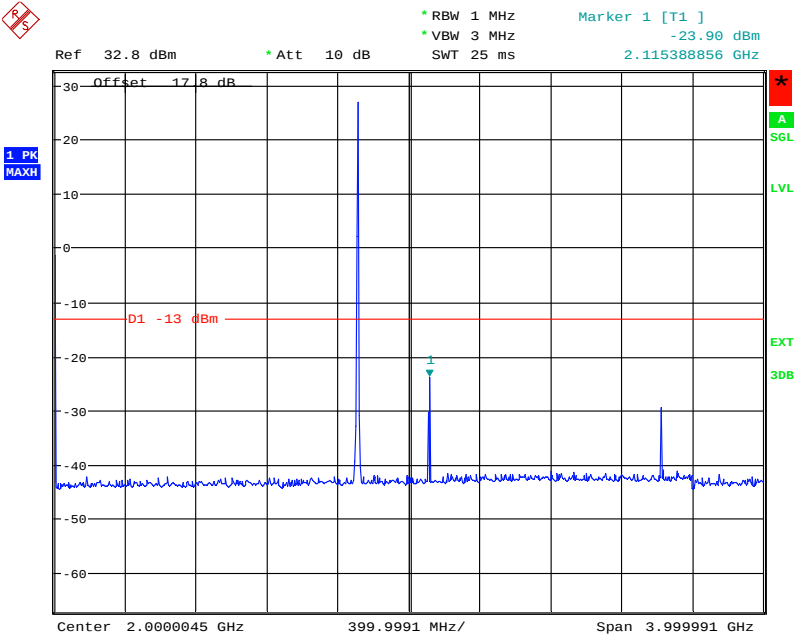


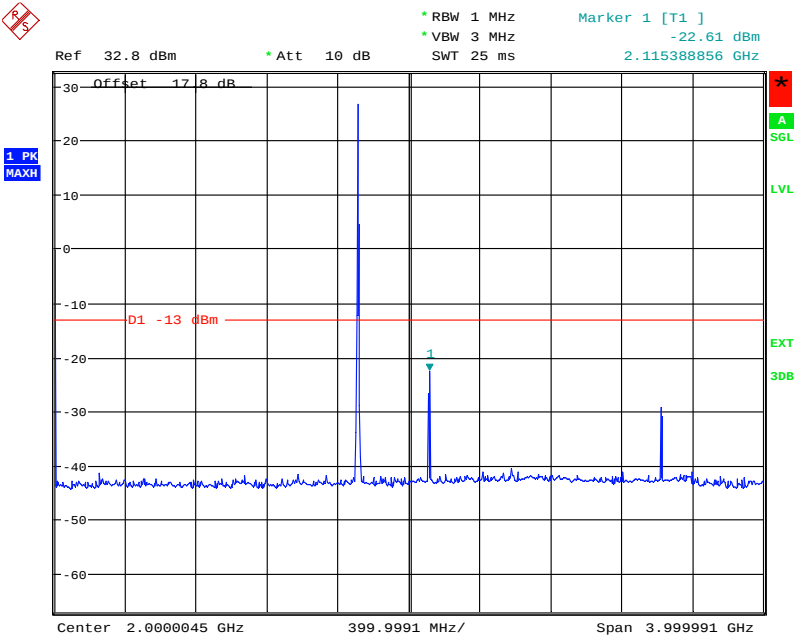
3.0 MHz Bandwidth - 16QAM

1711.5 MHz - 1 Resource Block - Low



Date: 1.AUG.2013 10:15:45

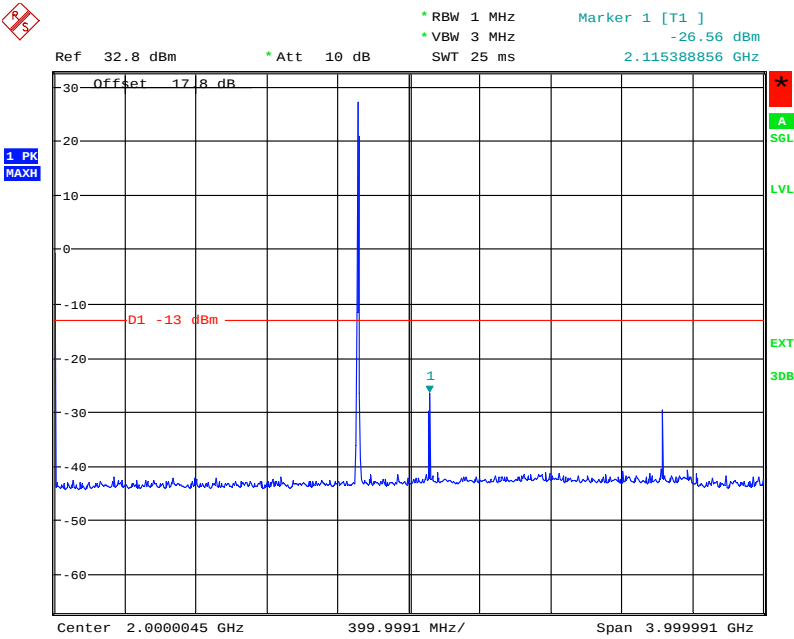
1711.5 MHz - 1 Resource Block - Middle



Date: 1.AUG.2013 10:37:09

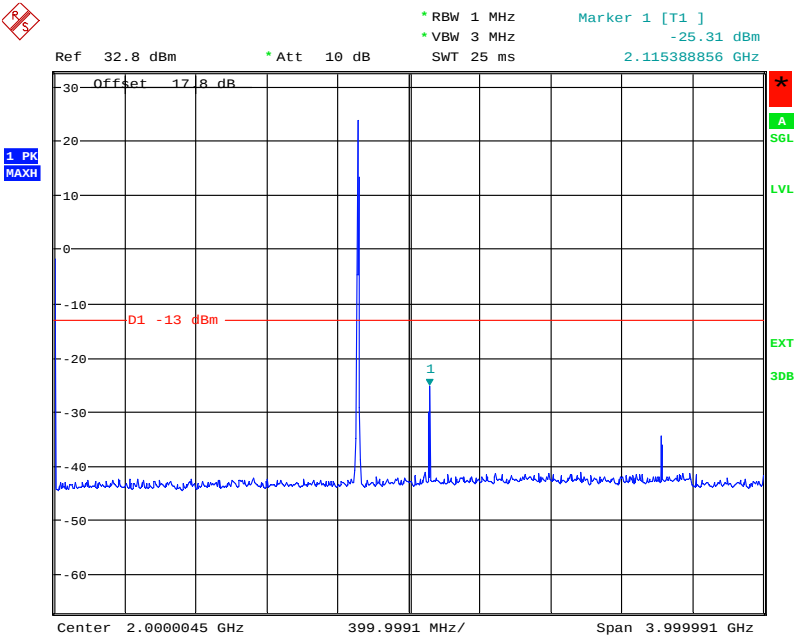


1711.5 MHz - 1 Resource Block - High



Date: 1.AUG.2013 10:44:37

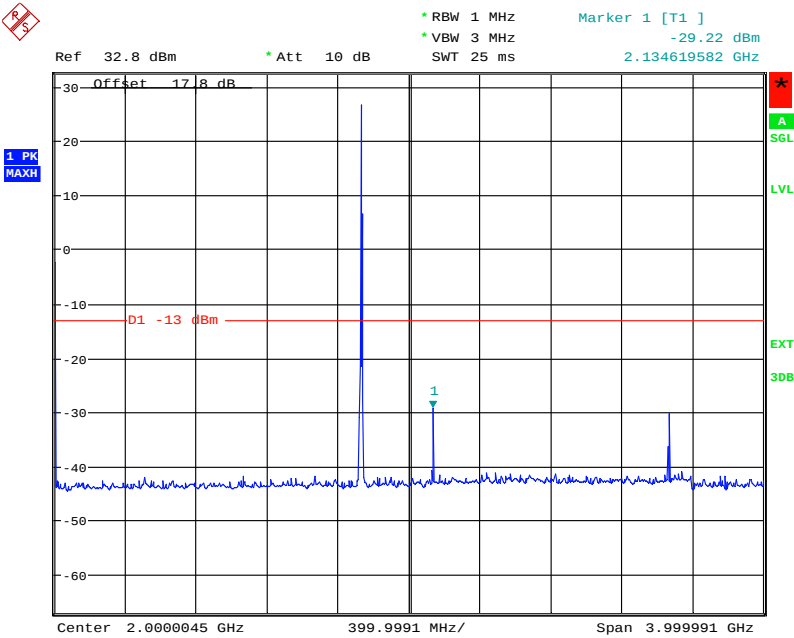
1711.5 MHz - All Resource Blocks



Date: 1.AUG.2013 10:07:56

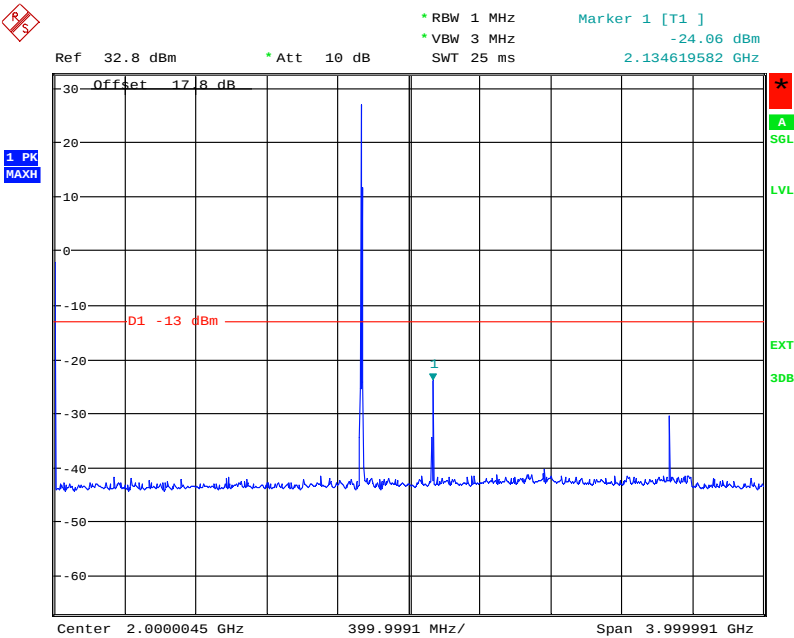


1732.5 MHz - 1 Resource Block - Low



Date: 1.AUG.2013 11:08:39

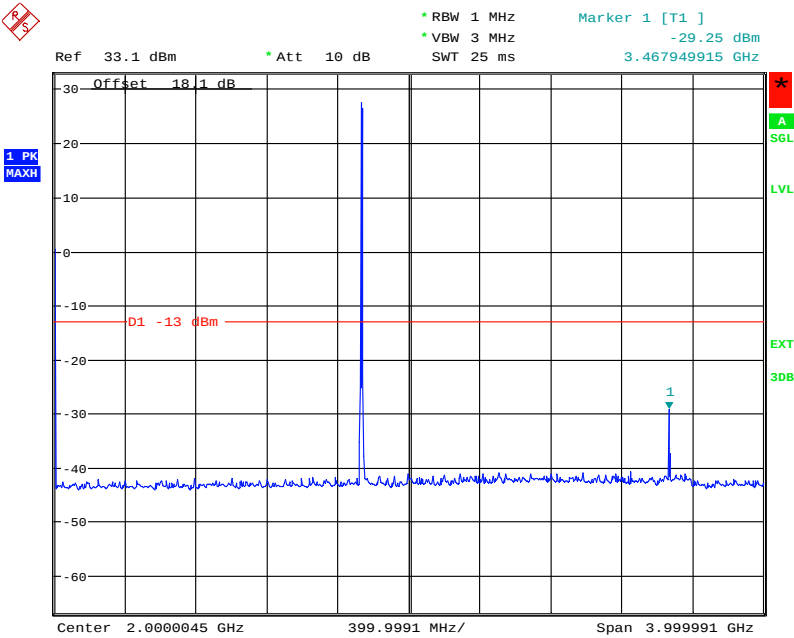
1732.5 MHz - 1 Resource Block - Middle



Date: 1.AUG.2013 11:02:23

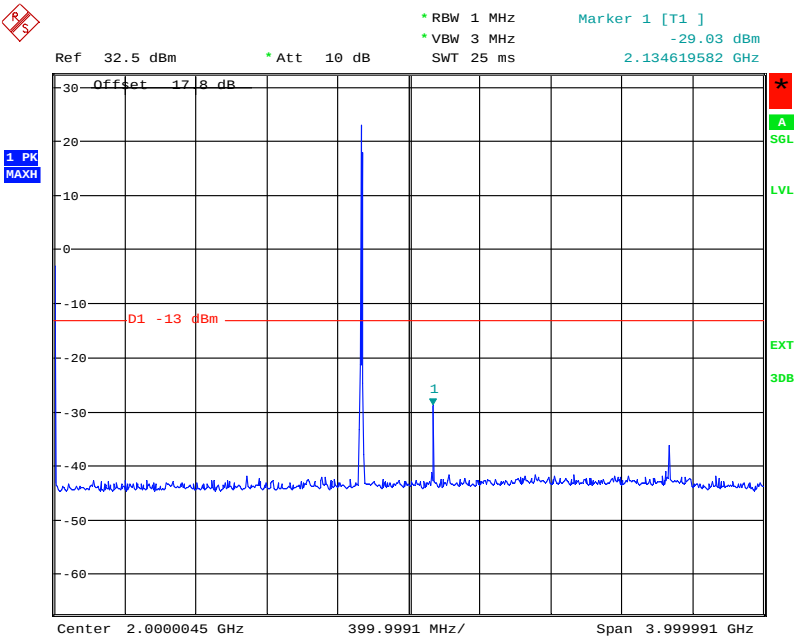


1732.5 MHz - 1 Resource Block - High



Date: 27.AUG.2013 17:30:50

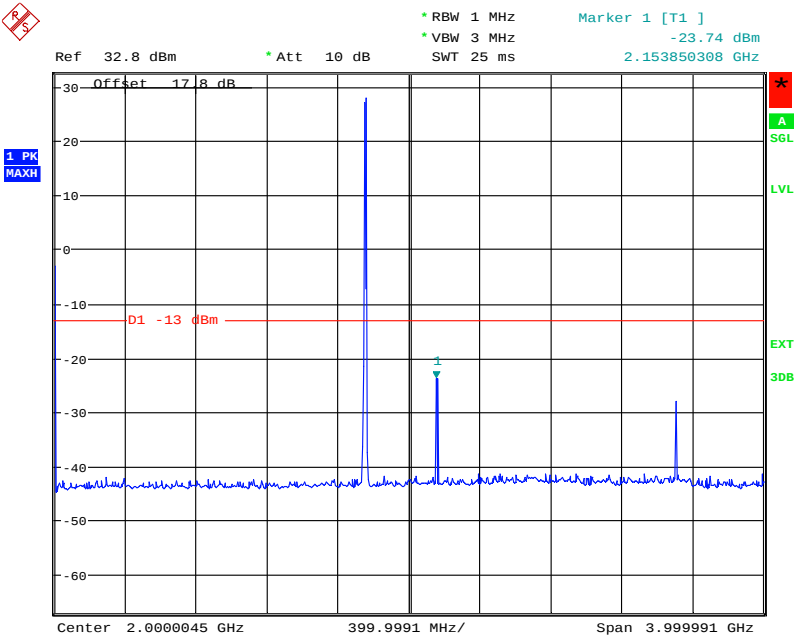
1732.5 MHz - All Resource Blocks



Date: 1.AUG.2013 11:14:49

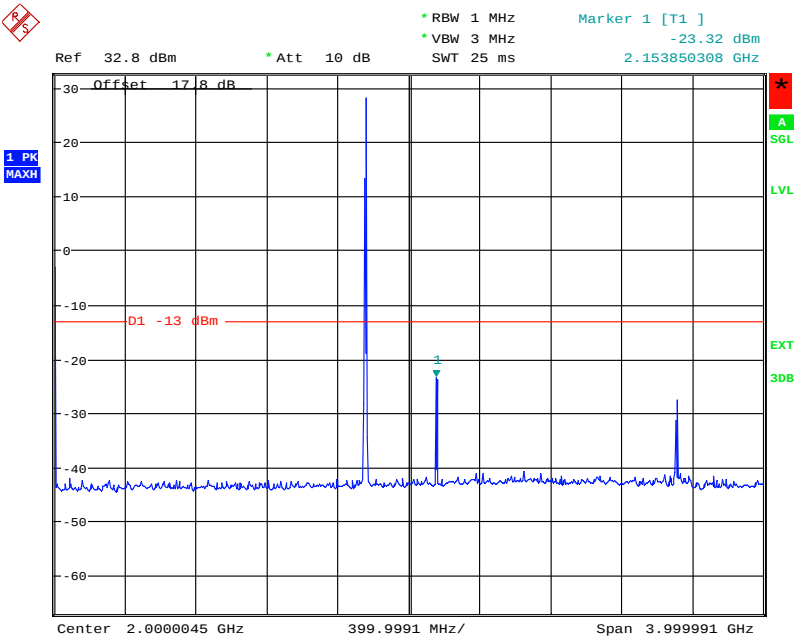


1753.5 MHz - 1 Resource Block - Low



Date: 1.AUG.2013 11:34:21

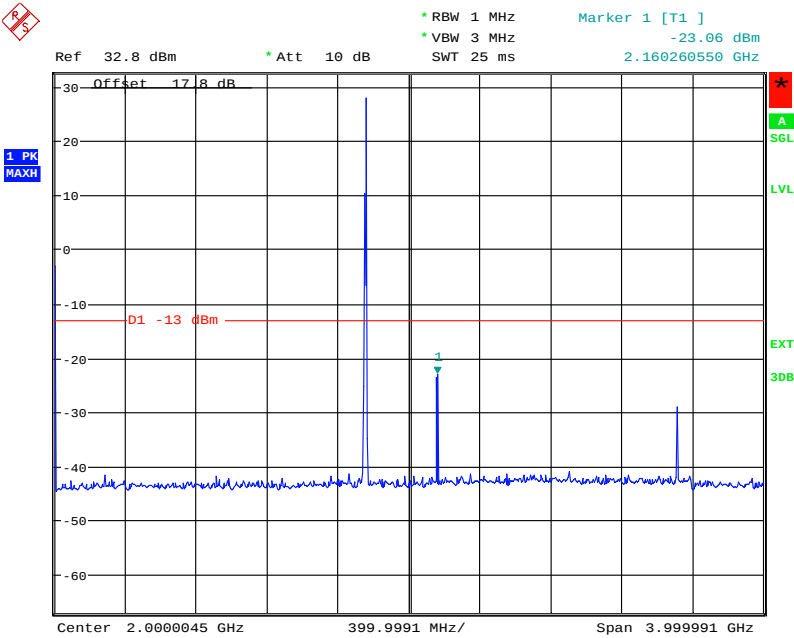
1753.5 MHz - 1 Resource Block - Middle



Date: 1.AUG.2013 11:42:35

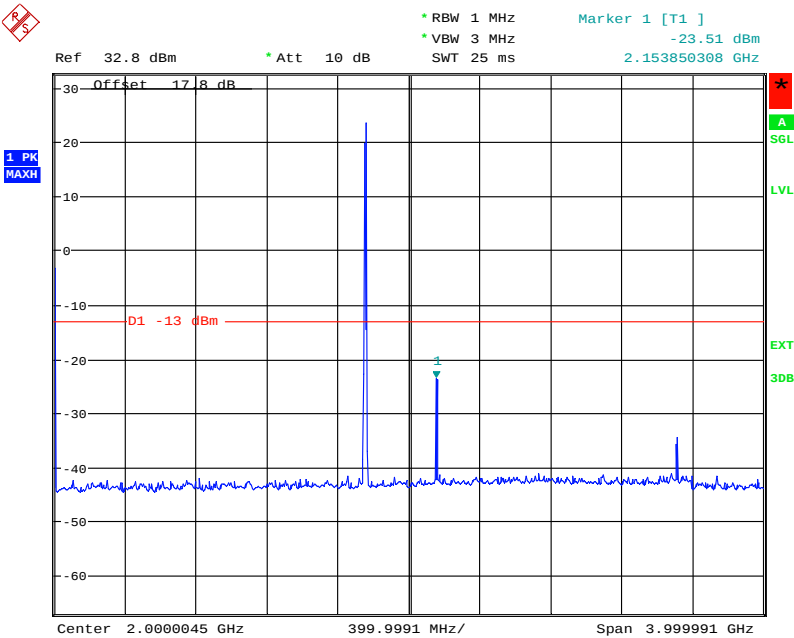


1753.5 MHz - 1 Resource Block - High



Date: 1.AUG.2013 11:52:03

1753.5 MHz - All Resource Blocks

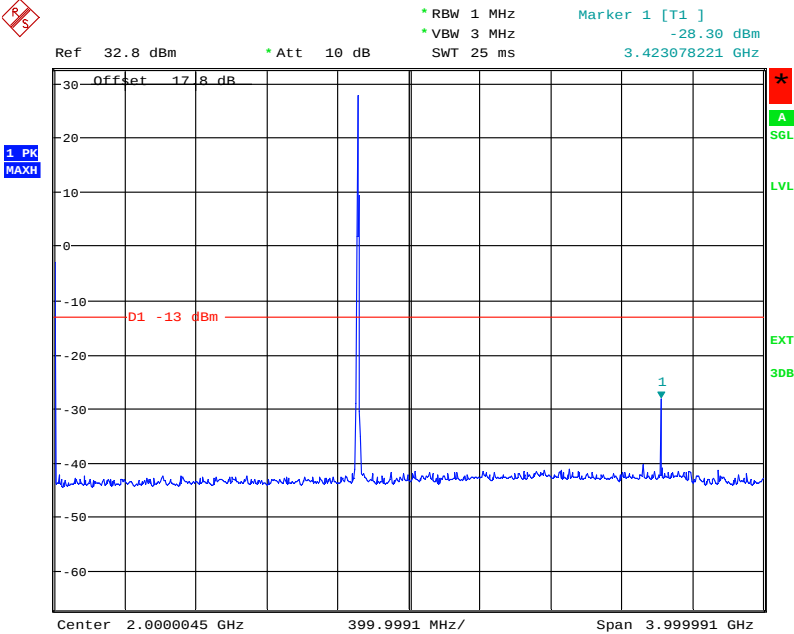


Date: 1.AUG.2013 11:26:20



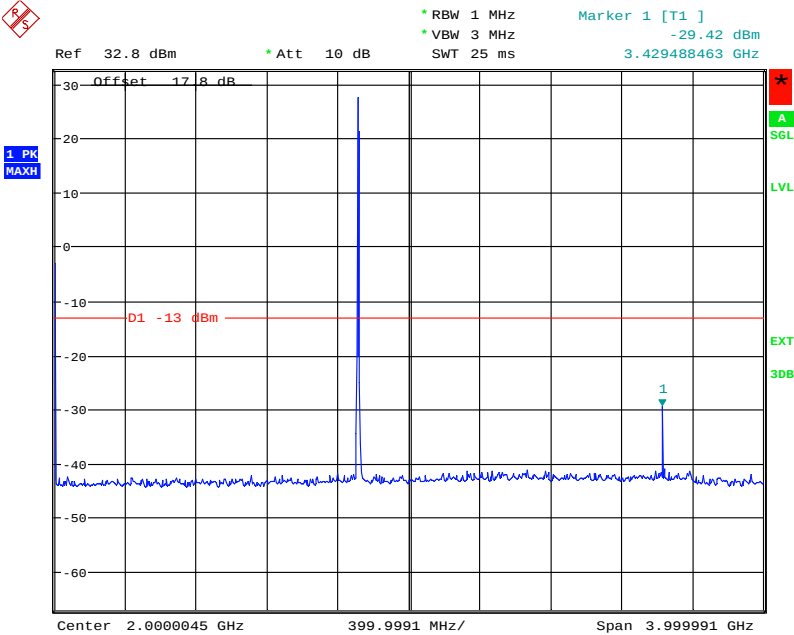
5.0 MHz Bandwidth - QPSK

1712.5 MHz - 1 Resource Block - Low



Date: 30.JUL.2013 15:12:39

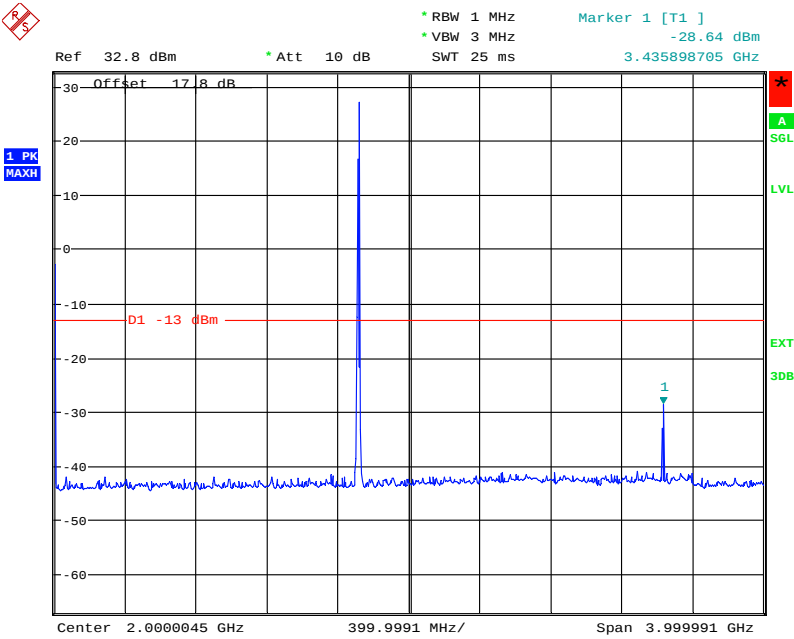
1712.5 MHz - 1 Resource Block - Middle



Date: 30.JUL.2013 15:19:00

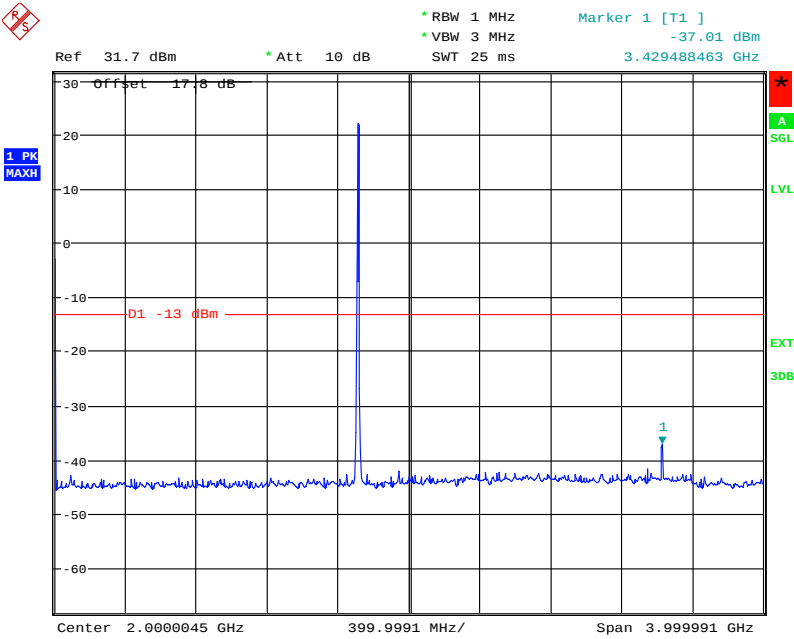


1712.5 MHz - 1 Resource Block - High



Date: 30.JUL.2013 15:30:24

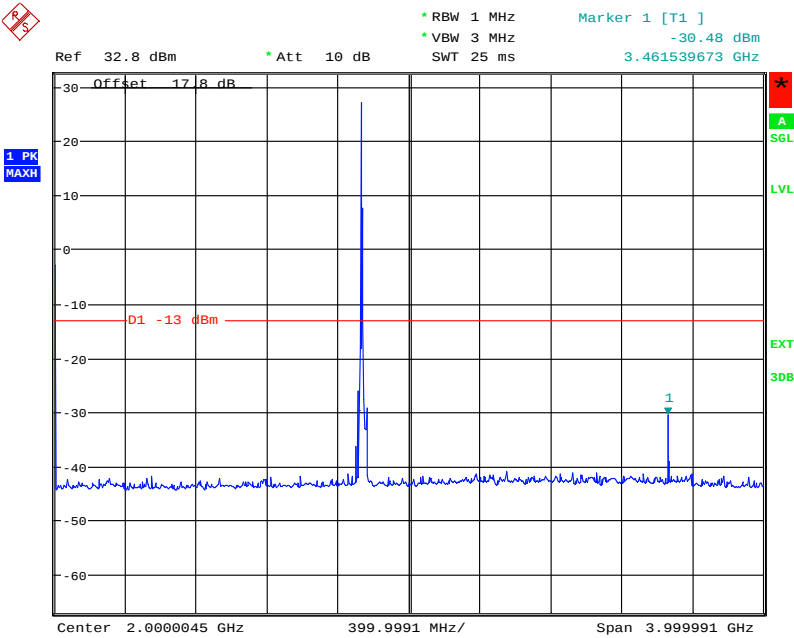
1712.5 MHz - All Resource Blocks



Date: 30.JUL.2013 15:02:56

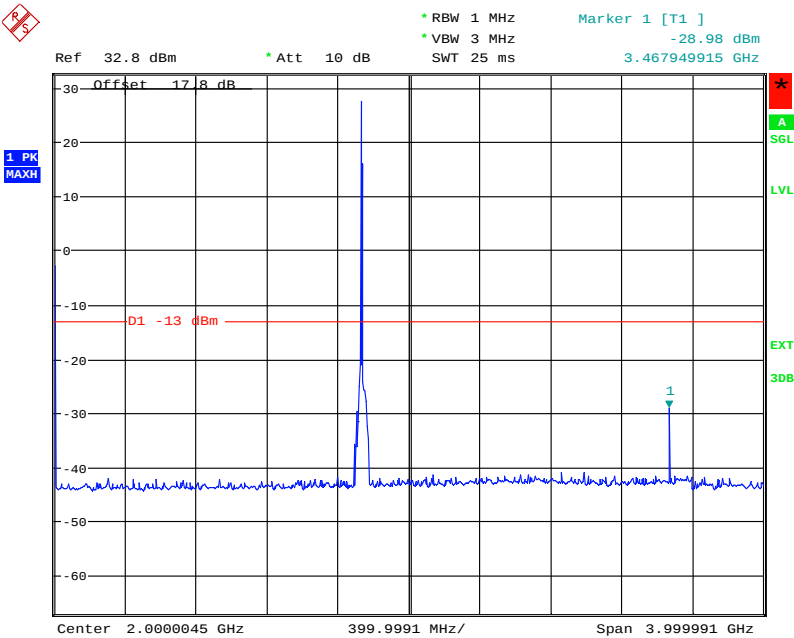


1732.5 MHz - 1 Resource Block - Low



Date: 30.JUL.2013 16:01:58

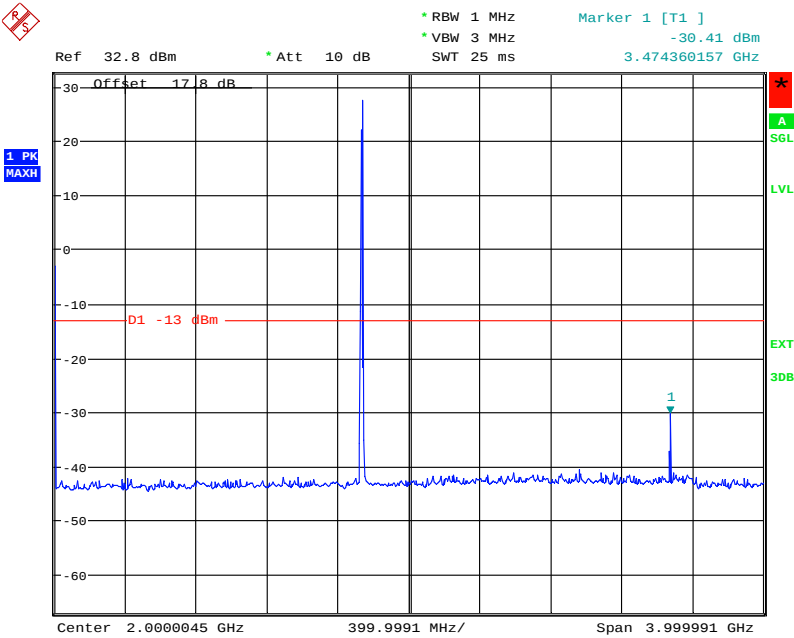
1732.5 MHz - 1 Resource Block - Middle



Date: 30.JUL.2013 15:55:32

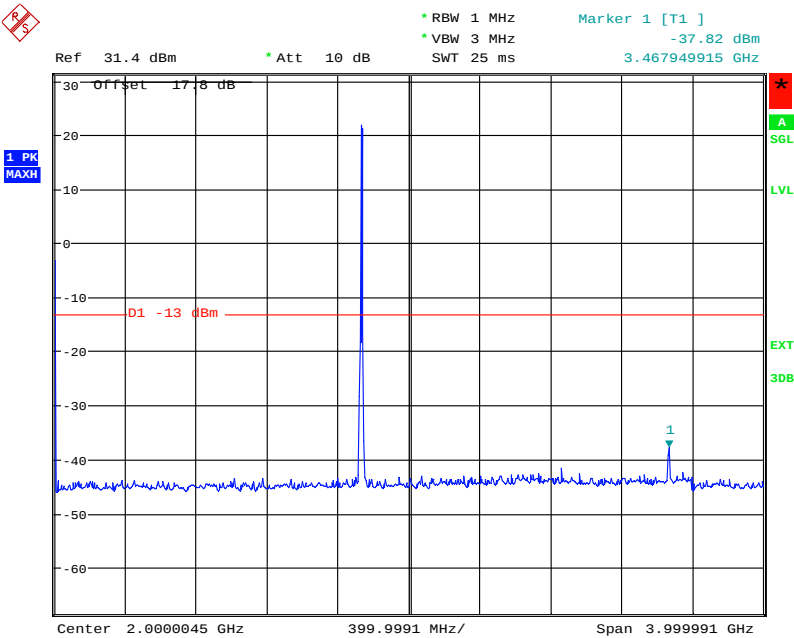


1732.5 MHz - 1 Resource Block - High



Date: 30.JUL.2013 15:49:37

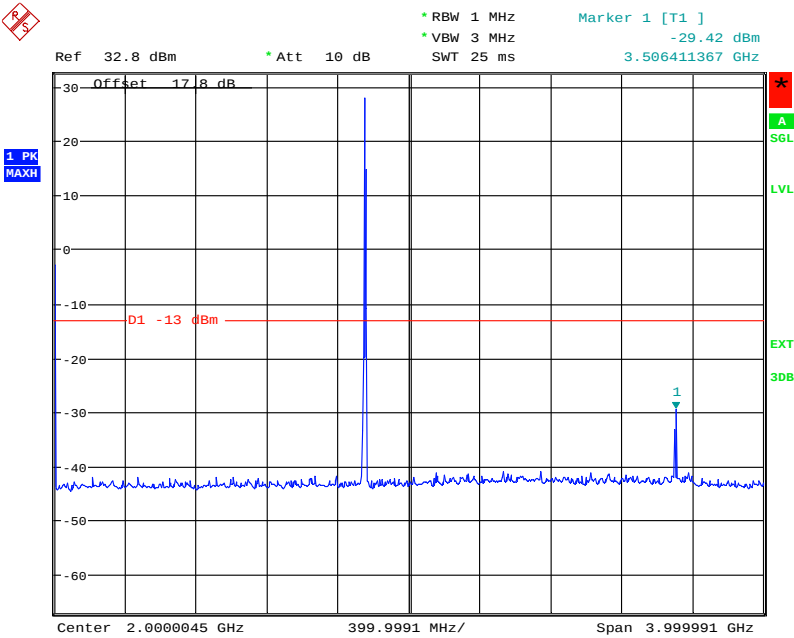
1732.5 MHz - All Resource Blocks



Date: 30.JUL.2013 15:43:18

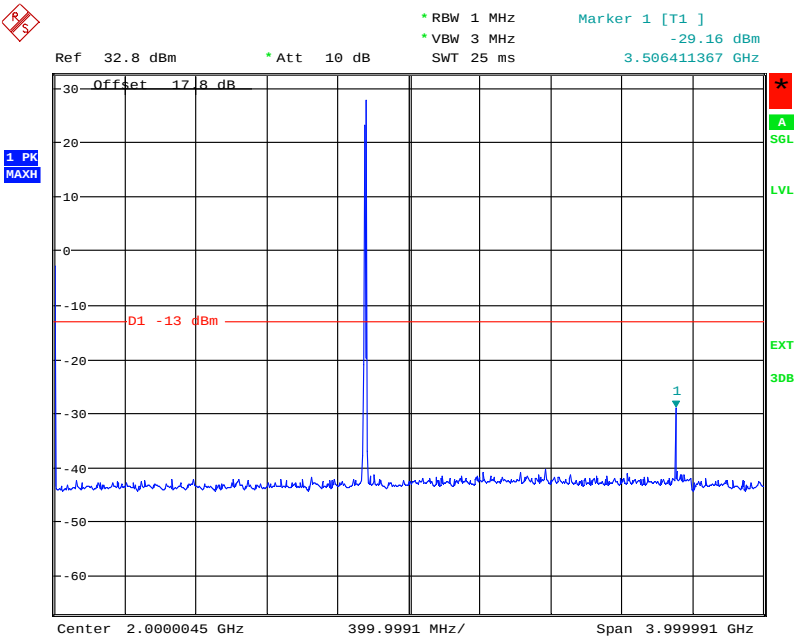


1752.5 MHz - 1 Resource Block - Low



Date: 30.JUL.2013 16:09:41

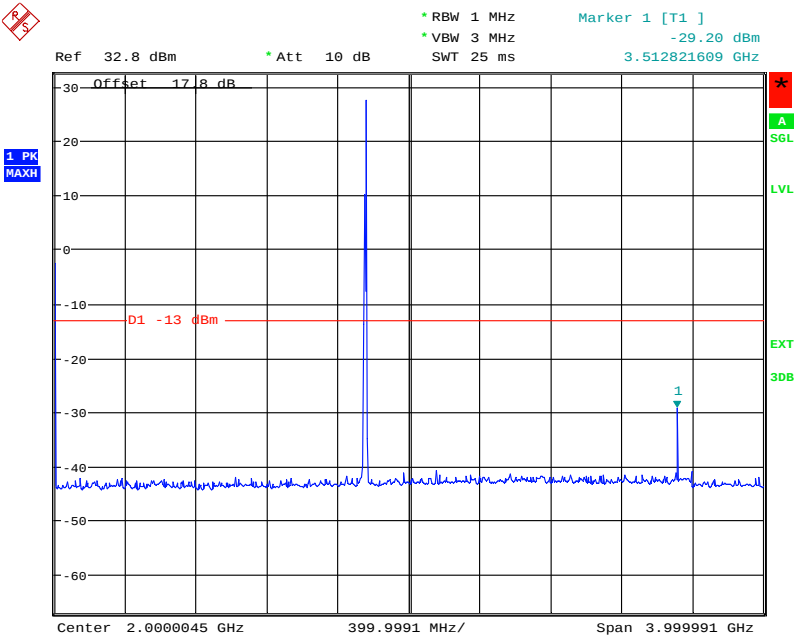
1752.5 MHz - 1 Resource Block - Middle



Date: 30.JUL.2013 16:16:01

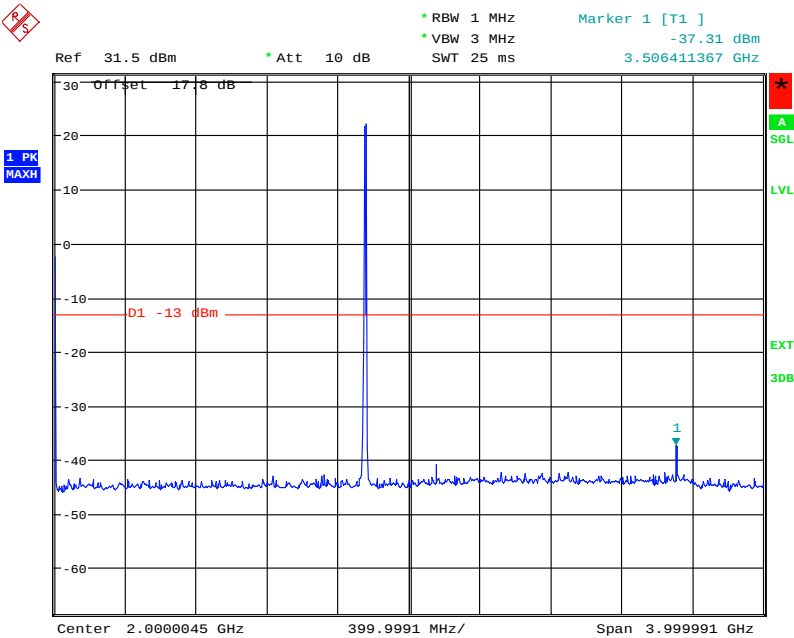


1752.5 MHz - 1 Resource Block - High



Date: 30.JUL.2013 16:23:10

1752.5 MHz - All Resource Blocks

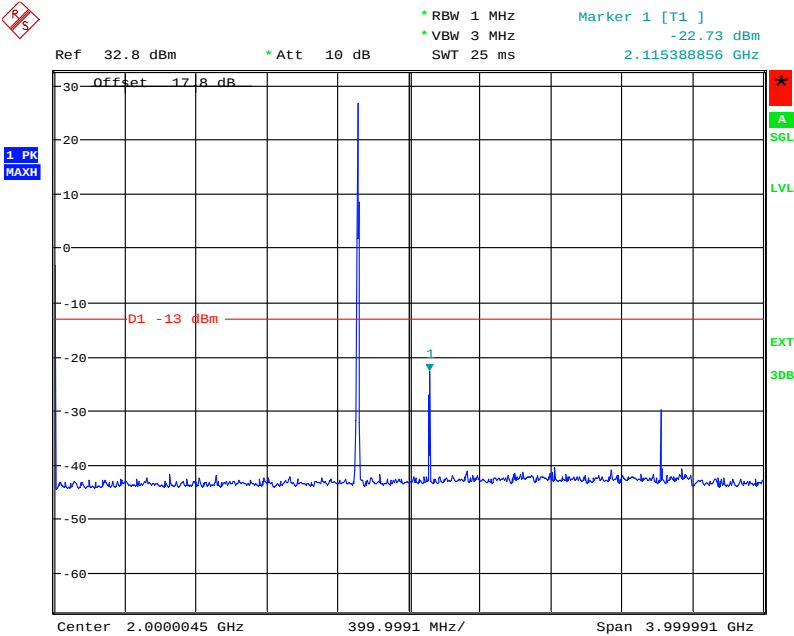


Date: 30.JUL.2013 16:30:39



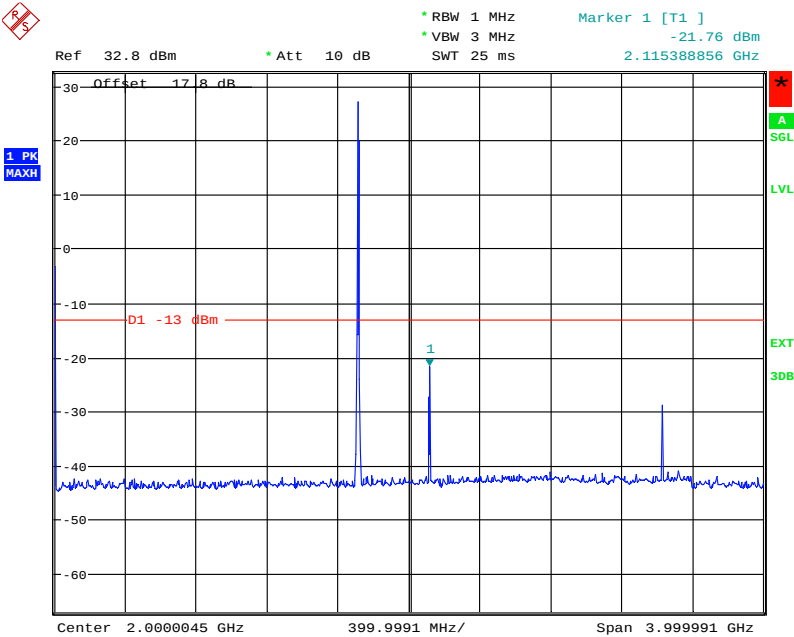
5.0 MHz Bandwidth - 16QAM

1712.5 MHz - 1 Resource Block - Low



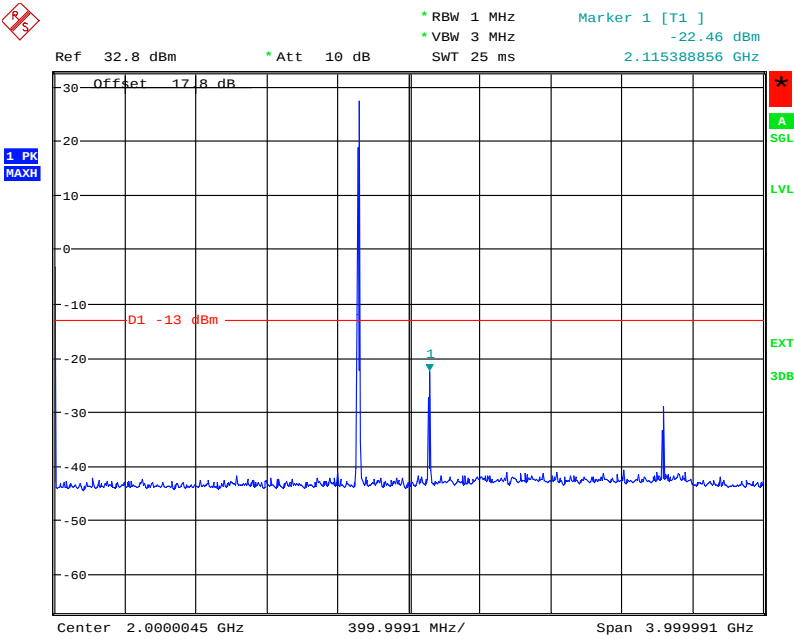
Date: 1.AUG.2013 12:14:40

1712.5 MHz - 1 Resource Block - Middle



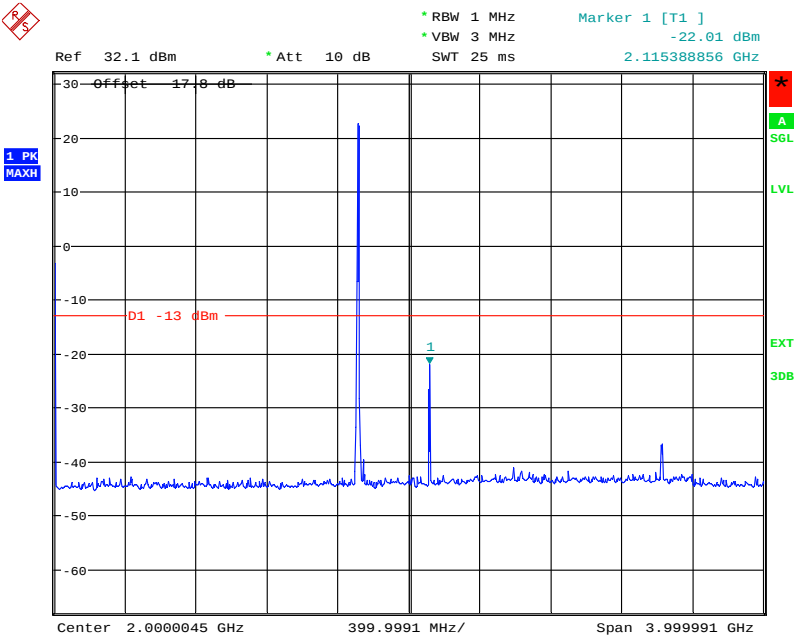
Date: 1.AUG.2013 12:22:44

1712.5 MHz - 1 Resource Block - High



Date: 1.AUG.2013 12:29:14

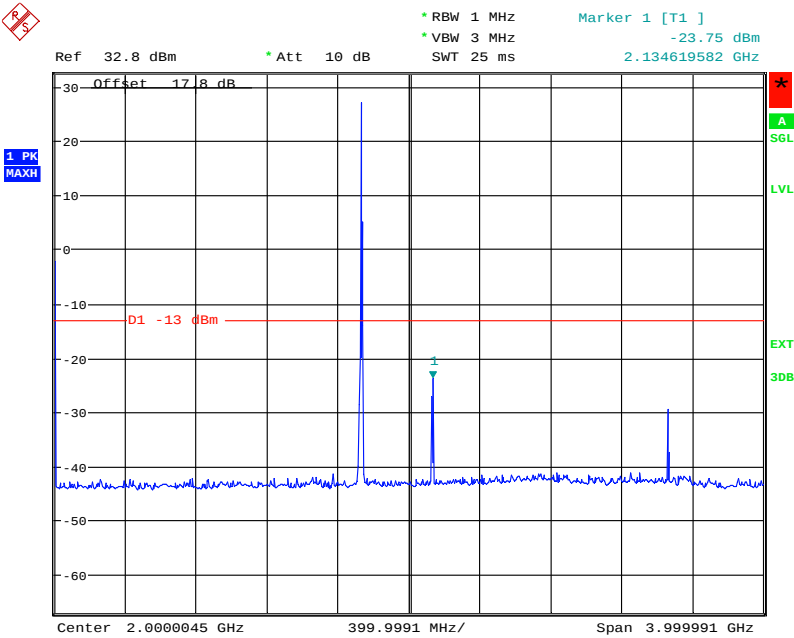
1712.5 MHz - All Resource Blocks



Date: 1.AUG.2013 12:05:21

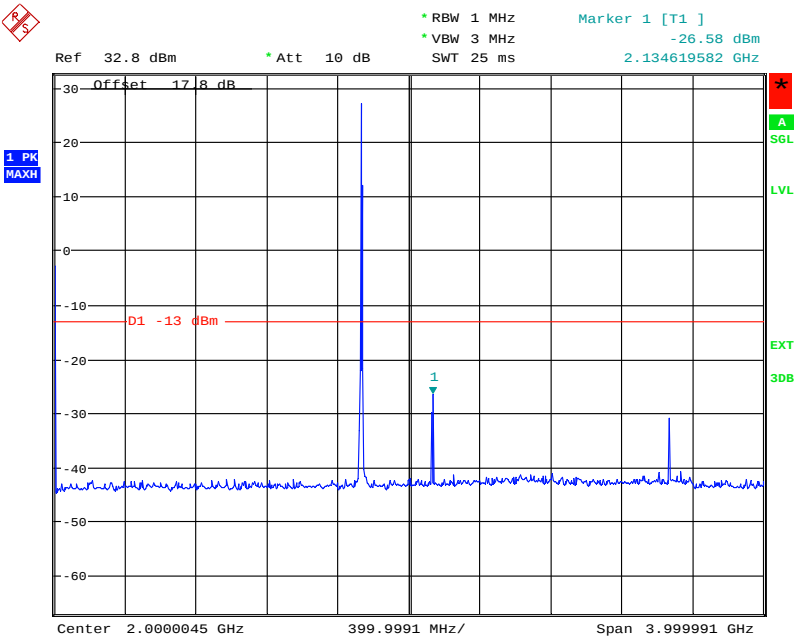


1732.5 MHz - 1 Resource Block - Low



Date: 1.AUG.2013 12:48:17

1732.5 MHz - 1 Resource Block - Middle



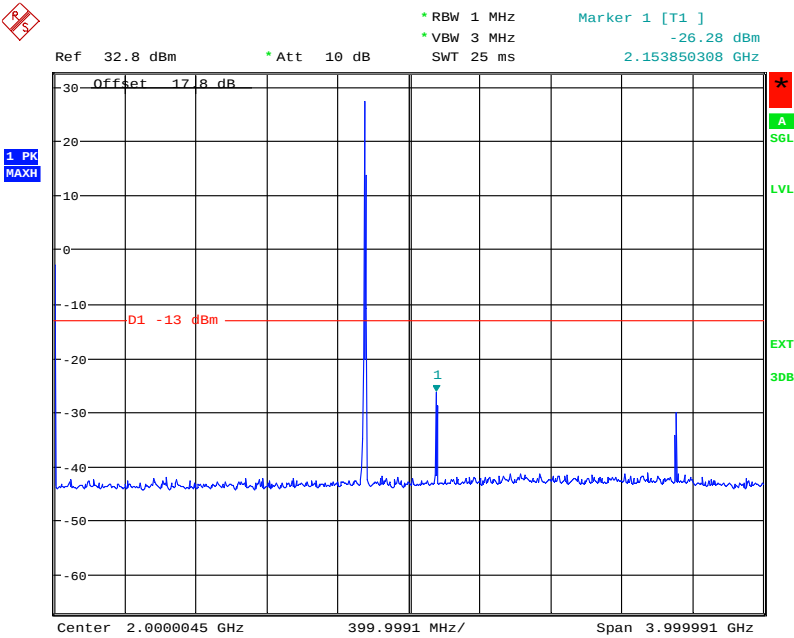
Date: 1.AUG.2013 12:42:32

Date: 1.AUG.2013 12:36:23

Date: 1.AUG.2013 12:53:55

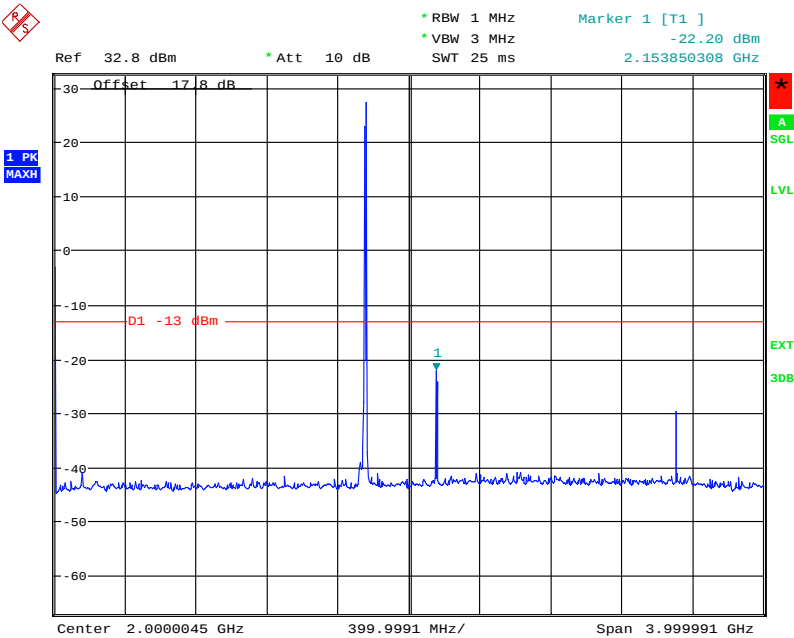


1752.5 MHz - 1 Resource Block - Low



Date: 1.AUG.2013 14:21:07

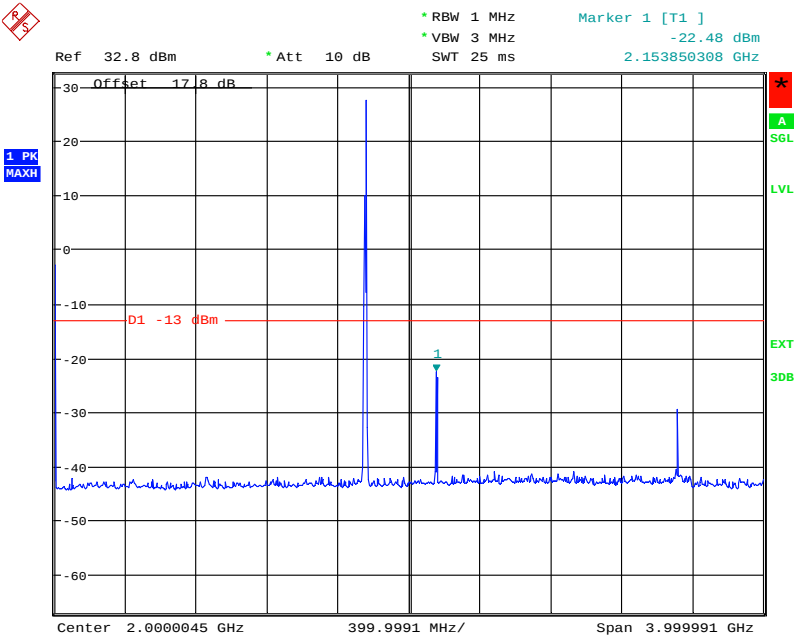
1752.5 MHz - 1 Resource Block - Middle



Date: 1.AUG.2013 14:12:36

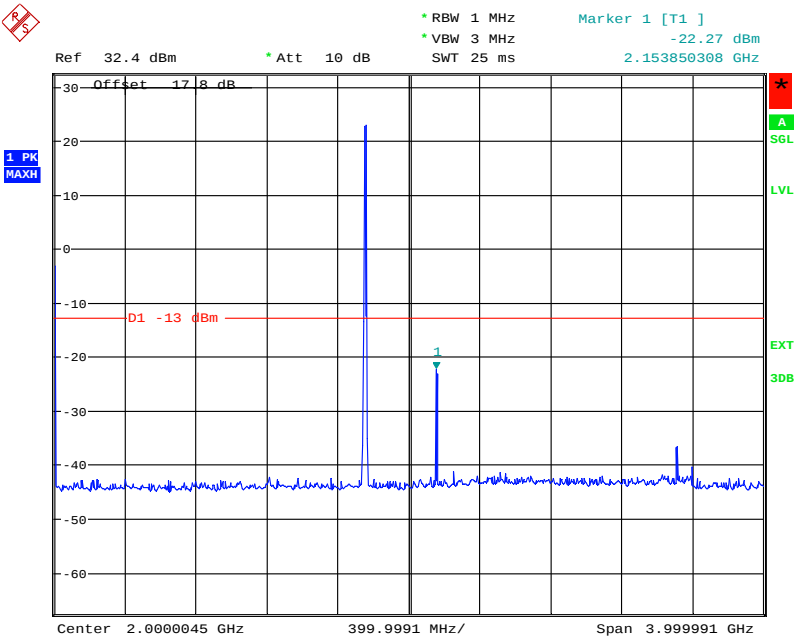


1752.5 MHz - 1 Resource Block - High



Date: 1.AUG.2013 13:59:38

1752.5 MHz - All Resource Blocks

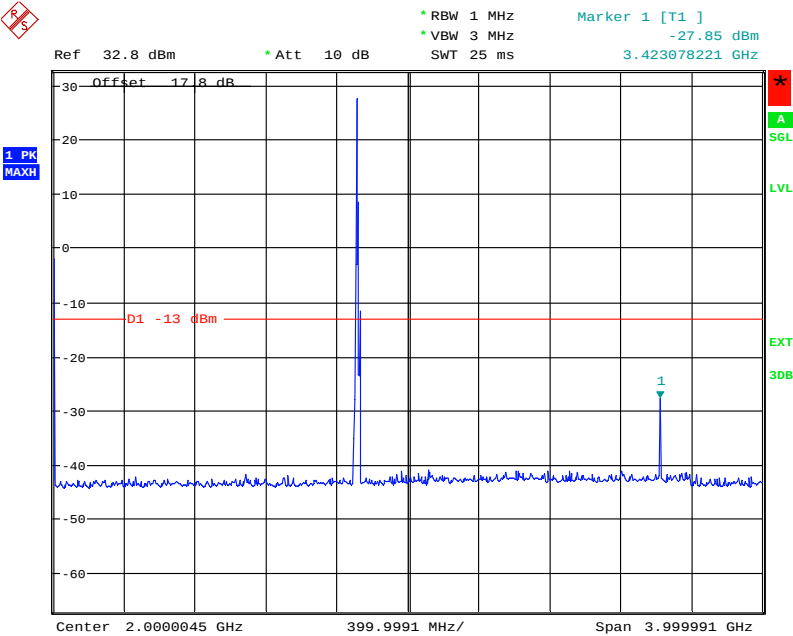


Date: 1.AUG.2013 13:49:50



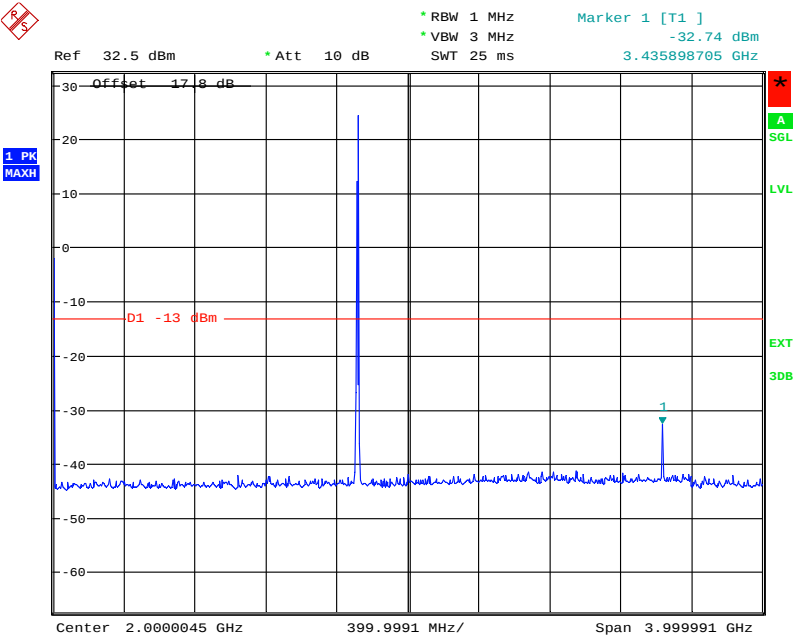
10.0 MHz Bandwidth - QPSK

1715 MHz - 1 Resource Block - Low



Date: 31.JUL.2013 08:57:53

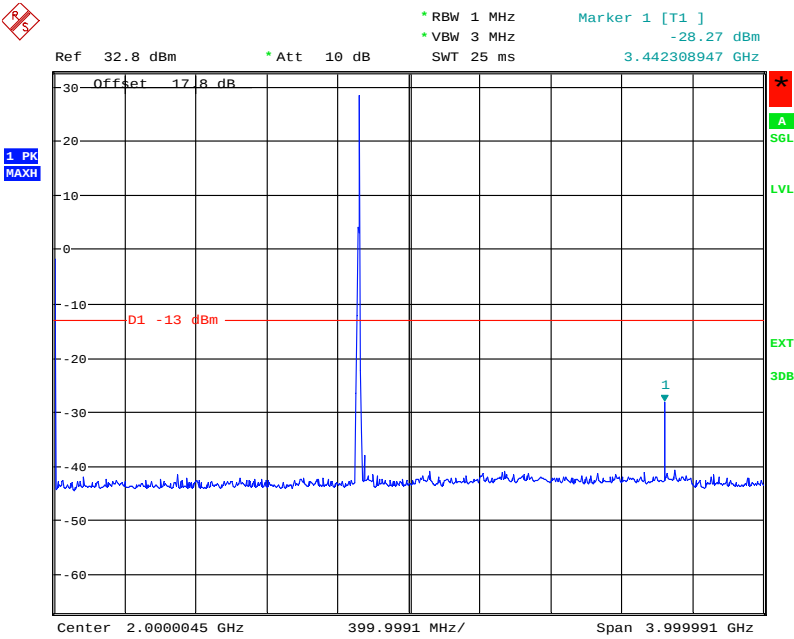
1715 MHz - 1 Resource Block - Middle



Date: 31.JUL.2013 09:06:46

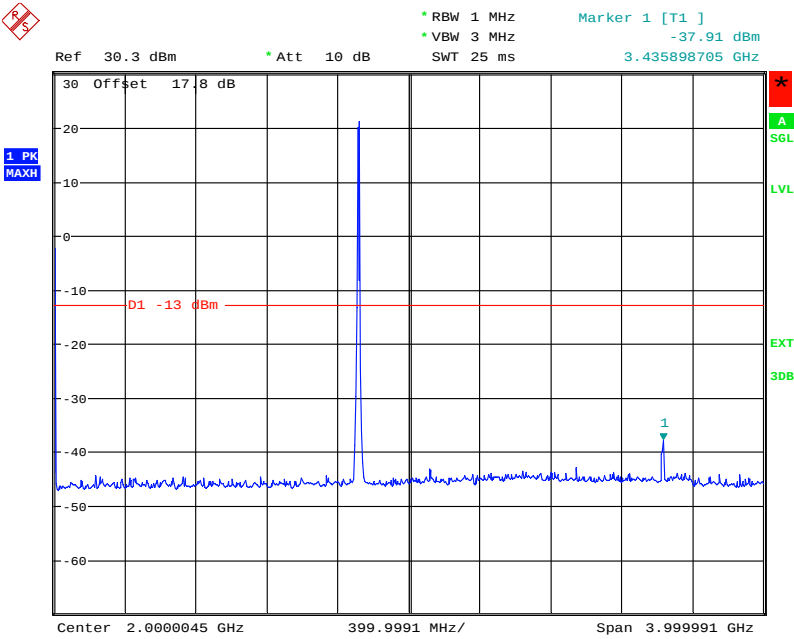


1715 MHz - 1 Resource Block - High



Date: 31.JUL.2013 09:12:59

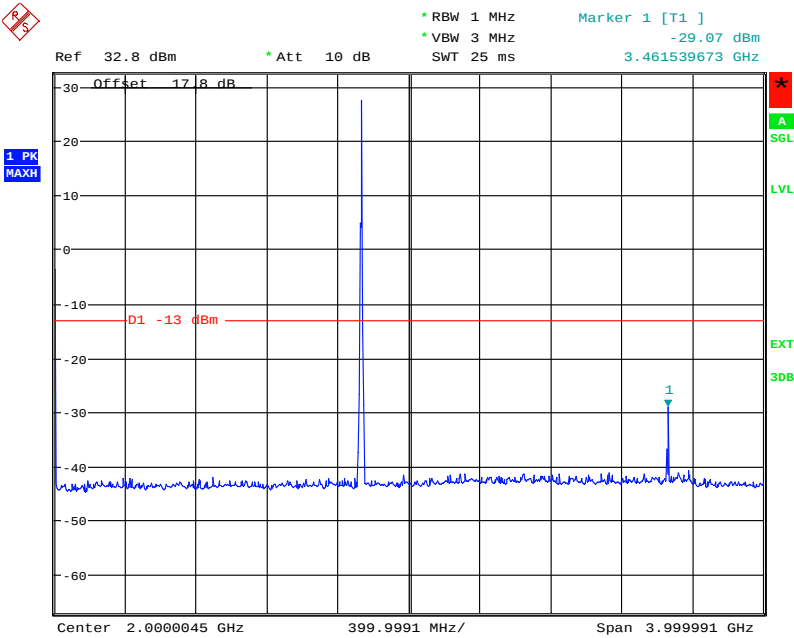
1715 MHz - All Resource Blocks



Date: 31.JUL.2013 08:48:40

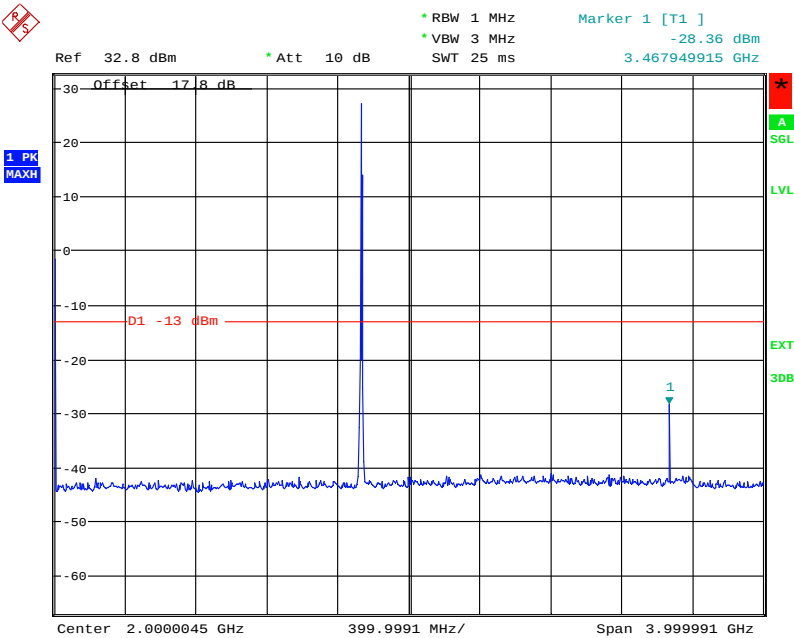


1732.5 MHz - 1 Resource Block - Low



Date: 31.JUL.2013 10:09:49

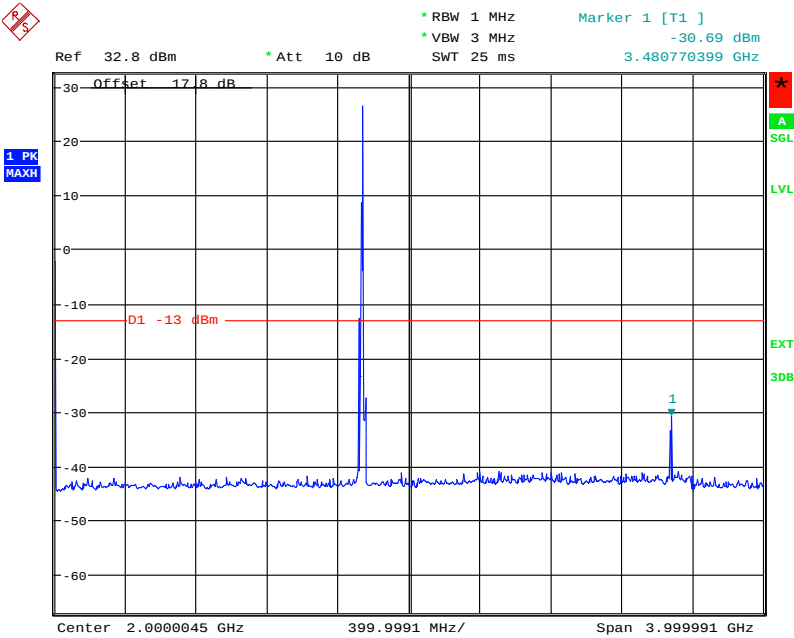
1732.5 MHz - 1 Resource Block - Middle



Date: 31.JUL.2013 09:57:43

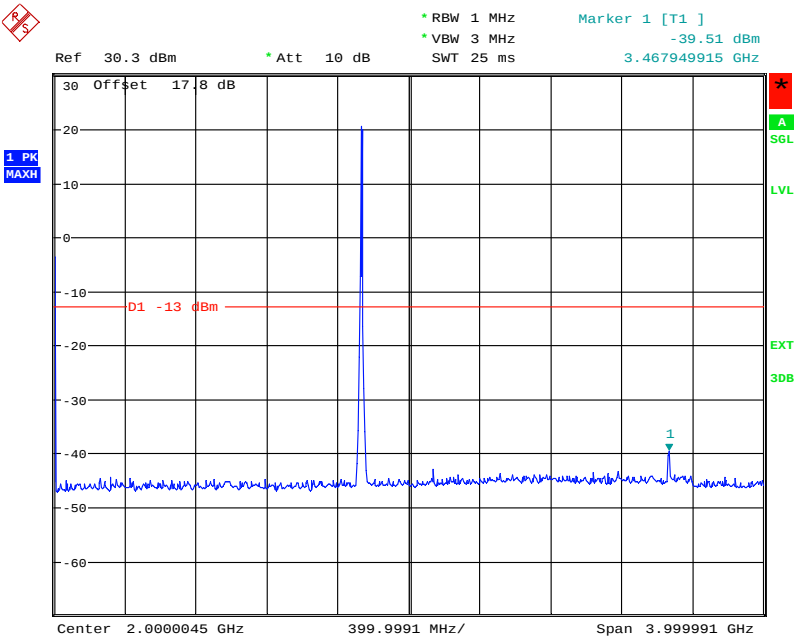


1732.5 MHz - 1 Resource Block - High



Date: 31.JUL.2013 09:30:51

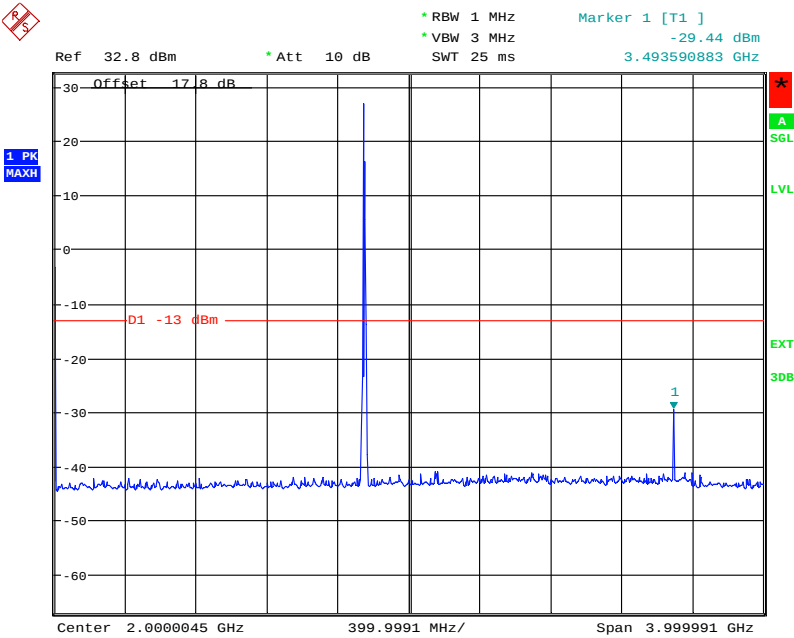
1732.5 MHz - All Resource Blocks



Date: 31.JUL.2013 10:15:27

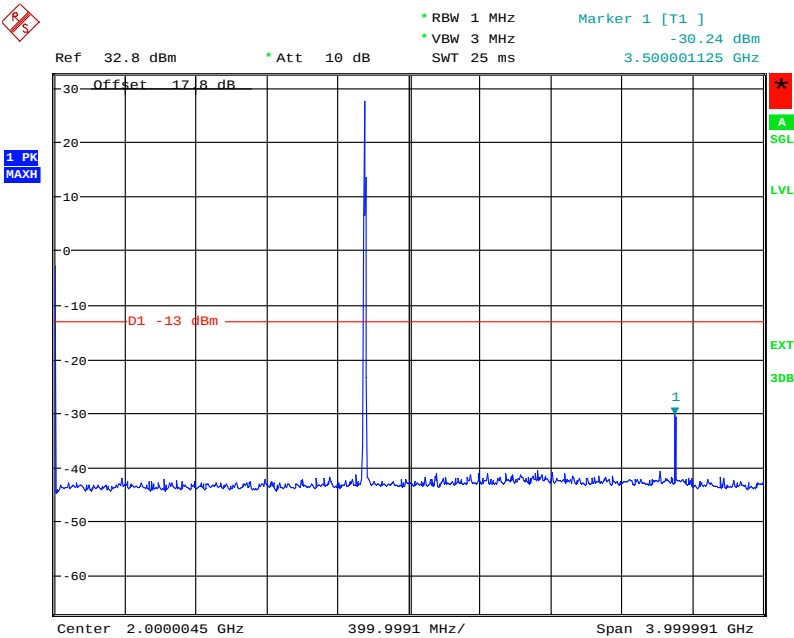


1750 MHz - 1 Resource Block - Low



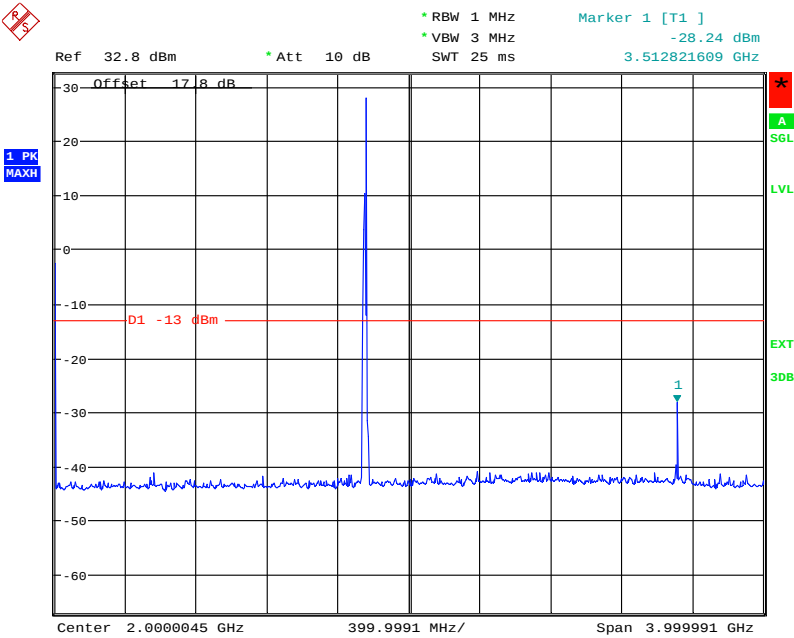
Date: 31.JUL.2013 10:59:20

1750 MHz - 1 Resource Block - Middle



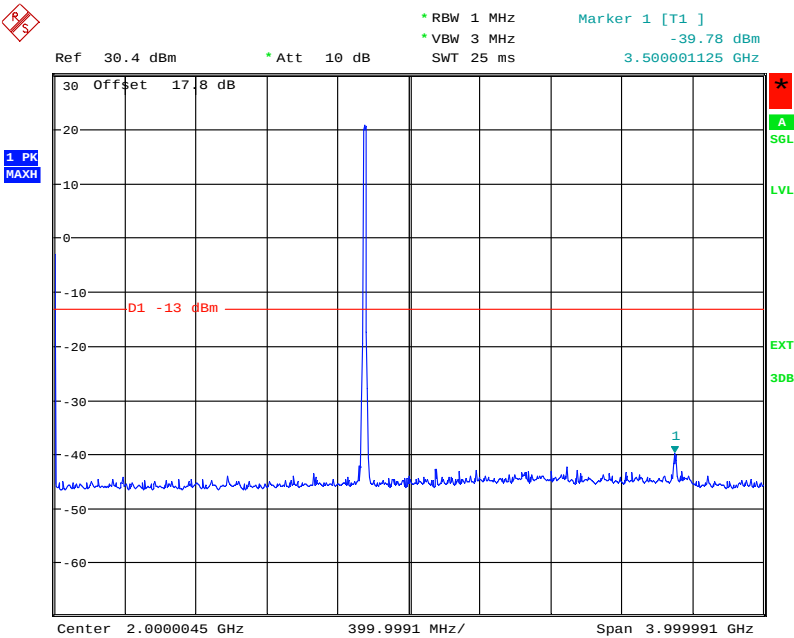
Date: 31.JUL.2013 10:43:59

1750 MHz - 1 Resource Block - High



Date: 31.JUL.2013 10:33:38

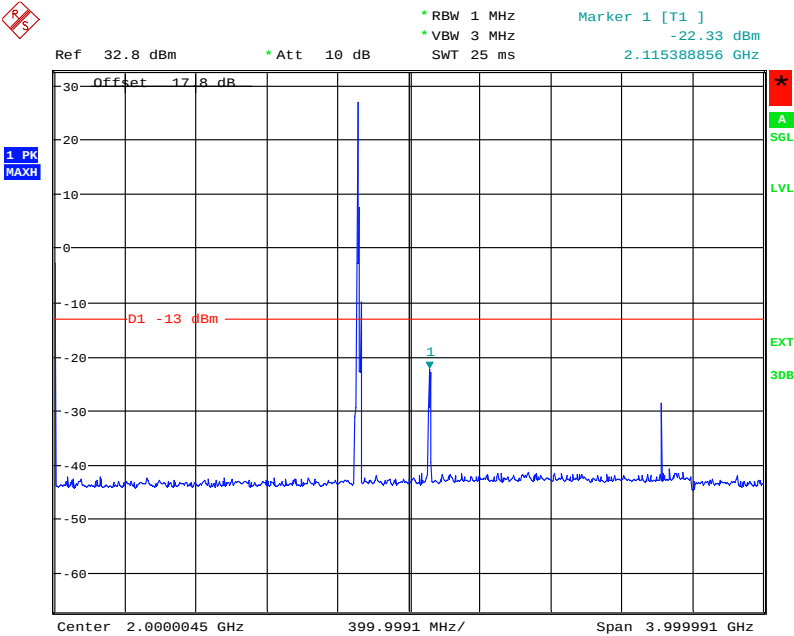
1750 MHz - All Resource Blocks



Date: 31.JUL.2013 10:25:43

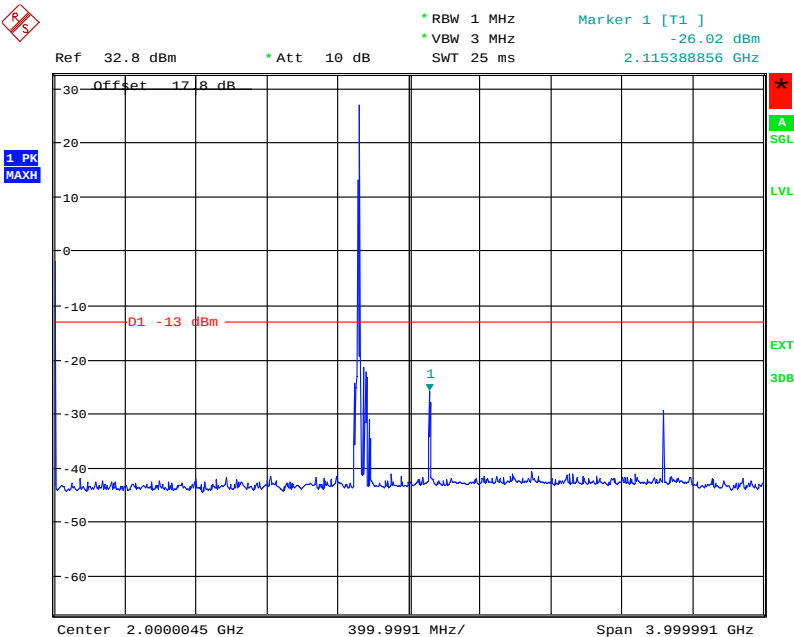
10.0 MHz Bandwidth - 16QAM

1715 MHz - 1 Resource Block - Low



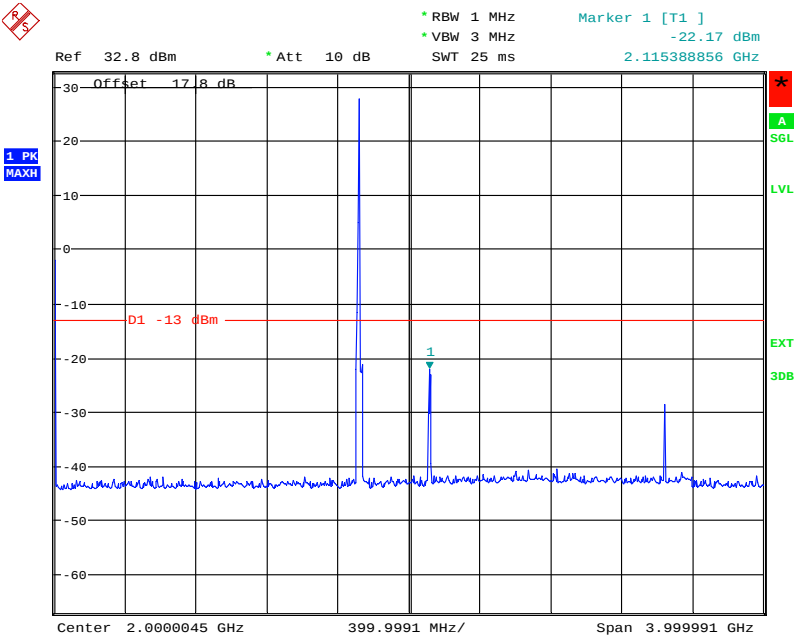
Date: 1.AUG.2013 14:33:42

1715 MHz - 1 Resource Block - Middle



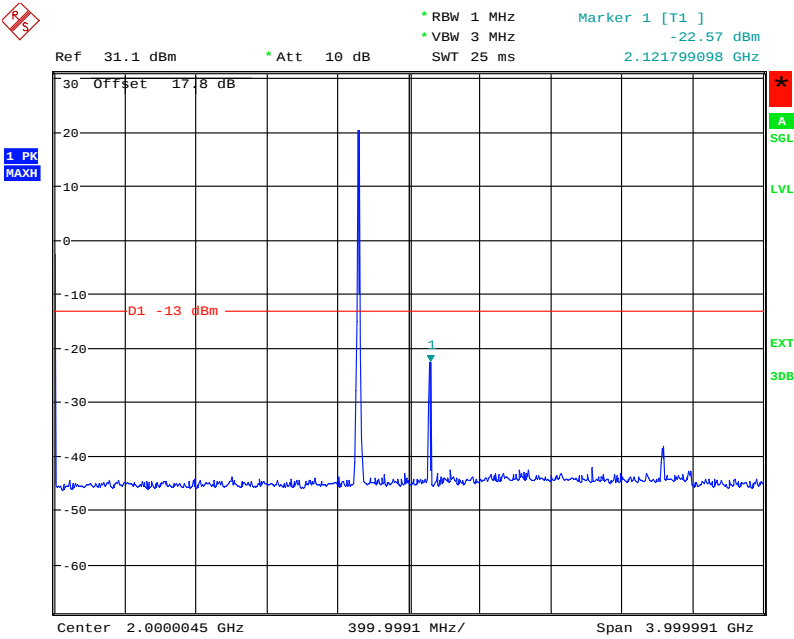
Date: 1.AUG.2013 14:57:21

1715 MHz - 1 Resource Block - High



Date: 1.AUG.2013 14:48:29

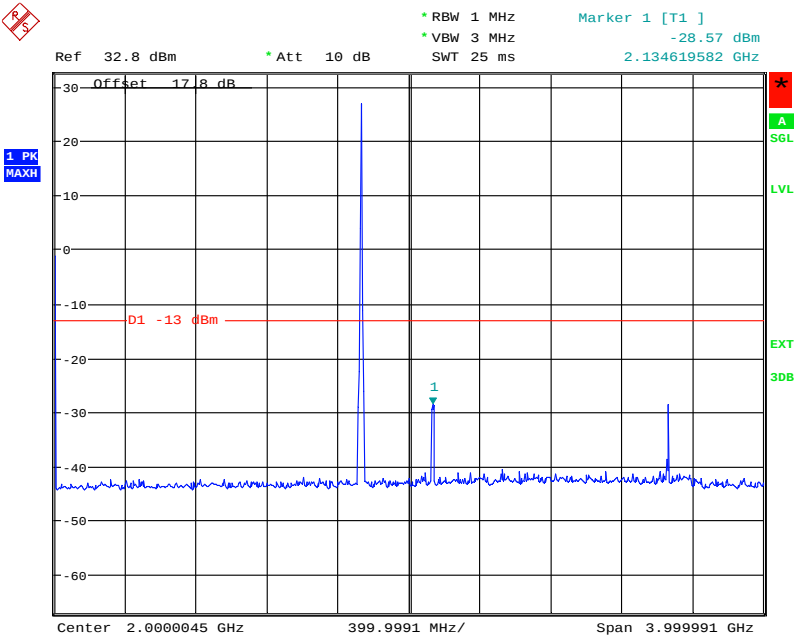
1715 MHz - All Resource Blocks



Date: 1.AUG.2013 14:41:19

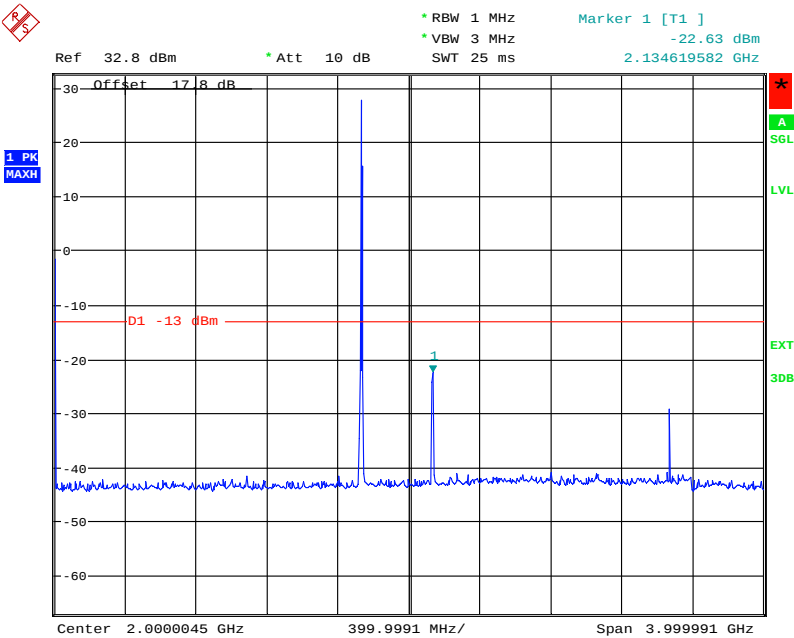


1732.5 MHz - 1 Resource Block - Low



Date: 1.AUG.2013 15:24:38

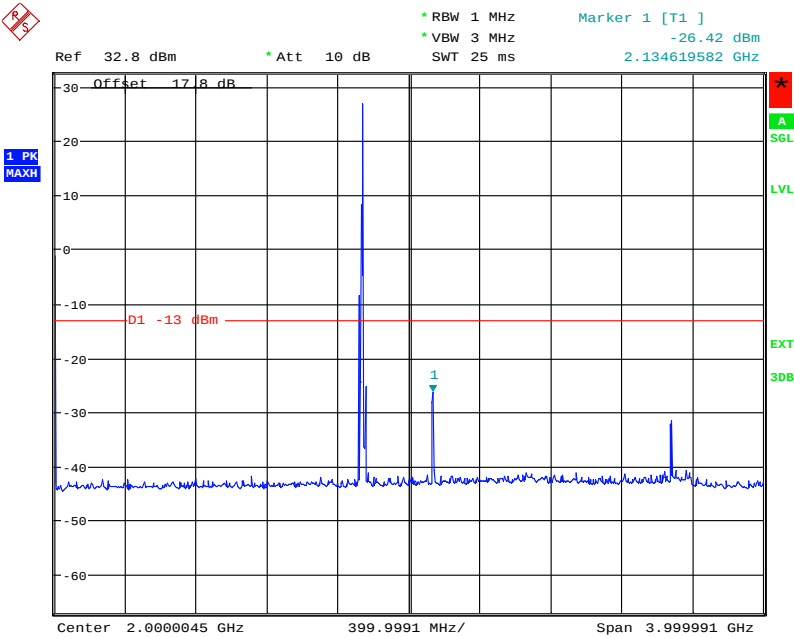
1732.5 MHz - 1 Resource Block - Middle



Date: 1.AUG.2013 15:08:57

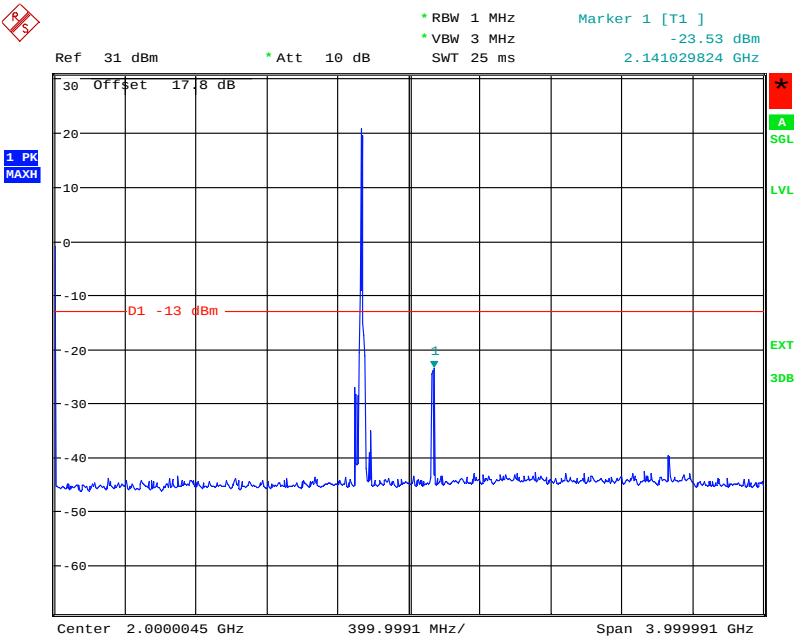


1732.5 MHz - 1 Resource Block - High



Date: 1.AUG.2013 15:15:31

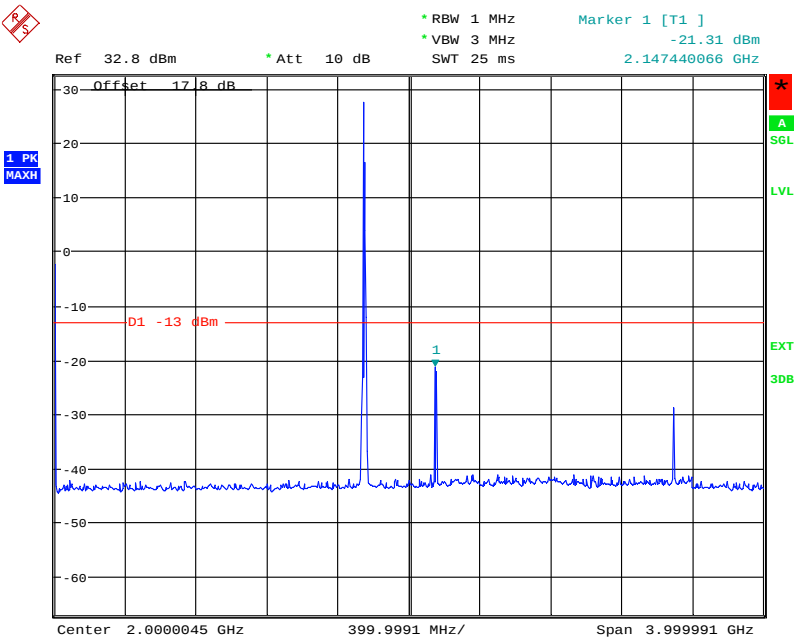
1732.5 MHz - All Resource Blocks



Date: 1.AUG.2013 15:32:26

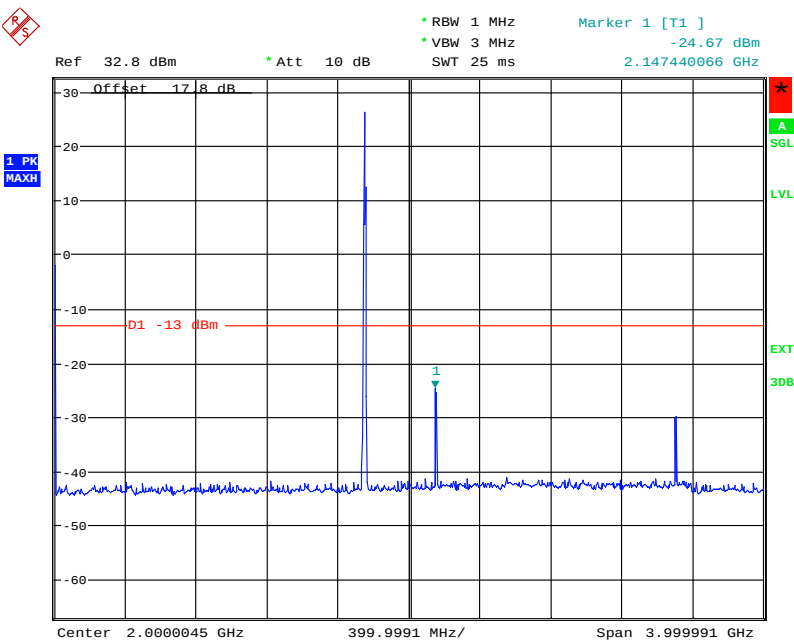


1750 MHz - 1 Resource Block - Low



Date: 1.AUG.2013 16:07:25

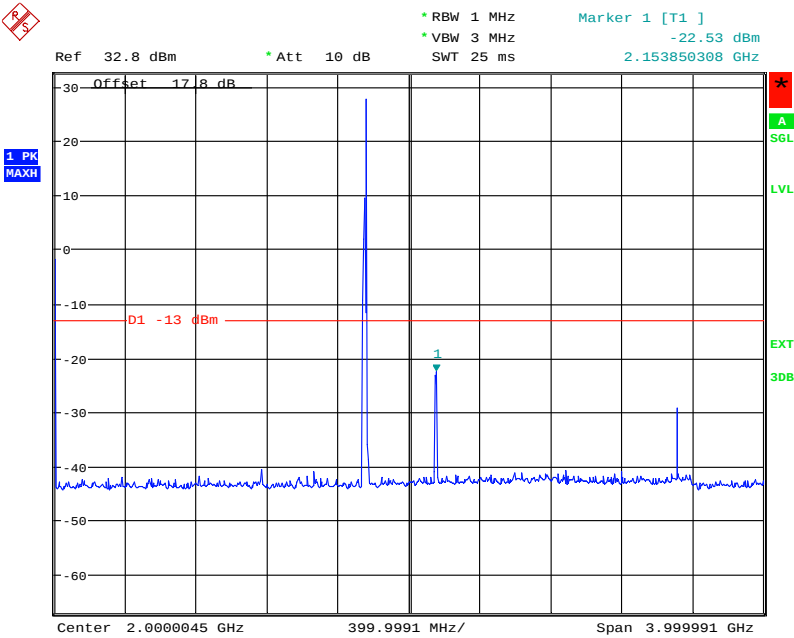
1750 MHz - 1 Resource Block - Middle



Date: 1.AUG.2013 16:01:20

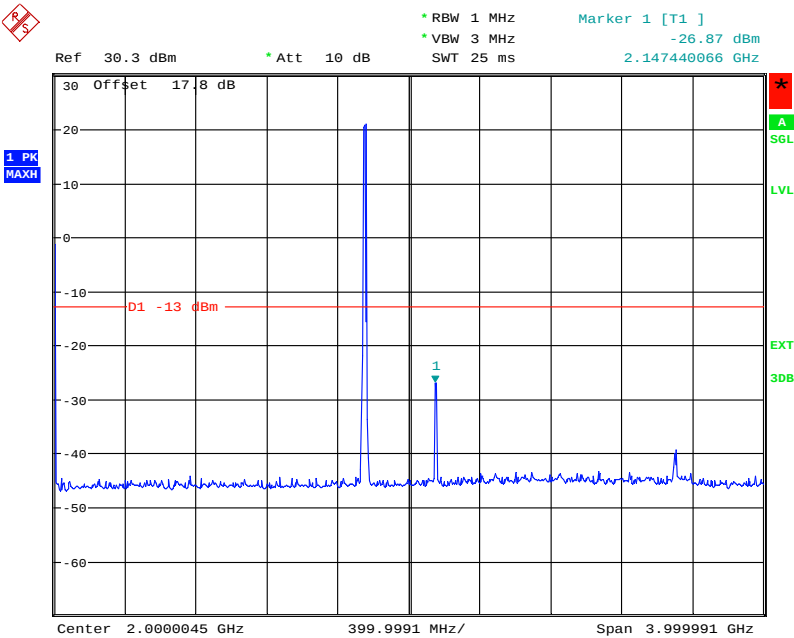


1750 MHz - 1 Resource Block - High



Date: 1.AUG.2013 15:55:44

1750 MHz - All Resource Blocks

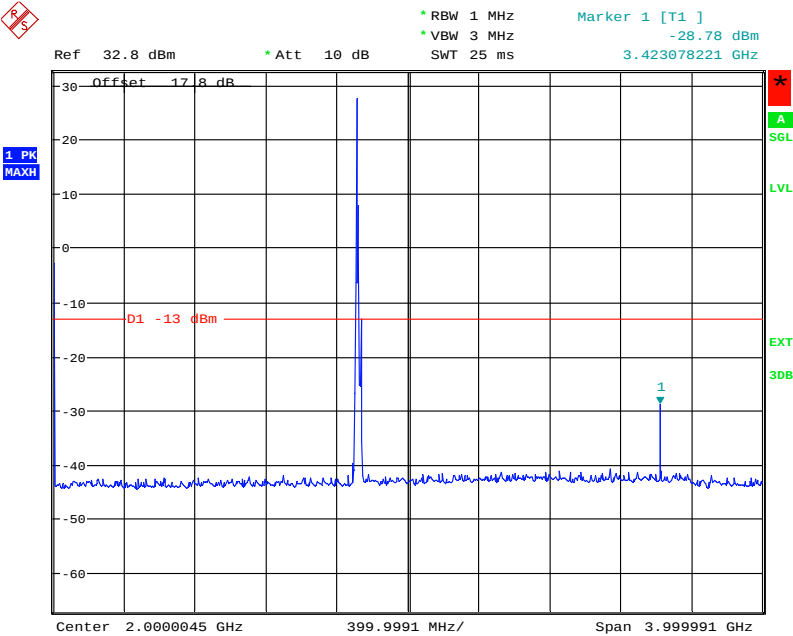


Date: 1.AUG.2013 15:46:18



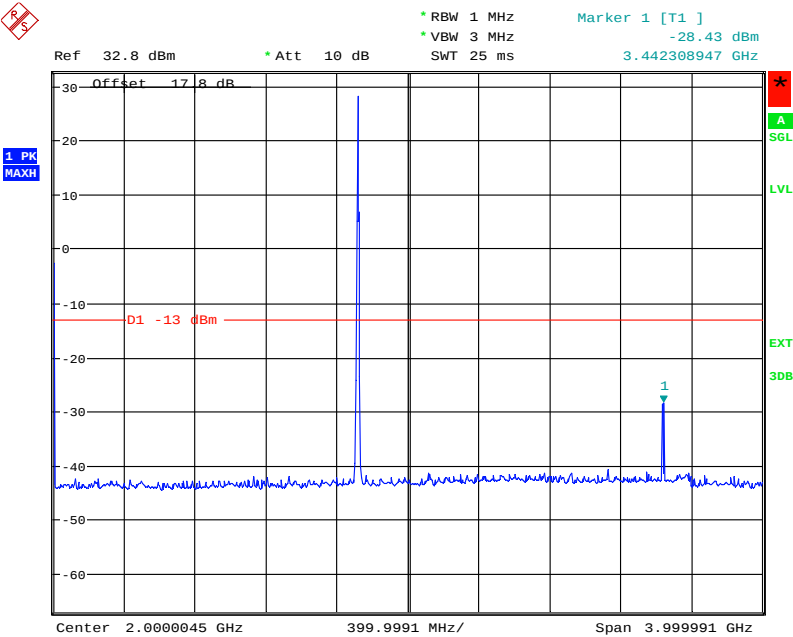
15.0 MHz Bandwidth - QPSK

1717.5 MHz - 1 Resource Block - Low



Date: 31.JUL.2013 11:14:43

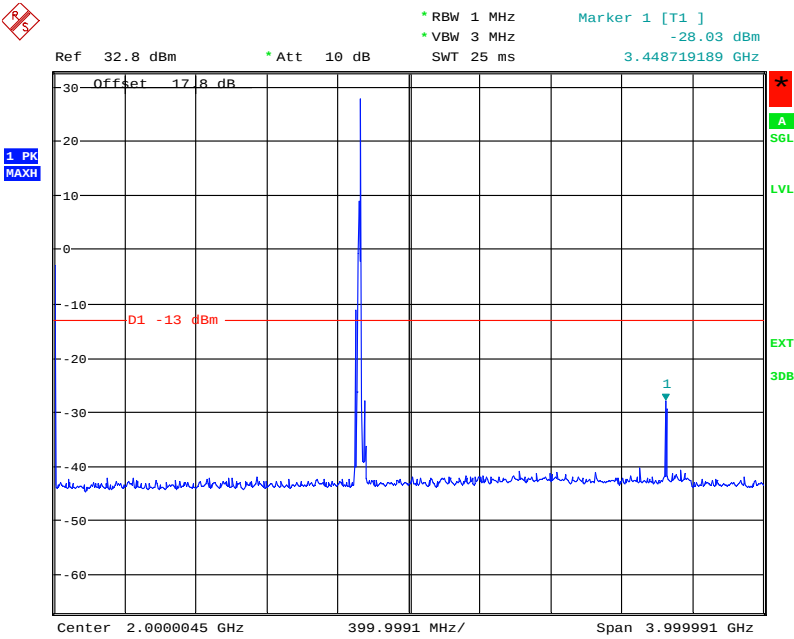
1717.5 MHz - 1 Resource Block - Middle



Date: 31.JUL.2013 11:48:53

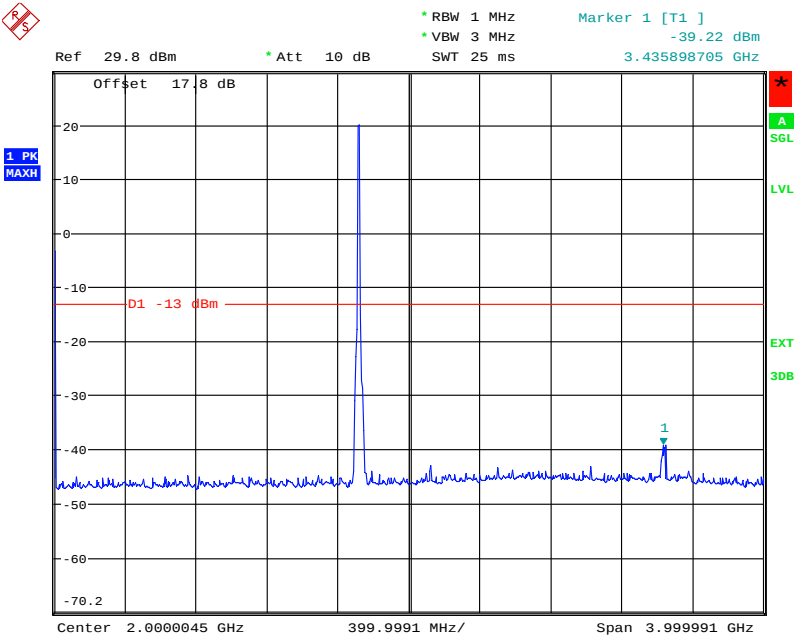


1717.5 MHz - 1 Resource Block - High



Date: 31.JUL.2013 11:43:02

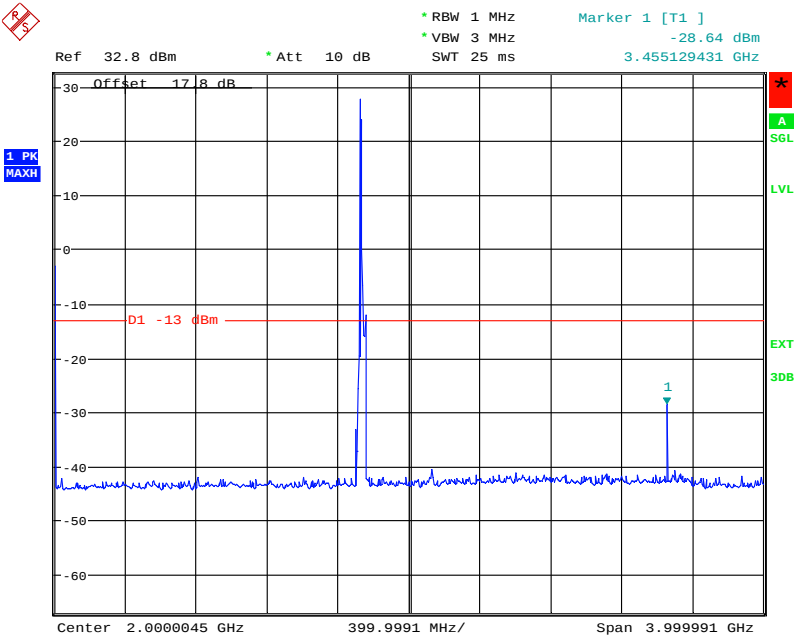
1717.5 MHz - All Resource Blocks



Date: 31.JUL.2013 11:33:56

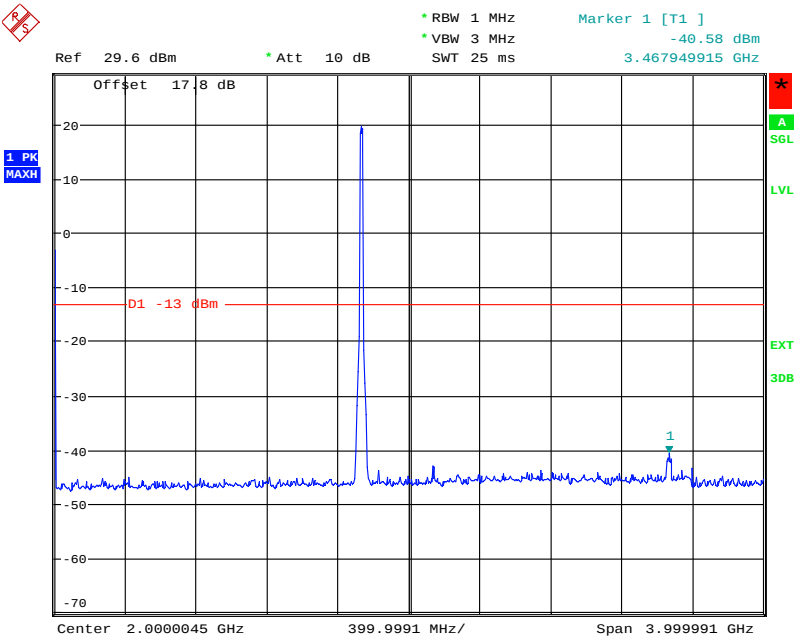


1732.5 MHz - 1 Resource Block - Low



Date: 31.JUL.2013 12:12:02

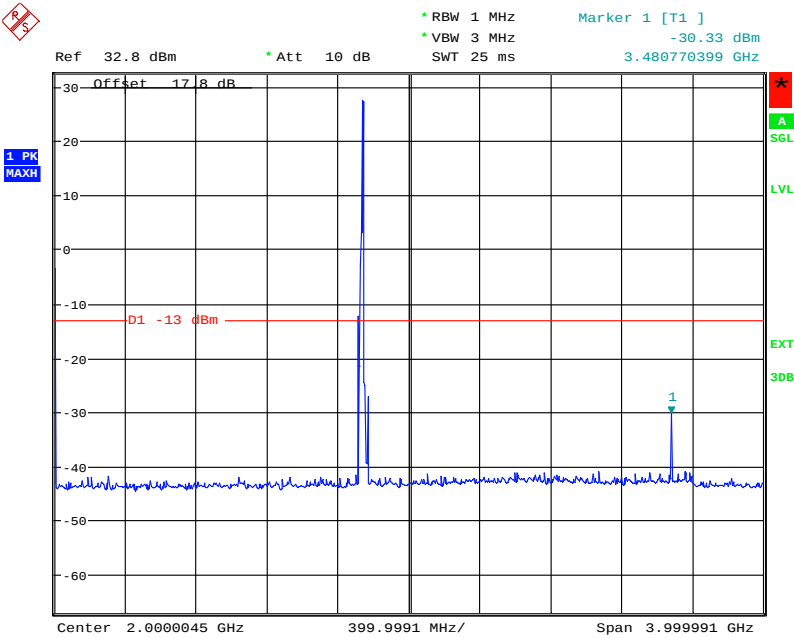
1732.5 MHz - 1 Resource Block - Middle



Date: 31.JUL.2013 11:58:07

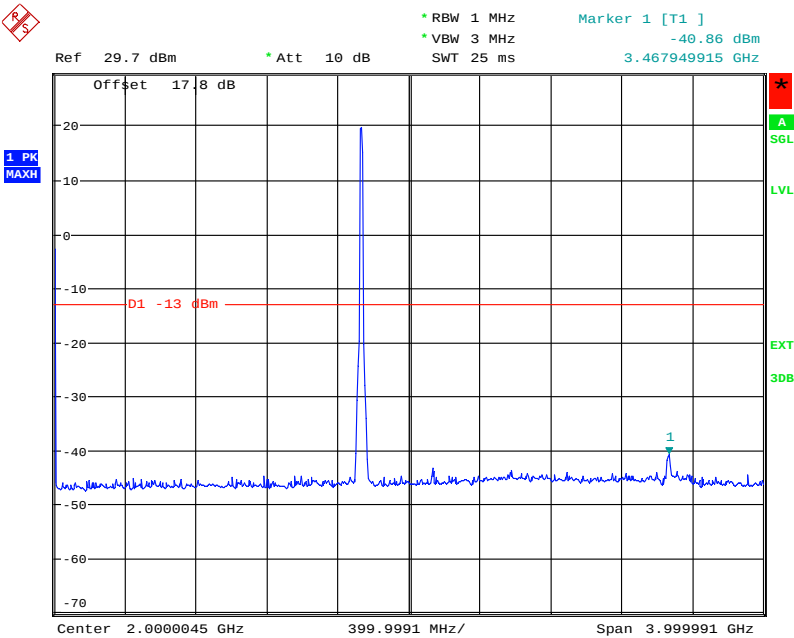


1732.5 MHz - 1 Resource Block - High



Date: 31.JUL.2013 12:05:14

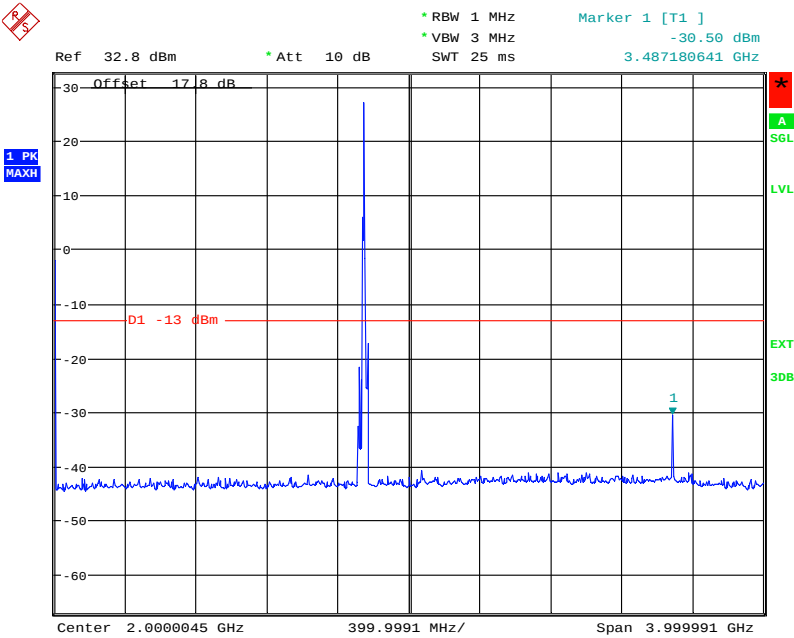
1732.5 MHz - All Resource Blocks



Date: 31.JUL.2013 12:18:16

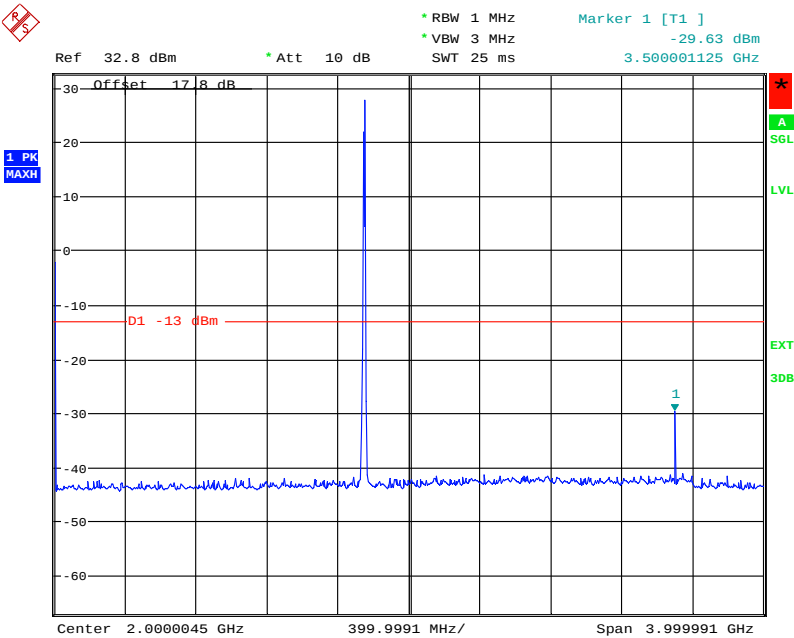


1747.5 MHz - 1 Resource Block - Low



Date: 31.JUL.2013 12:46:51

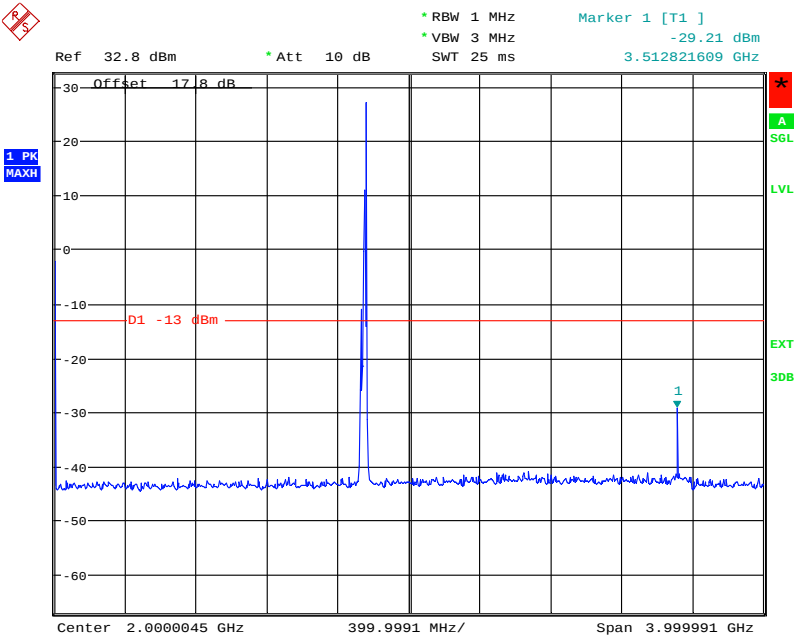
1747.5 MHz - 1 Resource Block - Middle



Date: 31.JUL.2013 12:41:07

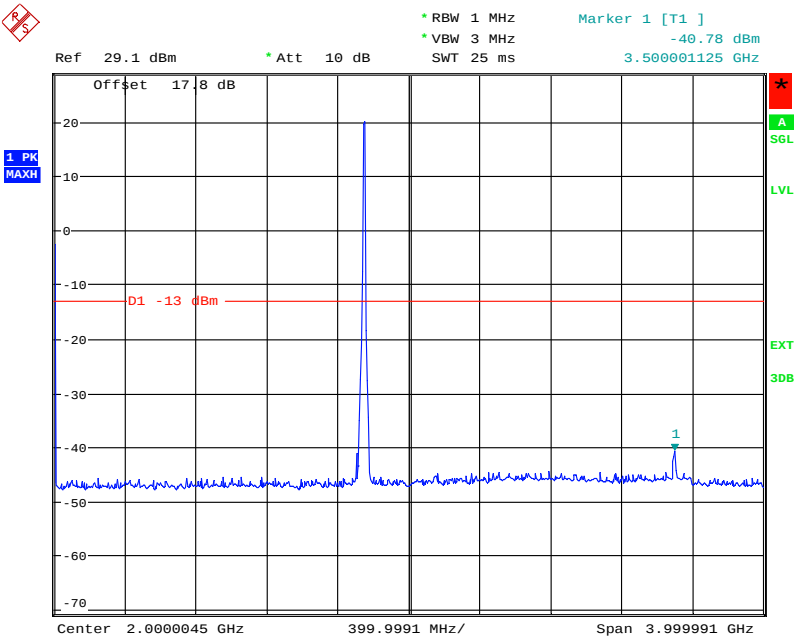


1747.5 MHz - 1 Resource Block - High



Date: 31.JUL.2013 12:34:19

1747.5 MHz - All Resource Blocks

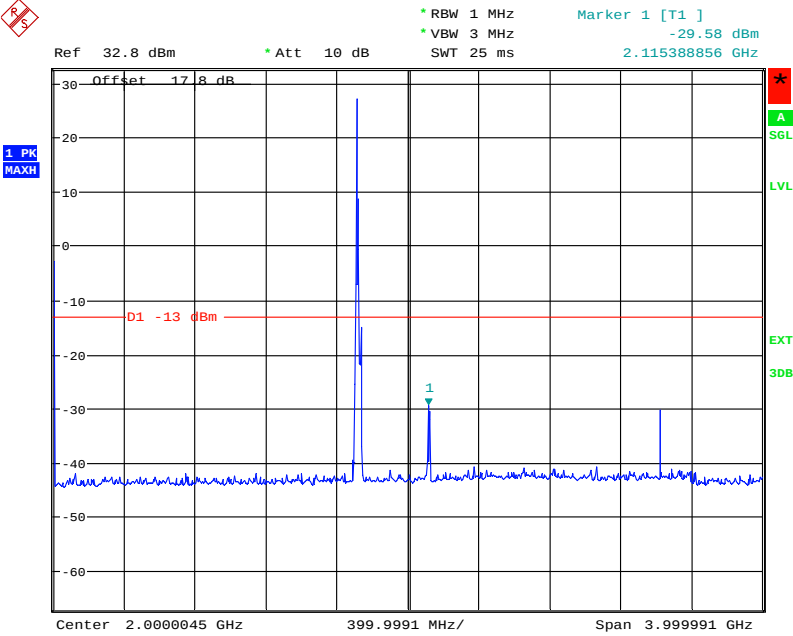


Date: 31.JUL.2013 12:26:43



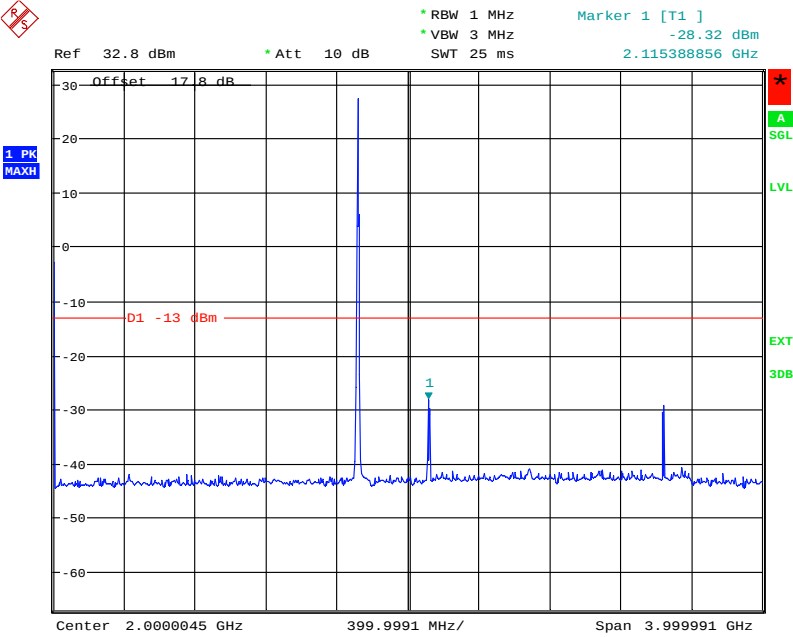
15.0 MHz Bandwidth - 16QAM

1717.5 MHz - 1 Resource Block - Low



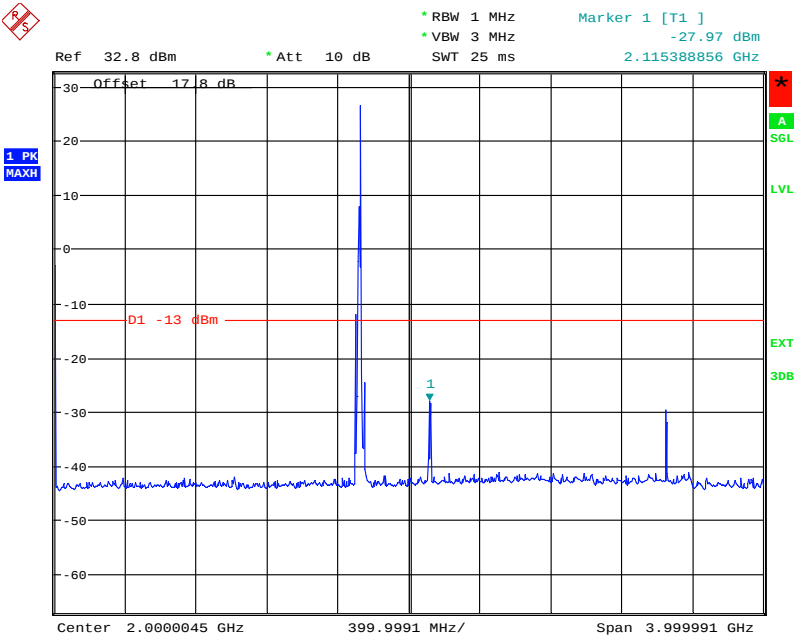
Date: 1.AUG.2013 16:24:32

1717.5 MHz - 1 Resource Block - Middle



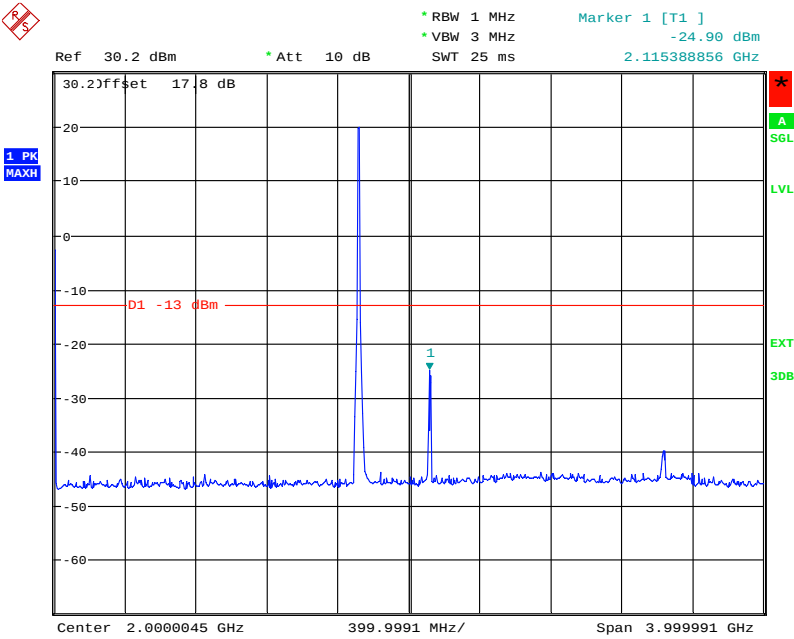
Date: 1.AUG.2013 16:30:10

1717.5 MHz - 1 Resource Block - High



Date: 1.AUG.2013 16:35:55

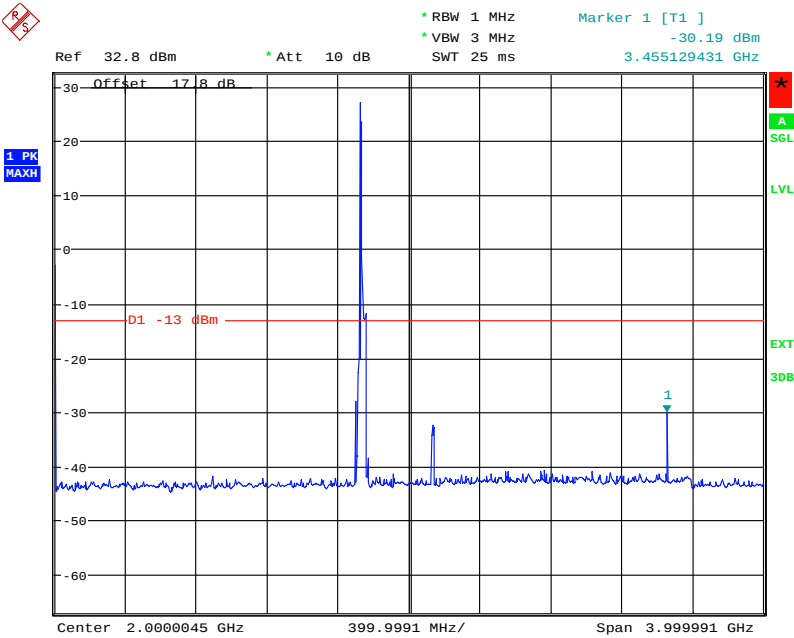
1717.5 MHz - All Resource Blocks



Date: 1.AUG.2013 16:16:44

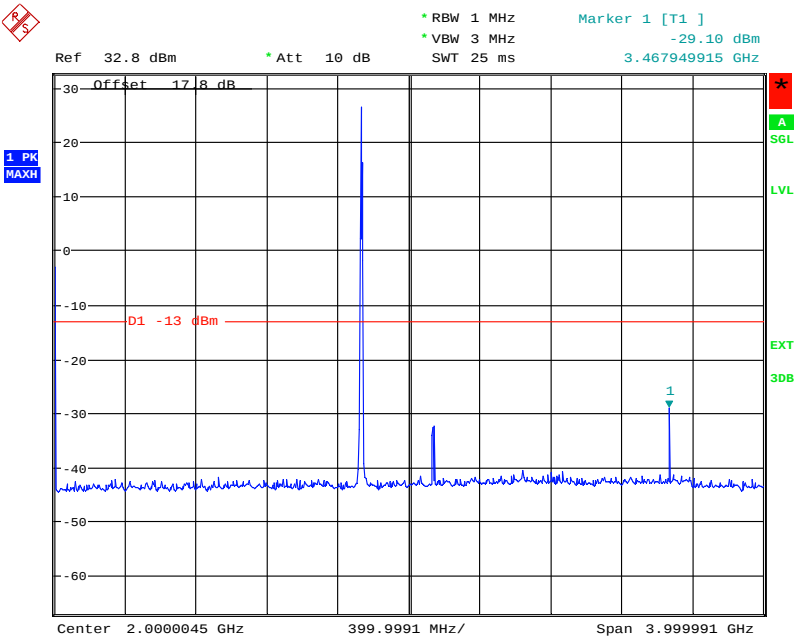


1732.5 MHz - 1 Resource Block - Low



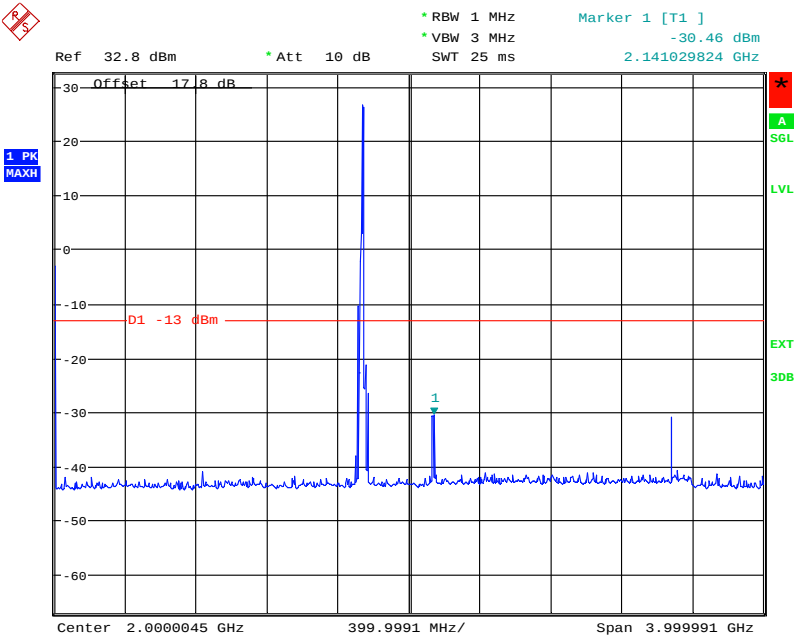
Date: 2.AUG.2013 08:48:49

1732.5 MHz - 1 Resource Block - Middle



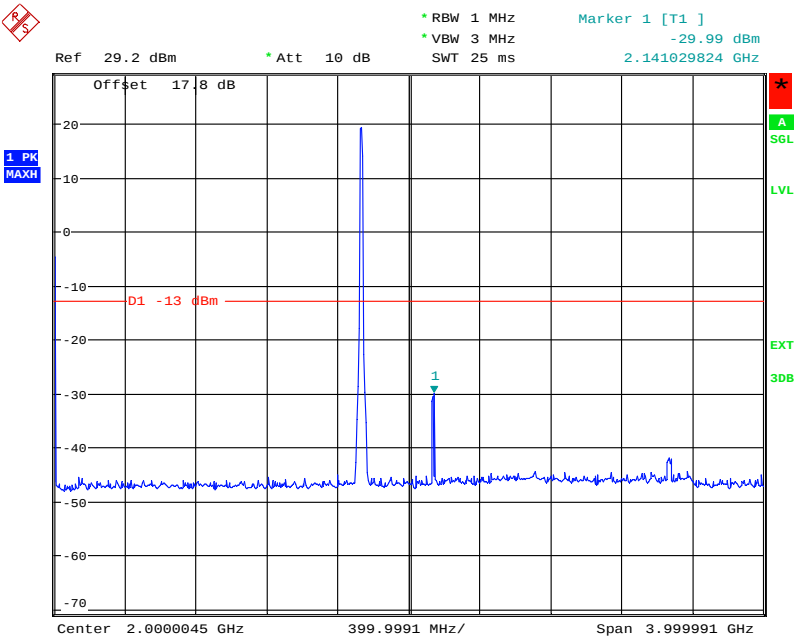
Date: 2.AUG.2013 08:42:29

1732.5 MHz - 1 Resource Block - High



Date: 2.AUG.2013 08:36:40

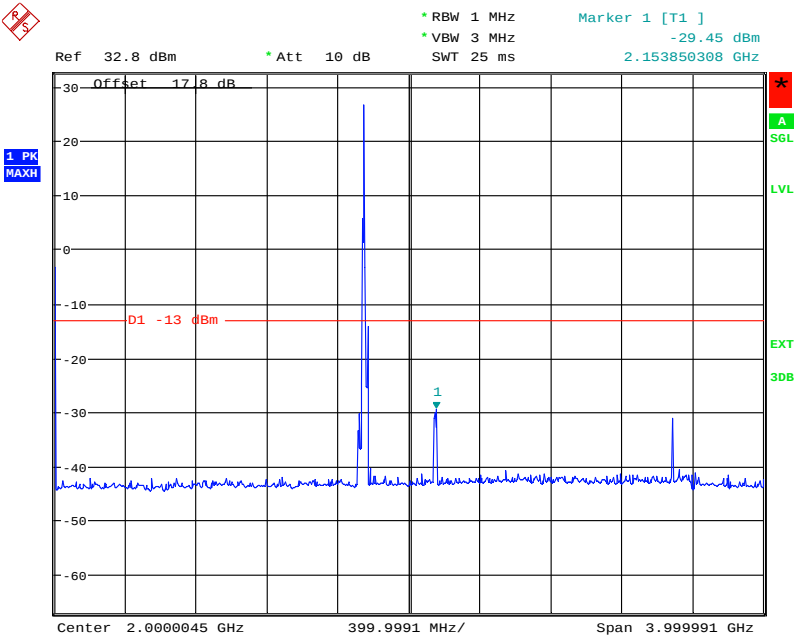
1732.5 MHz - All Resource Blocks



Date: 2.AUG.2013 08:18:12

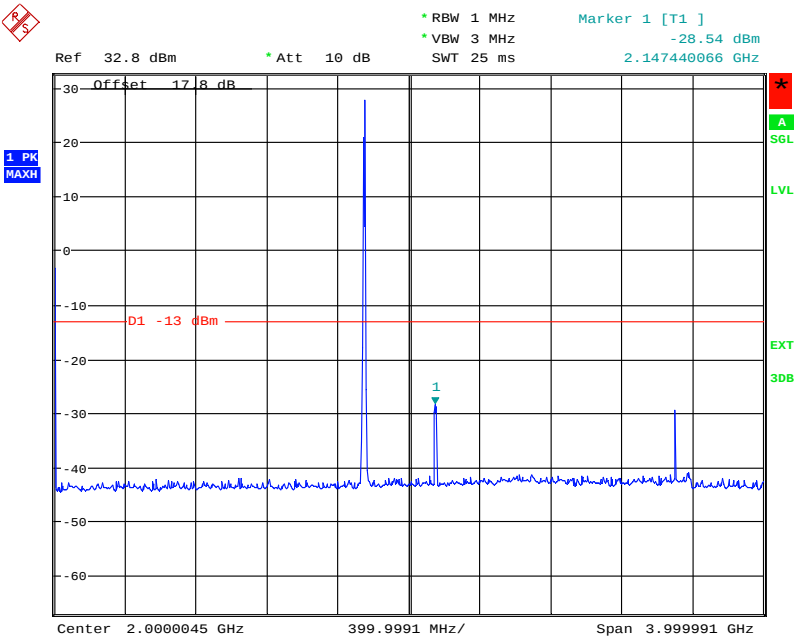


1747.5 MHz - 1 Resource Block - Low



Date: 2.AUG.2013 09:28:51

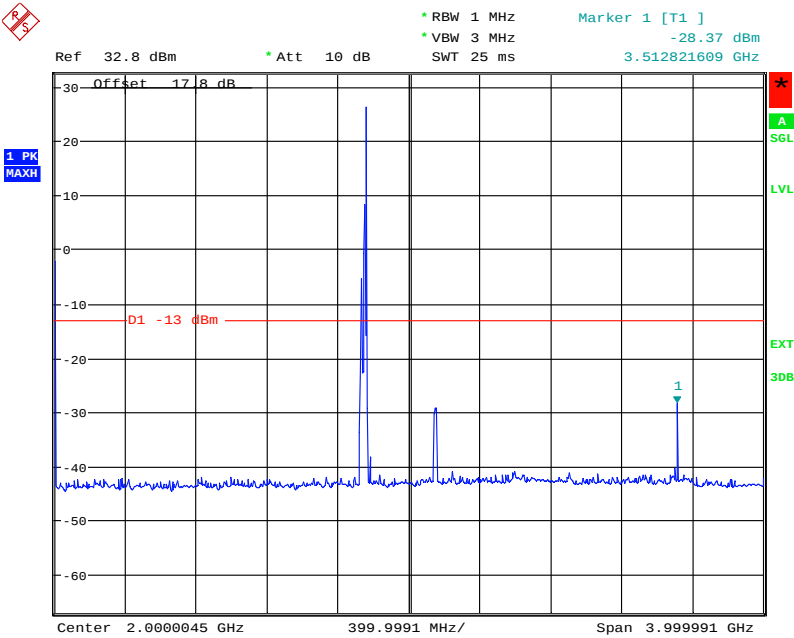
1747.5 MHz - 1 Resource Block - Middle



Date: 2.AUG.2013 09:17:56

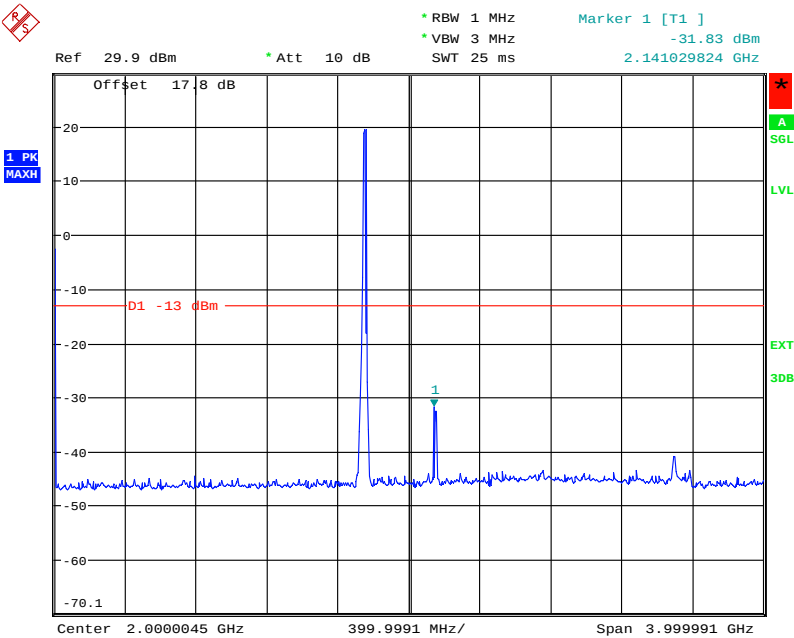


1747.5 MHz - 1 Resource Block - High



Date: 2.AUG.2013 09:05:20

1747.5 MHz - All Resource Blocks

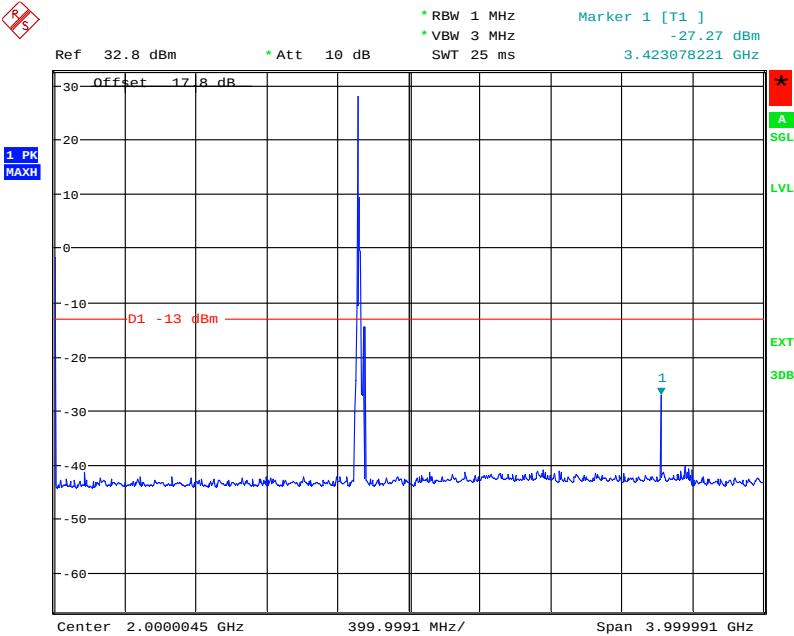


Date: 2.AUG.2013 08:57:15



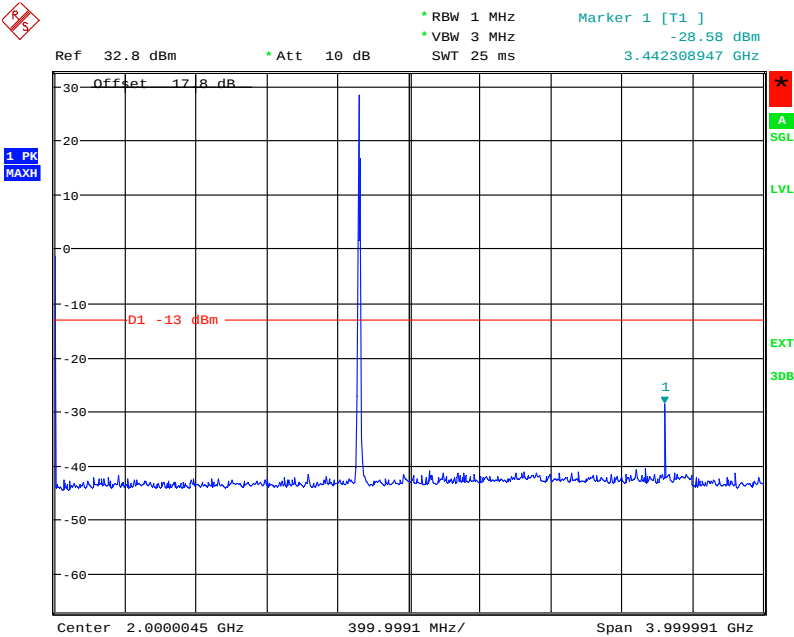
20.0 MHz Bandwidth - QPSK

1720 MHz - 1 Resource Block - Low



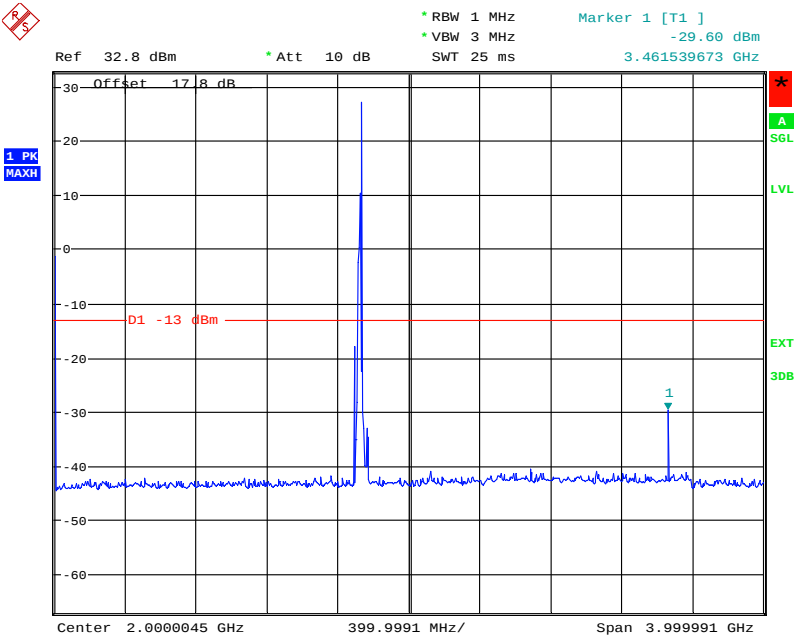
Date: 31.JUL.2013 14:55:22

1720 MHz - 1 Resource Block - Middle



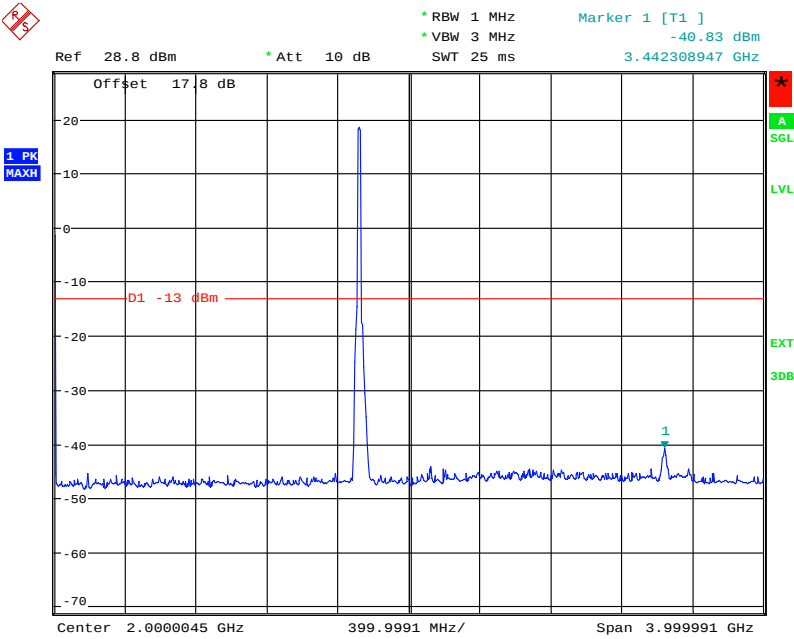
Date: 31.JUL.2013 15:17:39

1720 MHz - 1 Resource Block - High



Date: 31.JUL.2013 15:09:44

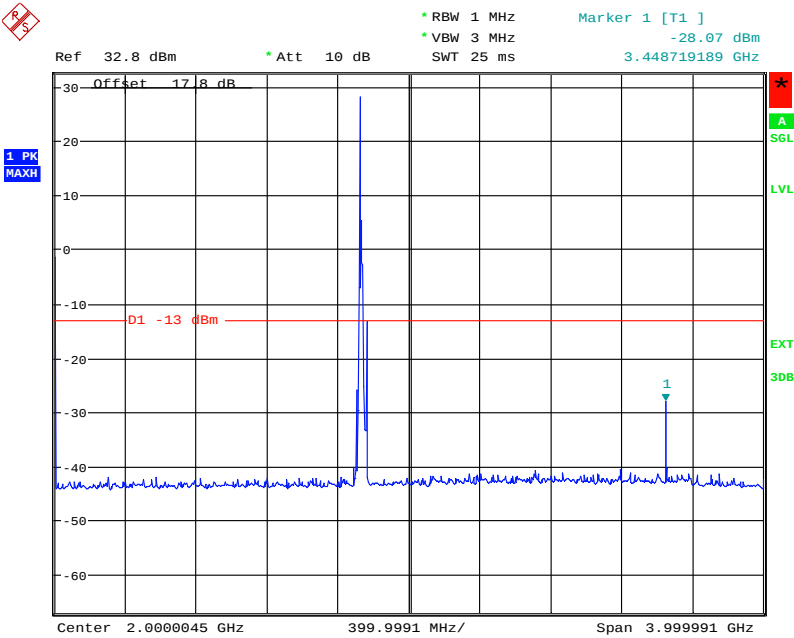
1720 MHz - All Resource Blocks



Date: 31.JUL.2013 15:03:54

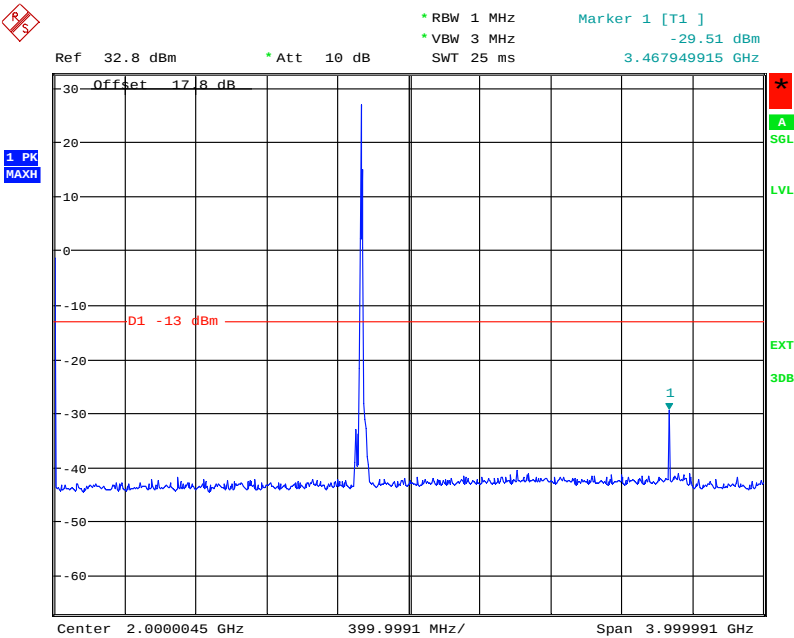


1732.5 MHz - 1 Resource Block - Low



Date: 31.JUL.2013 15:30:53

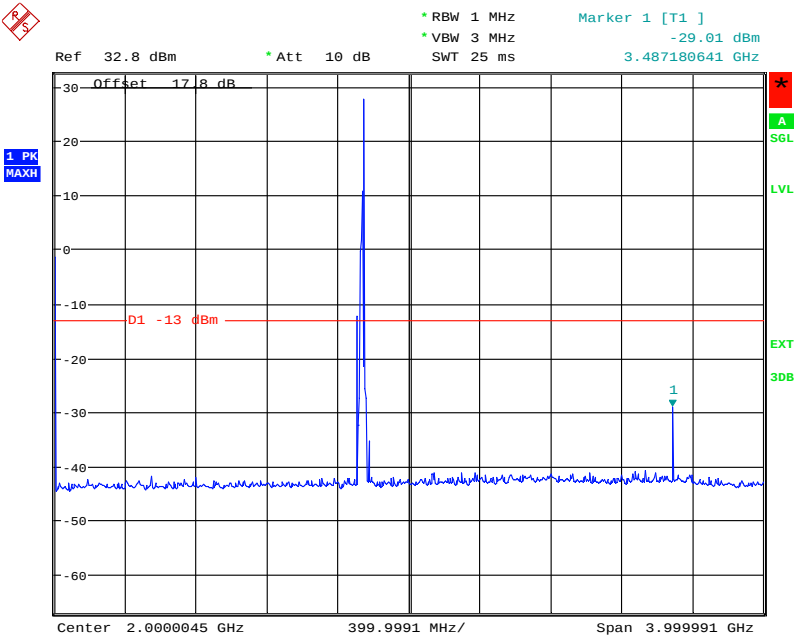
1732.5 MHz - 1 Resource Block - Middle



Date: 31.JUL.2013 15:24:13

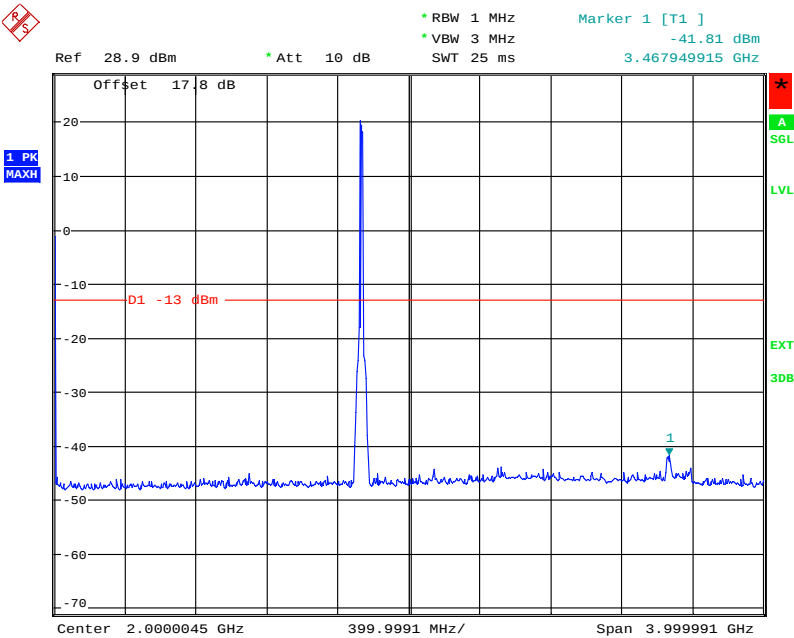


1732.5 MHz - 1 Resource Block - High



Date: 31.JUL.2013 15:36:54

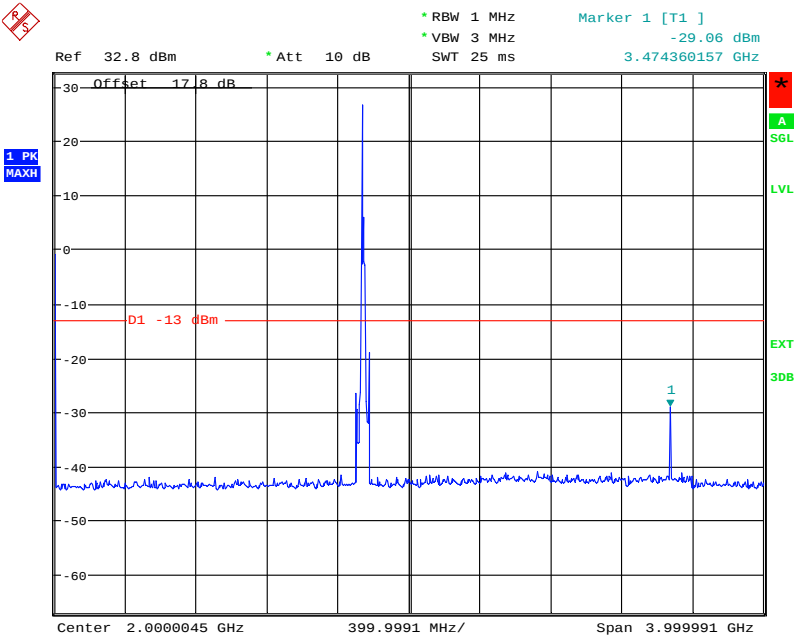
1732.5 MHz - All Resource Blocks



Date: 31.JUL.2013 15:43:59

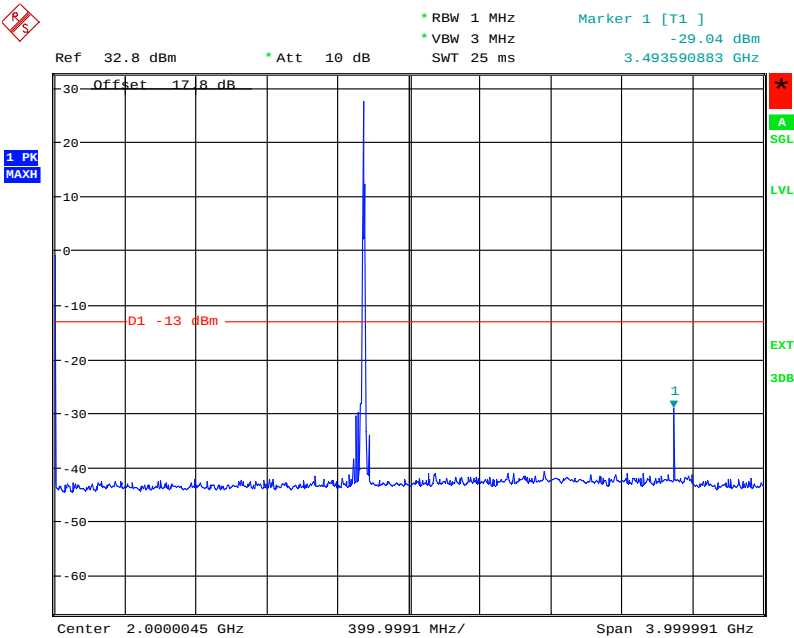


1745 MHz - 1 Resource Block - Low



Date: 31.JUL.2013 16:22:30

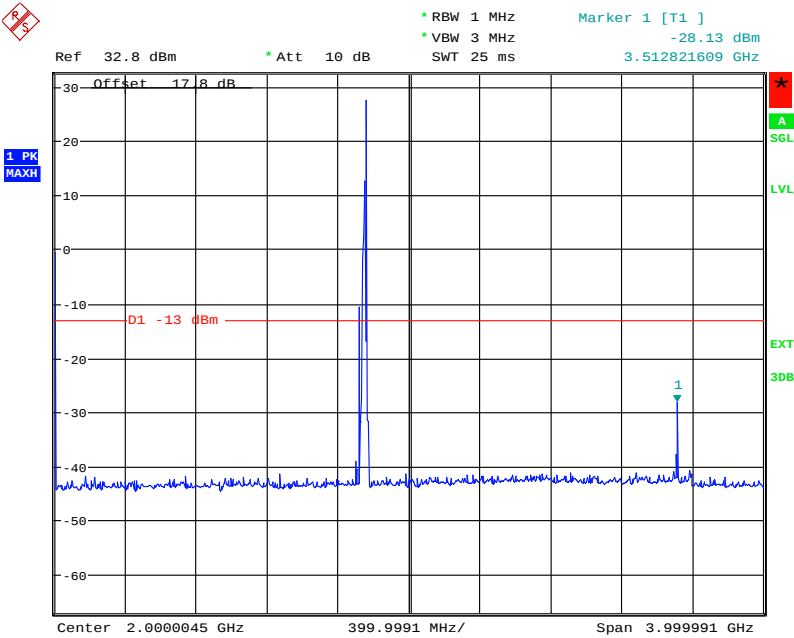
1745 MHz - 1 Resource Block - Middle



Date: 31.JUL.2013 16:16:27

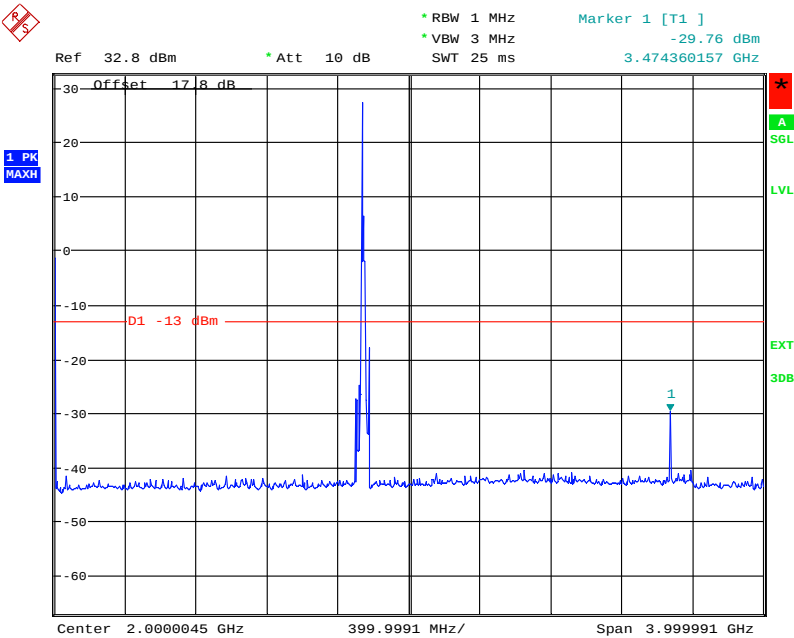


1745 MHz - 1 Resource Block - High



Date: 31.JUL.2013 16:10:20

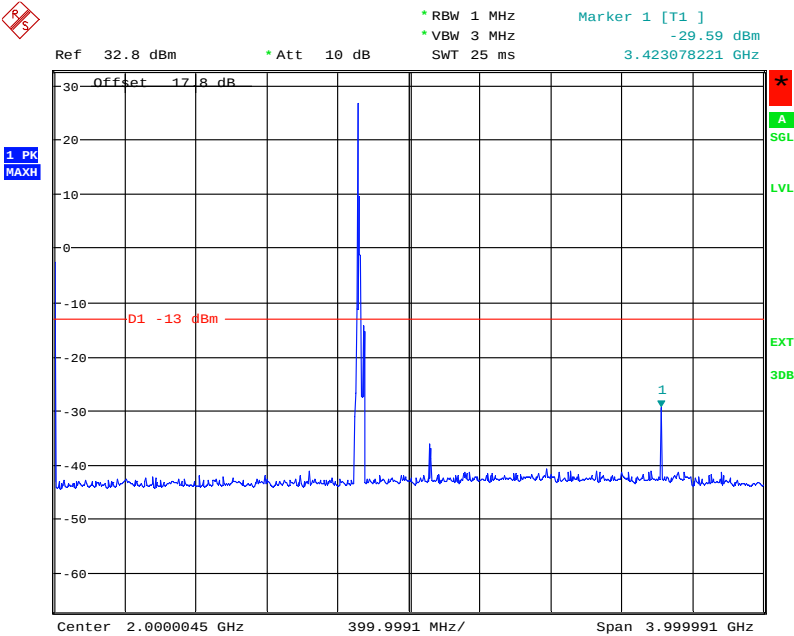
1745 MHz - All Resource Blocks



Date: 31.JUL.2013 15:51:08

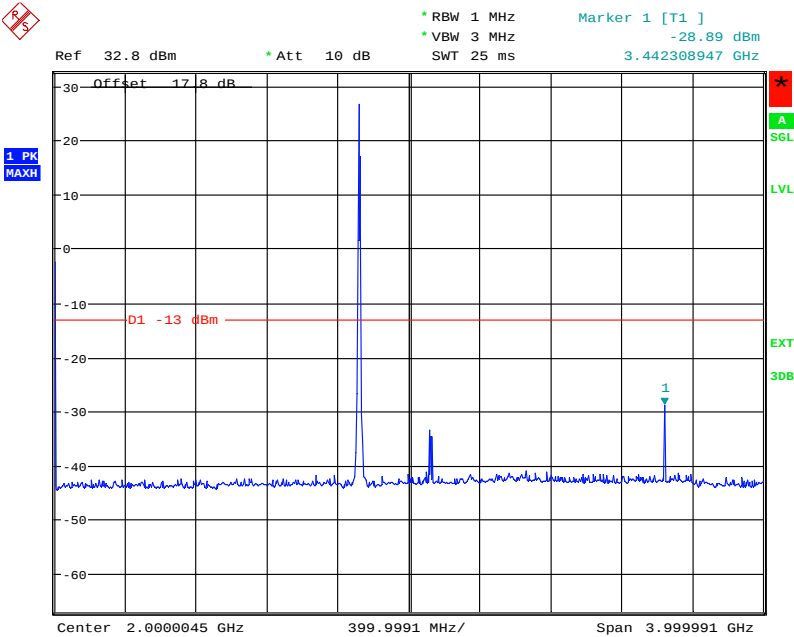
20.0 MHz Bandwidth - 16QAM

1720 MHz - 1 Resource Block - Low



Date: 2.AUG.2013 09:37:58

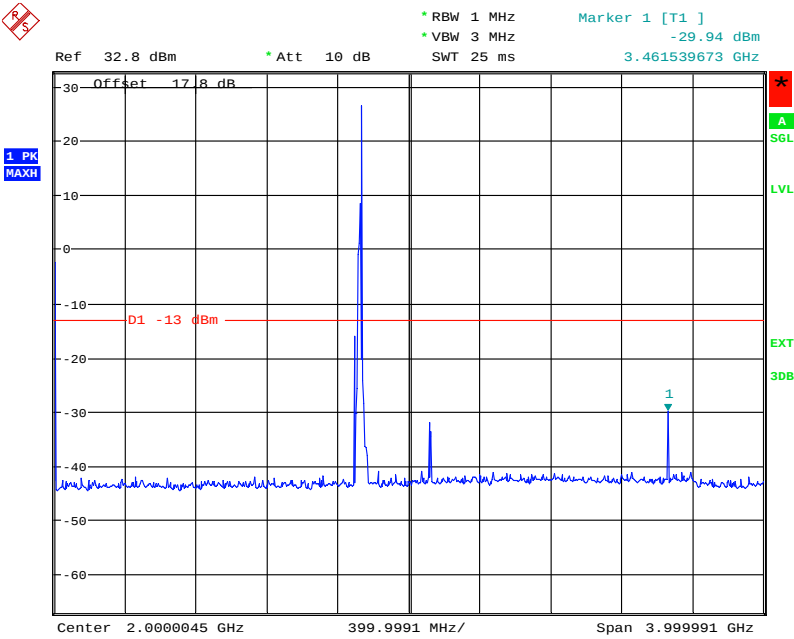
1720 MHz - 1 Resource Block - Middle



Date: 2.AUG.2013 10:15:21

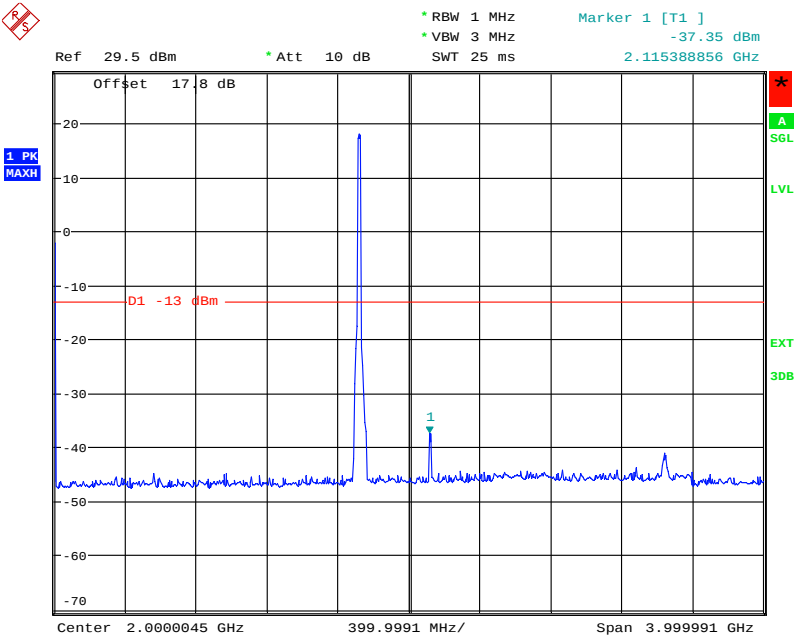


1720 MHz - 1 Resource Block - High



Date: 2.AUG.2013 10:04:55

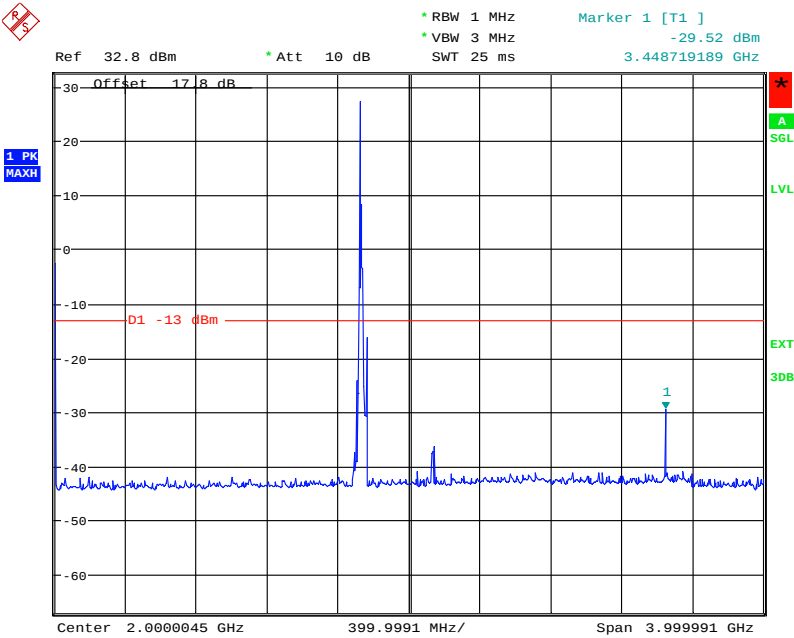
1720 MHz - All Resource Blocks



Date: 2.AUG.2013 09:54:51

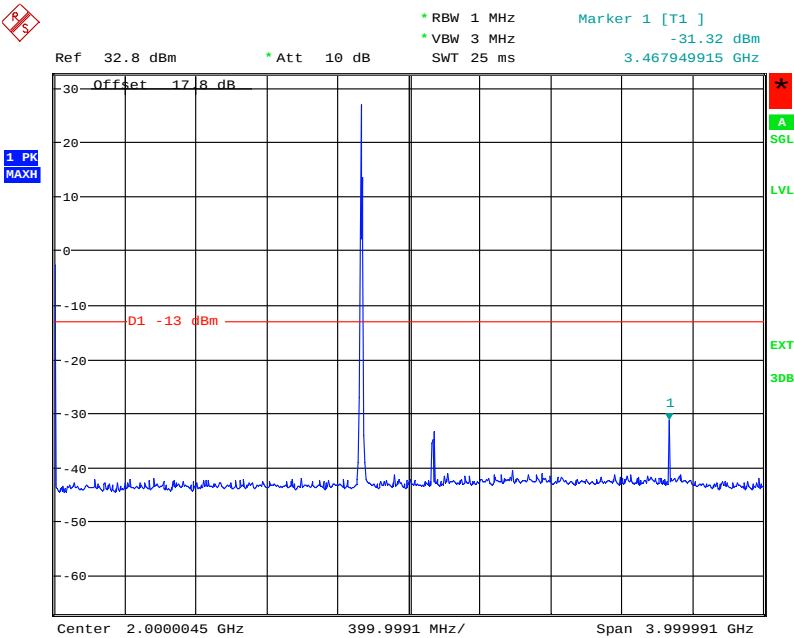


1732.5 MHz - 1 Resource Block - Low



Date: 2.AUG.2013 10:48:49

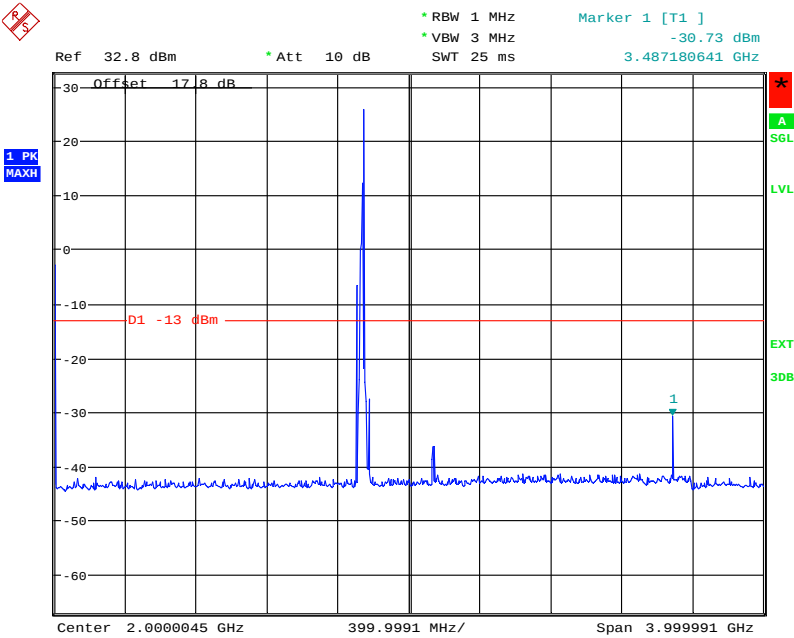
1732.5 MHz - 1 Resource Block - Middle



Date: 2.AUG.2013 10:33:16

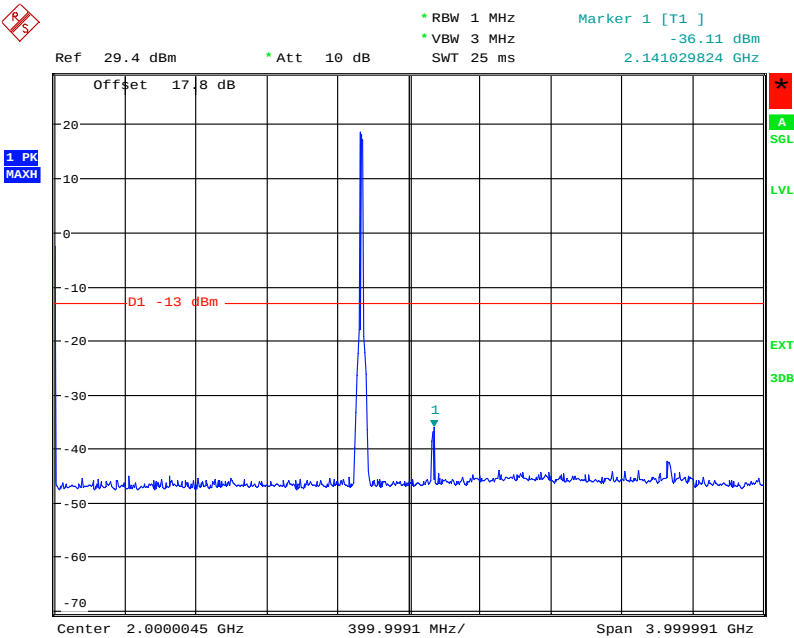


1732.5 MHz - 1 Resource Block - High



Date: 2.AUG.2013 10:42:32

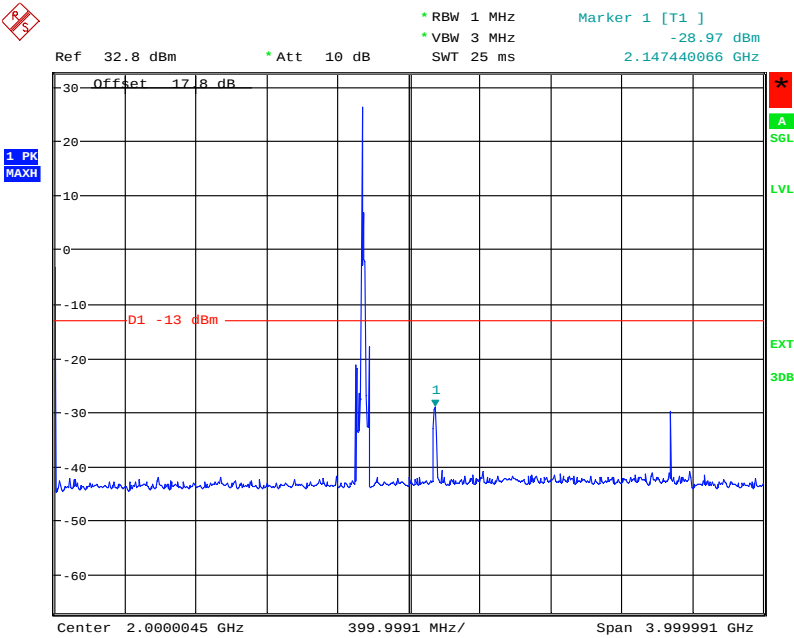
1732.5 MHz - All Resource Blocks



Date: 2.AUG.2013 10:56:02

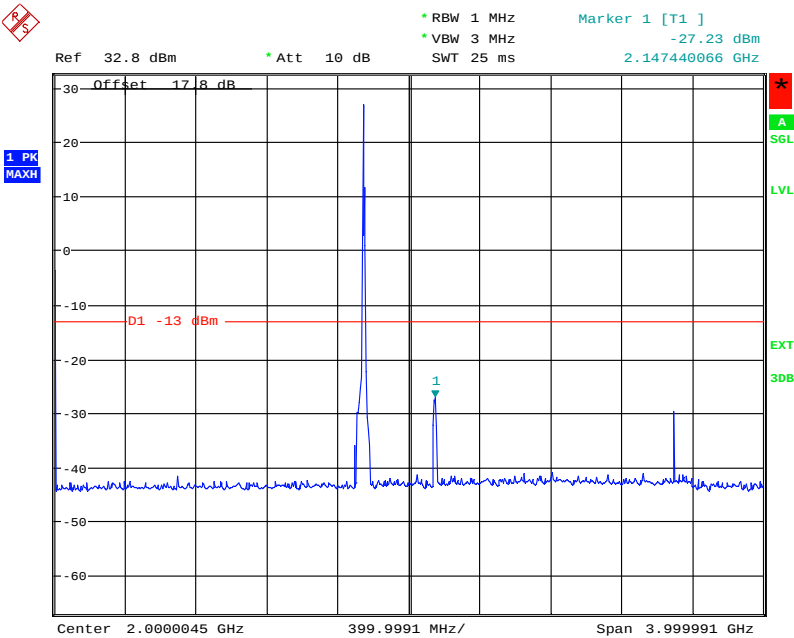


1745 MHz - 1 Resource Block - Low



Date: 2.AUG.2013 11:40:06

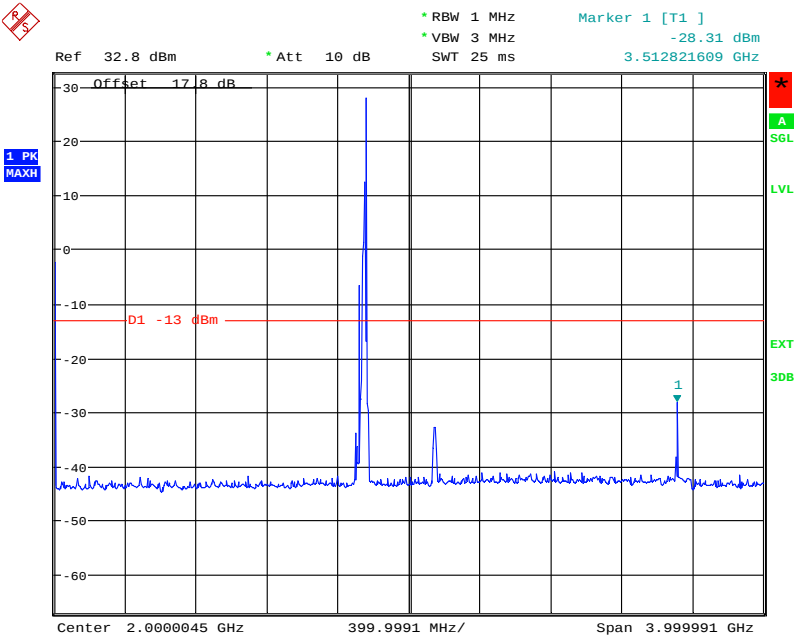
1745 MHz - 1 Resource Block - Middle



Date: 2.AUG.2013 11:33:51

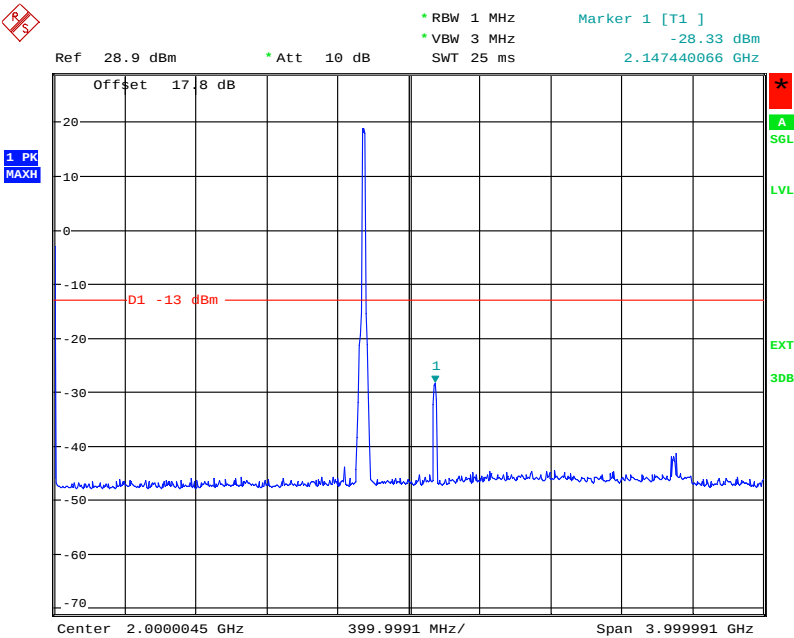


1745 MHz - 1 Resource Block - High



Date: 2.AUG.2013 11:20:50

1745 MHz - All Resource Blocks



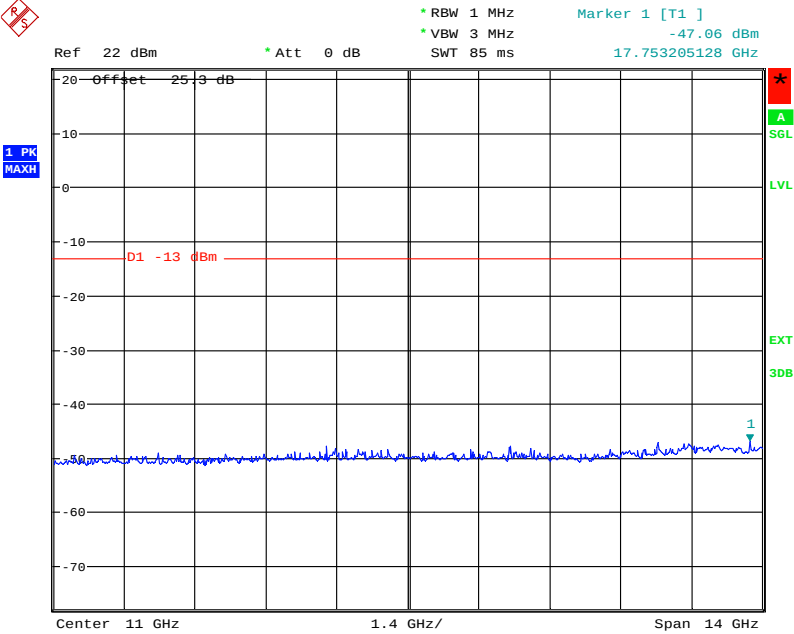
Date: 2.AUG.2013 11:13:27



Conducted Spurious Emissions (Band 2)

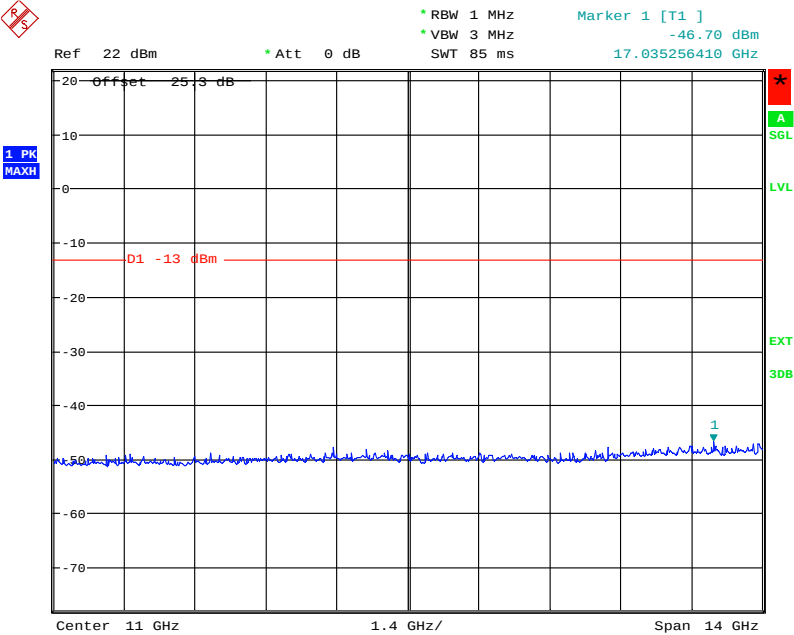
1.4 MHz Bandwidth - QPSK

1710.7 MHz - 1 Resource Block - Low



Date: 30.JUL.2013 10:05:12

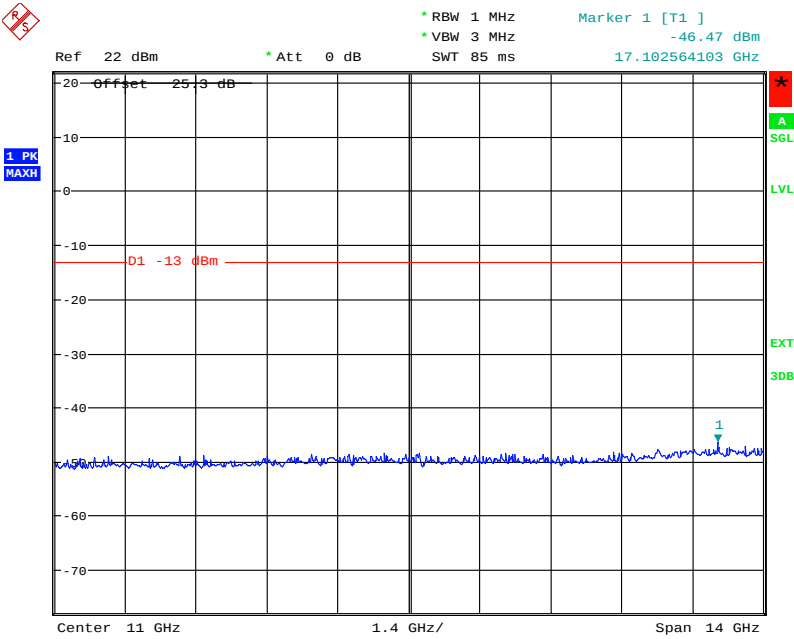
1710.7 MHz - 1 Resource Block - Middle



Date: 30.JUL.2013 10:25:02

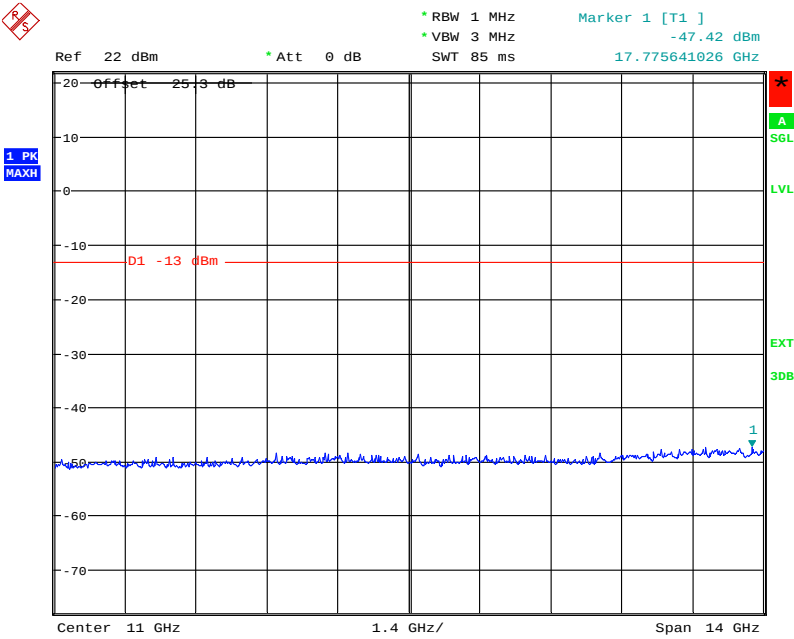


1710.7 MHz - 1 Resource Block - High



Date: 30.JUL.2013 10:36:41

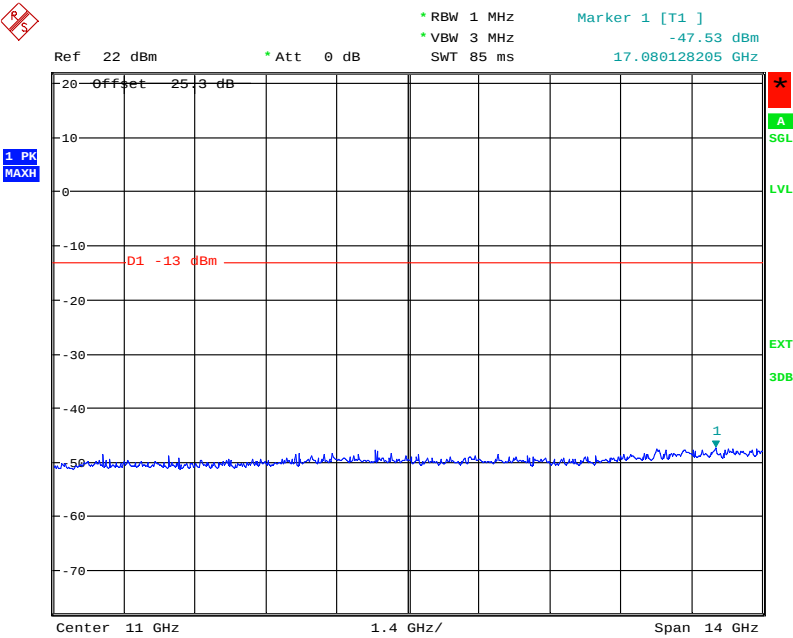
1710.7 MHz - All Resource Blocks



Date: 30.JUL.2013 10:46:08

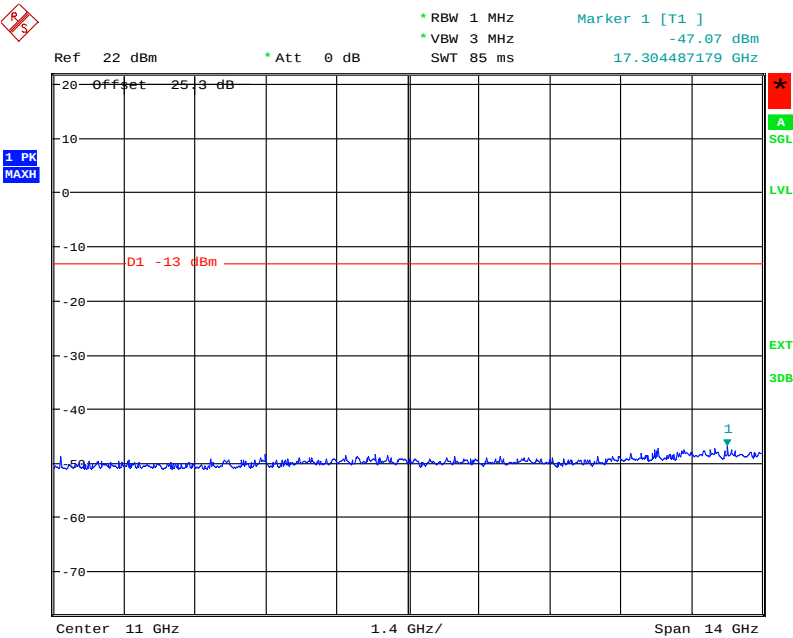


1732.5 MHz - 1 Resource Block - Low



Date: 30.JUL.2013 11:34:29

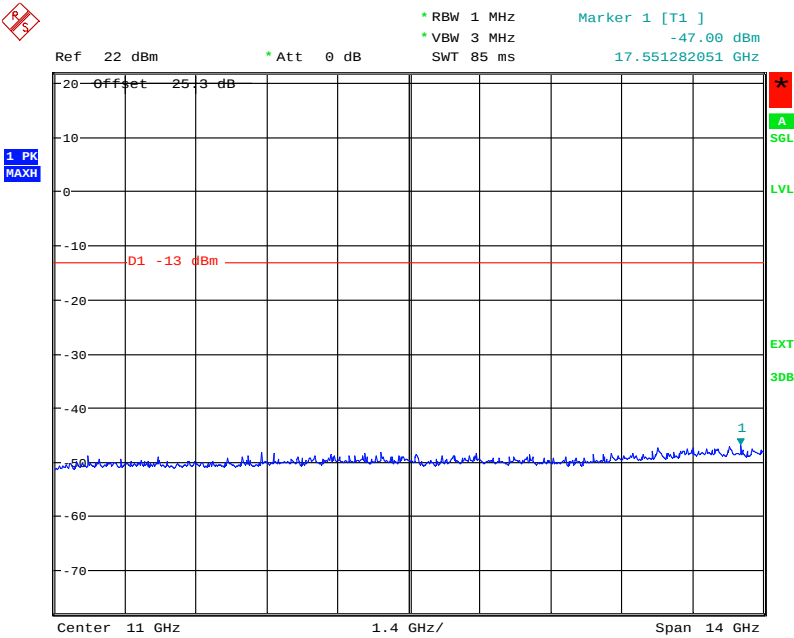
1732.5 MHz - 1 Resource Block - Middle



Date: 30.JUL.2013 11:27:31

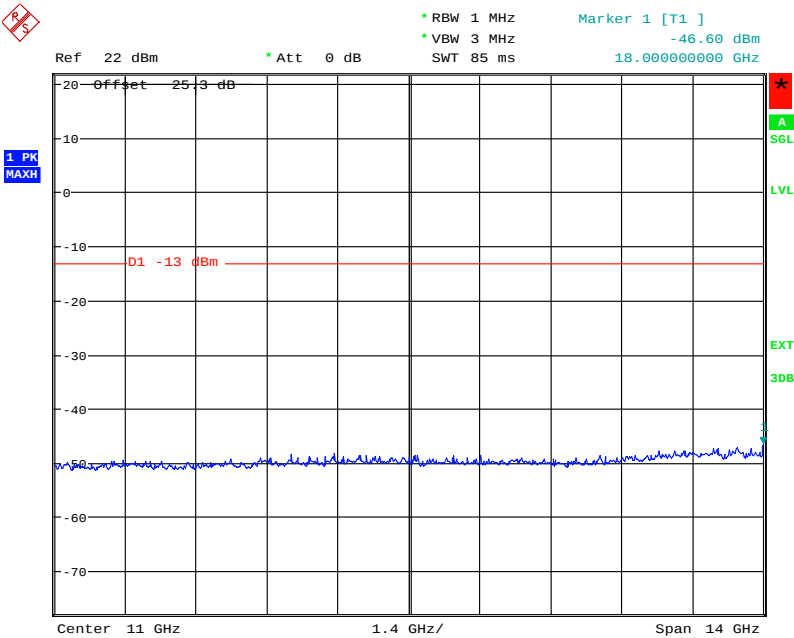


1732.5 MHz - 1 Resource Block - High



Date: 30.JUL.2013 11:20:40

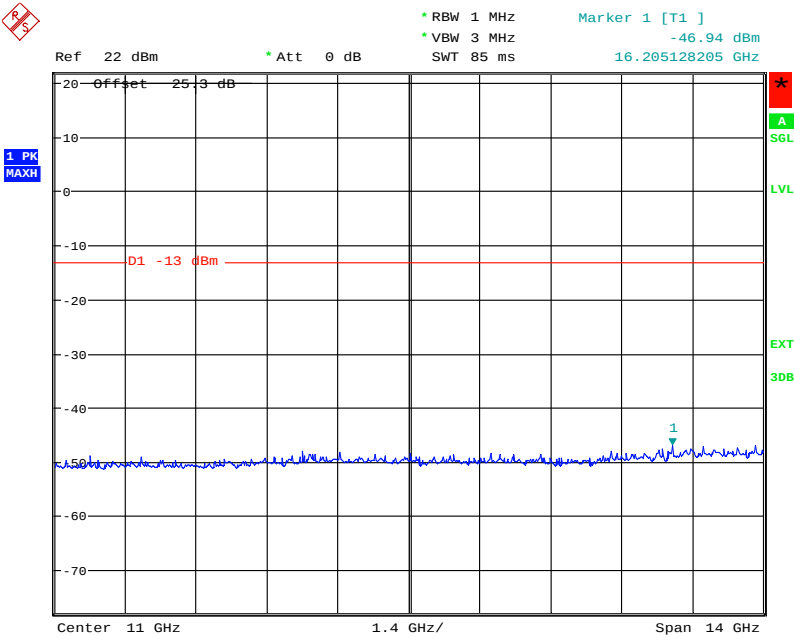
1732.5 MHz - All Resource Blocks



Date: 30.JUL.2013 11:12:50

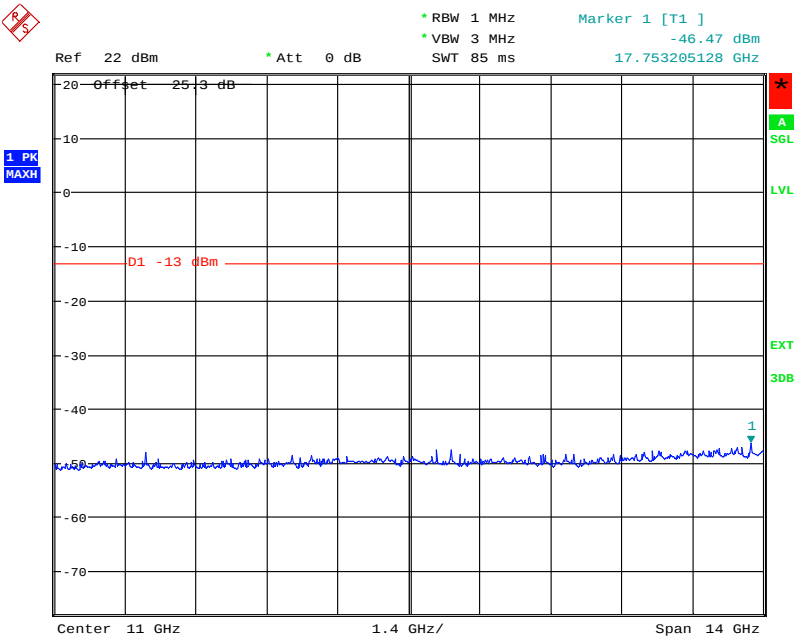


1754.3 MHz - 1 Resource Block - Low



Date: 30.JUL.2013 11:42:04

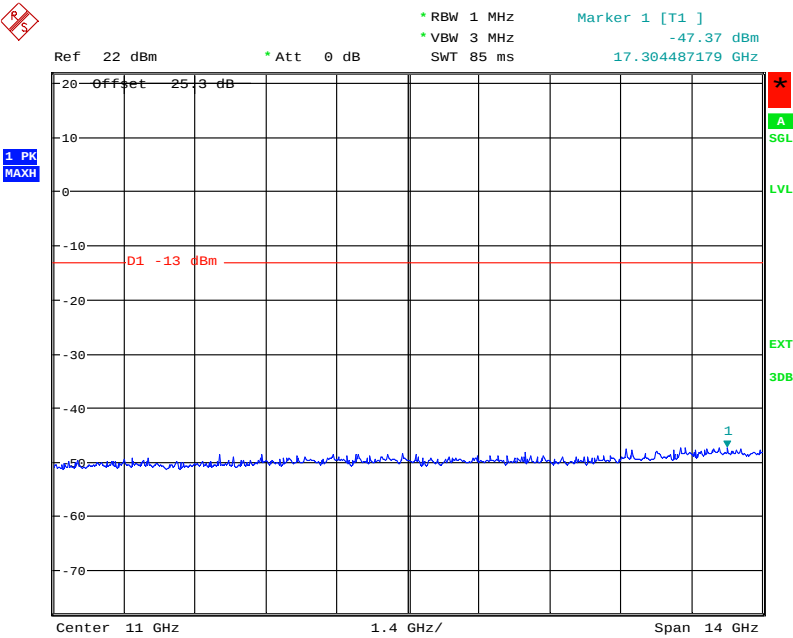
1754.3 MHz - 1 Resource Block - Middle



Date: 30.JUL.2013 11:49:06

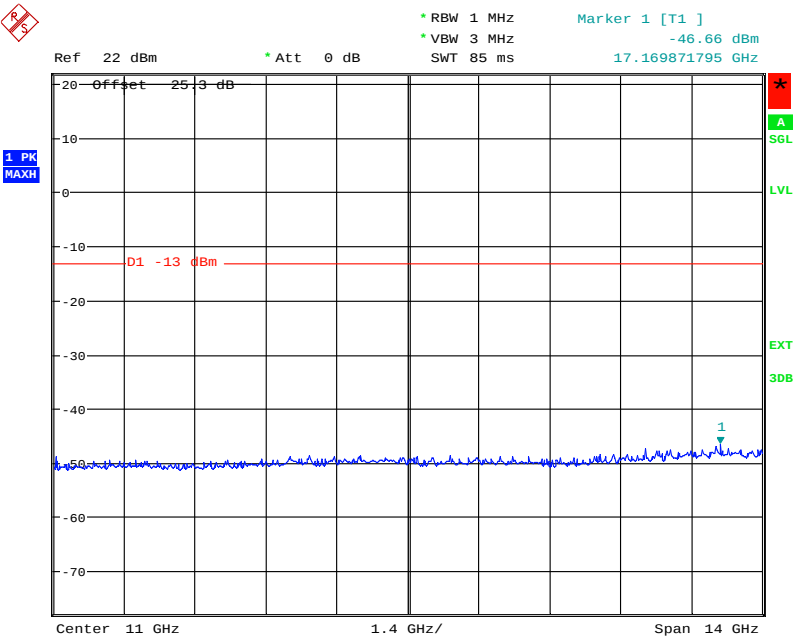


1754.3 MHz - 1 Resource Block - High



Date: 30.JUL.2013 11:58:24

1754.3 MHz - All Resource Blocks

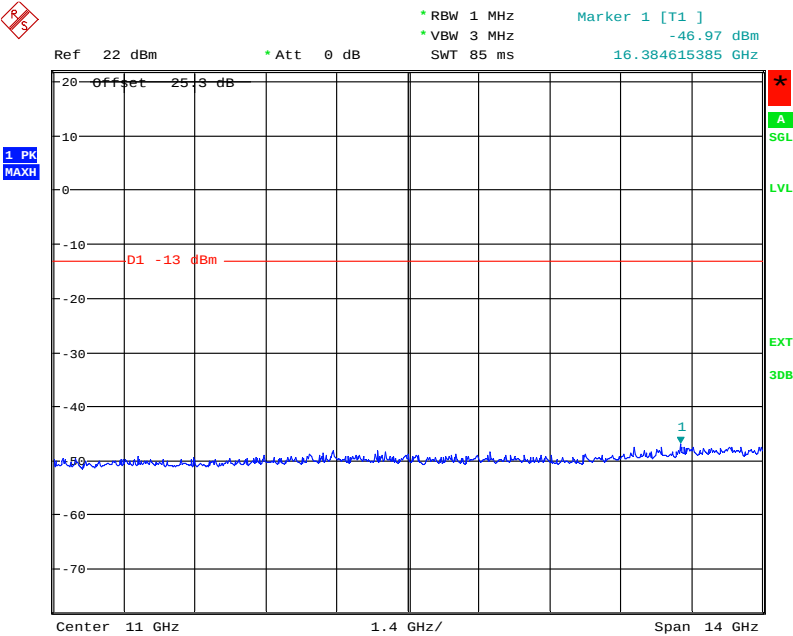


Date: 30.JUL.2013 12:09:12



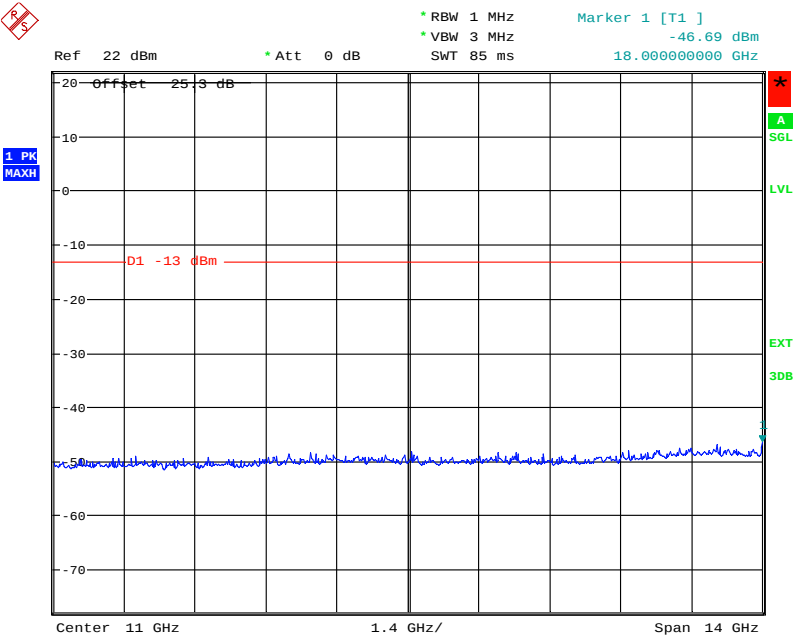
1.4 MHz Bandwidth - 16QAM

1710.7 MHz - 1 Resource Block - Low



Date: 1.AUG.2013 08:32:03

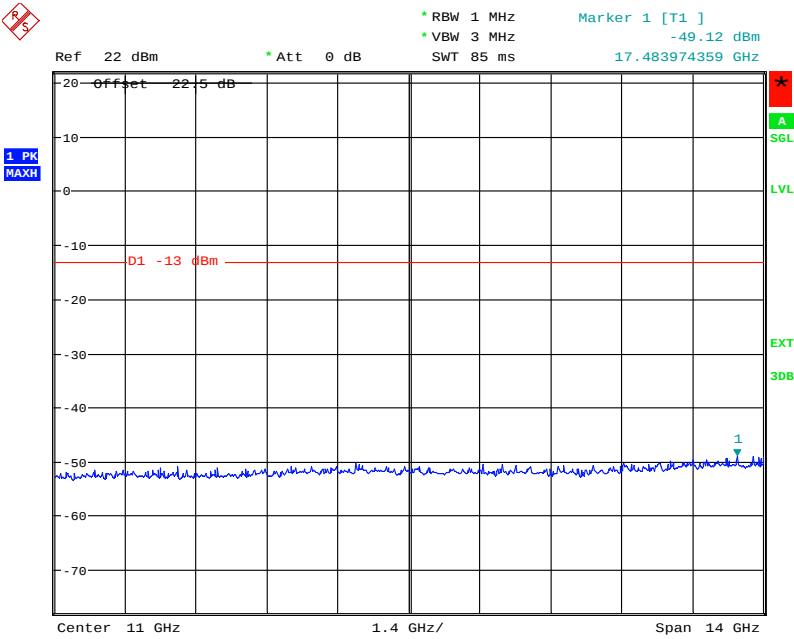
1710.7 MHz - 1 Resource Block - Middle



Date: 1.AUG.2013 08:39:42

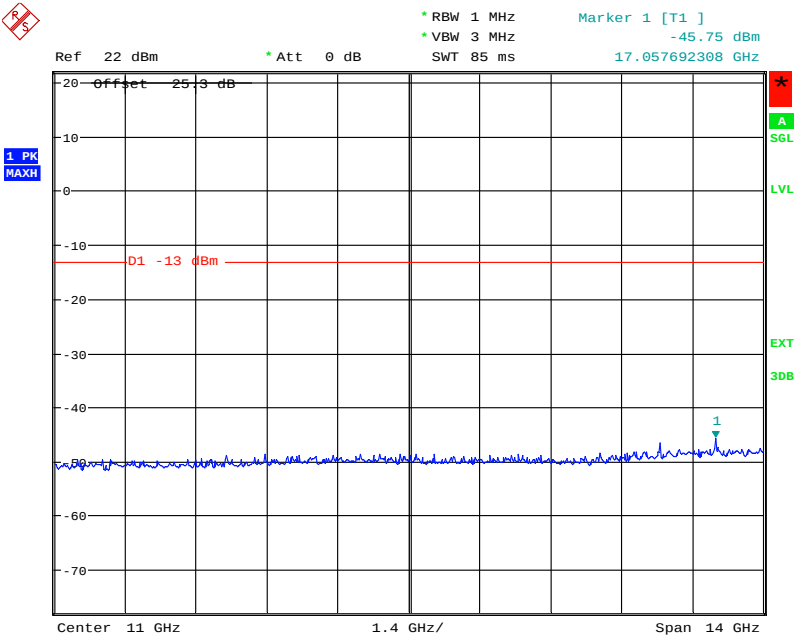


1710.7 MHz - 1 Resource Block - High



Date: 27.AUG.2013 17:42:43

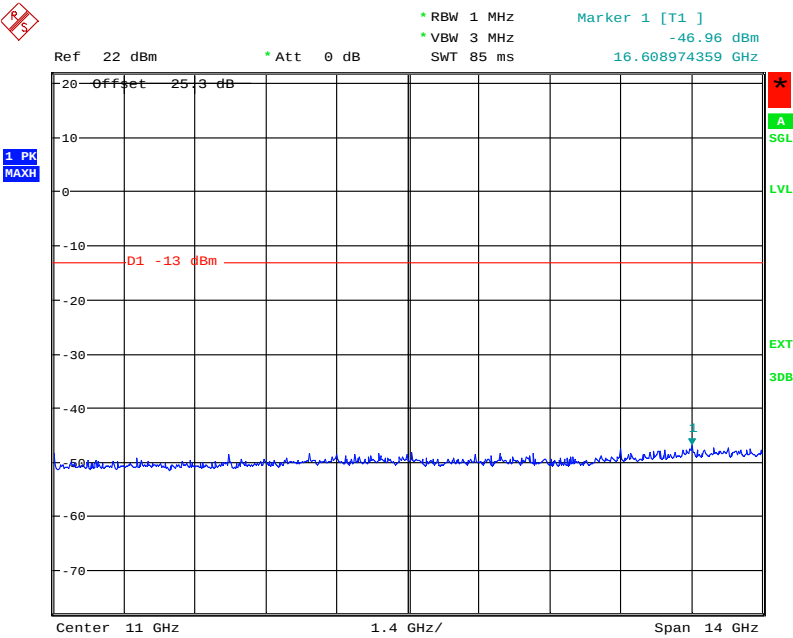
1710.7 MHz - All Resource Blocks



Date: 1.AUG.2013 08:17:35

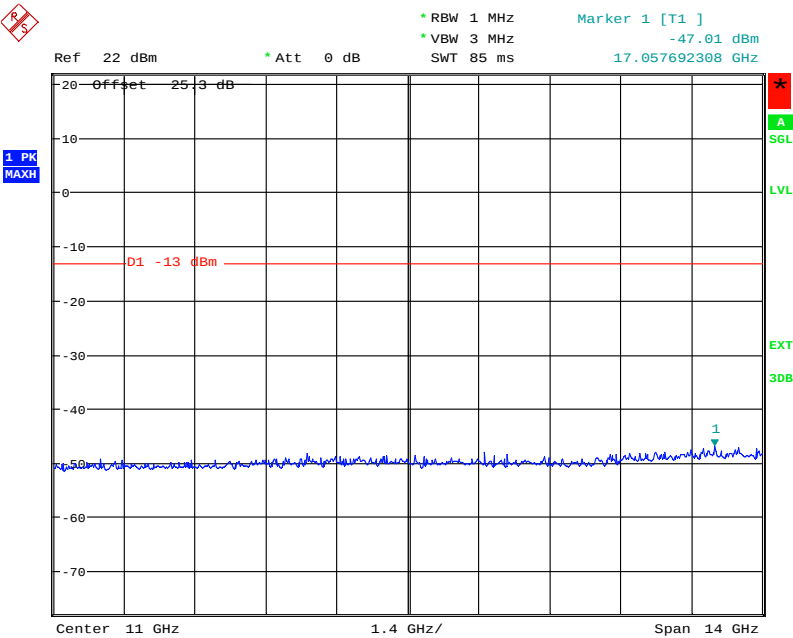


1732.5 MHz - 1 Resource Block - Low



Date: 1.AUG.2013 09:16:04

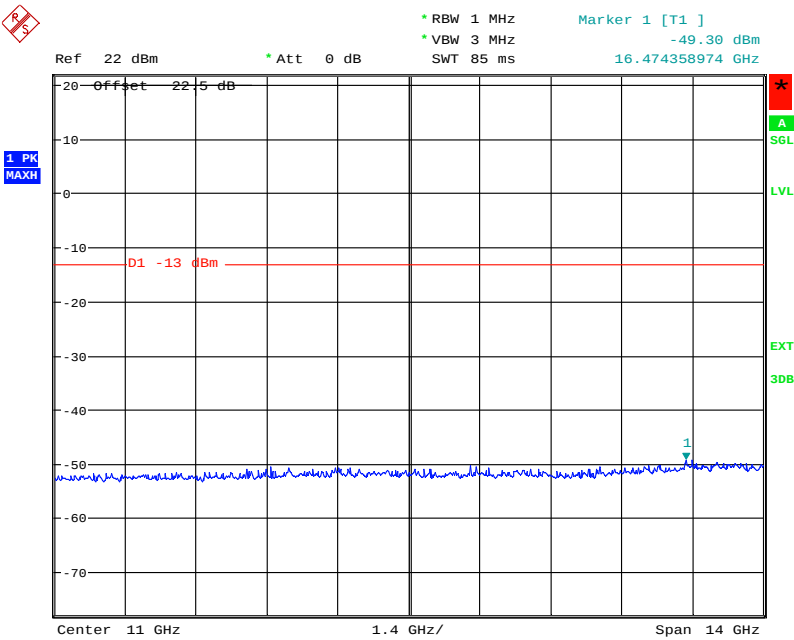
1732.5 MHz - 1 Resource Block - Middle



Date: 1.AUG.2013 09:23:51

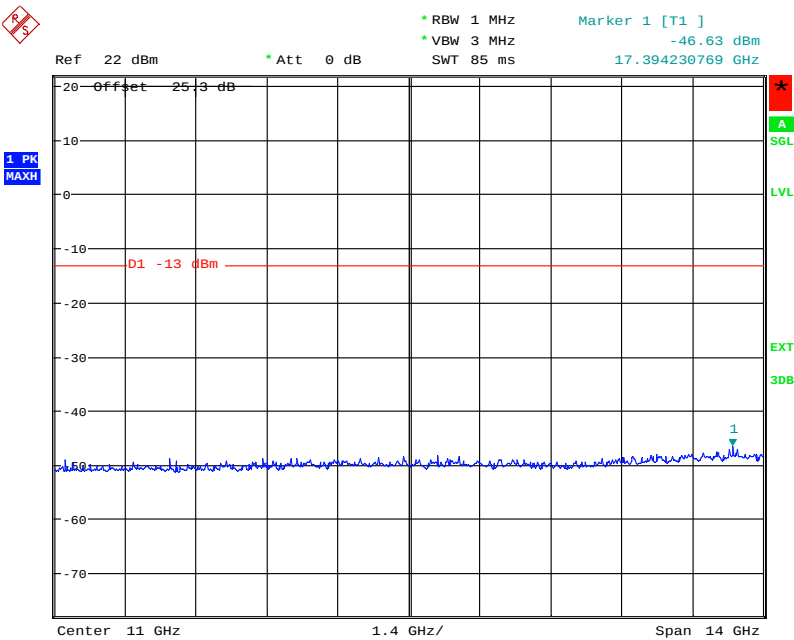


1732.5 MHz - 1 Resource Block - High



Date: 27.AUG.2013 17:44:50

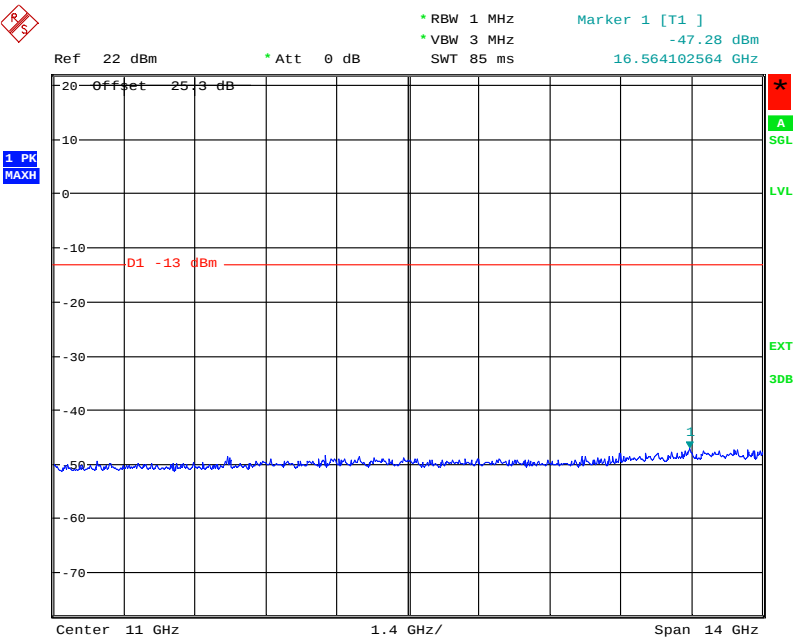
1732.5 MHz - All Resource Blocks



Date: 1.AUG.2013 09:01:50

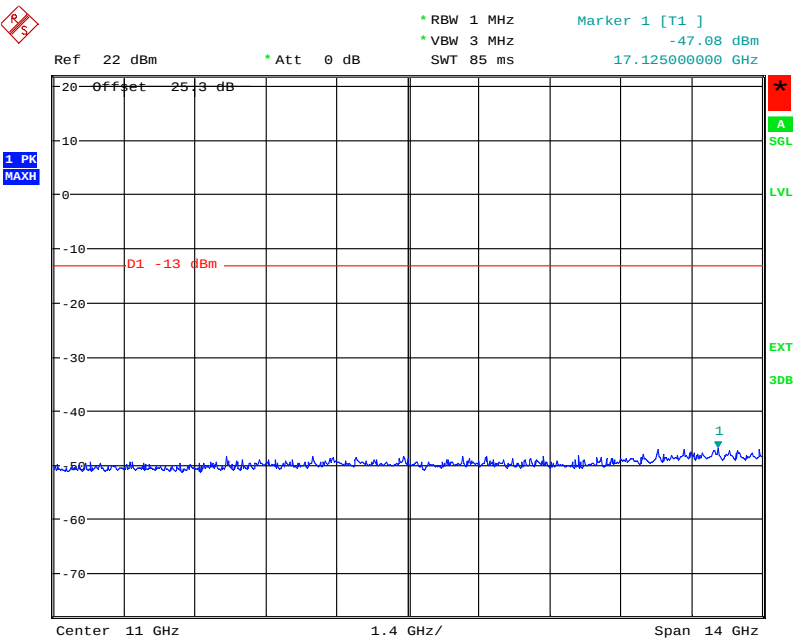


1754.3 MHz - 1 Resource Block - Low



Date: 1.AUG.2013 09:43:26

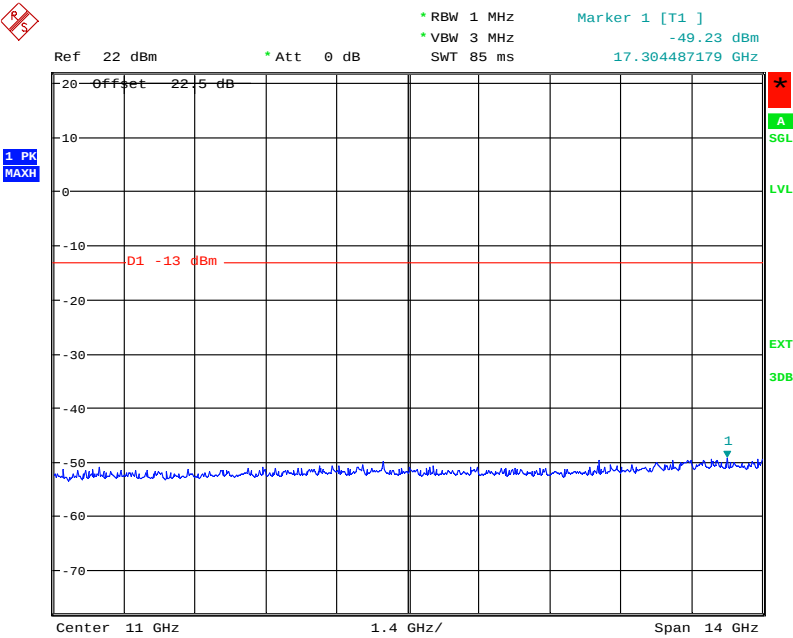
1754.3 MHz - 1 Resource Block - Middle



Date: 1.AUG.2013 09:55:39

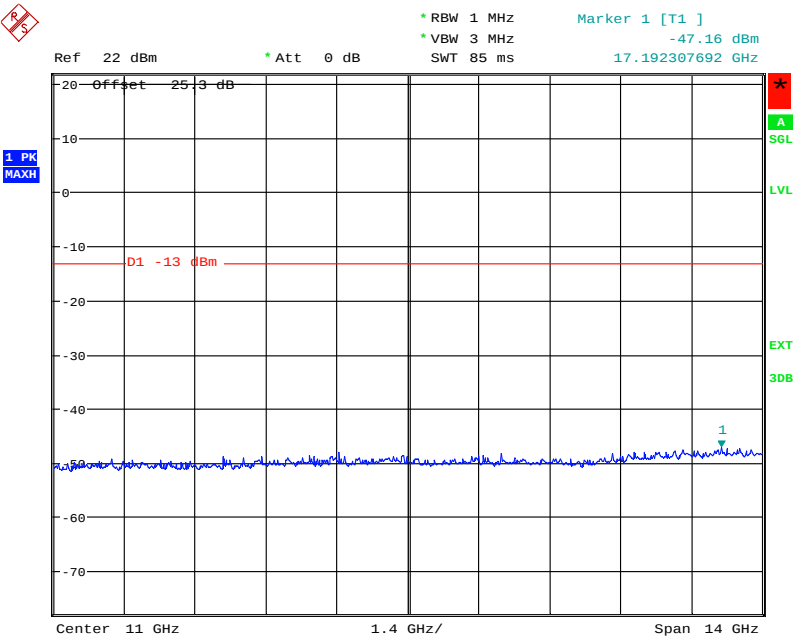


1754.3 MHz - 1 Resource Block - High



Date: 27.AUG.2013 17:47:11

1754.3 MHz - All Resource Blocks

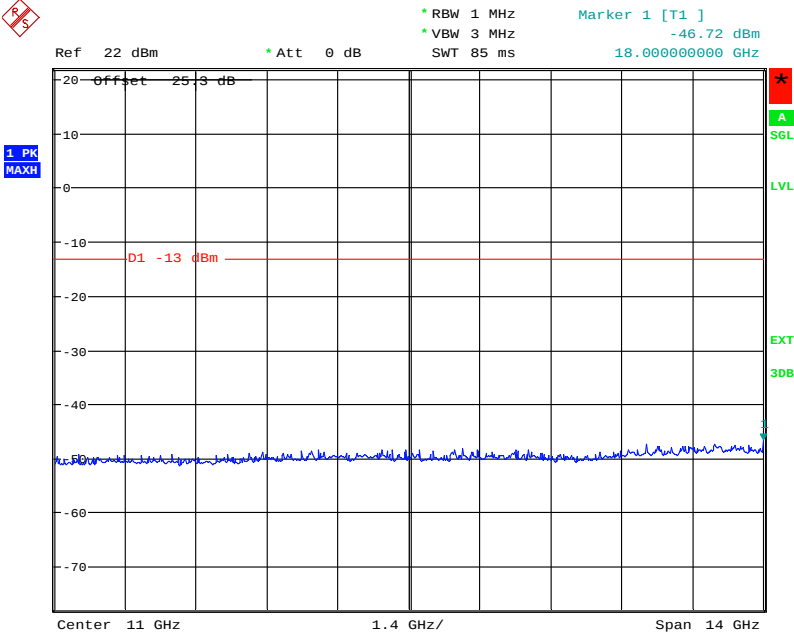


Date: 1.AUG.2013 09:34:22



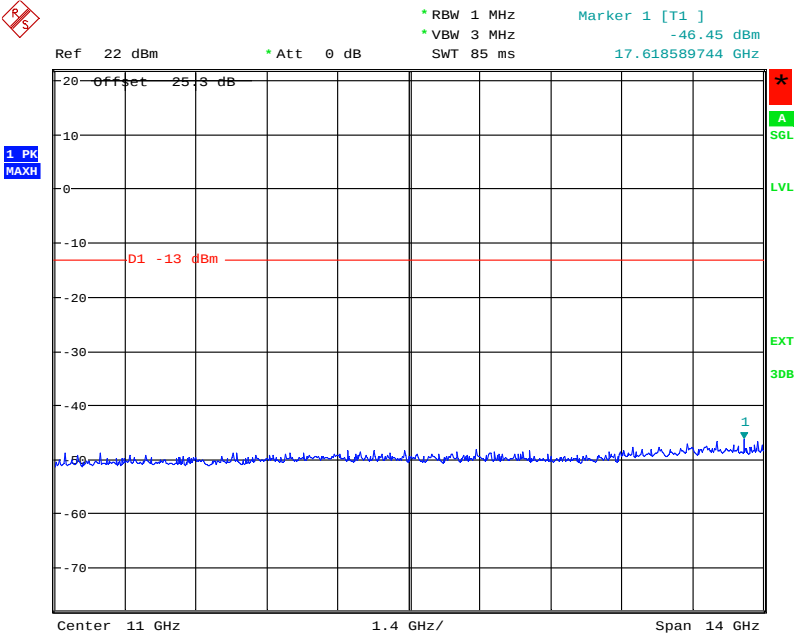
3.0 MHz Bandwidth - QPSK

1711.5 MHz - 1 Resource Block - Low



Date: 30.JUL.2013 12:28:17

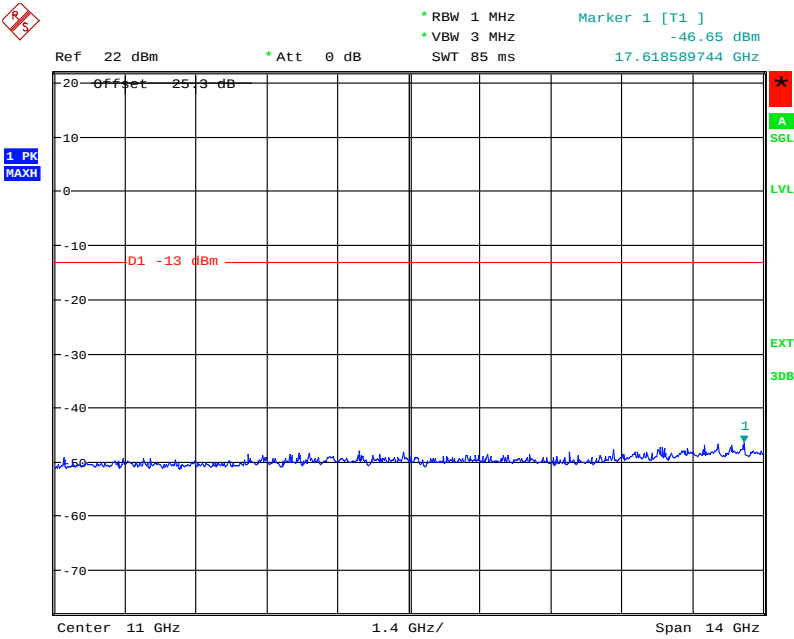
1711.5 MHz - 1 Resource Block - Middle



Date: 30.JUL.2013 12:36:12

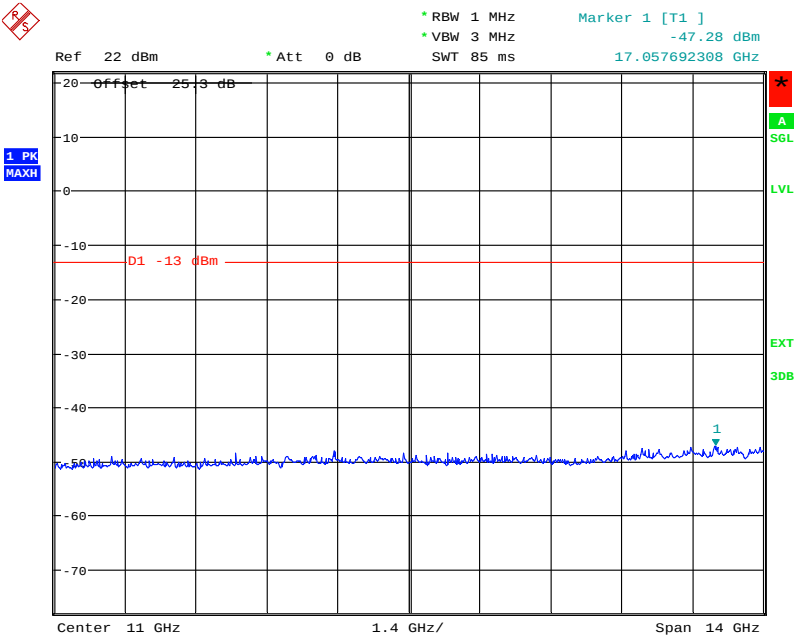


1711.5 MHz - 1 Resource Block - High



Date: 30.JUL.2013 12:47:37

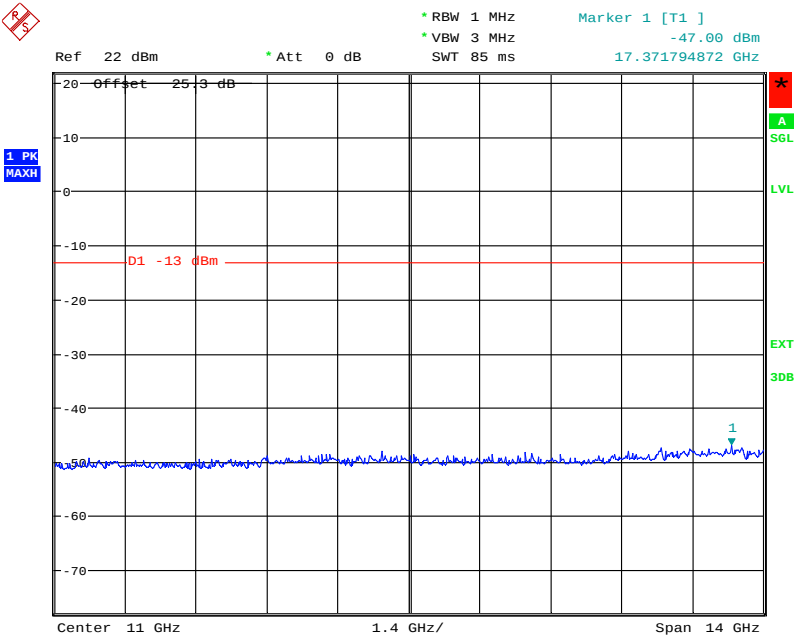
1711.5 MHz - All Resource Blocks



Date: 30.JUL.2013 12:20:00

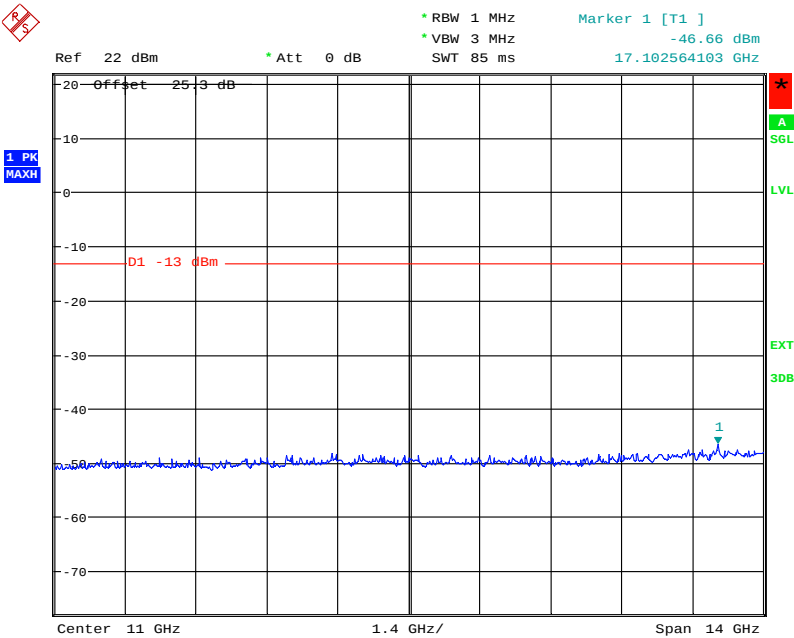


1732.5 MHz - 1 Resource Block - Low



Date: 30.JUL.2013 14:02:02

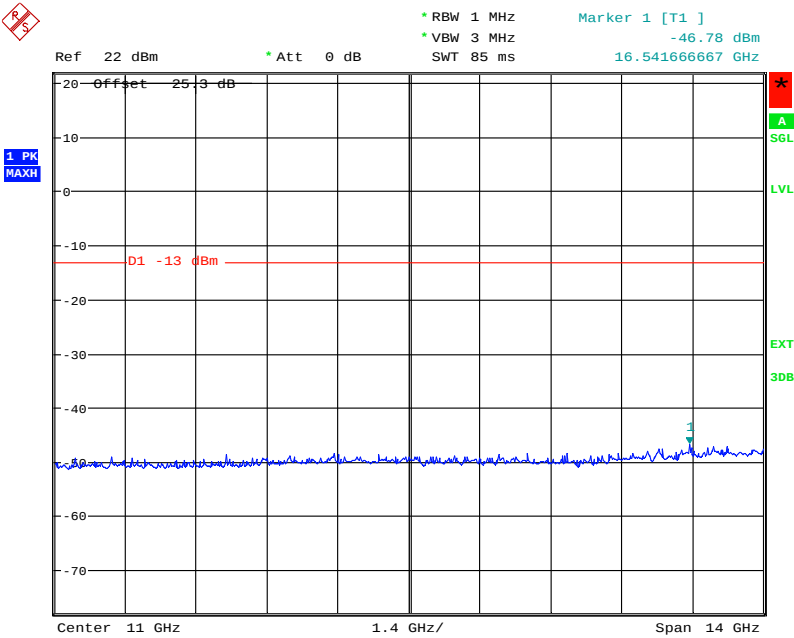
1732.5 MHz - 1 Resource Block - Middle



Date: 30.JUL.2013 13:55:50

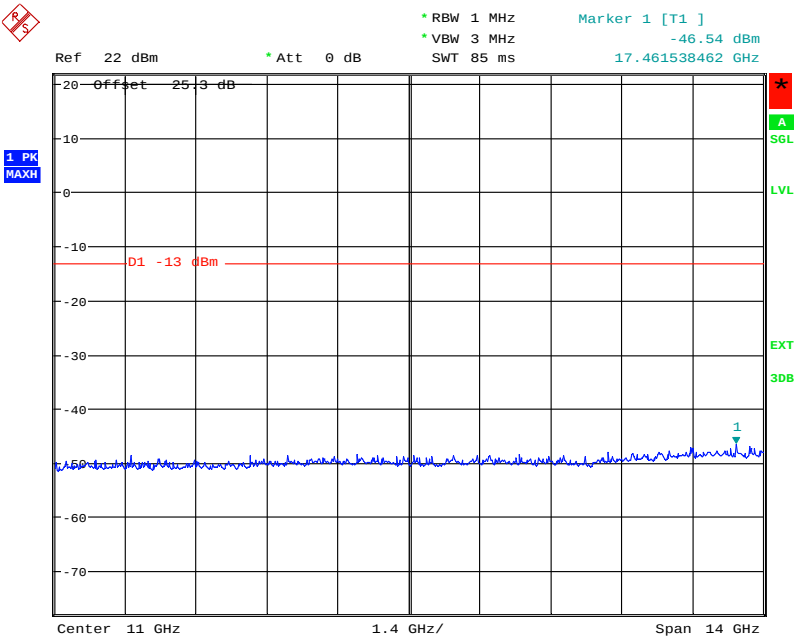


1732.5 MHz - 1 Resource Block - High



Date: 30.JUL.2013 13:48:06

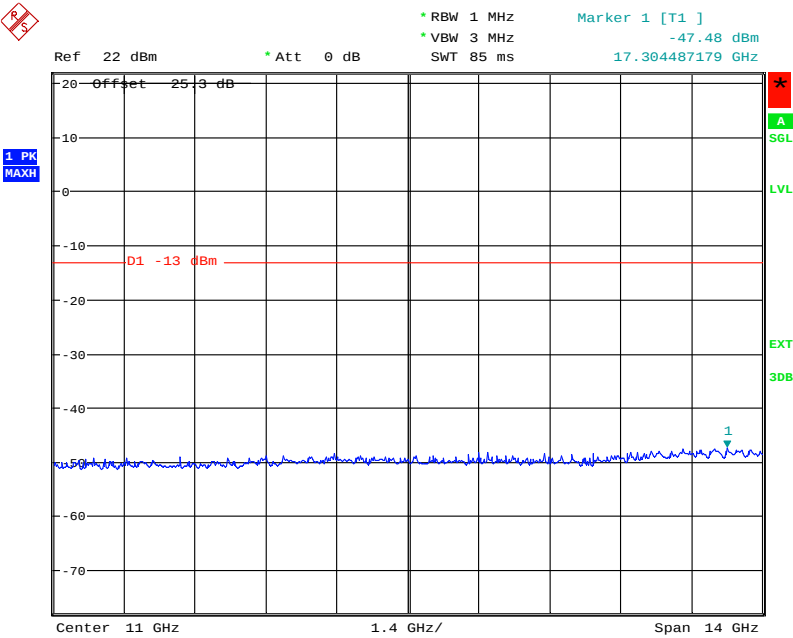
1732.5 MHz - All Resource Blocks



Date: 30.JUL.2013 13:39:12

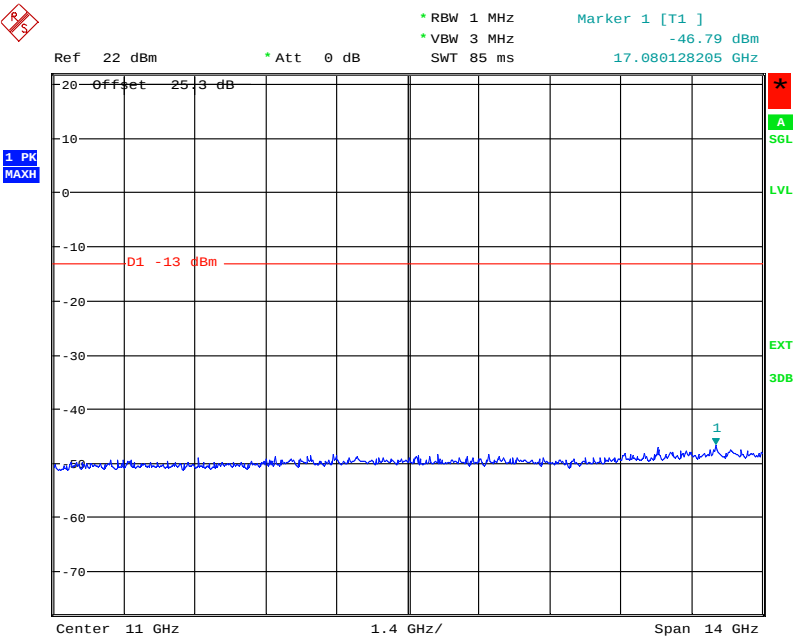


1753.5 MHz - 1 Resource Block - Low



Date: 30.JUL.2013 14:10:18

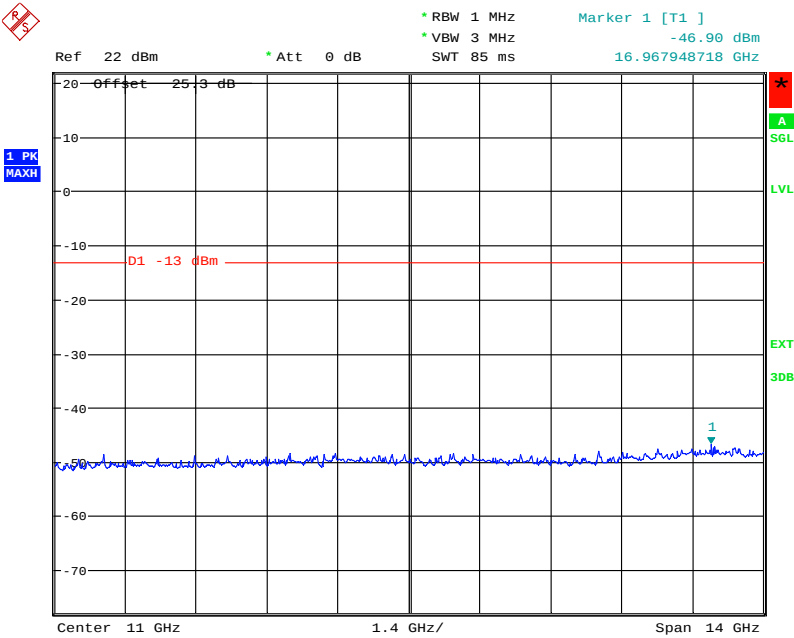
1753.5 MHz - 1 Resource Block - Middle



Date: 30.JUL.2013 14:35:25

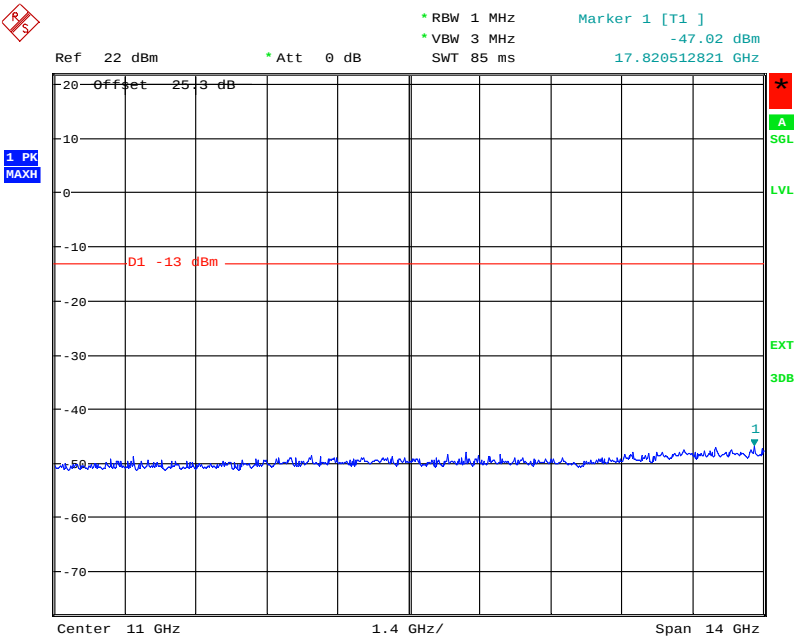


1753.5 MHz - 1 Resource Block - High



Date: 30.JUL.2013 14:43:10

1753.5 MHz - All Resource Blocks

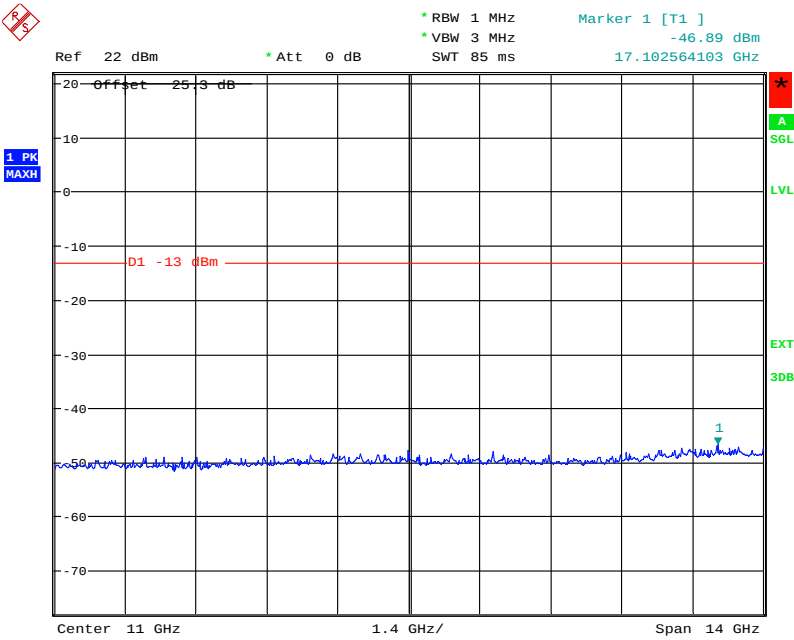


Date: 30.JUL.2013 14:55:38



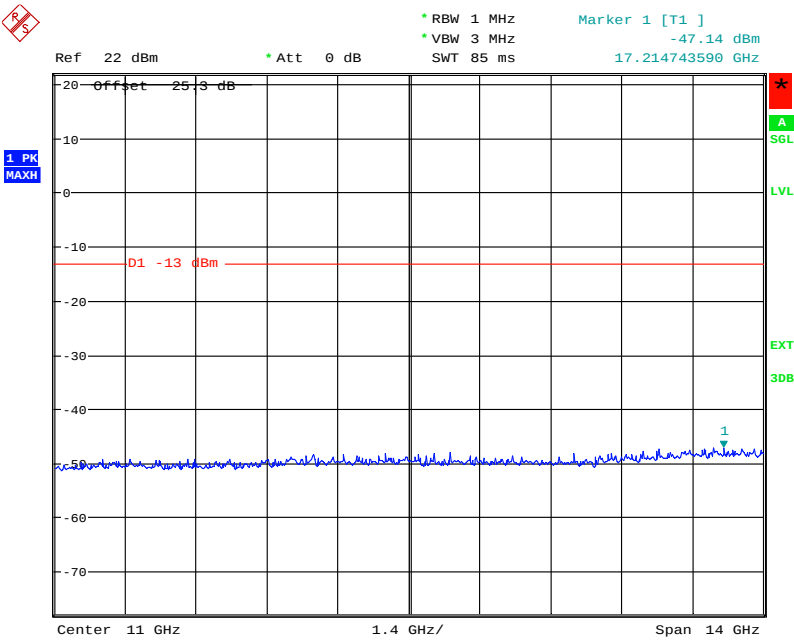
3.0 MHz Bandwidth - 16QAM

1711.5 MHz - 1 Resource Block - Low



Date: 1.AUG.2013 10:18:42

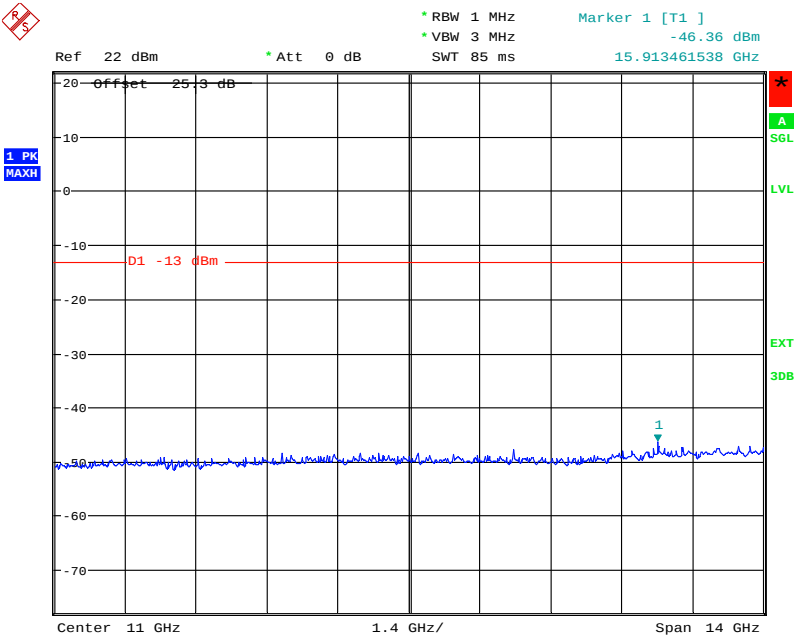
1711.5 MHz - 1 Resource Block - Middle



Date: 1.AUG.2013 10:39:20

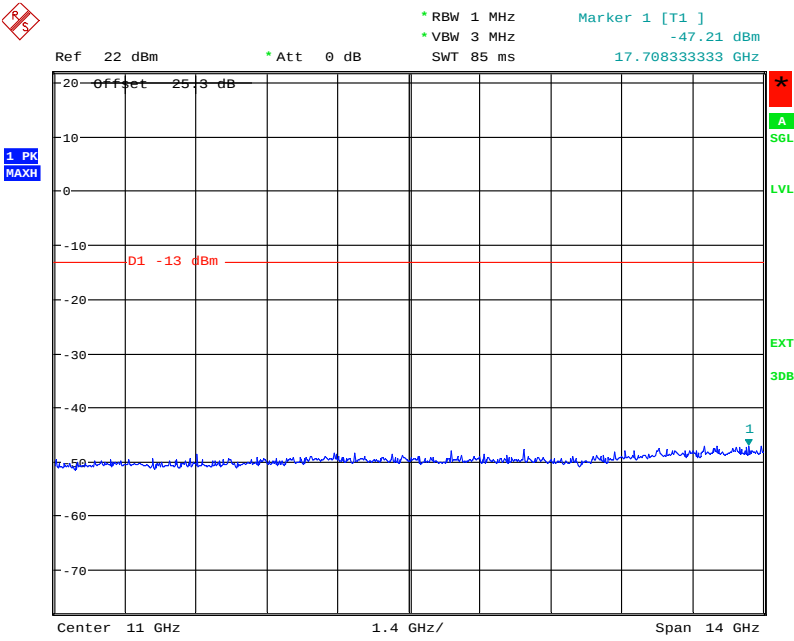


1711.5 MHz - 1 Resource Block - High



Date: 1.AUG.2013 10:47:45

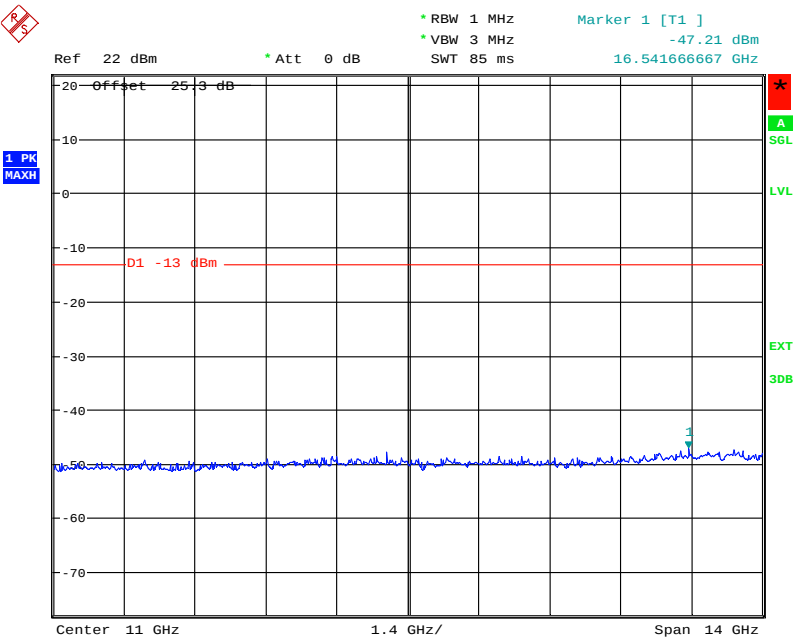
1711.5 MHz - All Resource Blocks



Date: 1.AUG.2013 10:09:59

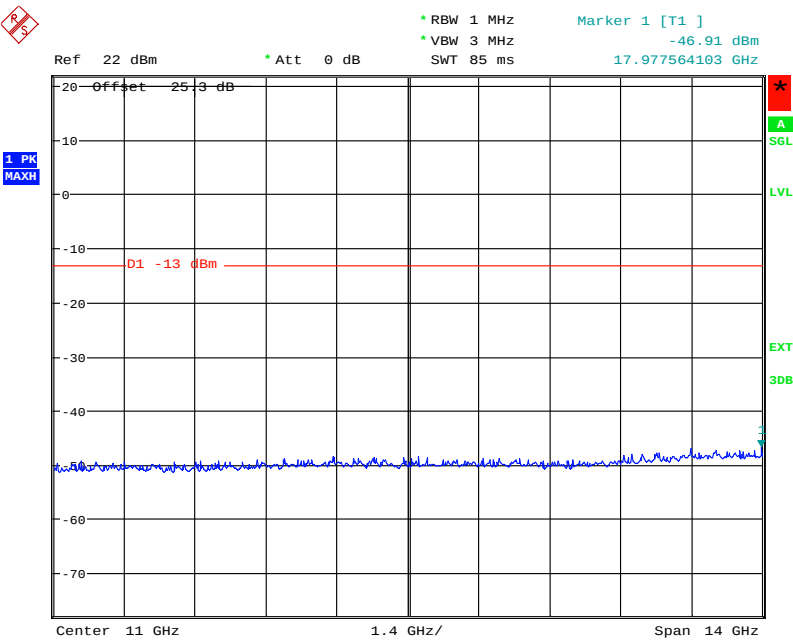


1732.5 MHz - 1 Resource Block - Low



Date: 1.AUG.2013 11:10:45

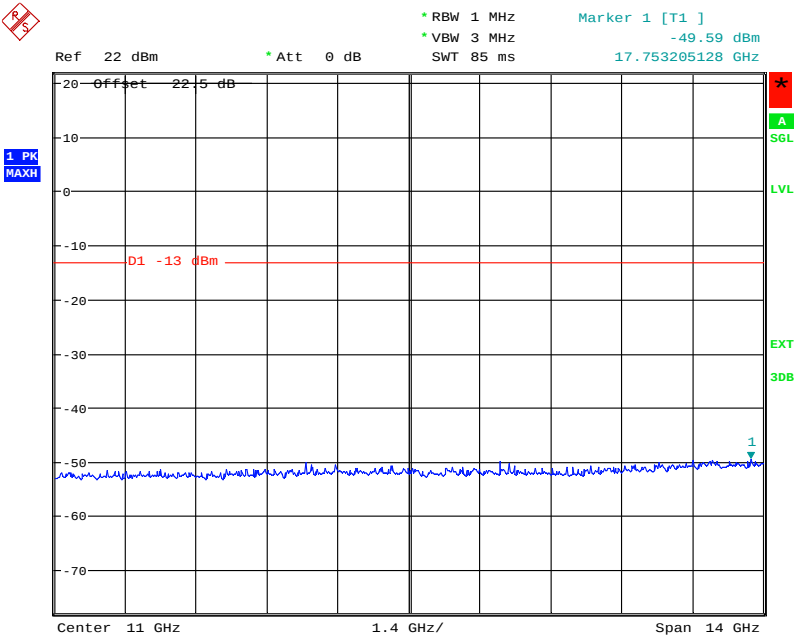
1732.5 MHz - 1 Resource Block - Middle



Date: 1.AUG.2013 11:04:26

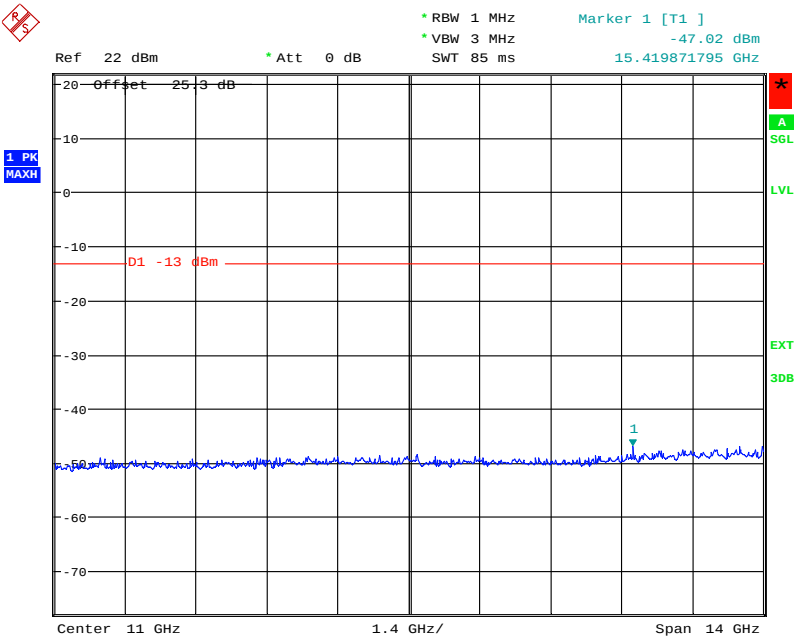


1732.5 MHz - 1 Resource Block - High



Date: 27.AUG.2013 17:40:16

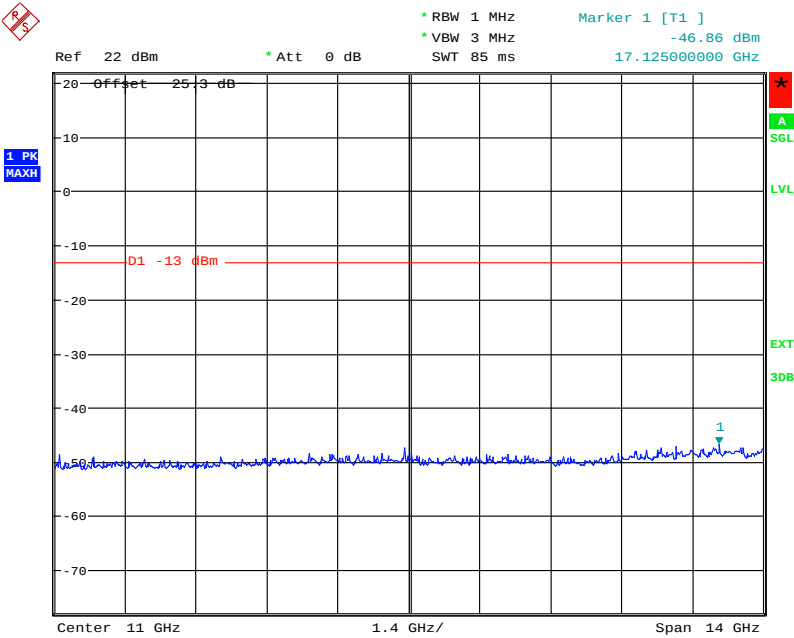
1732.5 MHz - All Resource Blocks



Date: 1.AUG.2013 11:17:03

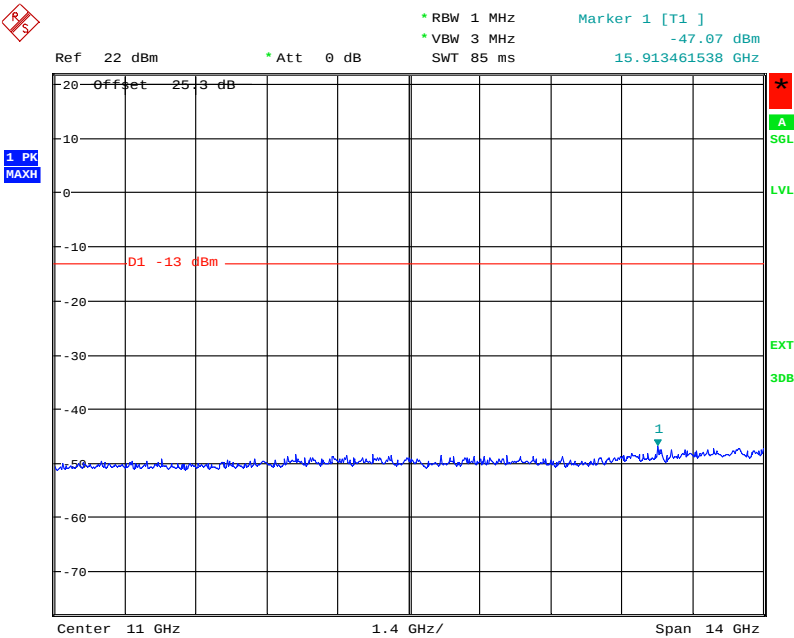


1753.5 MHz - 1 Resource Block - Low



Date: 1.AUG.2013 11:36:46

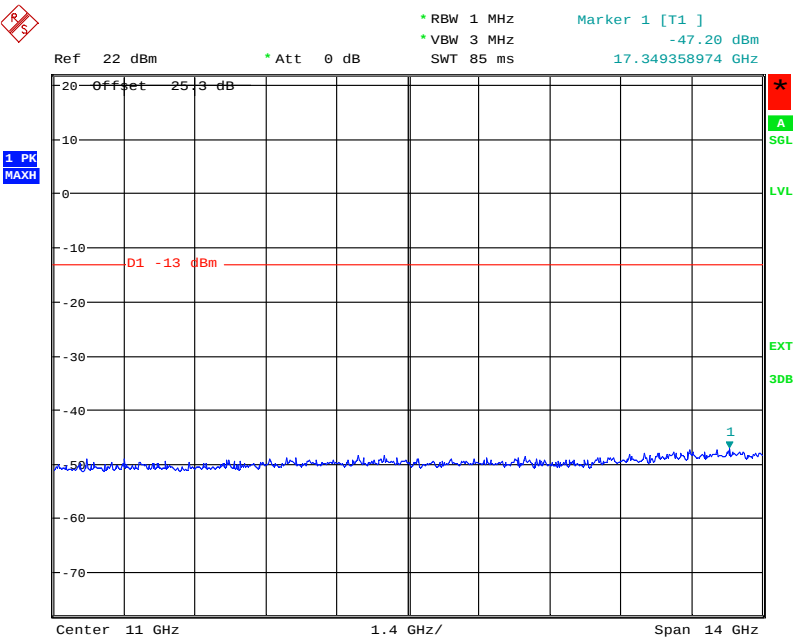
1753.5 MHz - 1 Resource Block - Middle



Date: 1.AUG.2013 11:44:34

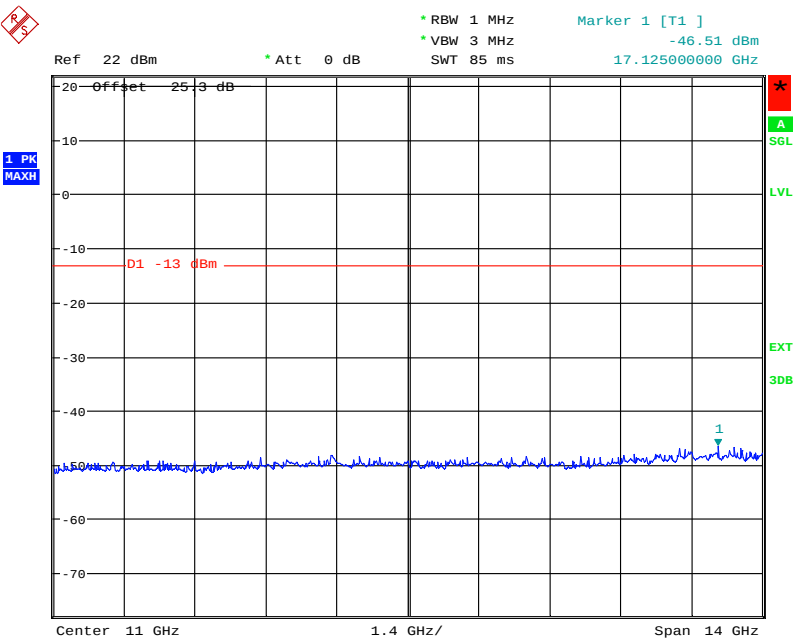


1753.5 MHz - 1 Resource Block - High



Date: 1.AUG.2013 11:54:11

1753.5 MHz - All Resource Blocks

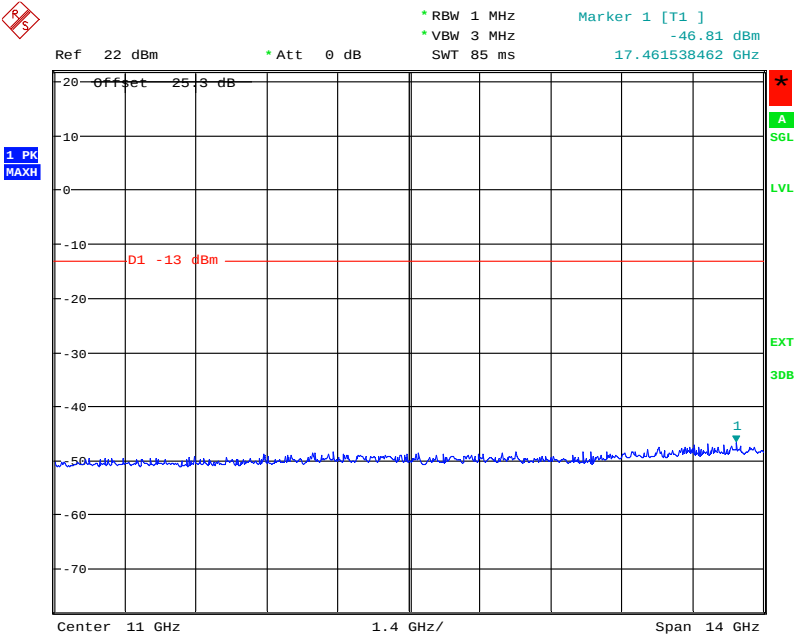


Date: 1.AUG.2013 11:28:44



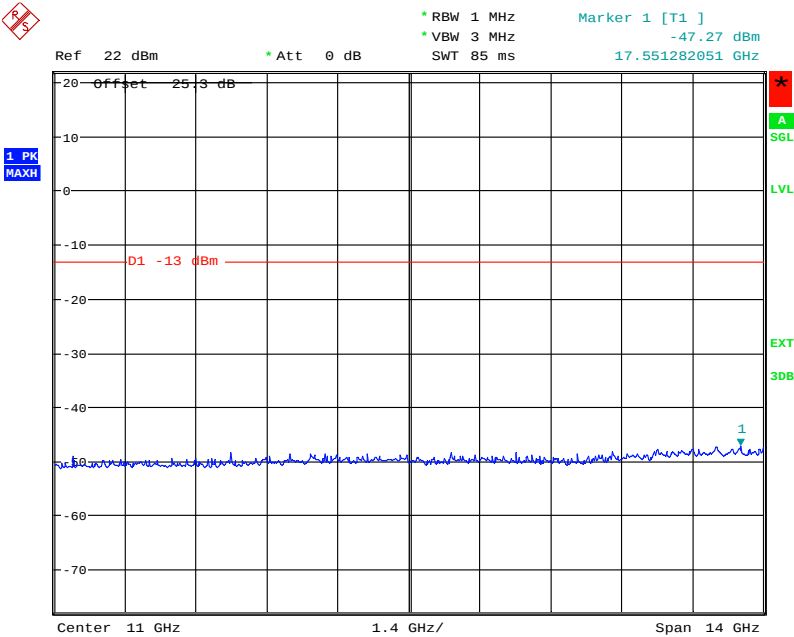
5.0 MHz Bandwidth - QPSK

1712.5 MHz - 1 Resource Block - Low



Date: 30.JUL.2013 15:14:56

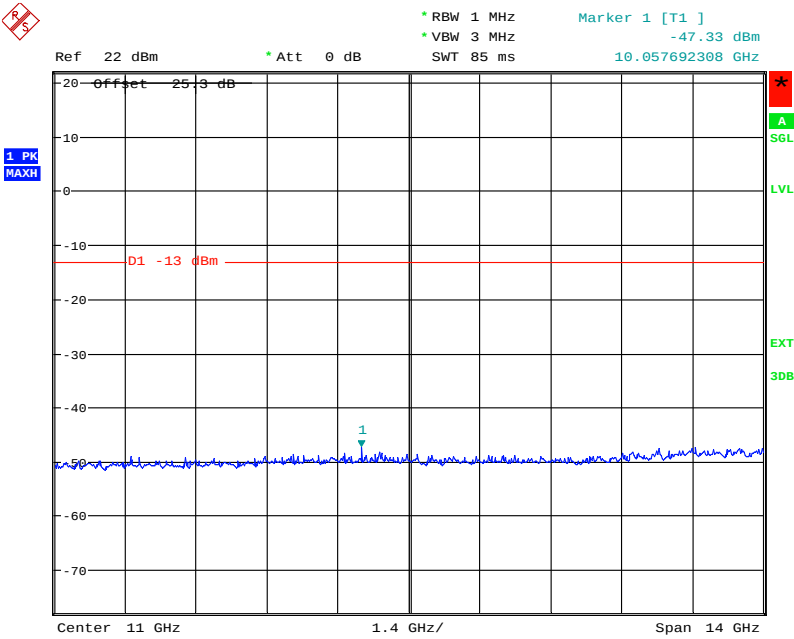
1712.5 MHz - 1 Resource Block - Middle



Date: 30.JUL.2013 15:21:28

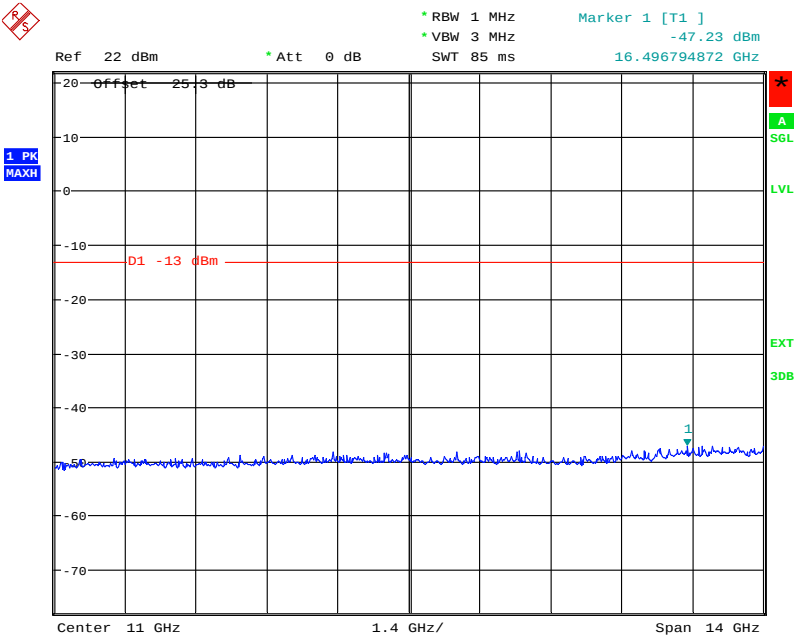


1712.5 MHz - 1 Resource Block - High



Date: 30.JUL.2013 15:36:33

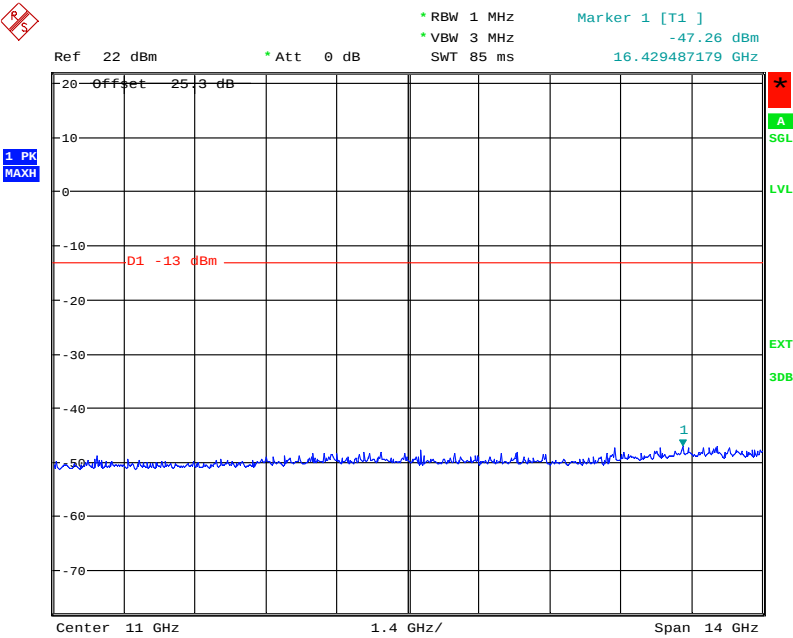
1712.5 MHz - All Resource Blocks



Date: 30.JUL.2013 15:06:32

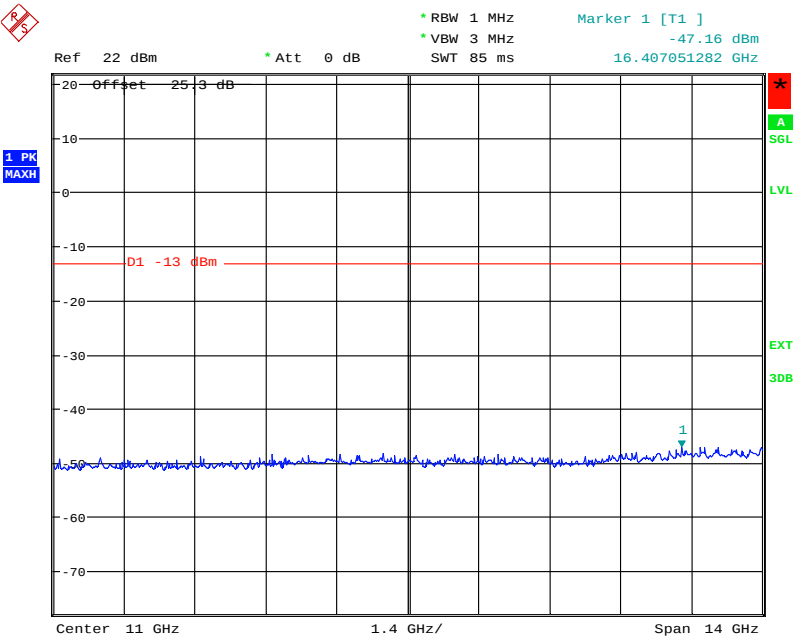


1732.5 MHz - 1 Resource Block - Low



Date: 30.JUL.2013 16:04:28

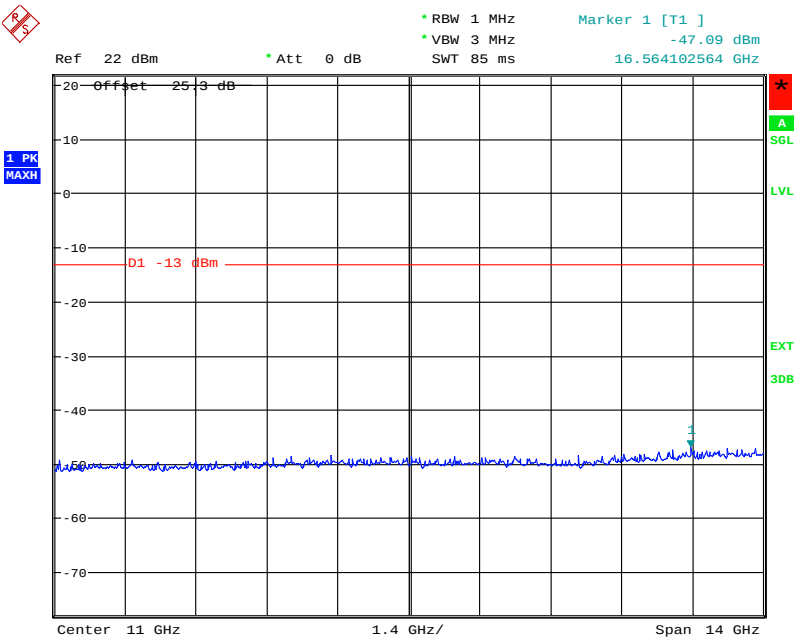
1732.5 MHz - 1 Resource Block - Middle



Date: 30.JUL.2013 15:57:47

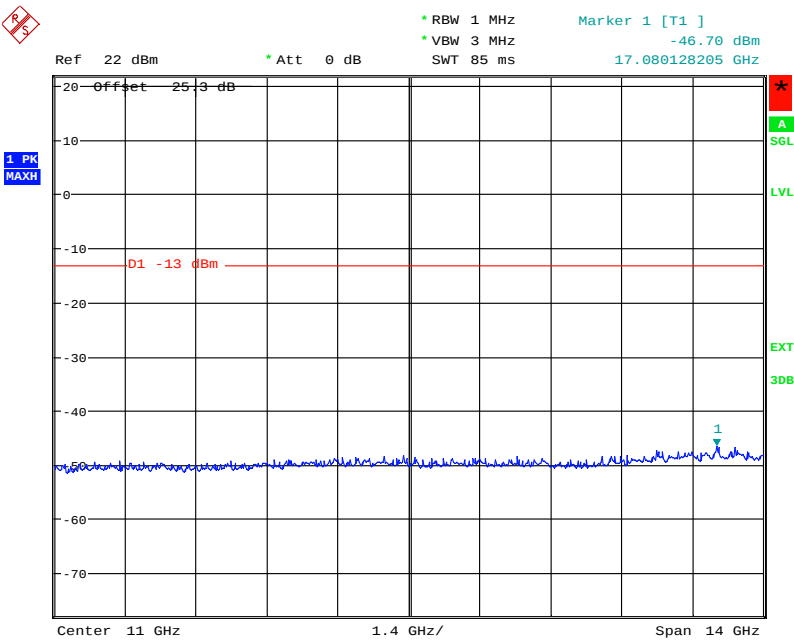


1732.5 MHz - 1 Resource Block - High



Date: 30.JUL.2013 15:51:44

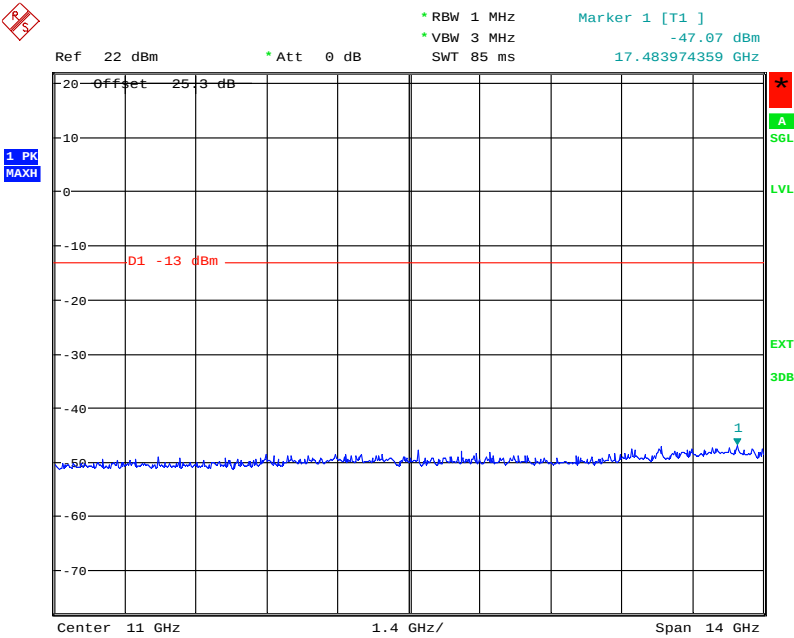
1732.5 MHz - All Resource Blocks



Date: 30.JUL.2013 15:45:30

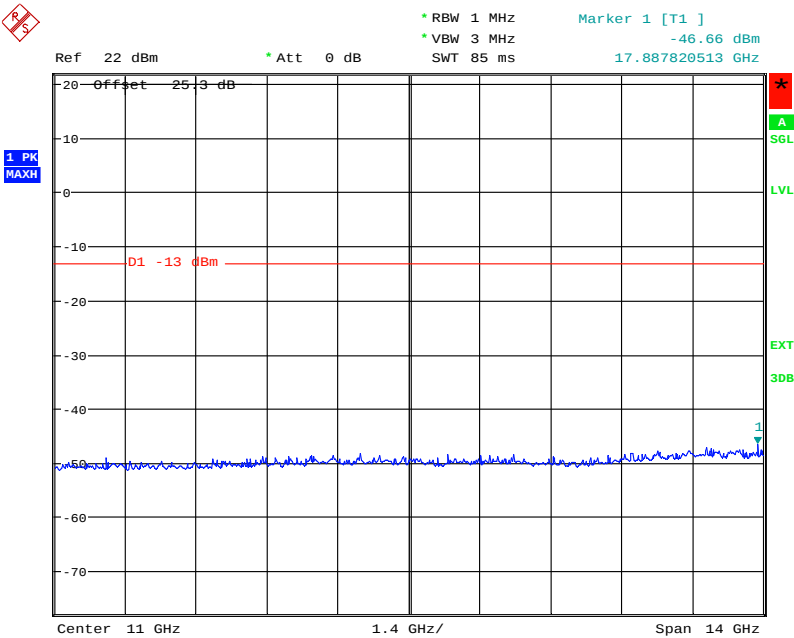


1752.5 MHz - 1 Resource Block - Low



Date: 30.JUL.2013 16:12:00

1752.5 MHz - 1 Resource Block - Middle

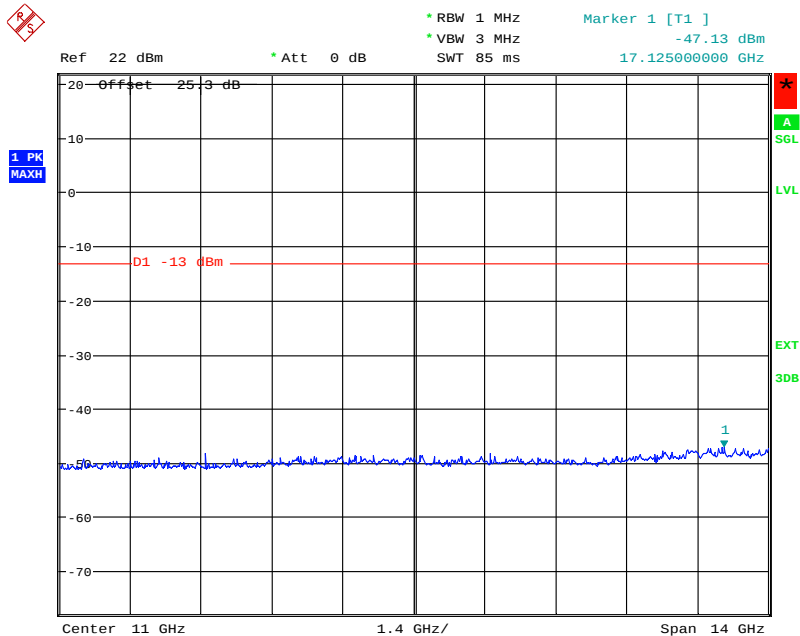


Date: 30.JUL.2013 16:18:06

Ref 22 dBm * Att 0 dB * RBW 1 MHz Marker 1 [T1] -47.08 dBm
 * VBW 3 MHz SWT 85 ms 17.102564103 GHz

Offset 25.3 dB
 1 PK MAXH
 D1 -13 dBm
 1
 Center 11 GHz 1.4 GHz/ Span 14 GHz

1752.5 MHz - All Resource Blocks

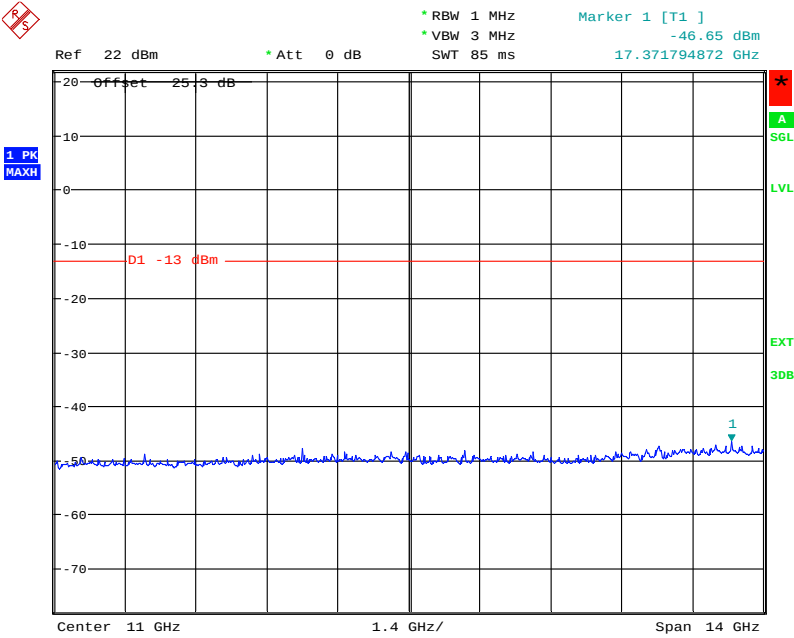


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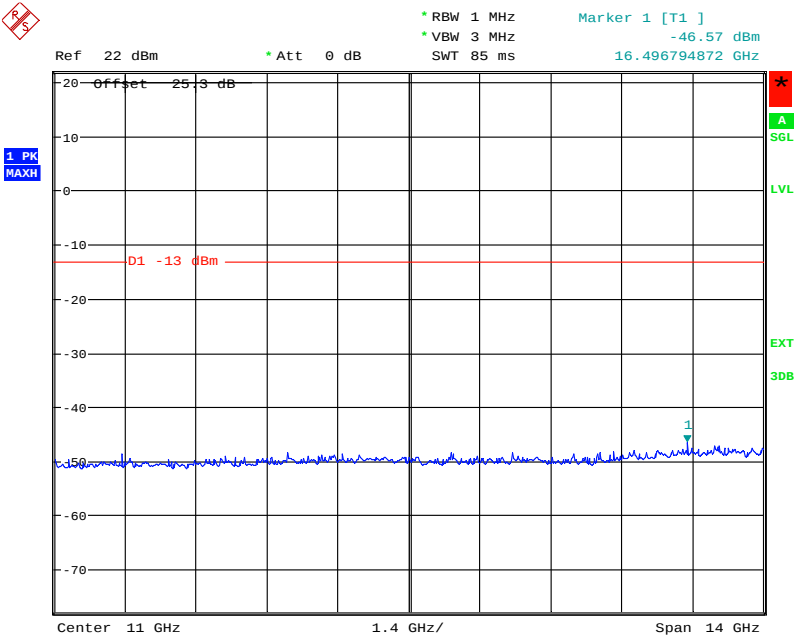
5.0 MHz Bandwidth - 16QAM

1712.5 MHz - 1 Resource Block - Low



Date: 1.AUG.2013 12:17:24

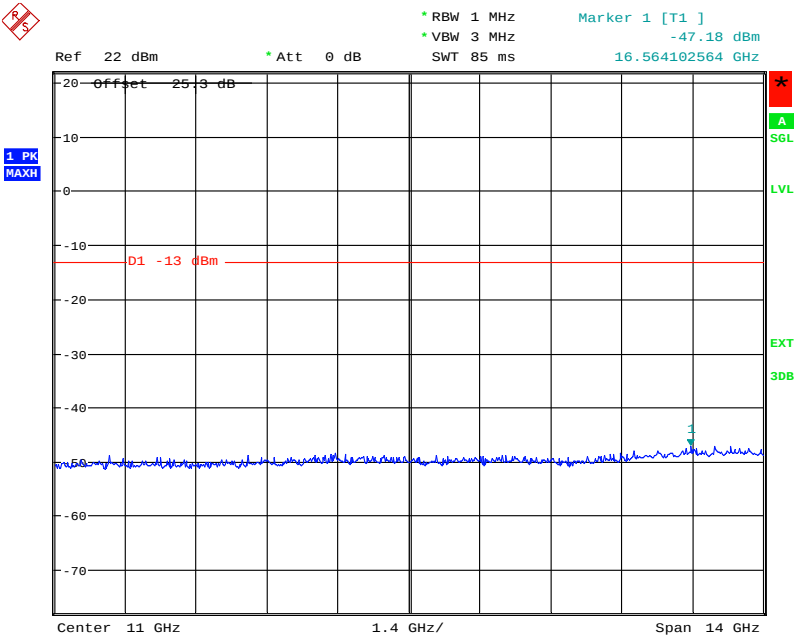
1712.5 MHz - 1 Resource Block - Middle



Date: 1.AUG.2013 12:25:00

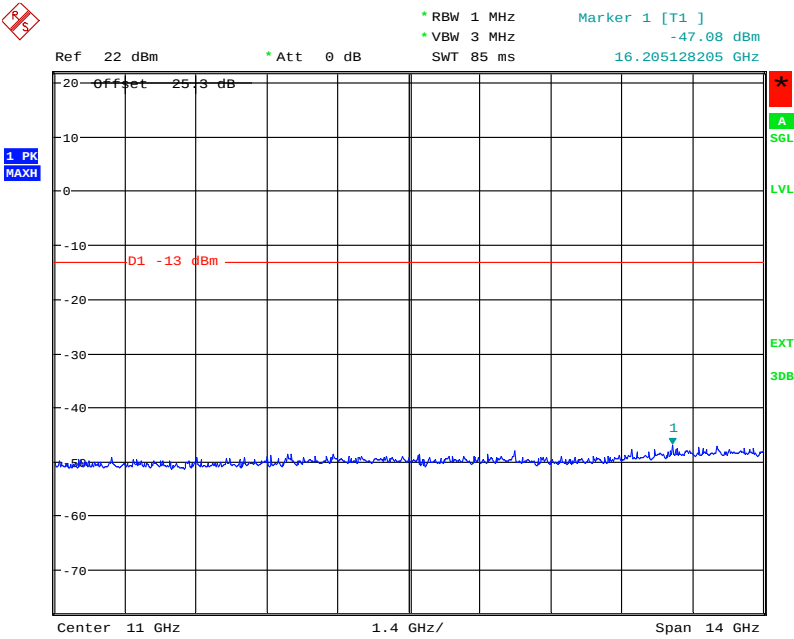


1712.5 MHz - 1 Resource Block - High



Date: 1.AUG.2013 12:31:34

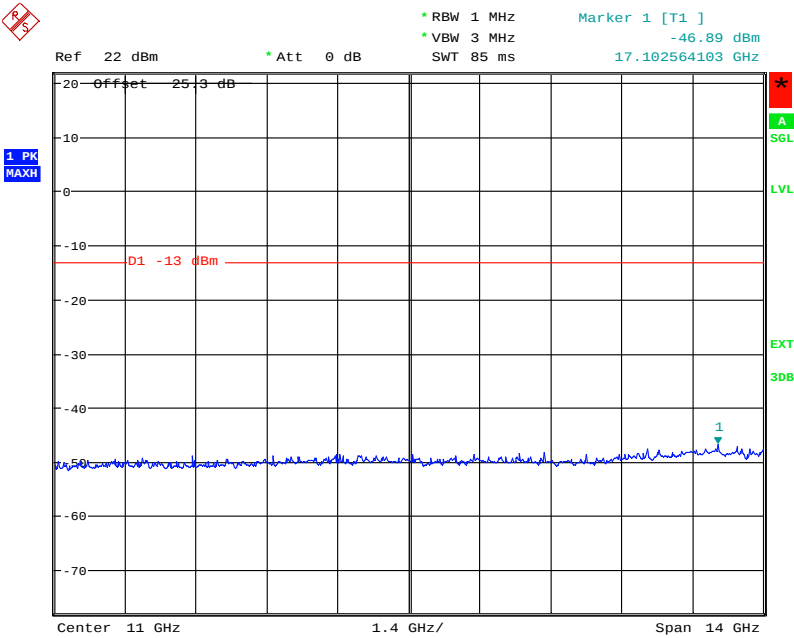
1712.5 MHz - All Resource Blocks



Date: 1.AUG.2013 12:07:33

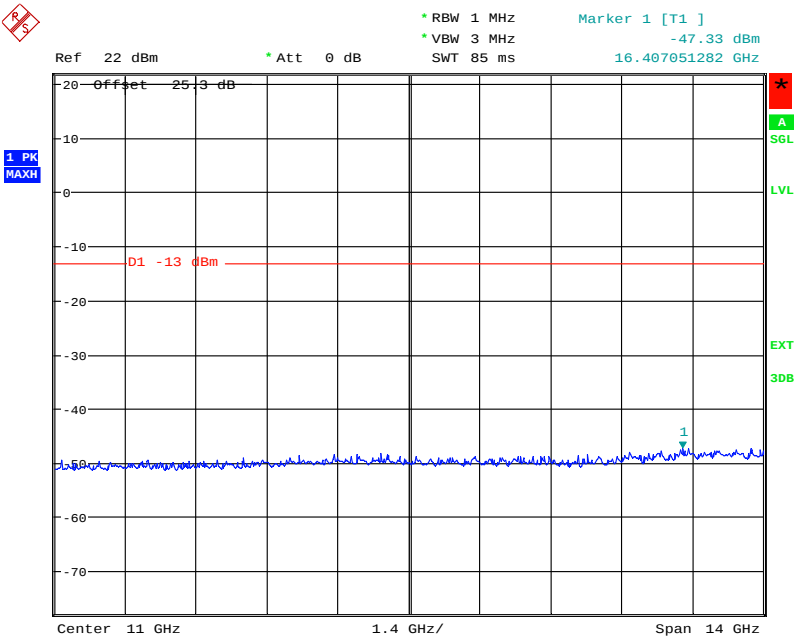


1732.5 MHz - 1 Resource Block - Low



Date: 1.AUG.2013 12:50:17

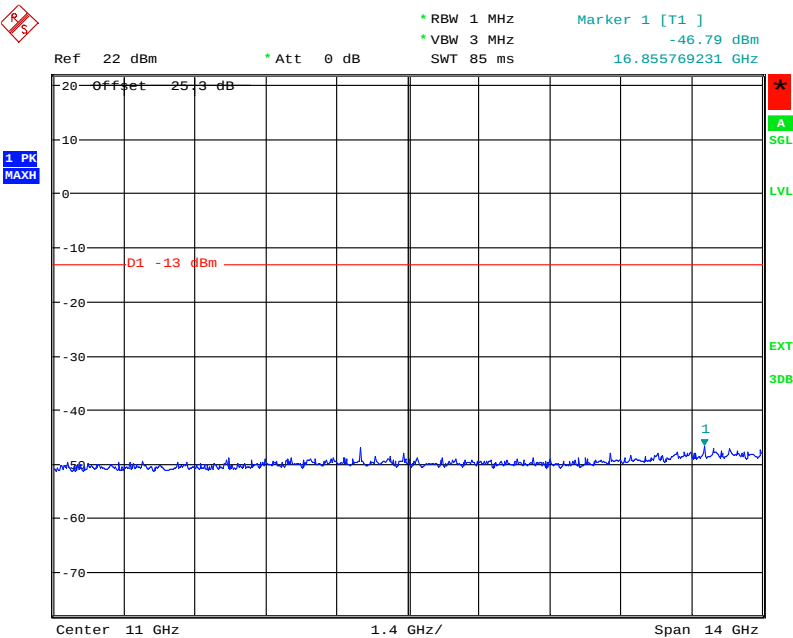
1732.5 MHz - 1 Resource Block - Middle



Date: 1.AUG.2013 12:44:40

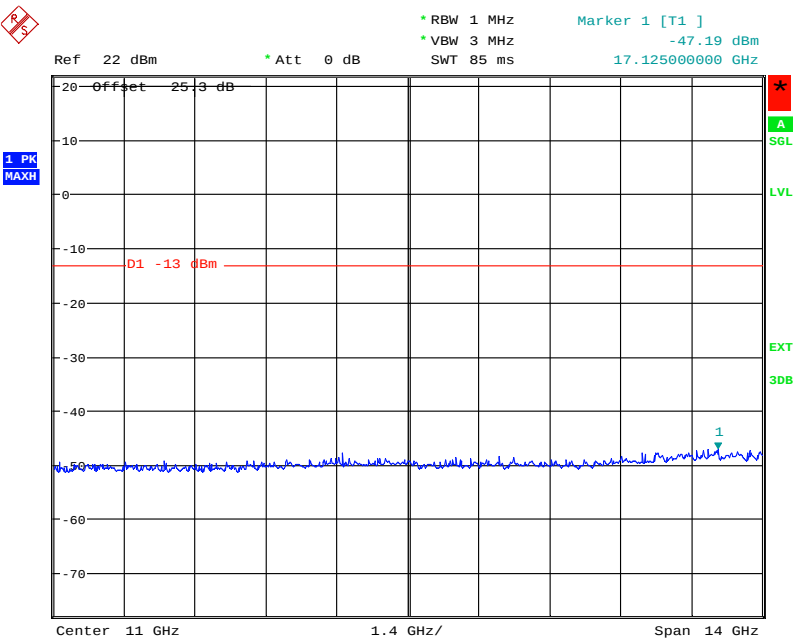


1732.5 MHz - 1 Resource Block - High



Date: 1.AUG.2013 12:38:27

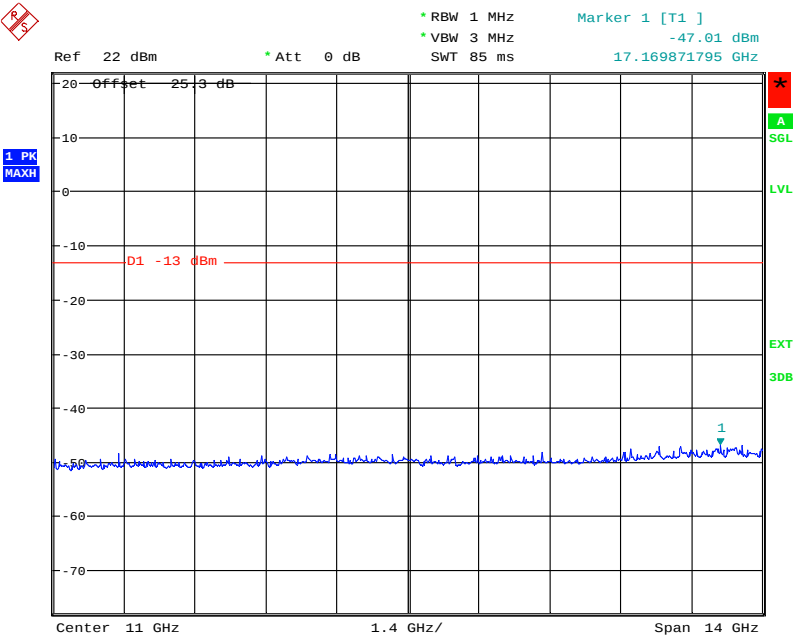
1732.5 MHz - All Resource Blocks



Date: 1.AUG.2013 12:55:54

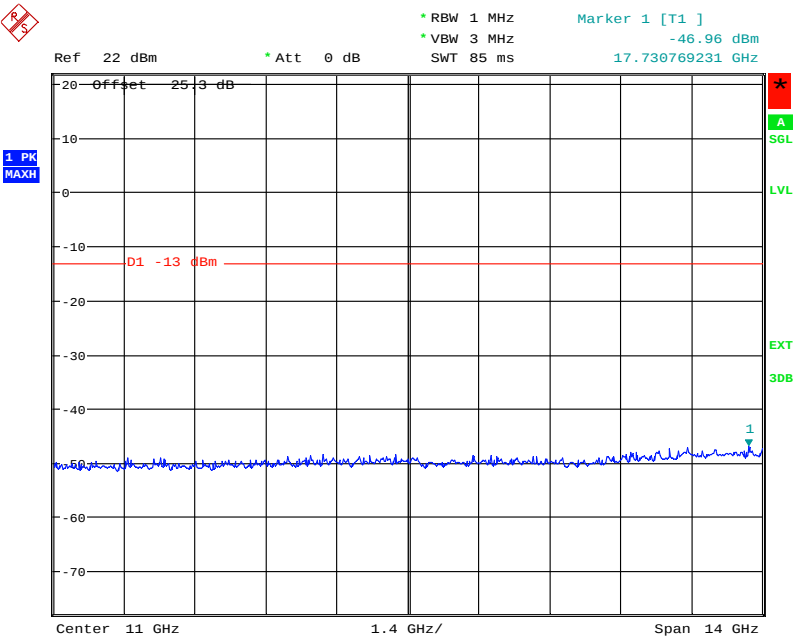


1752.5 MHz - 1 Resource Block - Low



Date: 1.AUG.2013 14:26:38

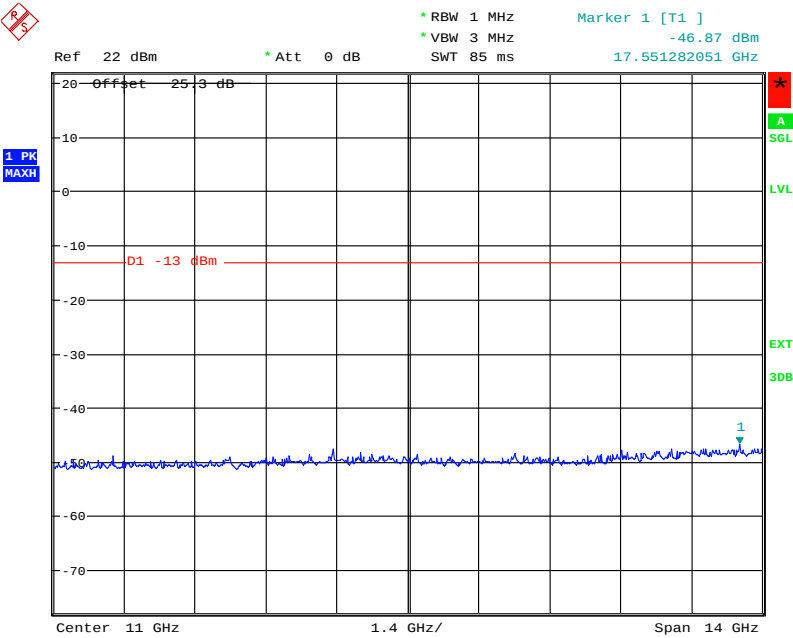
1752.5 MHz - 1 Resource Block - Middle



Date: 1.AUG.2013 14:15:45

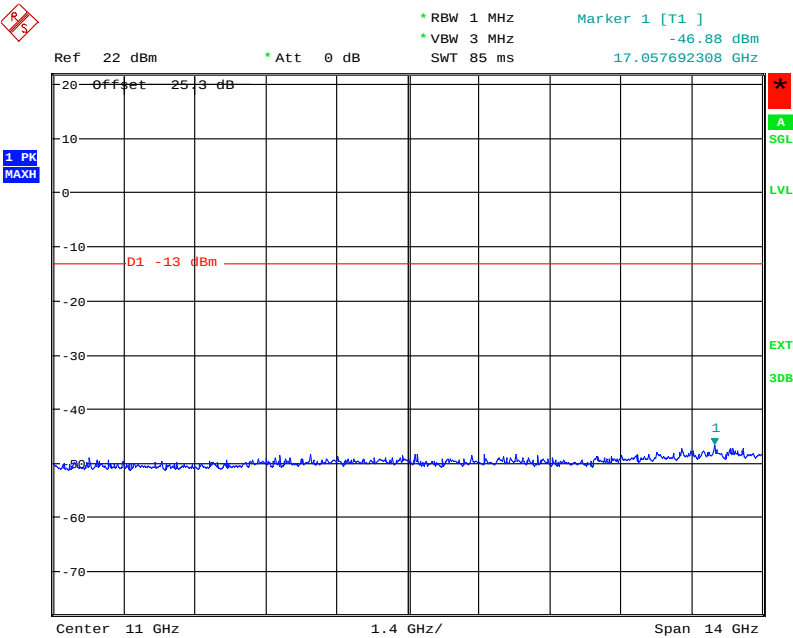


1752.5 MHz - 1 Resource Block - High



Date: 1.AUG.2013 14:02:05

1752.5 MHz - All Resource Blocks

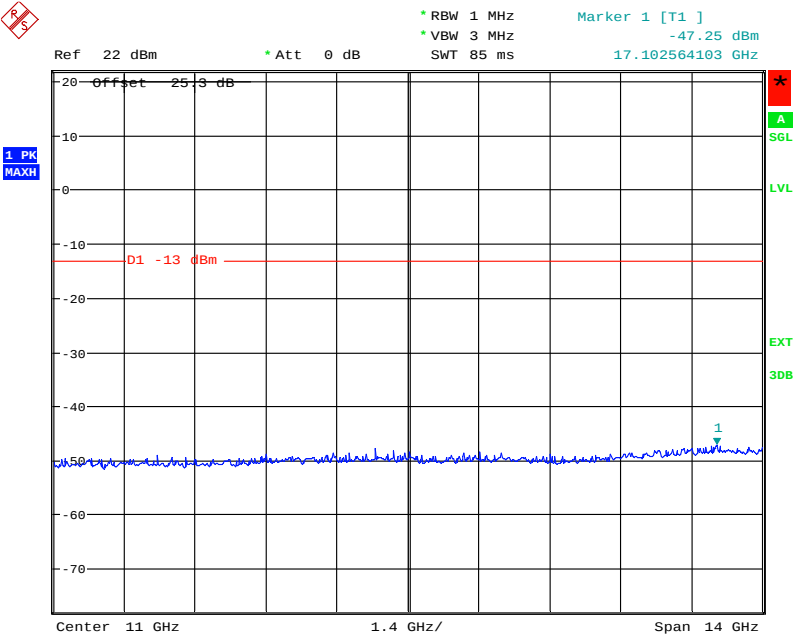


Date: 1.AUG.2013 13:53:17



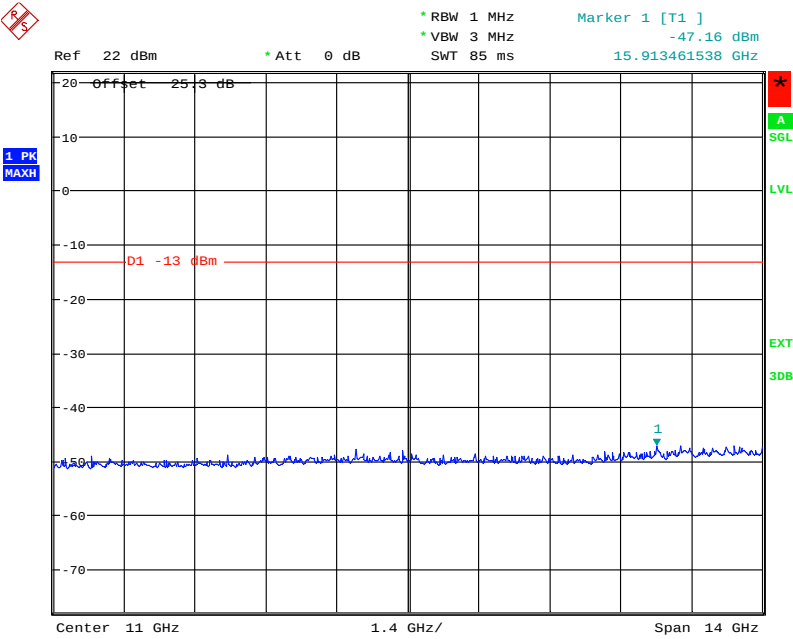
10.0 MHz Bandwidth - QPSK

1715 MHz - 1 Resource Block - Low



Date: 31.JUL.2013 09:02:09

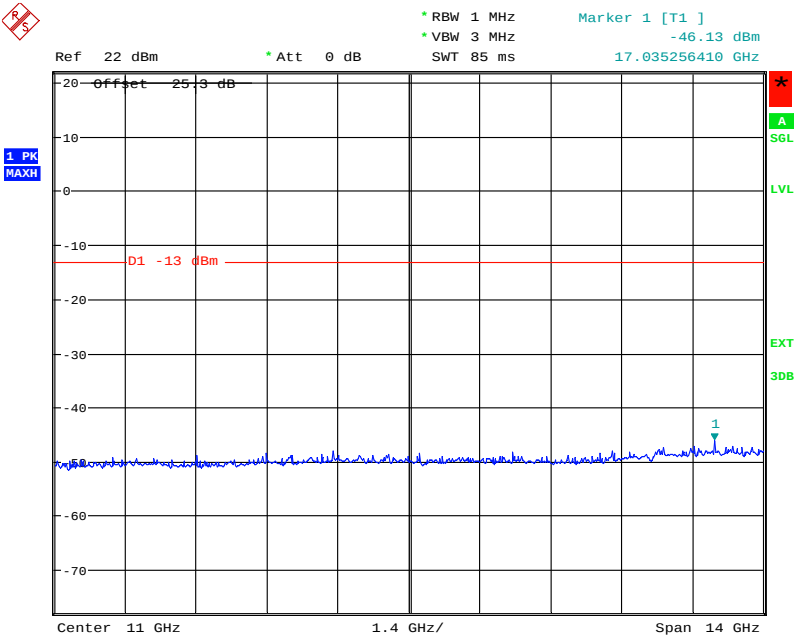
1715 MHz - 1 Resource Block - Middle



Date: 31.JUL.2013 09:09:14

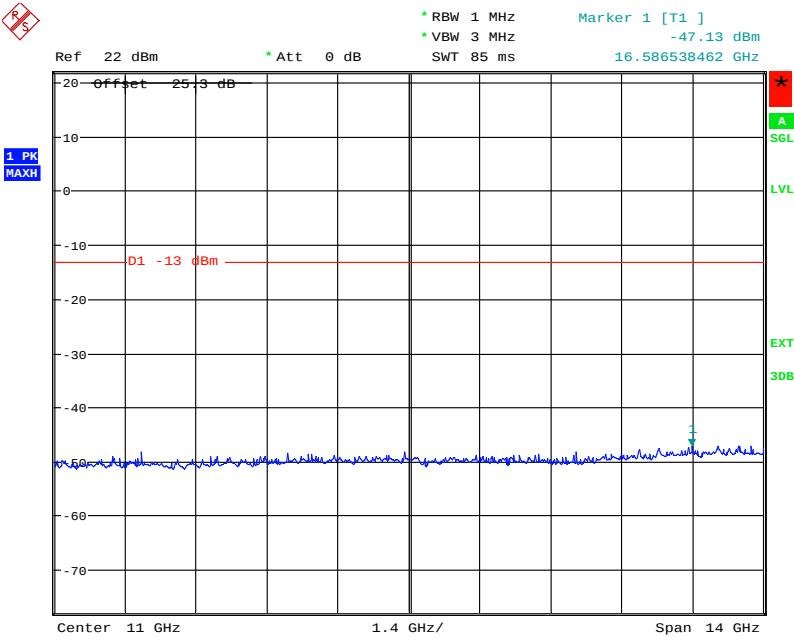


1715 MHz - 1 Resource Block - High



Date: 31.JUL.2013 09:15:14

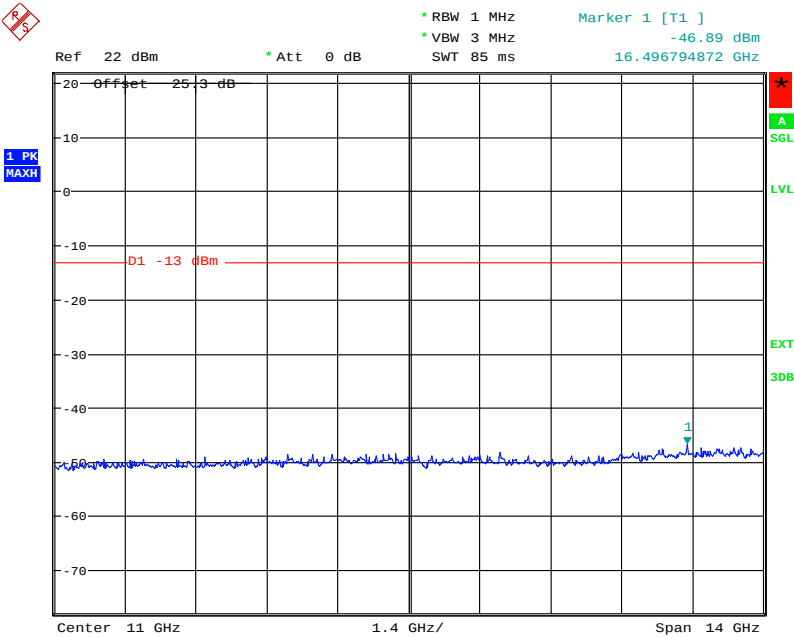
1715 MHz - All Resource Blocks



Date: 31.JUL.2013 08:50:54

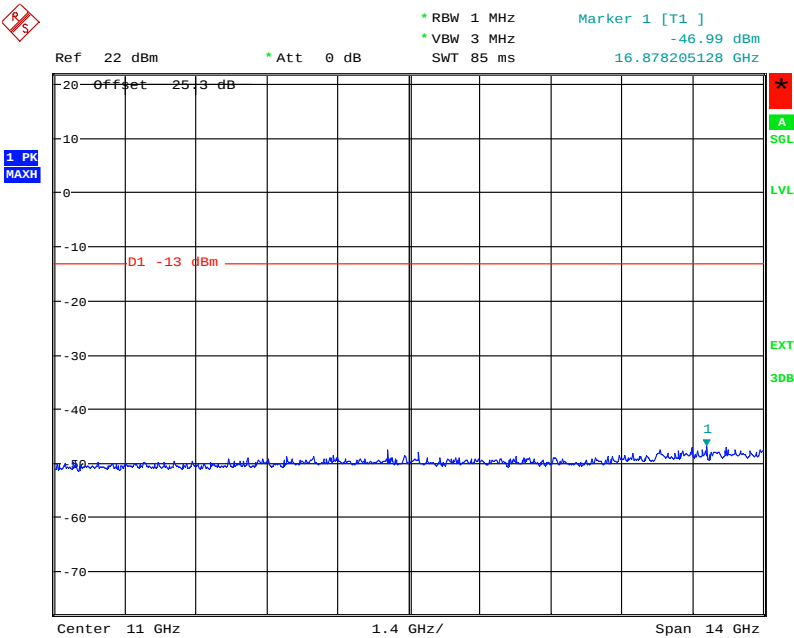


1732.5 MHz - 1 Resource Block - Low



Date: 31.JUL.2013 10:11:53

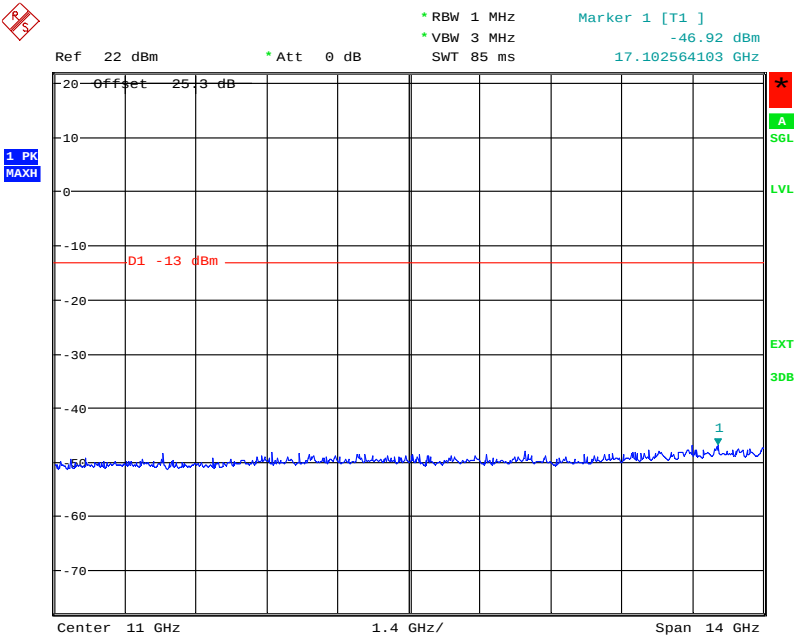
1732.5 MHz - 1 Resource Block - Middle



Date: 31.JUL.2013 10:00:45

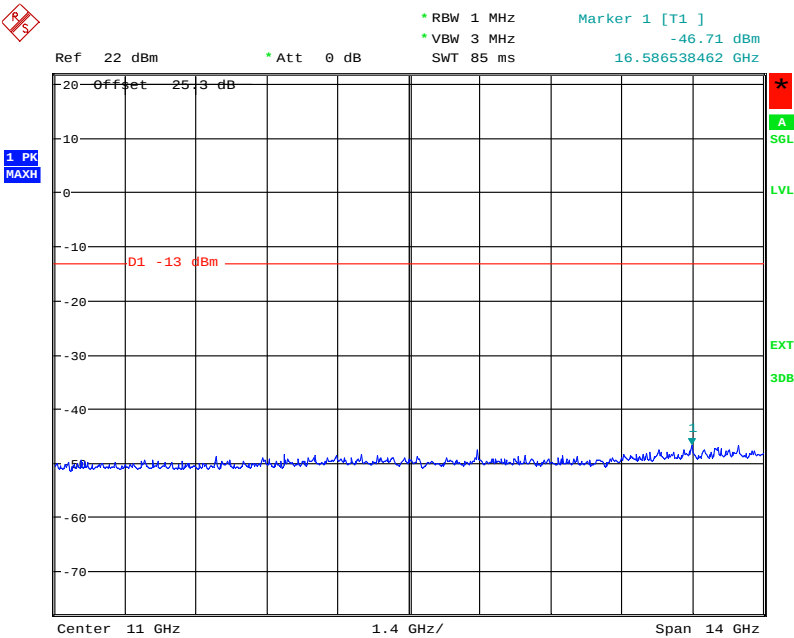


1732.5 MHz - 1 Resource Block - High



Date: 31.JUL.2013 09:33:21

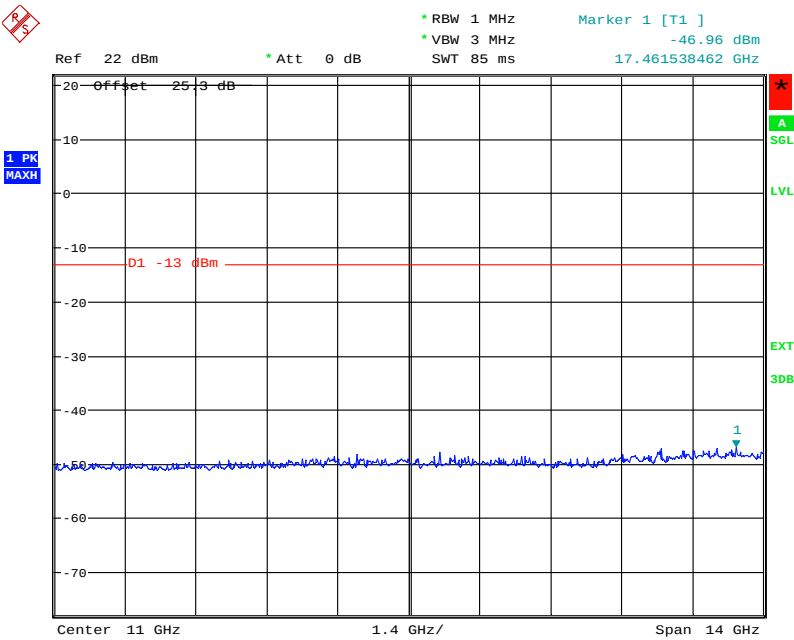
1732.5 MHz - All Resource Blocks



Date: 31.JUL.2013 10:19:02

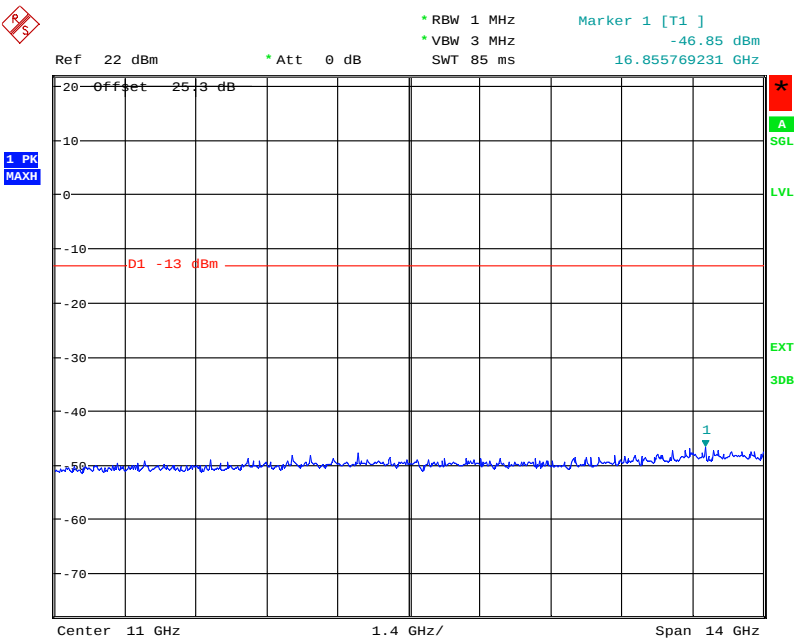


1750 MHz - 1 Resource Block - Low



Date: 31.JUL.2013 11:01:28

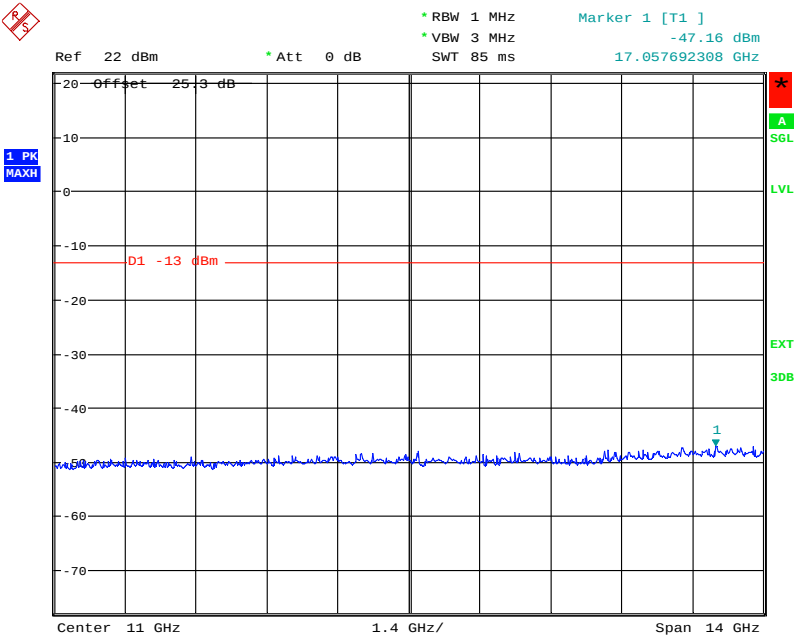
1750 MHz - 1 Resource Block - Middle



Date: 31.JUL.2013 10:47:58

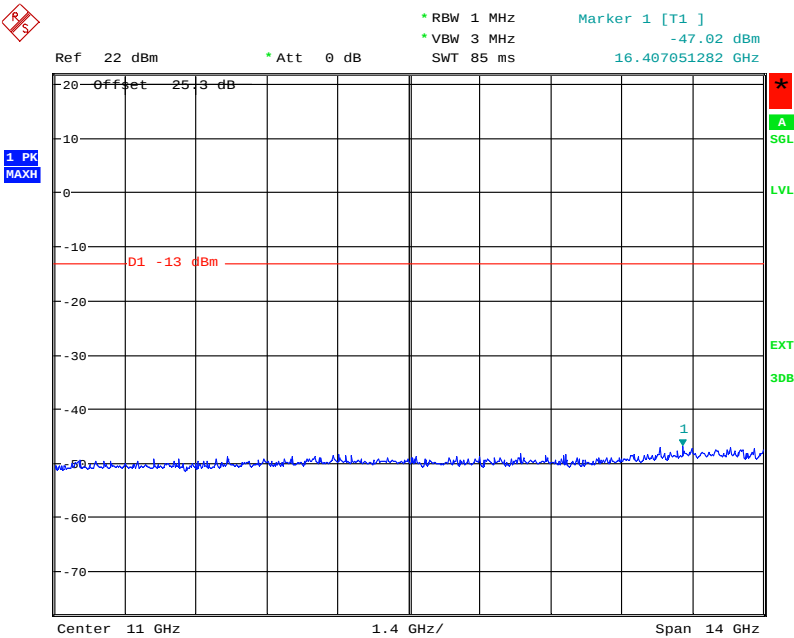


1750 MHz - 1 Resource Block - High



Date: 31.JUL.2013 10:37:37

1750 MHz - All Resource Blocks

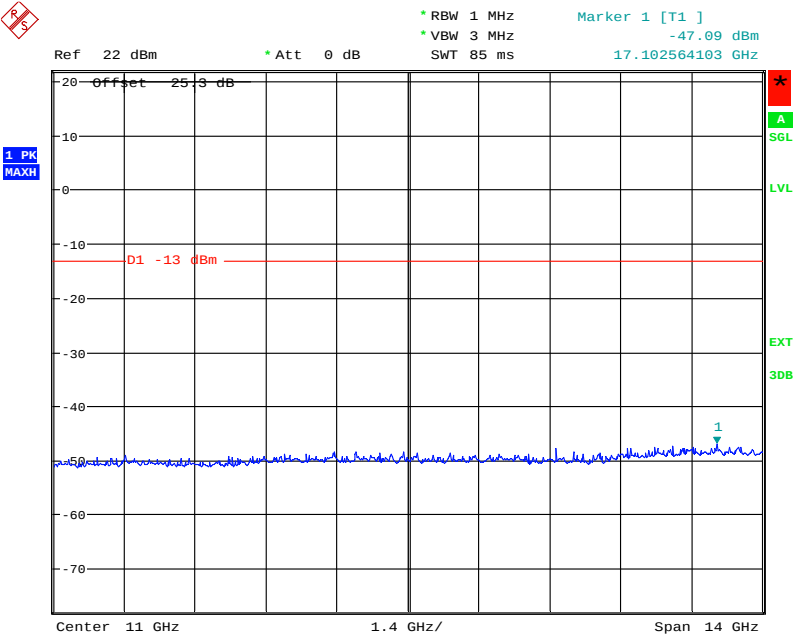


Date: 31.JUL.2013 10:27:49



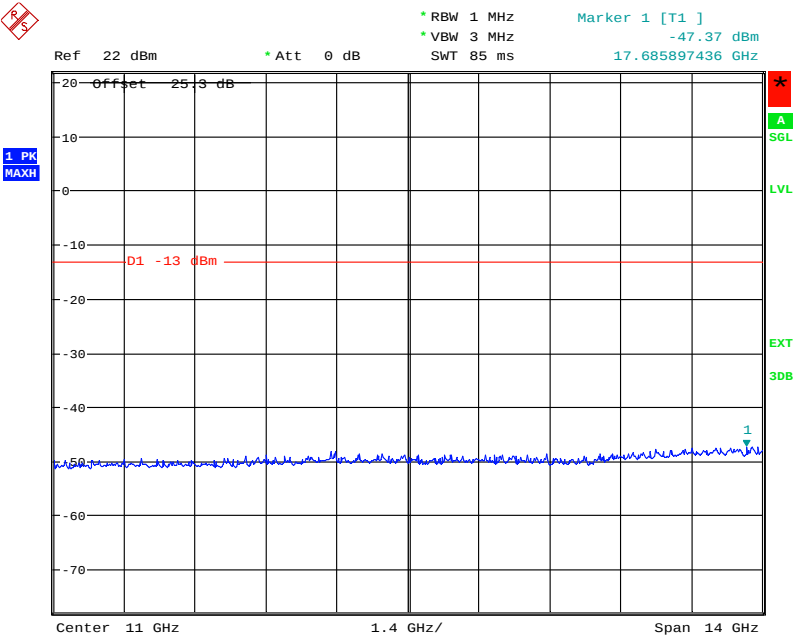
10.0 MHz Bandwidth - 16QAM

1715 MHz - 1 Resource Block - Low



Date: 1.AUG.2013 14:35:48

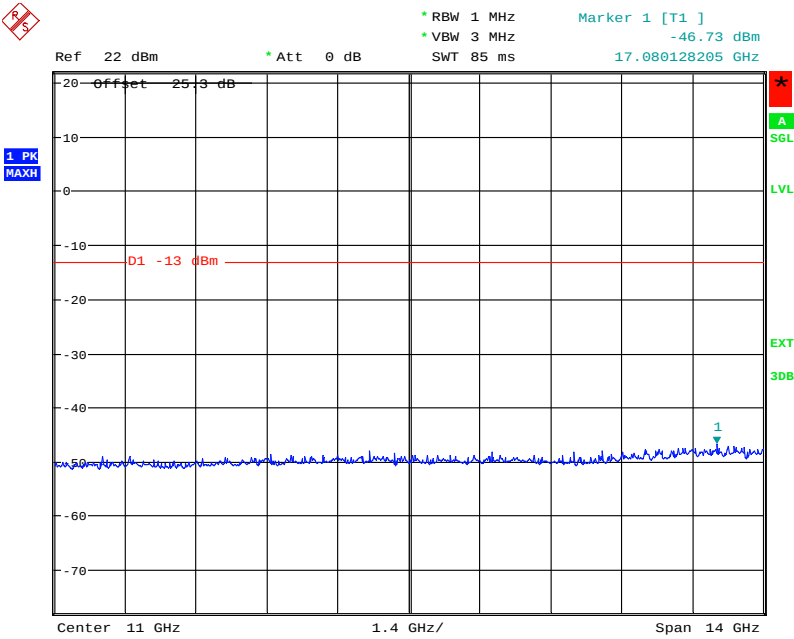
1715 MHz - 1 Resource Block - Middle



Date: 1.AUG.2013 14:59:26

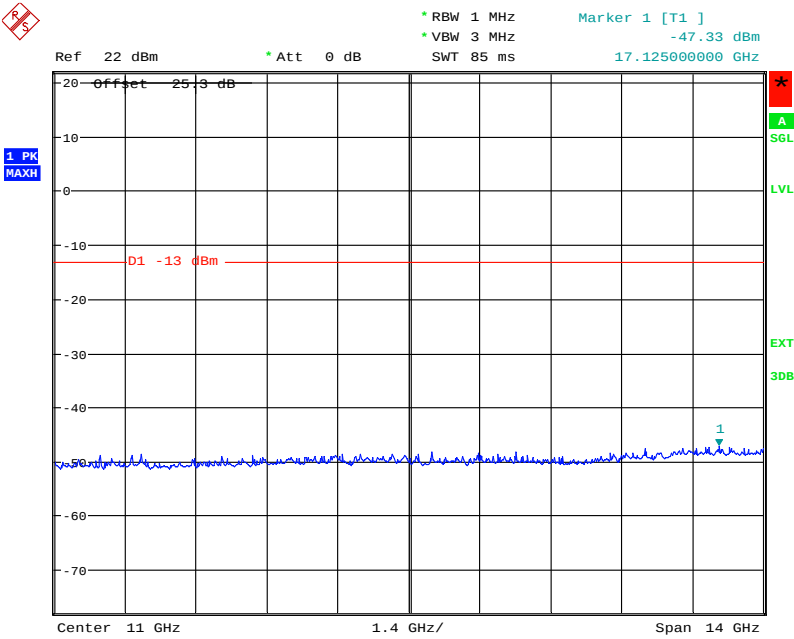


1715 MHz - 1 Resource Block - High



Date: 1.AUG.2013 14:50:41

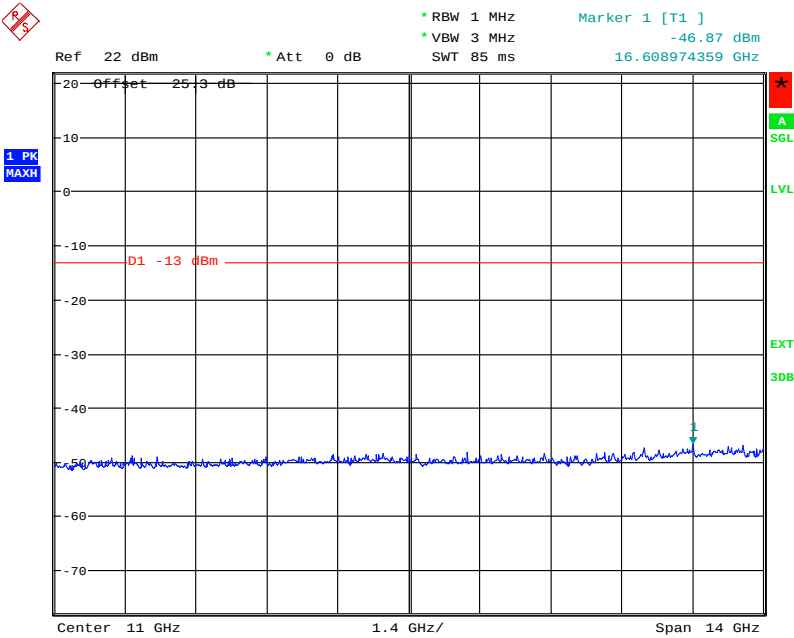
1715 MHz - All Resource Blocks



Date: 1.AUG.2013 14:43:27

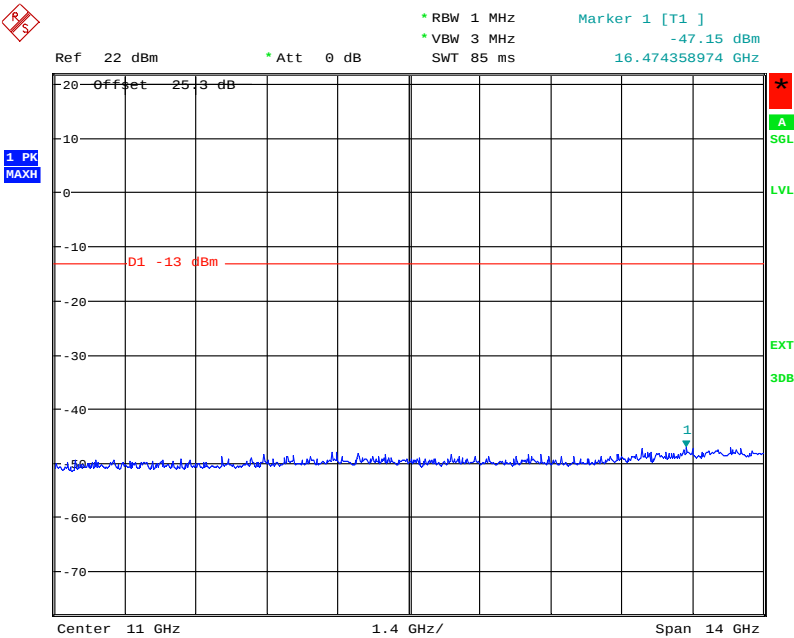


1732.5 MHz - 1 Resource Block - Low



Date: 1.AUG.2013 15:27:40

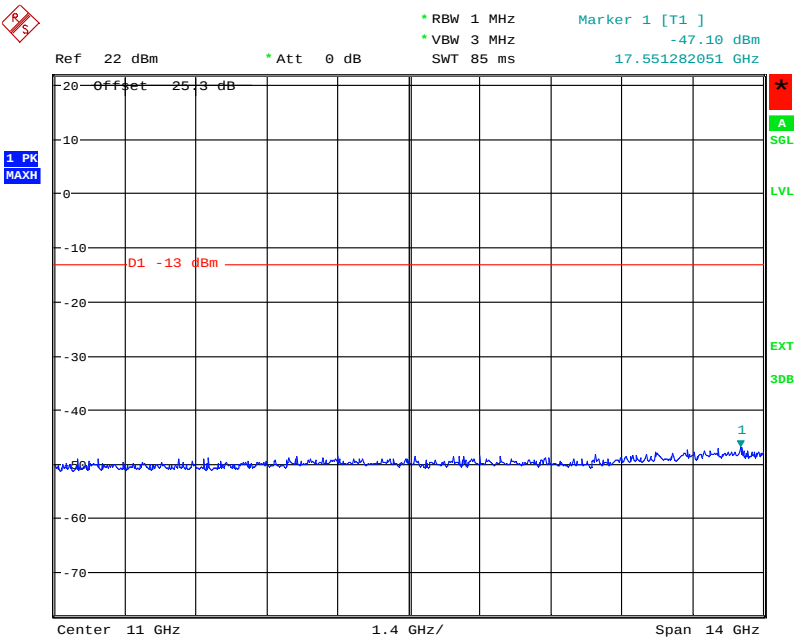
1732.5 MHz - 1 Resource Block - Middle



Date: 1.AUG.2013 15:11:05

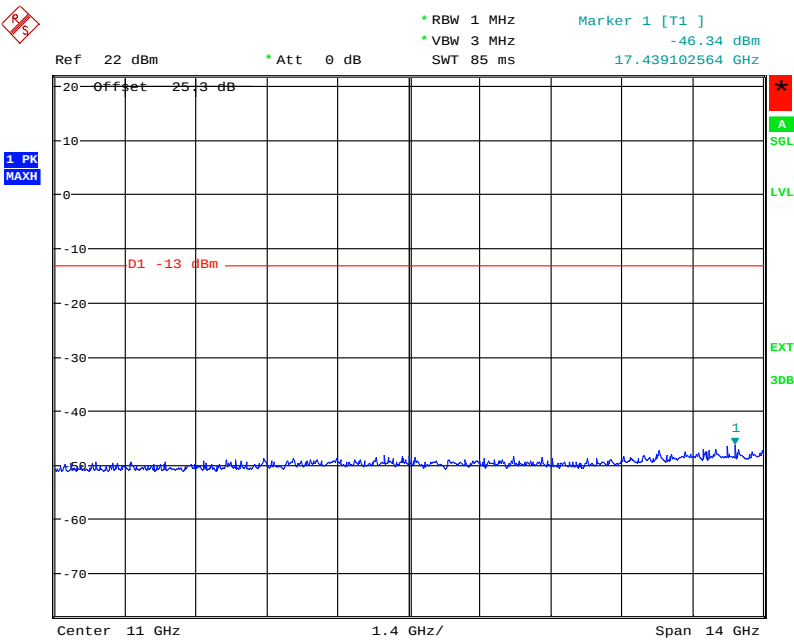


1732.5 MHz - 1 Resource Block - High



Date: 1.AUG.2013 15:17:39

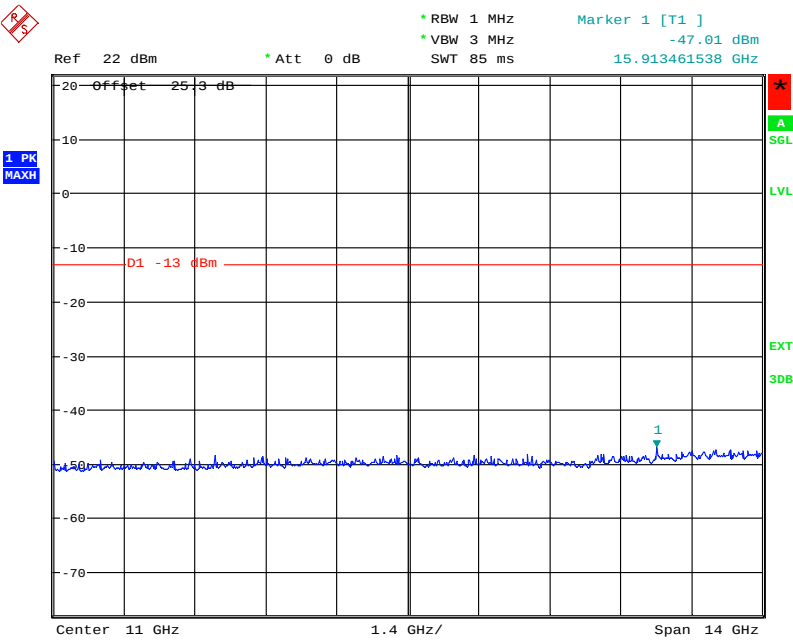
1732.5 MHz - All Resource Blocks



Date: 1.AUG.2013 15:34:29

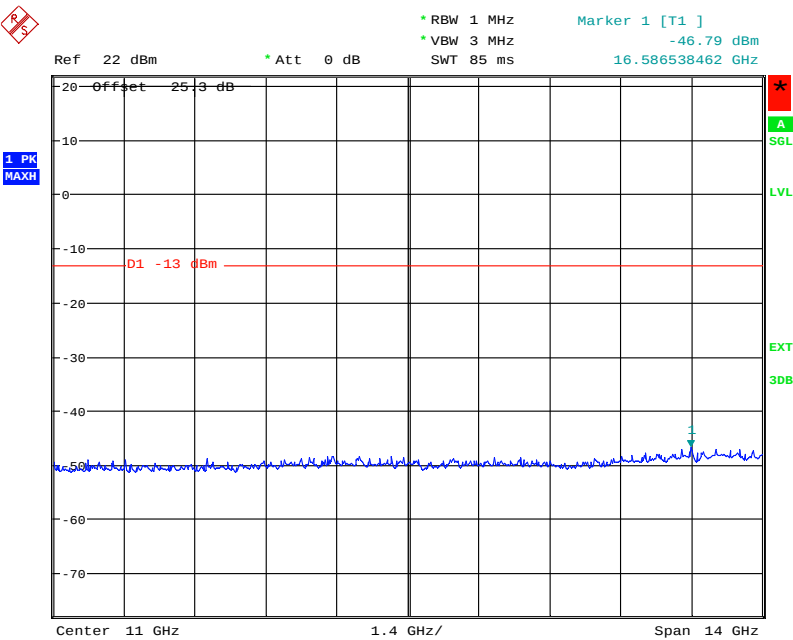


1750 MHz - 1 Resource Block - Low



Date: 1.AUG.2013 16:09:26

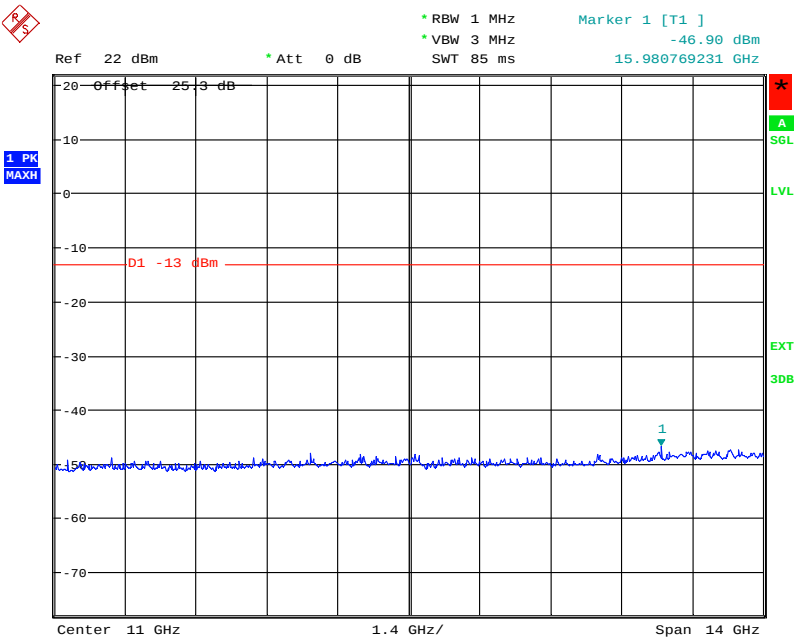
1750 MHz - 1 Resource Block - Middle



Date: 1.AUG.2013 16:03:20

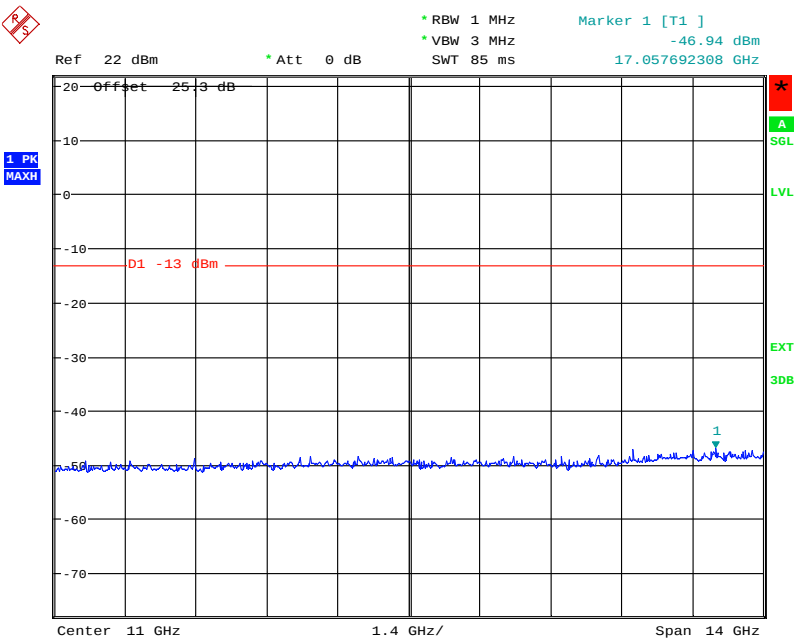


1750 MHz - 1 Resource Block - High



Date: 1.AUG.2013 15:57:49

1750 MHz - All Resource Blocks

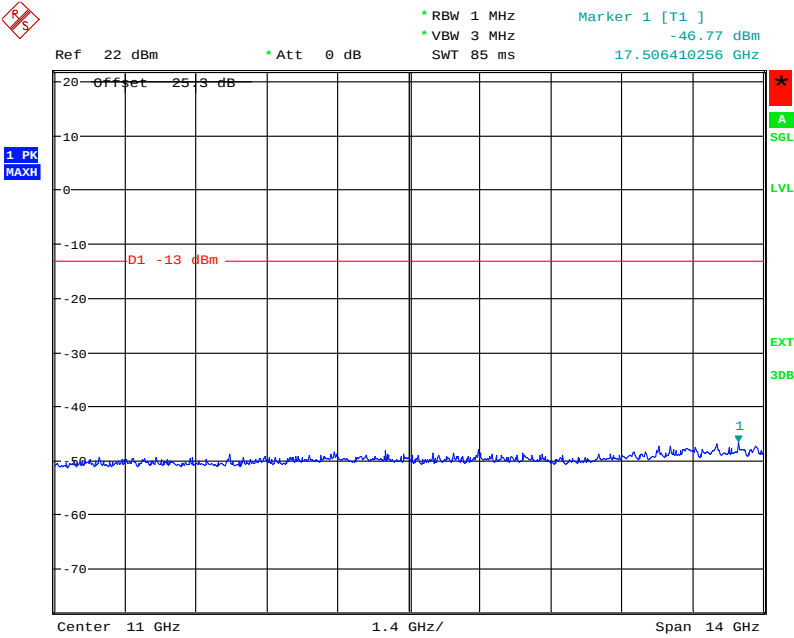


Date: 1.AUG.2013 15:48:26



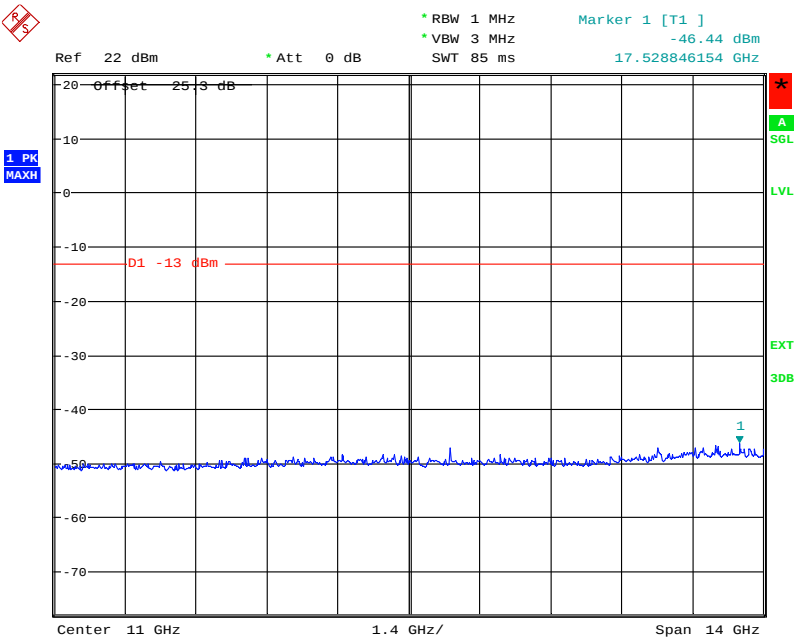
15.0 MHz Bandwidth - QPSK

1717.5 MHz - 1 Resource Block - Low



Date: 31.JUL.2013 11:26:52

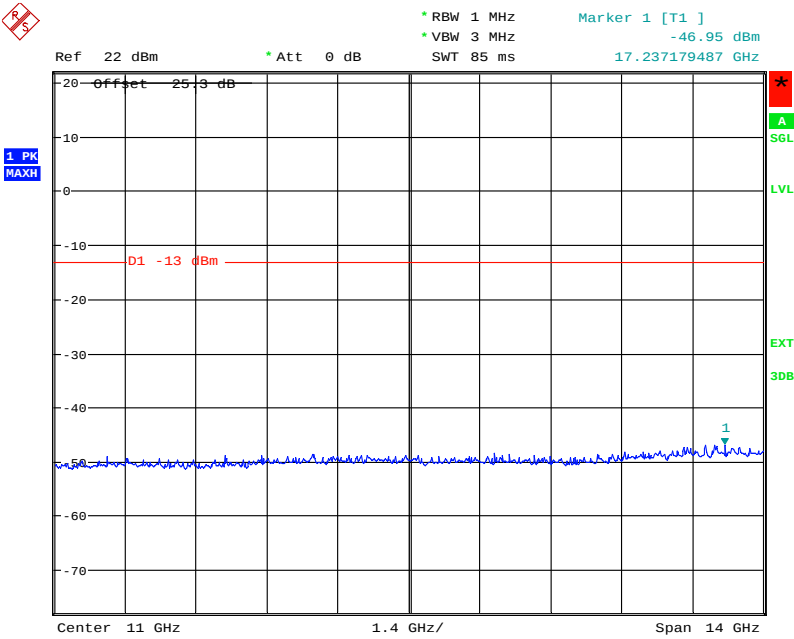
1717.5 MHz - 1 Resource Block - Middle



Date: 31.JUL.2013 11:51:55

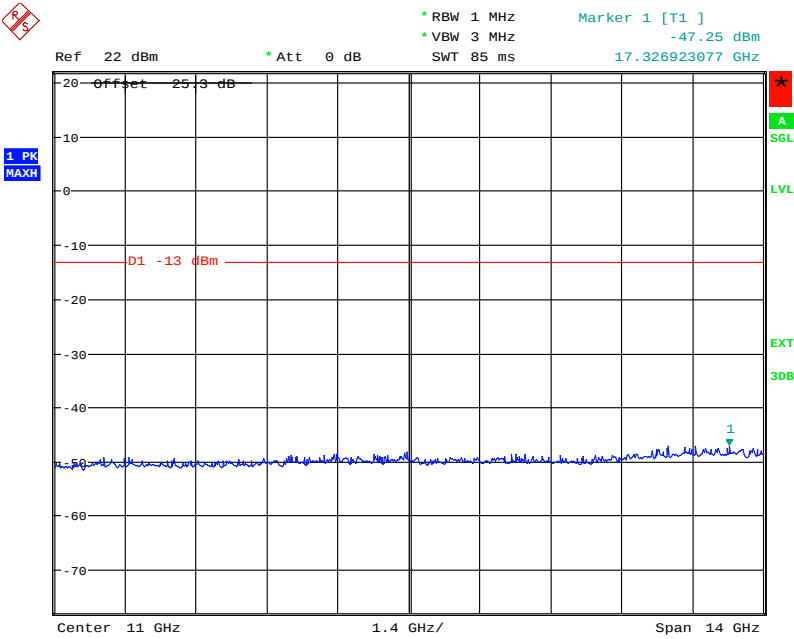


1717.5 MHz - 1 Resource Block - High



Date: 31.JUL.2013 11:45:09

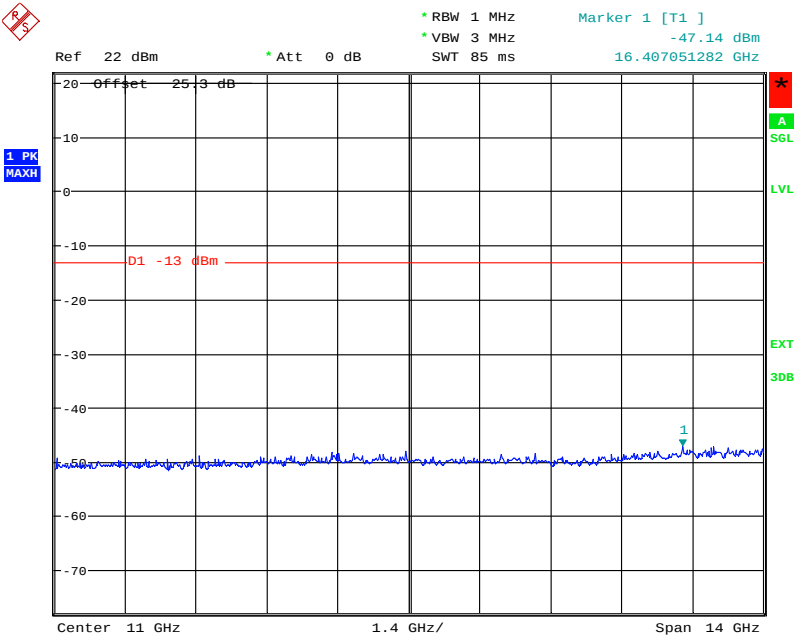
1717.5 MHz - All Resource Blocks



Date: 31.JUL.2013 11:37:06

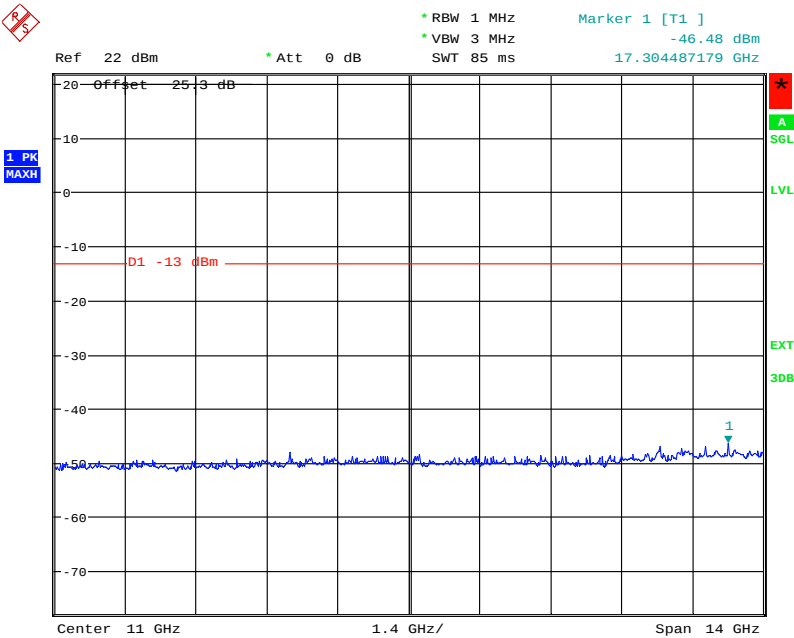


1732.5 MHz - 1 Resource Block - Low



Date: 31.JUL.2013 12:14:09

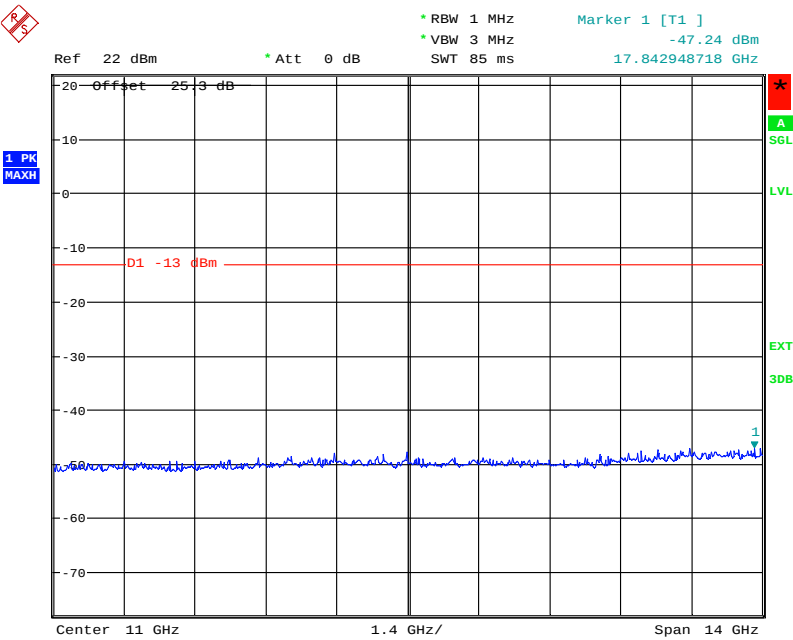
1732.5 MHz - 1 Resource Block - Middle



Date: 31.JUL.2013 12:00:11

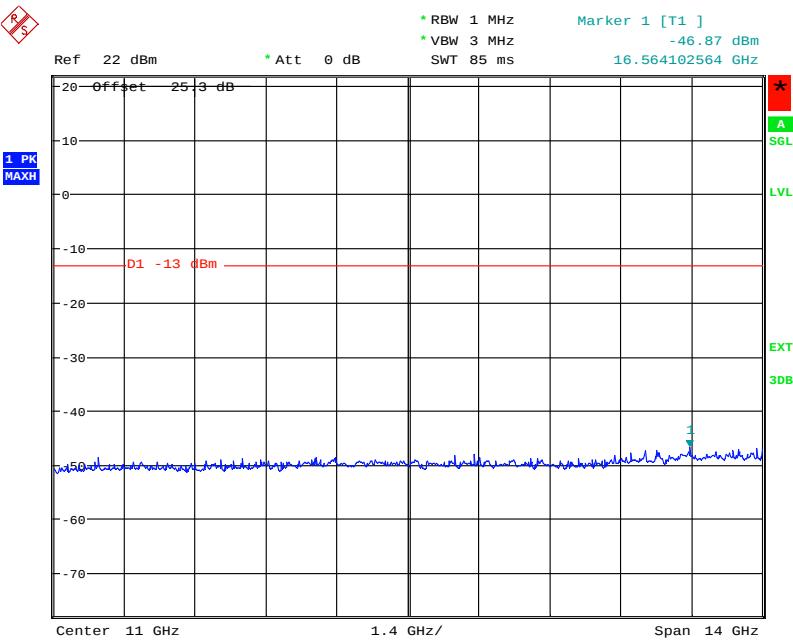


1732.5 MHz - 1 Resource Block - High



Date: 31.JUL.2013 12:07:26

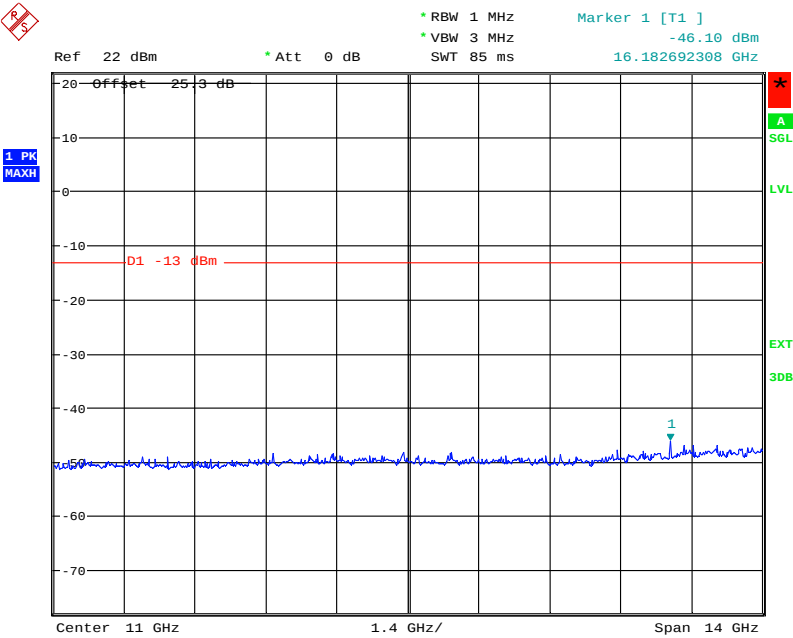
1732.5 MHz - All Resource Blocks



Date: 31.JUL.2013 12:20:23

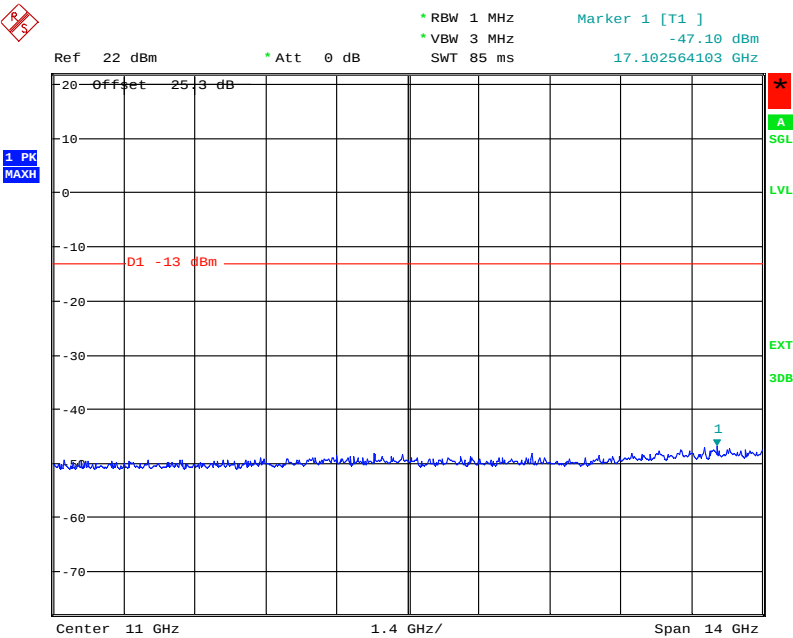


1747.5 MHz - 1 Resource Block - Low



Date: 31.JUL.2013 12:48:56

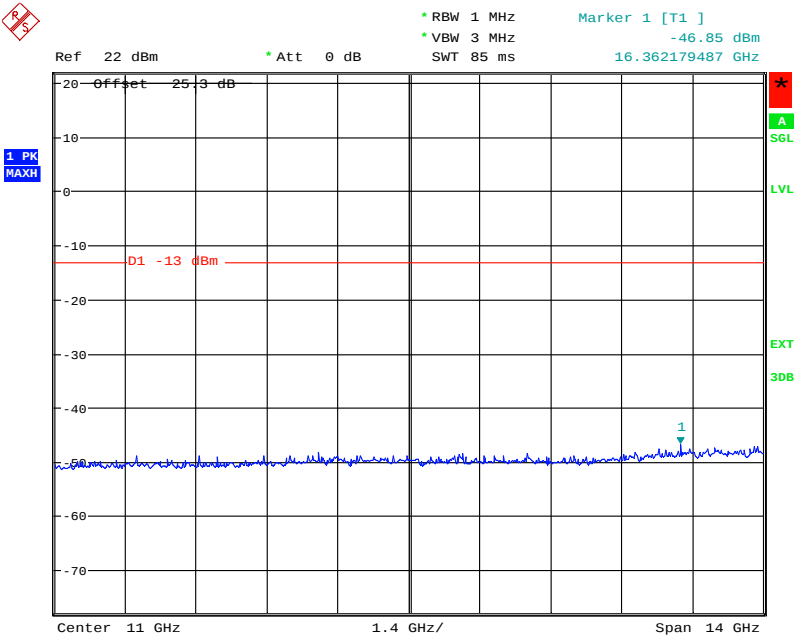
1747.5 MHz - 1 Resource Block - Middle



Date: 31.JUL.2013 12:43:06

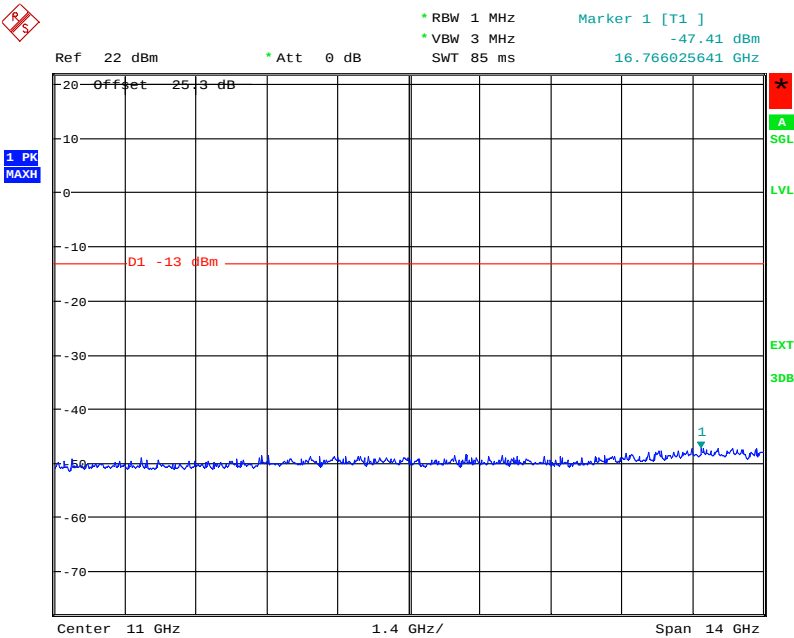


1747.5 MHz - 1 Resource Block - High



Date: 31.JUL.2013 12:36:29

1747.5 MHz - All Resource Blocks

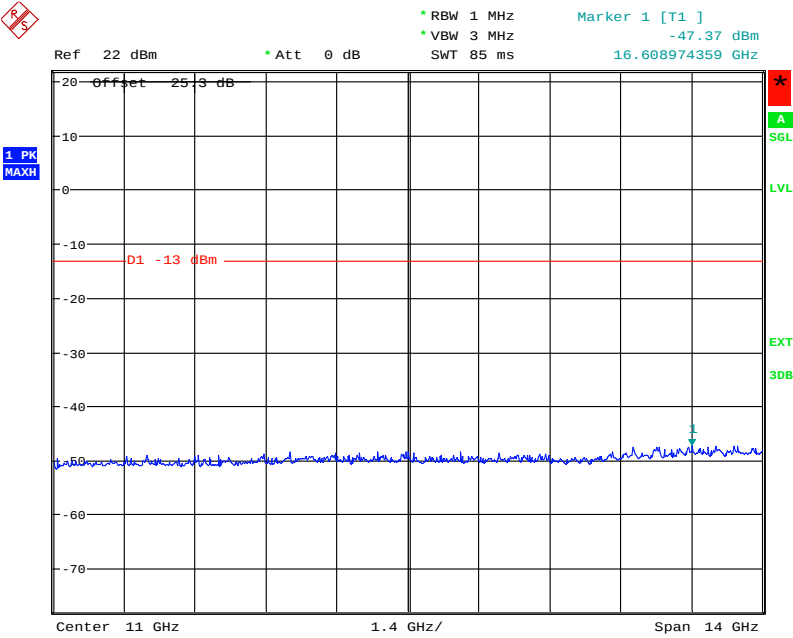


Date: 31.JUL.2013 12:28:58



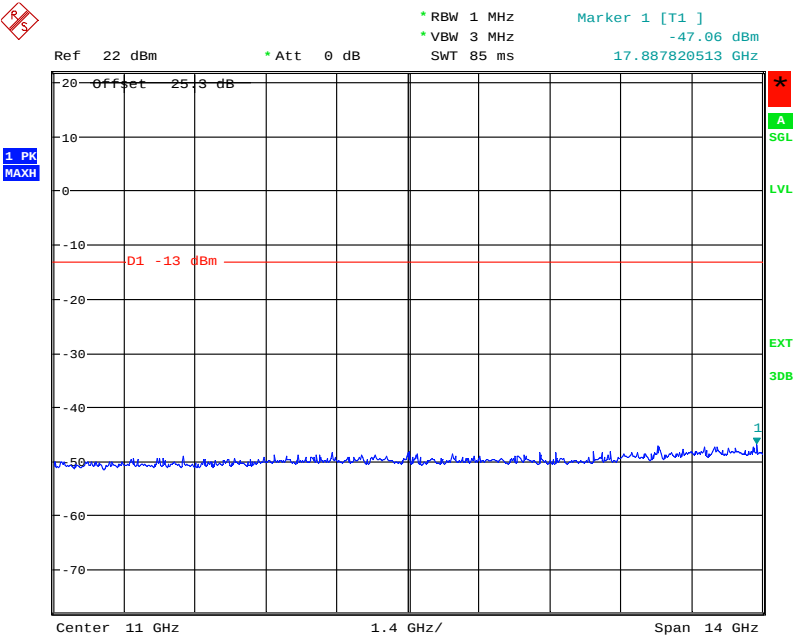
15.0 MHz Bandwidth - 16QAM

1717.5 MHz - 1 Resource Block - Low



Date: 1.AUG.2013 16:26:36

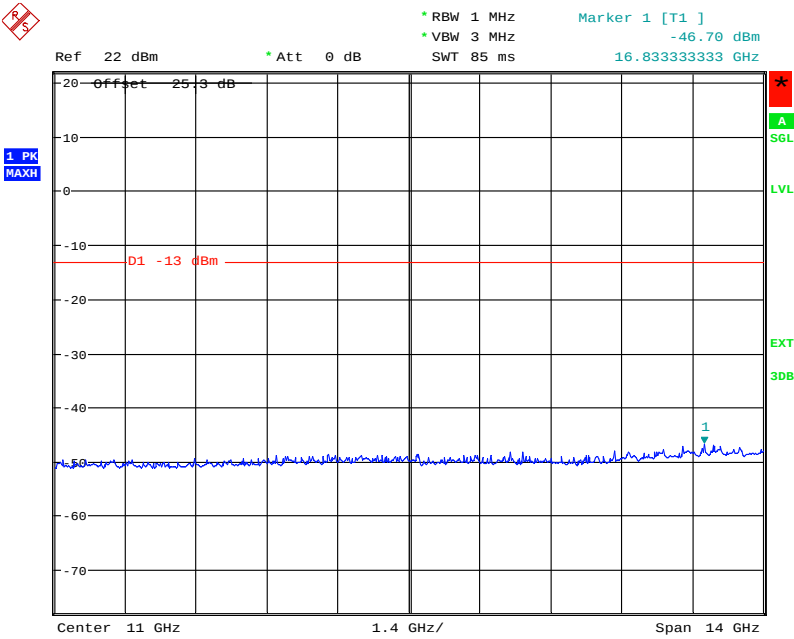
1717.5 MHz - 1 Resource Block - Middle



Date: 1.AUG.2013 16:32:11

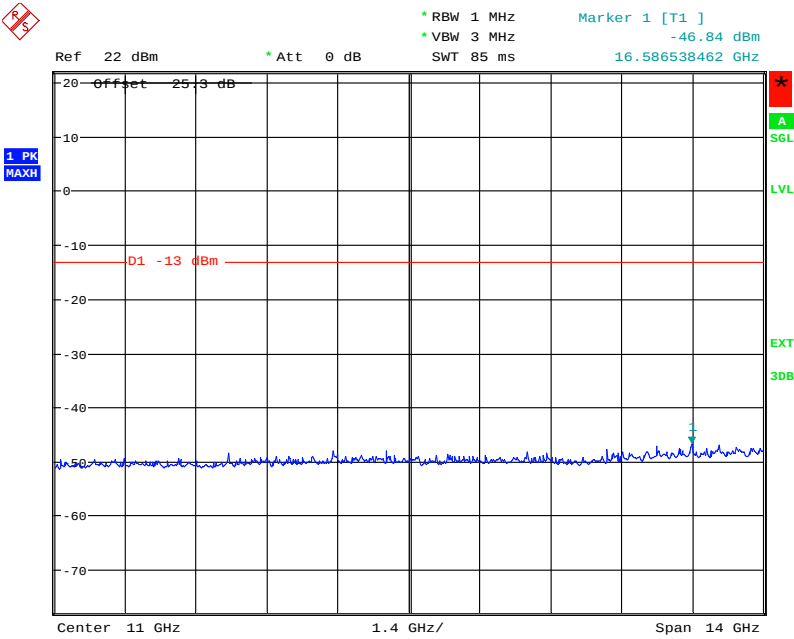


1717.5 MHz - 1 Resource Block - High



Date: 1.AUG.2013 16:37:56

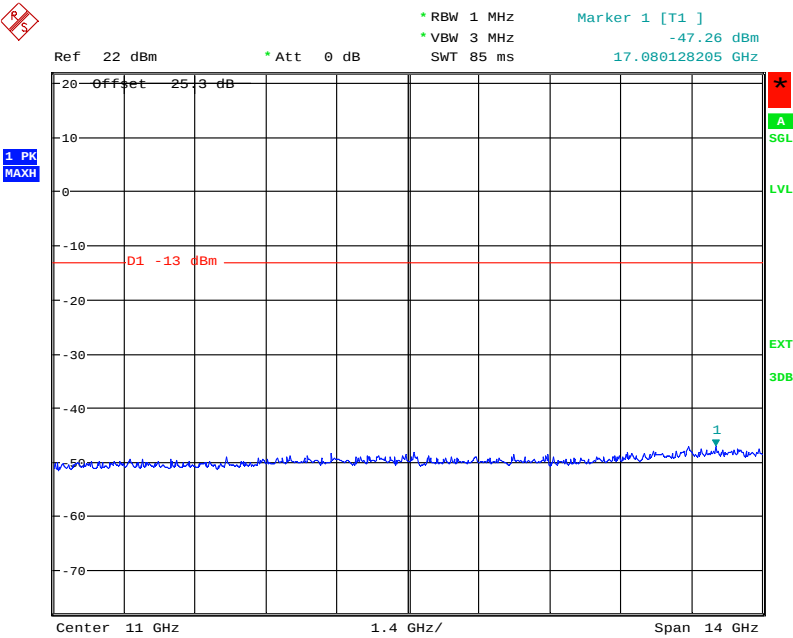
1717.5 MHz - All Resource Blocks



Date: 1.AUG.2013 16:19:32

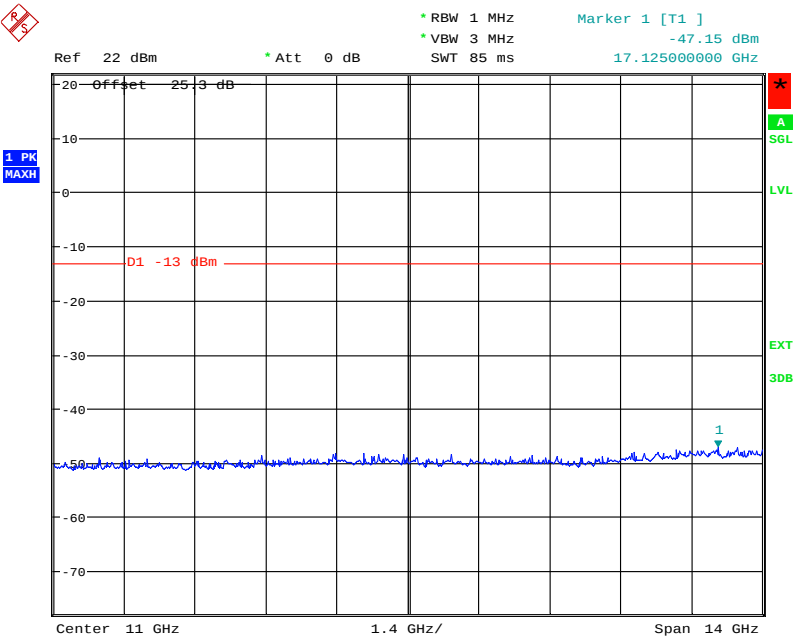


1732.5 MHz - 1 Resource Block - Low



Date: 2.AUG.2013 08:50:56

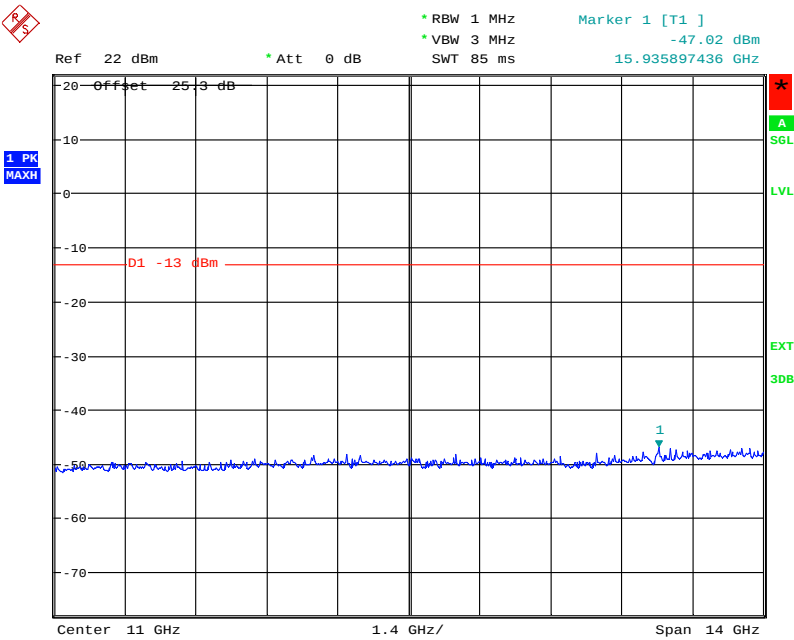
1732.5 MHz - 1 Resource Block - Middle



Date: 2.AUG.2013 08:44:44

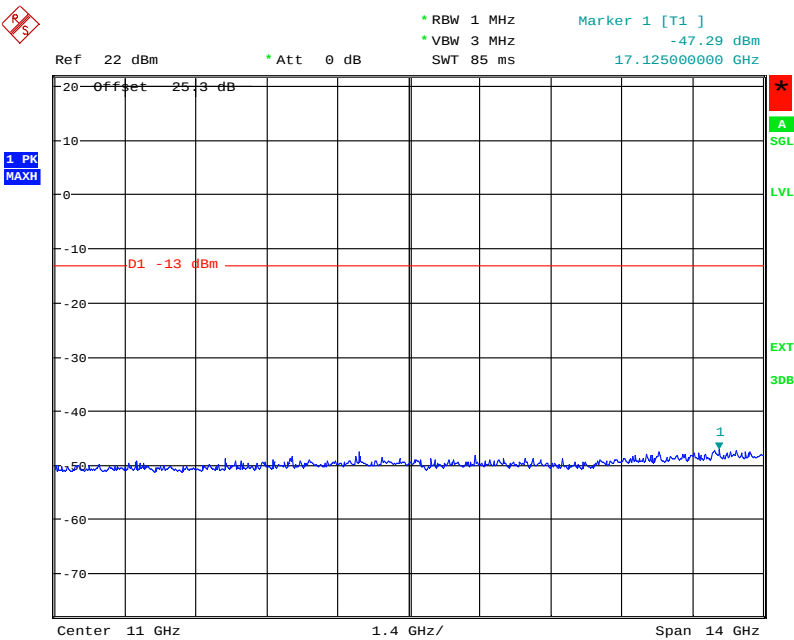


1732.5 MHz - 1 Resource Block - High



Date: 2.AUG.2013 08:38:48

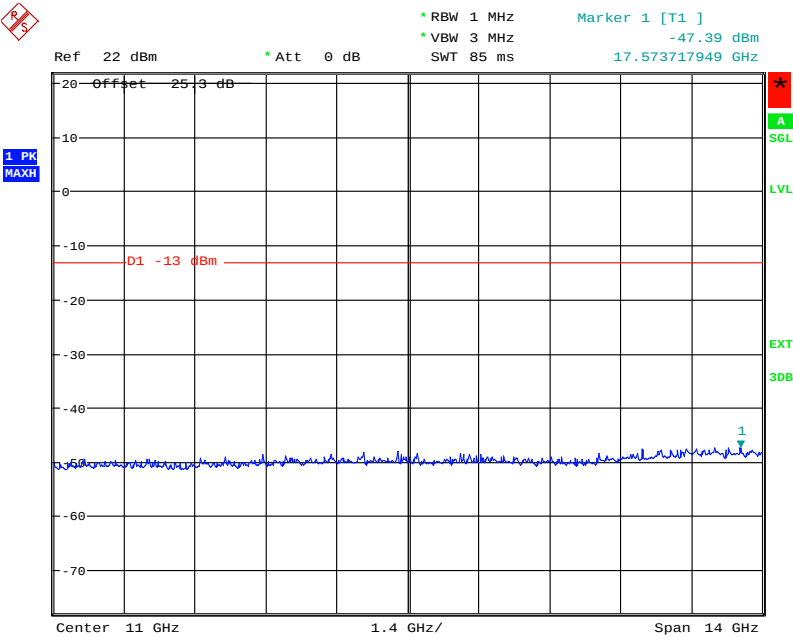
1732.5 MHz - All Resource Blocks



Date: 2.AUG.2013 08:21:37

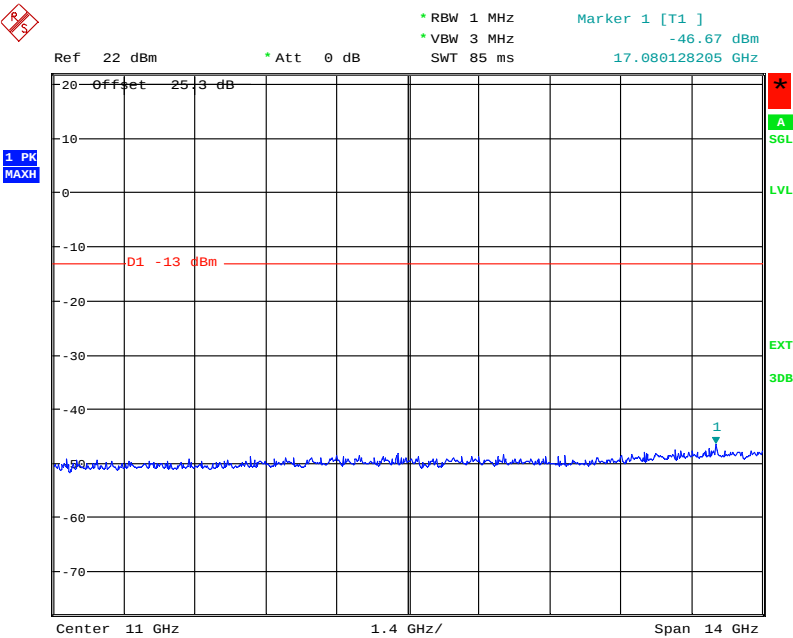


1747.5 MHz - 1 Resource Block - Low



Date: 2.AUG.2013 09:32:07

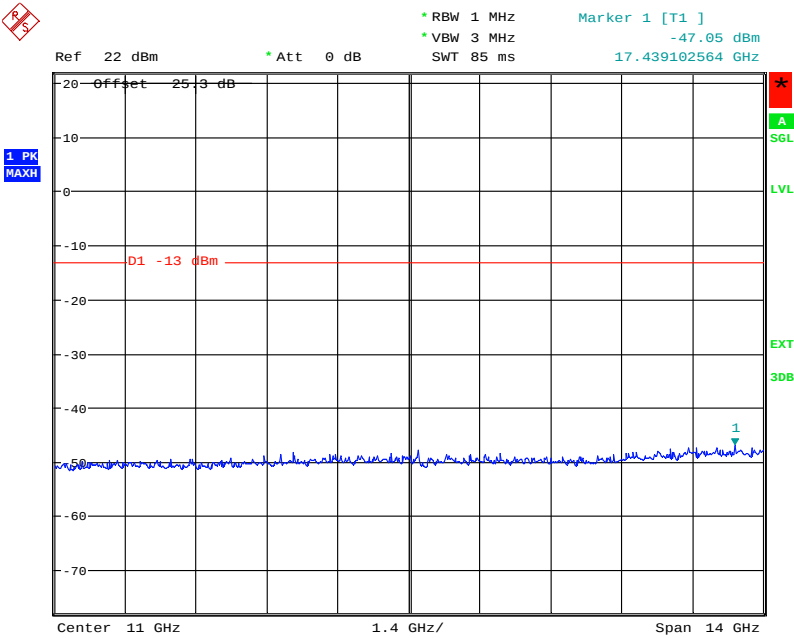
1747.5 MHz - 1 Resource Block - Middle



Date: 2.AUG.2013 09:21:08

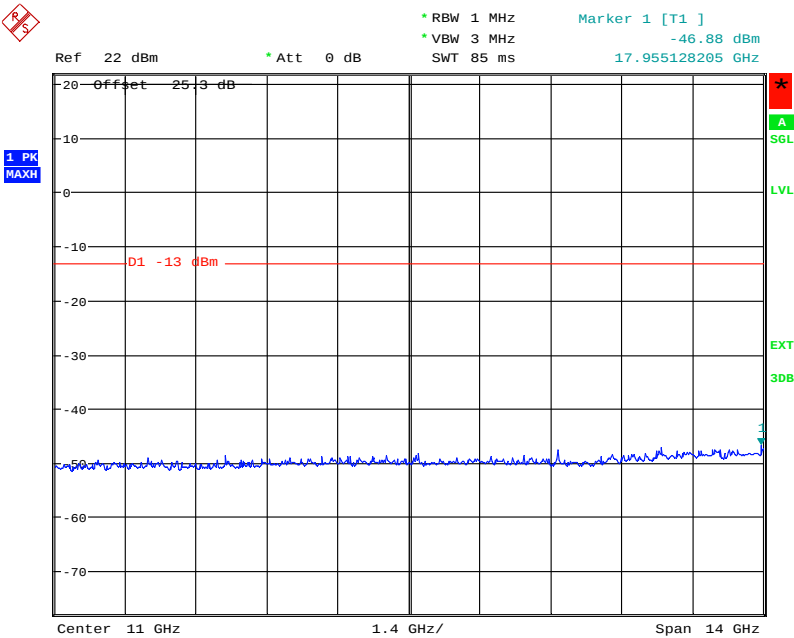


1747.5 MHz - 1 Resource Block - High



Date: 2.AUG.2013 09:07:37

1747.5 MHz - All Resource Blocks

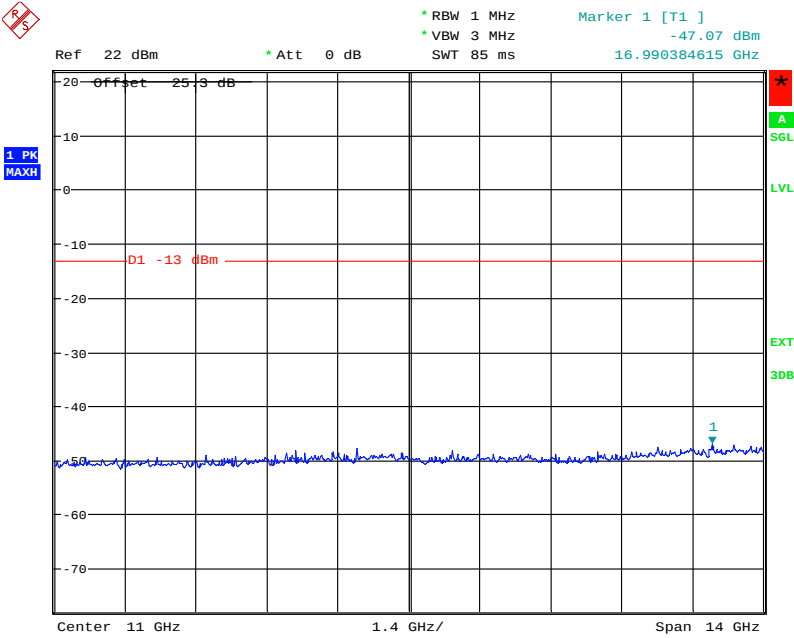


Date: 2.AUG.2013 08:59:54



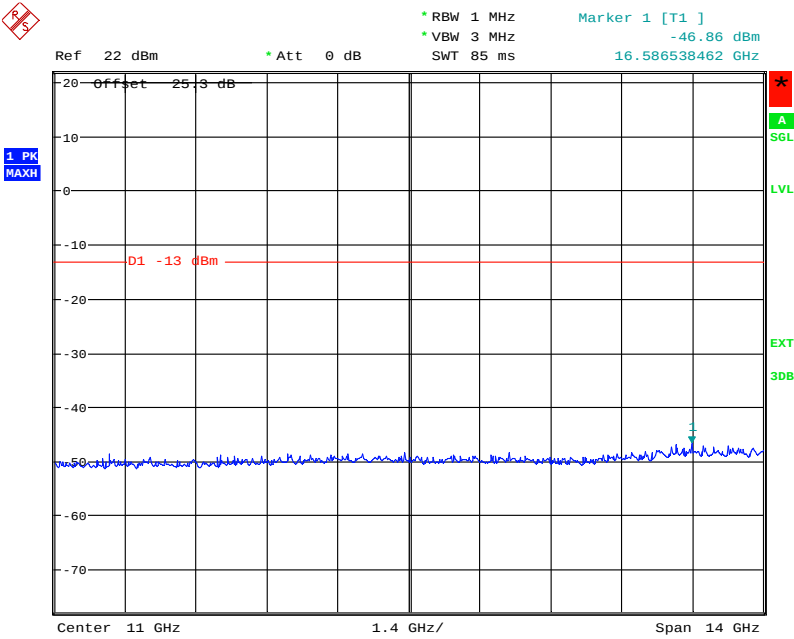
20.0 MHz Bandwidth - QPSK

1720 MHz - 1 Resource Block - Low



Date: 31.JUL.2013 14:57:53

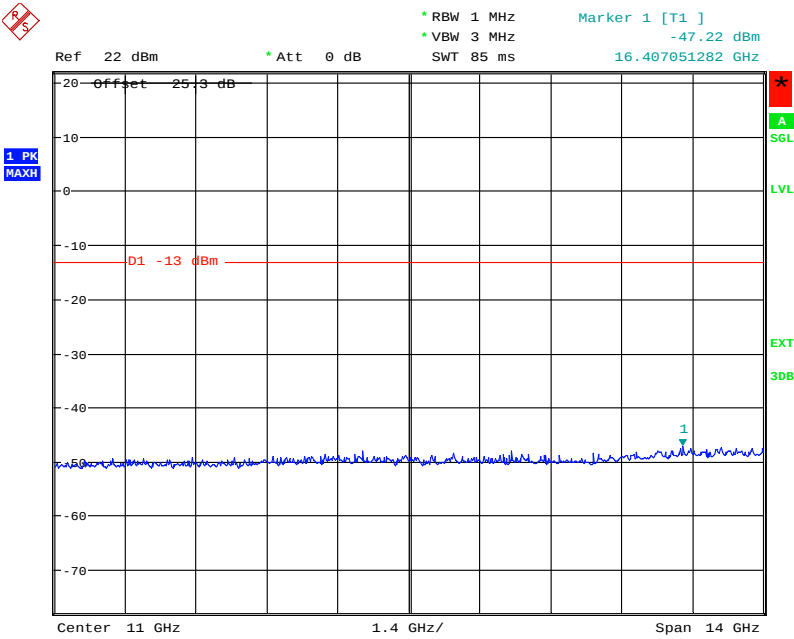
1720 MHz - 1 Resource Block - Middle



Date: 31.JUL.2013 15:19:39

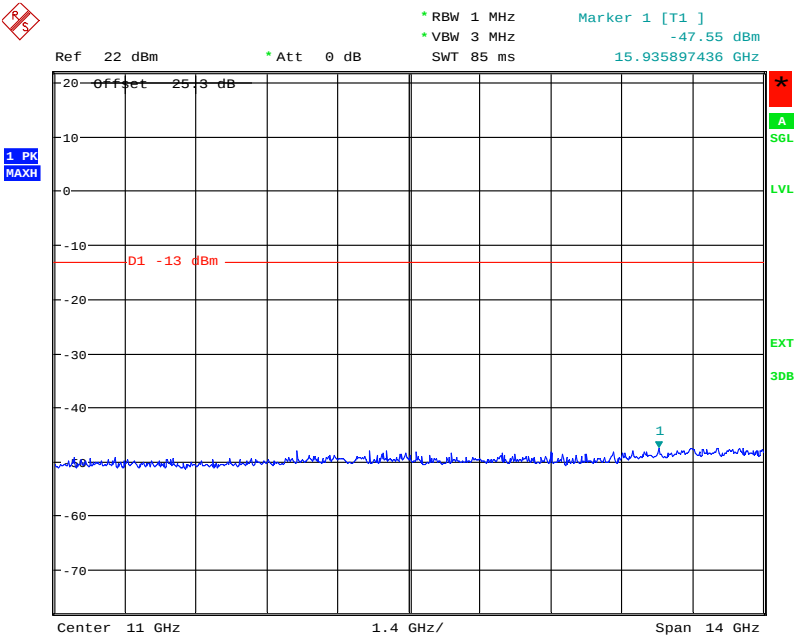


1720 MHz - 1 Resource Block - High



Date: 31.JUL.2013 15:12:39

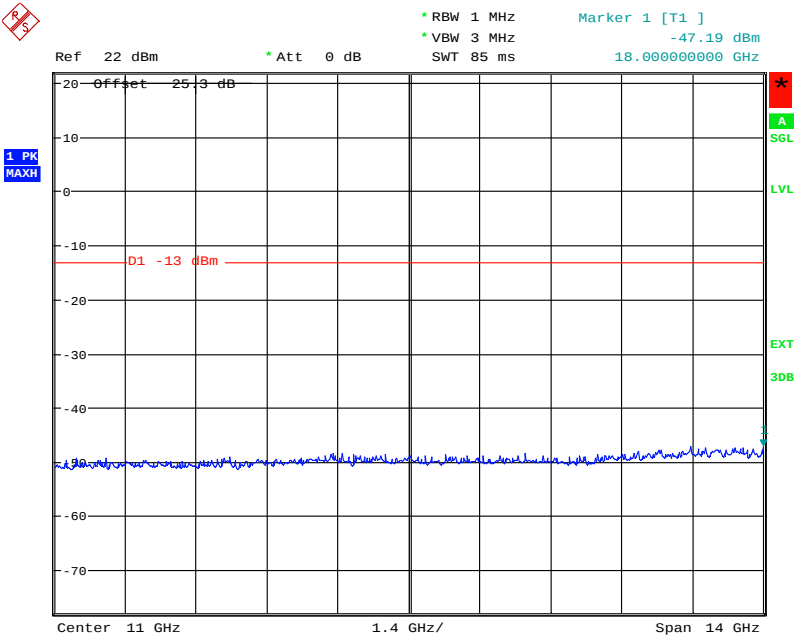
1720 MHz - All Resource Blocks



Date: 31.JUL.2013 15:05:55

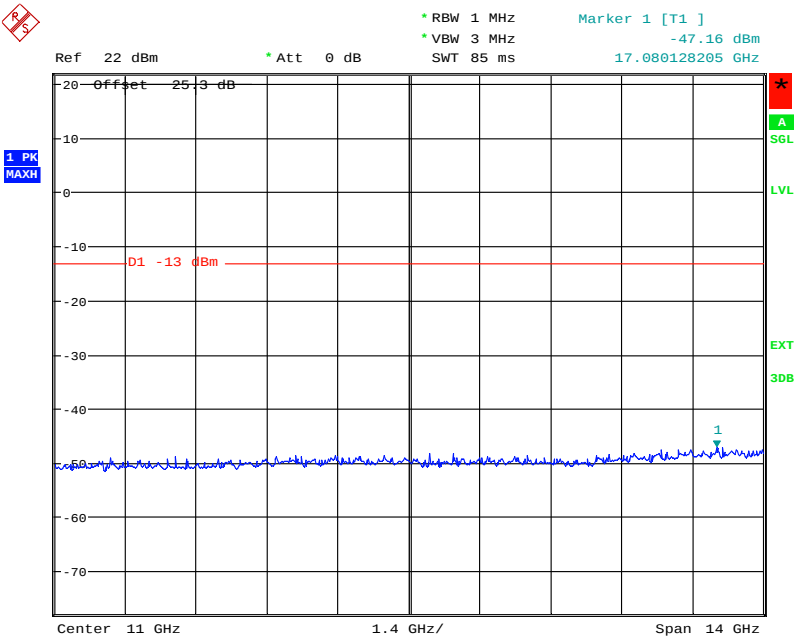


1732.5 MHz - 1 Resource Block - Low



Date: 31.JUL.2013 15:33:15

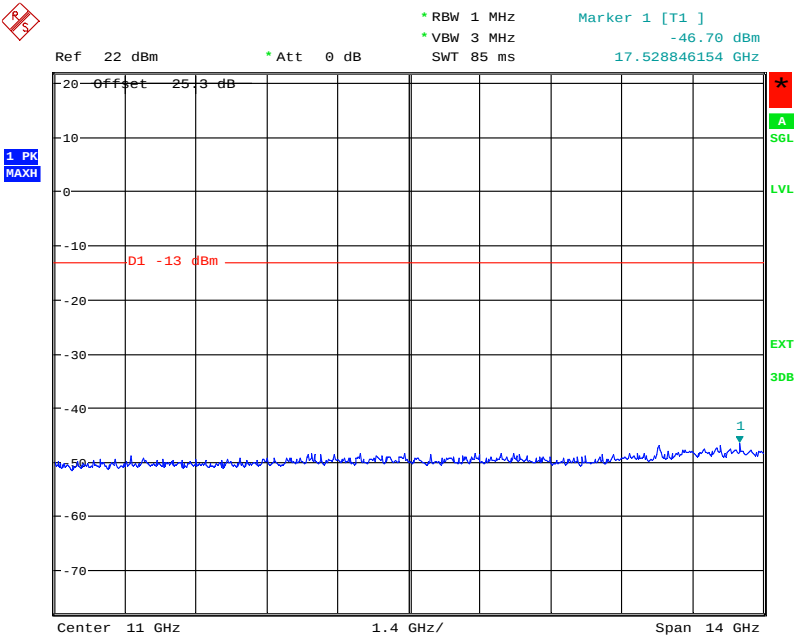
1732.5 MHz - 1 Resource Block - Middle



Date: 31.JUL.2013 15:26:44

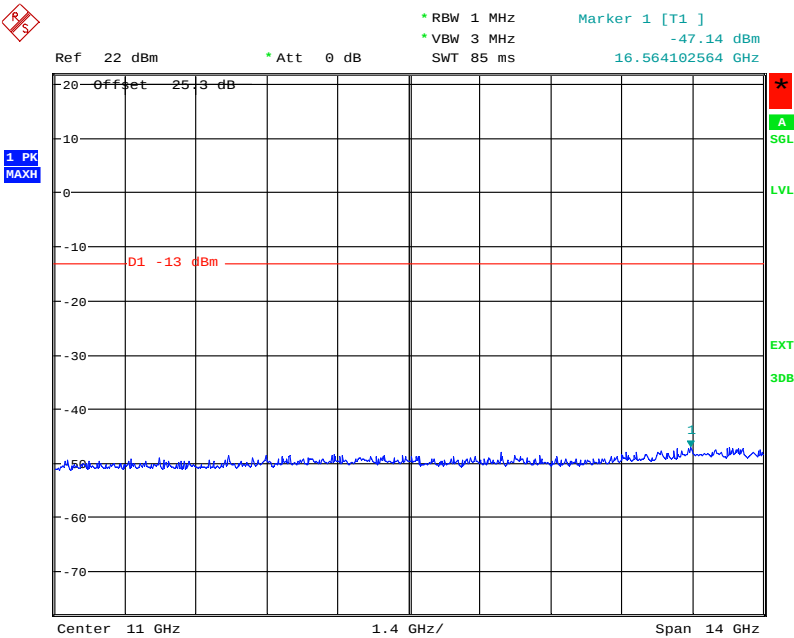


1732.5 MHz - 1 Resource Block - High



Date: 31.JUL.2013 15:38:56

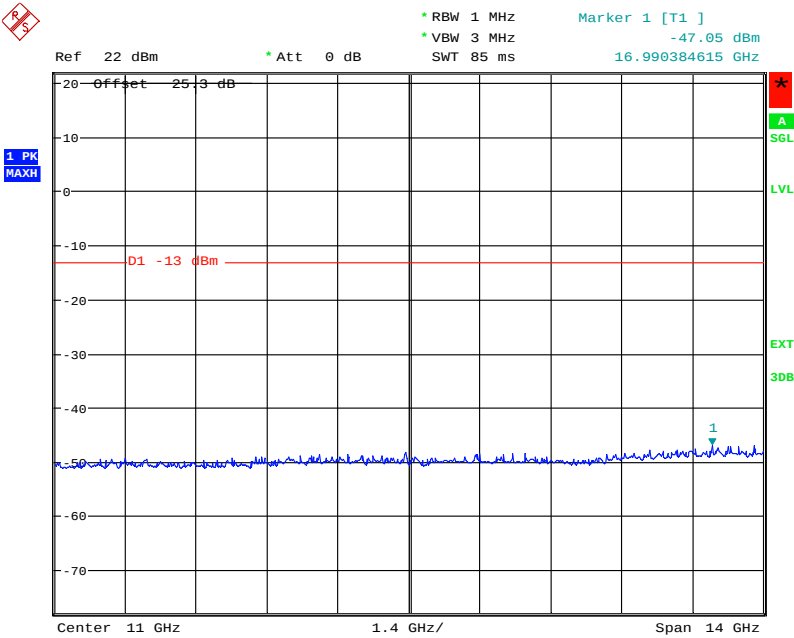
1732.5 MHz - All Resource Blocks



Date: 31.JUL.2013 15:45:59

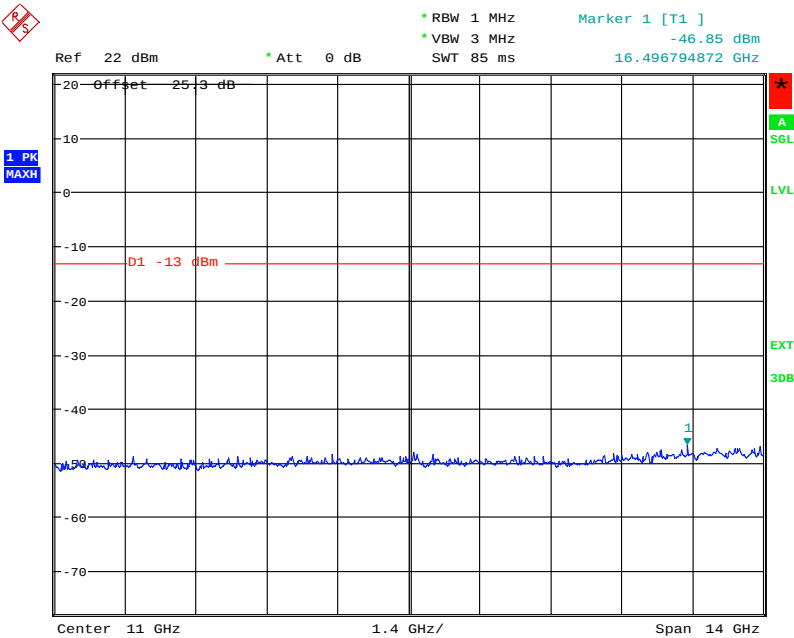


1745 MHz - 1 Resource Block - Low



Date: 31.JUL.2013 16:24:49

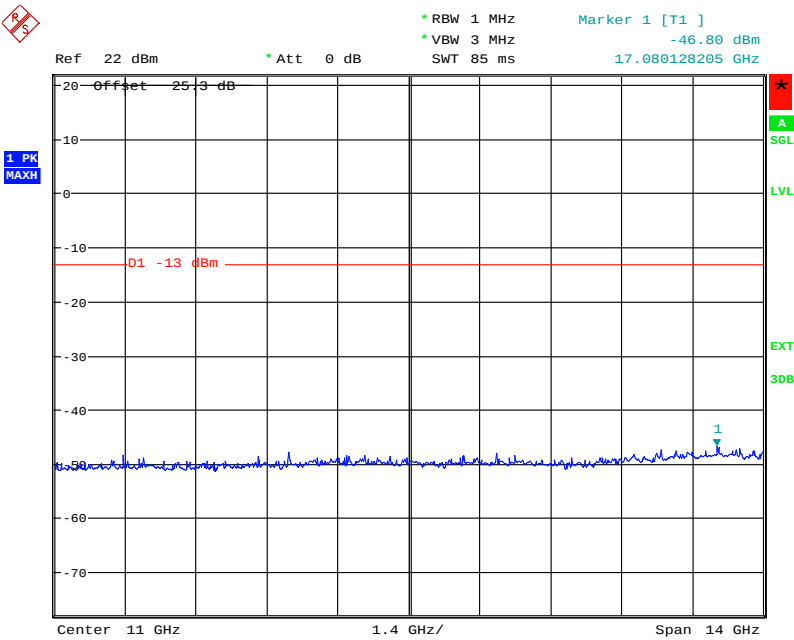
1745 MHz - 1 Resource Block - Middle



Date: 31.JUL.2013 16:18:25

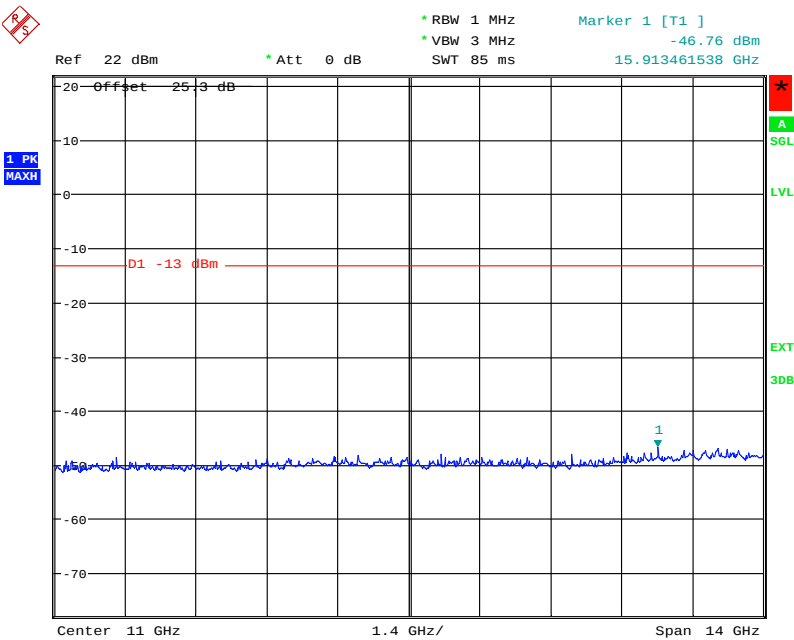


1745 MHz - 1 Resource Block - High



Date: 31.JUL.2013 16:12:47

1745 MHz - All Resource Blocks

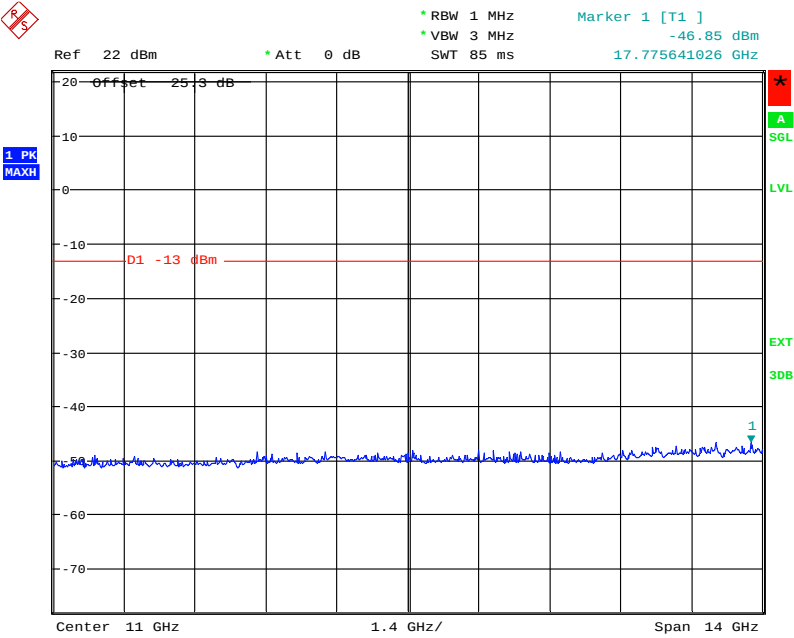


Date: 31.JUL.2013 15:53:13



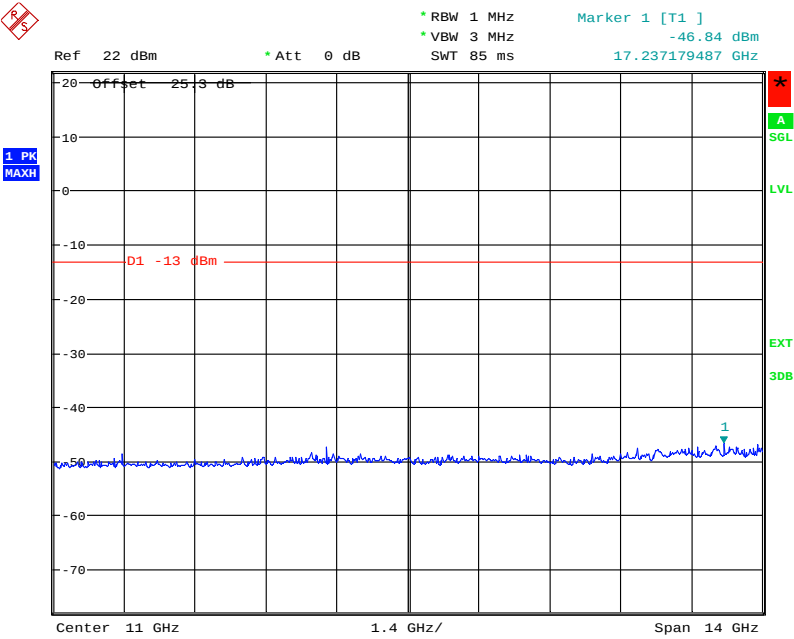
20.0 MHz Bandwidth - 16QAM

1720 MHz - 1 Resource Block - Low



Date: 2.AUG.2013 09:40:01

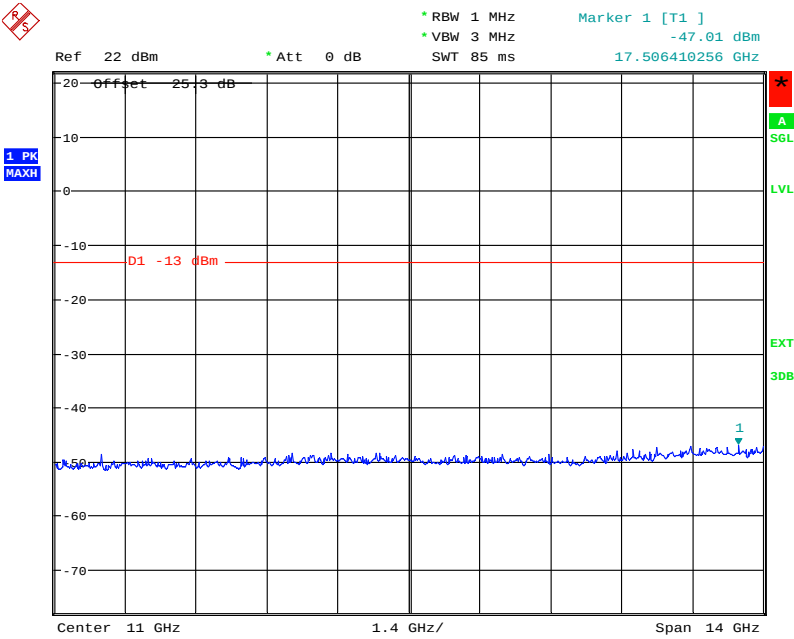
1720 MHz - 1 Resource Block - Middle



Date: 2.AUG.2013 10:18:16

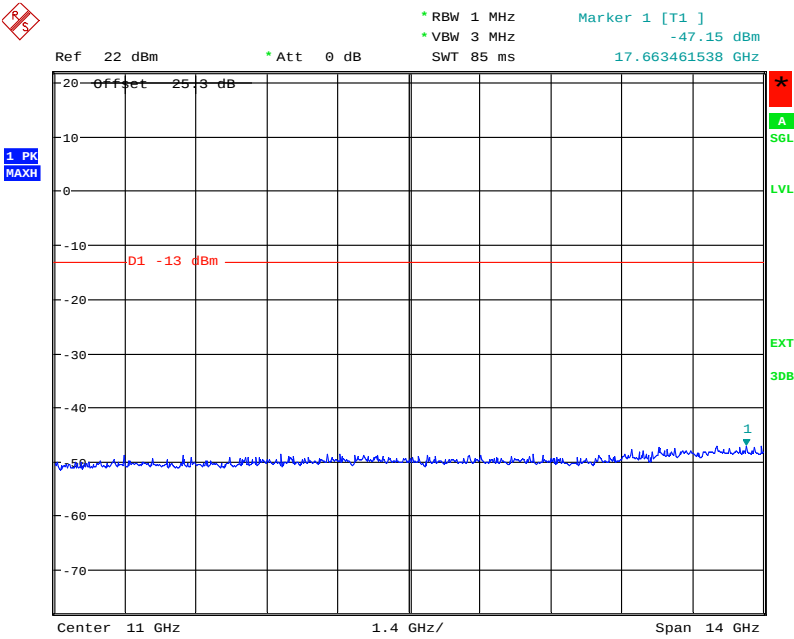


1720 MHz - 1 Resource Block - High



Date: 2.AUG.2013 10:08:48

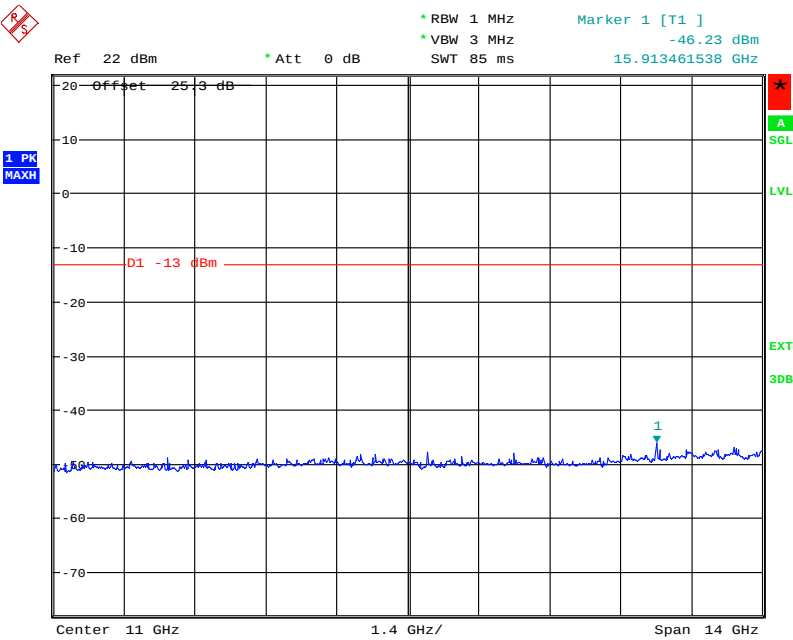
1720 MHz - All Resource Blocks



Date: 2.AUG.2013 09:57:02

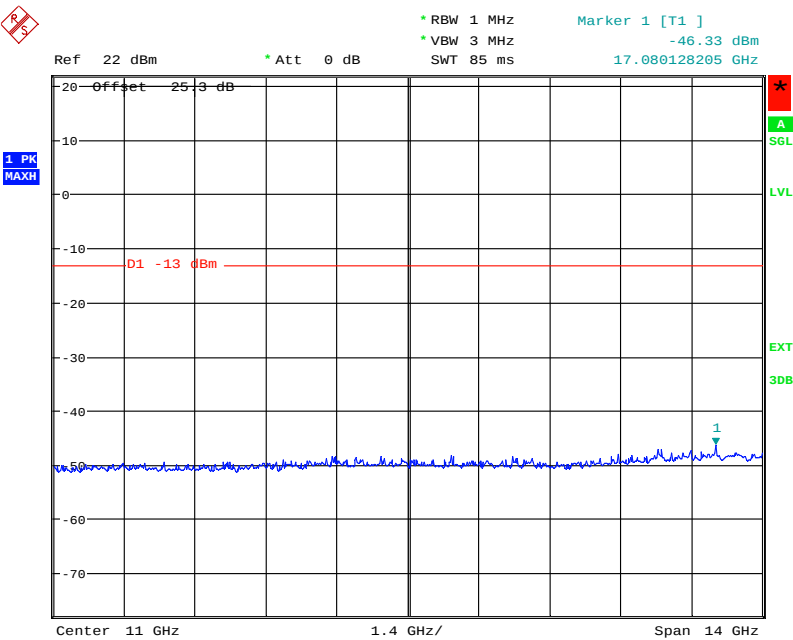


1732.5 MHz - 1 Resource Block - Low



Date: 2.AUG.2013 10:52:28

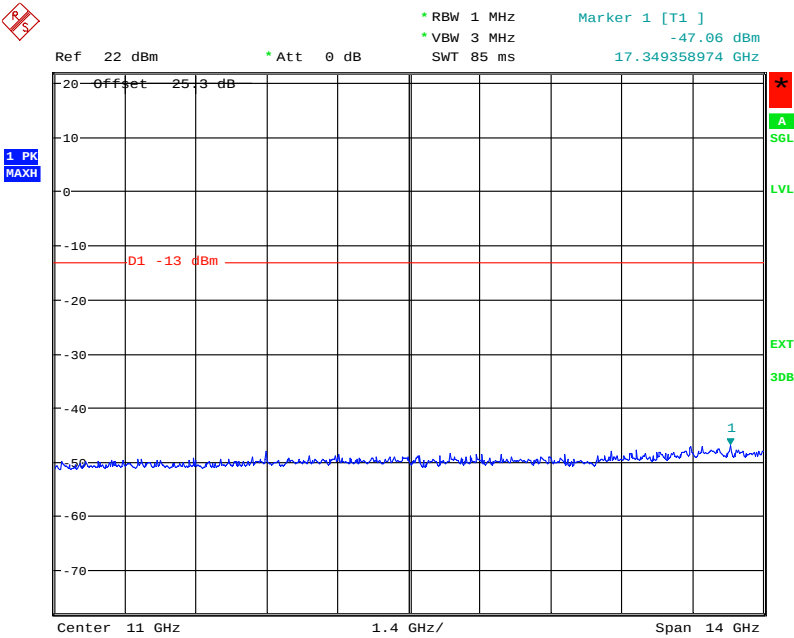
1732.5 MHz - 1 Resource Block - Middle



Date: 2.AUG.2013 10:38:42

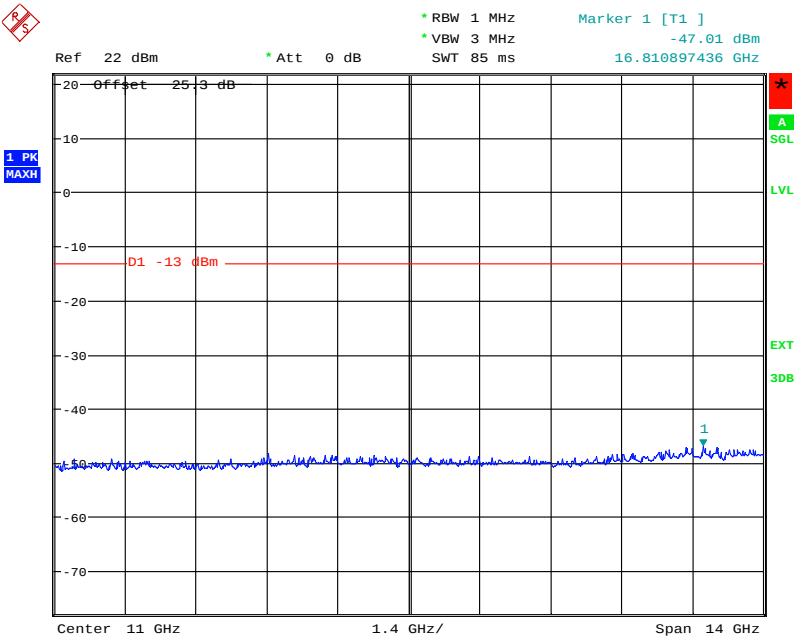


1732.5 MHz - 1 Resource Block - High



Date: 2.AUG.2013 10:44:49

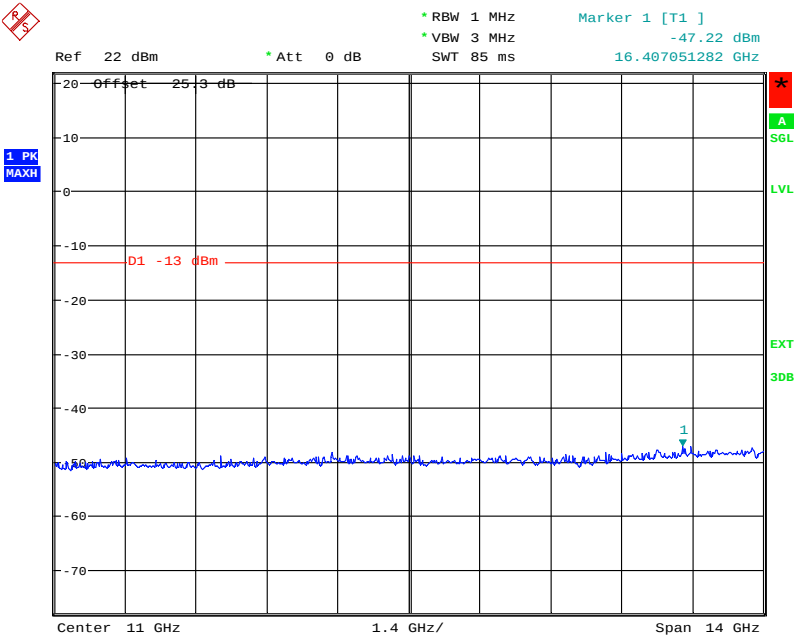
1732.5 MHz - All Resource Blocks



Date: 2.AUG.2013 10:58:09

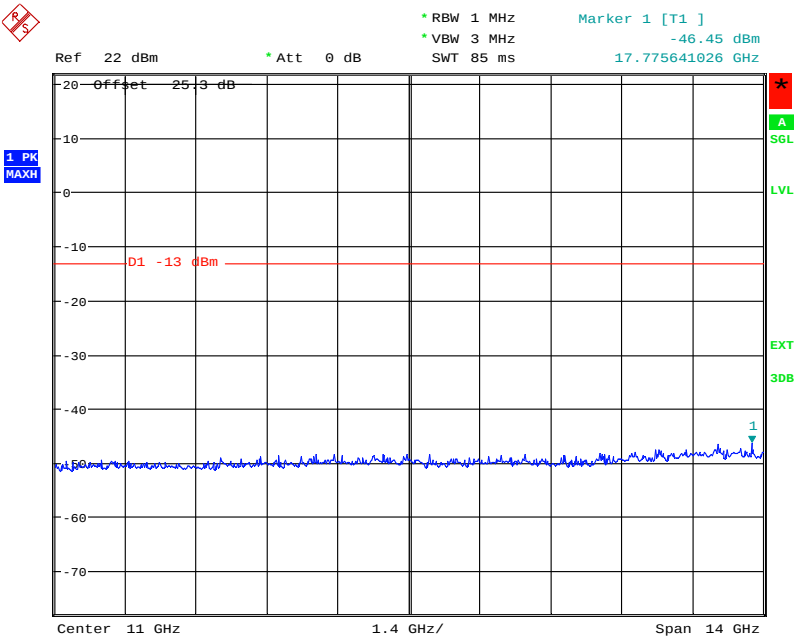


1745 MHz - 1 Resource Block - Low



Date: 2.AUG.2013 11:42:17

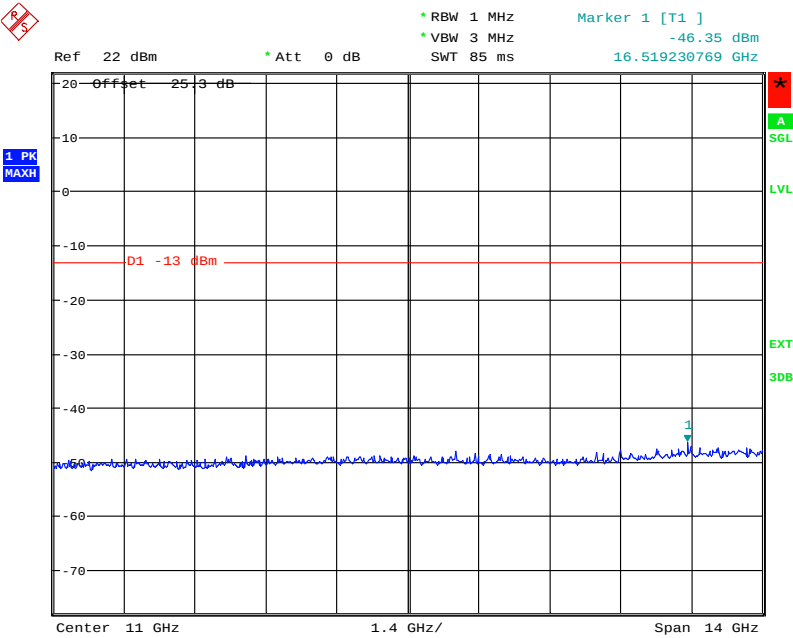
1745 MHz - 1 Resource Block - Middle



Date: 2.AUG.2013 11:36:04

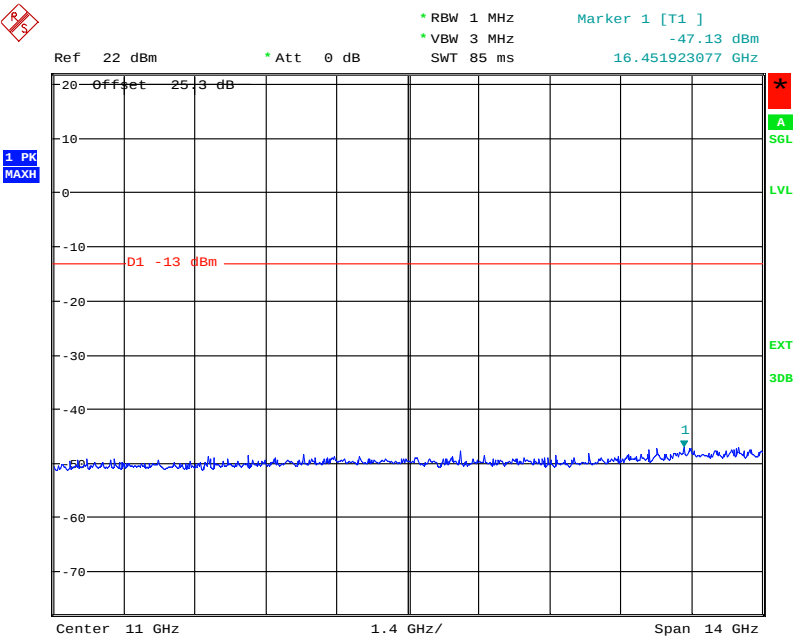


1745 MHz - 1 Resource Block - High

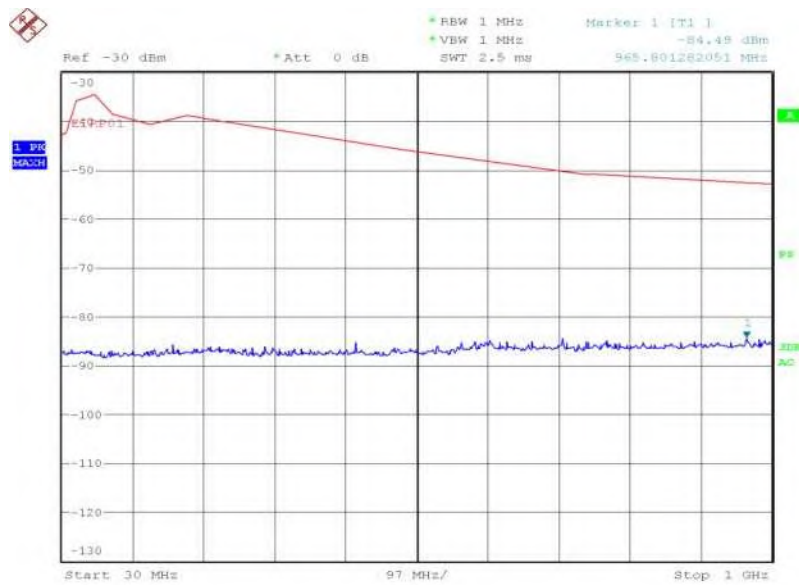


Date: 2.AUG.2013 11:29:55

1745 MHz - All Resource Blocks

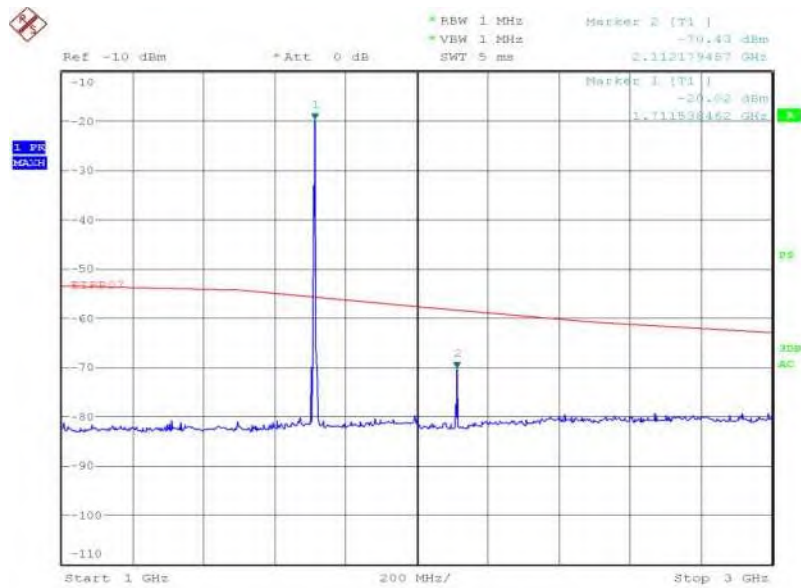


Date: 2.AUG.2013 11:15:47

Radiated Emissions**3.0 MHz Bandwidth – QPSK****1 Resource Block - Middle****1711.5 MHz****30 MHz to 1 GHz**

Date: 7.AUG.2013 18:37:39

30 MHz to 1 GHz

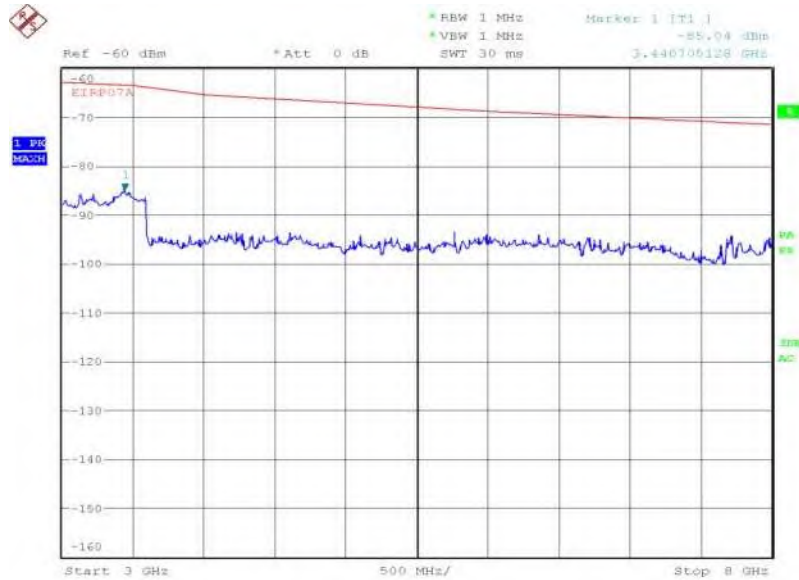


Date: 7.AUG.2013 18:51:11



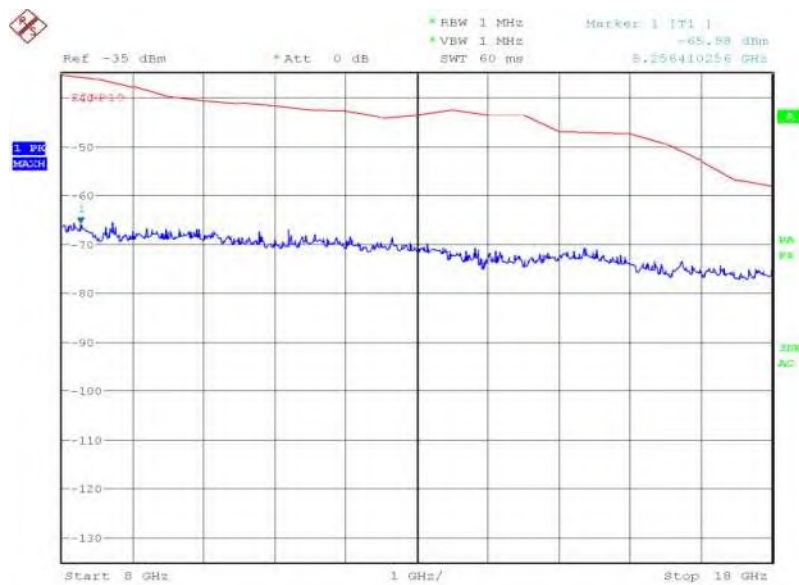
Product Service

3 GHz to 8 GHz



Date: 7.AUG.2013 18:55:51

8 GHz to 18 GHz

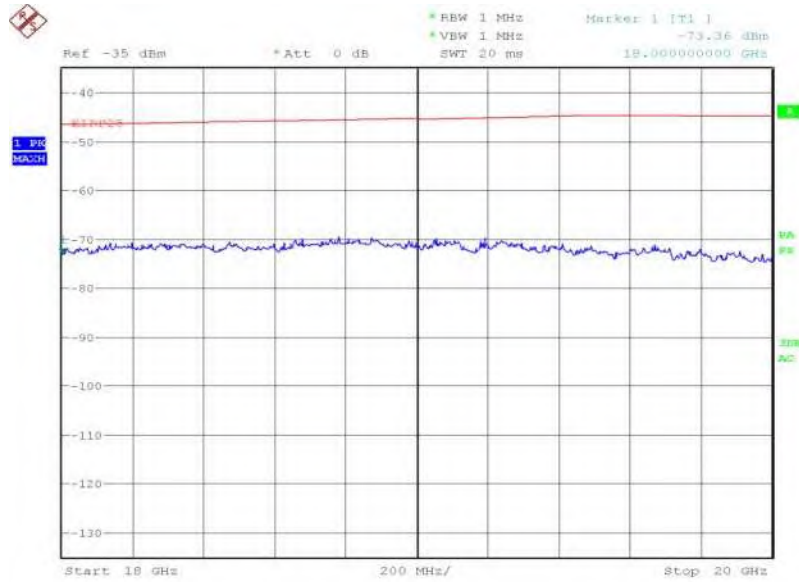


Date: 7.AUG.2013 19:35:41



Product Service

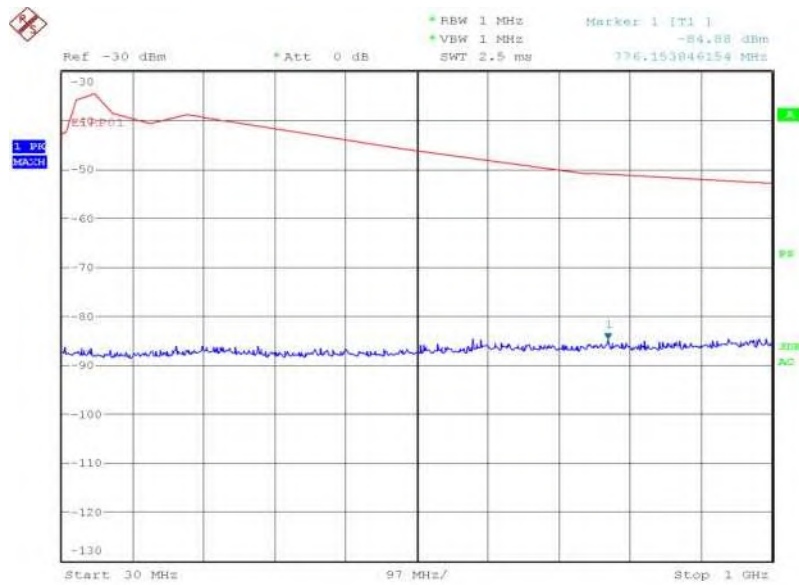
18 GHz to 20 GHz



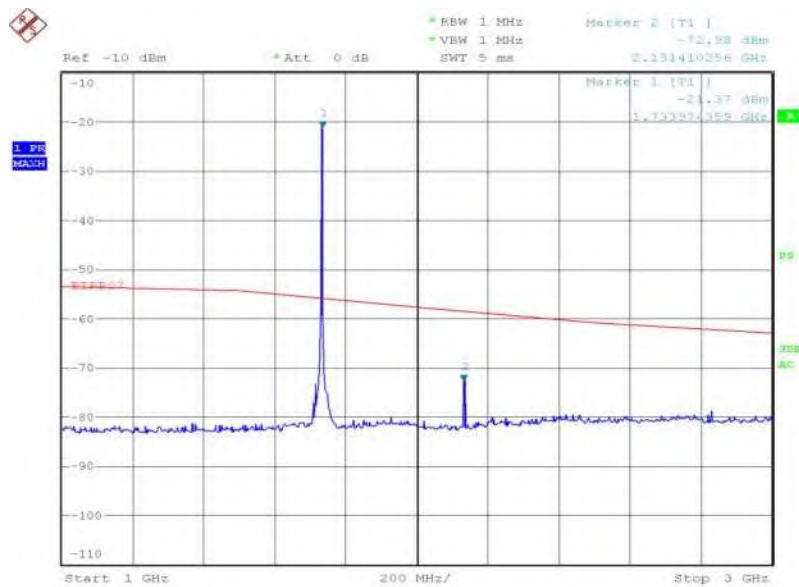
Date: 7.AUG.2013 20:21:44



Product Service

1732.5 MHz30 MHz to 1 GHz

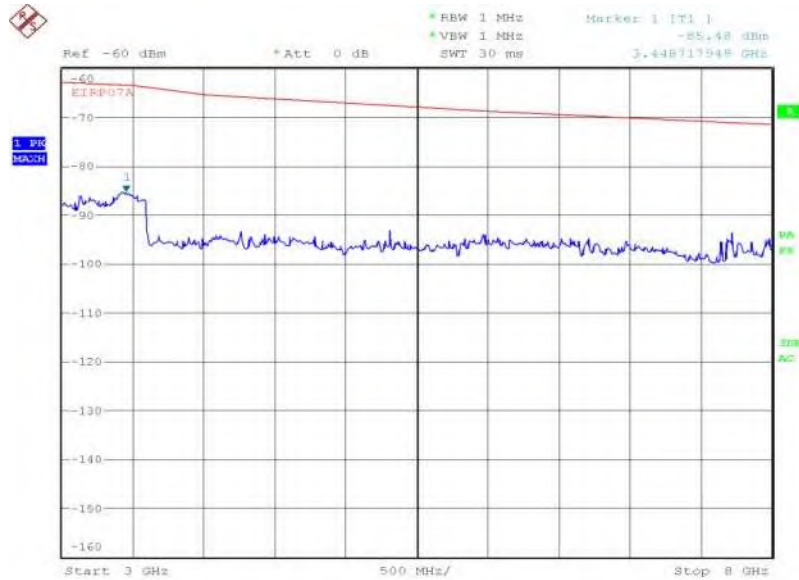
Date: 7.AUG.2013 18:38:30

30 MHz to 1 GHz

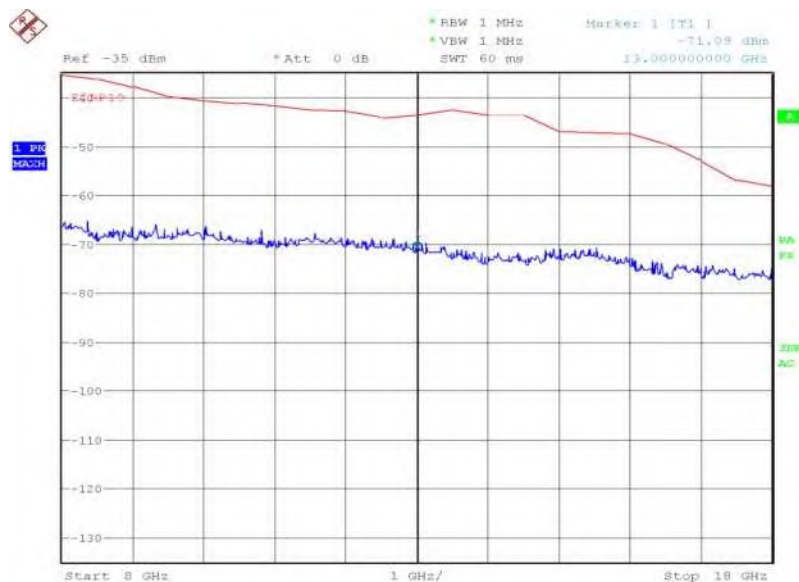
Date: 7.AUG.2013 18:48:24



Product Service

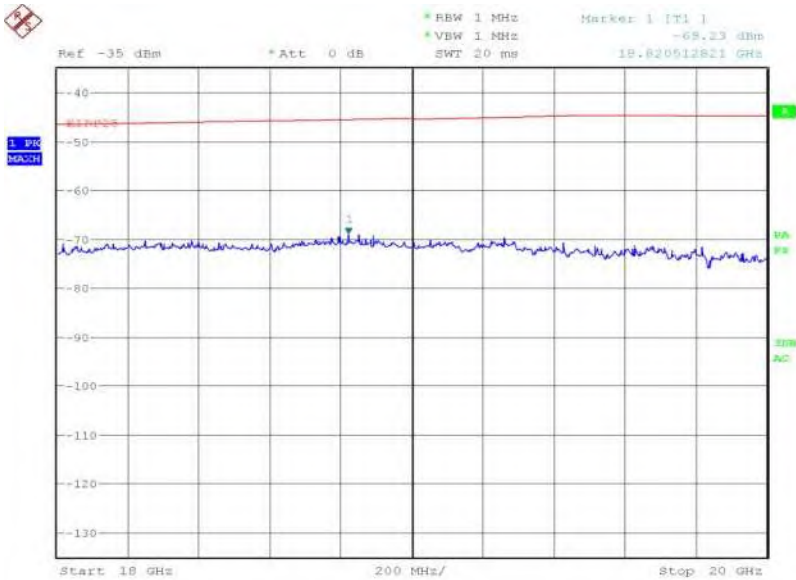
3 GHz to 8 GHz

Date: 7.AUG.2013 18:58:54

8 GHz to 18 GHz

Date: 7.AUG.2013 19:25:45

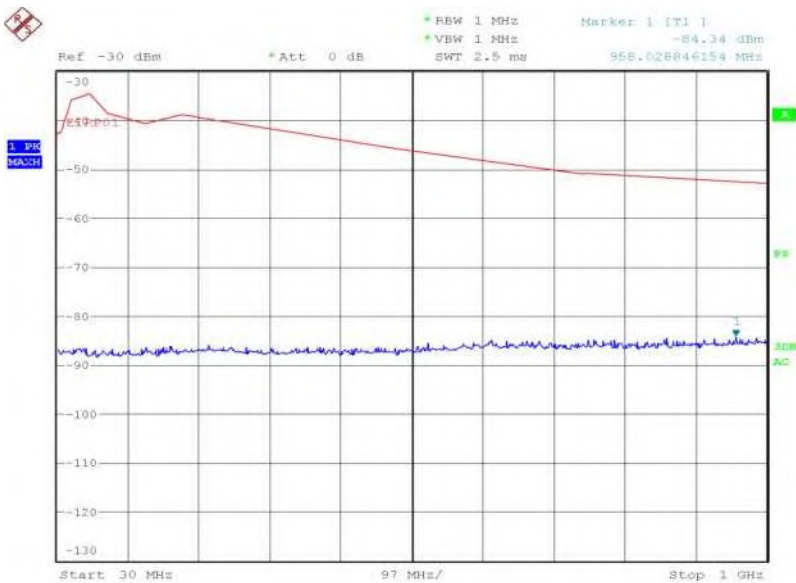
18 GHz to 20 GHz



Date: 7.AUG.2013 20:31:44

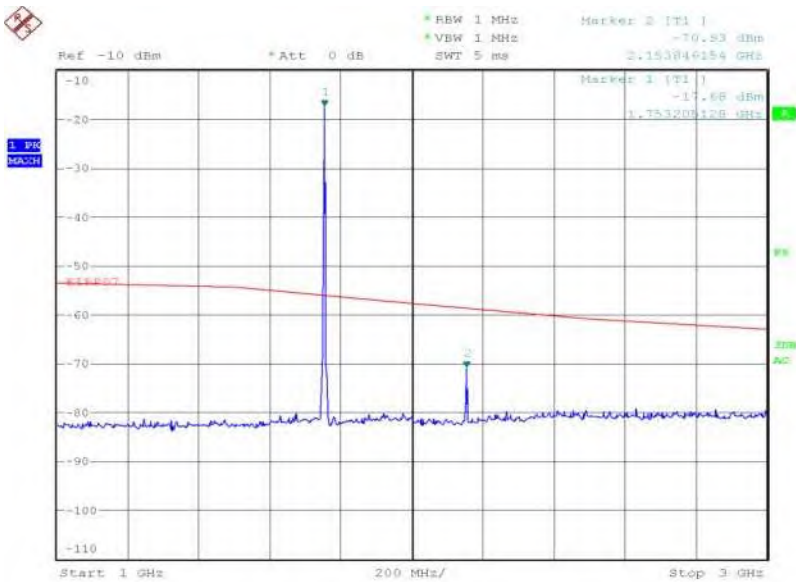
1753.5 MHz

30 MHz to 1 GHz



Date: 7.AUG.2013 18:40:22

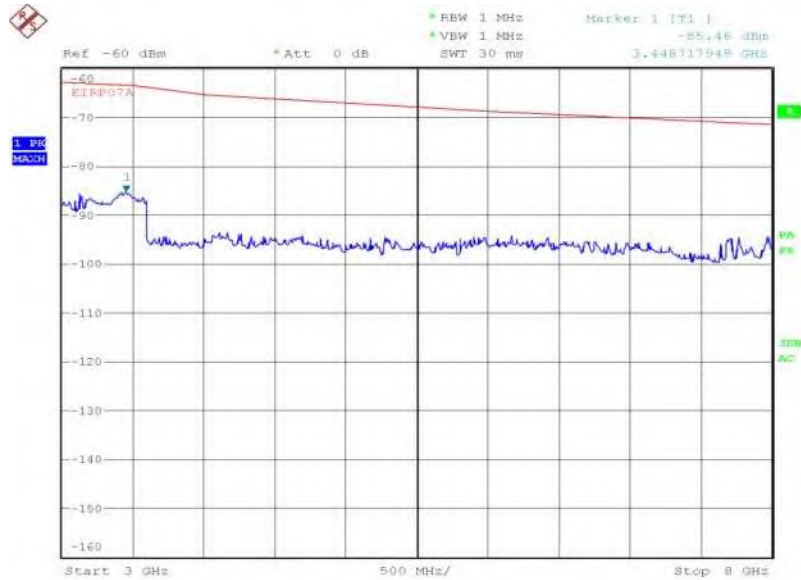
30 MHz to 1 GHz



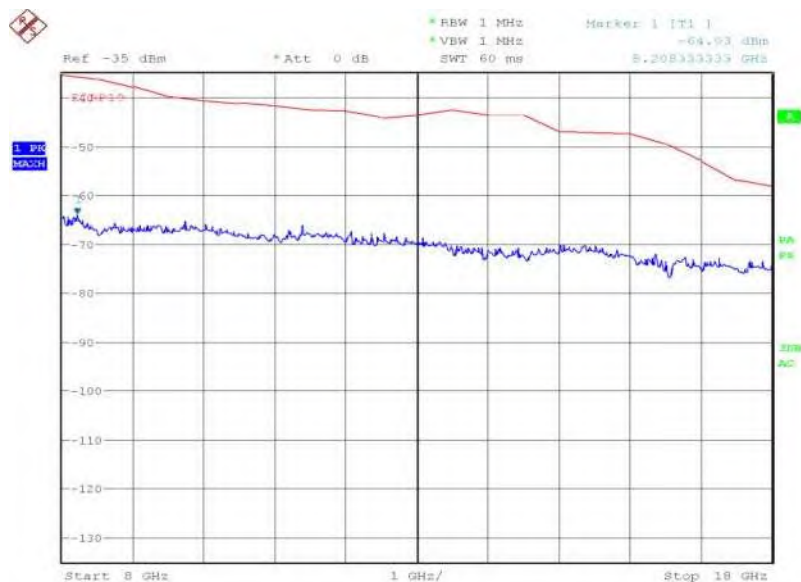
Date: 7.AUG.2013 18:46:00



Product Service

3 GHz to 8 GHz

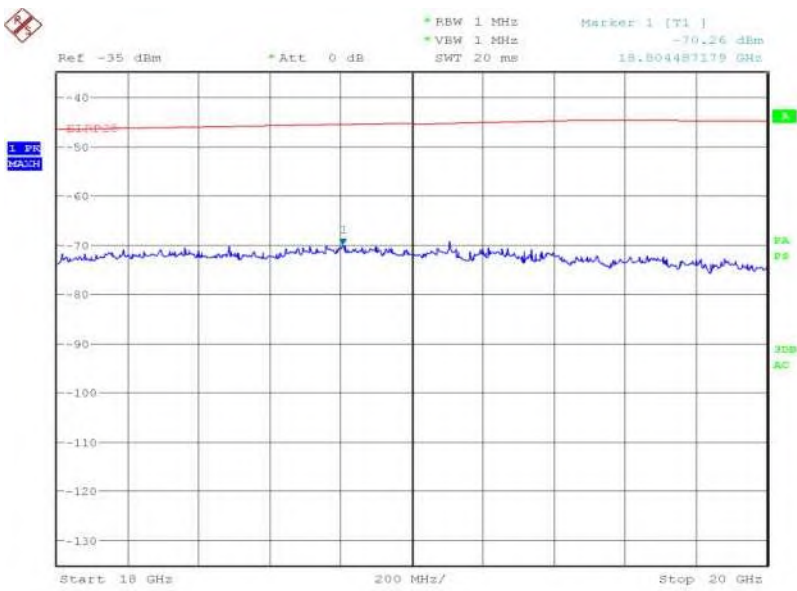
Date: 7.AUG.2013 19:01:18

8 GHz to 18 GHz

Date: 7.AUG.2013 19:17:17



18 GHz to 20 GHz



Date: 7.AUG.2013 20:34:44

Limit Clause 27.53 (h)

Conducted Emissions:	-13 dBm
Band Edge:	
Radiated Emissions:	



2.3 FREQUENCY STABILITY

2.3.1 Specification Reference

FCC CFR 47 Part 2 , Clause 2.1055
FCC CFR 47 Part 27, Clause 27.54

2.3.2 Equipment Under Test and Modification State

Black Smartphone S/N: XCV23200852 - Modification State 0

2.3.3 Date of Test

6 August 2013

2.3.4 Test Equipment Used

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

2.3.5 Test Procedure

The EUT was configured to transmit on all resource blocks with a 10 MHz channel bandwidth on the middle channel, 1732.5 MHz. In accordance with 2.1055, the temperature was varied from -30°C to +50°C in 10° steps.

At 20°C, the EUT supply voltage was varied between 85% and 115% of the declared nominal. At each extreme voltage, the maximum frequency error was measured.

Note: For hand carried battery equipment, only the end point voltage as declared by the manufacturer was tested.

2.3.6 Environmental Conditions

Ambient Temperature	21.2°C
Relative Humidity	42.3%



Product Service

2.3.7 Test Results

LTE FDD IV

3.8 V DC Supply

Frequency Stability

Under Temperature Variations

10 MHz Bandwidth - QPSK

Frequency Error (Hz)		
1732.5 MHz		
Supply Voltage	Temperature Interval °C	All Resource Blocks
V _{min} (3.6 V DC)	+20	-14.20
V _{nom} (3.8 V DC)	-30	-26.98
V _{nom} (3.8 V DC)	-20	-34.65
V _{nom} (3.8 V DC)	-10	-13.46
V _{nom} (3.8 V DC)	0	-14.03
V _{nom} (3.8 V DC)	+10	-14.88
V _{nom} (3.8 V DC)	+20	-14.20
V _{nom} (3.8 V DC)	+30	-17.75
V _{nom} (3.8 V DC)	+40	-19.07
V _{nom} (3.8 V DC)	+50	-16.82

10 MHz Bandwidth – 16QAM

Frequency Error (Hz)		
1732.5 MHz		
Supply Voltage	Temperature Interval °C	All Resource Blocks
V _{min} (3.6 V DC)	+20	-17.87
V _{nom} (3.8 V DC)	-30	-33.92
V _{nom} (3.8 V DC)	-20	-24.16
V _{nom} (3.8 V DC)	-10	-12.20
V _{nom} (3.8 V DC)	0	-15.38
V _{nom} (3.8 V DC)	+10	-14.89
V _{nom} (3.8 V DC)	+20	-13.59
V _{nom} (3.8 V DC)	+30	-19.78
V _{nom} (3.8 V DC)	+40	-33.92
V _{nom} (3.8 V DC)	+50	-24.16



Limit Clause 2.1055 (a)(1)(b) and 27.54

The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorised bands of operation.



2.4 MODULATION CHARACTERISTICS

2.4.1 Specification Reference

FCC CFR 47 Part 2, Clause 2.1047(d)

2.4.2 Equipment Under Test and Modification State

Black Smartphone S/N: XCV23200852 - Modification State 0

2.4.3 Date of Test

5 August 2013

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 Test Procedure

The following plots show a representation of the Modulation Characteristics of an LTE signal as measured from the EUT. Both supported modulation schemes of QPSK and 16QAM are recorded as plots below.

2.4.6 Environmental Conditions

Ambient Temperature	23.1°C
Relative Humidity	57.2%



Product Service

2.4.7 Test Results

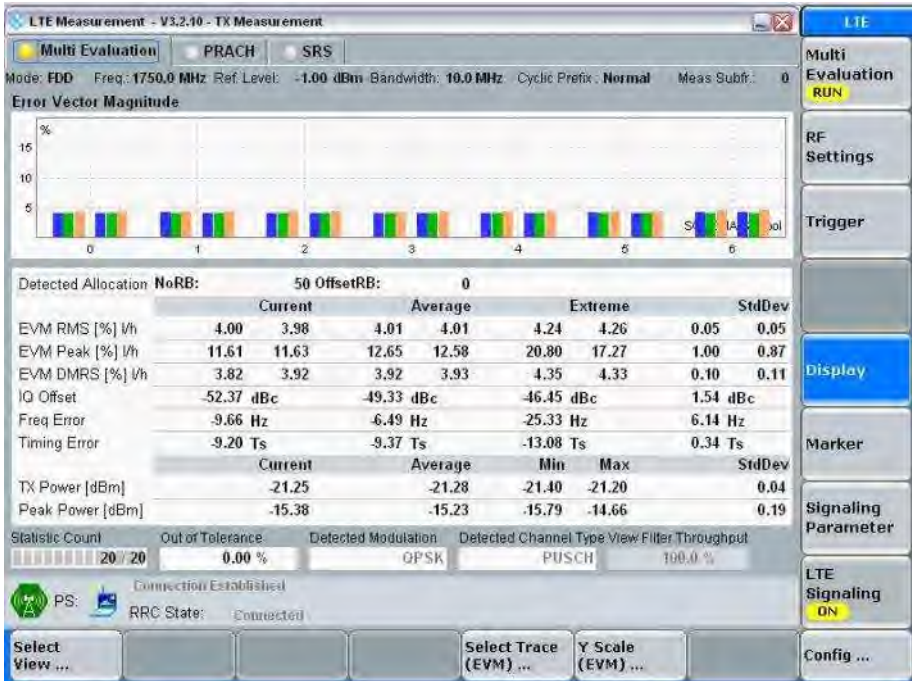
LTE FDD IV

10.0 MHz - QPSK

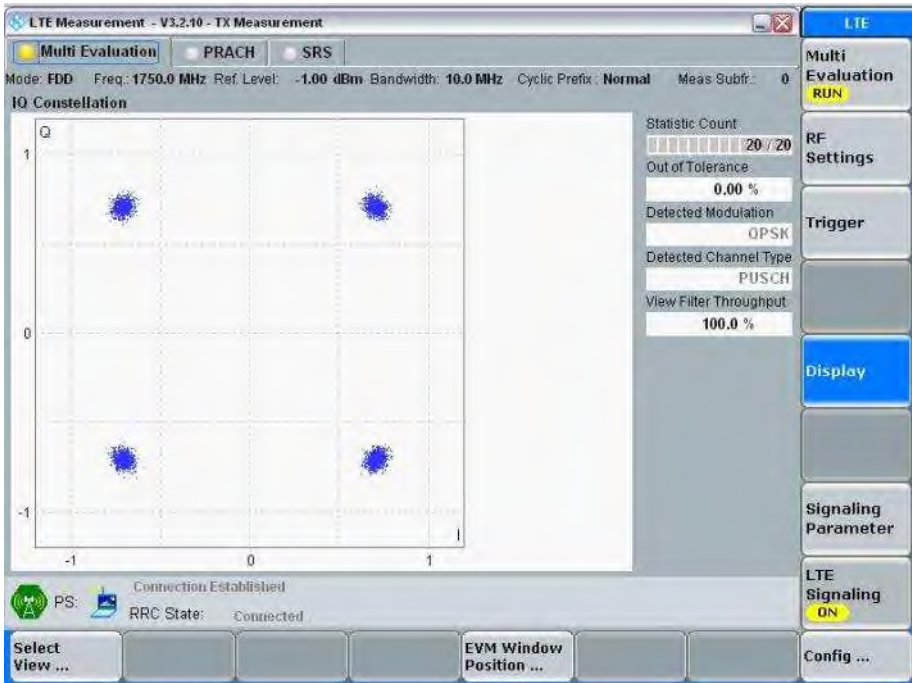
Transmitter Measurements Summary - All Resource Blocks



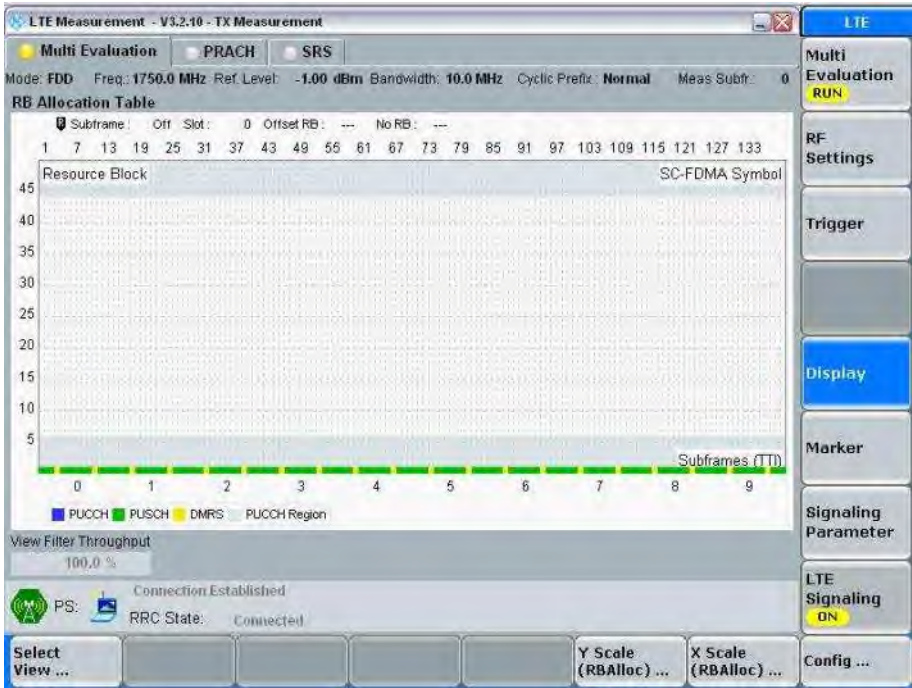
Error Vector Magnitude – All Resource Blocks



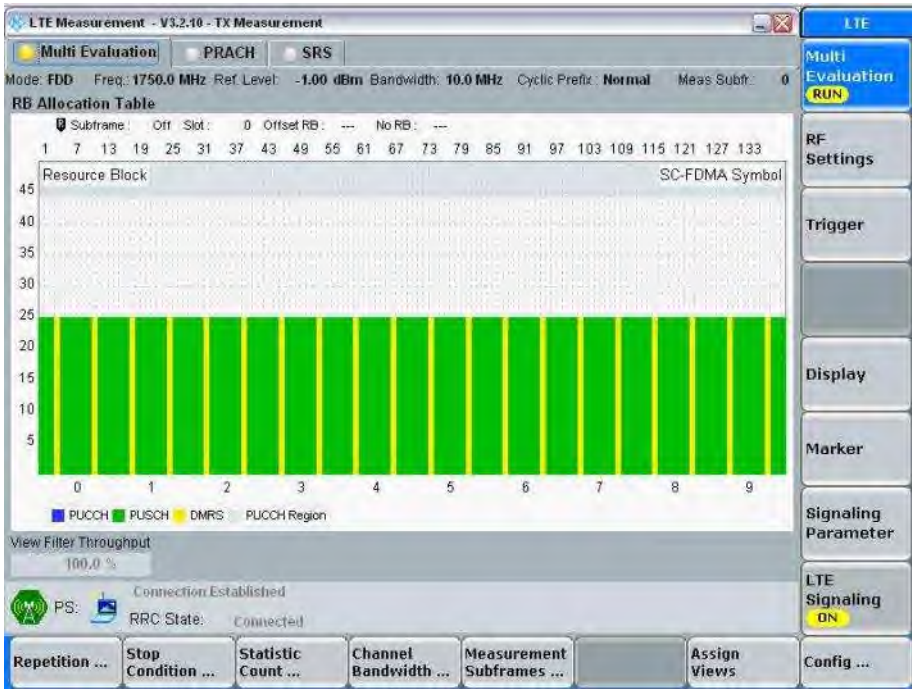
IQ Constellation – All Resource Blocks



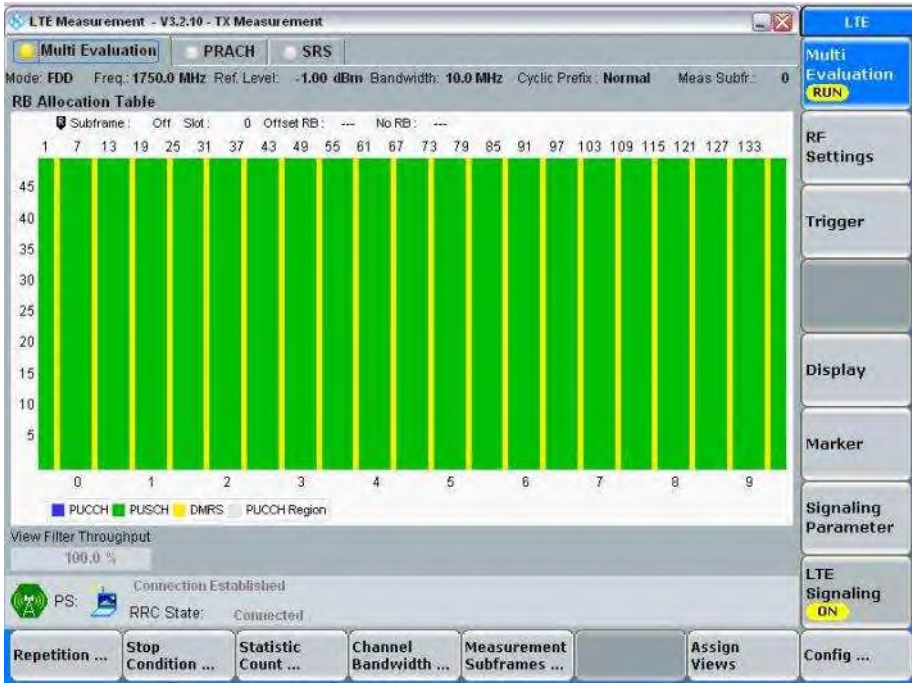
Resource Block Allocation – 1 Resource Block



Resource Block Allocation – 25 Resource Block

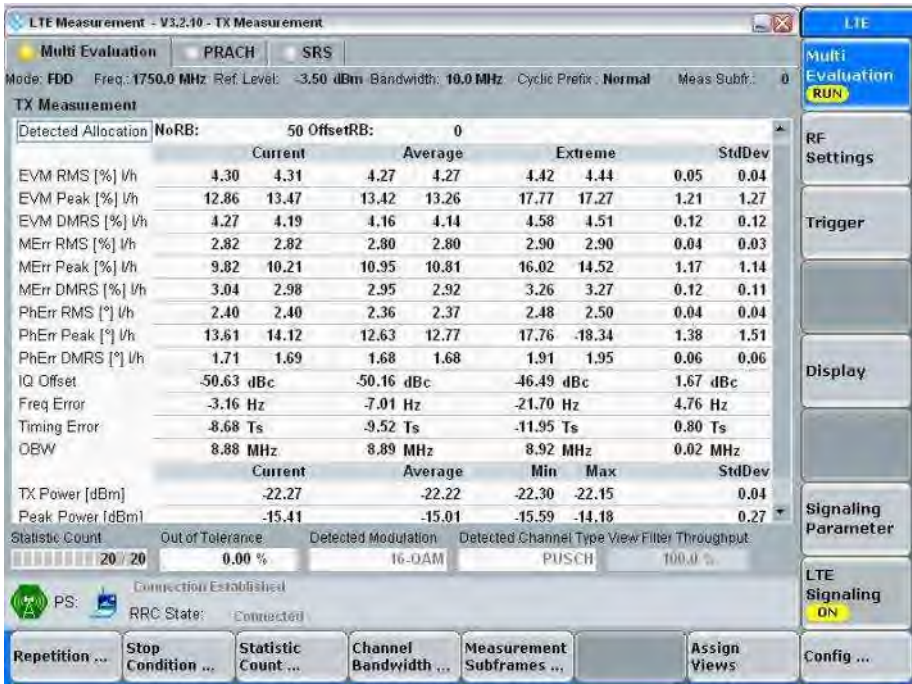


Resource Block Allocation – All Resource Blocks

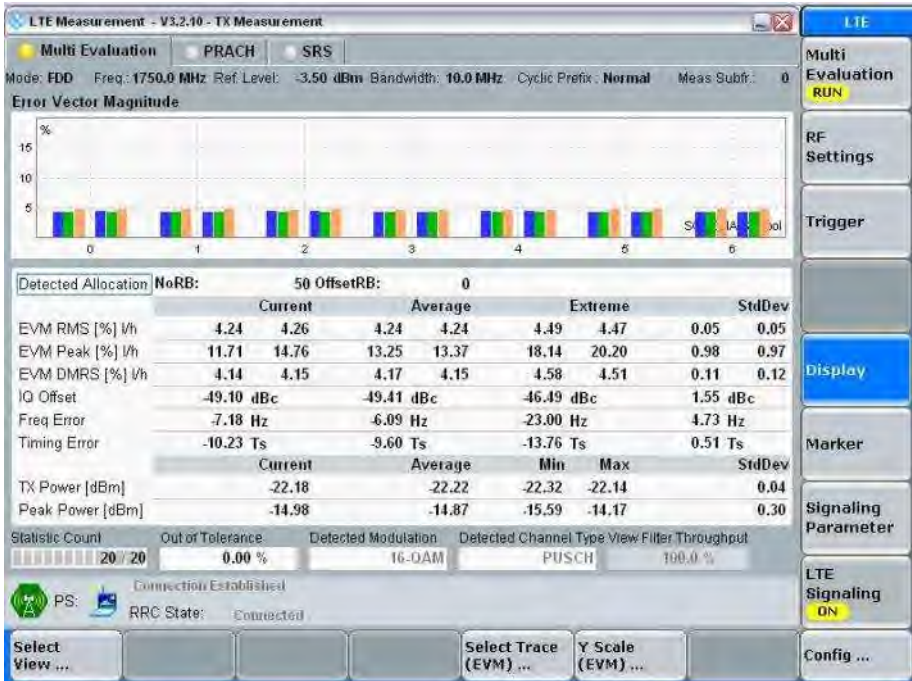


10.0 MHz - 16QAM

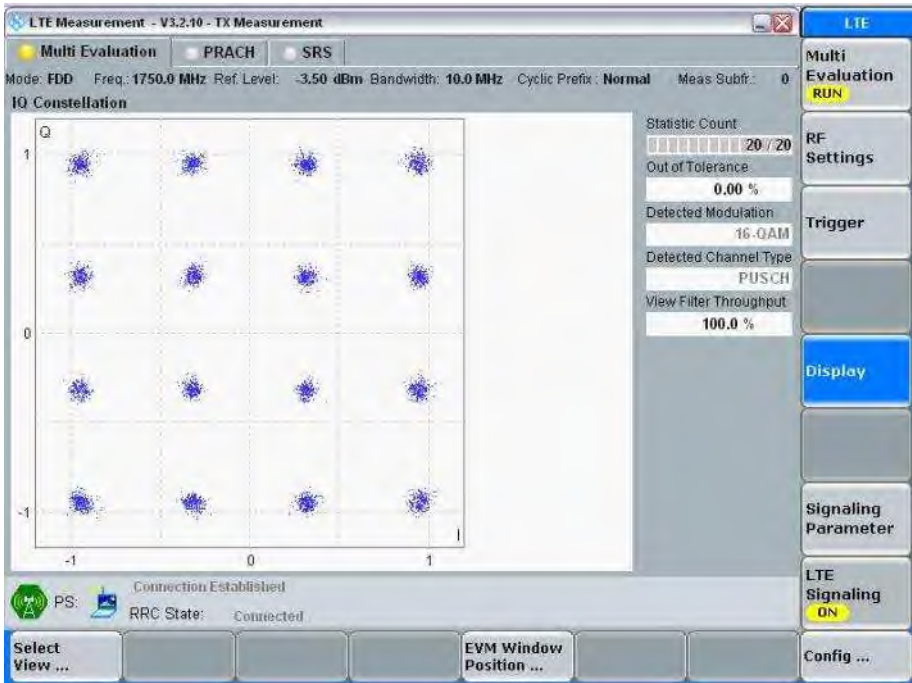
Transmitter Measurements Summary - All Resource Blocks



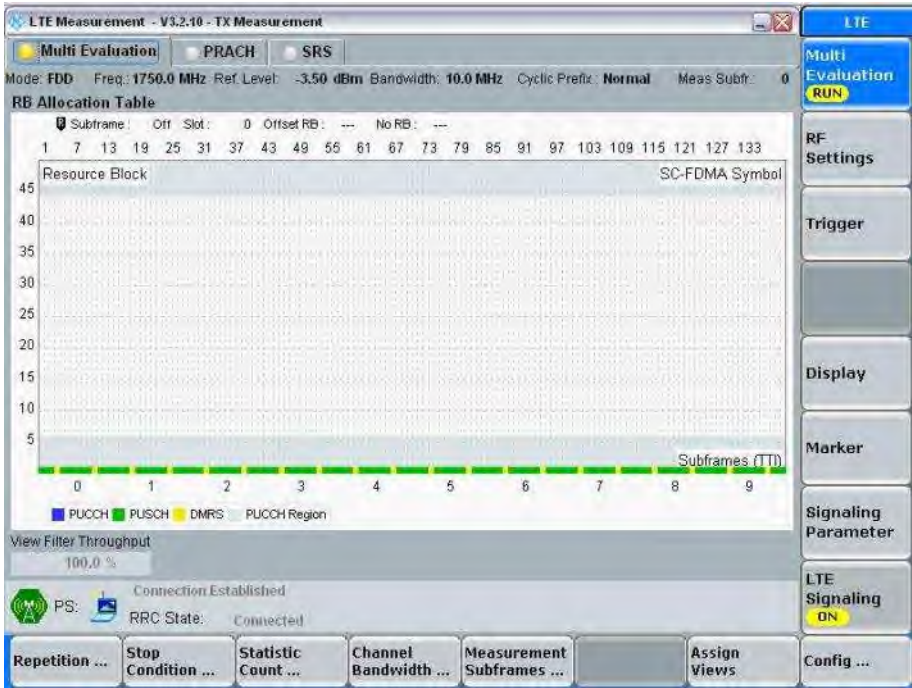
Error Vector Magnitude – All Resource Blocks



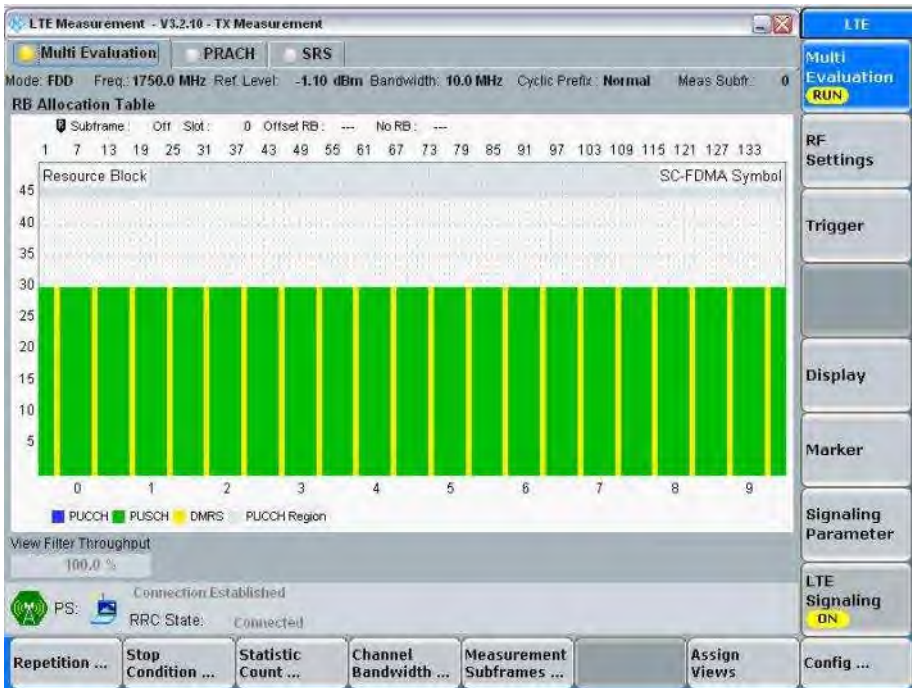
IQ Constellation – All Resource Blocks



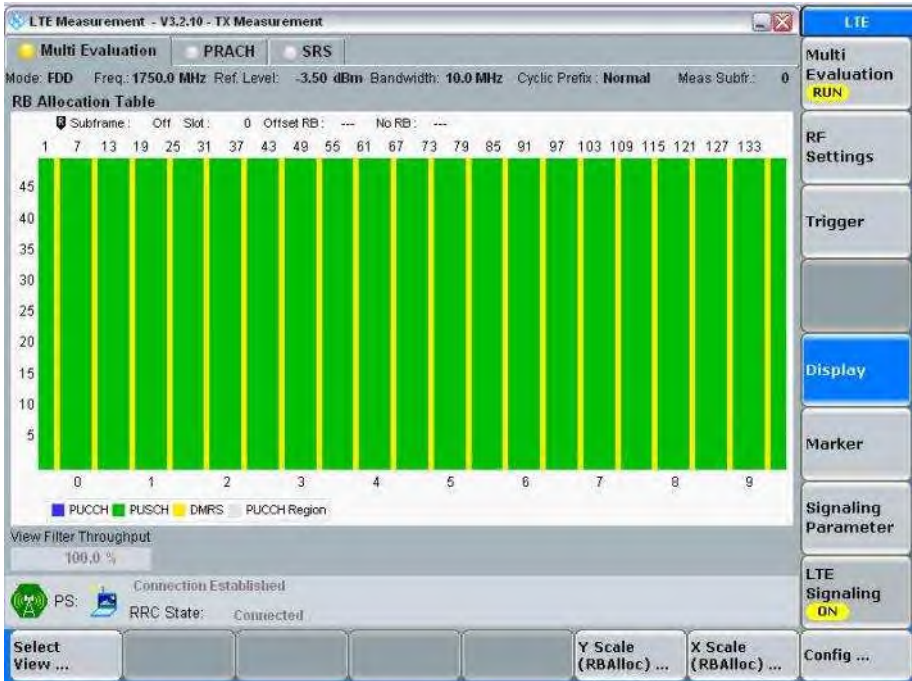
Resource Block Allocation – 1 Resource Block



Resource Block Allocation – 30 Resource Block



Resource Block Allocation – All Resource Blocks





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
Section 2.1 – Power Limits and Duty Cycle					
Antenna (Double Ridge Guide, 1GHz-18GHz)	EMCO	3115	234	12	3-Apr-2014
Antenna (Double Ridge Guide, 1GHz-18GHz)	EMCO	3115	235	12	9-Nov-2013
Attenuator (20dB/ 2W)	Pasternack	PE7004-20	489	12	18-Oct-2013
Signal Generator (10MHz to 40GHz)	Rohde & Schwarz	SMR40	1002	12	6-Sep-2013
Screened Room (5)	Rainford	Rainford	1545	36	25-Dec-2013
Turntable Controller	Inn-Co GmbH	CO 1000	1606	-	TU
Power Supply	Hewlett Packard	6104A	1948	-	TU
Radio Communications Test Set	Rohde & Schwarz	CMU 200	3035	12	6-Dec-2013
ESA-E Series Spectrum Analyser	Agilent Technologies	E4402B	3348	12	13-Jun-2014
EMI Test Receiver	Rohde & Schwarz	ESU40	3506	12	11-Oct-2013
Network Analyser	Rohde & Schwarz	ZVA 40	3548	12	31-Aug-2013
9m RF Cable (N Type)	Rhophase	NPS-2303-9000-NPS	3791	-	TU
Tilt Antenna Mast	maturo GmbH	TAM 4.0-P	3916	-	TU
Combiner/Splitter	Weinschel	1506A	3877	12	19-Mar-2014
Mast Controller	maturo GmbH	NCD	3917	-	TU
1 Metre SMA Cable	Rhophase	3PS-1801A-1000-3PS	4099	12	26-Oct-2013
Wideband Radio Communication Tester	Rohde & Schwarz	CMW 500	4144	12	17-Jul-2014
Section 2.2 – Emission Limits					
Antenna (Double Ridge Guide)	Link Microtek Ltd	AM180HA-K-TU2	230	24	13-Sep-2013
Antenna (Double Ridge Guide, 1GHz-18GHz)	EMCO	3115	234	12	3-Apr-2014
Antenna (Bilog)	Schaffner	CB16143	287	24	18-Jan-2014
Communications Tester	Rohde & Schwarz	CMU 200	442	12	1-Nov-2013
Filter (High Pass)	Lorch	SHP7-7000-SR	566	12	20-Feb-2014
Pre-Amplifier	Phase One	PS04-0086	1533	12	27-Sep-2013
Pre-Amplifier	Phase One	PS04-0087	1534	12	28-Sep-2013
Screened Room (5)	Rainford	Rainford	1545	36	25-Dec-2013
Turntable Controller	Inn-Co GmbH	CO 1000	1606	-	TU
Amplifier (1 - 8GHz)	Phase One	PS06-0060	3175	12	9-Aug-2014
Amplifier (8 - 18GHz)	Phase One	PS06-0061	3176	12	9-Aug-2014
EMI Test Receiver	Rohde & Schwarz	ESU40	3506	12	11-Oct-2013
3 GHz High Pass Filter	K&L Microwave	11SH10-3000/X18000-O/O	3552	12	1-Feb-2014
10mohm Resistor	Cropico	RS3	3616	48	12-Mar-2017
9m RF Cable (N Type)	Rhophase	NPS-2303-9000-NPS	3791	-	TU
Tilt Antenna Mast	maturo GmbH	TAM 4.0-P	3916	-	TU
Mast Controller	maturo GmbH	NCD	3917	-	TU
Wideband Radio Communication Tester	Rohde & Schwarz	CMW 500	4144	12	17-Jul-2014



Product Service

Instrument	Manufacturer	Type No.	TE No.	Calibration Period (months)	Calibration Due
Section 2.3 - Frequency Stability					
Multimeter	White Gold	WG022	190	12	30-Oct-2013
Temperature Chamber	Montford	2F3	467	-	O/P Mon
Power Supply Unit	Farnell	D302T	609	-	O/P Mon
Radio Communications Test Set	Rohde & Schwarz	CMU 200	3035	12	6-Dec-2013
Thermocouple Thermometer	Fluke	51	3173	12	23-Aug-2013
Attenuator (10dB, 20W)	Lucas Weinschel	1	3225	12	11-Dec-2013
1 Metre N Type Cable	Rhophase	NPS-1601A-1000-NPS	4103	12	11-Jun-2014
Wideband Radio Communication Tester	Rohde & Schwarz	CMW 500	4144	12	17-Jul-2014

TU – Traceability Unscheduled

O/P MON – Output Monitored with Calibrated Equipment

3.2 MEASUREMENT UNCERTAINTY

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

Test Discipline	MU
Frequency Stability	± 50.91 Hz
Modulation Characteristics	Occupied Bandwidth ; ± 262 kHz
Emission Limits	Radiated Emissions ; 30 MHz to 1 GHz ; ± 5.1 dB Radiated Emissions ; 1 GHz to 40 GHz ; ± 6.2 dB ERP / EIRP ; ± 3.0 dB Band Edge ; 30 MHz to 1 GHz ; ± 5.1 dB Band Edge ; 1 GHz to 40 GHz ; ± 6.2 dB
Power Limits and Duty Cycle	Conducted Power ; ± 0.7 dB ERP / EIRP ; ± 3.0 dB



SECTION 4

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
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