

5. Adjacent-Channel

5.1 Test Specification

FCC Part 15, Subpart H, Section 15.709(c)(2)

5.2 Test Procedure

The E.U.T operation mode and test set-up are as described in Section 2.

See Section 2.1 Justification of the System Test Configuration concerning the E.U.T. orientation for this test.

The E.U.T. antenna terminal was connected to the spectrum analyzer through an external attenuator (20 dB) and an appropriate coaxial cable (cable loss = 0.3 dB). The spectrum analyzer was set to 100 kHz resolution BW.

The adjacent channel emission limit applies in any 100kHz band segment within either the lower or upper adjacent 6MHz channels relative to the operating channel. A sweep time of 500ms was used for 1ms per trace point.

The E.U.T was evaluated in 3 operational frequencies: 473MHz, 587MHz and 695MHz.

5.3 Test Results

JUDGEMENT: Passed

For additional information see *Figure 84* to *Figure 159*.

Chain #	Adjacent channel	Modulation	Operation Frequency (MHz)	Reading (dBm)
Chain 1	Lower	16QAM	473	-48.8
			587	-47.4
			695	-48.8
		64QAM	473	-48.4
			587	-47.0
			695	-47.3
		QPSK	473	-50.2
			587	-49.8
			695	-48.5
	Upper	16QAM	473	-48.6
			587	-47.2
			695	-49.1
		64QAM	473	-48.4
			587	-46.6
			695	-50.0
		QPSK	473	-50.9
			587	-49.8
			695	-48.9

Figure 84 Adjacent Channel Chain 1

Chain #	Adjacent channel	Modulation	Operation Frequency (MHz)	Reading (dBm)
Chain 2	Lower	16QAM	473	-49.4
			587	-47.9
			695	-47.9
		64QAM	473	-48.5
			587	-47.8
			695	-48.0
		QPSK	473	-49.8
			587	-48.7
			695	-48.1
Chain 2	Upper	16QAM	473	-50.6
			587	-47.1
			695	-50.0
		64QAM	473	-49.9
			587	-46.3
			695	-47.5
		QPSK	473	-51.0
			587	-49.2
			695	-48.9

Figure 85 Adjacent Channel Chain 2

Chain #	Adjacent channel	Modulation	Operation Frequency (MHz)	Reading (dBm)
Chain 3	Lower	16QAM	473	-49.0
			587	-47.7
			695	-48.6
		64QAM	473	-48.8
			587	-45.5
			695	-47.8
		QPSK	473	-49.8
			587	-49.5
			695	-49.2
Chain 3	Upper	16QAM	473	-48.8
			587	-45.7
			695	-47.3
		64QAM	473	-48.7
			587	-47.5
			695	-47.1
		QPSK	473	-48.7
			587	-48.7
			695	-48.0

Figure 86 Adjacent Channel Chain 3

Chain #	Adjacent channel	Modulation	Operation Frequency (MHz)	Reading (dBm)
Chain 4	Lower	16QAM	473	-48.5
			587	-47.8
			695	-49.2
		64QAM	473	-47.1
			587	-47.0
			695	-46.4
		QPSK	473	-48.8
			587	-48.1
			695	-47.2
Chain 4	Upper	16QAM	473	-49.3
			587	-46.3
			695	-48.4
		64QAM	473	-48.8
			587	-45.9
			695	-47.1
		QPSK	473	-48.5
			587	-48.0
			695	-46.8

Figure 87 Adjacent Channel Chain 4

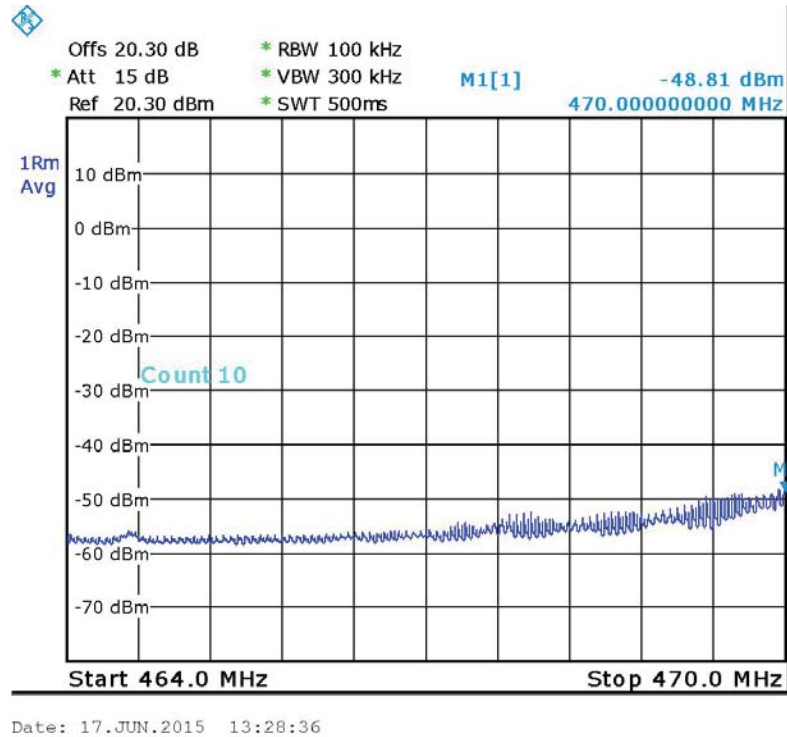


Figure 88. Chain 1 LOW – 16QAM – 473MHz

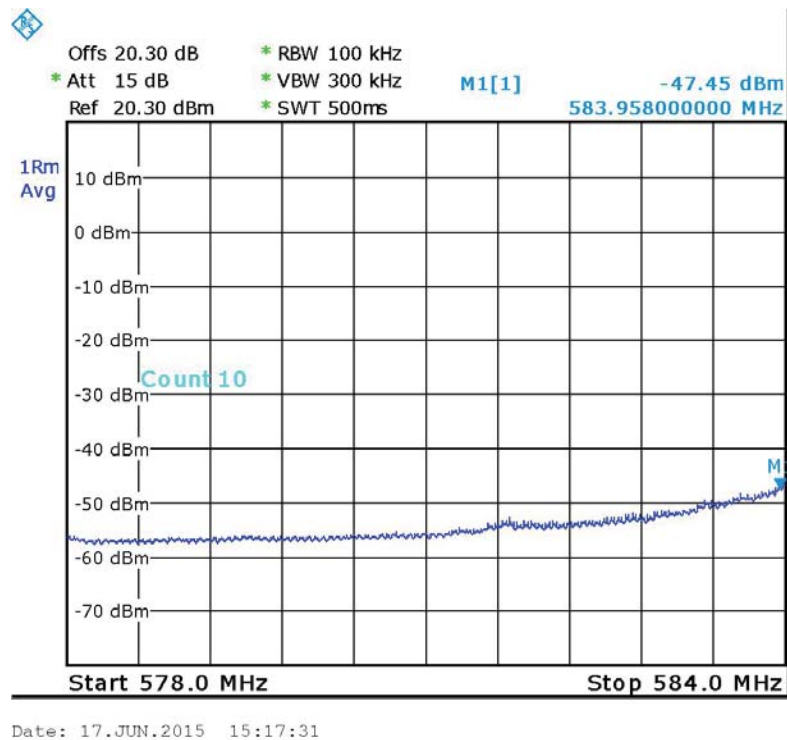
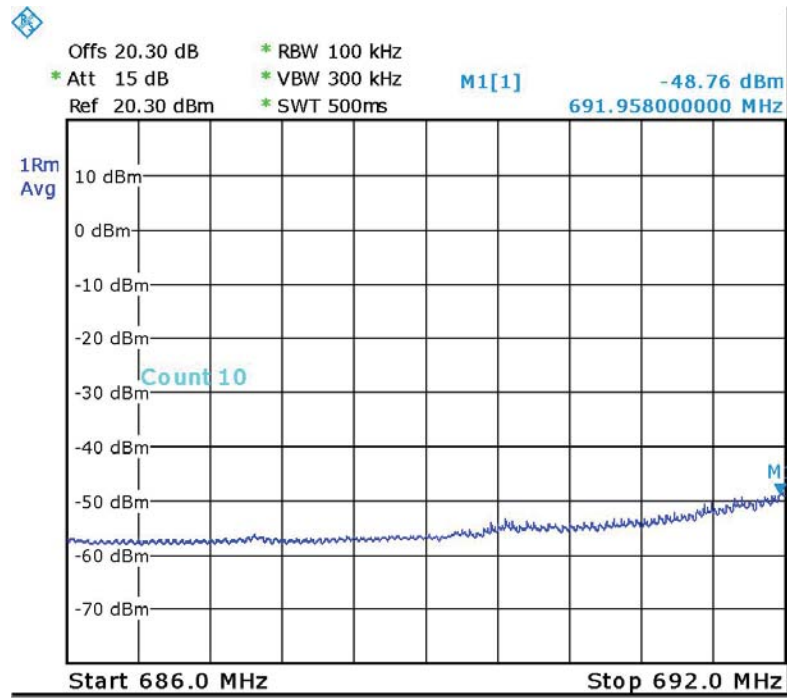
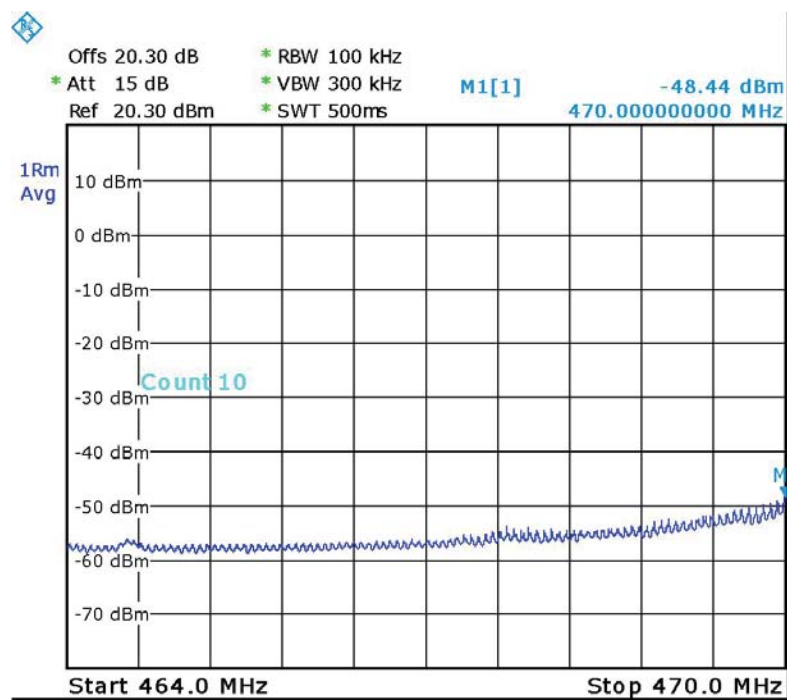


Figure 89. . Chain 1 LOW- 16QAM – 587MHz



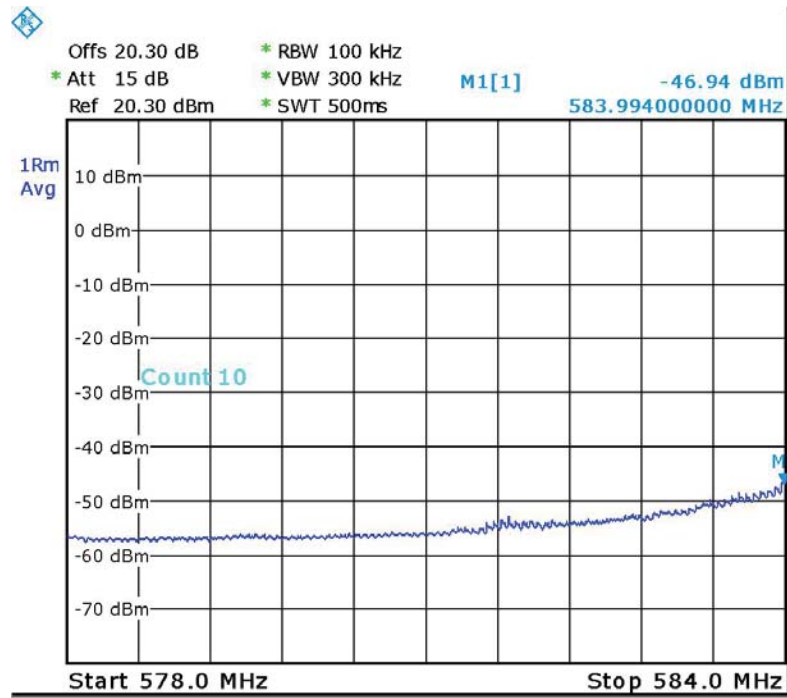
Date: 17.JUN.2015 16:14:05

Figure 90. Chain 1 LOW- 16QAM – 695MHz



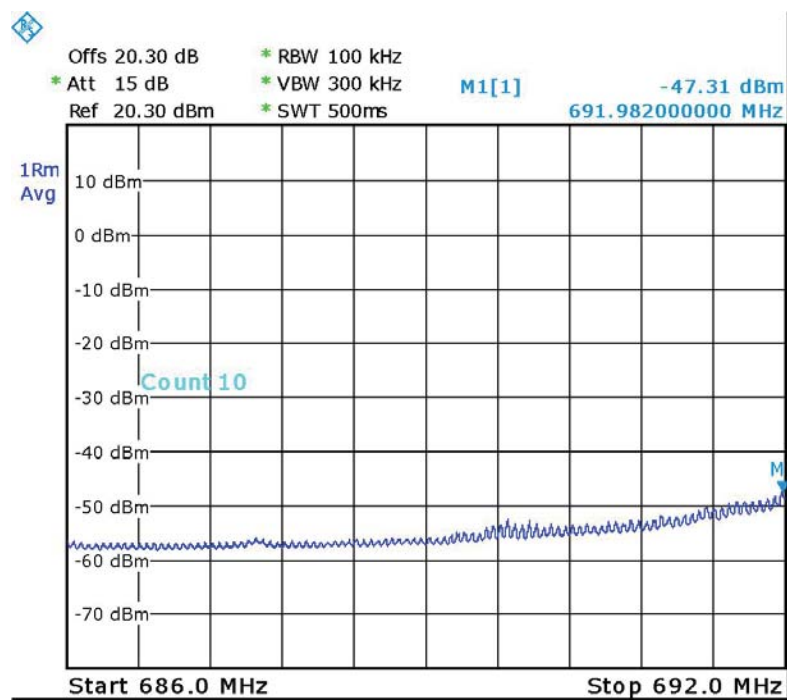
Date: 17.JUN.2015 13:45:09

Figure 91. Chain 1 LOW- 64QAM – 473MHz



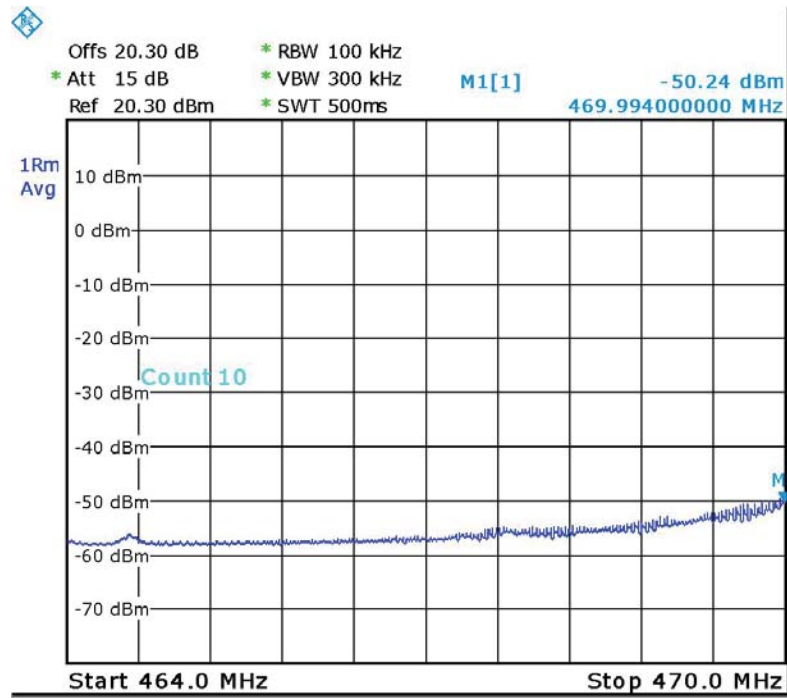
Date: 17.JUN.2015 15:29:32

Figure 92. . Chain 1 LOW- 64QAM – 587MHz



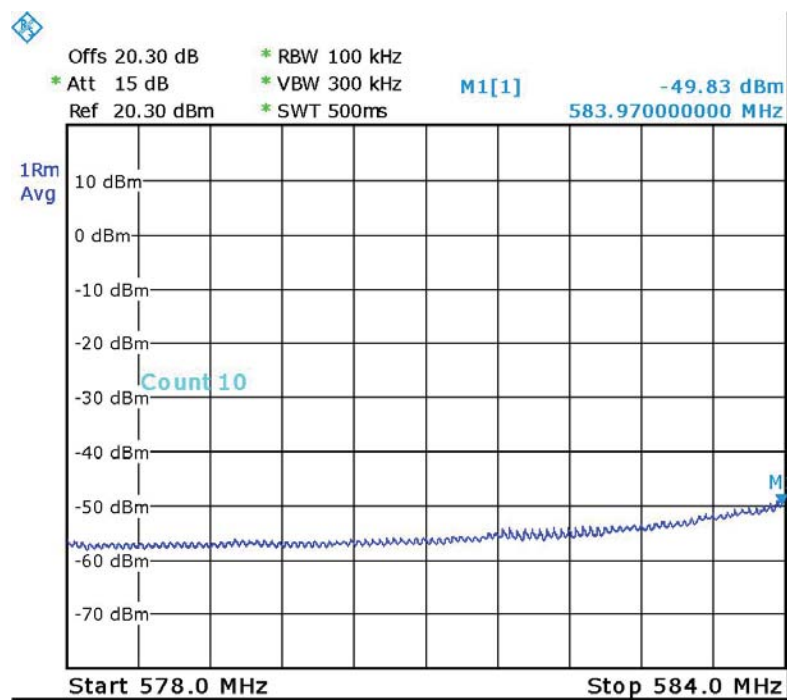
Date: 17.JUN.2015 15:55:39

Figure 93. Chain 1 LOW- 64QAM – 695MHz



Date: 17.JUN.2015 14:15:10

Figure 94. Chain 1 LOW- QPSK – 473MHz



Date: 17.JUN.2015 14:27:15

Figure 95. . Chain 1 LOW- QPSK – 587MHz

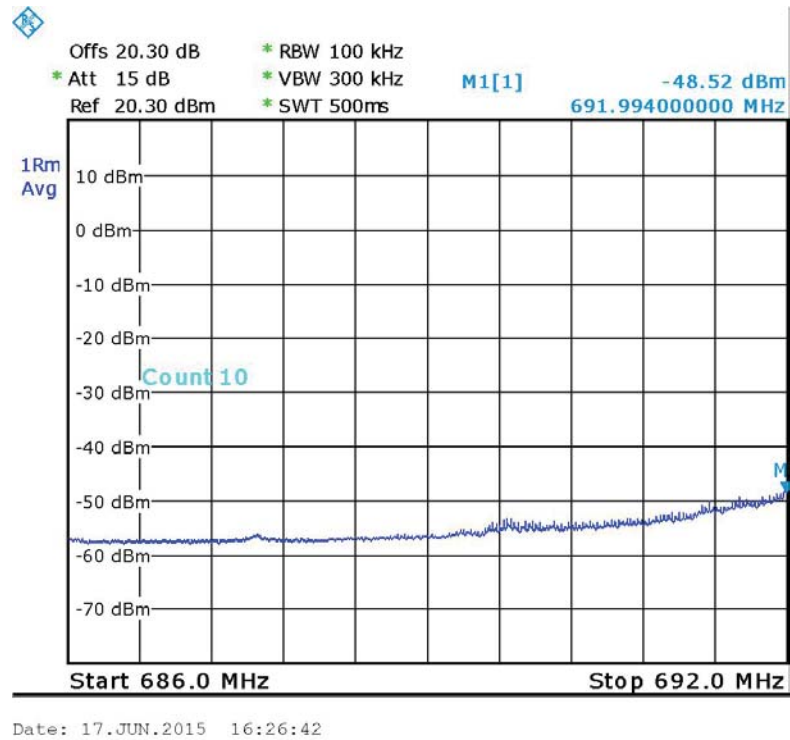
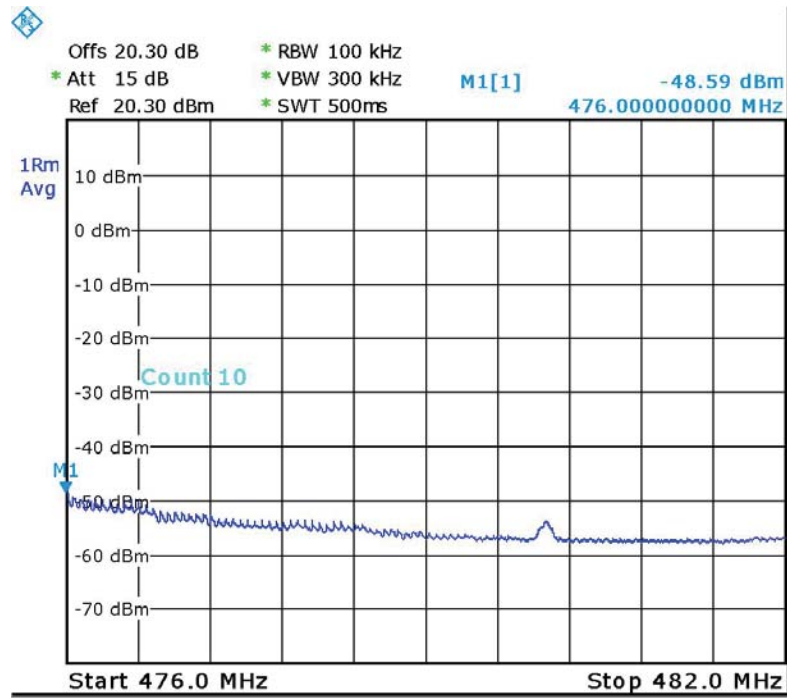
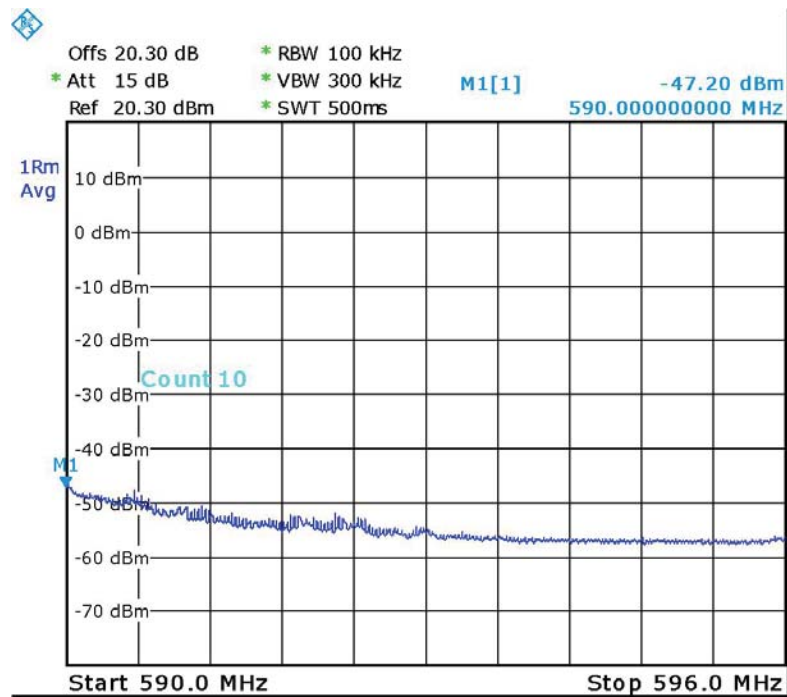


Figure 96. Chain 1 LOW- QPSK – 695MHz



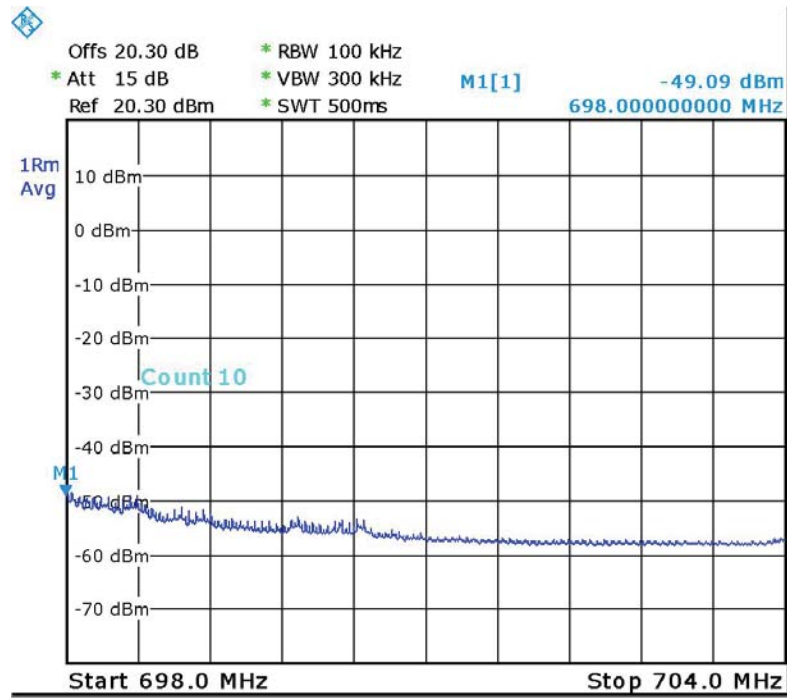
Date: 17.JUN.2015 13:39:14

Figure 97. Chain 1 HIGH – 16QAM – 473MHz



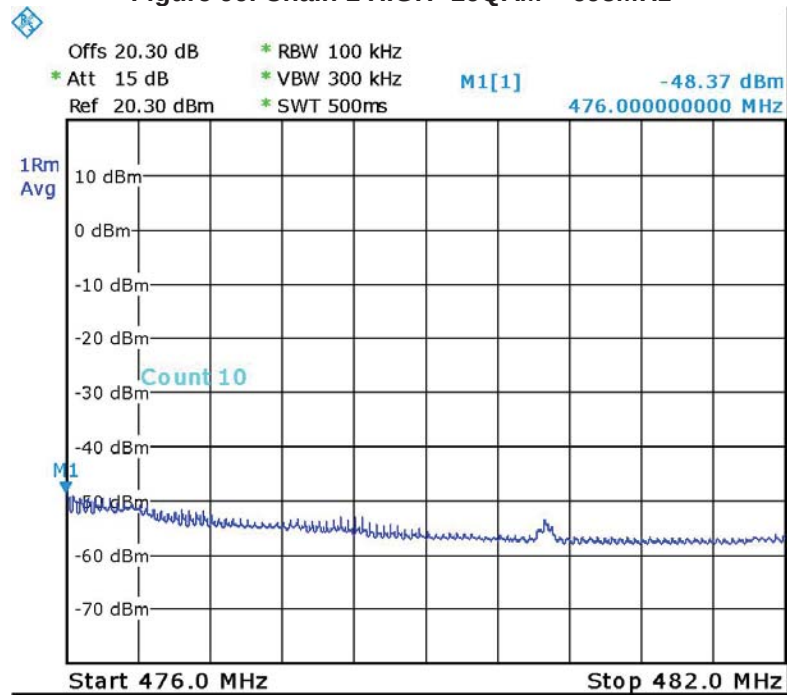
Date: 17.JUN.2015 15:22:19

Figure 98. . Chain 1 HIGH- 16QAM – 587MHz



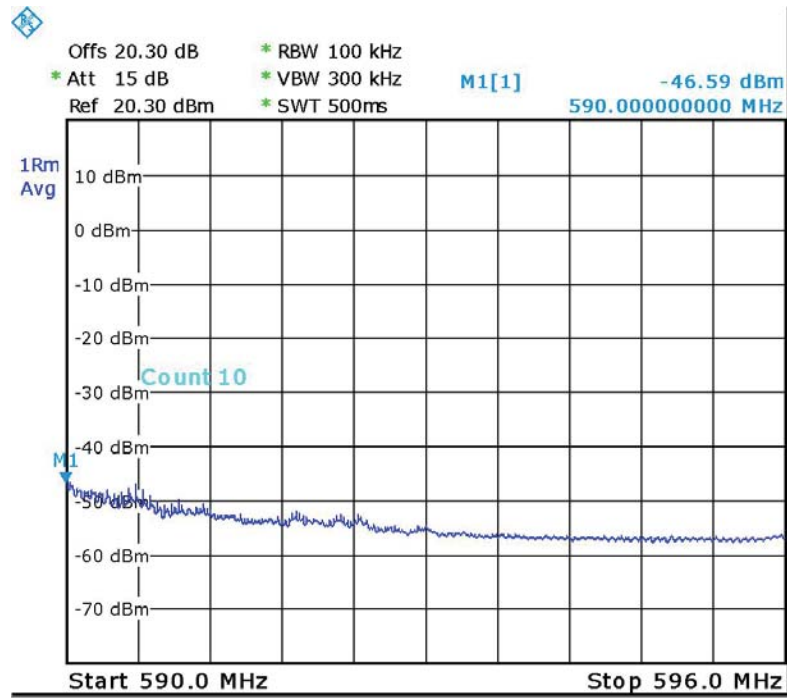
Date: 17.JUN.2015 16:10:46

Figure 99. Chain 1 HIGH- 16QAM - 695MHz



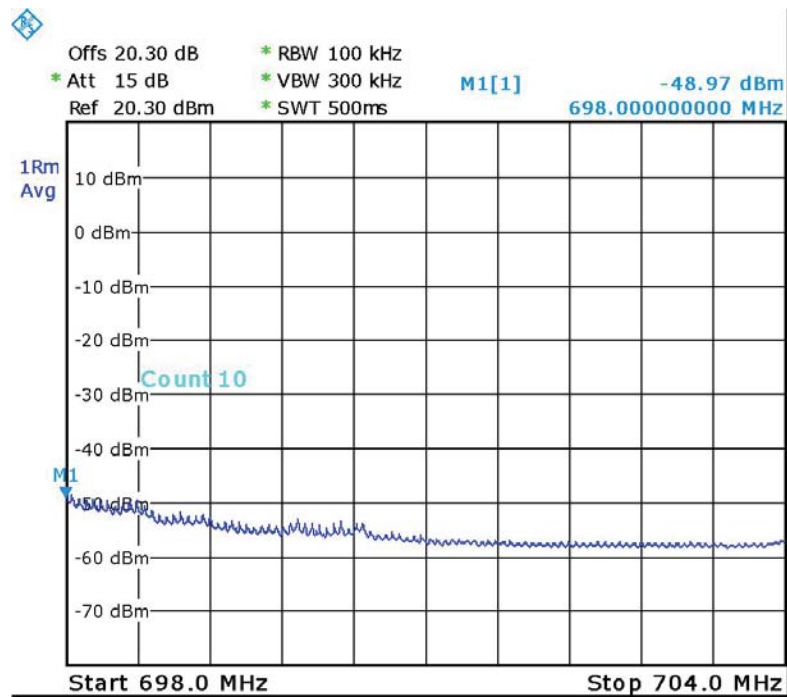
Date: 17.JUN.2015 13:37:09

Figure 100. Chain 1 HIGH- 64QAM - 473MHz



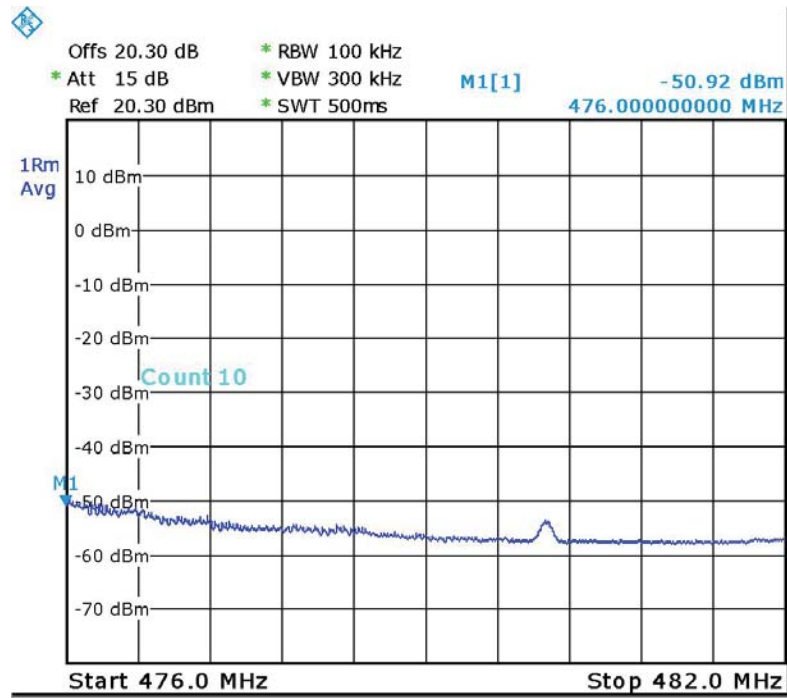
Date: 17.JUN.2015 15:24:54

Figure 101. . Chain 1 HIGH- 64QAM - 587MHz



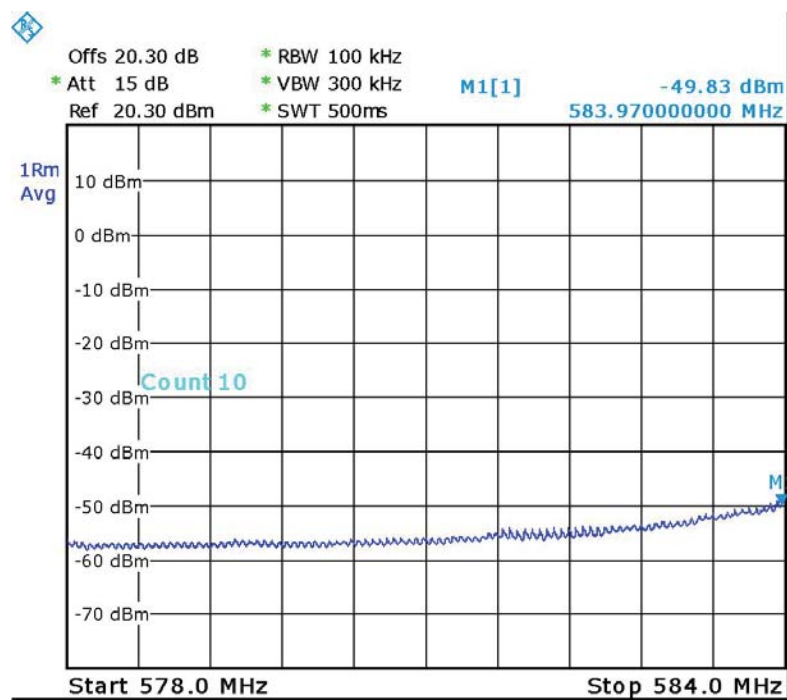
Date: 17.JUN.2015 16:07:47

Figure 102. Chain 1 HIGH- 64QAM - 695MHz



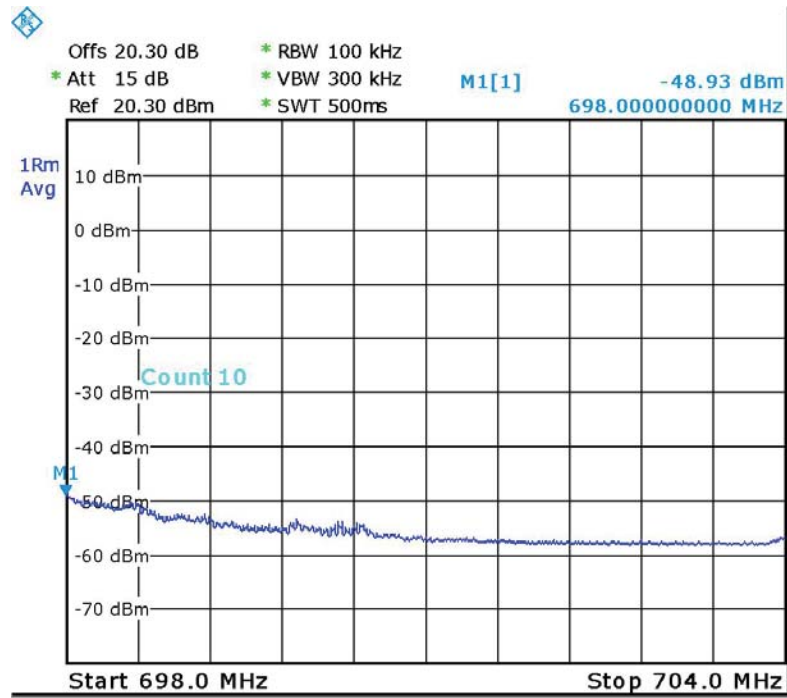
Date: 17.JUN.2015 14:19:58

Figure 103. Chain 1 HIGH- QPSK – 473MHz



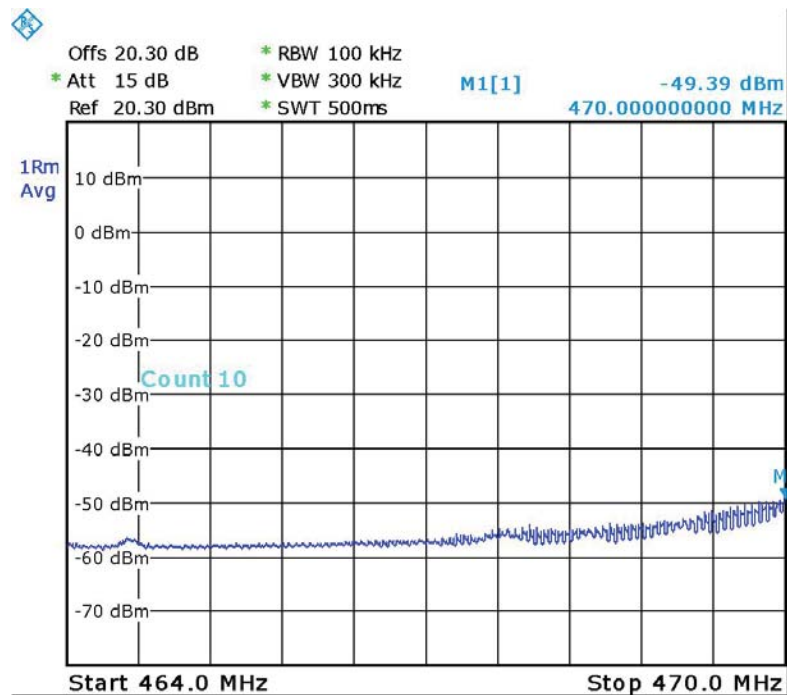
Date: 17.JUN.2015 14:27:15

Figure 104. . Chain 1 HIGH- QPSK – 587MHz



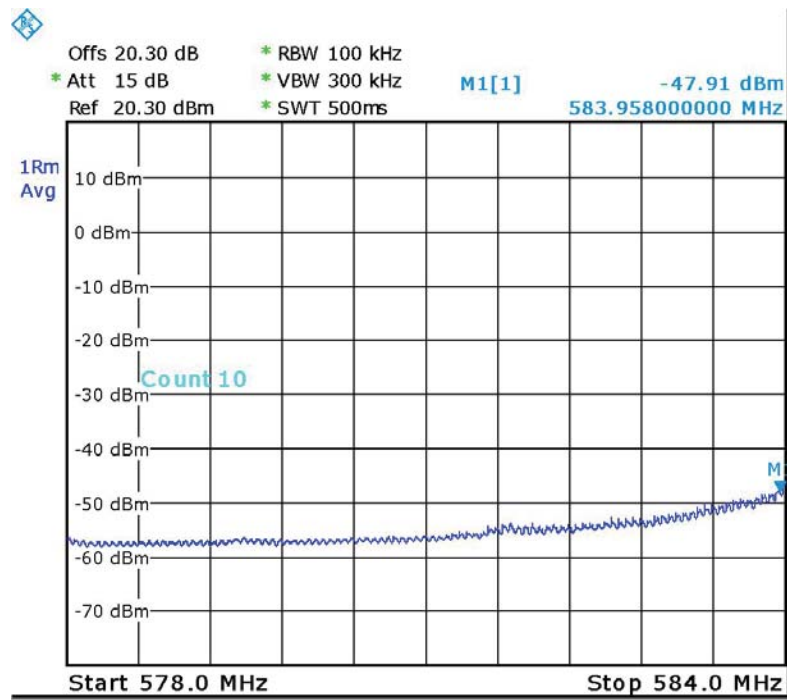
Date: 17.JUN.2015 16:30:46

Figure 105. Chain 1 HIGH- QPSK – 695MHz



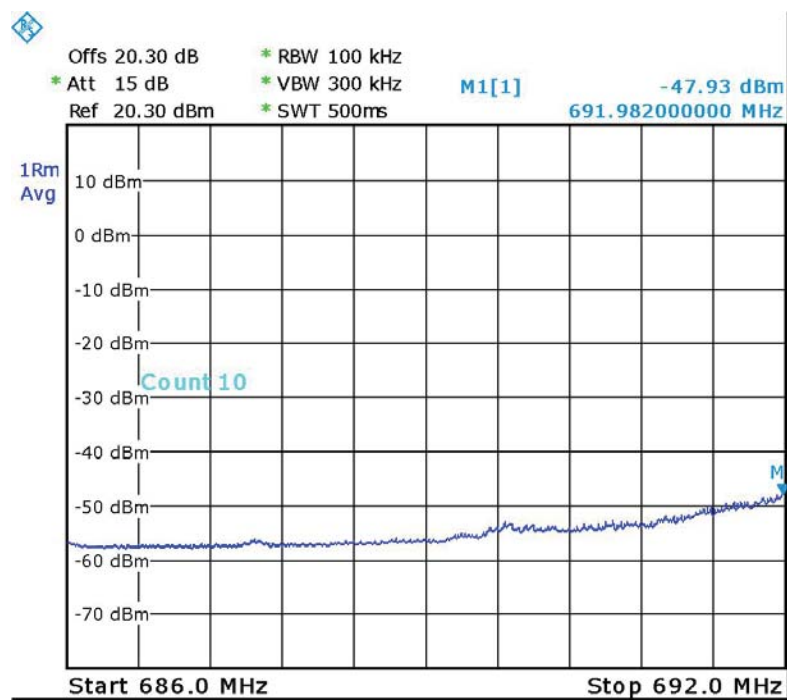
Date: 17.JUN.2015 13:44:36

Figure 106. Chain 2 LOW – 16QAM – 473MHz



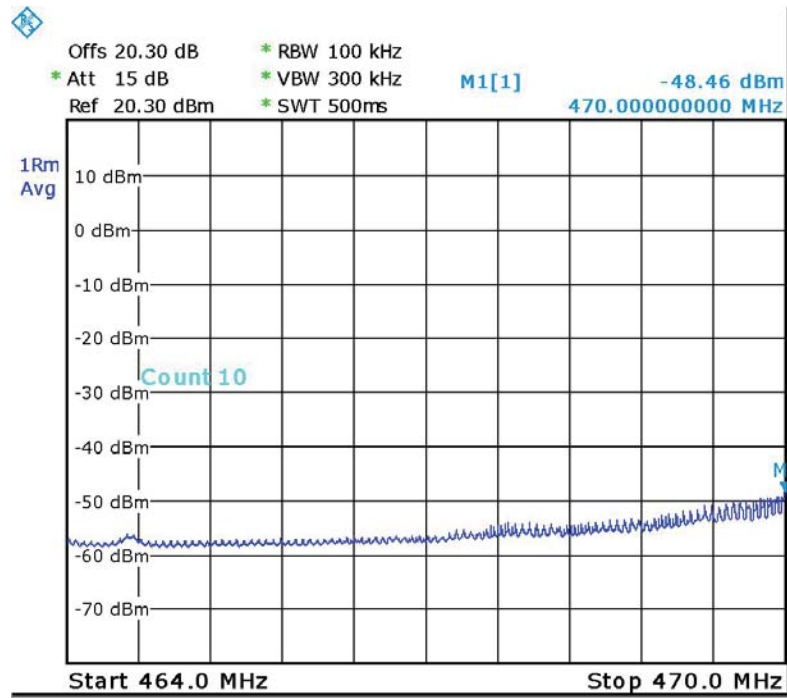
Date: 17.JUN.2015 15:18:19

Figure 107. . Chain 2 LOW- 16QAM – 587MHz



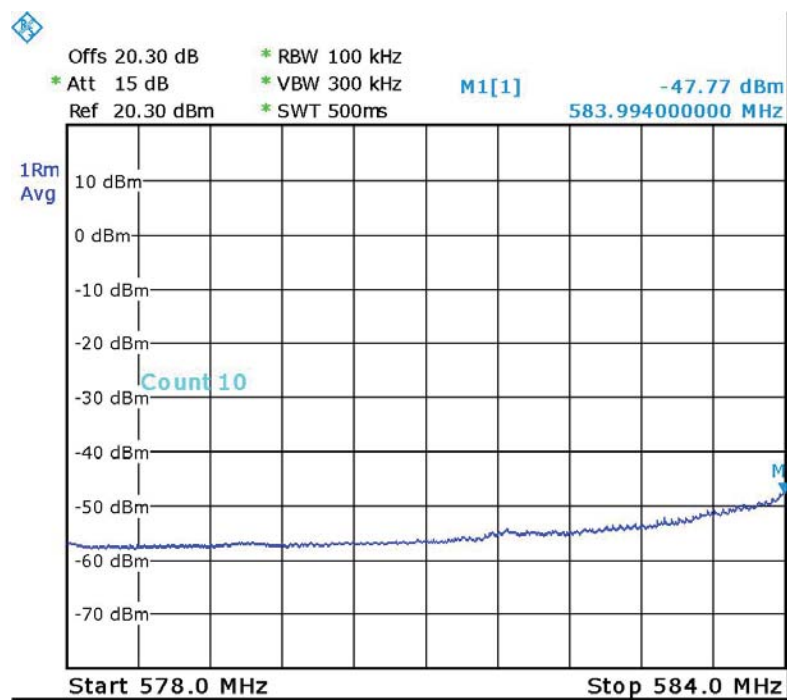
Date: 17.JUN.2015 15:56:22

Figure 108. Chain 2 LOW- 16QAM – 695MHz



Date: 17.JUN.2015 13:29:17

Figure 109. Chain 2 LOW- 64QAM – 473MHz



Date: 17.JUN.2015 15:28:51

Figure 110. . Chain 2 LOW- 64QAM – 587MHz

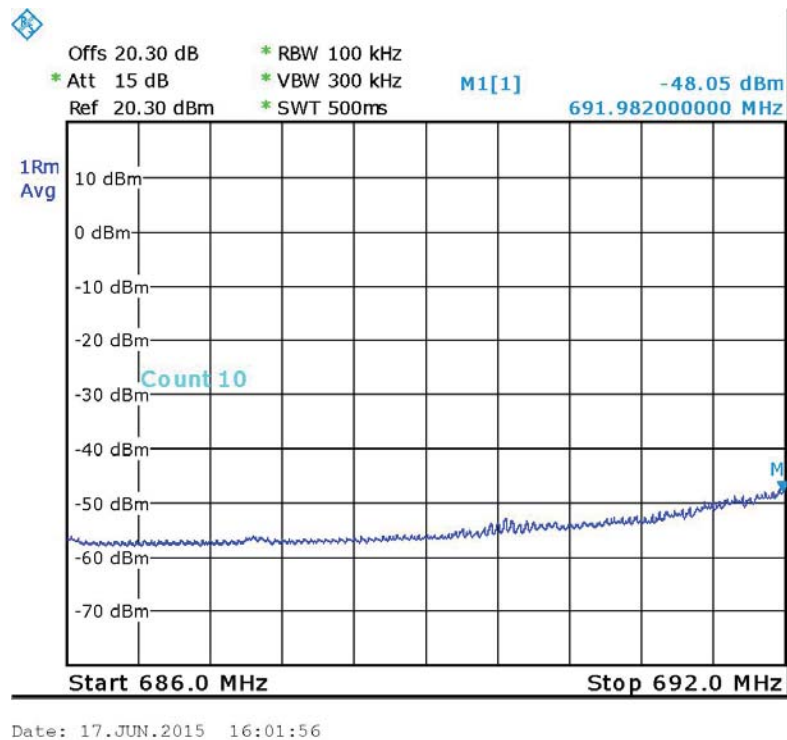


Figure 111. Chain 2 LOW- 64QAM – 695MHz

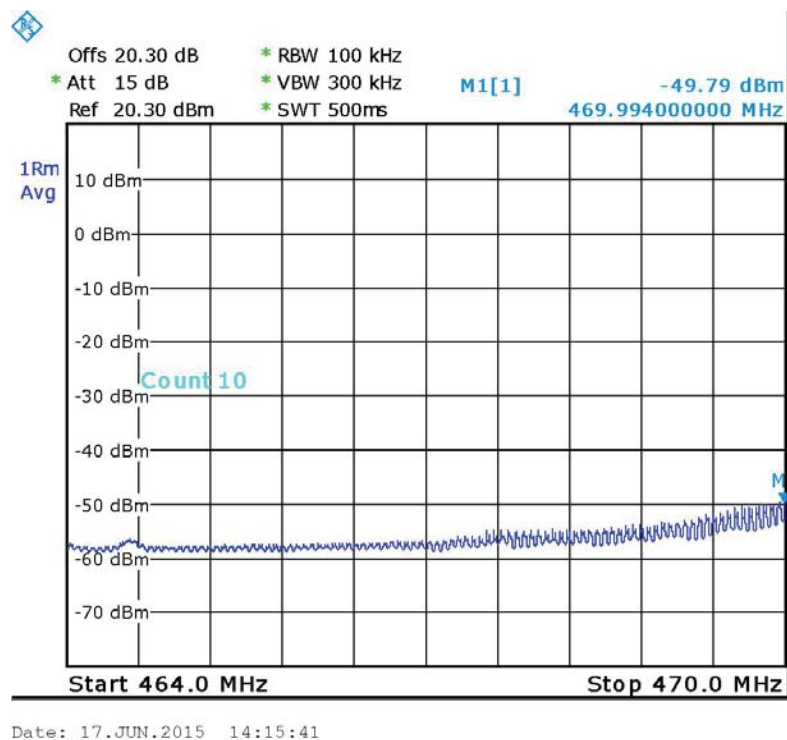
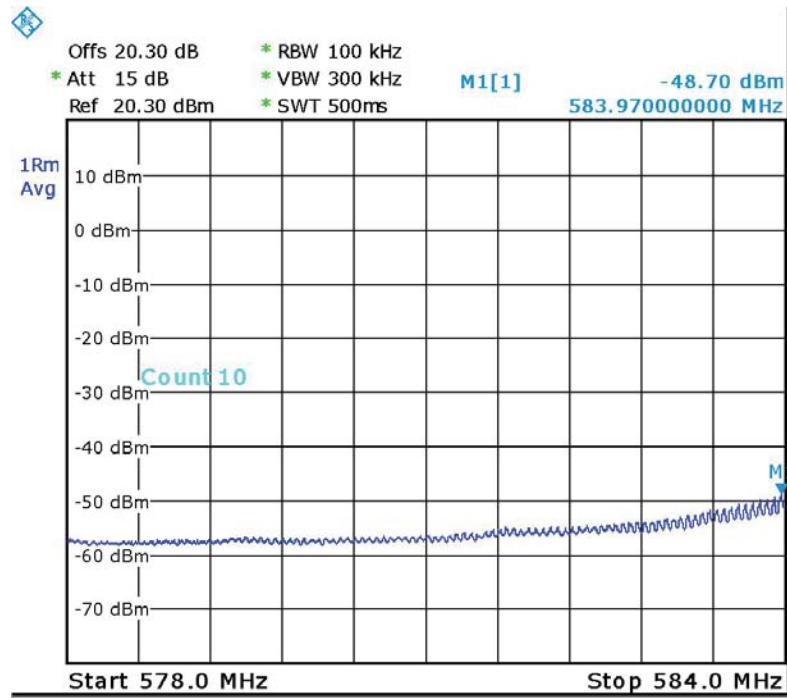
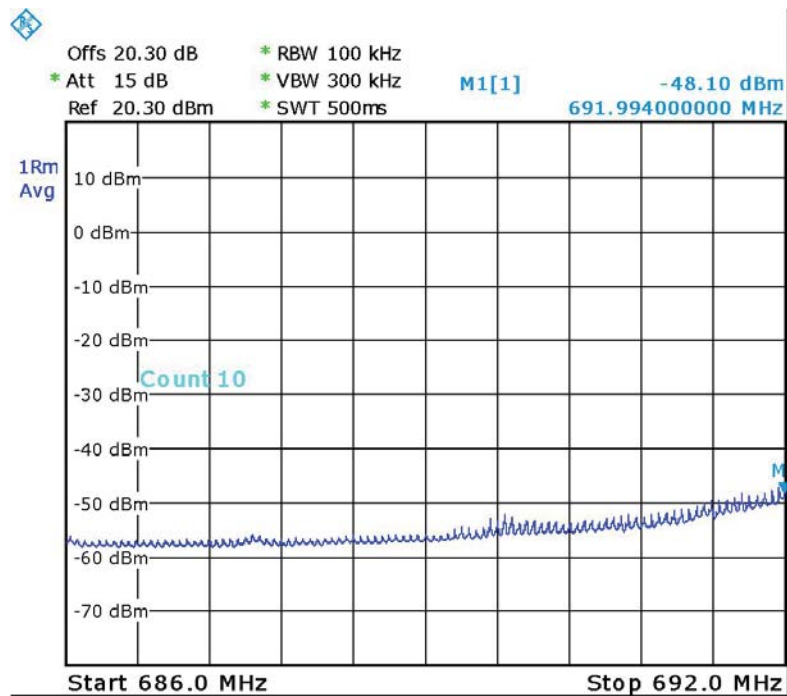


Figure 112. Chain 2 LOW- QPSK – 473MHz



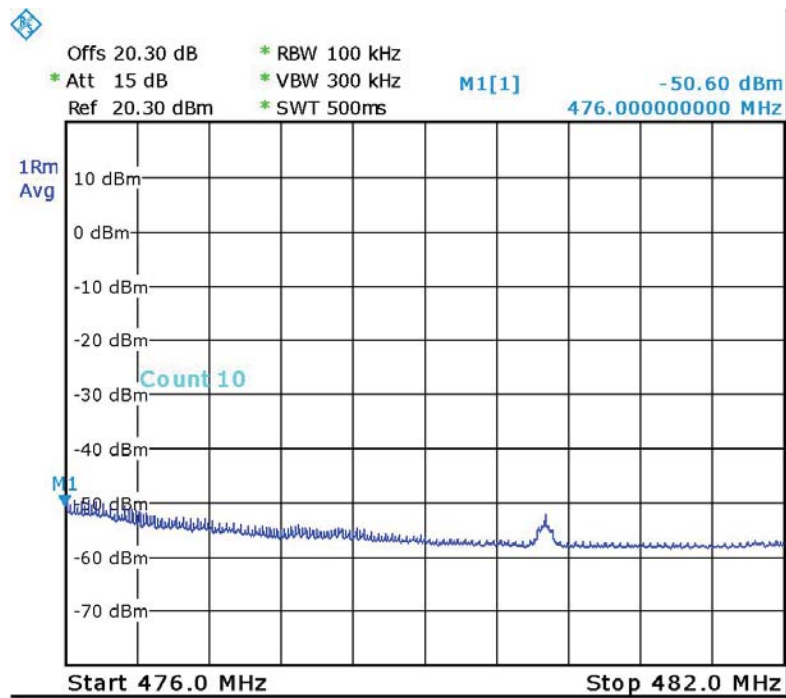
Date: 17.JUN.2015 14:28:28

Figure 113. . Chain 2 LOW- QPSK – 587MHz



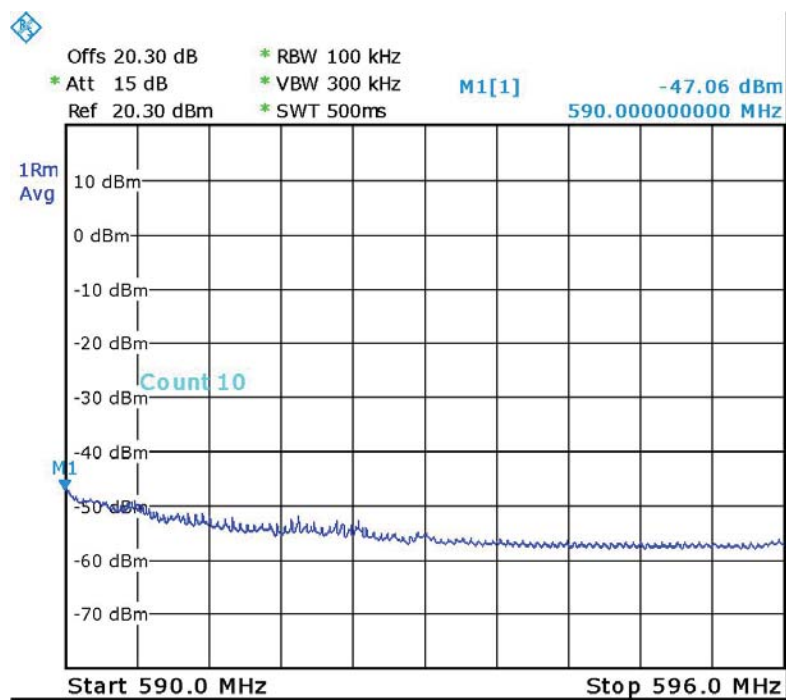
Date: 17.JUN.2015 16:27:36

Figure 114. Chain 2 LOW- QPSK – 695MHz



Date: 17.JUN.2015 13:39:41

Figure 115. Chain 2 HIGH – 16QAM – 473MHz



Date: 17.JUN.2015 15:21:54

Figure 116. . Chain 2 HIGH- 16QAM – 587MHz

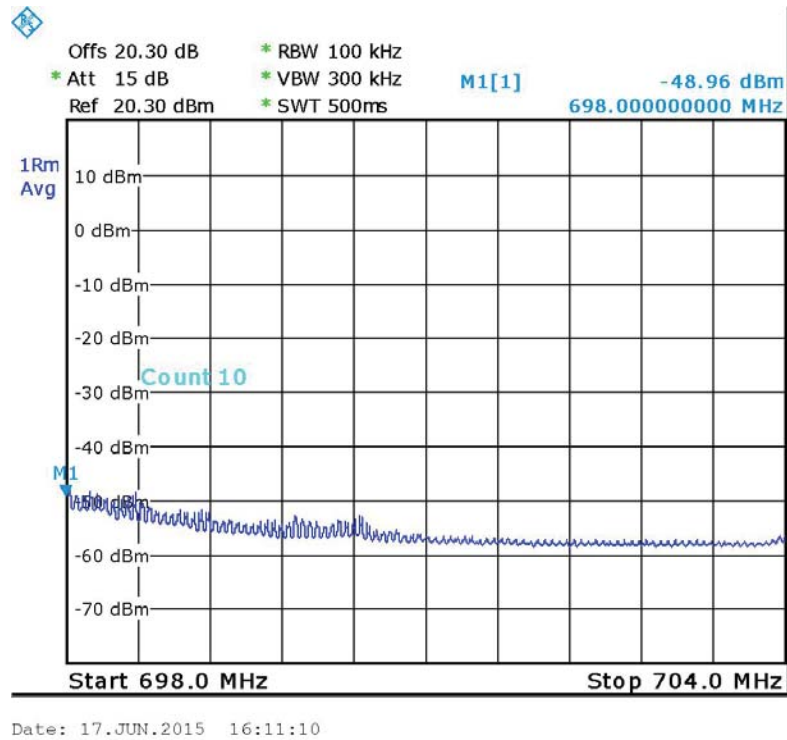


Figure 117. Chain 2 HIGH- 16QAM – 695MHz

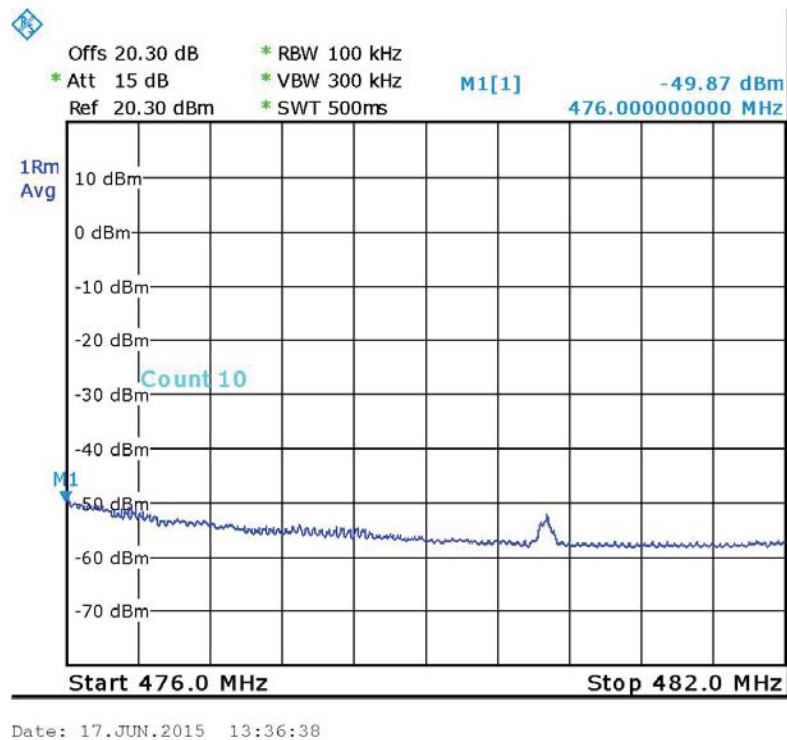


Figure 118. Chain 2 HIGH- 64QAM – 473MHz

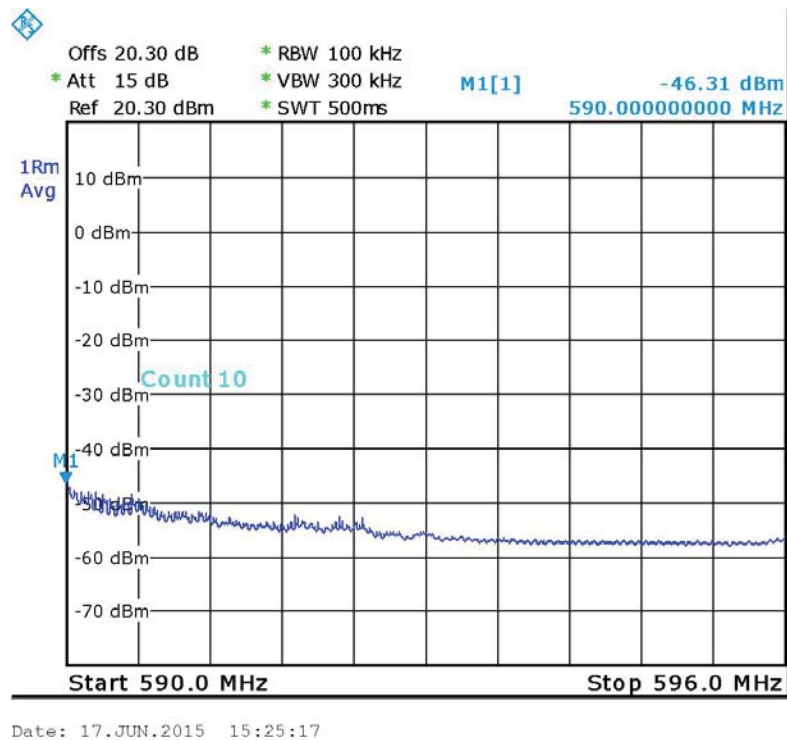


Figure 119. . Chain 2 HIGH- 64QAM – 587MHz

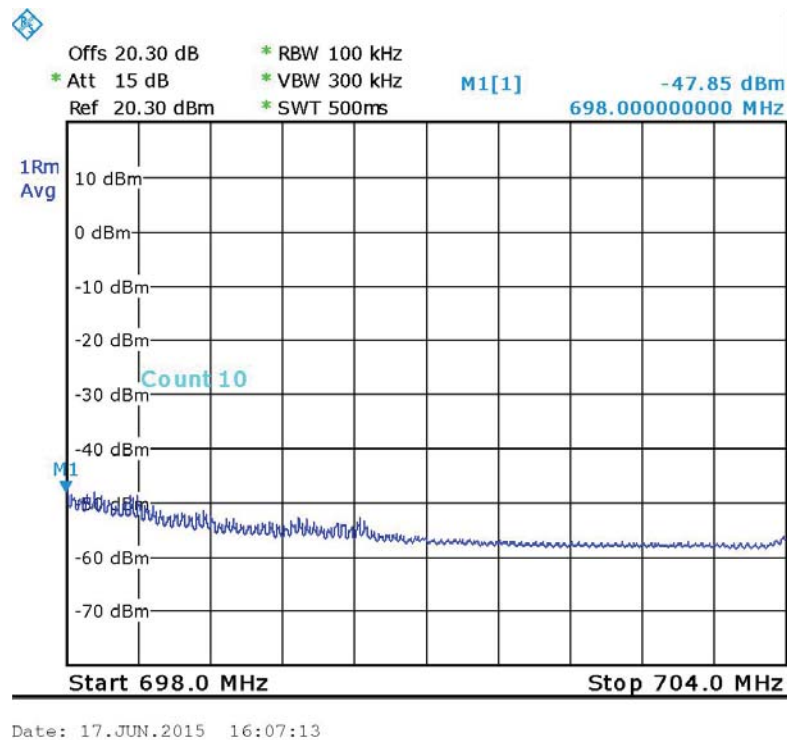
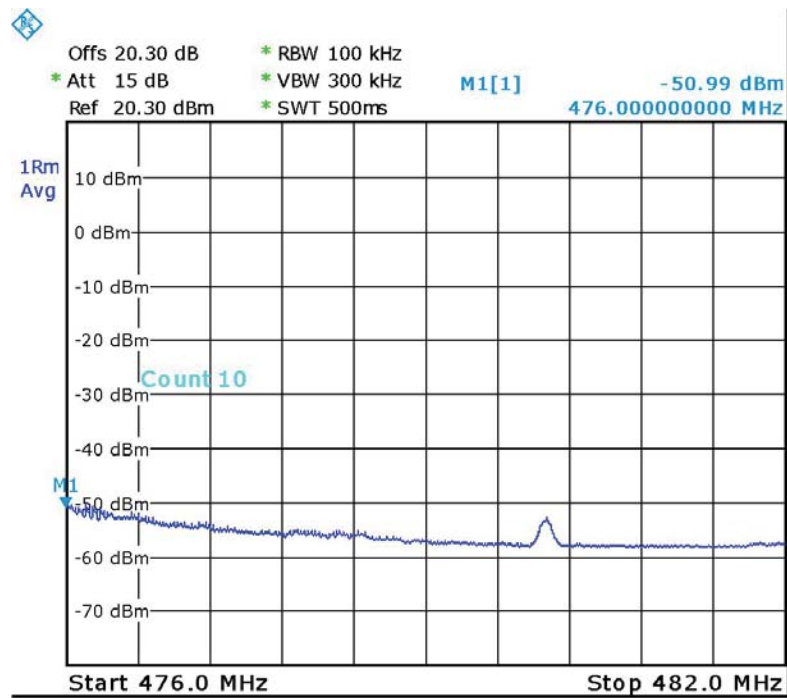
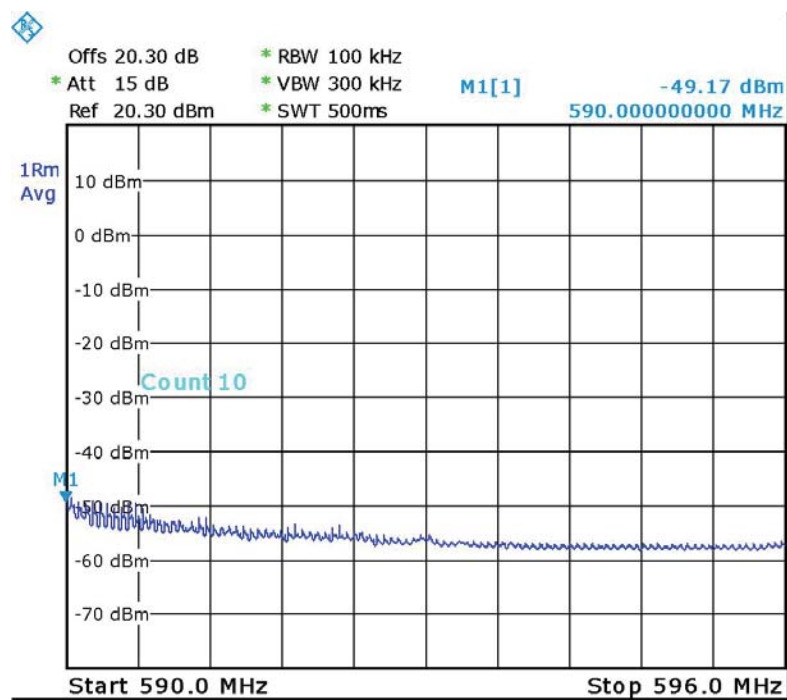


Figure 120. Chain 2 HIGH- 64QAM – 695MHz



Date: 17.JUN.2015 14:19:17

Figure 121. Chain 2 HIGH- QPSK – 473MHz



Date: 17.JUN.2015 14:40:30

Figure 122. . Chain 2 HIGH- QPSK – 587MHz

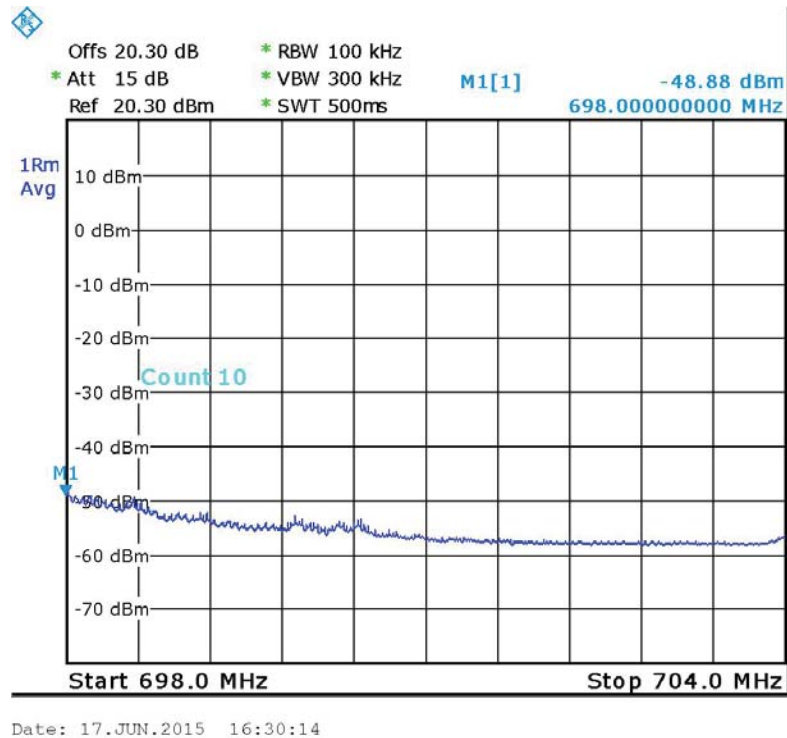


Figure 123. Chain 2 HIGH- QPSK – 695MHz

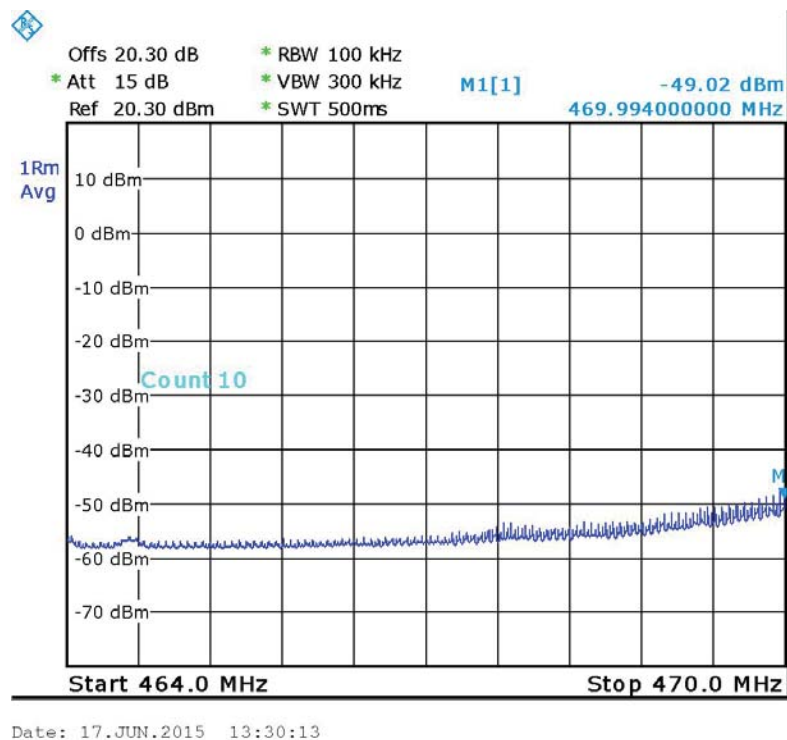
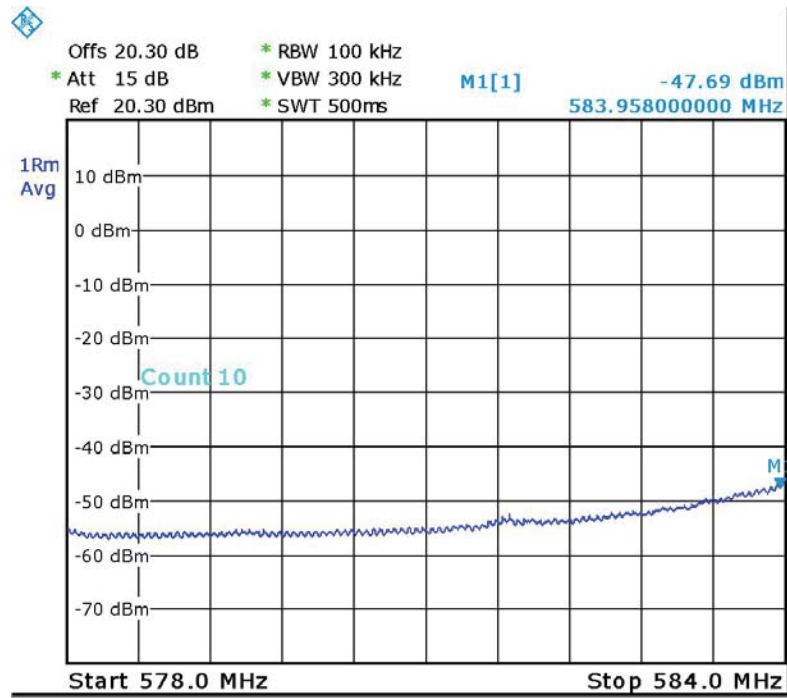
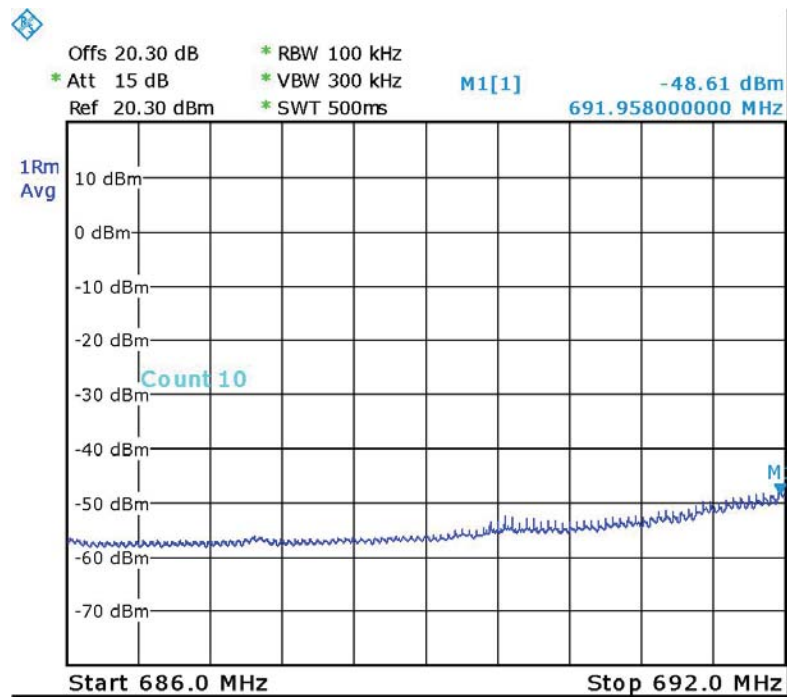


Figure 124. Chain 3 LOW – 16QAM – 473MHz



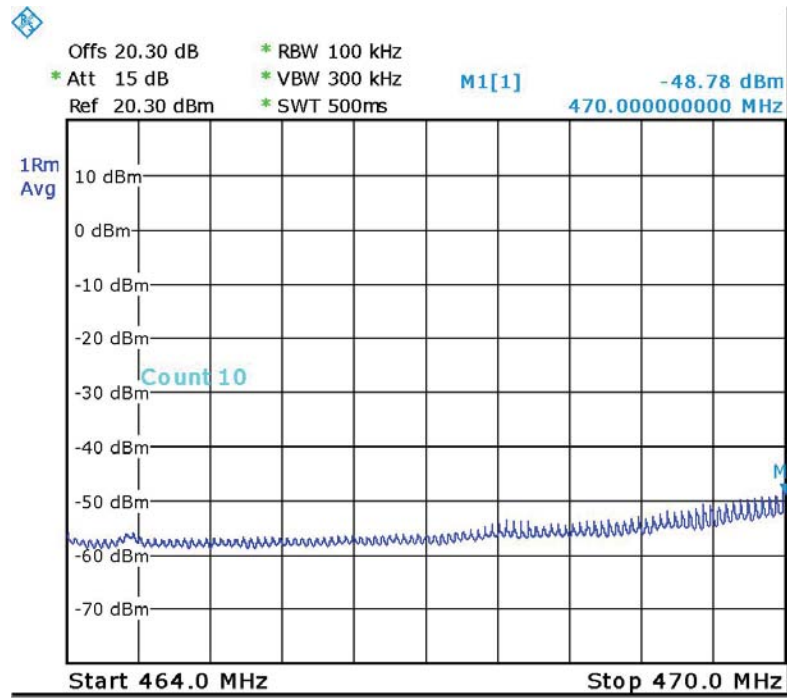
Date: 17.JUN.2015 15:19:01

Figure 125. Chain 3 LOW- 16QAM – 587MHz



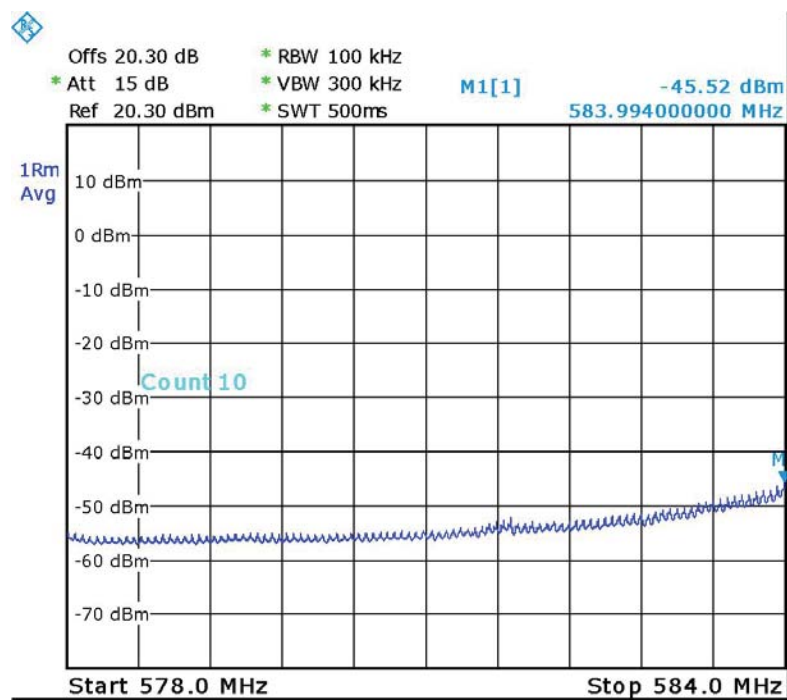
Date: 17.JUN.2015 16:13:13

Figure 126. Chain 3 LOW- 16QAM – 695MHz



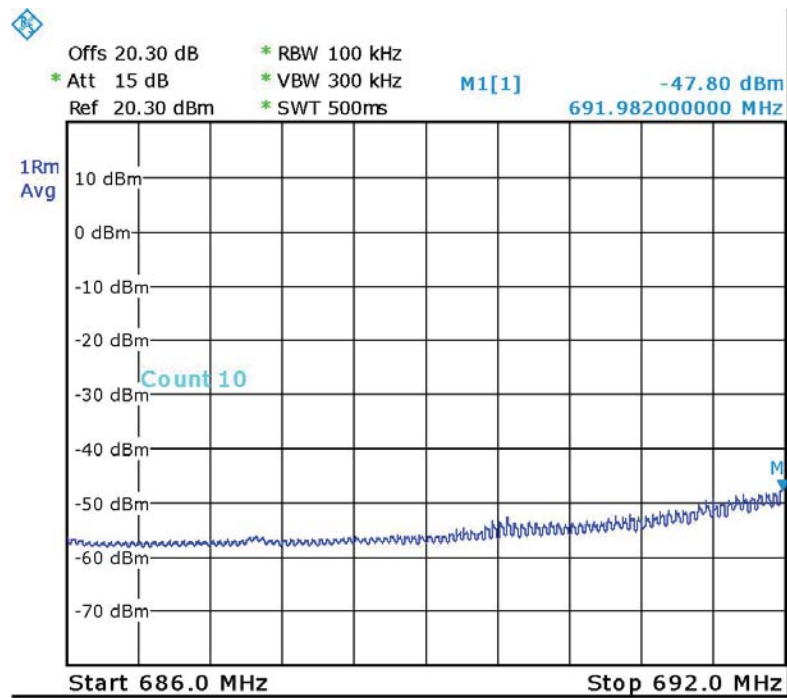
Date: 17.JUN.2015 13:42:24

Figure 127. Chain 3 LOW- 64QAM – 473MHz



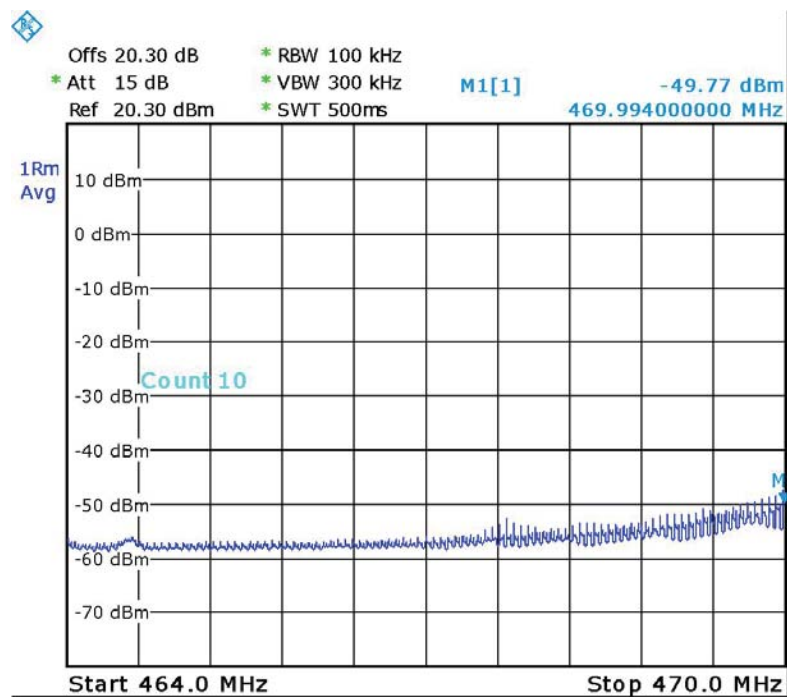
Date: 17.JUN.2015 15:28:26

Figure 128. . Chain 3 LOW- 64QAM – 587MHz



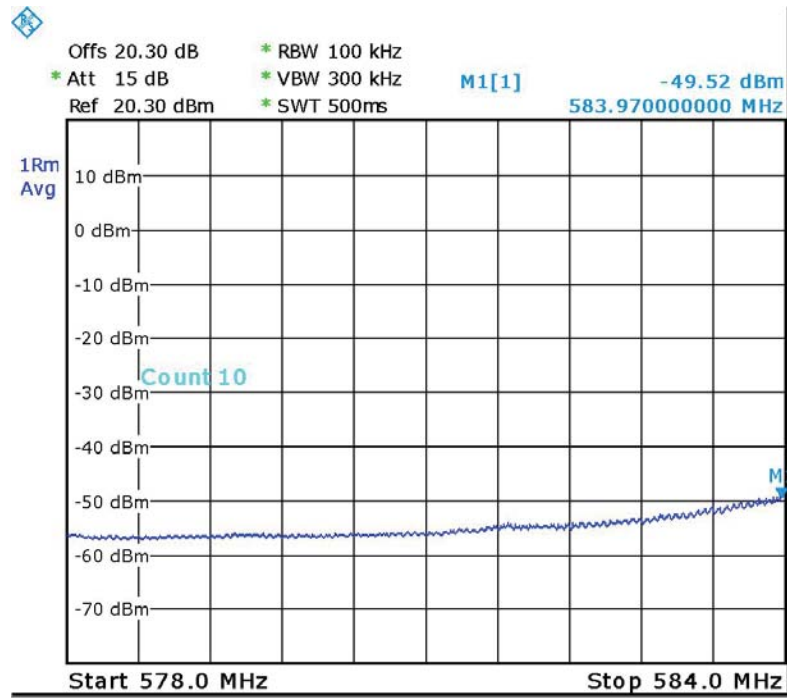
Date: 17.JUN.2015 16:01:12

Figure 129. Chain 3 LOW- 64QAM – 695MHz



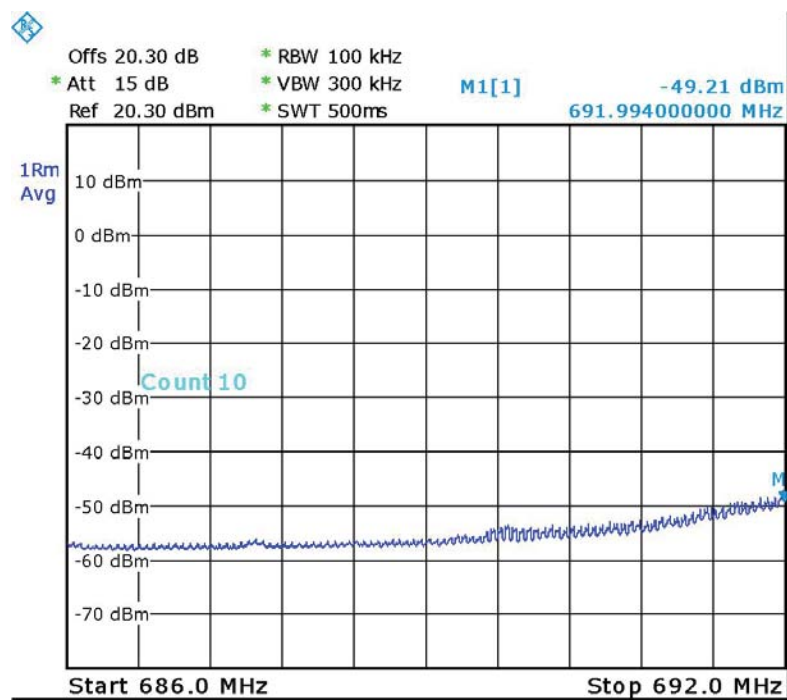
Date: 17.JUN.2015 14:16:17

Figure 130. Chain 3 LOW- QPSK – 473MHz



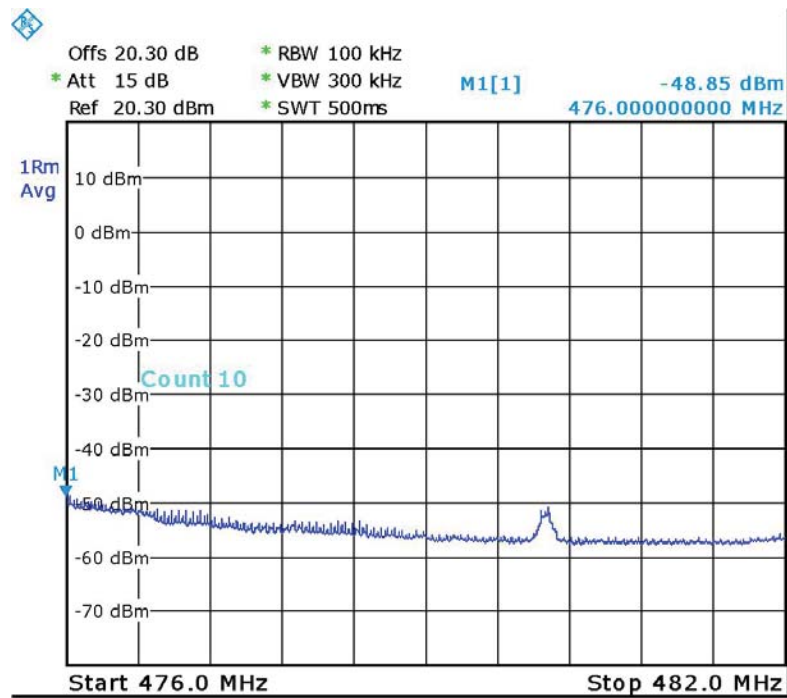
Date: 17.JUN.2015 14:29:22

Figure 131. . Chain 3 LOW- QPSK – 587MHz



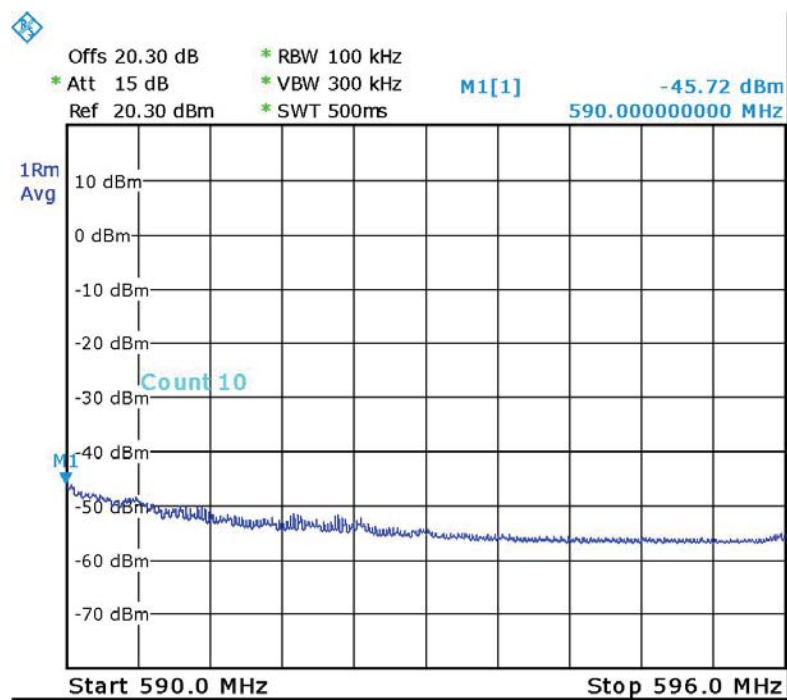
Date: 17.JUN.2015 16:28:01

Figure 132. Chain 3 LOW- QPSK – 695MHz



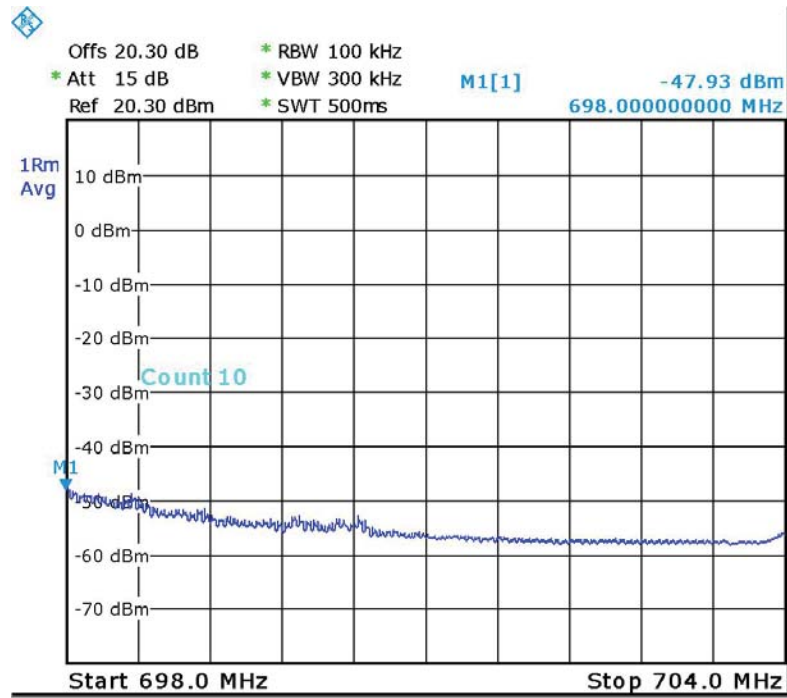
Date: 17.JUN.2015 13:40:06

Figure 133. Chain 3 HIGH – 16QAM – 473MHz



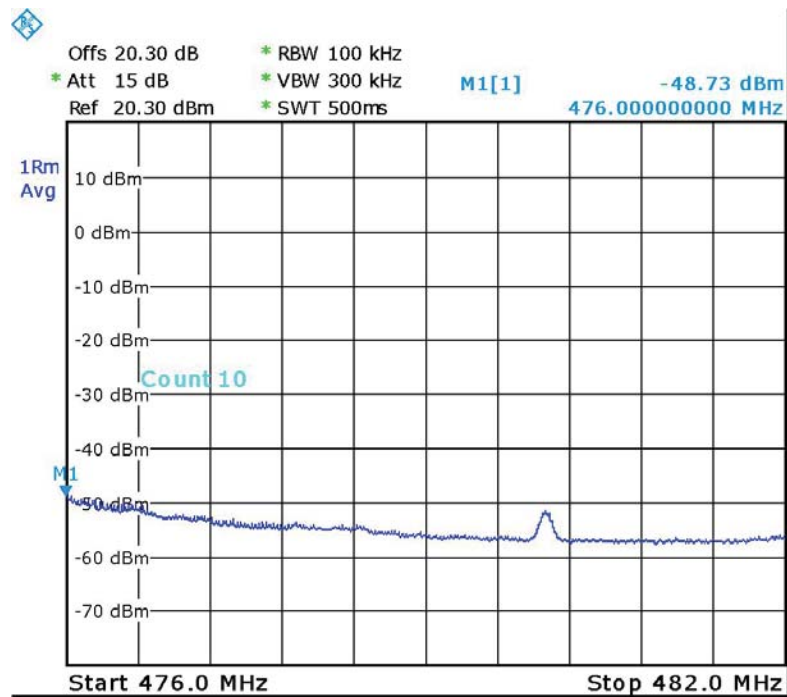
Date: 17.JUN.2015 15:21:34

Figure 134. . Chain 3 HIGH- 16QAM – 587MHz



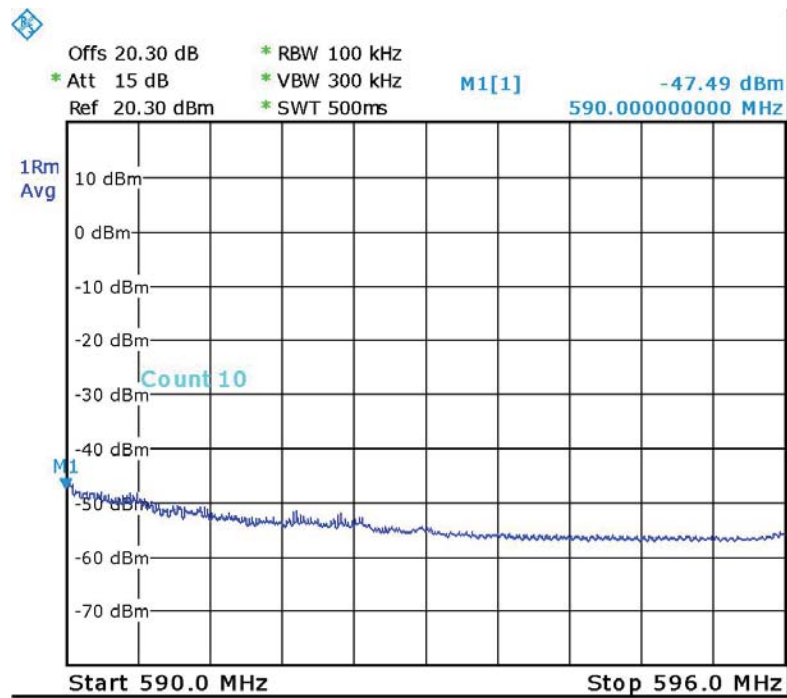
Date: 17.JUN.2015 16:11:35

Figure 135. Chain 3 HIGH- 16QAM – 695MHz



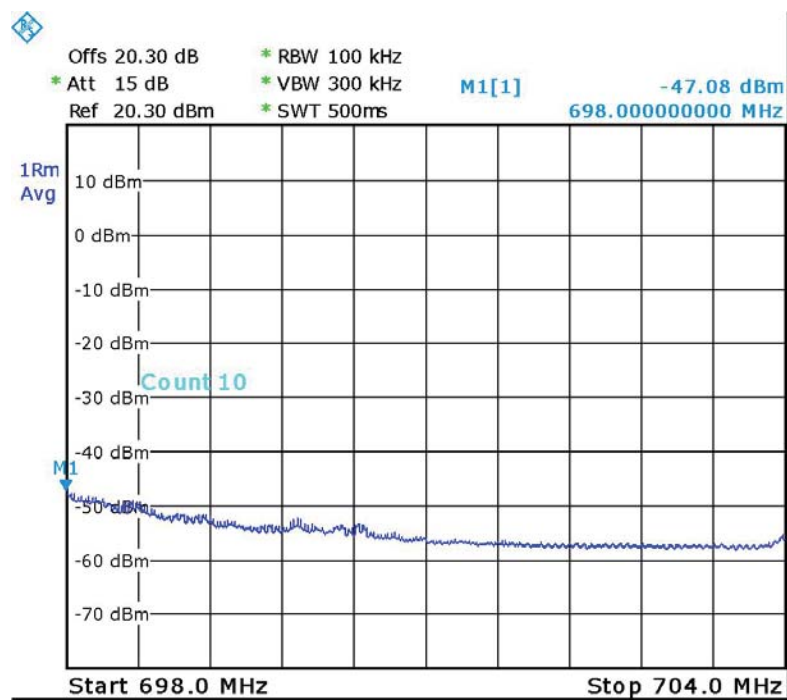
Date: 17.JUN.2015 13:34:56

Figure 136. Chain 3 HIGH- 64QAM – 473MHz



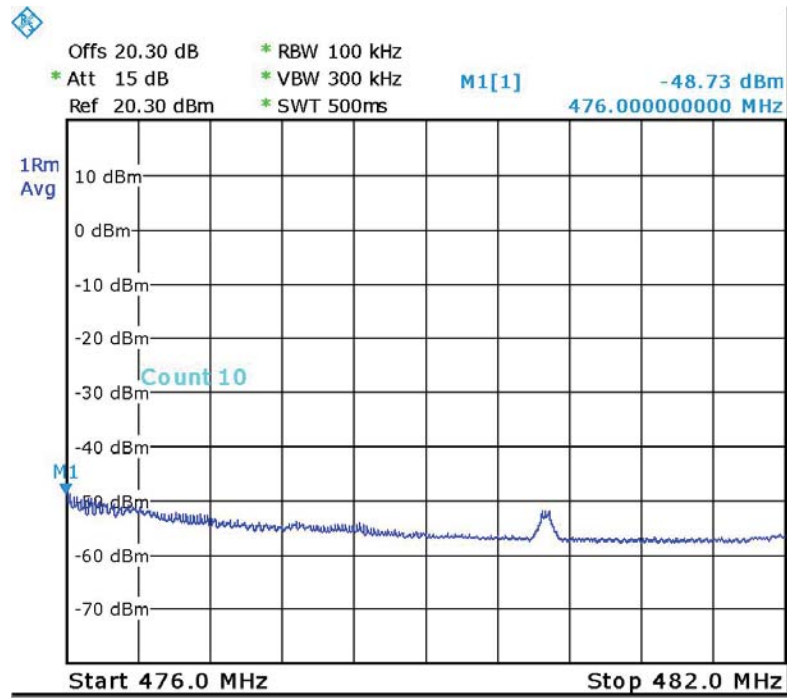
Date: 17.JUN.2015 15:25:47

Figure 137. . Chain 3 HIGH- 64QAM – 587MHz



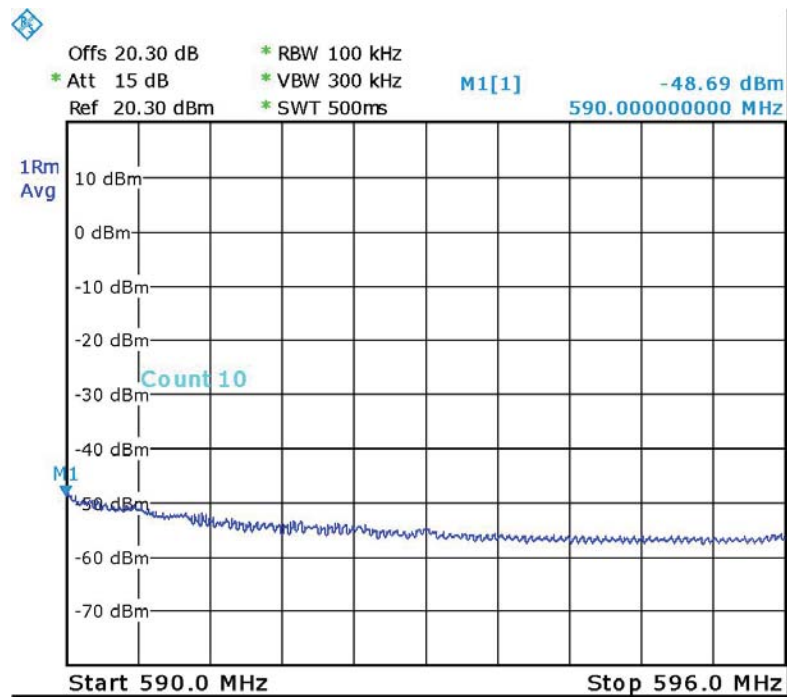
Date: 17.JUN.2015 16:06:49

Figure 138. Chain 3 HIGH- 64QAM – 695MHz



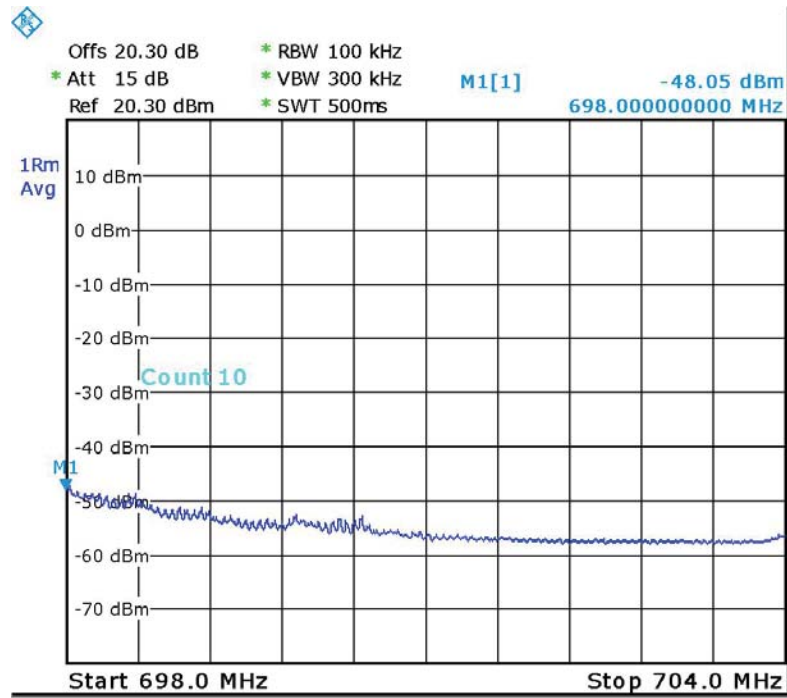
Date: 17.JUN.2015 14:18:44

Figure 139. Chain 3 HIGH- QPSK – 473MHz



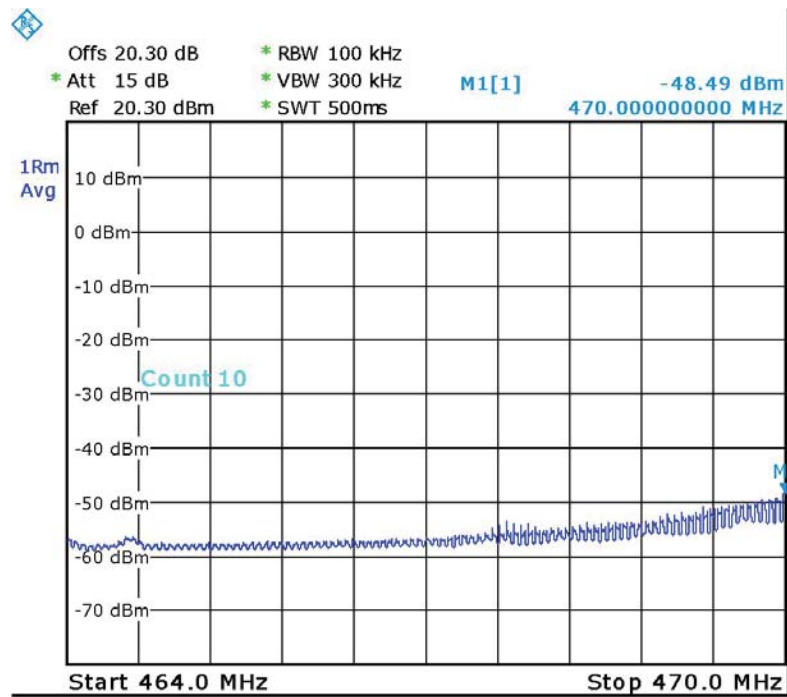
Date: 17.JUN.2015 14:40:00

Figure 140. . Chain 3 HIGH- QPSK – 587MHz



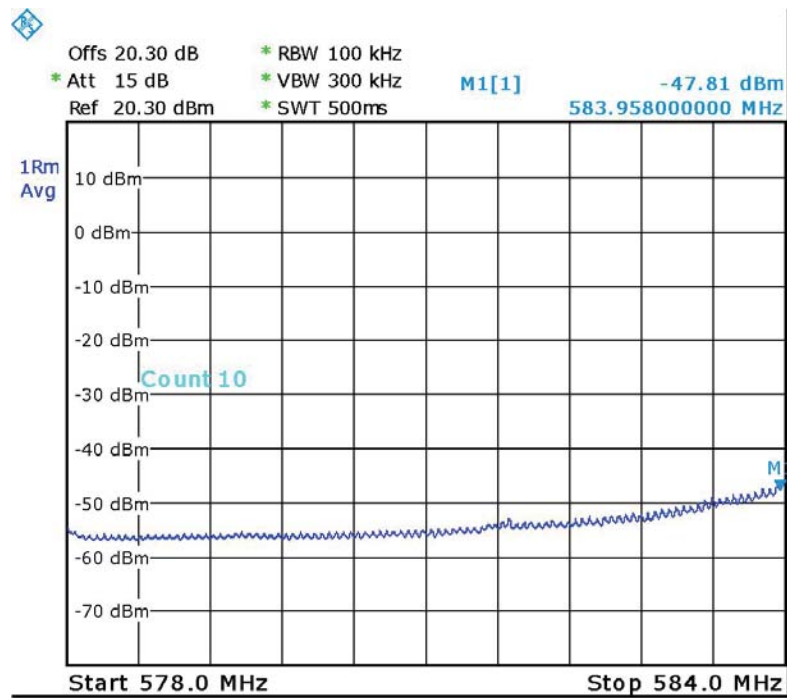
Date: 17.JUN.2015 16:29:41

Figure 141. Chain 3 HIGH- QPSK – 695MHz



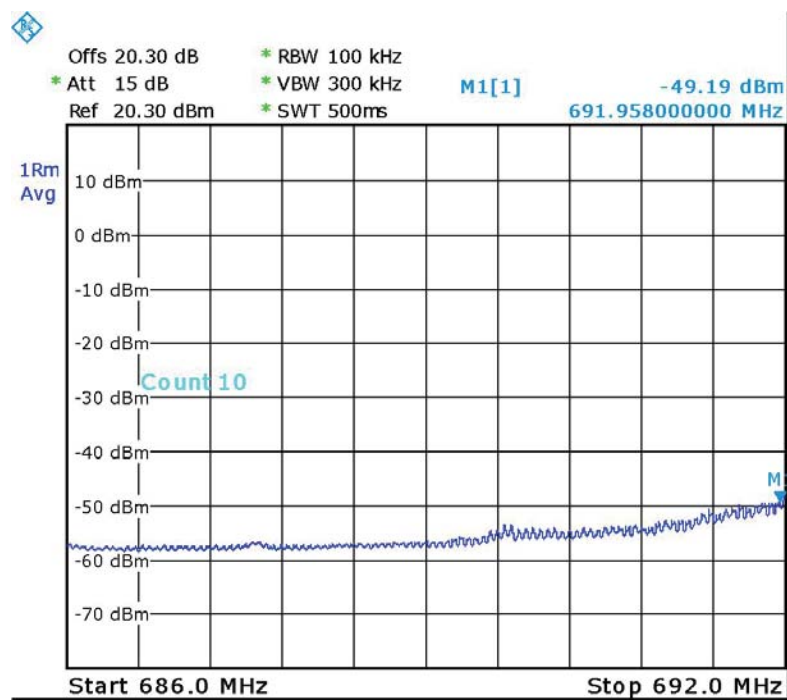
Date: 17.JUN.2015 13:41:52

Figure 142. Chain 4 LOW – 16QAM – 473MHz



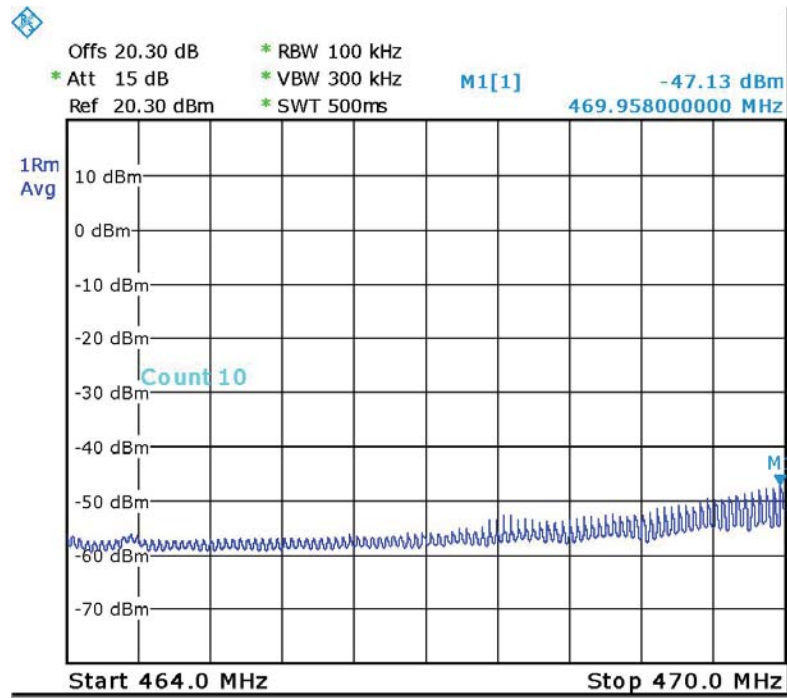
Date: 17.JUN.2015 15:19:41

Figure 143. . Chain 4 LOW- 16QAM – 587MHz



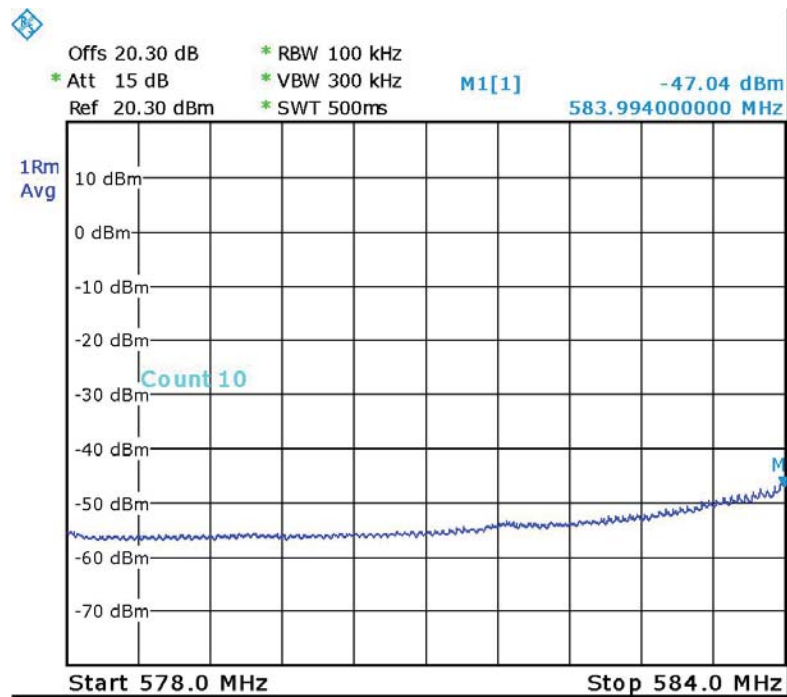
Date: 17.JUN.2015 16:13:44

Figure 144. Chain 4 LOW- 16QAM – 695MHz



Date: 17.JUN.2015 13:30:53

Figure 145. Chain 4 LOW- 64QAM – 473MHz



Date: 17.JUN.2015 15:27:34

Figure 146. . Chain 4 LOW- 64QAM – 587MHz

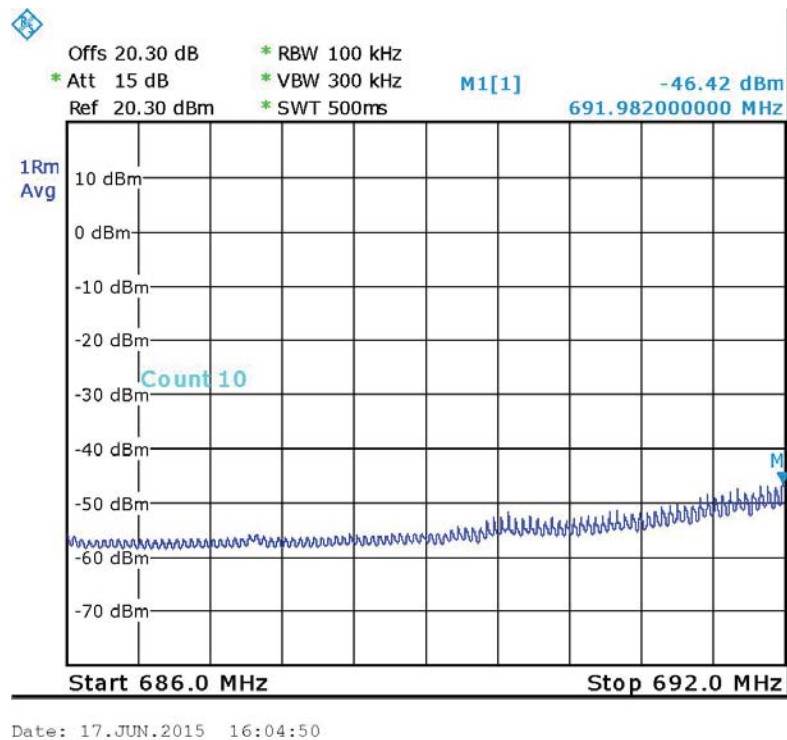


Figure 147. Chain 4 LOW- 64QAM – 695MHz

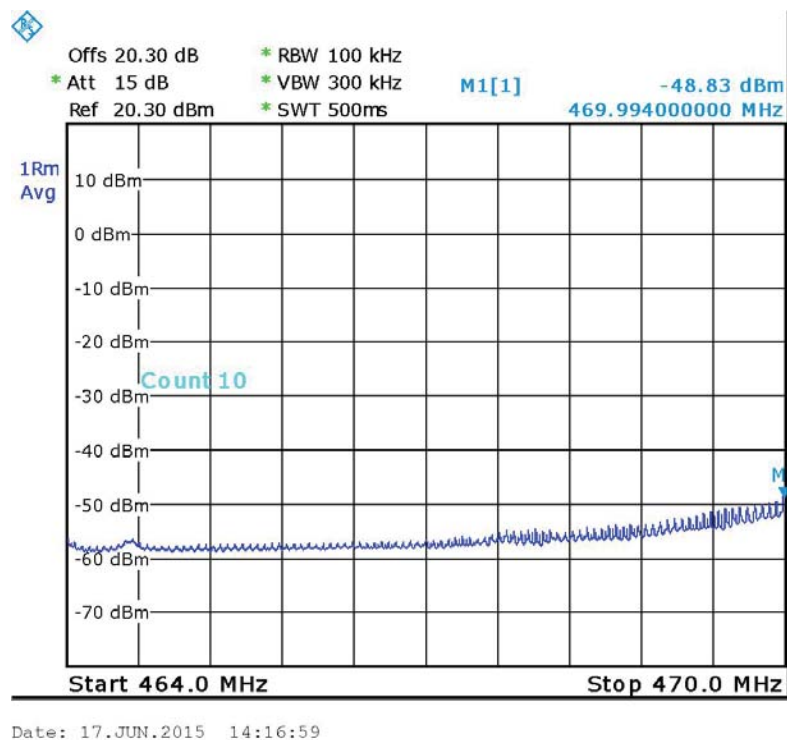
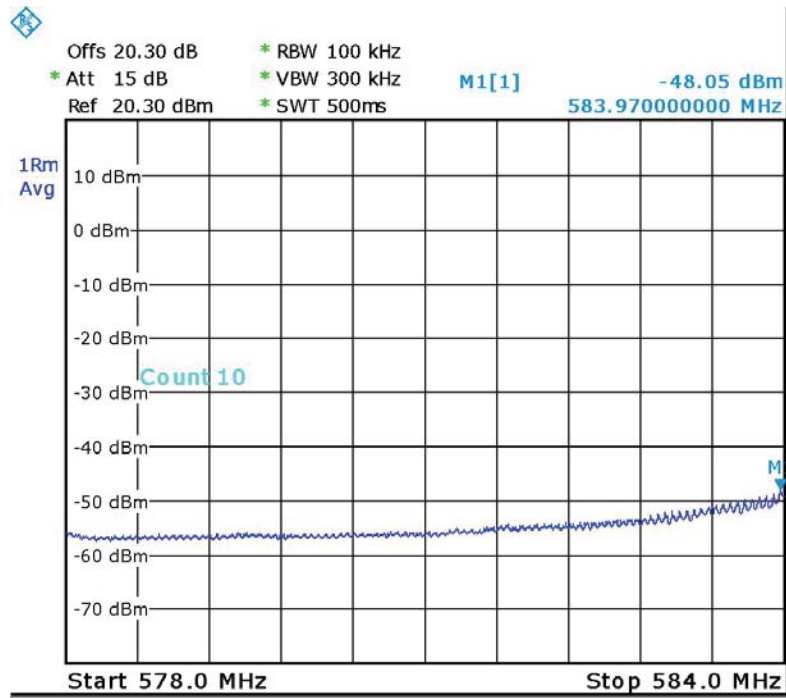
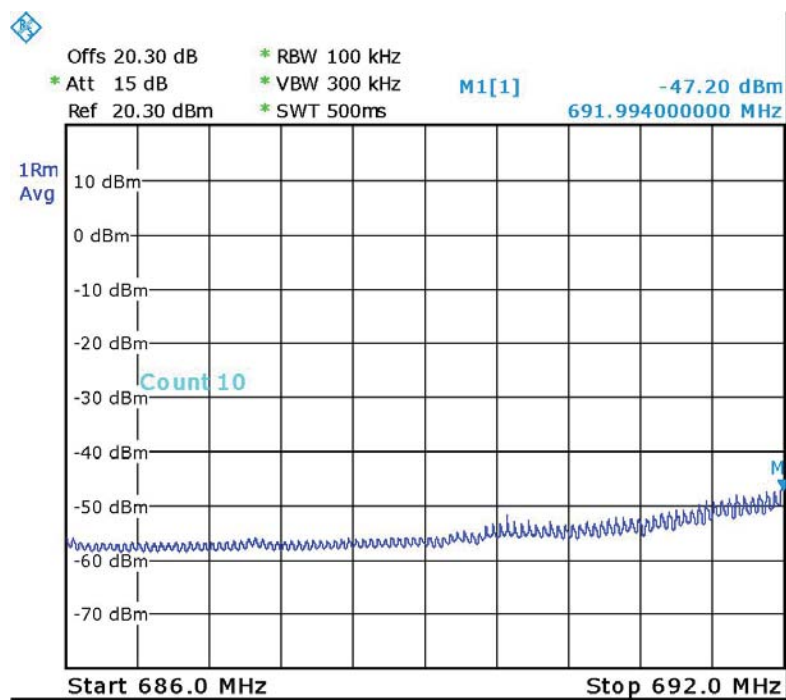


Figure 148. Chain 4 LOW- QPSK – 473MHz



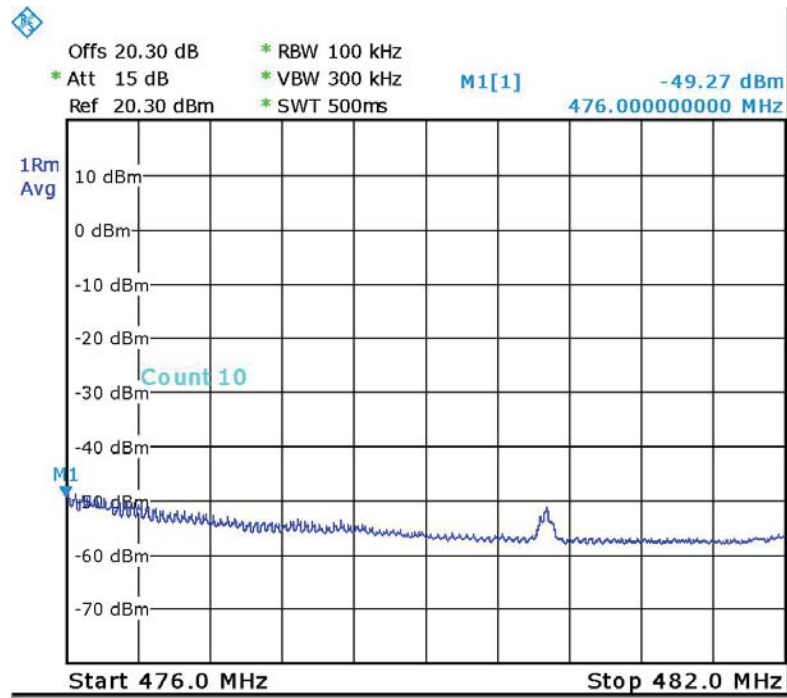
Date: 17.JUN.2015 14:30:11

Figure 149. . Chain 4 LOW- QPSK – 587MHz



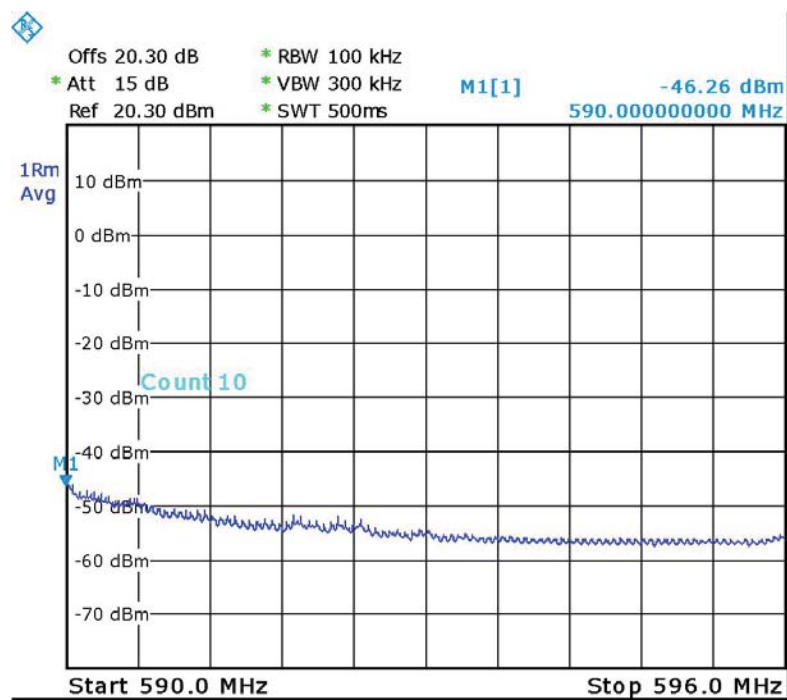
Date: 17.JUN.2015 16:28:31

Figure 150. Chain 4 LOW- QPSK – 695MHz



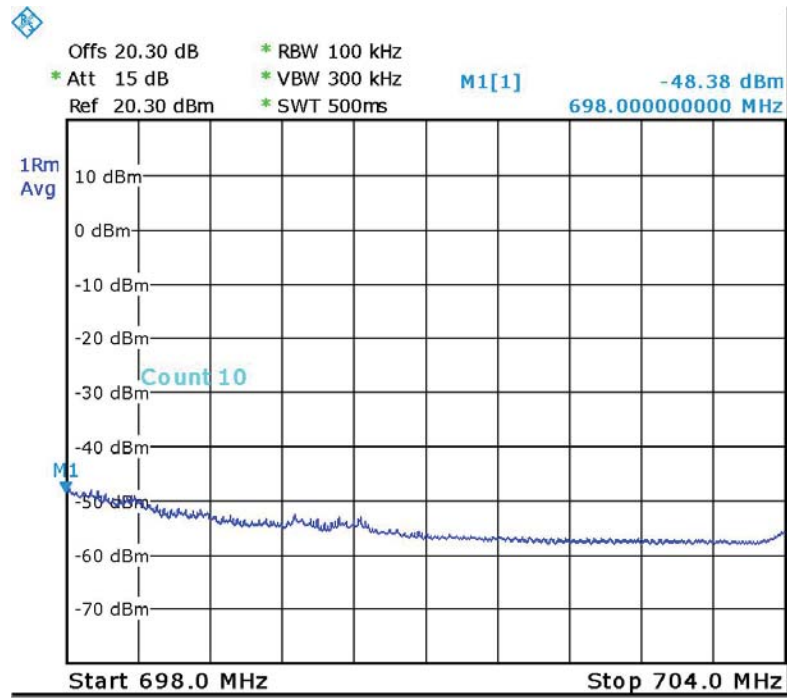
Date: 17.JUN.2015 13:40:35

Figure 151. Chain 4 HIGH – 16QAM – 473MHz



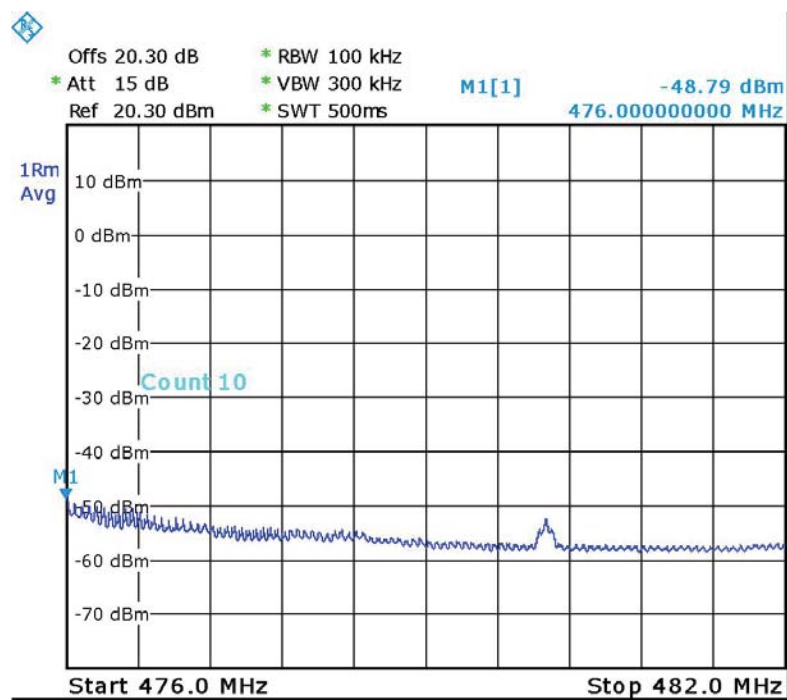
Date: 17.JUN.2015 15:21:09

Figure 152. . Chain 4 HIGH- 16QAM – 587MHz



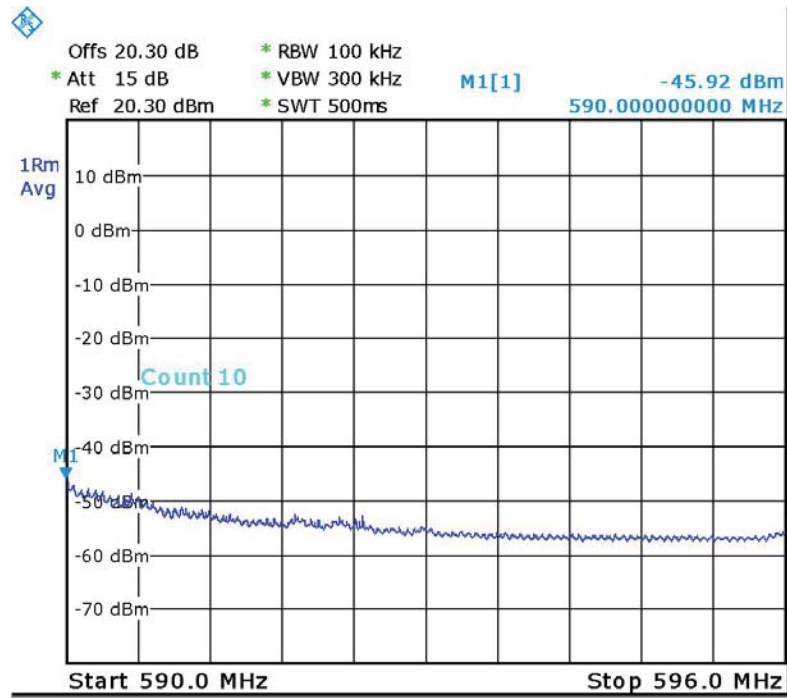
Date: 17.JUN.2015 16:11:57

Figure 153. Chain 4 HIGH- 16QAM – 695MHz



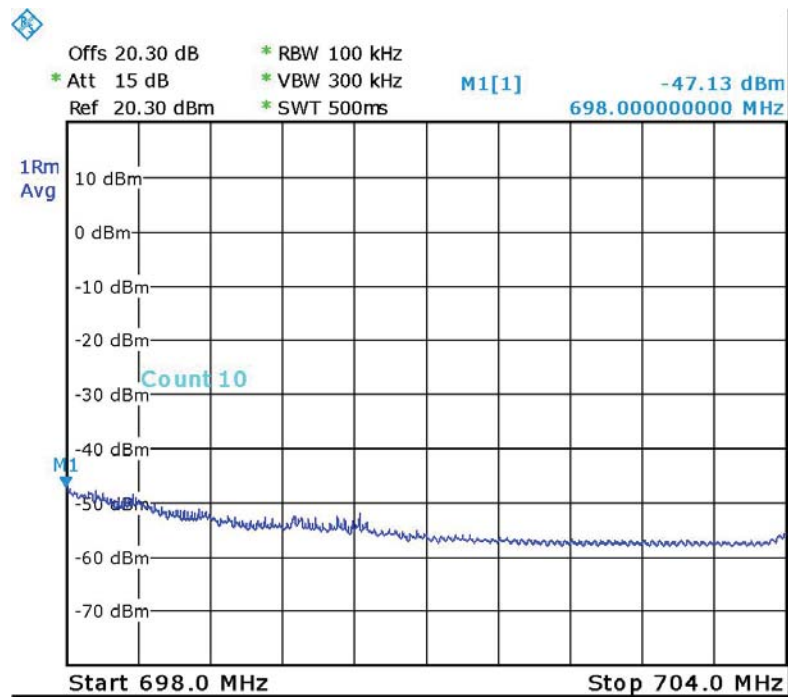
Date: 17.JUN.2015 13:35:16

Figure 154. Chain 4 HIGH- 64QAM – 473MHz



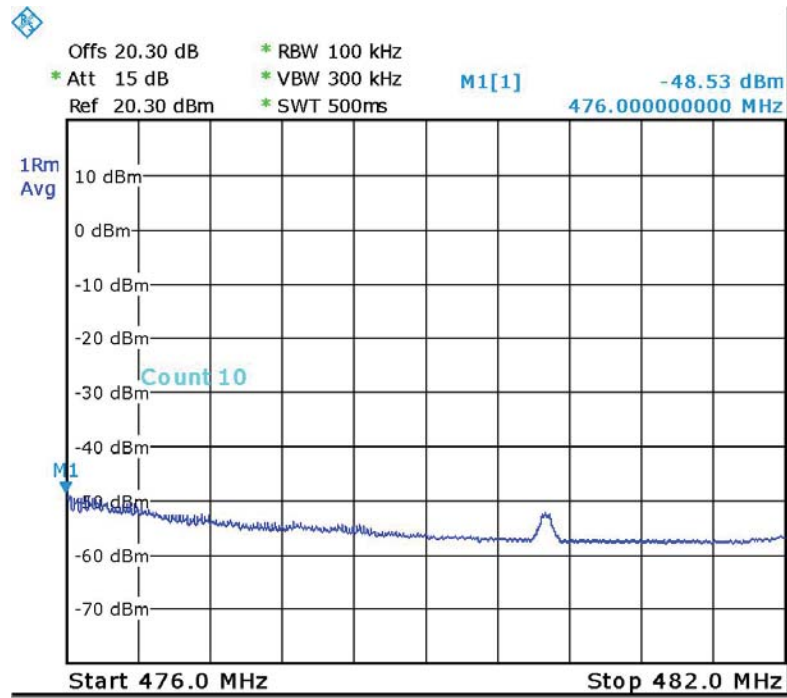
Date: 17.JUN.2015 15:26:18

Figure 155. . Chain 4 HIGH- 64QAM – 587MHz



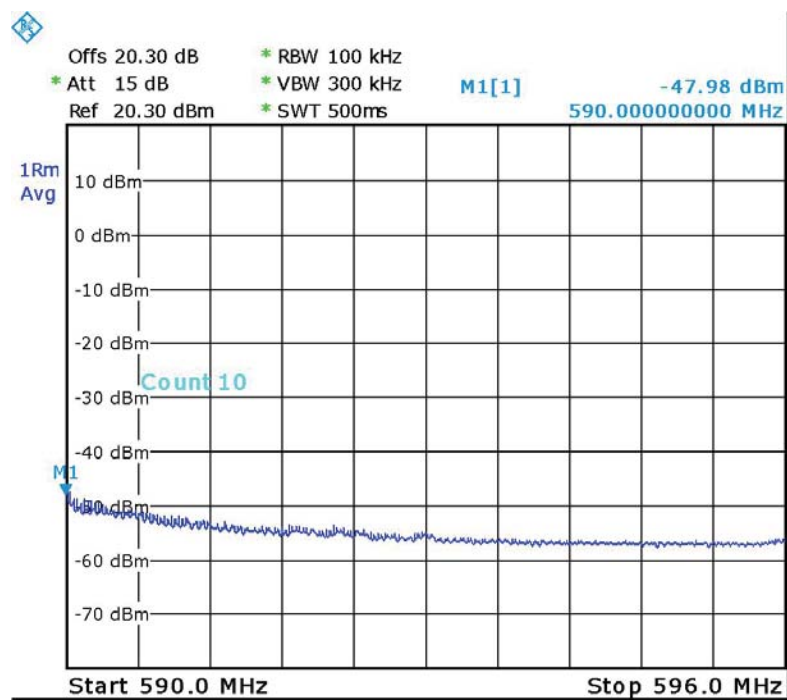
Date: 17.JUN.2015 16:05:33

Figure 156. Chain 4 HIGH- 64QAM – 695MHz



Date: 17.JUN.2015 14:18:16

Figure 157. Chain 4 HIGH- QPSK – 473MHz



Date: 17.JUN.2015 14:39:24

Figure 158. . Chain 4 HIGH- QPSK – 587MHz

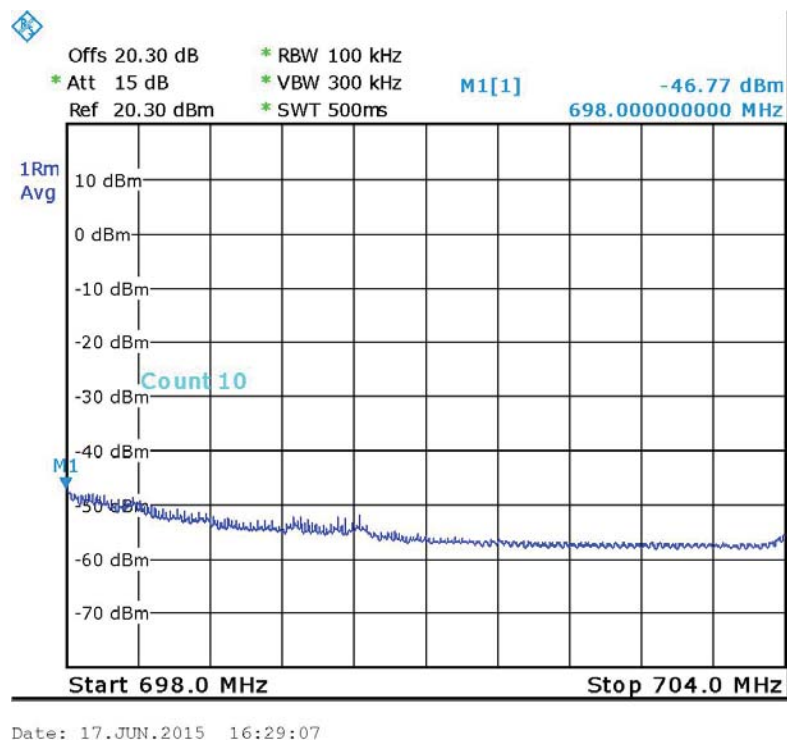


Figure 159. Chain 4 HIGH- QPSK – 695MHz

Instrument	Manufacturer	Model	Serial No.	Last Calibration Date	Period
Spectrum Analyzer	R&S	FSL6	100194	January 1, 2015	1 year
20dB attenuator	MCL	VAT-20W2+	848	June 15, 2015	1 year