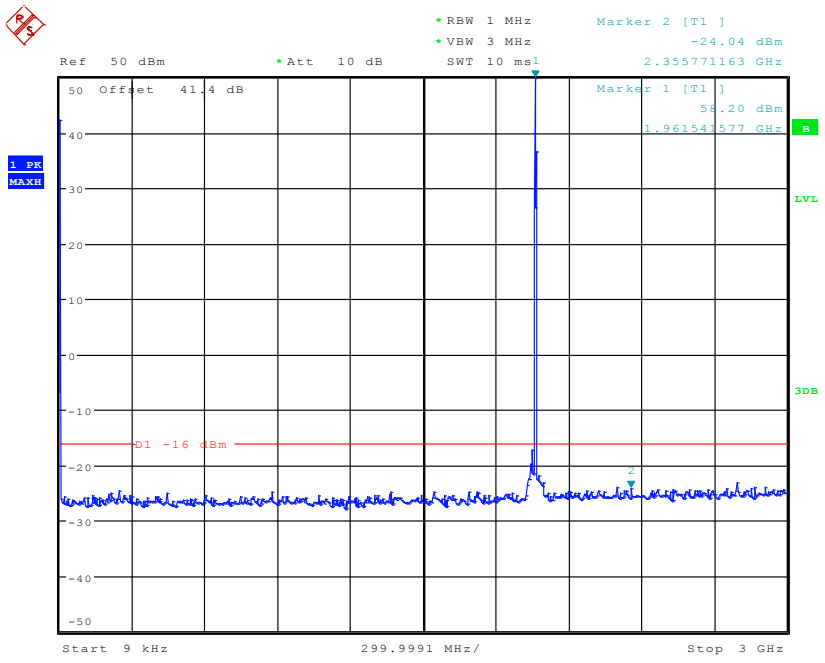
Date: 9.JUN.2014 09:46:09

Channel Position B - QPSK / Bandwidth 20.0MHz - 3GHz – 20GHz



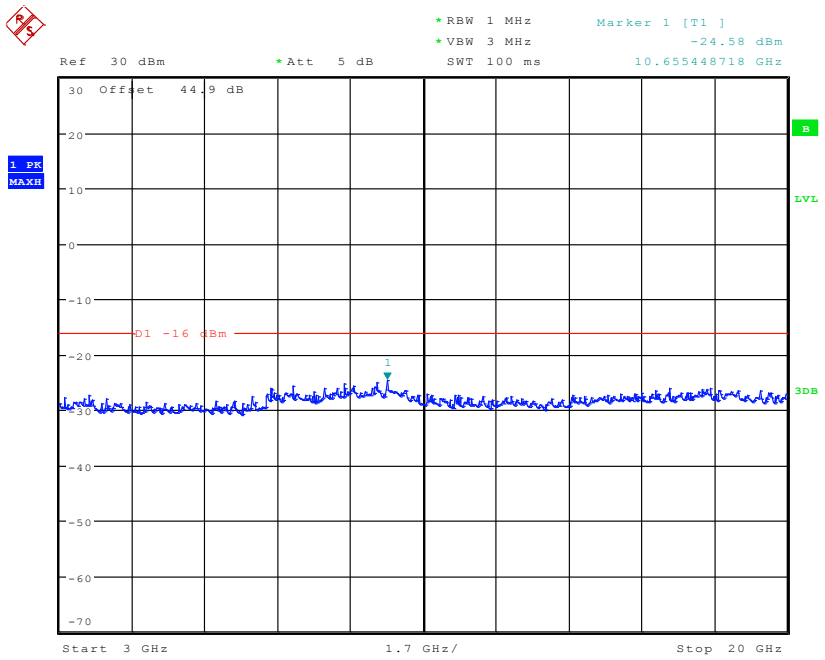
Date: 9.JUN.2014 09:44:57

Channel Position M - QPSK / Bandwidth 1.4MHz - 9kHz – 3GHz



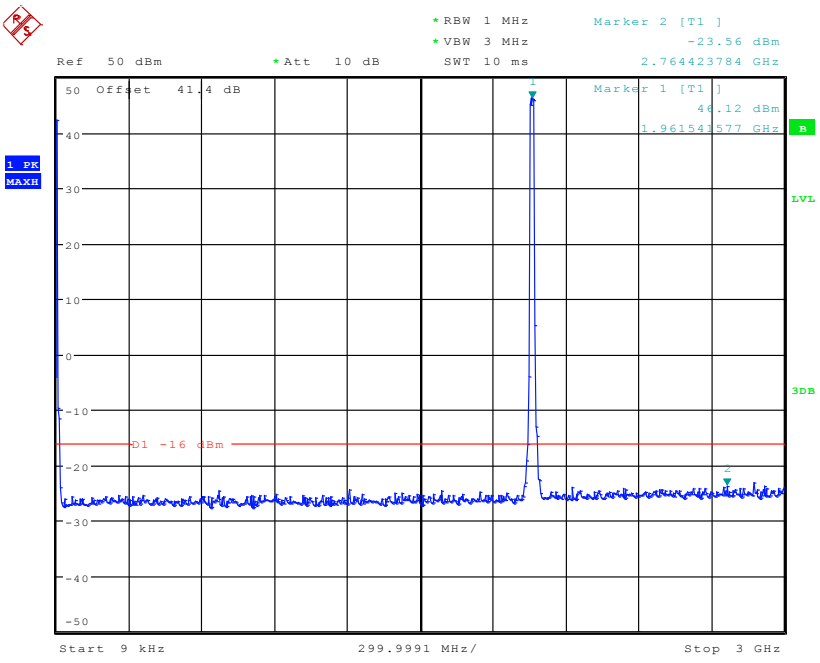
Date: 9.JUN.2014 09:40:41

Channel Position M - QPSK / Bandwidth 1.4MHz - 3GHz – 20GHz



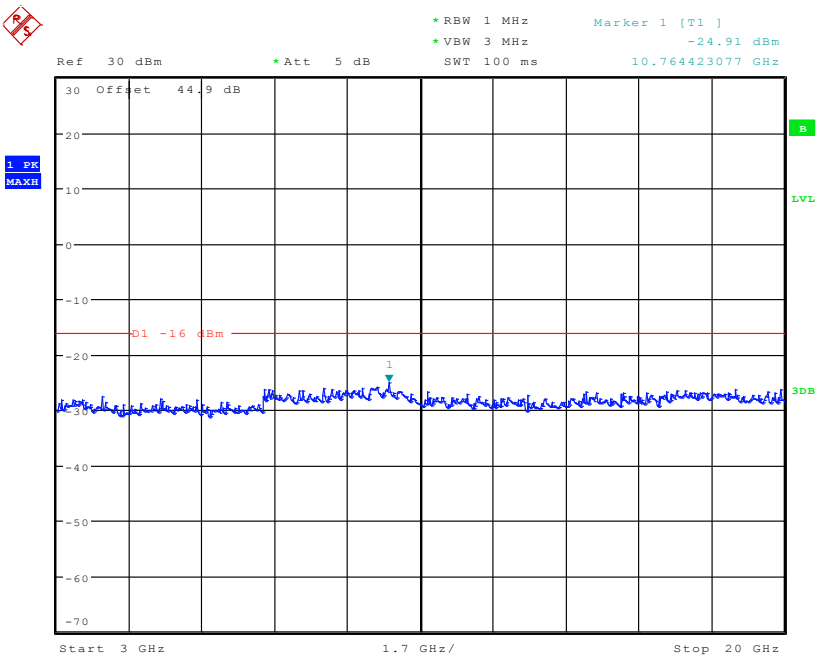
Date: 9.JUN.2014 09:39:29

Channel Position M - QPSK / Bandwidth 20.0MHz - 9kHz – 3GHz



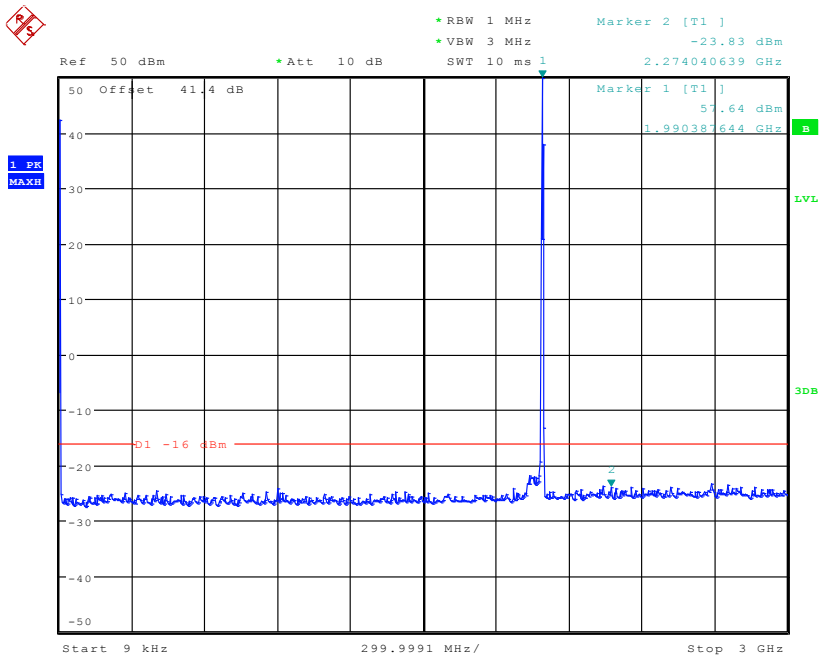
Date: 9.JUN.2014 09:49:20

Channel Position M - QPSK / Bandwidth 20.0MHz - 3GHz – 20GHz



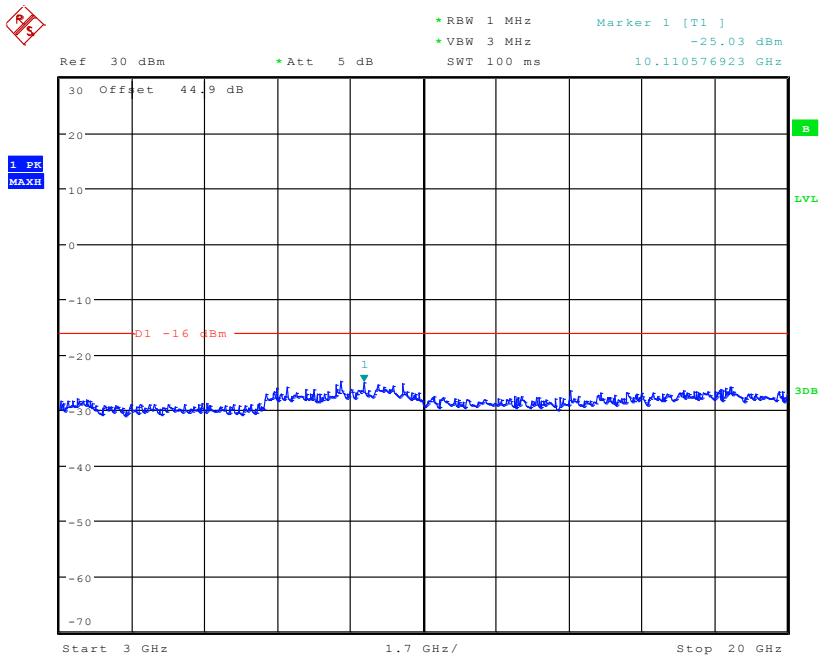
Date: 9.JUN.2014 10:11:29

Channel Position T - QPSK / Bandwidth 1.4MHz - 9kHz – 3GHz



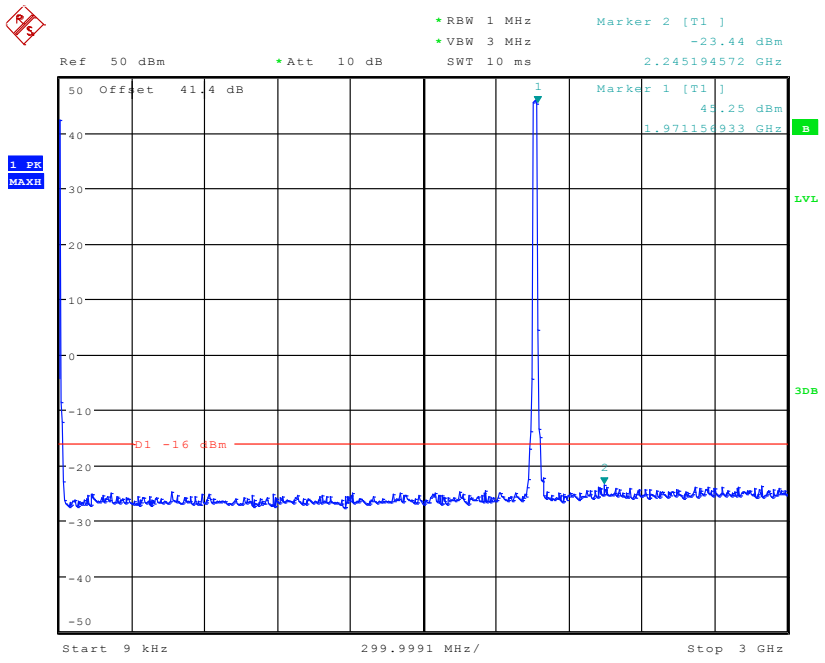
Date: 9.JUN.2014 09:42:29

Channel Position T - QPSK / Bandwidth 1.4MHz - 3GHz – 20GHz



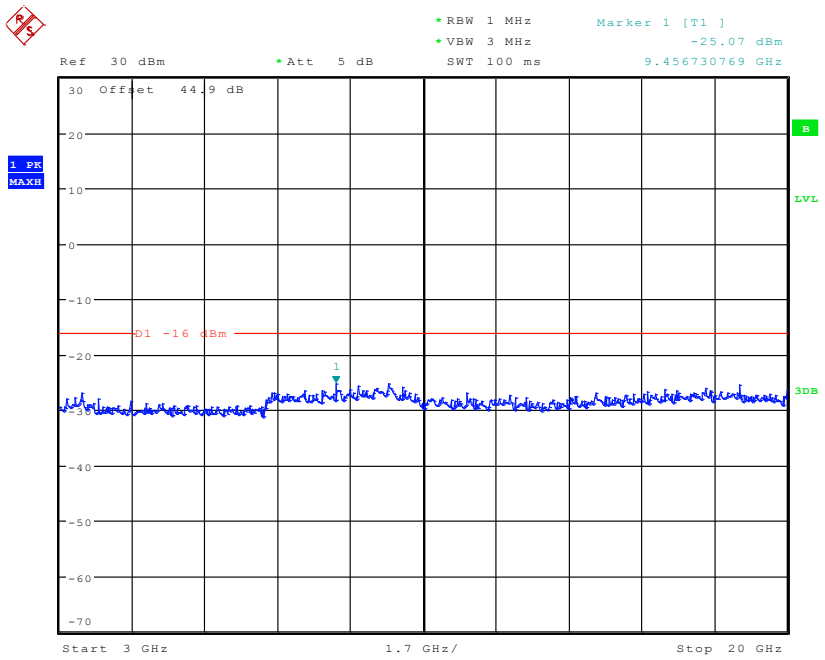
Date: 9.JUN.2014 09:43:28

Channel Position T - QPSK / Bandwidth 20.0MHz - 9kHz – 3GHz



Date: 9.JUN.2014 10:17:17

Channel Position T - QPSK / Bandwidth 20.0MHz - 3GHz – 20GHz



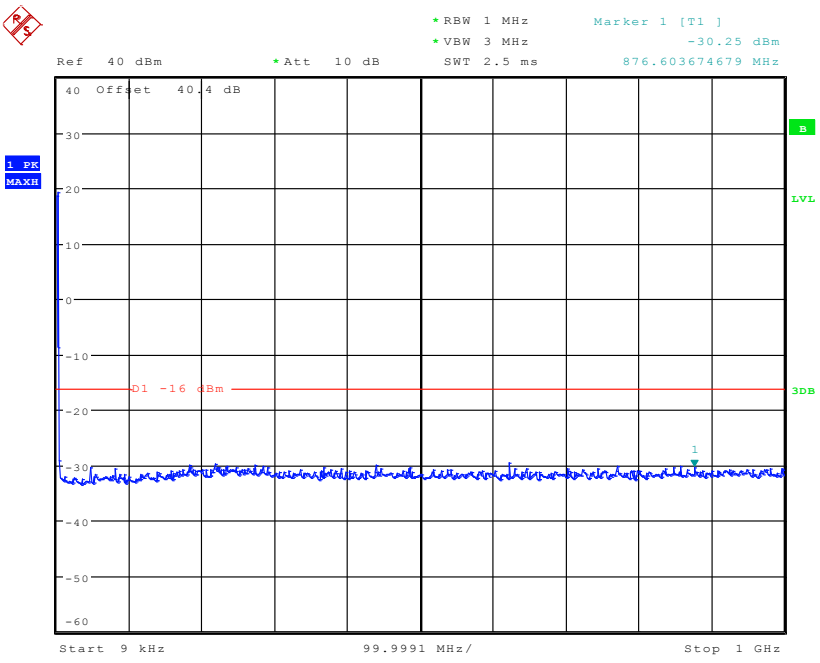
Date: 9.JUN.2014 10:15:59

Configuration L-MIMO-MC 2 (2C)

Maximum Output Power 44.8dBm per carrier

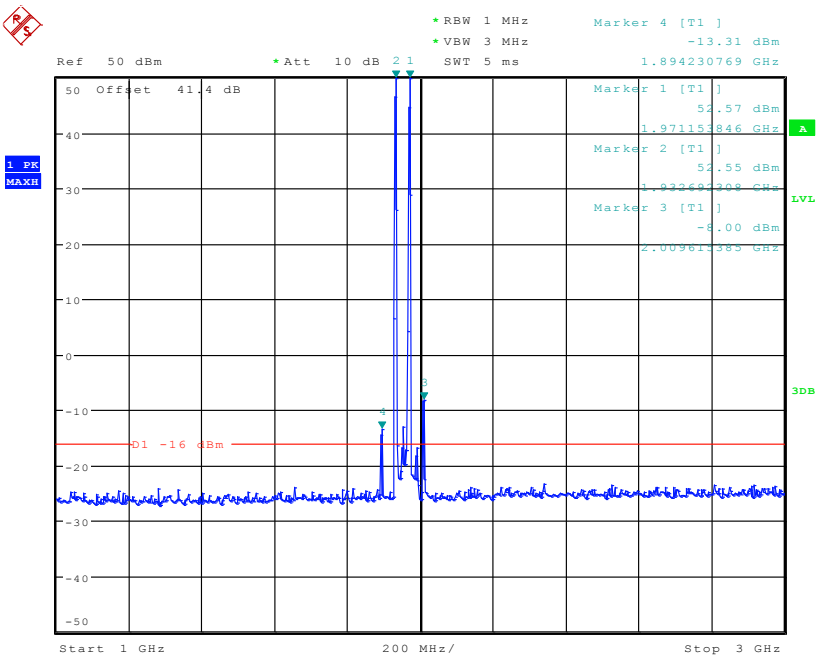
Channel Position	Bandwidth	Channel Frequency
Channel Position B	1.4MHz	1930.7MHz + 1969.3MHz
	10.0MHz	1935.0MHz + 1965.0MHz
Channel Position M	1.4MHz	1940.7MHz + 1979.3MHz
	10.0MHz	1945.0MHz + 1975.0MHz
Channel Position T	1.4MHz	1950.7MHz + 1989.3MHz
	10.0MHz	1955.0MHz + 1985.0MHz

Channel Position B - QPSK / Bandwidth 1.4MHz - 9kHz – 1GHz



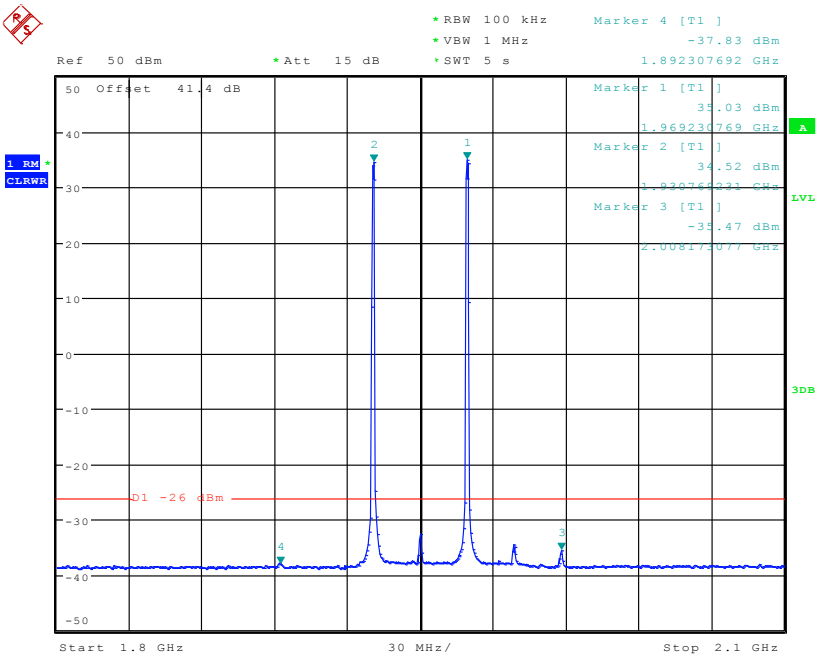
Date: 12.JUN.2014 13:34:29

Channel Position B - QPSK / Bandwidth 1.4MHz - 1GHz – 3GHz



Date: 9.JUN.2014 14:57:51

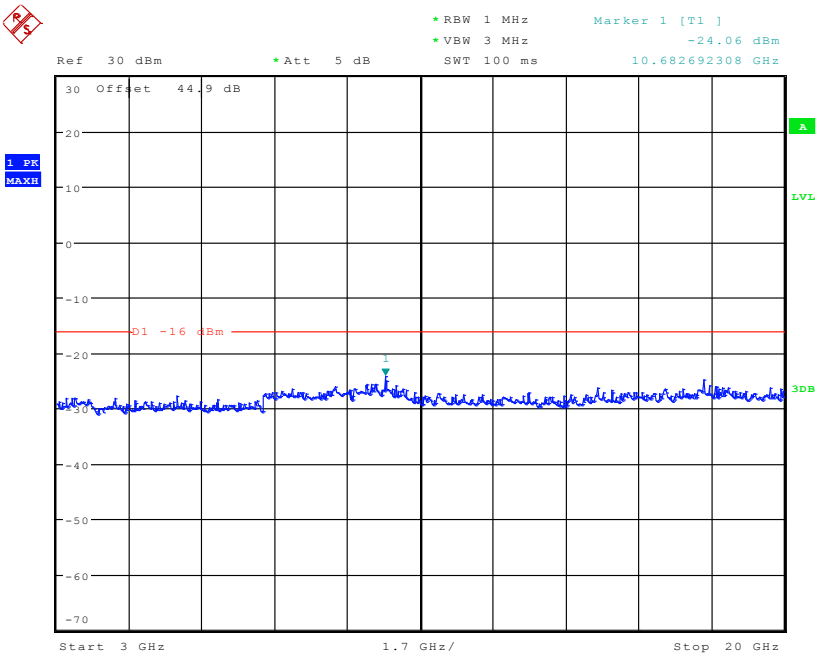
Channel Position B - QPSK / Bandwidth 1.4MHz - 1.8GHz – 2.1GHz



Date: 9.JUN.2014 15:00:02

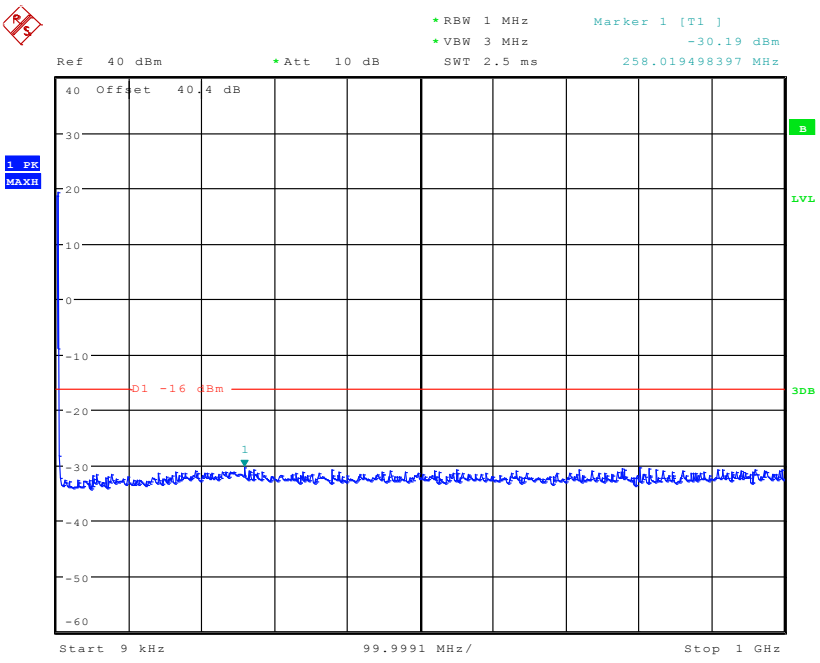
Note: A resolution bandwidth of 100 kHz is used, to compensate for this, the limit has been reduced by a further 10dB [10log(1000/100)] to – 26 dBm. The spectrum analyser was also configured with an RMS detector and in accordance with KDB 971168 D01 any spurious emission components were measured as the output power was also measured in this fashion.

Channel Position B - QPSK / Bandwidth 1.4MHz - 3GHz – 20GHz



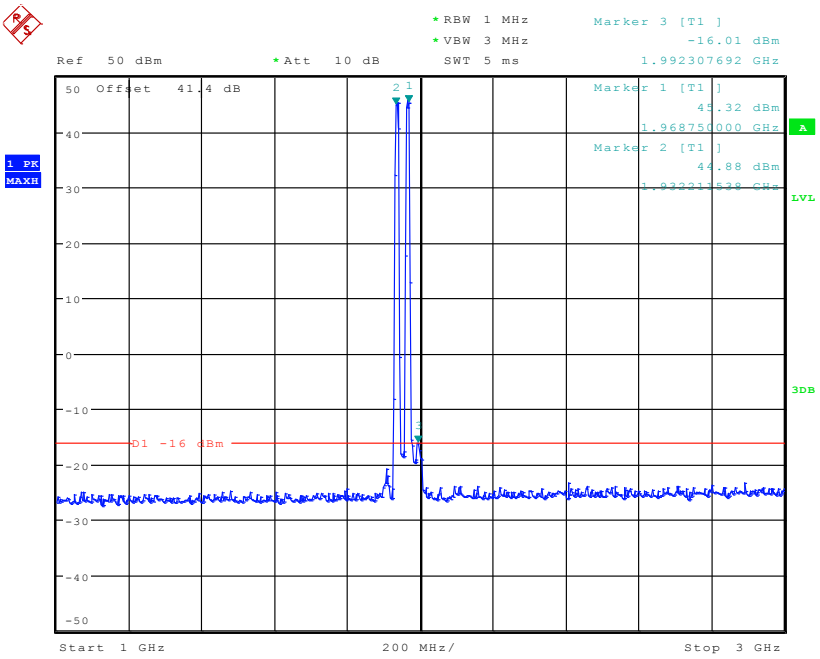
Date: 9.JUN.2014 14:04:36

Channel Position B - QPSK / Bandwidth 10.0MHz - 9kHz – 1GHz



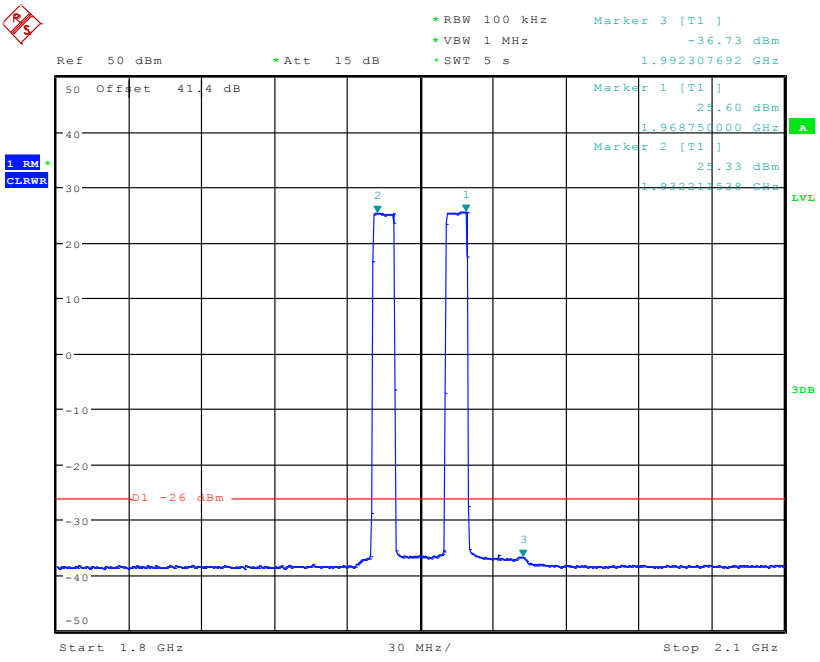
Date: 12.JUN.2014 13:39:49

Channel Position B - QPSK / Bandwidth 10.0MHz - 1GHz – 3GHz



Date: 9.JUN.2014 15:16:24

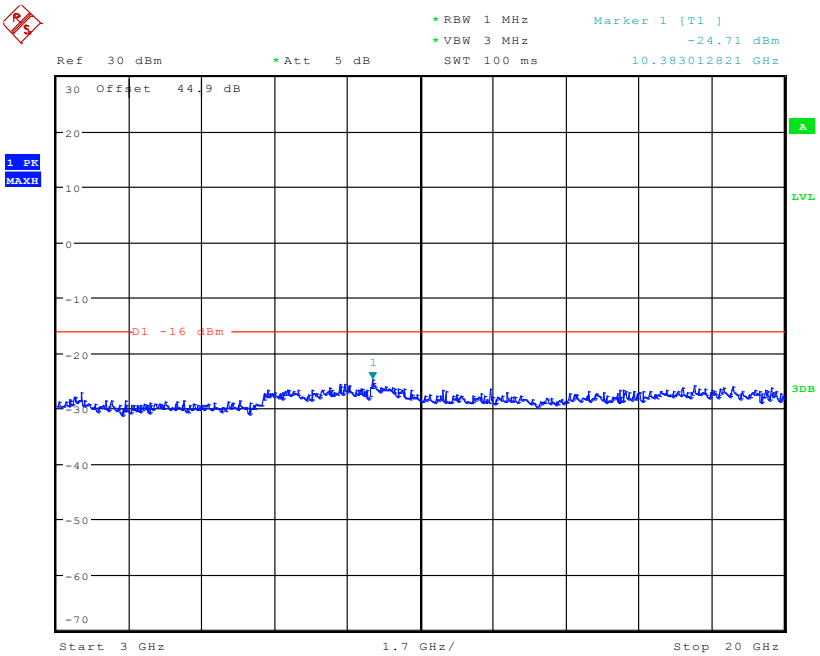
Channel Position B - QPSK / Bandwidth 10.0MHz - 1.8GHz – 2.1GHz



Date: 9.JUN.2014 15:14:39

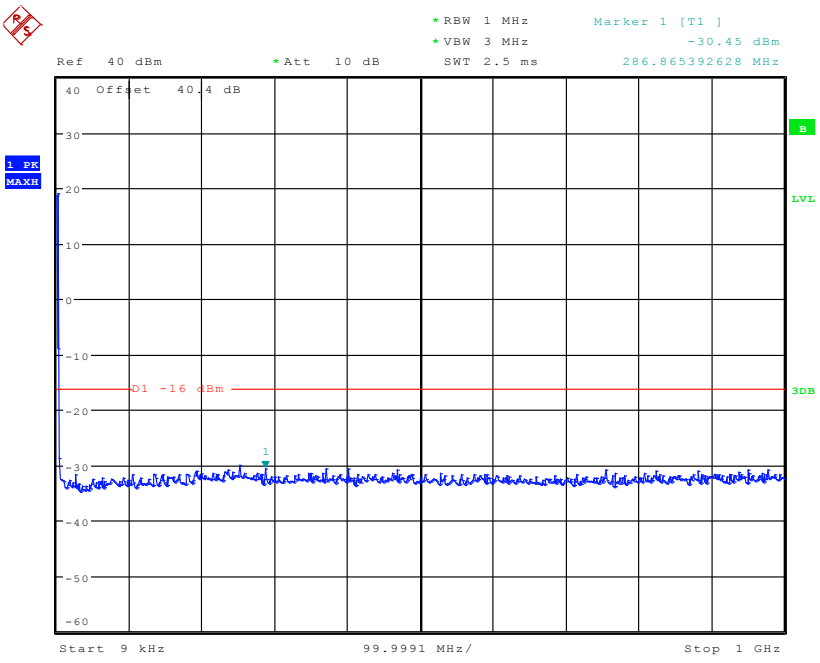
Note: A resolution bandwidth of 100 kHz is used, to compensate for this, the limit has been reduced by a further 10dB [10log(1000/100)] to – 26 dBm. The spectrum analyser was also configured with an RMS detector and in accordance with KDB 971168 D01 any spurious emission components were measured as the output power was also measured in this fashion.

Channel Position B - QPSK / Bandwidth 10.0MHz - 3GHz – 20GHz



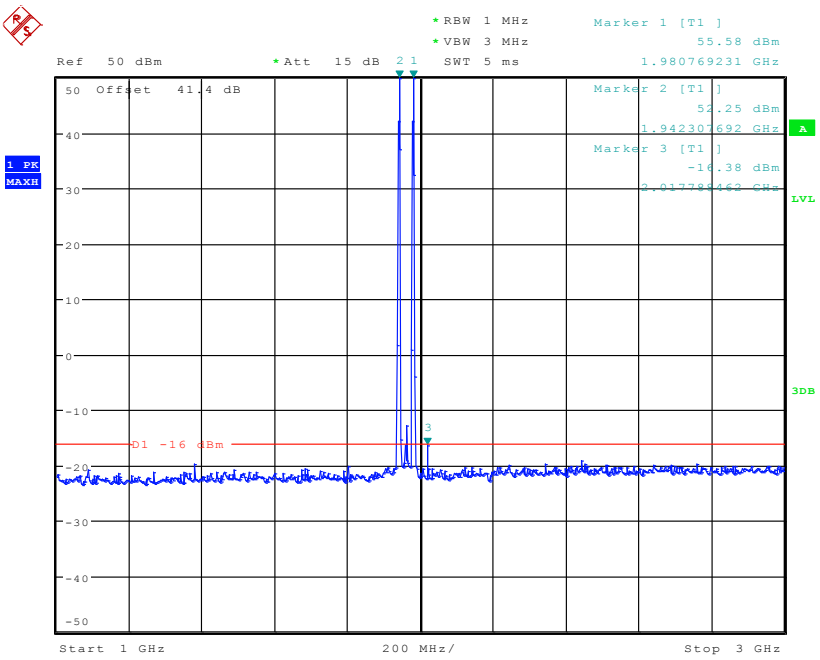
Date: 9.JUN.2014 14:07:10

Channel Position M - QPSK / Bandwidth 1.4MHz - 9kHz – 1GHz



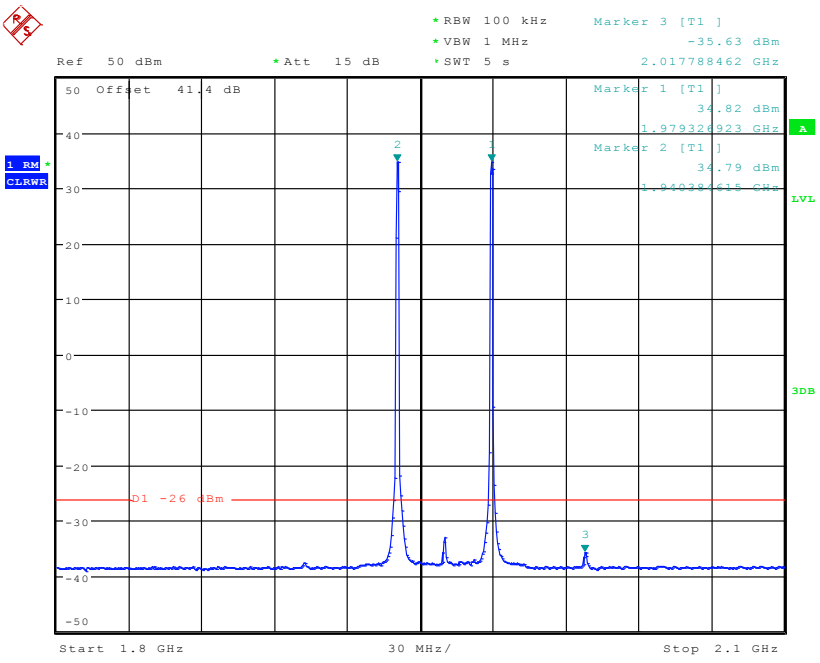
Date: 12.JUN.2014 13:36:14

Channel Position M - QPSK / Bandwidth 1.4MHz - 1GHz – 3GHz



Date: 9.JUN.2014 15:03:43

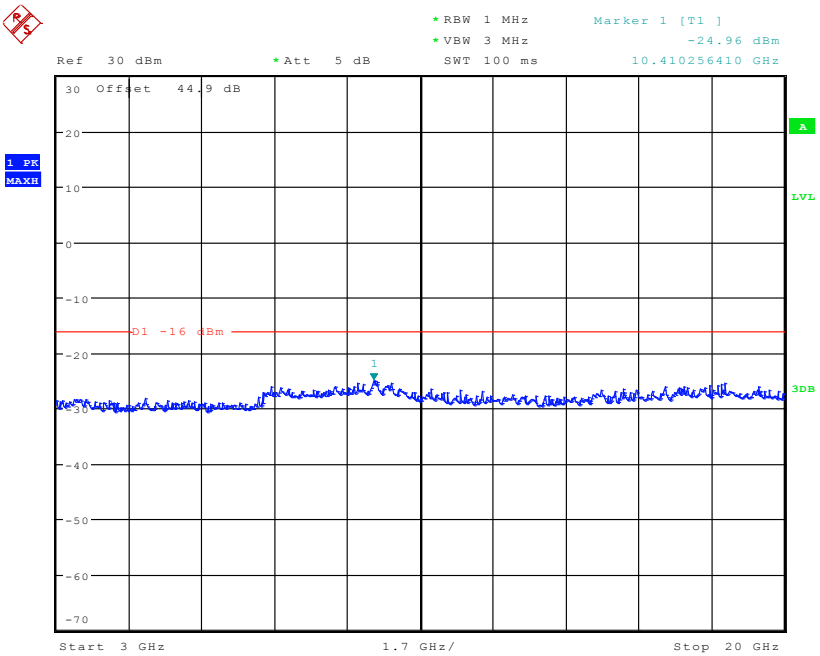
Channel Position M - QPSK / Bandwidth 1.4MHz - 1.8GHz – 2.1GHz



Date: 9.JUN.2014 15:05:48

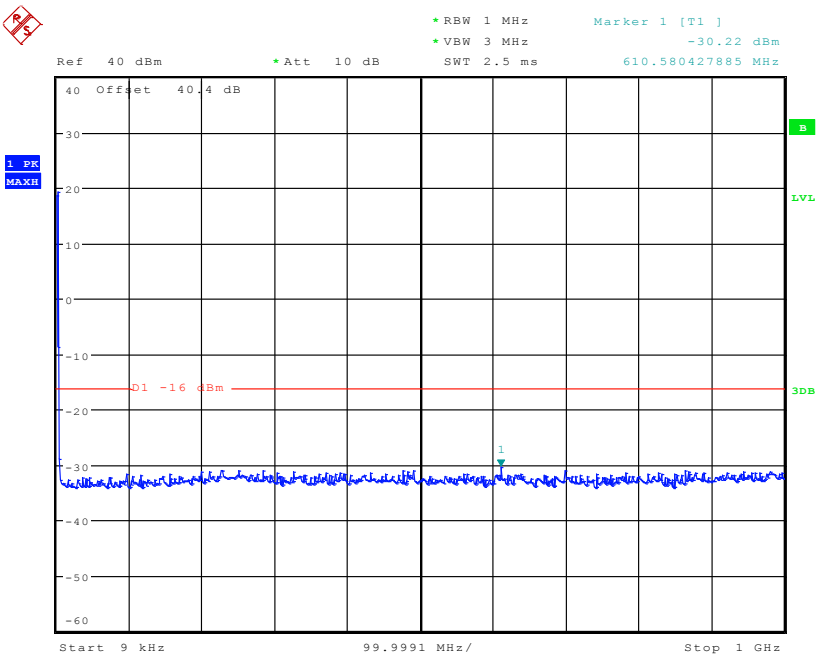
Note: A resolution bandwidth of 100 kHz is used, to compensate for this, the limit has been reduced by a further 10dB [10log(1000/100)] to – 26 dBm. The spectrum analyser was also configured with an RMS detector and in accordance with KDB 971168 D01 any spurious emission components were measured as the output power was also measured in this fashion.

Channel Position M - QPSK / Bandwidth 1.4MHz - 3GHz – 20GHz



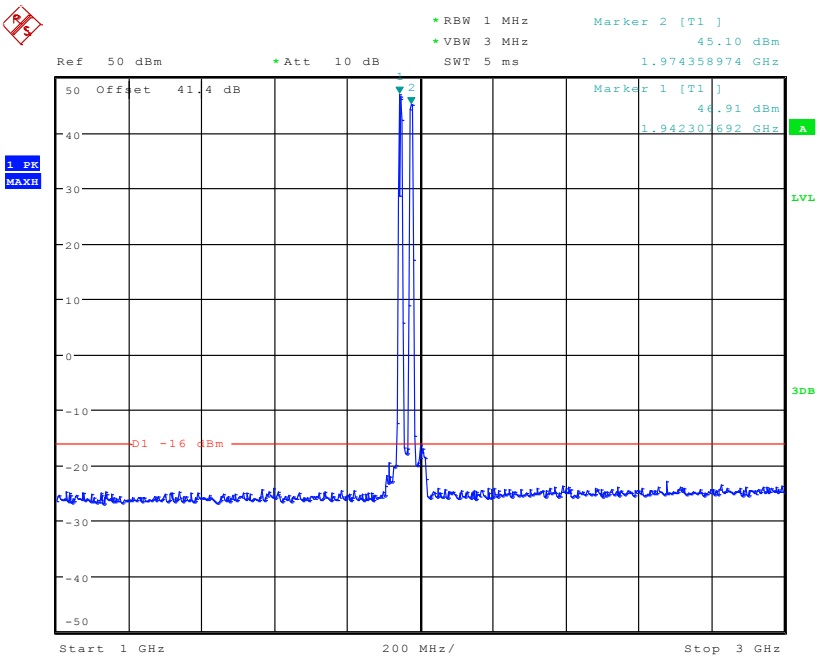
Date: 9.JUN.2014 13:44:00

Channel Position M - QPSK / Bandwidth 10.0MHz - 9kHz – 1GHz



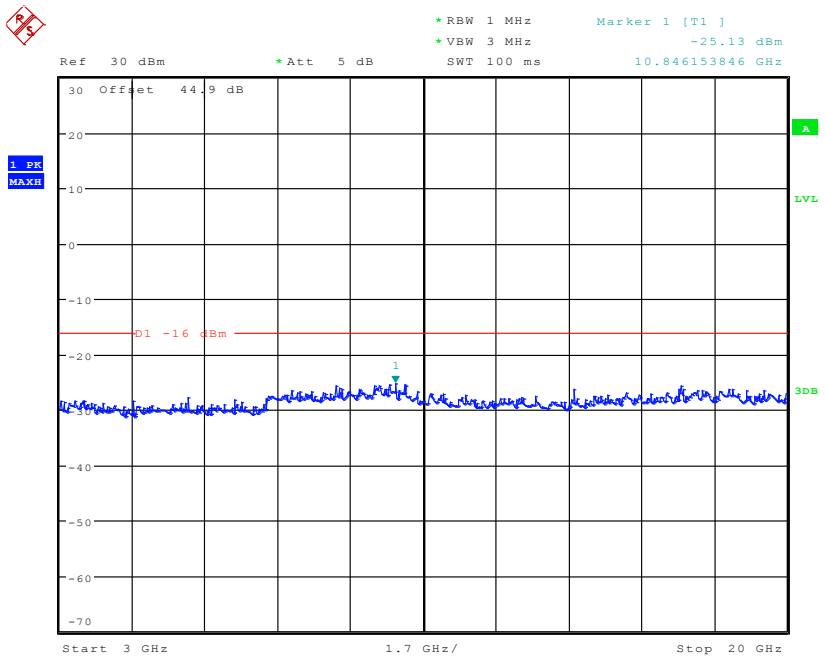
Date: 12.JUN.2014 13:44:26

Channel Position M - QPSK / Bandwidth 10.0MHz - 1GHz – 3GHz



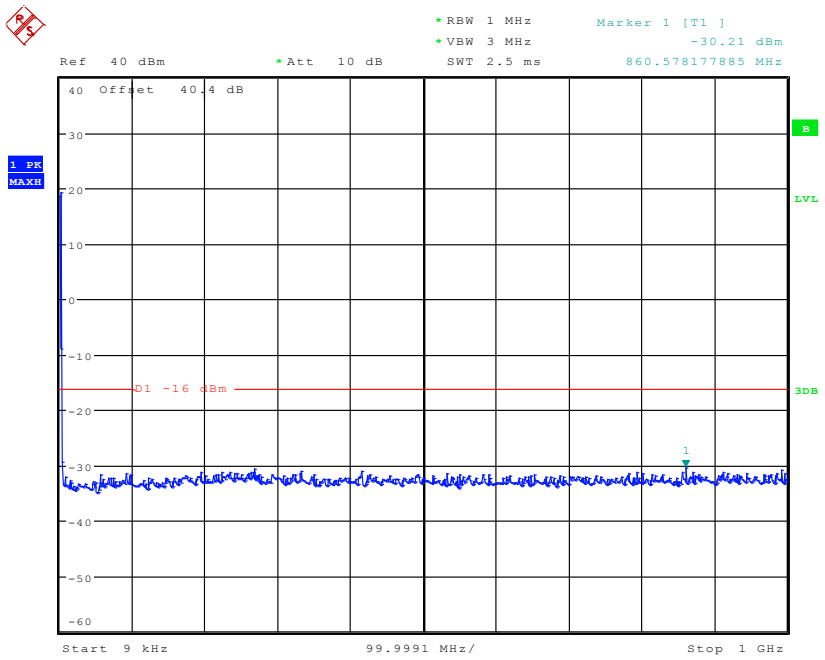
Date: 9.JUN.2014 14:30:06

Channel Position M - QPSK / Bandwidth 10.0MHz - 3GHz – 20GHz



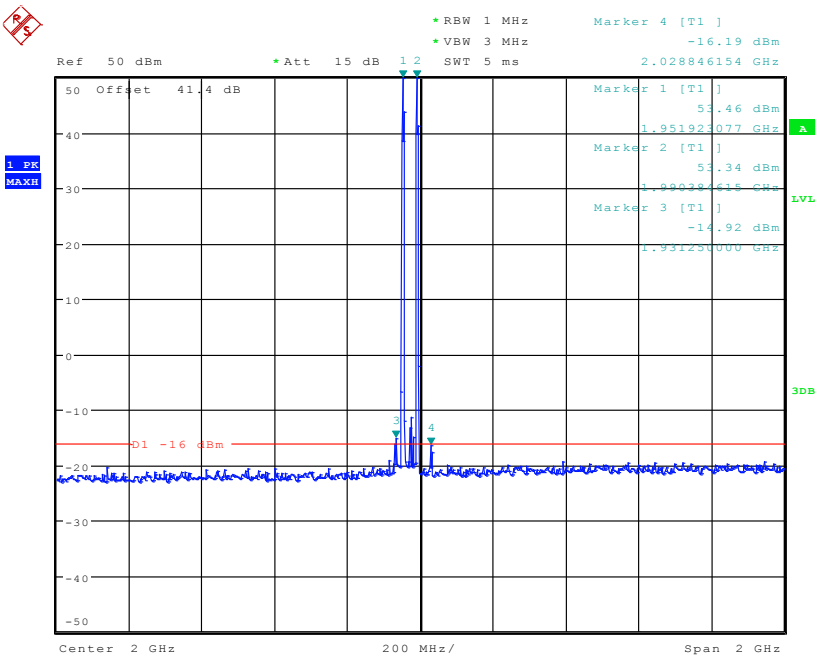
Date: 9.JUN.2014 14:31:31

Channel Position T - QPSK / Bandwidth 1.4MHz - 9kHz – 1GHz



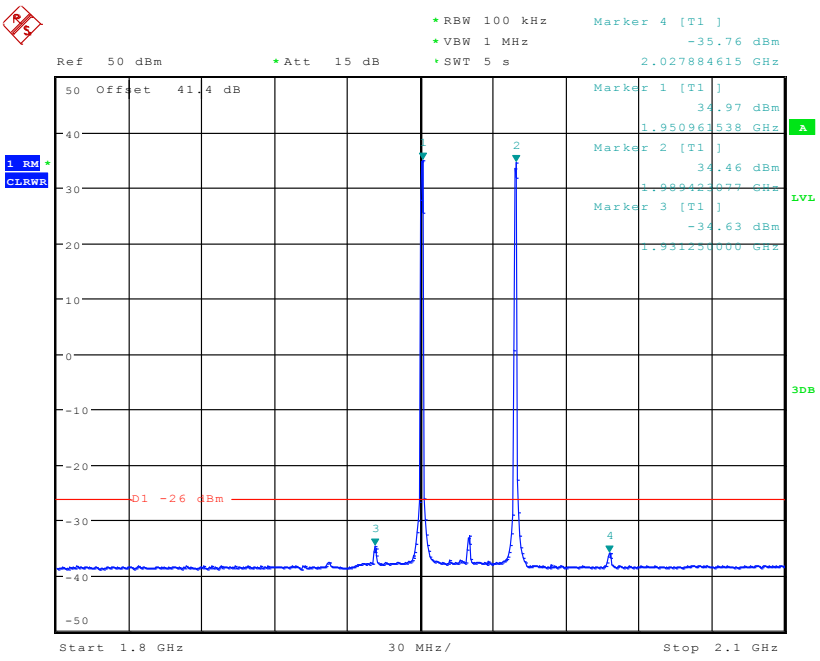
Date: 12.JUN.2014 13:37:44

Channel Position T - QPSK / Bandwidth 1.4MHz - 1GHz – 3GHz



Date: 9.JUN.2014 15:09:17

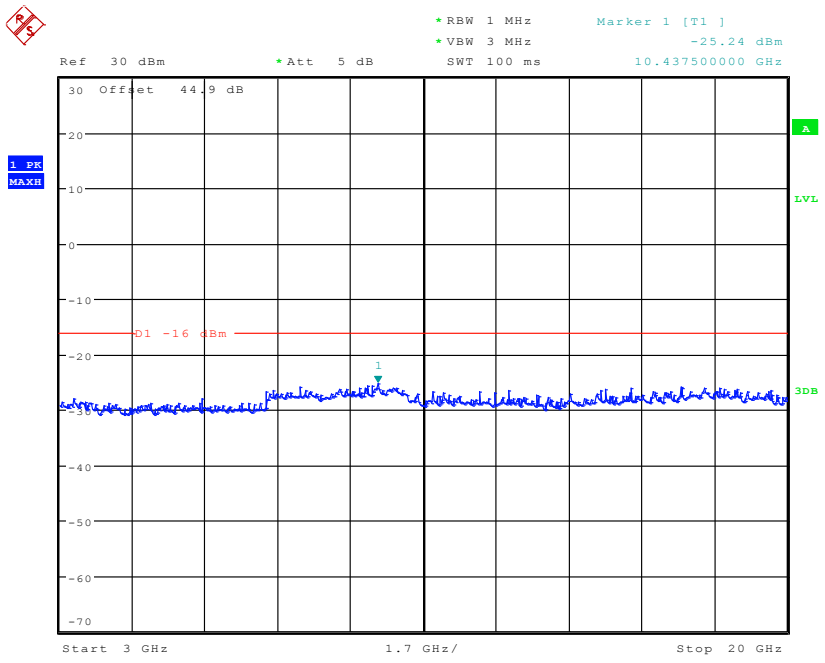
Channel Position T - QPSK / Bandwidth 1.4MHz - 1.8GHz – 2.1GHz



Date: 9.JUN.2014 15:11:31

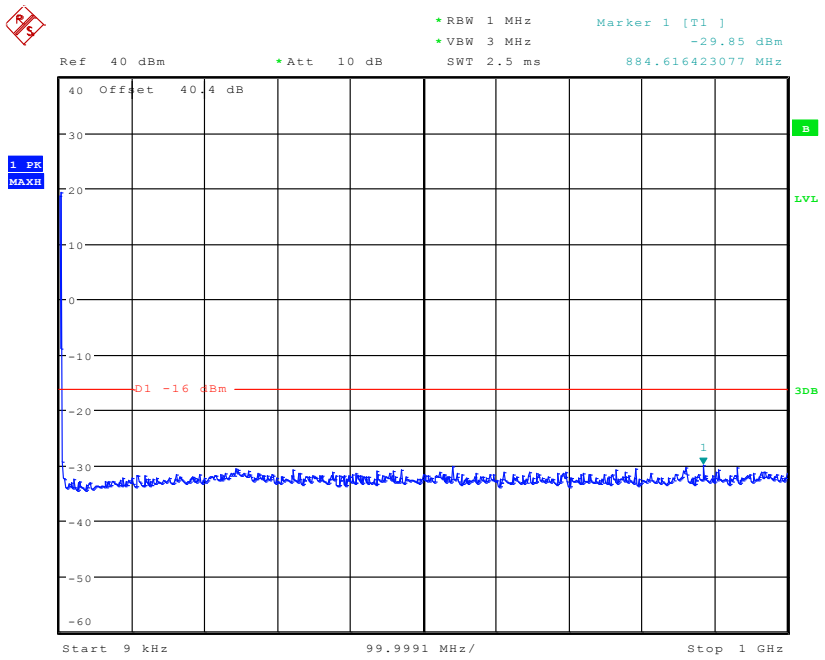
Note: A resolution bandwidth of 100 kHz is used, to compensate for this, the limit has been reduced by a further 10dB [10log(1000/100)] to – 26 dBm. The spectrum analyser was also configured with an RMS detector and in accordance with KDB 971168 D01 any spurious emission components were measured as the output power was also measured in this fashion.

Channel Position T - QPSK / Bandwidth 1.4MHz - 3GHz – 20GHz



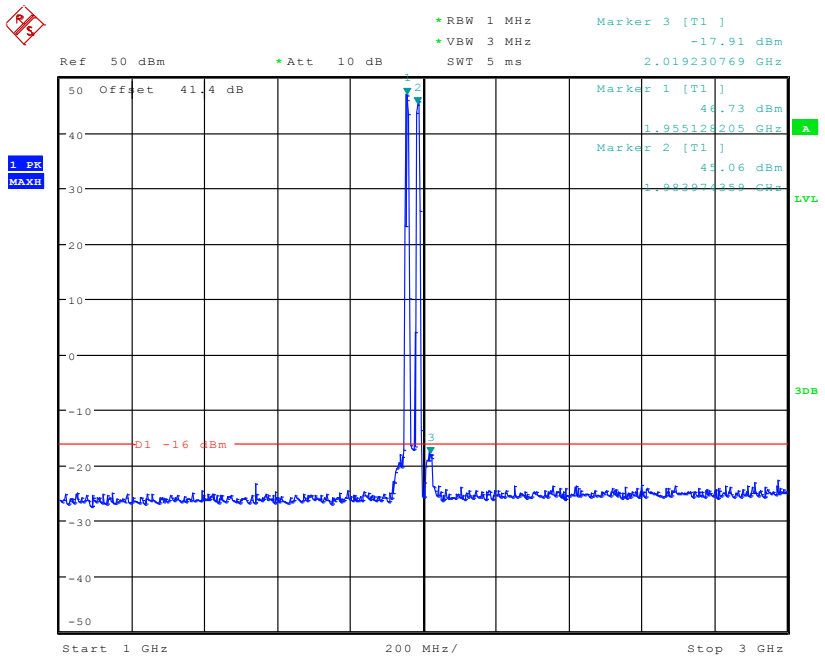
Date: 9.JUN.2014 13:45:39

Channel Position T - QPSK / Bandwidth 10.0MHz - 9kHz – 1GHz



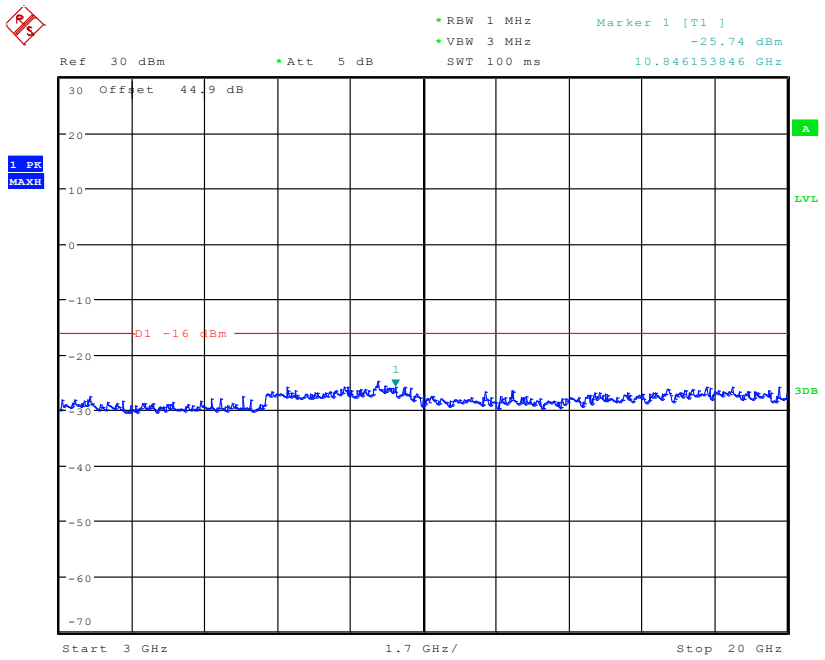
Date: 12.JUN.2014 13:45:52

Channel Position T - QPSK / Bandwidth 10.0MHz - 1GHz – 3GHz



Date: 9.JUN.2014 14:34:41

Channel Position T - QPSK / Bandwidth 10.0MHz - 3GHz – 20GHz



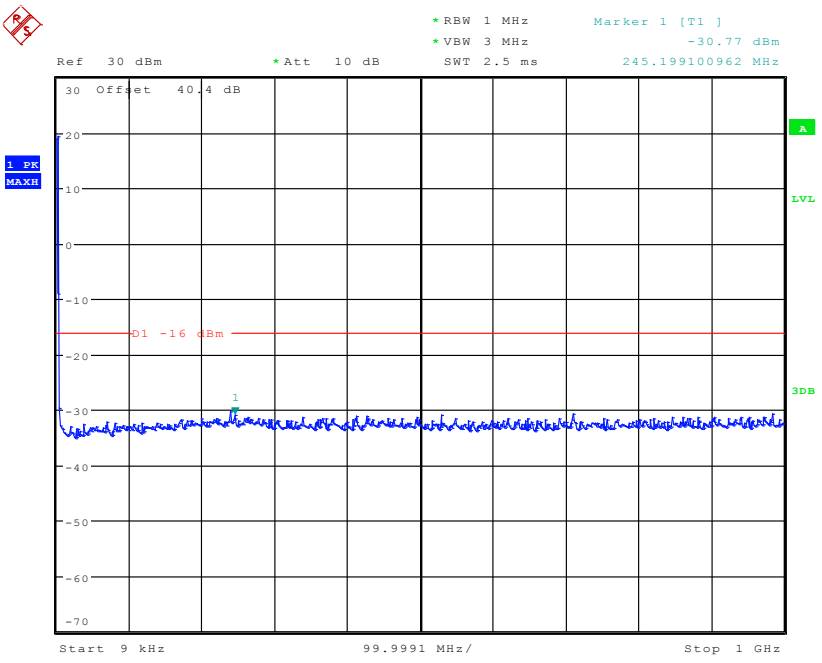
Date: 9.JUN.2014 14:33:04

Configuration G+W-MIMO-MC 1 (1G + 1W)

Maximum Output Power 44.8dBm per carrier

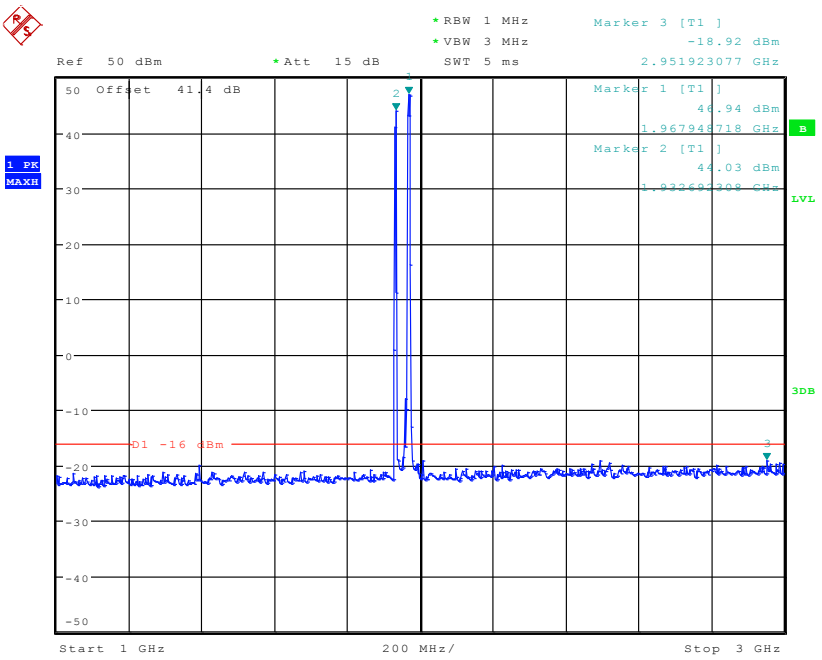
Channel Position	Channel Frequencies
Channel Position B_{RFBW}	Port A: (G) 1930.4MHz + (W)1967.6MHz Port B: (G) 1931.0MHz + (W)1967.6MHz
Channel Position M_{RFBW}	Port A: (G) 1940.2MHz + (W) 1977.6MHz Port B: (G) 1940.8MHz + (W) 1977.6MHz
Channel Position T_{RFBW}	Port A: (G) 1950.2MHz + (W) 1987.6MHz Port B: (G) 1950.8MHz + (W) 1987.6MHz

Channel Position B_{RFBW} - GSM GMSK / WCDMA 16QAM - 9kHz – 1GHz



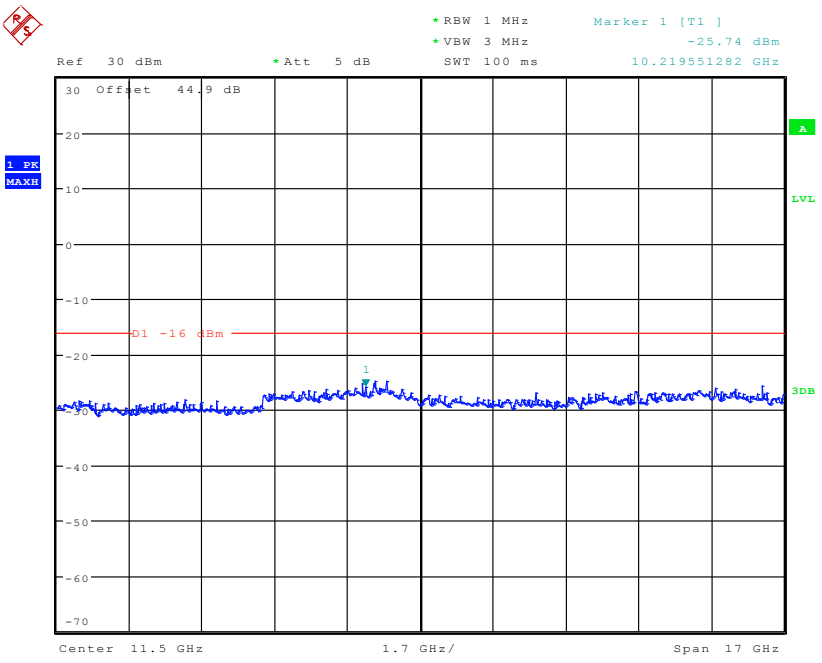
Date: 12.JUN.2014 15:08:09

Channel Position B_{RFBW} - GSM GMSK / WCDMA 16QAM - 1GHz – 3GHz



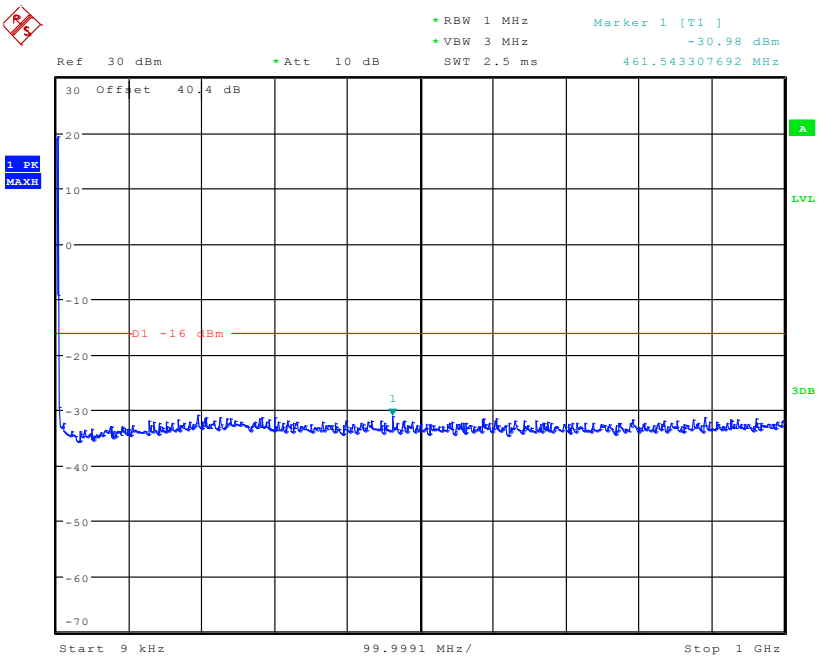
Date: 11.JUN.2014 10:31:57

Channel Position B_{RFBW} - GSM GMSK / WCDMA 16QAM - 3GHz – 20GHz



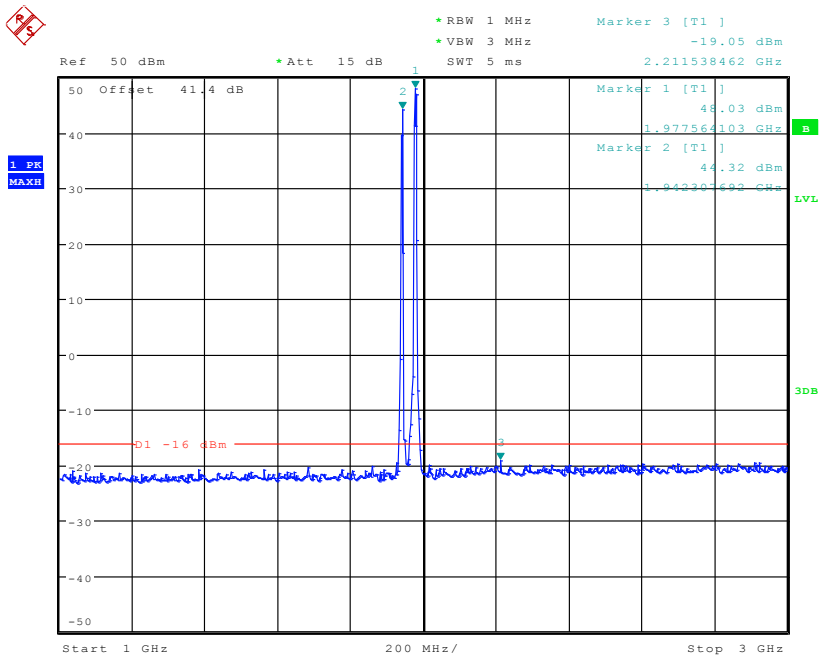
Date: 11.JUN.2014 10:32:24

Channel Position M_{RFBW} - GSM GMSK / WCDMA 16QAM - 9kHz – 1GHz



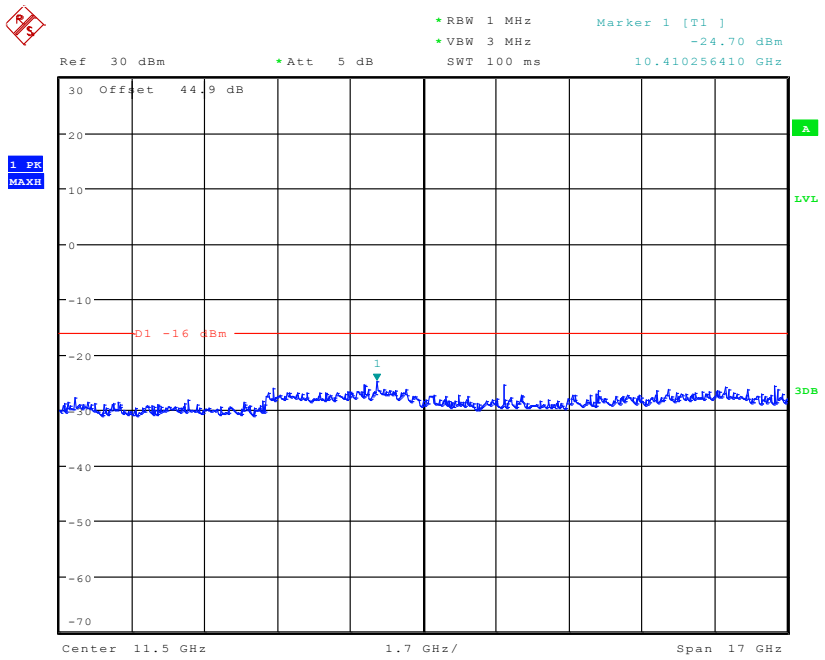
Date: 12.JUN.2014 15:10:56

Channel Position M_{RFBW} - GSM GMSK / WCDMA 16QAM - 1GHz – 3GHz



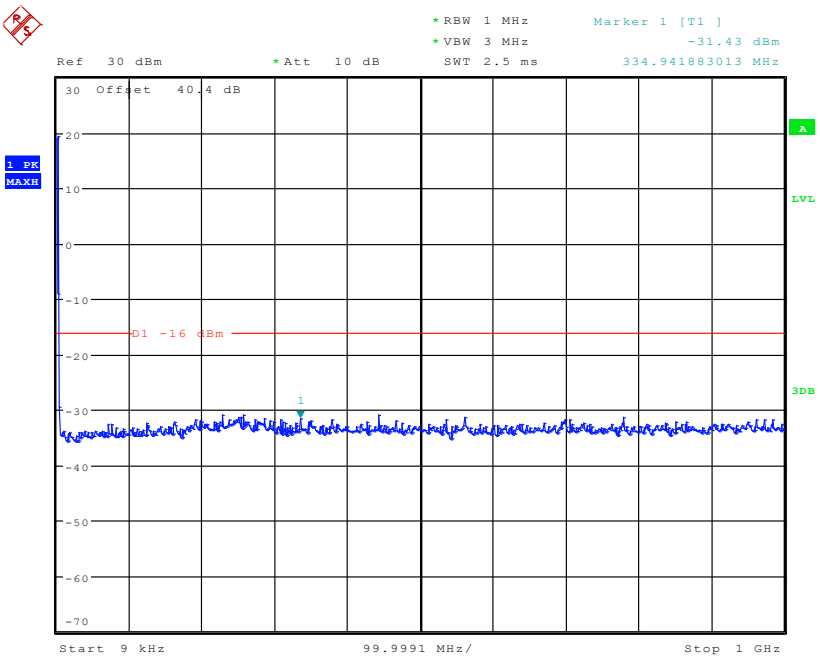
Date: 11.JUN.2014 10:36:40

Channel Position M_{RFBW} - GSM GMSK / WCDMA 16QAM - 3GHz – 20GHz



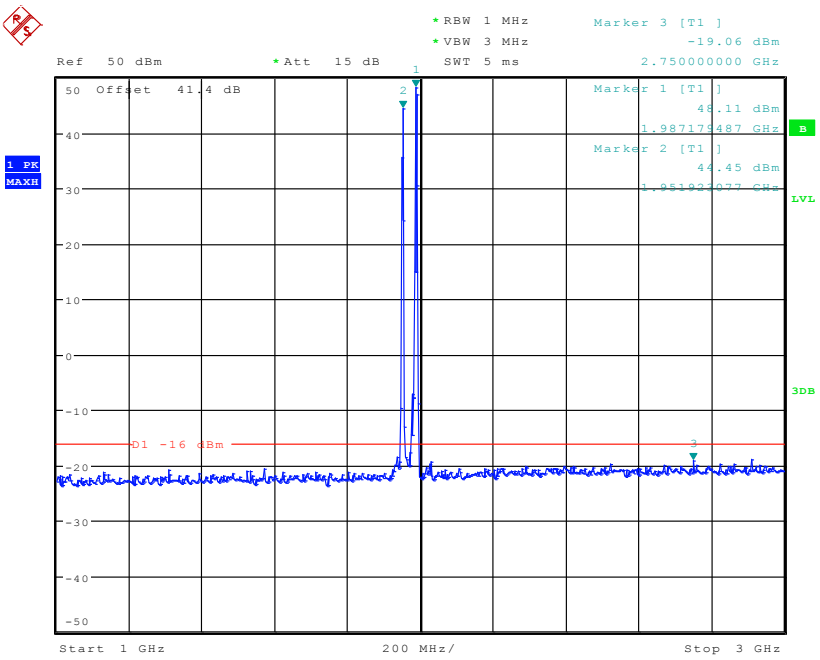
Date: 11.JUN.2014 10:36:59

Channel Position T_{RFBW} - GSM GMSK / WCDMA 16QAM - 9kHz – 1GHz



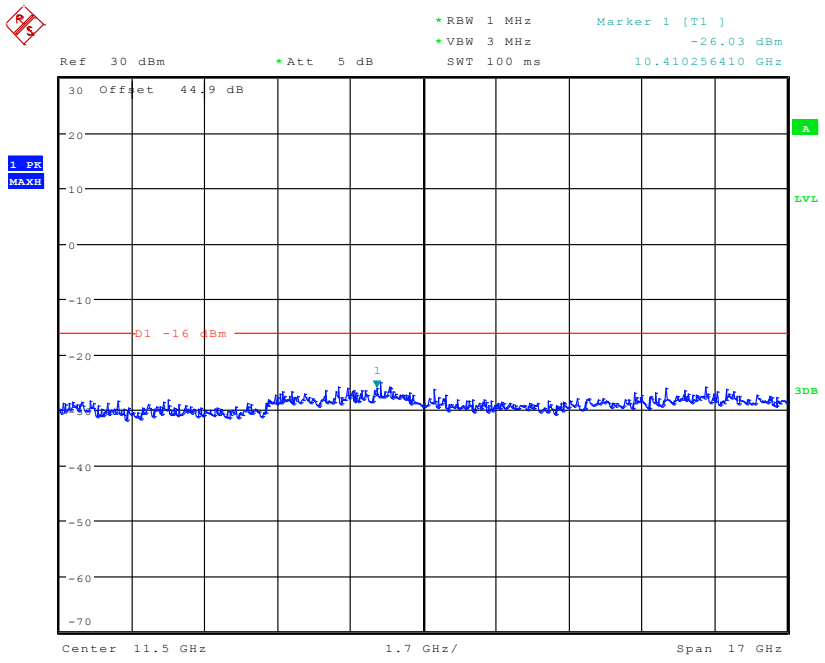
Date: 12.JUN.2014 15:14:28

Channel Position T_{RFBW} - GSM GMSK / WCDMA 16QAM - 1GHz – 3GHz



Date: 11.JUN.2014 10:38:31

Channel Position T_{RFBW} - GSM GMSK / WCDMA 16QAM - 3GHz – 20GHz



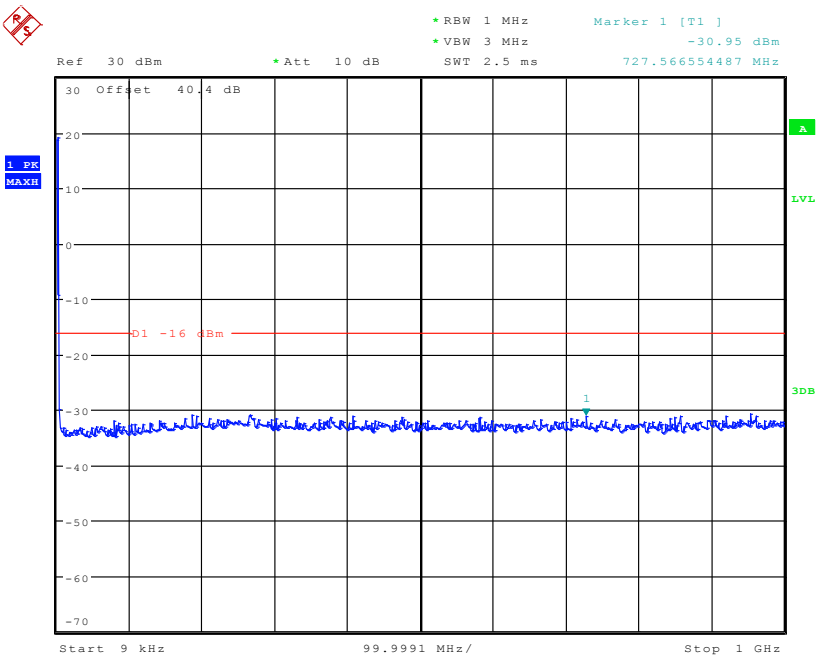
Date: 11.JUN.2014 10:38:38

Configuration G+W-MIMO-MC 3 (2G + 1W)

Maximum Output Power 43.0dBm per carrier

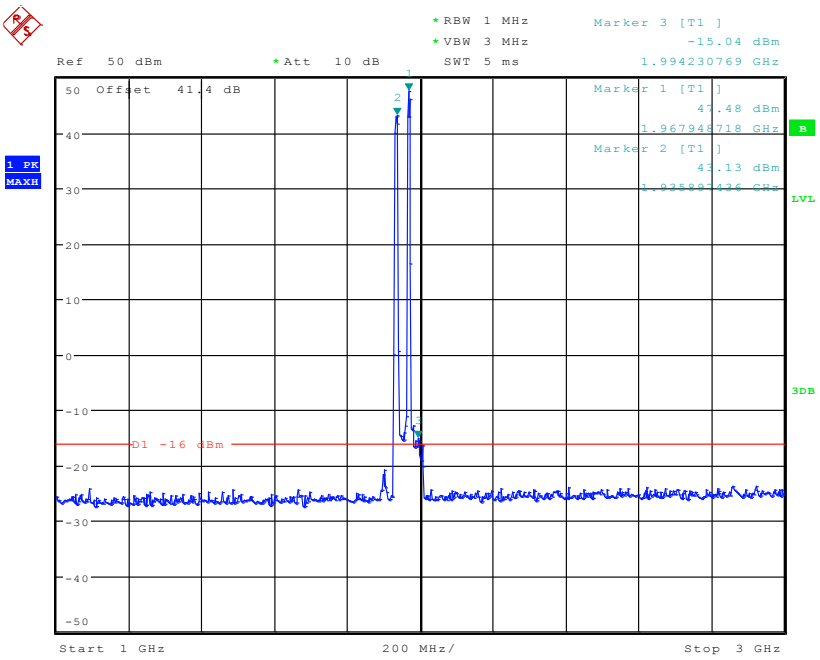
Channel Position	Channel Frequencies
Channel Position B_{RFBW}	Port A: (G) 1930.4MHz + 1936.4MHz + (W)1967.6MHz Port B: (G) 1931.0MHz + 1937.0MHz + (W)1967.6MHz
Channel Position M_{RFBW}	Port A: (G) 1940.2MHz + 1946.2MHz + (W) 1977.6MHz Port B: (G) 1940.8MHz + 1946.8MHz + (W) 1977.6MHz
Channel Position T_{RFBW}	Port A: (G) 1950.2MHz + 1956.2MHz + (W) 1987.6MHz Port B: (G) 1950.8MHz + 1956.8MHz + (W) 1987.6MHz

Channel Position B_{RFBW} - GSM GMSK / WCDMA 16QAM - 9kHz – 1GHz



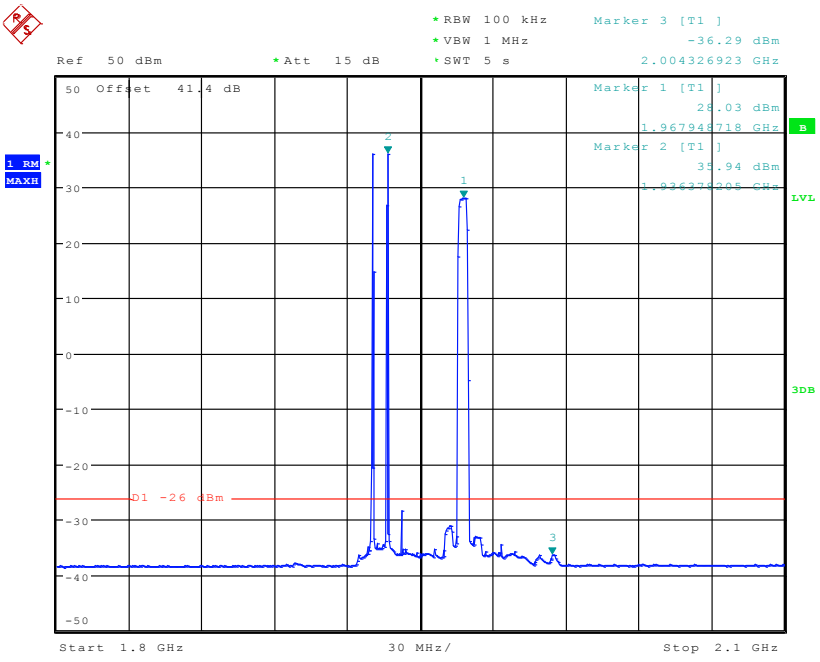
Date: 12.JUN.2014 15:06:16

Channel Position B_{RFBW} - GSM GMSK / WCDMA 16QAM - 1GHz – 3GHz



Date: 11.JUN.2014 10:47:08

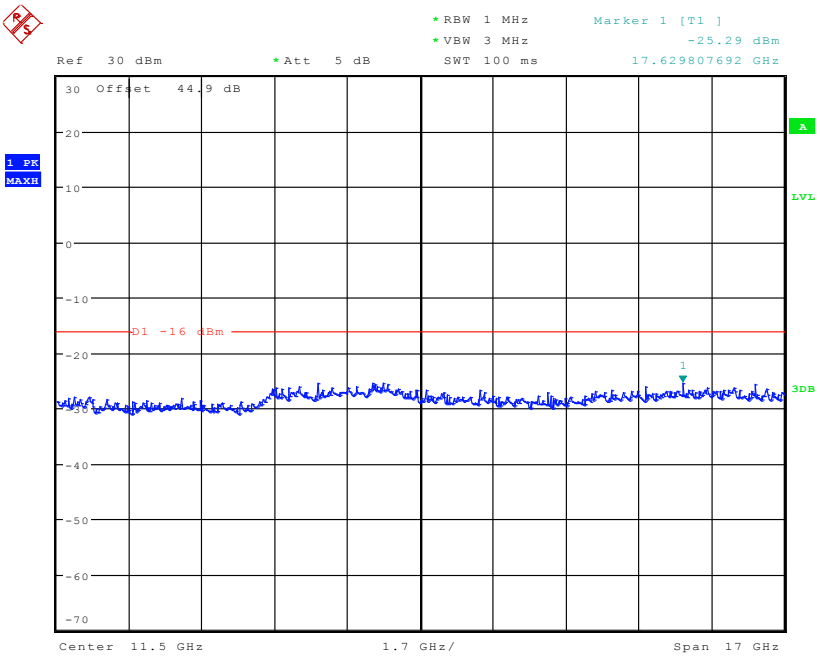
Channel Position B_{RFBW} - GSM GMSK / WCDMA 16QAM - 1.8GHz – 2.1GHz



Date: 11.JUN.2014 10:48:47

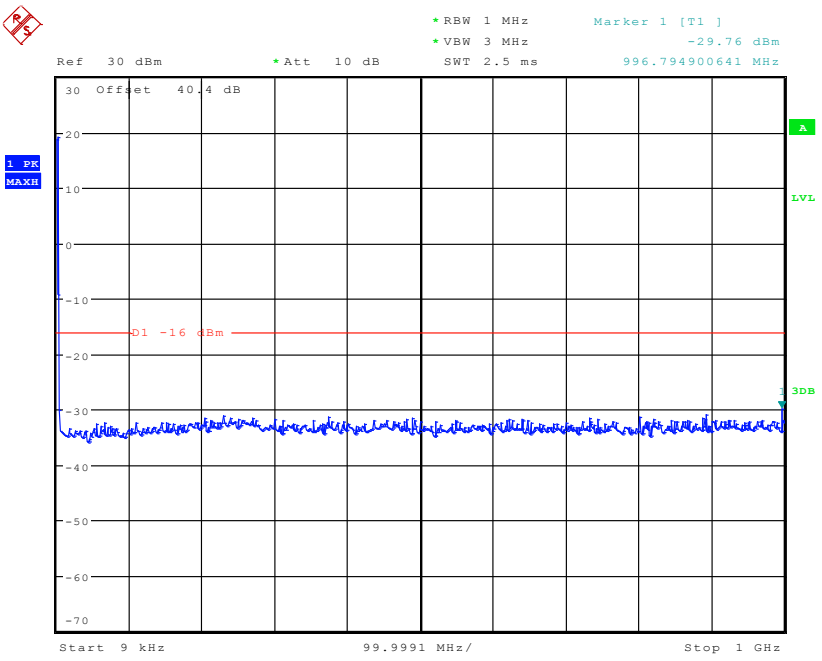
Note: A resolution bandwidth of 100 kHz is used, to compensate for this, the limit has been reduced by a further 10dB [10log(1000/100)] to – 26 dBm. The spectrum analyser was also configured with an RMS detector and in accordance with KDB 971168 D01 any spurious emission components were measured as the output power was also measured in this fashion.

Channel Position B_{RFBW} - GSM GMSK / WCDMA 16QAM - 3GHz – 20GHz



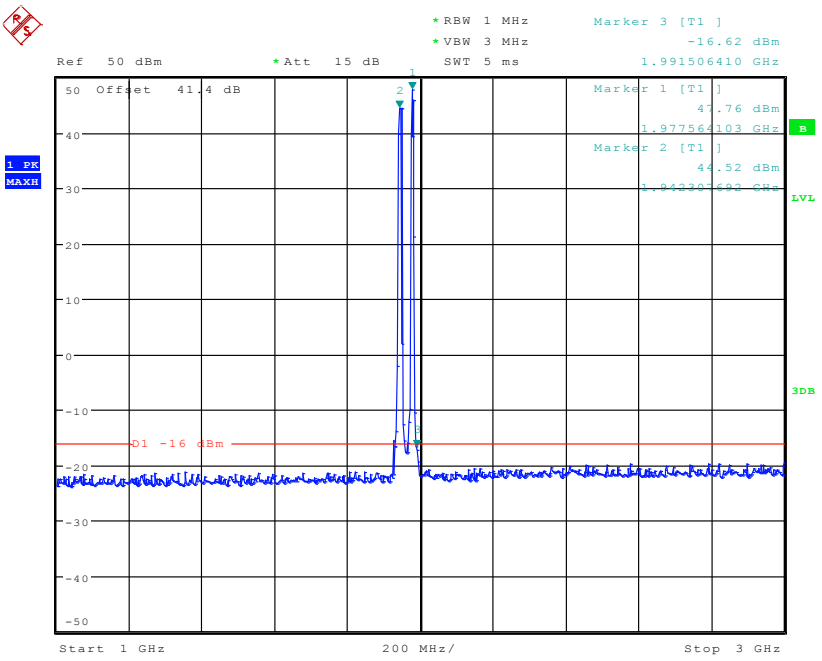
Date: 11.JUN.2014 10:49:04

Channel Position M_{RFBW} - GSM GMSK / WCDMA 16QAM - 9kHz – 1GHz



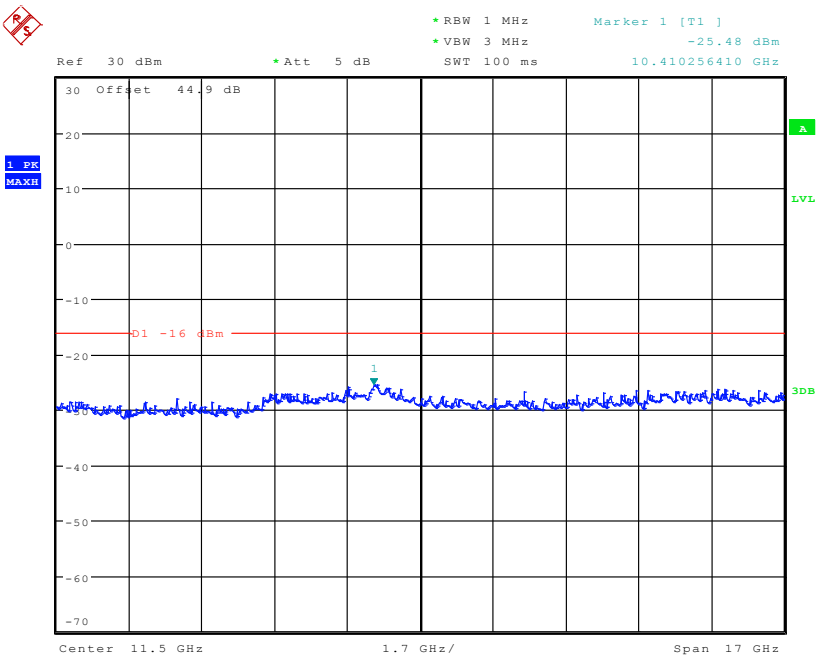
Date: 12.JUN.2014 15:06:45

Channel Position M_{RFBW} - GSM GMSK / WCDMA 16QAM - 1GHz – 3GHz



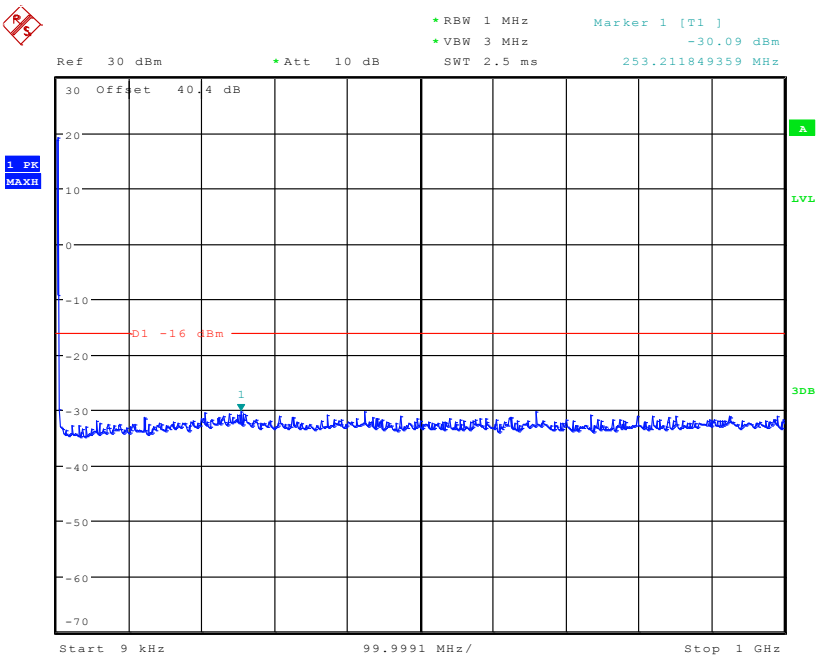
Date: 11.JUN.2014 10:53:13

Channel Position M_{RFBW} - GSM GMSK / WCDMA 16QAM - 3GHz – 20GHz



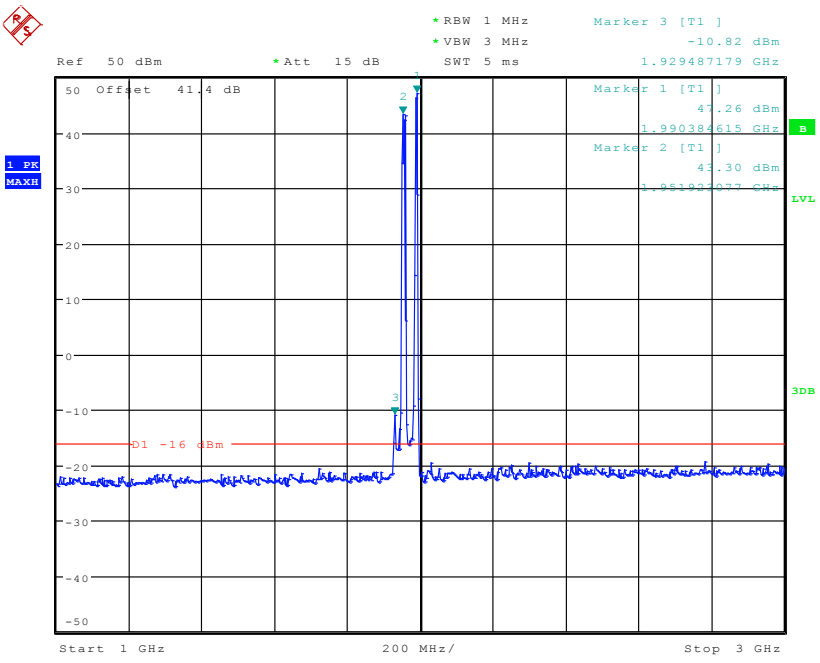
Date: 11.JUN.2014 10:53:29

Channel Position T_{RFBW} - GSM GMSK / WCDMA 16QAM - 9kHz – 1GHz



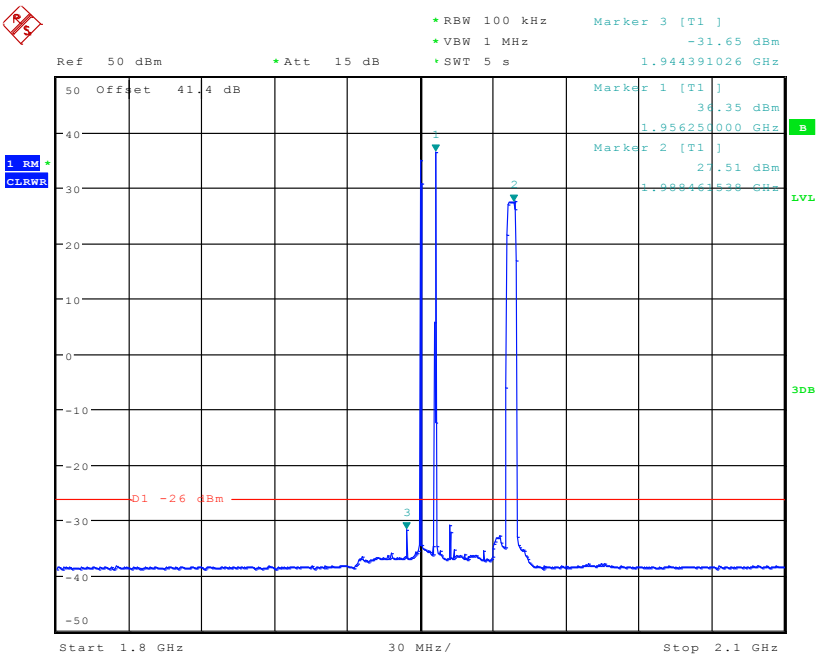
Date: 12.JUN.2014 15:07:01

Channel Position T_{RFBW} - GSM GMSK / WCDMA 16QAM - 1GHz – 3GHz



Date: 11.JUN.2014 10:56:53

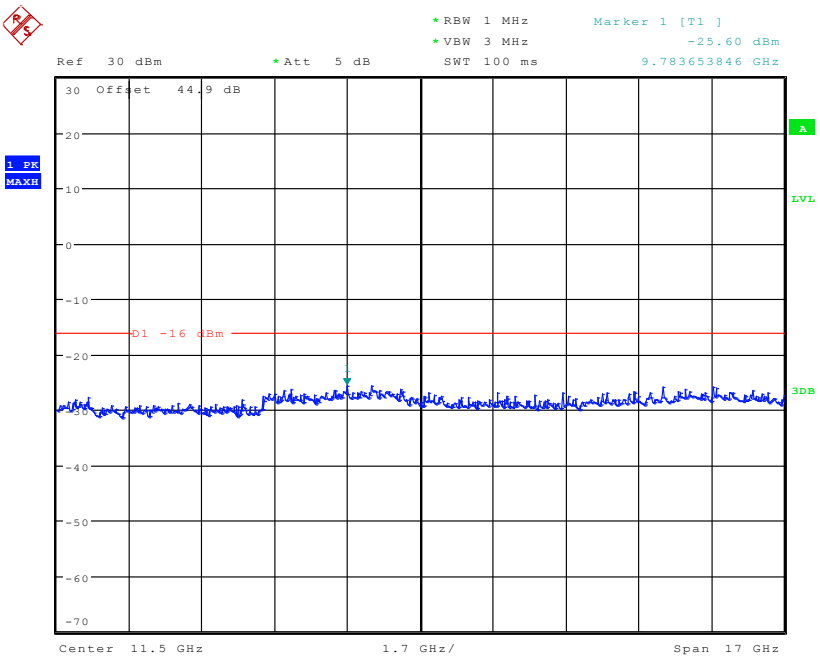
Channel Position T_{RFBW} - GSM GMSK / WCDMA 16QAM - 1.8GHz – 2.1GHz



Date: 11.JUN.2014 10:58:10

Note: A resolution bandwidth of 100 kHz is used, to compensate for this, the limit has been reduced by a further 10dB [10log(1000/100)] to – 26 dBm. The spectrum analyser was also configured with an RMS detector and in accordance with KDB 971168 D01 any spurious emission components were measured as the output power was also measured in this fashion.

Channel Position T_{RFBW} - GSM GMSK / WCDMA 16QAM - 3GHz – 20GHz



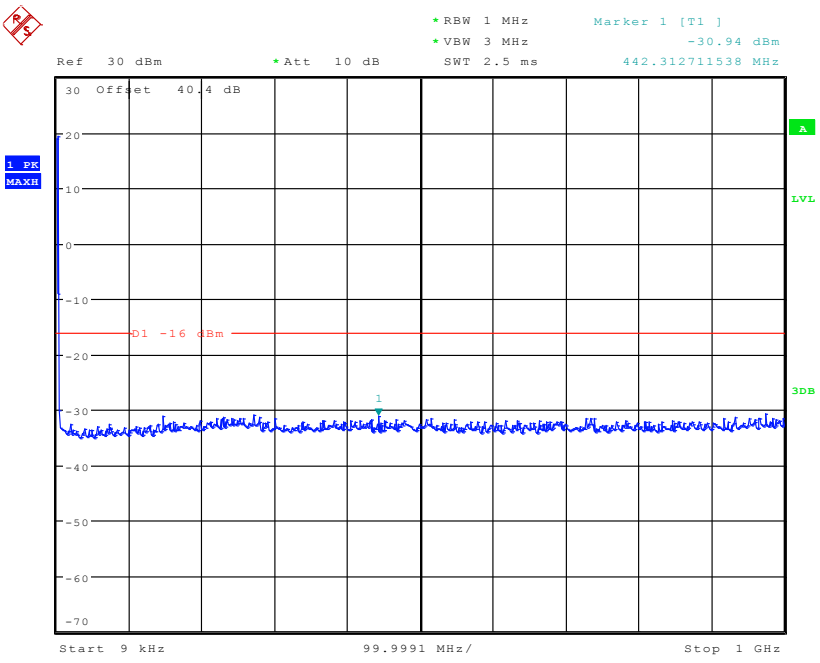
Date: 11.JUN.2014 10:58:20

Configuration G+L-MIMO-MC 1 (1G + 1L)

Maximum Output Power 44.8dBm per carrier, LTE Bandwidth 20.0MHz

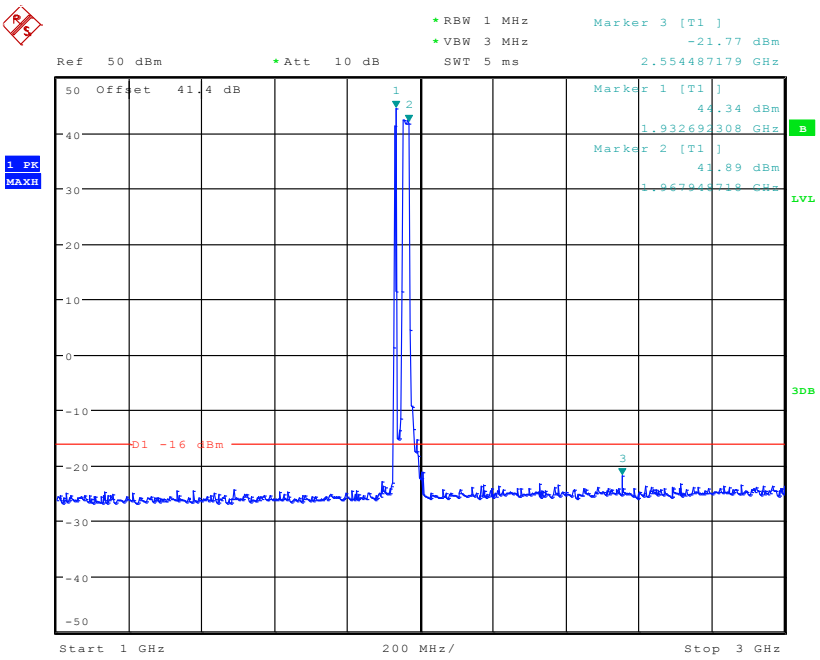
Channel Position	Channel Frequencies
Channel Position B_{RFBW}	Port A: (G) 1930.4MHz + (L)1960.0MHz Port B: (G) 1931.0MHz + (L)1960.0MHz
Channel Position M_{RFBW}	Port A: (G) 1940.2MHz + (L) 1970.0MHz Port B: (G) 1940.8MHz + (L) 1970.0MHz
Channel Position T_{RFBW}	Port A: (G) 1950.2MHz + (L) 1980.0MHz Port B: (G) 1950.8MHz + (L) 1980.0MHz

Channel Position B_{RFBW} - GSM GMSK / LTE QPSK: Bandwidth 20.0MHz - 9kHz – 1GHz



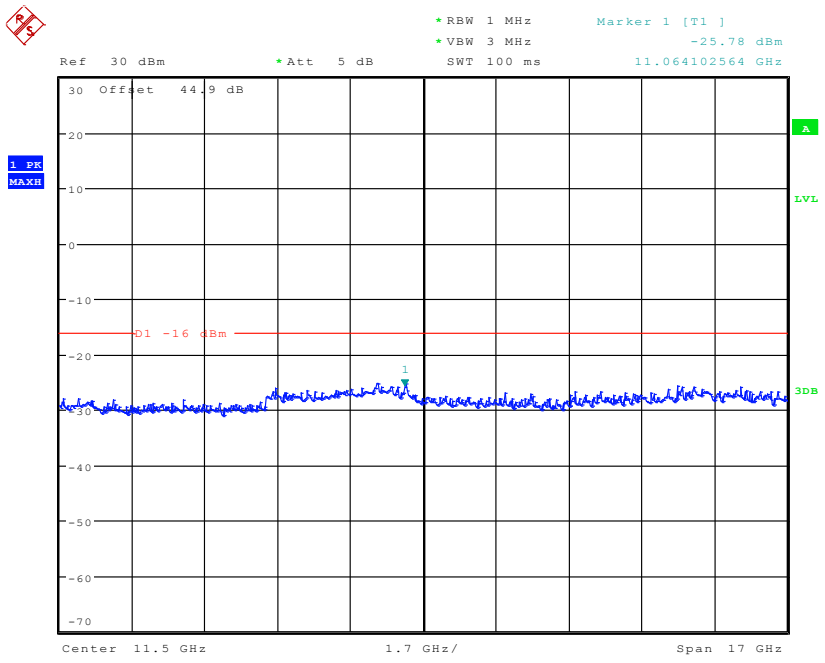
Date: 12.JUN.2014 15:18:30

Channel Position B_{RFBW} - GSM GMSK / LTE QPSK: Bandwidth 20.0MHz - 1GHz – 3GHz



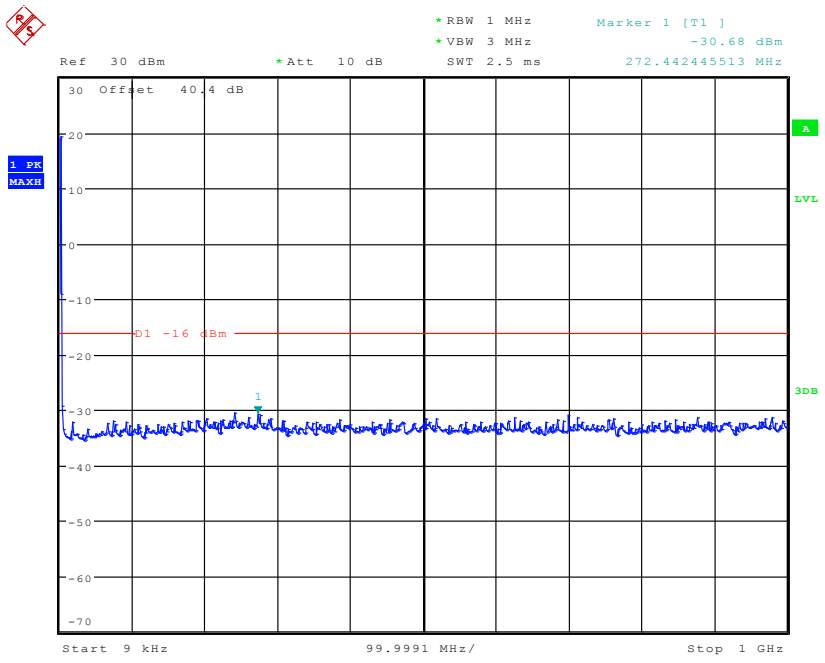
Date: 11.JUN.2014 09:23:26

Channel Position B_{RFBW} - GSM GMSK / LTE QPSK: Bandwidth 20.0MHz - 3GHz – 20GHz



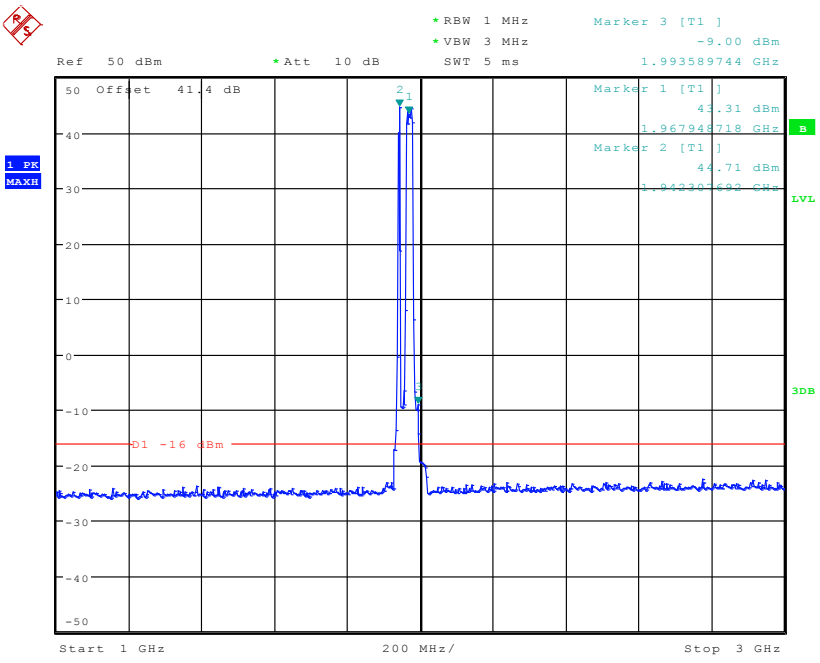
Date: 11.JUN.2014 09:23:55

Channel Position M_{RFBW} - GSM GMSK / LTE QPSK: Bandwidth 20.0MHz - 9kHz – 1GHz



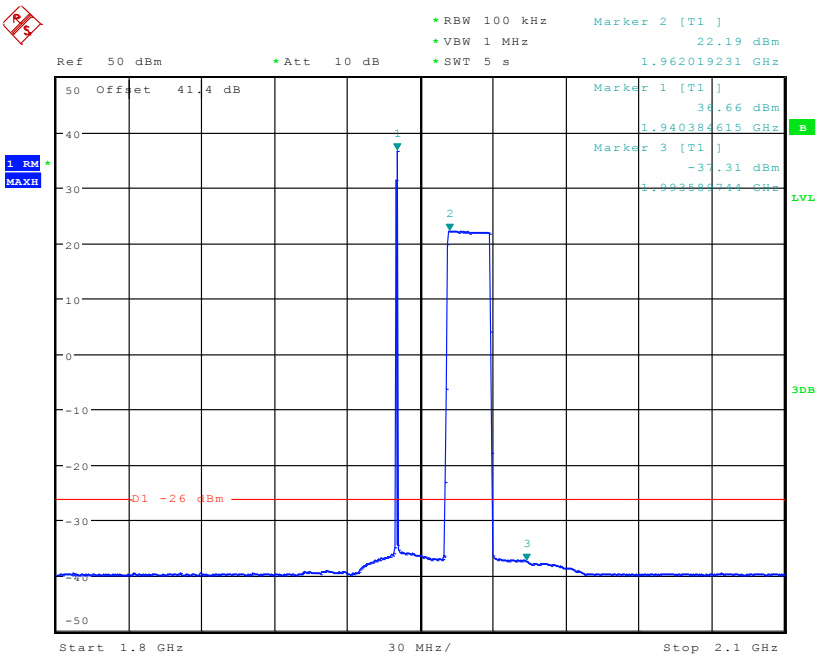
Date: 12.JUN.2014 15:19:16

Channel Position M_{RFBW} - GSM GMSK / LTE QPSK: Bandwidth 20.0MHz - 1GHz – 3GHz



Date: 11.JUN.2014 09:16:33

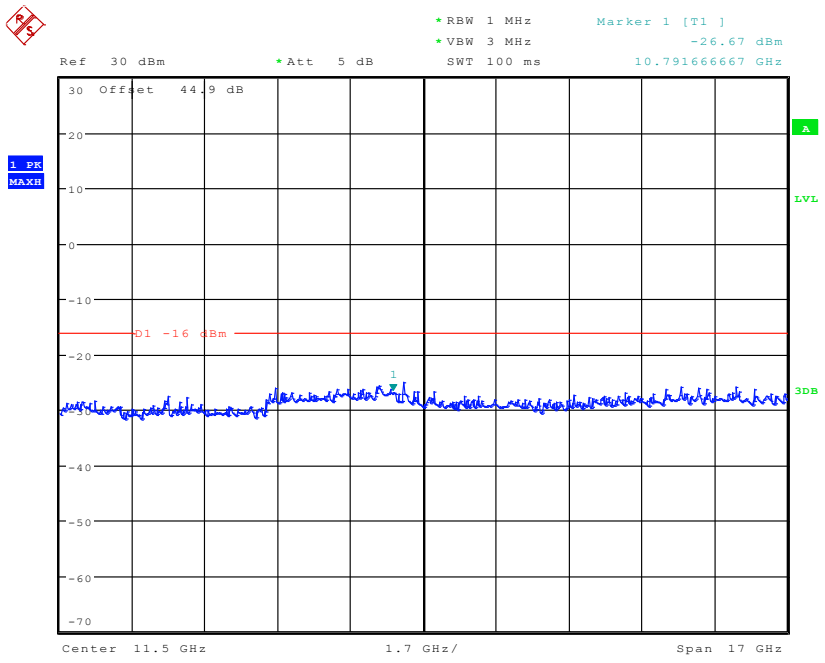
Channel Position M_{RFBW} - GSM GMSK / LTE QPSK: Bandwidth 20.0MHz - 1.8GHz – 2.1GHz



Date: 11.JUN.2014 09:18:20

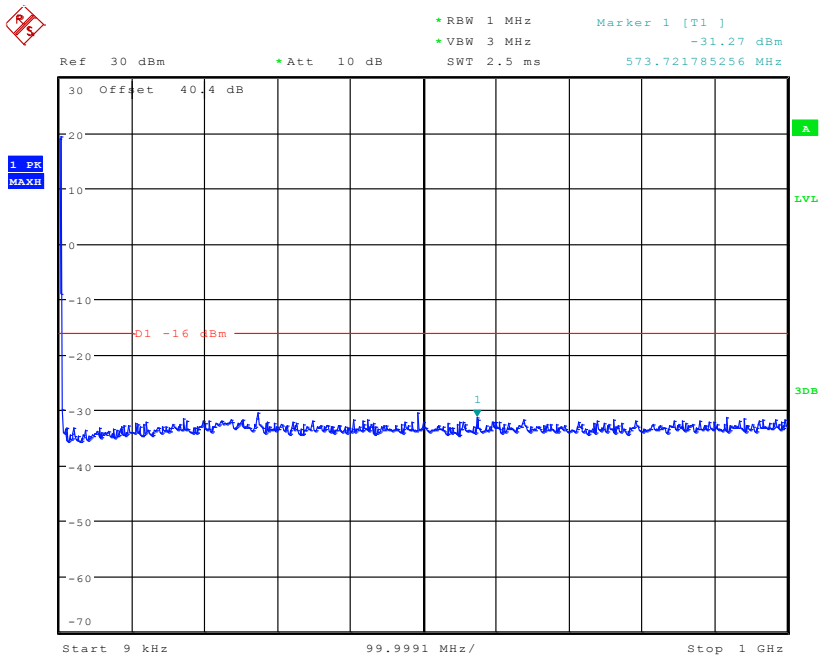
Note: A resolution bandwidth of 100 kHz is used, to compensate for this, the limit has been reduced by a further 10dB [10log(1000/100)] to – 26 dBm. The spectrum analyser was also configured with an RMS detector and in accordance with KDB 971168 D01 any spurious emission components were measured as the output power was also measured in this fashion.

Channel Position M_{RFBW} - GSM GMSK / LTE QPSK: Bandwidth 20.0MHz - 3GHz – 20GHz



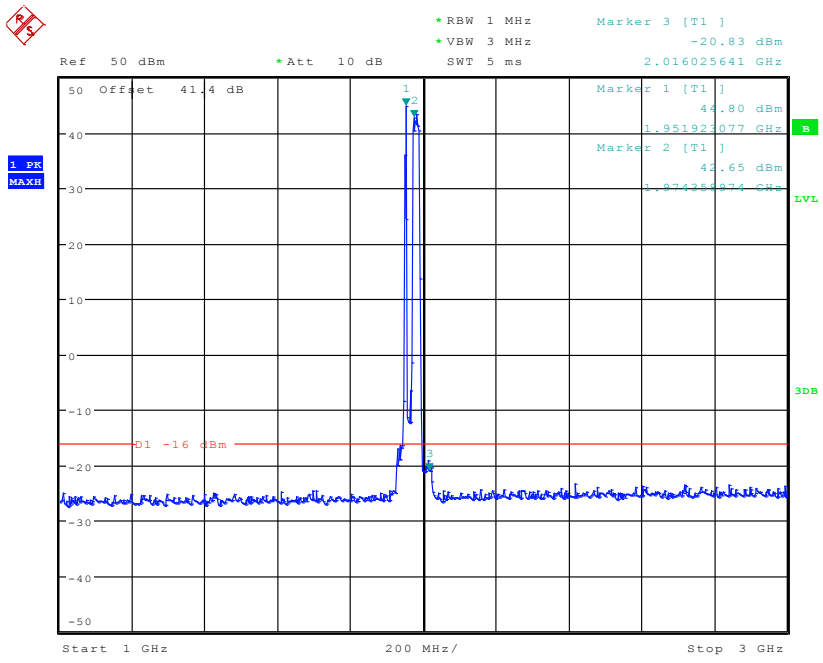
Date: 11.JUN.2014 09:18:50

Channel Position T_{RFBW} - GSM GMSK / LTE QPSK: Bandwidth 20.0MHz - 9kHz – 1GHz



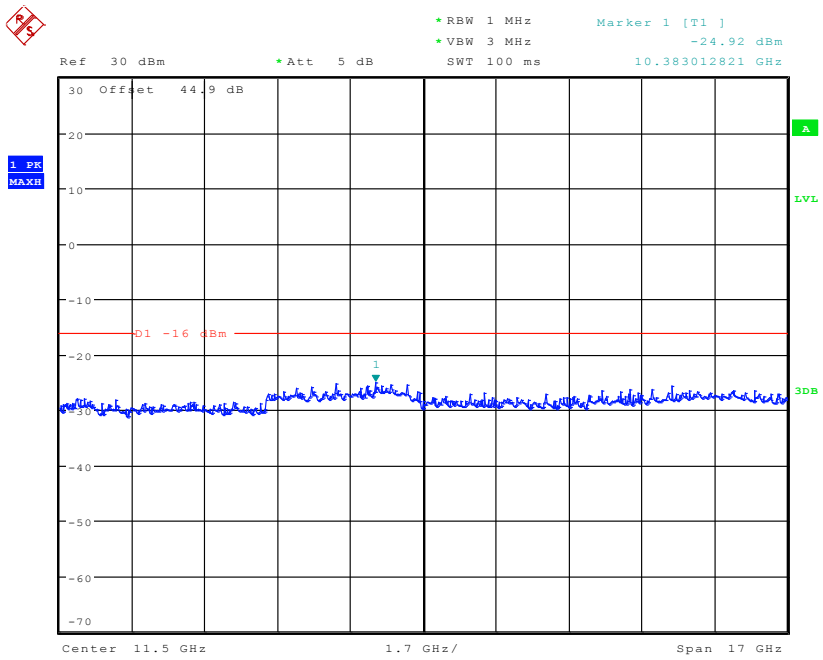
Date: 12.JUN.2014 15:19:27

Channel Position T_{RFBW} - GSM GMSK / LTE QPSK: Bandwidth 20.0MHz - 1GHz – 3GHz



Date: 11.JUN.2014 09:26:02

Channel Position T_{RFBW} - GSM GMSK / LTE QPSK: Bandwidth 20.0MHz - 3GHz – 20GHz



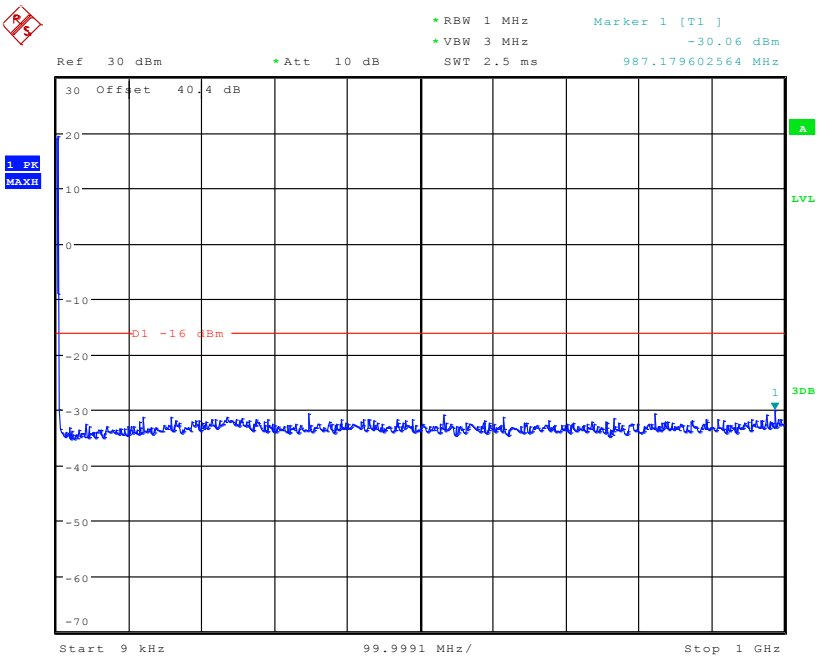
Date: 11.JUN.2014 09:26:30

Configuration G+L-MIMO-MC 3 (2G + 1L)

Maximum Output Power 43.0dBm per carrier, LTE Bandwidth 20.0MHz

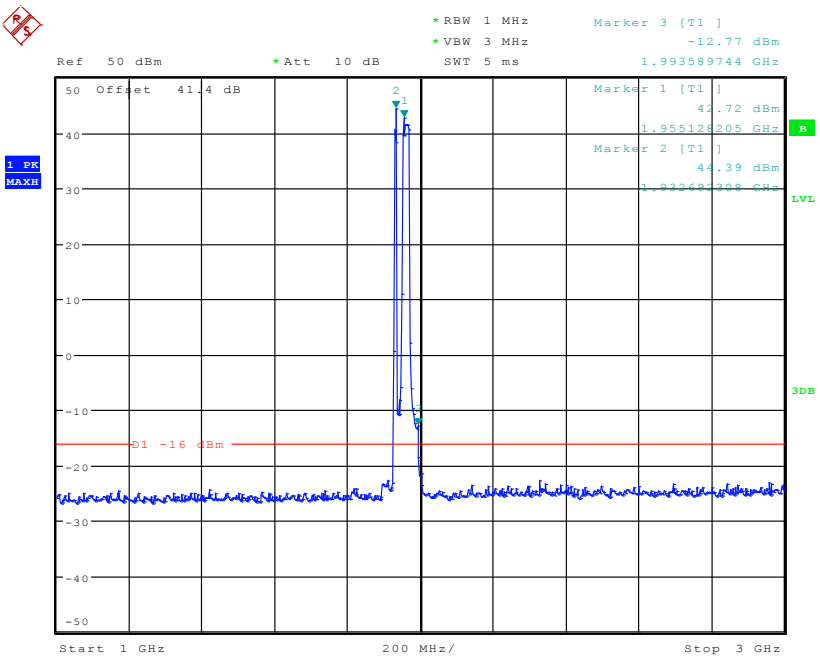
Channel Position	Channel Frequencies
Channel Position B_{RFBW}	Port A: (G) 1930.4MHz + 1936.4MHz + (L)1967.6MHz Port B: (G) 1931.0MHz + 1937.0MHz + (L)1967.6MHz
Channel Position M_{RFBW}	Port A: (G) 1940.2MHz + 1946.2MHz + (L) 1977.6MHz Port B: (G) 1940.8MHz + 1946.8MHz + (L) 1977.6MHz
Channel Position T_{RFBW}	Port A: (G) 1950.2MHz + 1956.2MHz + (L) 1987.6MHz Port B: (G) 1950.8MHz + 1956.8MHz + (L) 1987.6MHz

Channel Position B_{RFBW} - GSM GMSK / LTE QPSK: Bandwidth 20.0MHz - 9kHz – 1GHz



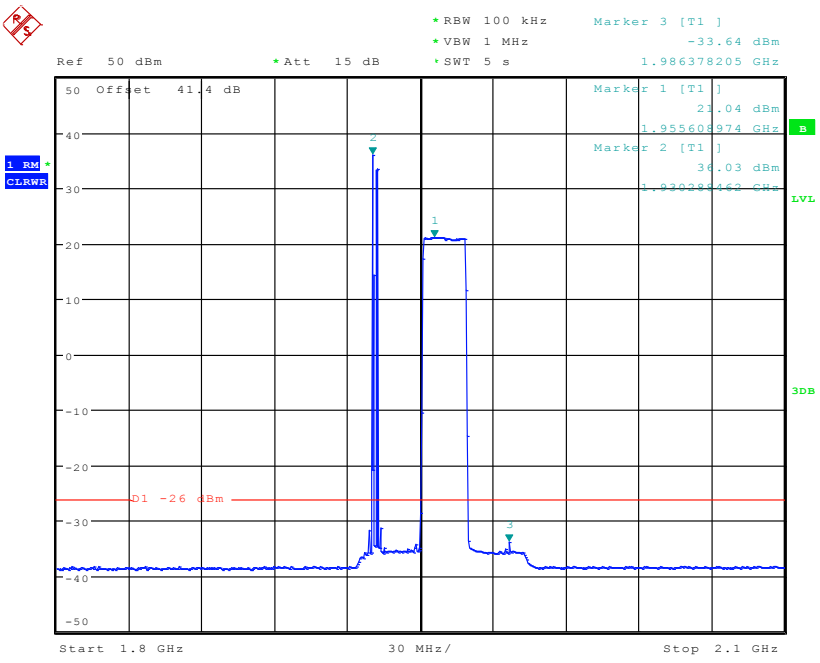
Date: 12.JUN.2014 15:22:48

Channel Position B_{RFBW} - GSM GMSK / LTE QPSK: Bandwidth 20.0MHz - 1GHz – 3GHz



Date: 11.JUN.2014 10:02:24

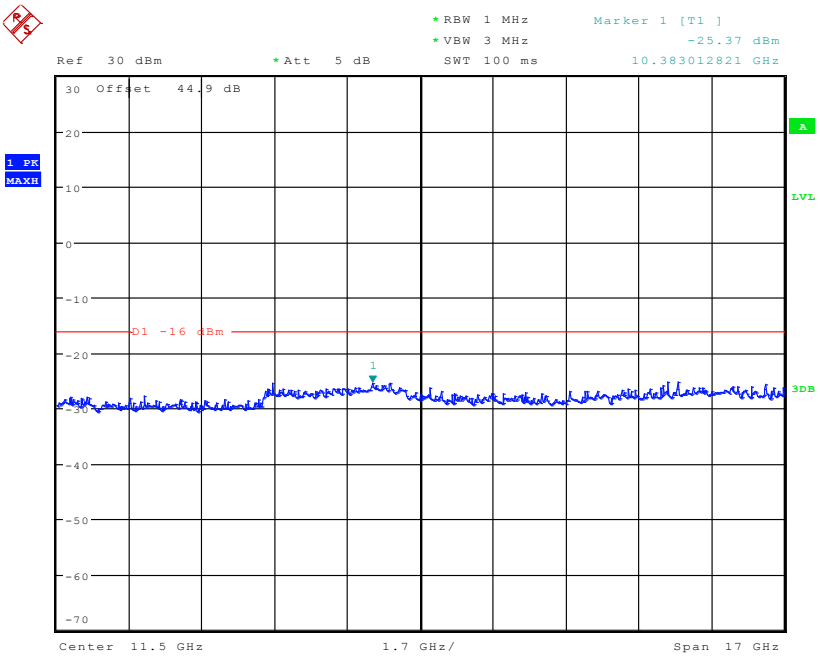
Channel Position B_{RFBW} - GSM GMSK / LTE QPSK: Bandwidth 20.0MHz - 1.8GHz – 2.1GHz



Date: 11.JUN.2014 10:03:53

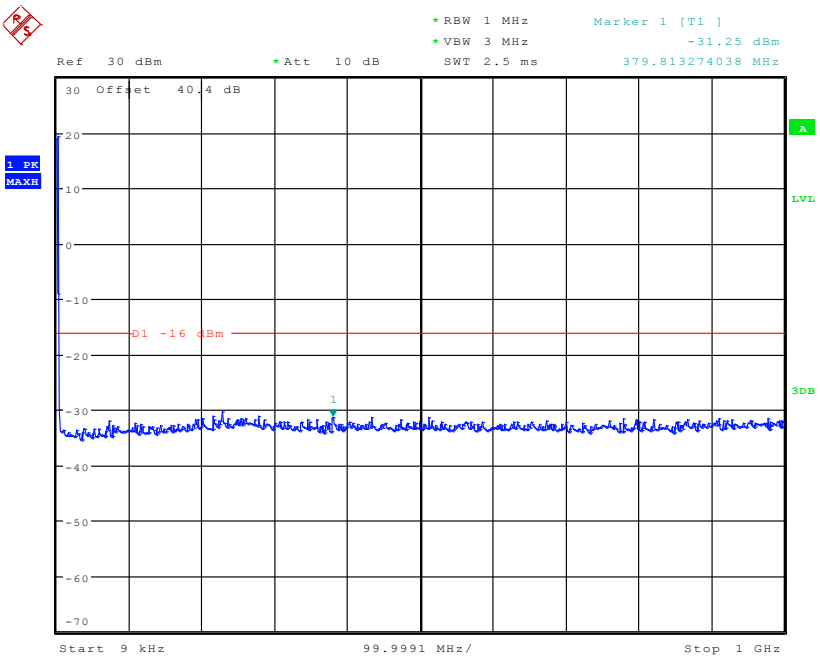
Note: A resolution bandwidth of 100 kHz is used, to compensate for this, the limit has been reduced by a further 10dB [10log(1000/100)] to – 26 dBm. The spectrum analyser was also configured with an RMS detector and in accordance with KDB 971168 D01 any spurious emission components were measured as the output power was also measured in this fashion.

Channel Position B_{RFBW} - GSM GMSK / LTE QPSK: Bandwidth 20.0MHz - 3GHz – 20GHz



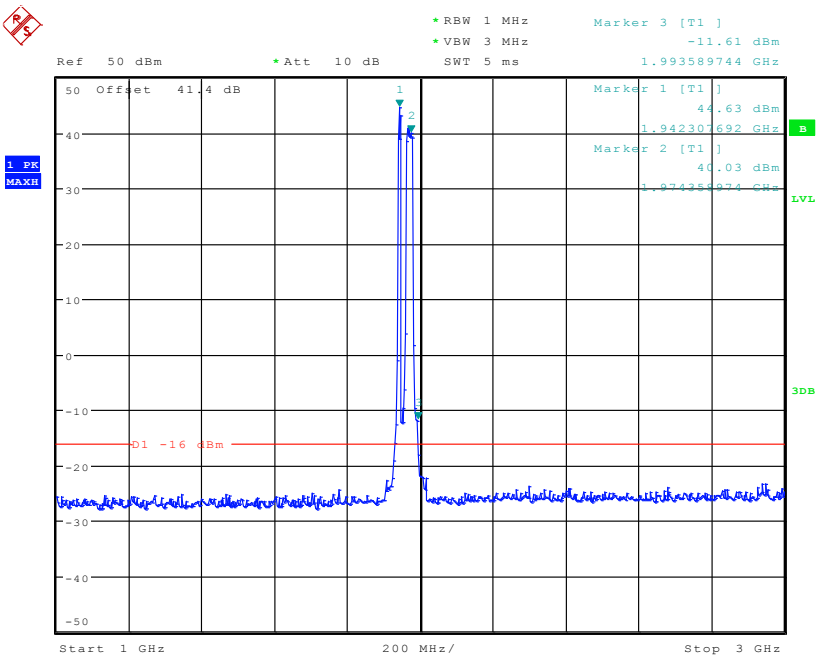
Date: 11.JUN.2014 10:04:20

Channel Position M_{RFBW} - GSM GMSK / LTE QPSK: Bandwidth 20.0MHz - 9kHz – 1GHz



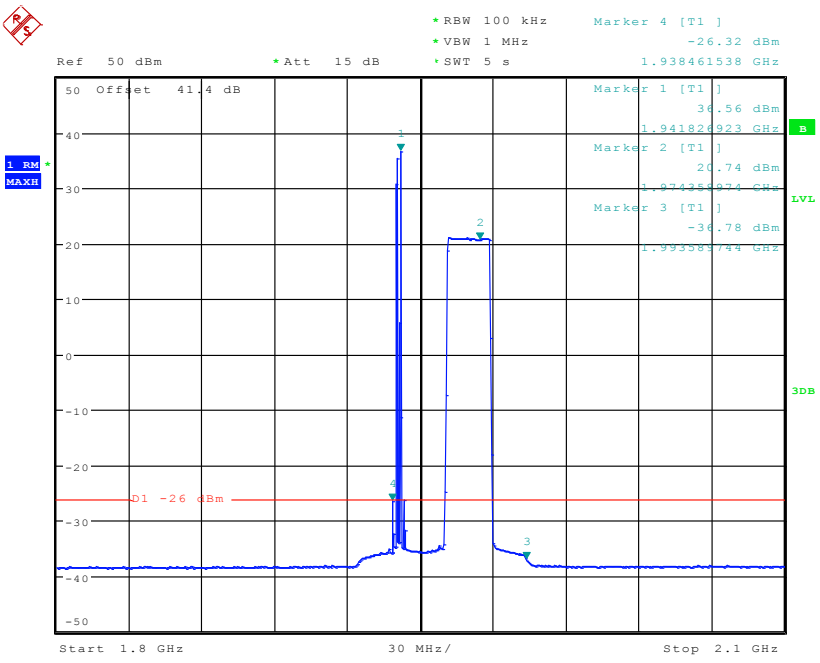
Date: 12.JUN.2014 15:23:09

Channel Position M_{RFBW} - GSM GMSK / LTE QPSK: Bandwidth 20.0MHz - 1GHz – 3GHz



Date: 11.JUN.2014 10:12:28

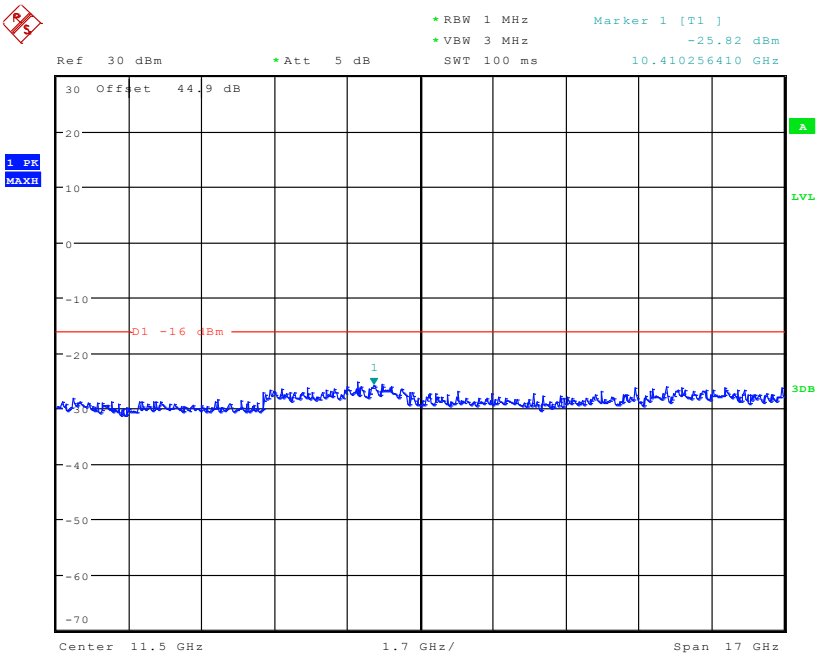
Channel Position M_{RFBW} - GSM GMSK / LTE QPSK: Bandwidth 20.0MHz - 1.8GHz – 2.1GHz



Date: 11.JUN.2014 10:13:50

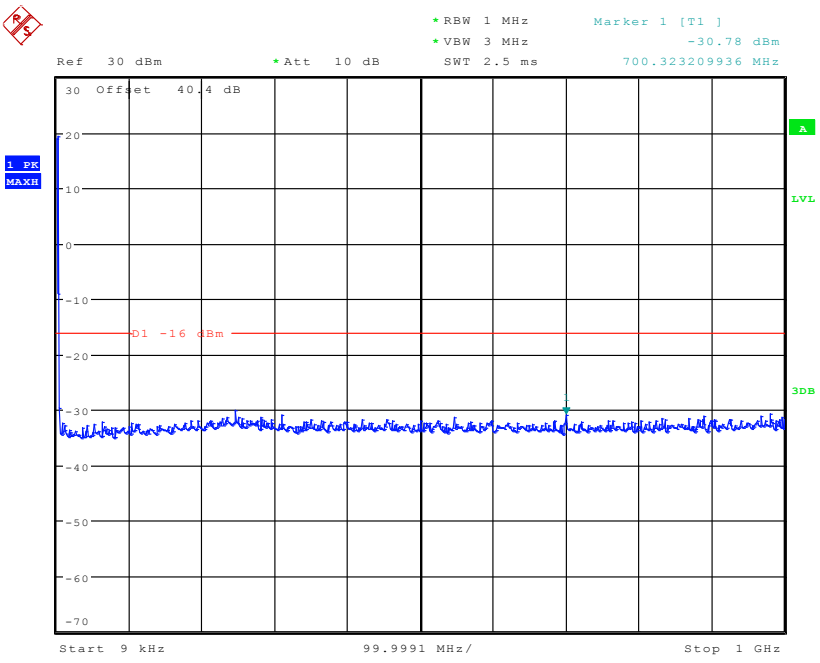
Note: A resolution bandwidth of 100 kHz is used, to compensate for this, the limit has been reduced by a further 10dB [10log(1000/100)] to – 26 dBm. The spectrum analyser was also configured with an RMS detector and in accordance with KDB 971168 D01 any spurious emission components were measured as the output power was also measured in this fashion.

Channel Position M_{RFBW} - GSM GMSK / LTE QPSK: Bandwidth 20.0MHz - 3GHz – 20GHz



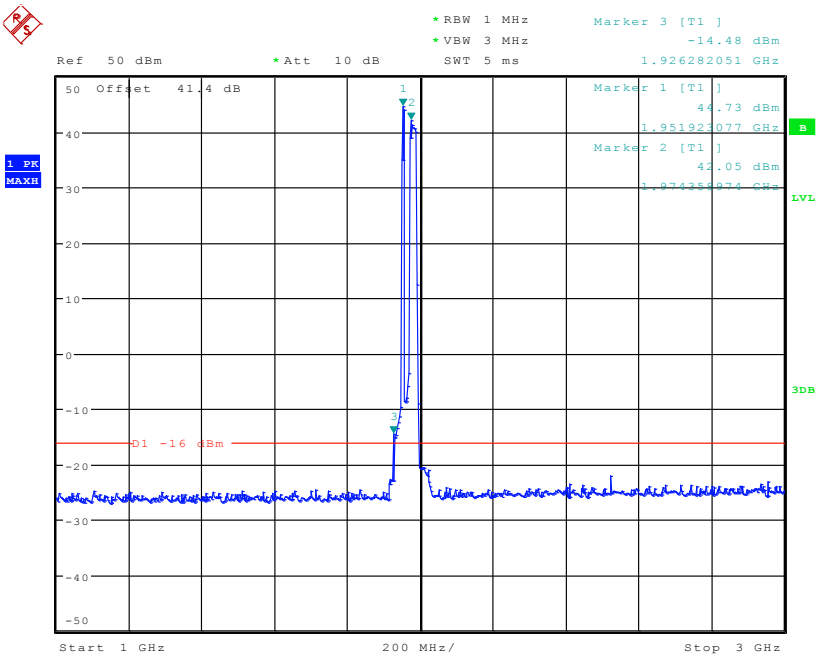
Date: 11.JUN.2014 10:14:00

Channel Position T_{RFBW} - GSM GMSK / LTE QPSK: Bandwidth 20.0MHz - 9kHz – 1GHz



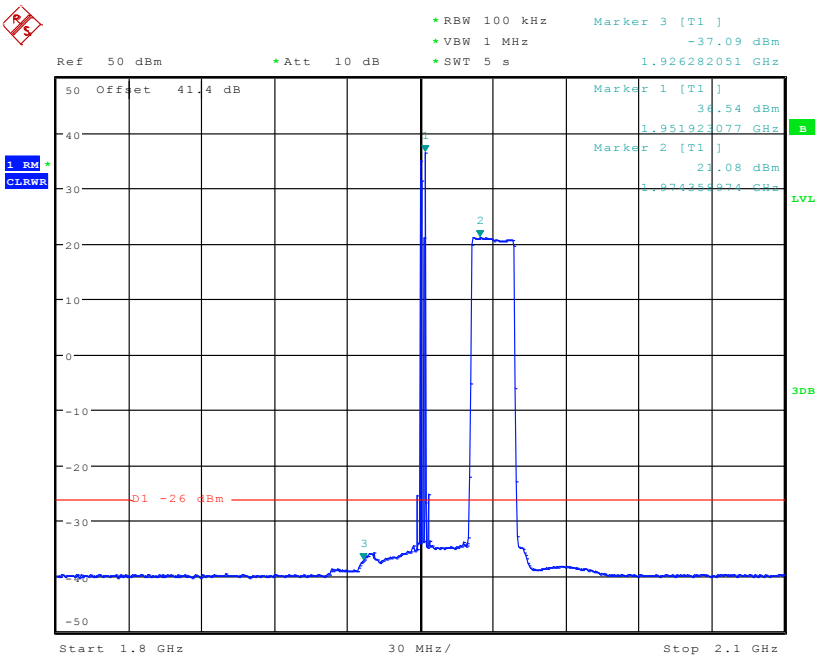
Date: 12.JUN.2014 15:23:19

Channel Position T_{RFBW} - GSM GMSK / LTE QPSK: Bandwidth 20.0MHz - 1GHz – 3GHz



Date: 11.JUN.2014 10:19:31

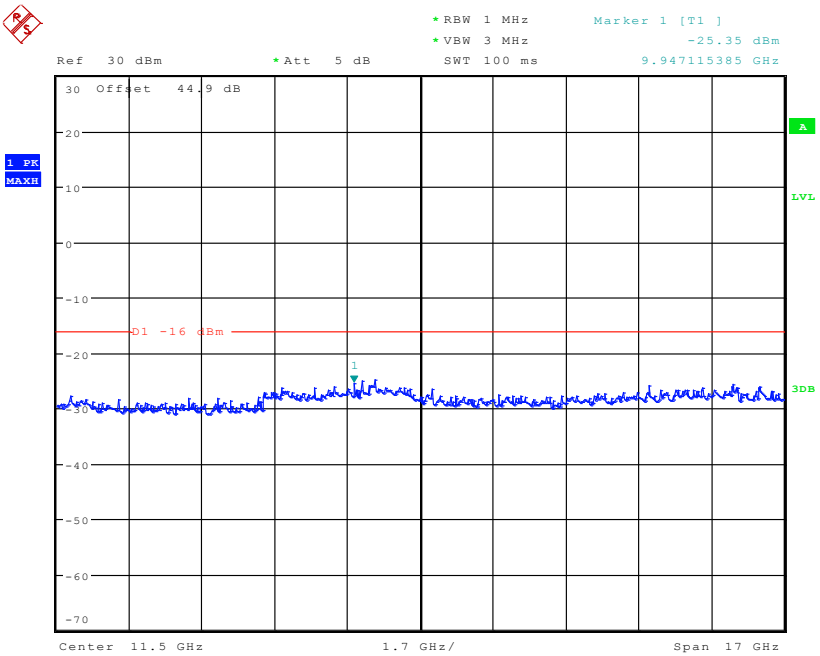
Channel Position T_{RFBW} - GSM GMSK / LTE QPSK: Bandwidth 20.0MHz - 1.8GHz – 2.1GHz



Date: 11.JUN.2014 10:20:26

Note: A resolution bandwidth of 100 kHz is used, to compensate for this, the limit has been reduced by a further 10dB [10log(1000/100)] to – 26 dBm. The spectrum analyser was also configured with an RMS detector and in accordance with KDB 971168 D01 any spurious emission components were measured as the output power was also measured in this fashion.

Channel Position T_{RFBW} - GSM GMSK / LTE QPSK: Bandwidth 20.0MHz - 3GHz – 20GHz



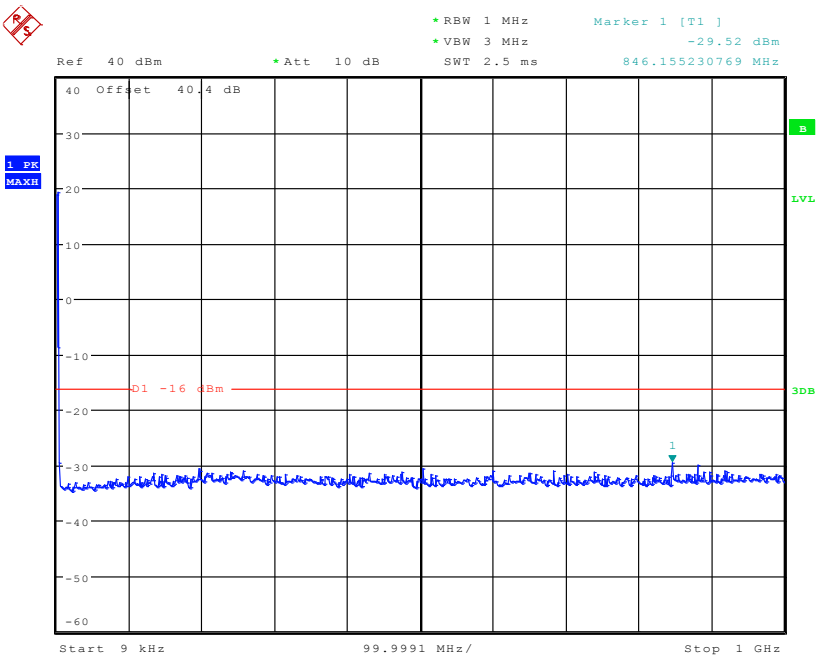
Date: 11.JUN.2014 10:20:38

Configuration W+L-MIMO-MC 1 (1W + 1L)

Maximum Output Power 44.8dBm per carrier, LTE Bandwidth 3.0MHz

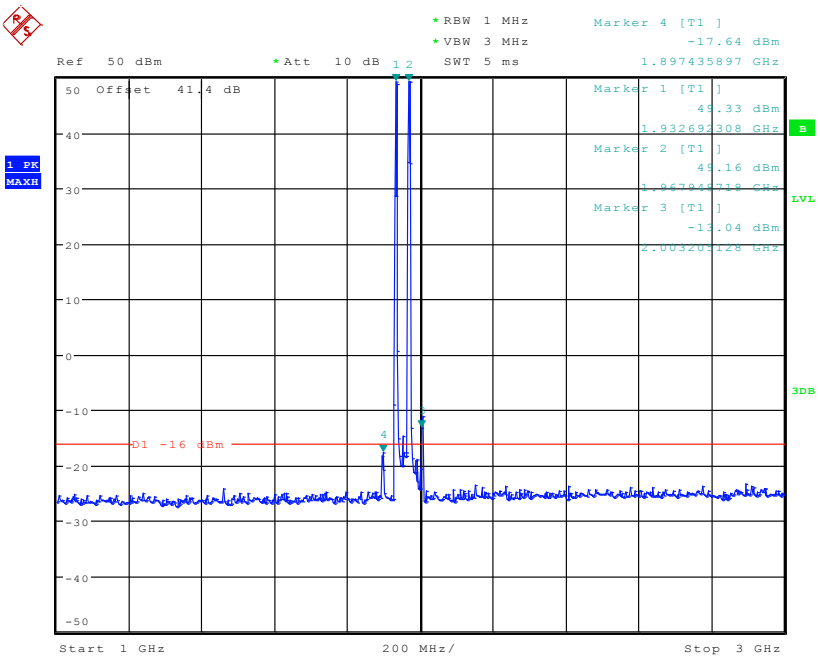
Channel Position	Channel Frequencies
Channel Position B_{RFBW}	(W) 1932.4MHz + (L)1968.5MHz
Channel Position M_{RFBW}	(W) 1942.4MHz + (L)19728.5MHz
Channel Position T_{RFBW}	(W) 1952.4MHz + (L)1988.5MHz

Channel Position B_{RFBW} - WCDMA 16QAM / LTE QPSK: Bandwidth 3.0MHz - 9kHz – 1GHz



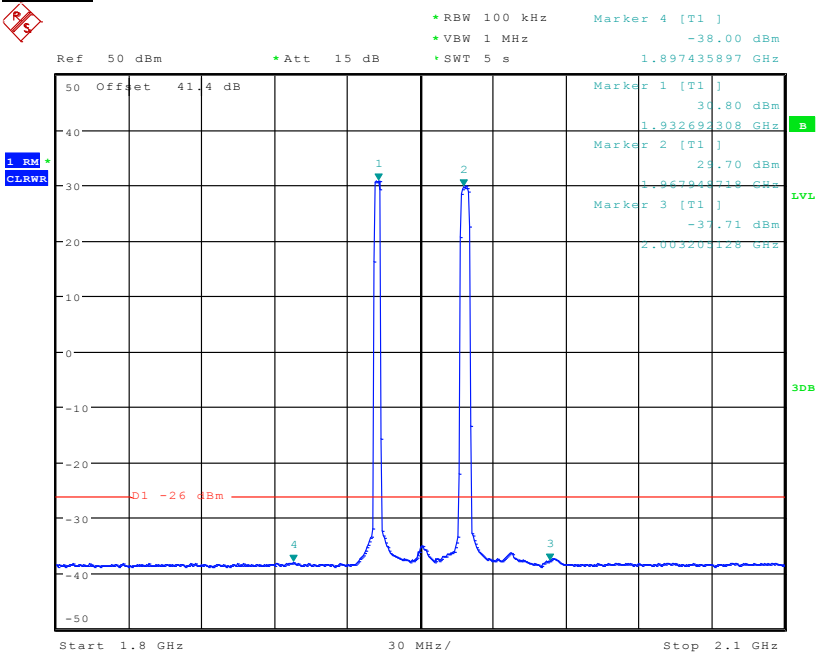
Date: 12.JUN.2014 14:24:09

Channel Position B_{RFBW} - WCDMA 16QAM / LTE QPSK: Bandwidth 3.0MHz - 1GHz – 3GHz



Date: 10.JUN.2014 15:02:06

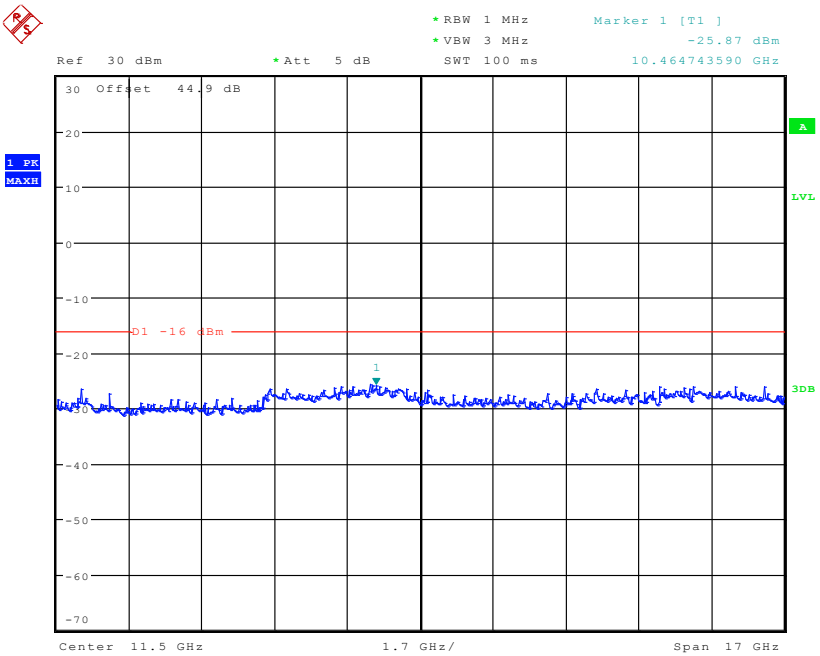
Channel Position B_{RFBW} - WCDMA 16QAM / LTE QPSK: Bandwidth 3.0MHz - 1.8GHz – 2.1GHz



Date: 10.JUN.2014 15:03:43

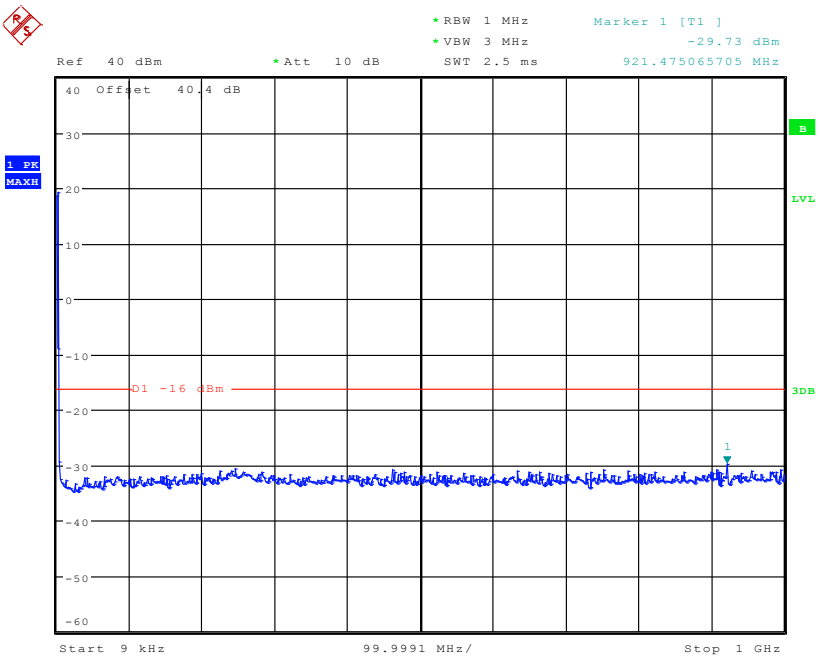
Note: A resolution bandwidth of 100 kHz is used, to compensate for this, the limit has been reduced by a further 10dB [10log(1000/100)] to – 26 dBm. The spectrum analyser was also configured with an RMS detector and in accordance with KDB 971168 D01 any spurious emission components were measured as the output power was also measured in this fashion.

Channel Position B_{RFBW} - WCDMA 16QAM / LTE QPSK: Bandwidth 3.0MHz - 3GHz – 20GHz



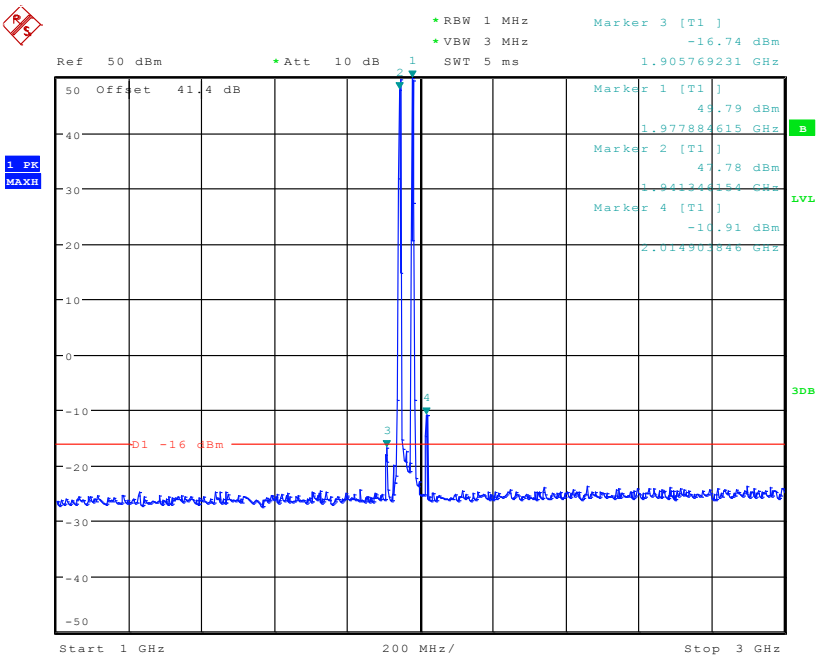
Date: 10.JUN.2014 15:03:52

Channel Position M_{RFBW} - WCDMA 16QAM / LTE QPSK: Bandwidth 3.0MHz - 9kHz – 1GHz



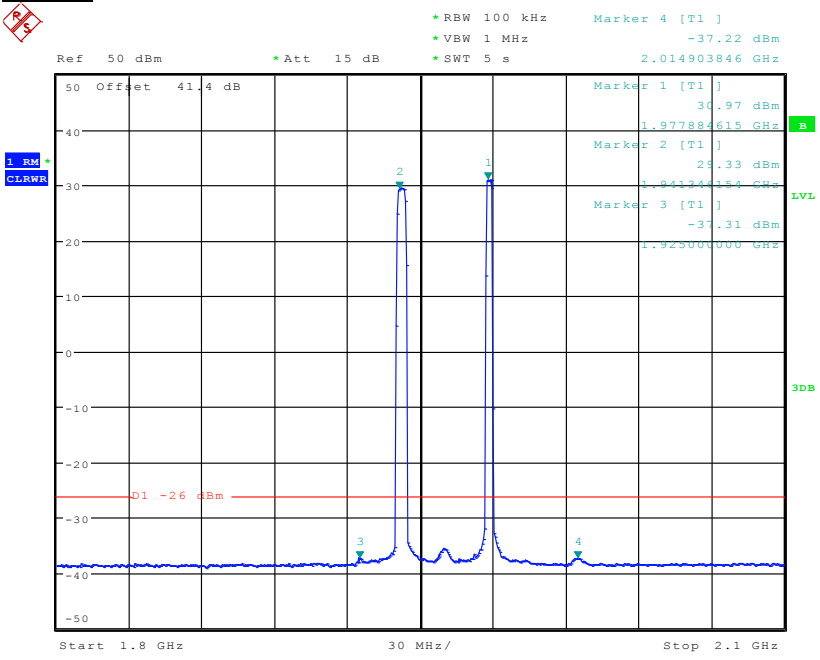
Date: 12.JUN.2014 14:25:58

Channel Position M_{RFBW} - WCDMA 16QAM / LTE QPSK: Bandwidth 3.0MHz - 1GHz – 3GHz



Date: 10.JUN.2014 15:06:55

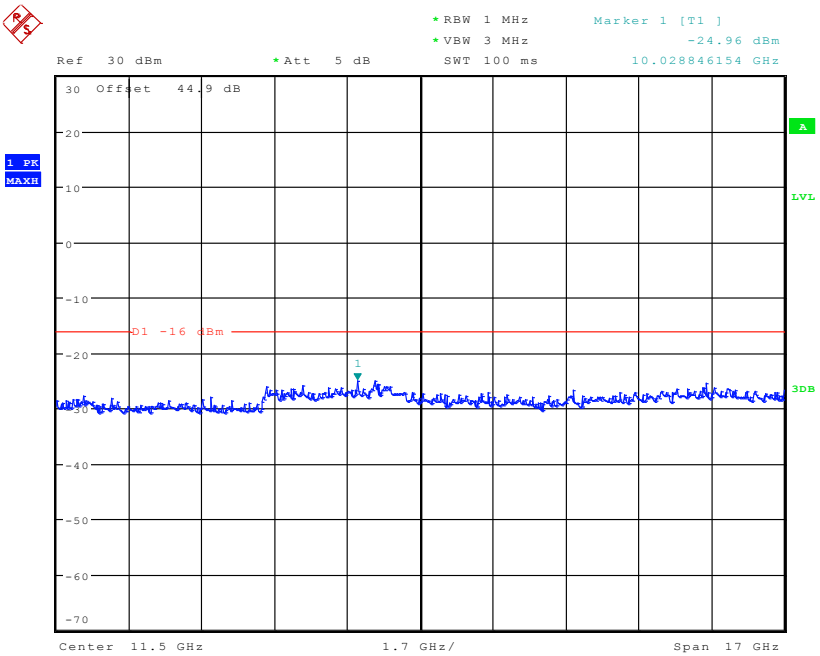
Channel Position M_{RFBW} - WCDMA 16QAM / LTE QPSK: Bandwidth 3.0MHz - 1.8GHz – 2.1GHz



Date: 10.JUN.2014 15:05:53

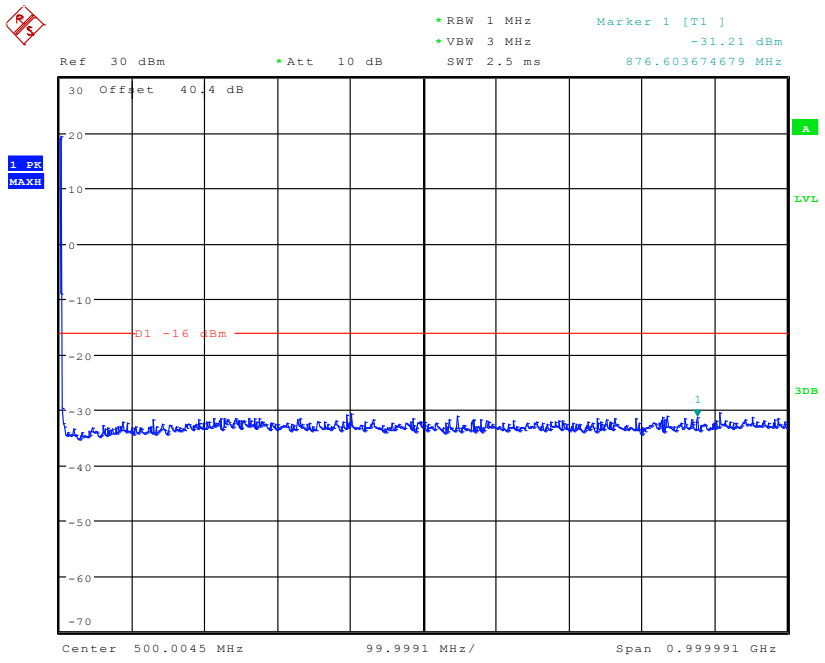
Note: A resolution bandwidth of 100 kHz is used, to compensate for this, the limit has been reduced by a further 10dB [10log(1000/100)] to – 26 dBm. The spectrum analyser was also configured with an RMS detector and in accordance with KDB 971168 D01 any spurious emission components were measured as the output power was also measured in this fashion.

Channel Position M_{RFBW} - WCDMA 16QAM / LTE QPSK: Bandwidth 3.0MHz - 3GHz – 20GHz



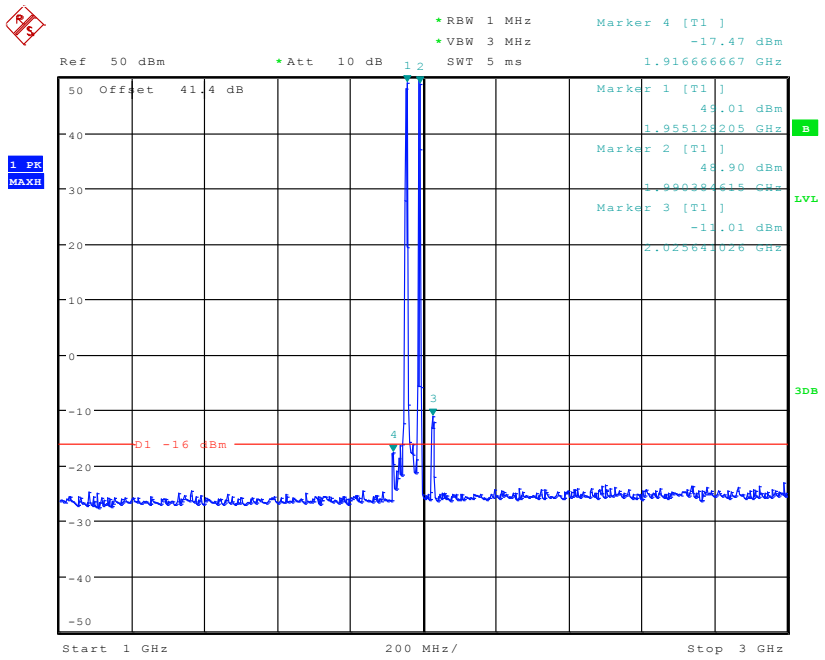
Date: 10.JUN.2014 14:47:32

Channel Position T_{RFBW} - WCDMA 16QAM / LTE QPSK: Bandwidth 3.0MHz - 9kHz – 1GHz



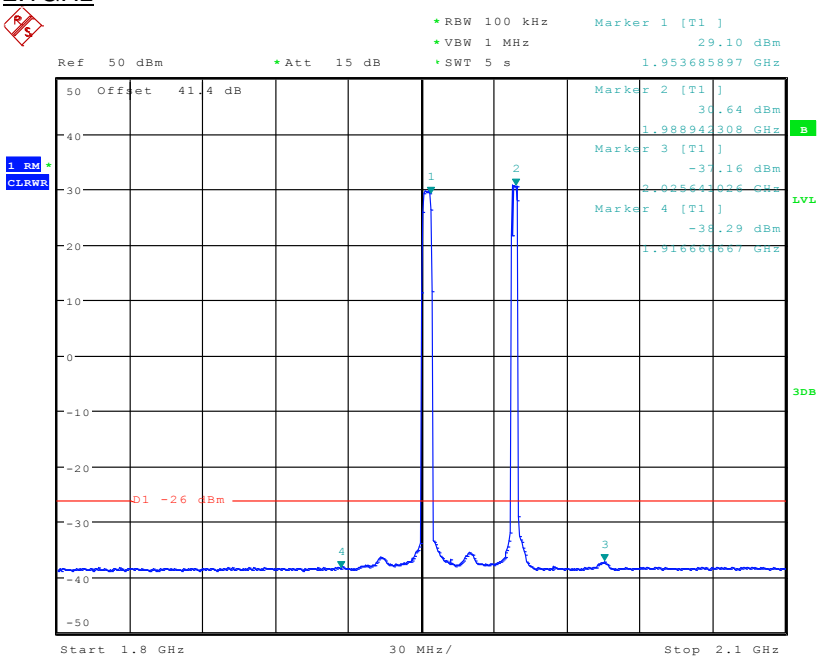
Date: 12.JUN.2014 14:53:31

Channel Position T_{RFBW} - WCDMA 16QAM / LTE QPSK: Bandwidth 3.0MHz - 1GHz – 3GHz



Date: 10.JUN.2014 15:08:20

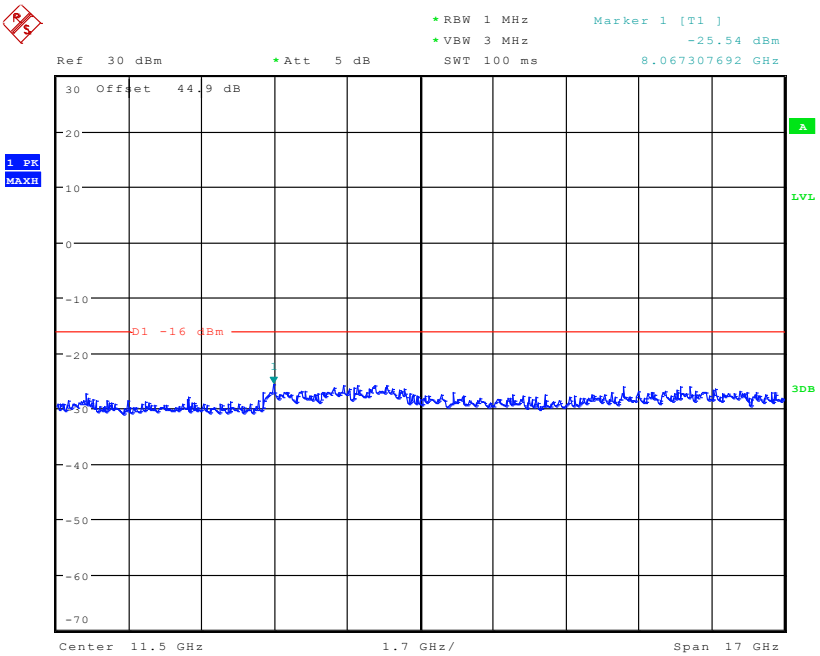
Channel Position T_{RFBW} - WCDMA 16QAM / LTE QPSK: Bandwidth 3.0MHz - 1.8GHz – 2.1GHz



Date: 10.JUN.2014 15:09:56

Note: A resolution bandwidth of 100 kHz is used, to compensate for this, the limit has been reduced by a further 10dB [10log(1000/100)] to – 26 dBm. The spectrum analyser was also configured with an RMS detector and in accordance with KDB 971168 D01 any spurious emission components were measured as the output power was also measured in this fashion.

Channel Position T_{RFBW} - WCDMA 16QAM / LTE QPSK: Bandwidth 3.0MHz - 3GHz – 20GHz



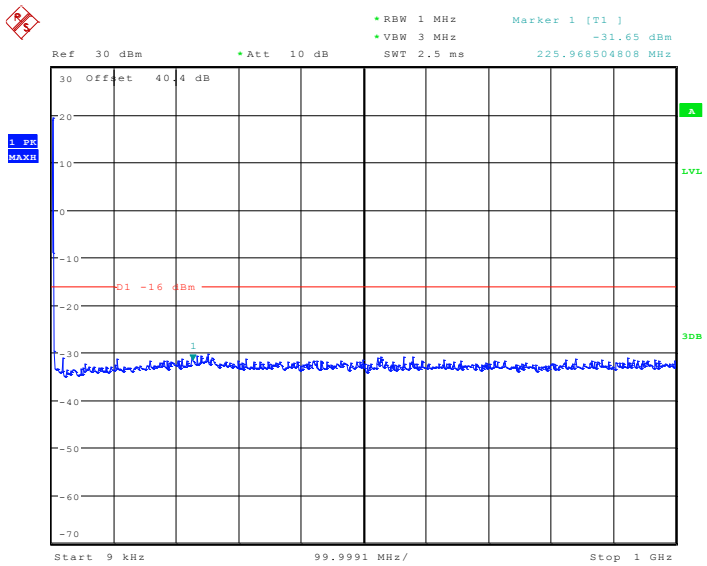
Date: 10.JUN.2014 15:10:08

Configuration W+L-MIMO-MC 3 (2W + 1L)

Maximum Output Power 43.0dBm per carrier, LTE Bandwidth 3.0MHz

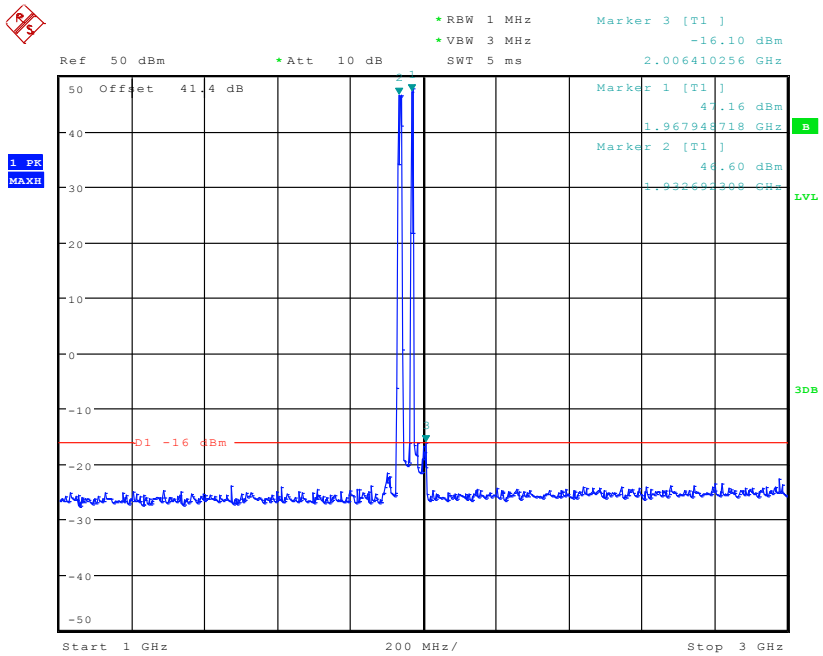
Channel Position	Channel Frequencies
Channel Position B_{RFBW}	(W) 1932.4MHz + 1937.4MHz + (L)1968.5MHz
Channel Position M_{RFBW}	(W) 1942.4MHz + 1947.4MHz + (L)1978.5MHz
Channel Position T_{RFBW}	(W) 1952.4MHz + 1957.4MHz + (L)1988.5MHz

Channel Position B_{RFBW} - WCDMA 16QAM / LTE QPSK: Bandwidth 3.0MHz - 9kHz – 1GHz



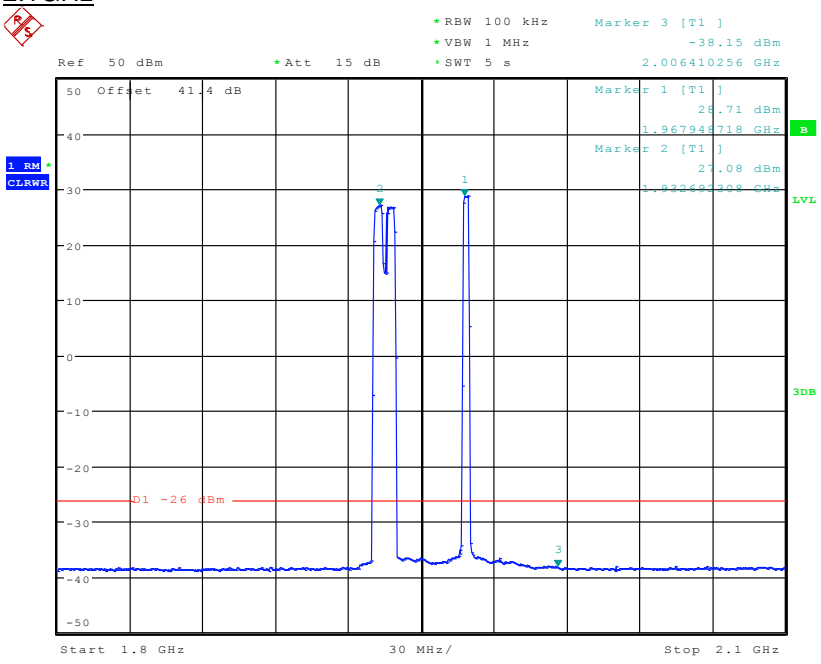
Date: 12.JUN.2014 15:00:51

Channel Position B_{RFBW} - WCDMA 16QAM / LTE QPSK: Bandwidth 3.0MHz - 1GHz – 3GHz



Date: 10.JUN.2014 15:40:27

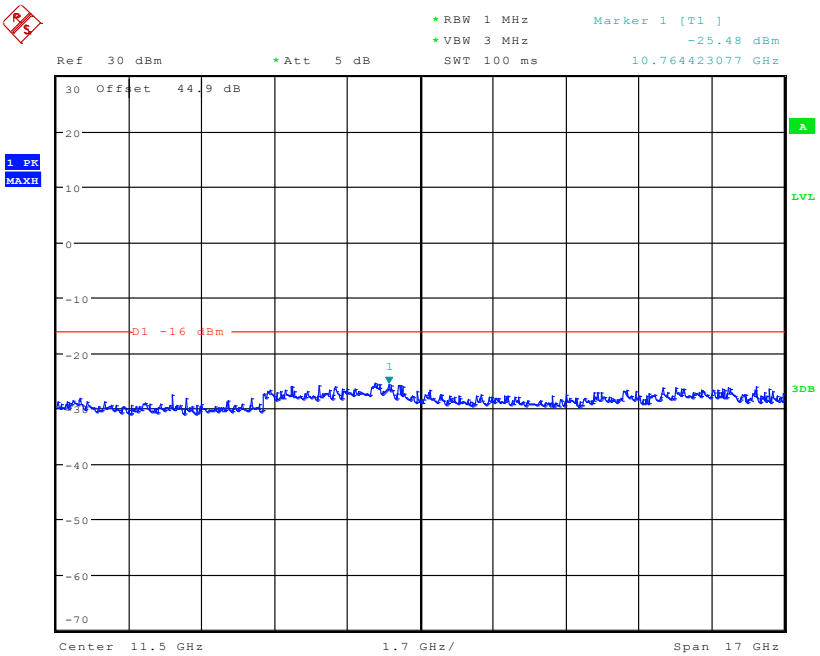
Channel Position B_{RFBW} - WCDMA 16QAM / LTE QPSK: Bandwidth 3.0MHz - 1.8GHz – 2.1GHz



Date: 10.JUN.2014 15:41:46

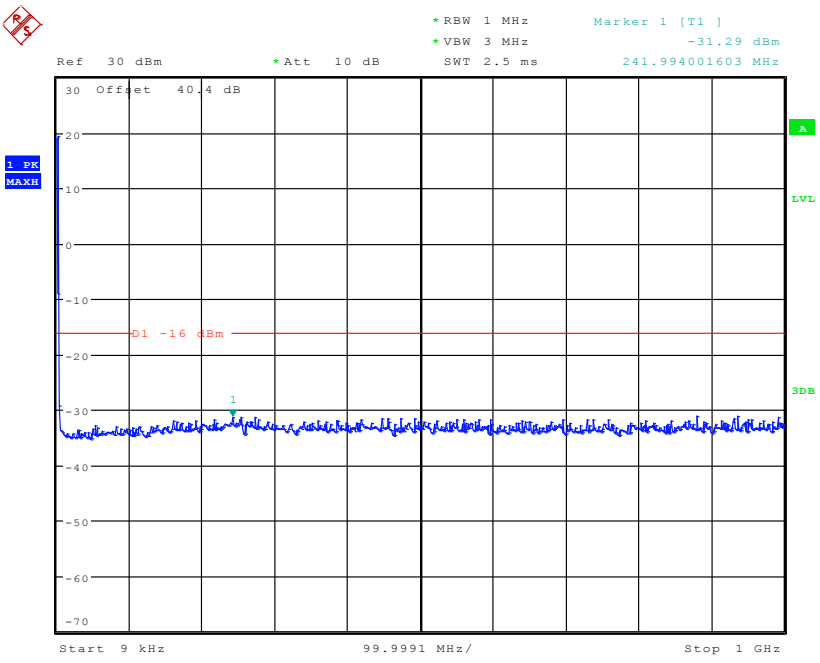
Note: A resolution bandwidth of 100 kHz is used, to compensate for this, the limit has been reduced by a further 10dB [10log(1000/100)] to – 26 dBm. The spectrum analyser was also configured with an RMS detector and in accordance with KDB 971168 D01 any spurious emission components were measured as the output power was also measured in this fashion.

Channel Position B_{RFBW} - WCDMA 16QAM / LTE QPSK: Bandwidth 3.0MHz - 3GHz – 20GHz



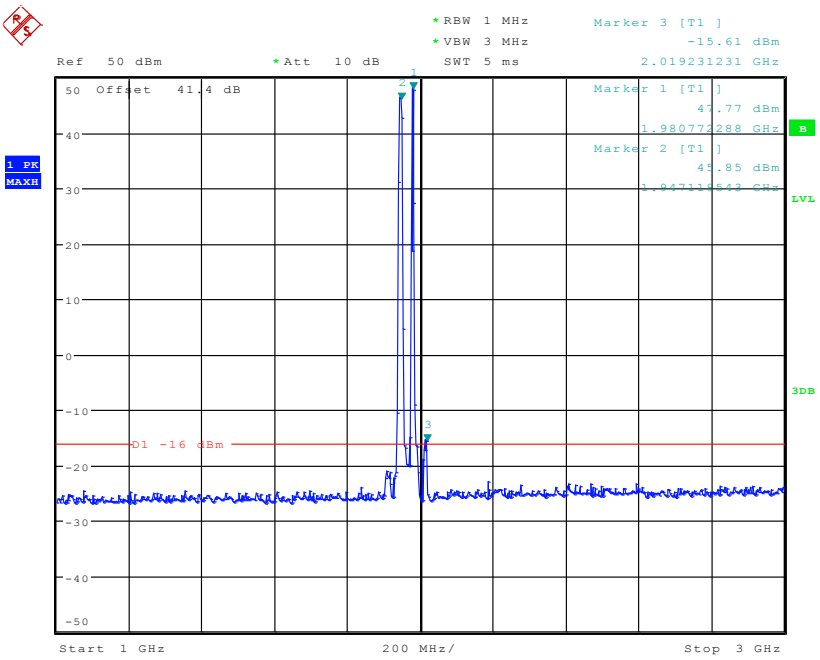
Date: 10.JUN.2014 15:41:59

Channel Position M_{RFBW} - WCDMA 16QAM / LTE QPSK: Bandwidth 3.0MHz - 9kHz – 1GHz



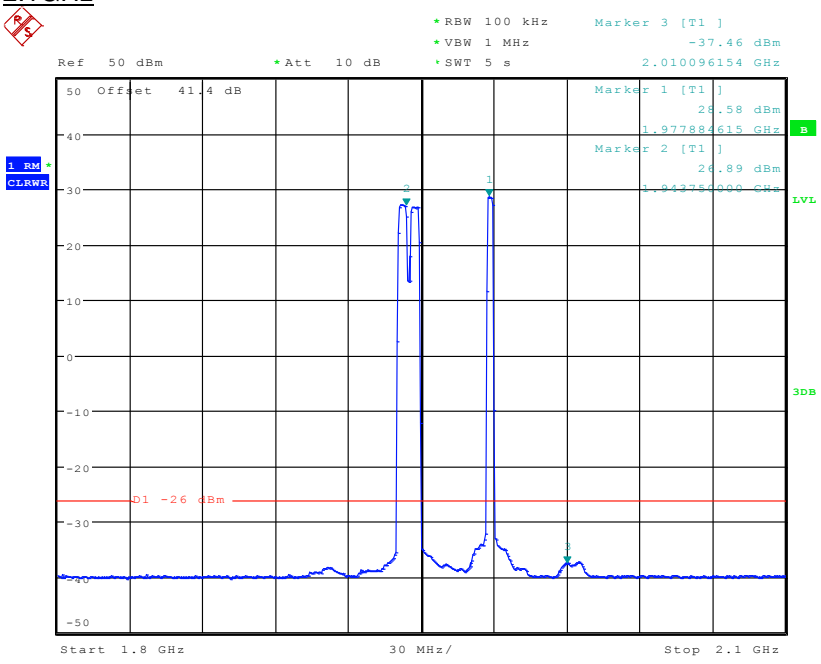
Date: 12.JUN.2014 15:02:50

Channel Position M_{RFBW} - WCDMA 16QAM / LTE QPSK: Bandwidth 3.0MHz - 1GHz – 3GHz



Date: 10.JUN.2014 15:21:59

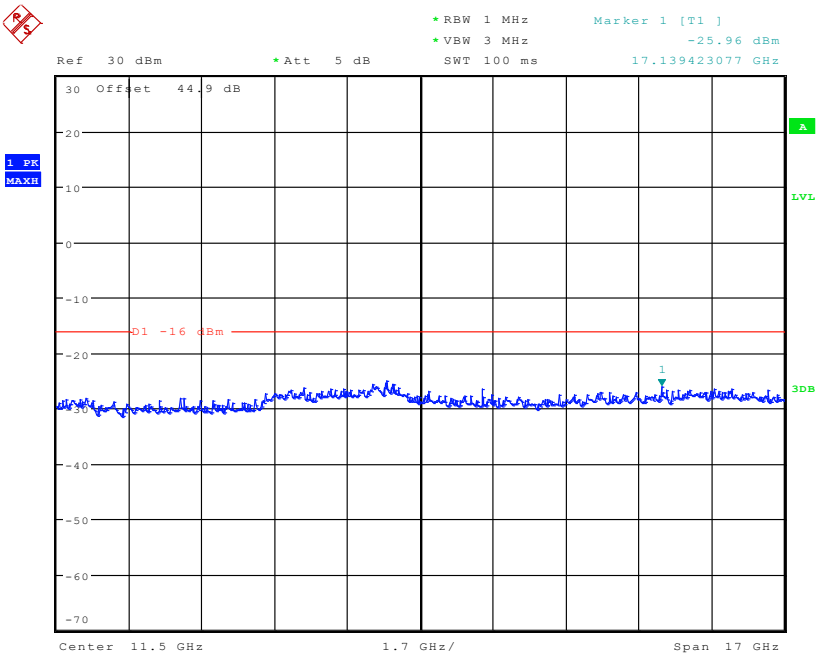
Channel Position M_{RFBW} - WCDMA 16QAM / LTE QPSK: Bandwidth 3.0MHz - 1.8GHz – 2.1GHz



Date: 10.JUN.2014 15:24:27

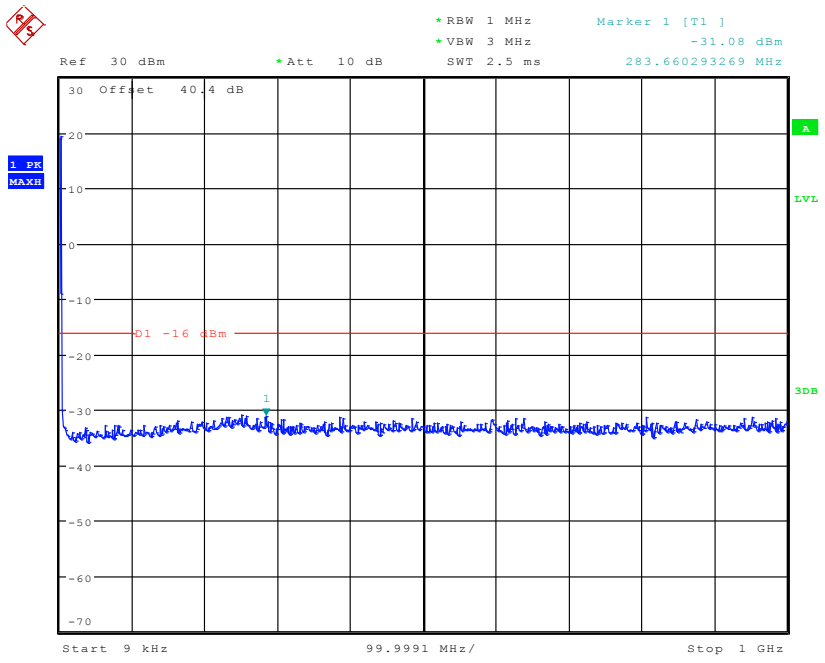
Note: A resolution bandwidth of 100 kHz is used, to compensate for this, the limit has been reduced by a further 10dB [10log(1000/100)] to – 26 dBm. The spectrum analyser was also configured with an RMS detector and in accordance with KDB 971168 D01 any spurious emission components were measured as the output power was also measured in this fashion.

Channel Position M_{RFBW} - WCDMA 16QAM / LTE QPSK: Bandwidth 3.0MHz - 3GHz – 20GHz



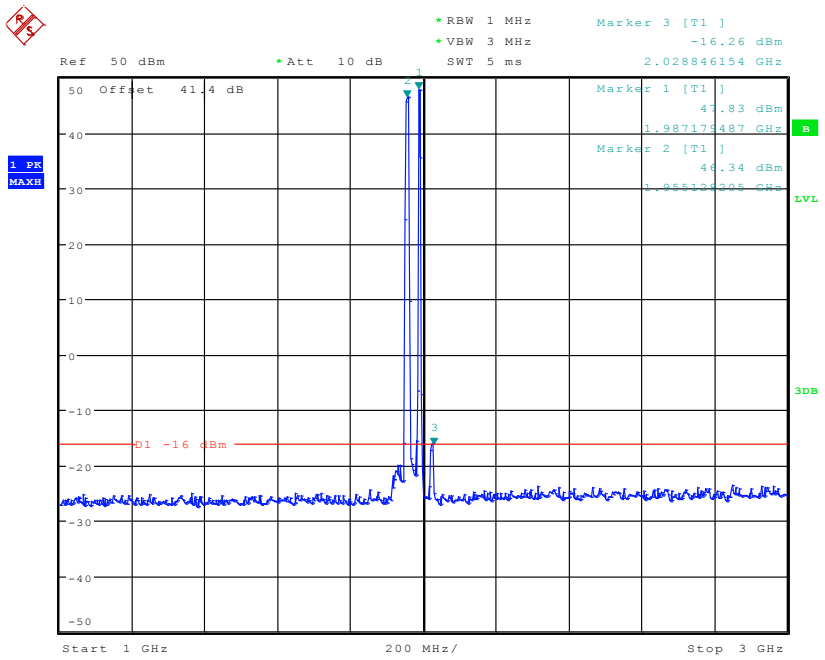
Date: 10.JUN.2014 15:25:03

Channel Position T_{RFBW} - WCDMA 16QAM / LTE QPSK: Bandwidth 3.0MHz - 9kHz – 1GHz



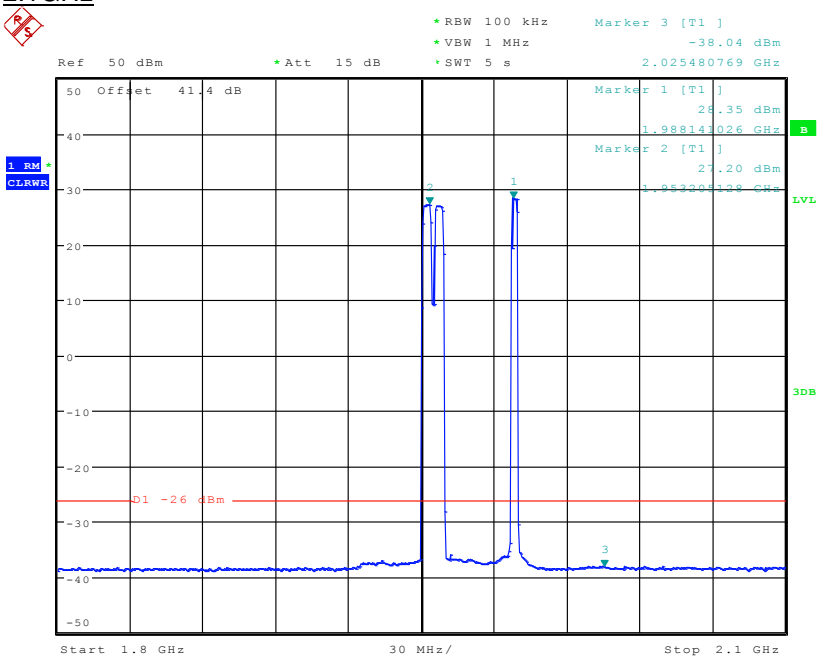
Date: 12.JUN.2014 15:04:12

Channel Position T_{RFBW} - WCDMA 16QAM / LTE QPSK: Bandwidth 3.0MHz - 1GHz – 3GHz



Date: 10.JUN.2014 15:44:19

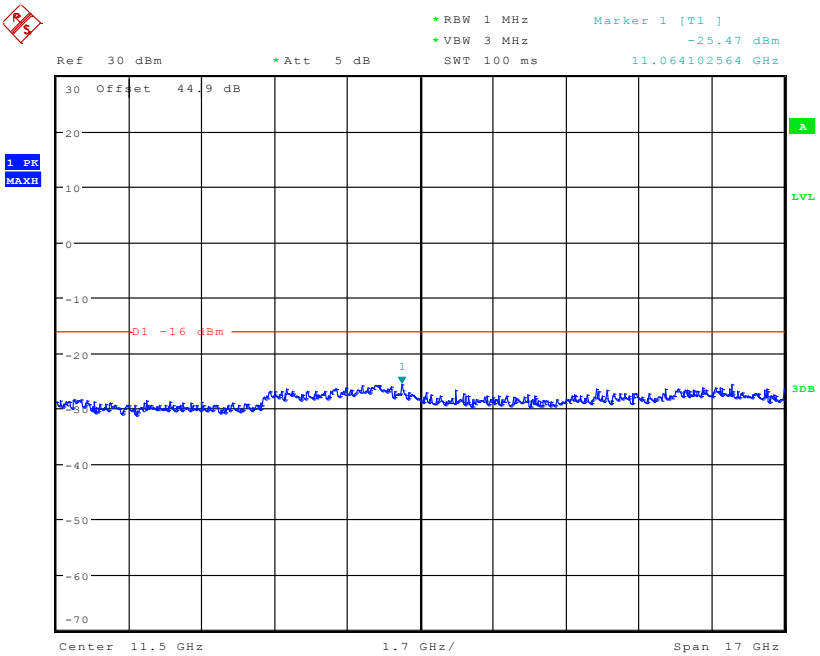
Channel Position T_{RFBW} - WCDMA 16QAM / LTE QPSK: Bandwidth 3.0MHz - 1.8GHz – 2.1GHz



Date: 10.JUN.2014 15:45:30

Note: A resolution bandwidth of 100 kHz is used, to compensate for this, the limit has been reduced by a further 10dB [10log(1000/100)] to – 26 dBm. The spectrum analyser was also configured with an RMS detector and in accordance with KDB 971168 D01 any spurious emission components were measured as the output power was also measured in this fashion.

Channel Position T_{RFBW} - WCDMA 16QAM / LTE QPSK: Bandwidth 3.0MHz - 3GHz – 20GHz



Date: 10.JUN.2014 15:45:59

Limit	-13dBm

SECTION 3

TEST EQUIPMENT USED

3.1 TEST EQUIPMENT USED

List of absolute measuring and other principal items of test equipment.

Instrument	Manufacturer	Type No.	TE No.	Calibration Period (months)	Calibration Due
Maximum Peak Output Power and Peak to Average Ratio - Conducted					
Network Analyzer	Agilent	8720D	US36140166	12	17-Nov-2014
Power Meter	Rohde & Schwarz	NRP	101593	12	04-Aug-2014
Power Sensor	Rohde & Schwarz	NRP-Z51	102309	12	04-Aug-2014
Power Sensor	Rohde & Schwarz	NRP-Z51	102310	12	04-Aug-2014
Spectrum Analyser	Rohde & Schwarz	FSQ26	100244	12	14-Apr-2015
40dB Attenuator	Aeroflex / Weinschel	48-40-43-LIM	BR5020	-	O/P MON
Load	Shanghai Huaxiang	TFE100	09121647	-	O/P MON
Power Supply	Dahua	DH1716A-10	1000303181	-	O/P MON
Occupied Bandwidth					
Network Analyzer	Agilent	8720D	US36140166	12	17-Nov-2014
Spectrum Analyser	Rohde & Schwarz	FSQ26	100244	12	14-Apr-2015
MXA Signal Analyzer	Agilent	N9020A	MY49100419	24	18-Apr-2016
40dB Attenuator	Aeroflex / Weinschel	48-40-43-LIM	BR5020	-	O/P MON
Load	Shanghai Huaxiang	TFE100	09121647	-	O/P MON
Power Supply	Dahua	DH1716A-10	1000303181	-	O/P MON
Band Edge					
Network Analyzer	Agilent	8720D	US36140166	12	17-Nov-2014
Spectrum Analyser	Rohde & Schwarz	FSQ26	100244	12	14-Apr-2015
40dB Attenuator	Aeroflex / Weinschel	48-40-43-LIM	BR5020	-	O/P MON
Load	Shanghai Huaxiang	TFE100	09121647	-	O/P MON
Power Supply	Dahua	DH1716A-10	1000303181	-	O/P MON
Conducted Spurious Emission					
Network Analyzer	Agilent	8720D	US36140166	12	17-Nov-2014
Spectrum Analyser	Rohde & Schwarz	FSQ26	100244	12	14-Apr-2015
Filter	K & L	ULK 904 098/2	16	-	O/P MON
40dB Attenuator	Aeroflex / Weinschel	48-40-43-LIM	BR5020	-	O/P MON
Load	Shanghai Huaxiang	TFE100	09121647	-	O/P MON
Power Supply	Dahua	DH1716A-10	1000303181	-	O/P MON

Radiated Spurious Emissions					
Load	Shanghai Huaxiang	TF150-3	06081410	-	O/P MON
Load	Shanghai Huaxiang	TF100	09121614	-	O/P MON
EMI Receiver	Rohde & Schwarz	ESI 40	100015	12	19-Aug-2014
Ultra log test antenna	Rohde & Schwarz	HL562	100167	12	19-Aug-2014
Double-Ridged Wave-guide Horn Antenna	Rohde & Schwarz	HF 906	100029	12	19-Aug-2014
Pyramidal Horn Antenna	EMCO	3160-09	760840	12	19-Aug-2014
Antenna master	Frankonia	MA 260	-	-	19-Aug-2014
Relay Switch Unit	Rohde & Schwarz	331.1601.31	338965002	-	TU
Semi Anechoic Chamber	Frankonia	23.18m×16.88m×9.60m	-	12	19-Aug-2014
DC Power Supply	Dahua	DH1716-5D	2007060047	-	O/P MON
Digital Multimeter	FLUKE	179	91820401	12	24-Dec-2014
Thermo-hygrometer	AZ Instruments	8705	9151655	12	12-Dec-2014

N/A – Not Applicable
OP MON – Output Monitored with Calibrated Equipment

3.2 MEASUREMENT UNCERTAINTY

For a 95% confidence level, the measurement uncertainties for defined systems are:-

Test Discipline	Frequency / Parameter	MU
Conducted Maximum Peak Output Power	30MHz to 10GHz Amplitude	0.5dB*
Conducted Emissions	30MHz to 40GHz Amplitude	3.0dB*
Radiated Emissions, Bilog Antenna, AOATS	30MHz to 1GHz Amplitude	5.1dB*
Radiated Emissions, Horn Antenna, AOATS	1GHz to 40GHz Amplitude	6.3dB*
Worst case error for both Time and Frequency measurement 12 parts in 10^6		

* In accordance with CISPR 16-4

SECTION 5

ACCREDITATION, DISCLAIMERS AND COPYRIGHT

4.1 ACCREDITATION, DISCLAIMERS AND COPYRIGHT

This report relates only to the actual item/items tested.

Our UKAS Accreditation does not cover opinions and interpretations and any expressed are outside the scope of our UKAS Accreditation.

Results of tests not covered by our UKAS Accreditation Schedule are marked NUA (Not UKAS Accredited).