



EMC TEST REPORT	
TEST REPORT NUMBER	DOJ 1517TEL038-A3
TEST REPORT DATE	14 <sup>th</sup> May 2015
TEST REPORT VERSION	1.0
MANUFACTURER	Gemtek Electronics (ChangSHU) Co.
PRODUCT NAME	5GHz ePMP Integrated Radio and 5GHz ePMP Connectorized Radio
PRODUCT MODEL NO.	C058900P072A, C058900C072A, C058900P062A, C058900C062A
PART No.	142000001193A
REV	0B
CONDITION OF EUT WHEN RECEIVED	GOOD and in working condition
ISSUED TO	3800 Golf Road, Suite 360 Rolling Meadows, IL 60008. USA +1 888-863-5250
ISSUED BY	<b>TARANG Lab</b> Wipro Technologies, SJP2, Survey#70,77,78/8A, Dodda Kanelli, Sarjapur road, Bangalore. Karnataka. India - 560 035 Tel: +91-80-30292929 Fax: +91-80-30298200 Email: tarang.planet@wipro.com Web: <a href="http://www.wipro.com">www.wipro.com</a>

Template Number: TARANG/T/032	Template Version:1.01	Template Date: Mar 14, 2013
-------------------------------	-----------------------	-----------------------------

*This report should always be reproduced in full. Any extracts of this report is invalid.*



---

## AMENDMENT HISTORY

Amendment Number	Amendment Date	Author of Amendment	Previous Report Version	Previous Report Date
Amendment Details				



---

## TABLE OF CONTENTS

<b>1</b>	<b>TEST REPORT SUMMARY.....</b>	<b>11</b>
<b>2</b>	<b>GENERAL INFORMATION .....</b>	<b>13</b>
2.1	TEST DETAILS.....	13
2.2	TEST FACILITY DETAILS .....	13
<b>3</b>	<b>INSTRUMENTATION AND CALIBRATION .....</b>	<b>14</b>
3.1	TEST AND MEASURING EQUIPMENT.....	14
3.2	EQUIPMENTS USED .....	14
<b>4</b>	<b>PRODUCT INFORMATION .....</b>	<b>15</b>
4.1	DESCRIPTION OF THE PRODUCT .....	15
4.2	SOFTWARE AND FIRMWARE DETAILS .....	15
4.3	LIST OF PRODUCT CABLES .....	18
<b>5</b>	<b>TEST DETAILS.....</b>	<b>19</b>
5.1	PRODUCT AND TEST SETUP .....	19
5.1.1	Product Configuration.....	19
5.1.2	Test Setup Details .....	19
5.1.3	Accessories .....	19
5.2	APPLICABLE TESTS .....	20
5.3	TEST RESULT .....	21
5.3.1	Undesirable emission outside the Intentional band.....	21
<b>APPENDIX I – ACRONYMS.....</b>		<b>185</b>

## LIST OF FIGURES

Figure 1: Block Diagram of the EUT test setup during the tests .....	19
Figure 2: Typical test setup for Conducted Test setup.....	22
Figure 3: Spurious emission measured from 9 kHz to 150 kHz at Ch. 0-Peak .....	23
Figure 4: Spurious emission measured from 150 kHz to 30 MHz at Ch. 0-Peak .....	23
Figure 5: Spurious emission measured from 30 MHz to 1GHz at Ch. 0-Peak .....	24
Figure 6: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Peak .....	24
Figure 7: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Average .....	25
Figure 8: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Peak .....	25
Figure 9: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Average .....	26
Figure 10: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Peak .....	26
Figure 11: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Avg .....	27
Figure 12: Spurious emission measured from 9 kHz to 150 kHz at Ch. 1-Peak .....	27
Figure 13: Spurious emission measured from 150 kHz to 30 MHz at Ch. 1-Peak .....	28
Figure 14: Spurious emission measured from 30 MHz to 1 GHz at Ch. 1-Peak .....	28
Figure 15: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Peak .....	29
Figure 16: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Average .....	29
Figure 17: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Peak .....	30
Figure 18: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Average .....	30
Figure 19: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Avg .....	31
Figure 20: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Peak .....	31
Figure 21: Spurious emission measured from 9 kHz to 150 kHz at Ch. 0-Peak .....	32
Figure 22: Spurious emission measured from 150 kHz to 30 MHz at Ch. 0-Peak .....	32
Figure 23: Spurious emission measured from 30 MHz to 1 GHz at Ch. 0-Peak .....	33
Figure 24: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Peak .....	33
Figure 25: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Average .....	34
Figure 26: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Peak .....	34
Figure 27: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Average .....	35
Figure 28: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Average .....	35
Figure 29: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Peak .....	36
Figure 30: Spurious emission measured from 9 kHz to 150 kHz at Ch. 1-Peak .....	36
Figure 31: Spurious emission measured from 150 kHz to 30 MHz at Ch. 1-Peak .....	37
Figure 32: Spurious emission measured from 30 MHz to 1 GHz at Ch. 1-Peak .....	37
Figure 33: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Peak .....	38
Figure 34: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Average .....	38
Figure 35: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Peak .....	39
Figure 36: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Average .....	39
Figure 37: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Average .....	40
Figure 38: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Peak .....	40
Figure 39: Spurious emission measured from 9 kHz to 150 kHz at Ch. 0-Peak .....	41
Figure 40: Spurious emission measured from 150 kHz to 30 MHz at Ch. 0-Peak .....	41
Figure 41: Spurious emission measured from 30 MHz to 1 GHz at Ch. 0-Peak .....	42
Figure 42: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Peak .....	42
Figure 43: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Average .....	43
Figure 44: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Peak .....	43
Figure 45: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Average .....	44
Figure 46: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Peak .....	44
Figure 47: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Average .....	45
Figure 48: Spurious emission measured from 9 kHz to 150 kHz at Ch. 1-Peak .....	45



Figure 49: Spurious emission measured from 150 kHz to 30 MHz at Ch. 1-Peak .....	46
Figure 50: Spurious emission measured from 30 MHz to 1 GHz at Ch. 1-Peak .....	46
Figure 51: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Peak .....	47
Figure 52: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Average .....	47
Figure 53: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Peak .....	48
Figure 54: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Average .....	48
Figure 55: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Average .....	49
Figure 56: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Peak .....	49
Figure 57: Spurious emission measured from 9 kHz to 150 kHz at Ch. 0-Peak .....	50
Figure 58: Spurious emission measured from 150 kHz to 30 MHz at Ch. 0-Peak .....	50
Figure 59: Spurious emission measured from 30 MHz to 1 GHz at Ch. 0-Peak .....	51
Figure 60: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Peak .....	51
Figure 61: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Average .....	52
Figure 62: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Peak .....	52
Figure 63: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Average .....	53
Figure 64: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Peak .....	53
Figure 65: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Average .....	54
Figure 66: Spurious emission measured from 9 kHz to 150 kHz at Ch. 1-Peak .....	54
Figure 67: Spurious emission measured from 150 kHz to 30 MHz at Ch. 1-Peak .....	55
Figure 68: Spurious emission measured from 30 MHz to 1 GHz at Ch. 1-Peak .....	55
Figure 69: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Peak .....	56
Figure 70: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Average .....	56
Figure 71: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Peak .....	57
Figure 72: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Average .....	57
Figure 73: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Average .....	58
Figure 74: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Peak .....	58
Figure 75: Spurious emission measured from 9 kHz to 150 kHz at Ch. 0-Peak .....	59
Figure 76: Spurious emission measured from 150 kHz to 30 MHz at Ch. 0-Peak .....	59
Figure 77: Spurious emission measured from 30 MHz to 1 GHz at Ch. 0-Peak .....	60
Figure 78: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Peak .....	60
Figure 79: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Average .....	61
Figure 80: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Peak .....	61
Figure 81: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Average .....	62
Figure 82: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Peak .....	62
Figure 83: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Average .....	63
Figure 84: Spurious emission measured from 9 kHz to 150 kHz at Ch. 1-Peak .....	63
Figure 85: Spurious emission measured from 150 kHz to 30 MHz at Ch. 1-Peak .....	64
Figure 86: Spurious emission measured from 30 MHz to 1 GHz at Ch. 1-Peak .....	64
Figure 87: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Peak .....	65
Figure 88: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Average .....	65
Figure 89: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Peak .....	66
Figure 90: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Average .....	66
Figure 91: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Average .....	67
Figure 92: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Peak .....	67
Figure 93: Spurious emission measured from 9 kHz to 150 kHz at Ch. 0-Peak .....	68
Figure 94: Spurious emission measured from 150 kHz to 30 MHz at Ch. 0-Peak .....	68
Figure 95: Spurious emission measured from 30 MHz to 1 GHz at Ch. 0-Peak .....	69
Figure 96: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Peak .....	69
Figure 97: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Average .....	70

Figure 98: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Peak .....	70
Figure 99: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Average .....	71
Figure 100: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Peak .....	71
Figure 101: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Average .....	72
Figure 102: Spurious emission measured from 9 kHz to 150 kHz at Ch. 1-Peak .....	72
Figure 103: Spurious emission measured from 150 kHz to 30 MHz at Ch. 1-Peak .....	73
Figure 104: Spurious emission measured from 30 MHz to 1 GHz at Ch. 1-Peak .....	73
Figure 105: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Peak .....	74
Figure 106: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Average .....	74
Figure 107: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Peak .....	75
Figure 108: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Average .....	75
Figure 109: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Average .....	76
Figure 110: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Peak .....	76
Figure 111: Spurious emission measured from 9 kHz to 150 kHz at Ch. 0-Peak .....	77
Figure 112: Spurious emission measured from 150 kHz to 30 MHz at Ch. 0-Peak .....	77
Figure 113: Spurious emission measured from 30 MHz to 1 GHz at Ch. 0-Peak .....	78
Figure 114: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Peak .....	78
Figure 115: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Average .....	79
Figure 116: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Peak .....	79
Figure 117: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Average .....	80
Figure 118: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Peak .....	80
Figure 119: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Avg .....	81
Figure 120: Spurious emission measured from 9 kHz to 150 kHz at Ch. 1-Peak .....	81
Figure 121: Spurious emission measured from 150 kHz to 30 MHz at Ch. 1-Peak .....	82
Figure 122: Spurious emission measured from 30 MHz to 1 GHz at Ch. 1-Peak .....	82
Figure 123: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Peak .....	83
Figure 124: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Average .....	83
Figure 125: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Peak .....	84
Figure 126: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Average .....	84
Figure 127: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Average .....	85
Figure 128: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Peak .....	85
Figure 129: Spurious emission measured from 9 kHz to 150 kHz at Ch. 0-Peak .....	86
Figure 130: Spurious emission measured from 150 kHz to 30 MHz at Ch. 0-Peak .....	86
Figure 131: Spurious emission measured from 30 MHz to 1 GHz at Ch. 0-Peak .....	87
Figure 132: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Peak .....	87
Figure 133: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Average .....	88
Figure 134: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Peak .....	88
Figure 135: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Average .....	89
Figure 136: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Peak .....	89
Figure 137: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Average .....	90
Figure 138: Spurious emission measured from 9 kHz to 150 kHz at Ch. 1-Peak .....	90
Figure 139: Spurious emission measured from 150 kHz to 30 kHz at Ch. 1-Peak .....	91
Figure 140: Spurious emission measured from 30 MHz to 1 GHz at Ch. 1-Peak .....	91
Figure 141: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Peak .....	92
Figure 142: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Average .....	92
Figure 143: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Peak .....	93
Figure 144: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Average .....	93
Figure 145: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Average .....	94
Figure 146: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Peak .....	94



Figure 147: Spurious emission measured from 9 kHz to 150 kHz at Ch. 0-Peak.....	95
Figure 148: Spurious emission measured from 150 kHz to 30 MHz at Ch. 0-Peak .....	95
Figure 149: Spurious emission measured from 30 MHz to 1 GHz at Ch. 0-Peak .....	96
Figure 150: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Peak .....	96
Figure 151: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Average .....	97
Figure 152: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Peak .....	97
Figure 153: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Average .....	98
Figure 154: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Peak .....	98
Figure 155: Spurious emission measured from 26.5GHz to 40 GHz at Ch. 0-Average .....	99
Figure 156: Spurious emission measured from 9 kHz to 150 kHz at Ch. 1-Peak.....	99
Figure 157: Spurious emission measured from 150 kHz to 30 MHz at Ch. 1-Peak .....	100
Figure 158: Spurious emission measured from 30 MHz to 1 GHz at Ch. 1-Peak .....	100
Figure 159: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Peak .....	101
Figure 160: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Average .....	101
Figure 161: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Peak .....	102
Figure 162: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Average .....	102
Figure 163: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Average .....	103
Figure 164: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Peak .....	103
Figure 165: Spurious emission measured from 9 kHz to 150 kHz at Ch. 0-Peak.....	104
Figure 166: Spurious emission measured from 150 kHz to 30 MHz at Ch. 0-Peak .....	104
Figure 167: Spurious emission measured from 30 MHz to 1 GHz at Ch. 0-Peak .....	105
Figure 168: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Peak .....	105
Figure 169: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Average .....	106
Figure 170: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Peak .....	106
Figure 171: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Average .....	107
Figure 172: Spurious emission measured from 26.5GHz to 40 GHz at Ch. 0-Peak .....	107
Figure 173: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Average .....	108
Figure 174: Spurious emission measured from 9 kHz to 150 kHz at Ch. 1-Peak.....	108
Figure 175: Spurious emission measured from 150 kHz to 30 MHz at Ch. 1-Peak .....	109
Figure 176: Spurious emission measured from 30 MHz to 1 GHz at Ch. 1-Peak .....	109
Figure 177: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Peak .....	110
Figure 178: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Average .....	110
Figure 179: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Peak .....	111
Figure 180: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Average .....	111
Figure 181: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Average .....	112
Figure 182: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Peak .....	112
Figure 183: Spurious emission measured from 9 kHz to 150 kHz at Ch. 0-Peak.....	113
Figure 184: Spurious emission measured from 150 kHz to 30 MHz at Ch. 0-Peak .....	113
Figure 185: Spurious emission measured from 30 MHz to 1 GHz at Ch. 0-Peak .....	114
Figure 186: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Peak .....	114
Figure 187: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Average .....	115
Figure 188: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Peak .....	115
Figure 189: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Average .....	116
Figure 190: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Peak .....	116
Figure 191: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Average .....	117
Figure 192: Spurious emission measured from 9 kHz to 150 kHz at Ch. 1-Peak.....	117
Figure 193: Spurious emission measured from 150 kHz to 30 MHz at Ch. 1-Peak .....	118
Figure 194: Spurious emission measured from 30 MHz to 1 GHz at Ch. 1-Peak .....	118
Figure 195: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Peak .....	119



Figure 196: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Average .....	119
Figure 197: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Peak .....	120
Figure 198: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Average .....	120
Figure 199: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Average .....	121
Figure 200: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Peak .....	121
Figure 201: Spurious emission measured from 9 kHz to 150 kHz at Ch. 0-Peak .....	122
Figure 202: Spurious emission measured from 150 kHz to 30 MHz at Ch. 0-Peak .....	122
Figure 203: Spurious emission measured from 30 MHz to 1 GHz at Ch. 0-Peak .....	123
Figure 204: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Peak .....	123
Figure 205: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Average .....	124
Figure 206: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Peak .....	124
Figure 207: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Average .....	125
Figure 208: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Peak .....	125
Figure 209: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Average .....	126
Figure 210: Spurious emission measured from 9 kHz to 150 kHz at Ch. 1-Peak .....	126
Figure 211: Spurious emission measured from 150 kHz to 30 MHz at Ch. 1-Peak .....	127
Figure 212: Spurious emission measured from 30 MHz to 1 GHz at Ch. 1-Peak .....	127
Figure 213: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Peak .....	128
Figure 214: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Average .....	128
Figure 215: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Peak .....	129
Figure 216: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Average .....	129
Figure 217: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Average .....	130
Figure 218: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Peak .....	130
Figure 219: Spurious emission measured from 9 kHz to 150 kHz at Ch. 0-Peak .....	131
Figure 220: Spurious emission measured from 150 kHz to 30 MHz at Ch. 0-Peak .....	131
Figure 221: Spurious emission measured from 30 MHz to 1 GHz at Ch. 0-Peak .....	132
Figure 222: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Peak .....	132
Figure 223: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Average .....	133
Figure 224: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Peak .....	133
Figure 225: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Average .....	134
Figure 226: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Peak .....	134
Figure 227: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Avg .....	135
Figure 228: Spurious emission measured from 9 kHz to 150 kHz at Ch. 1-Peak .....	135
Figure 229: Spurious emission measured from 150 kHz to 30 MHz at Ch. 1-Peak .....	136
Figure 230: Spurious emission measured from 30 MHz to 1 GHz at Ch. 1-Peak .....	136
Figure 231: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Peak .....	137
Figure 232: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Average .....	137
Figure 233: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Peak .....	138
Figure 234: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Average .....	138
Figure 235: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Average .....	139
Figure 236: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Peak .....	139
Figure 237: Spurious emission measured from 9 kHz to 150 kHz at Ch. 0-Peak .....	140
Figure 238: Spurious emission measured from 150 kHz to 30 MHz at Ch. 0-Peak .....	140
Figure 239: Spurious emission measured from 30 MHz to 1 GHz at Ch. 0-Peak .....	141
Figure 240: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Peak .....	141
Figure 241: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Average .....	142
Figure 242: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Peak .....	142
Figure 243: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Average .....	143
Figure 244: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Peak .....	143





Figure 245: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Average .....	144
Figure 246: Spurious emission measured from 9 kHz to 150 kHz at Ch. 1-Peak.....	144
Figure 247: Spurious emission measured from 150 kHz to 30 MHz at Ch. 1-Peak .....	145
Figure 248: Spurious emission measured from 30 MHz to 1 GHz at Ch. 1-Peak .....	145
Figure 249: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Peak .....	146
Figure 250: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Average .....	146
Figure 251: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Peak .....	147
Figure 252: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Average .....	147
Figure 253: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Average .....	148
Figure 254: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Peak .....	148
Figure 255: Spurious emission measured from 9 kHz to 150 kHz at Ch. 0-Peak.....	149
Figure 256: Spurious emission measured from 150 kHz to 30 MHz at Ch. 0-Peak .....	149
Figure 257: Spurious emission measured from 30 MHz to 1 GHz at Ch. 0-Peak .....	150
Figure 258: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Peak .....	150
Figure 259: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Average .....	151
Figure 260 : Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Peak .....	151
Figure 261: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Average .....	152
Figure 262: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Peak .....	152
Figure 263: Spurious emission measured from 26.5GHz to 40 GHz at Ch. 0-Average .....	153
Figure 264: Spurious emission measured from 9 kHz to 150 kHz at Ch. 1-Peak.....	153
Figure 265: Spurious emission measured from 150 kHz to 30 MHz at Ch. 1-Peak .....	154
Figure 266: Spurious emission measured from 30 MHz to 1 GHz at Ch. 1-Peak .....	154
Figure 267: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Peak .....	155
Figure 268: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Average .....	155
Figure 269: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Peak .....	156
Figure 270: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Average .....	156
Figure 271: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Average .....	157
Figure 272: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Peak .....	157
Figure 273: Spurious emission measured from 9 kHz to 150 kHz at Ch. 0-Peak.....	158
Figure 274: Spurious emission measured from 150 kHz to 30 MHz at Ch. 0-Peak .....	158
Figure 275: Spurious emission measured from 30 MHz to 1 GHz at Ch. 0-Peak .....	159
Figure 276: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Peak .....	159
Figure 277: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Average .....	160
Figure 278: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Peak .....	160
Figure 279: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Average .....	161
Figure 280: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Peak .....	161
Figure 281: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Average .....	162
Figure 282: Spurious emission measured from 9 kHz to 150 kHz at Ch. 1-Peak.....	162
Figure 283: Spurious emission measured from 150 kHz to 30 MHz at Ch. 1-Peak .....	163
Figure 284: Spurious emission measured from 30 MHz to 1 GHz at Ch. 1-Peak .....	163
Figure 285: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Peak .....	164
Figure 286: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Average .....	164
Figure 287: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Peak .....	165
Figure 288: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Average .....	165
Figure 289: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Average .....	166
Figure 290: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Peak .....	166
Figure 291: Spurious emission measured from 9 kHz to 150 kHz at Ch. 0-Peak.....	167
Figure 292: Spurious emission measured from 150 kHz to 30 MHz at Ch. 0-Peak .....	167
Figure 293: Spurious emission measured from 30 MHz to 1 GHz at Ch. 0-Peak .....	168

Figure 294: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Peak .....	168
Figure 295: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Average .....	169
Figure 296: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Peak .....	169
Figure 297: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Average .....	170
Figure 298: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Peak .....	170
Figure 299: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Average .....	171
Figure 300: Spurious emission measured from 9 kHz to 150 kHz at Ch. 1-Peak.....	171
Figure 301: Spurious emission measured from 150 kHz to 30 MHz at Ch. 1-Peak .....	172
Figure 302: Spurious emission measured from 30 MHz to 1 GHz at Ch. 1-Peak .....	172
Figure 303: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Peak .....	173
Figure 304: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Average .....	173
Figure 305: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Peak .....	174
Figure 306: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Average .....	174
Figure 307: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Average .....	175
Figure 308: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Peak .....	175
Figure 309: Spurious emission measured from 9 kHz to 150 kHz at Ch. 0-Peak.....	176
Figure 310: Spurious emission measured from 150 kHz to 30 MHz at Ch. 0-Peak .....	176
Figure 311: Spurious emission measured from 30 MHz to 1 GHz at Ch. 0-Peak .....	177
Figure 312: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Peak .....	177
Figure 313: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Average .....	178
Figure 314: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Peak .....	178
Figure 315: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Average .....	179
Figure 316: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Peak .....	179
Figure 317: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Average .....	180
Figure 318: Spurious emission measured from 9 kHz to 150 kHz at Ch. 1-Peak.....	180
Figure 319: Spurious emission measured from 150 kHz to 30 MHz at Ch. 1-Peak .....	181
Figure 320: Spurious emission measured from 30 MHz to 1 GHz at Ch. 1-Peak .....	181
Figure 321: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Peak .....	182
Figure 322: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Average .....	182
Figure 323: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Peak .....	183
Figure 324: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Average .....	183
Figure 325: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Average.....	184
Figure 326: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Peak .....	184



## 1 TEST REPORT SUMMARY

<b>Applicant</b>	Cambium Networks			
<b>Manufacturer</b>	Gemtek Electronics (ChangSHU) Co.			
<b>Equipment Under Test</b>	5GHz ePMP Integrated Radio and 5GHz ePMP Connectorized Radio			
<b>Model</b>	C058900P072A, C058900C072A, C058900P062A, C058900C062A			
<b>Serial number</b>	<b>Type of test</b>	<b>Serial no.</b>	<b>Wi-Fi MAC</b>	<b>Ethernet MAC</b>
	<b>Radiated &amp; Conducted</b>	AE50013121	000456F802AD	000456F802AC
<b>Date of Submission</b>	05 <sup>th</sup> May 2015			
<b>Date of Test</b>	05 <sup>th</sup> May 2015 to 12 <sup>th</sup> May 2015			
<b>Venue of Test</b>	Tarang Lab			




<b>Applicable Standard</b>	<b>FCC Section</b>	<b>Description</b>	<b>Results</b>
47 CFR Ch. I (10–1–14 Ed), Part 15, Subpart C;  RSS-Gen, Issue 4, Nov 2014  RSS-210, Issue 8, Dec 2010	§15.407 (b) (3) & §15.407 (b) (6)	Undesirable emission outside the Intentional band	PASS



**5GHz ePMP Integrated Radio and 5GHz ePMP Connectorized Radio** was tested by Tarang Lab as per the standards that are listed in the table above. Based on the observations during the test and interpretations by Tarang lab, results have been indicated. The test results produced in this report shall apply only to the above sample that have been tested under the specific conditions and modes of testing as described in the report. Other similar equipment may not necessarily reproduce same result due to production tolerances and measurement uncertainties. Any measurement uncertainties listed in this report are for information purpose only.

The results shall stand invalid, in case there are any modifications / additions / removals to the hardware or software or end use atmosphere to the product tested. This report shall not be modified or in any way revised unless it is expressly permitted and endorsed by Tarang lab, through a duly authorized representative. Particulars on Manufacturer / Supplier / Product configuration / performance criteria, given in this report, are based on the information given by the customer, along with test request. Tarang does not assume any responsibility for the correctness of such information for the above mentioned equipment under test.

Customer acknowledges that this is a test report and not a certificate to gain market access for the product. To gain market access, Customer needs appropriate clearance from the Government or authorized agency for the target market. For markets that allow self-declaration, customer needs to follow the procedure defined by the target market.

Prepared by	Reviewed by	Approved by
		
Subhendu	Harsha Sainath	Rajneesh R
Test Engineer	Test Engineer	Functional Head



## 2 GENERAL INFORMATION

### 2.1 TEST DETAILS

The tests documented in this report are performed according to the following standards:

- ANSI C63.10-2013
- 47 CFR Ch. I (10–1–14 Ed), Part 15, Subpart C
- RSS-Gen, Issue 4, Nov 2014
- RSS-210, Issue 8, Dec 2010

### 2.2 TEST FACILITY DETAILS

All the tests were carried out at Tarang –Product Qualification and Compliance Planet located at Wipro Limited, SJP2, Dodda Kanelli, Sarjapur road, Bangalore, Karnataka, India. 560035.

Following are the accreditation and listing details for Tarang.

Accreditation / Listing body	Registration / Company / Certificate Number
ISO 17025 Accreditation	Certificate Number :T-1533 and T-1534 (NABL) <a href="http://www.nabl-india.org">http://www.nabl-india.org</a>
FCC (Federal Communications Commission)	Registration Number: 799247 <a href="http://www.fcc.gov/">http://www.fcc.gov/</a>
IC (Industry Canada)	Company Number: 9023A <a href="http://www.ic.gc.ca">http://www.ic.gc.ca</a>
TEC Approval	Certificate Number: TEC/MRA/CAB/IND-D/3 CAB Identification: IND003
DGAQA Approval	1415/F-15/DGAQA/Aircraft
CEMILAC approval	Certificate Number: F-07-22 Reference Number: CEMILAC/6042/TH-13/TC & S

### 3 INSTRUMENTATION AND CALIBRATION

#### 3.1 TEST AND MEASURING EQUIPMENT

The list of following measuring equipment used for this testing conforms to the applicable standards. Performance of all test and measuring equipment including any accessories are checked periodically to ensure accuracy.

#### 3.2 EQUIPMENTS USED

Name of Equipment	Manufacturer	Model No	Serial No	Calibration Due
EMI Test Receiver	R&S	ESIB40	100306	07 <sup>th</sup> Oct 2015
Spectrum Analyzer	Agilent Technologies	E4407B	MY45112948	02 <sup>nd</sup> Apr 2016
X-Series USB Peak & Average Power Sensor	Keysight Technologies	U2021XA	MY55050002	08 <sup>th</sup> Feb 2016
X-Series USB Peak & Average Power Sensor	Keysight Technologies	U2021XA	MY55050001	08 <sup>th</sup> Feb 2016
Tunable Band reject/Notch filter	Wainwright Instruments GmbH	WTRCJV8-5150-5850-40-160-50SSK	01	NA



## 4 PRODUCT INFORMATION

### 4.1 DESCRIPTION OF THE PRODUCT

EUT is a Point to point & Point to Multipoint Fixed outdoor Transceiver.

<b>Product Category / Type of Equipment</b>	TEL (Telecom)
<b>EUT Operating AC Voltage</b>	120V AC
<b>Max EUT AC Operating Current</b>	0.5A
<b>Max EUT AC Power Rating</b>	60W
<b>EUT Operating DC Voltage</b>	30V DC
<b>Max EUT DC Operating Current</b>	0.5A
<b>Max EUT DC Power Rating</b>	12W

### 4.2 SOFTWARE AND FIRMWARE DETAILS

The 5GHz ePMP Integrated Radio and 5GHz ePMP Connectorized Radio was configured with test software and configured to have the following settings during the course of testing:

- 40MHz modulation bandwidth for low Channel (CH 0)
  - Rate - HT40,
  - 54Mbps OFDM, MCS15:270Mbps
  - Interframe spacing is tx100
  - Tx gain is 82 for 2.15dBi antenna configuration
  - Tx gain is 55 for 17dBi antenna configuration
  - Tx gain is 39 for 24dBi antenna configuration
- 40MHz modulation bandwidth for low Channel (CH 1)
  - Rate - HT40,
  - 54Mbps OFDM, MCS15:270Mbps
  - Interframe spacing is tx100
  - Tx gain is 87 for 2.15dBi antenna configuration
  - Tx gain is 60 for 17dBi antenna configuration
  - Tx gain is 43 for 24dBi antenna configuration
- 40MHz modulation bandwidth for Mid Channel (CH 0)
  - Rate - HT40,
  - 54Mbps OFDM, MCS15:270Mbps
  - Interframe spacing is tx100
  - Tx gain is 103 for 2.15dBi antenna configuration
  - Tx gain is 81 for 17dBi antenna configuration
  - Tx gain is 64 for 24dBi antenna configuration

- 40MHz modulation bandwidth for Mid Channel (CH 1)
  - Rate - HT40,
  - 54Mbps OFDM, MCS15:270Mbps
  - Interframe spacing is tx100
  - Tx gain is 110 for 2.15dBi antenna configuration
  - Tx gain is 88 for 17dBi antenna configuration
  - Tx gain is 75 for 24dBi antenna configuration
- 40MHz modulation bandwidth for High Channel (CH 0)
  - Rate - HT40,
  - 54Mbps OFDM, MCS15:270Mbps
  - Interframe spacing is tx100
  - Tx gain is 79 for 2.15dBi antenna configuration
  - Tx gain is 48 for 17dBi antenna configuration
  - Tx gain is 33 for 24dBi antenna configuration
- 40MHz modulation bandwidth for High Channel (CH 1)
  - Rate - HT40,
  - 54Mbps OFDM, MCS15:270Mbps
  - Interframe spacing is tx100
  - Tx gain is 87 for 2.15dBi antenna configuration
  - Tx gain is 55 for 17dBi antenna configuration
  - Tx gain is 40 for 24dBi antenna configuration
- 10MHz modulation bandwidth for low Channel (CH 0)
  - Rate – HT20,
  - 54Mbps OFDM, MCS15:130Mbps
  - Interframe spacing is tx100
  - Tx gain is 93 for 2.15dBi antenna configuration
  - Tx gain is 75 for 17dBi antenna configuration
  - Tx gain is 63 for 24dBi antenna configuration
- 10MHz modulation bandwidth for low Channel (CH 1)
  - Rate – HT20,
  - 54Mbps OFDM, MCS15:130Mbps
  - Interframe spacing is tx100
  - Tx gain is 96 for 2.15dBi antenna configuration
  - Tx gain is 82 for 17dBi antenna configuration
  - Tx gain is 64 for 24dBi antenna configuration

- 10MHz modulation bandwidth for Mid Channel (CH 0)
  - Rate – HT20,
  - 54Mbps OFDM, MCS15:130Mbps
  - Interframe spacing is tx100
  - Tx gain is 100 for 2.15dBi antenna configuration
  - Tx gain is 78 for 17dBi antenna configuration
  - Tx gain is 64 for 24dBi antenna configuration
- 10MHz modulation bandwidth for Mid Channel (CH 1)
  - Rate – HT20,
  - 54Mbps OFDM, MCS15:130Mbps
  - Interframe spacing is tx100
  - Tx gain is 100 for 2.15dBi antenna configuration
  - Tx gain is 83 for 17dBi antenna configuration
  - Tx gain is 69 for 24dBi antenna configuration
- 10MHz modulation bandwidth for High Channel (CH 0)
  - Rate – HT20,
  - 54Mbps OFDM, MCS15:130Mbps
  - Interframe spacing is tx100
  - Tx gain is 97 for 2.15dBi antenna configuration
  - Tx gain is 75 for 17dBi antenna configuration
  - Tx gain is 62 for 24dBi antenna configuration
- 10MHz modulation bandwidth for High Channel (CH 1)
  - Rate – HT20,
  - 54Mbps OFDM, MCS15:130Mbps
  - Interframe spacing is tx100
  - Tx gain is 103 for 2.15dBi antenna configuration
  - Tx gain is 80 for 17dBi antenna configuration
  - Tx gain is 61 for 24dBi antenna configuration

The unit was continuously monitored for transmission using an auxiliary antenna during the radiated tests

---

### 4.3 LIST OF PRODUCT CABLES

Cable No.	Cable Name	Cable Length	Power / Interconnection cable	Shielded / Unshielded
Cable - 1	Cat. 5E_Ethernet cable	0.5 meter	Interconnection	Unshielded
Cable - 2	Cat. 5E_Ethernet cable	2 meter	Interconnection	Unshielded
Cable - 3	RF cable (50 $\Omega$ )	0.125 meter	Interconnection	Shielded
Cable - 4	Power Cord	0.8 meter	Power	Unshielded

## 5 TEST DETAILS

### 5.1 PRODUCT AND TEST SETUP

#### 5.1.1 PRODUCT CONFIGURATION

The EUT was powered through AC power supply (120VAC / 60Hz). The EUT was connected to Ethernet switch by using RJ45 cable. Figure 1 shows the product configuration during the tests. Following power supply module was used during the test to power ON the EUT.

Name of the Equipment	Manufacturer	Model Number	Serial Number
Switching Power Supply Gigabit Compatible	PHIHONG	PSA15M-300 (AP)	N000900L001A

#### 5.1.2 TEST SETUP DETAILS

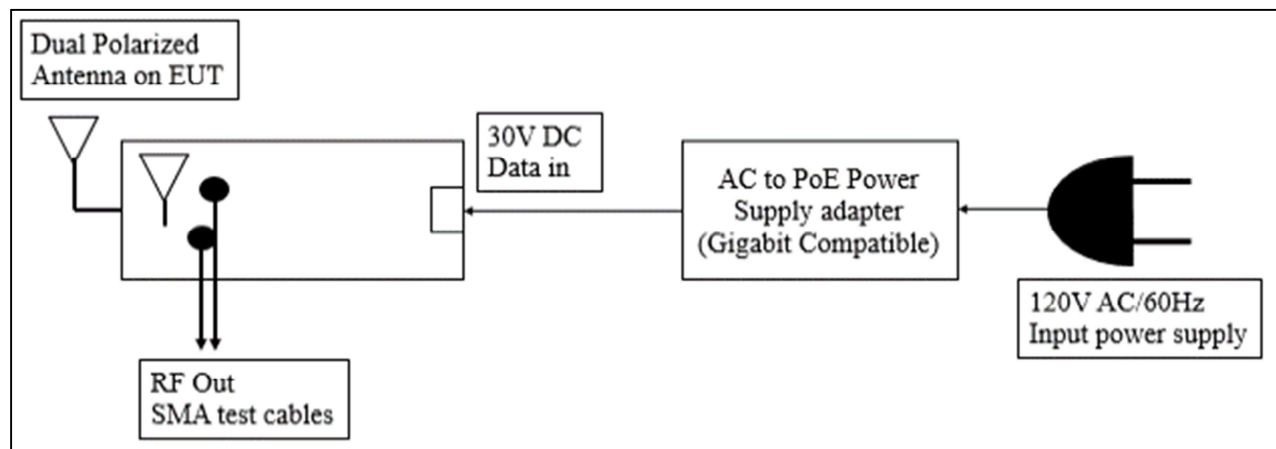


Figure 1: Block Diagram of the EUT test setup during the tests

#### 5.1.3 ACCESSORIES

Name of the Equipment	Manufacturer	Model Number	Serial Number
Laptop	Wipro Technologies Ltd	WLG7E1100	1221



## 5.2 APPLICABLE TESTS

Applicable Standard	Description	Test level / Test Voltage	Applicability
47 CFR Ch. I (10–1–14 Ed), Part 15, Subpart C;  RSS-Gen, Issue 4, Nov 2014  RSS-210 Issue 8, Dec 2010	Undesirable emission outside the Intentional band-Conducted	EIRP of < -27dBm/MHz	Antenna port



## 5.3 TEST RESULT

### 5.3.1 UNDESIRABLE EMISSION OUTSIDE THE INTENTIONAL BAND

#### 5.3.1.1 TEST SPECIFICATION

<b>Test Standard</b>	47 CFR Ch. I (10–1–14 Ed), Part 15, Subpart C RSS-Gen, Issue 4, Nov 2014
<b>Test Procedure</b>	ANSI C63.10-2013
<b>Frequency Range</b>	9 kHz to 40GHz
<b>Resolution Bandwidth</b>	1MHz
<b>Video Bandwidth</b>	3MHz
<b>Sweep Time</b>	Auto
<b>Attenuation</b>	Auto
<b>Test Mode</b>	Conducted
<b>Detector</b>	Peak & Average
<b>Input Voltage</b>	120V AC
<b>Input Frequency</b>	60 Hz
<b>Temperature</b>	22.0°C
<b>Humidity</b>	56.0%
<b>Tested By</b>	Subhendu
<b>Test Date</b>	05 <sup>th</sup> May to 12 <sup>th</sup> May 2015

#### 5.3.1.2 LIMITS

Standard	FCC Section	Antenna condition	Calculated Limit
47 CFR Ch. I (10–1–14 Ed), Part 15, Subpart C RSS-Gen, Issue 4, Nov 2014	15.407 (b) (3)	2.15dBi Antenna	-32.15dBm/MHz
		17dBi Antenna	-47dBm/MHz
		24dBi dish	-54dBm/MHz
47 CFR Ch. I (10–1–14 Ed), Part 15, Subpart C RSS-Gen, Issue 4, Nov 2014	15.407 (b) (6)	<b>Limit</b>	
		As per clause 15.209	

Limit as per standard is -27dBm/MHz. In this condition we have to consider MIMO condition & take 3dB Factor and also the antenna gain needs to be considered.

Calculated limit = -27dBm/MHz – 3 – Antenna gain

### 5.3.1.3 TEST SETUP

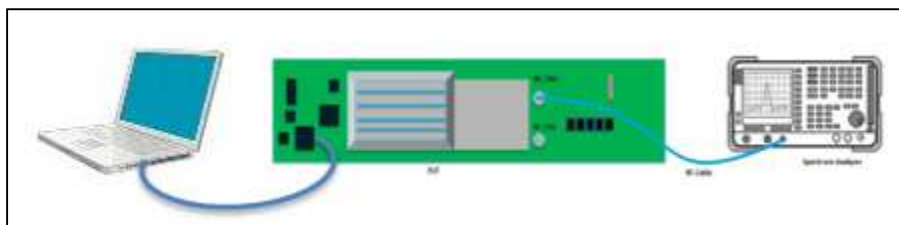


Figure 2: Typical test setup for Conducted Test setup

### 5.3.1.4 TEST PROCEDURE

The Conducted test was performed using the Spectrum analyzer. Measurements were done as per Sections H(1), H(2), H(3), H(4), H(5) & H(6) of **“789033 D01 General UNII Test Procedures Old Rules v01r04”**. The RF output of the EUT was connected to the input port of Spectrum analyzer using an attenuator. Captured the data from spectrum analyzer and compared with the limits specified in the standard.

### 5.3.1.5 RESULT (SUPPORTING GRAPHS / DATA) FOR BASIC CONDITION

#### 5.3.1.5.1 40MHz MODULATION BW - Low CHANNEL\_5280MHz

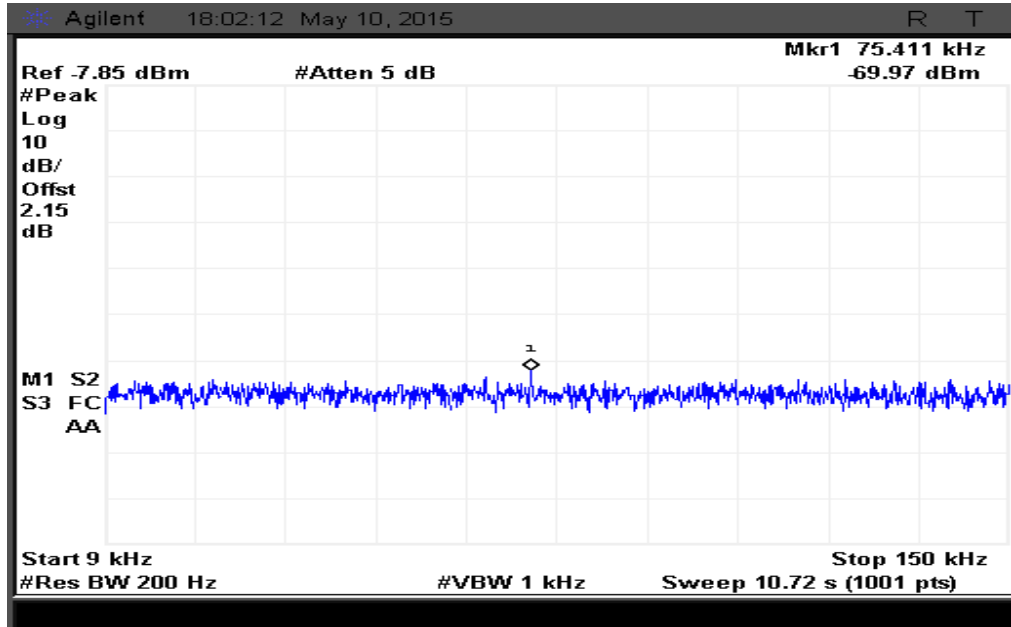


Figure 3: Spurious emission measured from 9 kHz to 150 kHz at Ch. 0-Peak

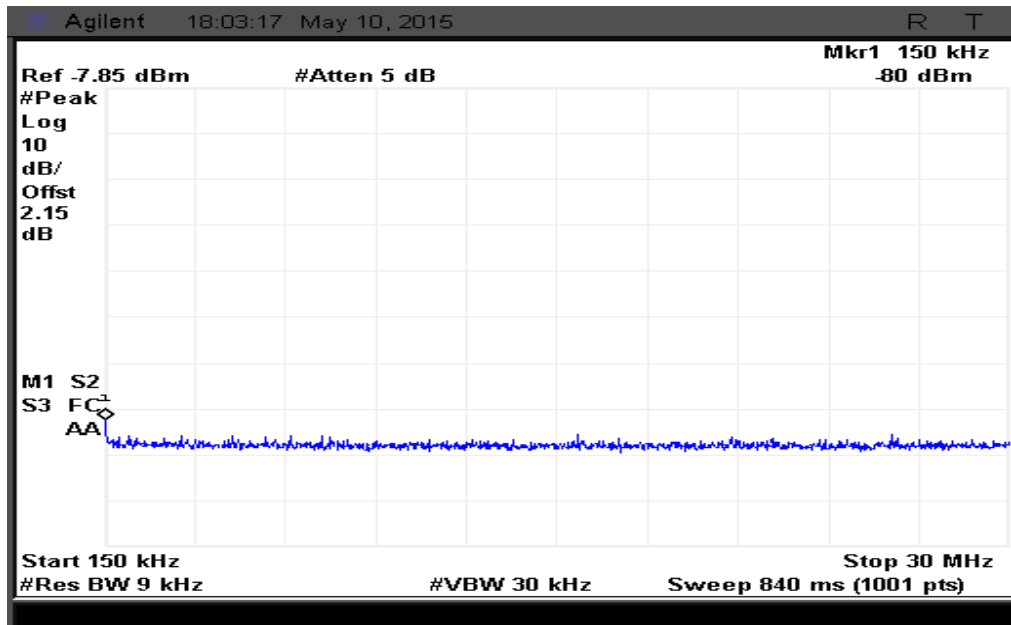


Figure 4: Spurious emission measured from 150 kHz to 30 MHz at Ch. 0-Peak

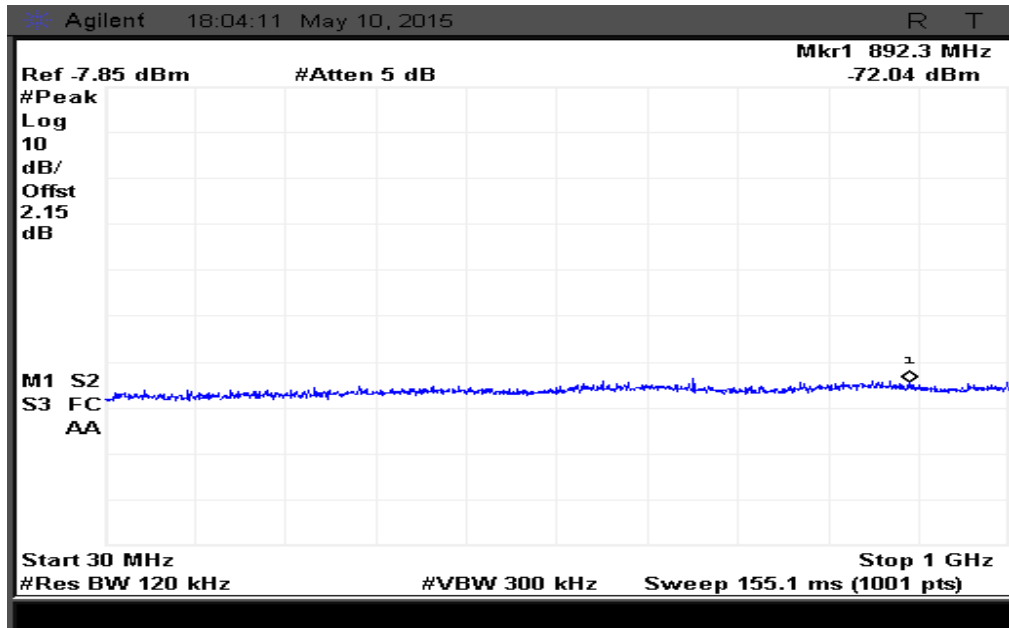


Figure 5: Spurious emission measured from 30 MHz to 1GHz at Ch. 0-Peak

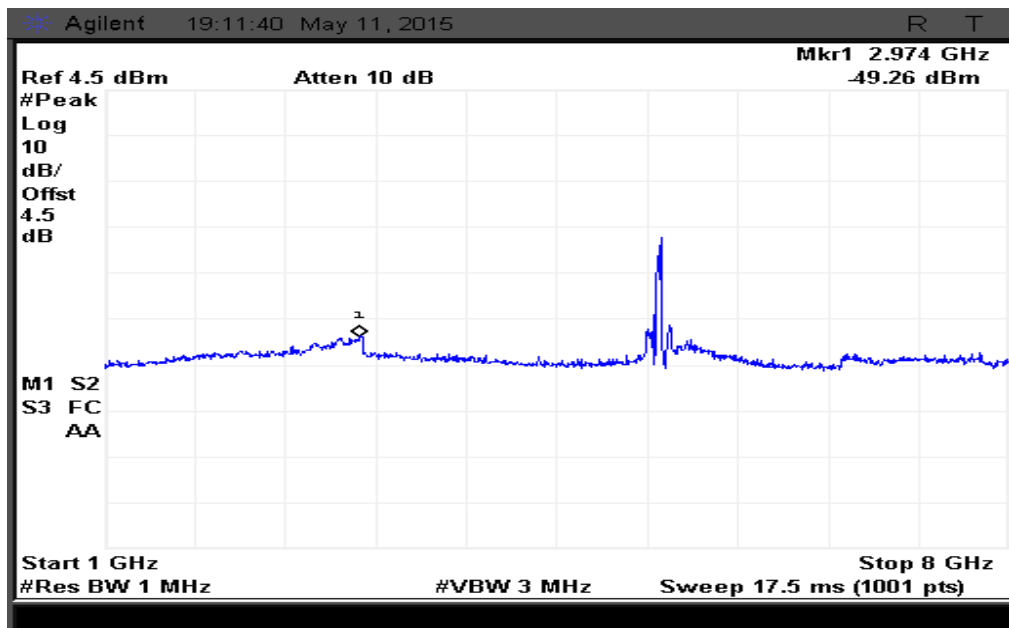


Figure 6: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Peak

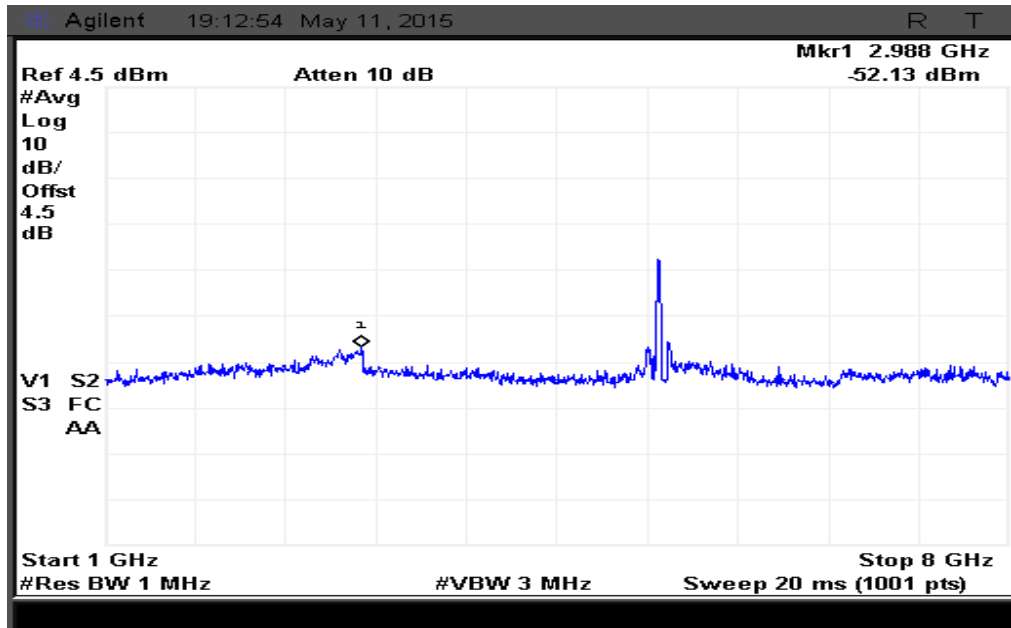


Figure 7: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Average

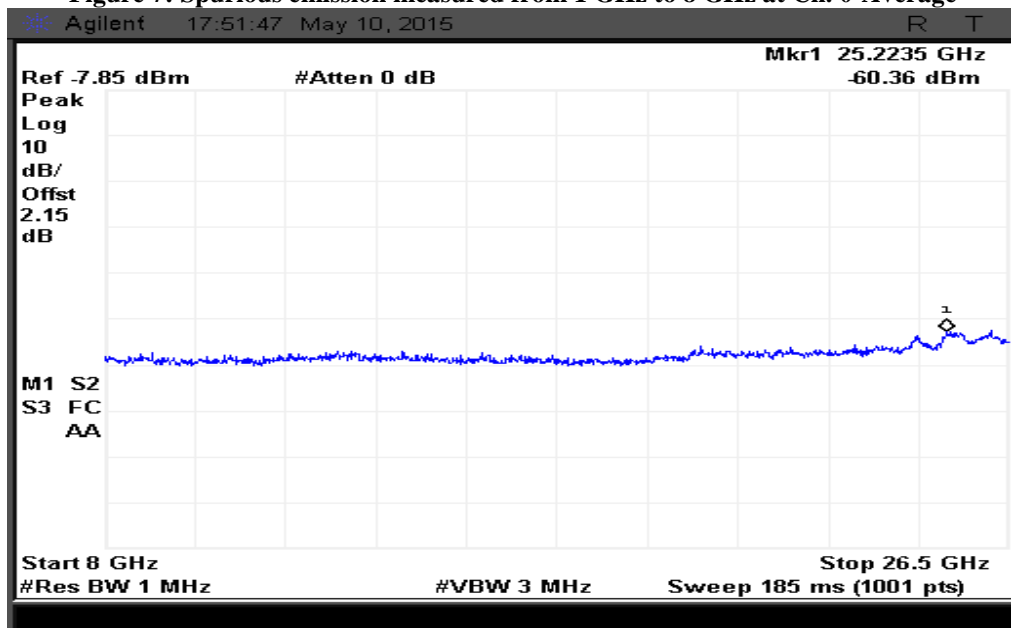


Figure 8: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Peak

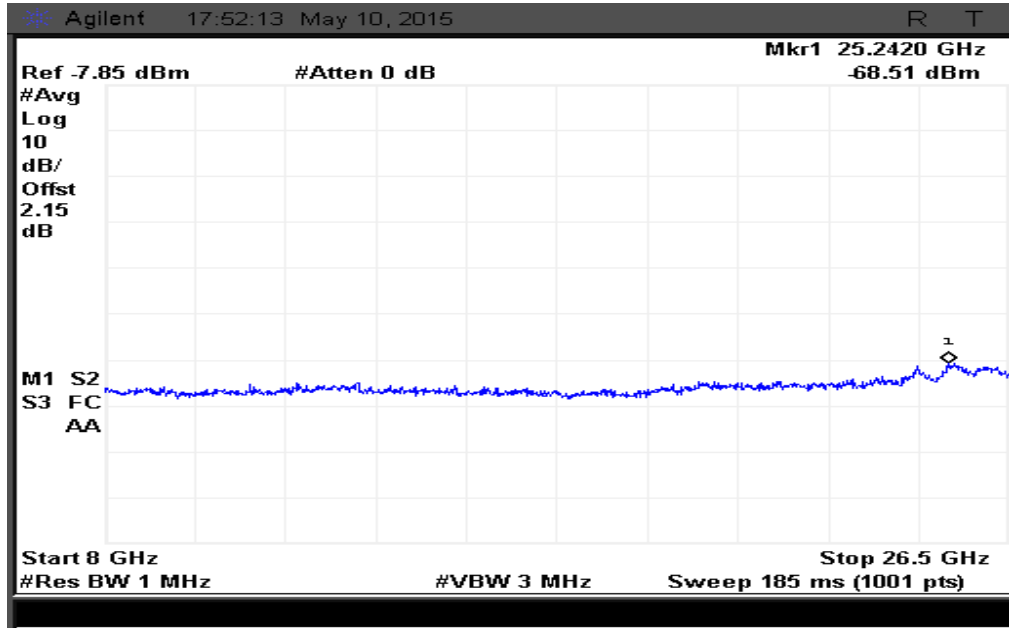


Figure 9: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Average

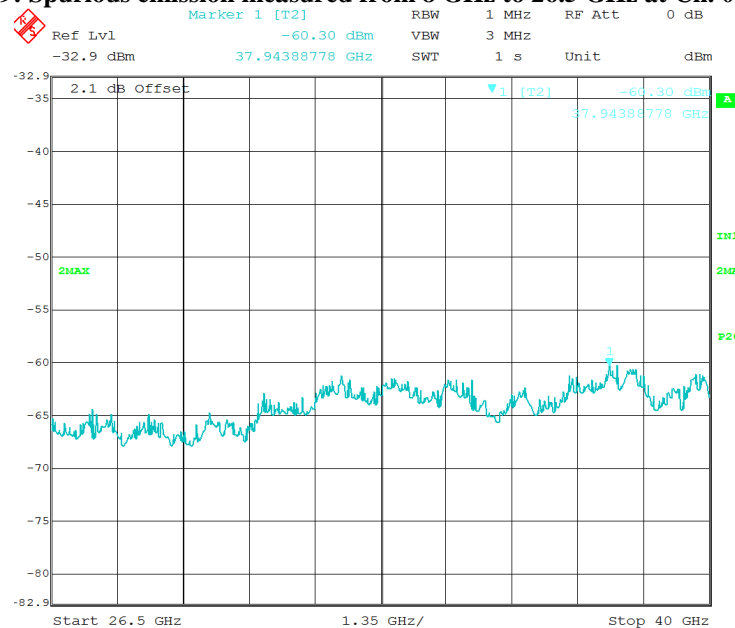


Figure 10: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Peak



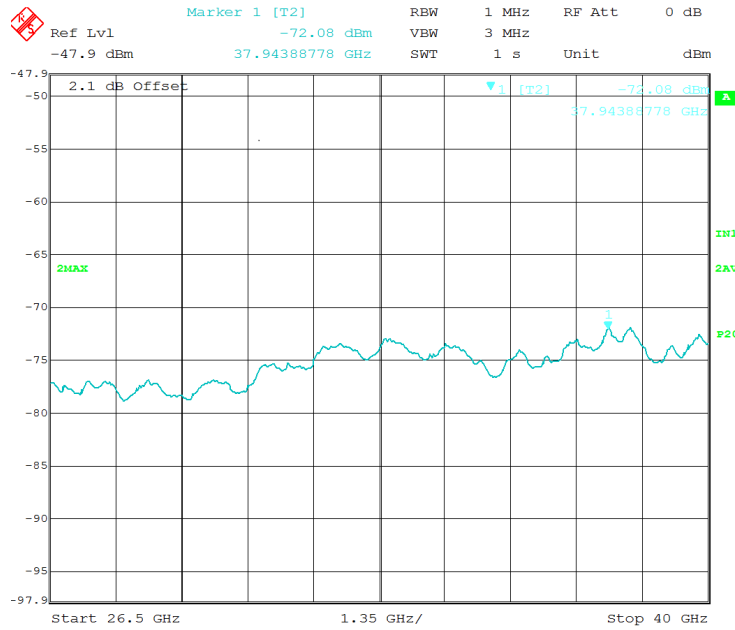


Figure 11: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Avg

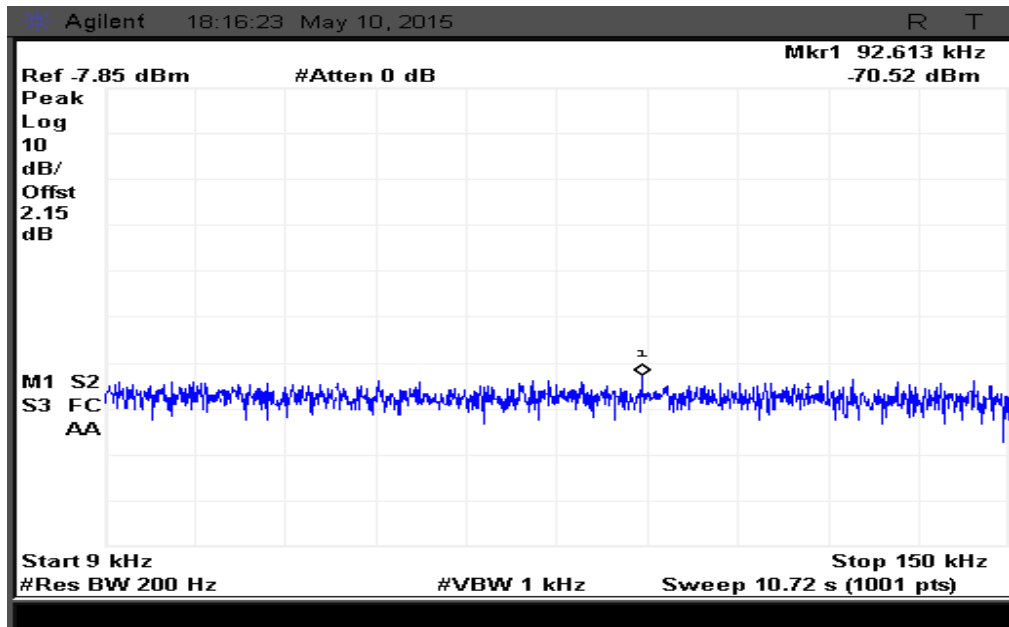


Figure 12: Spurious emission measured from 9 kHz to 150 kHz at Ch. 1-Peak

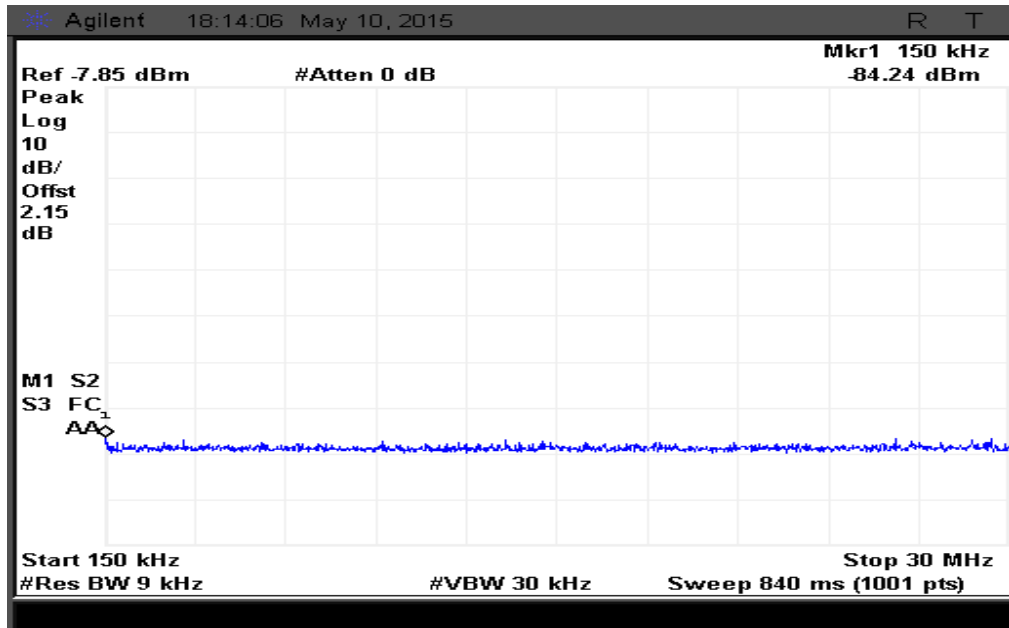


Figure 13: Spurious emission measured from 150 kHz to 30 MHz at Ch. 1-Peak

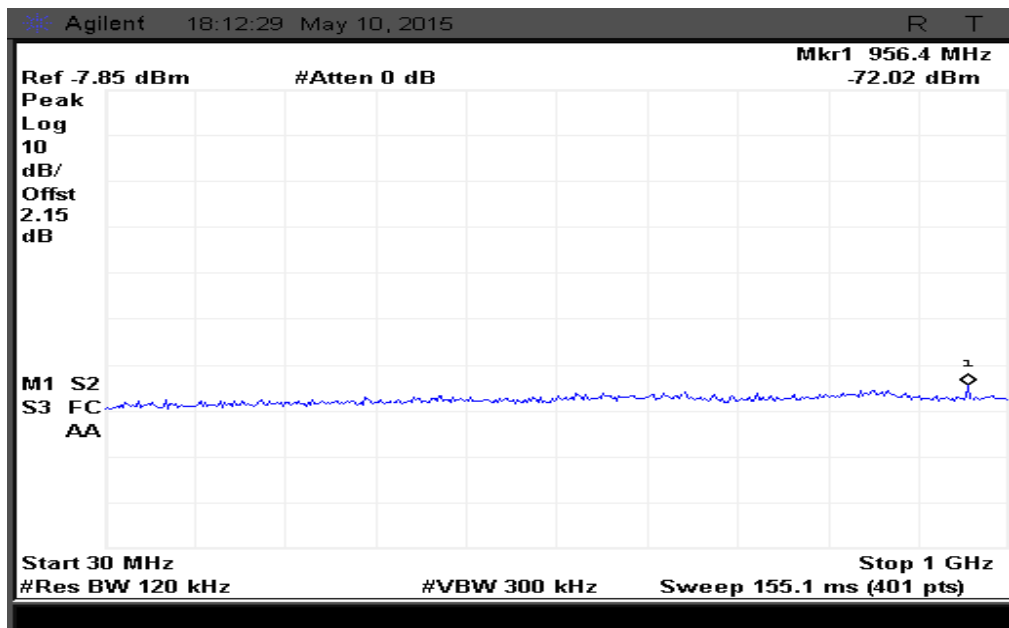


Figure 14: Spurious emission measured from 30 MHz to 1 GHz at Ch. 1-Peak

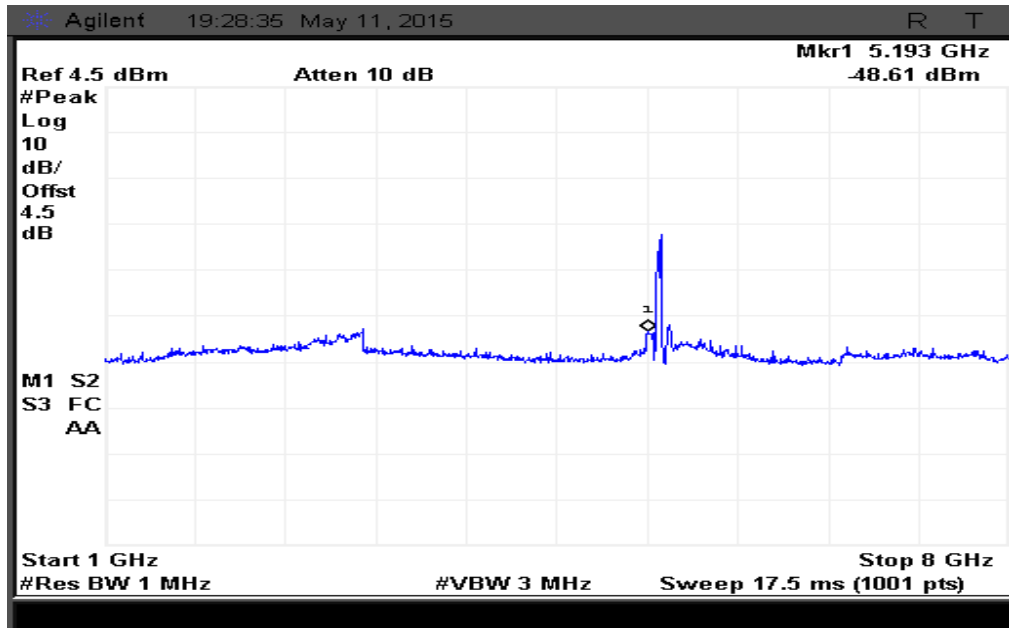


Figure 15: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Peak

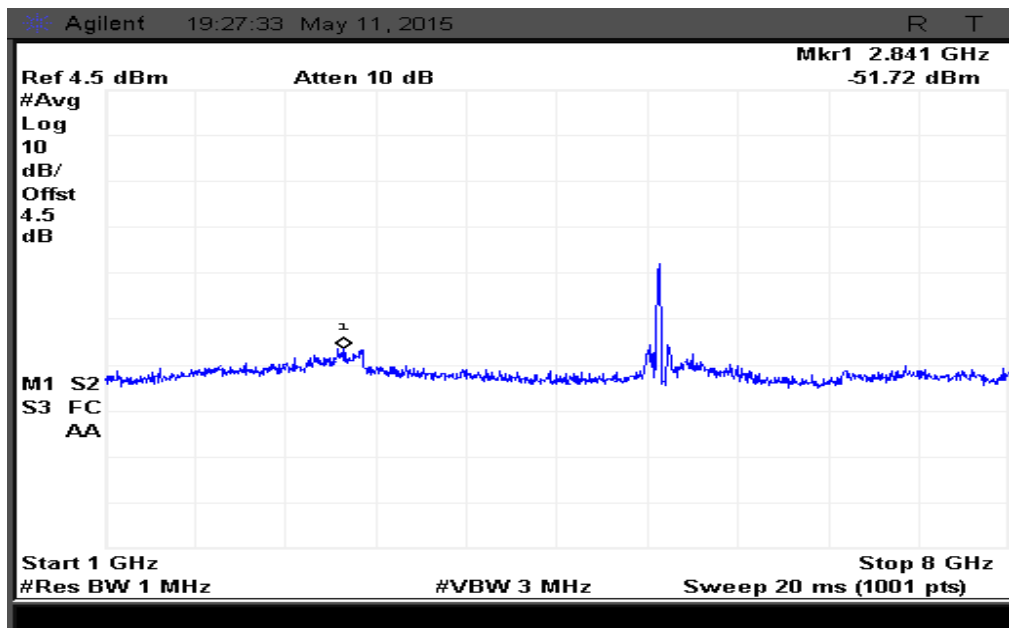


Figure 16: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Average

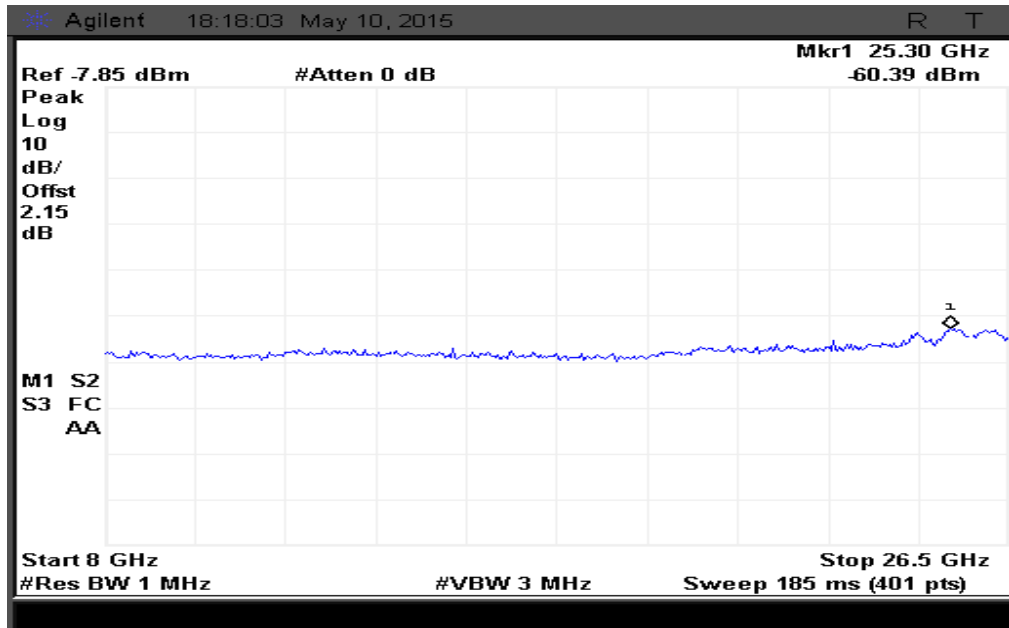


Figure 17: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Peak

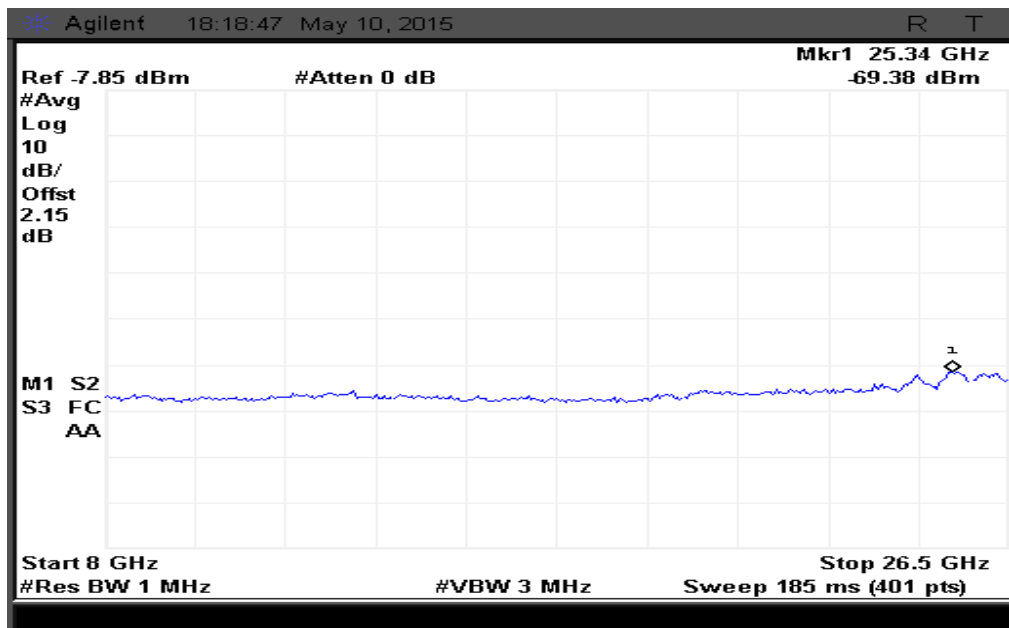
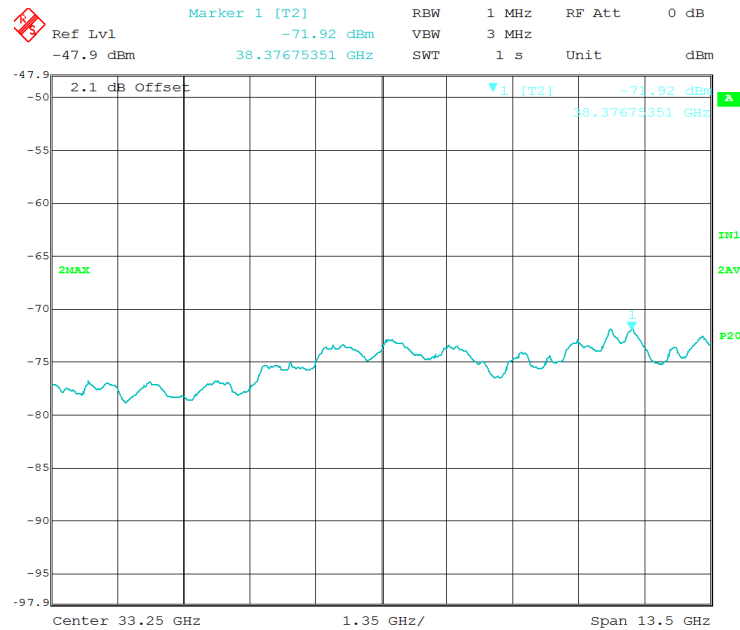
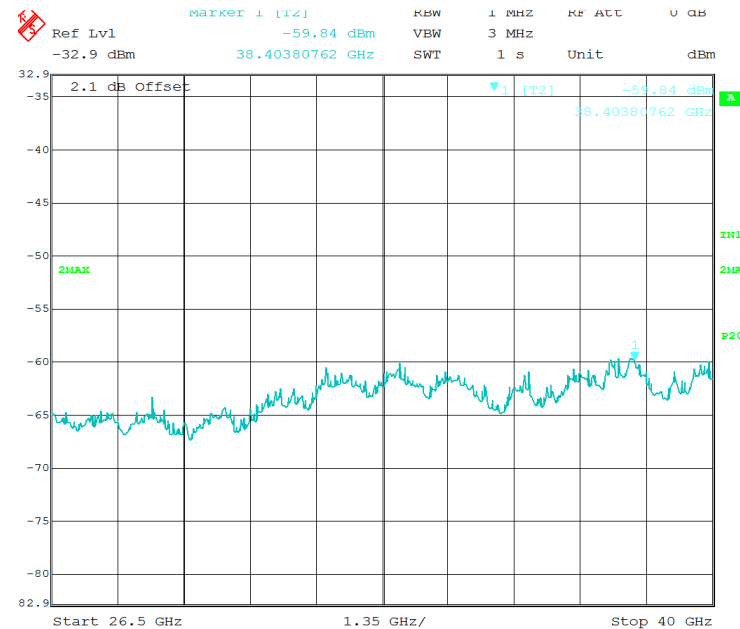


Figure 18: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Average



**Figure 19: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Avg**



**Figure 20: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Peak**

### 5.3.1.5.2 40MHz MODULATION BW - MID CHANNEL\_5300MHZ

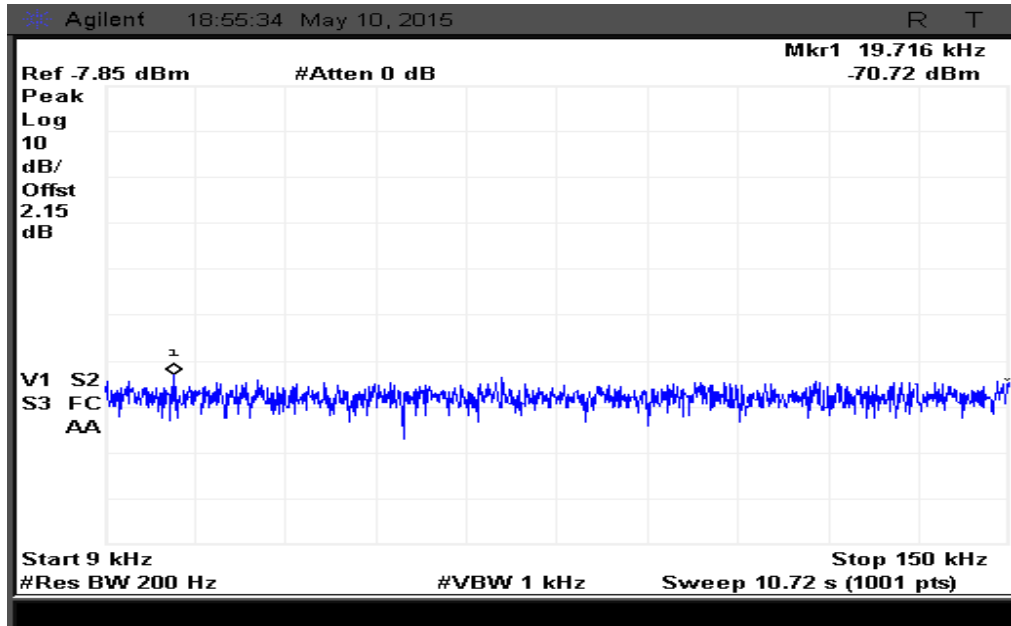


Figure 21: Spurious emission measured from 9 kHz to 150 kHz at Ch. 0-Peak

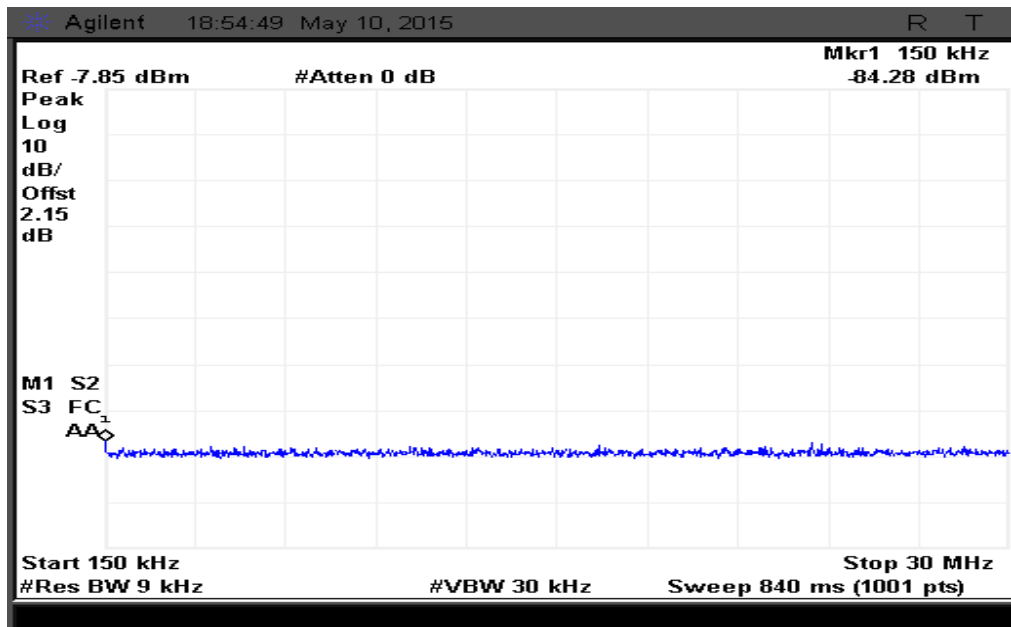


Figure 22: Spurious emission measured from 150 kHz to 30 MHz at Ch. 0-Peak



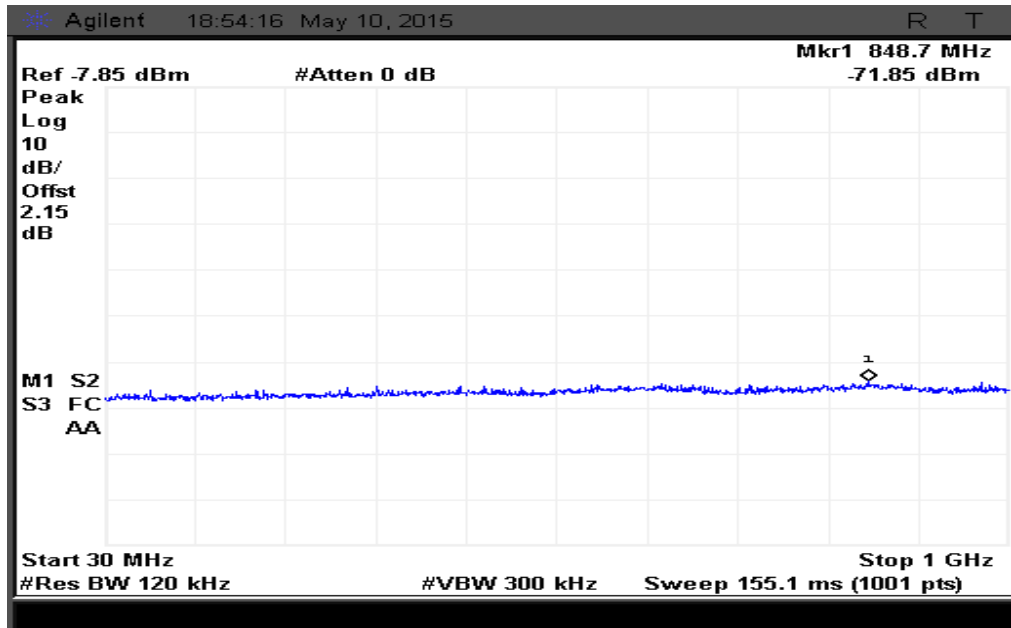


Figure 23: Spurious emission measured from 30 MHz to 1 GHz at Ch. 0-Peak

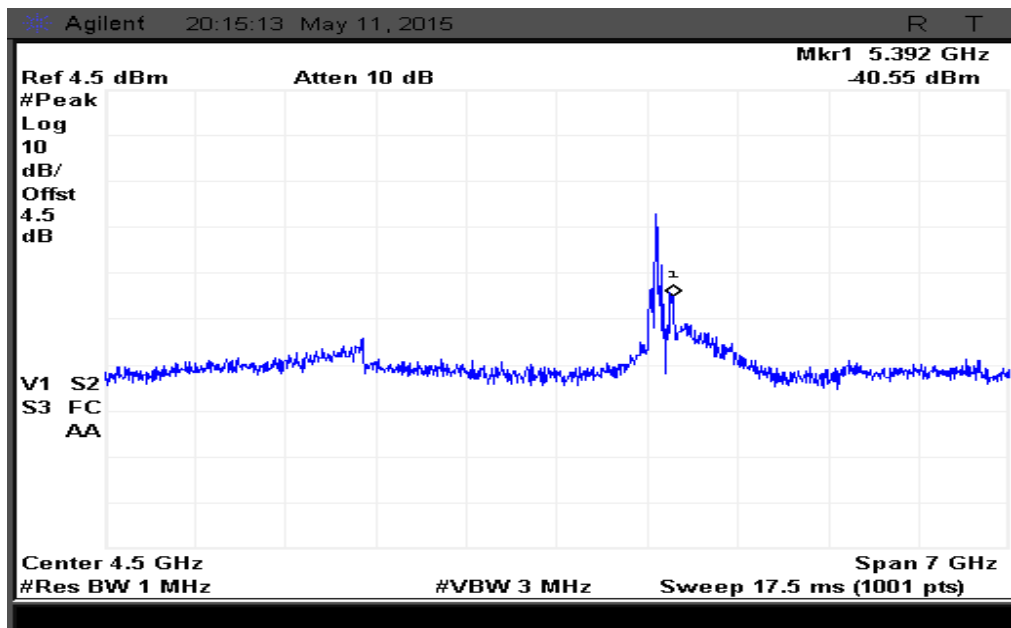


Figure 24: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Peak

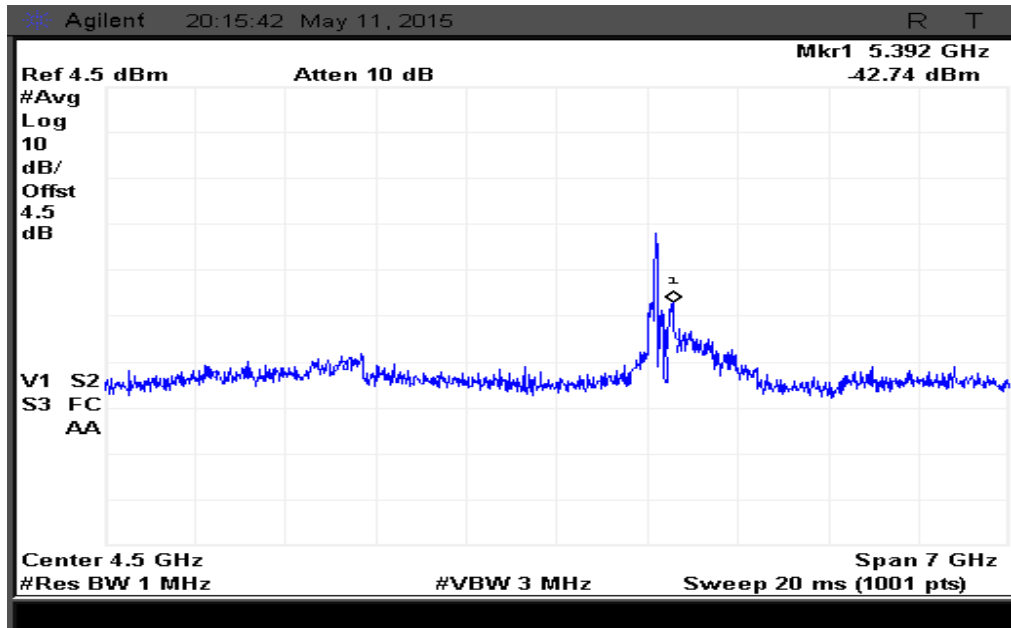


Figure 25: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Average

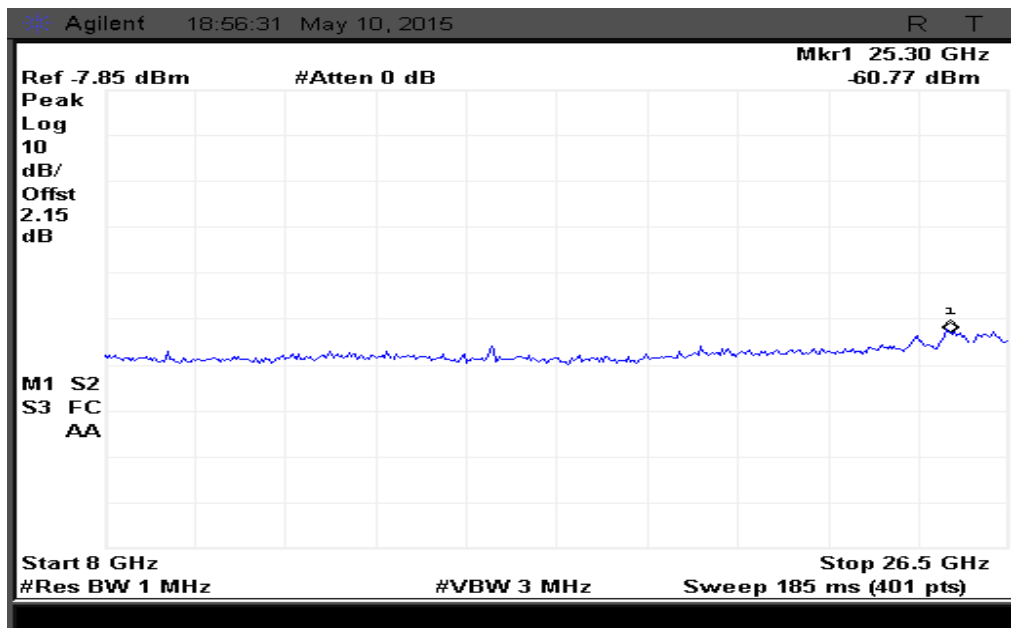


Figure 26: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Peak

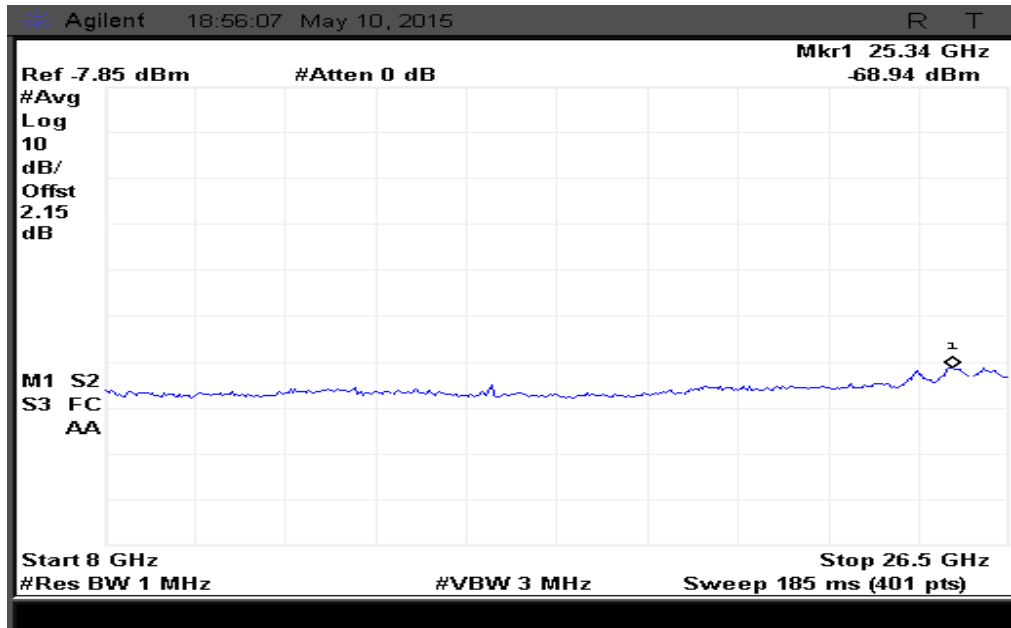


Figure 27: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Average

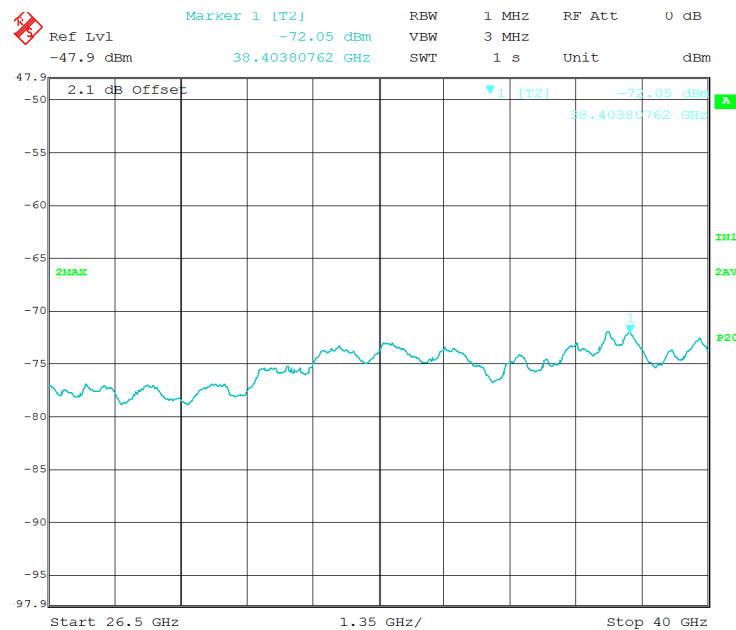


Figure 28: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Average

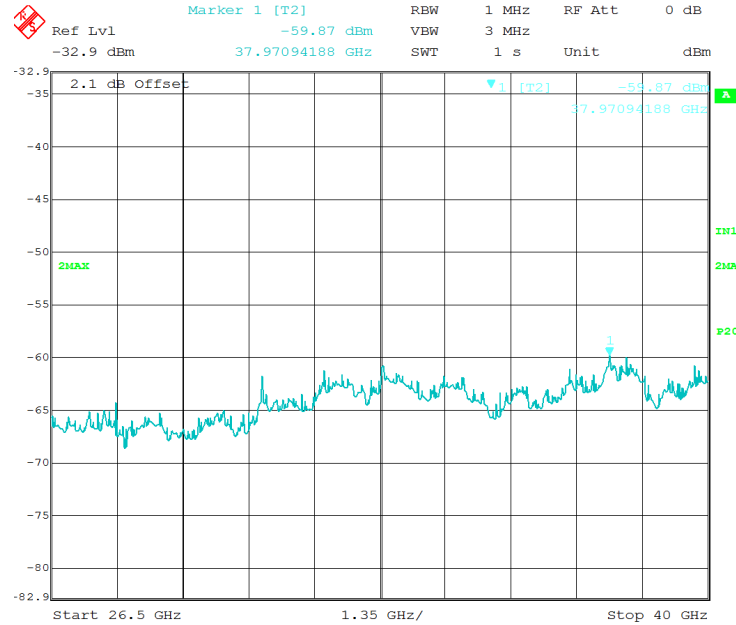


Figure 29: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Peak

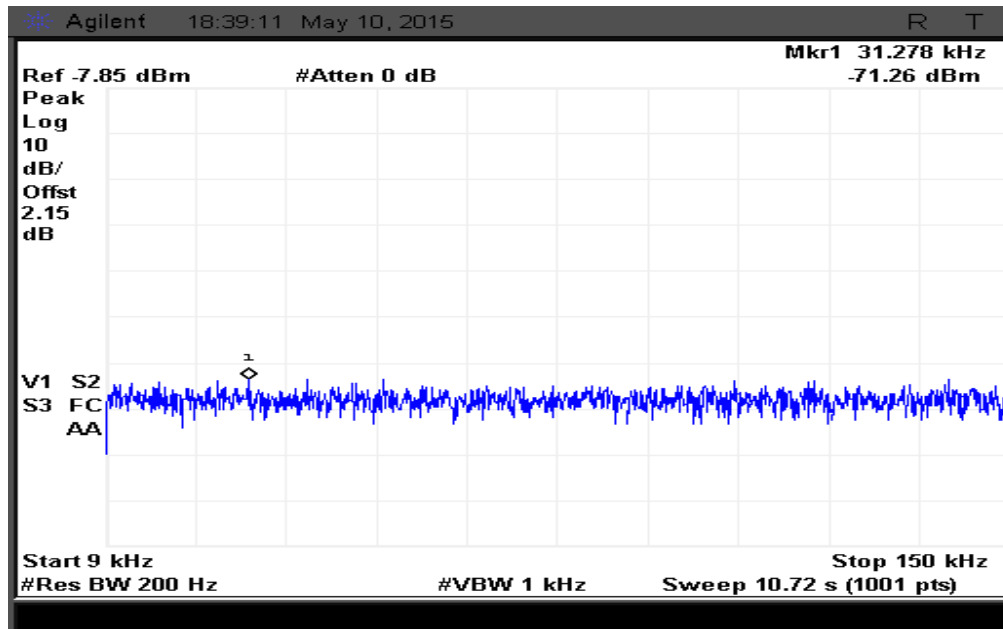


Figure 30: Spurious emission measured from 9 kHz to 150 kHz at Ch. 1-Peak

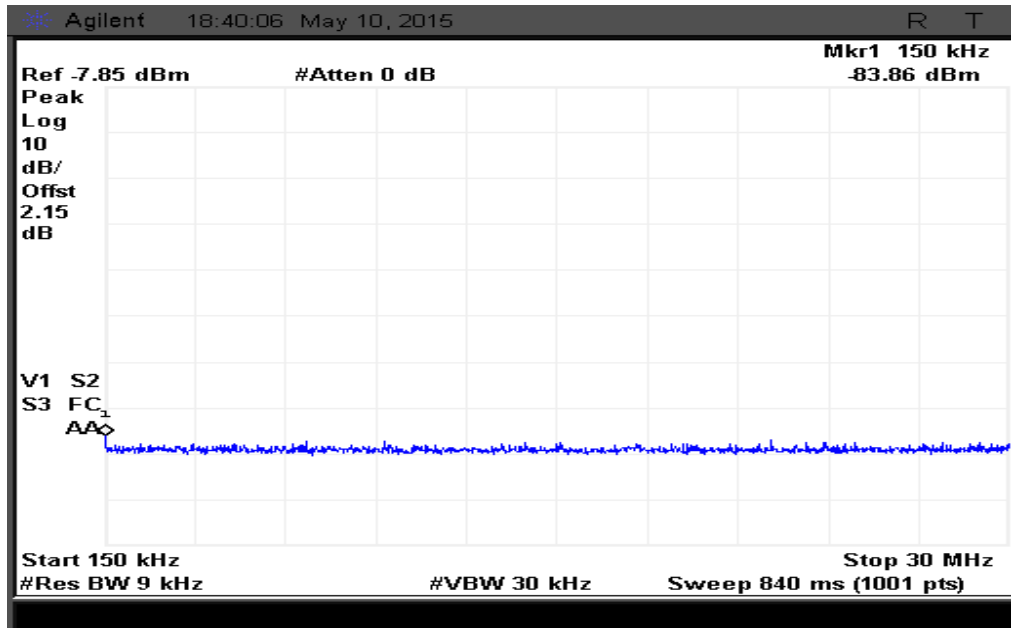


Figure 31: Spurious emission measured from 150 kHz to 30 MHz at Ch. 1-Peak

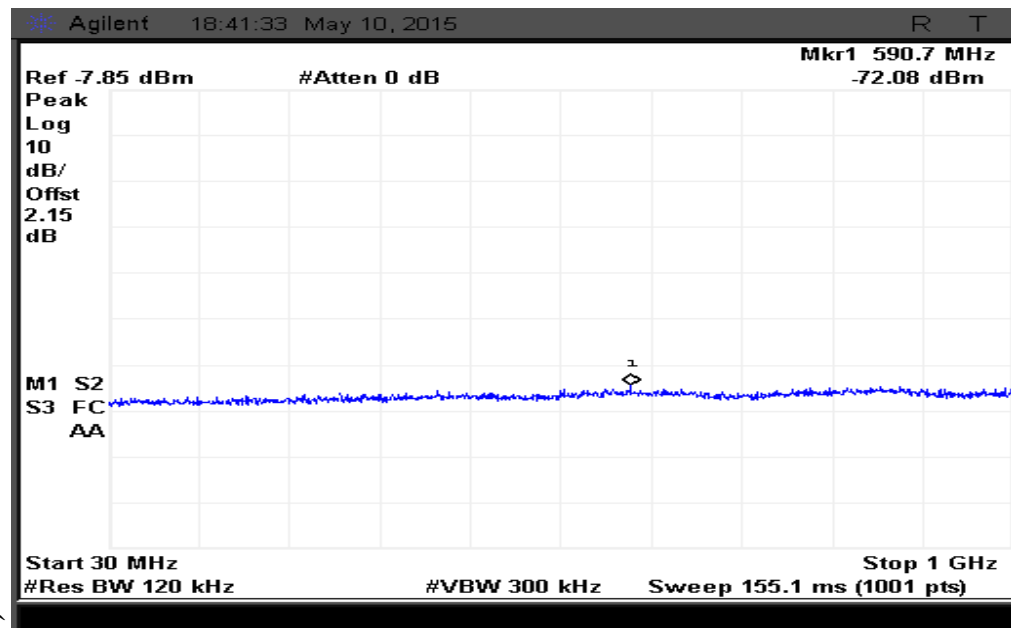


Figure 32: Spurious emission measured from 30 MHz to 1 GHz at Ch. 1-Peak

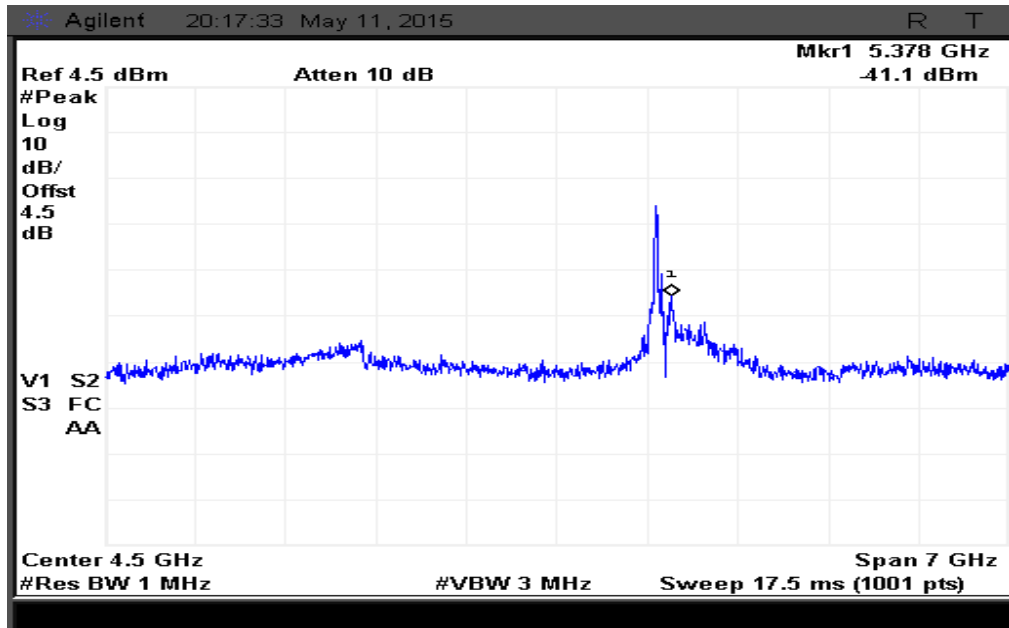


Figure 33: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Peak

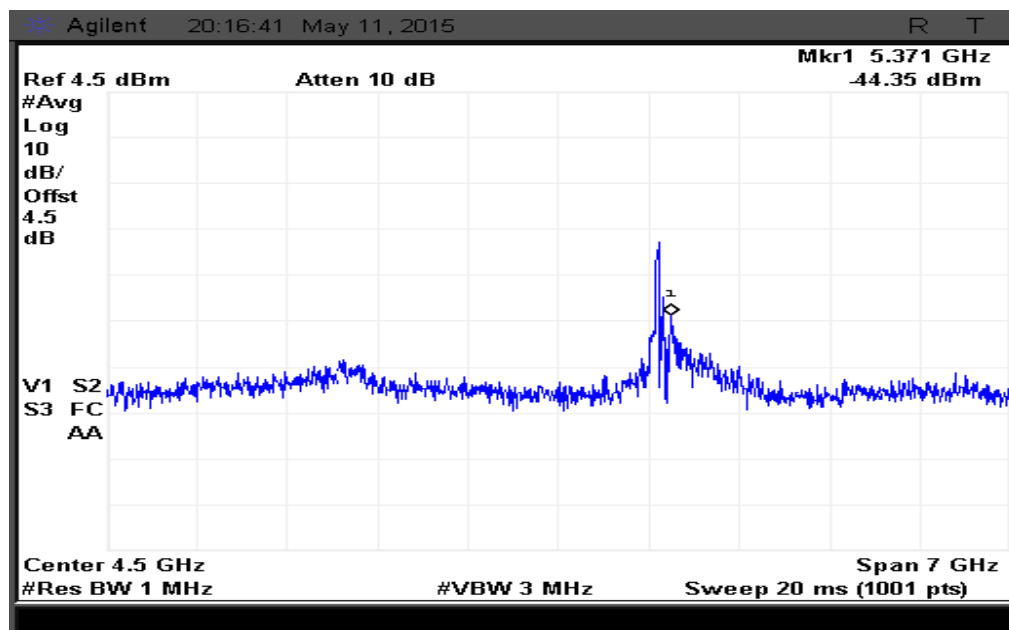


Figure 34: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Average

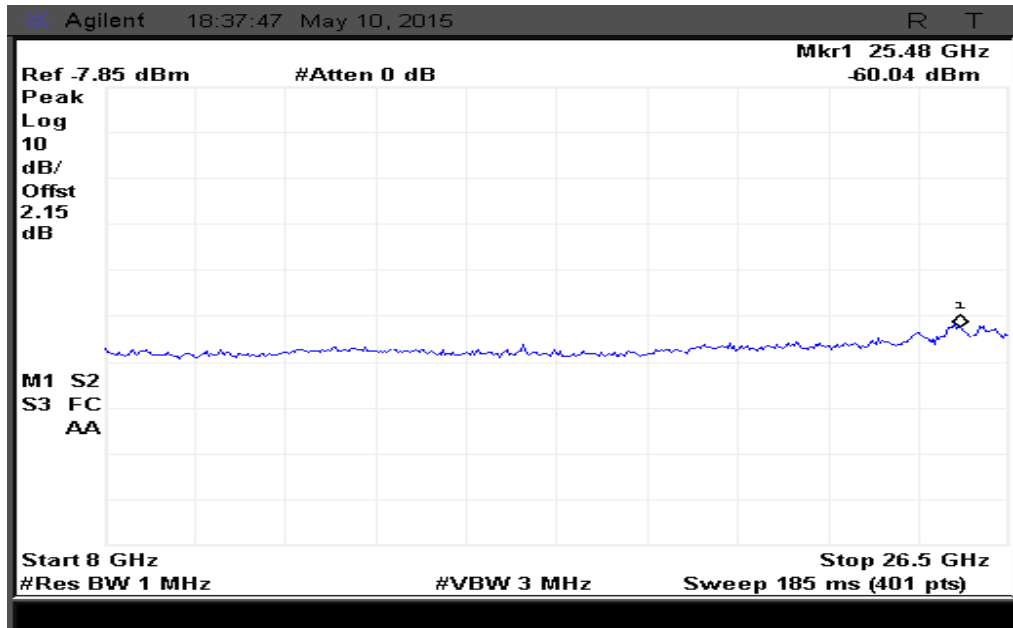


Figure 35: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Peak

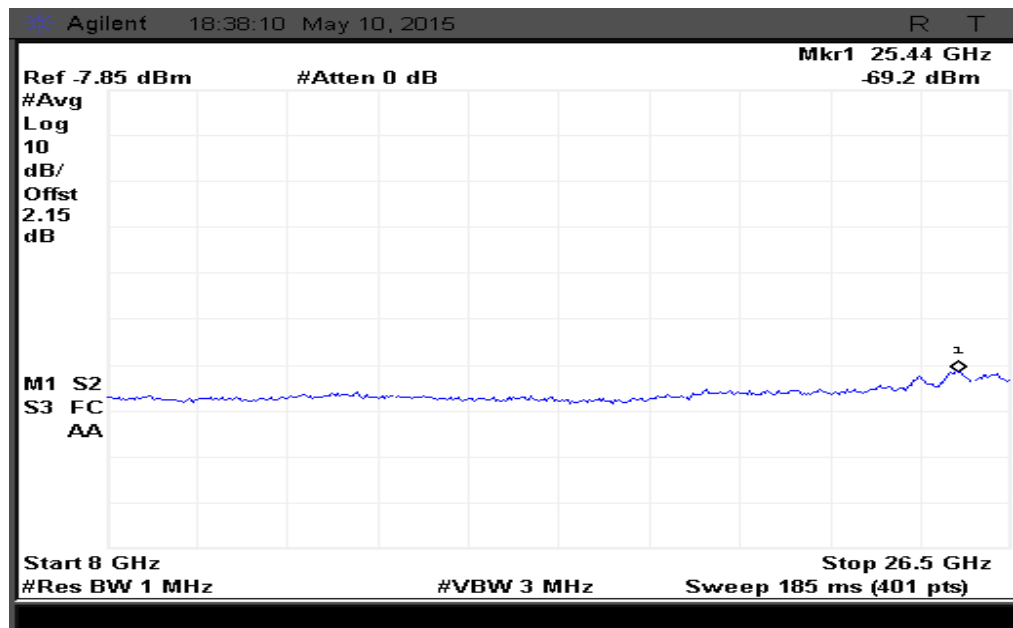
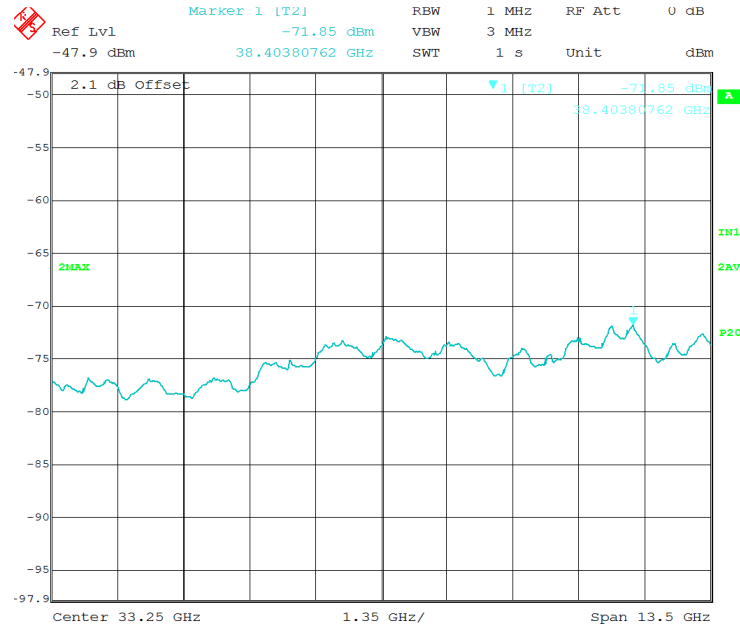
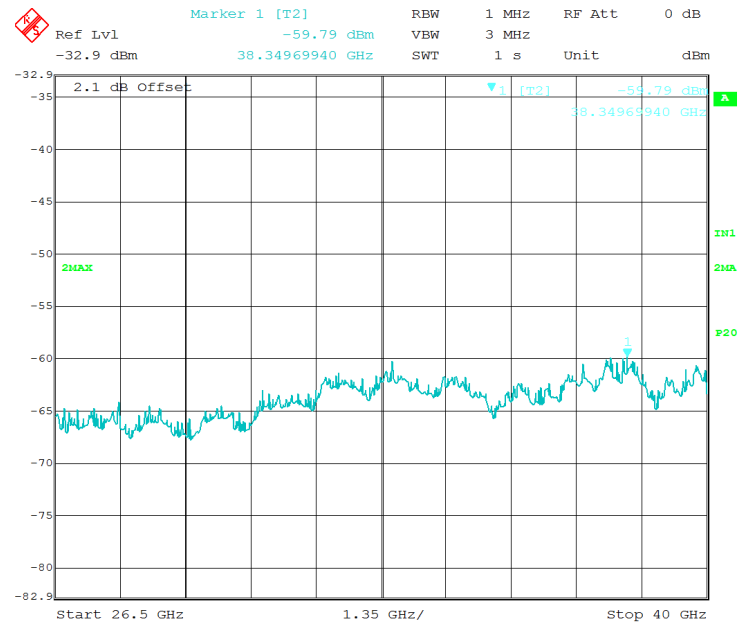


Figure 36: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Average



**Figure 37: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Average**



**Figure 38: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Peak**



### 5.3.1.5.3 40MHz MODULATION BW - HIGH CHANNEL\_5320MHZ

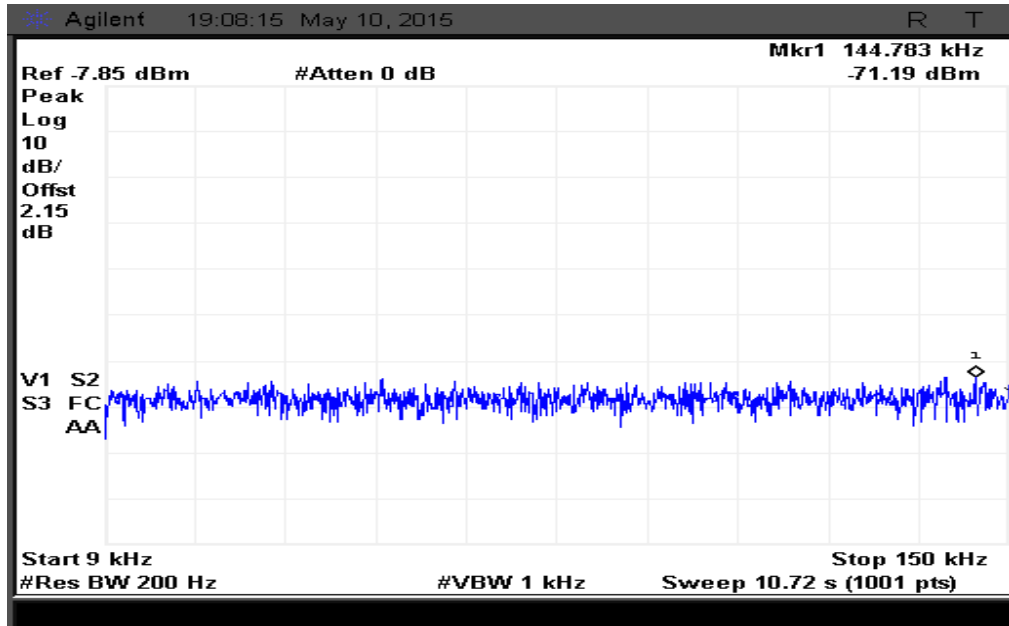


Figure 39: Spurious emission measured from 9 kHz to 150 kHz at Ch. 0-Peak

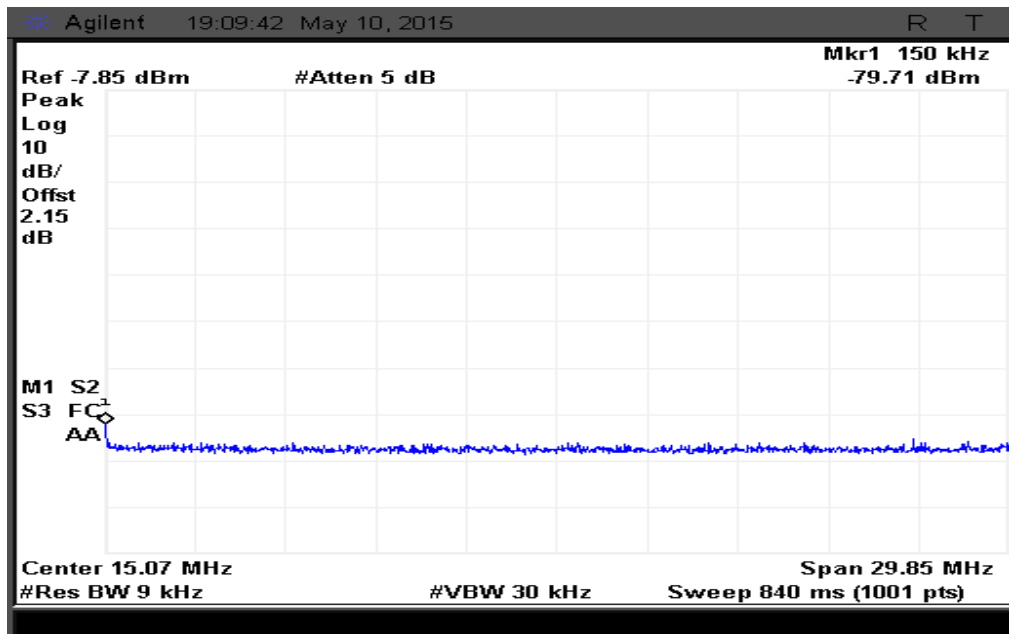


Figure 40: Spurious emission measured from 150 kHz to 30 MHz at Ch. 0-Peak

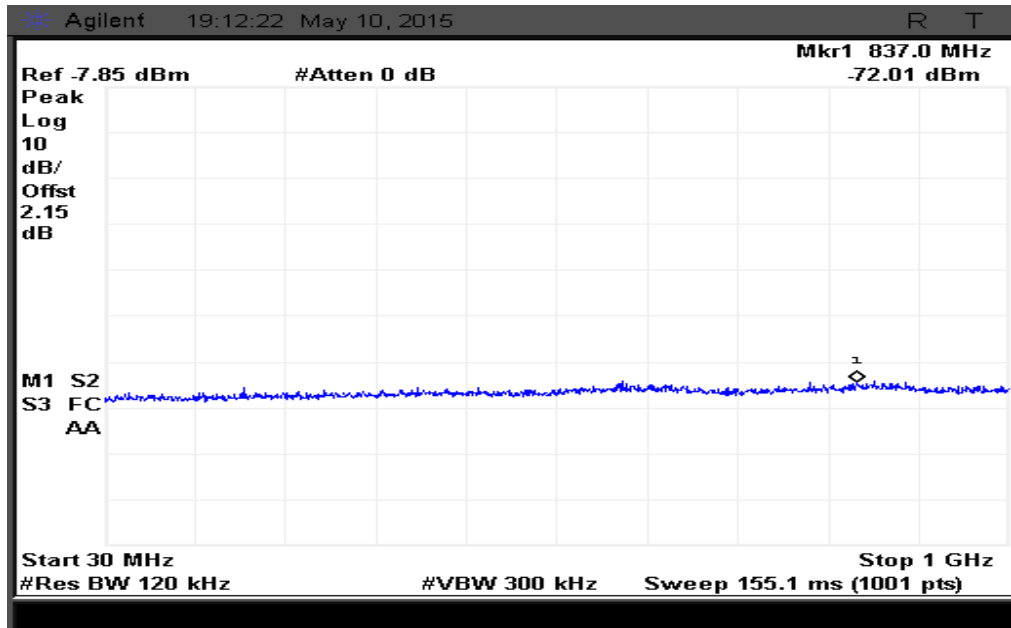


Figure 41: Spurious emission measured from 30 MHz to 1 GHz at Ch. 0-Peak

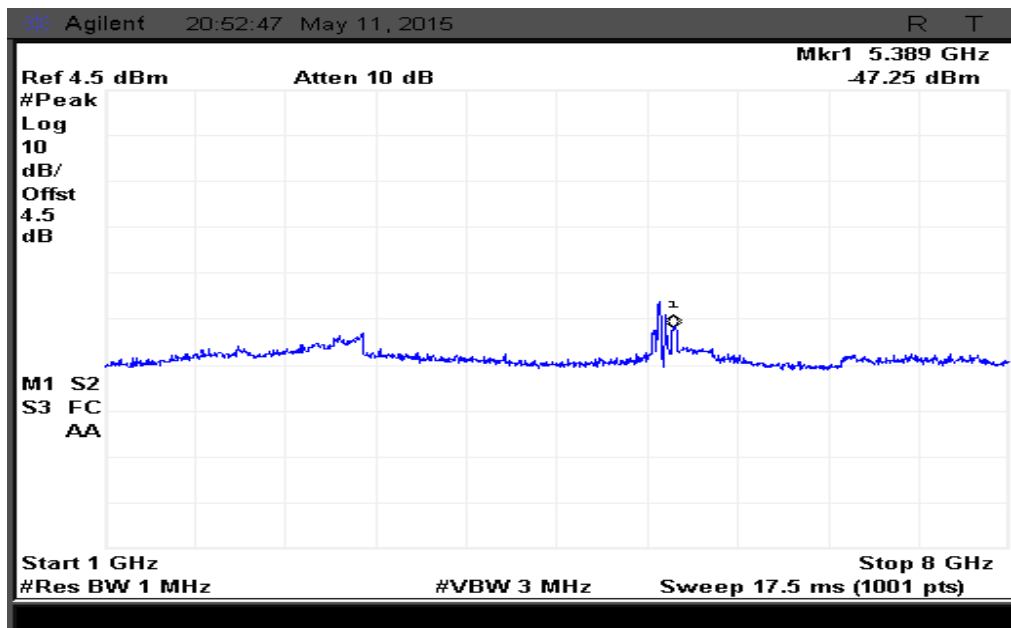


Figure 42: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Peak

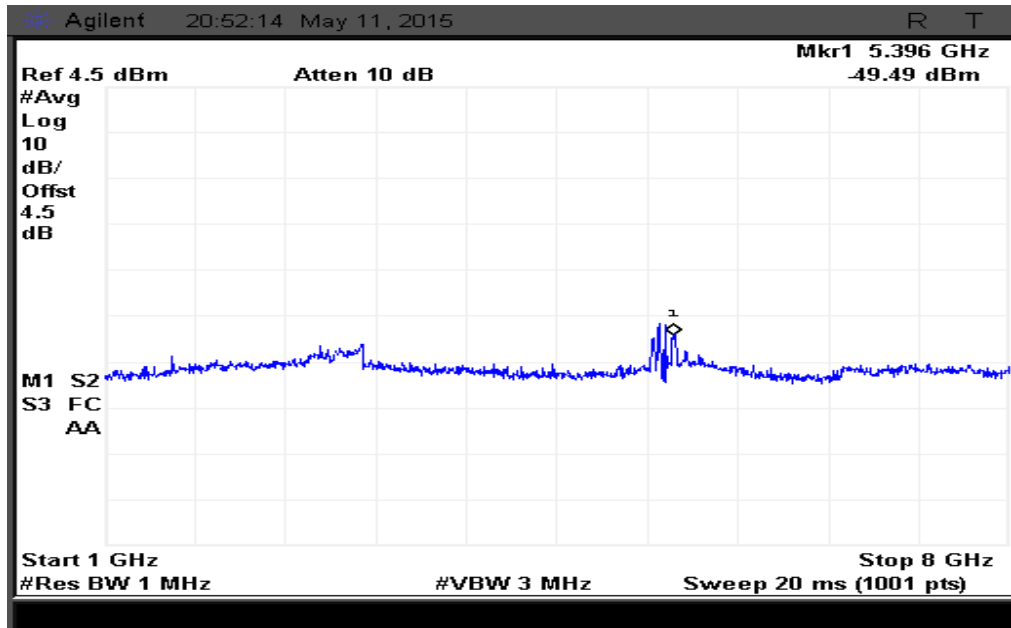


Figure 43: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Average

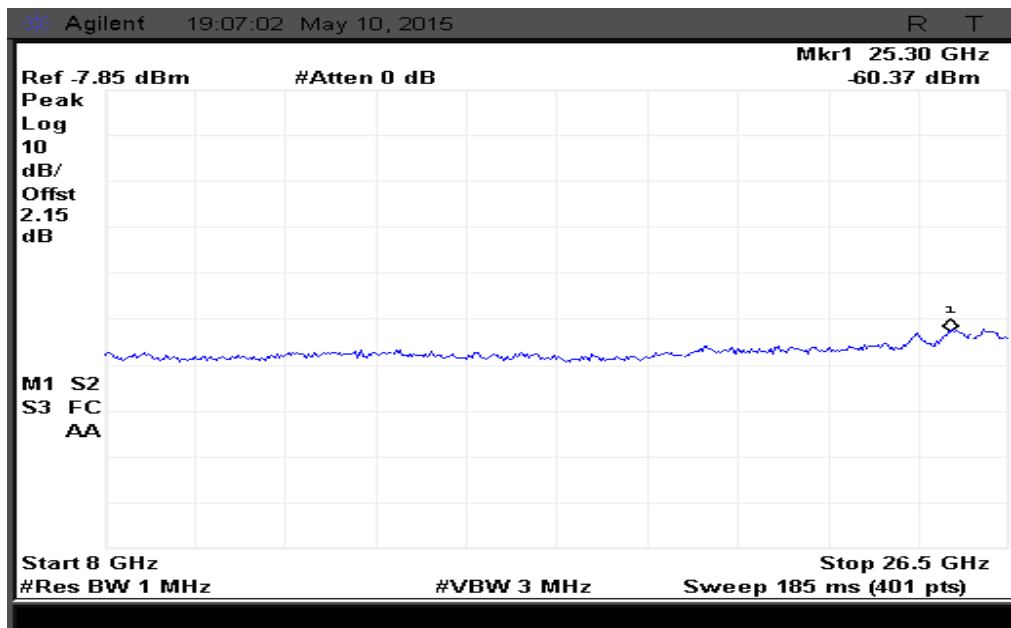


Figure 44: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Peak

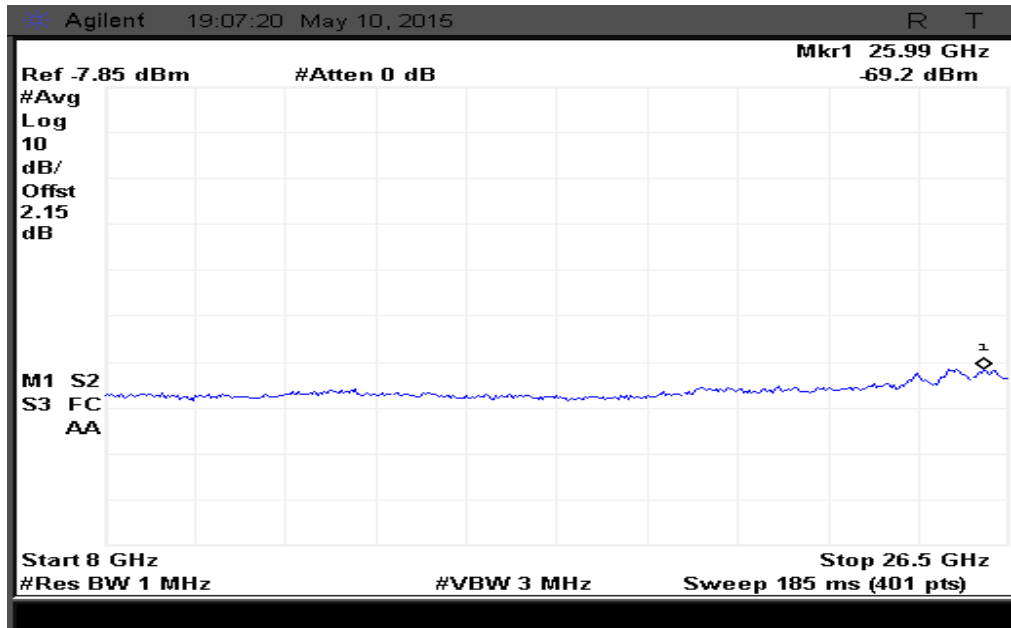


Figure 45: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Average



Figure 46: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Peak

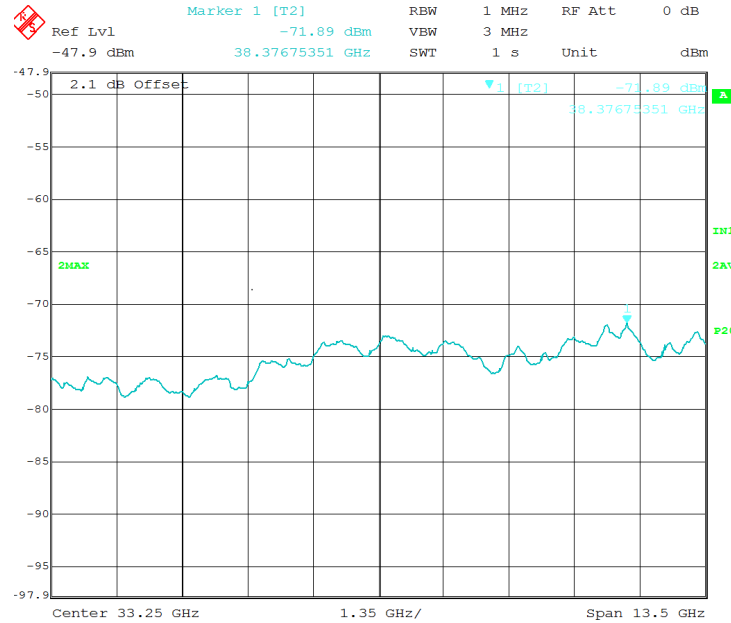


Figure 47: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Average

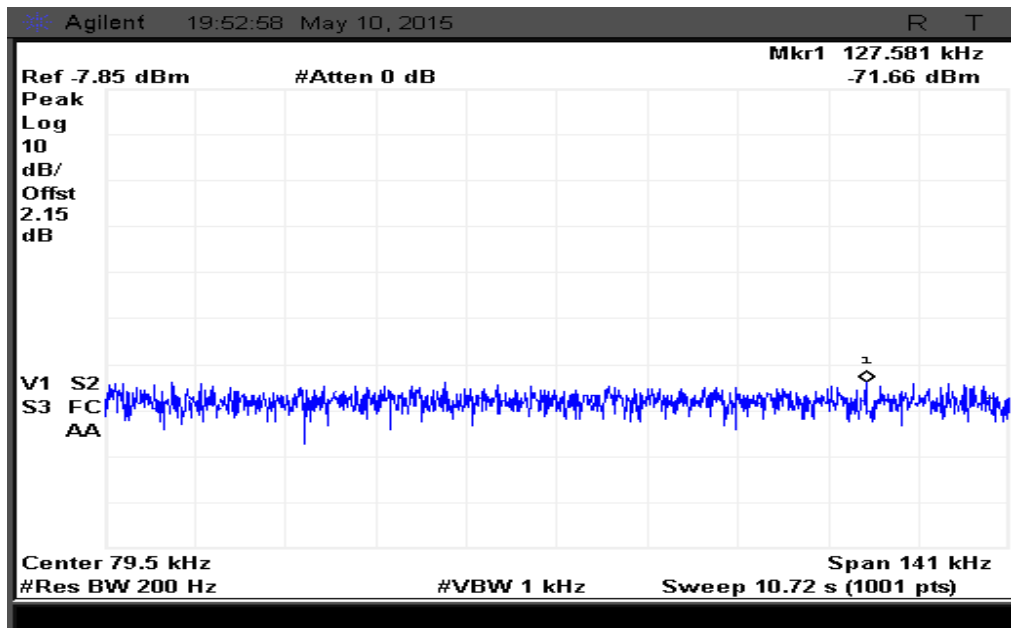


Figure 48: Spurious emission measured from 9 kHz to 150 kHz at Ch. 1-Peak

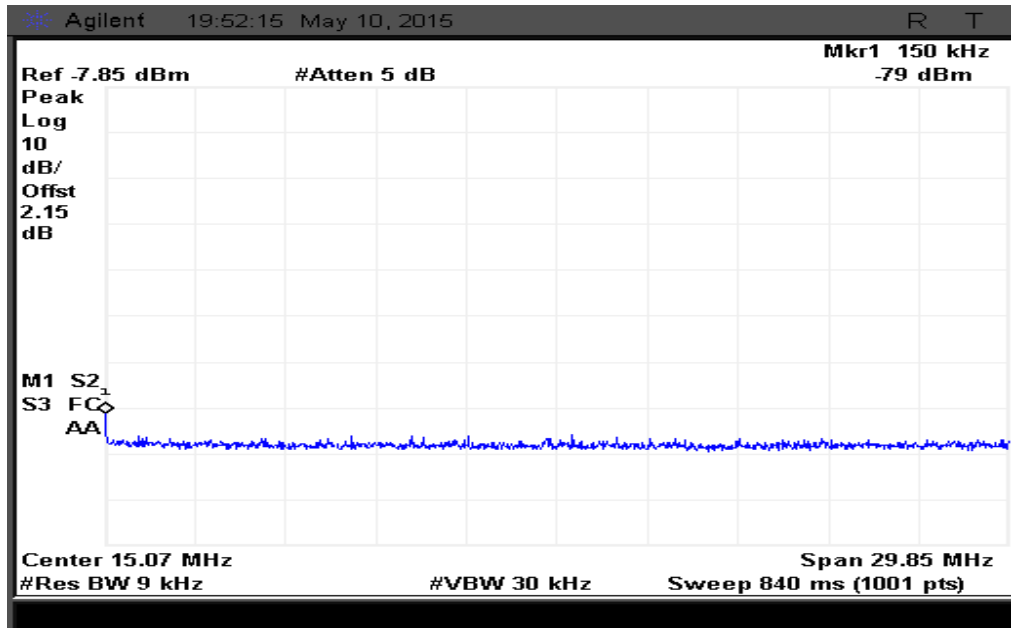


Figure 49: Spurious emission measured from 150 kHz to 30 MHz at Ch. 1-Peak

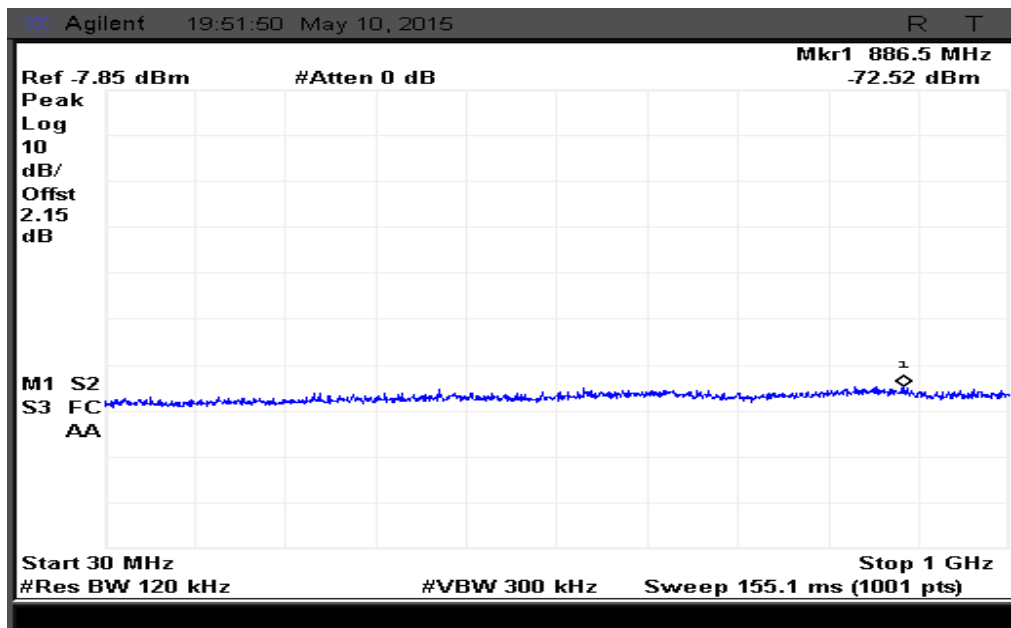


Figure 50: Spurious emission measured from 30 MHz to 1 GHz at Ch. 1-Peak

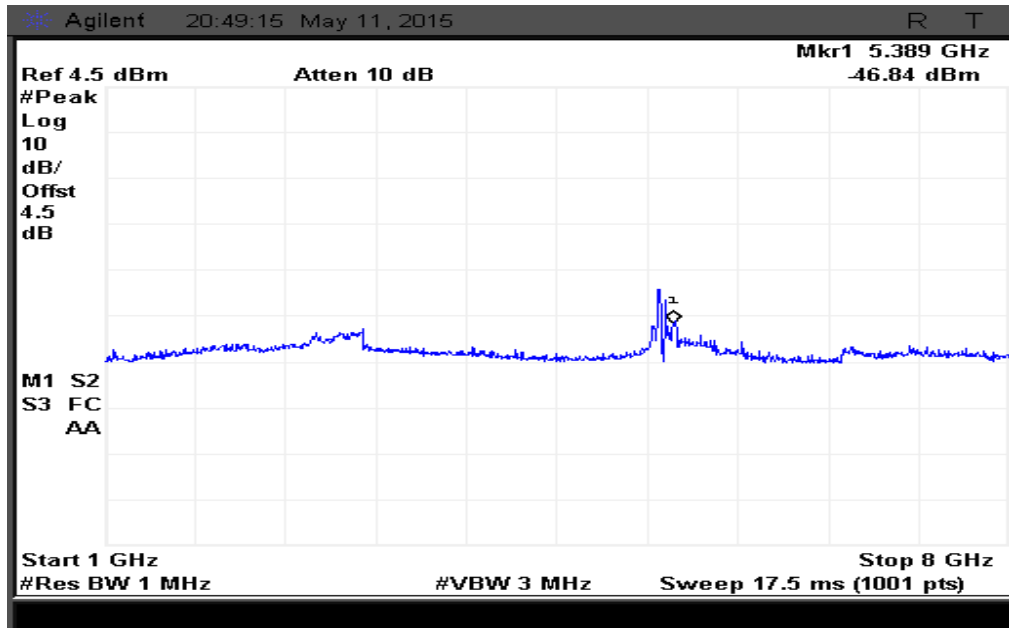


Figure 51: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Peak

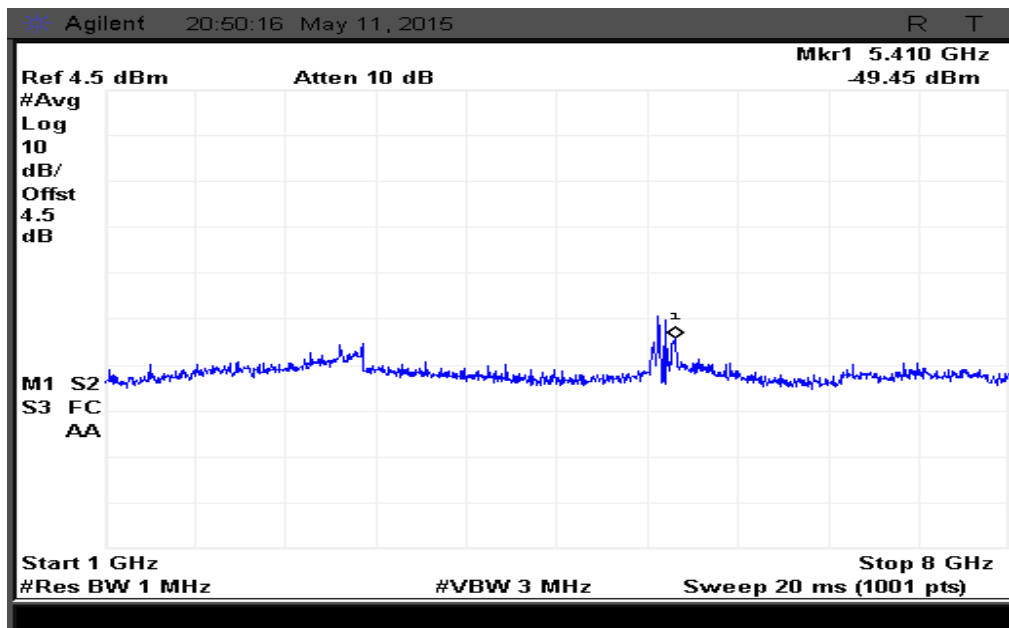


Figure 52: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Average

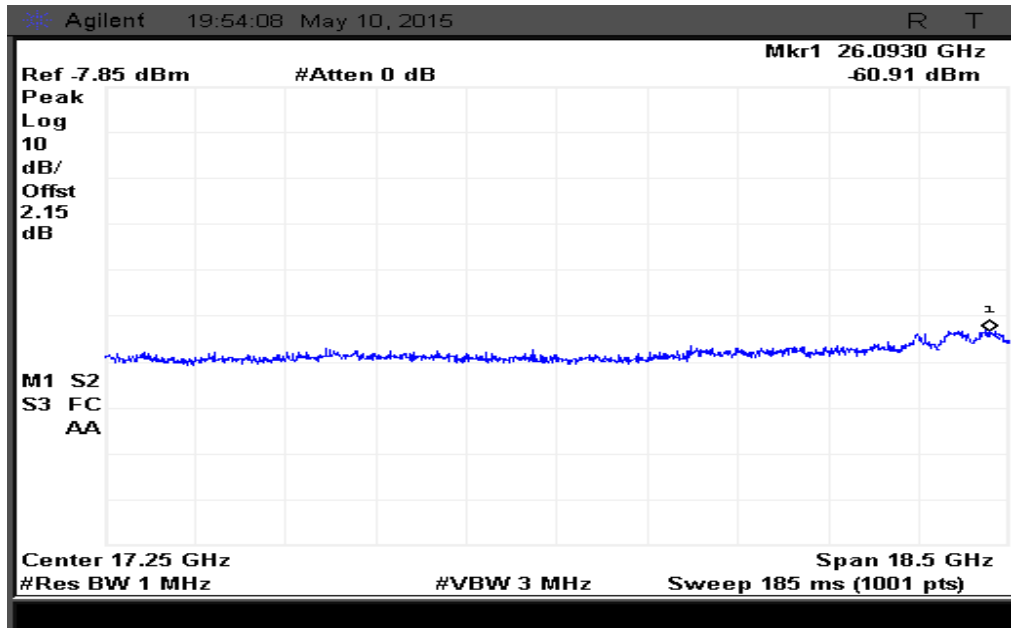


Figure 53: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Peak

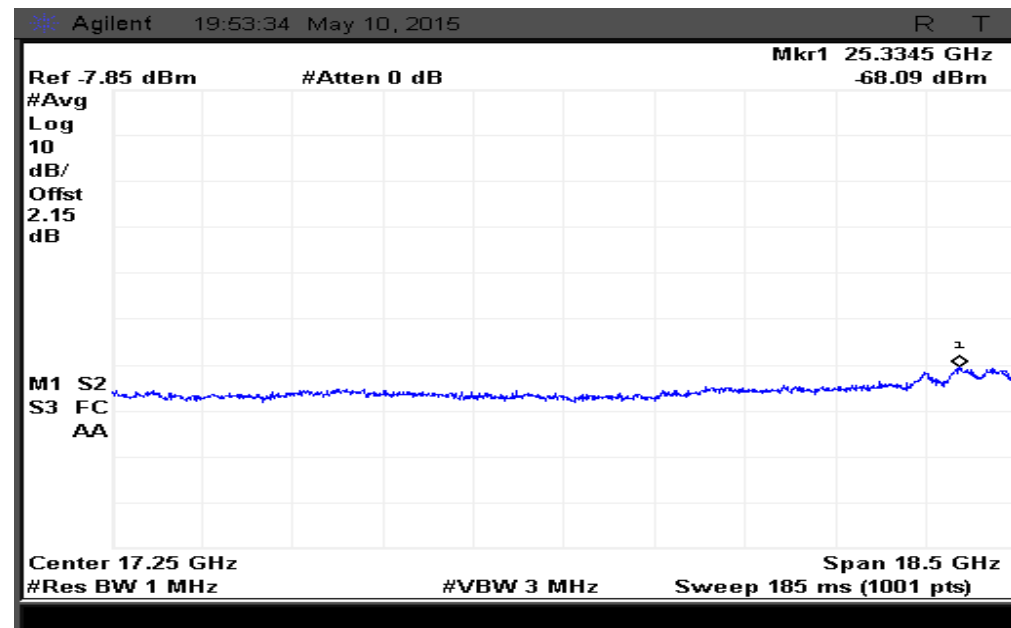
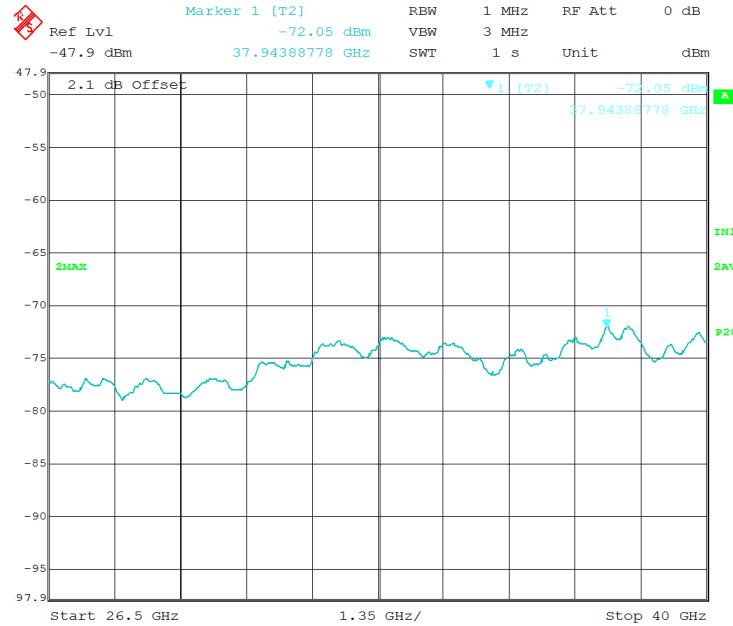
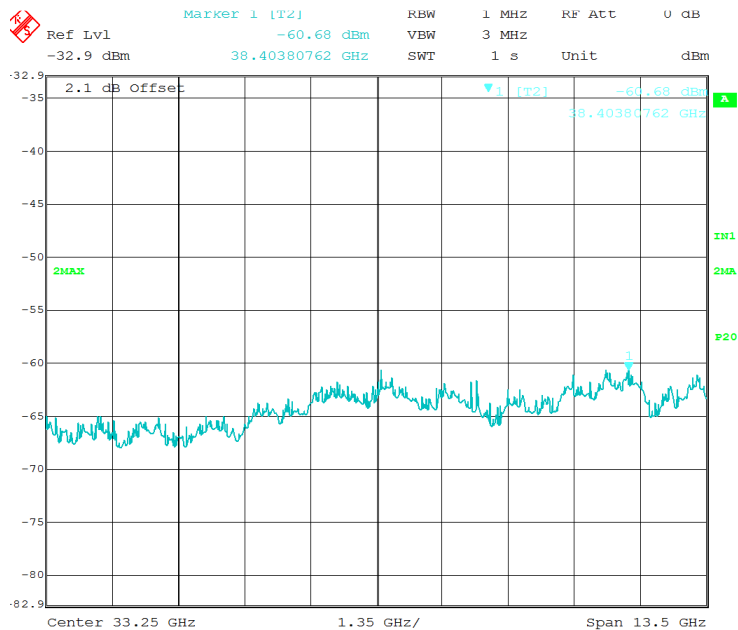


Figure 54: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Average





**Figure 55: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Average**



**Figure 56: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Peak**

#### 5.3.1.5.4 10MHz MODULATION BW - LOW CHANNEL\_5265 MHz

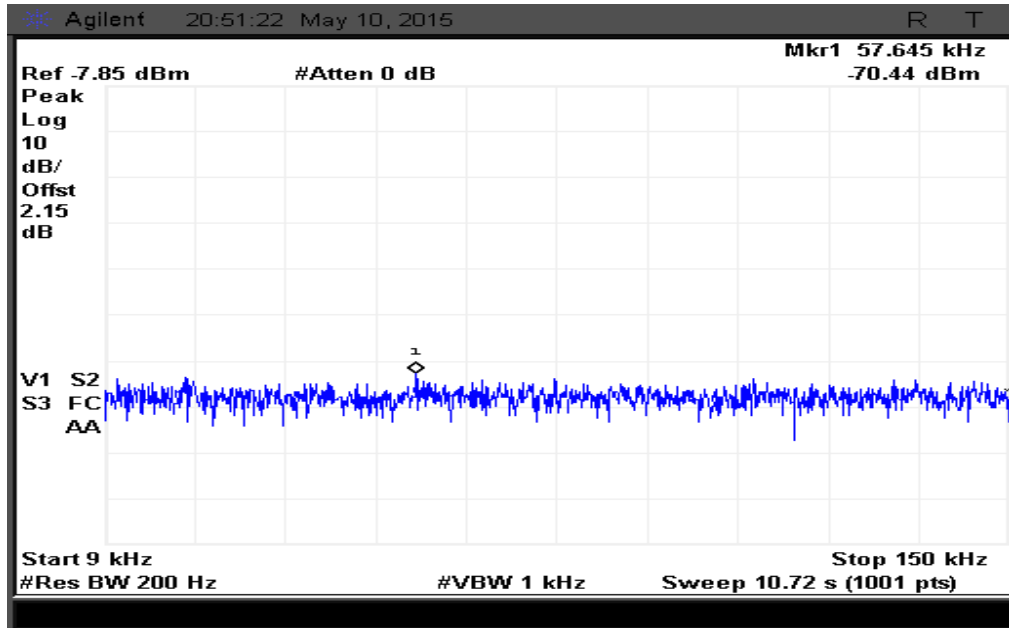


Figure 57: Spurious emission measured from 9 kHz to 150 kHz at Ch. 0-Peak

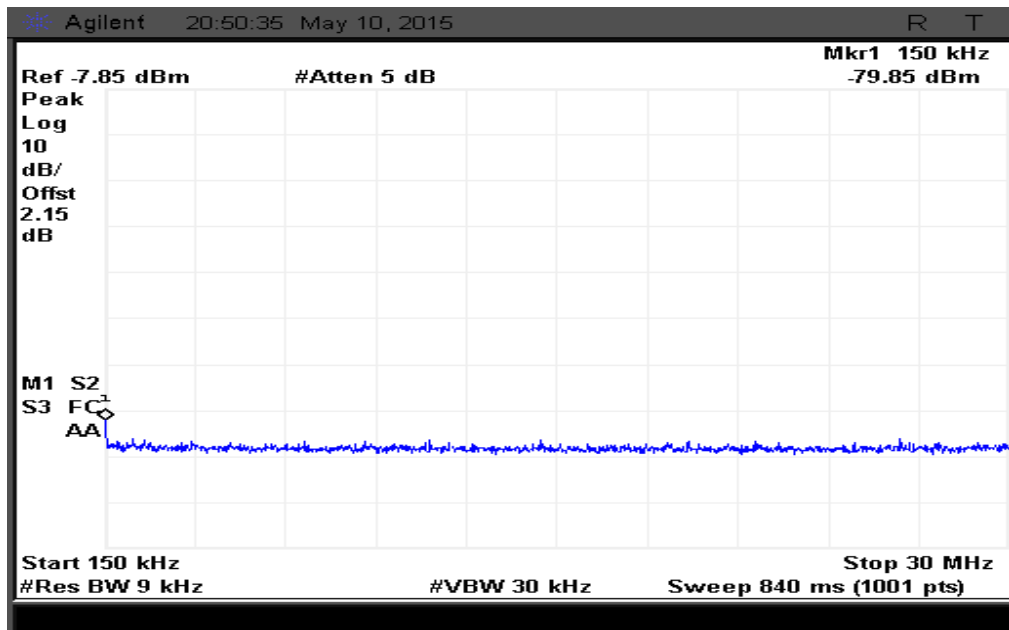


Figure 58: Spurious emission measured from 150 kHz to 30 MHz at Ch. 0-Peak

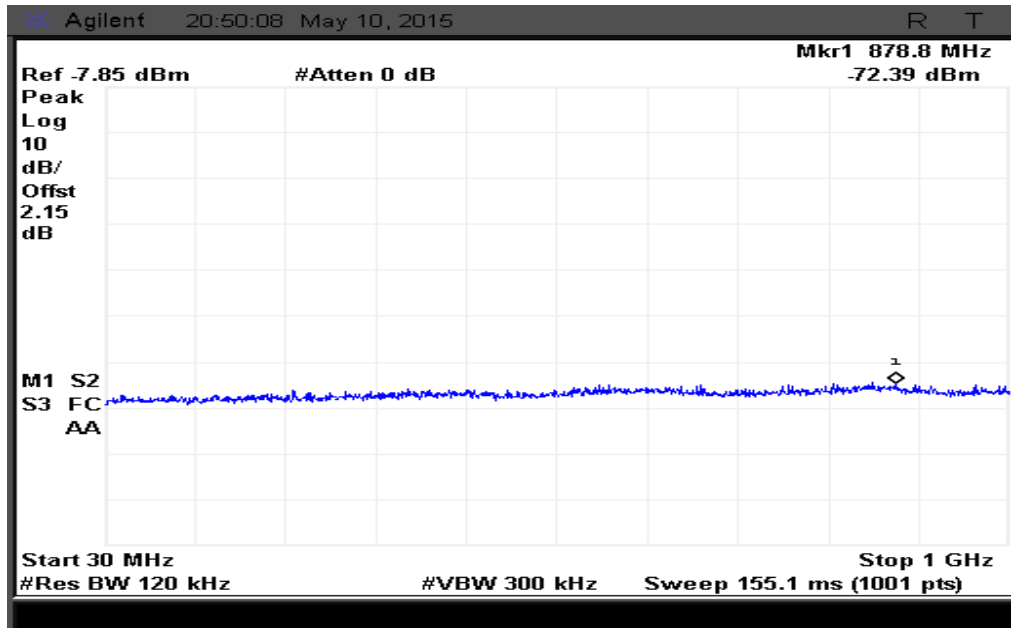


Figure 59: Spurious emission measured from 30 MHz to 1 GHz at Ch. 0-Peak

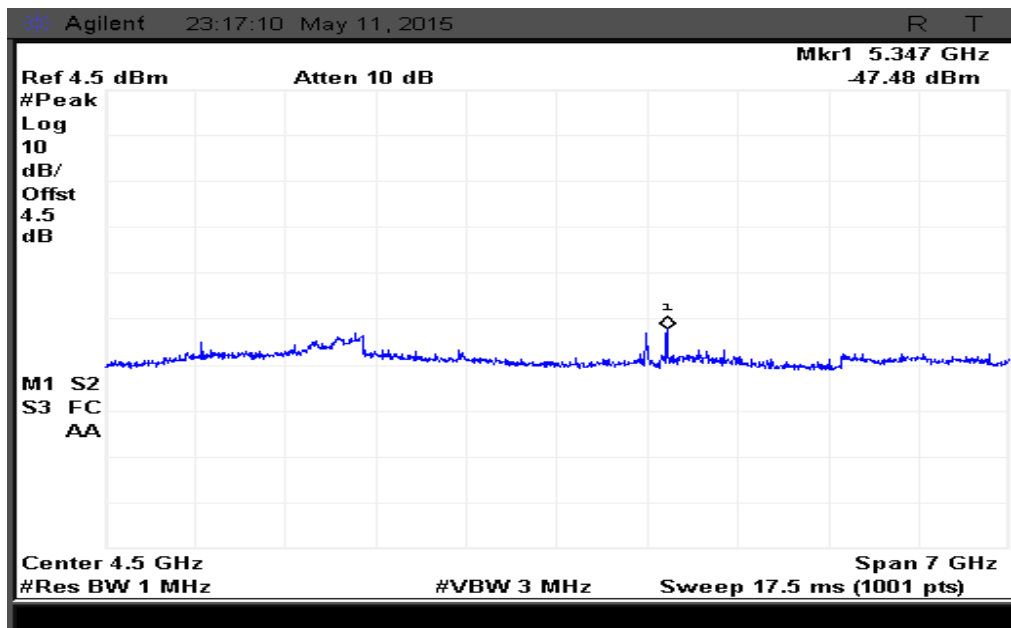


Figure 60: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Peak

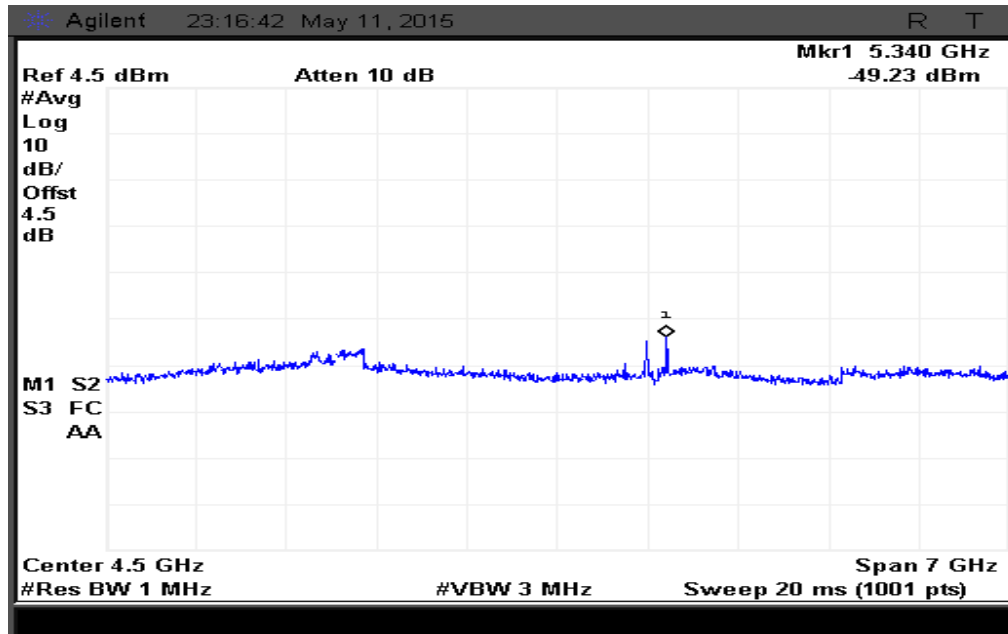


Figure 61: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Average

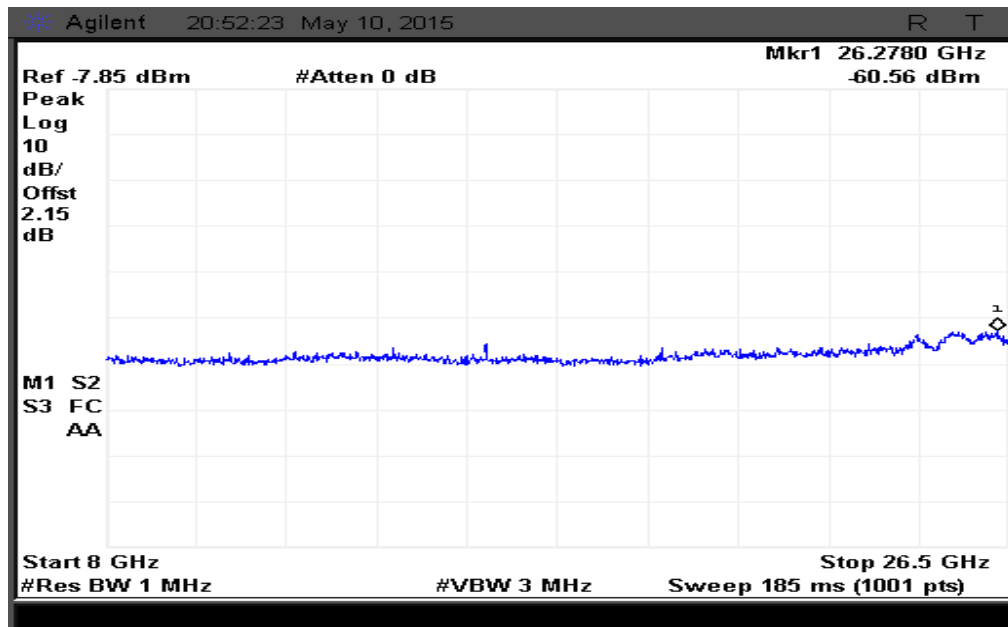


Figure 62: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Peak

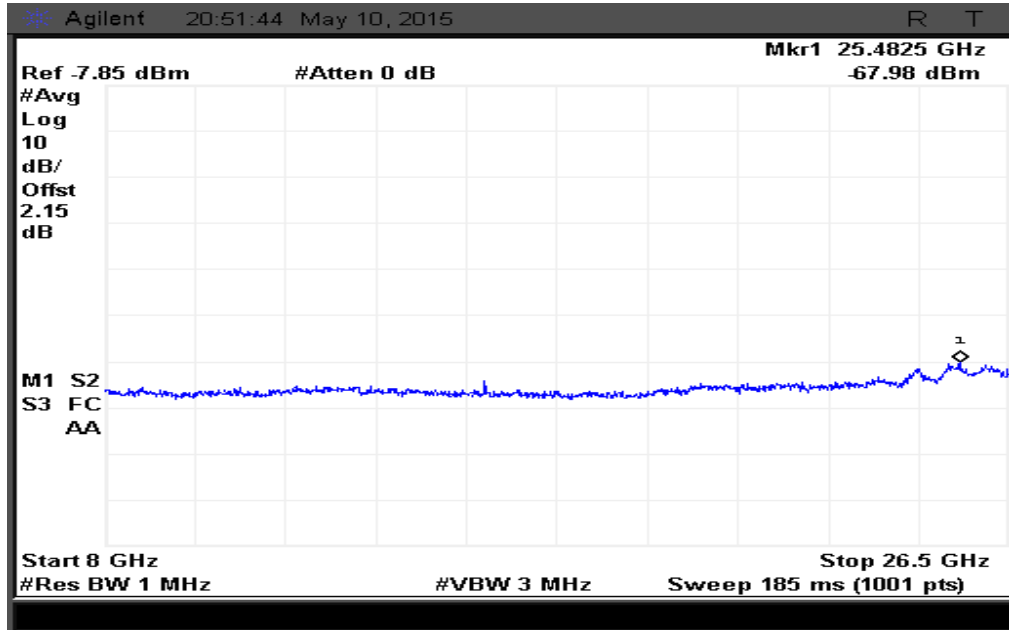


Figure 63: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Average

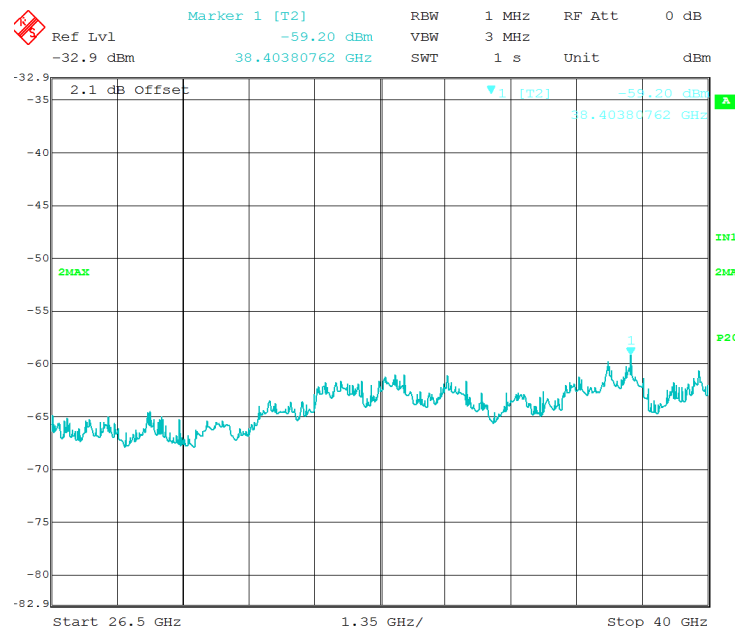


Figure 64: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Peak

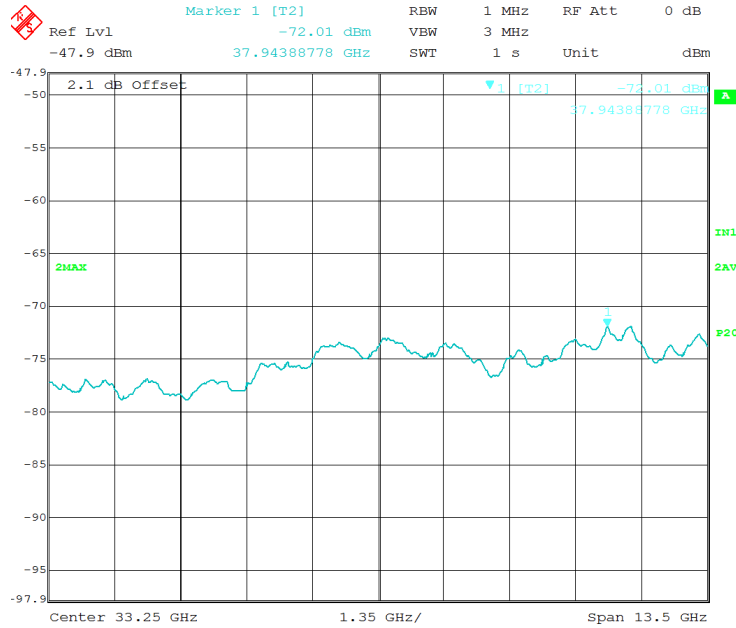


Figure 65: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Average

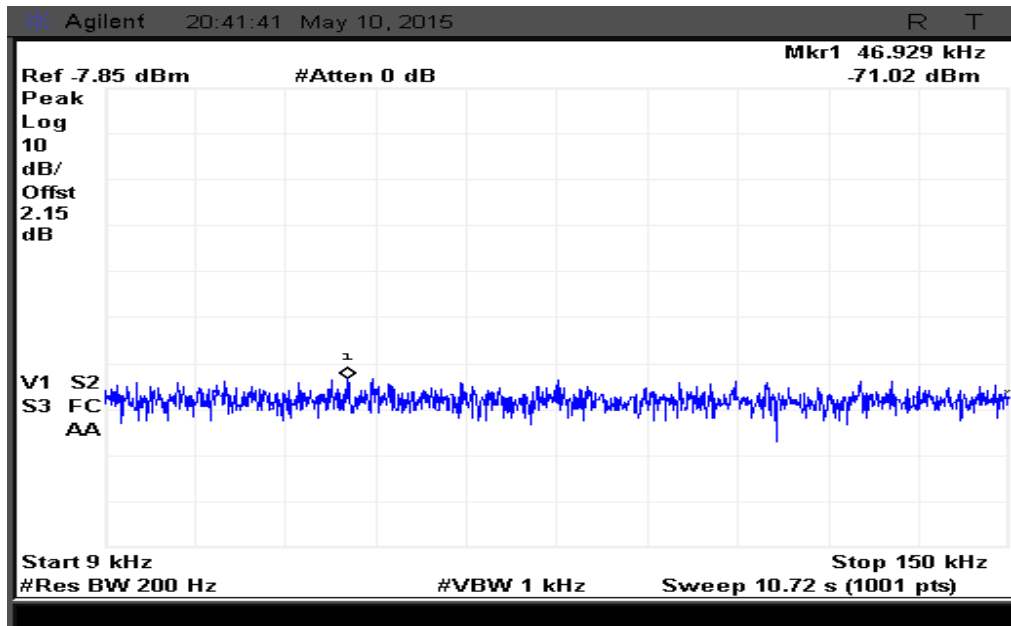


Figure 66: Spurious emission measured from 9 kHz to 150 kHz at Ch. 1-Peak

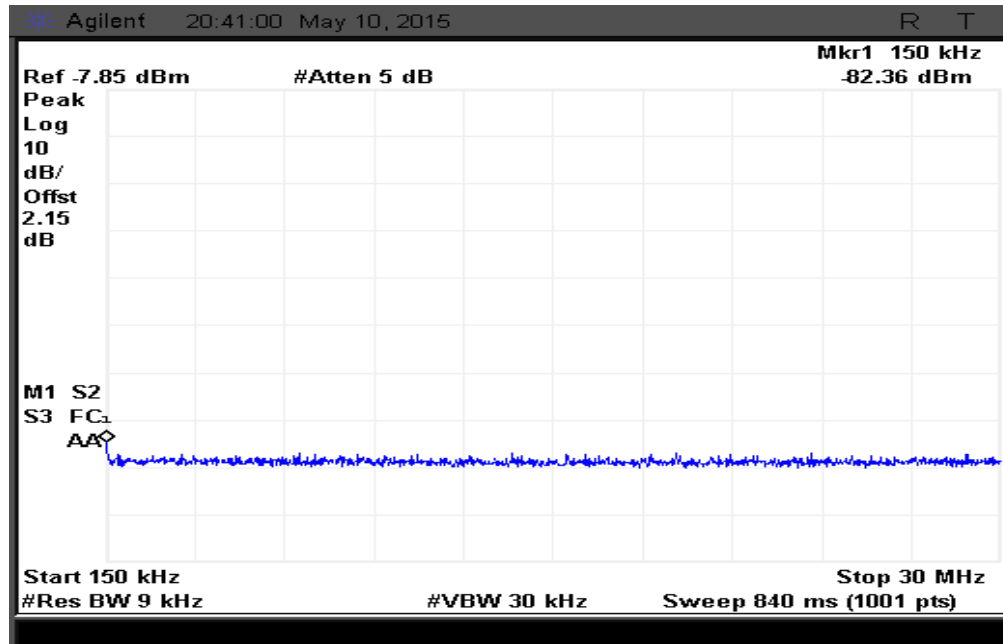


Figure 67: Spurious emission measured from 150 kHz to 30 MHz at Ch. 1-Peak

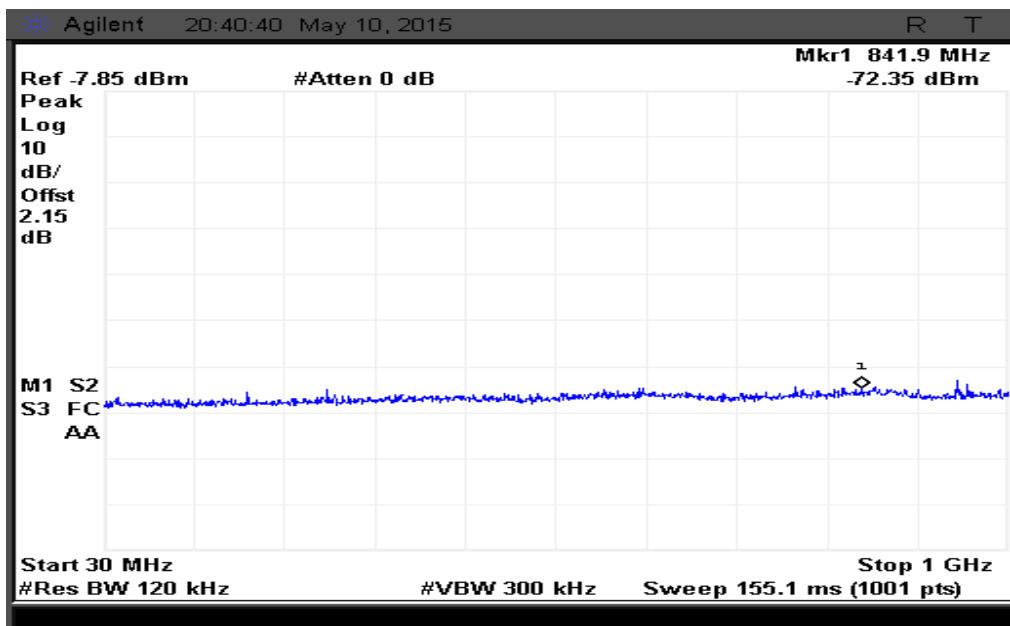


Figure 68: Spurious emission measured from 30 MHz to 1 GHz at Ch. 1-Peak

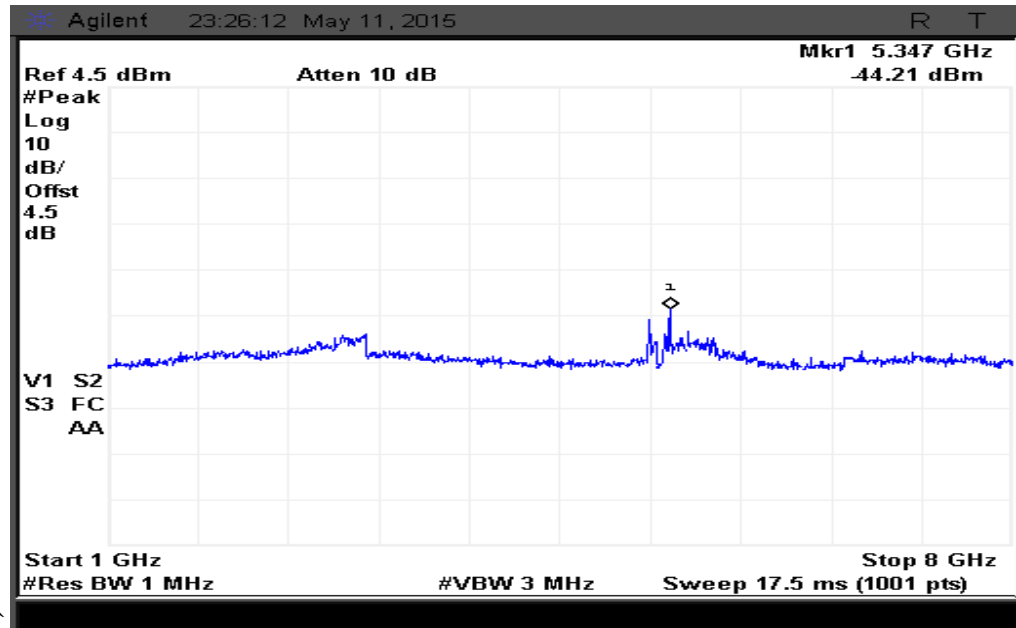


Figure 69: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Peak

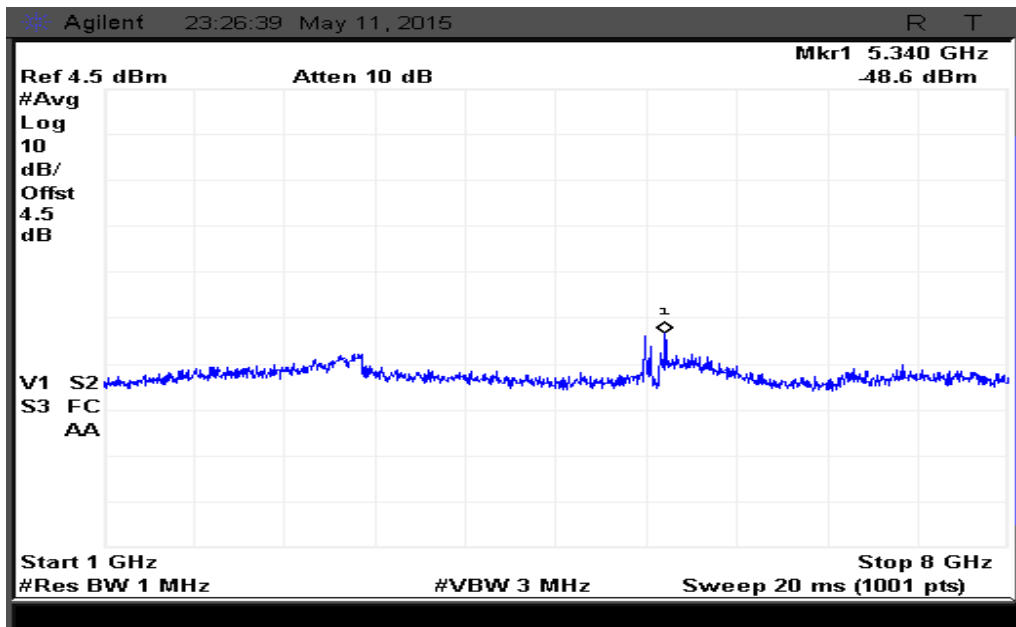


Figure 70: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Average



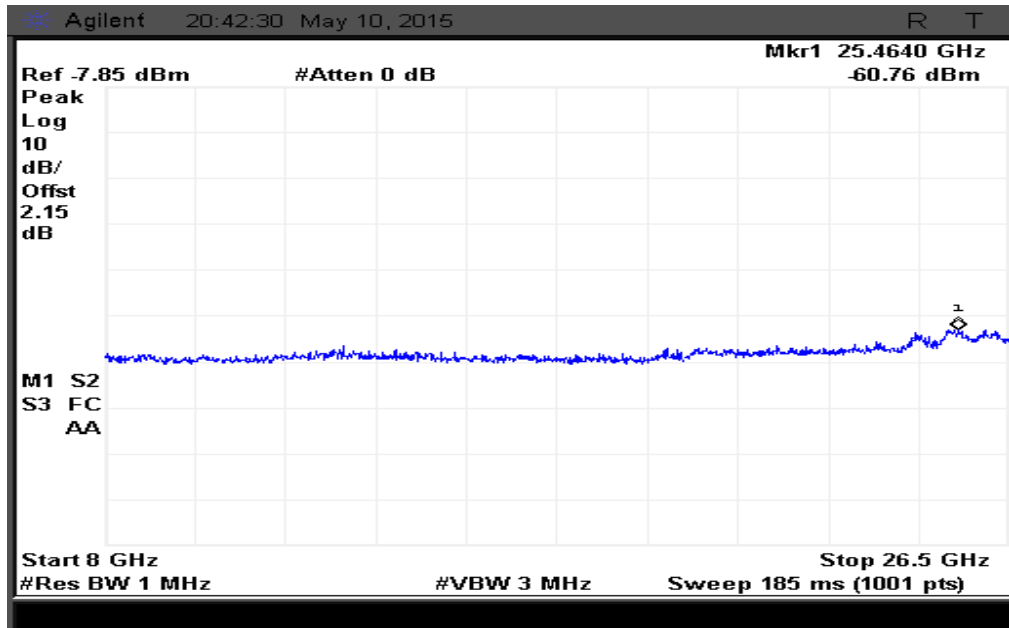


Figure 71: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Peak

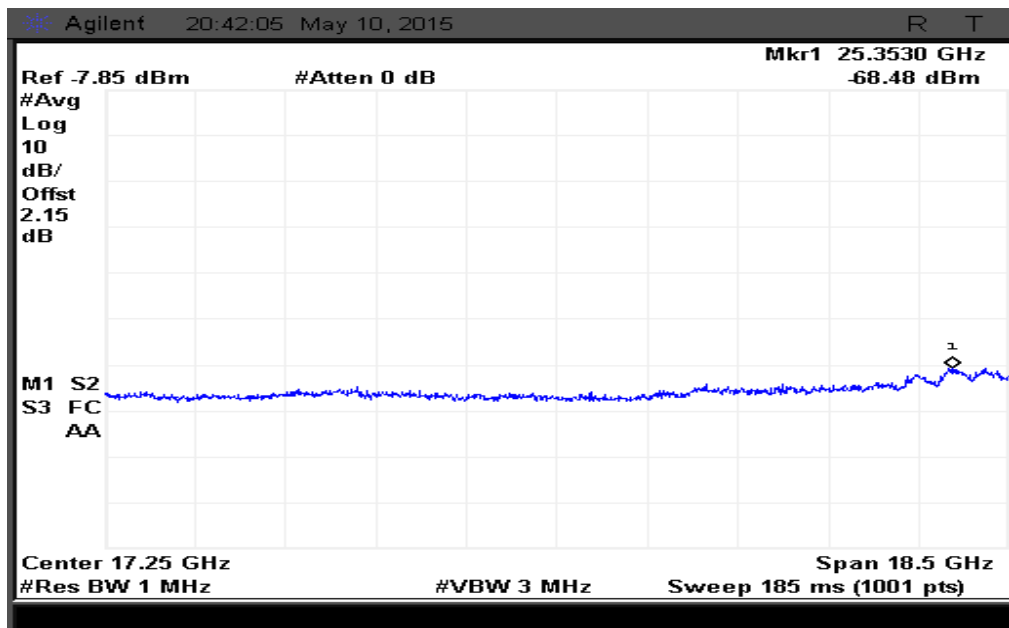
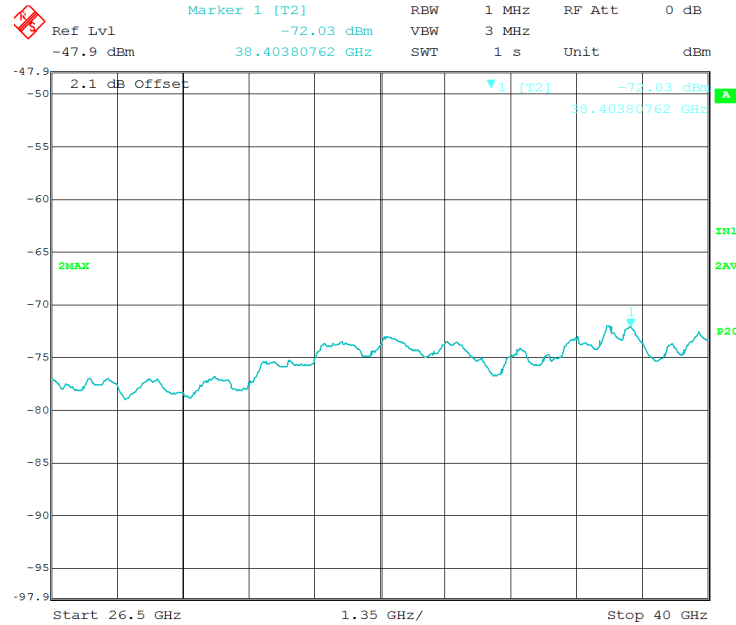
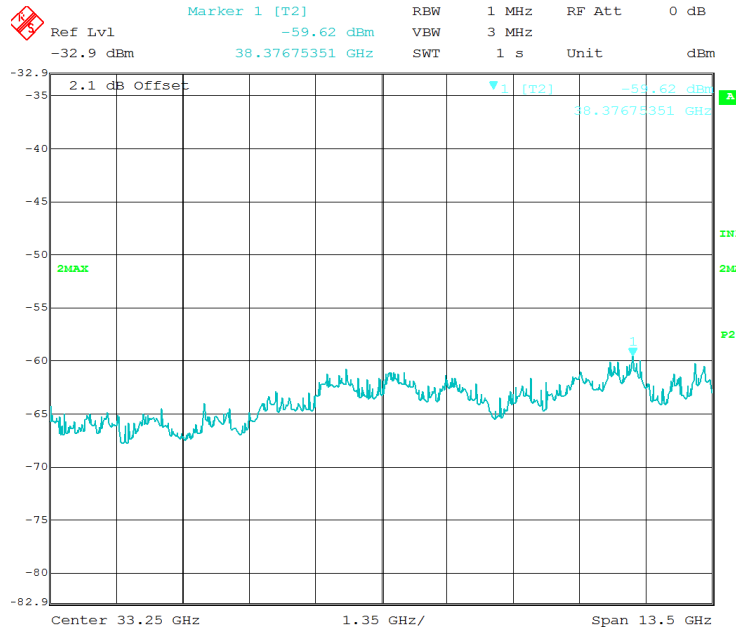


Figure 72: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Average



**Figure 73: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Average**



**Figure 74: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Peak**

### 5.3.1.5.5 10MHz MODULATION BW - MID CHANNEL\_5300 MHz

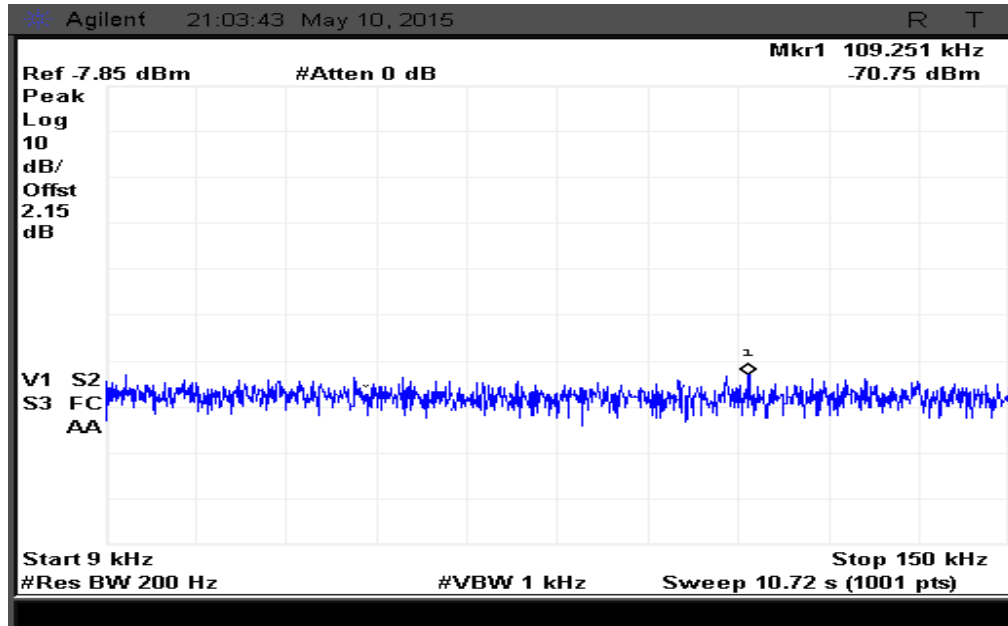


Figure 75: Spurious emission measured from 9 kHz to 150 kHz at Ch. 0-Peak

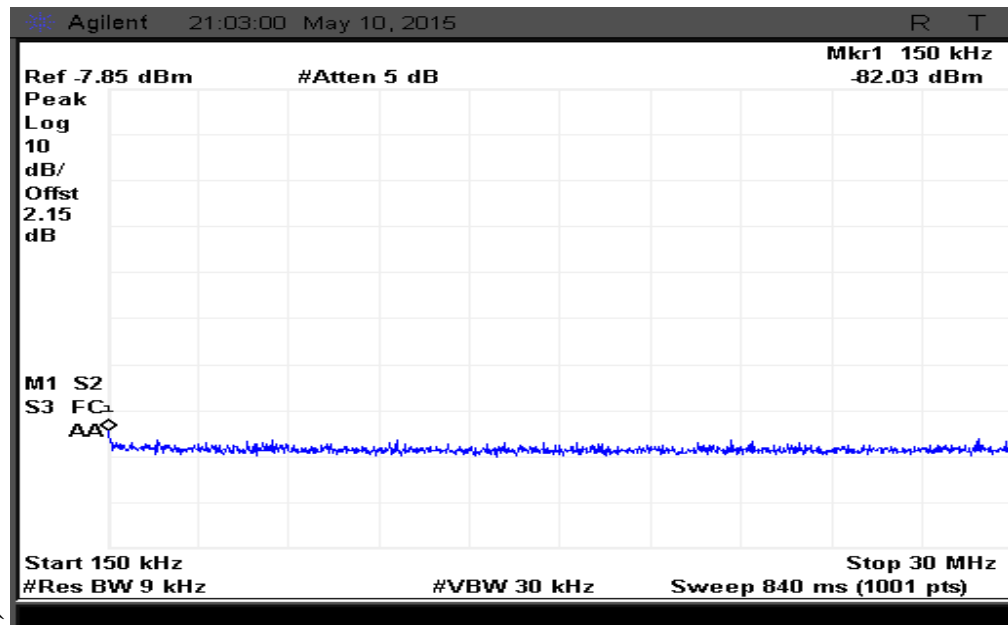


Figure 76: Spurious emission measured from 150 kHz to 30 MHz at Ch. 0-Peak

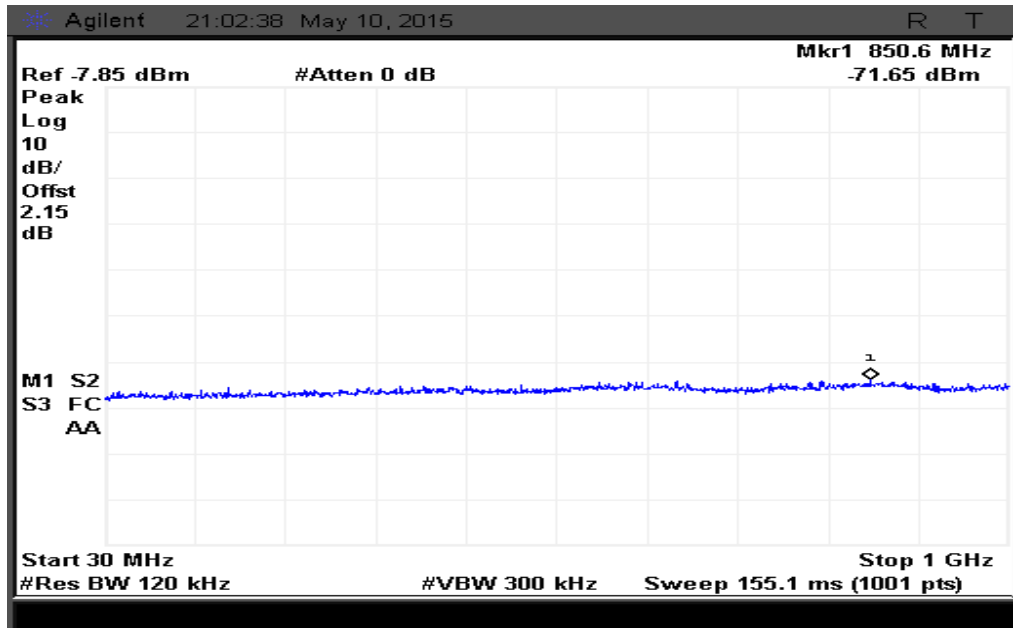


Figure 77: Spurious emission measured from 30 MHz to 1 GHz at Ch. 0-Peak

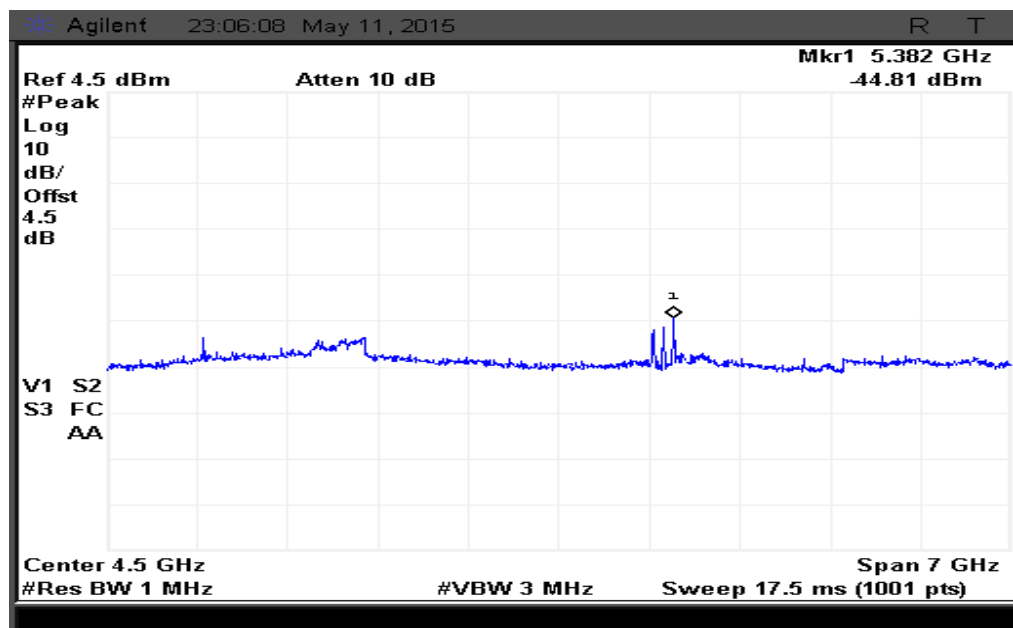


Figure 78: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Peak

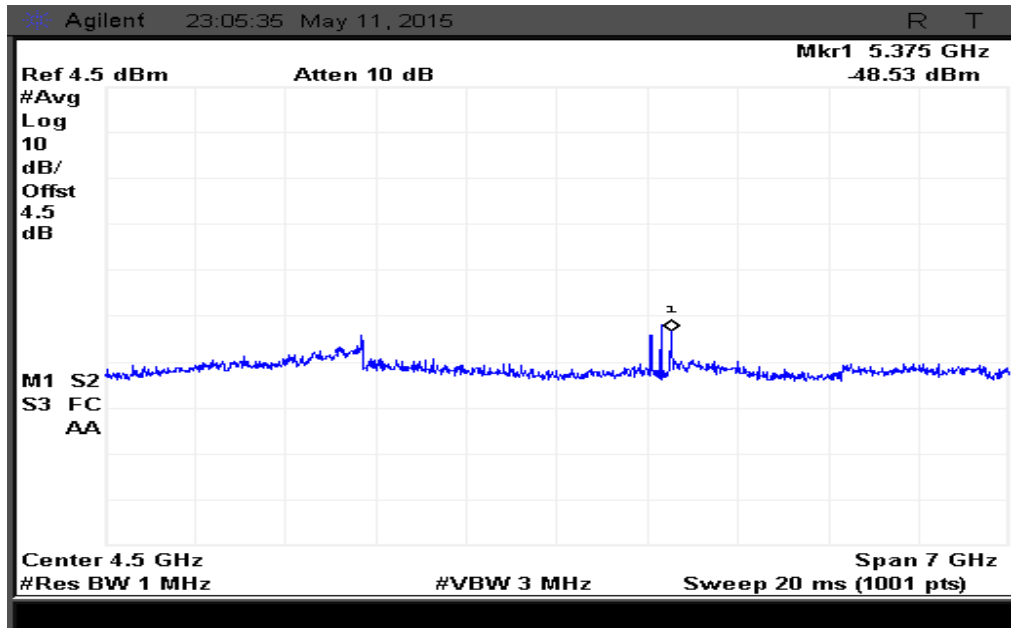


Figure 79: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Average

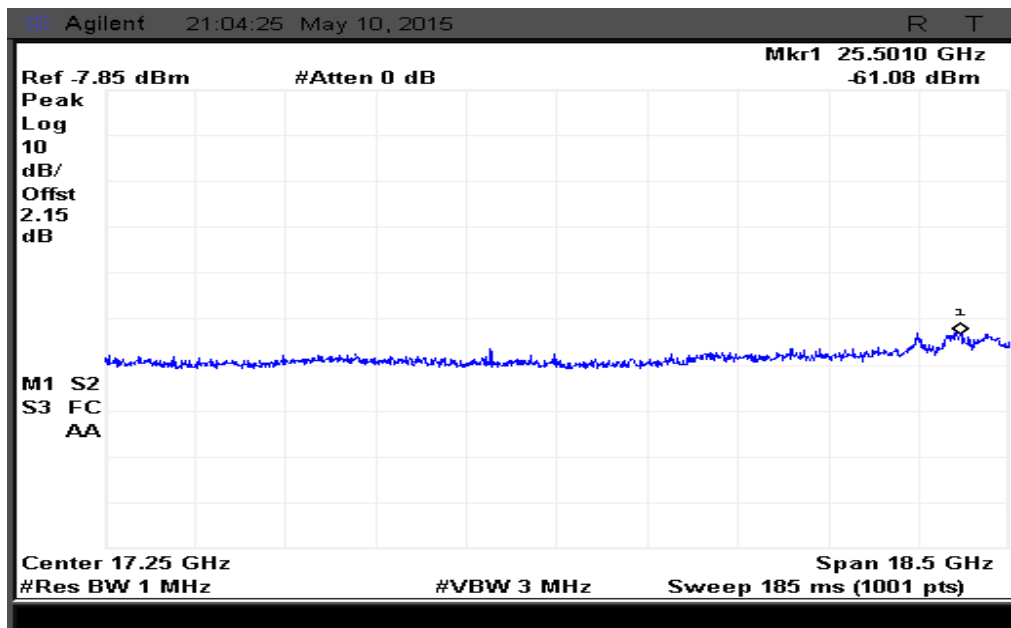


Figure 80: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Peak

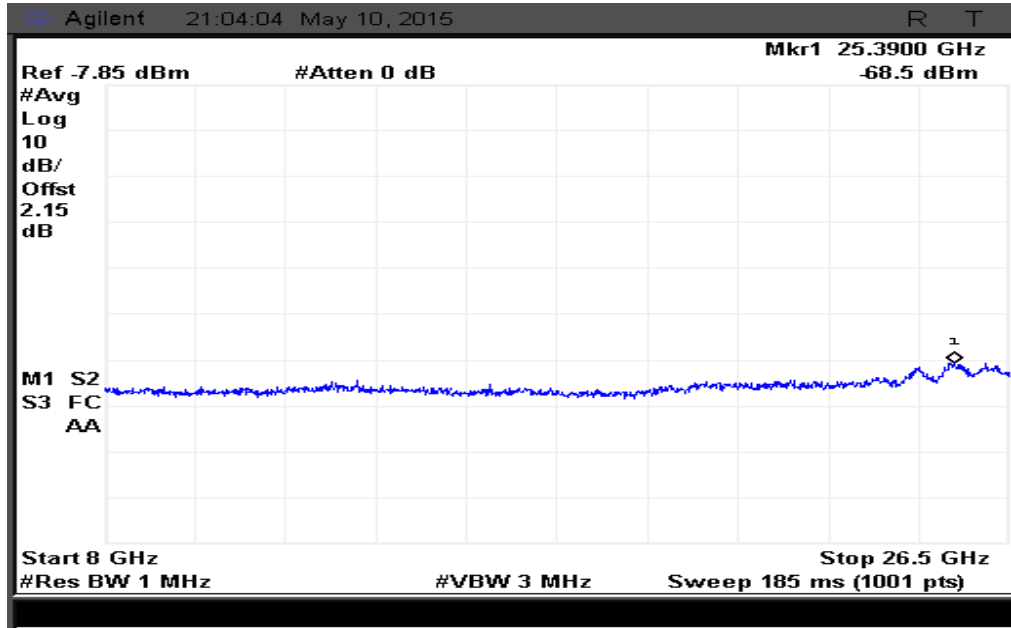


Figure 81: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Average

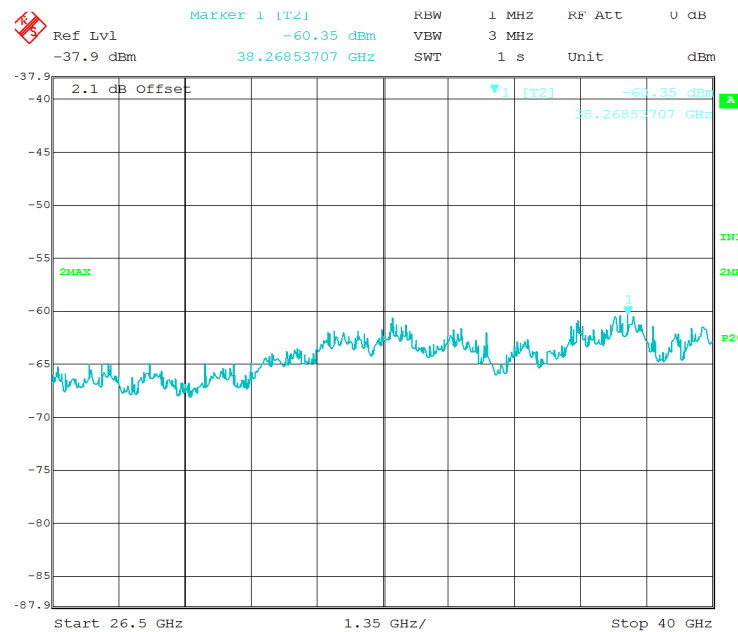


Figure 82: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Peak

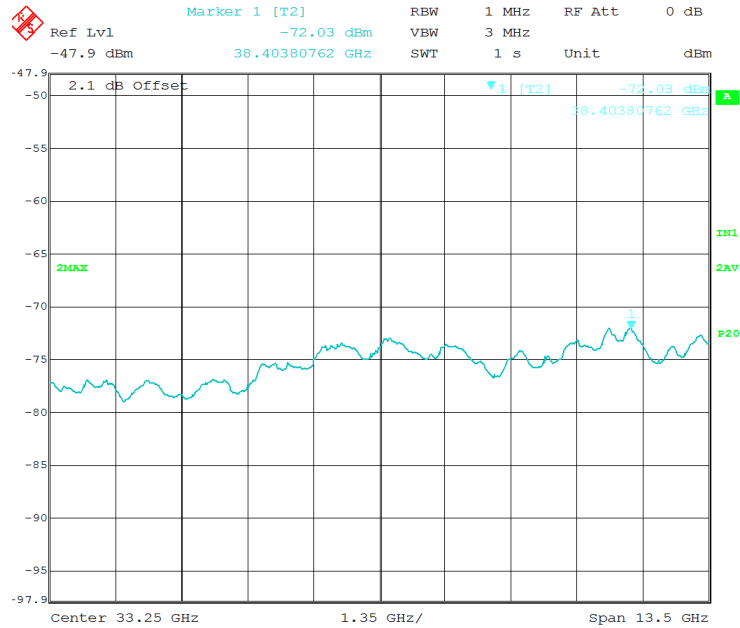


Figure 83: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Average

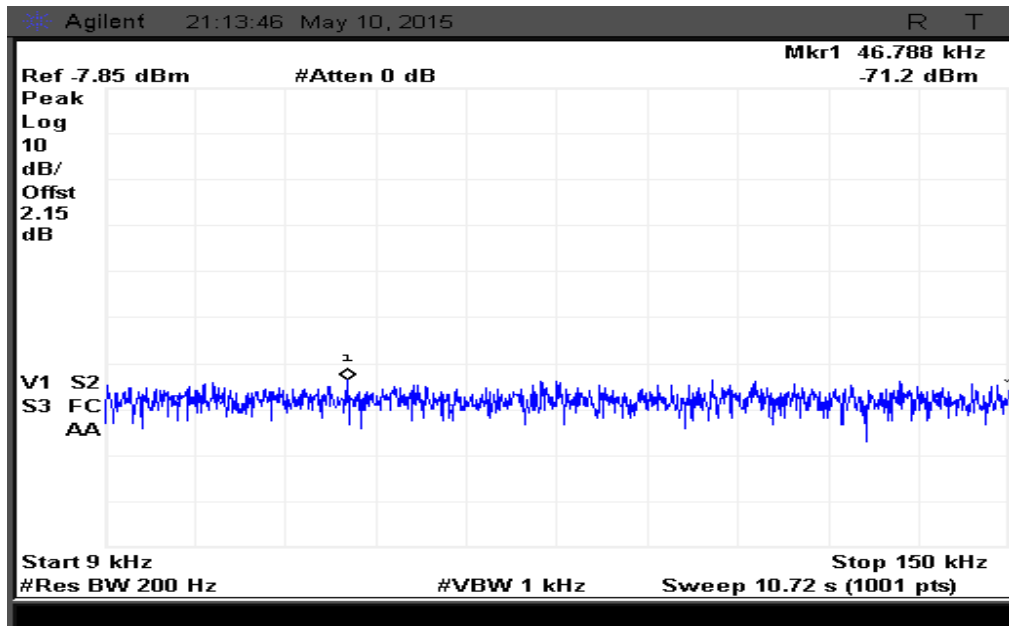


Figure 84: Spurious emission measured from 9 kHz to 150 kHz at Ch. 1-Peak

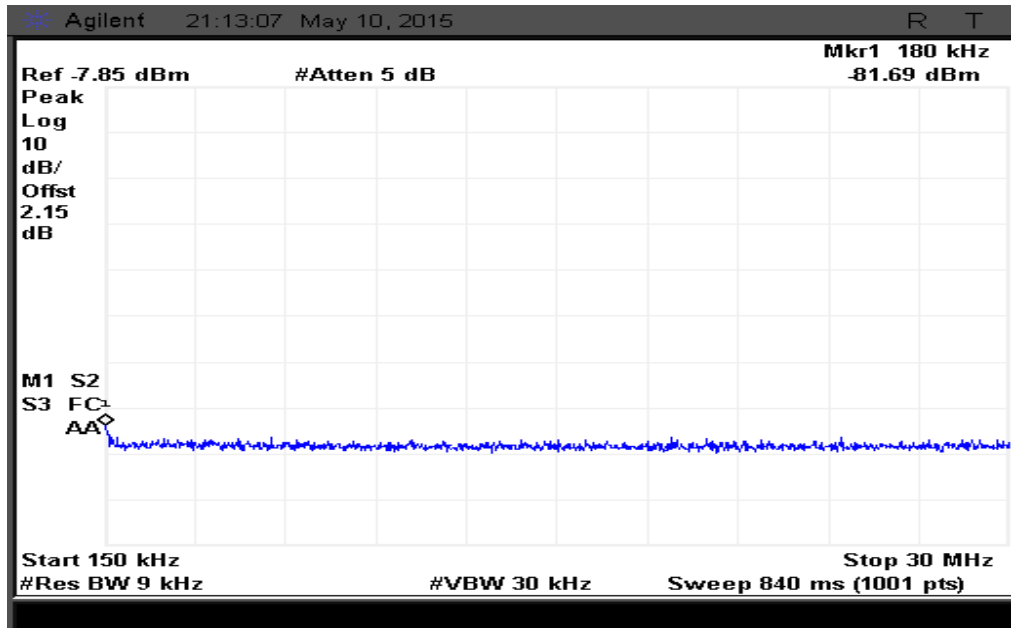


Figure 85: Spurious emission measured from 150 kHz to 30 MHz at Ch. 1-Peak

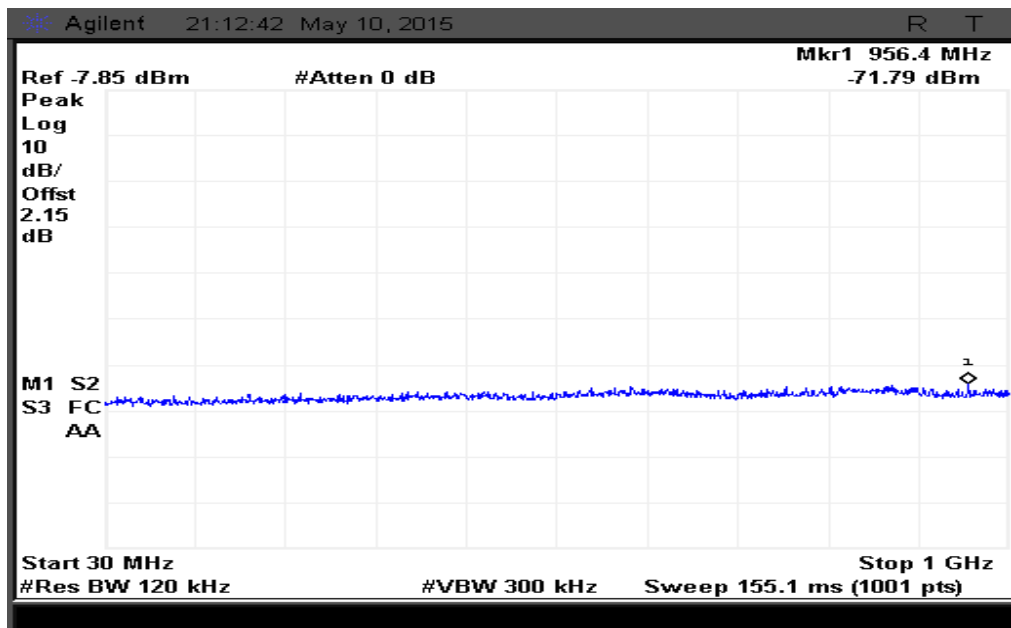


Figure 86: Spurious emission measured from 30 MHz to 1 GHz at Ch. 1-Peak



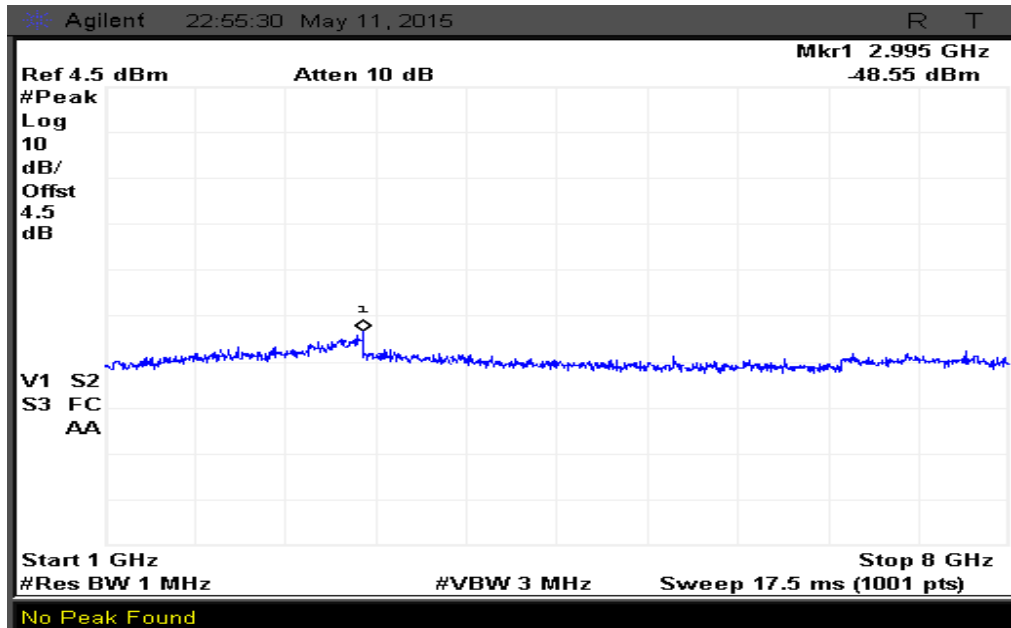


Figure 87: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Peak

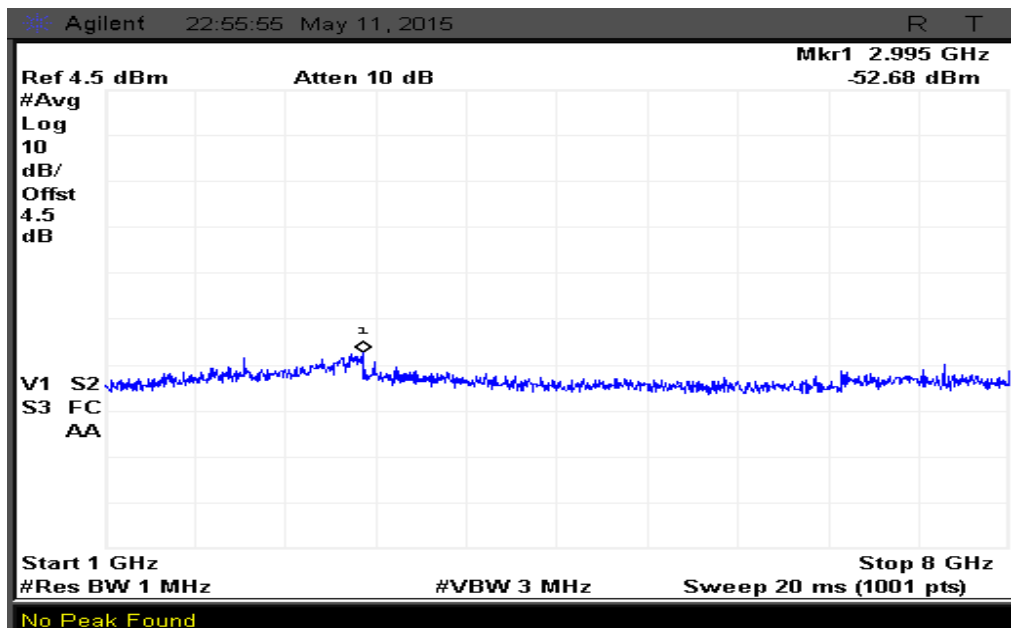


Figure 88: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Average

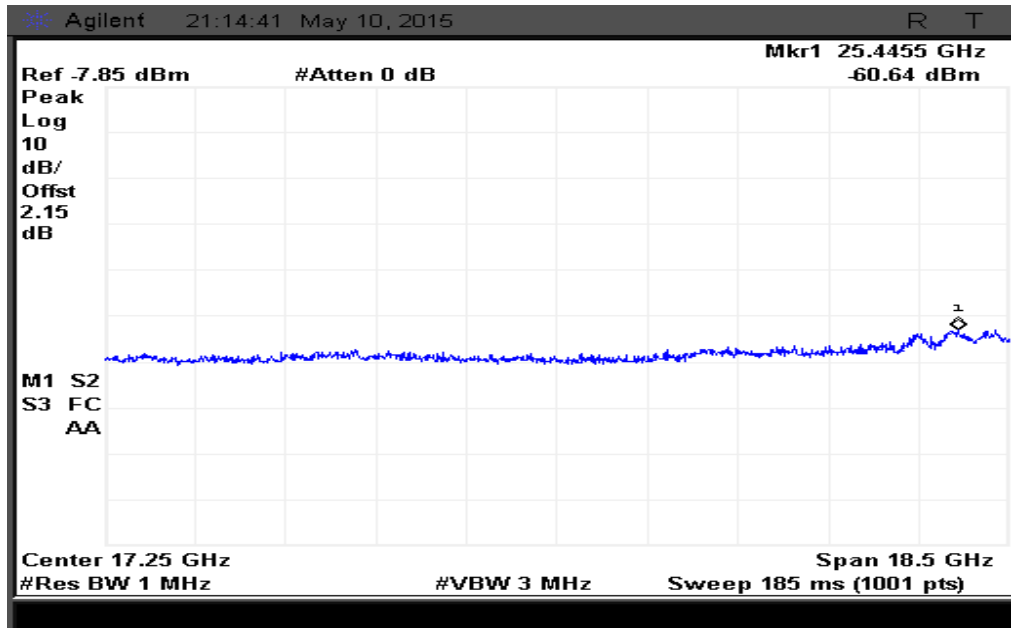


Figure 89: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Peak

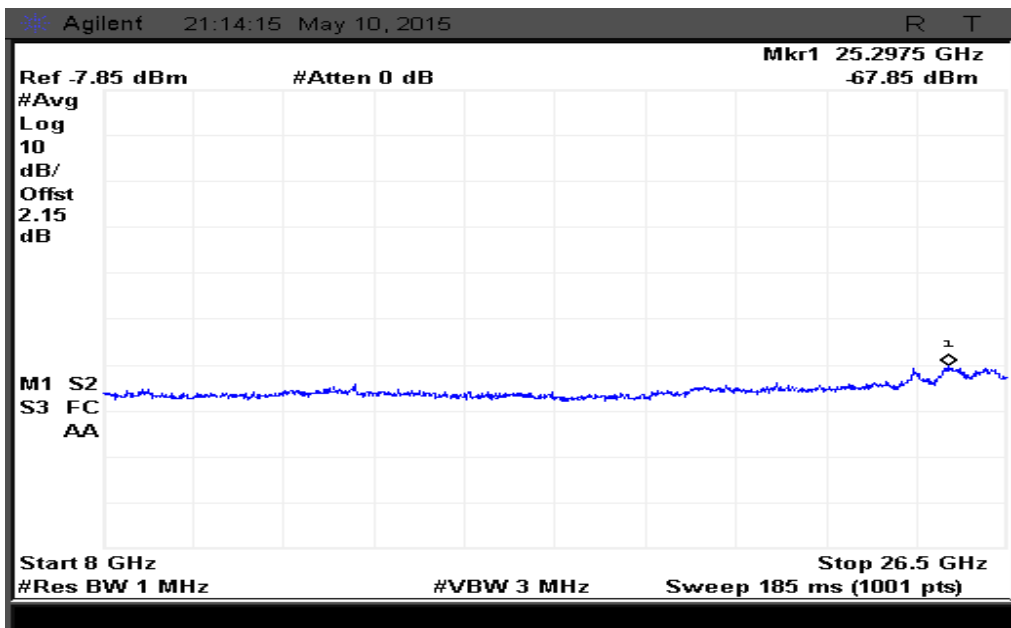
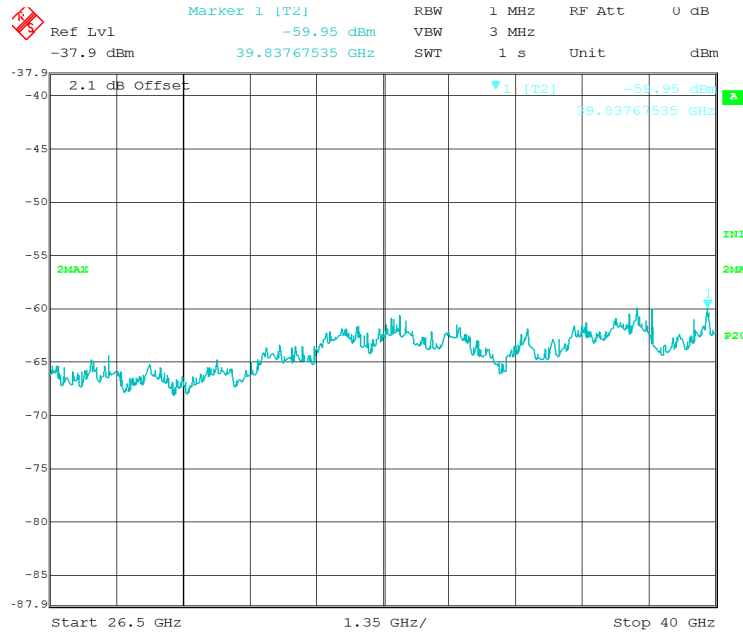
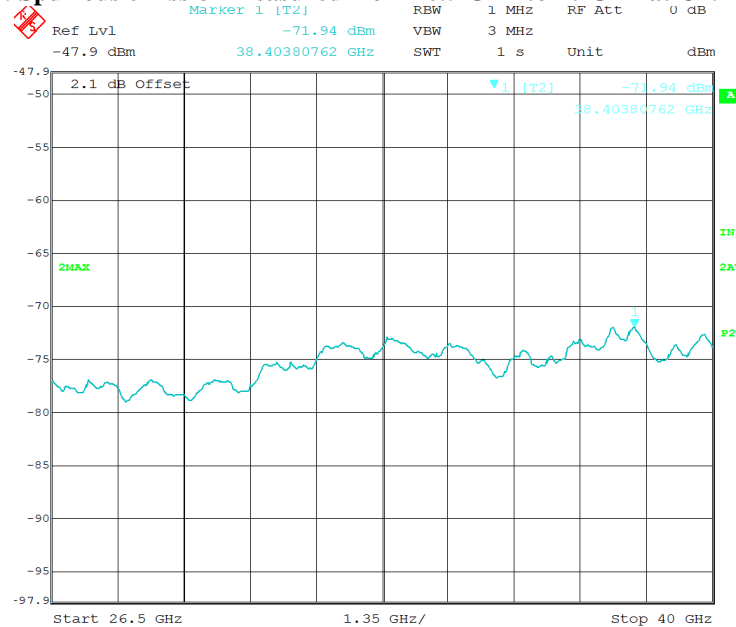


Figure 90: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Average



**Figure 91: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Average**



**Figure 92: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Peak**

### 5.3.1.5.6 10MHz MODULATION BW - HIGH CHANNEL\_5335 MHz

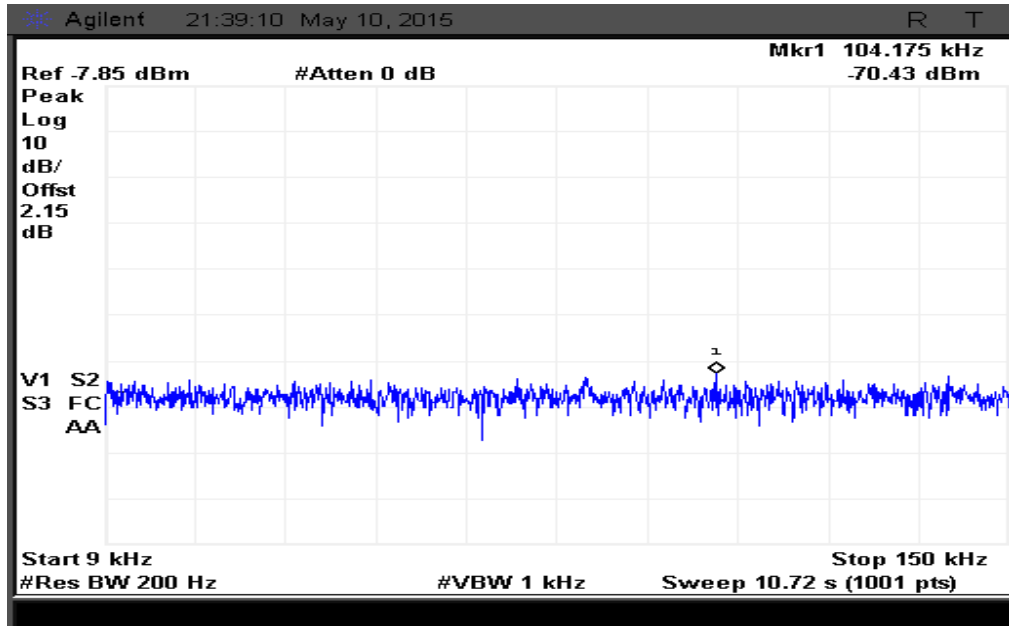


Figure 93: Spurious emission measured from 9 kHz to 150 kHz at Ch. 0-Peak

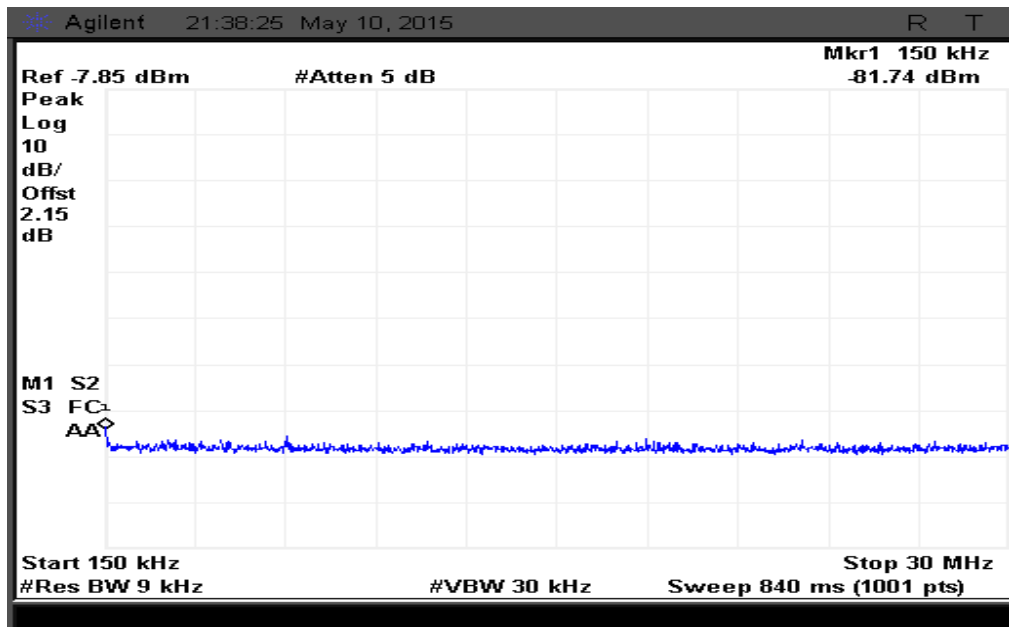


Figure 94: Spurious emission measured from 150 kHz to 30 MHz at Ch. 0-Peak

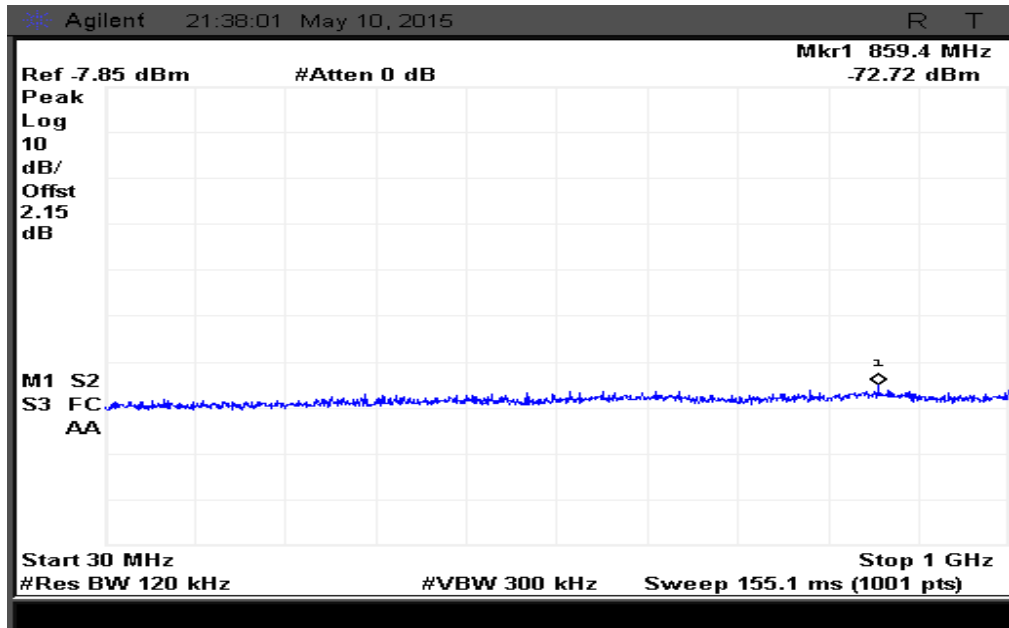


Figure 95: Spurious emission measured from 30 MHz to 1 GHz at Ch. 0-Peak

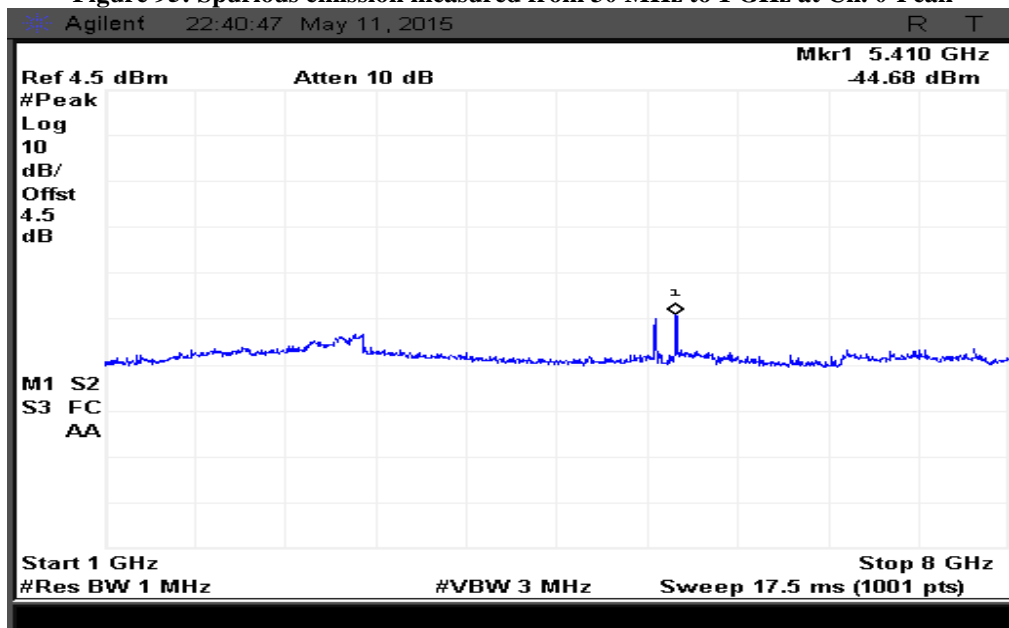


Figure 96: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Peak

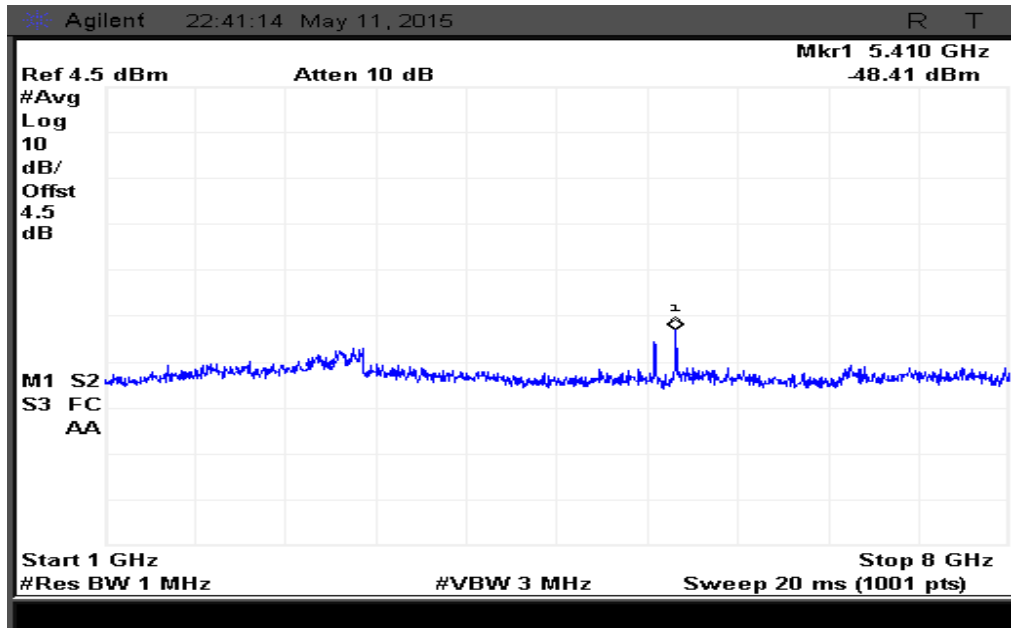


Figure 97: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Average

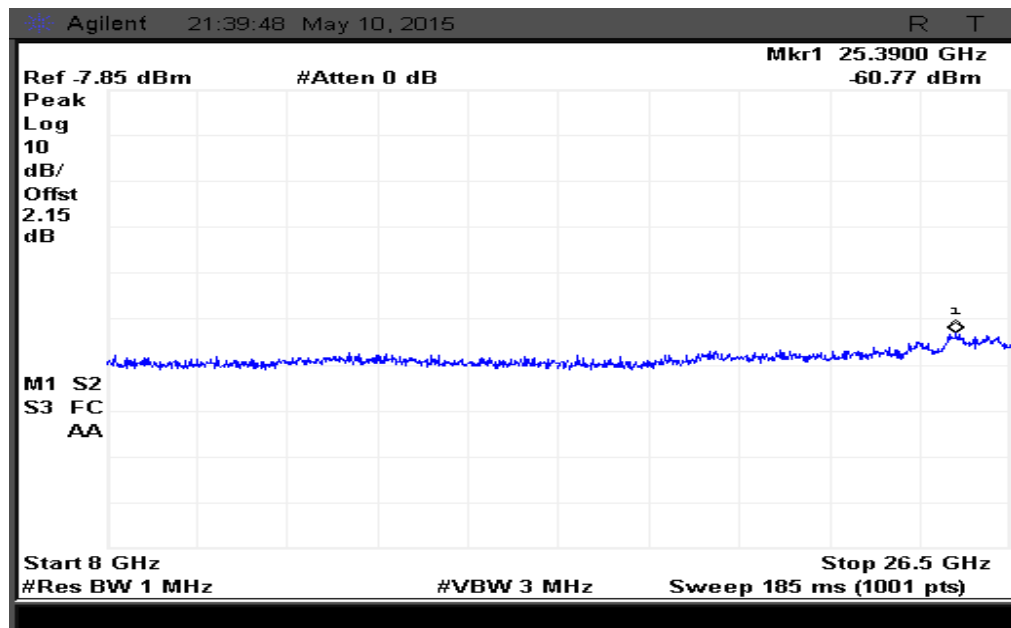


Figure 98: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Peak

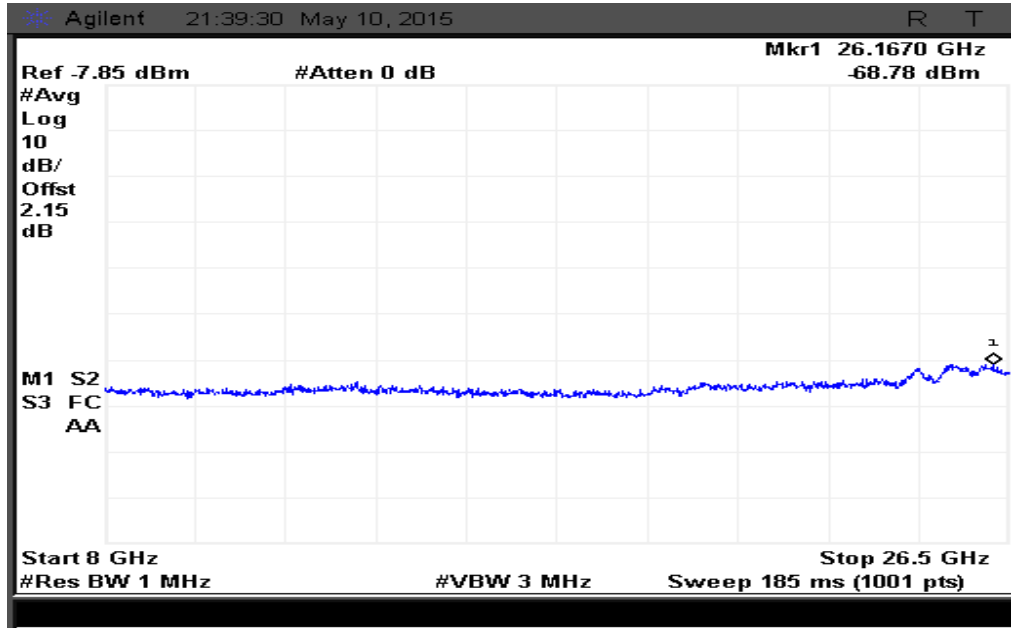


Figure 99: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Average

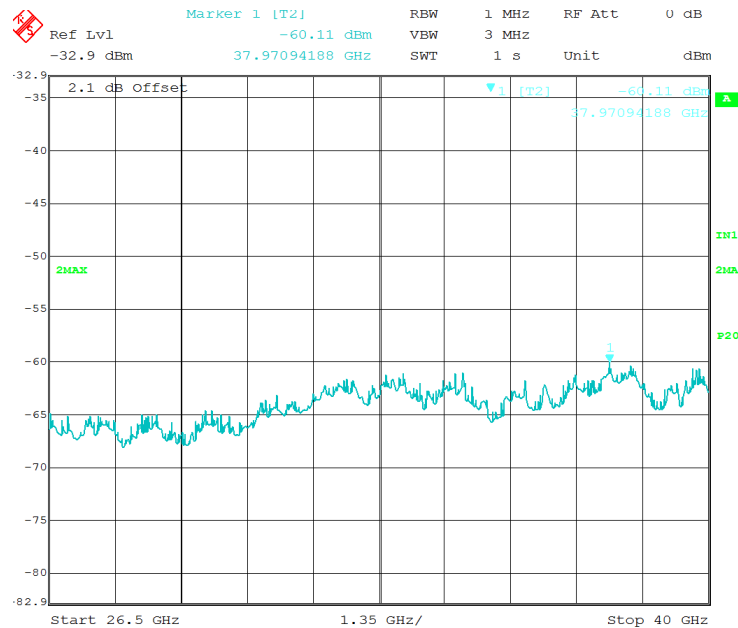


Figure 100: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Peak

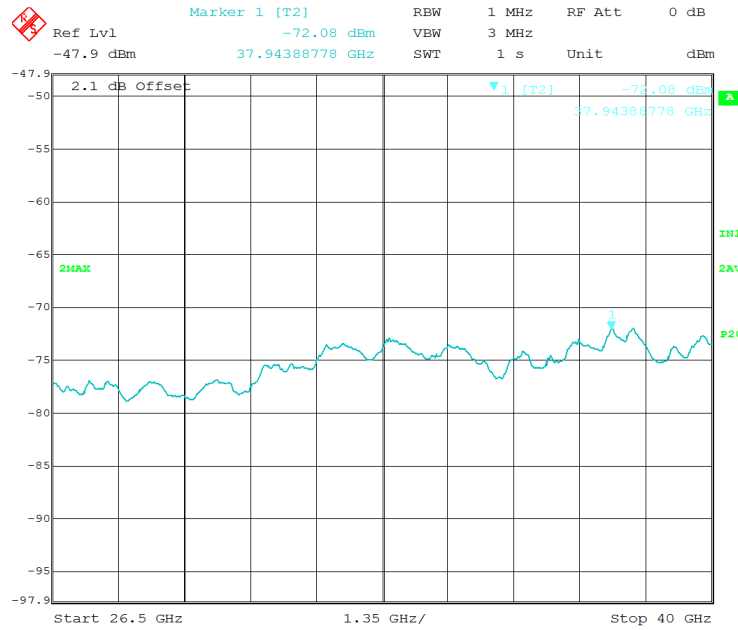


Figure 101: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Average

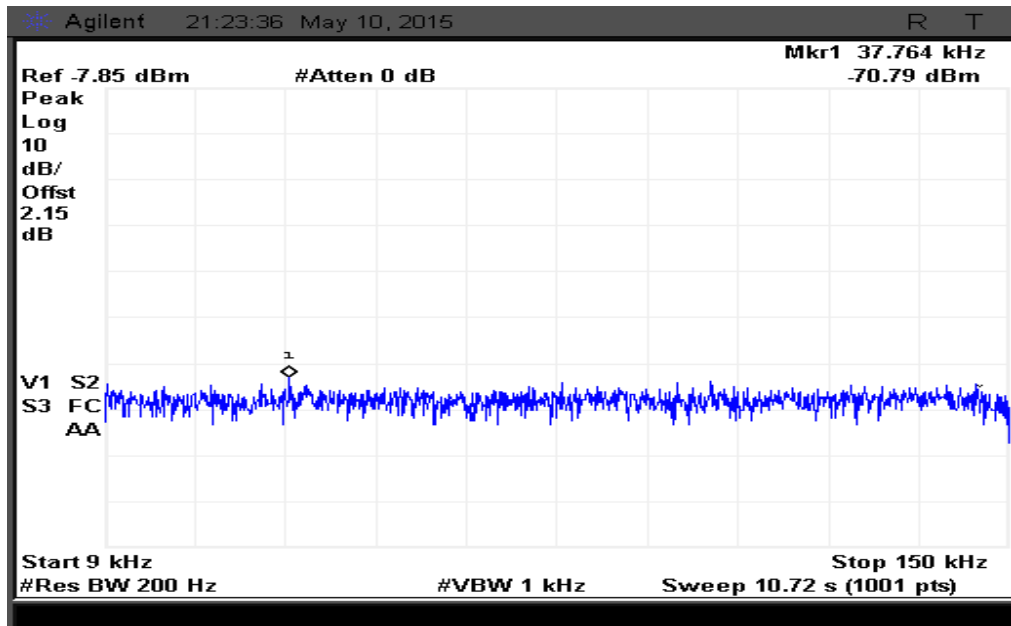


Figure 102: Spurious emission measured from 9 kHz to 150 kHz at Ch. 1-Peak



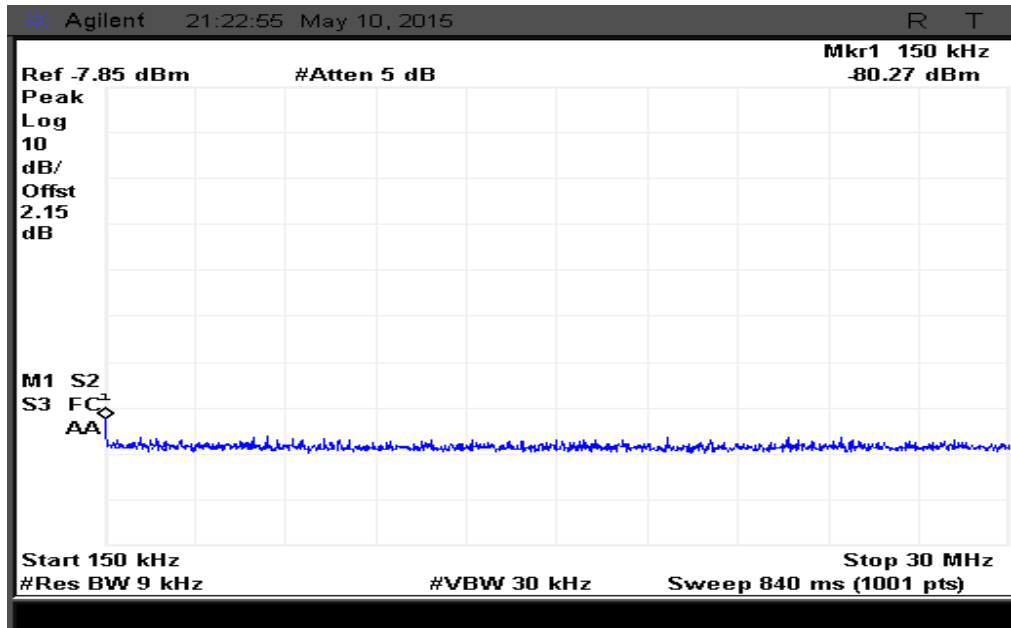


Figure 103: Spurious emission measured from 150 kHz to 30 MHz at Ch. 1-Peak

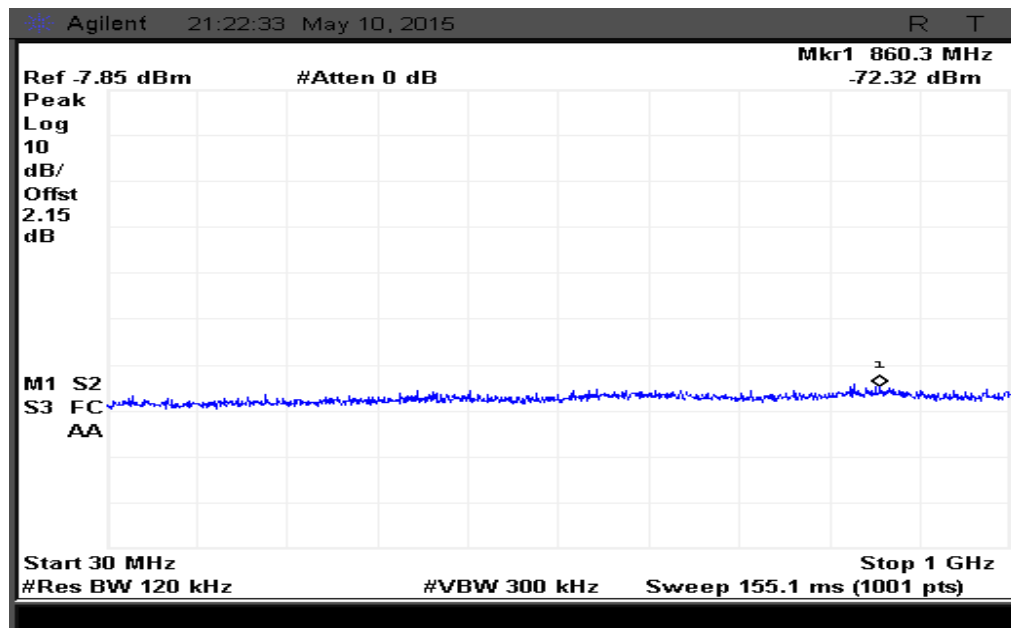


Figure 104: Spurious emission measured from 30 MHz to 1 GHz at Ch. 1-Peak

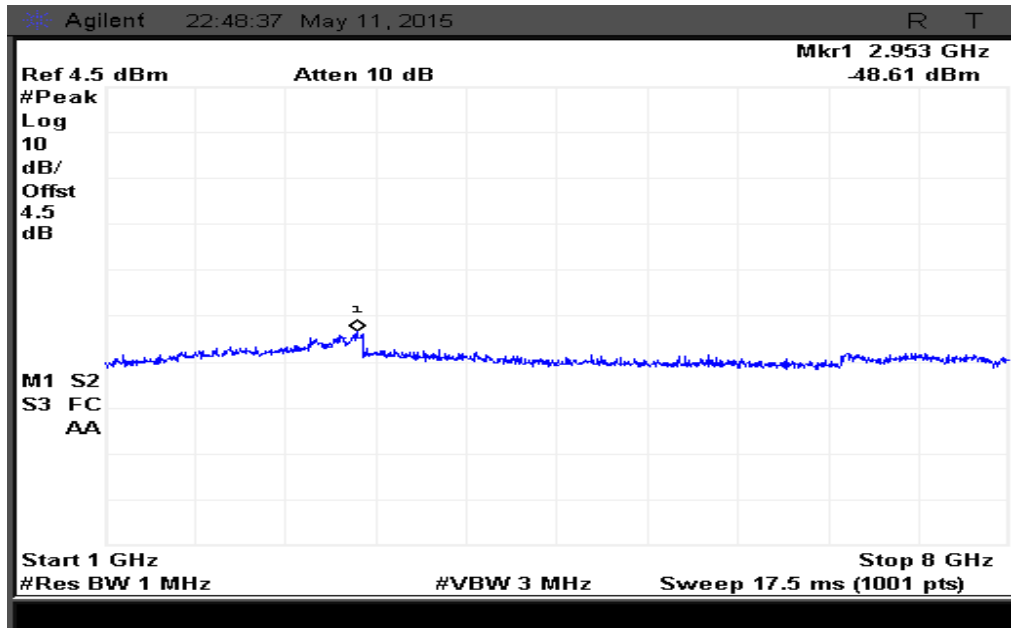


Figure 105: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Peak

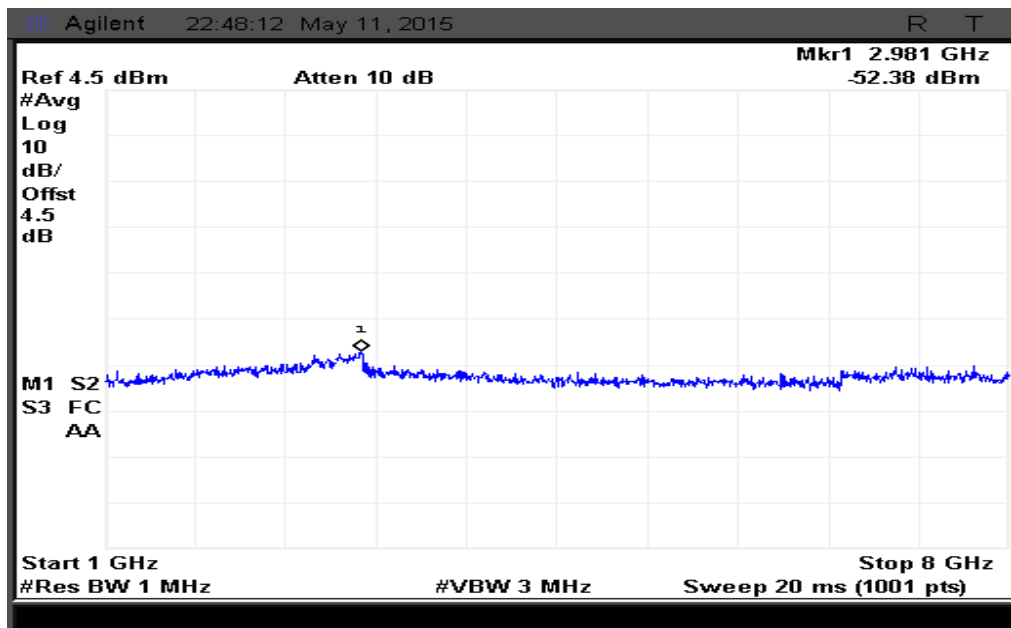


Figure 106: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Average

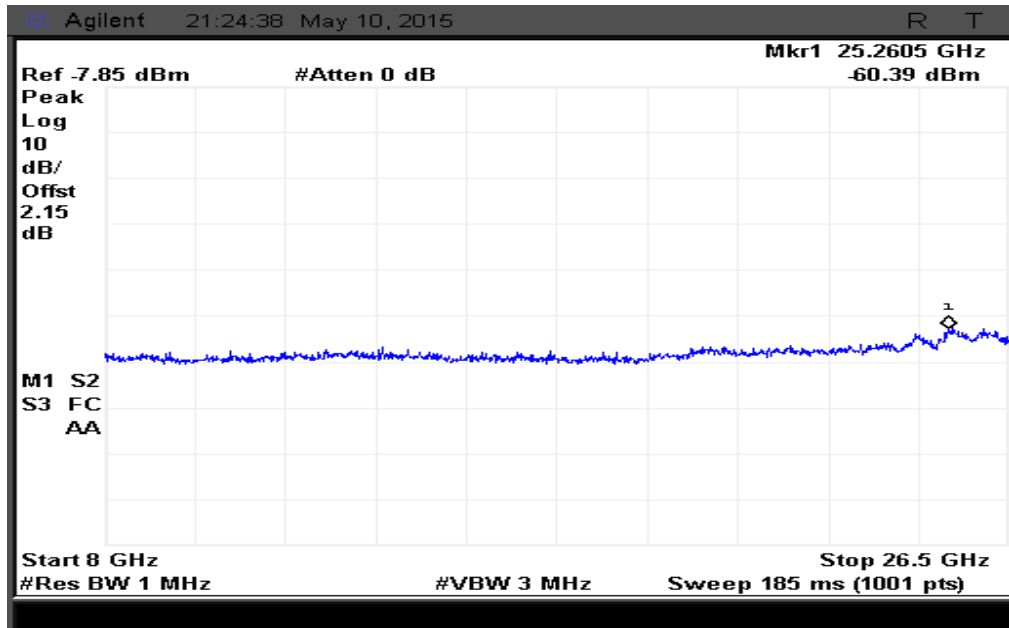


Figure 107: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Peak

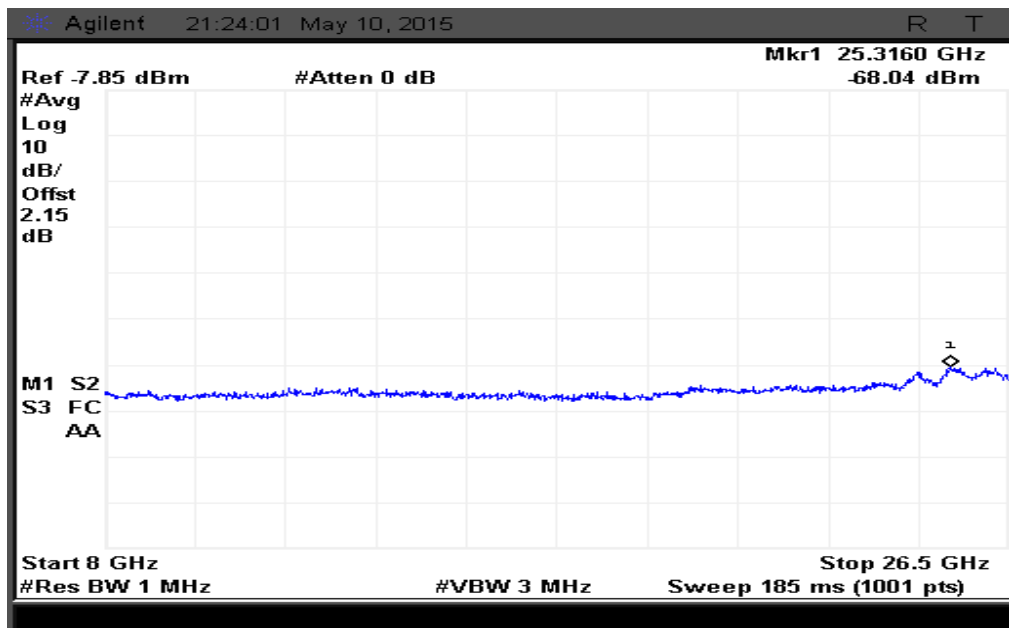
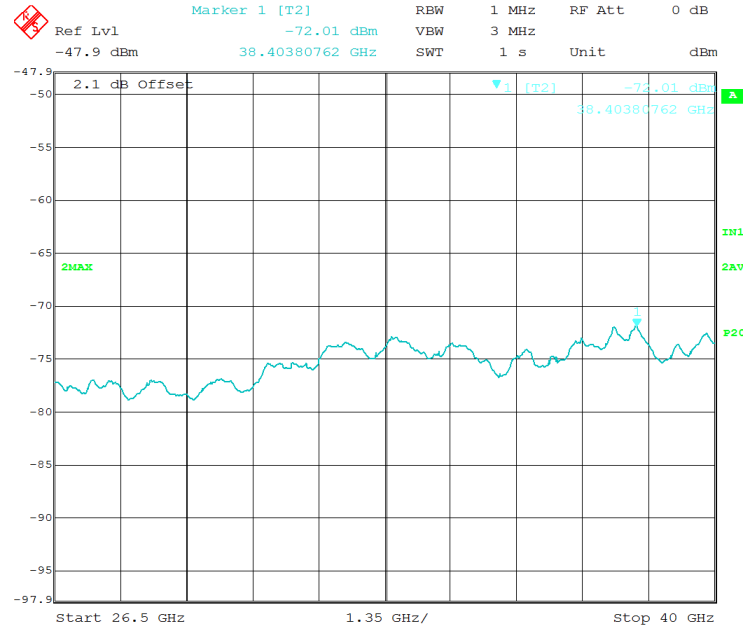
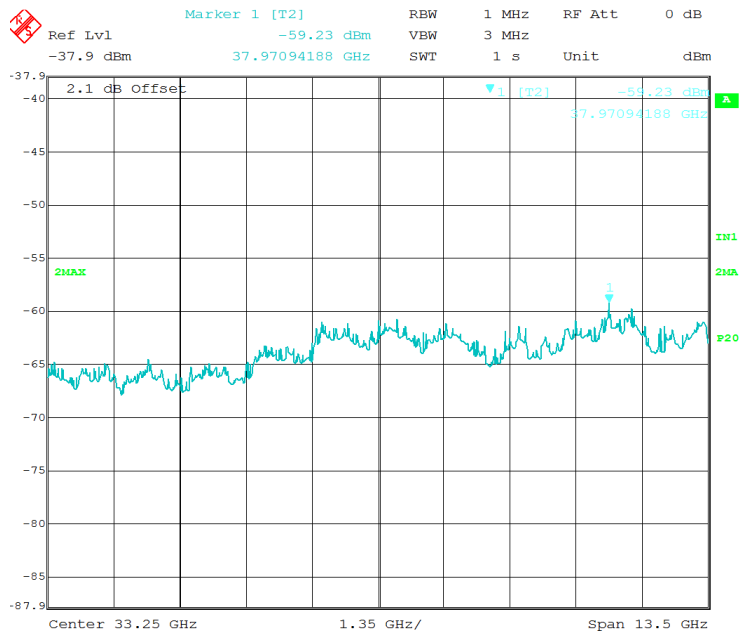


Figure 108: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Average



**Figure 109: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Average**



**Figure 110: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Peak**

### 5.3.1.6 RESULT (SUPPORTING GRAPHS / DATA) FOR 17DBI ANTENNA CONDITION

#### 5.3.1.6.1 40MHz MODULATION BW - Low CHANNEL\_5280 MHz

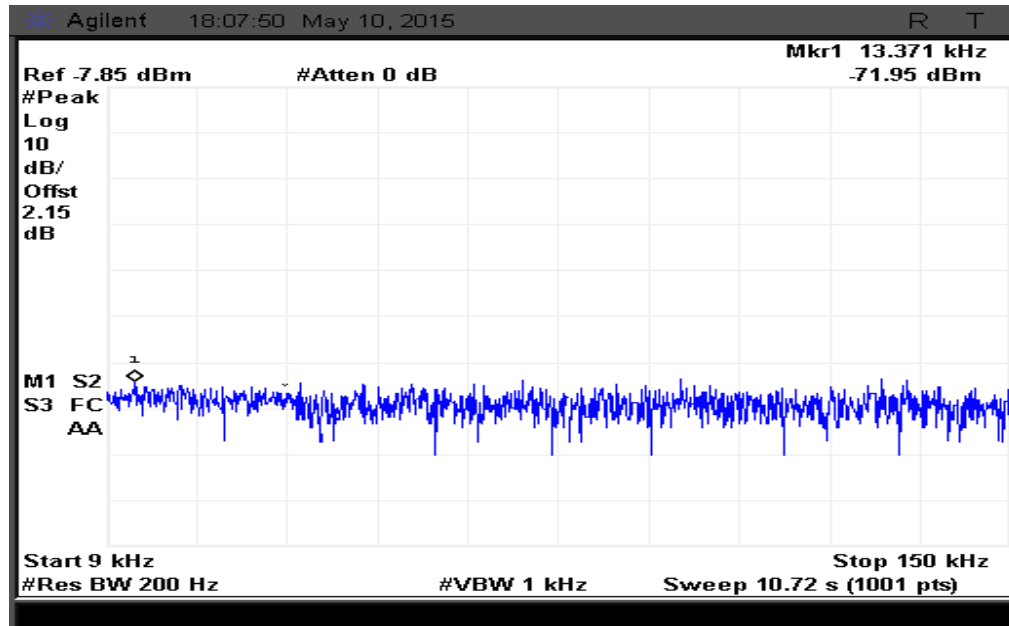


Figure 111: Spurious emission measured from 9 kHz to 150 kHz at Ch. 0-Peak

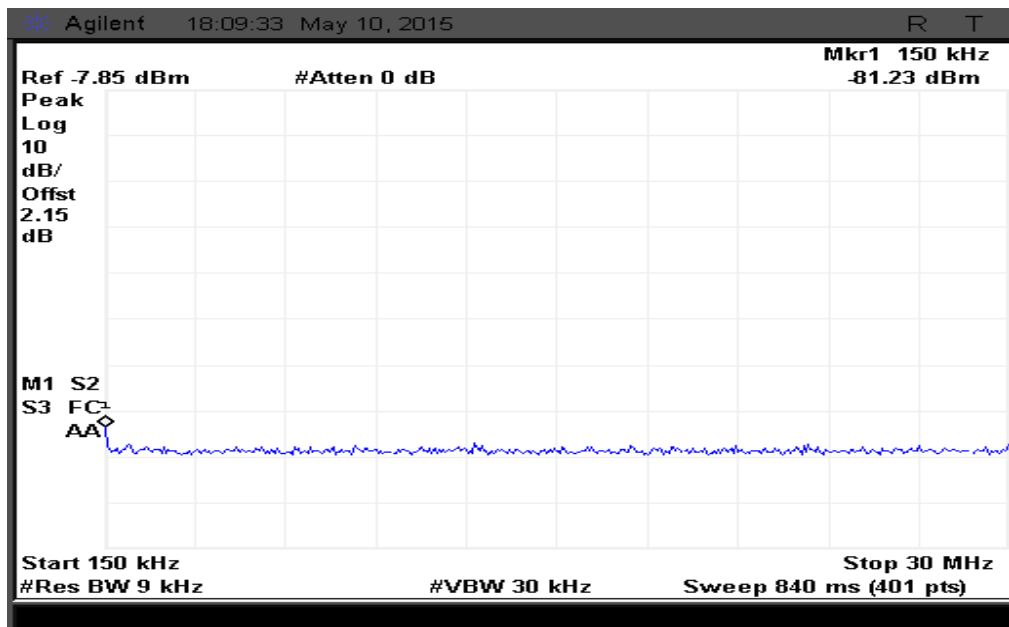


Figure 112: Spurious emission measured from 150 kHz to 30 MHz at Ch. 0-Peak

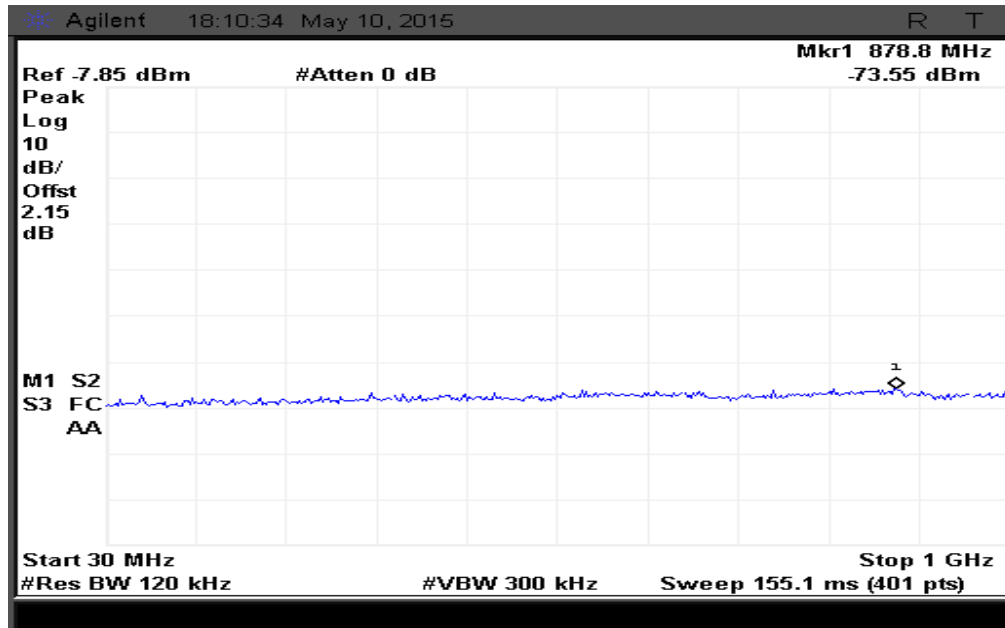


Figure 113: Spurious emission measured from 30 MHz to 1 GHz at Ch. 0-Peak

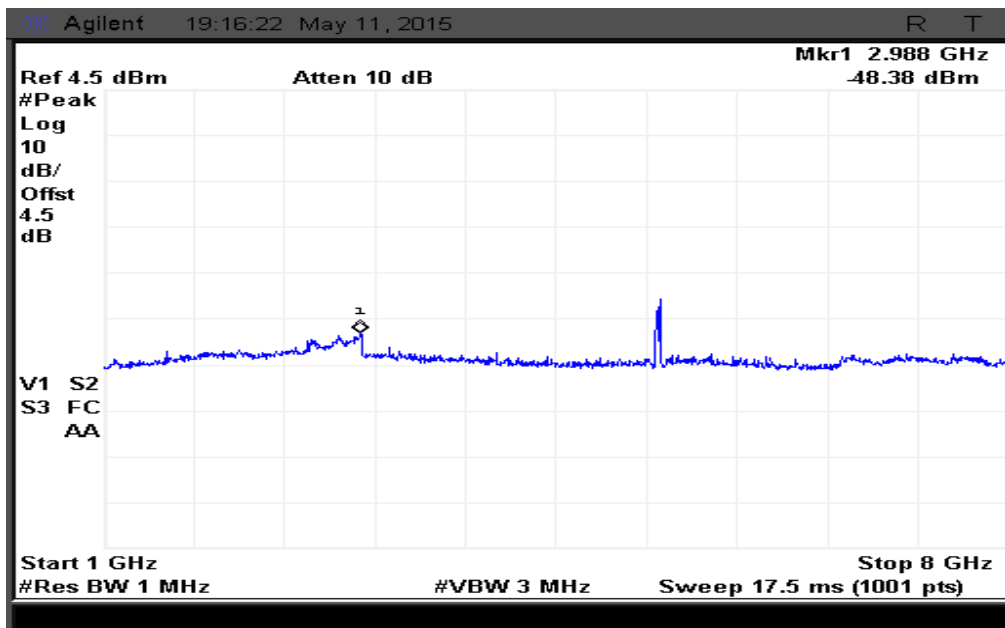


Figure 114: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Peak

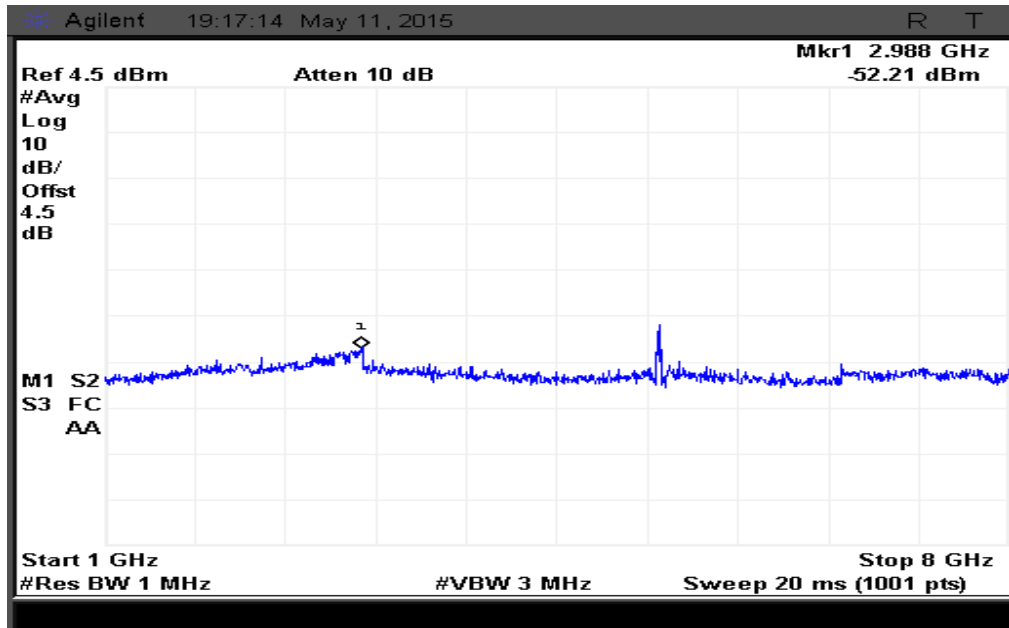


Figure 115: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Average

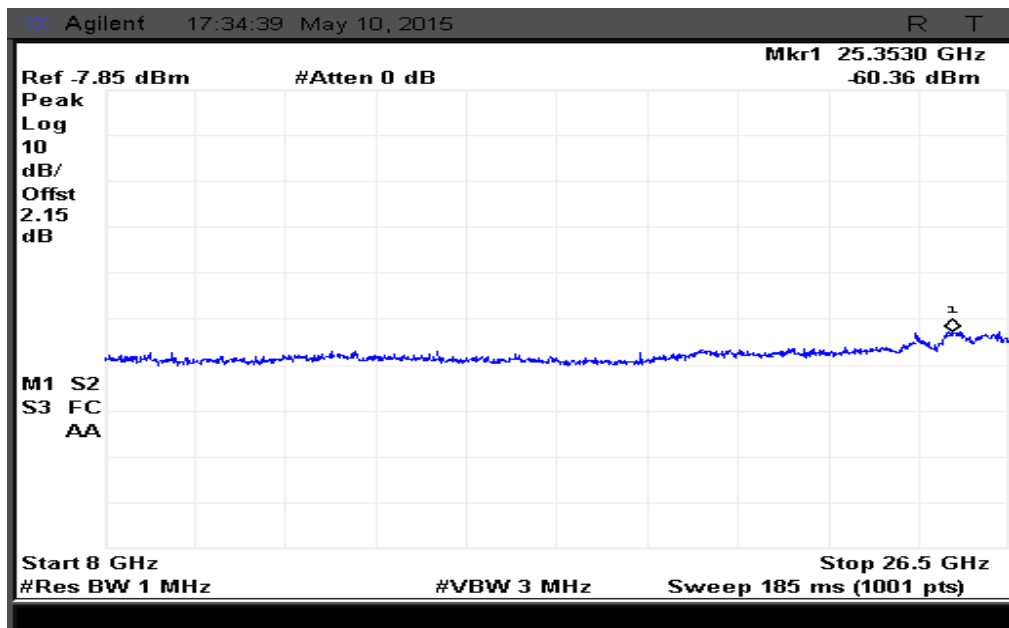


Figure 116: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Peak

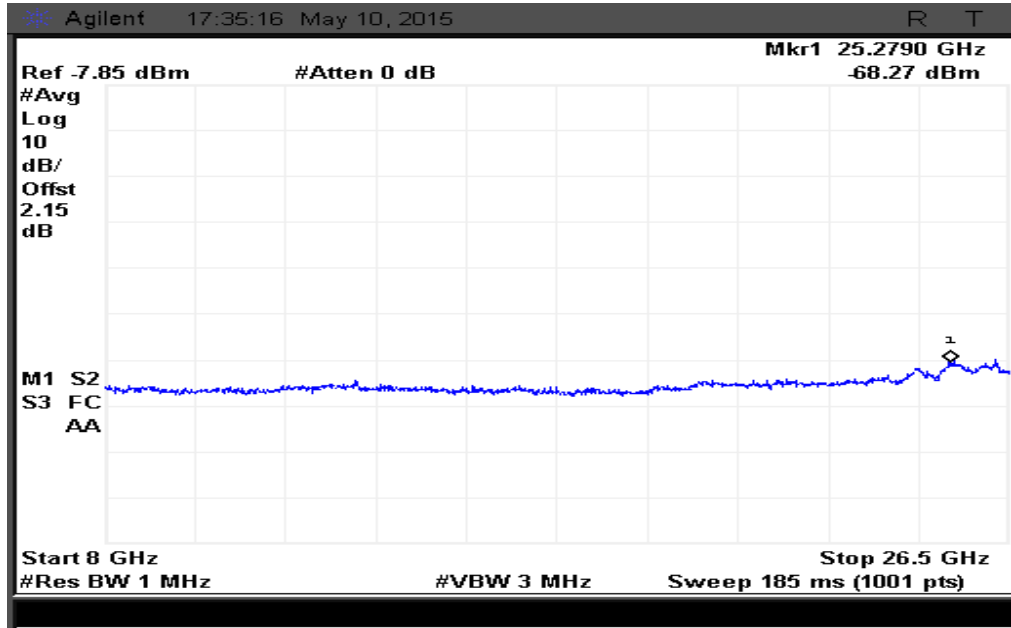


Figure 117: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Average

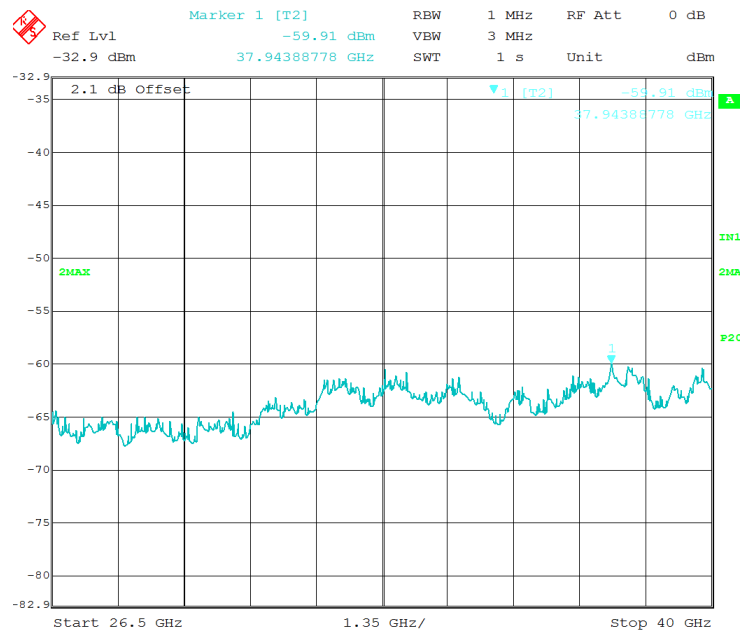


Figure 118: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Peak



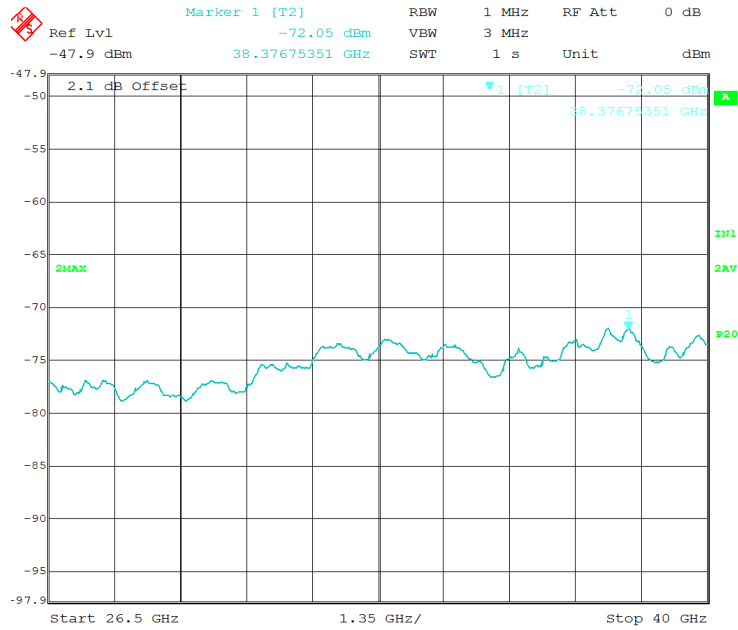


Figure 119: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Avg

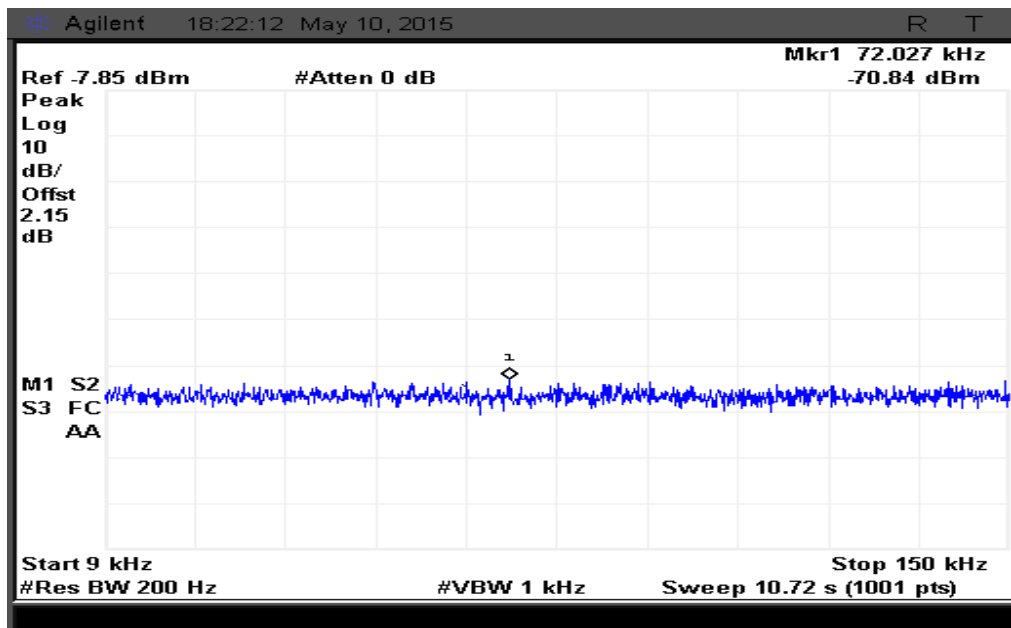


Figure 120: Spurious emission measured from 9 kHz to 150 kHz at Ch. 1-Peak

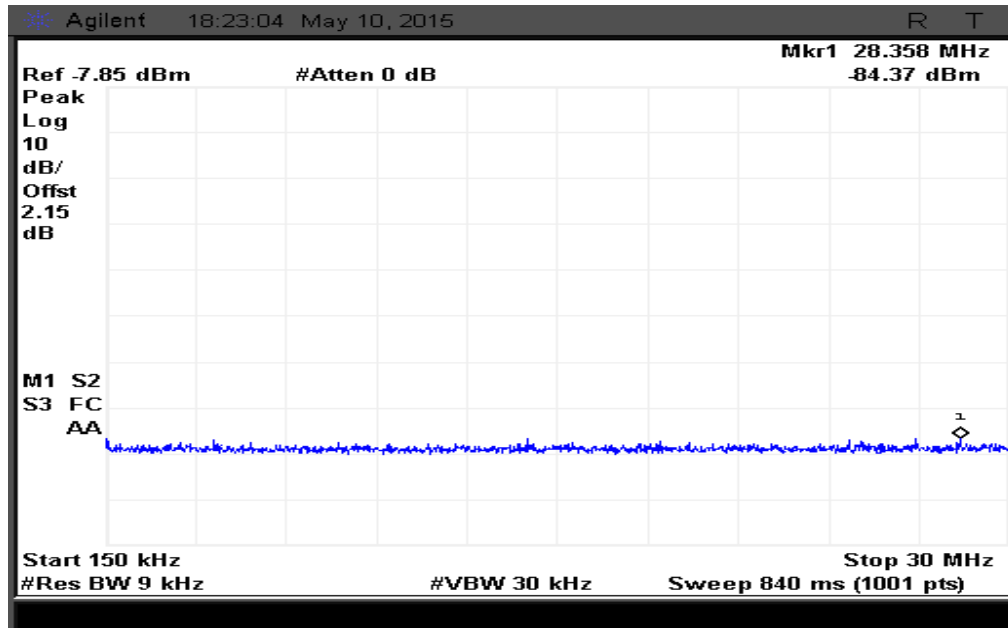


Figure 121: Spurious emission measured from 150 kHz to 30 MHz at Ch. 1-Peak

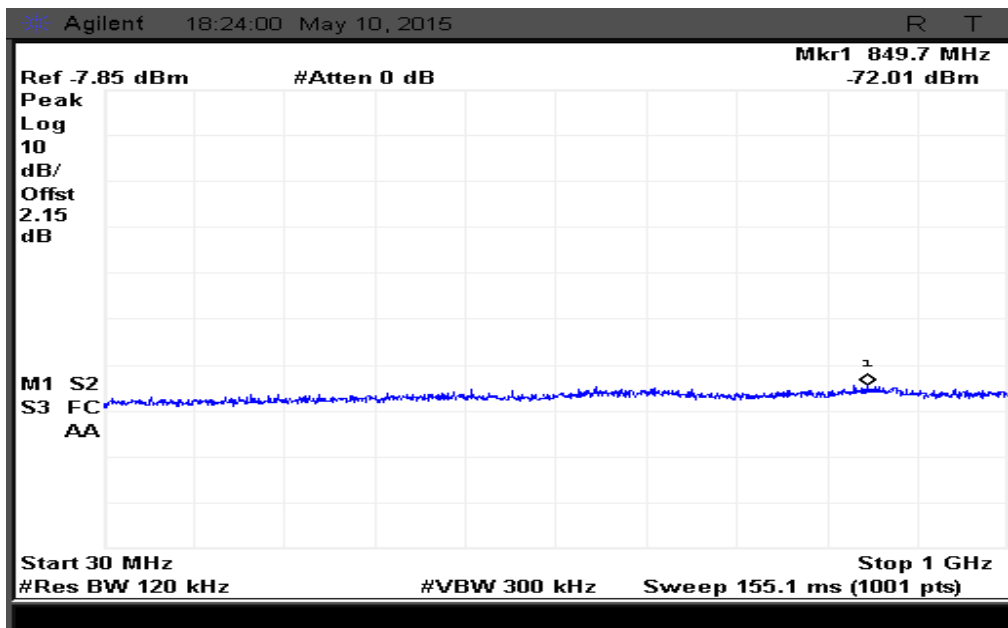


Figure 122: Spurious emission measured from 30 MHz to 1 GHz at Ch. 1-Peak

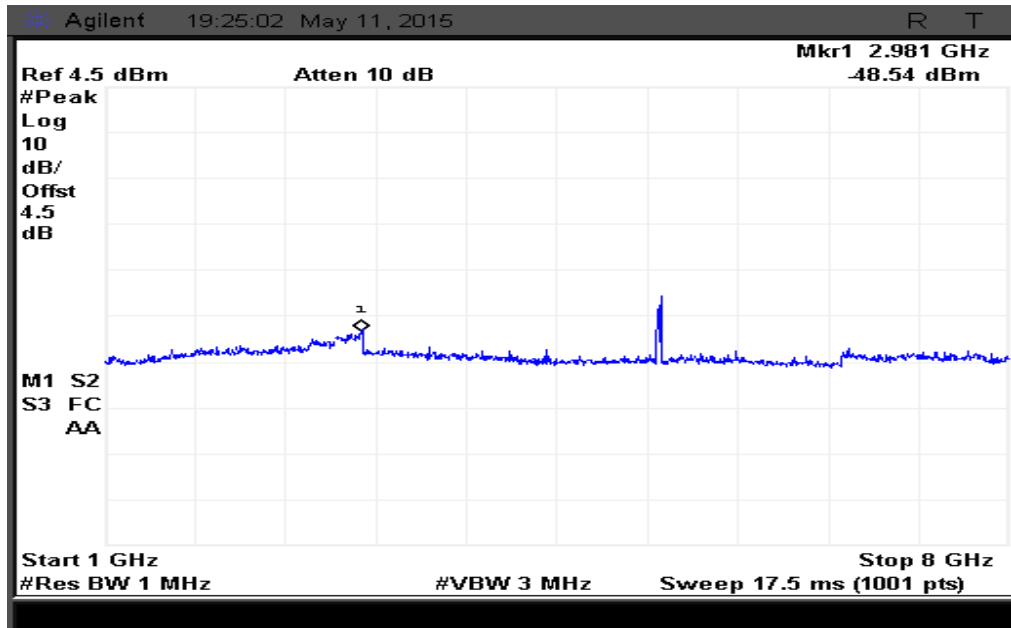


Figure 123: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Peak

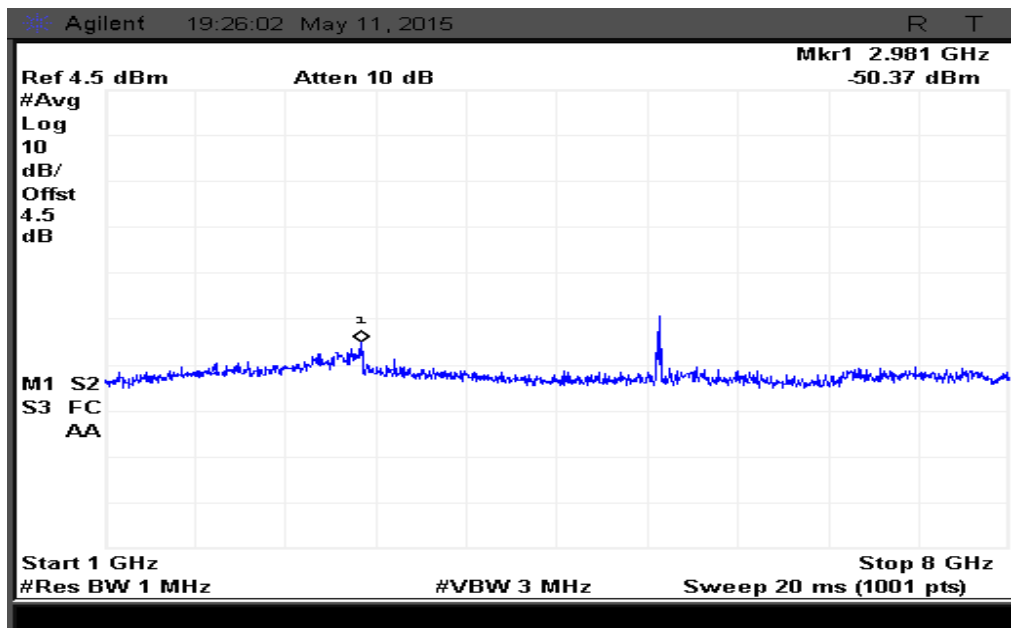


Figure 124: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Average

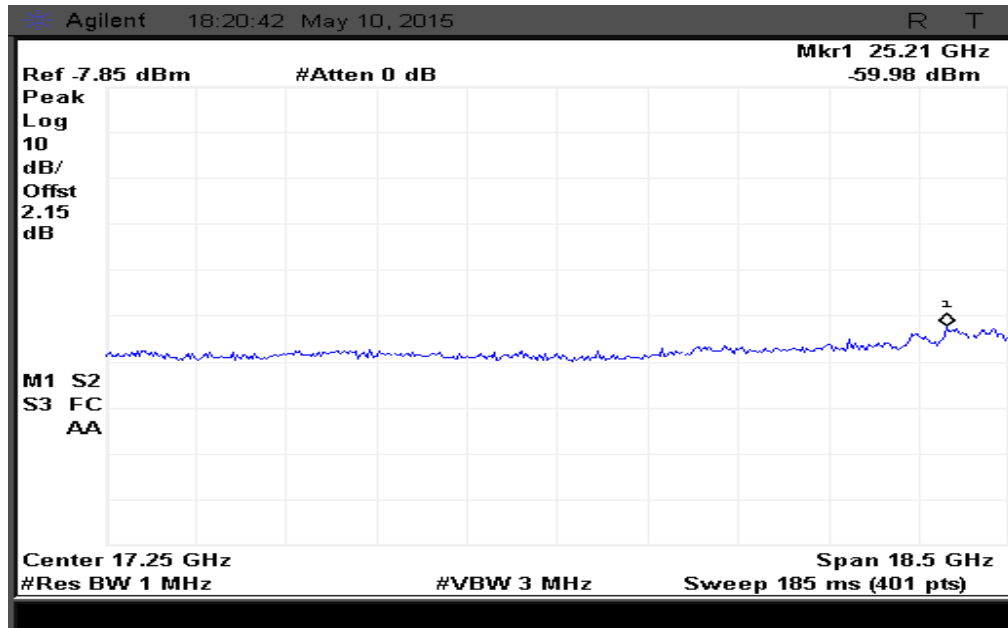


Figure 125: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Peak

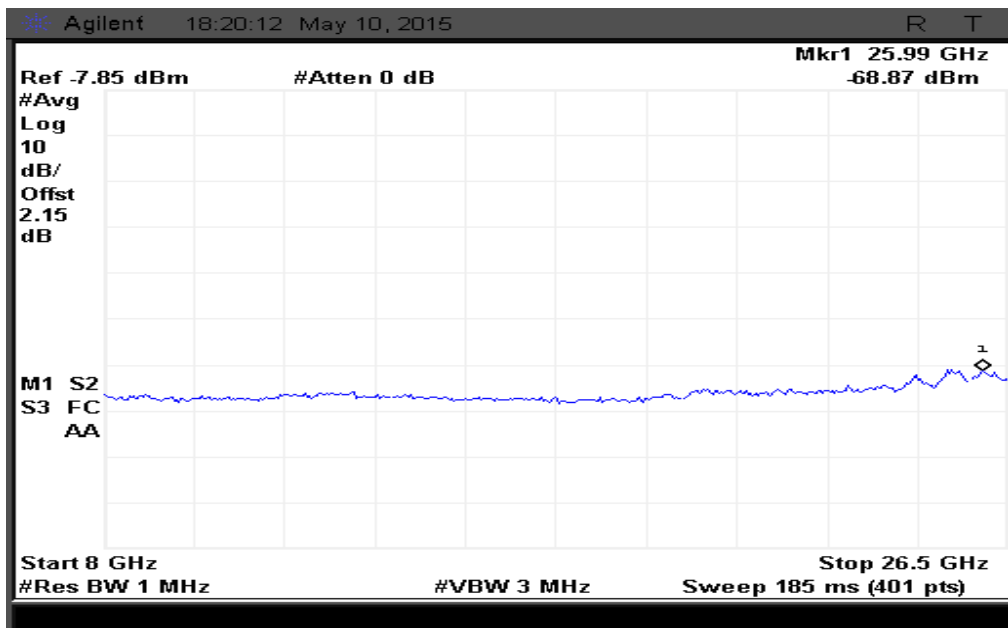
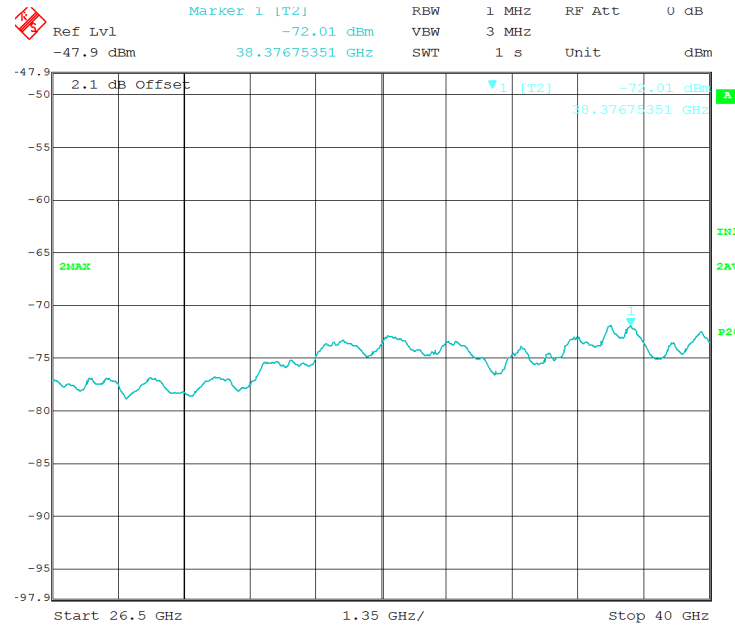


Figure 126: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Average



**Figure 127: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Average**



**Figure 128: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Peak**

### 5.3.1.6.2 40MHz MODULATION BW - MID CHANNEL\_5300 MHz

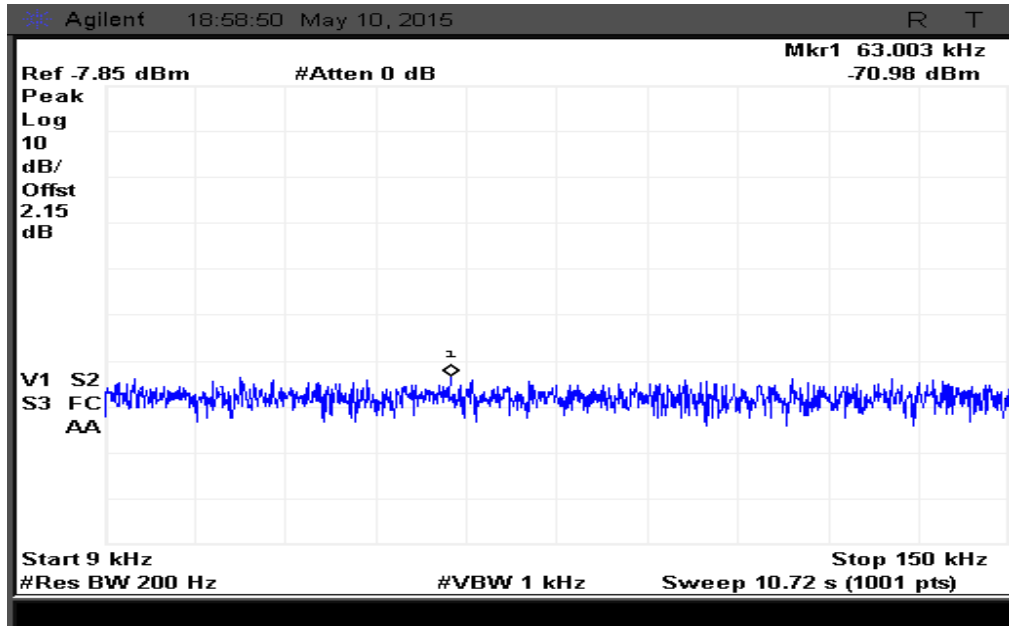


Figure 129: Spurious emission measured from 9 kHz to 150 kHz at Ch. 0-Peak

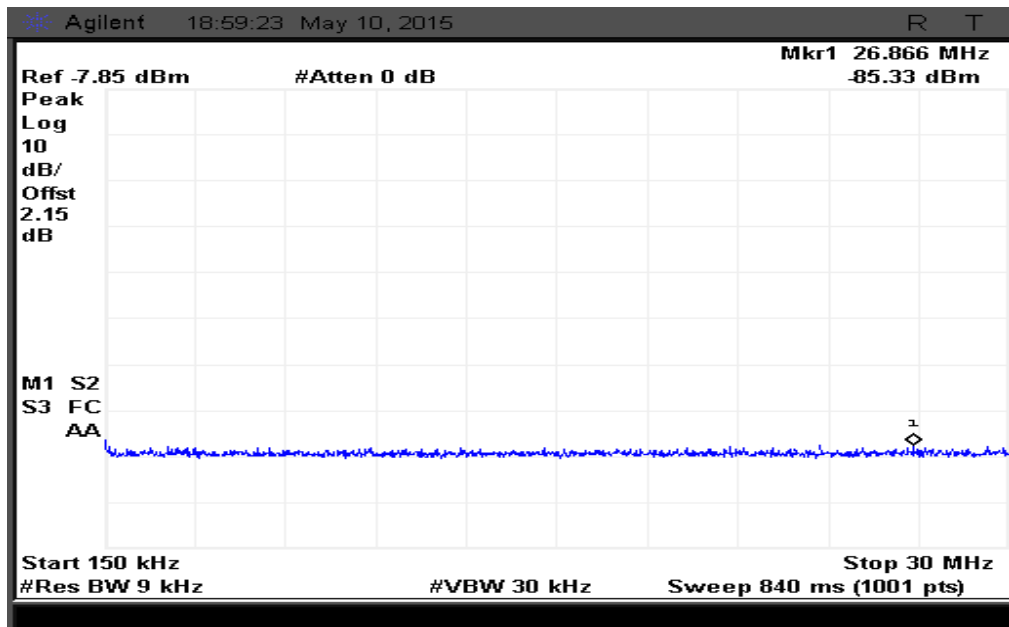


Figure 130: Spurious emission measured from 150 kHz to 30 MHz at Ch. 0-Peak

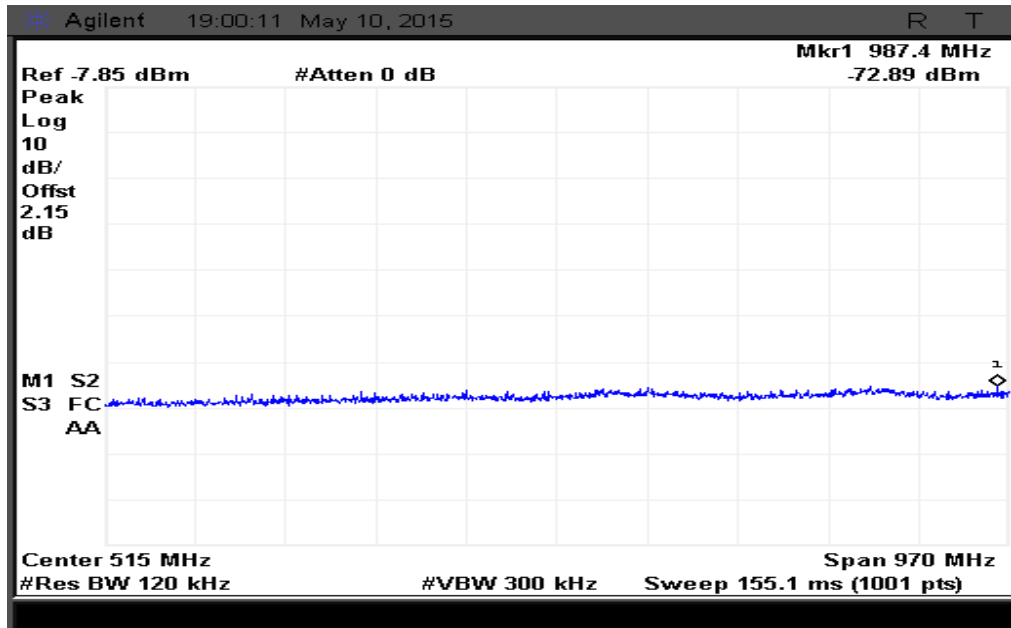


Figure 131: Spurious emission measured from 30 MHz to 1 GHz at Ch. 0-Peak

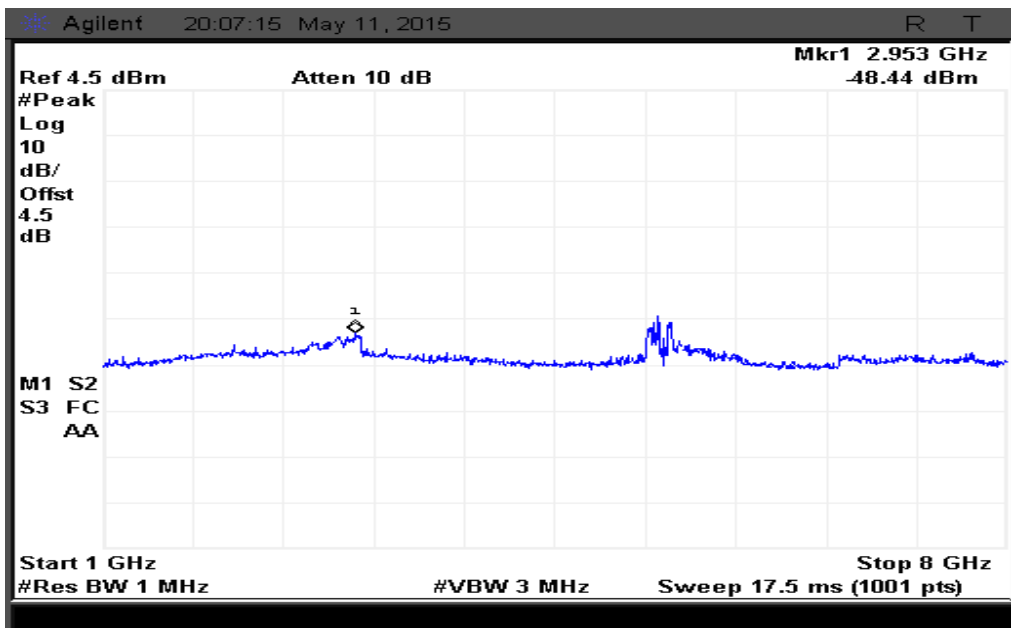


Figure 132: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Peak

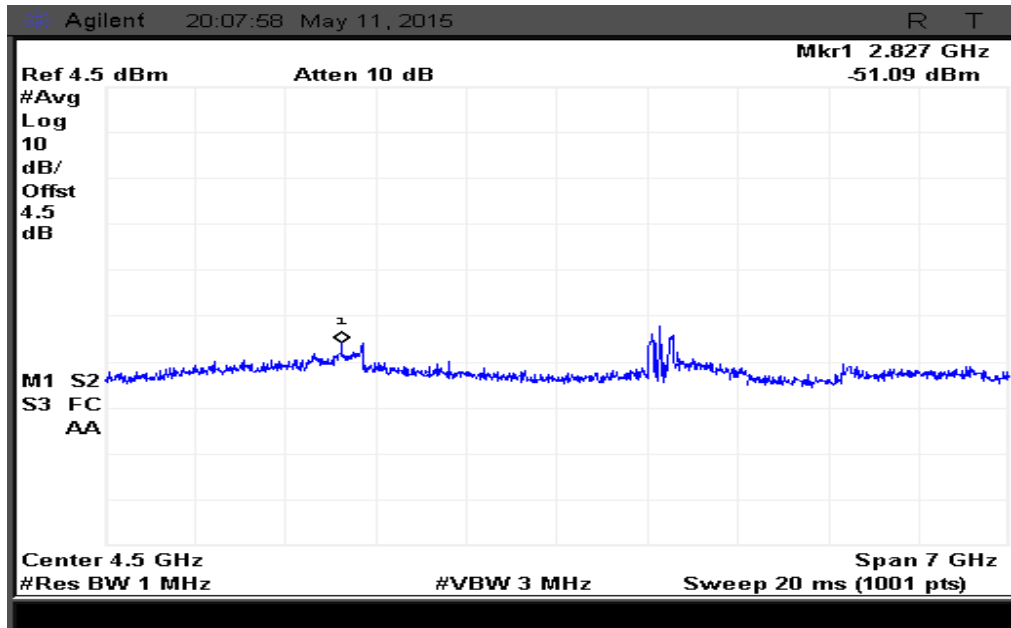


Figure 133: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Average

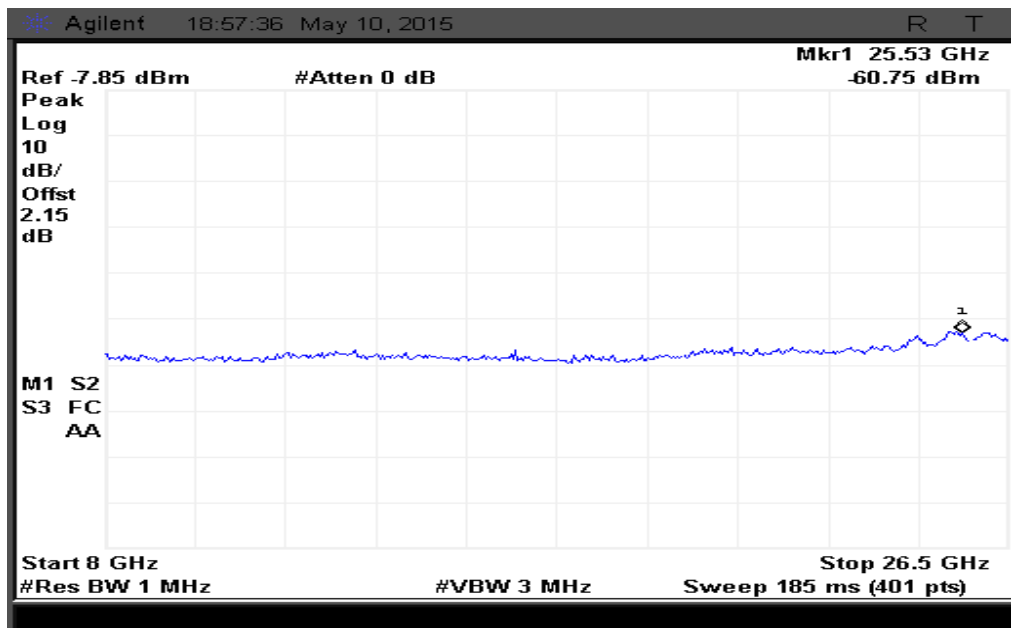


Figure 134: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Peak



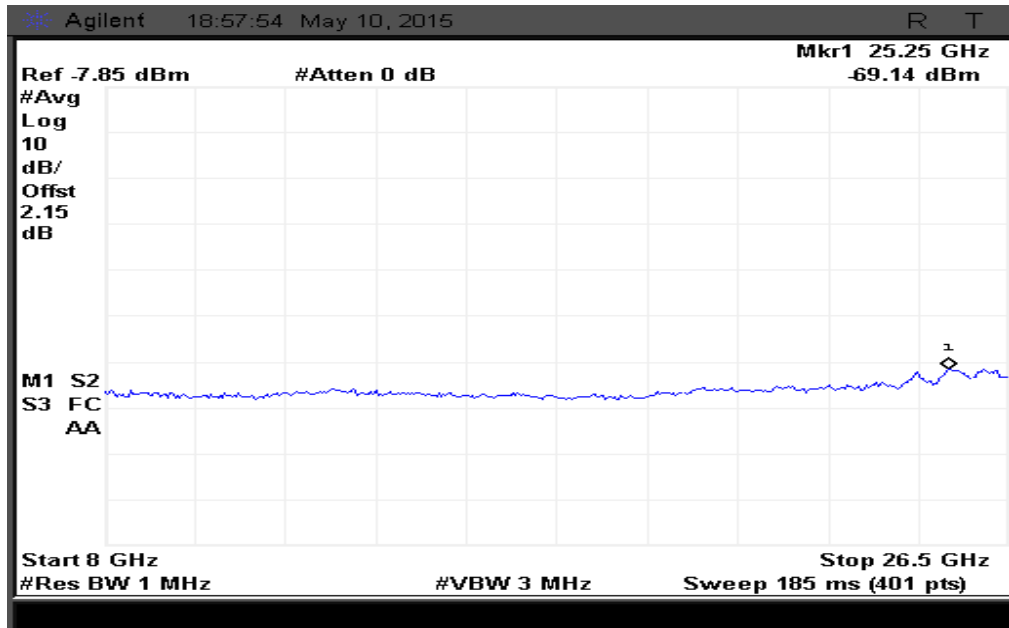


Figure 135: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Average

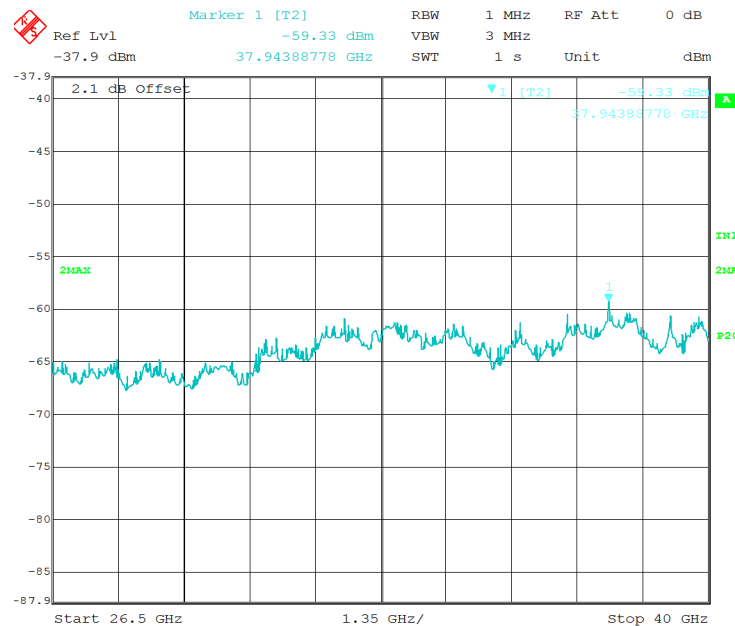


Figure 136: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Peak

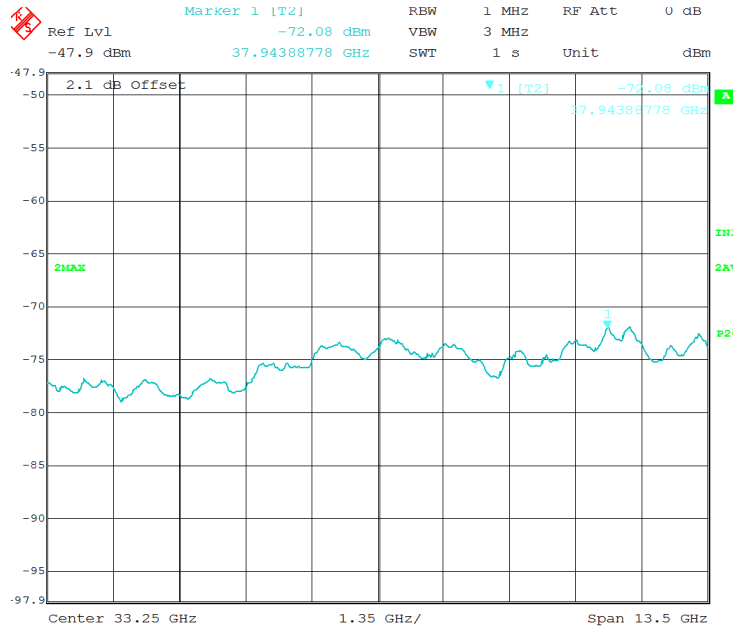


Figure 137: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Average

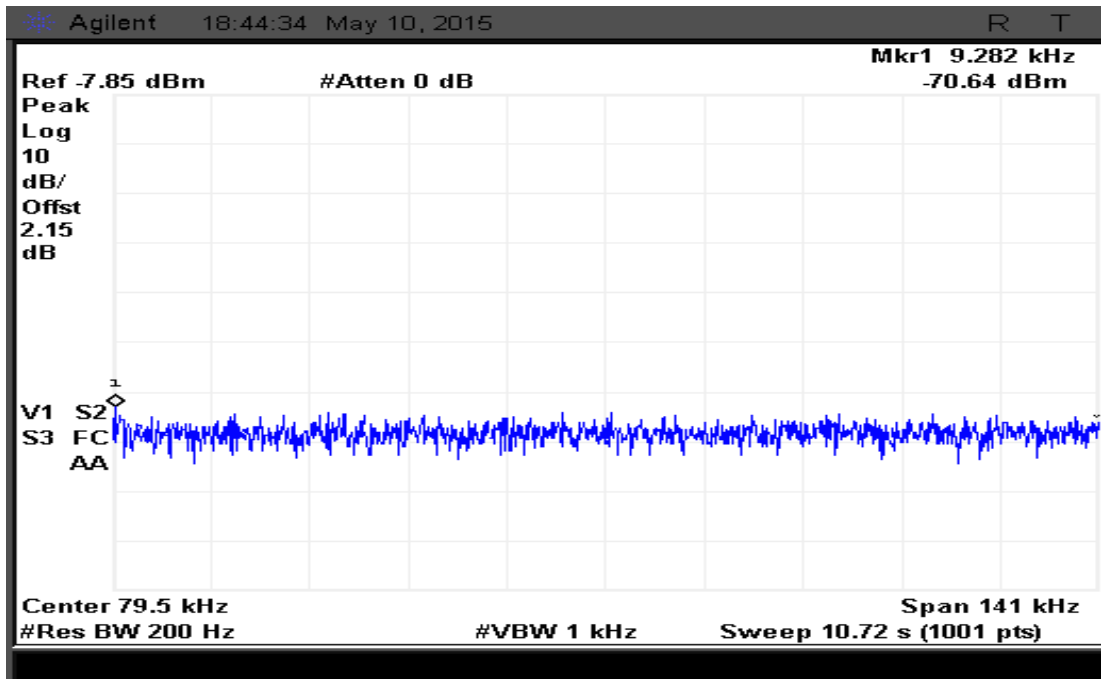


Figure 138: Spurious emission measured from 9 kHz to 150 kHz at Ch. 1-Peak

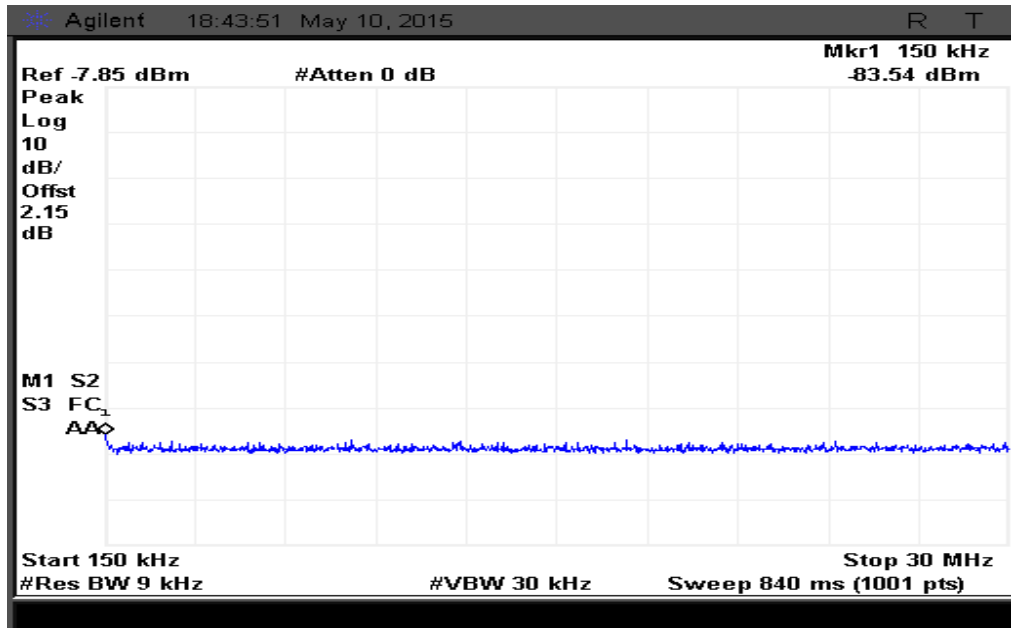


Figure 139: Spurious emission measured from 150 kHz to 30 kHz at Ch. 1-Peak

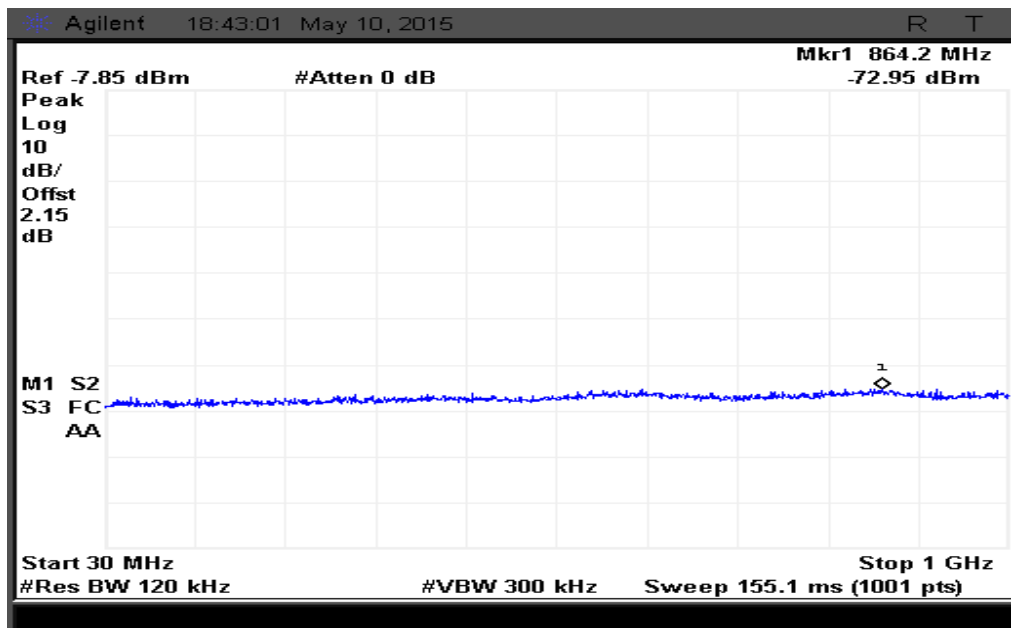


Figure 140: Spurious emission measured from 30 MHz to 1 GHz at Ch. 1-Peak

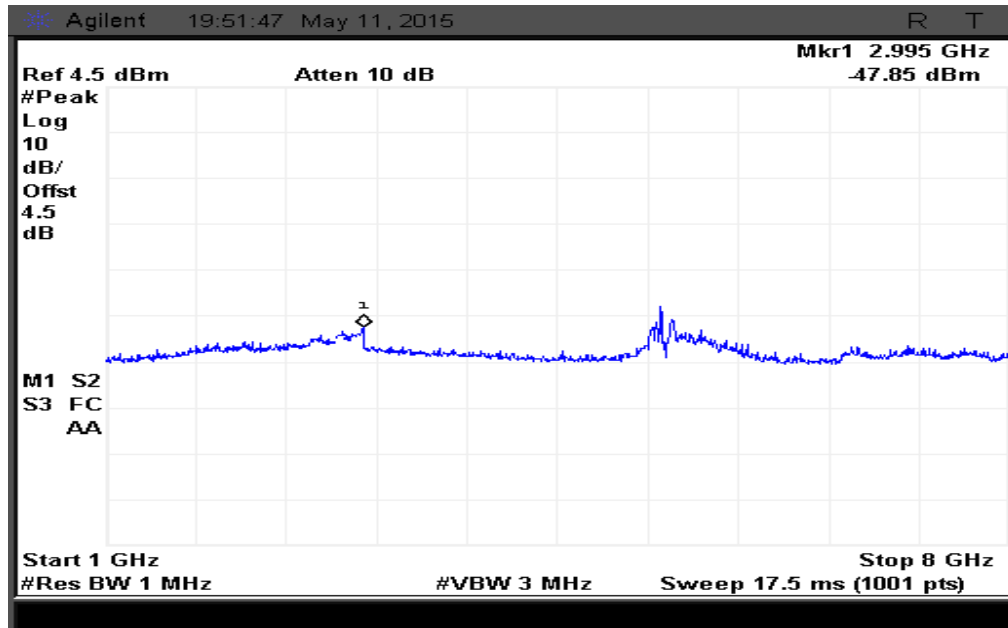


Figure 141: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Peak

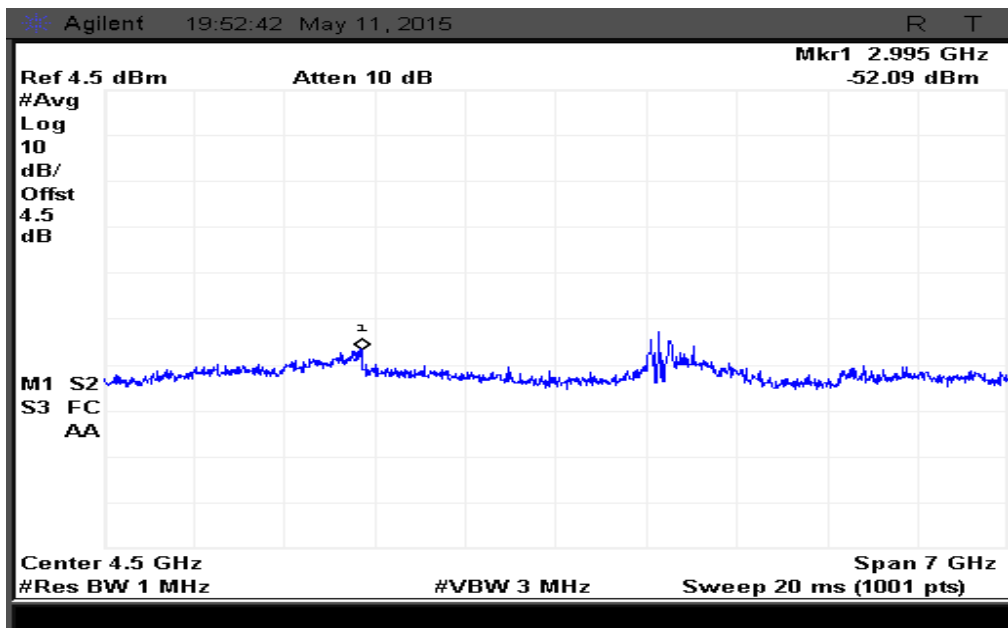


Figure 142: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Average

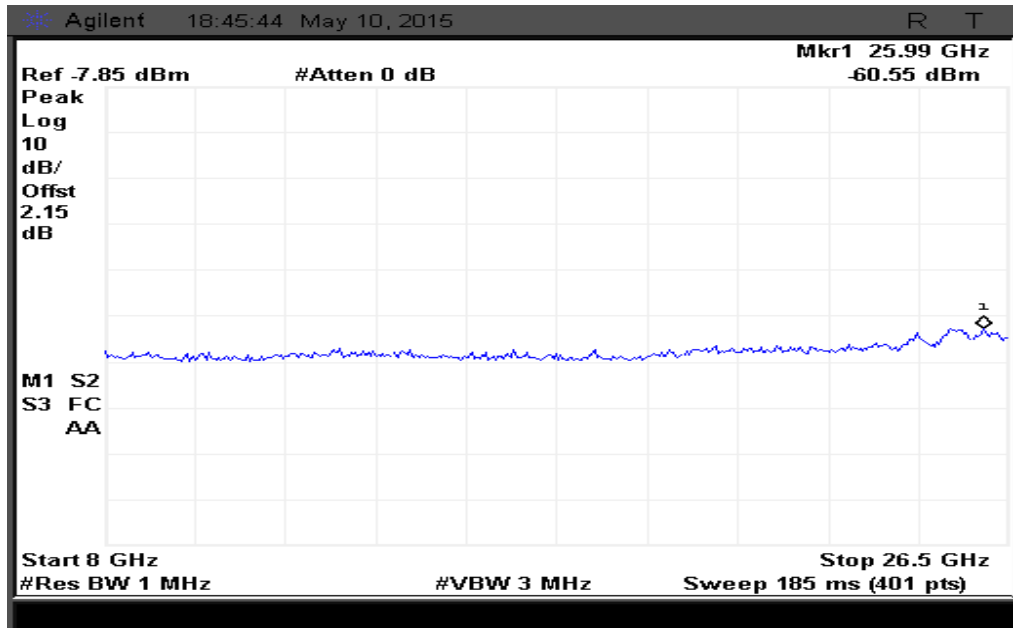


Figure 143: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Peak

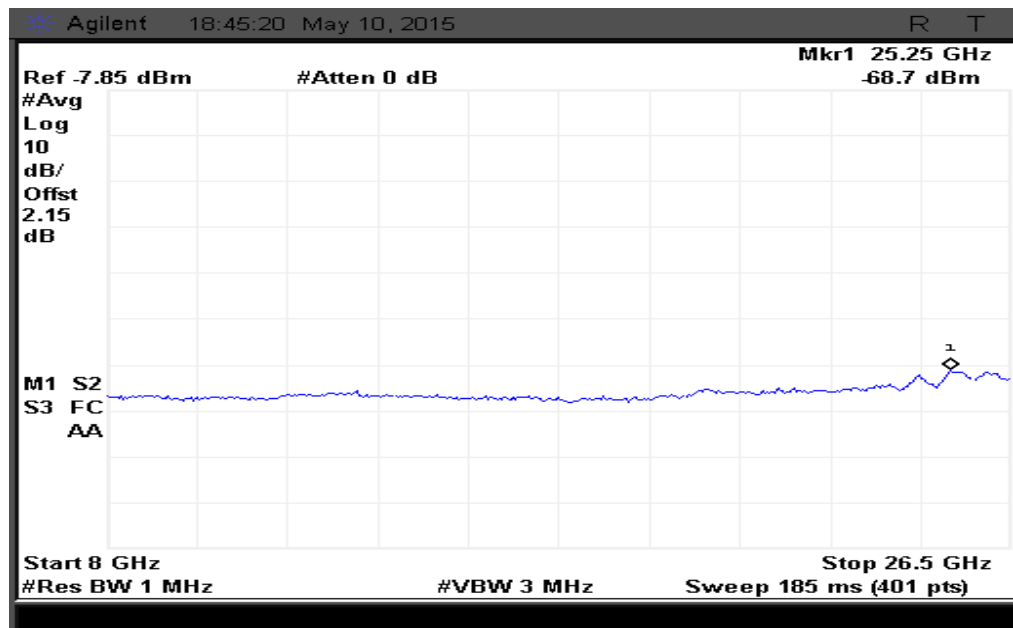
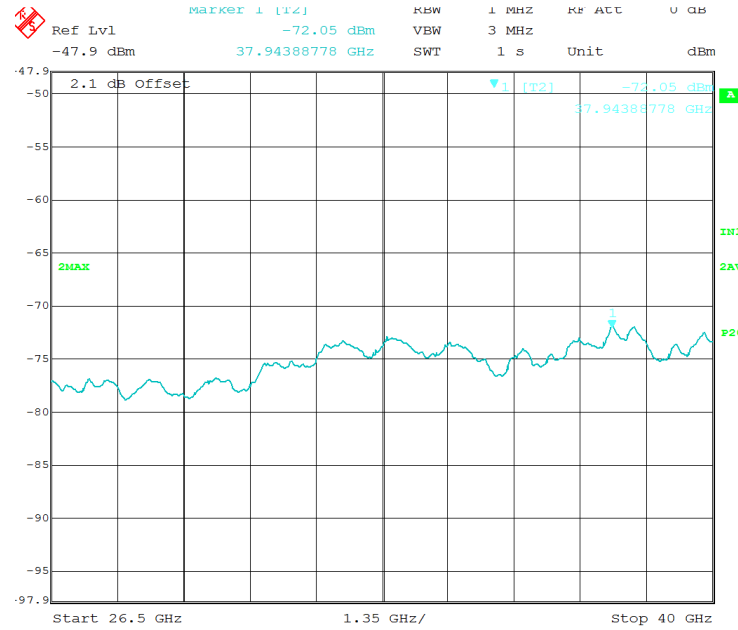
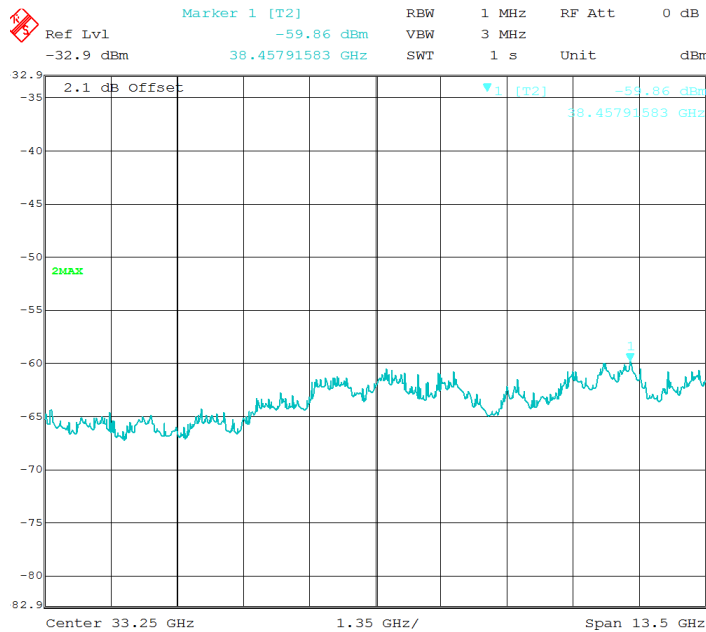


Figure 144: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Average



**Figure 145: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Average**



**Figure 146: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Peak**

### 5.3.1.6.3 40MHz MODULATION BW - HIGH CHANNEL\_5320MHZ

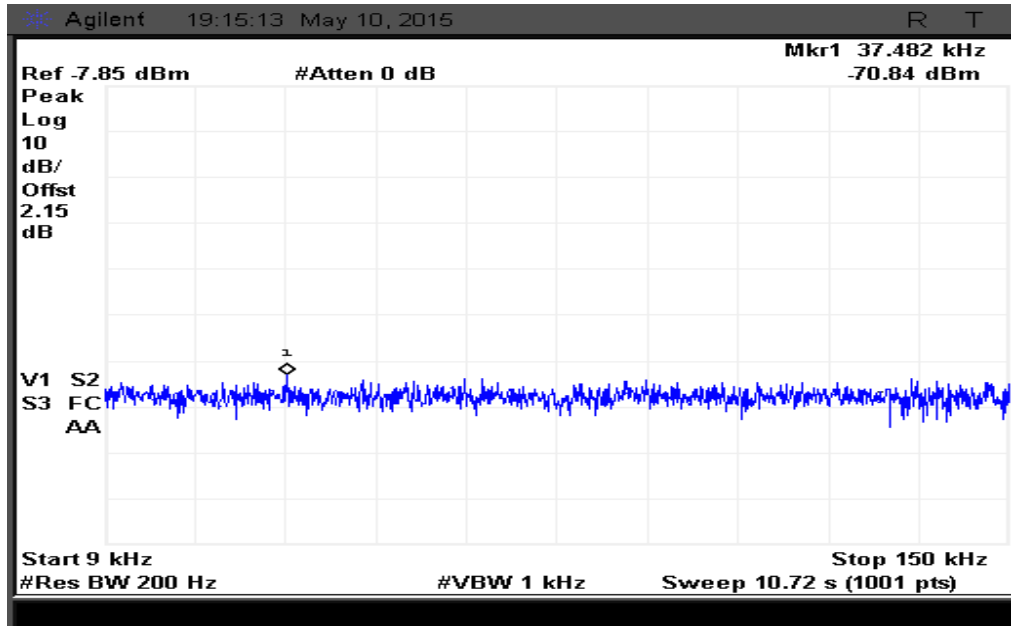


Figure 147: Spurious emission measured from 9 kHz to 150 kHz at Ch. 0-Peak

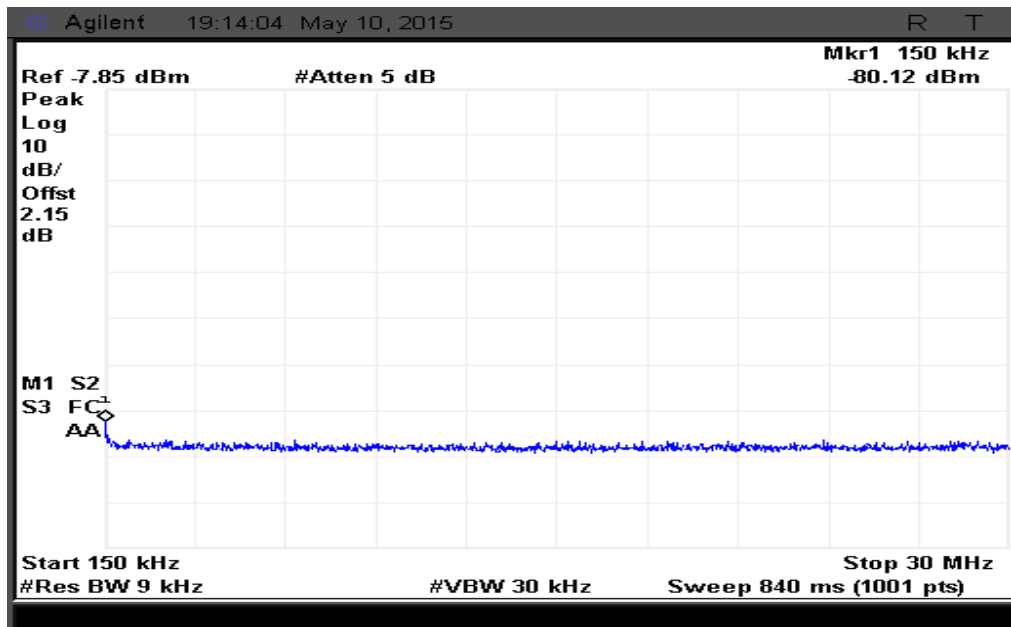


Figure 148: Spurious emission measured from 150 kHz to 30 MHz at Ch. 0-Peak

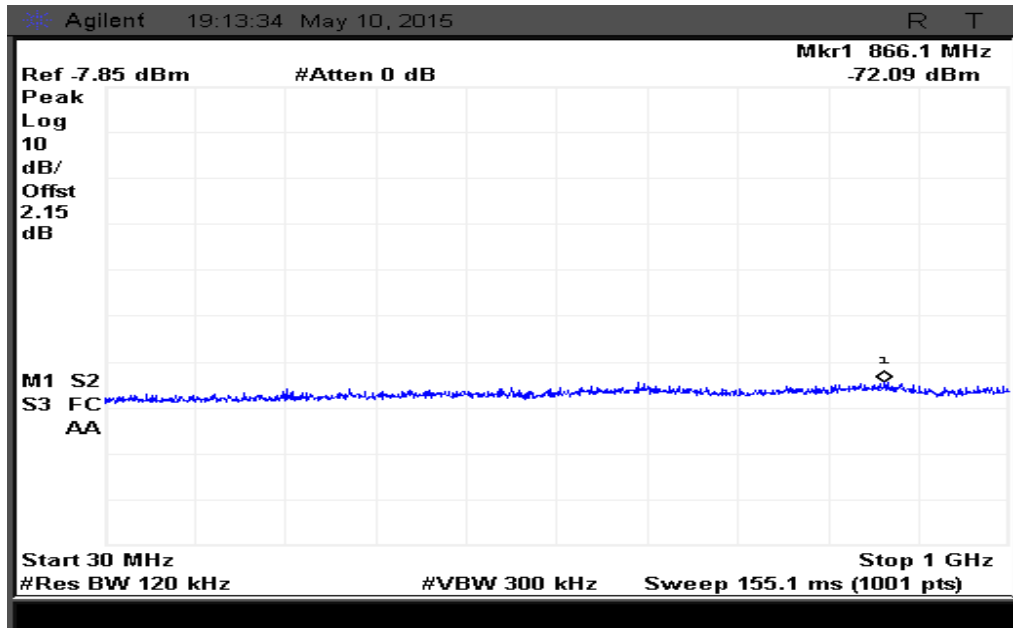


Figure 149: Spurious emission measured from 30 MHz to 1 GHz at Ch. 0-Peak

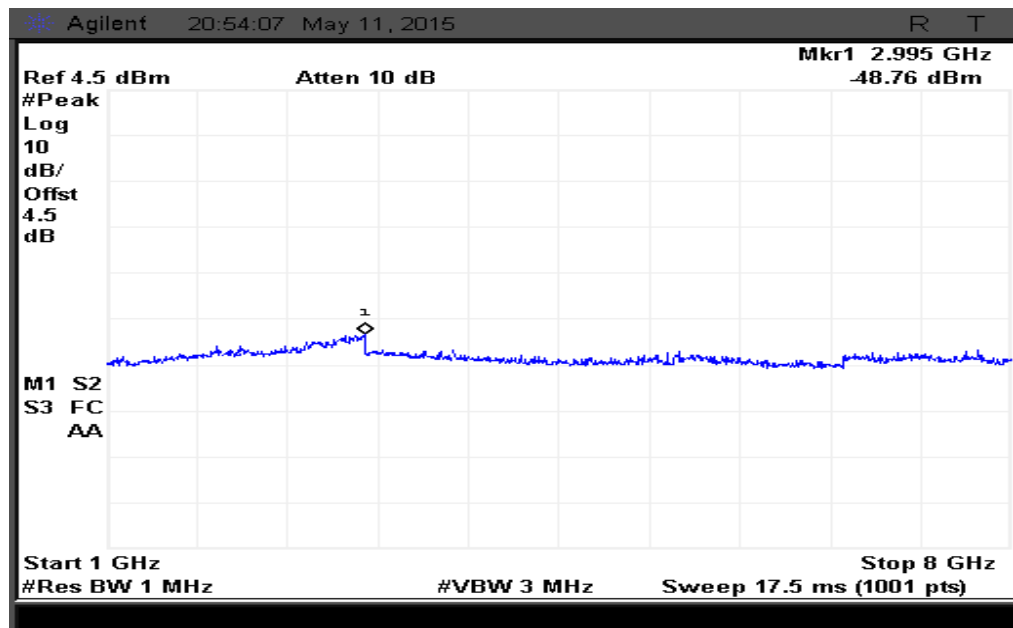


Figure 150: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Peak



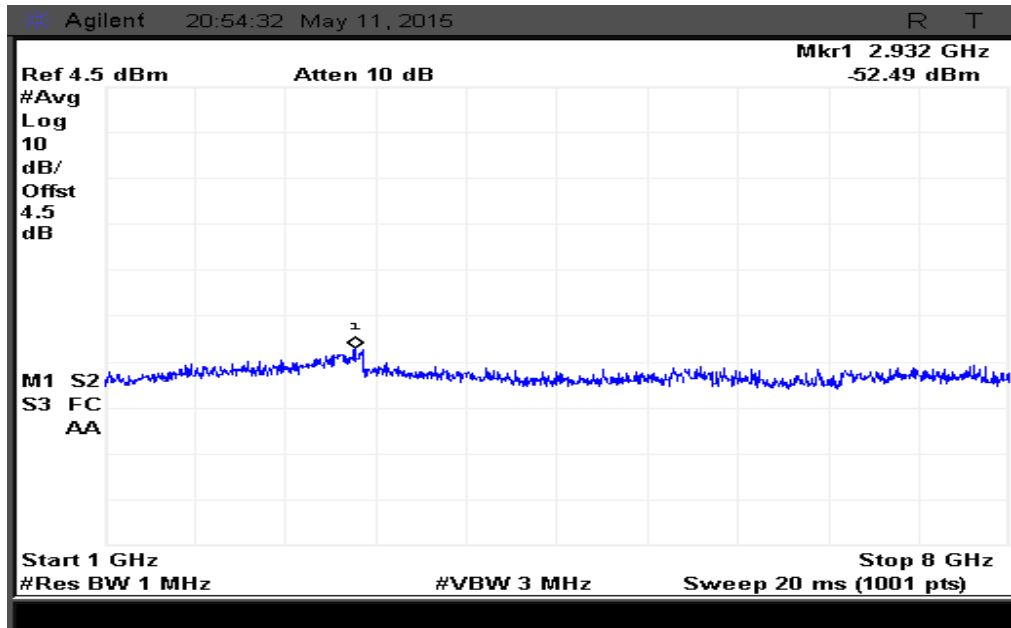


Figure 151: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Average

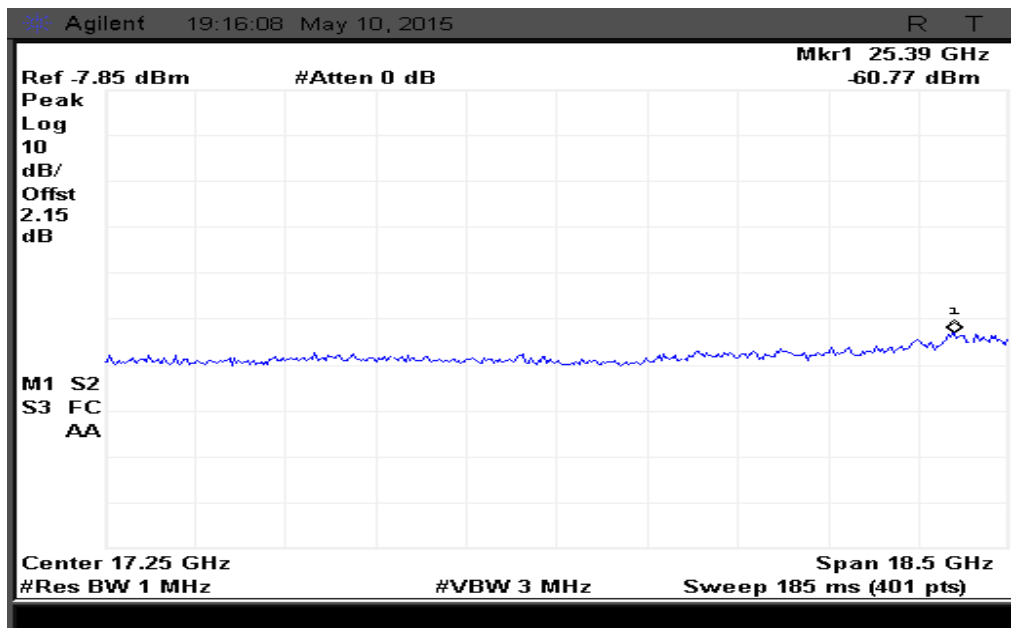


Figure 152: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Peak

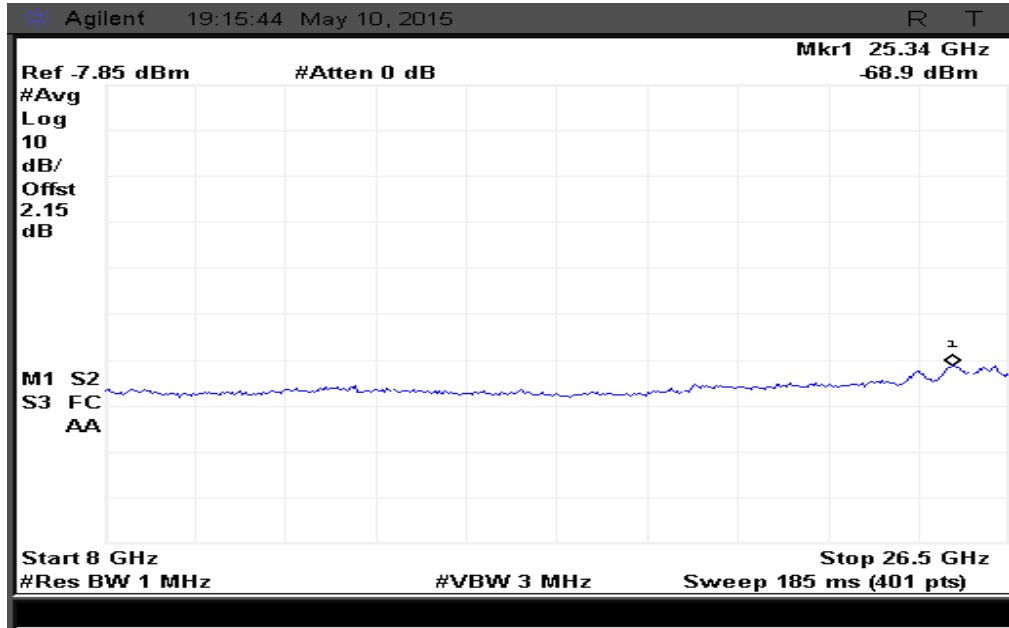


Figure 153: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Average

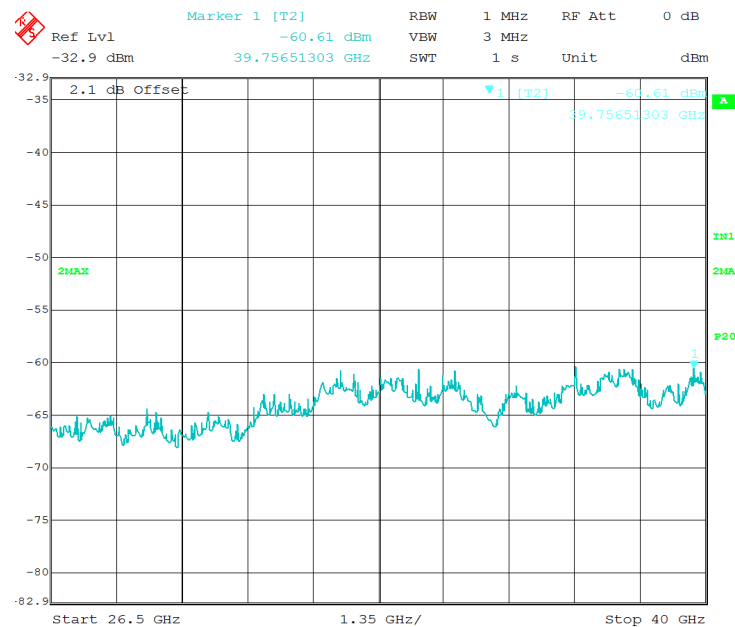


Figure 154: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Peak

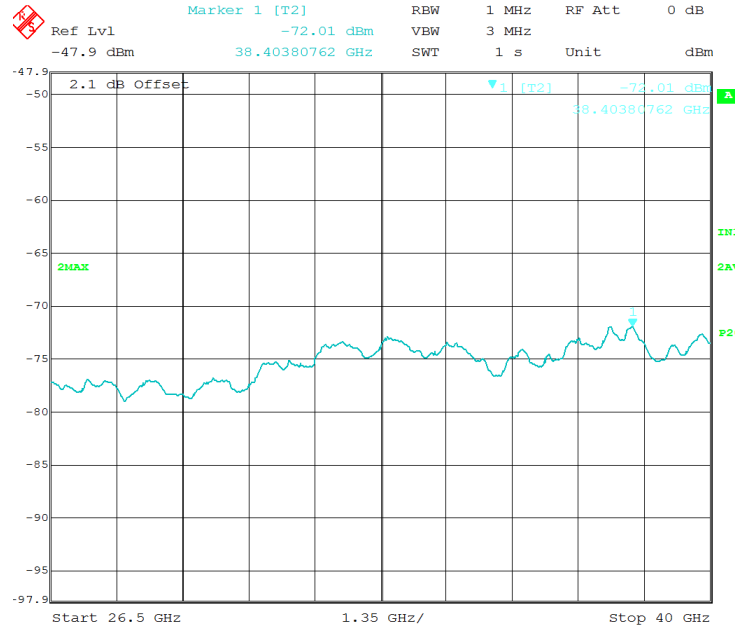


Figure 155: Spurious emission measured from 26.5GHz to 40 GHz at Ch. 0-Average

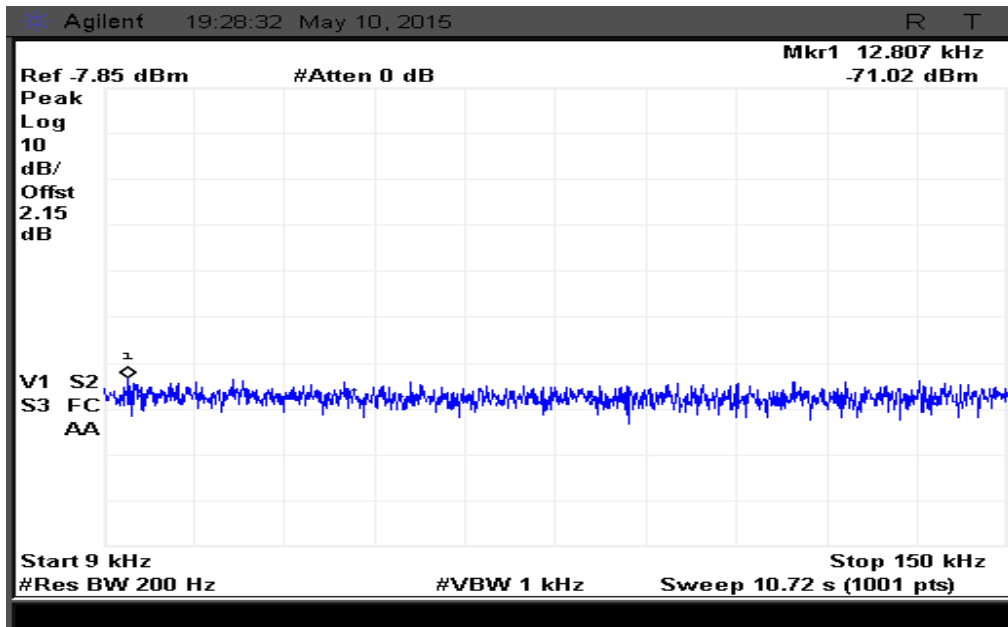


Figure 156: Spurious emission measured from 9 kHz to 150 kHz at Ch. 1-Peak

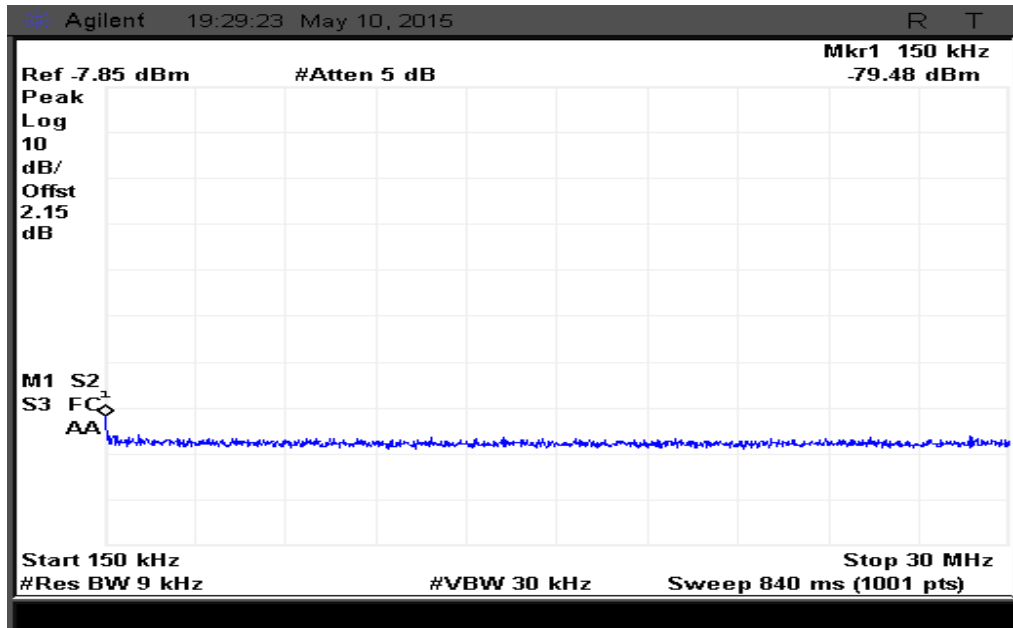


Figure 157: Spurious emission measured from 150 kHz to 30 MHz at Ch. 1-Peak

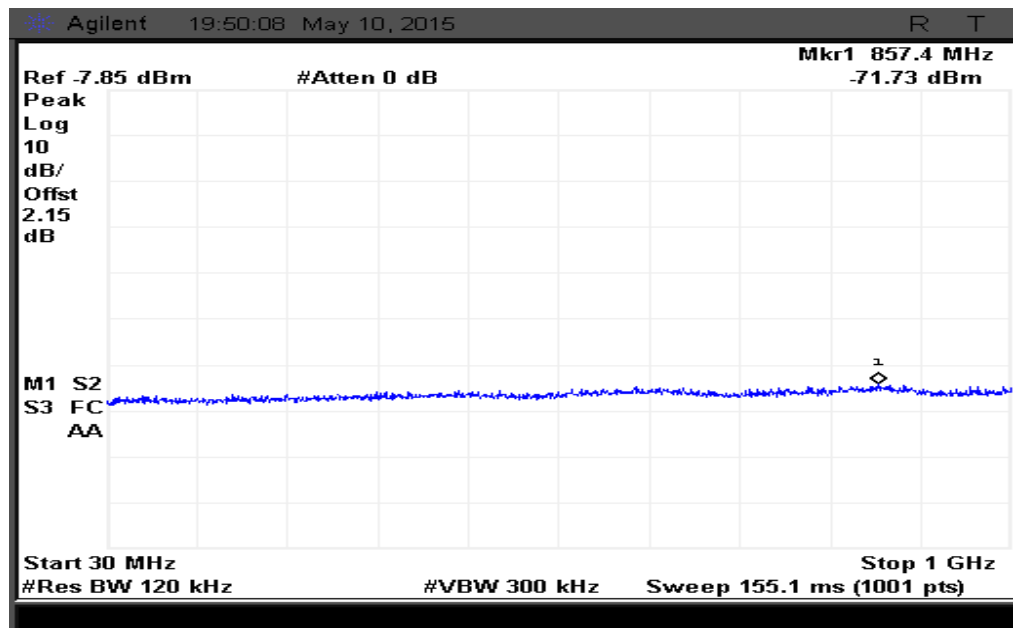


Figure 158: Spurious emission measured from 30 MHz to 1 GHz at Ch. 1-Peak

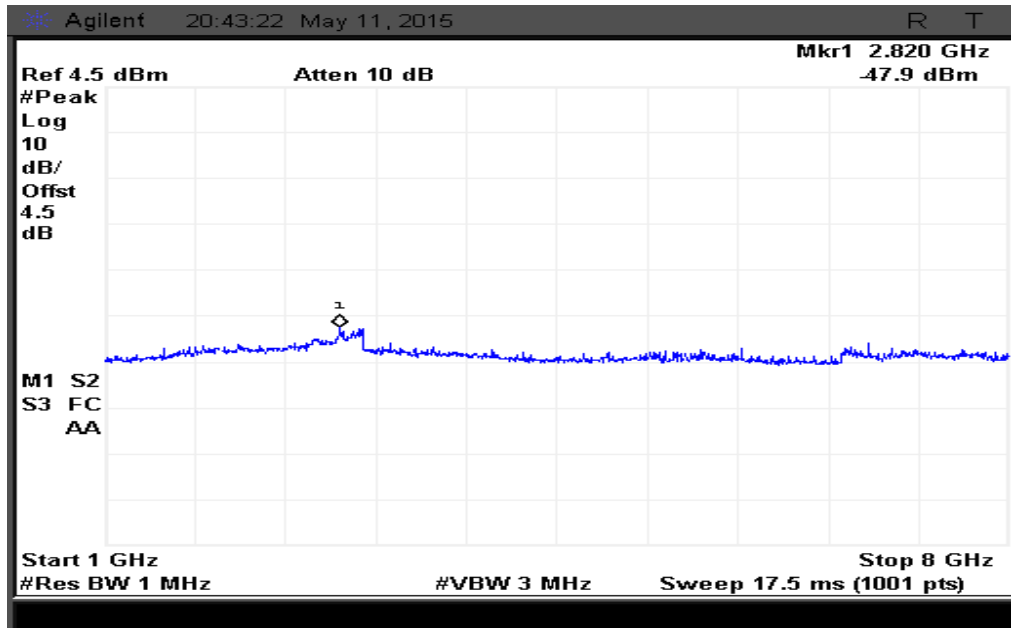


Figure 159: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Peak

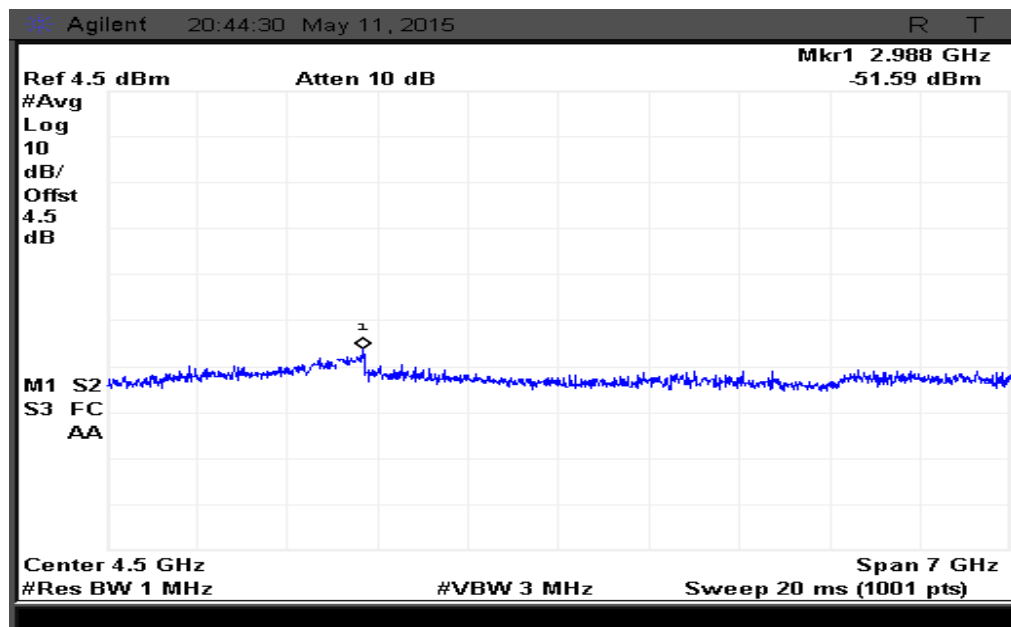


Figure 160: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Average

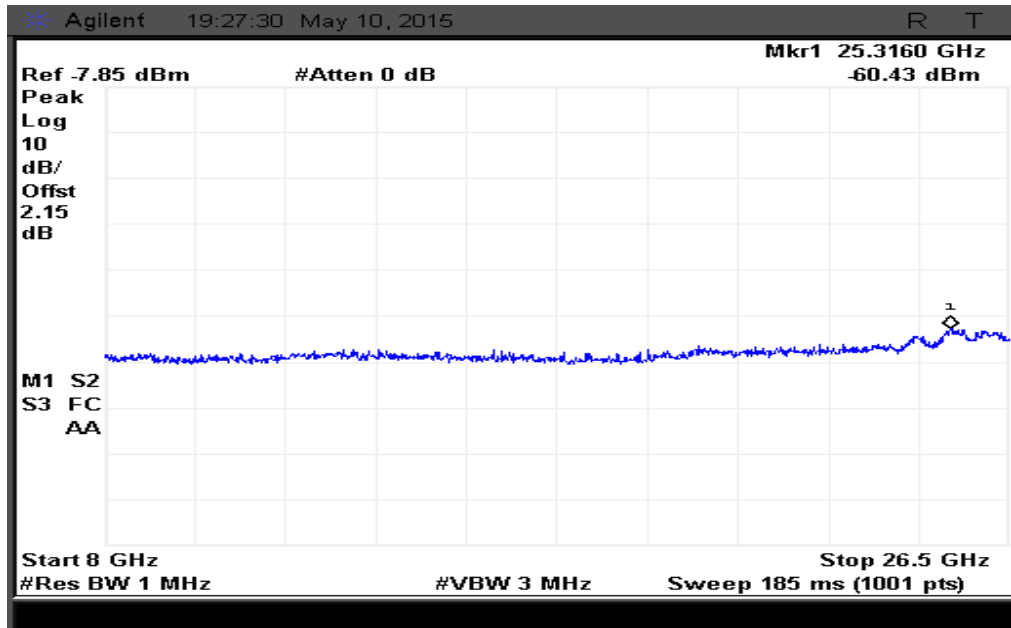


Figure 161: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Peak

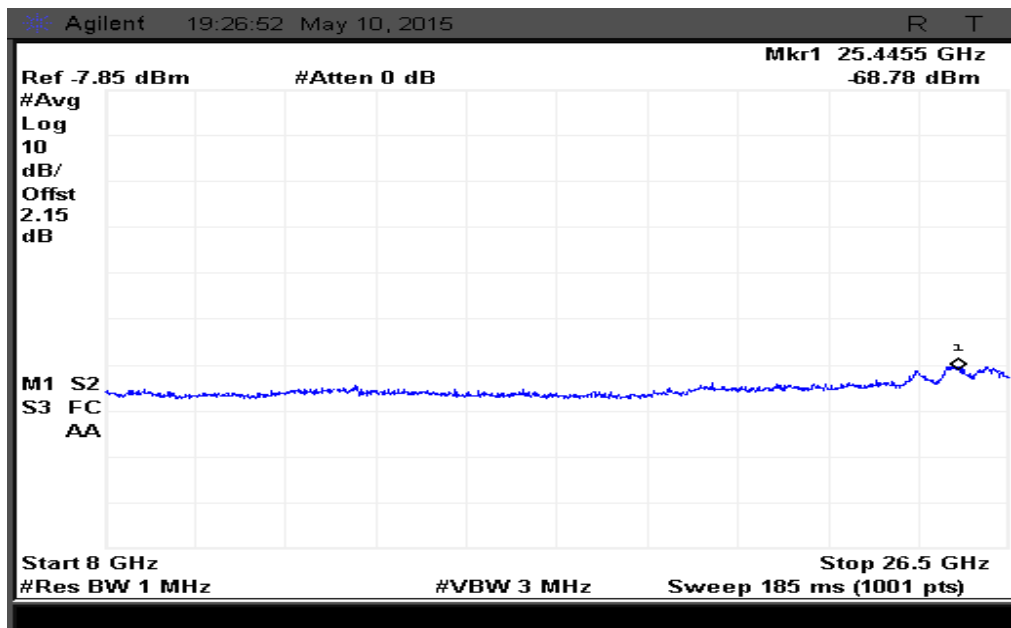
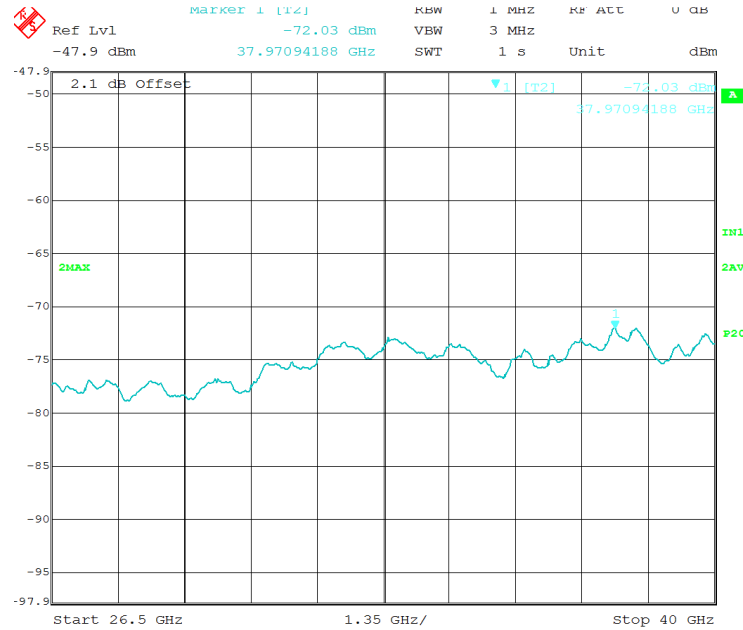
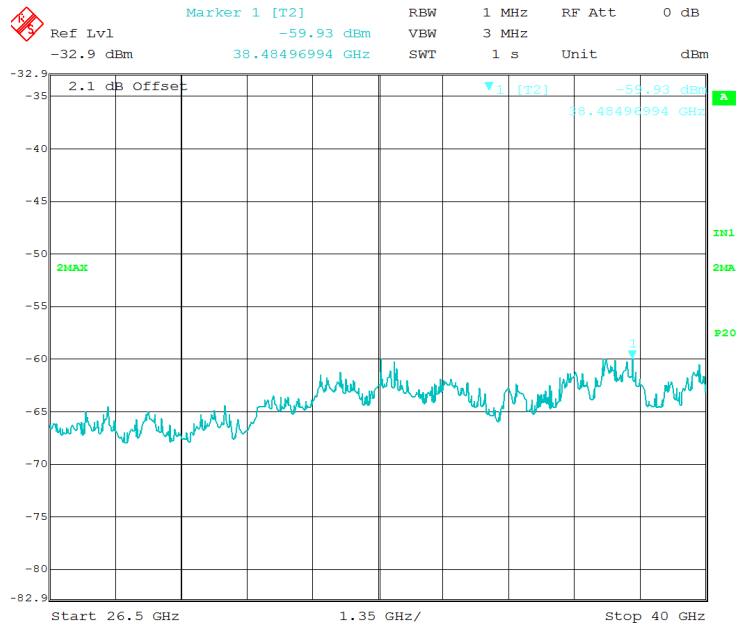


Figure 162: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Average



**Figure 163: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Average**



**Figure 164: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Peak**

### 5.3.1.6.4 10MHz MODULATION BW - LOW CHANNEL\_5265MHz

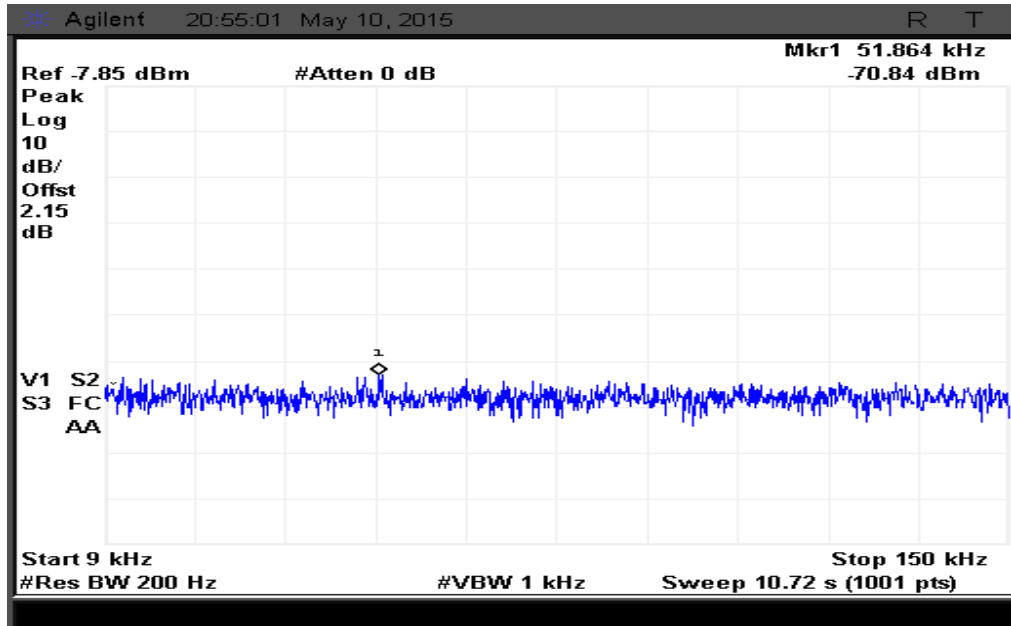


Figure 165: Spurious emission measured from 9 kHz to 150 kHz at Ch. 0-Peak

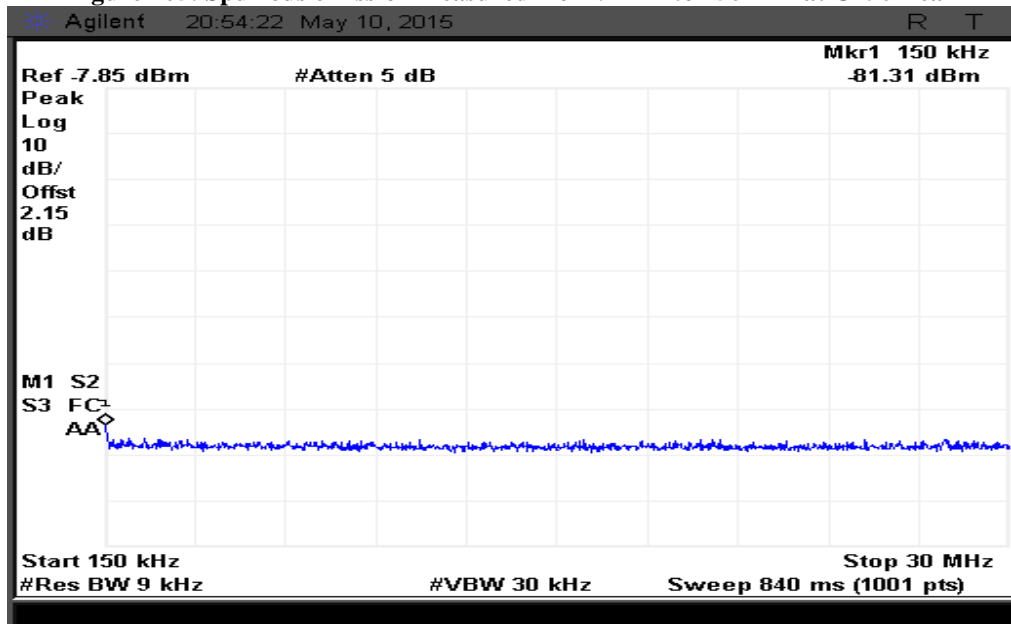


Figure 166: Spurious emission measured from 150 kHz to 30 MHz at Ch. 0-Peak



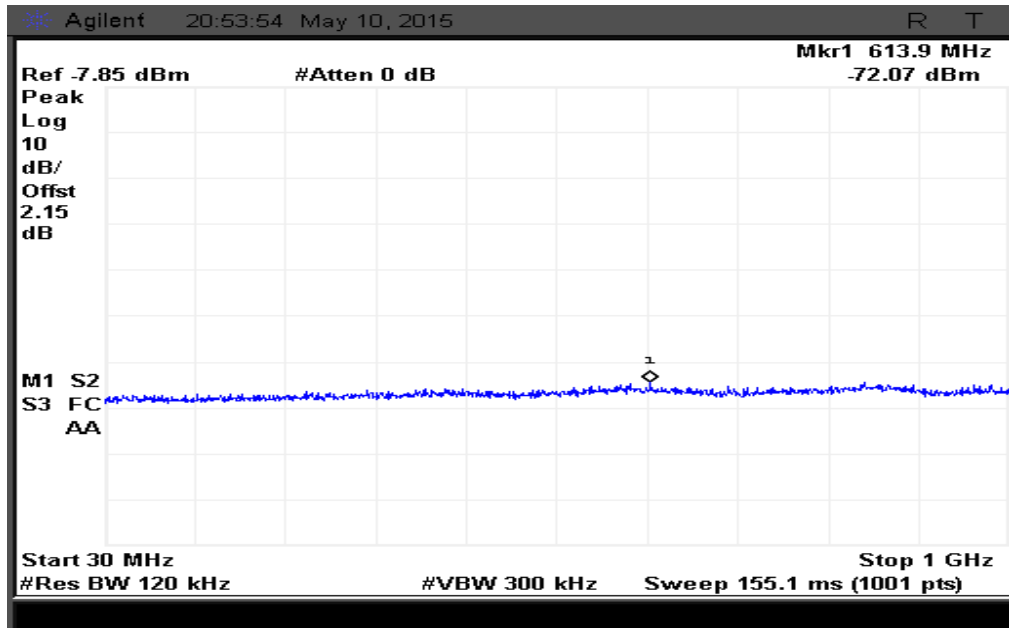


Figure 167: Spurious emission measured from 30 MHz to 1 GHz at Ch. 0-Peak

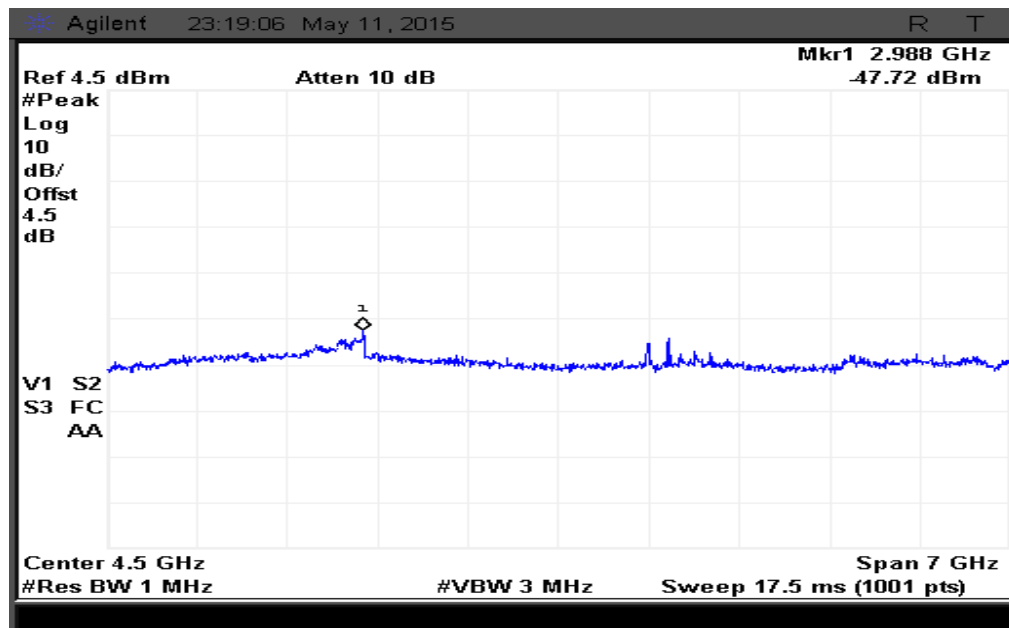


Figure 168: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Peak

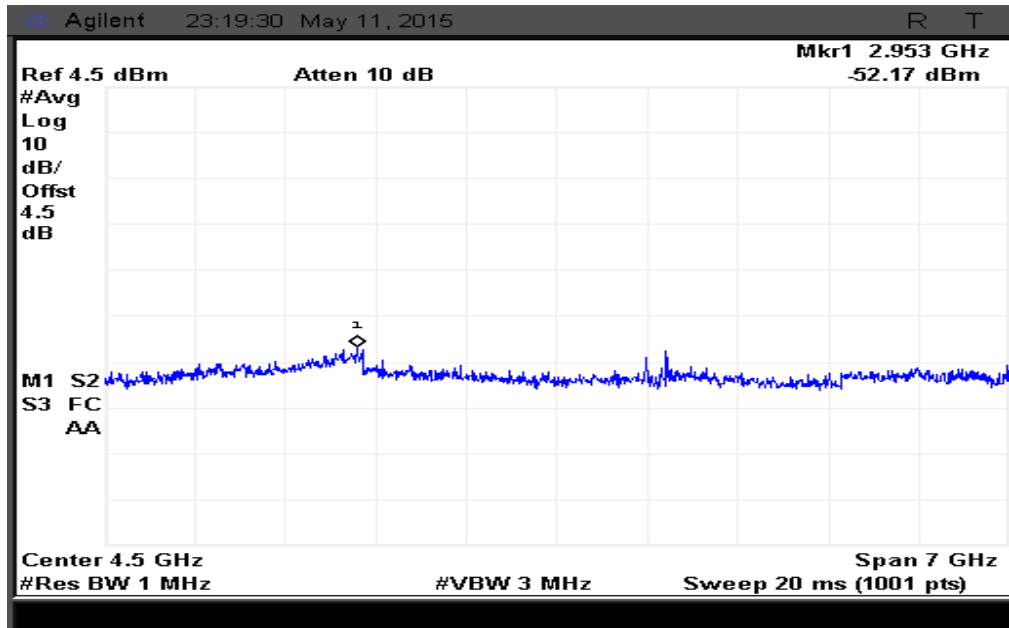


Figure 169: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Average

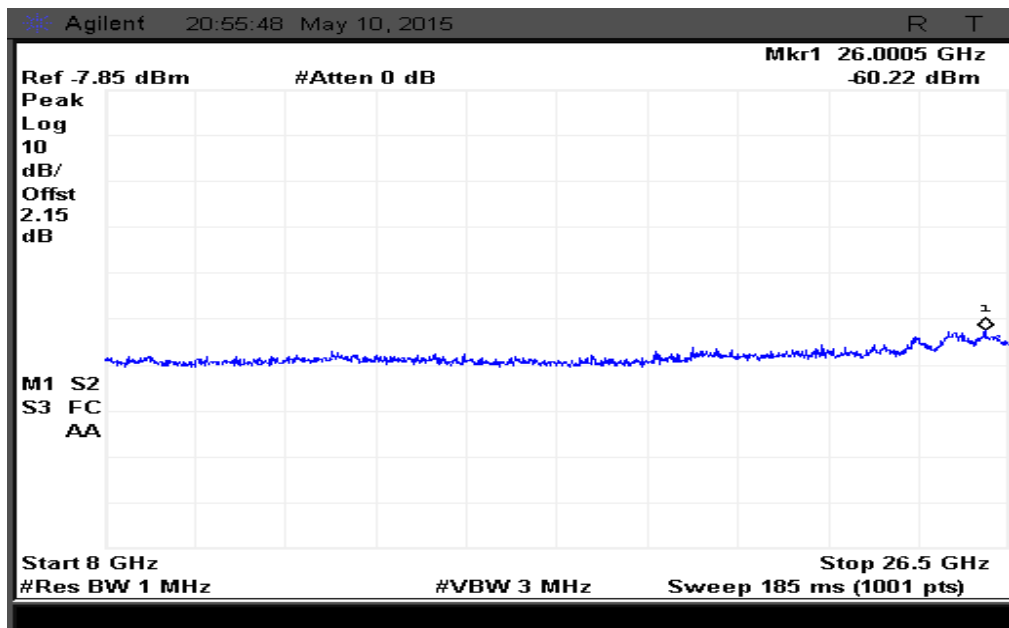


Figure 170: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Peak

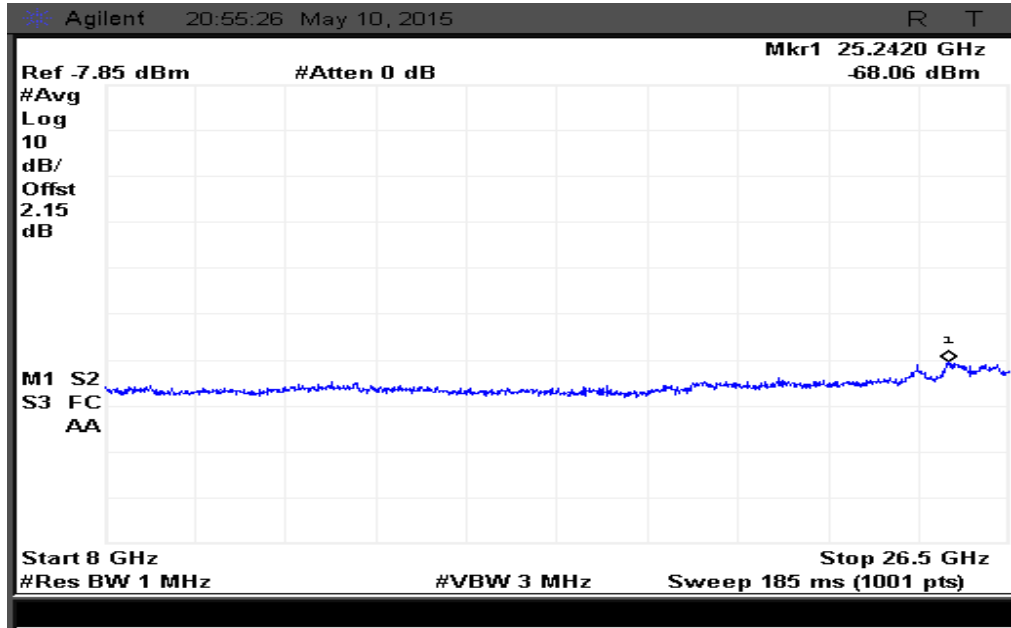


Figure 171: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Average

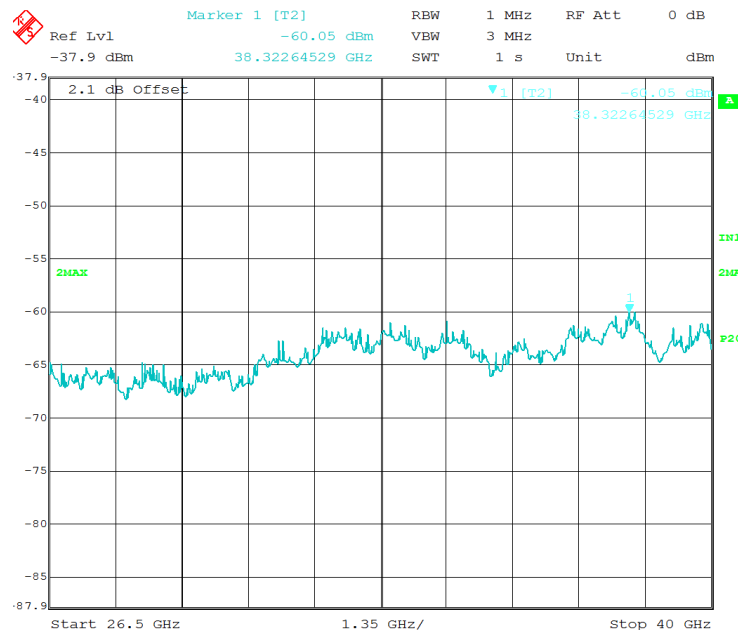


Figure 172: Spurious emission measured from 26.5GHz to 40 GHz at Ch. 0-Peak

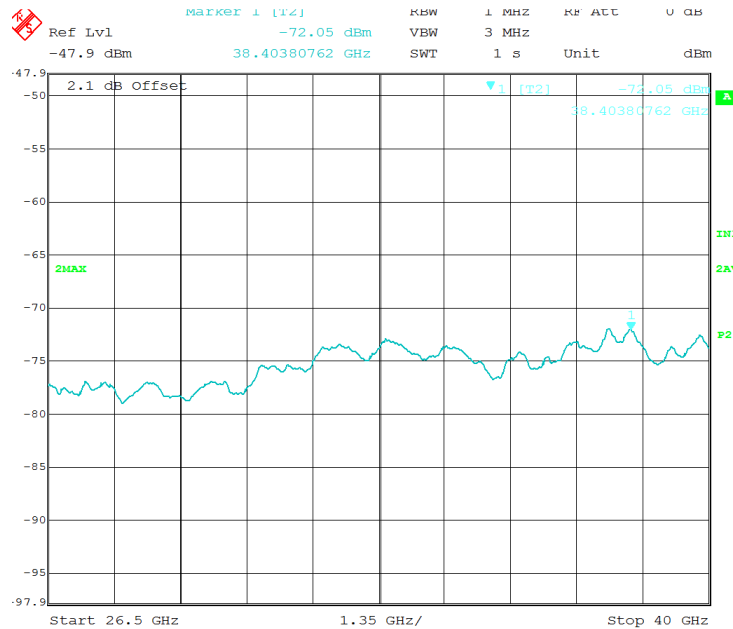


Figure 173: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Average

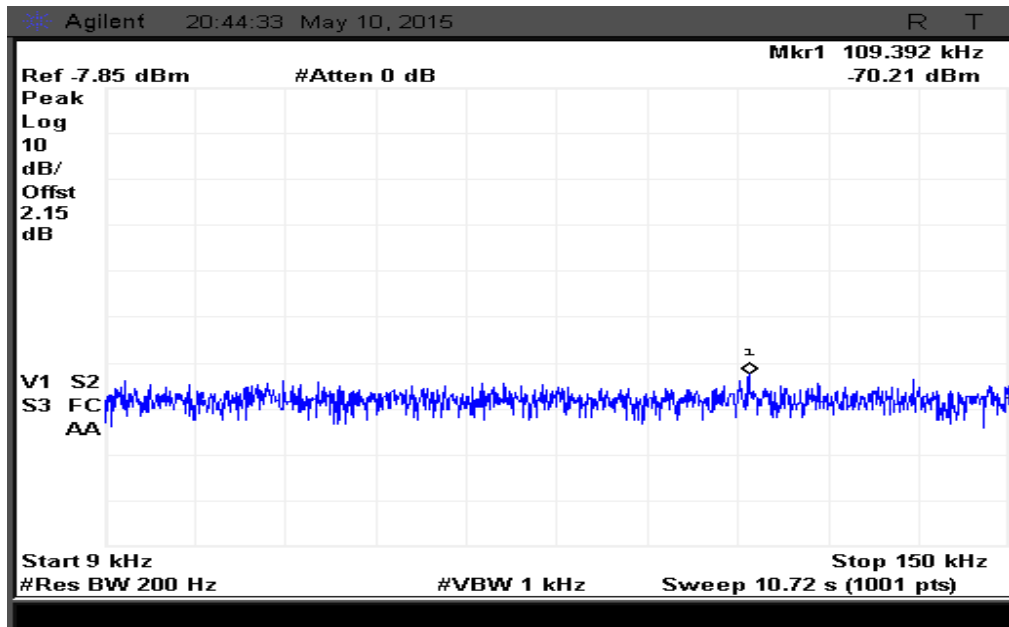


Figure 174: Spurious emission measured from 9 kHz to 150 kHz at Ch. 1-Peak

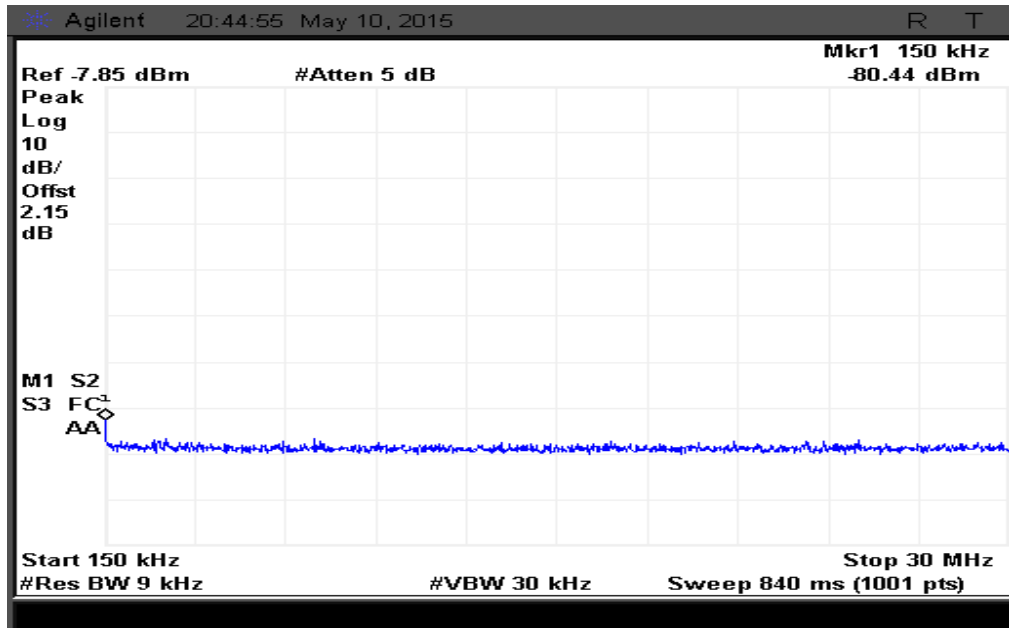


Figure 175: Spurious emission measured from 150 kHz to 30 MHz at Ch. 1-Peak

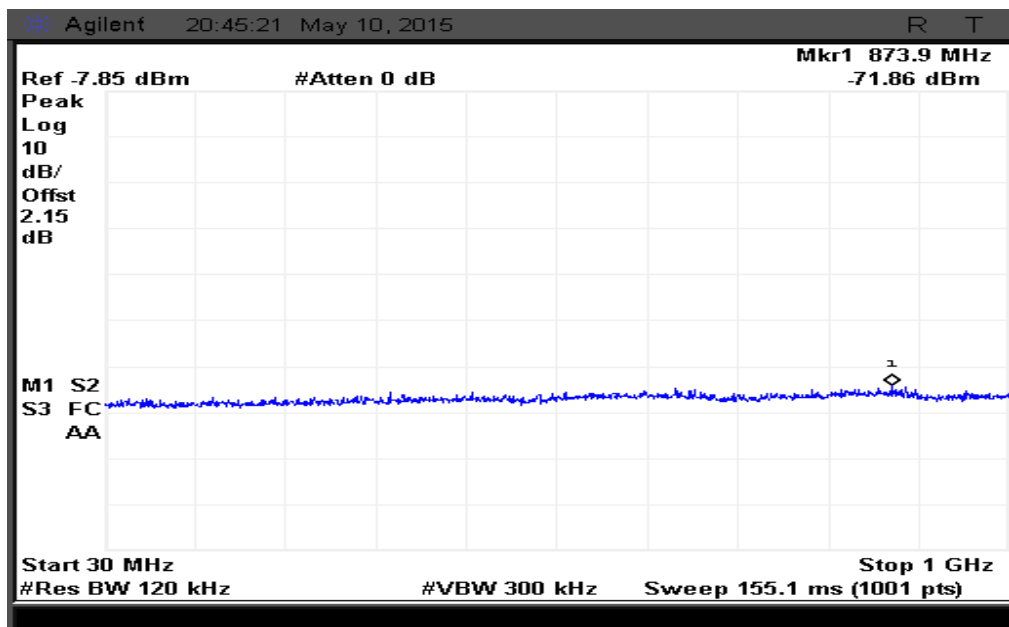


Figure 176: Spurious emission measured from 30 MHz to 1 GHz at Ch. 1-Peak

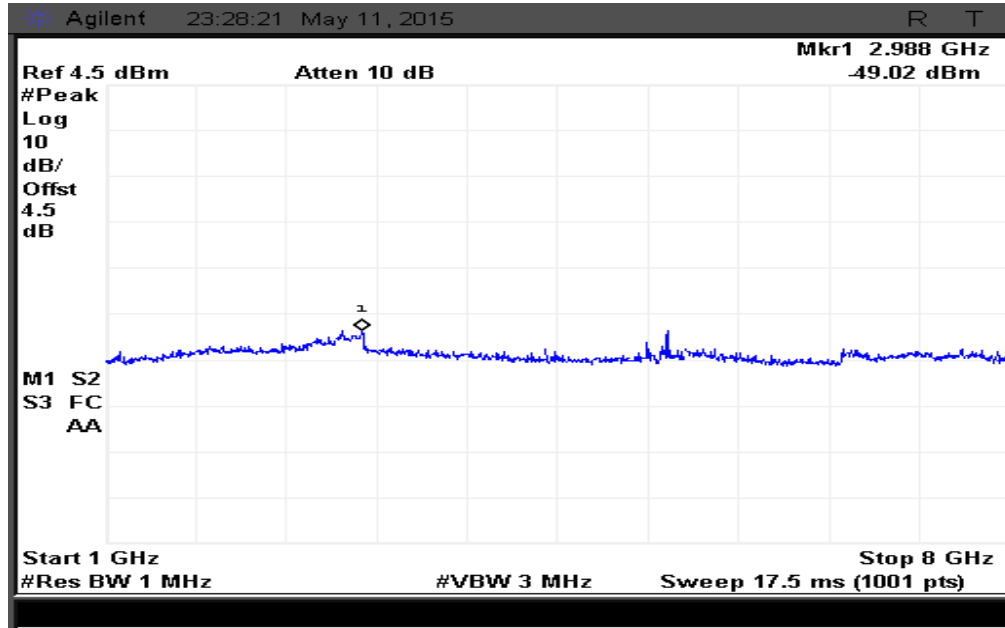


Figure 177: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Peak

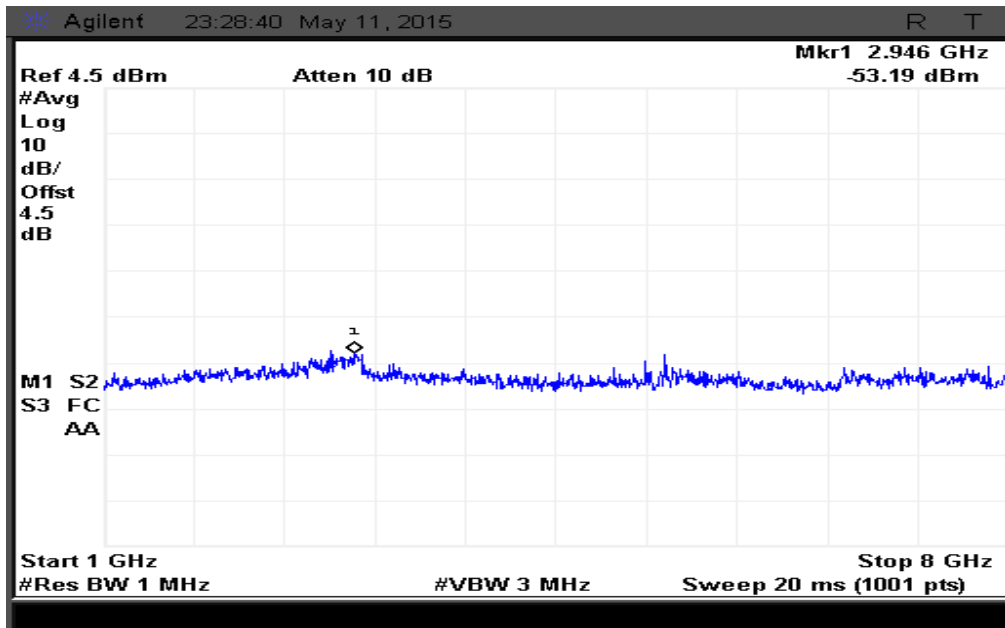


Figure 178: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Average

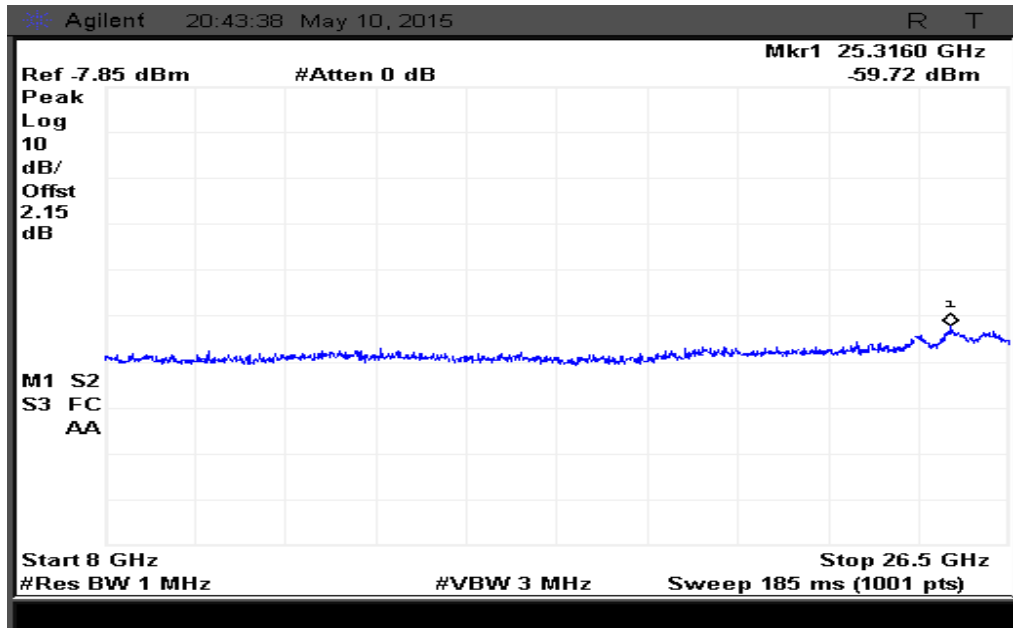


Figure 179: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Peak

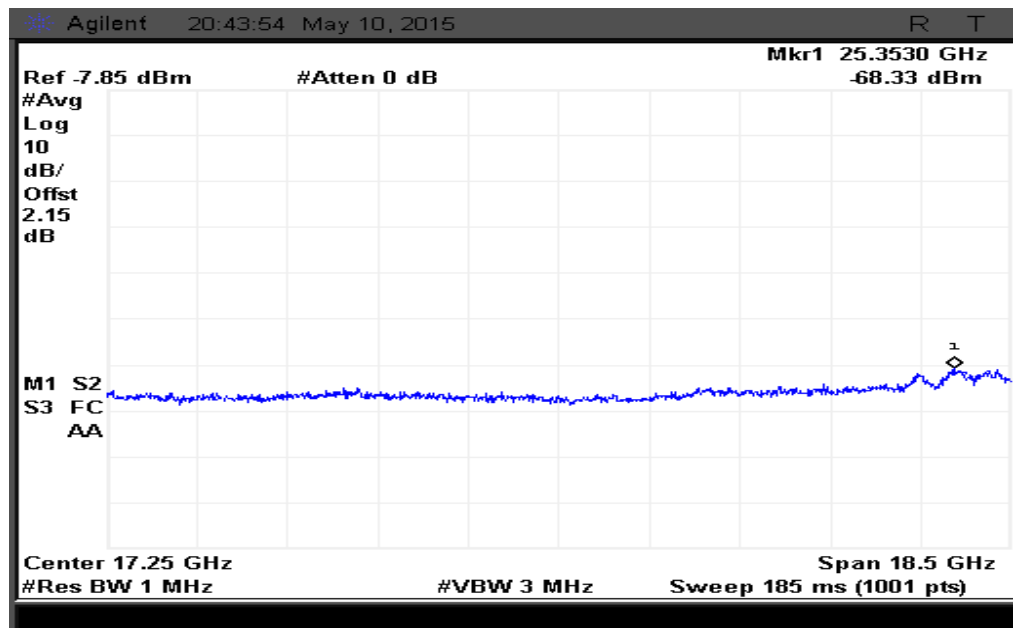
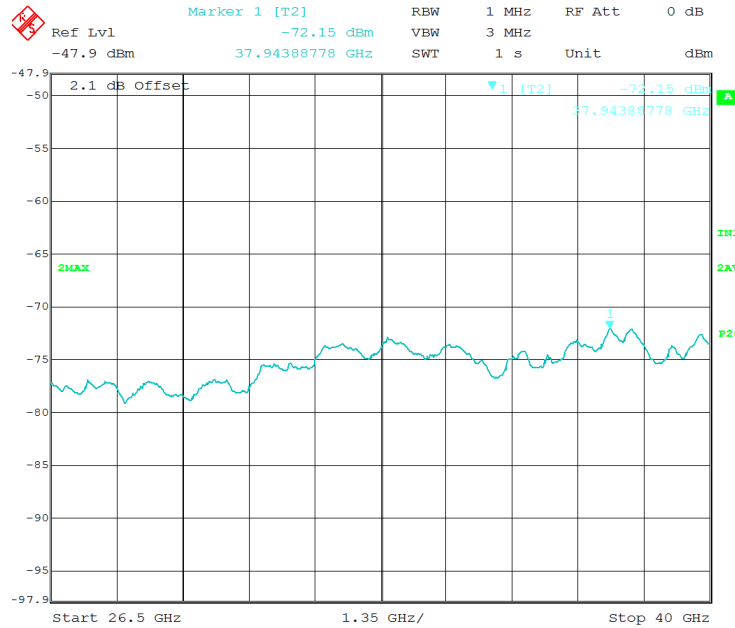
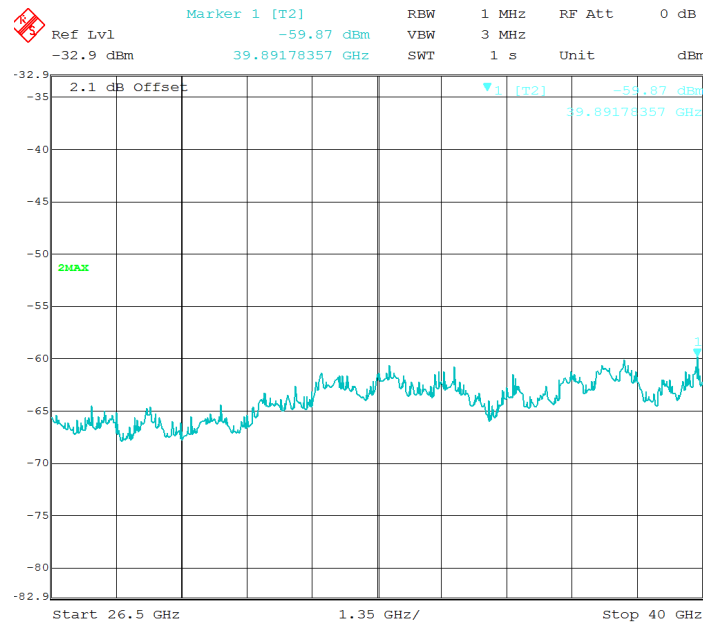


Figure 180: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Average



**Figure 181: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Average**



**Figure 182: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Peak**



### 5.3.1.6.5 10MHz MODULATION BW - MID CHANNEL\_5300MHZ

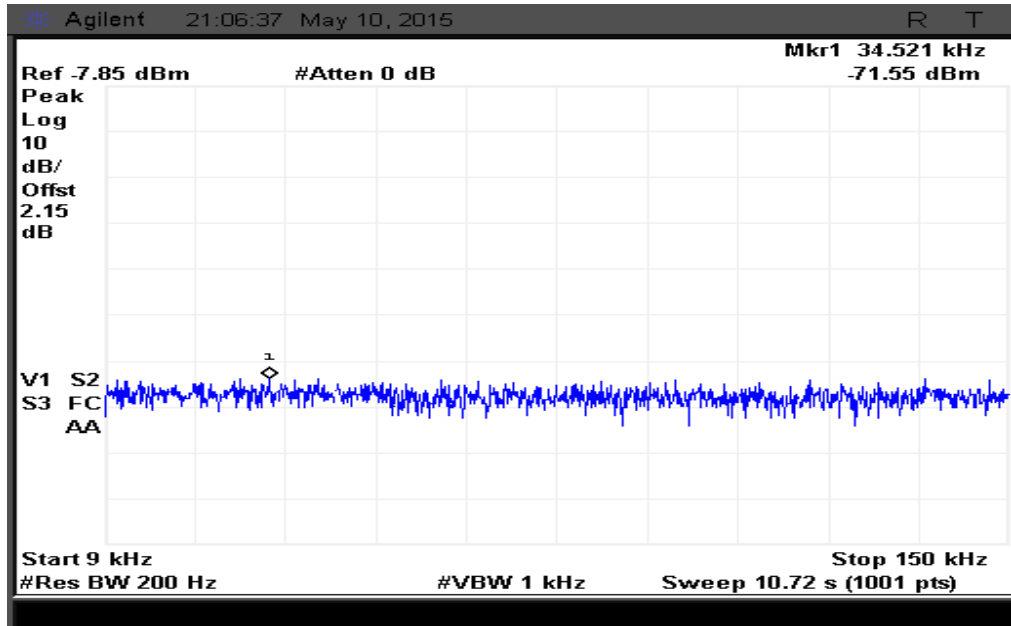


Figure 183: Spurious emission measured from 9 kHz to 150 kHz at Ch. 0-Peak

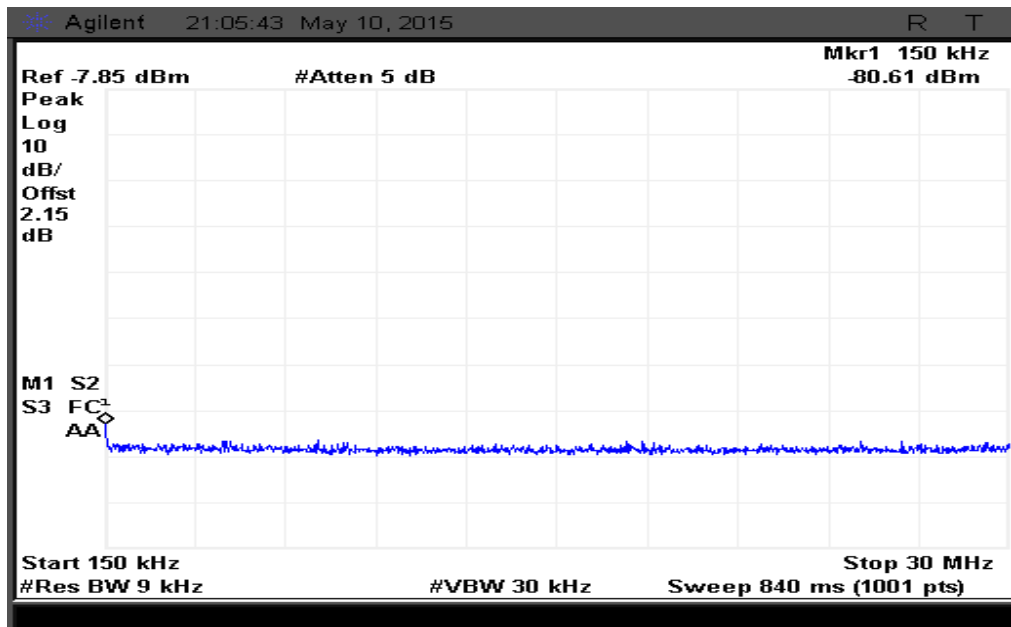


Figure 184: Spurious emission measured from 150 kHz to 30 MHz at Ch. 0-Peak

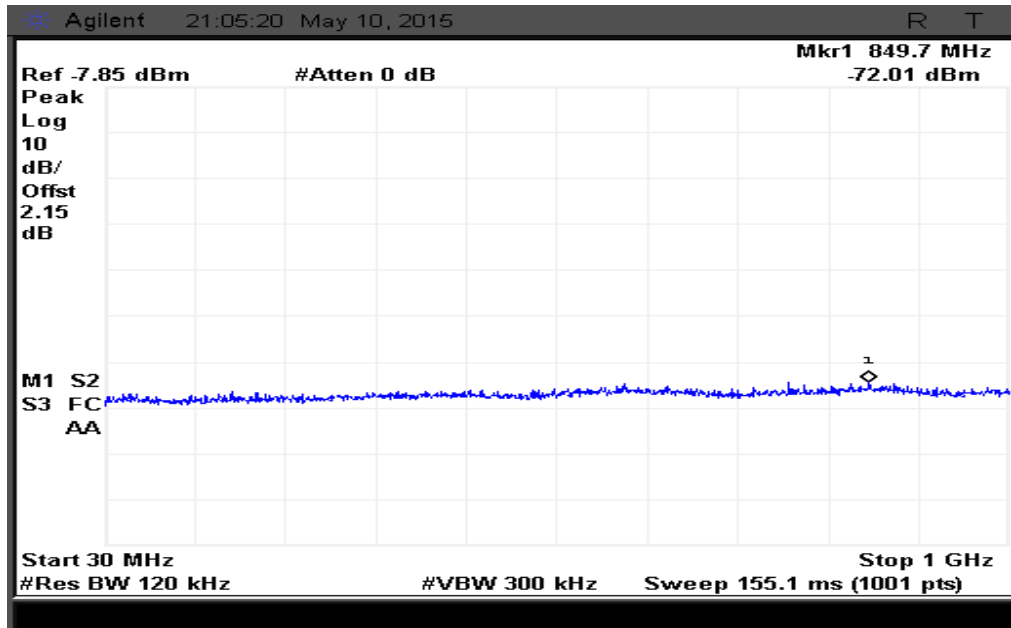


Figure 185: Spurious emission measured from 30 MHz to 1 GHz at Ch. 0-Peak

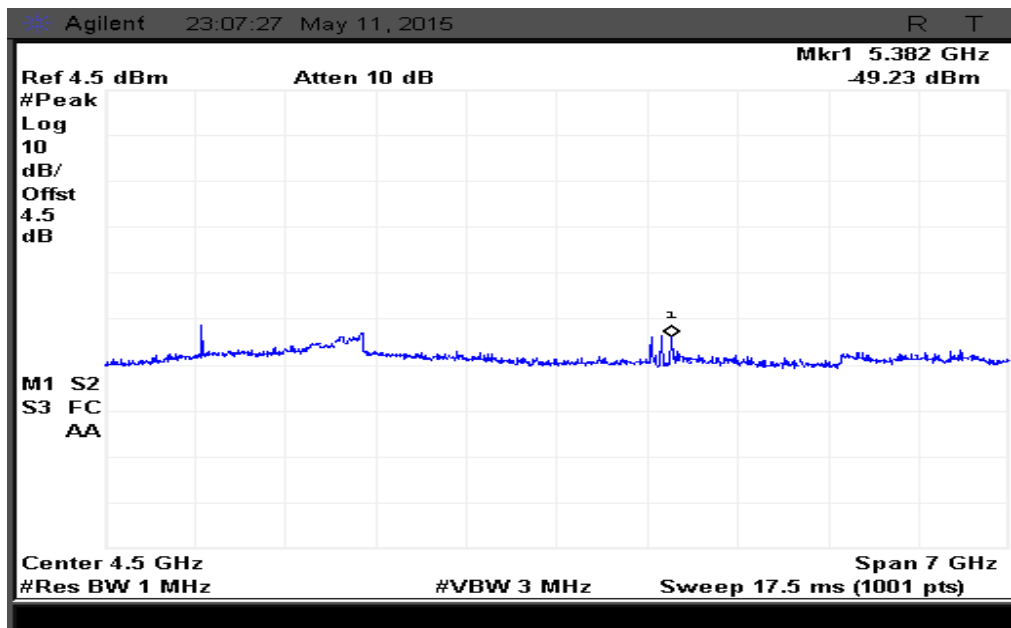


Figure 186: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Peak

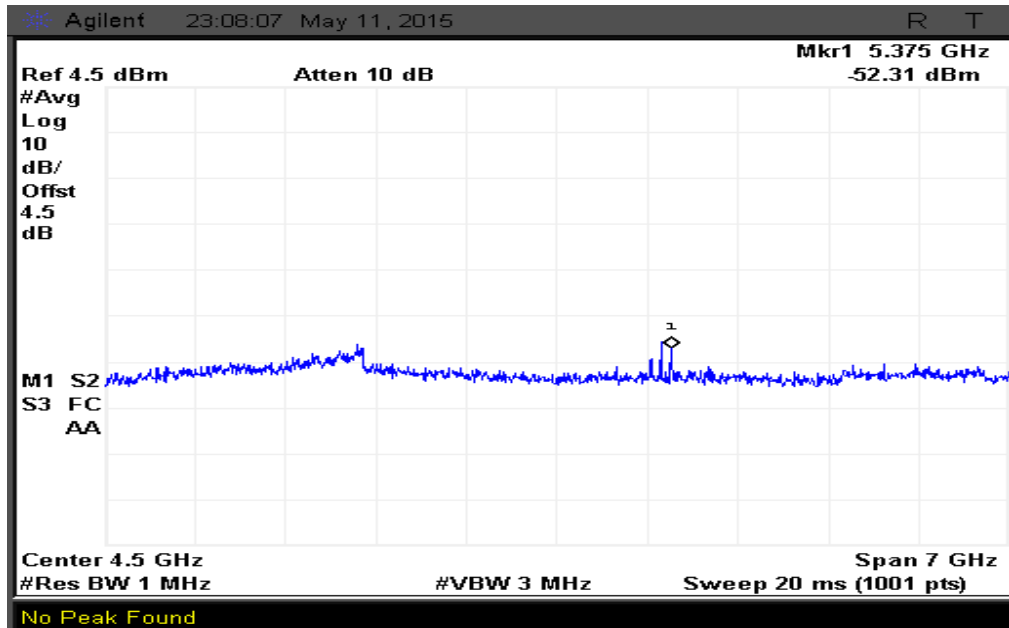


Figure 187: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Average

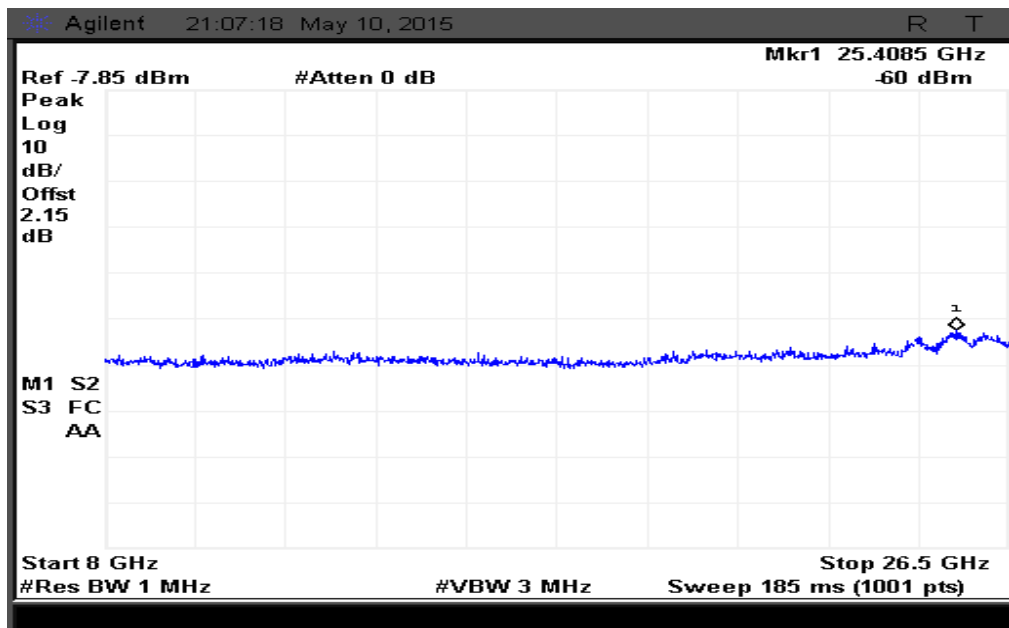


Figure 188: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Peak

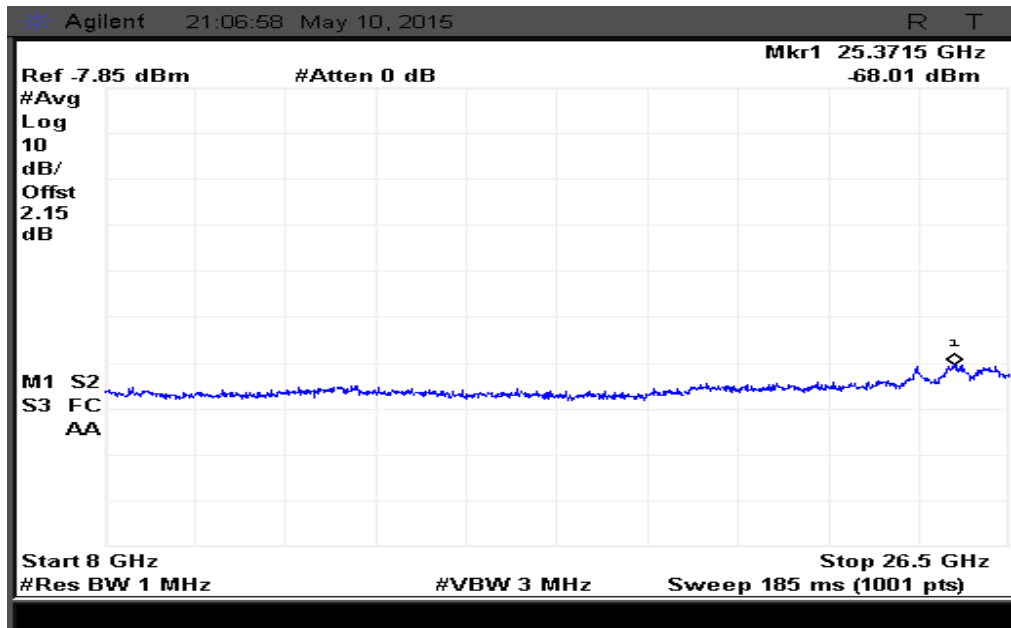


Figure 189: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Average

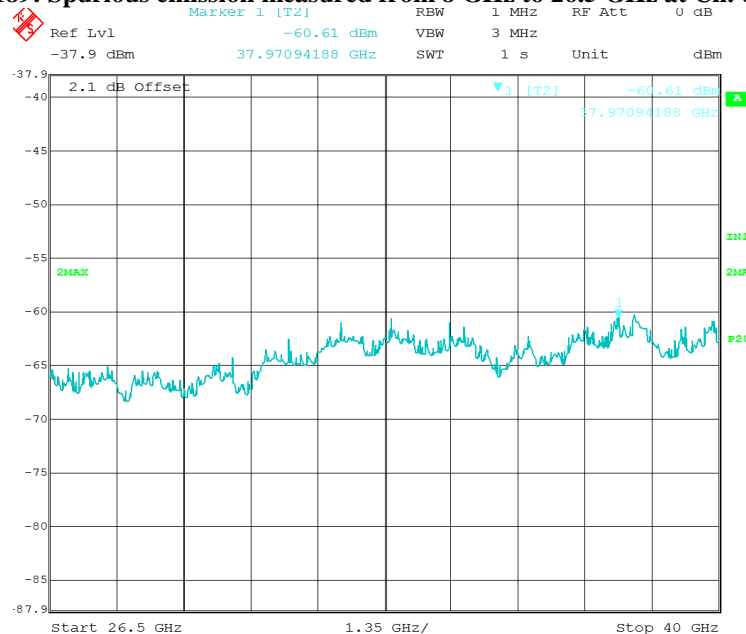


Figure 190: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Peak

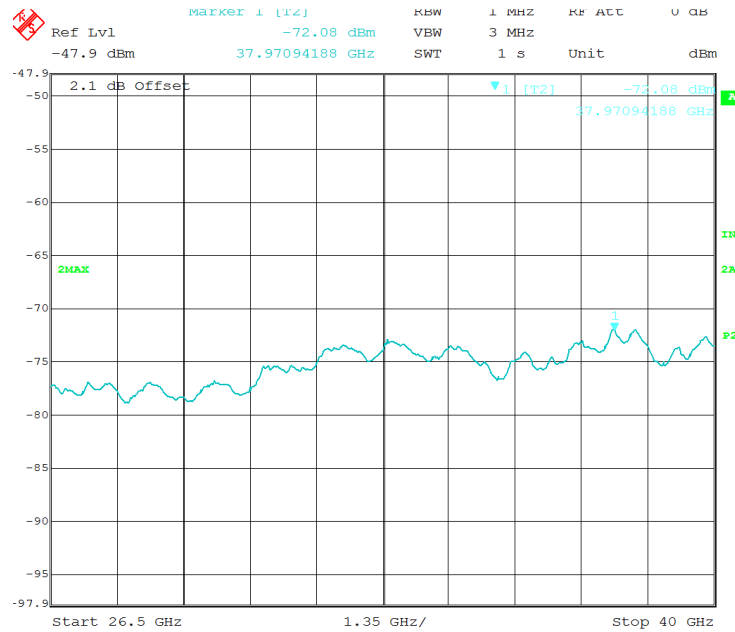


Figure 191: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Average

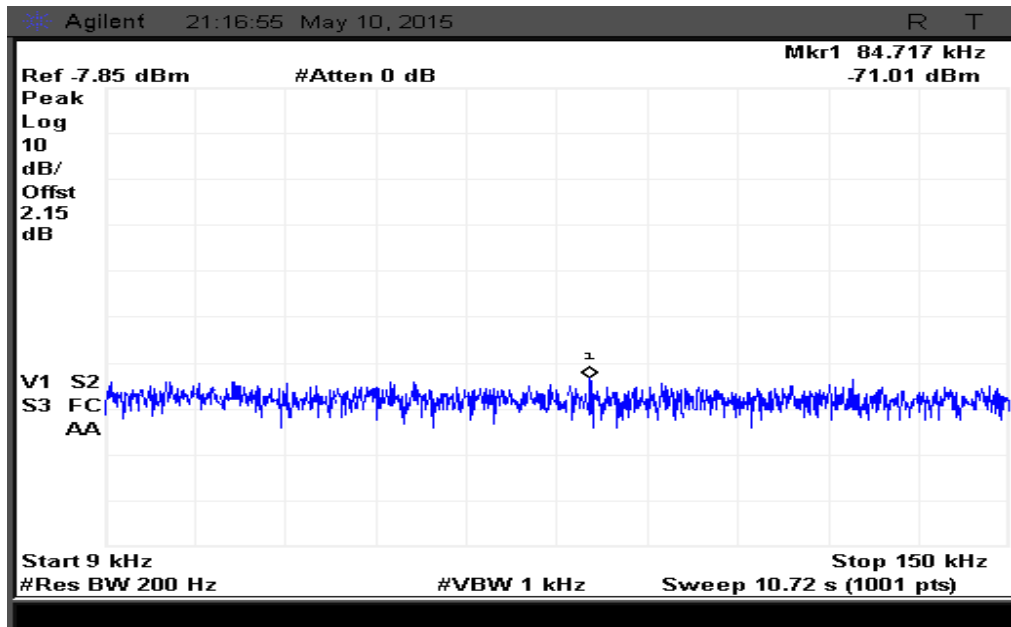


Figure 192: Spurious emission measured from 9 kHz to 150 kHz at Ch. 1-Peak

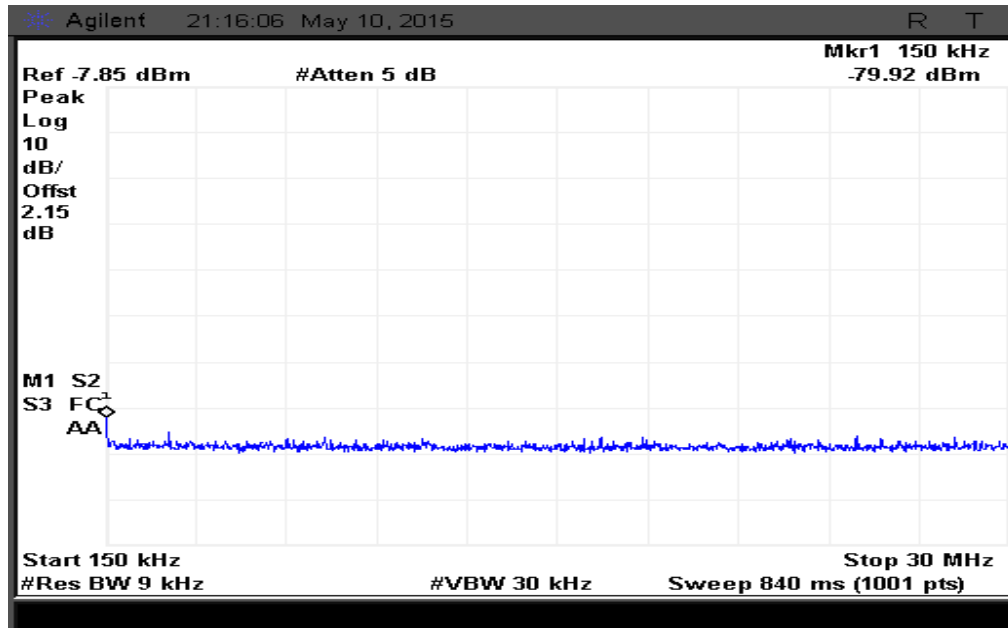


Figure 193: Spurious emission measured from 150 kHz to 30 MHz at Ch. 1-Peak

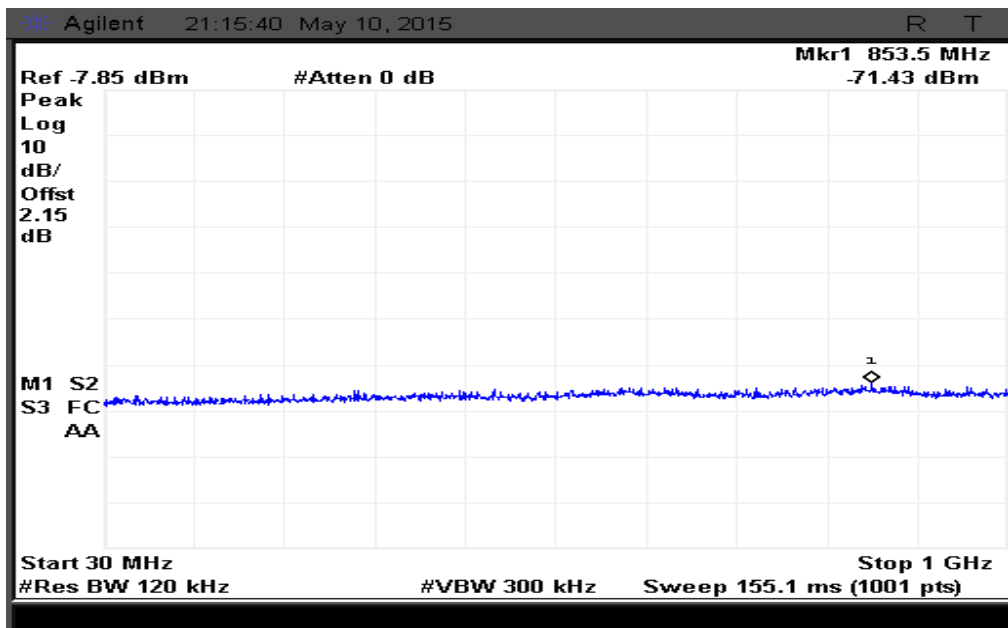


Figure 194: Spurious emission measured from 30 MHz to 1 GHz at Ch. 1-Peak

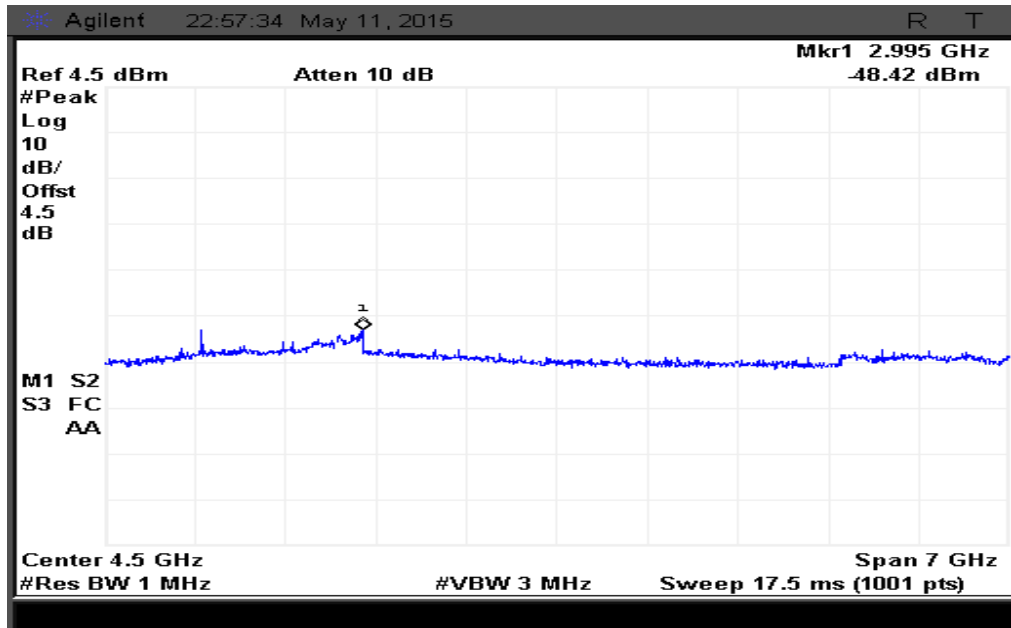


Figure 195: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Peak

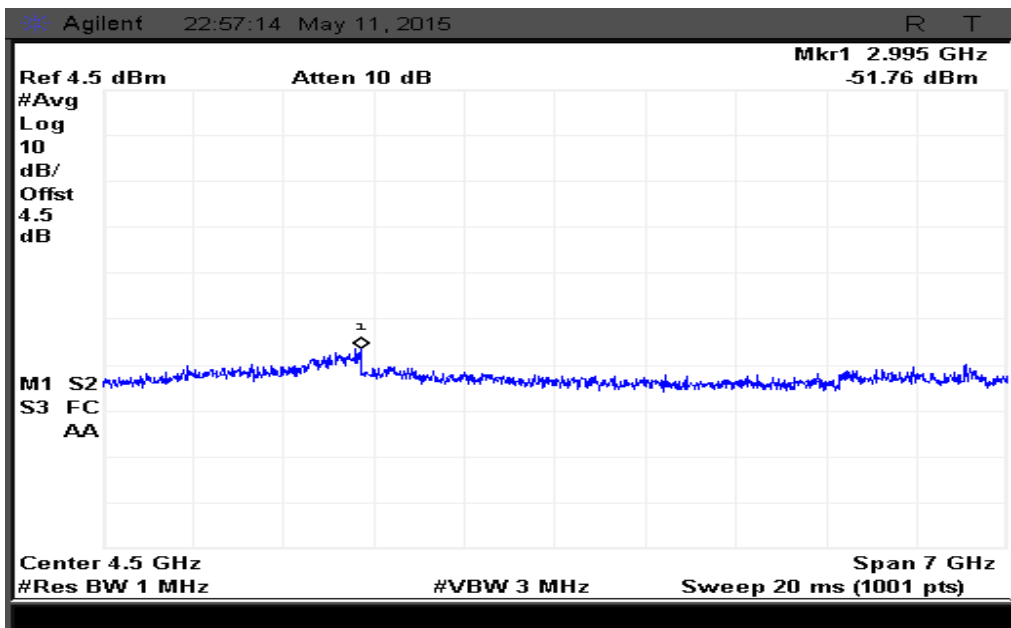


Figure 196: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Average

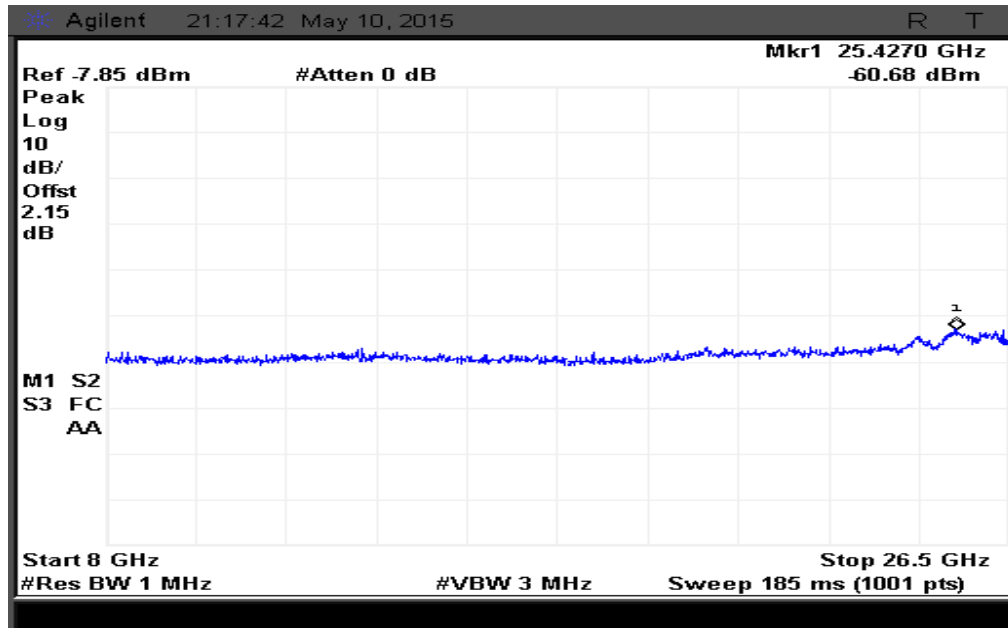


Figure 197: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Peak

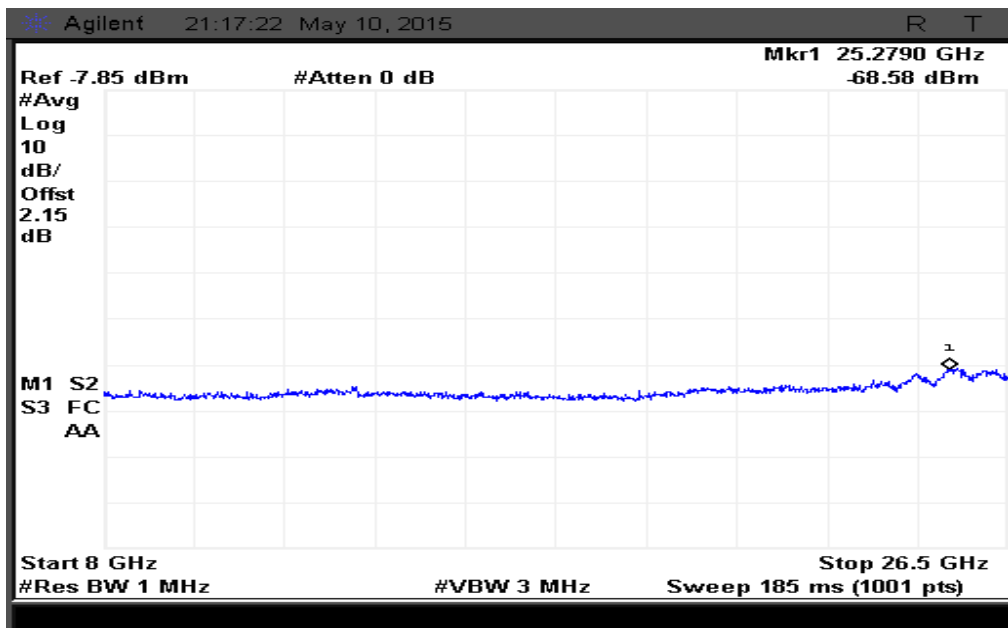
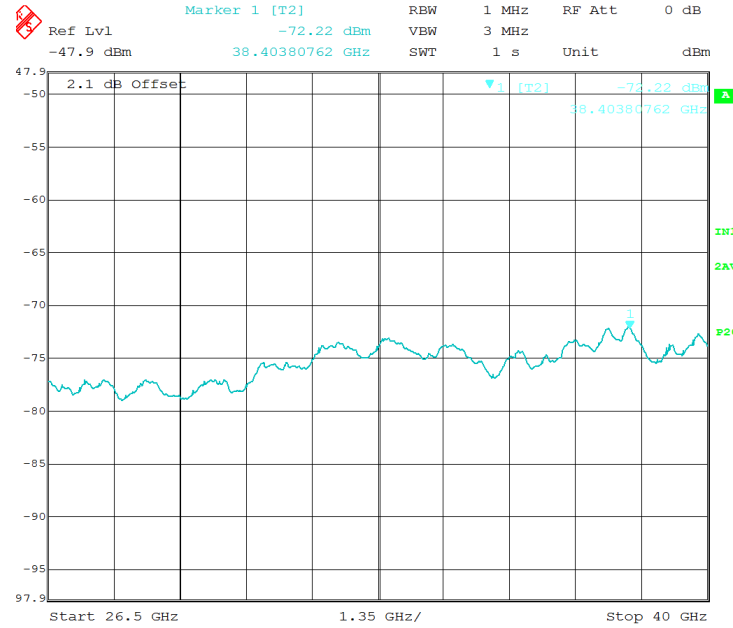
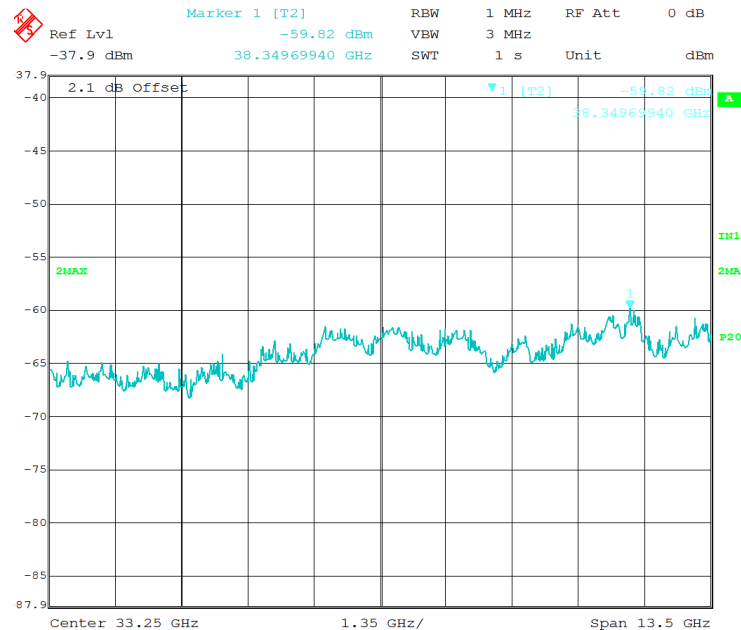


Figure 198: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Average





**Figure 199: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Average**



**Figure 200: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Peak**

### 5.3.1.6.6 10MHz MODULATION BW - HIGH CHANNEL\_5335MHZ

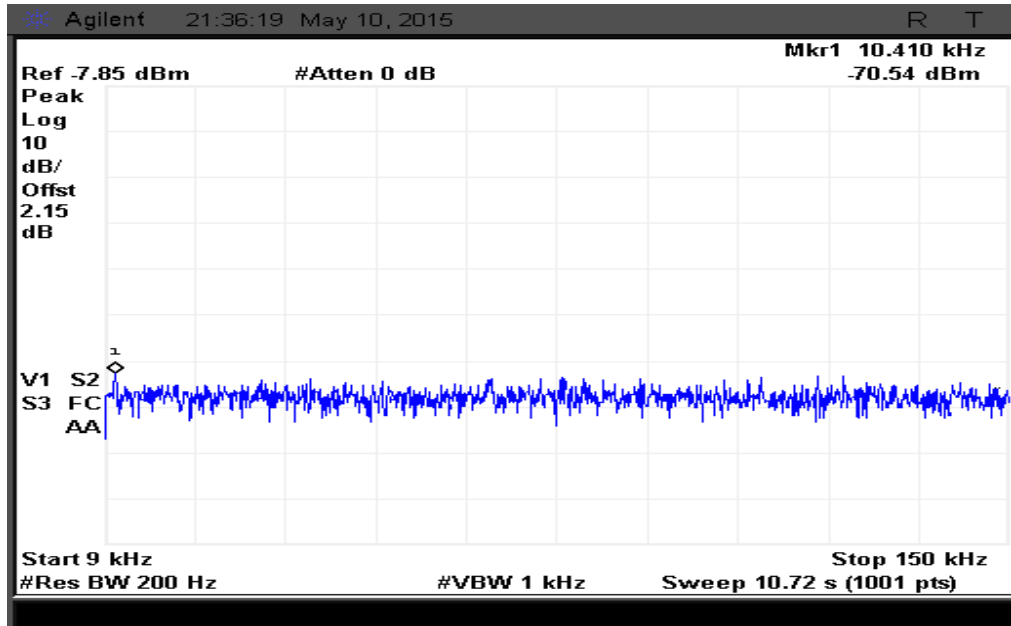


Figure 201: Spurious emission measured from 9 kHz to 150 kHz at Ch. 0-Peak

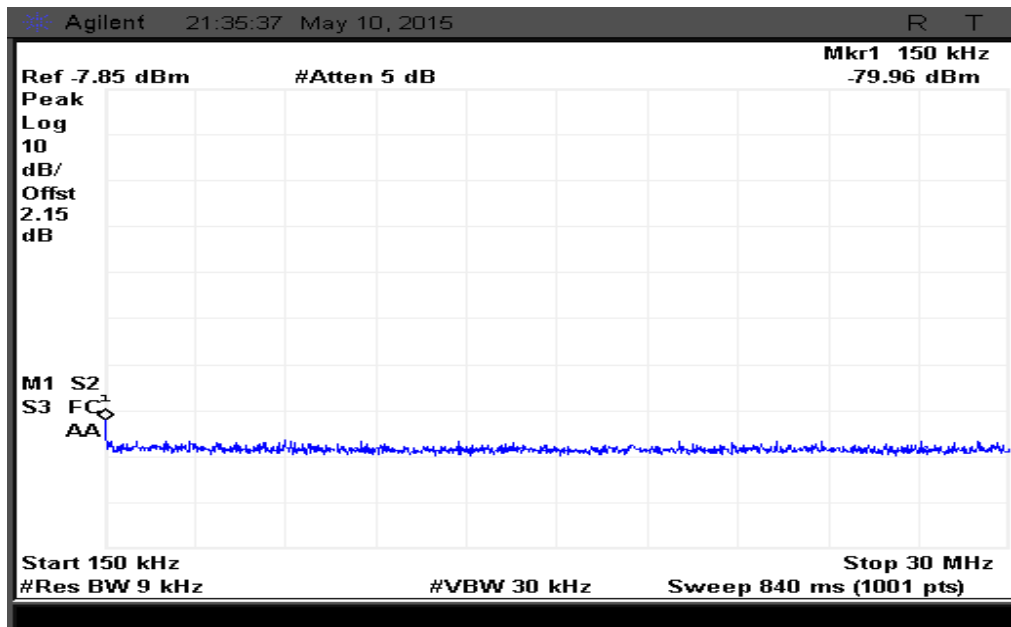


Figure 202: Spurious emission measured from 150 kHz to 30 MHz at Ch. 0-Peak

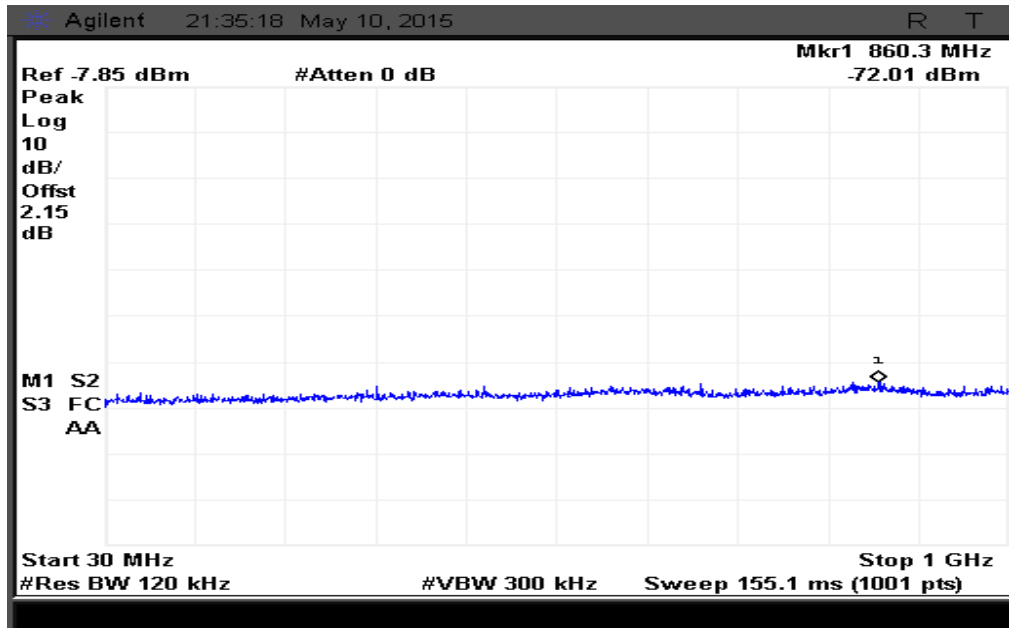


Figure 203: Spurious emission measured from 30 MHz to 1 GHz at Ch. 0-Peak

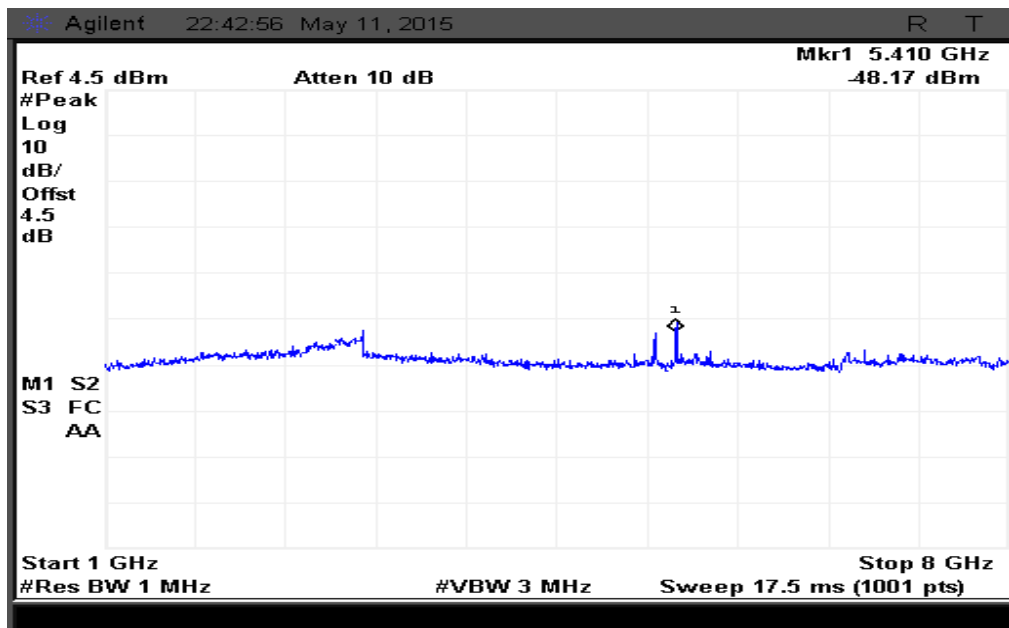


Figure 204: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Peak

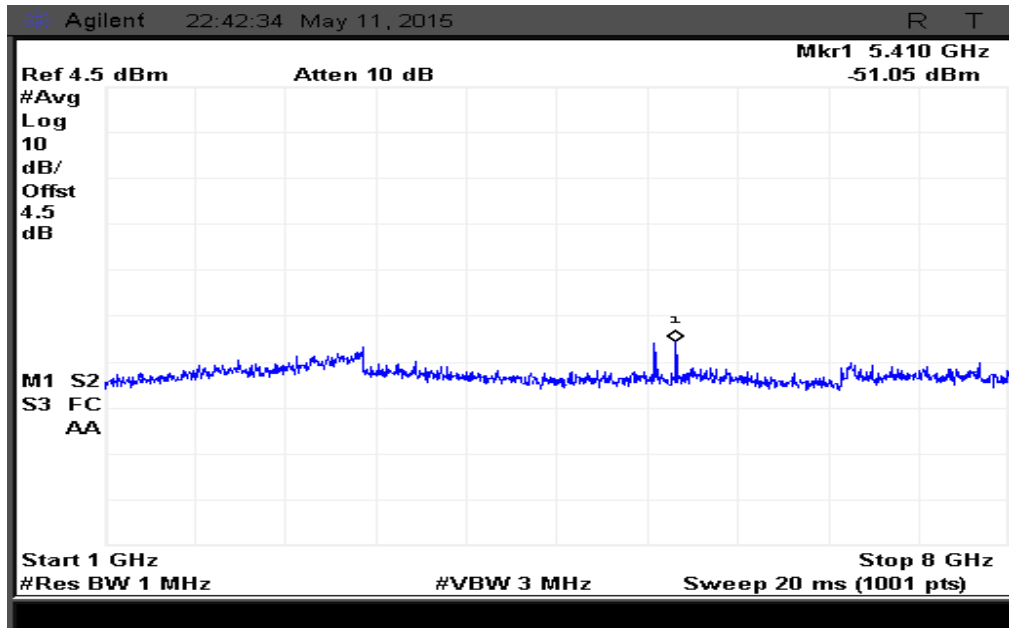


Figure 205: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Average

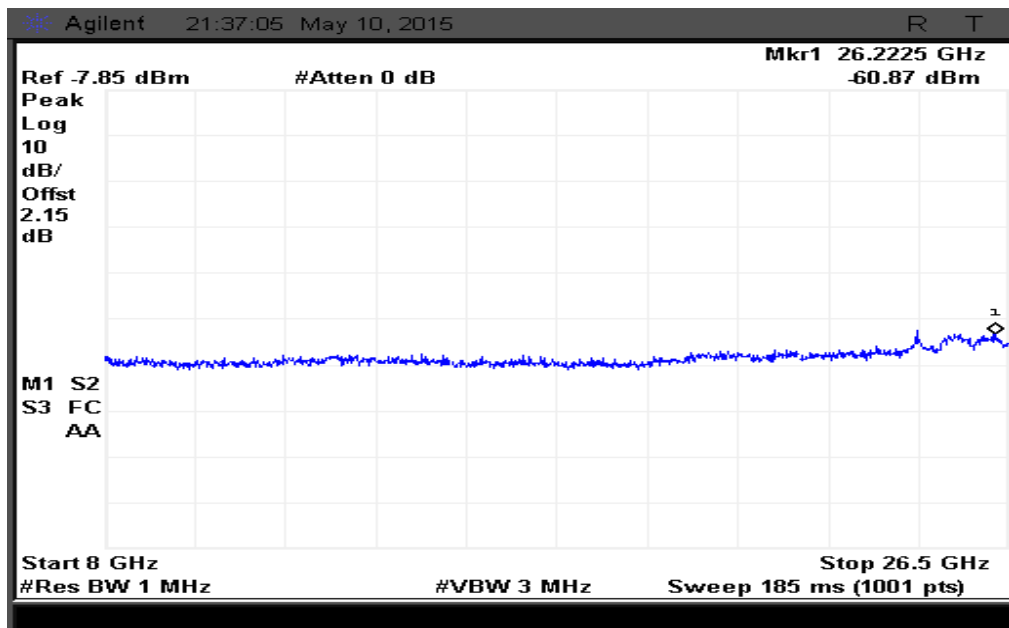


Figure 206: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Peak

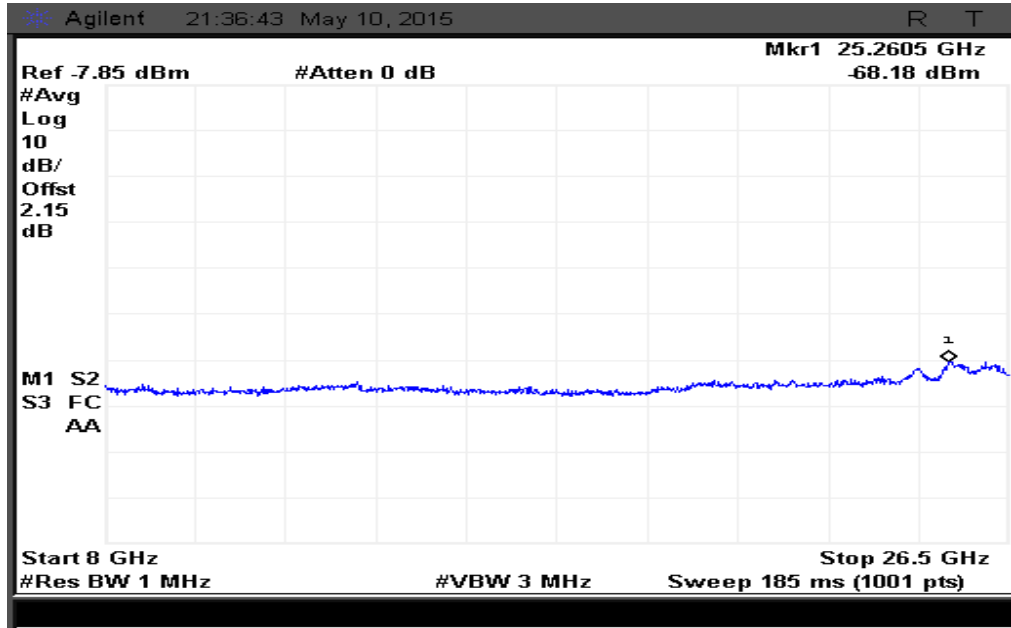


Figure 207: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Average

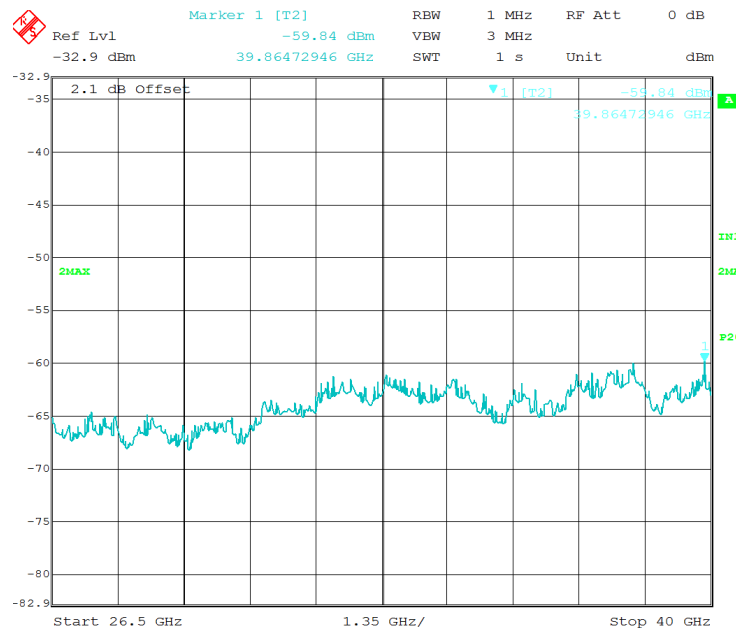


Figure 208: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Peak

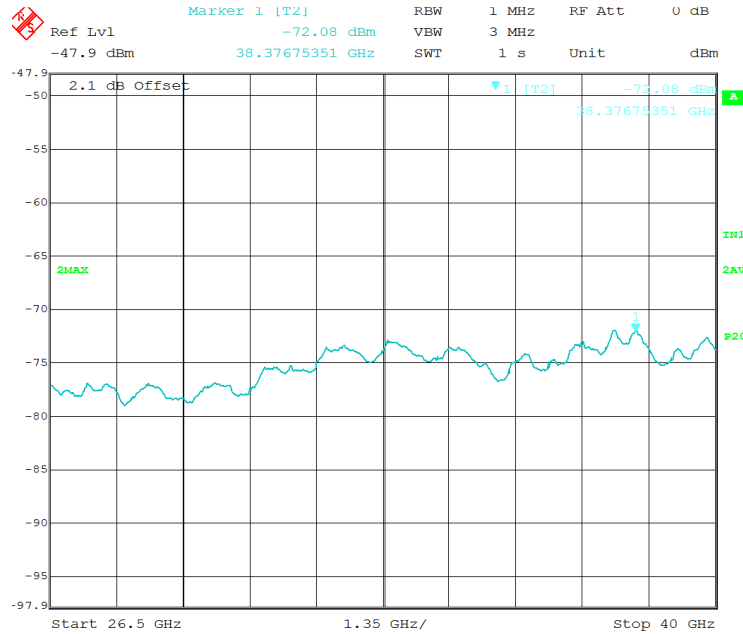


Figure 209: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Average

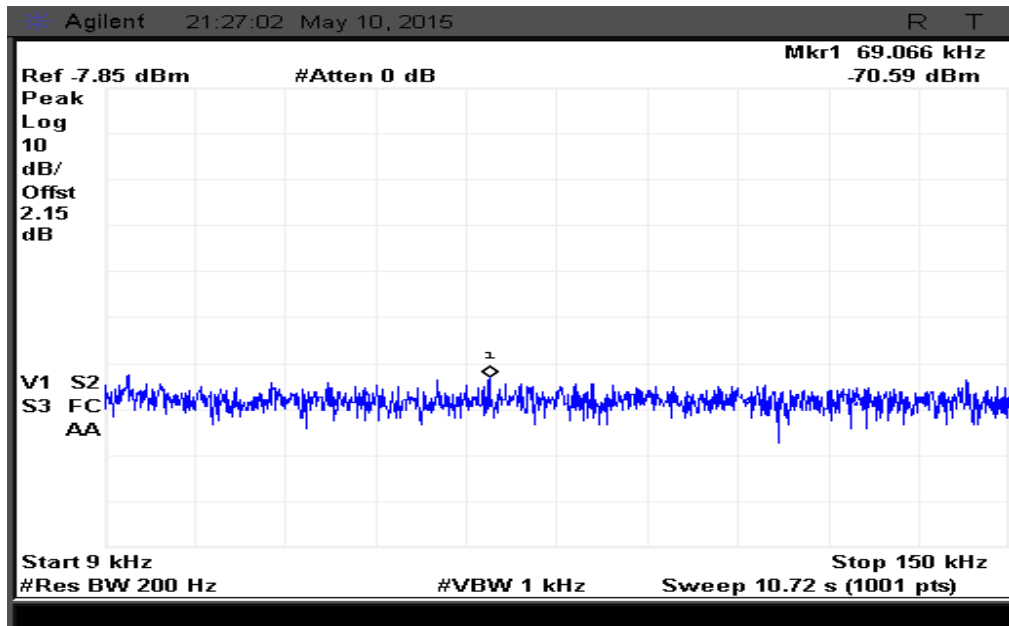


Figure 210: Spurious emission measured from 9 kHz to 150 kHz at Ch. 1-Peak

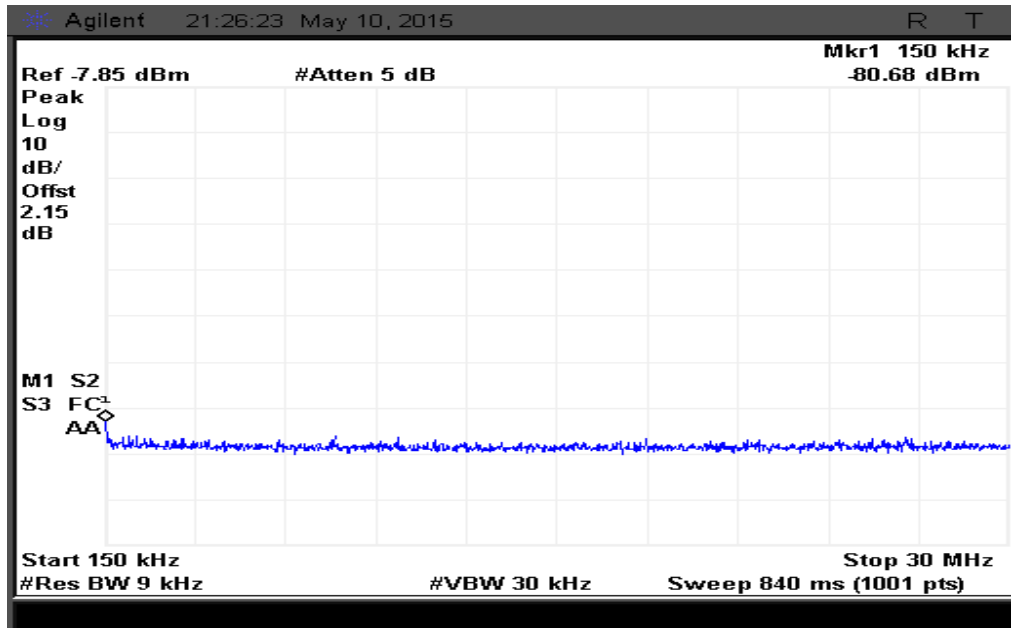


Figure 211: Spurious emission measured from 150 kHz to 30 MHz at Ch. 1-Peak

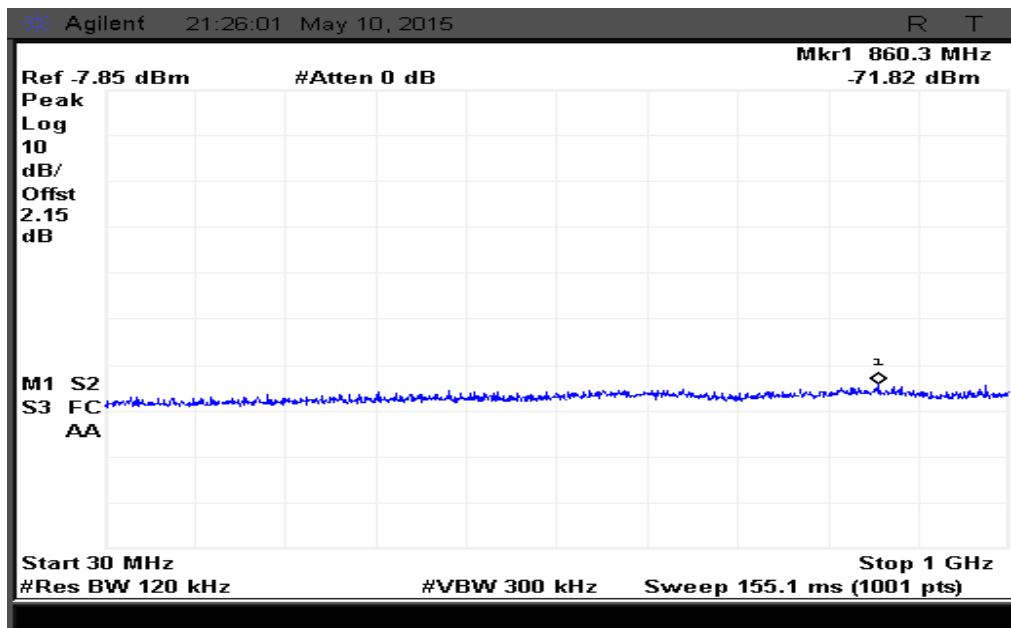


Figure 212: Spurious emission measured from 30 MHz to 1 GHz at Ch. 1-Peak

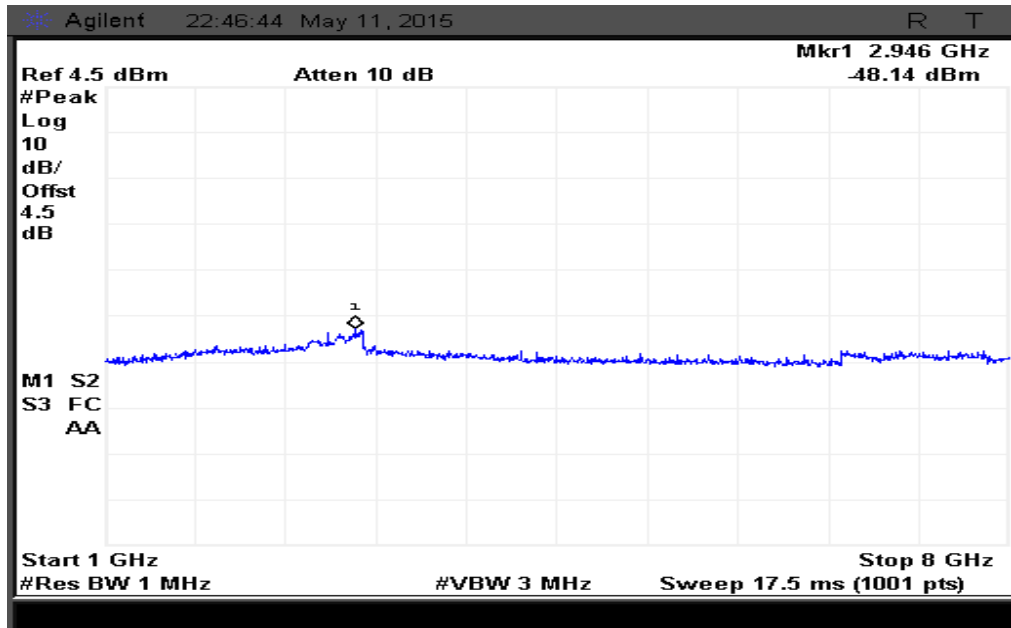


Figure 213: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Peak

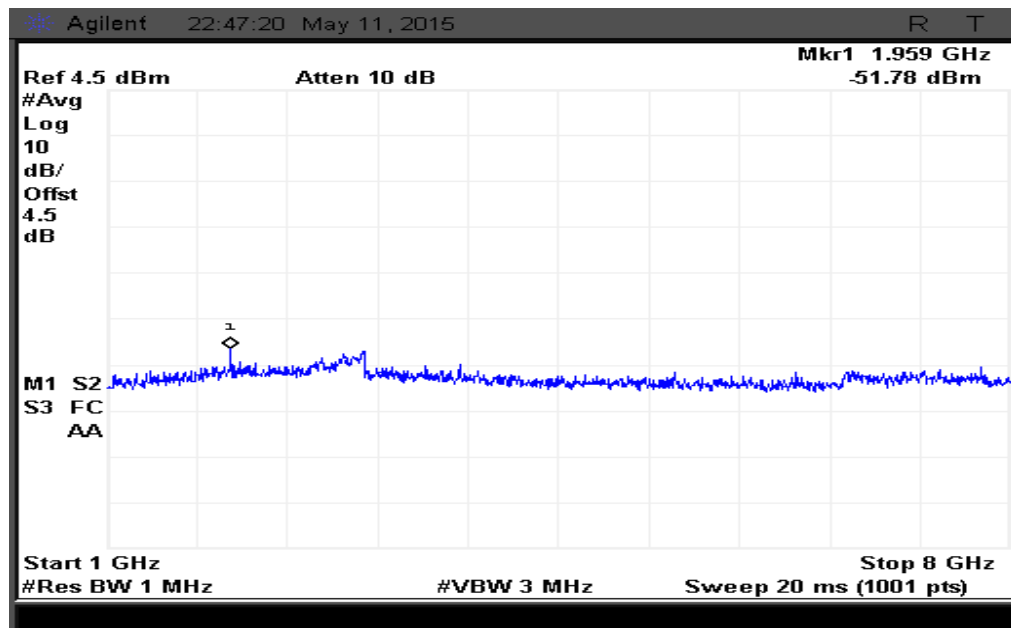


Figure 214: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Average



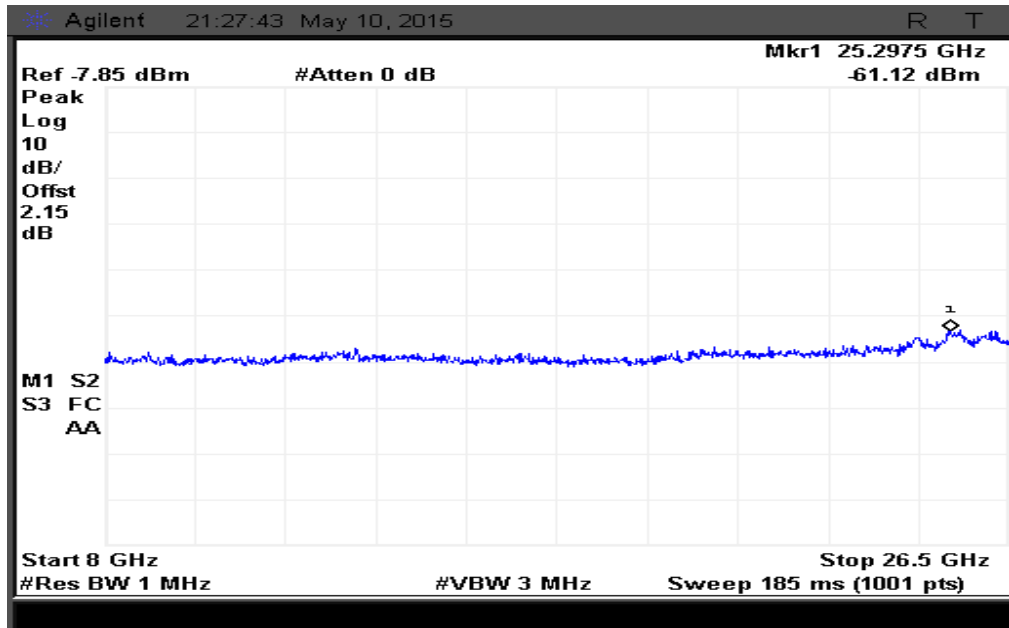


Figure 215: Spurious emission measured from 8 GHz to 26.50 GHz at Ch. 1-Peak

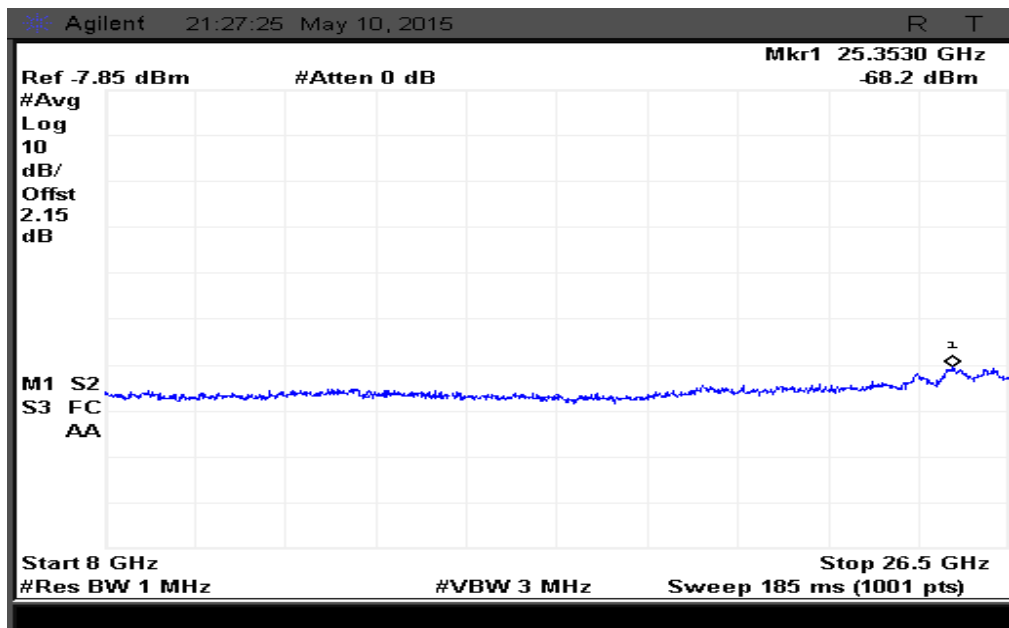
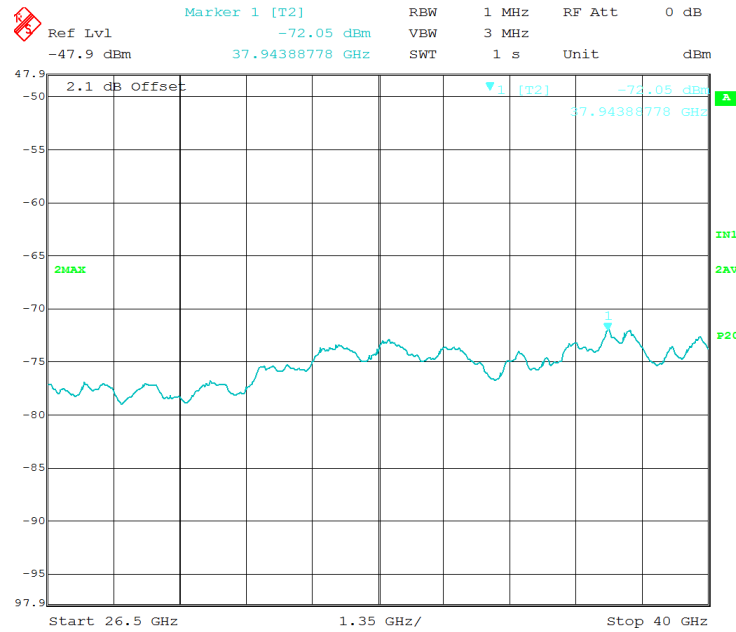
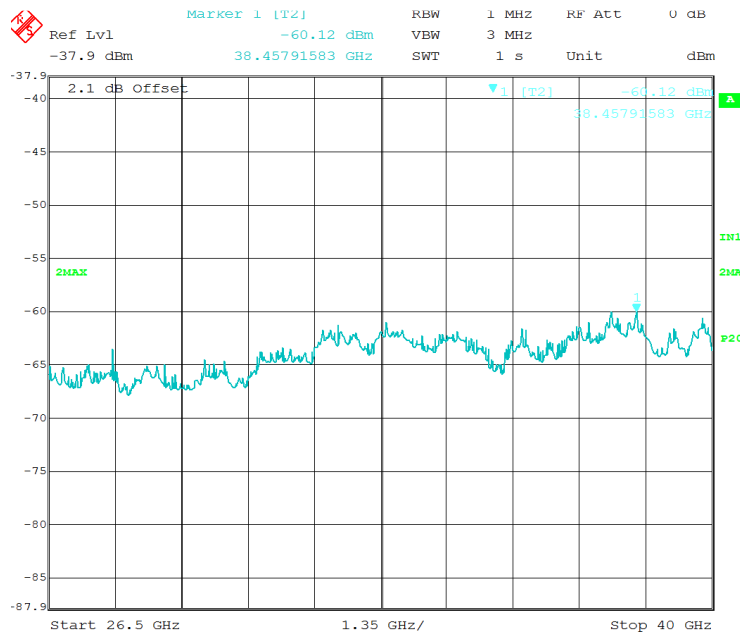


Figure 216: Spurious emission measured from 8 GHz to 26.50 GHz at Ch. 1-Average



**Figure 217: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Average**



**Figure 218: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Peak**

### 5.3.1.7 RESULT (SUPPORTING GRAPHS / DATA) FOR 24DBI DISH CONDITION

#### 5.3.1.7.1 40MHz MODULATION BW - Low CHANNEL\_5280 MHz

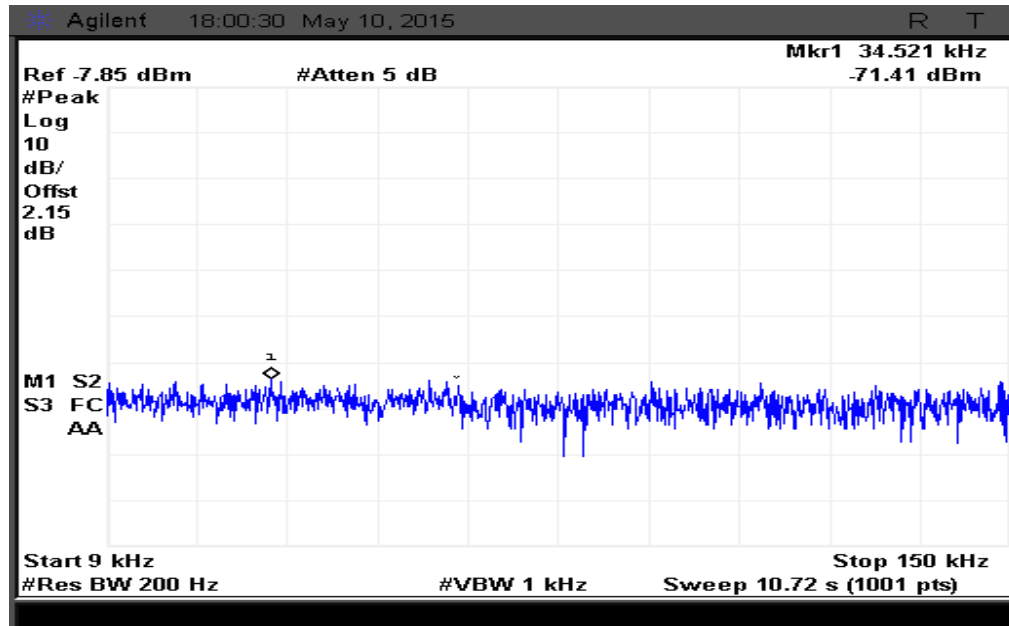


Figure 219: Spurious emission measured from 9 kHz to 150 kHz at Ch. 0-Peak

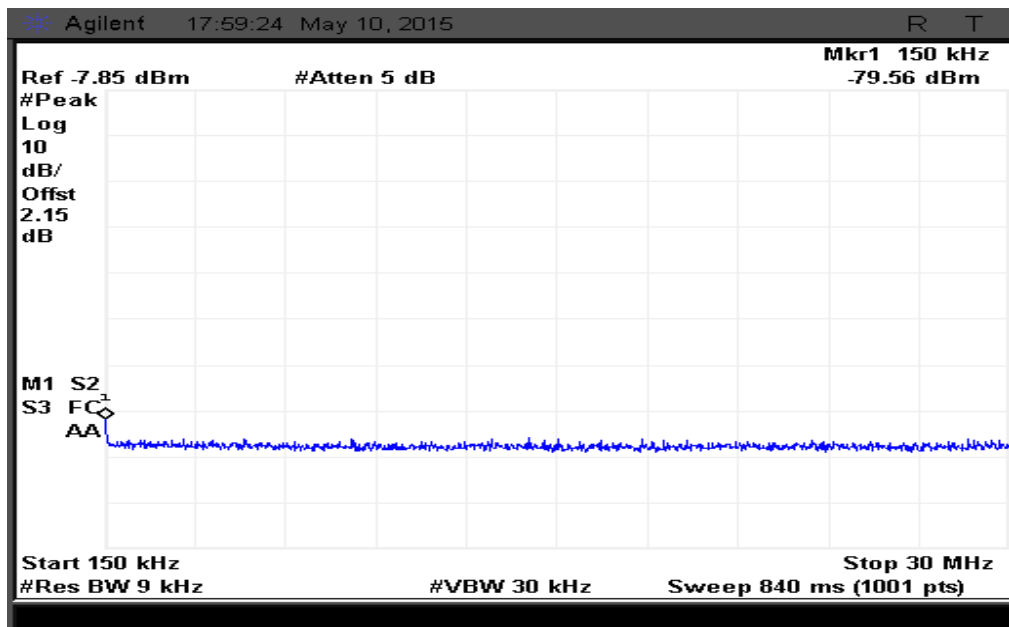


Figure 220: Spurious emission measured from 150 kHz to 30 MHz at Ch. 0-Peak

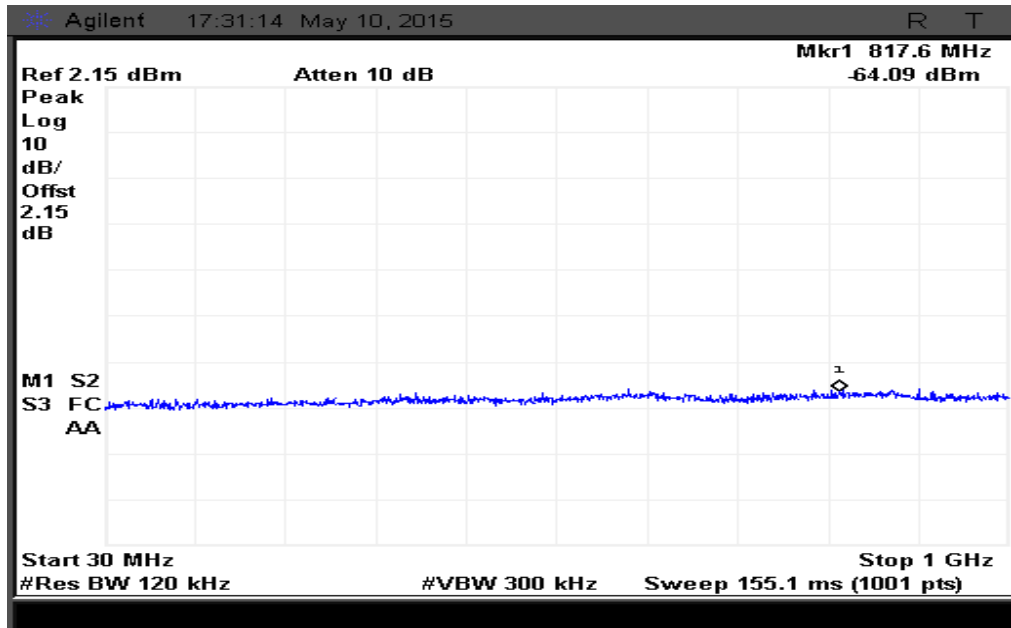


Figure 221: Spurious emission measured from 30 MHz to 1 GHz at Ch. 0-Peak

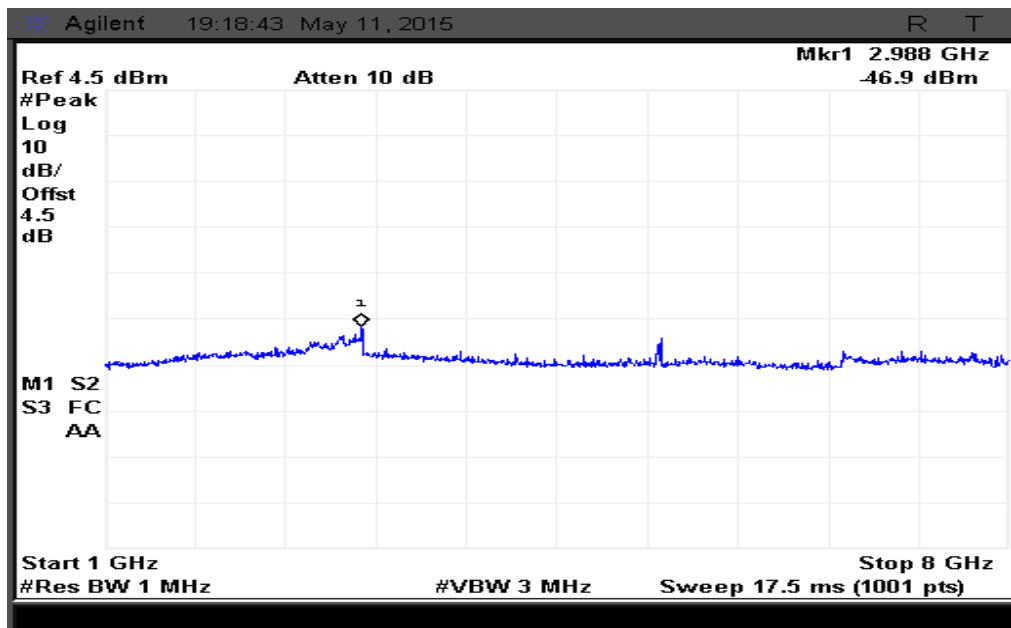


Figure 222: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Peak

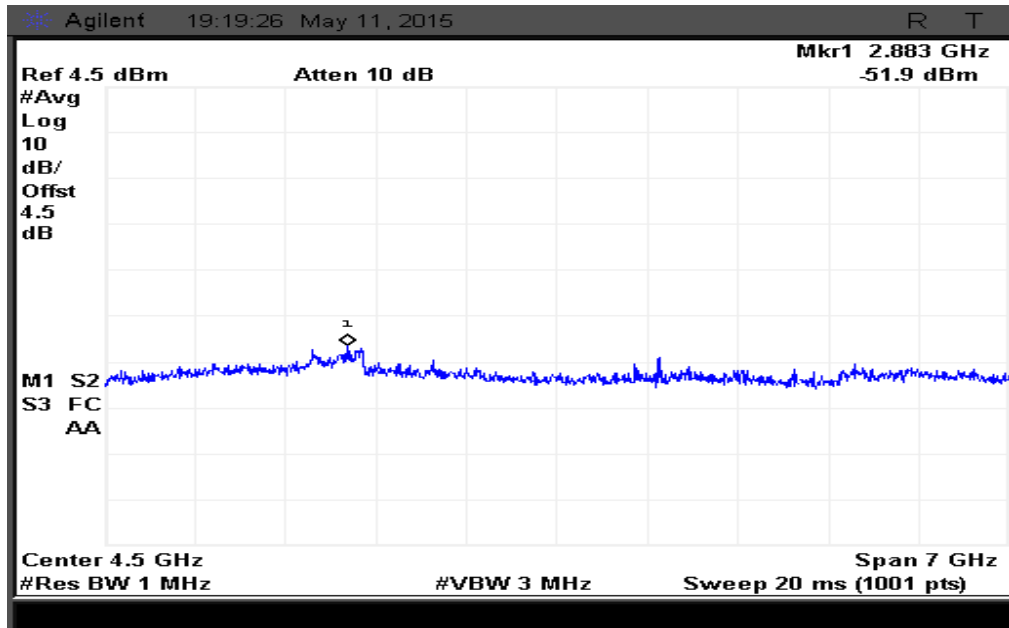


Figure 223: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Average

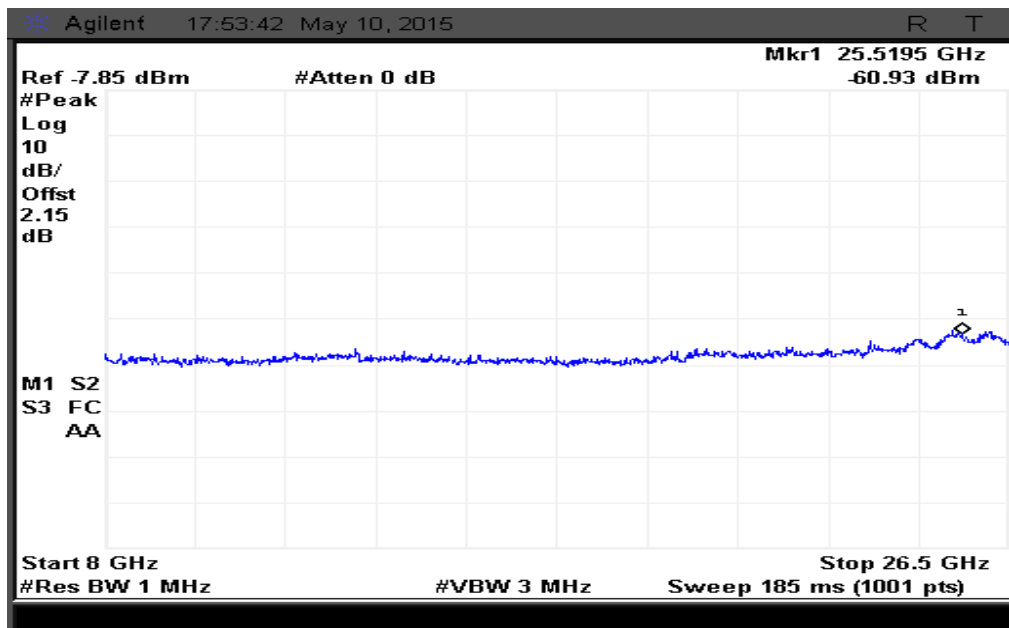


Figure 224: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Peak

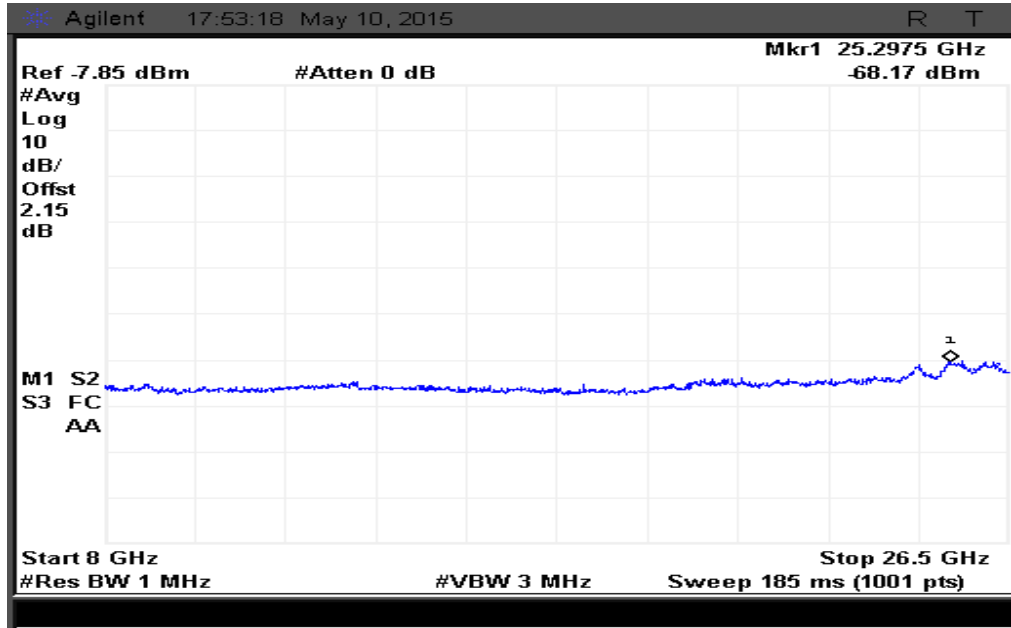


Figure 225: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Average

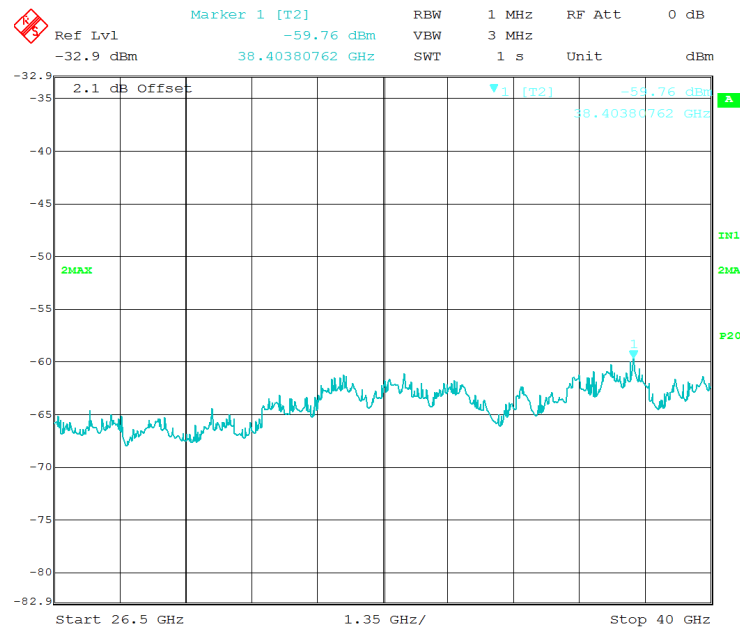


Figure 226: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Peak

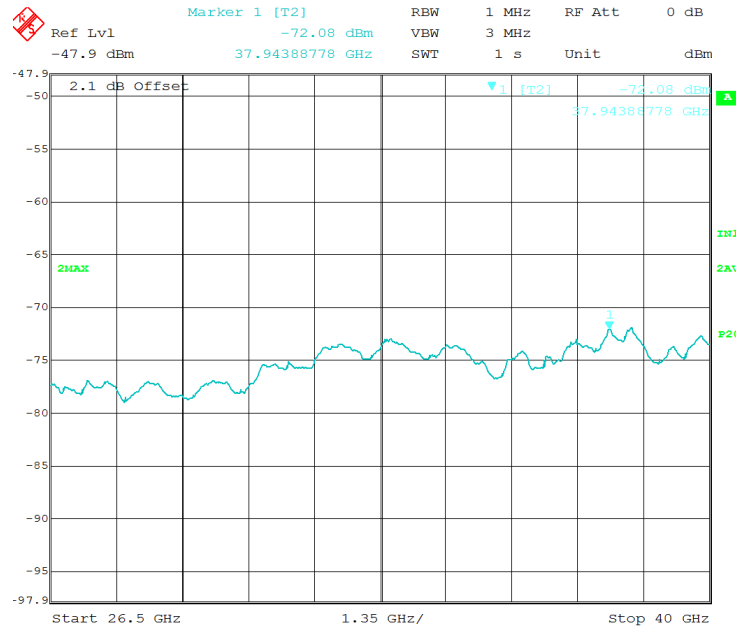


Figure 227: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Avg

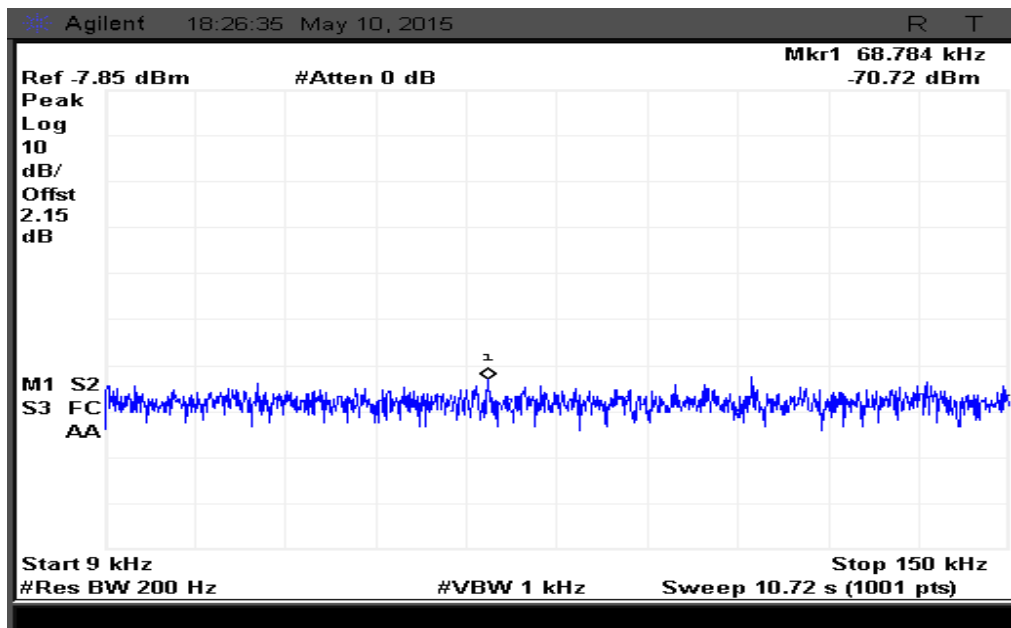


Figure 228: Spurious emission measured from 9 kHz to 150 kHz at Ch. 1-Peak

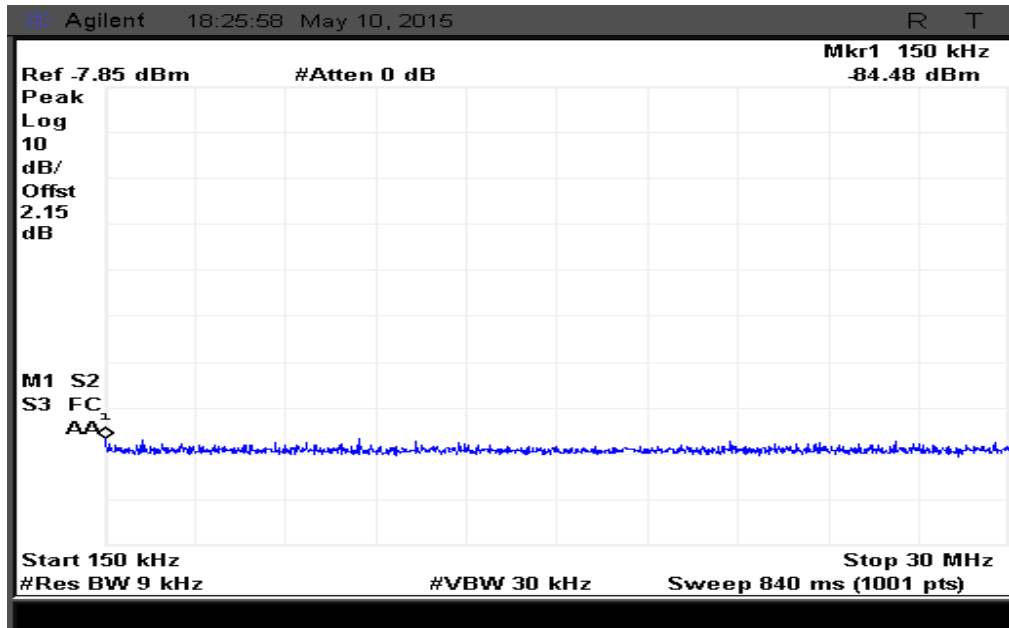


Figure 229: Spurious emission measured from 150 kHz to 30 MHz at Ch. 1-Peak

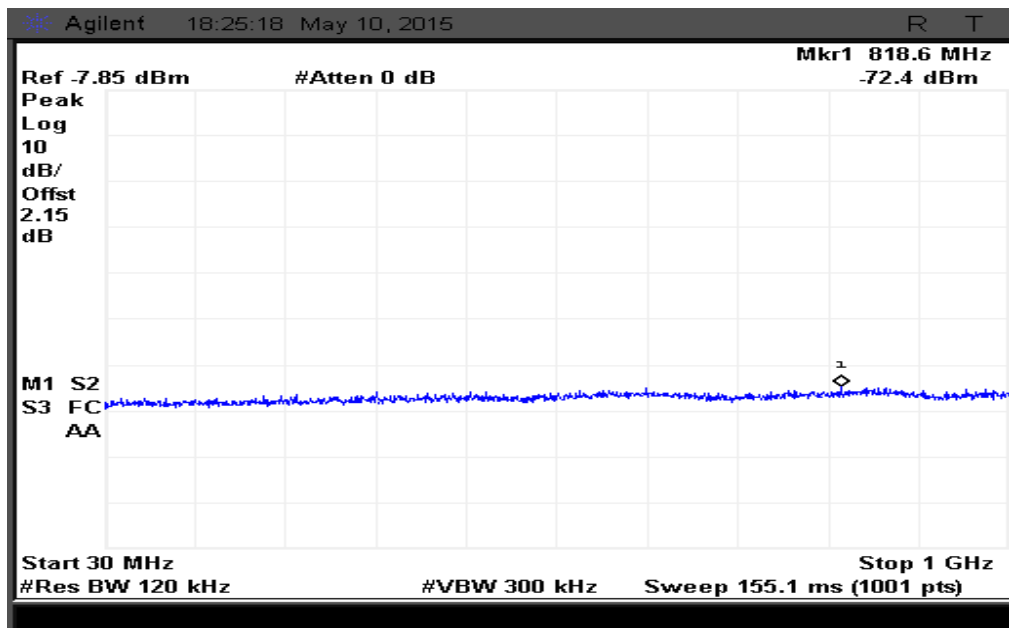


Figure 230: Spurious emission measured from 30 MHz to 1 GHz at Ch. 1-Peak



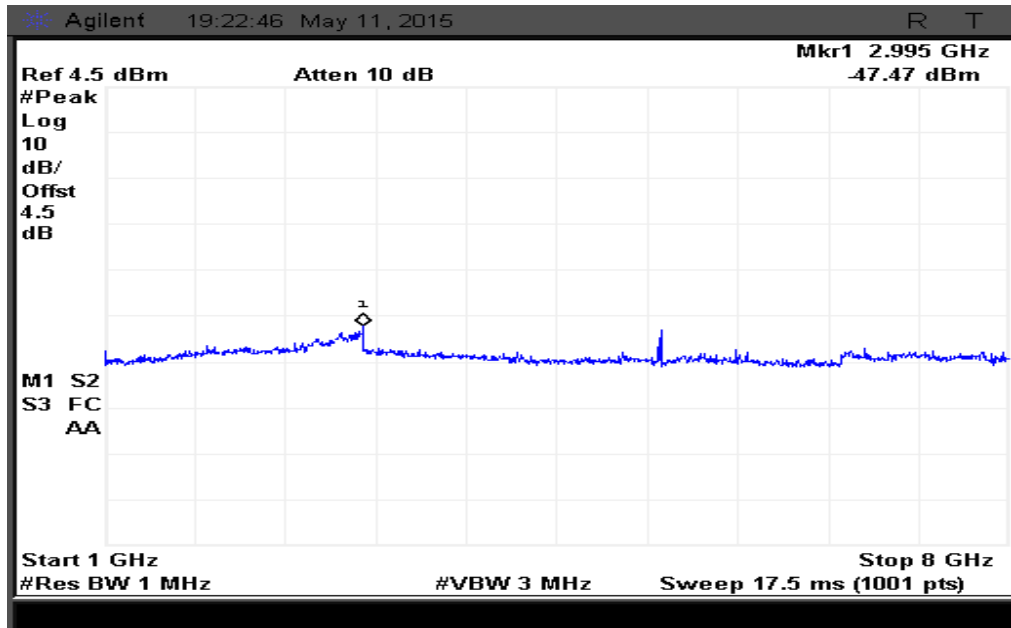


Figure 231: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Peak

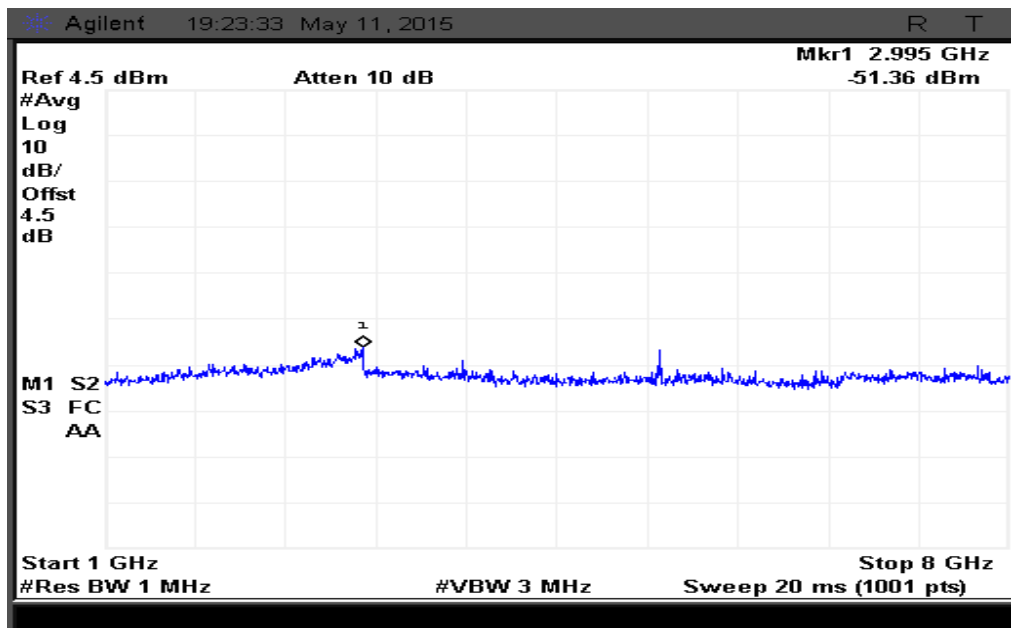


Figure 232: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Average

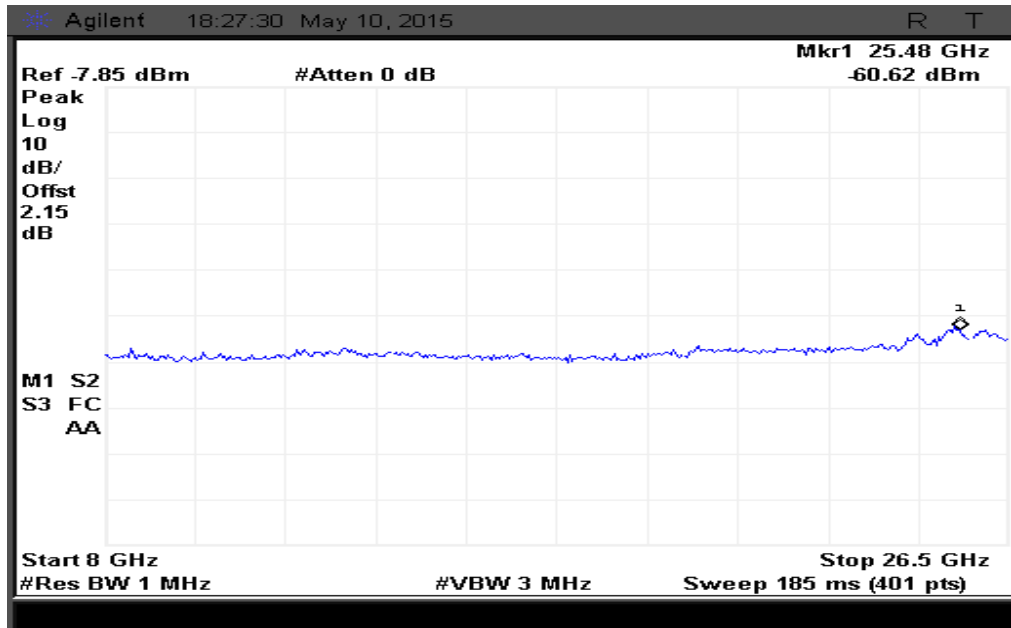


Figure 233: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Peak

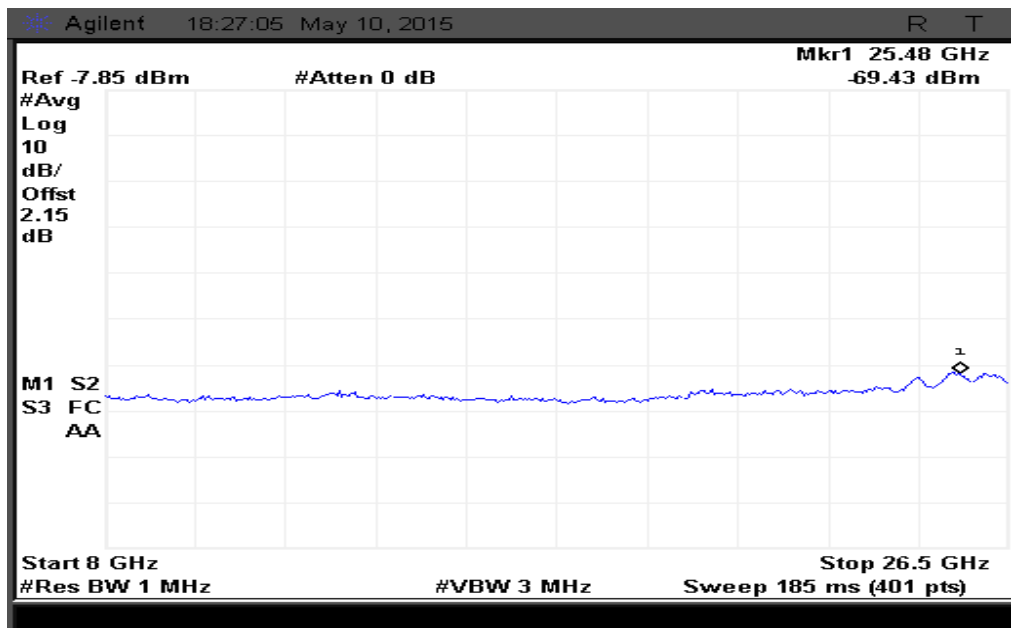
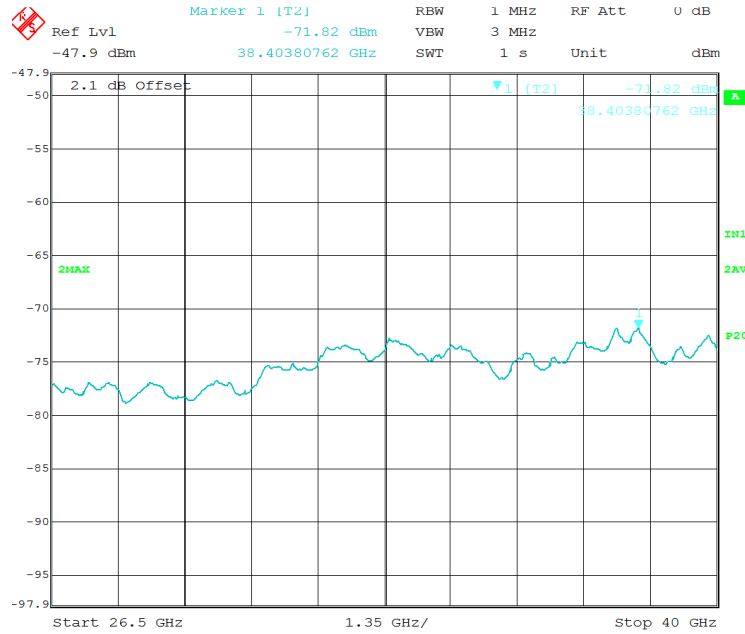
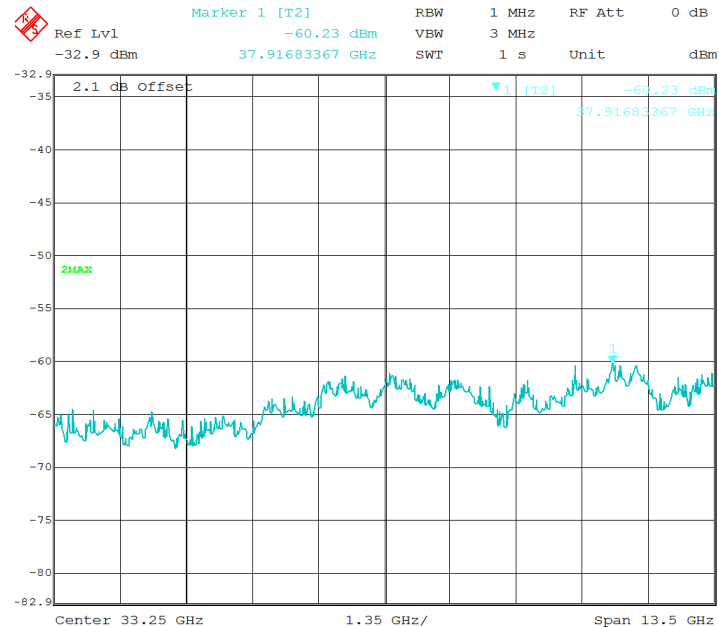


Figure 234: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Average



**Figure 235: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Average**



**Figure 236: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Peak**

### 5.3.1.7.2 40MHz MODULATION BW - MID CHANNEL\_5300 MHz

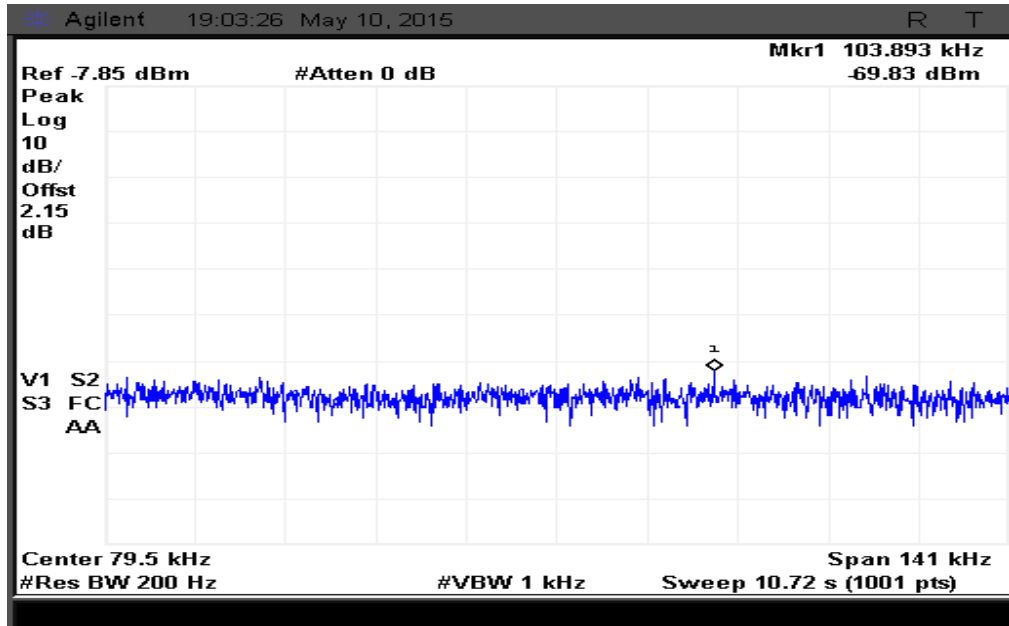


Figure 237: Spurious emission measured from 9 kHz to 150 kHz at Ch. 0-Peak

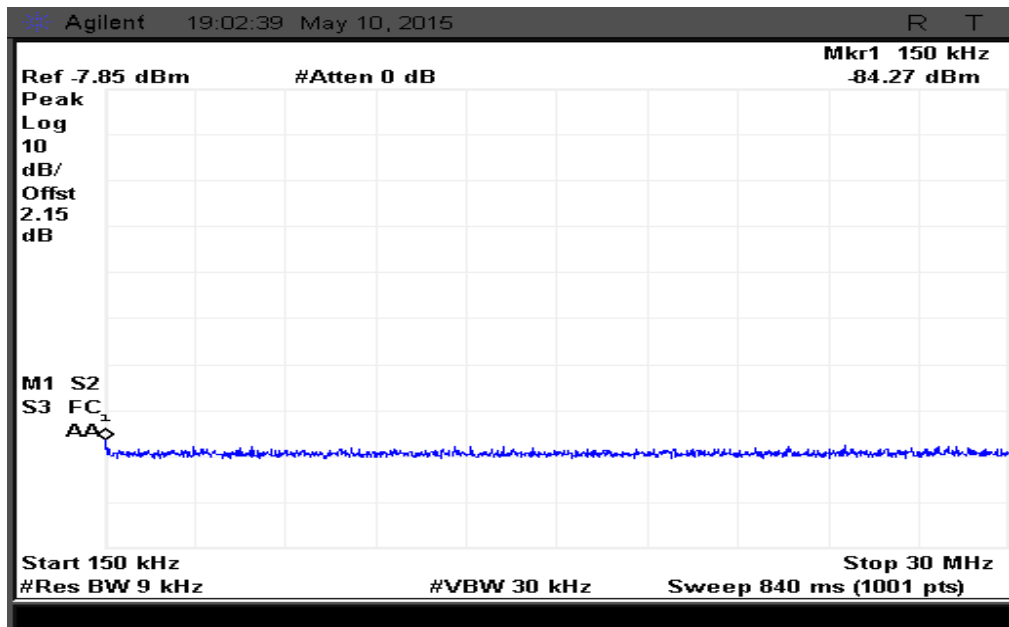


Figure 238: Spurious emission measured from 150 kHz to 30 MHz at Ch. 0-Peak

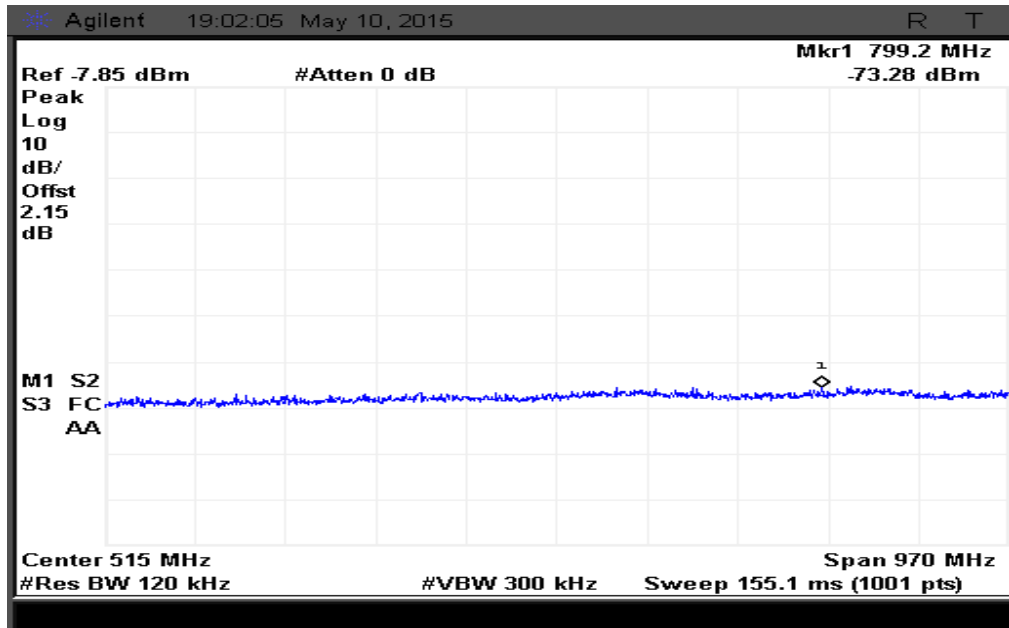


Figure 239: Spurious emission measured from 30 MHz to 1 GHz at Ch. 0-Peak

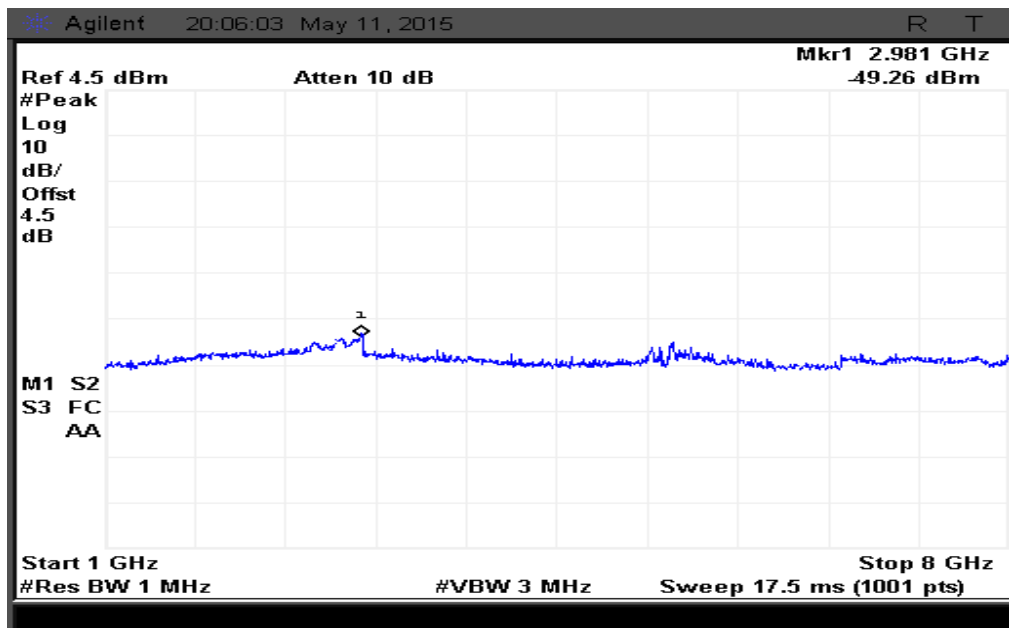


Figure 240: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Peak

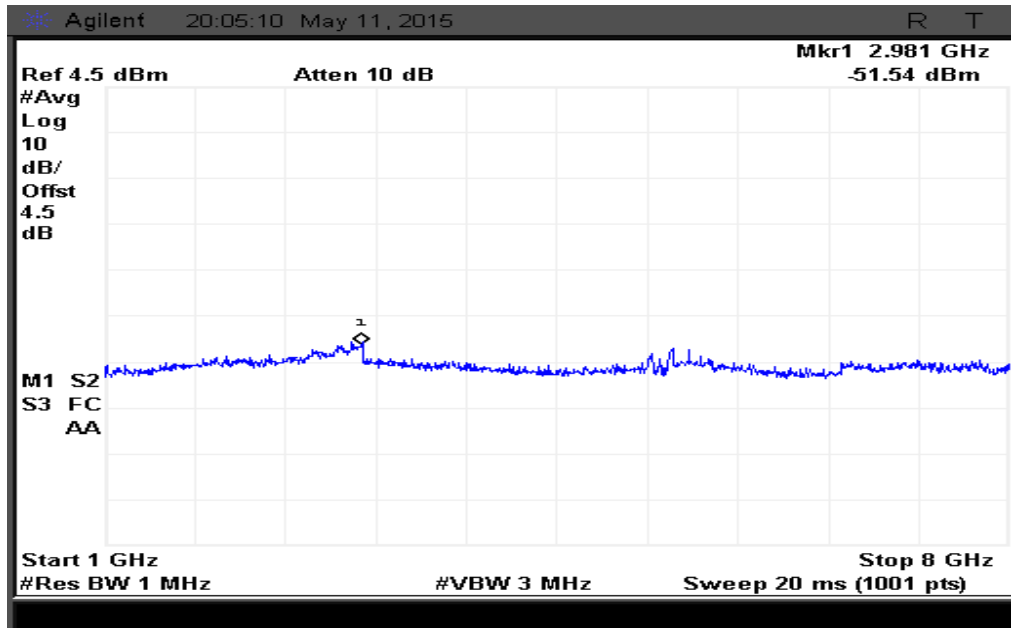


Figure 241: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Average

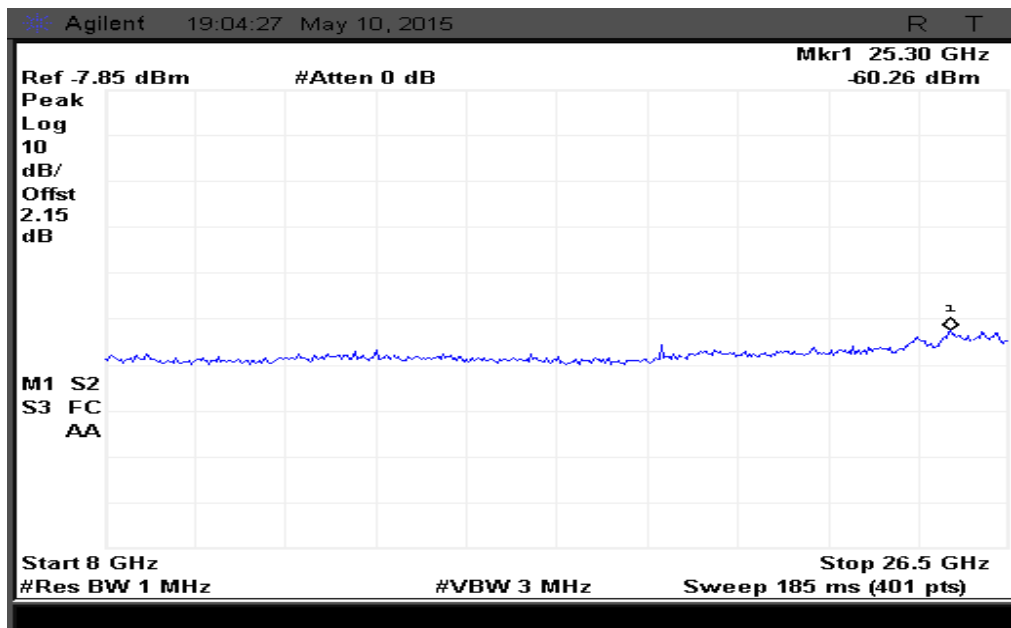


Figure 242: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Peak

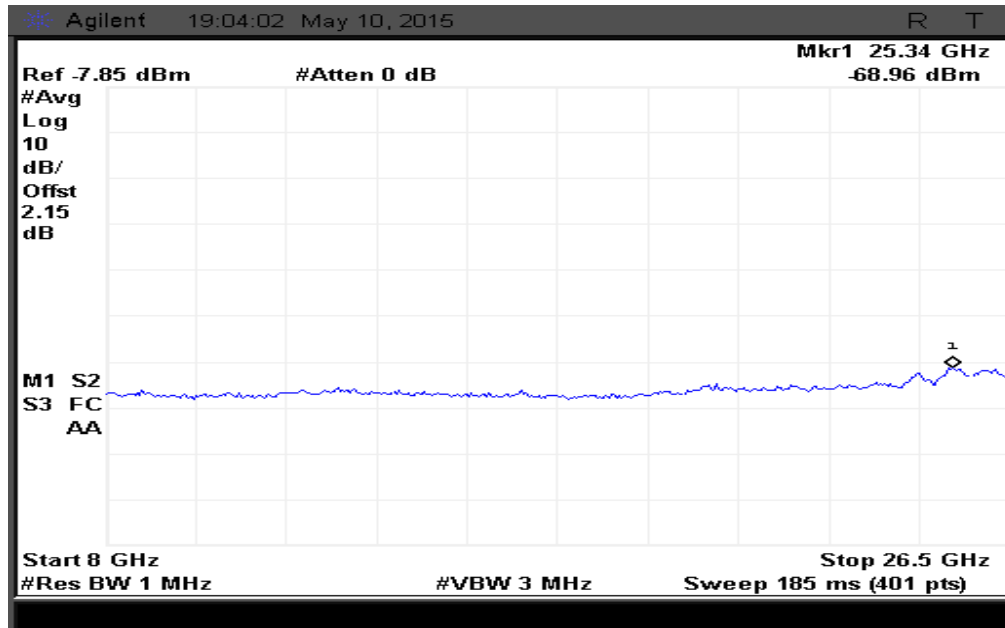


Figure 243: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Average

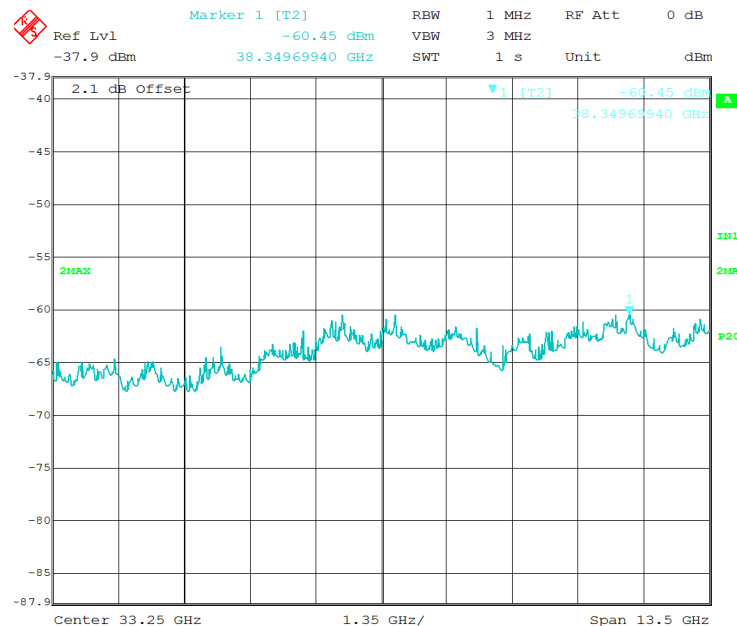


Figure 244: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Peak

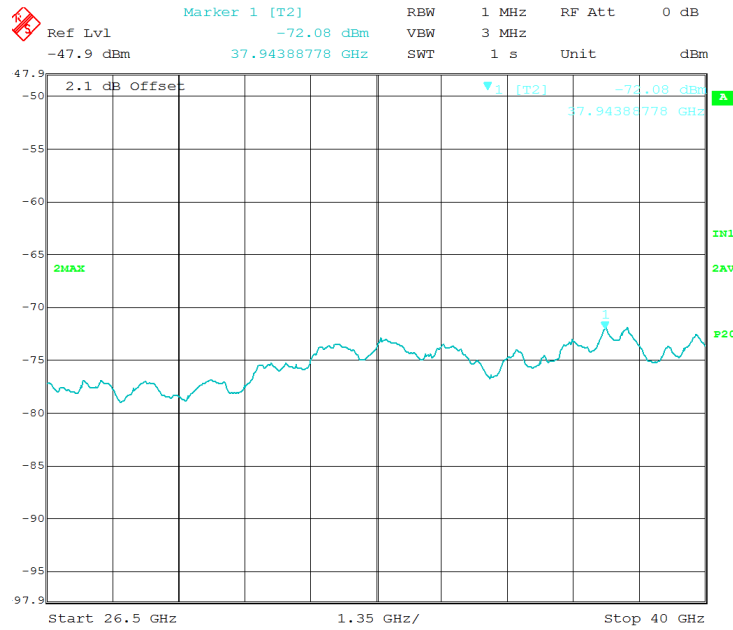


Figure 245: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Average

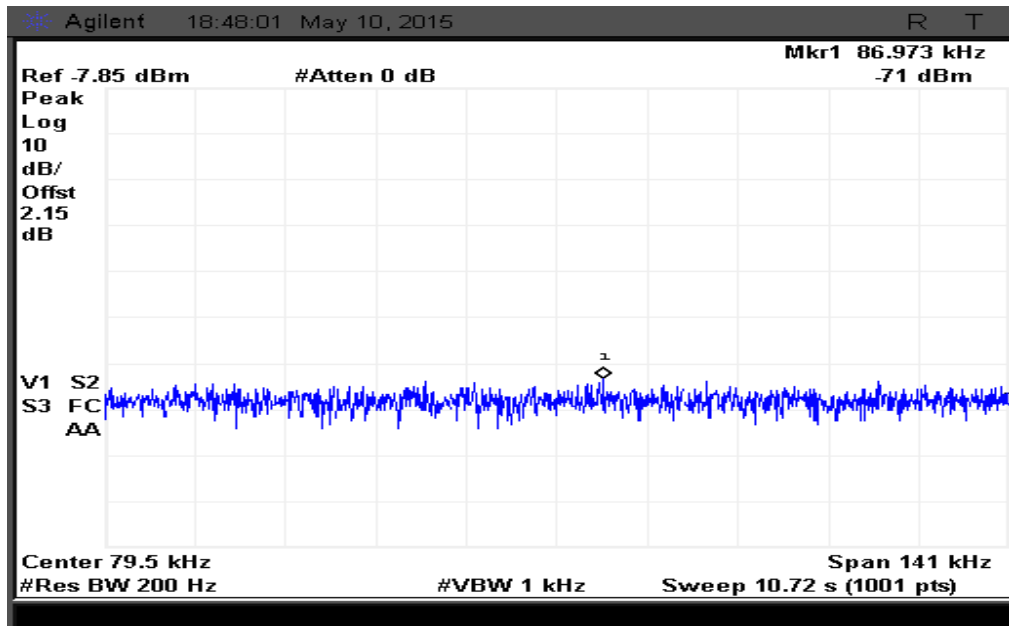


Figure 246: Spurious emission measured from 9 kHz to 150 kHz at Ch. 1-Peak



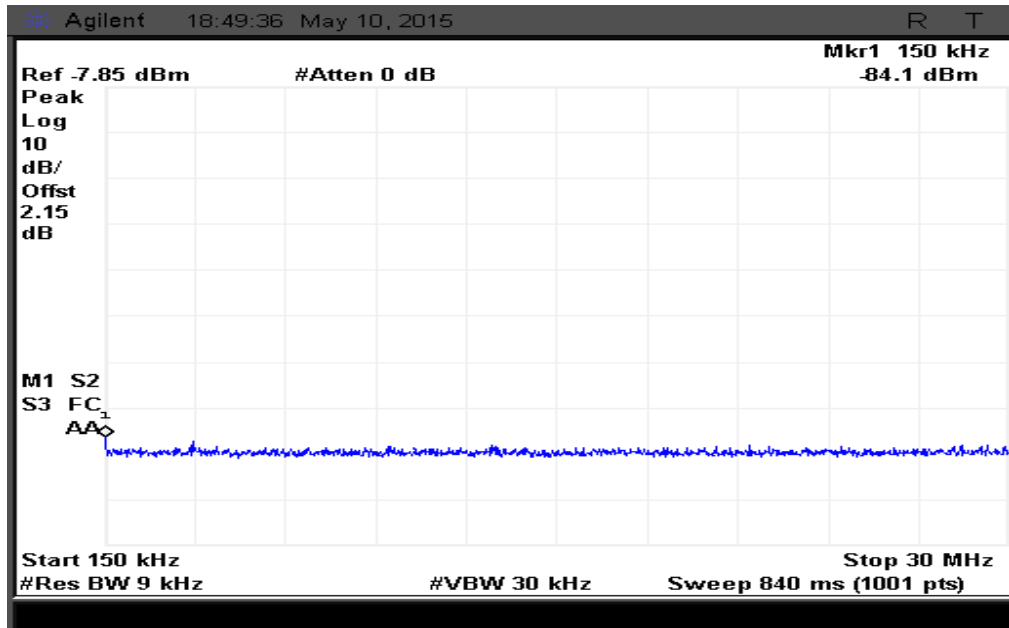


Figure 247: Spurious emission measured from 150 kHz to 30 MHz at Ch. 1-Peak

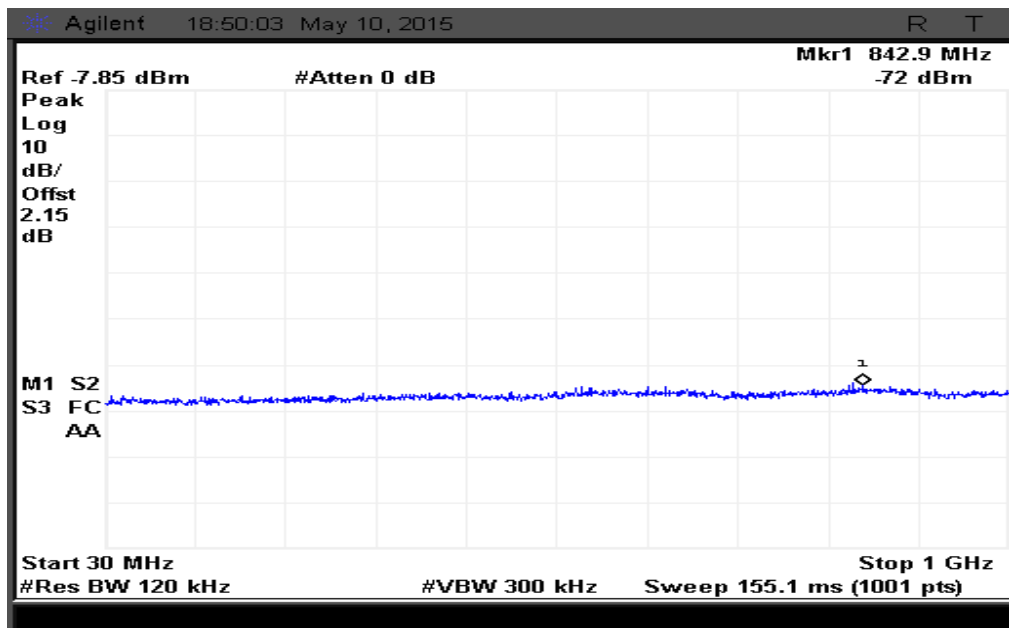


Figure 248: Spurious emission measured from 30 MHz to 1 GHz at Ch. 1-Peak

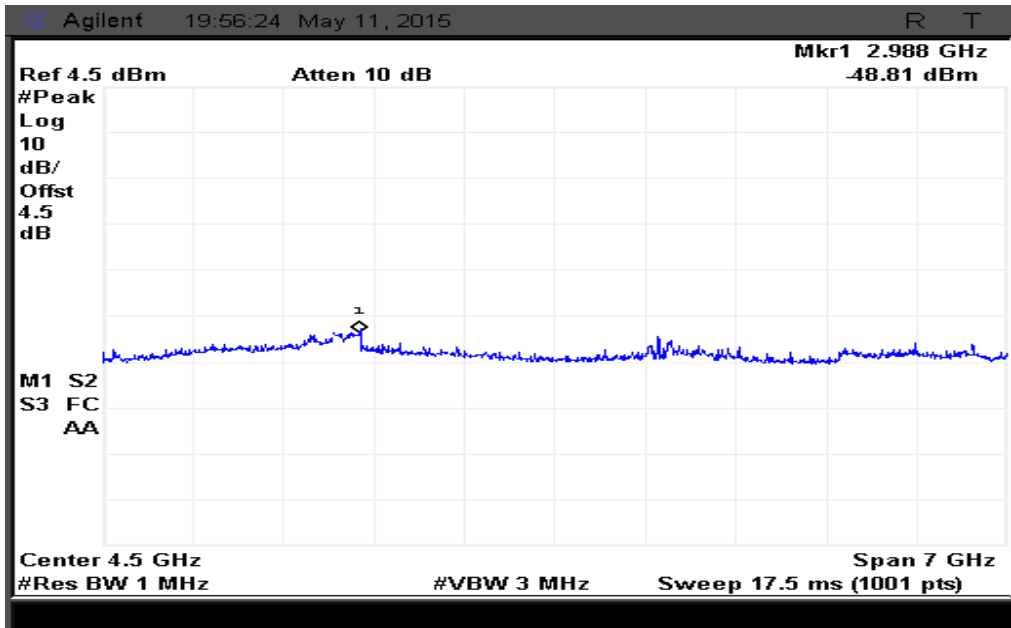


Figure 249: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Peak

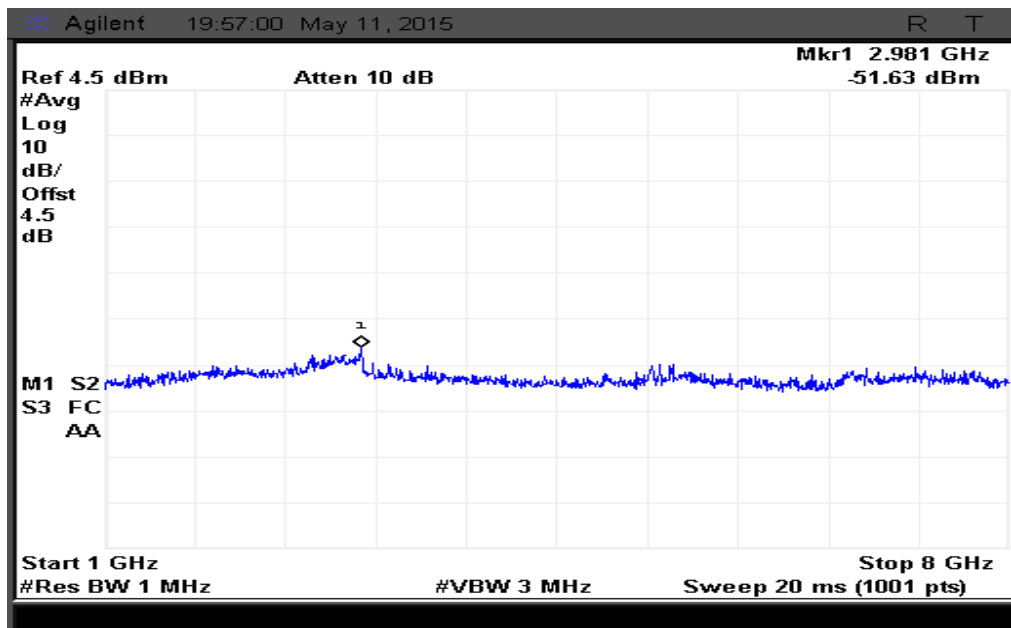


Figure 250: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Average

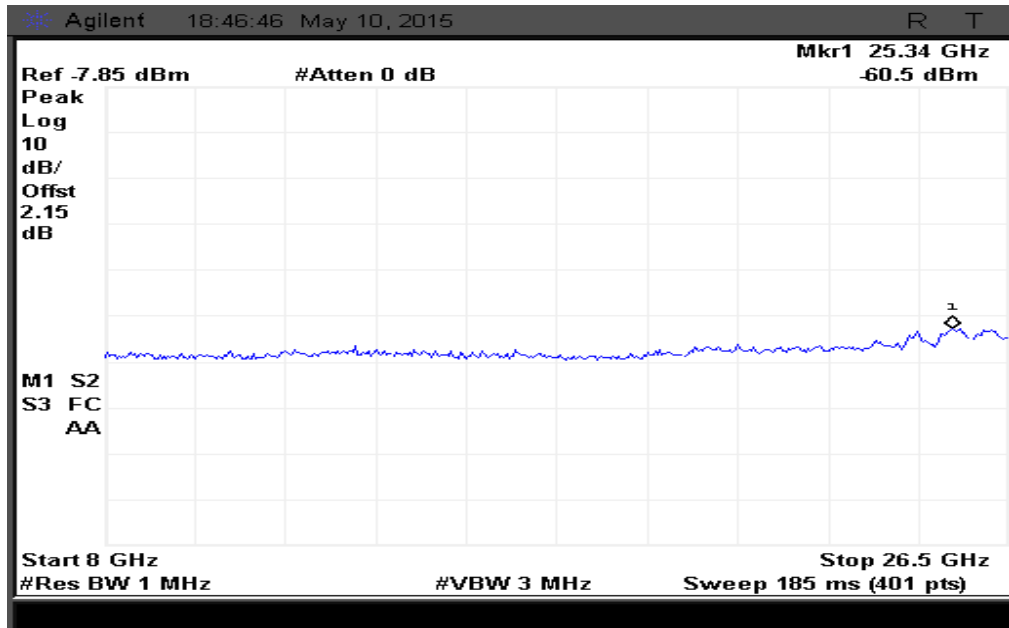


Figure 251: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Peak

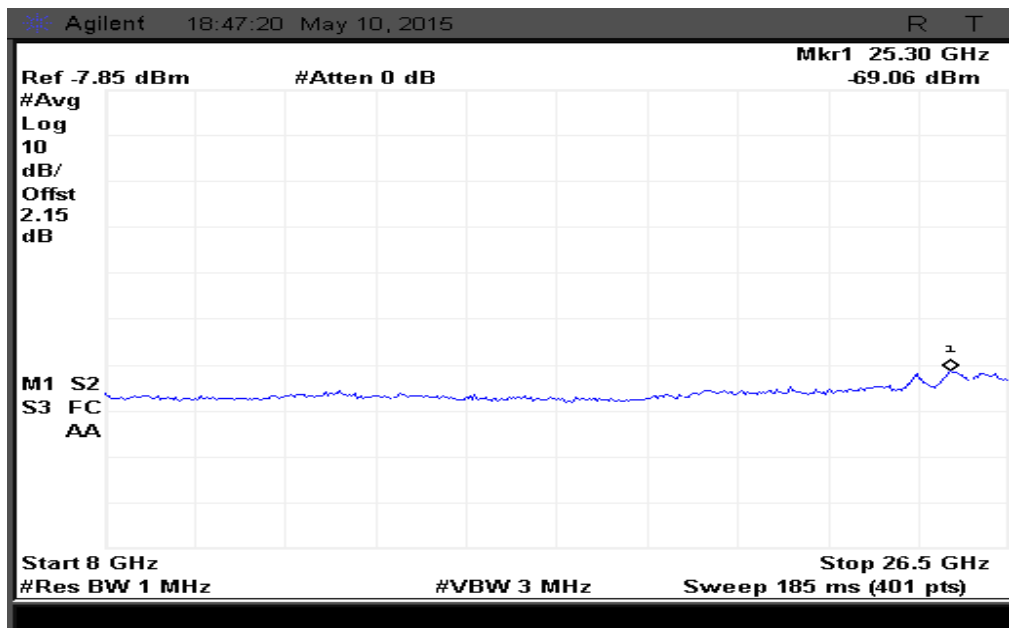
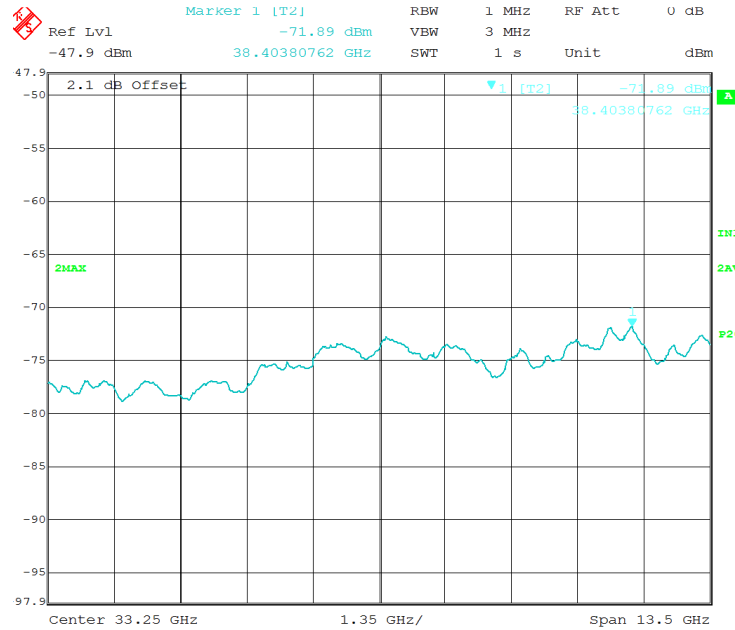
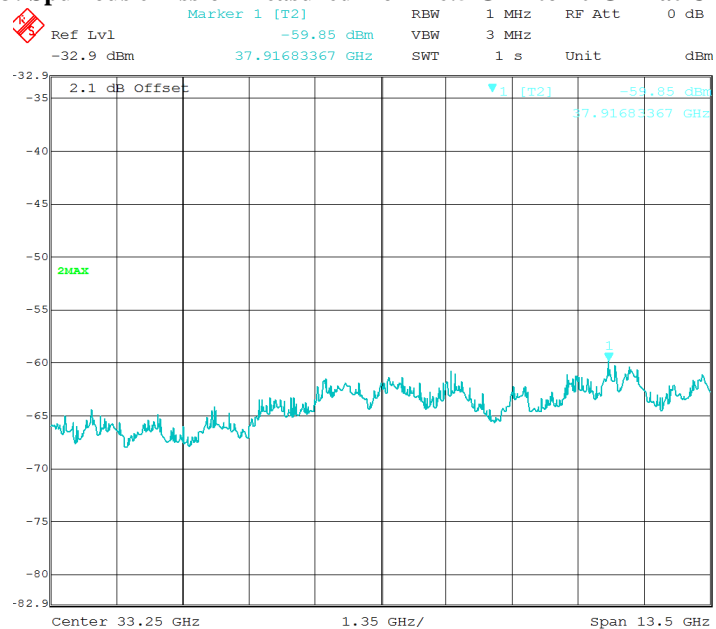


Figure 252: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Average



**Figure 253: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Average**



**Figure 254: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Peak**

### 5.3.1.7.3 40MHz MODULATION BW - HIGH CHANNEL\_5320MHZ

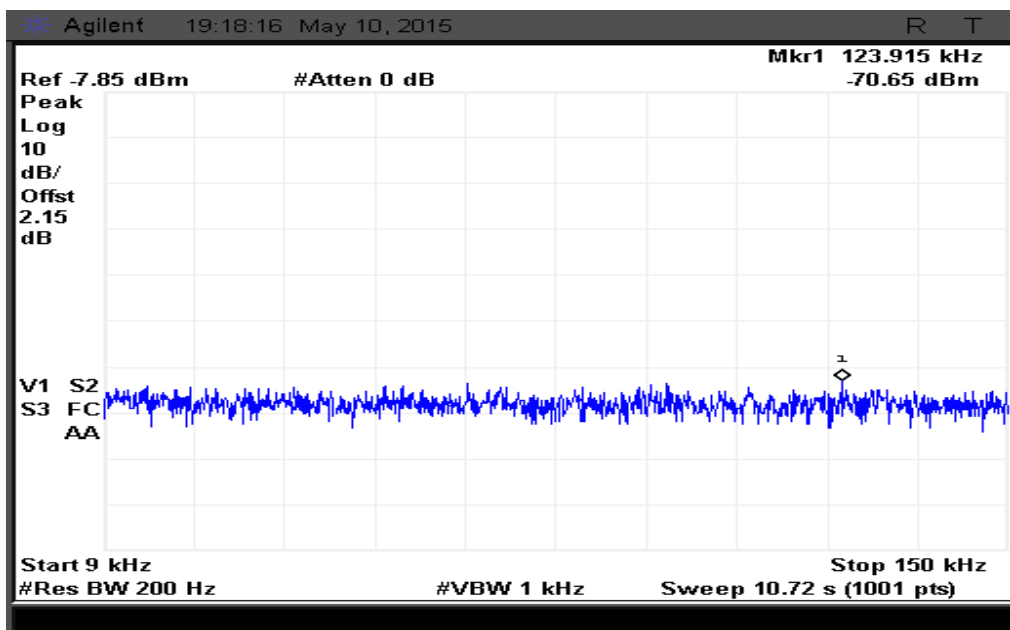


Figure 255: Spurious emission measured from 9 kHz to 150 kHz at Ch. 0-Peak

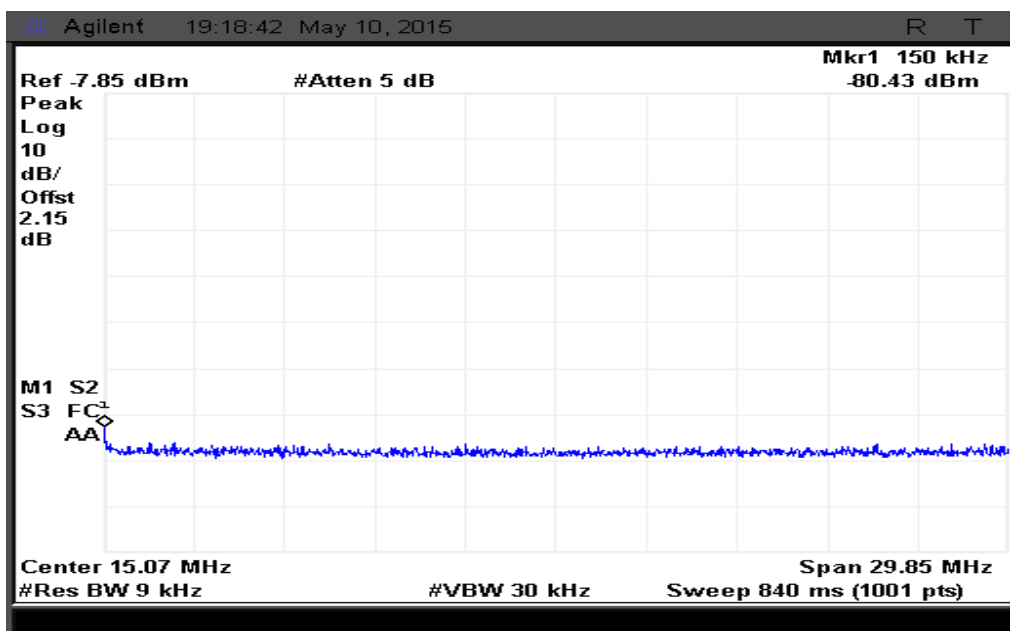


Figure 256: Spurious emission measured from 150 kHz to 30 MHz at Ch. 0-Peak

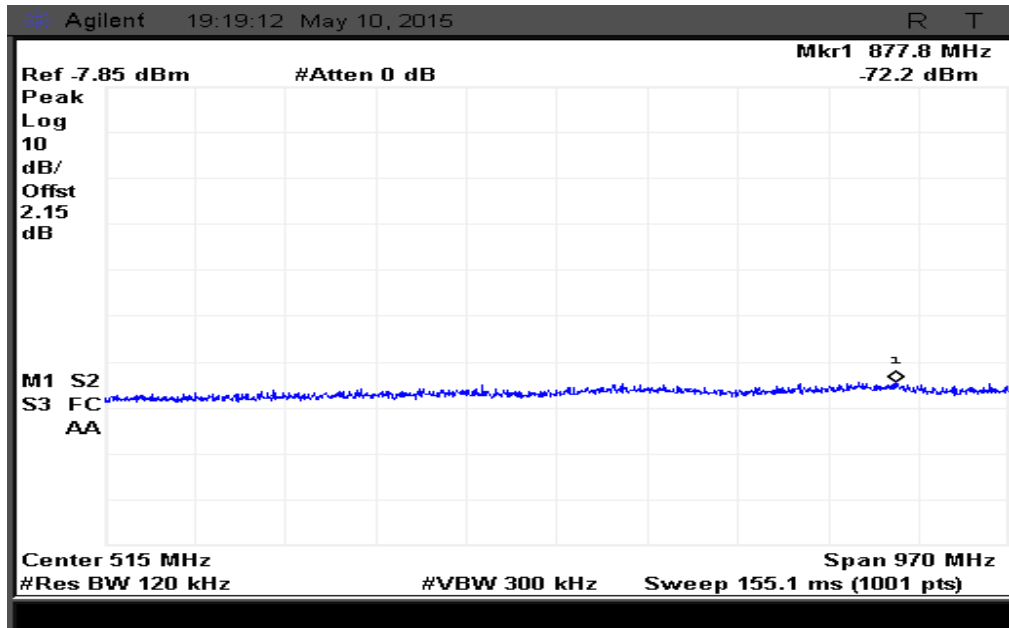


Figure 257: Spurious emission measured from 30 MHz to 1 GHz at Ch. 0-Peak

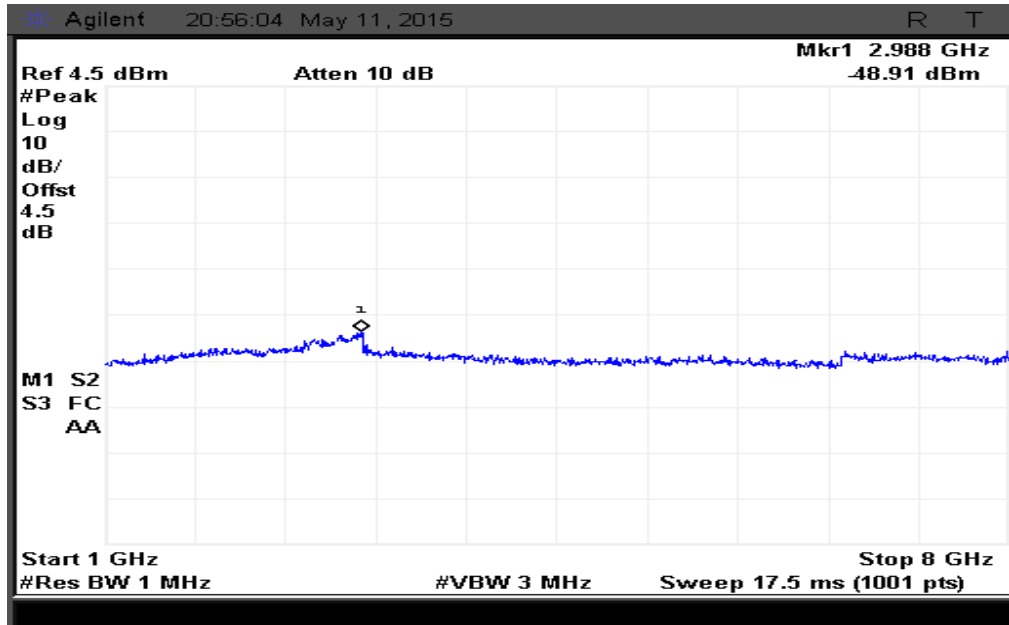


Figure 258: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Peak

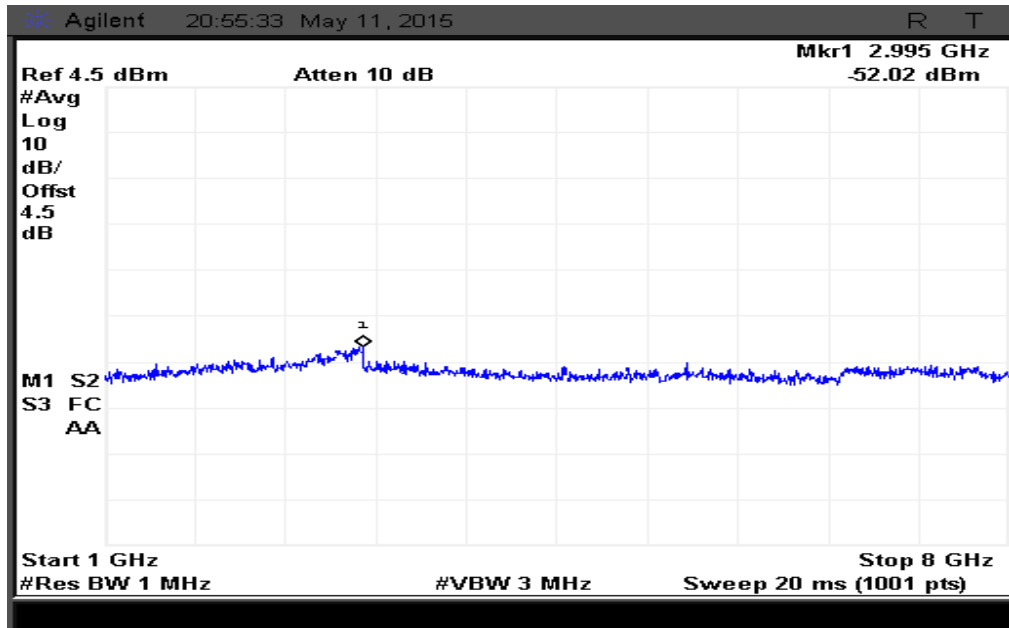


Figure 259: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Average

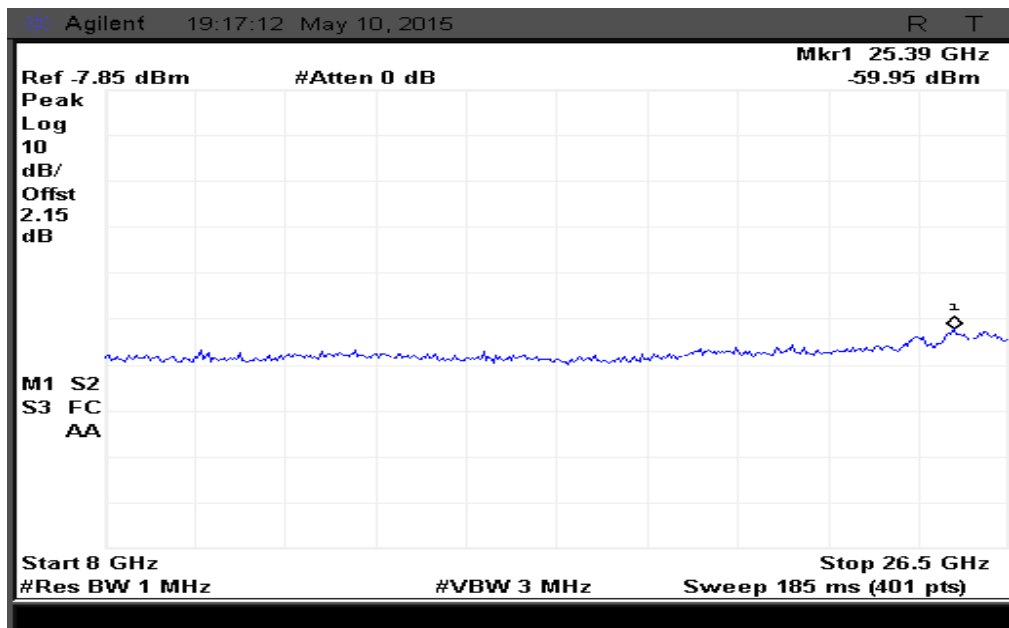


Figure 260 : Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Peak

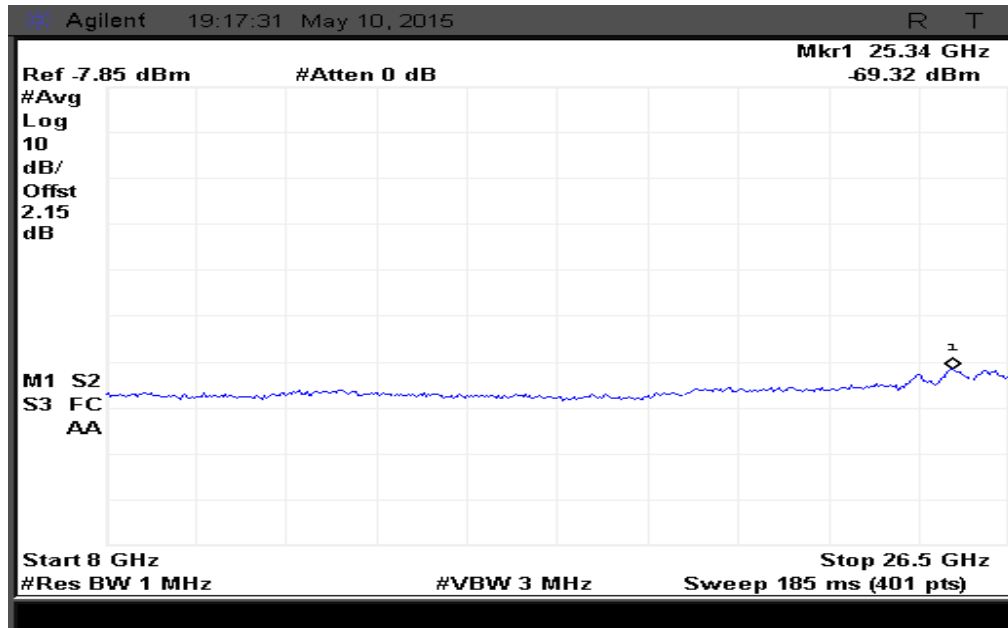


Figure 261: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Average

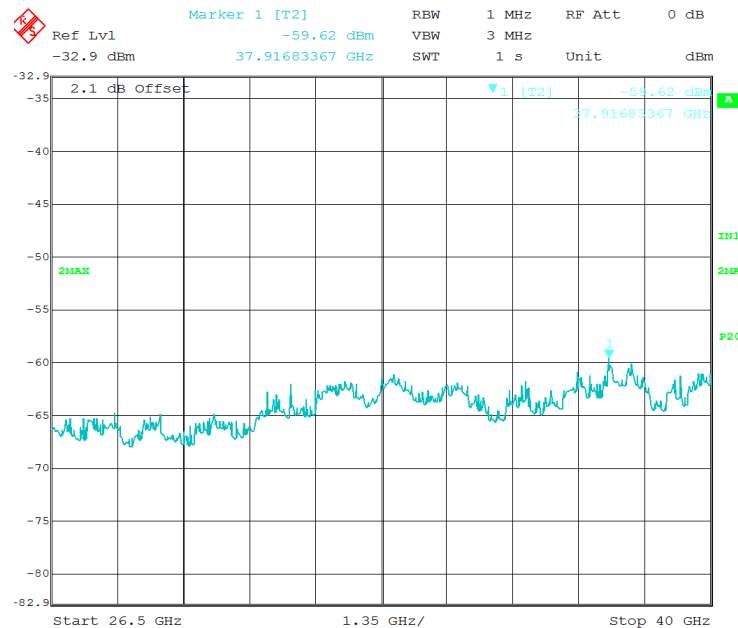


Figure 262: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Peak



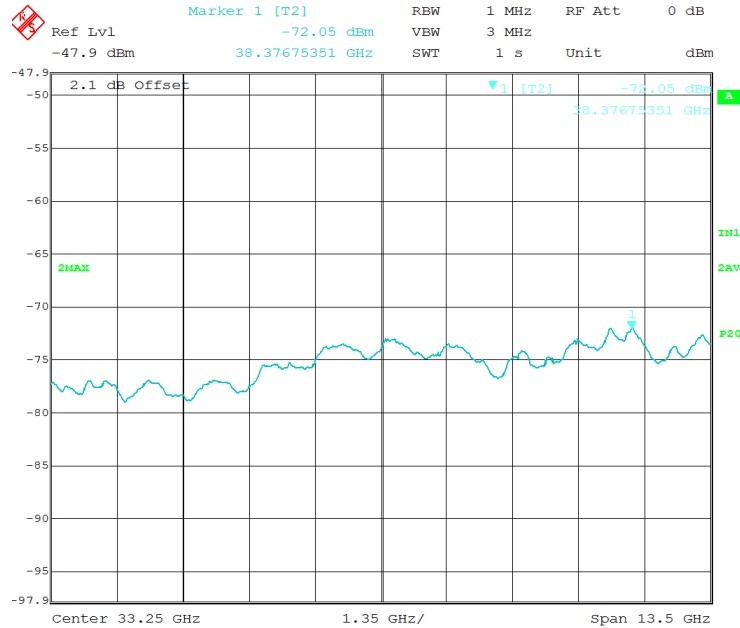


Figure 263: Spurious emission measured from 26.5GHz to 40 GHz at Ch. 0-Average

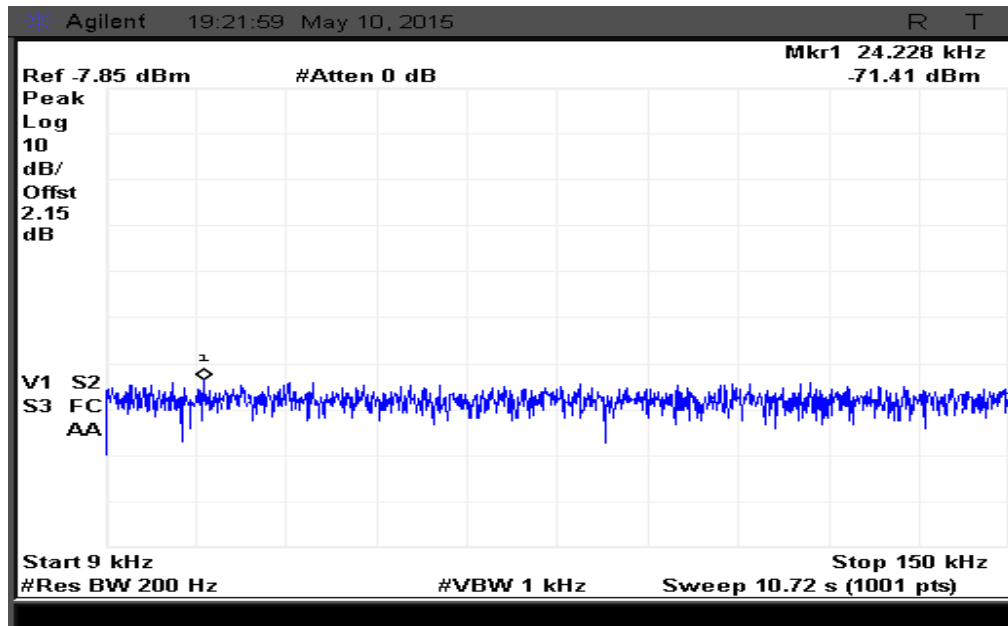


Figure 264: Spurious emission measured from 9 kHz to 150 kHz at Ch. 1-Peak

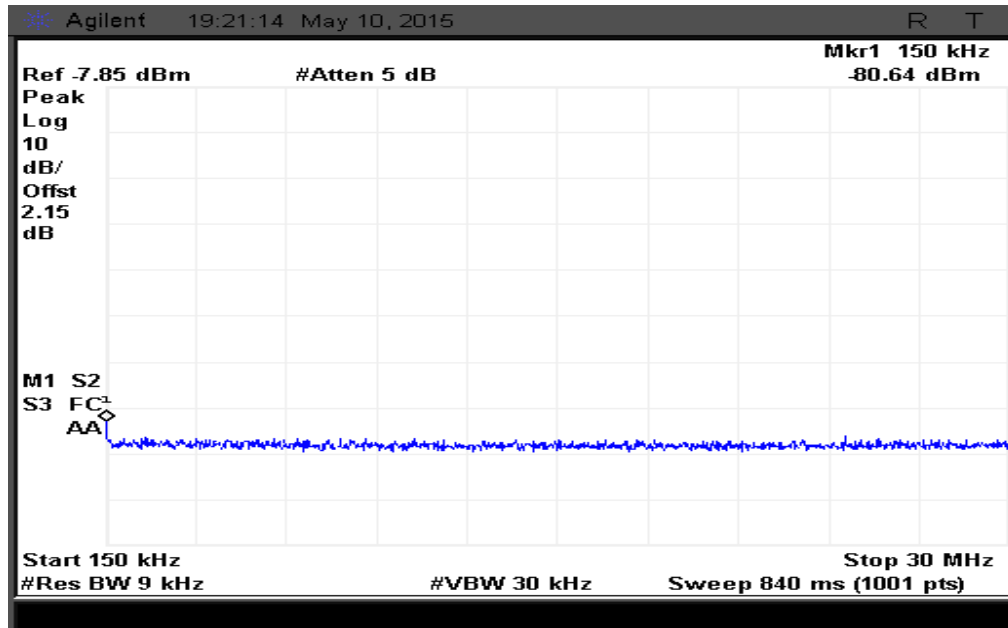


Figure 265: Spurious emission measured from 150 kHz to 30 MHz at Ch. 1-Peak

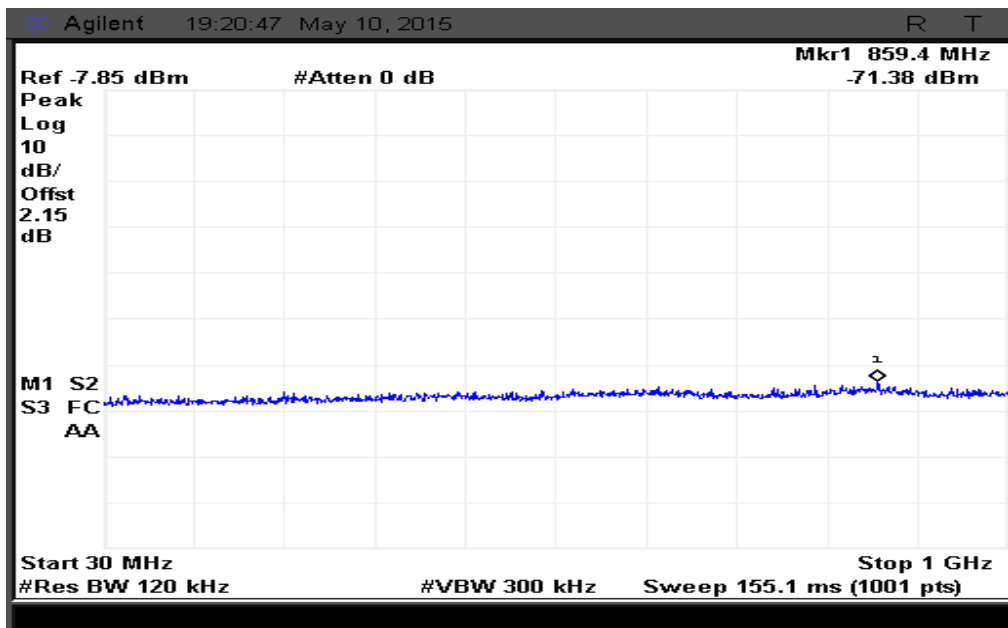


Figure 266: Spurious emission measured from 30 MHz to 1 GHz at Ch. 1-Peak

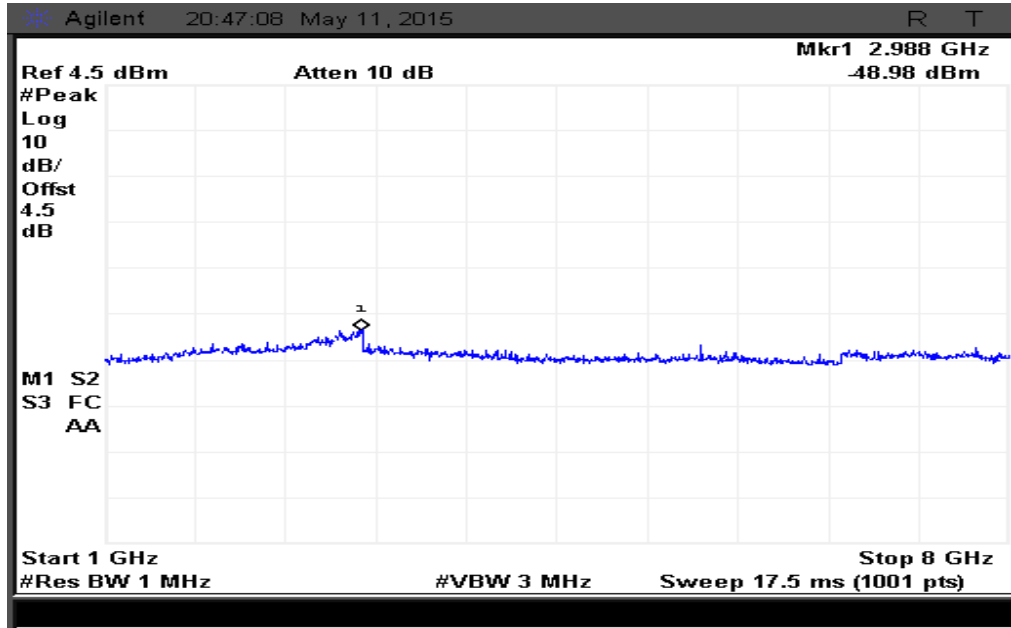


Figure 267: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Peak

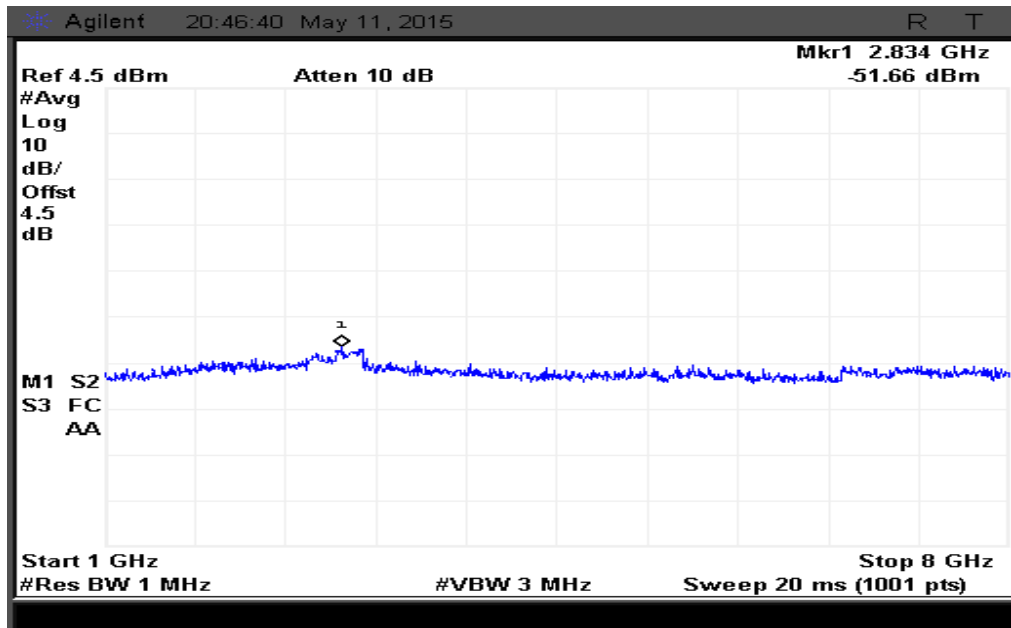


Figure 268: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Average

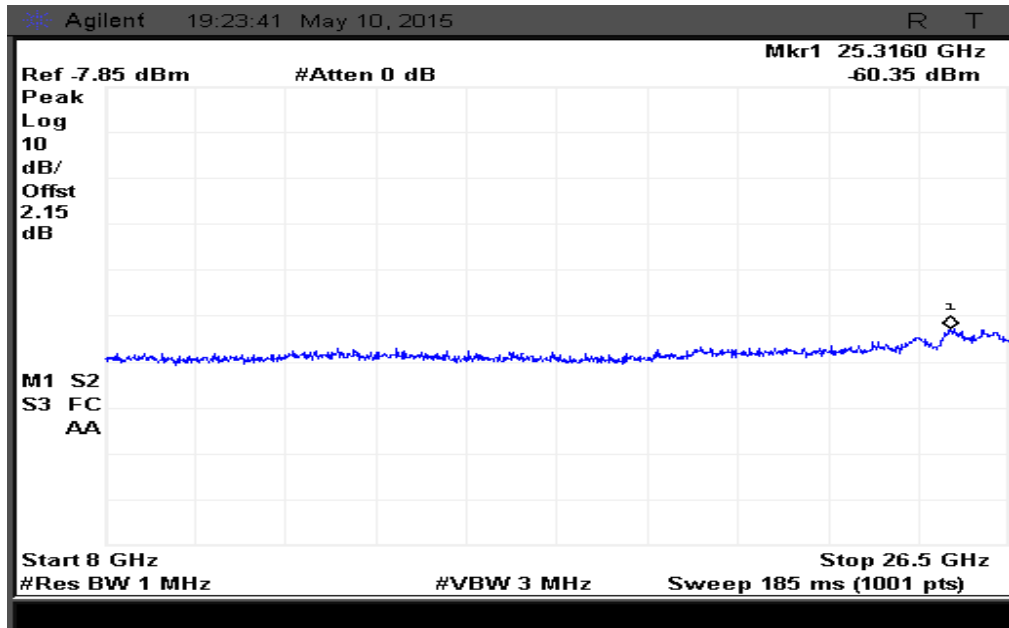


Figure 269: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Peak

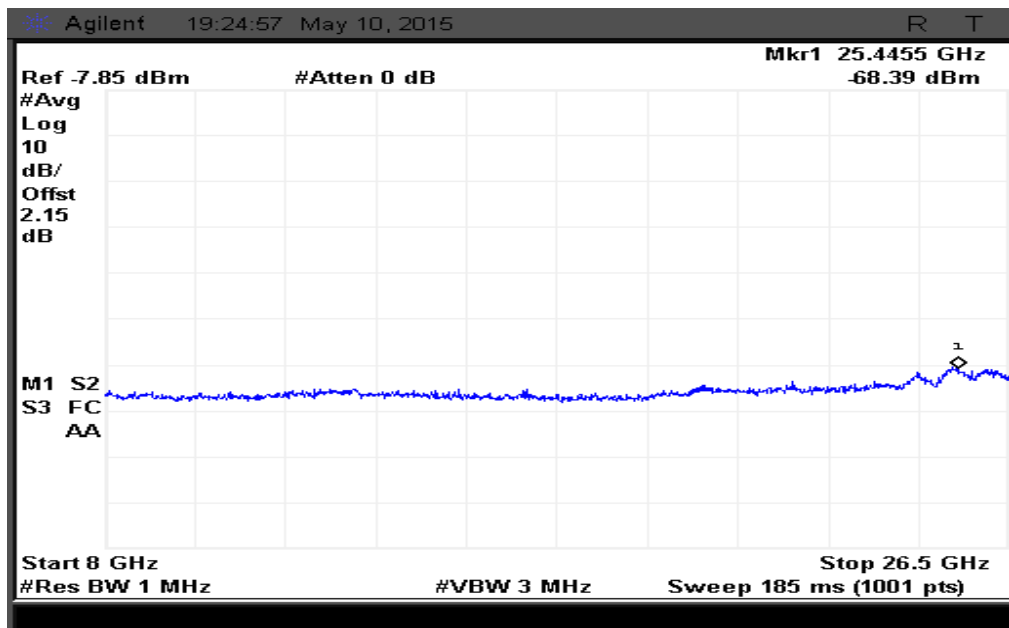
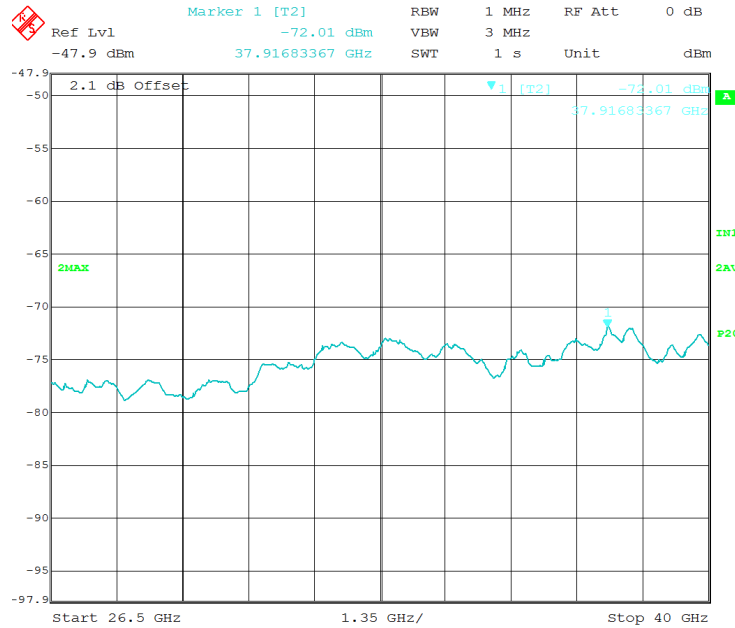
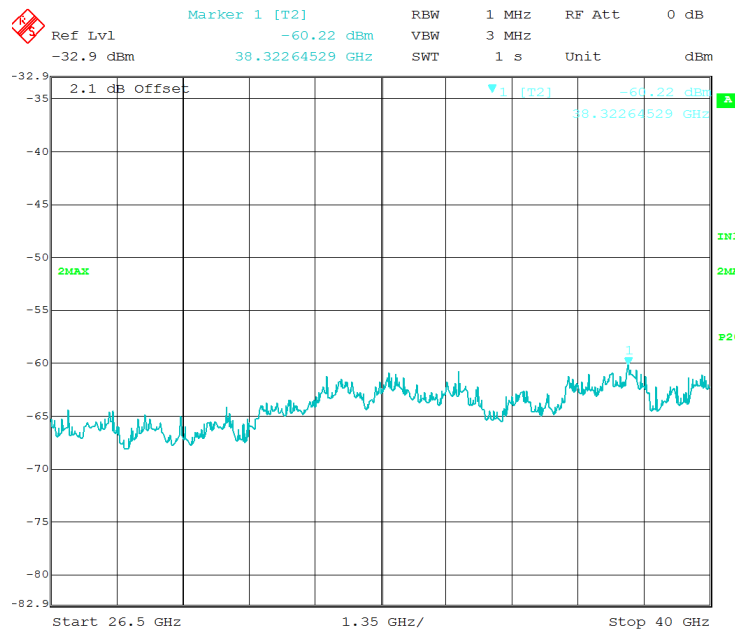


Figure 270: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Average



**Figure 271: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Average**



**Figure 272: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Peak**

#### 5.3.1.7.4 10MHz MODULATION BW - LOW CHANNEL\_5265 MHz

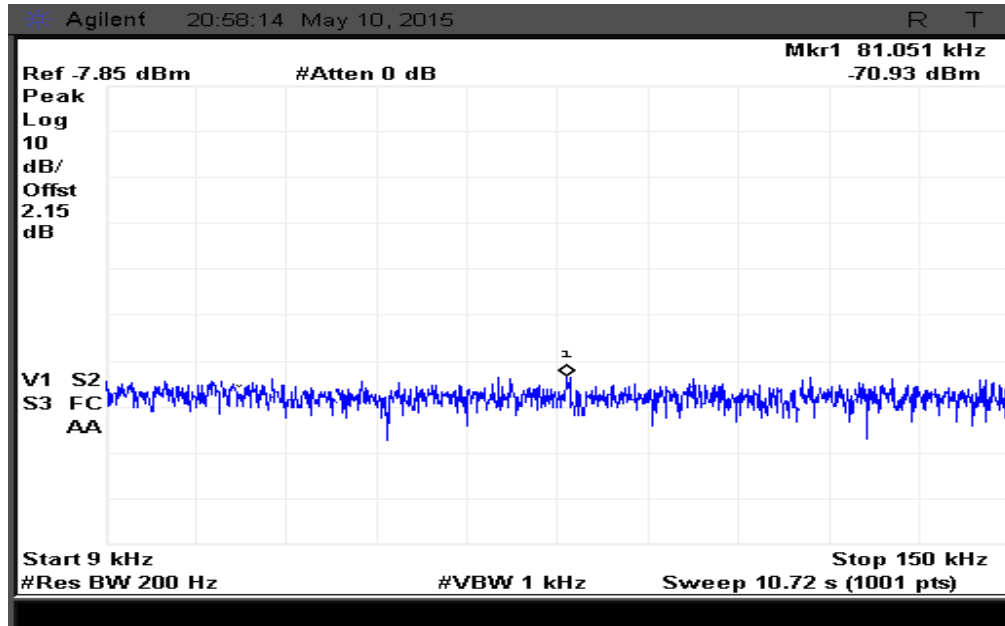


Figure 273: Spurious emission measured from 9 kHz to 150 kHz at Ch. 0-Peak

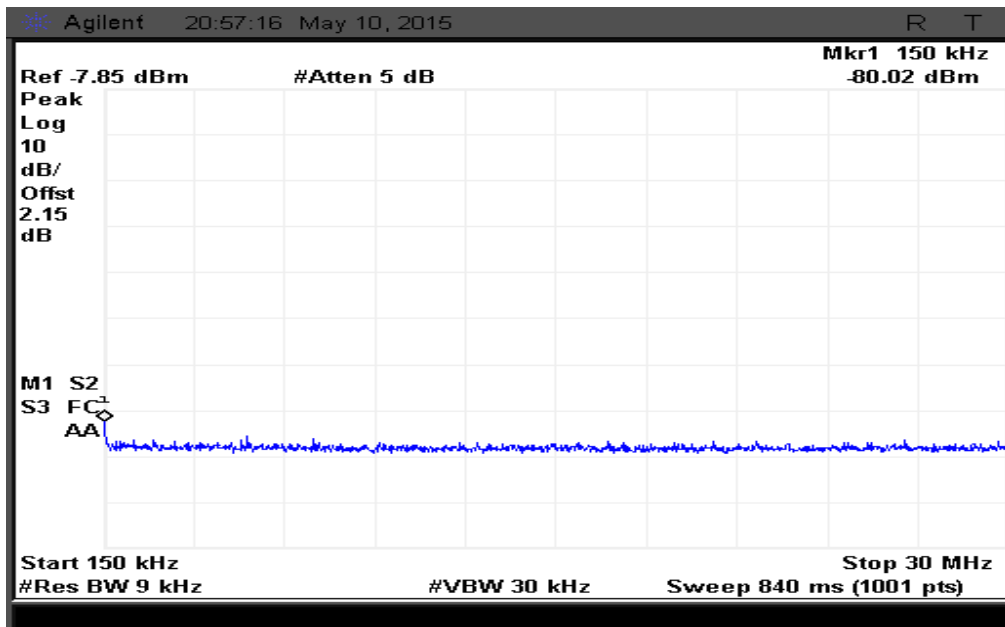


Figure 274: Spurious emission measured from 150 kHz to 30 MHz at Ch. 0-Peak

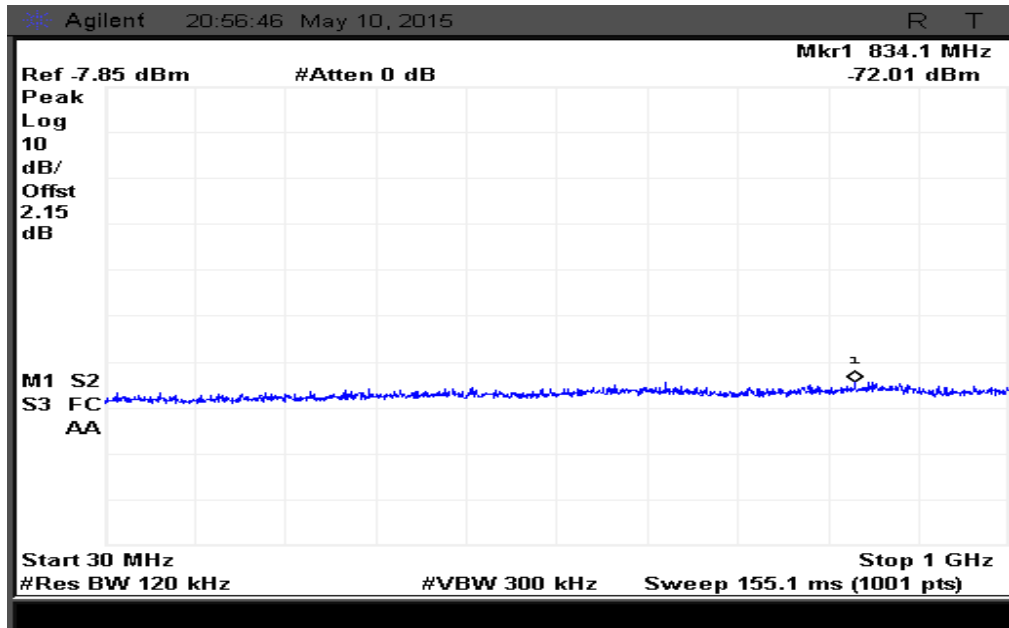


Figure 275: Spurious emission measured from 30 MHz to 1 GHz at Ch. 0-Peak

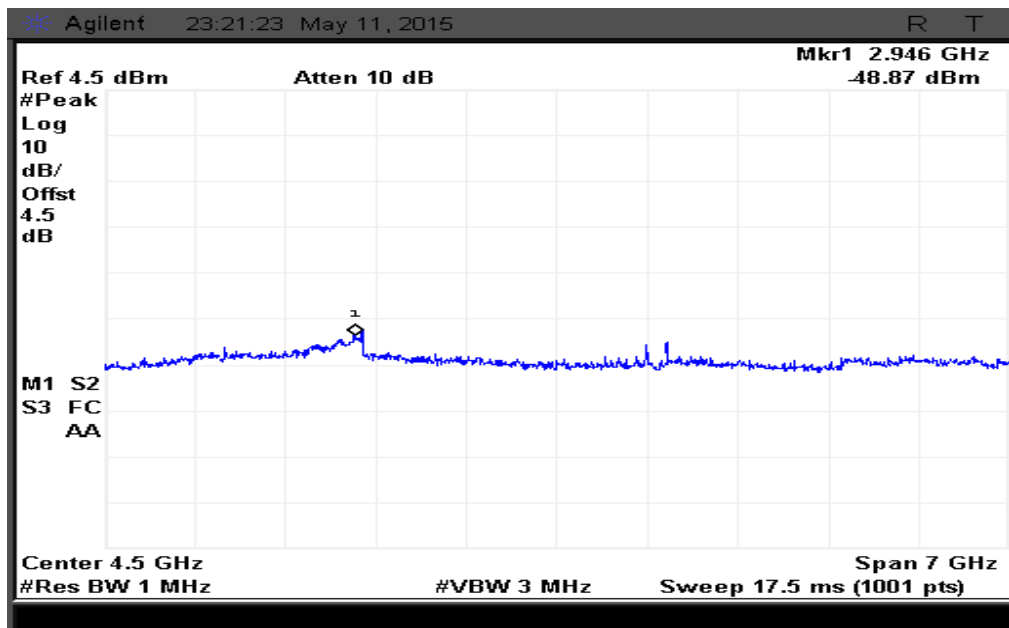


Figure 276: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Peak

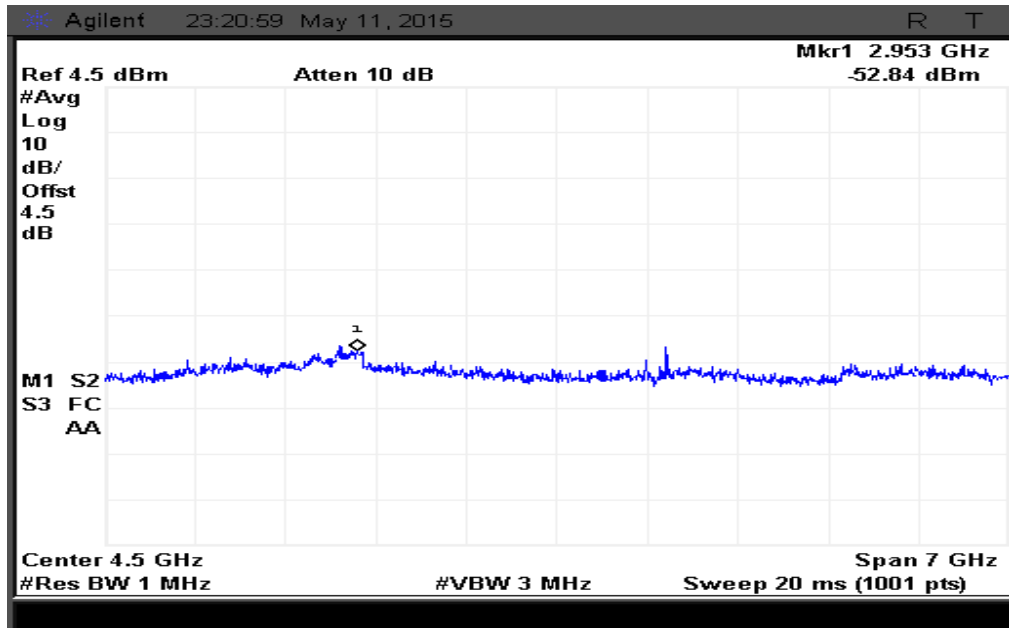


Figure 277: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Average

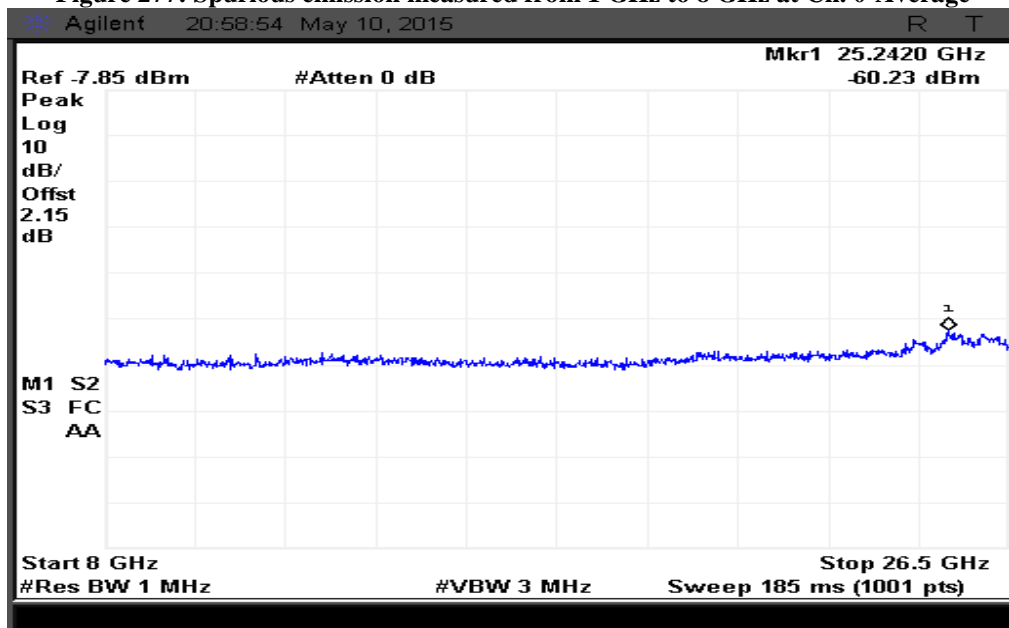


Figure 278: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Peak



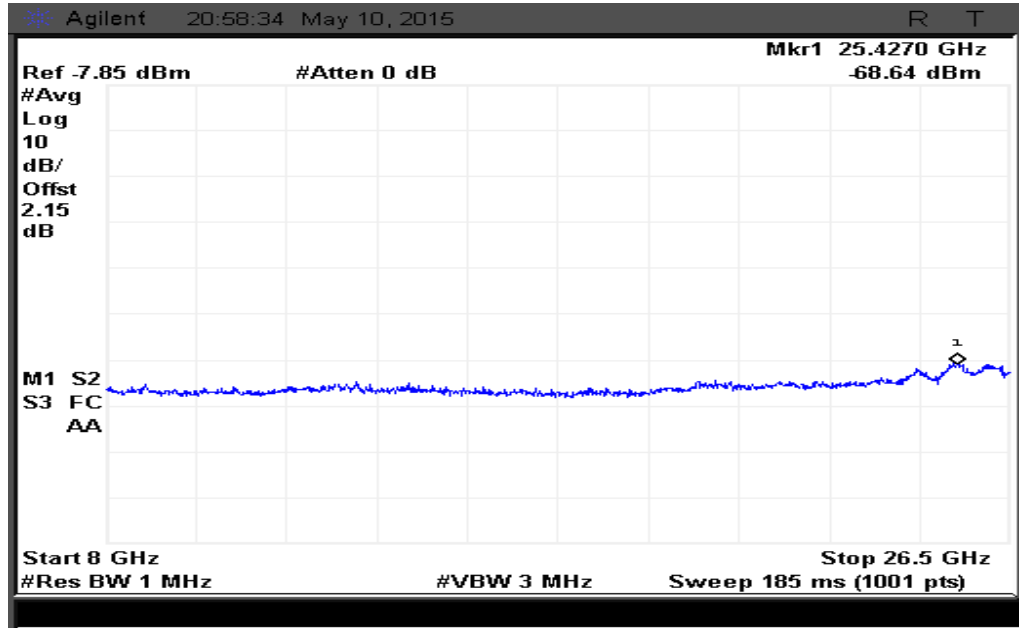


Figure 279: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Average

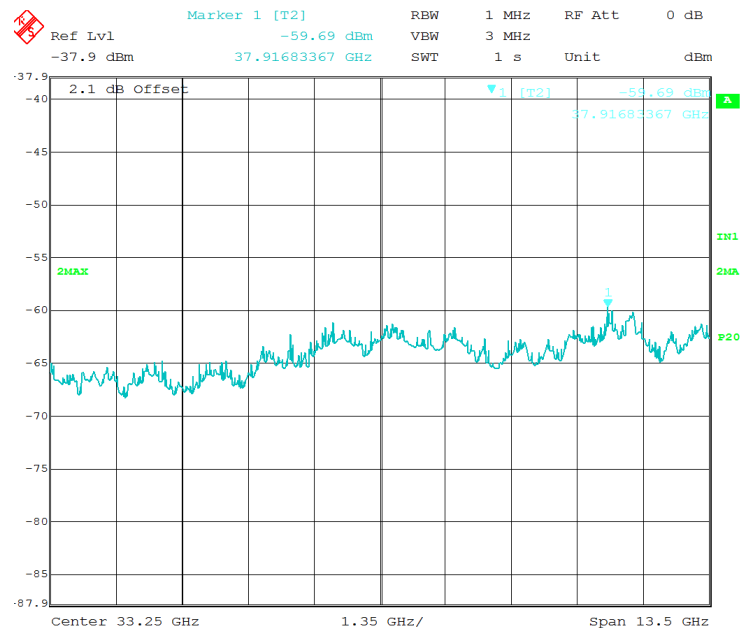


Figure 280: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Peak

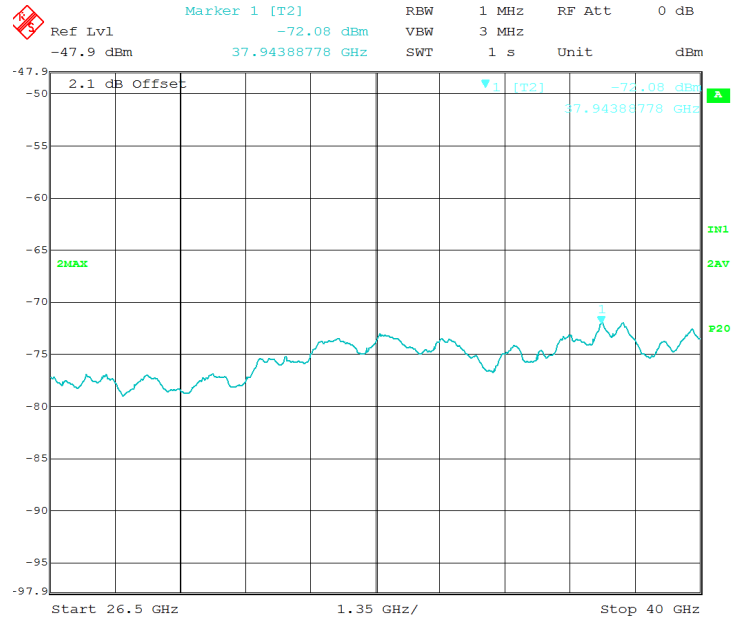


Figure 281: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Average

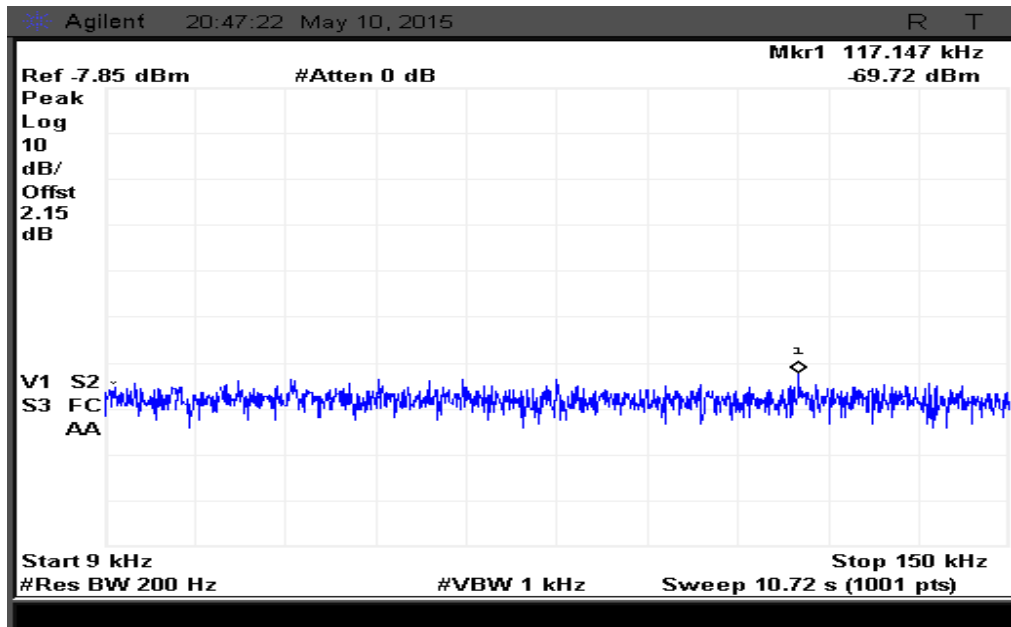


Figure 282: Spurious emission measured from 9 kHz to 150 kHz at Ch. 1-Peak

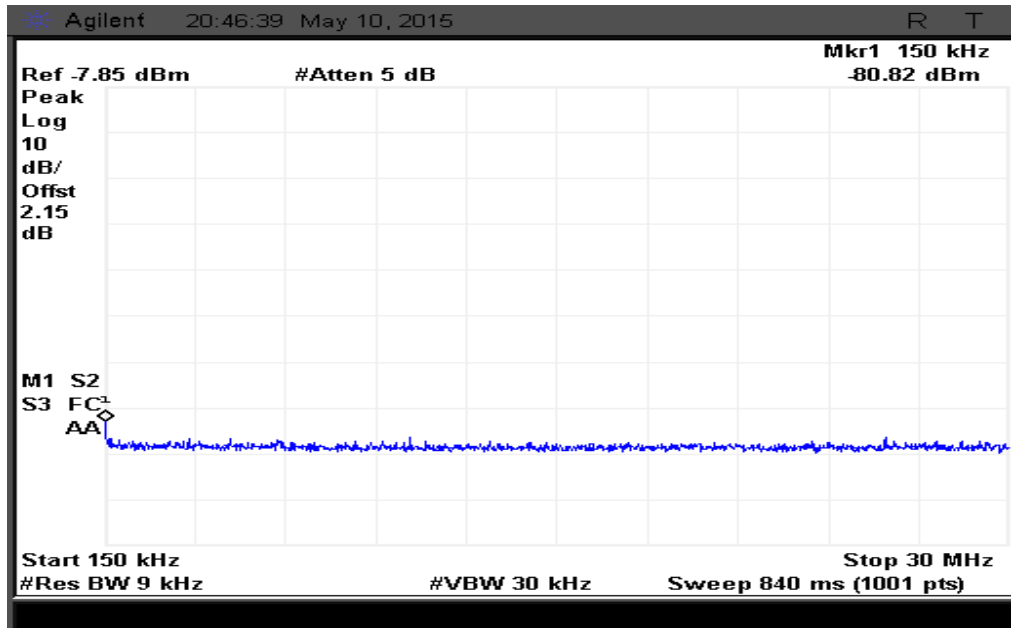


Figure 283: Spurious emission measured from 150 kHz to 30 MHz at Ch. 1-Peak

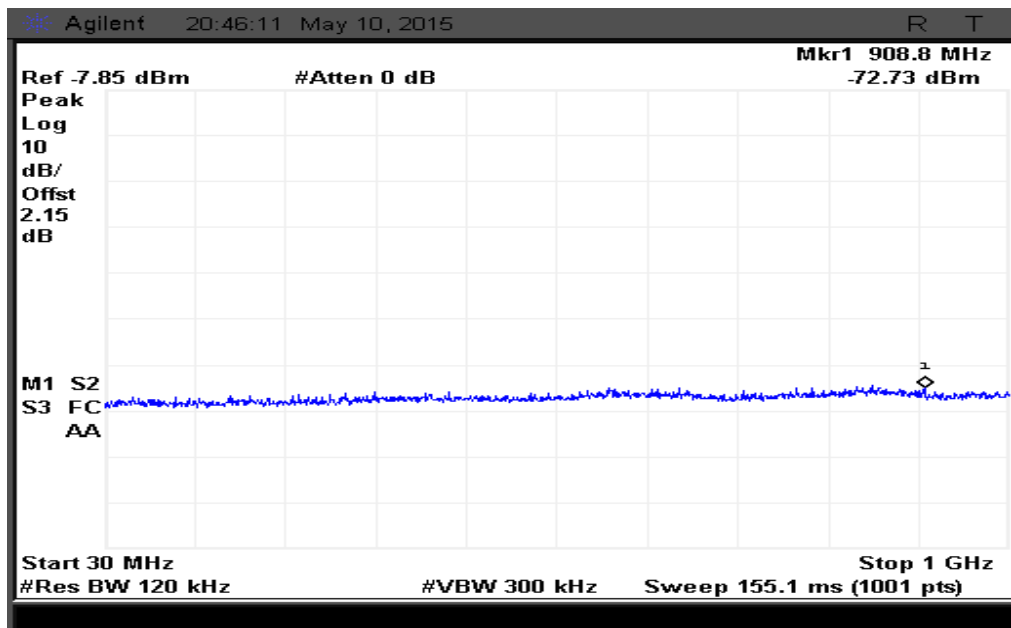


Figure 284: Spurious emission measured from 30 MHz to 1 GHz at Ch. 1-Peak

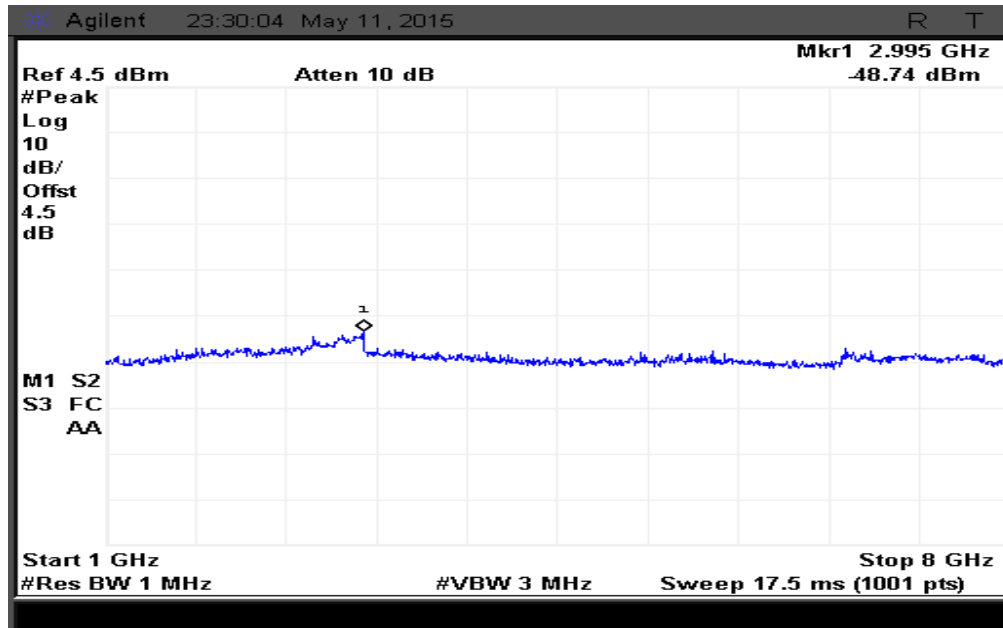


Figure 285: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Peak

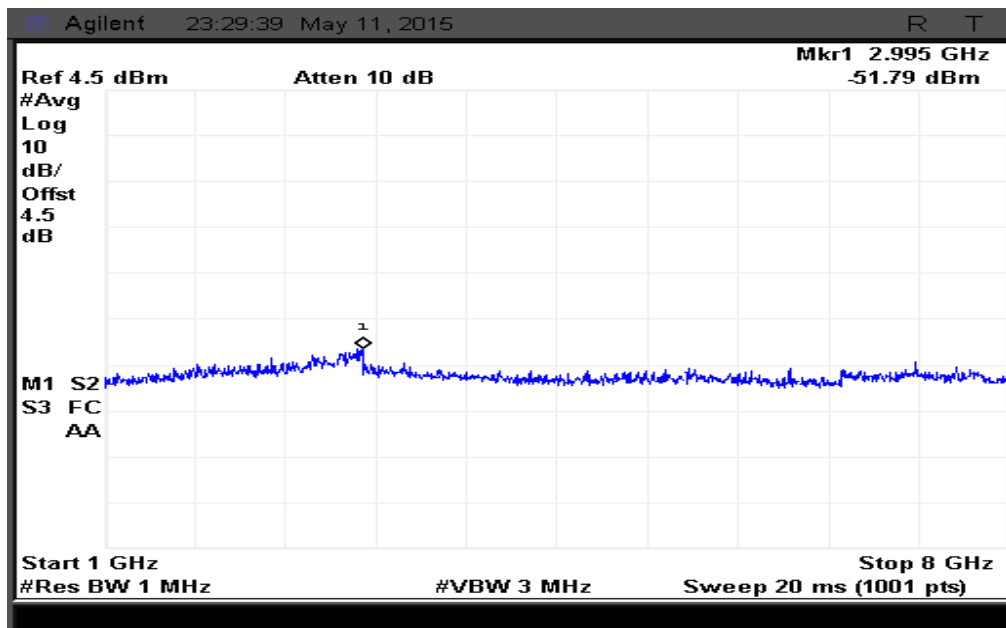


Figure 286: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Average

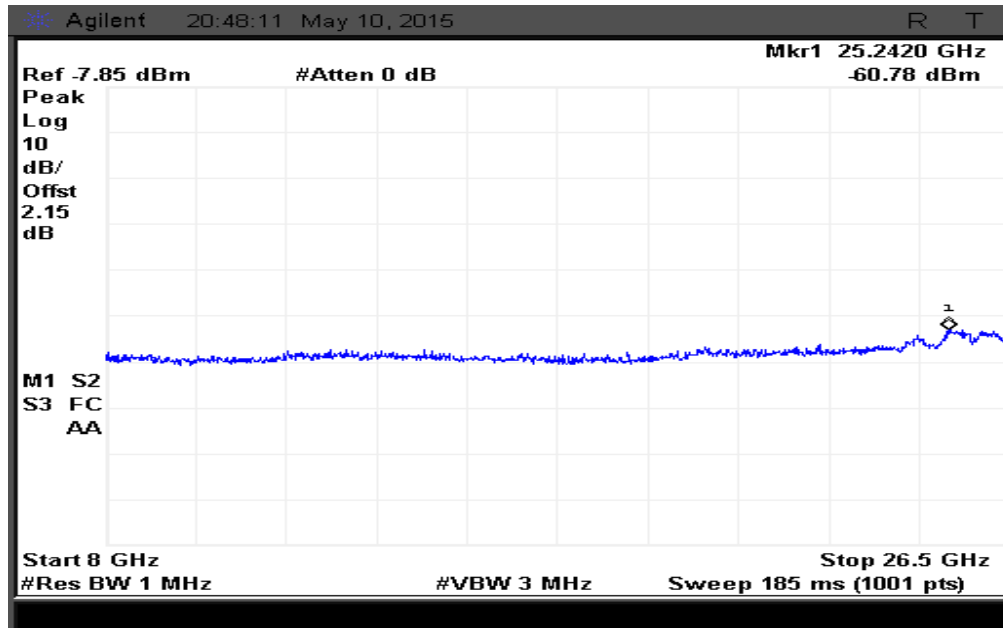


Figure 287: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Peak

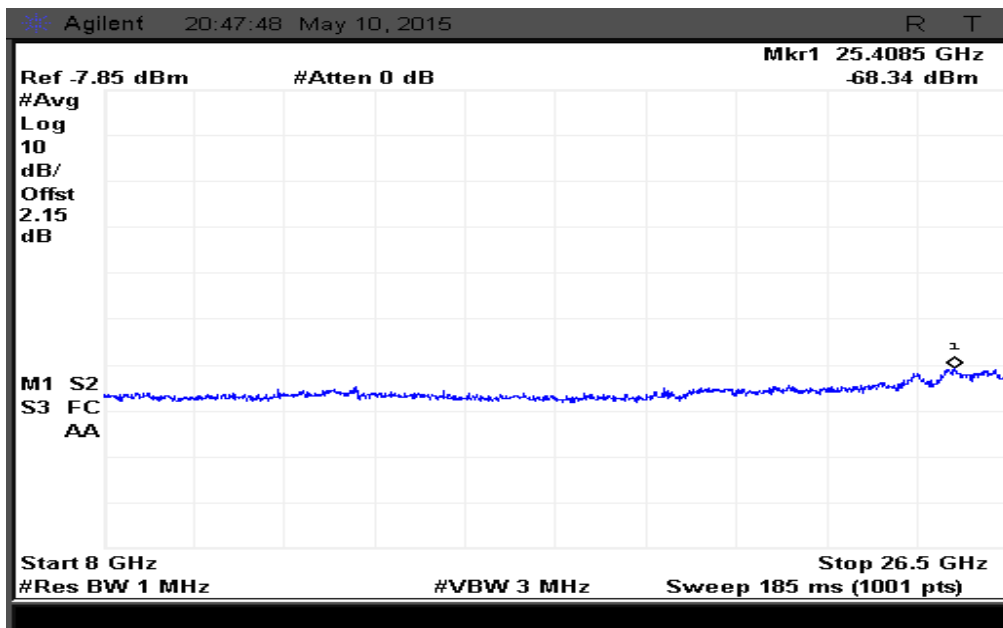
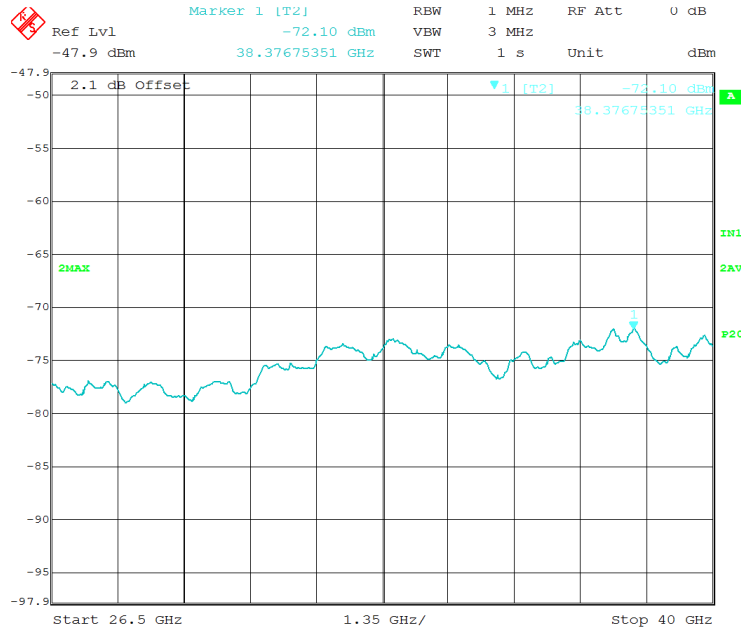
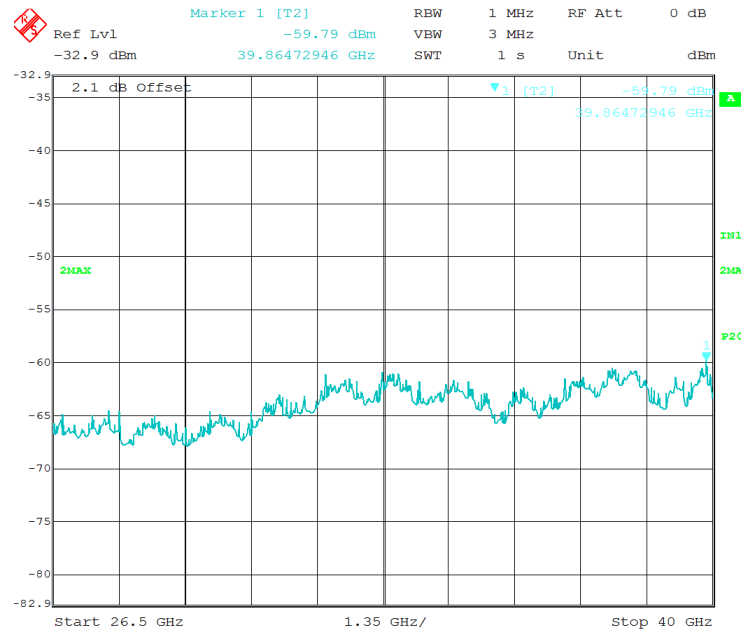


Figure 288: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Average



**Figure 289: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Average**



**Figure 290: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Peak**

### 5.3.1.7.5 10MHz MODULATION BW - MID CHANNEL\_5300 MHz

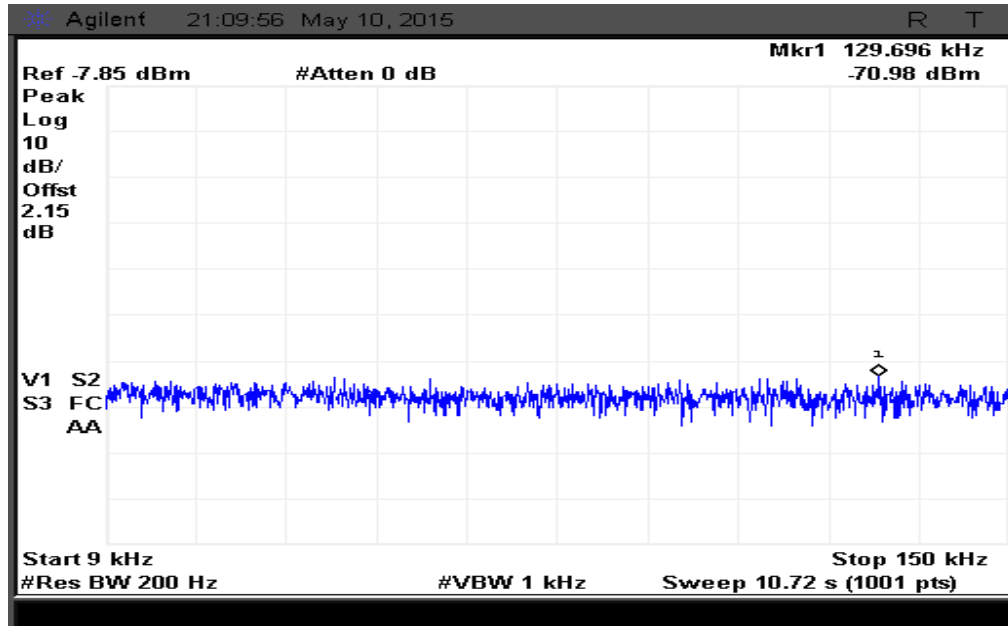


Figure 291: Spurious emission measured from 9 kHz to 150 kHz at Ch. 0-Peak

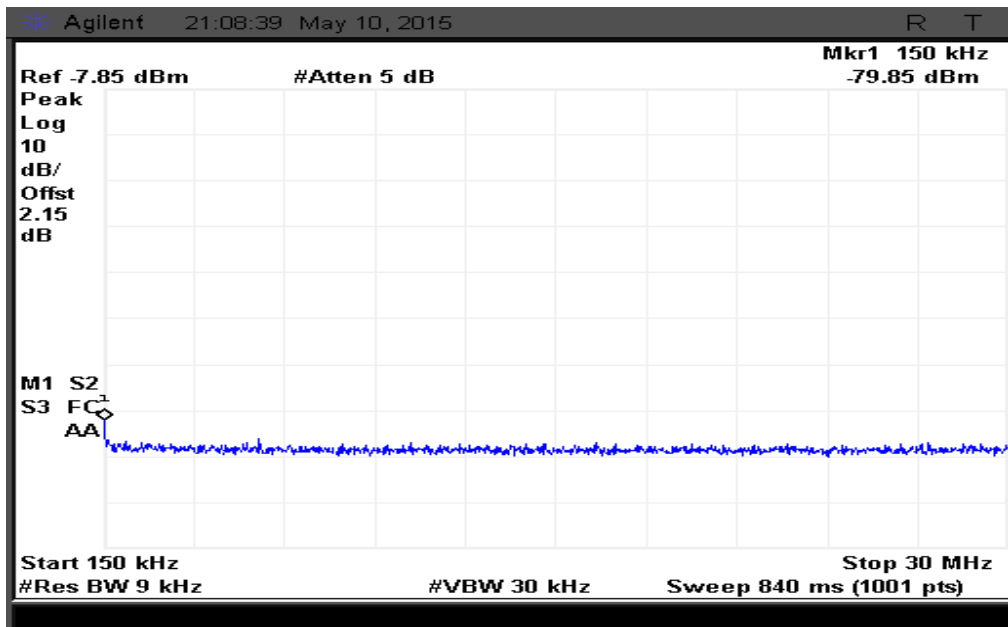


Figure 292: Spurious emission measured from 150 kHz to 30 MHz at Ch. 0-Peak

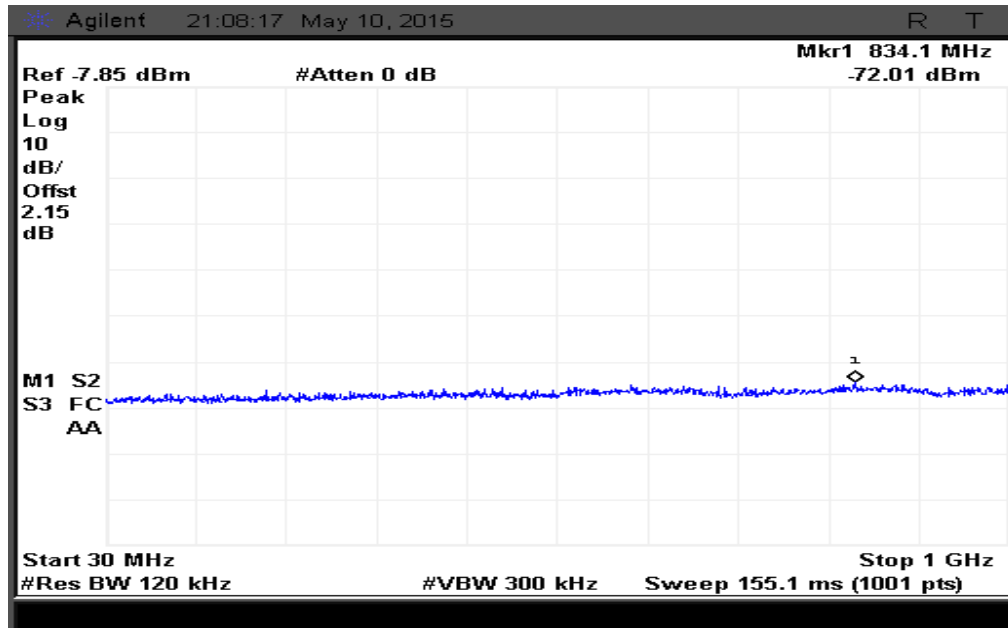


Figure 293: Spurious emission measured from 30 MHz to 1 GHz at Ch. 0-Peak

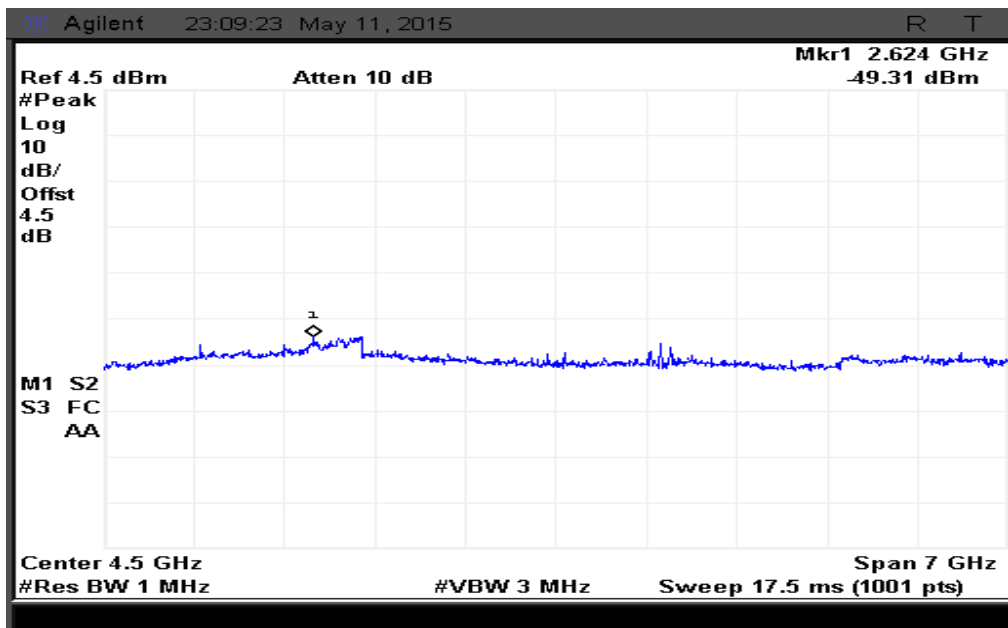


Figure 294: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Peak



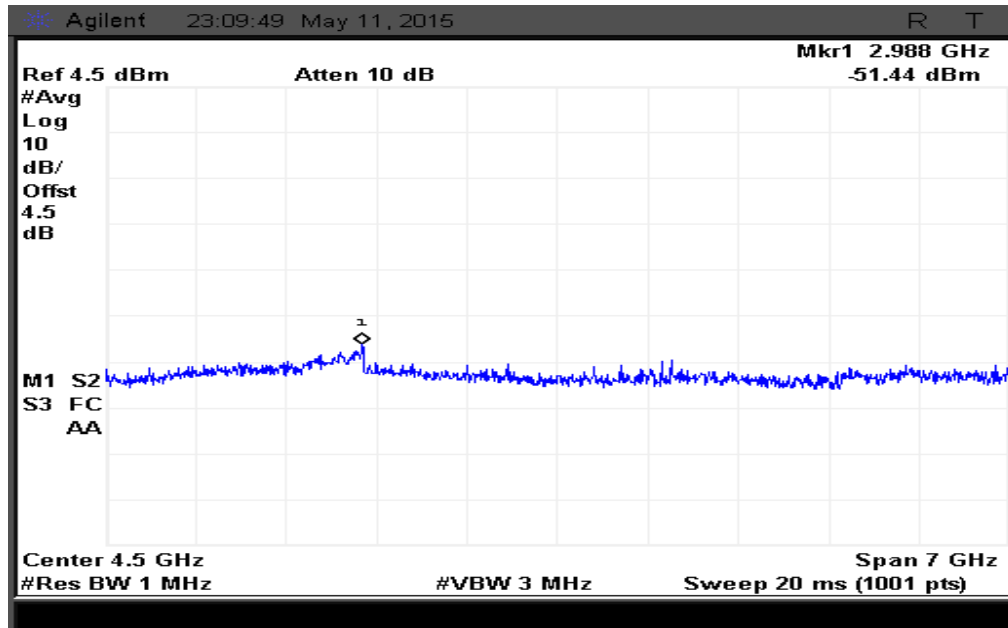


Figure 295: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Average

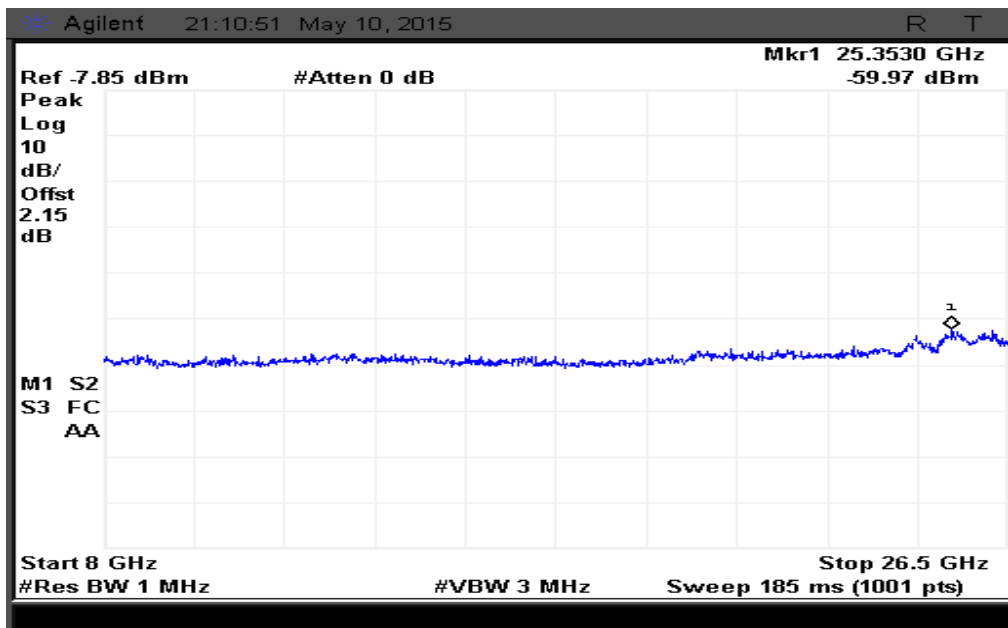


Figure 296: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Peak

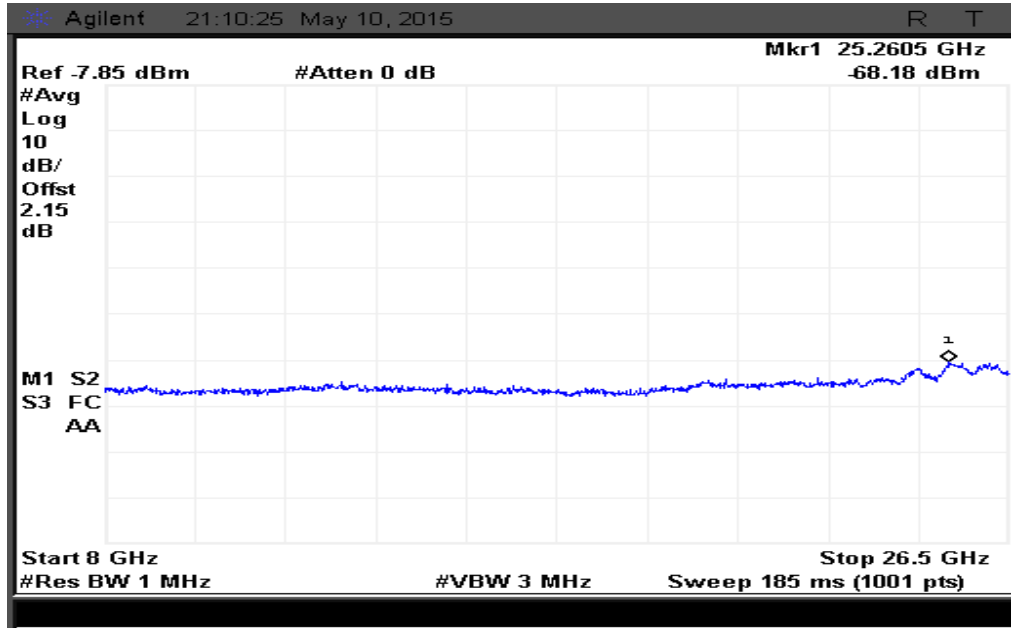


Figure 297: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Average

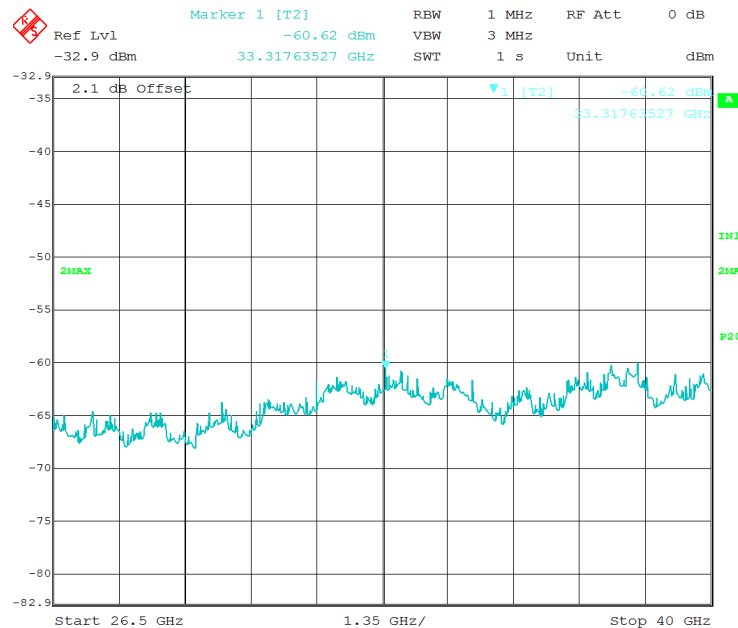


Figure 298: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Peak

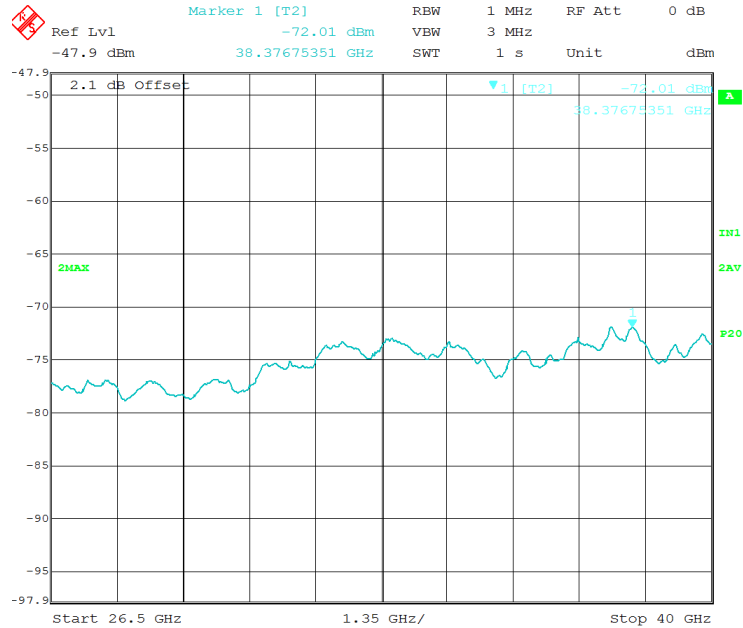


Figure 299: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Average

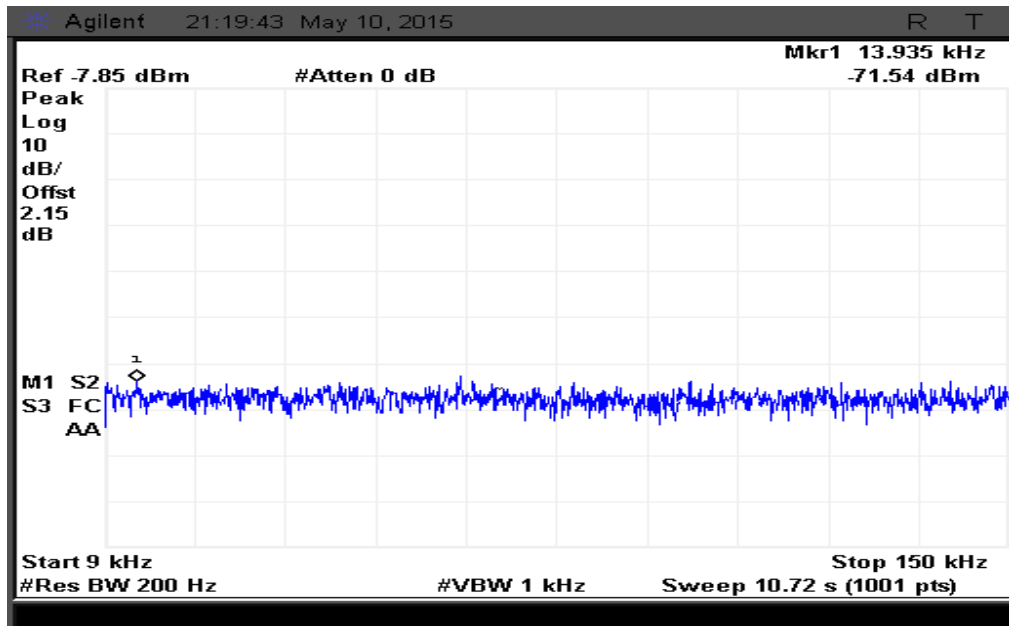


Figure 300: Spurious emission measured from 9 kHz to 150 kHz at Ch. 1-Peak

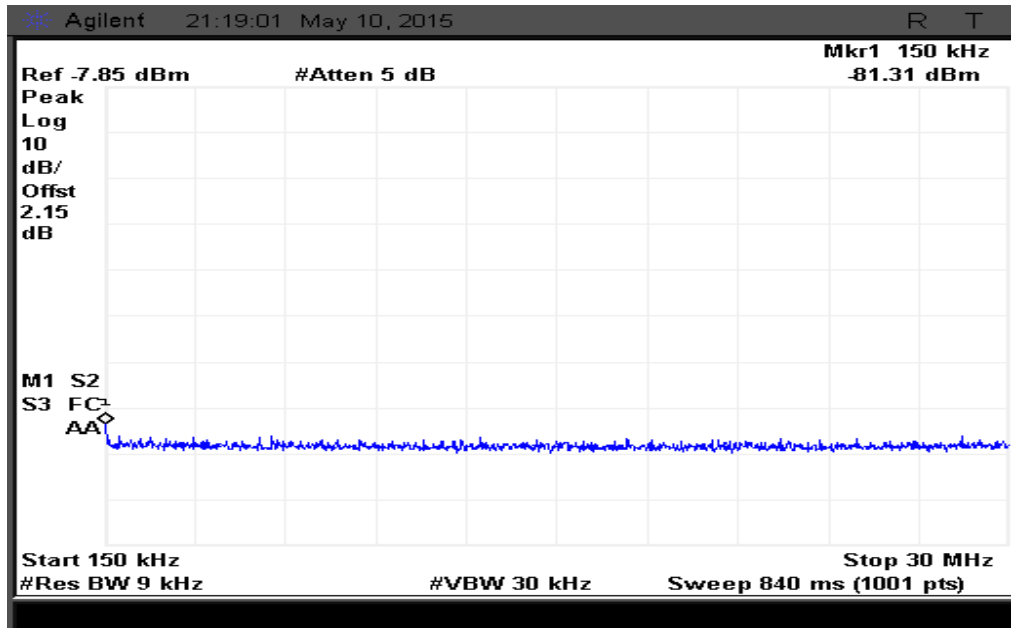


Figure 301: Spurious emission measured from 150 kHz to 30 MHz at Ch. 1-Peak

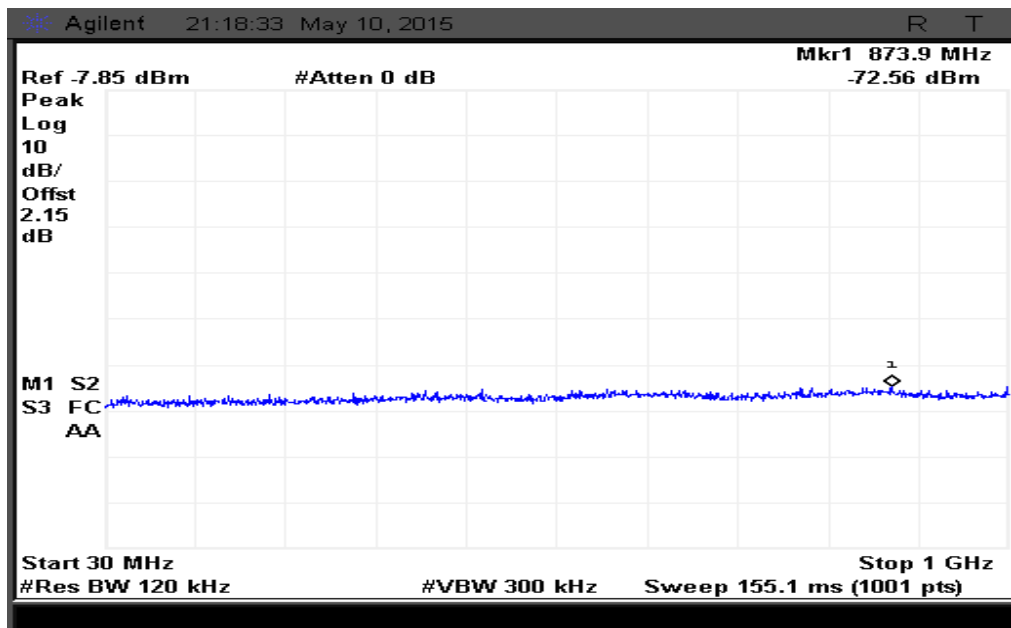


Figure 302: Spurious emission measured from 30 MHz to 1 GHz at Ch. 1-Peak

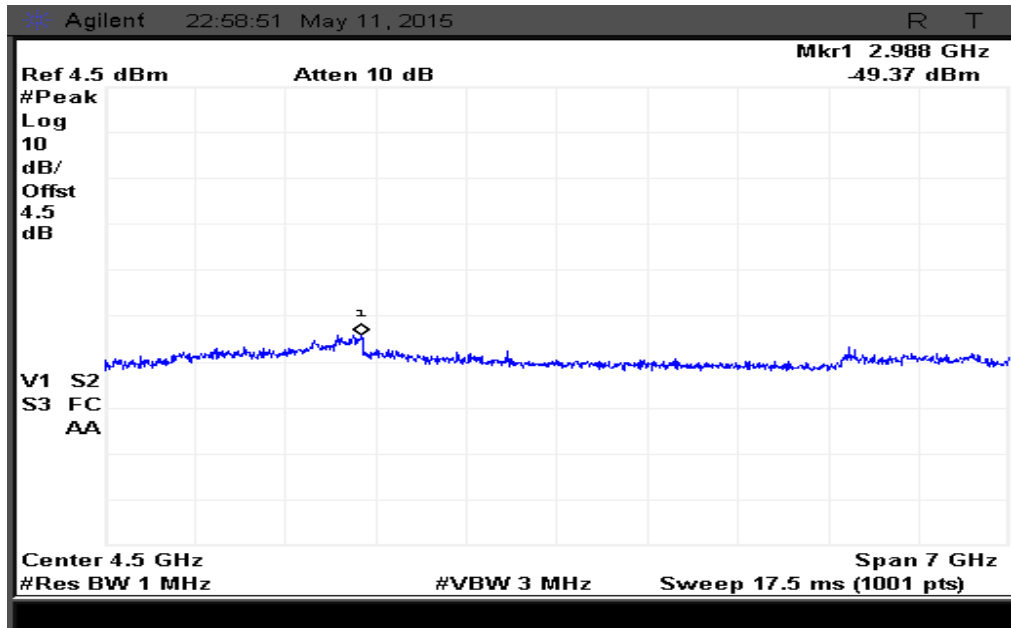


Figure 303: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Peak

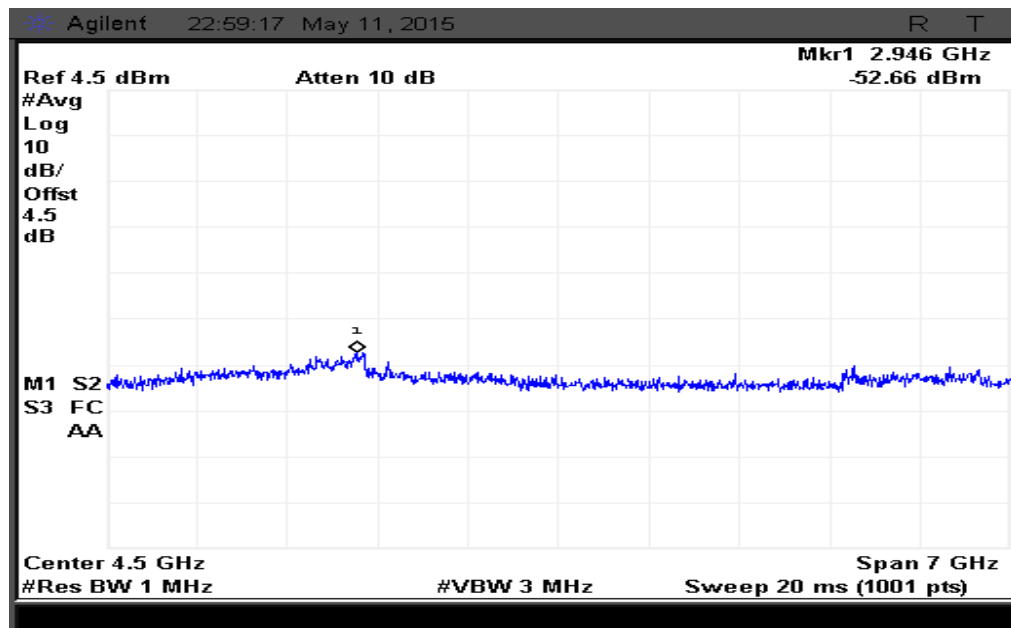


Figure 304: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Average

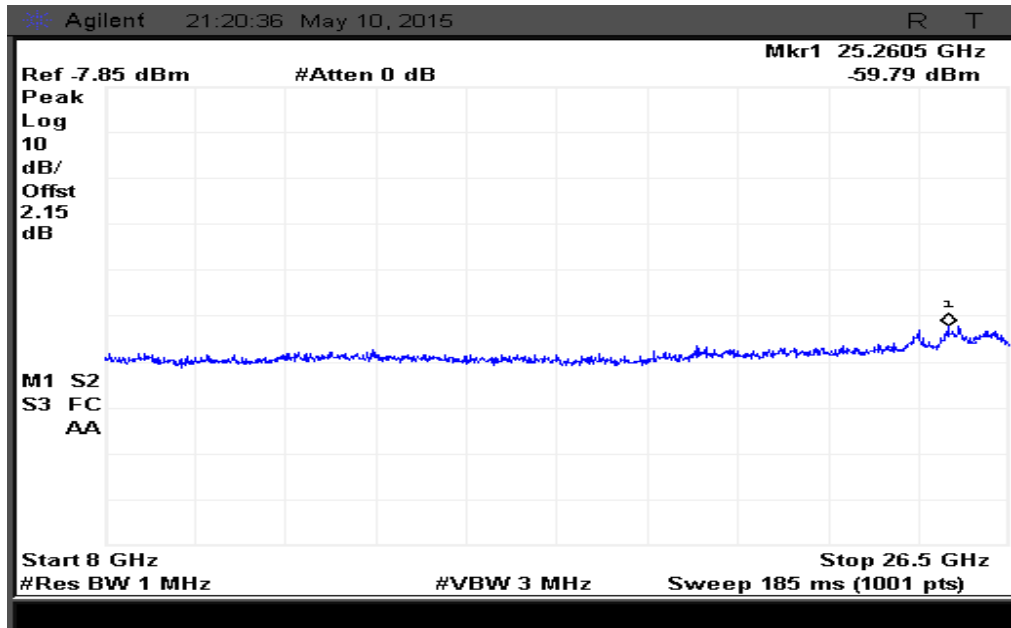


Figure 305: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Peak

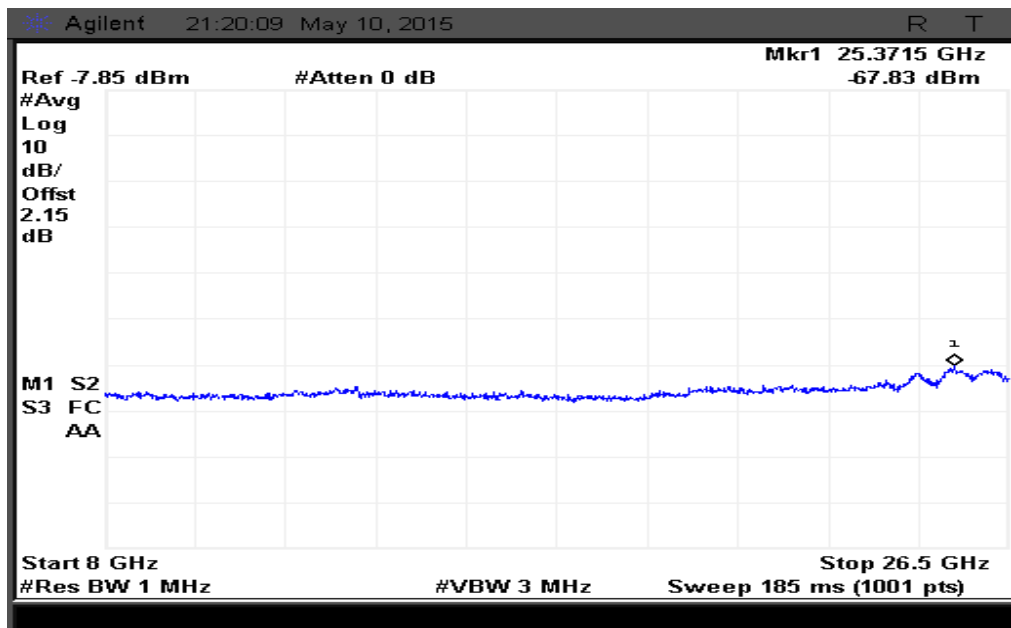
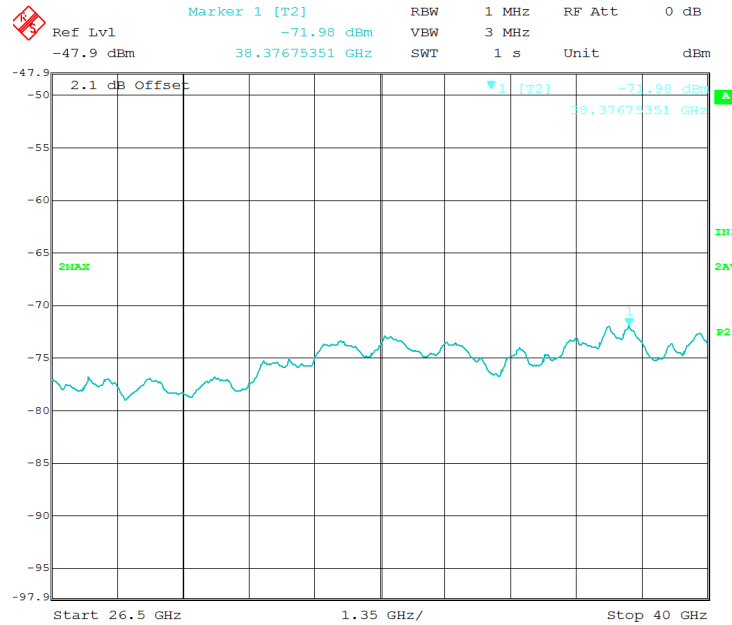
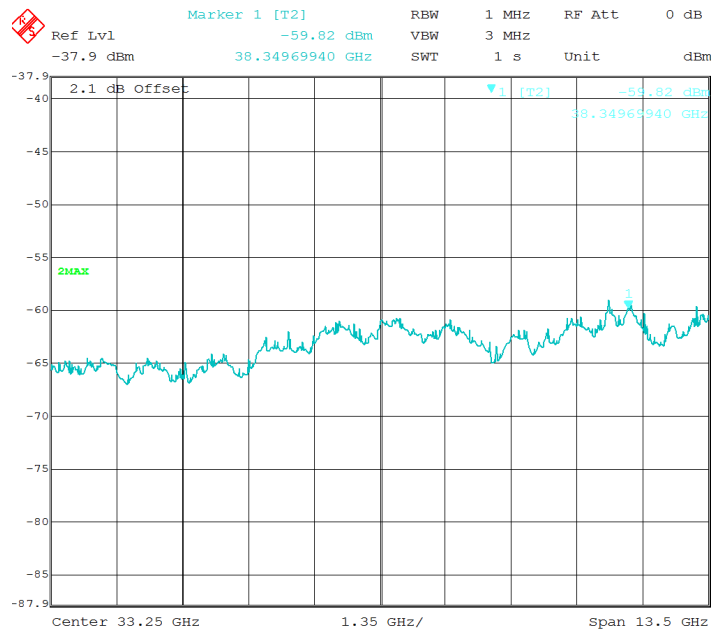


Figure 306: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Average



**Figure 307: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Average**



**Figure 308: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Peak**

### 5.3.1.7.6 10MHz MODULATION BW - HIGH CHANNEL\_5335 MHz

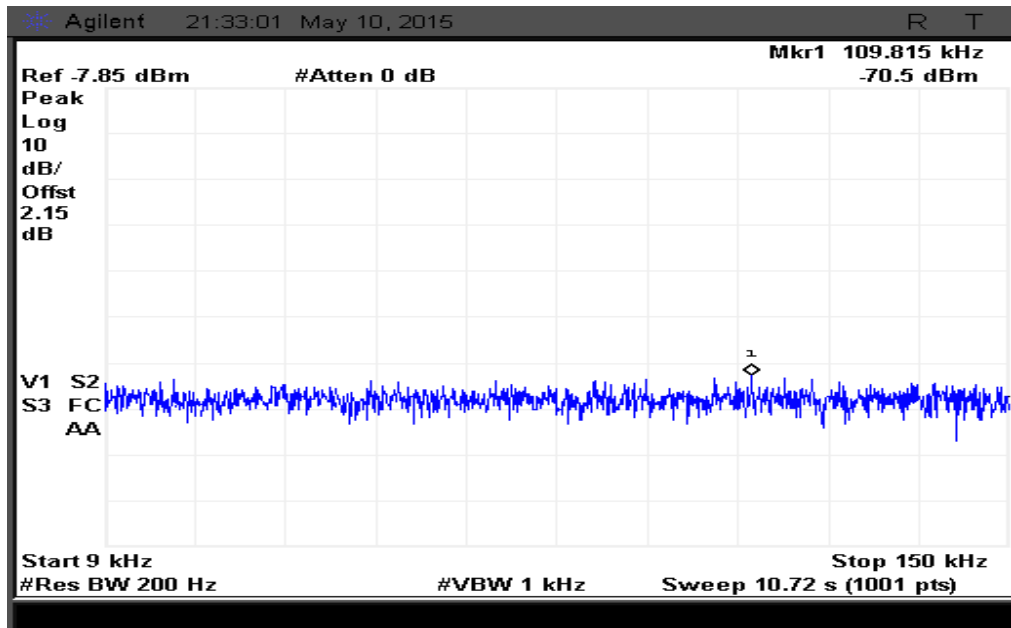


Figure 309: Spurious emission measured from 9 kHz to 150 kHz at Ch. 0-Peak

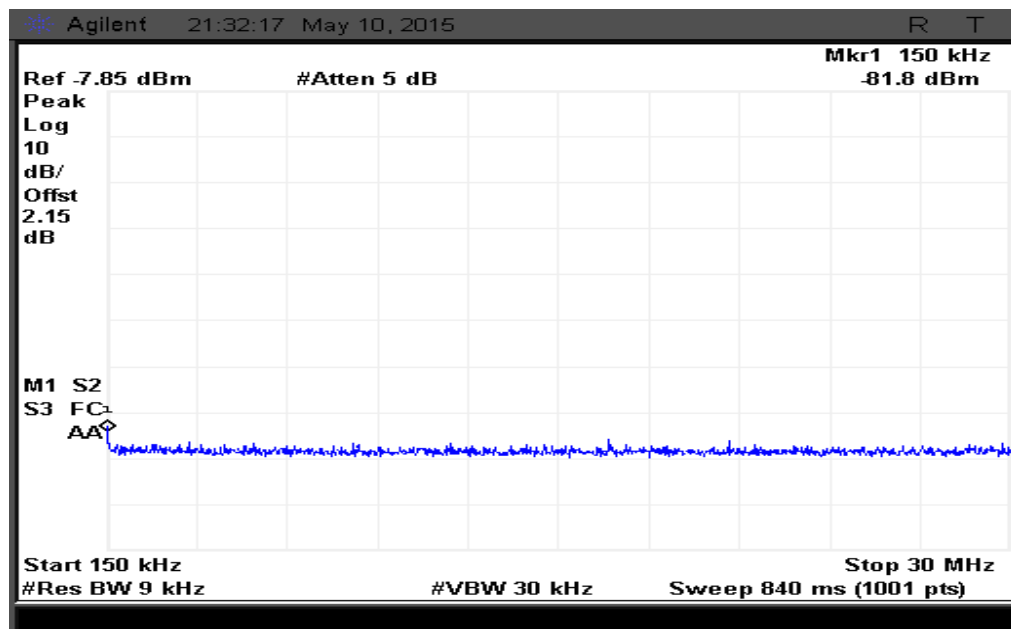


Figure 310: Spurious emission measured from 150 kHz to 30 MHz at Ch. 0-Peak



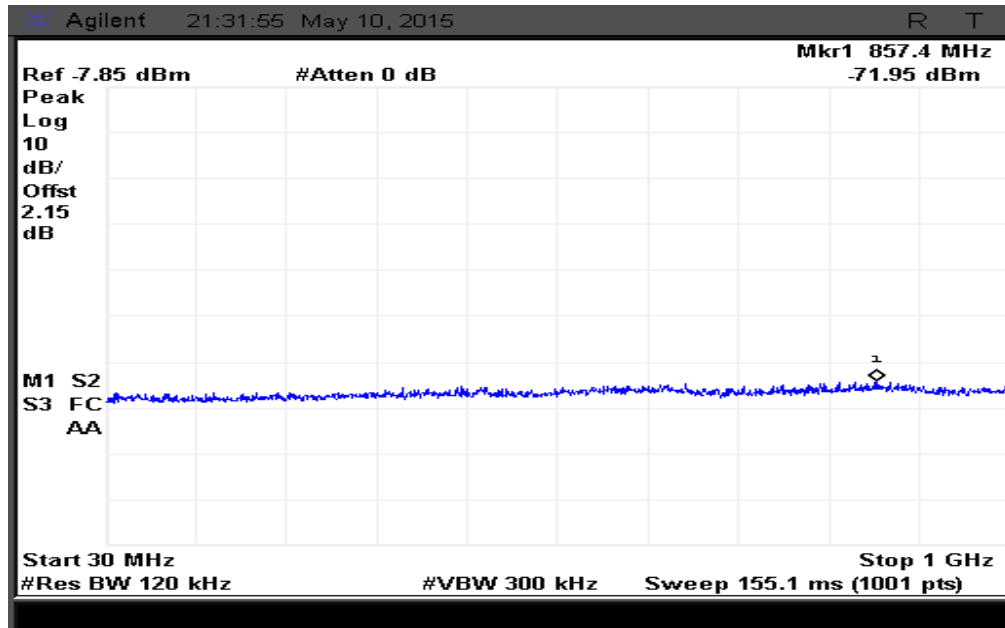


Figure 311: Spurious emission measured from 30 MHz to 1 GHz at Ch. 0-Peak

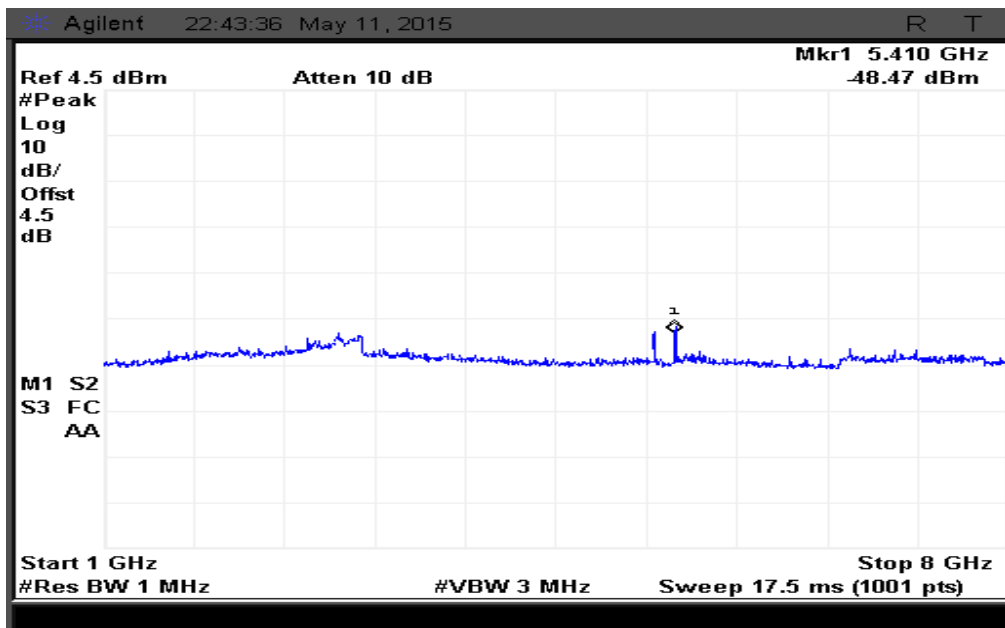


Figure 312: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Peak

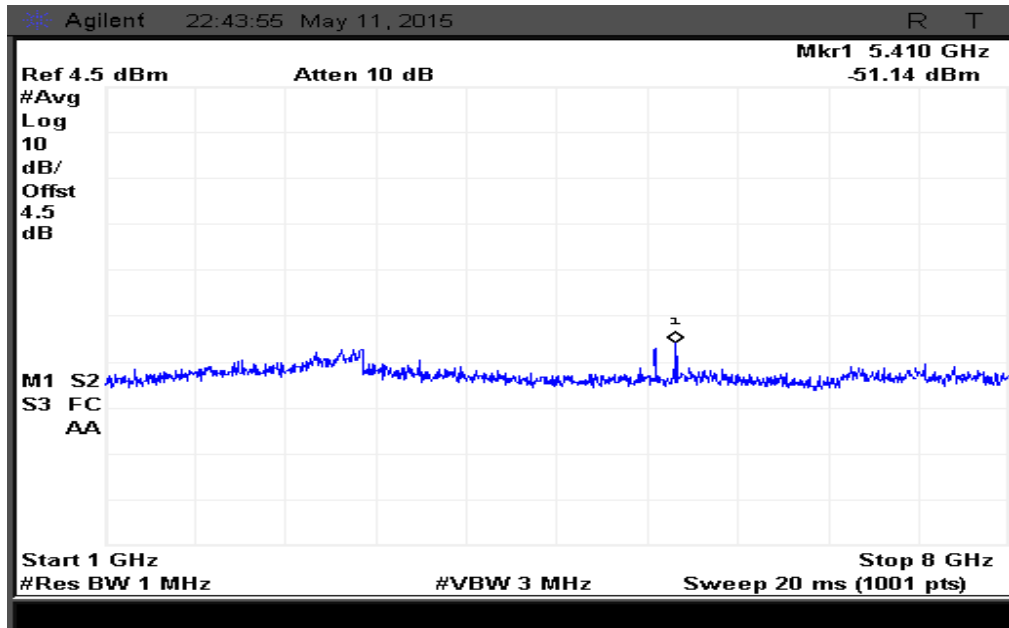


Figure 313: Spurious emission measured from 1 GHz to 8 GHz at Ch. 0-Average

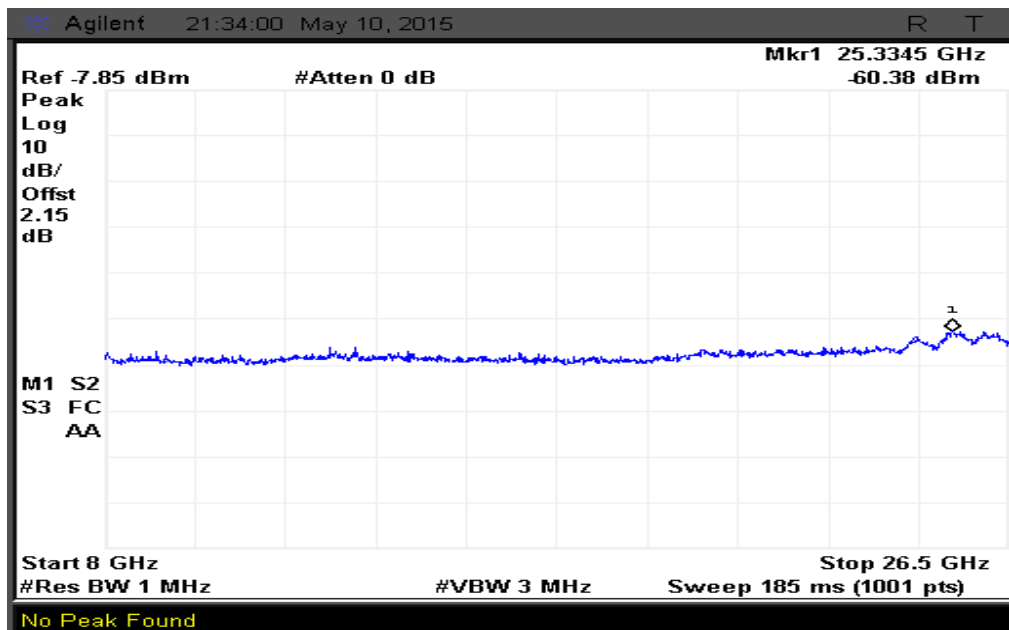


Figure 314: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Peak

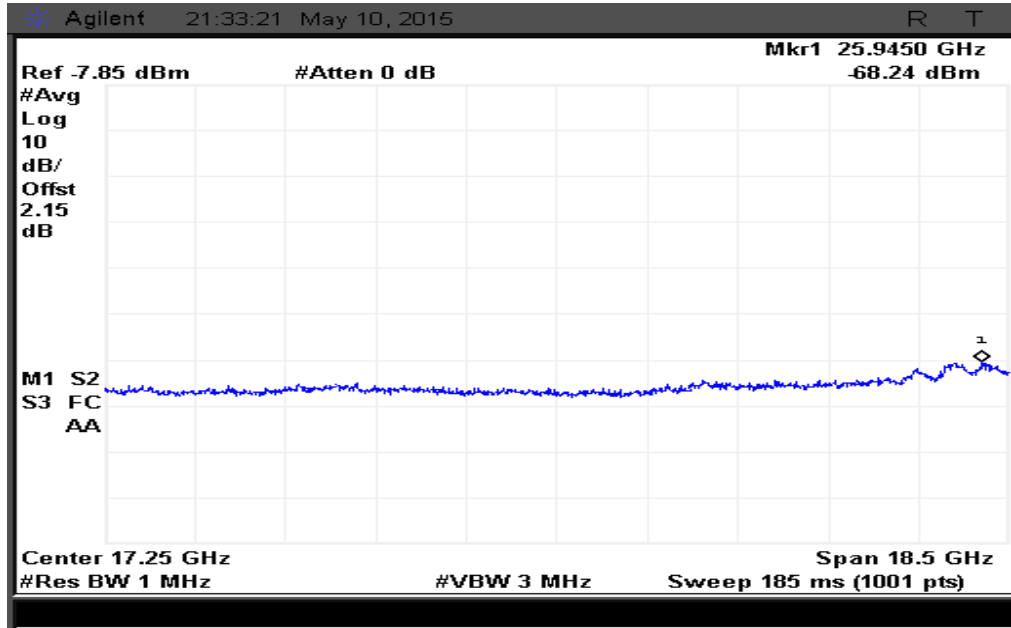


Figure 315: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 0-Average

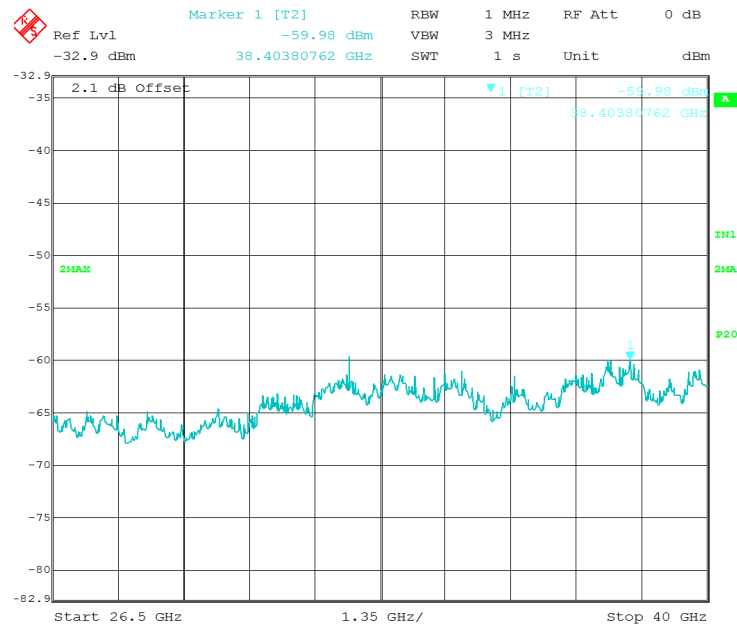


Figure 316: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Peak

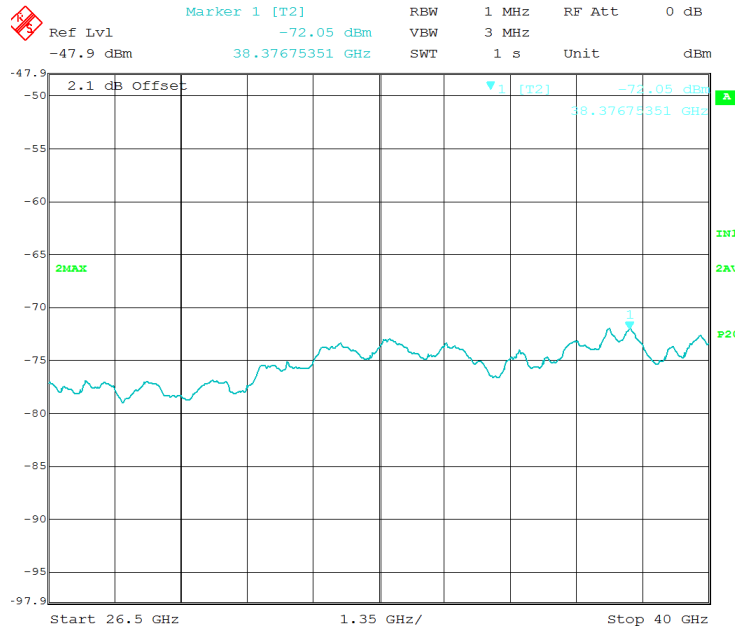


Figure 317: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 0-Average

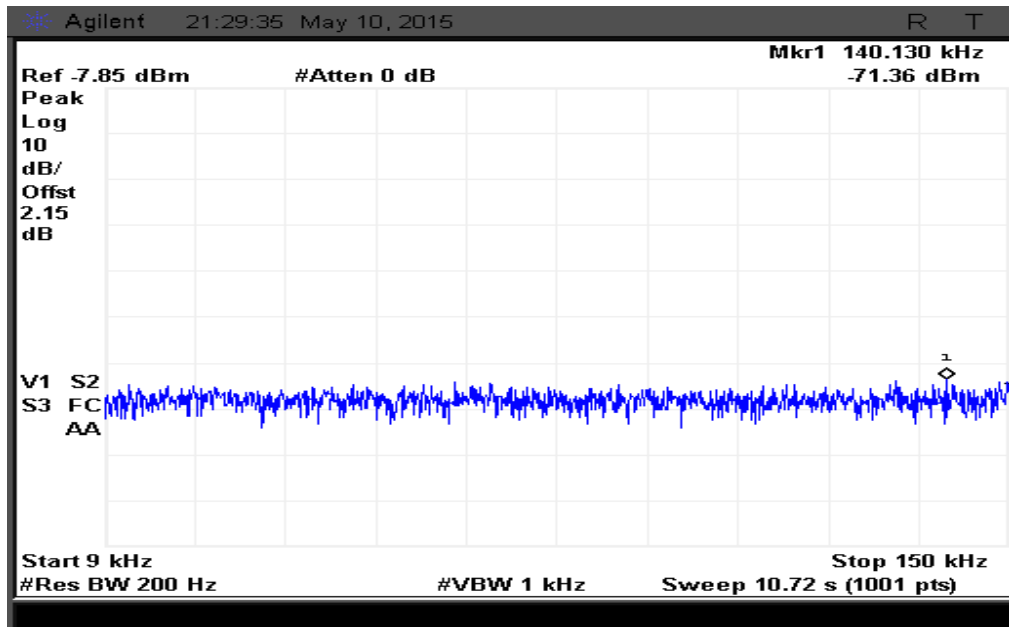


Figure 318: Spurious emission measured from 9 kHz to 150 kHz at Ch. 1-Peak

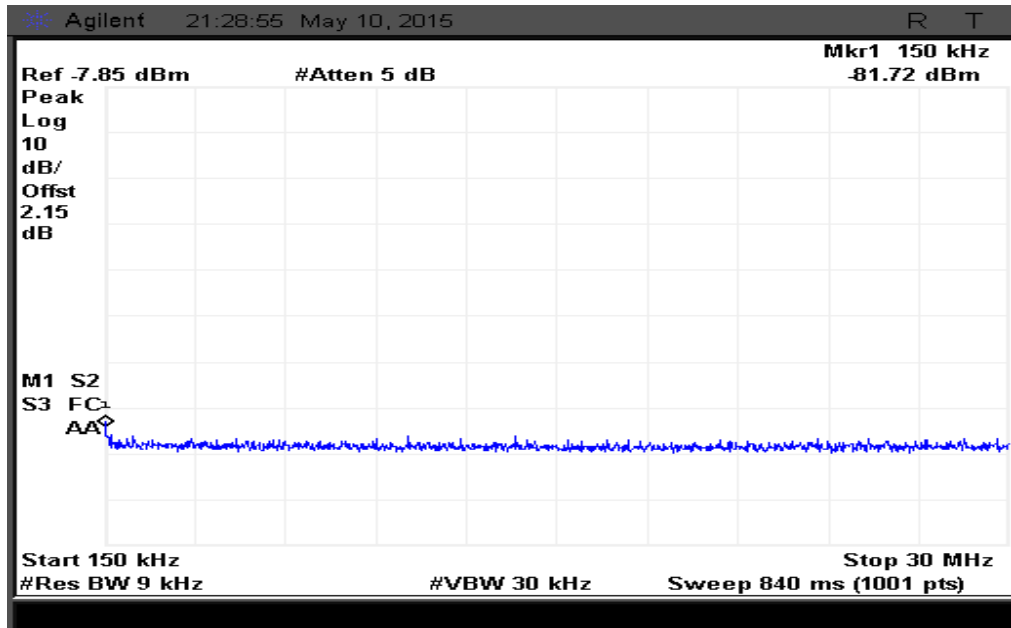


Figure 319: Spurious emission measured from 150 kHz to 30 MHz at Ch. 1-Peak

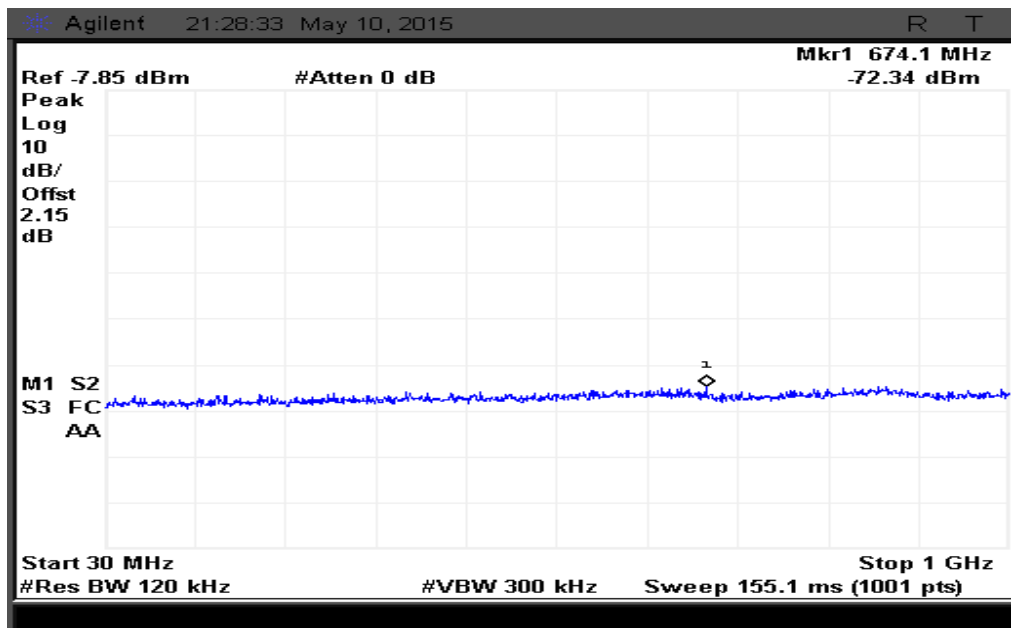


Figure 320: Spurious emission measured from 30 MHz to 1 GHz at Ch. 1-Peak

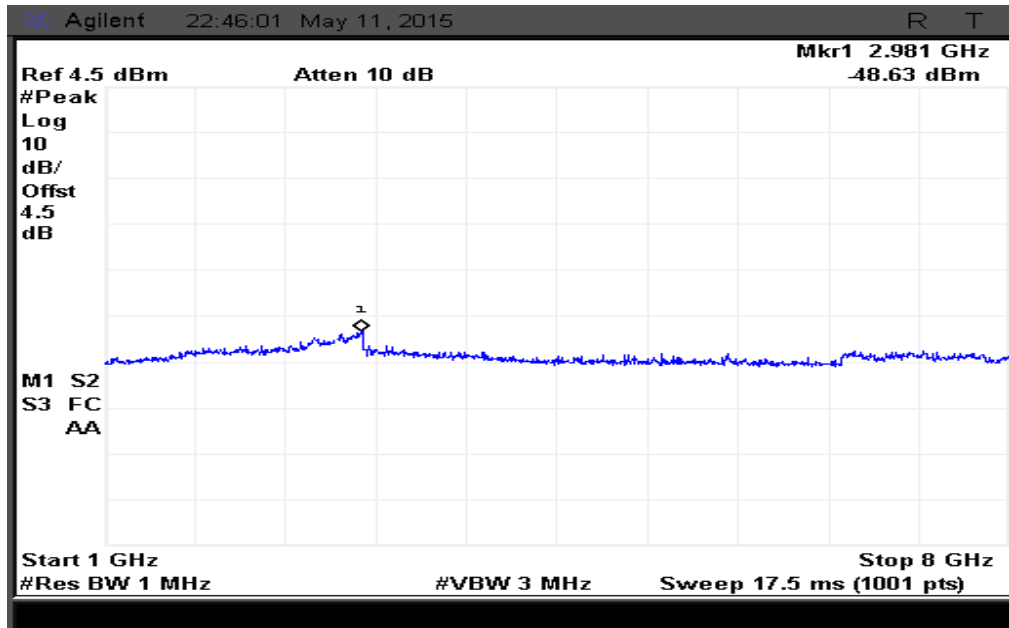


Figure 321: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Peak

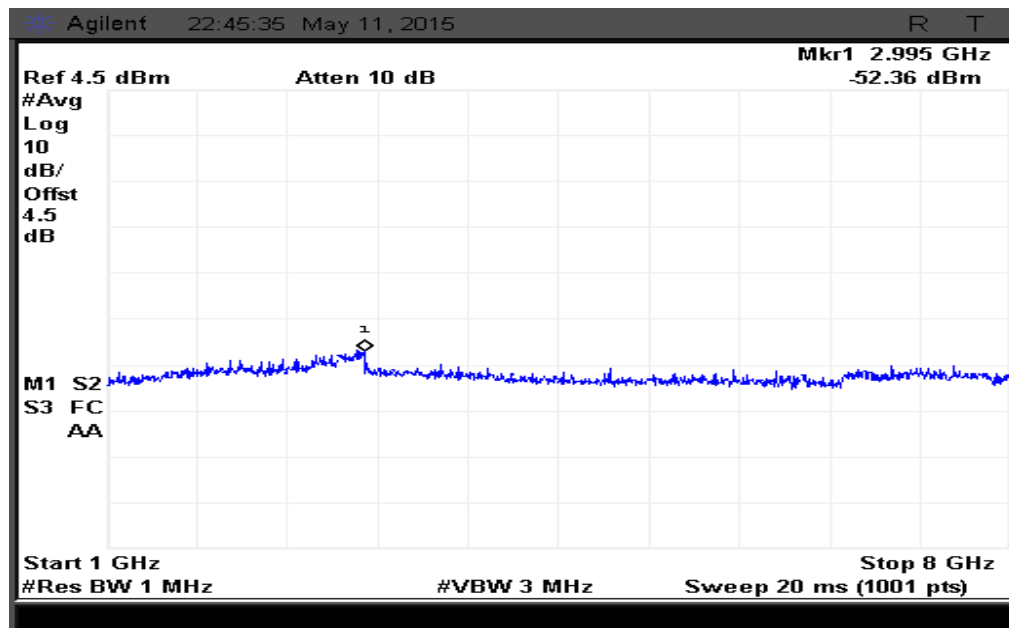


Figure 322: Spurious emission measured from 1 GHz to 8 GHz at Ch. 1-Average

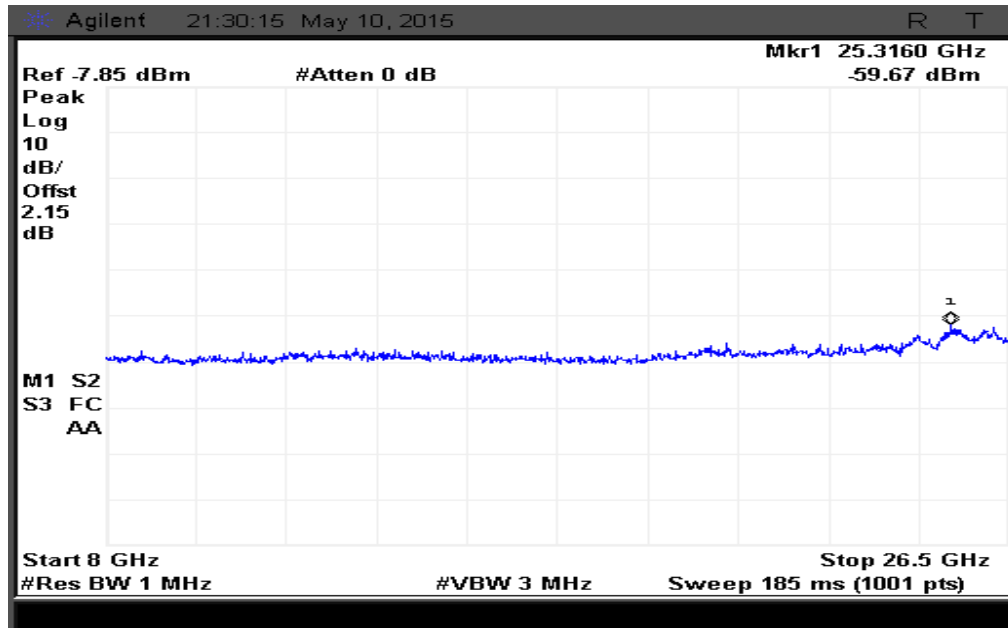


Figure 323: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Peak

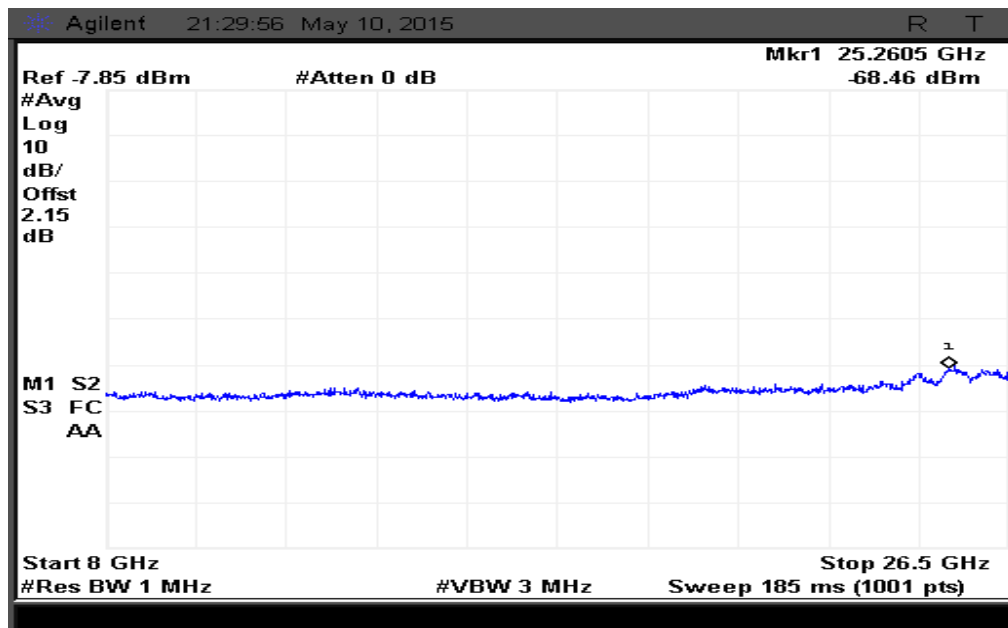
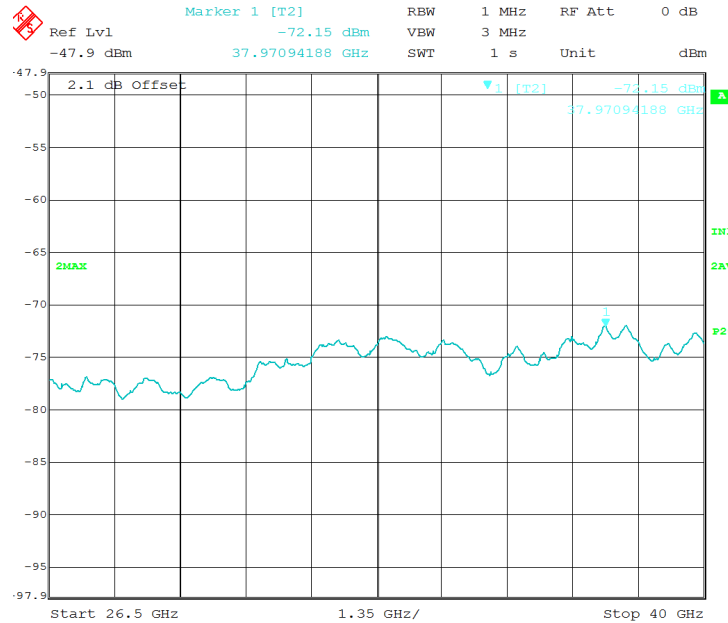
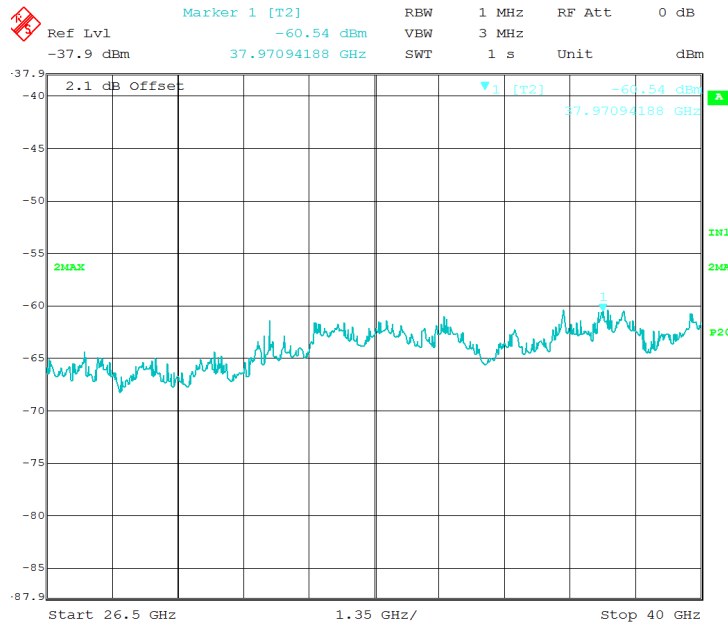


Figure 324: Spurious emission measured from 8 GHz to 26.5 GHz at Ch. 1-Average



**Figure 325: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Average**



**Figure 326: Spurious emission measured from 26.5 GHz to 40 GHz at Ch. 1-Peak**

### 5.3.1.8 RESULT

Emission is below EIRP limit in all channels for both 40MHz & 10MHz Modulation Bandwidths.





---

## APPENDIX I – ACRONYMS

dB $\mu$ V	Decibel micro Volts
EUT	Equipment Under Test
FCC	Federal Communications Commission
GHz	Giga Hertz
kHz	Kilo Hertz
LISN	Line Impedance Stabilization Network
MHz	Mega Hertz
QP	Quasi Peak

**END OF REPORT**