

Testing Tomorrow's Technology

**CFR 47 FCC Part 2, Subpart J, and FCC Part 90, Subpart I
Certification for Private Land Mobile Radio Services,
Part 90.219 Use of signal boosters**

and

**ANSI/TIA-603-E (March 2016), Equipment Measurement and Performance
Standards, KDB 935210 D02 Signal Boosters Certification v04r01**

And

**Innovation, Science and Economic Development Canada, RSS-131, Spectrum
Management and Telecommunications Radio Standards Specification, Zone
Enhancers,**

**Clause 6 Equipment Standard specifications for zone enhancers working with
equipment certified under RSS-119**

For the

Safe-Com Wireless

Models: SAFE-1000, SAFE-1015, SAFE-1020 and SAFE-1030

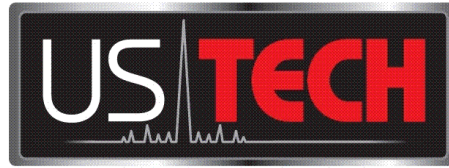
FCC ID: 2AKSM-SAFE2

IC: 22303-SAFE2

UST Project No: 18-0181

September 10, 2018

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I certify that I am authorized to sign for the Test Agency and that all of the statements in this report and in the Exhibits attached hereto are true and correct to the best of my knowledge and belief:

US Tech (Agent Responsible For Test):

By: 

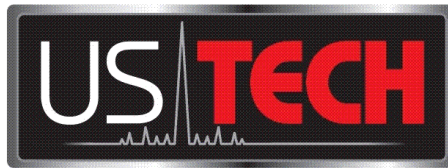
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Date: September 10, 2018

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MEASUREMENT/TECHNICAL REPORT

This report concerns (check one): Original grant ☒ X
Class II change ☐

Reevaluation ☐

Equipment type: **Part 90.219 Distributed Antenna System (DAS)**

Deferred grant requested per 47 CFR 0.457(d)(1)(ii)? yes ☐ No ☐ N/A

If yes, defer until: _____
date

N/A agrees to notify the Commission by N/A

of the intended date of announcement of the product so that the grant can be issued on that date.

Report prepared by:

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3505 Francis Circle
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TABLE OF CONTENTS

<u>Paragraph</u>	<u>Title</u>	<u>Page</u>
1	General Information	20
1.1	Product Description.....	20
1.2	Related Submittal(s)/Grant(s)	20
2	Test and Measurements	21
2.1	Configuration of Tested System.....	21
2.2	Characterization of Tested System	21
2.3	Test Facility.....	21
2.4	Test Equipment.....	21
2.5	Modifications to Equipment under Test (EUT)	21
2.6	Noise (FCC Section 90.219(e)(2) and RSS-131, 6.4).....	26
2.7	Retransmitted Signals (FCC Section 90.219(e)(4) and RSS-131, 6.6)	26
2.8	Intermodulation (FCC Section 90.219(d)(6i) and RSS-131, 6.3).....	26
2.9	Frequency Stability (FCC 2.1055, 90.213 and RSS-131 5.2.4)	26
2.10	Emission Mask Definitions (FCC Section 2.1049, 90.219(e)(4iii), 90.210, RSS-131, 6.5, RSS-119, 5.8)	27
2.10.1	Emission Mask B (FCC Part 90.210, 2.1051, RSS-119, 5.8).....	27
2.10.2	Emission Mask D (FCC Part 90.210, 2.1051, RSS-119, 5.8).....	27
2.10.3	Emission Mask E (FCC Part 90.210, 2.1051, RSS-119, 5.8).....	28
2.10.4	Emission Mask I (FCC Part 90.210, 2.1051, RSS-119, 5.8)	28
2.11	RF Power Output (FCC Section 2.1046, 90.219(e)(1), RSS-131, 6.2) - Uplink 29	
2.12	Output Power Plots	30
2.13	Emission Mask and Retransmitted Signal Measurements - Uplink.....	43
2.13.1	VHF Channels	43
2.13.2	UHF Channels	82
2.13.3	700 MHz Channels	124
2.13.4	800 MHz Channel	148
2.13.5	900 MHz Channel	166
2.14	Spurious Emissions (FCC Section 90.219(d)(e)(3) and RSS-131, 6.5) - Uplink 172	
2.14.1	Radiated Spurious Emissions Measurement	172
2.14.2	Conducted Spurious Emissions Measurement (90.219(e)(4), RSS-131, 6.5) 241	
2.15	Unintentional Emissions (FCC Section 15.107, 15.109 and RSS-Gen) - Uplink 300	
2.15.1	Radiated Spurious Emissions	300
2.15.2	Conducted Powerline Spurious Emissions	301
2.16	RF Power Output (FCC Section 2.1046, 90.219(e)(1), RSS-131, 6.2) - Downlink	302
2.17	Output Power Plots	303

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

2.18	Emission Mask and Retransmitted Signal Measurements - Downlink	315
2.18.1	VHF Channels	315
2.18.2	UHF Channels	354
2.18.3	700 MHz Channels	396
2.18.4	800 MHz Channel	420
2.18.5	900 MHz Channel	438
2.19	Spurious Emissions (FCC Section 90.219(d)(e)(3) and RSS-131, 6.5) - Downlink	444
2.19.1	Radiated Spurious Emissions Measurement	444
2.19.2	Conducted Spurious Emissions Measurement	513
2.20	Unintentional Emissions (FCC Section 15.107, 15.109 and RSS-Gen) - Downlink	563
2.20.1	Radiated Spurious Emissions	563
2.20.2	Conducted Powerline Spurious Emissions	564
2.21	Measurement Uncertainty	565
2.21.1	Radiated Spurious Emissions Measurement Uncertainty	565
2.21.2	Conducted Powerline Emissions Measurement uncertainty	565
2.22	Conclusions	566
2.23	Test Outcome	566

List of Figures

<u>Figure</u>	<u>Title</u>	<u>Page</u>
Figure 1.	Block Diagram of Uplink Test Configuration.....	22
Figure 2.	Block Diagram of Downlink Test Configuration	23
Figure 3.	138 MHz Output Power Plot.....	30
Figure 4.	144 MHz Output Power Plot.....	31
Figure 5.	150 MHz Output Power Plot.....	31
Figure 6.	162 MHz Output Power Plot.....	32
Figure 7.	174 MHz Output Power Plot.....	32
Figure 8.	381 MHz Output Power Plot.....	33
Figure 9.	401 MHz Output Power Plot.....	33
Figure 10.	407 MHz Output Power Plot.....	34
Figure 11.	421 MHz Output Power Plot.....	34
Figure 12.	450 MHz Output Power Plot.....	35
Figure 13.	480 MHz Output Power Plot.....	35
Figure 14.	512 MHz Output Power Plot.....	36
Figure 15.	788 MHz Output Power Plot.....	36
Figure 16.	798 MHz Output Power Plot.....	37
Figure 17.	799 MHz Output Power Plot.....	37
Figure 18.	805 MHz Output Power Plot.....	38
Figure 19.	806 MHz Output Power Plot.....	38
Figure 20.	815 MHz Output Power Plot.....	39
Figure 21.	824 MHz Output Power Plot.....	39
Figure 22.	851 MHz Output Power Plot.....	40
Figure 23.	860 MHz Output Power Plot.....	40
Figure 24.	869 MHz Output Power Plot.....	41
Figure 25.	896 MHz Output Power Plot.....	41
Figure 26.	901 MHz Output Power Plot.....	42
Figure 27.	Input 138 MHz @ 12.5 kHz	43
Figure 28.	138 MHz @ 12.5 kHz, Mask B	44
Figure 29.	138 MHz @ 12.5 kHz + 3.0 dB, Mask B.....	45
Figure 30.	Input 138 MHz @ 25 kHz	46
Figure 31.	138 MHz @ 25 kHz, Mask B	47
Figure 32.	138 MHz @ 25 kHz + 3.0 dB, Mask B.....	48
Figure 33.	Input 145 MHz @ 12.5 kHz	49
Figure 34.	145 MHz @ 12.5 kHz, Mask B	50
Figure 35.	145 MHz @ 12.5 kHz + 3.0 dB, Mask B.....	51
Figure 36.	Input 145 MHz @ 25 kHz	52
Figure 37.	145 MHz @ 25 kHz, Mask B	53
Figure 38.	145 MHz @ 25 kHz + 3.0 dB, Mask B.....	54
Figure 39.	Input 150 MHz @ 6.25 kHz	55
Figure 40.	150 MHz @ 6.25 kHz, Mask E	56
Figure 41.	150 MHz @ 6.25 kHz + 3.0 dB, Mask E.....	57
Figure 42.	Input 150 MHz @ 12.5 kHz	58
Figure 43.	150 MHz @ 12.5 kHz, Mask D.....	59

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

Figure 44. 150 MHz @ 12.5 kHz + 3.0 dB, Mask D.....	60
Figure 45. Input 150 MHz @ 25 kHz	61
Figure 46. 150 MHz @ 25 kHz, Mask B	62
Figure 47. 150 MHz @ 25 kHz + 3.0 dB, Mask B.....	63
Figure 48. Input 162 MHz @ 6.25 kHz	64
Figure 49. 162 MHz @ 6.25 kHz, Mask E	65
Figure 50. 162 MHz @ 6.25 kHz + 3.0 dB, Mask E.....	66
Figure 51. Input 162 MHz @ 12.5 kHz	67
Figure 52. 162 MHz @ 12.5 kHz, Mask D	68
Figure 53. 162 MHz @ 12.5 kHz + 3.0 dB, Mask D.....	69
Figure 54. Input 162 MHz @ 25 kHz	70
Figure 55. 162 MHz @ 25 kHz, Mask B	71
Figure 56. 162 MHz @ 25 kHz + 3.0 dB, Mask B.....	72
Figure 57. Input 174 MHz @ 6.25 kHz	73
Figure 58. 174 MHz @ 6.25 kHz, Mask E	74
Figure 59. 174 MHz @ 6.25 kHz + 3.0 dB, Mask E.....	75
Figure 60. Input 174 MHz @ 12.5 kHz	76
Figure 61. 174 MHz @ 12.5 kHz, Mask D	77
Figure 62. 174 MHz @ 12.5 kHz + 3.0 dB, Mask D.....	78
Figure 63. Input 174 MHz @ 25 kHz	79
Figure 64. 174 MHz @ 25 kHz, Mask B	80
Figure 65. 174 MHz @ 25 kHz + 3.0 dB, Mask B.....	81
Figure 66. Input 381 MHz @ 12.5 kHz	82
Figure 67. 381 MHz @ 12.5 kHz, Mask B	83
Figure 68. 381 MHz @ 12.5 kHz + 3.0 dB, Mask B.....	84
Figure 69. Input 381 MHz @ 25 kHz	85
Figure 70. 381 MHz @ 25 kHz, Mask B	86
Figure 71. 381 MHz @ 25 kHz + 3.0 dB, Mask B.....	87
Figure 72. Input 400 MHz @ 12.5 kHz	88
Figure 73. 400 MHz @ 12.5 kHz, Mask B	89
Figure 74. 400 MHz @ 12.5 kHz + 3.0 dB, Mask B.....	90
Figure 75. Input 400 MHz @ 25 kHz	91
Figure 76. 400 MHz @ 25 kHz, Mask B	92
Figure 77. 400 MHz @ 25 kHz + 3.0 dB, Mask B.....	93
Figure 78. Input 407 MHz @ 12.5 kHz	94
Figure 79. 407 MHz @ 12.5 kHz, Mask B	95
Figure 80. 407 MHz @ 12.5 kHz + 3.0 dB, Mask B.....	96
Figure 81. Input 407 MHz @ 25 kHz	97
Figure 82. 407 MHz @ 25 kHz, Mask B	98
Figure 83. 407 MHz @ 25 kHz + 3.0 dB, Mask B.....	99
Figure 84. Input 420 MHz @ 12.5 kHz	100
Figure 85. 420 MHz @ 12.5 kHz, Mask B	101
Figure 86. 420 MHz @ 12.5 kHz + 3.0 dB, Mask B.....	102
Figure 87. Input 420 MHz @ 25 kHz	103
Figure 88. 420 MHz @ 25 kHz, Mask B	104
Figure 89. 420 MHz @ 25 kHz + 3.0 dB, Mask B.....	105

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

Figure 90. Input 450 MHz @ 12.5 kHz	106
Figure 91. 450 MHz @ 12.5 kHz, Mask D	107
Figure 92. 450 MHz @ 12.5 kHz + 3.0 dB, Mask D	108
Figure 93. Input 450 MHz @ 25 kHz	109
Figure 94. 450 MHz @ 25 kHz, Mask B	110
Figure 95. 450 MHz @ 25 kHz + 3.0 dB, Mask B	111
Figure 96. Input 480 MHz @ 12.5 kHz	112
Figure 97. 480 MHz @ 12.5 kHz, Mask D	113
Figure 98. 480 MHz @ 12.5 kHz + 3.0 dB, Mask D	114
Figure 99. Input 480 MHz @ 25 kHz	115
Figure 100. 480 MHz @ 25 kHz, Mask B	116
Figure 101. 480 MHz @ 25 kHz + 3.0 dB, Mask B	117
Figure 102. Input 512 MHz @ 12.5 kHz	118
Figure 103. 512 MHz @ 12.5 kHz, Mask D	119
Figure 104. 512 MHz @ 12.5 kHz + 3.0 dB, Mask D	120
Figure 105. Input 512 MHz @ 25 kHz	121
Figure 106. 512 MHz @ 25 kHz, Mask B	122
Figure 107. 512 MHz @ 25 kHz + 3.0, Mask B	123
Figure 108. Input 788 MHz @ 12.5 kHz	124
Figure 109. 788 MHz @ 12.5 kHz, Mask B	125
Figure 110. 788 MHz @ 12.5 kHz + 3.0 dB, Mask B	126
Figure 111. Input 788 MHz @ 25 kHz	127
Figure 112. 788 MHz @ 25 kHz, Mask B	128
Figure 113. 788 MHz @ 25 kHz + 3.0 dB, Mask B	129
Figure 114. Input 798 MHz @ 12.5 kHz	130
Figure 115. 798 MHz @ 12.5 kHz, Mask B	131
Figure 116. 798 MHz @ 12.5 kHz + 3.0 dB, Mask B	132
Figure 117. Input 798 MHz @ 25 kHz	133
Figure 118. 798 MHz @ 25 kHz, Mask B	134
Figure 119. 798 MHz @ 25 kHz + 3.0 dB, Mask B	135
Figure 120. Input 799 MHz @ 12.5 kHz	136
Figure 121. 799 MHz @ 12.5 MHz, Mask B	137
Figure 122. 799 MHz @ 12.5 kHz + 3.0 dB, Mask B	138
Figure 123. Input 799 MHz @ 25 kHz	139
Figure 124. 799 MHz @ 25 kHz, Mask B	140
Figure 125. 799 MHz @ 25 kHz + 3.0 dB, Mask B	141
Figure 126. Input 805 MHz @ 12.5 kHz	142
Figure 127. 805 MHz @ 12.5 kHz, Mask B	143
Figure 128. 805 MHz @ 12.5 kHz + 3.0 dB, Mask B	144
Figure 129. Input 805 MHz @ 25 kHz	145
Figure 130. 805 MHz @ 25 kHz, Mask B	146
Figure 131. 805 MHz @ 25 kHz + 3.0 dB, Mask B	147
Figure 132. Input 806 MHz @ 12.5 kHz	148
Figure 133. 806 MHz @ 12.5 kHz, Mask B	149
Figure 134. 806 MHz @ 12.5 kHz + 3.0 dB, Mask B	150
Figure 135. Input 806 MHz @ 25 kHz	151

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

Figure 136. 806 MHz @ 25 kHz, Mask B	152
Figure 137. 806 MHz @ 25 kHz + 3.0 dB, Mask B	153
Figure 138. Input 815 MHz @ 12.5 kHz	154
Figure 139. 815 MHz @ 12.5 kHz, Mask B	155
Figure 140. 815 MHz @ 12.5 kHz + 3.0 dB, Mask B	156
Figure 141. Input 815 MHz @ 25 kHz	157
Figure 142. 815 MHz @ 25 kHz, Mask B	158
Figure 143. 815 MHz @ 25 kHz +3.0 dB, Mask B	159
Figure 144. Input 824 MHz @ 12.5 kHz	160
Figure 145. 824 MHz @ 12.5 kHz, Mask B	161
Figure 146. 824 MHz @ 12.5 kHz + 3.0 dB, Mask B	162
Figure 147. Input 824 MHz @ 25 kHz	163
Figure 148. 824 MHz @ 25 kHz, Mask B	164
Figure 149. 824 MHz @ 25 kHz + 3.0 dB, Mask B	165
Figure 150. Input 896 MHz @ 12.5 kHz	166
Figure 151. 896 MHz @ 12.5 kHz, Mask I	167
Figure 152. 896 MHz @ 12.5 + 3.0 dB, Mask I	168
Figure 153. Input 901 MHz @ 12.5 kHz	169
Figure 154. 901 MHz @ 12.5 kHz, Mask I	170
Figure 155. 901 MHz @ 12.5 kHz + 3.0 dB, Mask I	171
Figure 156. 138 MHz Horizontal, 30 – 200 MHz	173
Figure 157. 138 MHz Vertical, 30 – 200 MHz	174
Figure 158. 138 MHz Horizontal, 200 MHz - 1 GHz	175
Figure 159. 138 MHz Vertical, 200 MHz - 1 GHz	176
Figure 160. 138 MHz Horizontal, 1 – 10 GHz	177
Figure 161. 138 MHz Vertical, 1 – 10 GHz	178
Figure 162. 162 MHz Horizontal, 30 – 200 MHz	179
Figure 163. 162 MHz Vertical, 30 - 200 MHz	180
Figure 164. 162 MHz Horizontal, 200 MHz - 1 GHz	181
Figure 165. 162 MHz Vertical, 200 MHz – 1 GHz	182
Figure 166. 162 MHz Horizontal, 1 – 2.9 GHz	183
Figure 167. 162 MHz Vertical, 1 - 2.9 GHz	184
Figure 168. 162 MHz Horizontal, 2.9 – 6 GHz	185
Figure 169. 162 MHz Vertical, 2.9 - 6 GHz	186
Figure 170. 162 MHz Horizontal, 6 - 10 GHz	187
Figure 171. 162 MHz Vertical, 6 – 10 GHz	188
Figure 172. 380 MHz Horizontal, 30 – 200 MHz	189
Figure 173. 380 MHz Vertical, 30 – 200 MHz	190
Figure 174. 380 MHz Horizontal, 200 MHz – 1 GHz	191
Figure 175. 380 MHz Vertical, 200 MHz – 1 GHz	192
Figure 176. 380 MHz Horizontal, 1 - 10 GHz	193
Figure 177. 380 MHz Vertical, 1 - 10 GHz	194
Figure 178. 407 MHz Horizontal, 30 – 200 MHz	195
Figure 179. 407 MHz Vertical, 30 – 200 MHz	196
Figure 180. 407 MHz Horizontal, 200 MHz – 1 GHz	197
Figure 181. 407 MHz Vertical, 200 MHz – 1 GHz	198

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

Figure 182. 407 MHz Horizontal, 1 - 10 GHz	199
Figure 183. 407 MHz Vertical, 1 - 10 GHz.....	200
Figure 184. 481 MHz Horizontal, 30 - 200 MHz	201
Figure 185. 481 MHz Vertical, 30 - 200 MHz	202
Figure 186. 481 MHz Horizontal, 200 MHz - 1 GHz	203
Figure 187. 481 MHz Vertical, 200 MHz - 1 GHz	204
Figure 188. 481 MHz Horizontal, 1 – 2.9 GHz.....	205
Figure 189. 481 MHz Vertical, 1 – 2.9 GHz.....	206
Figure 190. 481 MHz Horizontal, 2.9 - 6 GHz	207
Figure 191. 481 MHz Vertical, 2.9 – 6 GHz.....	208
Figure 192. 481 MHz Horizontal, 6 - 10 GHz	209
Figure 193. 481 MHz Vertical, 6 - 10 GHz.....	210
Figure 194. 805 MHz Horizontal, 30 – 200 MHz	211
Figure 195. 805 MHz Vertical, 30 - 200 MHz	212
Figure 196. 805 MHz Horizontal, 200 MHz - 1 GHz	213
Figure 197. 805 MHz Vertical, 200 MHz - 1 GHz	214
Figure 198. 805 MHz Horizontal, 1 – 2.9 GHz.....	215
Figure 199. 805 MHz Vertical, 1 – 2.9 GHz.....	216
Figure 200. 805 MHz Horizontal, 2.9 - 6 GHz	217
Figure 201. 805 MHz Vertical, 2.9 – 6 GHz.....	218
Figure 202. 805 MHz Horizontal, 6 – 10 GHz.....	219
Figure 203. 805 MHz Vertical, 6 – 10 GHz.....	220
Figure 204. 824 MHz Horizontal, 30 – 200 MHz	221
Figure 205. 824 MHz Vertical, 30 - 200 MHz	222
Figure 206. 824 MHz Horizontal 200 MHz - 1 GHz	223
Figure 207. 824 MHz Vertical, 200 MHz – 1 GHz	224
Figure 208. 824 MHz Horizontal, 1 – 2.9 GHz.....	225
Figure 209. 824 MHz Vertical, 1 – 2.9 GHz.....	226
Figure 210. 824 MHz Horizontal 2.9 - 6 GHz	227
Figure 211. 824 MHz Vertical 2.9 - 6 GHz.....	228
Figure 212. 824 MHz Horizontal, 6 – 10 GHz.....	229
Figure 213. 824 MHz Vertical, 6 – 10 GHz.....	230
Figure 214. 901 MHz Horizontal, 30 - 200 MHz	231
Figure 215. 901 MHz Vertical, 30 - 200 MHz	232
Figure 216. 901 MHz Horizontal, 200 MHz - 1 GHz	233
Figure 217. 901 MHz Vertical, 200 MHz - 1 GHz	234
Figure 218. 901 MHz Horizontal, 1 – 2.9 GHz	235
Figure 219. 901 MHz Vertical, 1 – 2.9 GHz	236
Figure 220. 901 MHz Horizontal, 2.9 - 6 GHz	237
Figure 221. 901 MHz Vertical, 2.9 - 6 GHz.....	238
Figure 222. 901 MHz Horizontal, 6 – 10 GHz.....	239
Figure 223. 901 MHz Vertical, 6 – 10 GHz.....	240
Figure 224. 138 MHz below 1 GHz	242
Figure 225. 138 MHz above 1 GHz.....	243
Figure 226. 145 MHz below 1 GHz	244
Figure 227. 145 MHz above 1 GHz.....	245

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

Figure 228. 150 MHz below 1 GHz	246
Figure 229. 150 MHz, above 1 GHz	247
Figure 230. 162 MHz below 1 GHz	248
Figure 231. 162 MHz, above 1 GHz	249
Figure 232. 174 MHz below 1 GHz	250
Figure 233. 174 MHz, above 1 GHz	251
Figure 234. 381 MHz below 1 GHz	252
Figure 235. 381 MHz, 1 – 2.9 GHz.....	253
Figure 236. 381 MHz, 2.9 – 10 GHz.....	254
Figure 237. 400 MHz below 1 GHz	255
Figure 238. 400 MHz, 1 – 2.9 GHz.....	256
Figure 239. 400 MHz, 2.9 – 10 GHz.....	257
Figure 240. 407 MHz below 1 GHz	258
Figure 241. 407 MHz, 1 – 2.9 GHz.....	259
Figure 242. 407 MHz, 2.9 – 10 GHz.....	260
Figure 243. 420 MHz below 1 GHz	261
Figure 244. 420 MHz, 1 – 2.9 GHz.....	262
Figure 245. 420 MHz, 2.9 – 10 GHz.....	263
Figure 246. 451 MHz below 1 GHz	264
Figure 247. 451 MHz, 1 – 2.9 GHz.....	265
Figure 248. 451 MHz, 2.9 – 10 GHz.....	266
Figure 249. 481 MHz below 1 GHz	267
Figure 250. 481 MHz, 1 – 2.9 GHz.....	268
Figure 251. 481 MHz, 2.9 – 10 GHz.....	269
Figure 252. 512 MHz below 1 GHz	270
Figure 253. 512 MHz, 1 – 2.9 GHz.....	271
Figure 254. 512 MHz, 2.9 – 10 GHz.....	272
Figure 255. 788 MHz below 1 GHz	273
Figure 256. 788 MHz, 1 – 2.9 GHz.....	274
Figure 257. 788MHz, 2.9 – 10 GHz.....	275
Figure 258. 798 MHz below 1 GHz	276
Figure 259. 798 MHz, 1 – 2.9 GHz.....	277
Figure 260. 798 MHz, 2.9 – 10 GHz.....	278
Figure 261. 799 MHz below 1 GHz	279
Figure 262. 799 MHz, 1 – 2.9 GHz.....	280
Figure 263. 799 MHz, 2.9 – 10 GHz.....	281
Figure 264. 805 MHz below 1 GHz	282
Figure 265. 805 MHz, 1 – 2.9 GHz.....	283
Figure 266. 805 MHz, 2.9 – 10 GHz.....	284
Figure 267. 806 MHz below 1 GHz	285
Figure 268. 806 MHz, 1 – 2.9 GHz.....	286
Figure 269. 806 MHz, 2.9 - 10 GHz.....	287
Figure 270. 815 MHz below 1 GHz	288
Figure 271. 815 MHz, 1 – 2.9 GHz.....	289
Figure 272. 815 MHz, 2.9 - 10 GHz.....	290
Figure 273. 824 MHz below 1 GHz	291

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

Figure 274. 824 MHz, 1 – 2.9 GHz.....	292
Figure 275. 824 MHz, 2.9 – 10 GHz.....	293
Figure 276. 896 MHz below 1 GHz	294
Figure 277. 896 MHz, 1 – 2.9 GHz.....	295
Figure 278. 896 MHz, 2.9 – 10 GHz.....	296
Figure 279. 901 MHz below 1 GHz	297
Figure 280. 901 MHz, 1 – 2.9 GHz.....	298
Figure 281. 901 MHz, 2.9 – 10 GHz.....	299
Figure 282. 138 MHz Output Power Plot.....	303
Figure 283. 145 MHz Output Power Plot.....	303
Figure 284. 150 MHz Output Power Plot.....	304
Figure 285. 162 MHz Output Power Plot.....	304
Figure 286. 174 MHz Output Power Plot.....	305
Figure 287. 380 MHz Output Power Plot.....	305
Figure 288. 400 MHz Output Power Plot.....	306
Figure 289. 406 MHz Output Power Plot.....	306
Figure 290. 421 MHz Output Power Plot.....	307
Figure 291. 450 MHz Output Power Plot.....	307
Figure 292. 480 MHz Output Power Plot.....	308
Figure 293. 511 MHz Output Power Plot.....	308
Figure 294. 758 MHz Output Power Plot.....	309
Figure 295. 763 MHz Output Power Plot.....	309
Figure 296. 768 MHz Output Power Plot.....	310
Figure 297. 769 MHz Output Power Plot.....	310
Figure 298. 775 MHz Output Power Plot.....	311
Figure 299. 851 MHz Output Power Plot.....	311
Figure 300. 860 MHz Output Power Plot.....	312
Figure 301. 869 MHz Output Power Plot.....	312
Figure 302. 930 MHz Output Power Plot.....	313
Figure 303. 935 MHz Output Power Plot.....	313
Figure 304. 938 MHz Output Power Plot.....	314
Figure 305. 941 MHz Output Power Plot.....	314
Figure 306. Input 138 MHz @ 12.5 kHz	315
Figure 307. 138 MHz @ 12.5 kHz, Mask B	316
Figure 308. 138 MHz @ 12.5 kHz + 3.0 dB, Mask B.....	317
Figure 309. Input 138 MHz @ 25 kHz	318
Figure 310. 138 MHz @ 25 kHz, Mask B	319
Figure 311. 138 MHz @ 25 kHz + 3.0 dB, Mask B.....	320
Figure 312. Input 145 MHz @ 12.5 kHz	321
Figure 313. 145 MHz @ 12.5 kHz, Mask B	322
Figure 314. 145 MHz @ 12.5 kHz + 3.0 dB, Mask B.....	323
Figure 315. Input 145 MHz @ 25 kHz	324
Figure 316. 145 MHz @ 25 kHz, Mask B	325
Figure 317. 145 MHz @ 25 kHz + 3.0 dB, Mask B.....	326
Figure 318. Input 150 MHz @ 6.25 kHz	327
Figure 319. 150 MHz @ 6.25 kHz, Mask E	328

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

Figure 320. 150 MHz @ 6.25 kHz + 3.0 dB, Mask E	329
Figure 321. Input 150 MHz @ 12.5 kHz	330
Figure 322. 150 MHz @ 12.5 kHz, Mask D	331
Figure 323. 150 MHz @ 12.5 kHz +3.0 dB, Mask D	332
Figure 324. Input 150 MHz @ 25 kHz	333
Figure 325. 150 MHz @ 25 kHz, Mask B	334
Figure 326. 150 MHz @ 25 kHz, + 3.0 dB, Mask B	335
Figure 327. Input 162 MHz @ 6.25 kHz	336
Figure 328. 162 MHz @ 6.25 kHz, Mask E	337
Figure 329. 162 MHz @ 6.25 kHz +3.0 dB, Mask E	338
Figure 330. Input 162 MHz @ 12.5 kHz	339
Figure 331. 162 MHz @ 12.5 kHz, Mask D	340
Figure 332. 162 MHz @ 12.5 kHz + 3.0 dB, Mask D	341
Figure 333. Input 162 MHz @ 25 kHz	342
Figure 334. 162 MHz @ 25 kHz, Mask B	343
Figure 335. 162 MHz @ 25 kHz +3.0 dB, Mask B	344
Figure 336. Input 174 MHz @ 6.25 kHz	345
Figure 337. 174 MHz @ 6.25 kHz, Mask E	346
Figure 338. 174 MHz @ 6.25 kHz +3.0 dB, Mask E	347
Figure 339. Input 174 MHz @ 12.5 kHz	348
Figure 340. 174 MHz @ 12.5 kHz, Mask D	349
Figure 341. 174 MHz @ 12.5 kHz + 3.0 dB, Mask D	350
Figure 342. Input 174 MHz @ 25 kHz	351
Figure 343. 174 MHz @ 25 kHz, Mask B	352
Figure 344. 174 MHz @ 25 kHz + 3.0 dB, Mask B	353
Figure 345. Input 380 MHz @ 12.5 kHz	354
Figure 346. 380 MHz @ 12.5 kHz, Mask B	355
Figure 347. 380 MHz @ 12.5 kHz + 3.0 dB, Mask B	356
Figure 348. Input 380 MHz @ 25 kHz	357
Figure 349. 380 MHz @ 25 kHz, Mask B	358
Figure 350. 380 MHz @ 25 kHz + 3.0 dB, Mask B	359
Figure 351. Input 401 MHz @ 12.5 kHz	360
Figure 352. 401 MHz @ 12.5 kHz, Mask B	361
Figure 353. 401 MHz @ 12.5 kHz + 3.0 dB, Mask B	362
Figure 354. Input 401 MHz @ 25 kHz	363
Figure 355. 401 MHz @ 25 kHz, Mask B	364
Figure 356. 401 MHz @ 25 kHz + 3.0 dB, Mask B	365
Figure 357. Input 406 MHz @ 12.5 kHz	366
Figure 358. 406 MHz @ 12.5 kHz, Mask B	367
Figure 359. 406 MHz @ 12.5 kHz + 3.0 dB, Mask B	368
Figure 360. Input 406 MHz @ 25 kHz	369
Figure 361. 406 MHz @ 25 kHz, Mask B	370
Figure 362. 406 MHz @ 25 kHz + 3.0 dB, Mask B	371
Figure 363. Input 421 MHz @ 12.5 kHz	372
Figure 364. 421 MHz @ 12.5 kHz, Mask B	373
Figure 365. 421 MHz @ 12.5 kHz + 3.0 dB, Mask B	374

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

Figure 366. Input 421 MHz @ 25 kHz	375
Figure 367. 421 MHz @ 25 kHz, Mask B	376
Figure 368. 421 MHz @ 25 kHz + 3.0 dB, Mask B	377
Figure 369. Input 450 MHz @ 12.5 kHz	378
Figure 370. 450 MHz @ 12.5 kHz, Mask D	379
Figure 371. 450 MHz @ 12.5 kHz +3.0 dB, Mask D	380
Figure 372. Input 450 MHz @ 25 kHz	381
Figure 373. 450 MHz @ 25 kHz, Mask B	382
Figure 374. 450 MHz @ 25 kHz +3.0 dB, Mask B	383
Figure 375. Input 480 MHz @ 12.5 kHz	384
Figure 376. 480 MHz @ 12.5 kHz, Mask D	385
Figure 377. 480 MHz @ 12.5 kHz +3.0 dB, Mask D	386
Figure 378. Input 480 MHz @ 25 kHz	387
Figure 379. 480 MHz @ 25 kHz, Mask B	388
Figure 380. 480 MHz @ 25 kHz +3.0 dB, Mask B	389
Figure 381. Input 512 MHz @ 12.5 kHz	390
Figure 382. 512 MHz @ 12.5 kHz, Mask D	391
Figure 383. 512 MHz @ 12.5 kHz +3.0 dB, Mask D	392
Figure 384. Input 512 MHz @ 25 kHz	393
Figure 385. 512 MHz @ 25 kHz, Mask B	394
Figure 386. 512 MHz @ 25 kHz +3.0, Mask B	395
Figure 387. Input 763 MHz @ 12.5 kHz	396
Figure 388. 763 MHz @ 12.5 kHz, Mask B	397
Figure 389. 763 MHz @ 12.5 kHz +3.0 dB, Mask B	398
Figure 390. Input 763 MHz @ 25 kHz	399
Figure 391. 763 MHz @ 25 kHz, Mask B	400
Figure 392. 763 MHz @ 25 kHz +3.0 dB, Mask B	401
Figure 393. Input 768 MHz @ 12.5 kHz	402
Figure 394. 768 MHz @ 12.5 kHz, Mask B	403
Figure 395. 768 MHz @ 12.5 kHz +3.0 dB, Mask B	404
Figure 396. Input 768 MHz @ 25 kHz	405
Figure 397. 768 MHz @ 25 kHz, Mask B	406
Figure 398. 768 MHz @ 25 kHz +3.0 dB, Mask B	407
Figure 399. Input 769 MHz @ 12.5 kHz	408
Figure 400. 769 MHz @ 12.5 kHz, Mask B	409
Figure 401. 769 MHz @ 12.5 kHz +3.0 dB, Mask B	410
Figure 402. Input 769 MHz @ 25 kHz	411
Figure 403. 769 MHz @ 25 kHz, Mask B	412
Figure 404. 769 MHz @ 25 kHz +3.0 dB, Mask B	413
Figure 405. Input 775 MHz @ 12.5 kHz	414
Figure 406. 775 MHz @ 12.5 MHz, Mask B	415
Figure 407. 775 MHz @ 12.5 kHz +3.0 dB, Mask B	416
Figure 408. Input 775 MHz @ 25 kHz	417
Figure 409. 775 MHz @ 25 kHz, Mask B	418
Figure 410. 775 MHz @ 25 kHz +3.0 dB, Mask B	419
Figure 411. Input 851 MHz @ 12.5 kHz	420

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

Figure 412. 851 MHz @ 12.5 kHz, Mask B	421
Figure 413. 851 MHz @ 12.5 kHz +3.0 dB, Mask B	422
Figure 414. Input 851 MHz @ 25 kHz	423
Figure 415. 851 MHz @ 25 kHz, Mask B	424
Figure 416. 851 MHz @ 25 kHz +3.0 dB, Mask B	425
Figure 417. Input 860 MHz @ 12.5 kHz	426
Figure 418. 860 MHz @ 12.5 kHz, Mask B	427
Figure 419. 860 MHz @ 12.5 kHz +3.0 dB, Mask B	428
Figure 420. Input 860 MHz @ 25 kHz	429
Figure 421. 860 MHz @ 25 kHz, Mask B	430
Figure 422. 860 MHz @ 25 kHz +3.0 dB, Mask B	431
Figure 423. Input 869 MHz @ 12.5 kHz	432
Figure 424. 869 MHz @ 12.5 kHz, Mask B	433
Figure 425. 869 MHz @ 12.5 kHz +3.0 dB, Mask B	434
Figure 426. Input 869 MHz @ 25 kHz	435
Figure 427. 869 MHz @ 25 kHz, Mask B	436
Figure 428. 869 MHz @ 25 kHz +3.0 dB, Mask B	437
Figure 429. Input 935 MHz @ 12.5 kHz	438
Figure 430. 935 MHz @ 12.5 kHz, Mask I	439
Figure 431. 935 MHz @ 12.5 +3.0 dB, Mask I	440
Figure 432. Input 941 MHz @ 12.5 kHz	441
Figure 433. 941 MHz @ 12.5 kHz, Mask I	442
Figure 434. 941 MHz @ 12.5 kHz +3.0 dB, Mask I	443
Figure 435. 145 MHz Horizontal, 30 – 200 MHz	445
Figure 436. 145 MHz Vertical, 30 – 200 MHz	446
Figure 437. 145 MHz Horizontal, 200 MHz – 1GHz	447
Figure 438. 145 MHz Vertical, 200 MHz – 1 GHz	448
Figure 439. 145 MHz Horizontal above 1 GHz	449
Figure 440. 145 MHz Vertical above 1 GHz	450
Figure 441. 150 MHz Horizontal, 30 – 200 MHz	451
Figure 442. 150 MHz Vertical, 30 - 200 MHz	452
Figure 443. 150 MHz Horizontal 200 MHz - 1 GHz	453
Figure 444. 150 MHz Vertical, 200 MHz – 1 GHz	454
Figure 445. 150 MHz Horizontal, 1 – 2.9 GHz	455
Figure 446. 150 MHz Vertical, 1 - 2.9 GHz	456
Figure 447. 150 MHz Horizontal, 2.9 – 6 GHz	457
Figure 448. 150 MHz Vertical, 2.9 – 6 GHz	458
Figure 449. 150 MHz Horizontal, 6 - 10 GHz	459
Figure 450. 150 MHz Vertical, 6 – 10 GHz	460
Figure 451. 381 MHz Horizontal, 30 - 200 MHz	461
Figure 452. 381 MHz Vertical, 30 - 200 MHz	462
Figure 453. 381 MHz Horizontal, 200 MHz – 1 GHz	463
Figure 454. 381 MHz Vertical 200 MHz – 1 GHz	464
Figure 455. 381 MHz Horizontal above 1 GHz	465
Figure 456. 381 MHz Vertical above 1 GHz	466
Figure 457. 420 MHz Horizontal, 30 - 200 MHz	467

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

Figure 458. 420 MHz Vertical, 30 - 200 MHz	468
Figure 459. 420 MHz Horizontal, 200 MHz – 1 GHz	469
Figure 460. 420 MHz Vertical, 200 MHz – 1 GHz	470
Figure 461. 420 MHz Horizontal above 1 GHz.....	471
Figure 462. 420 MHz Vertical above 1 GHz	472
Figure 463. 451 MHz Horizontal, 30 - 200 MHz	473
Figure 464. 451 MHz Vertical, 30 - 200 MHz	474
Figure 465. 451 MHz Horizontal, 200 MHz - 1 GHz	475
Figure 466. 451 MHz Vertical, 200 -1 GHz.....	476
Figure 467. 451 MHz Horizontal, 1 – 2.9 GHz.....	477
Figure 468. 451 MHz Vertical, 1 – 2.9 GHz.....	478
Figure 469. 451 MHz Horizontal, 2.9 - 6 GHz	479
Figure 470. 451 MHz Vertical 2.9 – 6 GHz.....	480
Figure 471. 451 MHz Horizontal, 6 – 10 GHz.....	481
Figure 472. 451 MHz Vertical, 6 – 10 GHz.....	482
Figure 473. 775 MHz Horizontal, 30 – 200 MHz	483
Figure 474. 775 MHz Vertical, 30 - 200 MHz	484
Figure 475. 775 MHz Horizontal, 200 MHz - 1 GHz	485
Figure 476. 775 MHz Vertical, 200 MHz - 1 GHz	486
Figure 477. 775 MHz Horizontal, 1 – 2.9 GHz.....	487
Figure 478. 775 MHz Vertical, 1 – 2.9 GHz.....	488
Figure 479. 775 MHz Horizontal, 2.9 - 6 GHz	489
Figure 480. 775 MHz Vertical, 2.9 – 6 GHz.....	490
Figure 481. 775 MHz Horizontal, 6 – 10 GHz.....	491
Figure 482. 775 MHz Vertical, 6 – 10 GHz.....	492
Figure 483. 868 MHz Horizontal, 30 – 200 MHz	493
Figure 484. 868 MHz Vertical, 30 - 200 MHz	494
Figure 485. 868 MHz Horizontal, 200 MHz - 1 GHz	495
Figure 486. 868 MHz Vertical, 200 – 1 GHz.....	496
Figure 487. 868 MHz Horizontal, 1 – 2.9 GHz.....	497
Figure 488. 868 MHz Vertical, 1 – 2.9 GHz.....	498
Figure 489. 868 MHz Horizontal, 2.9 - 6 GHz	499
Figure 490. 868 MHz Vertical, 2.9 - 6 GHz.....	500
Figure 491. 868 MHz Horizontal, 6 – 10 GHz.....	501
Figure 492. 868 MHz Vertical, 6 – 10 GHz.....	502
Figure 493. 939 MHz Horizontal, 30 - 200 MHz	503
Figure 494. 939 MHz Vertical, 30 - 200 MHz	504
Figure 495. 939 MHz Horizontal, 200 MHz - 1 GHz	505
Figure 496. 939 MHz Vertical, 200 MHz - 1 GHz	506
Figure 497. 939 MHz Horizontal, 1 – 2.9 GHz.....	507
Figure 498. 937 MHz Vertical, 1 – 2.9 GHz.....	508
Figure 499. 937 MHz Horizontal, 2.9 - 6 GHz	509
Figure 500. 939 MHz Vertical, 2.9 - 6 GHz.....	510
Figure 501. 939 MHz Horizontal, 6 – 10 GHz.....	511
Figure 502. 939 MHz Vertical, 6 – 10 GHz.....	512
Figure 503. 138 MHz below 1 GHz	514

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

Figure 504. 138 MHz above 1 GHz	515
Figure 505. 145 MHz below 1 GHz	516
Figure 506. 145 MHz above 1 GHz	517
Figure 507. 150 MHz below 1 GHz	518
Figure 508. 150 MHz above 1 GHz	519
Figure 509. 162 MHz below 1 GHz	520
Figure 510. 162 MHz above 1 GHz	521
Figure 511. 174 MHz below 1 GHz	522
Figure 512. 174 MHz above 1 GHz	523
Figure 513. 380 MHz below 1 GHz	524
Figure 514. 380 MHz, 1 – 2.9 GHz.....	525
Figure 515. 380 MHz, 2.9 – 10 GHz.....	526
Figure 516. 401 MHz below 1 GHz	527
Figure 517. 401 MHz, 1 – 2.9 GHz.....	528
Figure 518. 401 MHz, 2.9 – 10 GHz.....	529
Figure 519. 406 MHz below 1 GHz	530
Figure 520. 406 MHz, 1 – 2.9 GHz.....	531
Figure 521. 406 MHz, 2.9 – 10 GHz.....	532
Figure 522. 421 MHz below 1 GHz	533
Figure 523. 421 MHz, 1 – 2.9 GHz.....	534
Figure 524. 421 MHz, 2.9 – 10 GHz.....	535
Figure 525. 450 MHz below 1 GHz	536
Figure 526. 450 MHz, 1 – 2.9 GHz.....	537
Figure 527. 450 MHz, 2.9 – 10 GHz.....	538
Figure 528. 480 MHz below 1 GHz	539
Figure 529. 480 MHz, 1 – 2.9 GHz.....	540
Figure 530. 480 MHz, 2.9 – 10 GHz.....	541
Figure 531. 511 MHz below 1 GHz	542
Figure 532. 511 MHz, 1 – 2.9 GHz.....	543
Figure 533. 511 MHz, 2.9 - 10 GHz.....	544
Figure 534. 769 MHz below 1 GHz	545
Figure 535. 769 MHz, 1 – 2.9 GHz.....	546
Figure 536. 769 MHz, 2.9 - 10 GHz.....	547
Figure 537. 775 MHz below 1 GHz	548
Figure 538. 775 MHz, 1 – 2.9 GHz.....	549
Figure 539. 775 MHz, 2.9 - 10 GHz.....	550
Figure 540. 851 MHz below 1 GHz	551
Figure 541. 851 MHz, 1 – 2.9 GHz.....	552
Figure 542. 851 MHz, 2.9 - 10 GHz.....	553
Figure 543. 869 MHz below 1 GHz	554
Figure 544. 869 MHz, 1 – 2.9 GHz.....	555
Figure 545. 869 MHz, 2.9 - 10 GHz.....	556
Figure 546. 935 MHz below 1 GHz	557
Figure 547. 935 MHz, 1 – 2.9 GHz.....	558
Figure 548. 935 MHz, 2.9 – 10 GHz.....	559
Figure 549. 941 MHz below 1 GHz	560

U.S. Tech Test Report:

FCC ID:

IC:

Report Number:

Issue Date:

Customer:

Model:

FCC Part 90 Certification

2AKSM-SAFE2

22303-SAFE2

18-0181

September 10, 2018

Safe-Com Wireless

SAFE-1000

Figure 550. 941 MHz, 1 – 2.9 GHz..... 561

Figure 551. 941 MHz, 2.9 – 10 GHz..... 562

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

List of Tables

<u>Table</u>	<u>Title</u>	<u>Page</u>
Table 1.	EUT and Peripherals	24
Table 2.	Test Instruments.....	25
Table 3.	Radiated Spurious Emissions.....	300
Table 4.	Conducted Powerline Emissions – Head End Unit.....	301
Table 5.	Radiated Spurious Emissions.....	563
Table 6.	Conducted Powerline Emissions – Remote Unit	564

1 General Information

1.1 Product Description

The Equipment under Test (EUT) is the Safe-Com Wireless model Safe-1015 which is part of a fiber Distributed Antenna System. The EUT consists of 2 physically separated units, a Head End unit and a Remote unit, that can uplink or downlink signals over fiber optic cables. Each unit accepts multiple modulated RF signals. The EUT is equipped with multiple cards; each one set to operate across a specific frequency band. The cards are designed to be hot-swap cards which enable the user to easily replace the cards as needed, depending on the band of operation required.

The EUT is designed to operate in the following uplink bands:

- *138-174MHz VHF band
- *380-512MHz UHF band
- 788-805MHz
- 806-824MHz
- 896-901MHz

The EUT is designed to operate in the following downlink bands:

- *138-174MHz VHF band
- *380-512MHz UHF band
- 763-775MHz
- 851-869MHz
- 935-941MHz

The EUT is representative of the related models SAFE-1020 and SAFE-1030. The difference is that the SAFE-1030 is a non-fiber version. The SAFE-1015 & SAFE-1020 are both fiber versions.

The EUT is considered a Class A (non-SMR) Zone Enhancer. Its passband at one or more specific channels do not exceed 75 kHz.

(Note: Band 138-144MHz and 380-400 MHz not applicable for FCC certification)

1.2 Related Submittal(s)/Grant(s)

There are no related submittals or grants associated with this project.

2 Test and Measurements

2.1 Configuration of Tested System

Block diagrams of the tested system are shown in Figures 1 and 2. All measurements are peak unless stated otherwise. The video filter associated with the spectrum analyzer was off or set to 3x the resolution bandwidth throughout the evaluation process. Interconnecting cables were manipulated as necessary to maximize emissions.

2.2 Characterization of Tested System

The sample used for testing was received by US Tech on June 27, 2018 in good condition.

2.3 Test Facility

Testing was performed at US Tech's measurement facility at 3505 Francis Circle, Alpharetta, GA. All radiated measurements were performed at US Tech's 3 meter EMC chamber measurement facility. Additional test such as bench testing was also performed at US Tech's facility in Alpharetta GA. This site has been fully described and registered by the FCC under Registration Number US5301. Additionally this site has also been fully described and submitted to Industry Canada (IC), and has been approved under file number 9900A-1. NVLAP code: 200162-0

2.4 Test Equipment

The test equipment used for this evaluation is listed in Table 2 below.

2.5 Modifications to Equipment under Test (EUT)

No modifications were made by US Tech to bring the EUT into compliance with the FCC limits for the transmitter portion of the EUT.

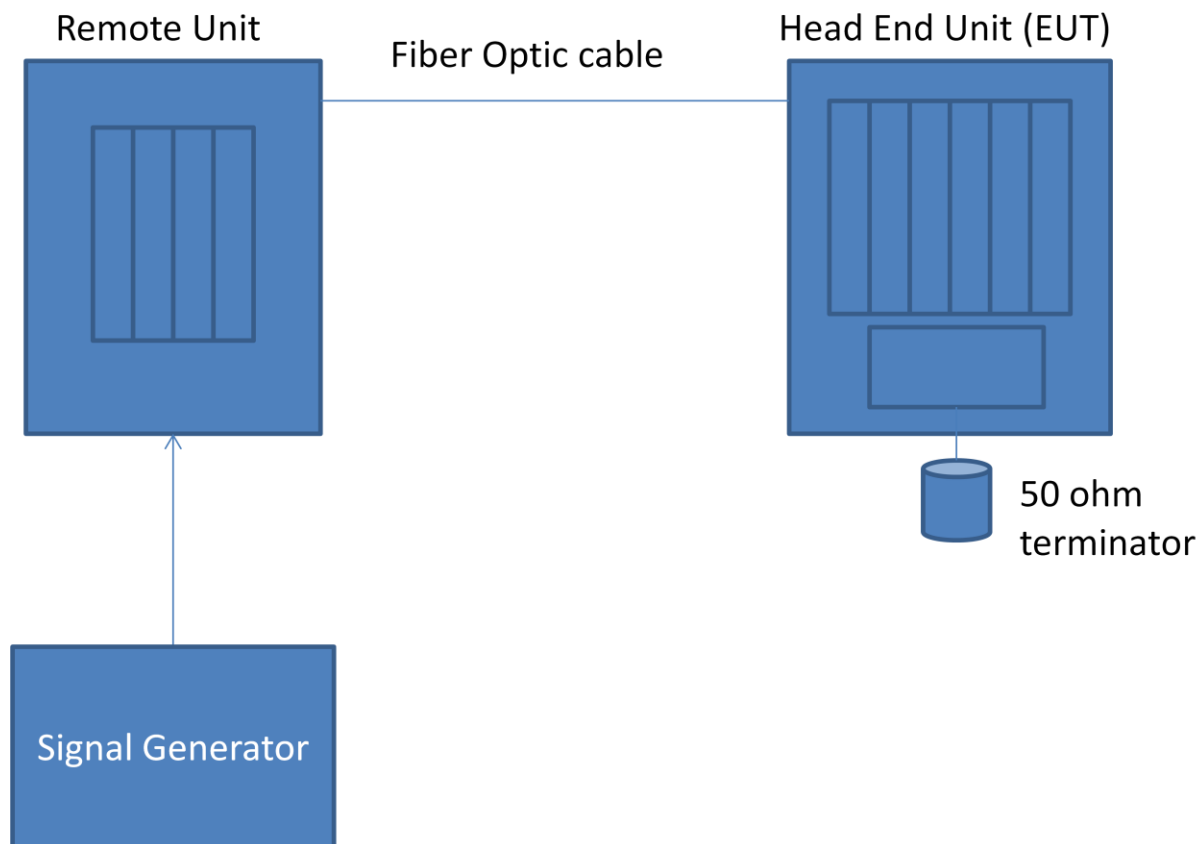


Figure 1. Block Diagram of Uplink Test Configuration

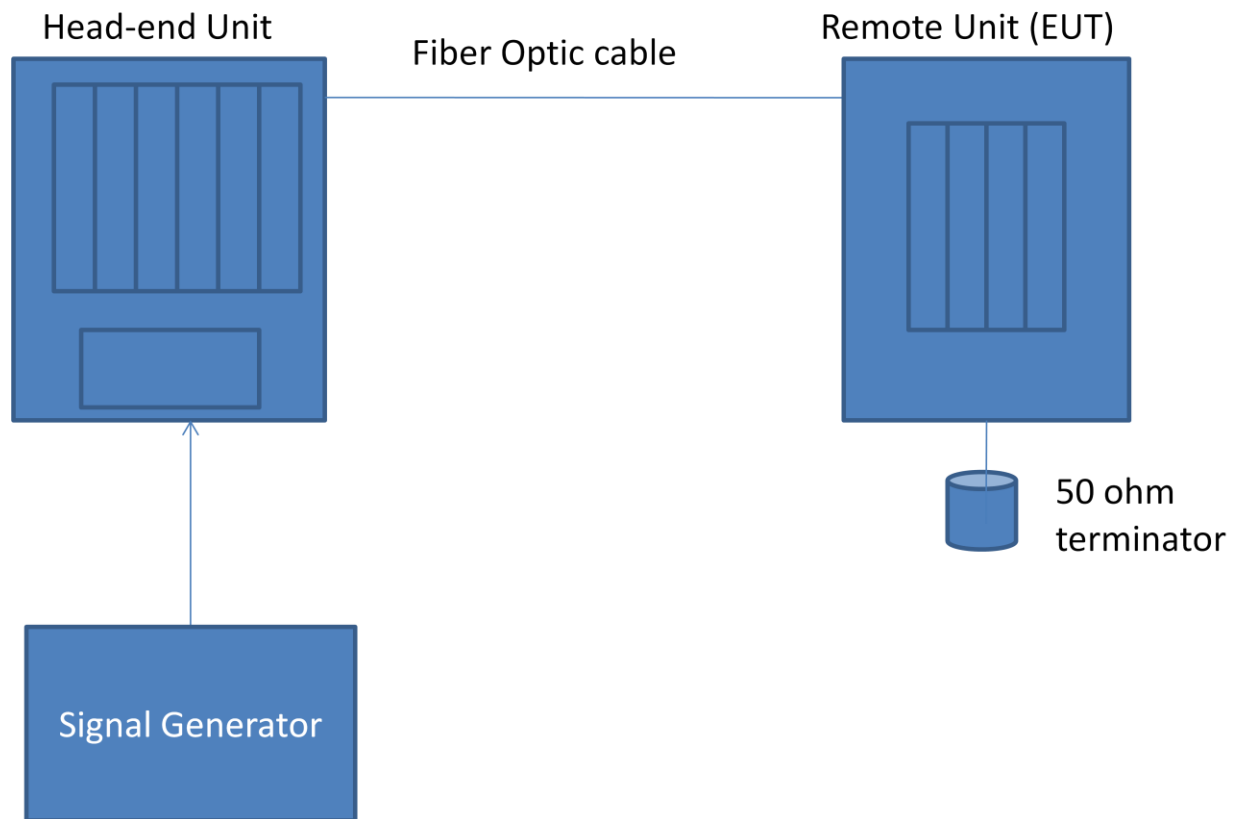


Figure 2. Block Diagram of Downlink Test Configuration

U.S. Tech Test Report:
 FCC ID:
 IC:
 Report Number:
 Issue Date:
 Customer:
 Model:

FCC Part 90 Certification
 2AKSM-SAFE2
 22303-SAFE2
 18-0181
 September 10, 2018
 Safe-Com Wireless
 SAFE-1000

Table 1. EUT and Peripherals

PERIPHERAL MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	FCC ID/ IC ID	CABLES P/D
Remote Unit with RF cards Safe-Com	SAFE-1015	Engineering Sample	FCC ID: 2AKSM- SAFE2 IC: 22303-SAFE2	0.1m U P
700 Mhz Safe-Com	SAFE-1015	Engineering Sample	--	--
800 Mhz Safe-Com	SAFE-1015	Engineering Sample	--	--
900 MHz Safe-Com	SAFE-1015	Engineering Sample	--	--
UHF Safe-Com	SAFE-1015	Engineering Sample	--	--
VHF Safe-Com	SAFE-1015	Engineering Sample	--	--
Head End Unit with RF cards Safe-Com	SAFE-1015	Engineering Sample	FCC ID: 2AKSM- SAFE2 IC: 22303-SAFE2	1m U D 0.6m U P

U= Unshielded, S= Shielded, P= Power cable, D= Data cable

U.S. Tech Test Report:
 FCC ID:
 IC:
 Report Number:
 Issue Date:
 Customer:
 Model:

FCC Part 90 Certification
 2AKSM-SAFE2
 22303-SAFE2
 18-0181
 September 10, 2018
 Safe-Com Wireless
 SAFE-1000

Table 2. Test Instruments

EQUIPMENT	MODEL NUMBER	MANUFACTURER	SERIAL NUMBER	CALIBRATION DUE DATE
SPECTRUM ANALYZER	E4407B	AGILENT	US41442935	8/17/2020
SPECTRUM ANALYZER	DSA815	RIGOL	DSA8A180300138	10/11/2018
SPECTRUM ANALYZER	8593E	HEWLETT-PACKARD	3205A00124	10/25/2018
RF PREAMP 100 kHz to 1.3 GHz	8447D	HEWLETT-PACKARD	1937A02980	3/7/2019
RF PREAMP > 1 GHz	8449B	HEWLETT PACKARD	3008A00480	12/1/2018
LOG PERIODIC	3146	EMCO	9110-3236	9/21/2019 2 YR
BICONNICAL	3110B	EMCO	9306-1708	5/2/2019 2 YR
HORN ANTENNA	3115	EMCO	9107-3723	9/22/2018 2 YR
SIGNAL GENERATOR	MG3671B	Anritsu	M52073/ M53573/ M17473	Verified with HP 8593E analyzer
SIGNAL GENERATOR	HP8648B	HEWLETT-PACKARD	3642U01679	Verified with HP 8593E analyzer
LISN	9247-50-TS- 50-N	Solar Electronics	955824/ 955825	03/19/2019

Note: The calibration interval of the above test instruments is 12 months and all calibrations are traceable to NIST/USA.

2.6 Noise (FCC Section 90.219(e)(2) and RSS-131, 6.4)

The noise figure of a signal booster must not exceed 9 dB in either direction.

The EUT is a DAS system; this test was deemed not applicable.

2.7 Retransmitted Signals (FCC Section 90.219(e)(4) and RSS-131, 6.6)

A signal booster must be designed such that all signals, when retransmitted meet the following requirements:

1. The signals are retransmitted on the same channels as received. Minor departures from the exact provider or reference frequencies of the input signals are allowed provided that the retransmitted signals meet the requirements of 90.213.

In this case the EUT is exempt from meeting these requirements.

2. There is no change in the occupied bandwidth of the retransmitted signals.

The EUT meets this requirement; see the plots in the following section which show the input signal compared to the retransmitted signal.

3. The retransmitted signals continue to meet the unwanted emissions limits of Part 90.210 applicable to the corresponding received signal.

The EUT meets this requirement; see the emissions mask test data presented in the next section.

2.8 Intermodulation (FCC Section 90.219(d)(6i) and RSS-131, 6.3)

FCC requires good engineering practice to be used in regard to the radiation of intermodulation products and noise, such that interference to licensed communications systems is avoided. In the event of harmful interference caused by any given deployment, the FCC may require additional attenuation or filtering of the emissions and/or noise from signal boosters or signal booster systems, as necessary, to eliminate the interference.

The EUT only takes fiber optic as its input; therefore testing for intermodulation cannot be applied here.

2.9 Frequency Stability (FCC 2.1055, 90.213 and RSS-131 5.2.4)

The EUT has no input signal processing capability, the frequency stability measurements in this section are not required.

2.10 Emission Mask Definitions (FCC Section 2.1049, 90.219(e)(4iii), 90.210, RSS-131, 6.5, RSS-119, 5.8)

The EUT is equipped with a low pass filter; therefore the emissions masks for equipment utilizing a low pass filter were applied.

2.10.1 Emission Mask B (FCC Part 90.210, 2.1051, RSS-119, 5.8)

Emission Mask B. For transmitters that are equipped with an audio low-pass filter, the power of any emission must be attenuated below the unmodulated carrier power (P) as follows:

- (1) On any frequency removed from the assigned frequency by more than 50 percent, but not more than 100 percent of the authorized bandwidth: At least 25 dB.
- (2) On any frequency removed from the assigned frequency by more than 100 percent, but not more than 250 percent of the authorized bandwidth: At least 35 dB.
- (3) On any frequency removed from the assigned frequency by more than 250 percent of the authorized bandwidth: At least $43 + 10 \log (P)$ dB.

2.10.2 Emission Mask D (FCC Part 90.210, 2.1051, RSS-119, 5.8)

Emission Mask D—12.5 kHz channel bandwidth equipment. For transmitters designed to operate with a 12.5 kHz channel bandwidth, any emission must be attenuated below the power (P) of the highest emission contained within the authorized bandwidth as follows:

- (1) On any frequency from the center of the authorized bandwidth f_0 to 5.625 kHz removed from f_0 : Zero dB.
- (2) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 5.625 kHz but no more than 12.5 kHz: At least $7.27(f_d - 2.88 \text{ kHz})$ dB.
- (3) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 12.5 kHz: At least $50 + 10 \log (P)$ dB or 70 dB, whichever is the lesser attenuation.

2.10.3 Emission Mask E (FCC Part 90.210, 2.1051, RSS-119, 5.8)

Emission Mask E—6.25 kHz or less channel bandwidth equipment. For transmitters designed to operate with a 6.25 kHz or less bandwidth, any emission must be attenuated below the power (P) of the highest emission contained within the authorized bandwidth as follows:

- (1) On any frequency from the center of the authorized bandwidth f_0 to 3.0 kHz removed from f_0 : Zero dB.
- (2) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 3.0 kHz but no more than 4.6 kHz: At least $30 + 16.67(f_d - 3 \text{ kHz})$ or $55 + 10 \log (P)$ or 65 dB, whichever is the lesser attenuation.
- (3) On any frequency removed from the center of the authorized bandwidth by more than 4.6 kHz: At least $55 + 10 \log (P)$ or 65 dB, whichever is the lesser attenuation.

2.10.4 Emission Mask I (FCC Part 90.210, 2.1051, RSS-119, 5.8)

Emission Mask I. For transmitters that are equipped with an audio low pass filter, the power of any emission must be attenuated below the unmodulated carrier power of the transmitter (P) as follows:

- (1) On any frequency removed from the center of the authorized bandwidth by a displacement frequency of more than 6.8 kHz, but no more than 9.0 kHz: At least 25 dB;
- (2) On any frequency removed from the center of the authorized bandwidth by a displacement frequency of more than 9.0 kHz, but no more than 15 kHz: At least 35 dB;
- (3) On any frequency removed from the center of the authorized bandwidth by a displacement frequency of more than 15 kHz: At least $43 + 10 \log (P)$ dB, or 70 dB, whichever is the lesser attenuation.

2.11 RF Power Output (FCC Section 2.1046, 90.219(e)(1), RSS-131, 6.2) - Uplink

The output power capability of a signal booster must be designed for deployments providing a radiated power not exceeding 5 Watts ERP for each retransmitted channel.

The EUT was connected to a spectrum analyzer through a 20 dB power attenuator. All cables and attenuator losses were input into the spectrum analyzer as either a reference level offset or an external preamp gain correction to ensure that accurate readings were obtained.

A CW signal was utilized and transmitted through the EUT. The RF input signal was set at least 0.2 dB below the AGC threshold. The spectrum analyzer was set to the following settings: RBW= 100 kHz, Video= 3x RBW, Span of 1 MHz.

The output power levels are recorded below:

Band	Tuned Frequency	Measured Output power (dBm)	FCC max Output Power limit (5 Watt)	Margin (dB) From the output limit
VHF	*138.00 MHz	28.77	37 dBm	8.23
	*144.00 MHz	29.14	37 dBm	7.86
	150.00 MHz	29.12	37 dBm	7.88
	162.00 MHz	25.69	37 dBm	11.31
	174.00 MHz	23.91	37 dBm	13.09
UHF	*381.00 MHz	28.80	37 dBm	8.20
	401.00 MHz	29.41	37 dBm	7.59
	407.00 MHz	29.31	37 dBm	7.69
	421.00 MHz	29.56	37 dBm	7.44
	450.00 MHz	25.43	37 dBm	11.57
	480.00 MHz	27.12	37 dBm	9.88
	512.00 MHz	24.19	37 dBm	12.81
700	788.00 MHz	29.84	37 dBm	7.16
	798.00 MHz	30.26	37 dBm	6.74
	799.00 MHz	32.02	37 dBm	4.98
	805.00 MHz	30.90	37 dBm	6.10
800	806.00 MHz	31.42	37 dBm	5.58
	815.00 MHz	30.22	37 dBm	6.78
	824.00 MHz	31.71	37 dBm	5.29
	851.00 MHz	29.90	37 dBm	7.1
	860.00 MHz	29.77	37 dBm	7.23
	869.00 MHz	29.68	37 dBm	7.32
900	896.00 MHz	25.91	37 dBm	11.09
	901.00 MHz	27.78	37 dBm	9.22

(*) Test data for band 138-144 MHz and 380-400 MHz not applicable for FCC certification

2.12 Output Power Plots

Following are the Uplink Output Power Plots.

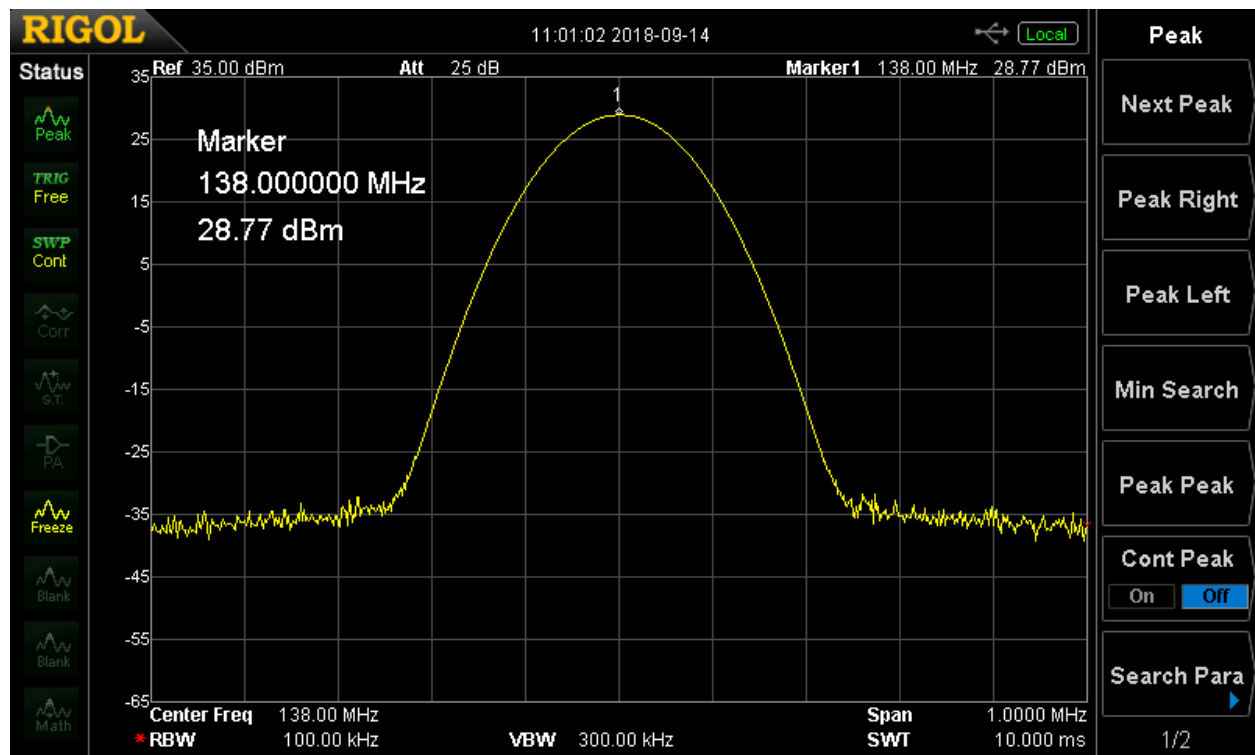


Figure 3. 138 MHz Output Power Plot

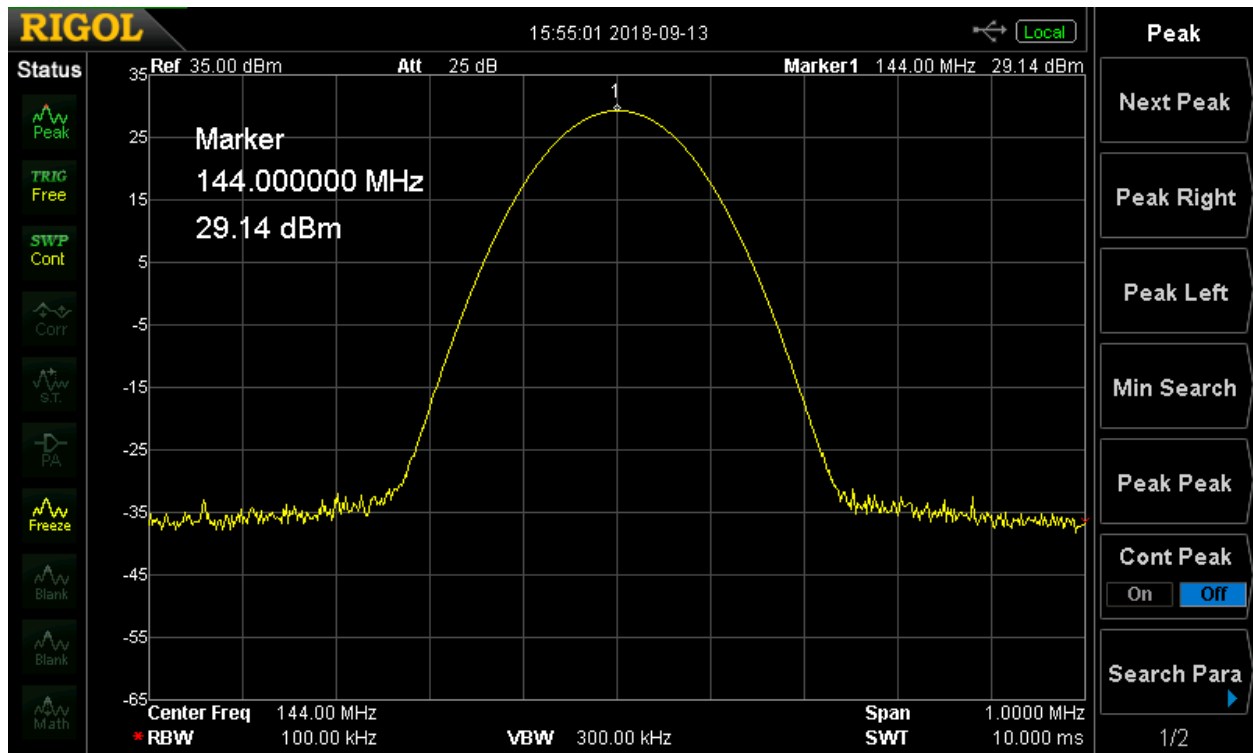


Figure 4. 144 MHz Output Power Plot

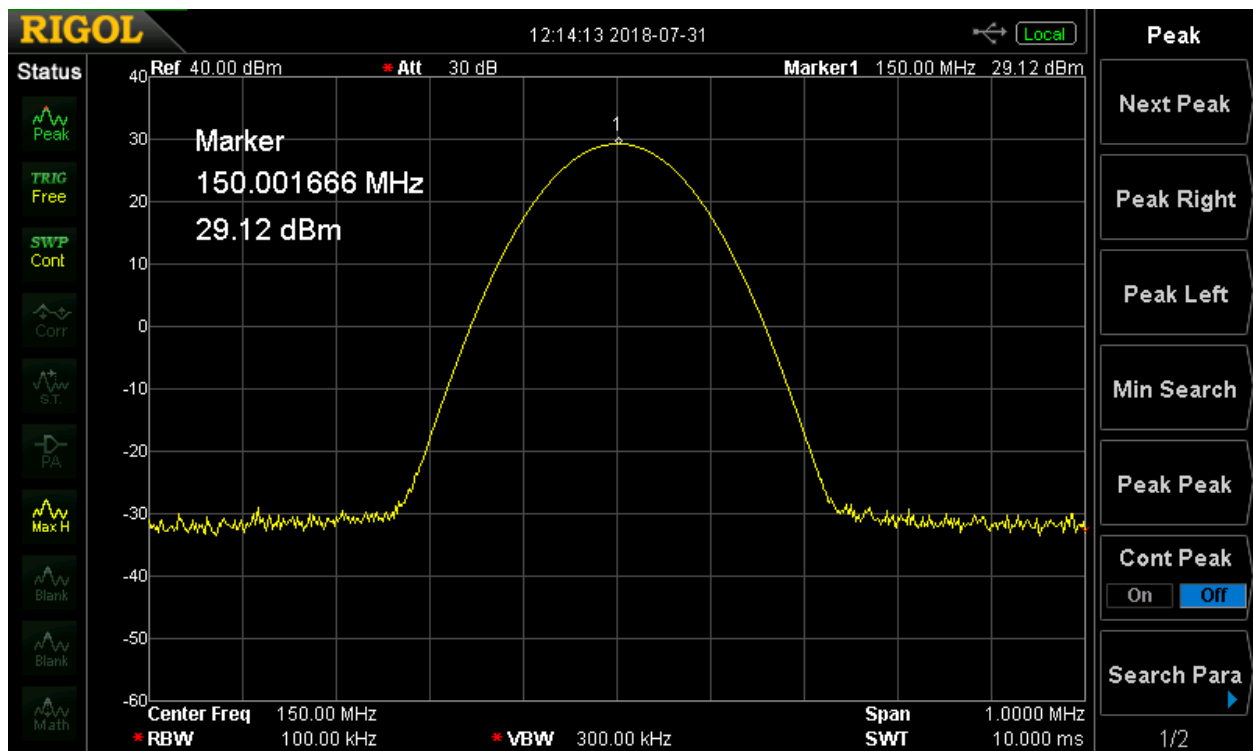


Figure 5. 150 MHz Output Power Plot

U.S. Tech Test Report:
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Report Number:
Issue Date:
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FCC Part 90 Certification
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22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

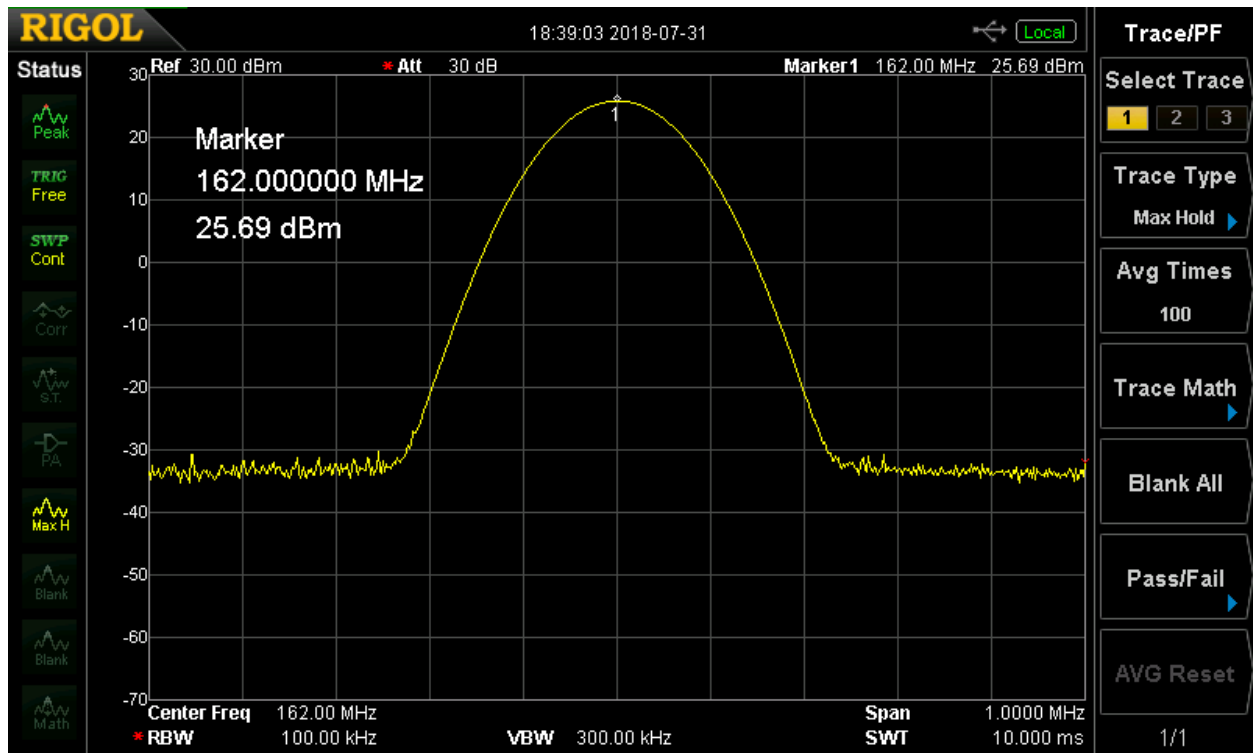


Figure 6. 162 MHz Output Power Plot

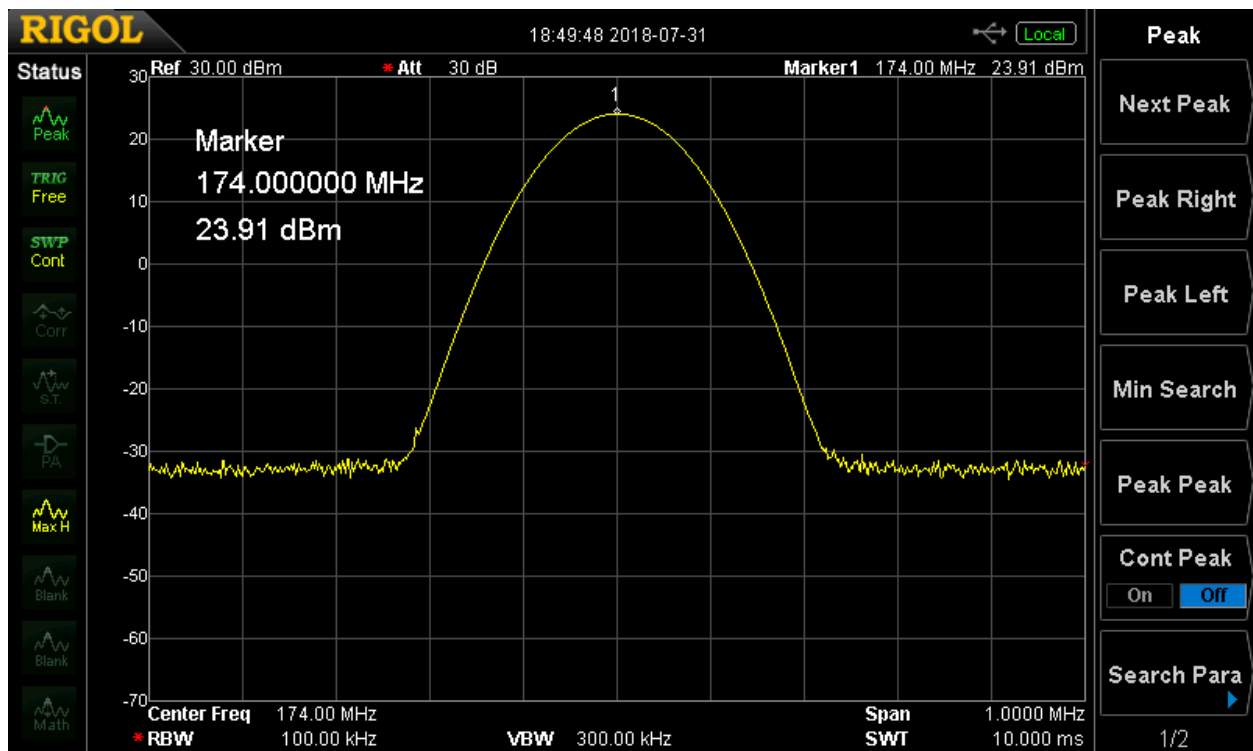


Figure 7. 174 MHz Output Power Plot

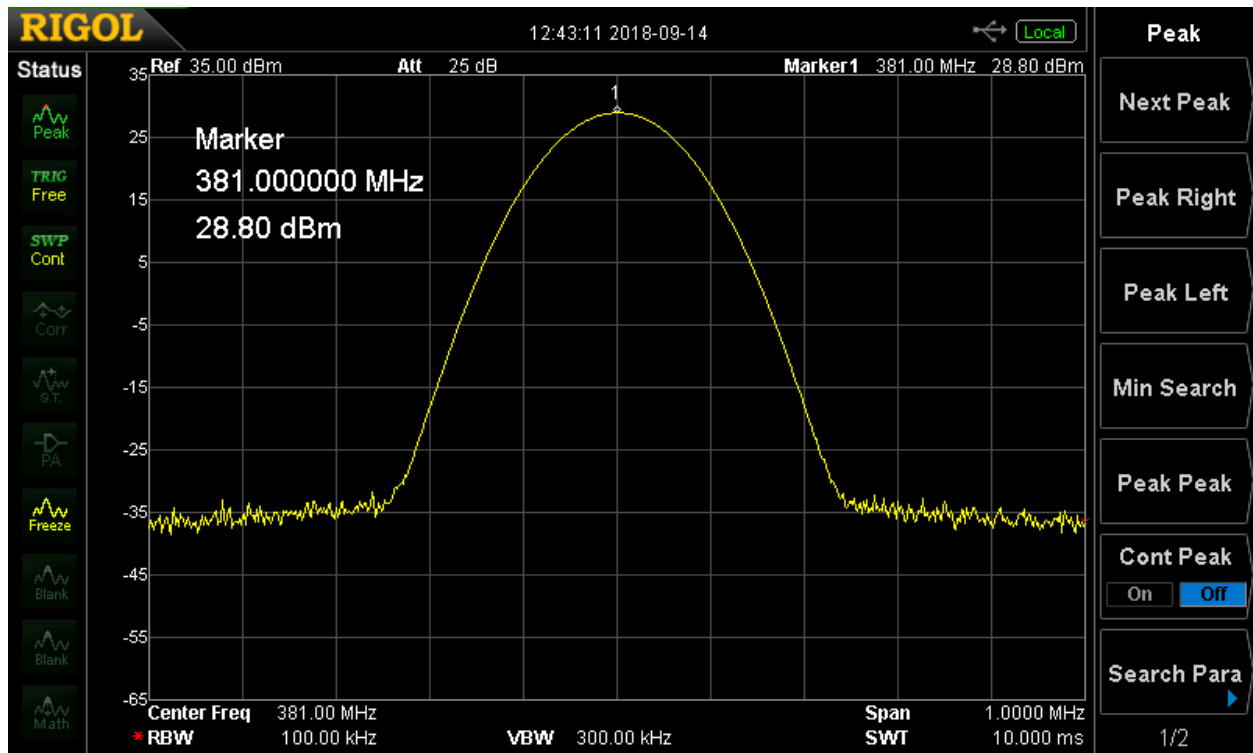


Figure 8. 381 MHz Output Power Plot

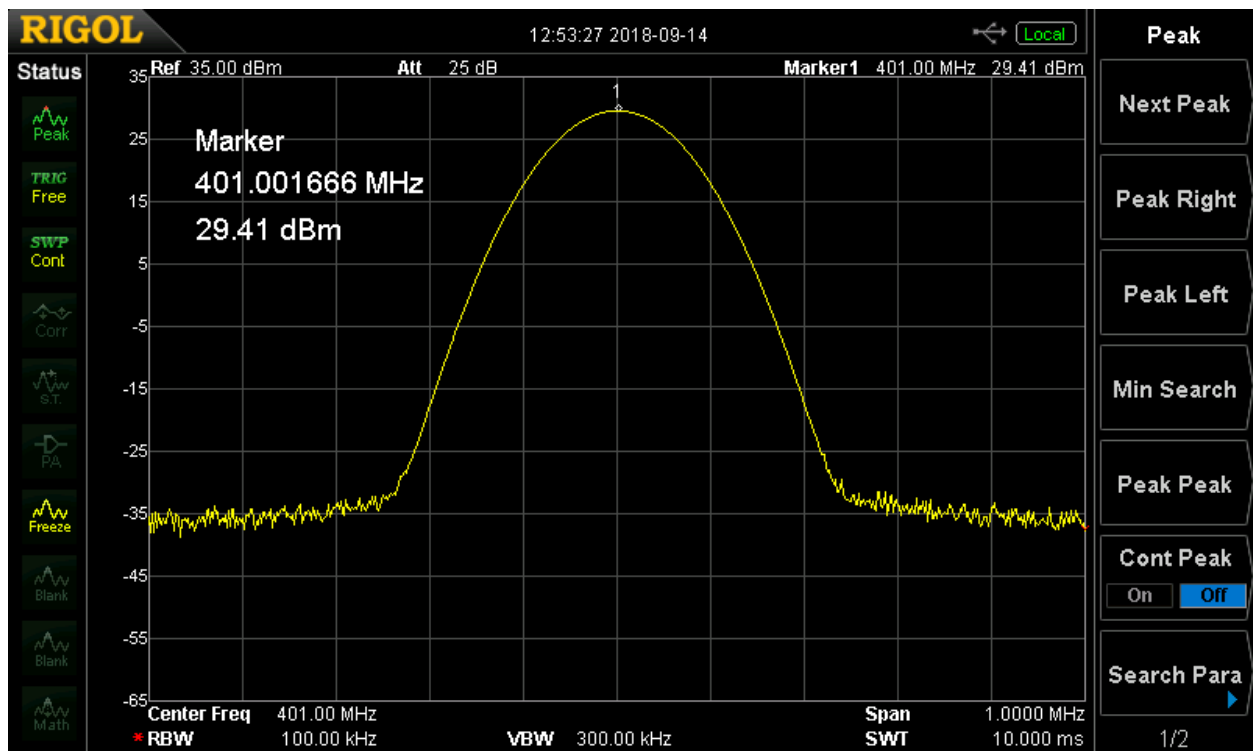


Figure 9. 401 MHz Output Power Plot

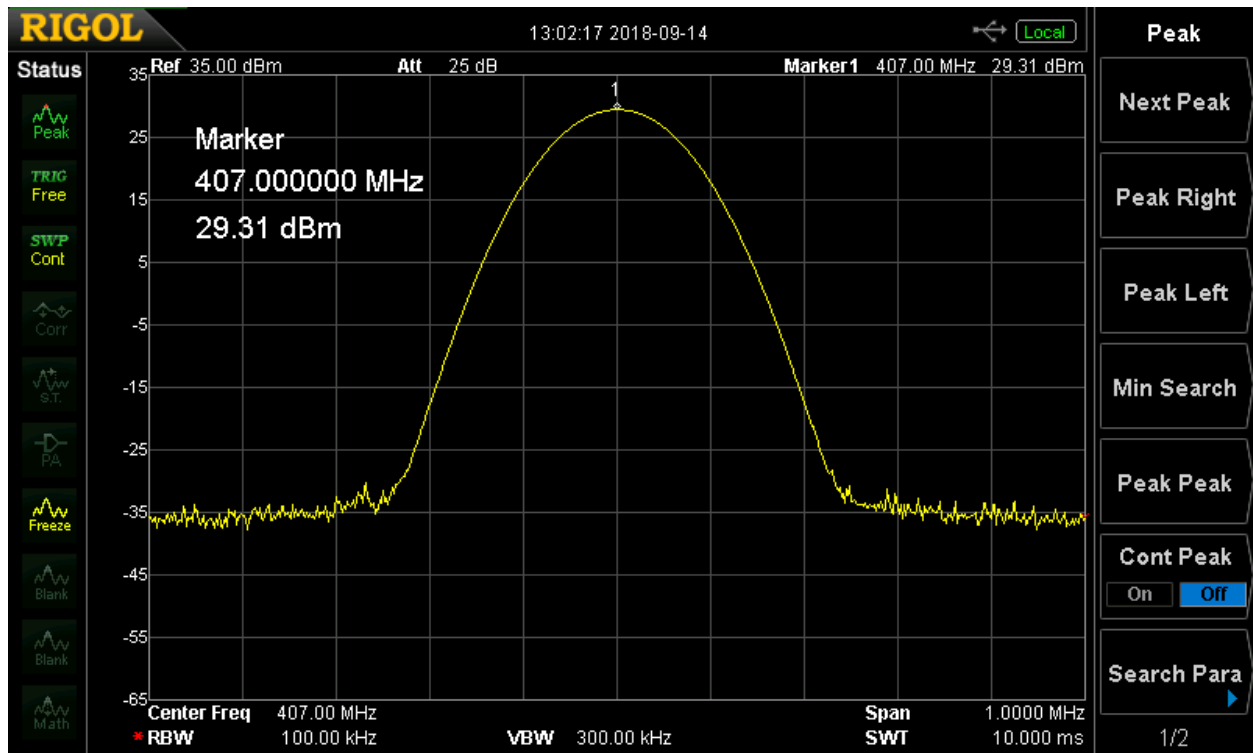


Figure 10. 407 MHz Output Power Plot

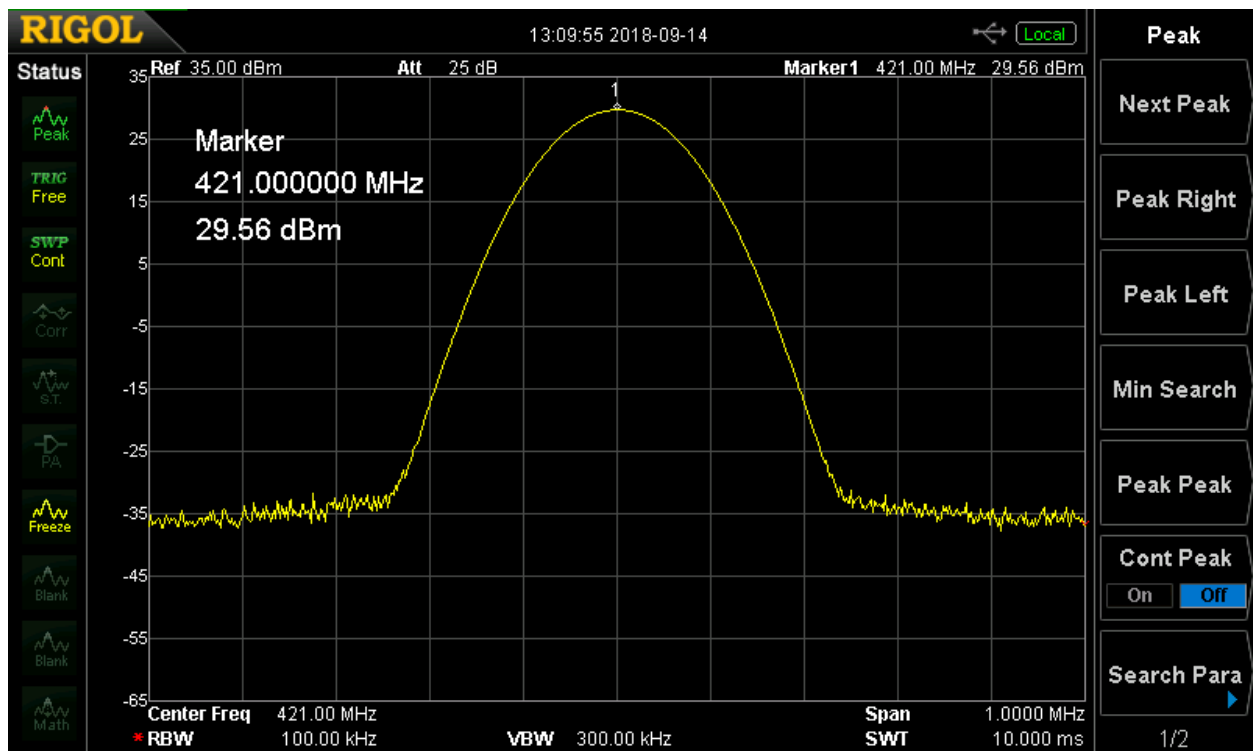


Figure 11. 421 MHz Output Power Plot

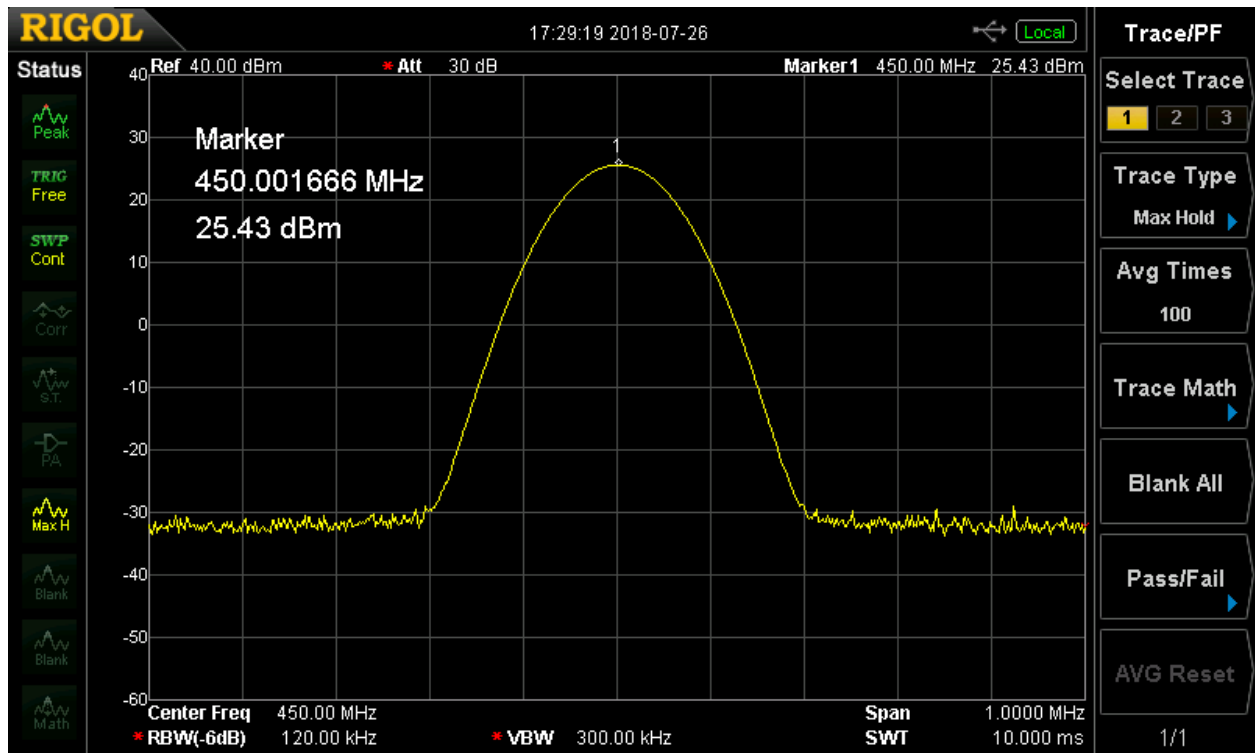


Figure 12. 450 MHz Output Power Plot

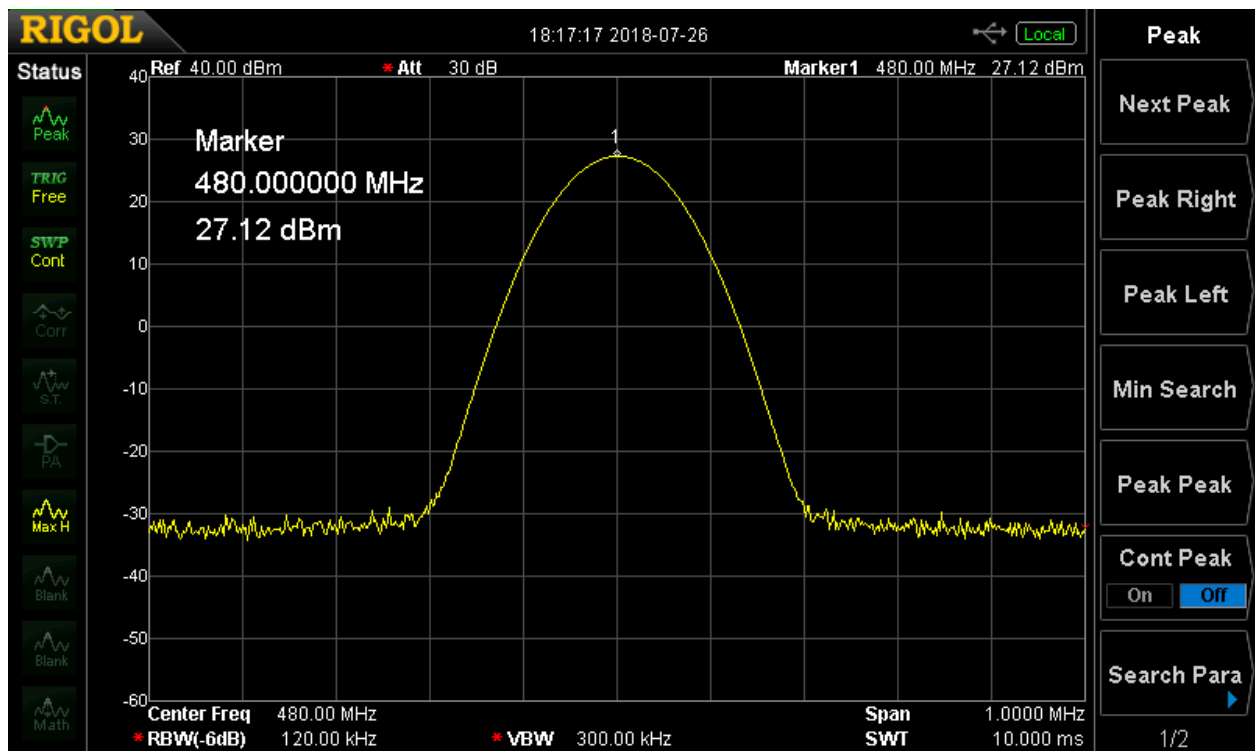


Figure 13. 480 MHz Output Power Plot

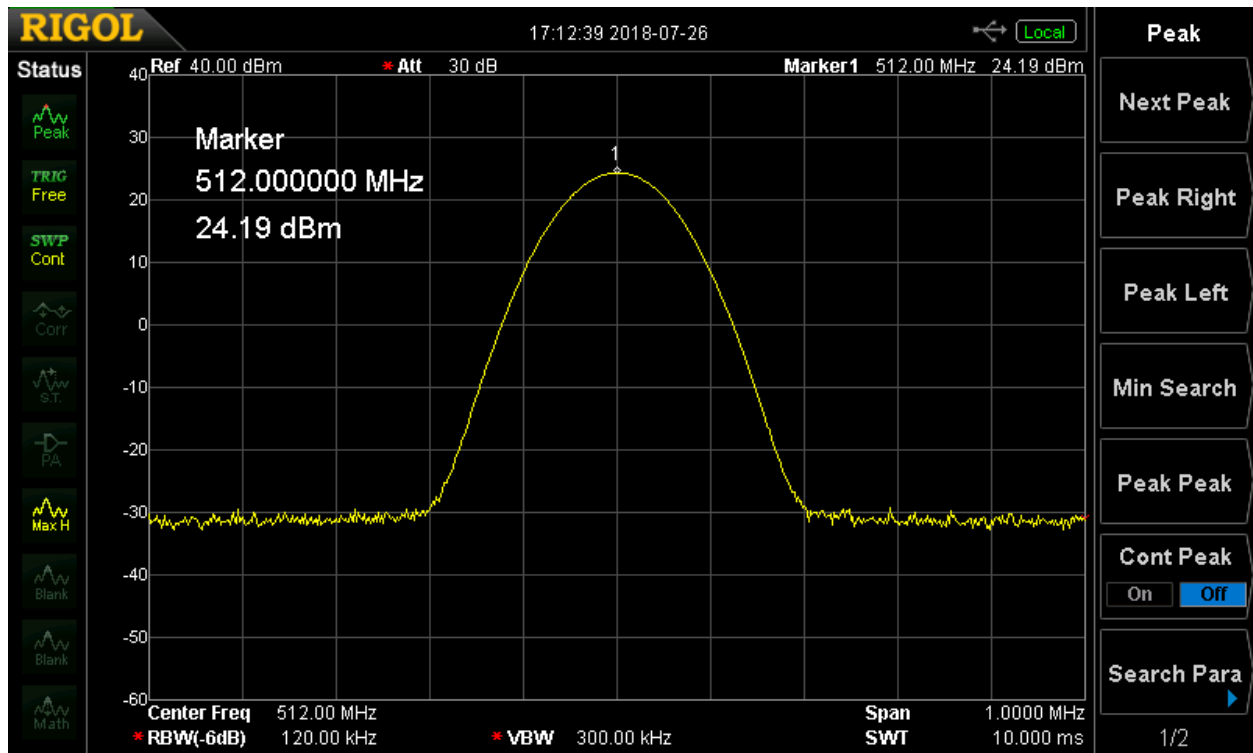


Figure 14. 512 MHz Output Power Plot

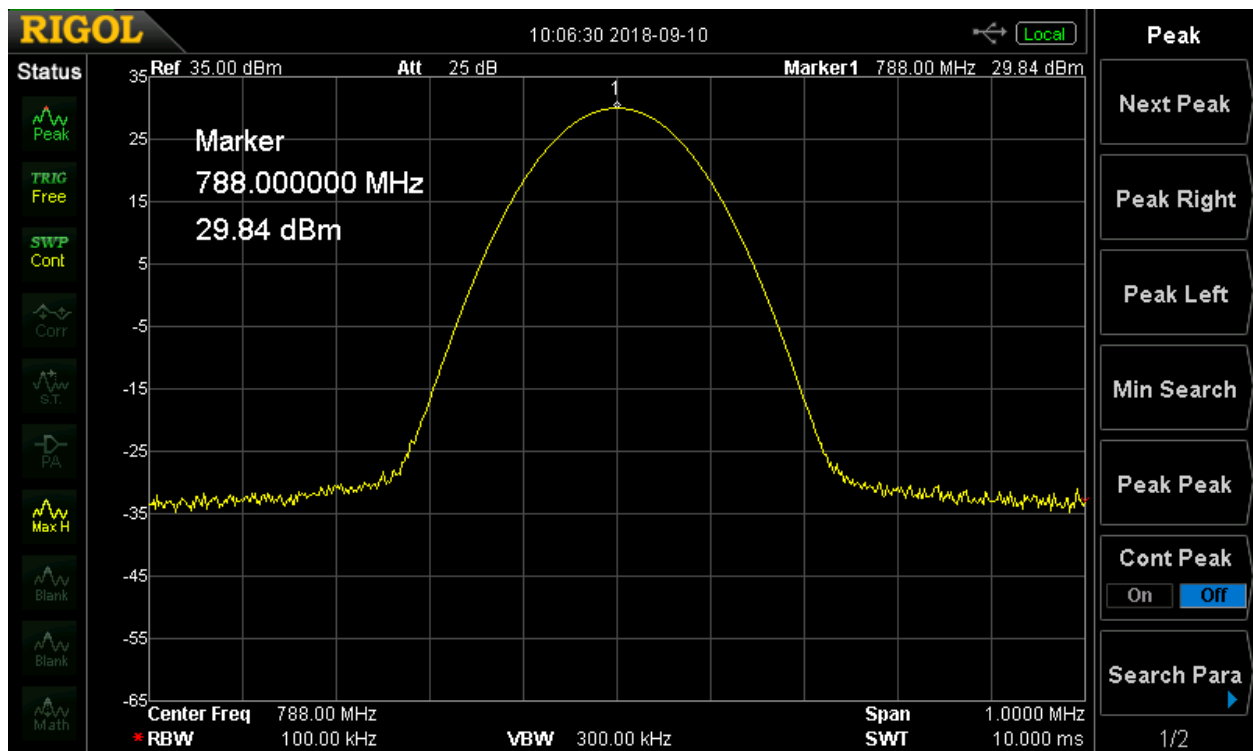


Figure 15. 788 MHz Output Power Plot

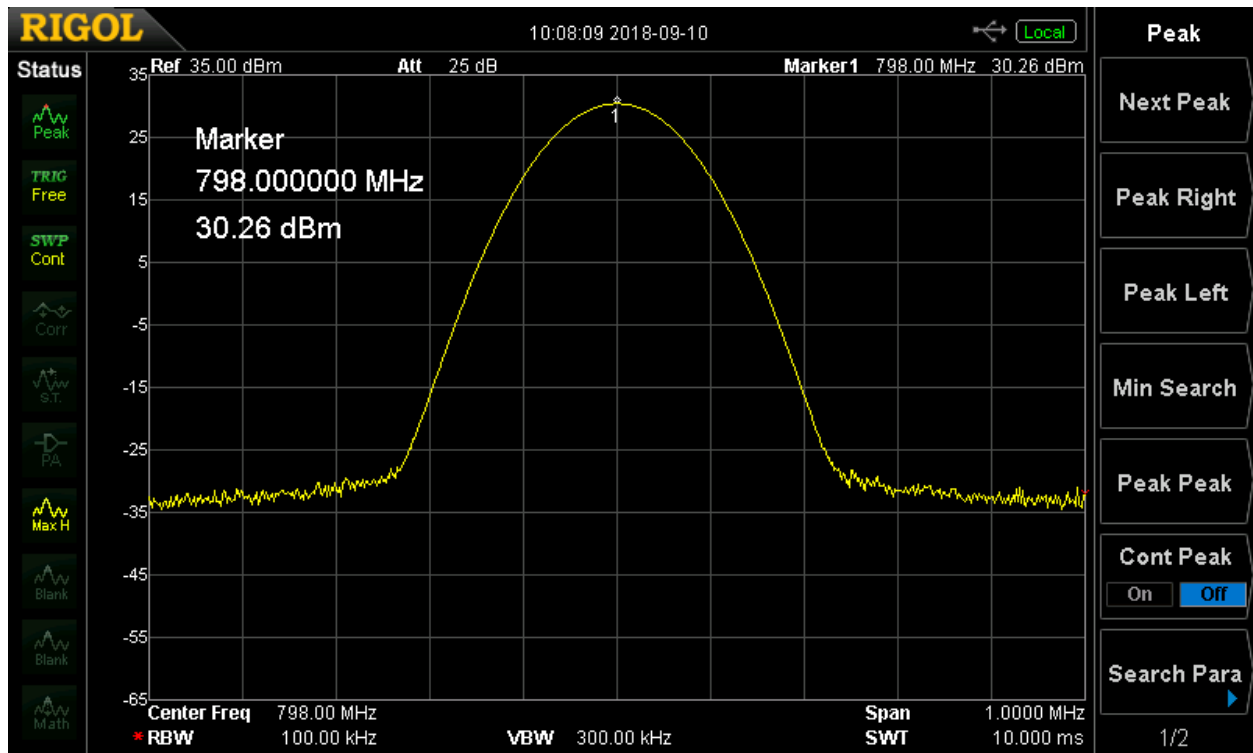


Figure 16. 798 MHz Output Power Plot

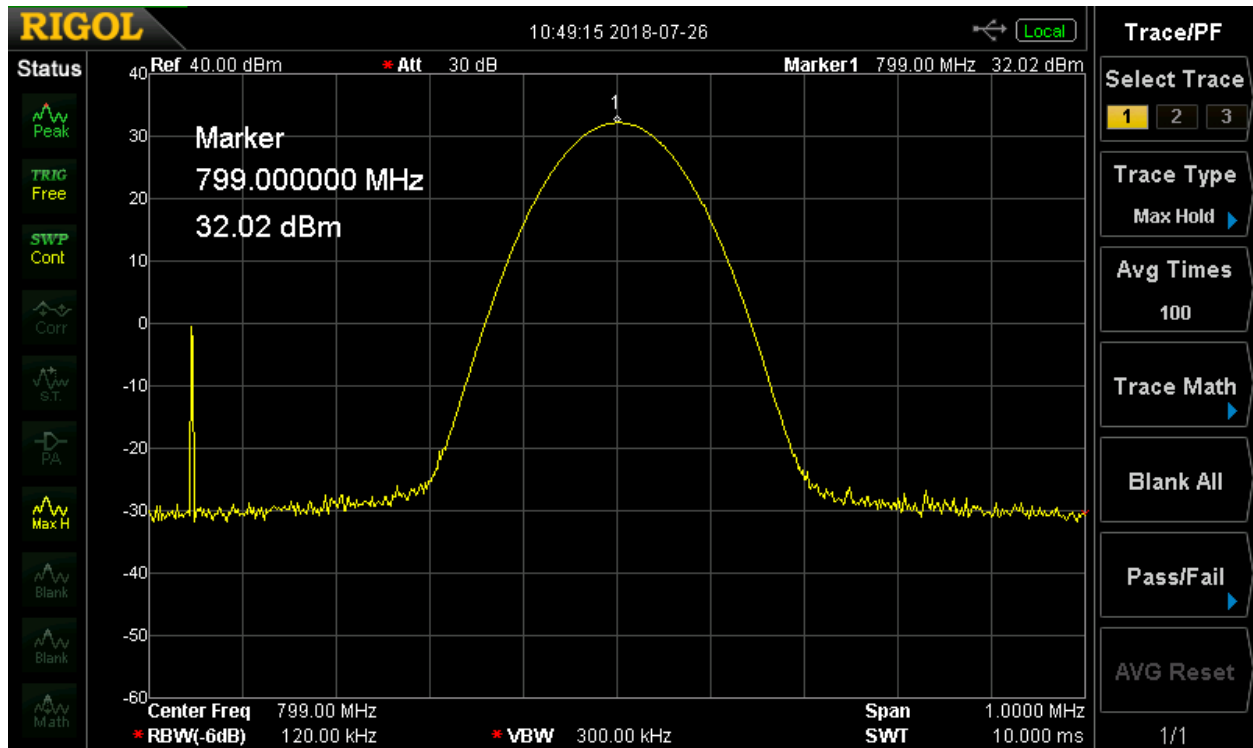


Figure 17. 799 MHz Output Power Plot

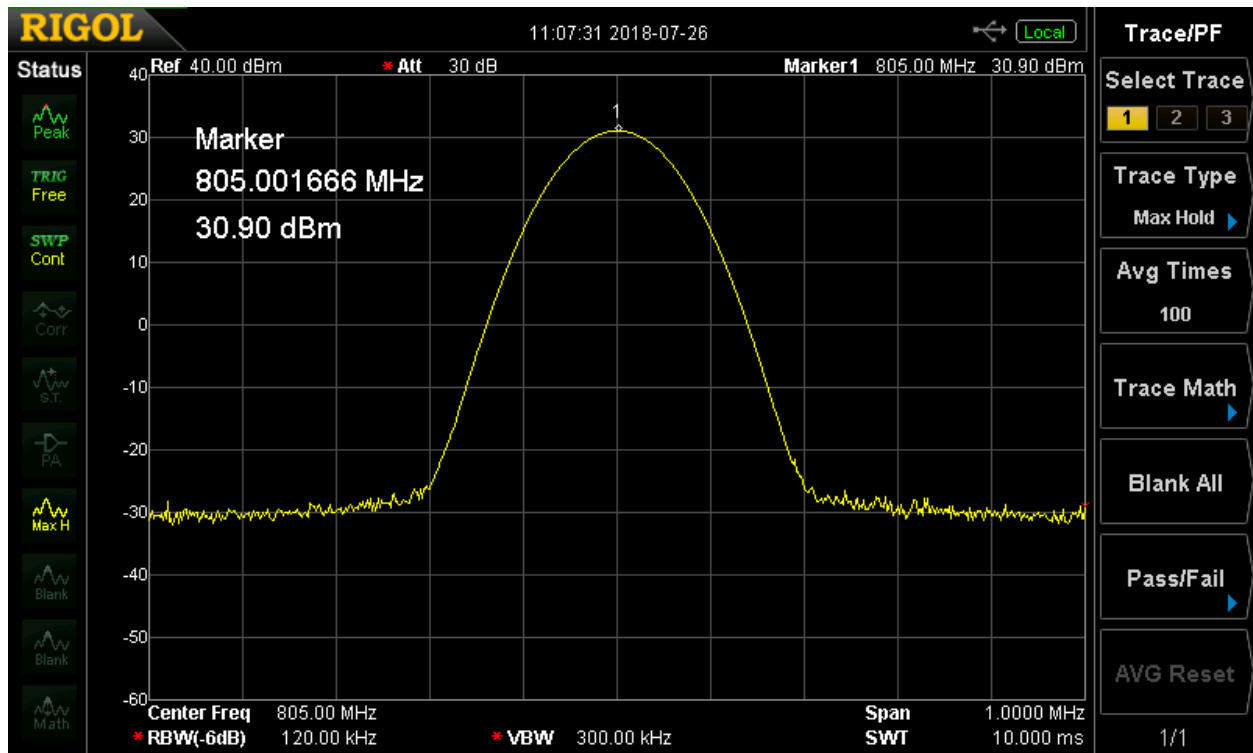


Figure 18. 805 MHz Output Power Plot

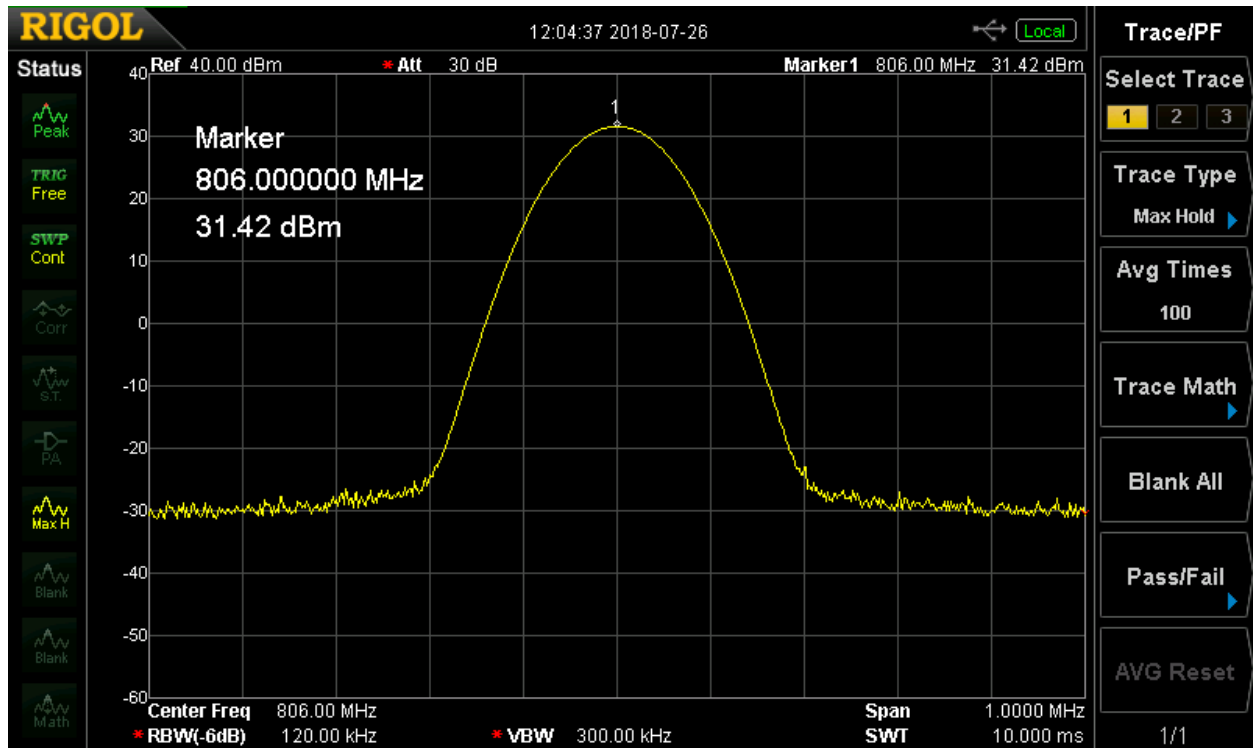


Figure 19. 806 MHz Output Power Plot

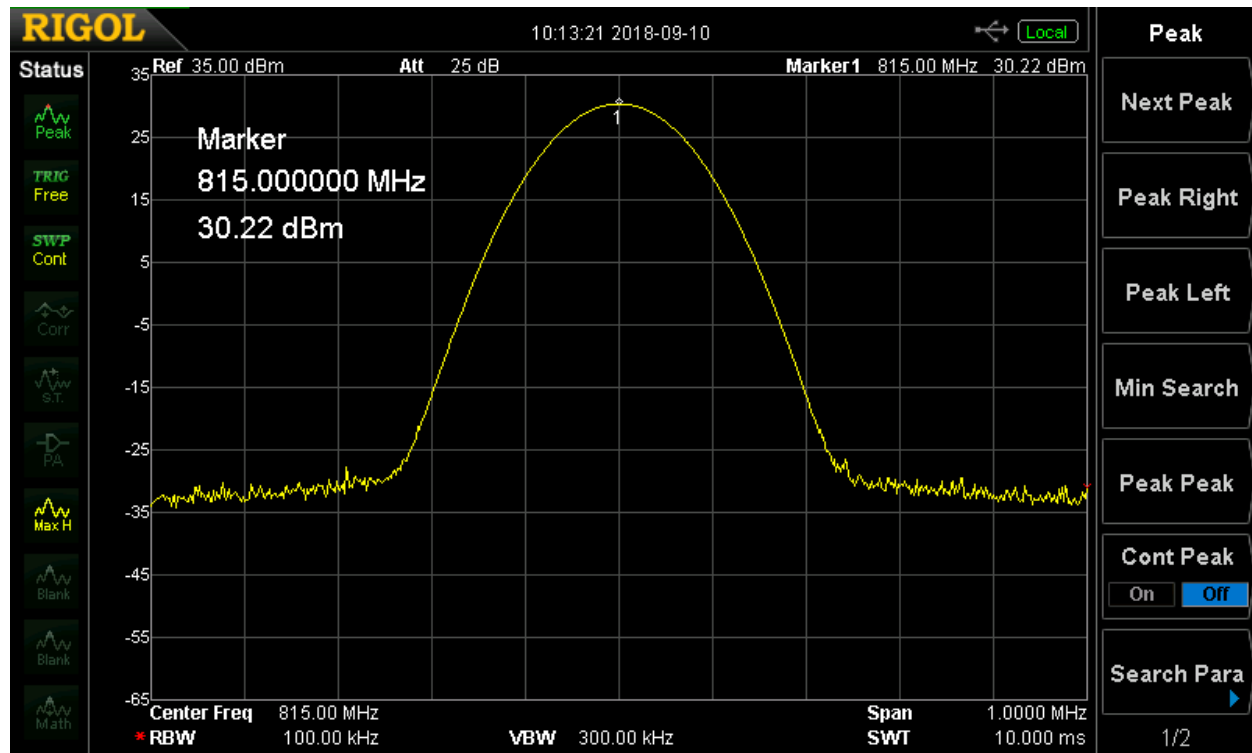


Figure 20. 815 MHz Output Power Plot

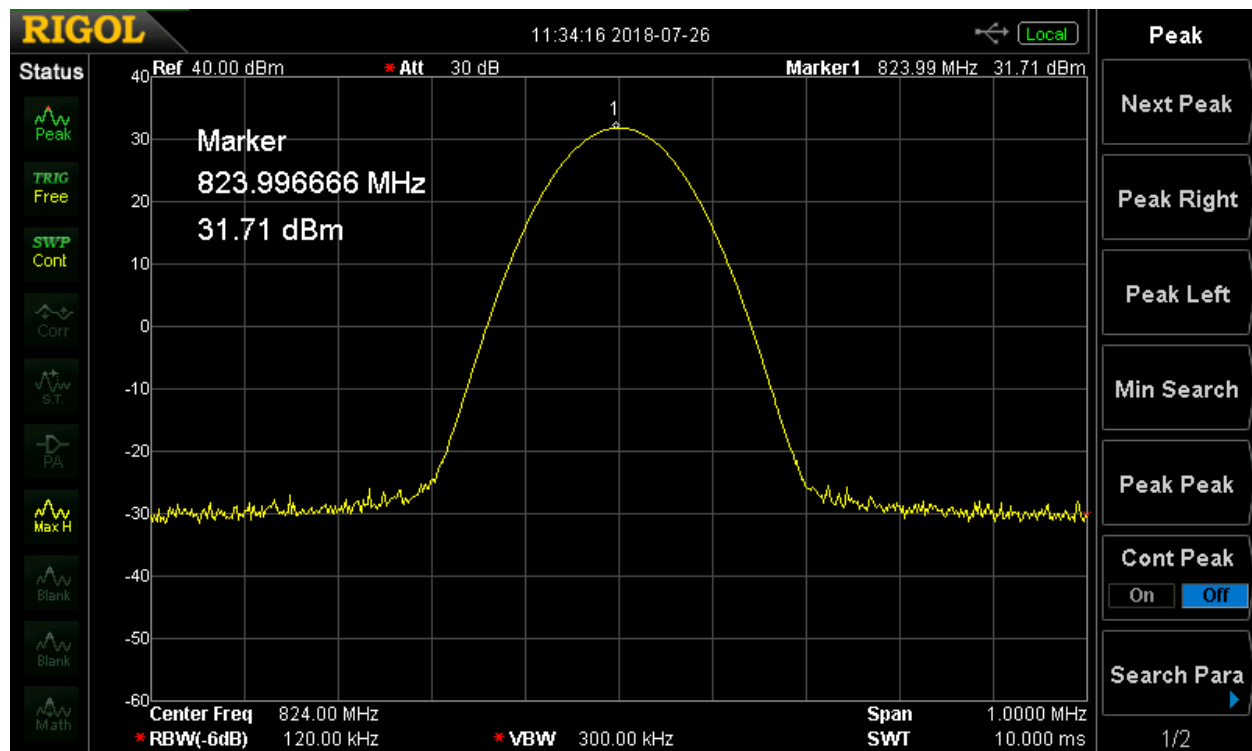


Figure 21. 824 MHz Output Power Plot

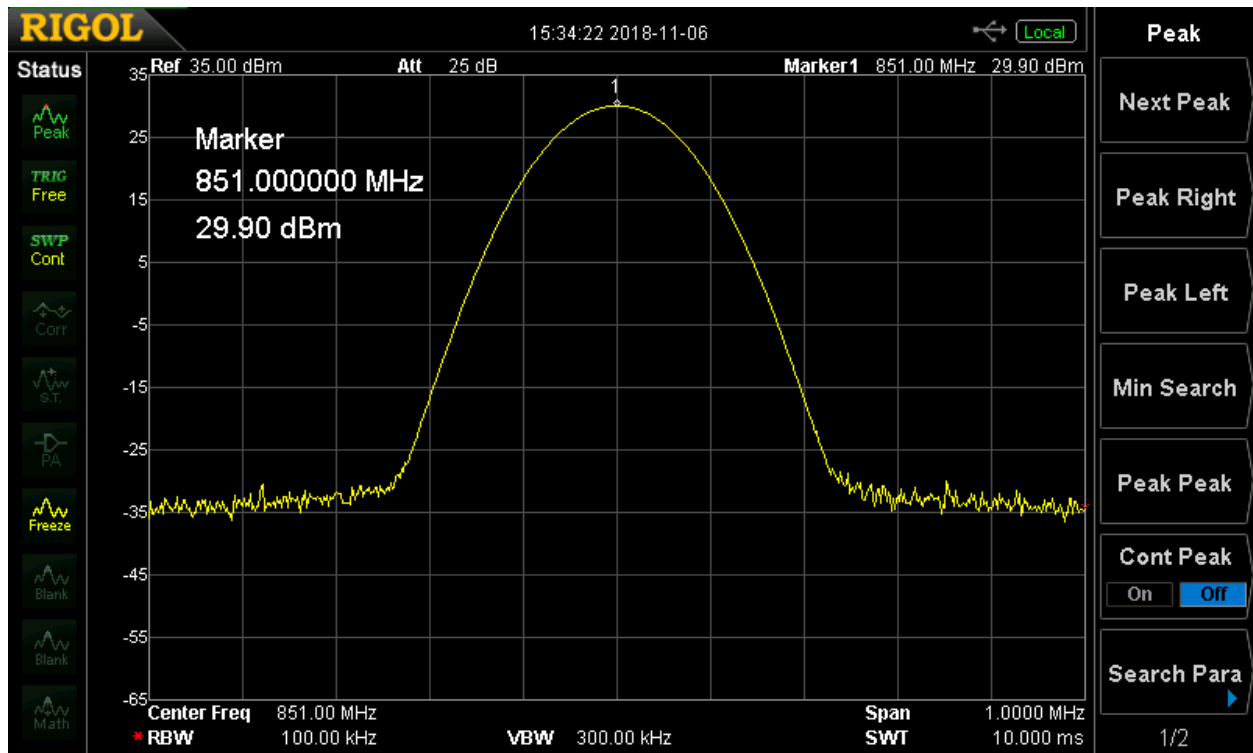


Figure 22. 851 MHz Output Power Plot

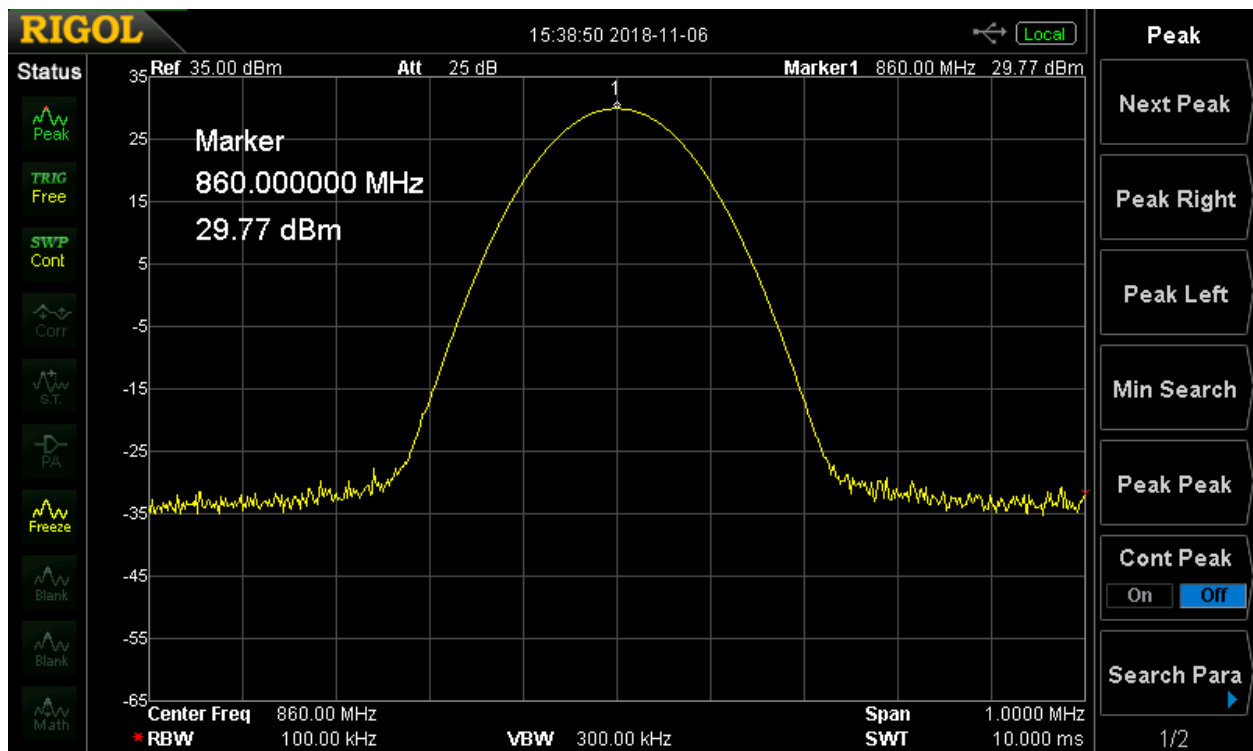


Figure 23. 860 MHz Output Power Plot

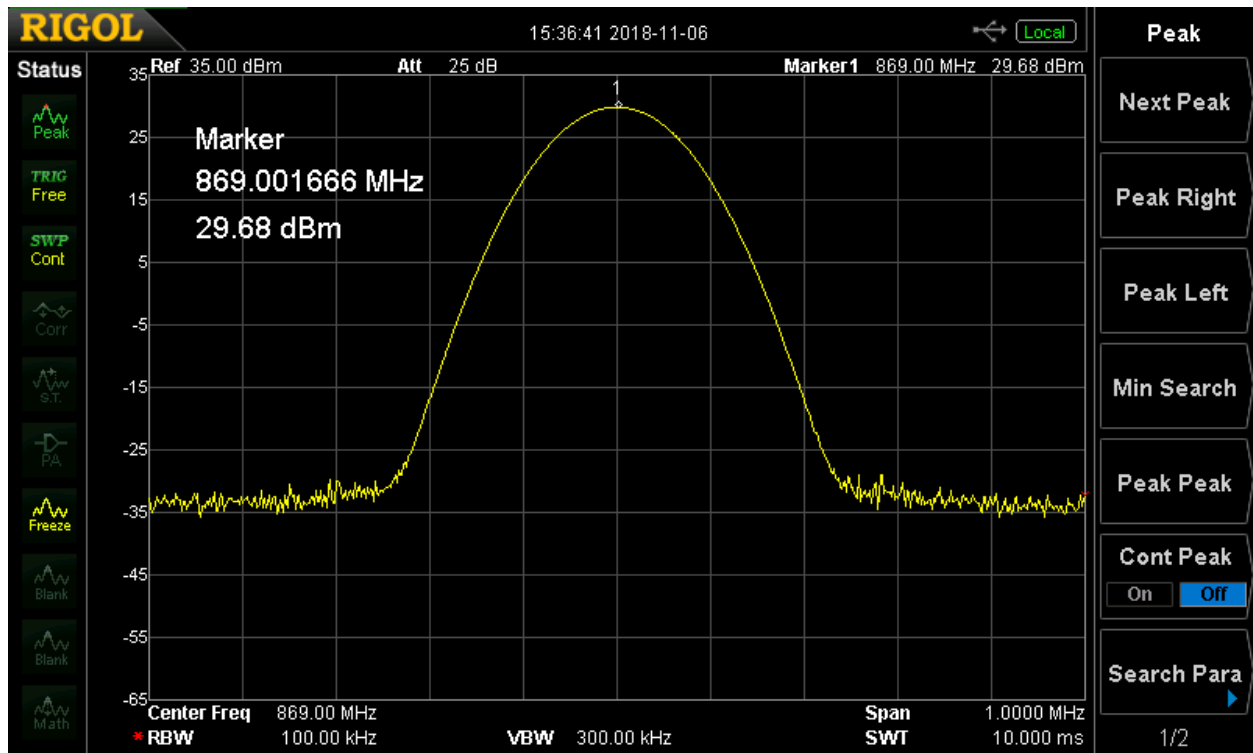


Figure 24. 869 MHz Output Power Plot

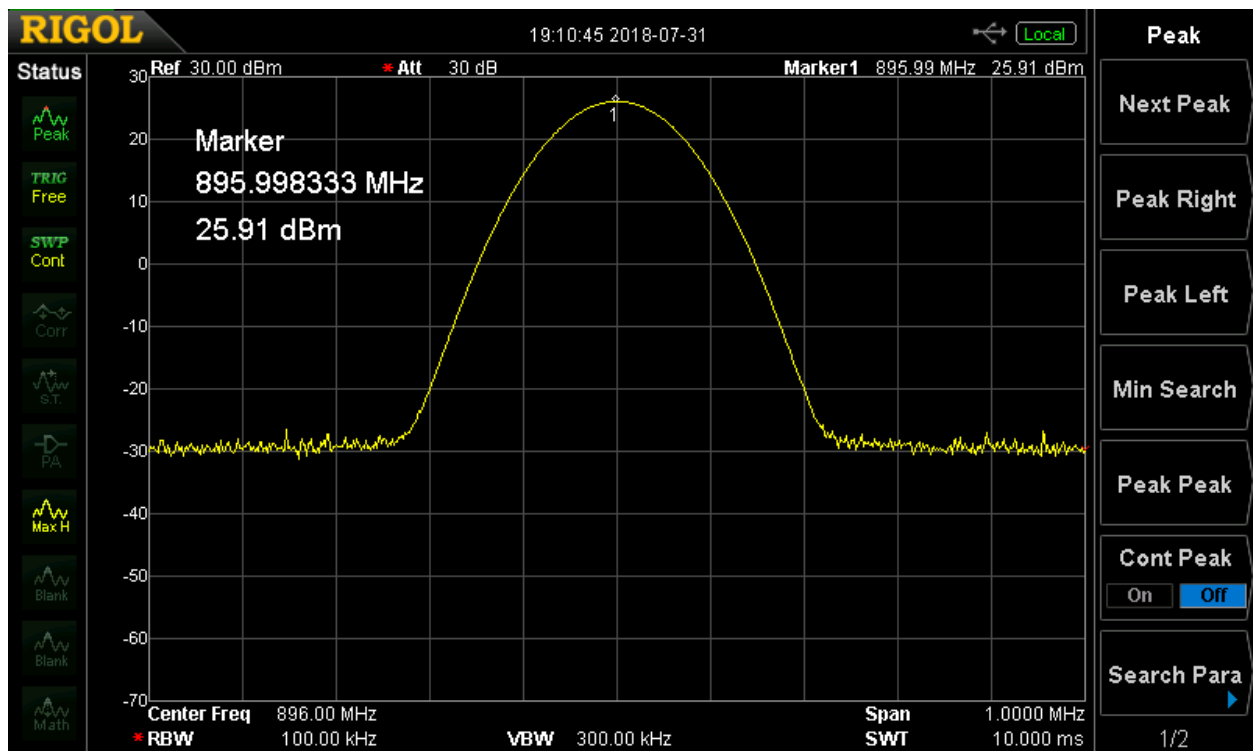


Figure 25. 896 MHz Output Power Plot

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
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Model:

FCC Part 90 Certification
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18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

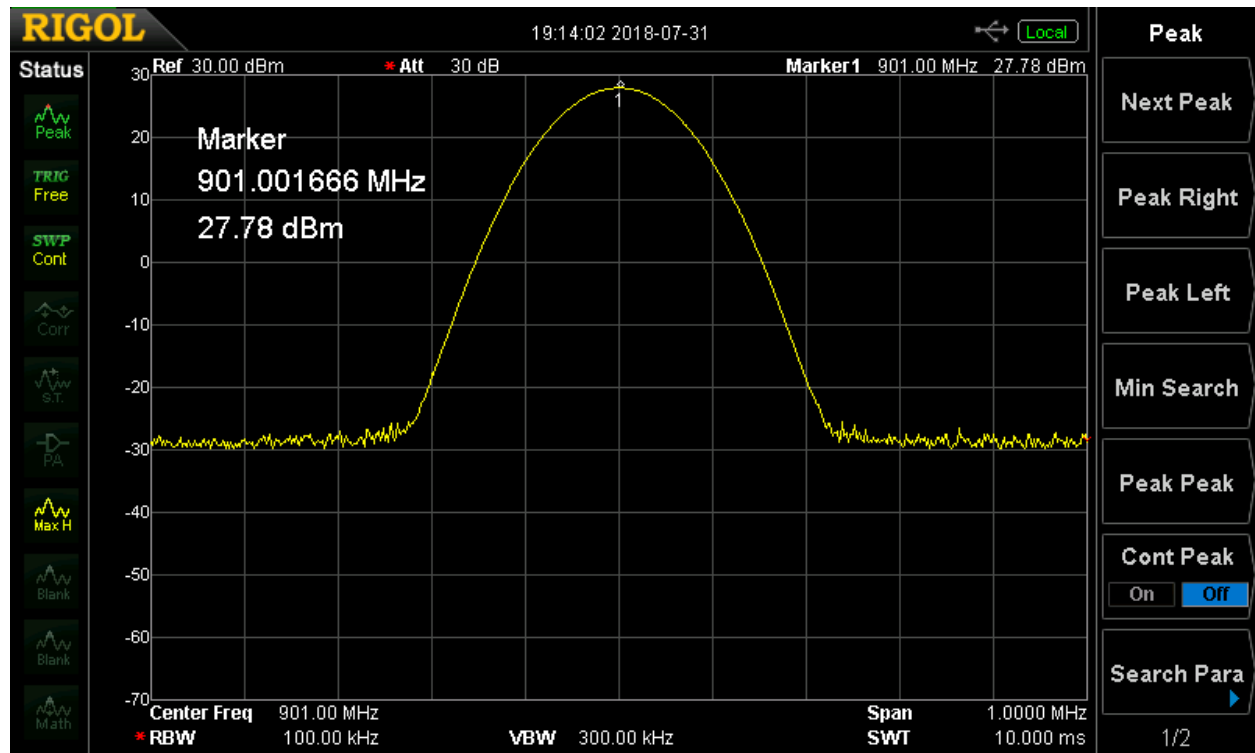


Figure 26. 901 MHz Output Power Plot

2.13 Emission Mask and Retransmitted Signal Measurements - Uplink

The EUT was connected to a spectrum analyzer through a 20 dB attenuator. All cable and attenuator losses were input into the spectrum analyzer as a combination of reference level offset and/or external correction factor offset to ensure accurate readings were obtained. Measurements were collect to verify that the EUT meets the required emissions mask parameters as cited in section 2.10 of this test report. A reference level plot is provided to show that the retransmitted signal meets the parameters as cited in section 2.10 of this test report.

The Emissions Mask were measured with the RF input set to at least 0.2 dB below the AGC level and then at +3.0 dB above the AGC level per KDB 935210 D03 V04.

2.13.1 VHF Channels

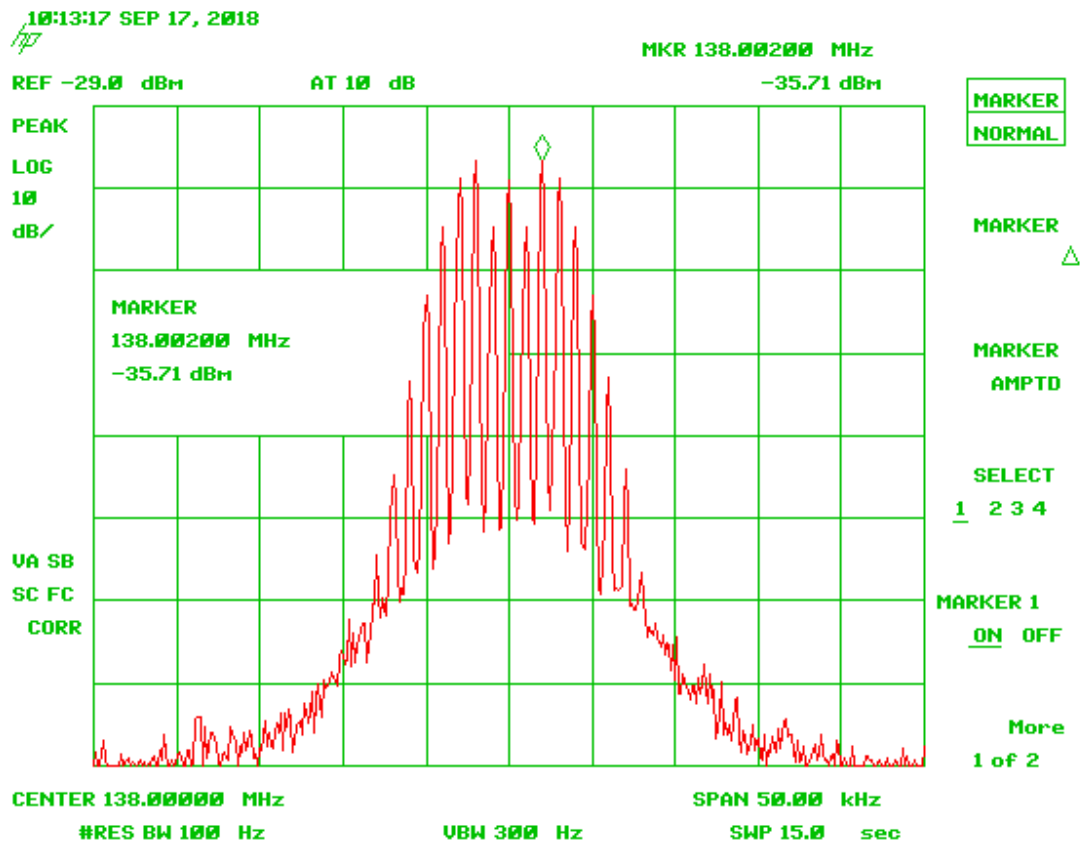


Figure 27. Input 138 MHz @ 12.5 kHz

(Note: Test data for band 138-144 MHz and 380-400 MHz not applicable for FCC certification)

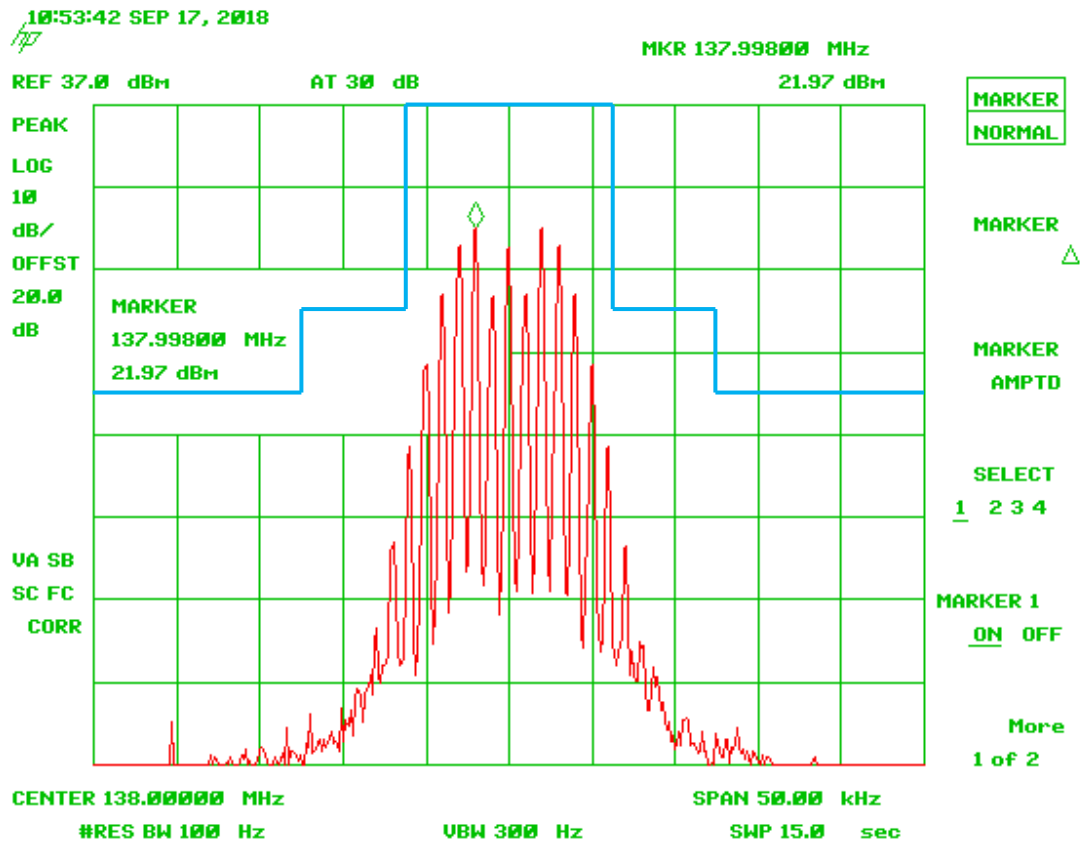


Figure 28. 138 MHz @ 12.5 kHz, Mask B

(Note: Test data for band 138-144 MHz and 380-400 MHz not applicable for FCC certification)

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

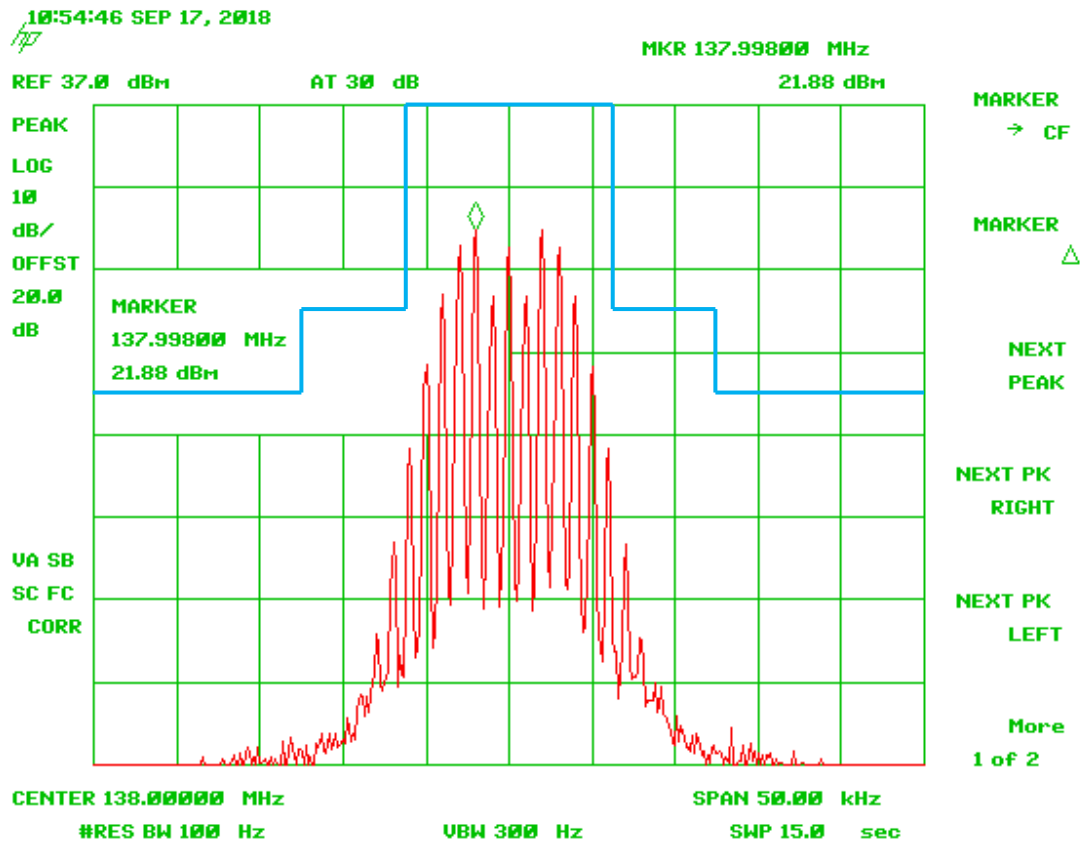


Figure 29. 138 MHz @ 12.5 kHz + 3.0 dB, Mask B

(Note: Test data for band 138-144 MHz and 380-400 MHz not applicable for FCC certification)

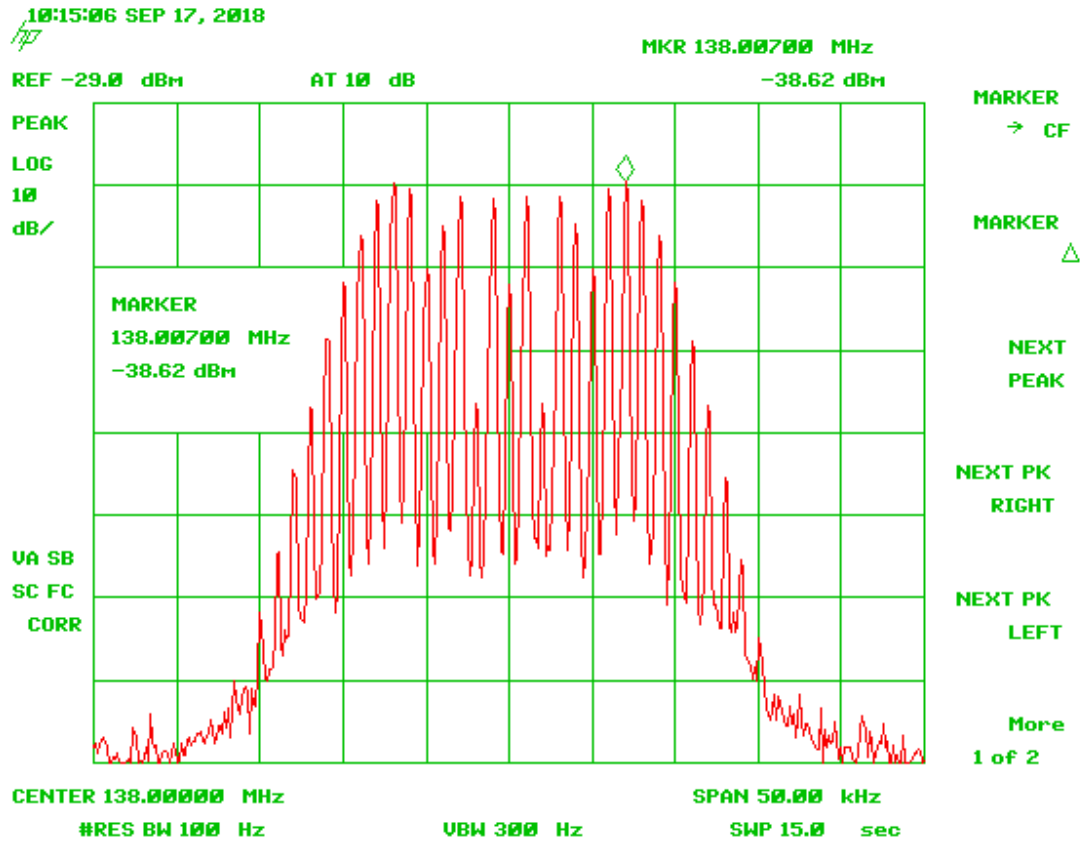


Figure 30. Input 138 MHz @ 25 kHz

(Note: Test data for band 138-144 MHz and 380-400 MHz not applicable for FCC certification)

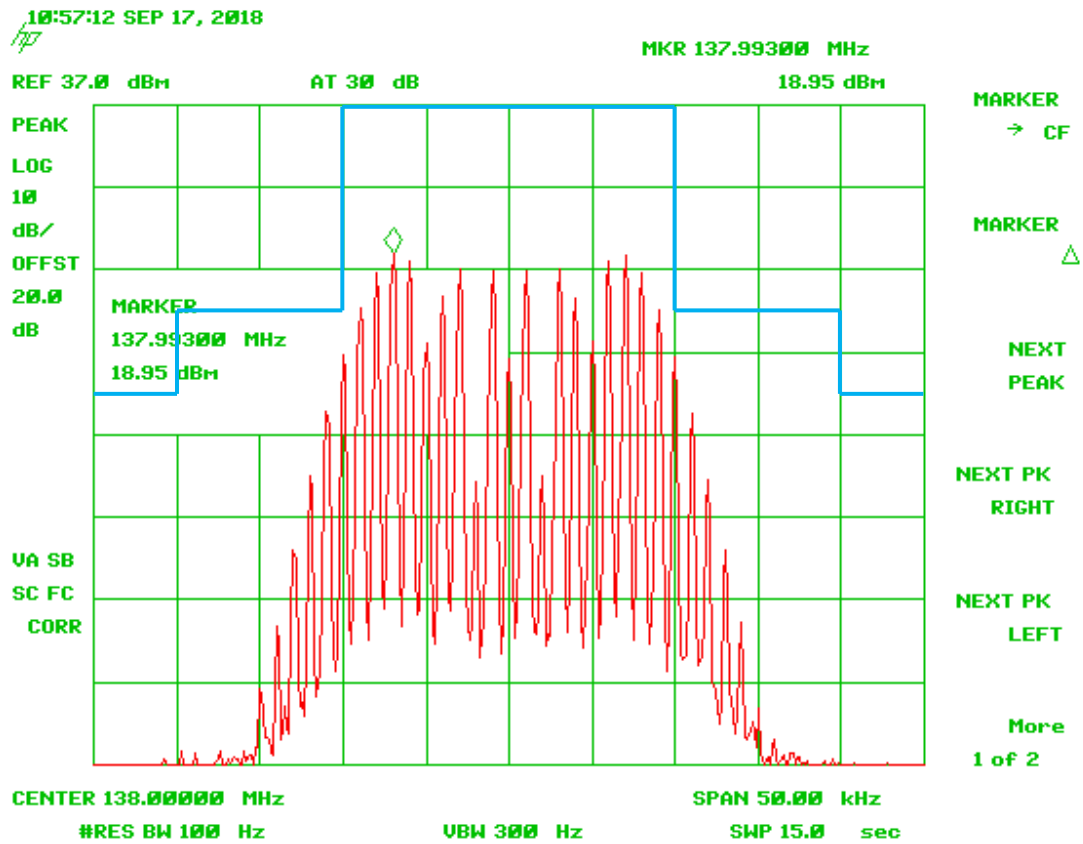


Figure 31. 138 MHz @ 25 kHz, Mask B

(Note: Test data for band 138-144 MHz and 380-400 MHz not applicable for FCC certification)

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

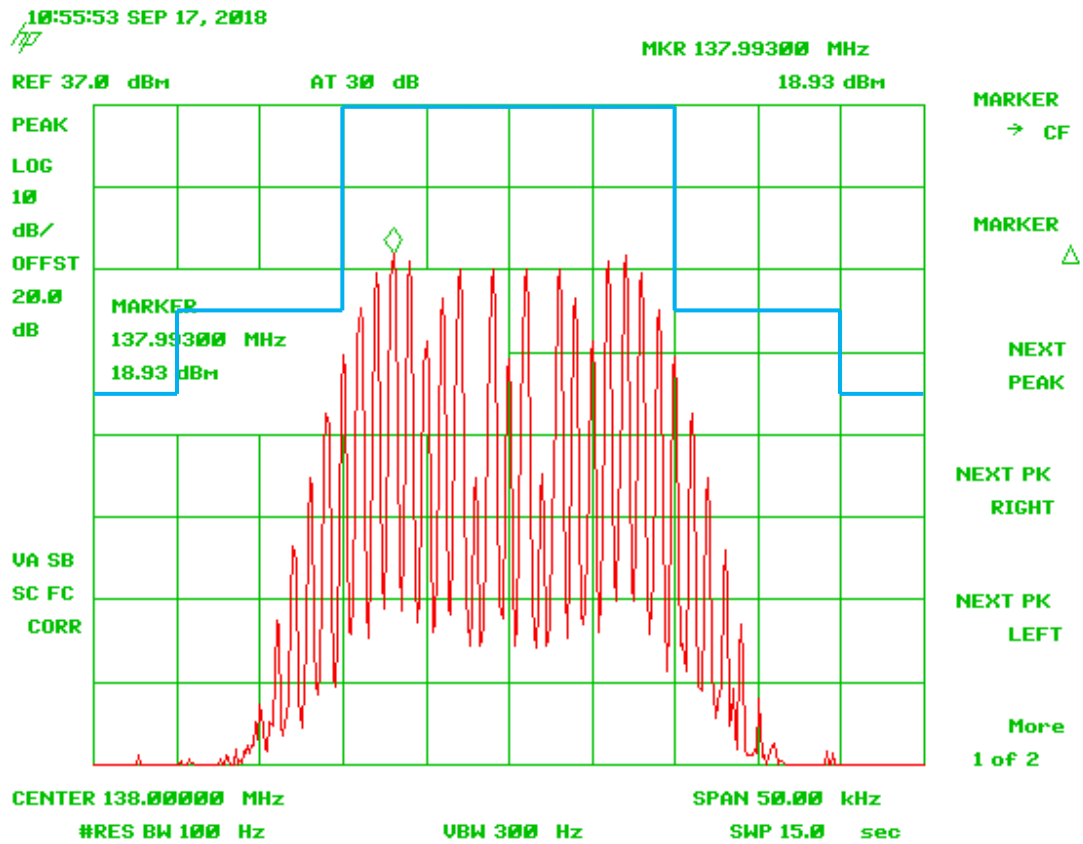


Figure 32. 138 MHz @ 25 kHz + 3.0 dB, Mask B

(Note: Test data for band 138-144 MHz and 380-400 MHz not applicable for FCC certification)

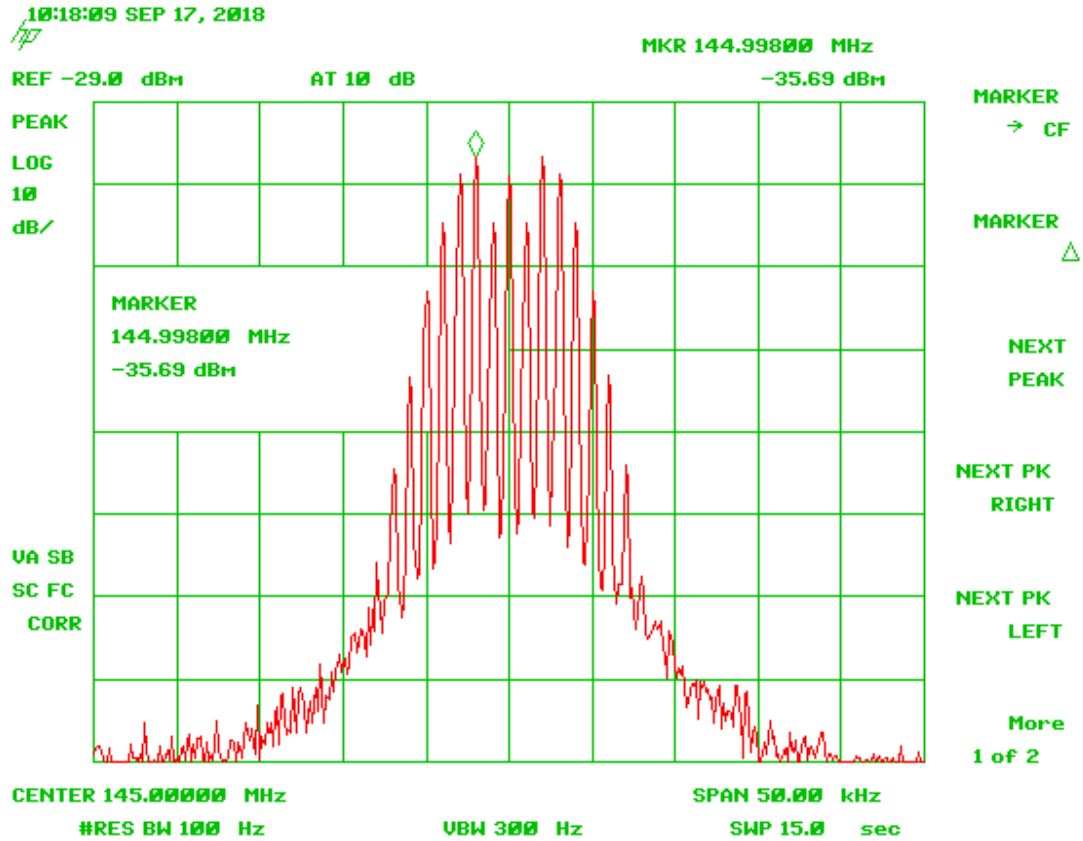


Figure 33. Input 145 MHz @ 12.5 kHz

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IC:
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Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
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18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

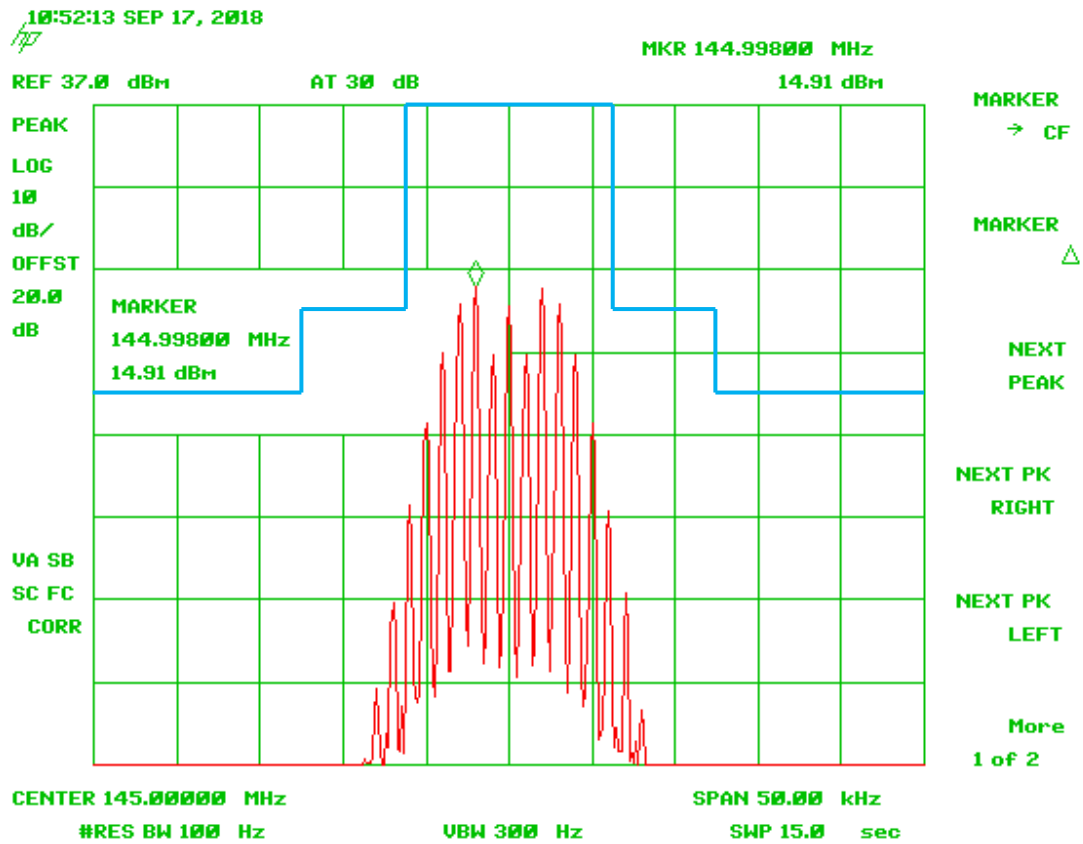


Figure 34. 145 MHz @ 12.5 kHz, Mask B

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

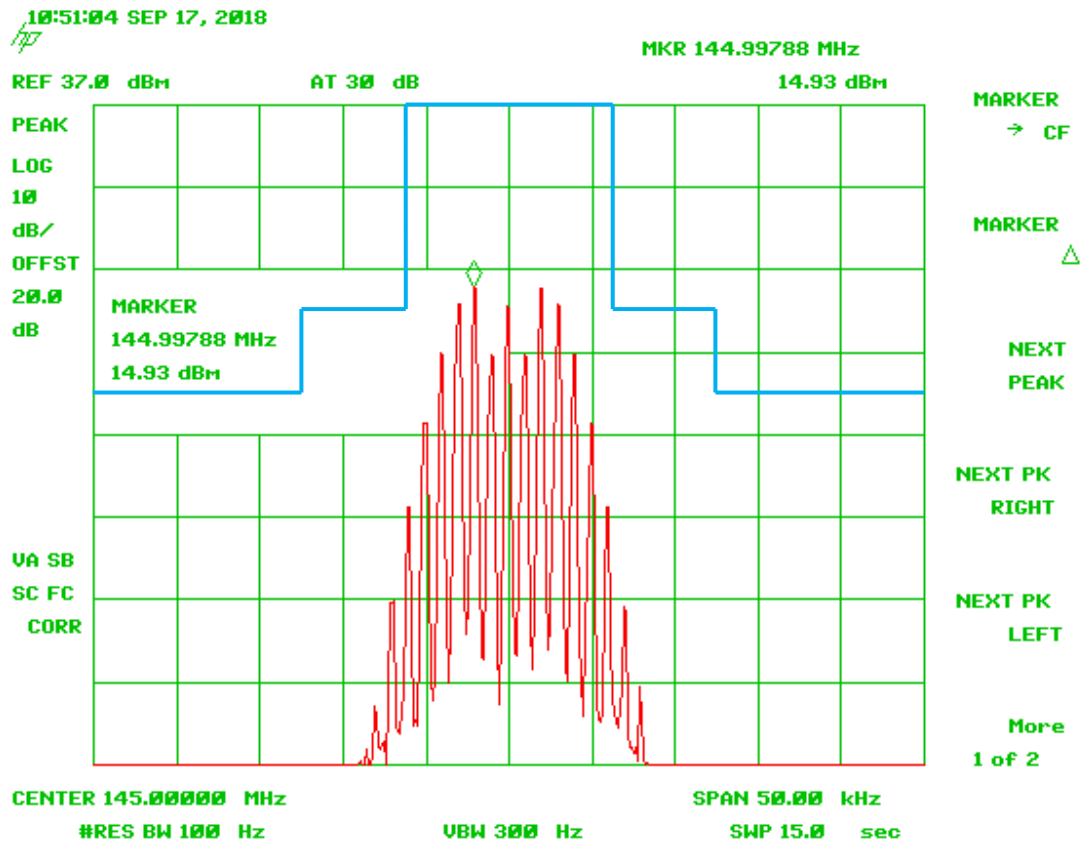


Figure 35. 145 MHz @ 12.5 kHz + 3.0 dB, Mask B

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FCC ID:
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Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

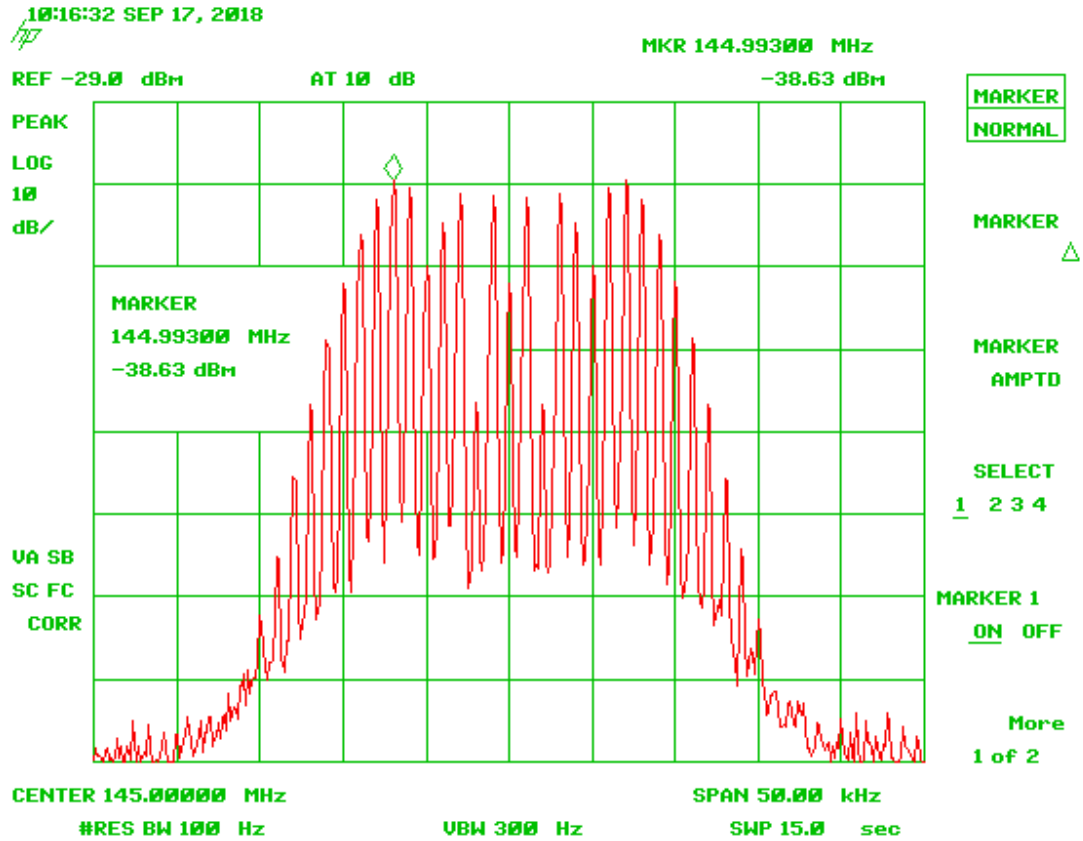


Figure 36. Input 145 MHz @ 25 kHz

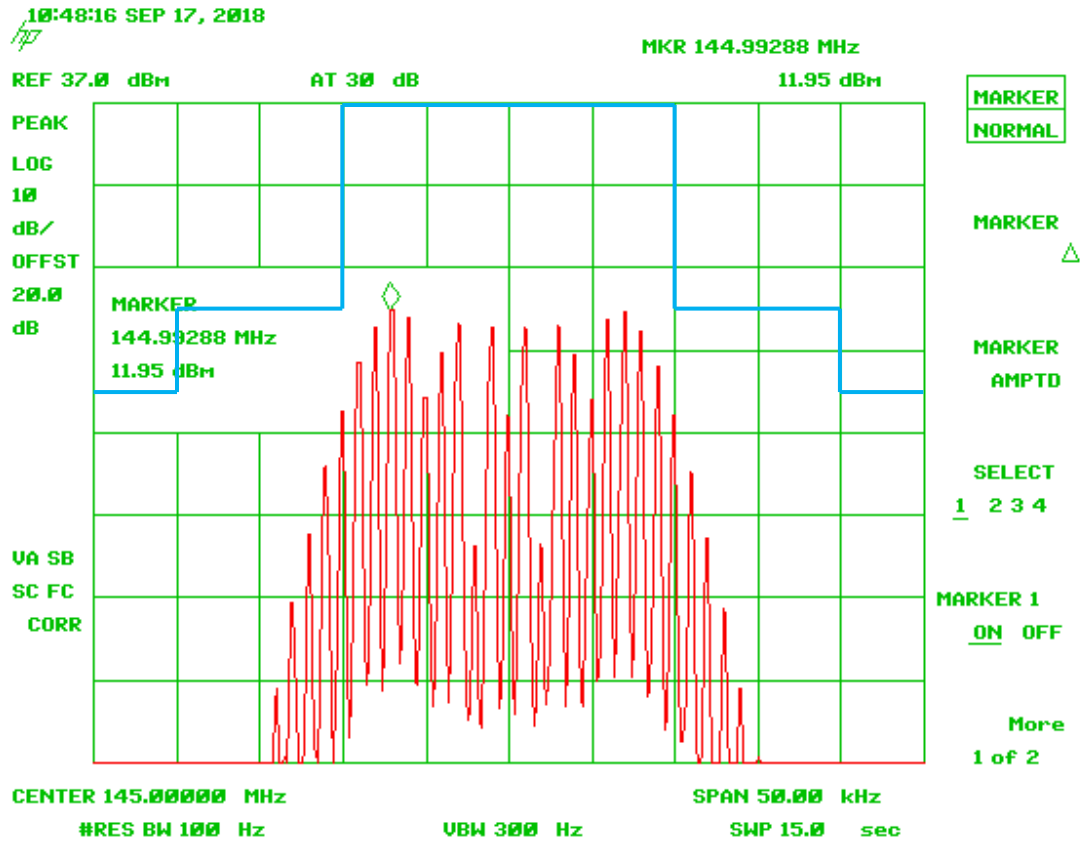


Figure 37. 145 MHz @ 25 kHz, Mask B

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FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

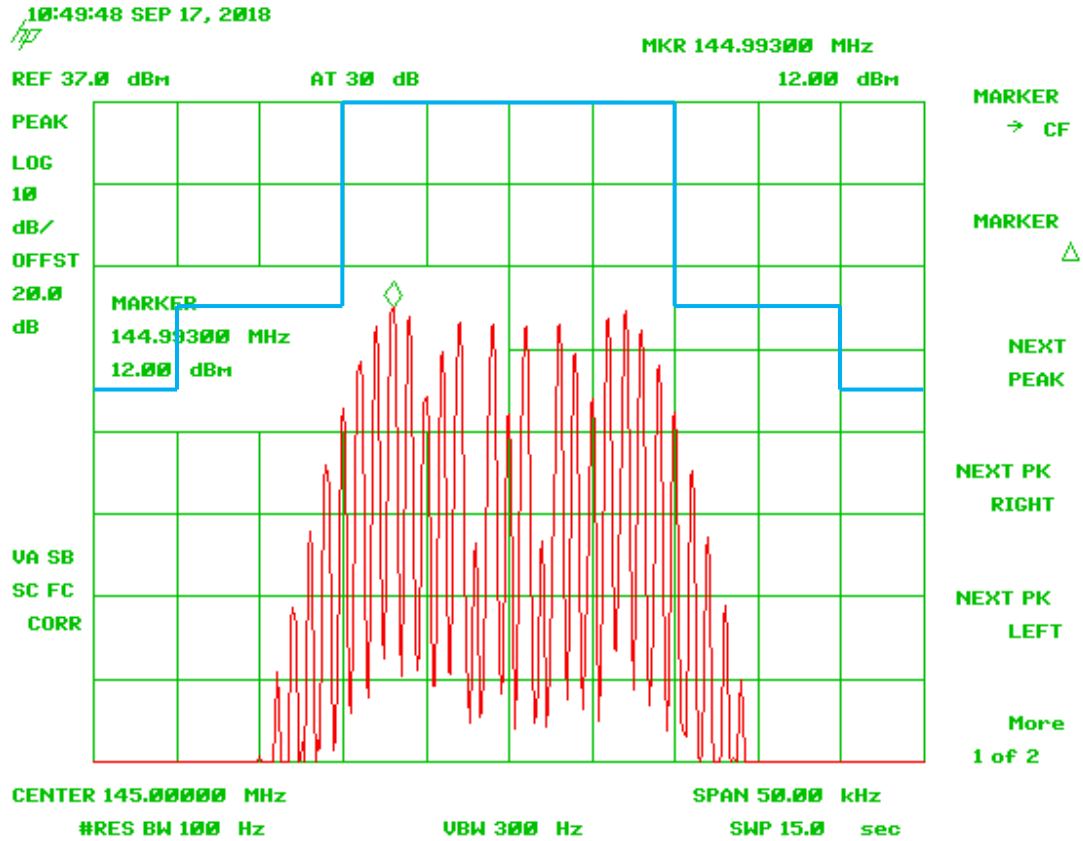


Figure 38. 145 MHz @ 25 kHz + 3.0 dB, Mask B

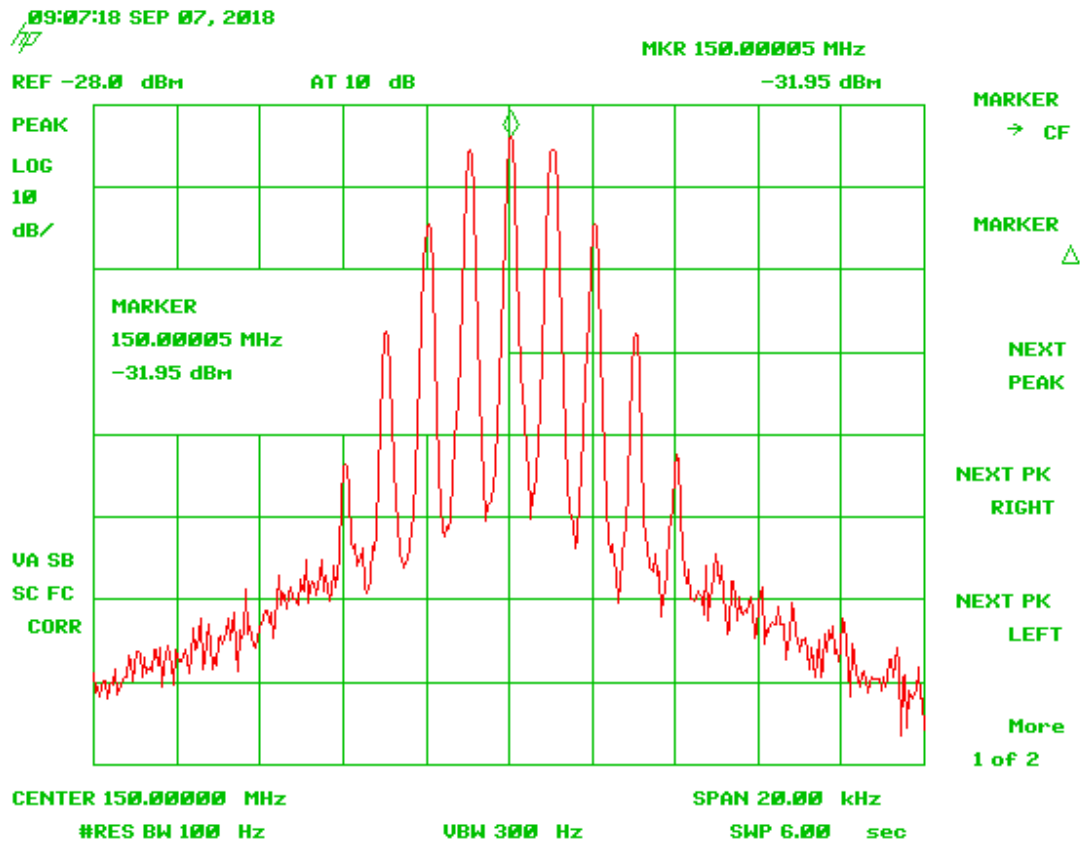


Figure 39. Input 150 MHz @ 6.25 kHz

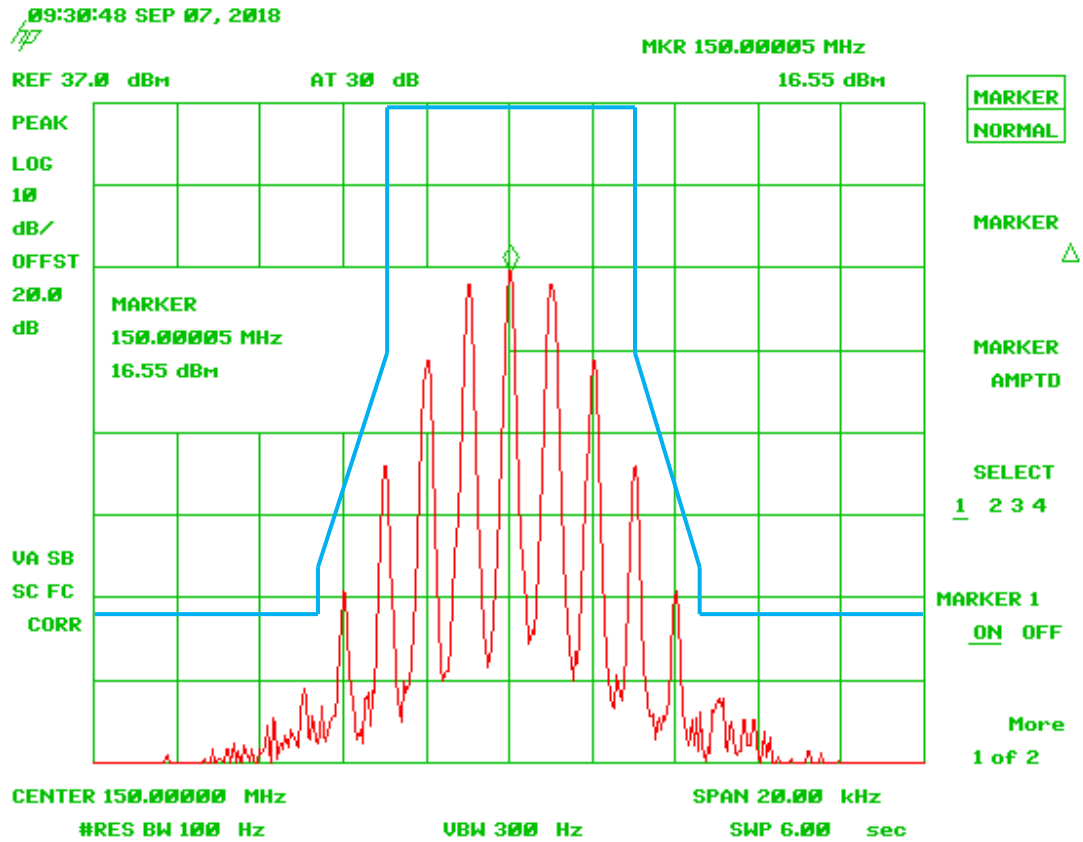


Figure 40. 150 MHz @ 6.25 kHz, Mask E

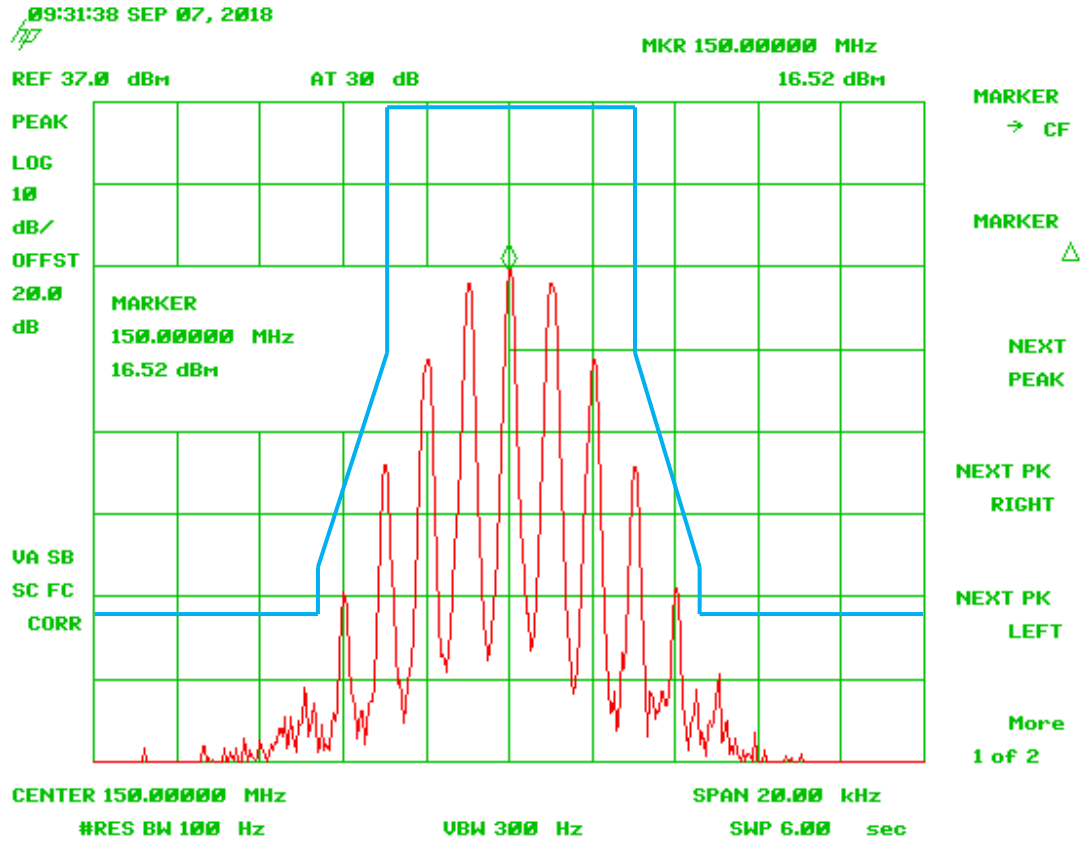


Figure 41. 150 MHz@ 6.25 kHz + 3.0 dB, Mask E

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IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

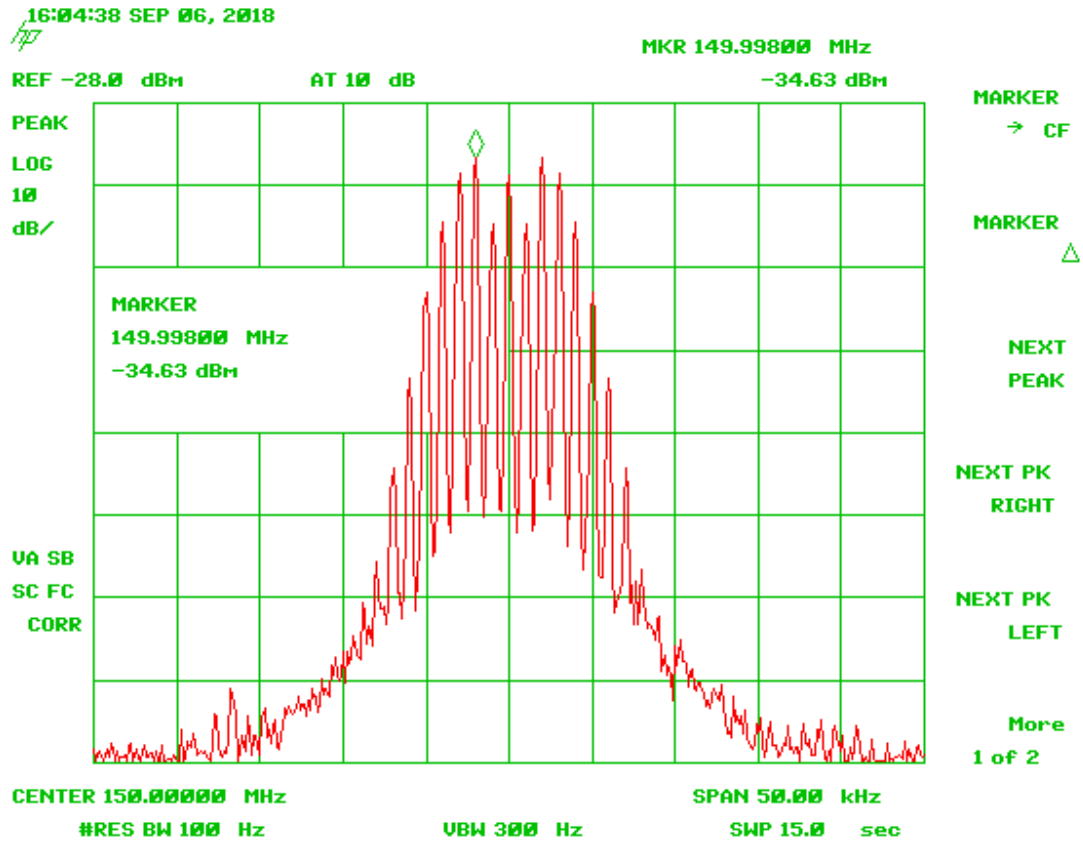


Figure 42. Input 150 MHz @ 12.5 kHz

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Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

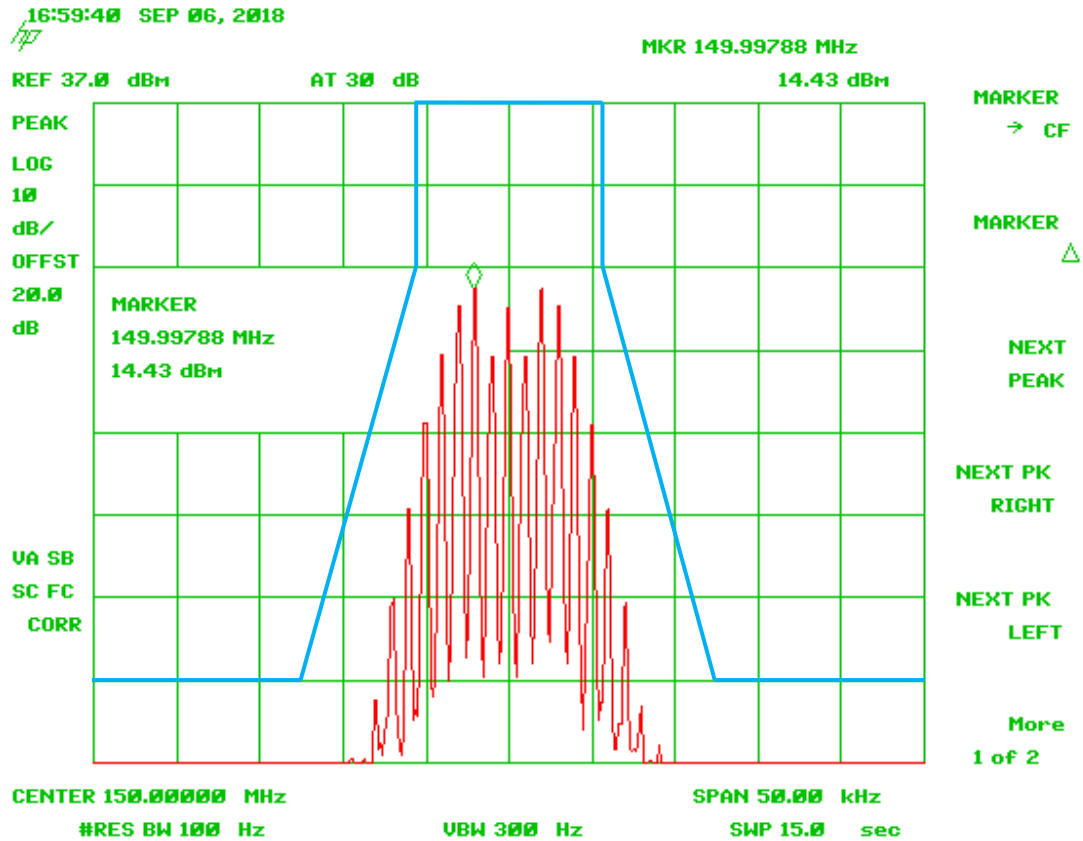


Figure 43. 150 MHz @ 12.5 kHz, Mask D

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Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

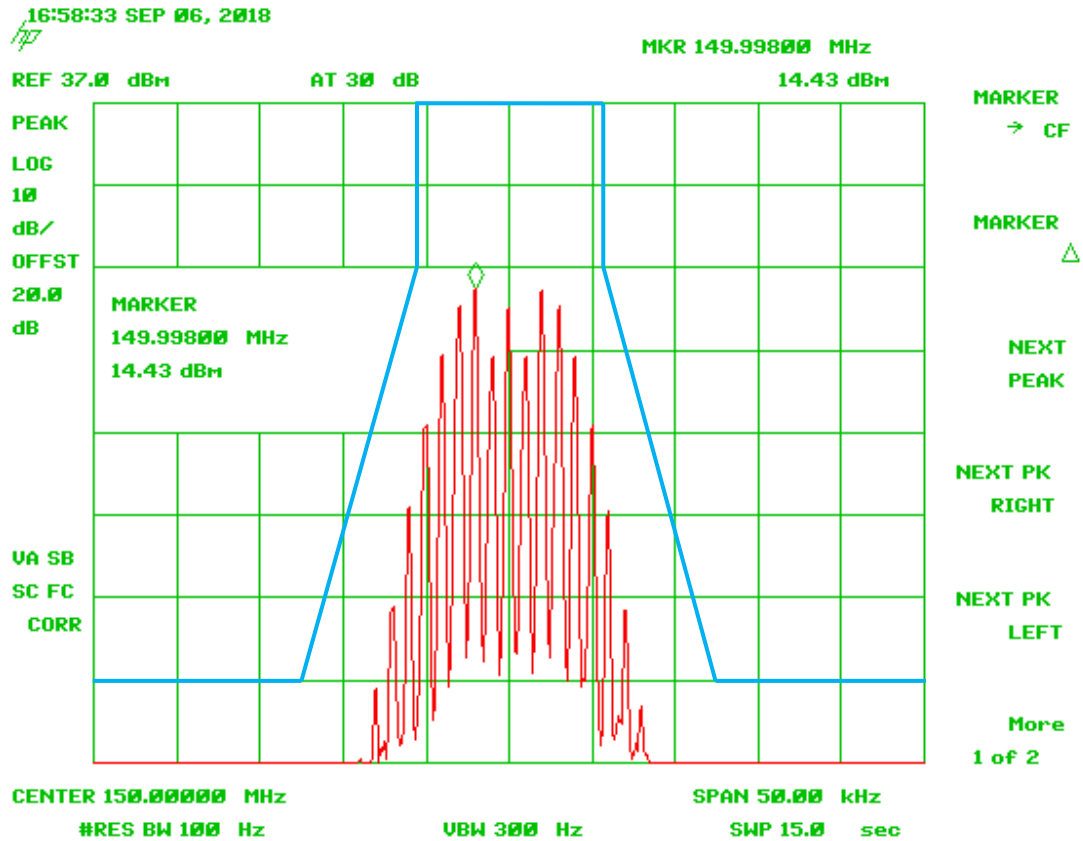


Figure 44. 150 MHz @ 12.5 kHz + 3.0 dB, Mask D

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Customer:
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FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

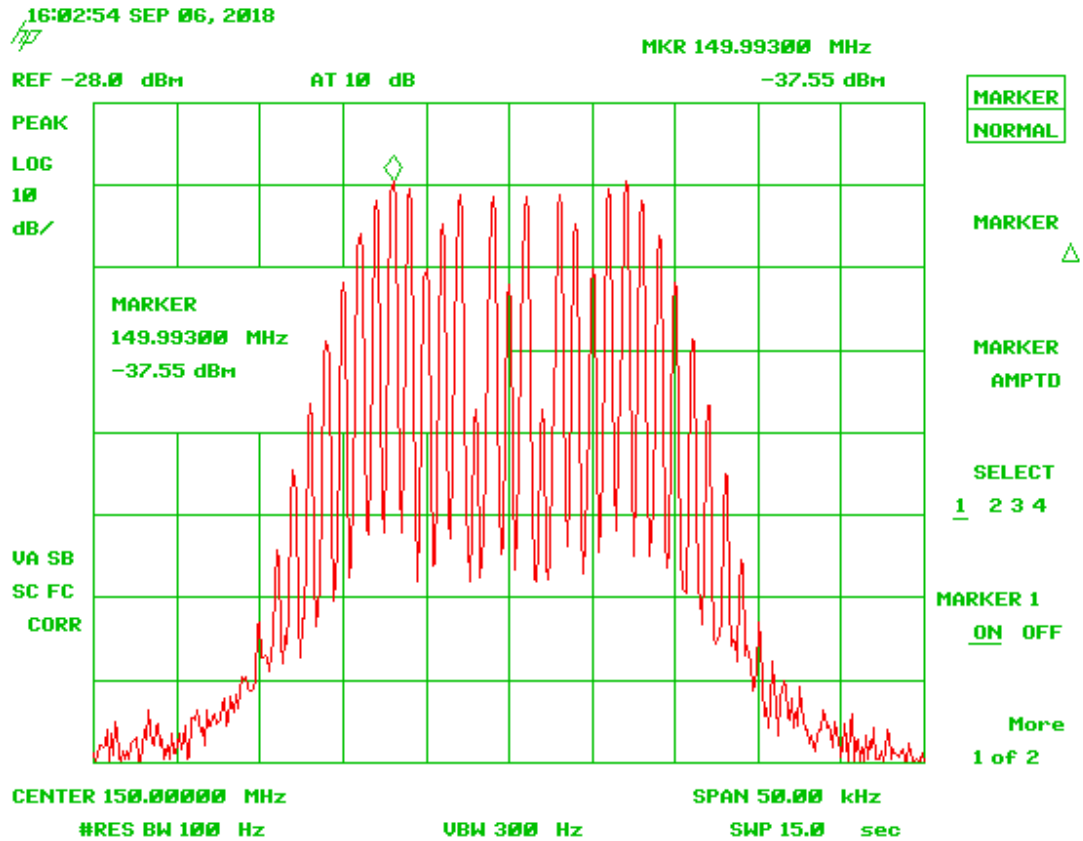


Figure 45. Input 150 MHz @ 25 kHz

U.S. Tech Test Report:
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IC:
Report Number:
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Customer:
Model:

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2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

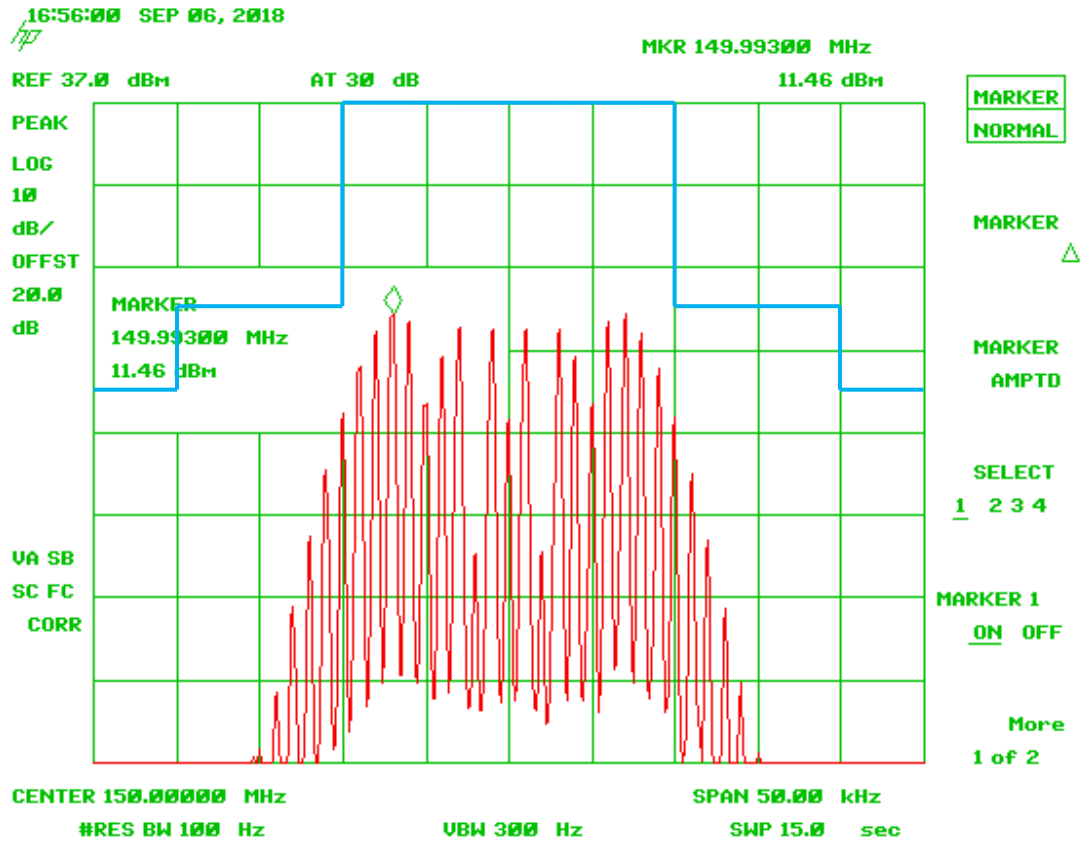


Figure 46. 150 MHz @ 25 kHz, Mask B

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

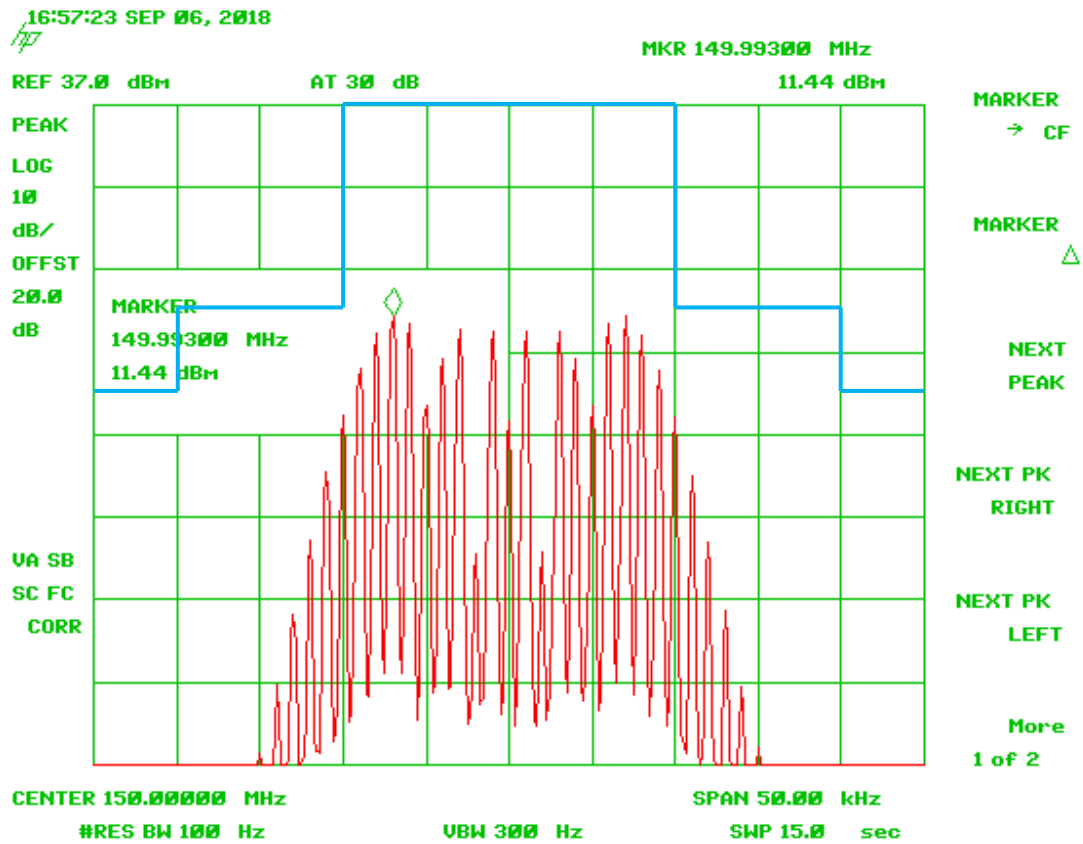


Figure 47. 150 MHz @ 25 kHz + 3.0 dB, Mask B

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

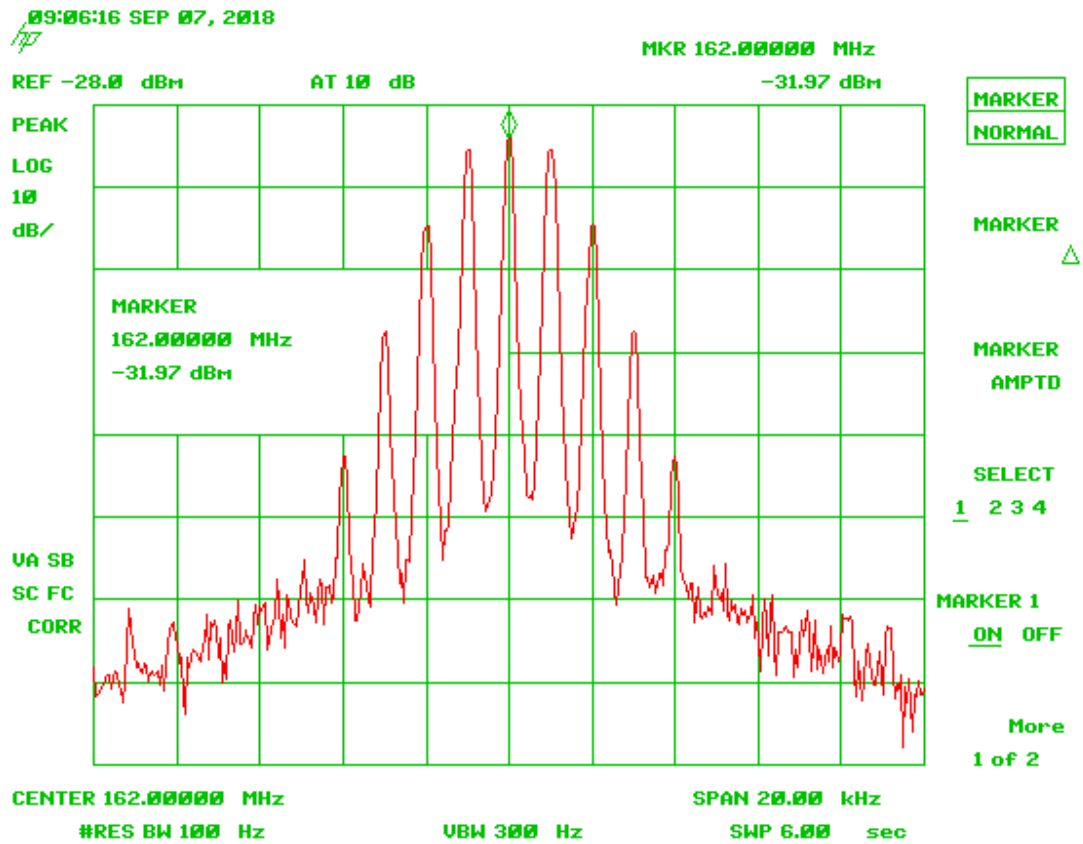


Figure 48. Input 162 MHz @ 6.25 kHz

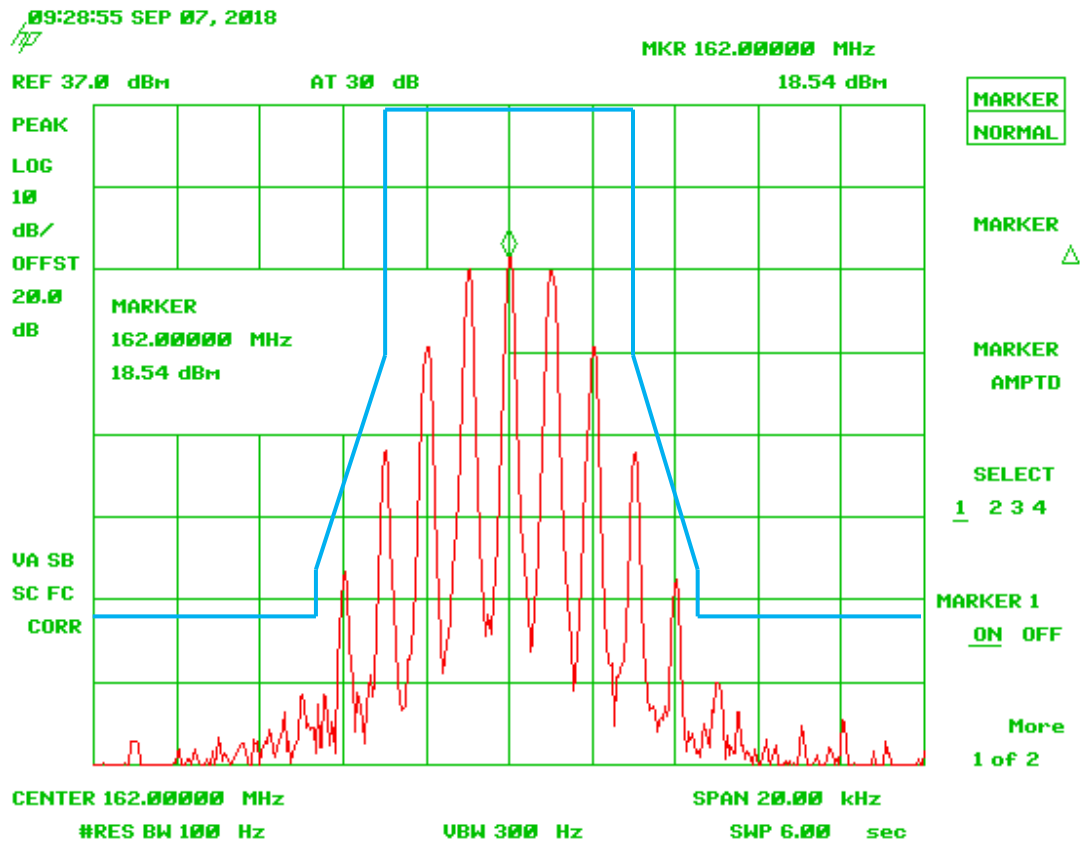


Figure 49. 162 MHz @ 6.25 kHz, Mask E

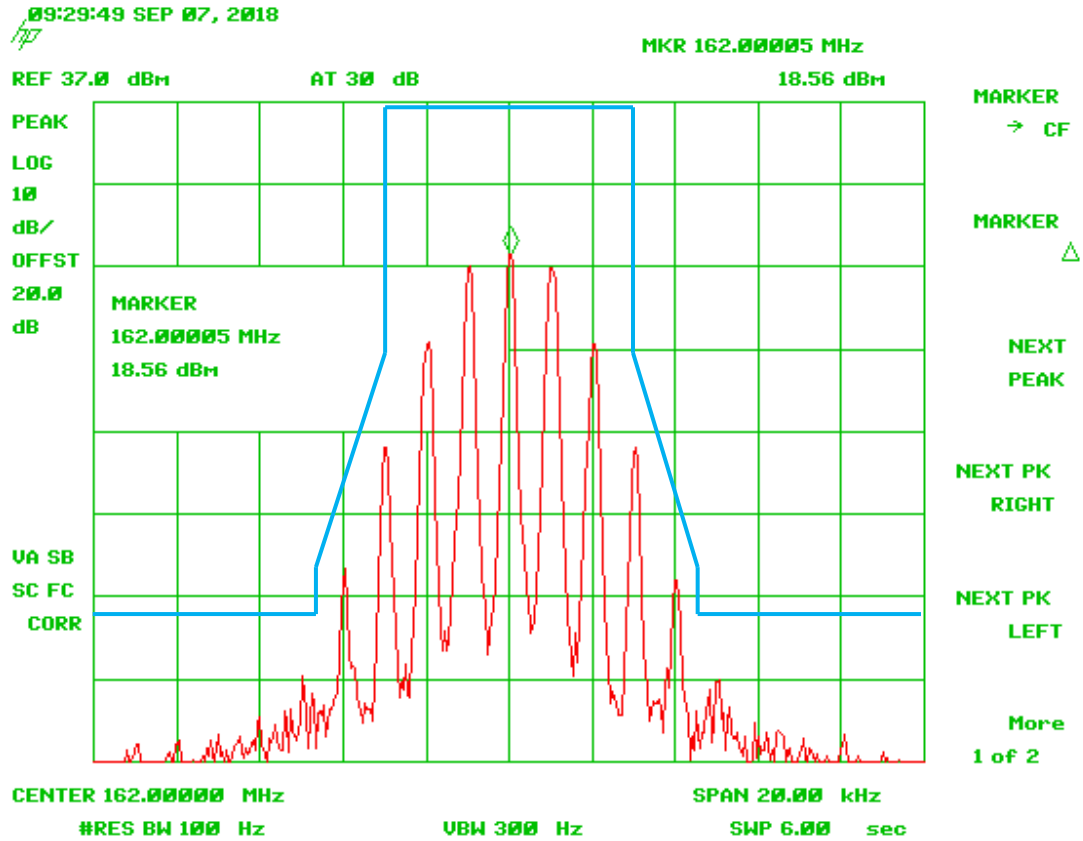


Figure 50. 162 MHz @ 6.25 kHz + 3.0 dB, Mask E

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

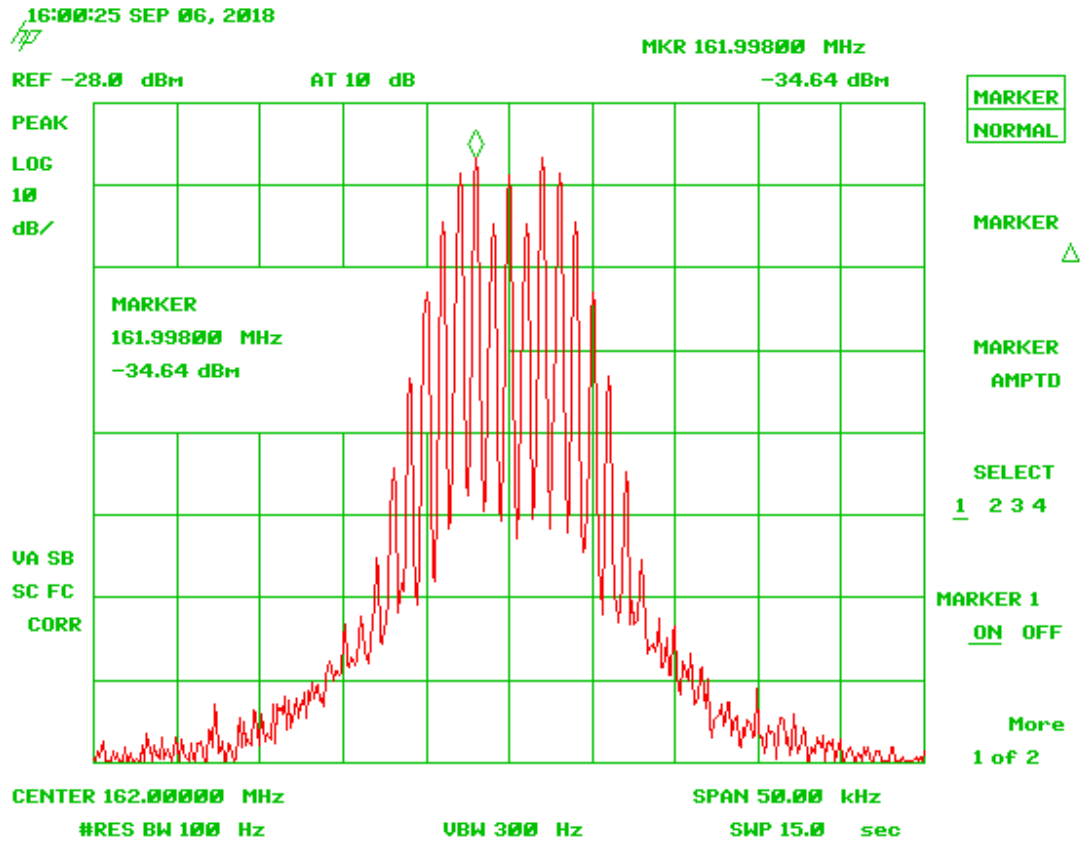


Figure 51. Input 162 MHz @ 12.5 kHz

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IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

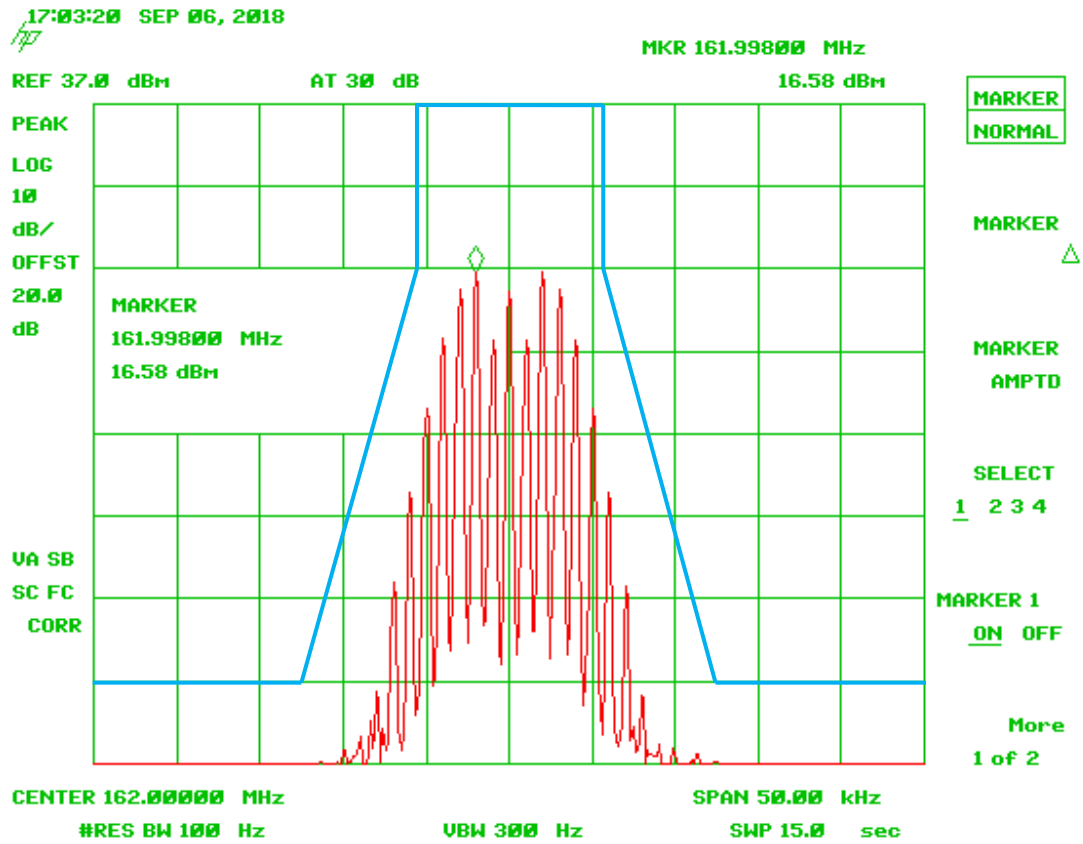


Figure 52. 162 MHz @ 12.5 kHz, Mask D

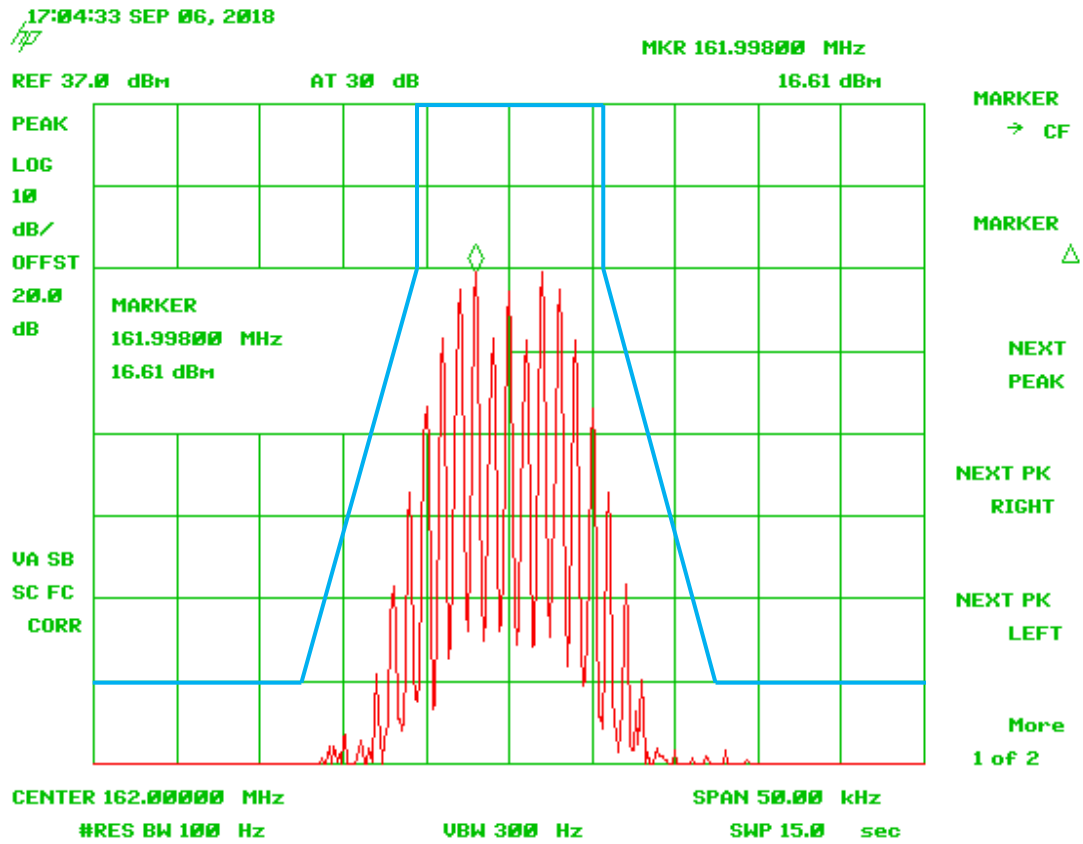


Figure 53. 162 MHz @ 12.5 kHz + 3.0 dB, Mask D

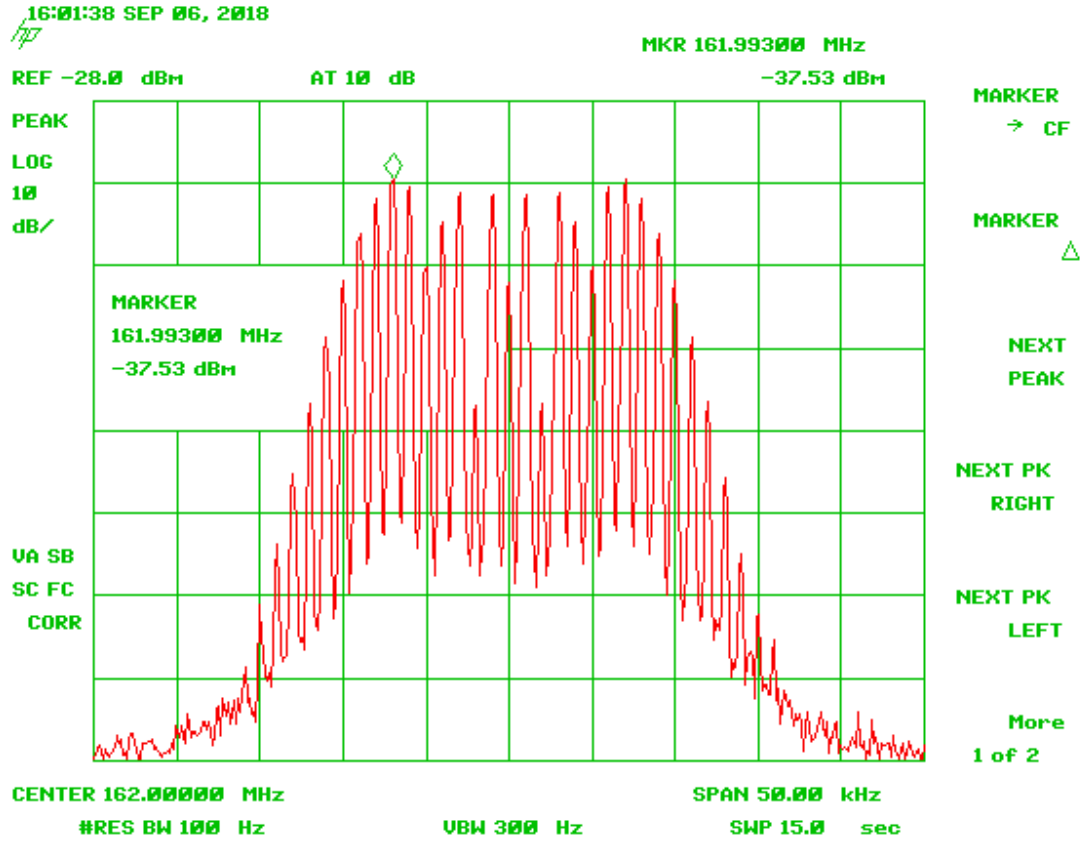


Figure 54. Input 162 MHz @ 25 kHz

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IC:
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Issue Date:
Customer:
Model:

FCC Part 90 Certification
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22303-SAFE2
18-0181
September 10, 2018
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SAFE-1000

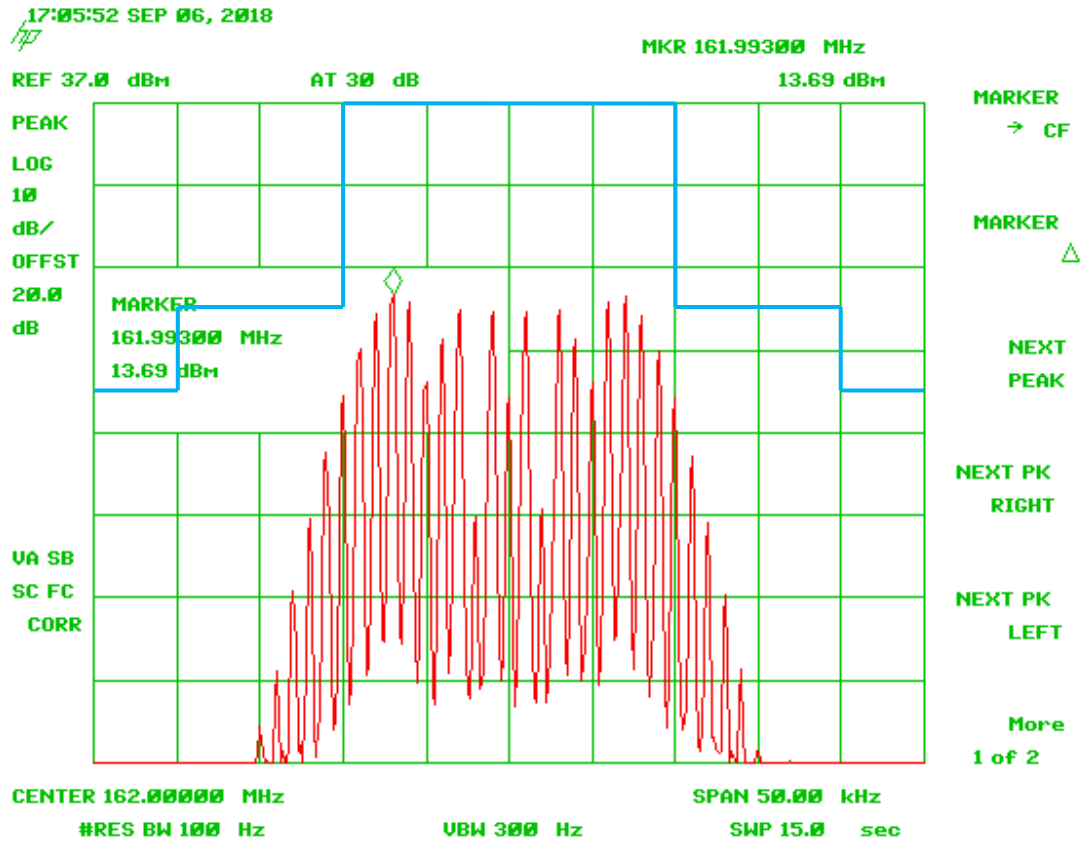


Figure 55. 162 MHz @ 25 kHz, Mask B

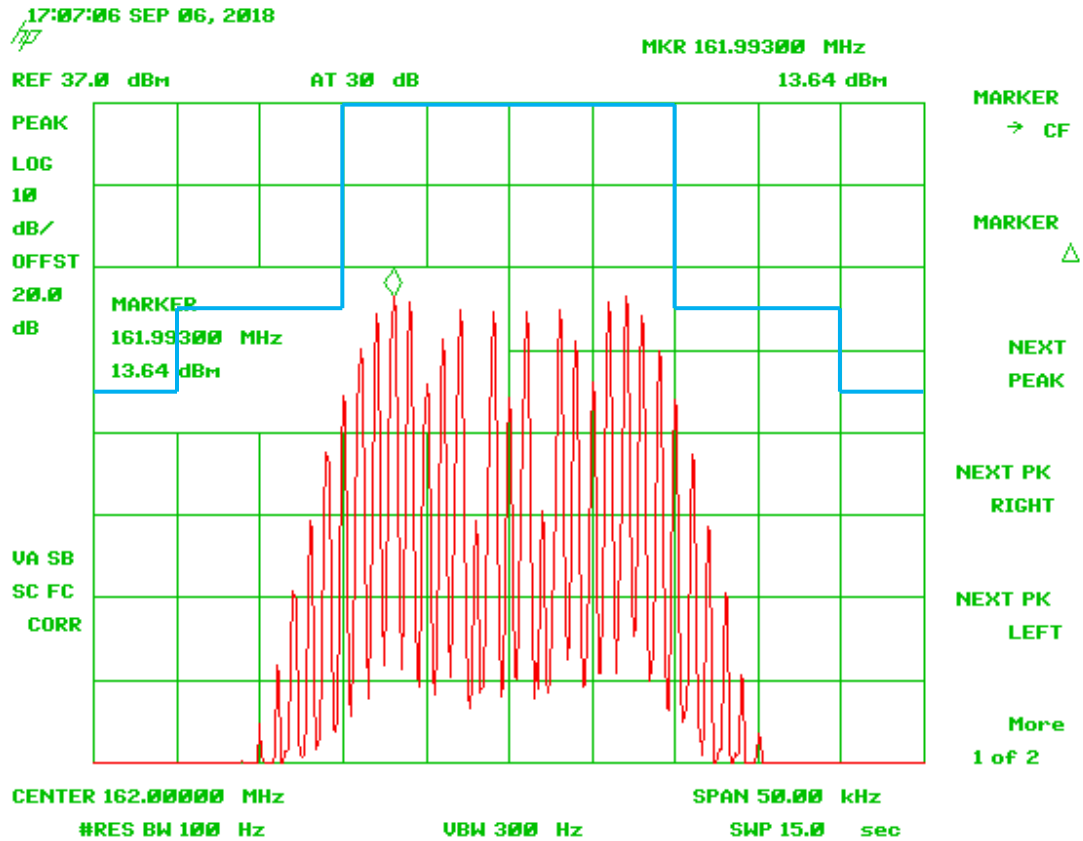


Figure 56. 162 MHz @ 25 kHz + 3.0 dB, Mask B

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

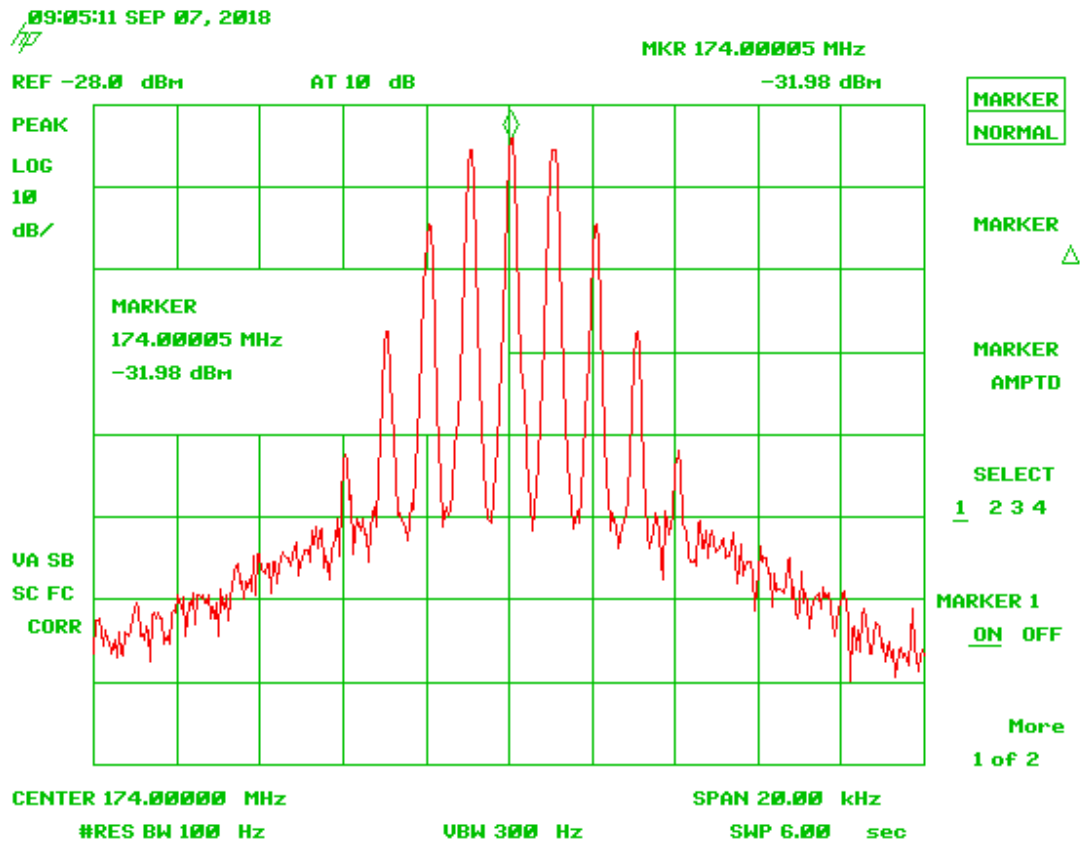


Figure 57. Input 174 MHz @ 6.25 kHz

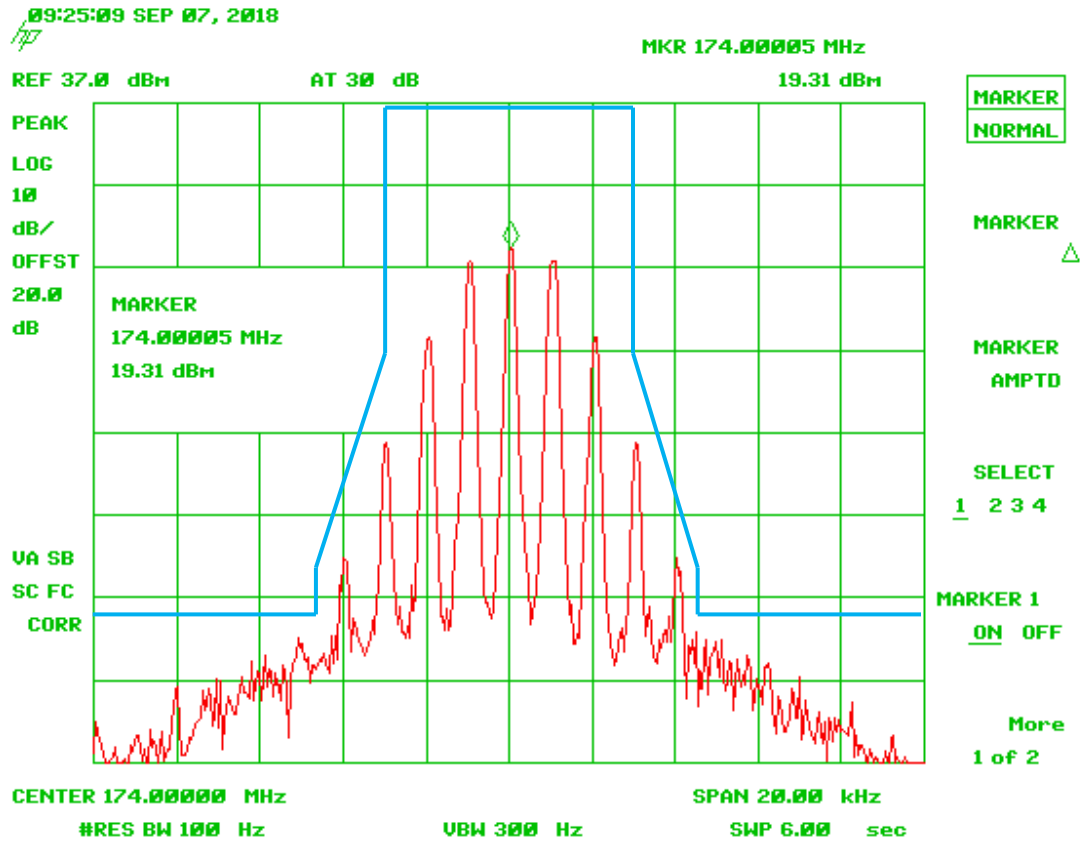


Figure 58. 174 MHz @ 6.25 kHz, Mask E

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FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

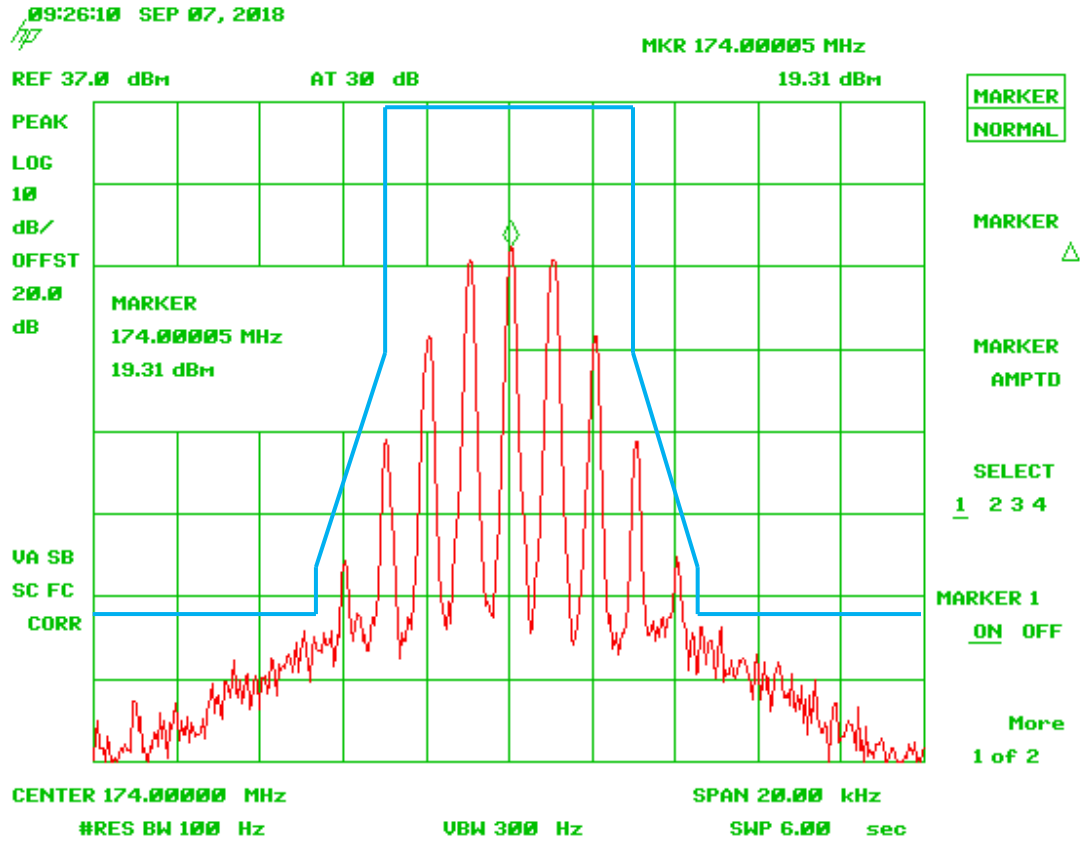


Figure 59. 174 MHz @ 6.25 kHz + 3.0 dB, Mask E

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FCC ID:
IC:
Report Number:
Issue Date:
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Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

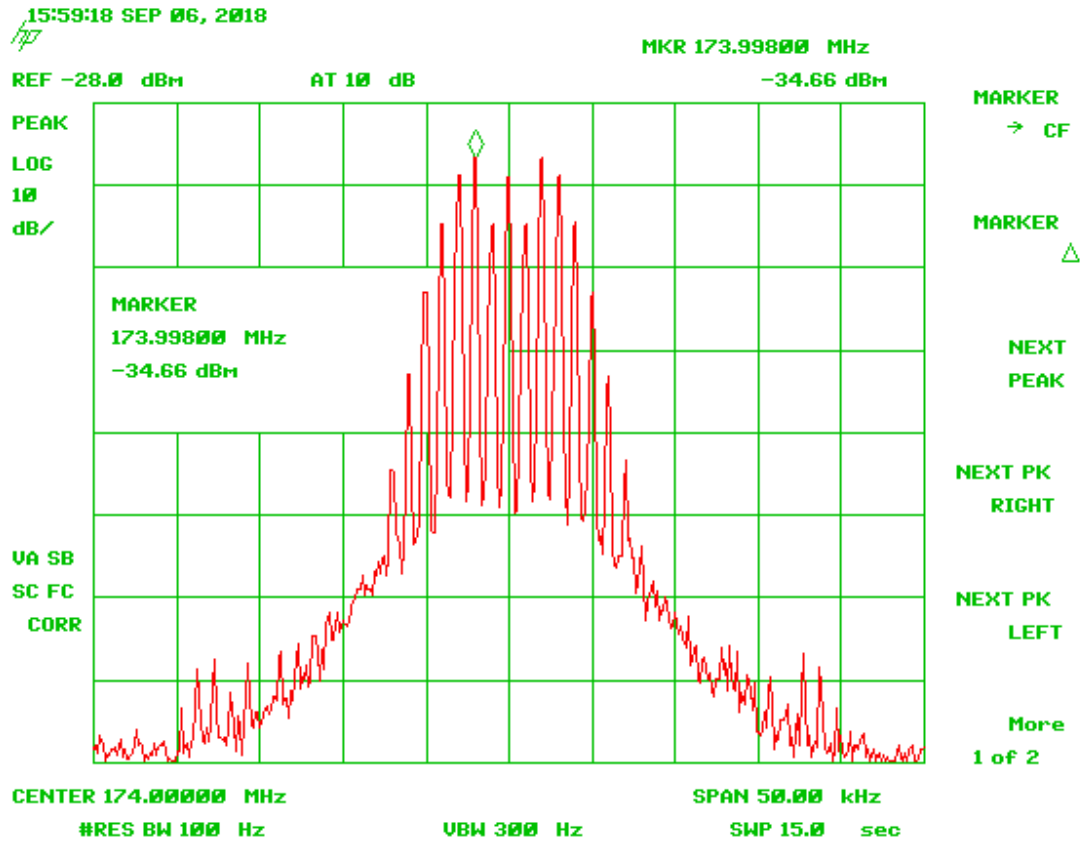


Figure 60. Input 174 MHz @ 12.5 kHz

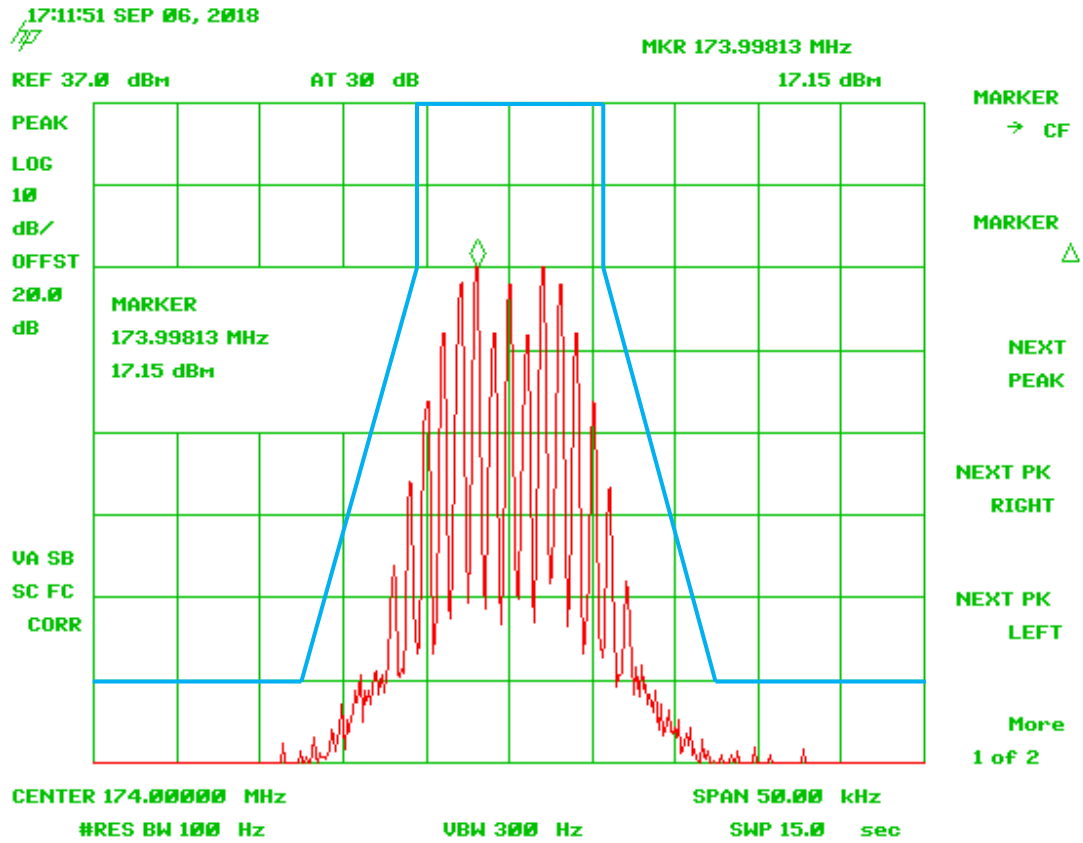


Figure 61. 174 MHz @ 12.5 kHz, Mask D

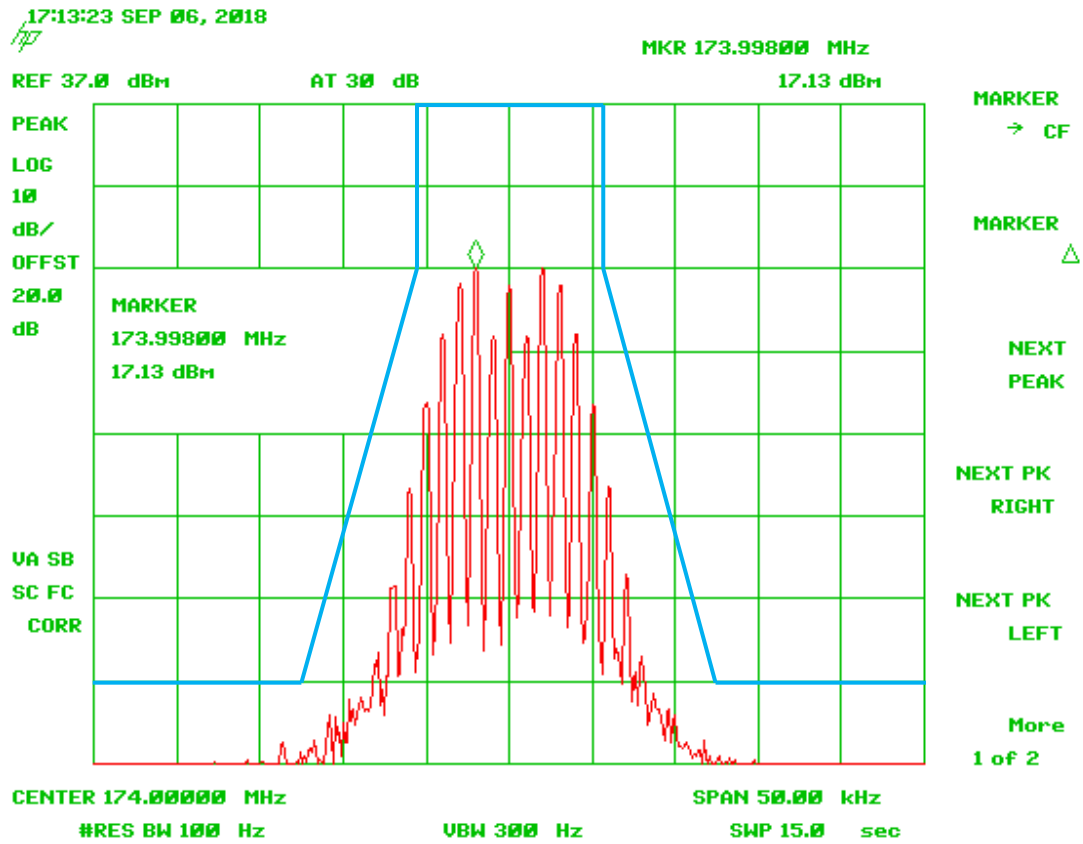


Figure 62. 174 MHz @ 12.5 kHz + 3.0 dB, Mask D

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FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
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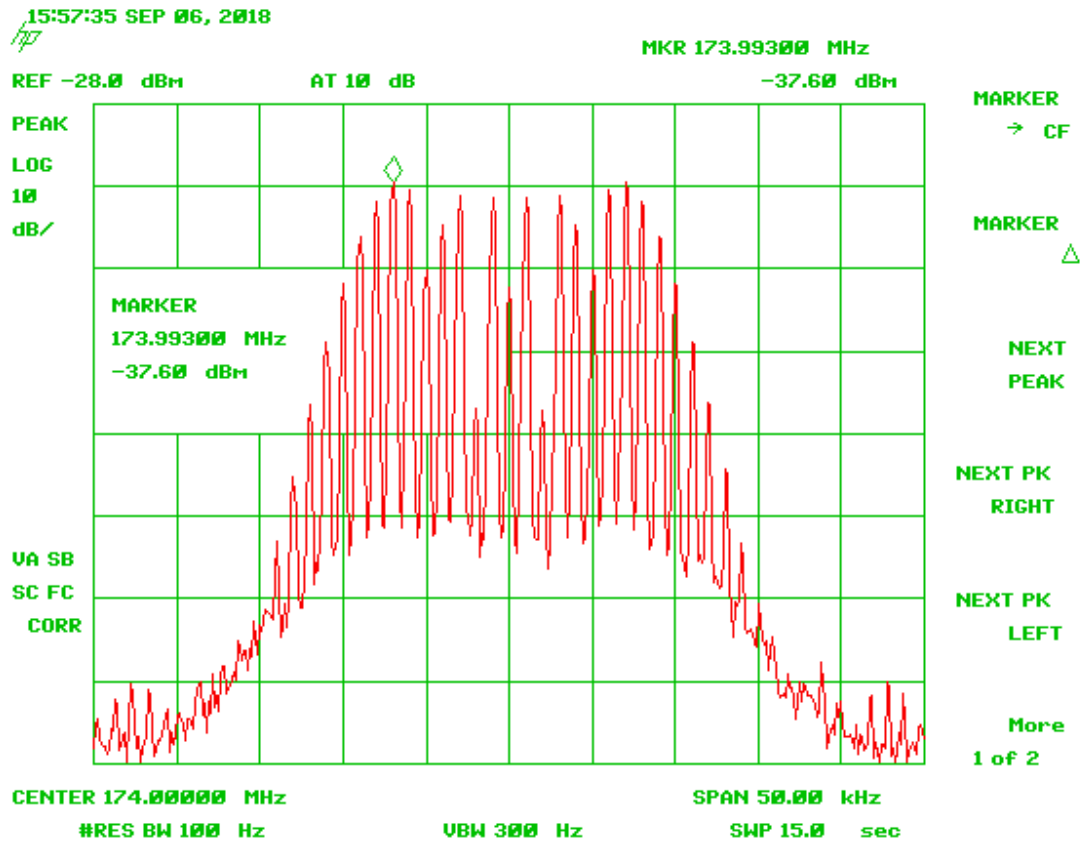


Figure 63. Input 174 MHz @ 25 kHz

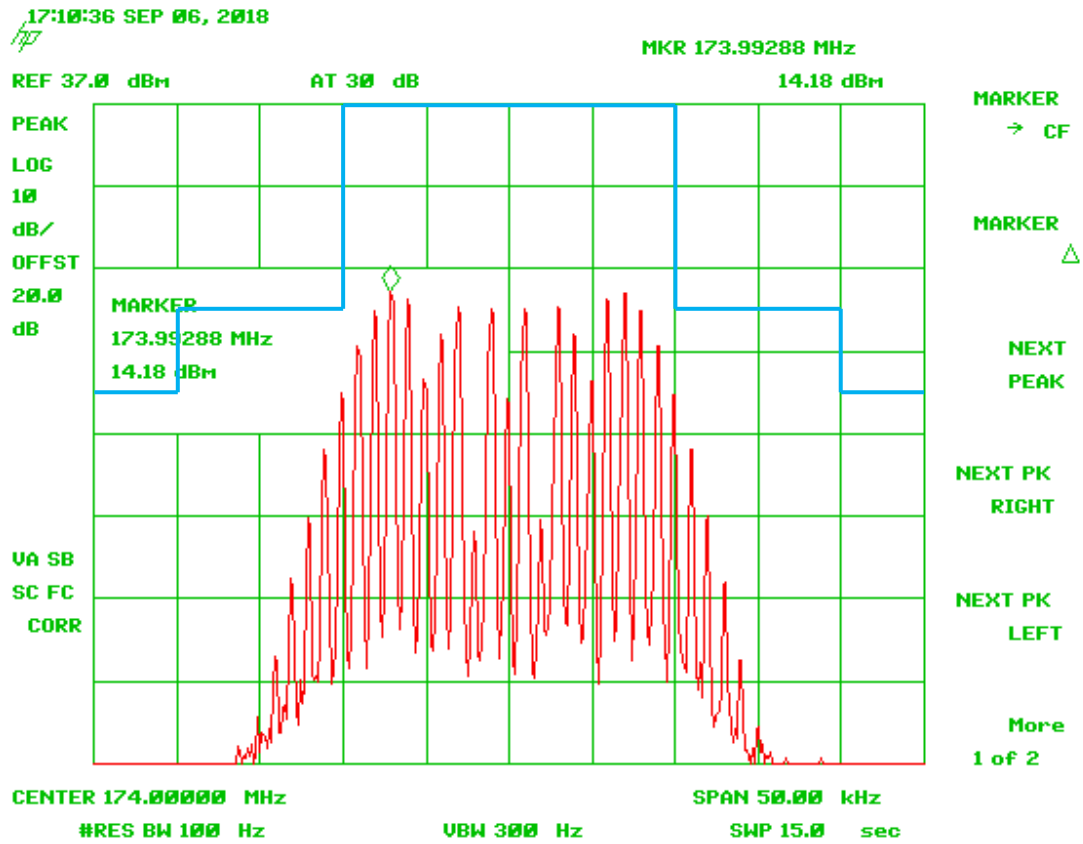


Figure 64. 174 MHz @ 25 kHz, Mask B

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
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Safe-Com Wireless
SAFE-1000

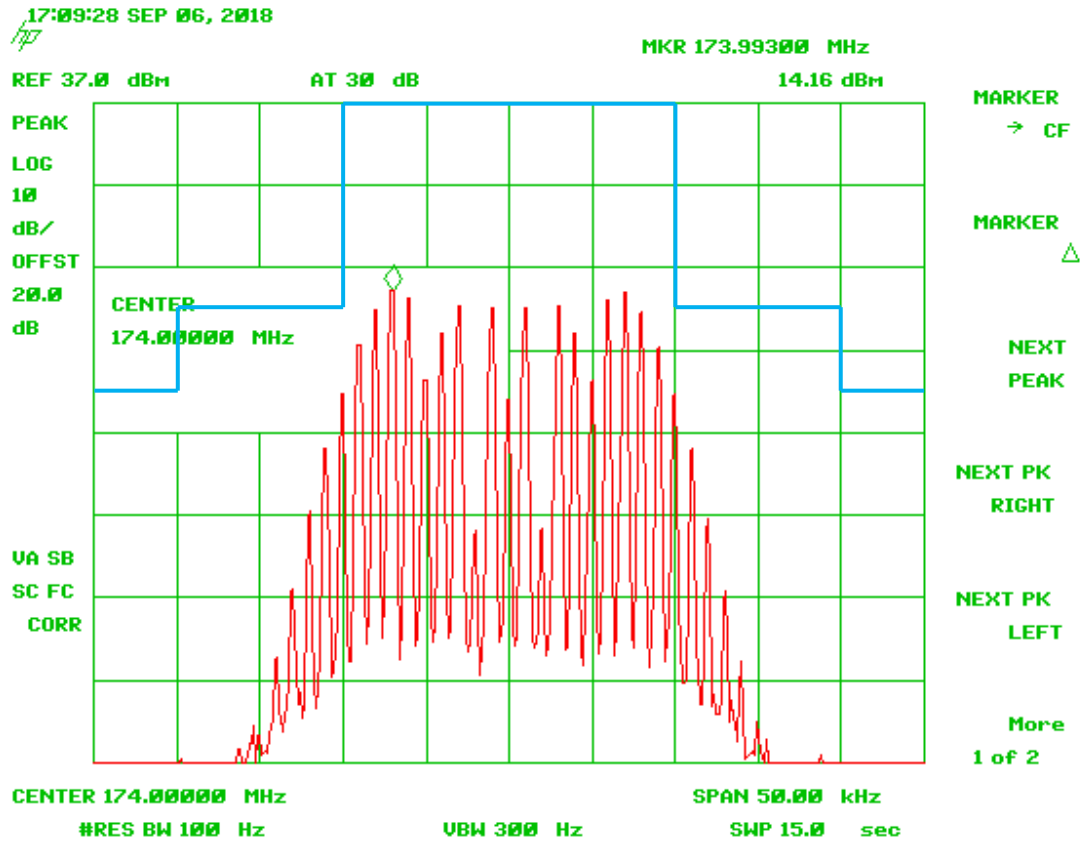


Figure 65. 174 MHz @ 25 kHz + 3.0 dB, Mask B

2.13.2 UHF Channels

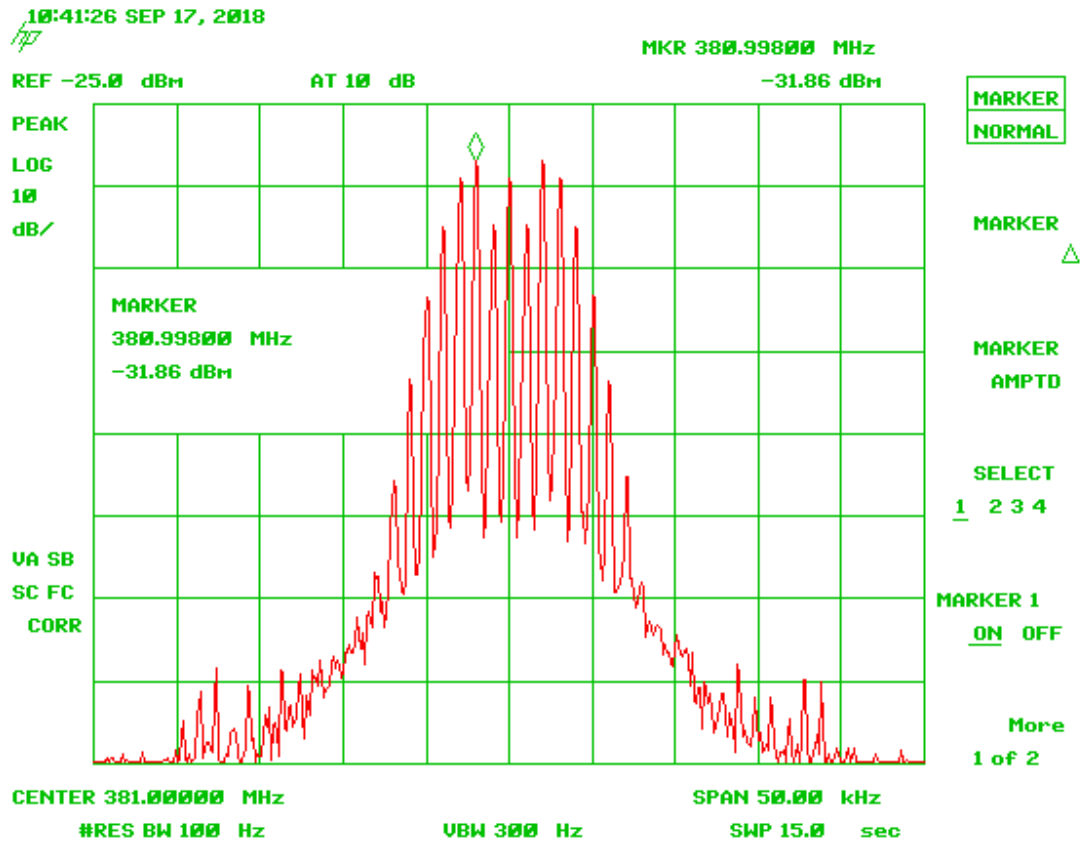


Figure 66. Input 381 MHz @ 12.5 kHz

(Note: Test data for band 138-144 MHz and 380-400 MHz not applicable for FCC certification)

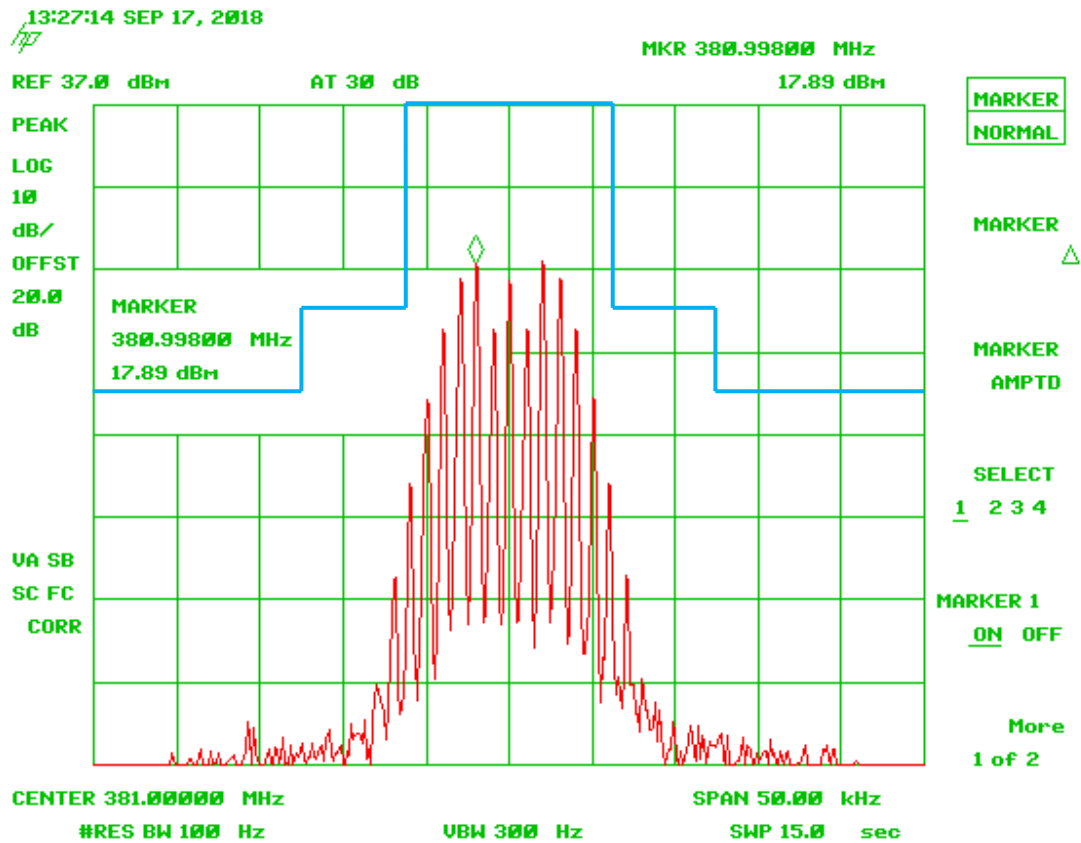


Figure 67. 381 MHz @ 12.5 kHz, Mask B

(Note: Test data for band 138-144 MHz and 380-400 MHz not applicable for FCC certification)

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
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SAFE-1000

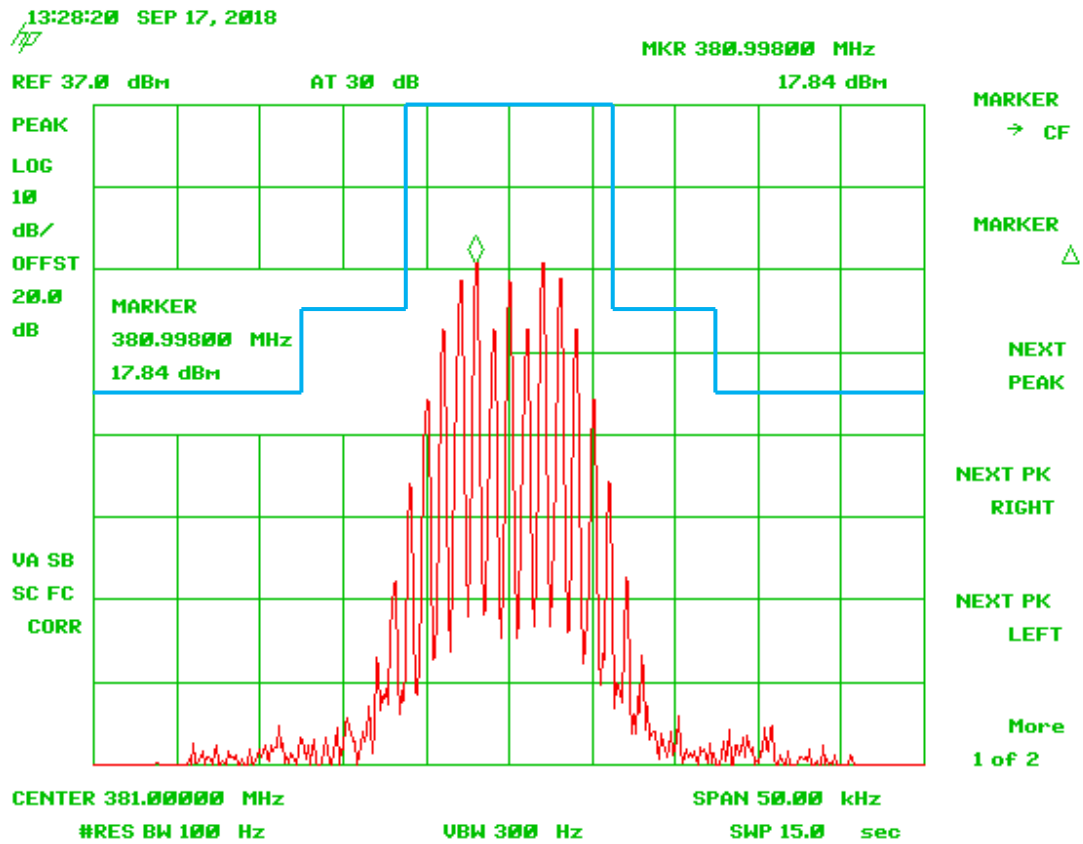


Figure 68. 381 MHz @ 12.5 kHz + 3.0 dB, Mask B

(Note: Test data for band 138-144 MHz and 380-400 MHz not applicable for FCC certification)

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
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SAFE-1000

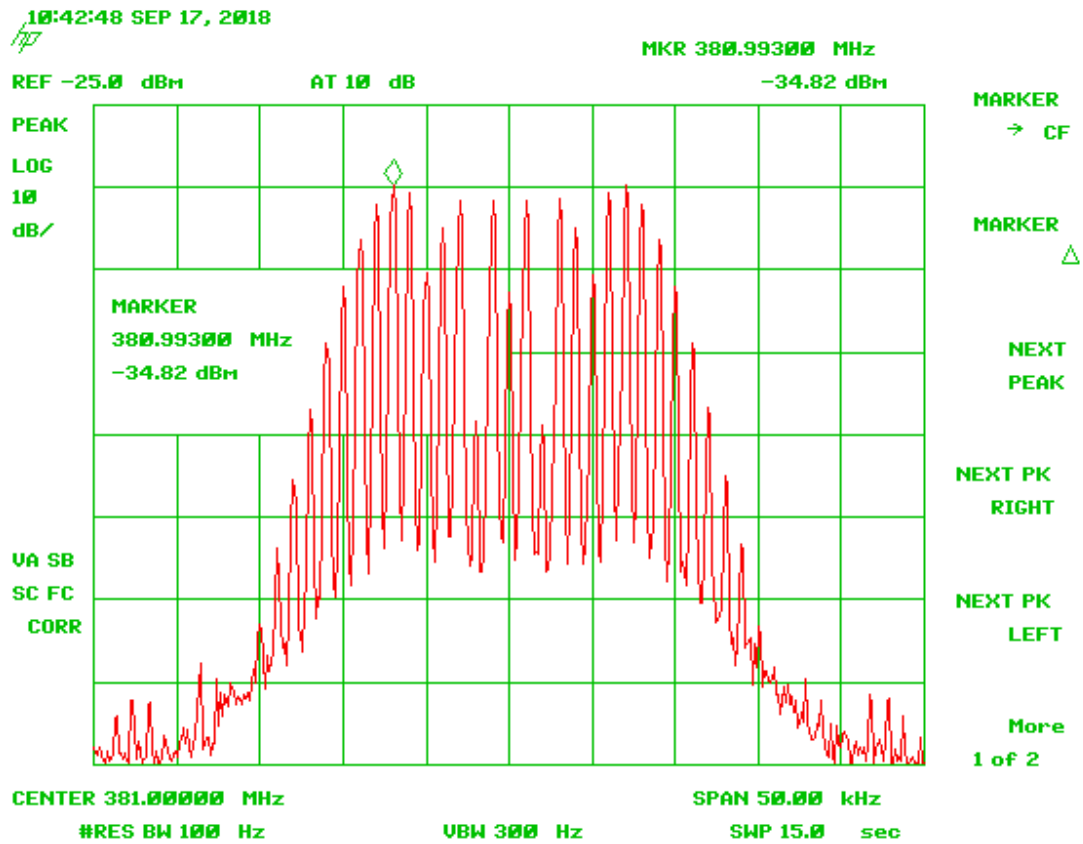


Figure 69. Input 381 MHz @ 25 kHz

(Note: Test data for band 138-144 MHz and 380-400 MHz not applicable for FCC certification)

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
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September 10, 2018
Safe-Com Wireless
SAFE-1000

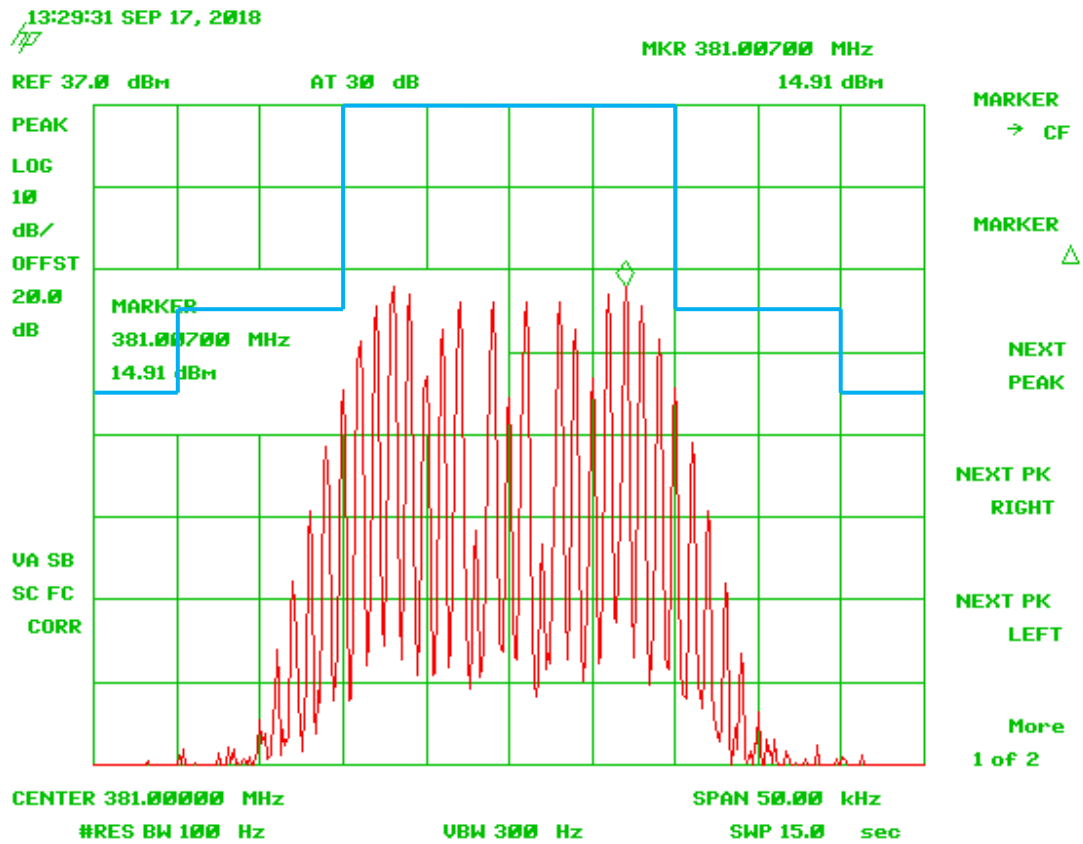


Figure 70. 381 MHz @ 25 kHz, Mask B

(Note: Test data for band 138-144 MHz and 380-400 MHz not applicable for FCC certification)

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
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Safe-Com Wireless
SAFE-1000

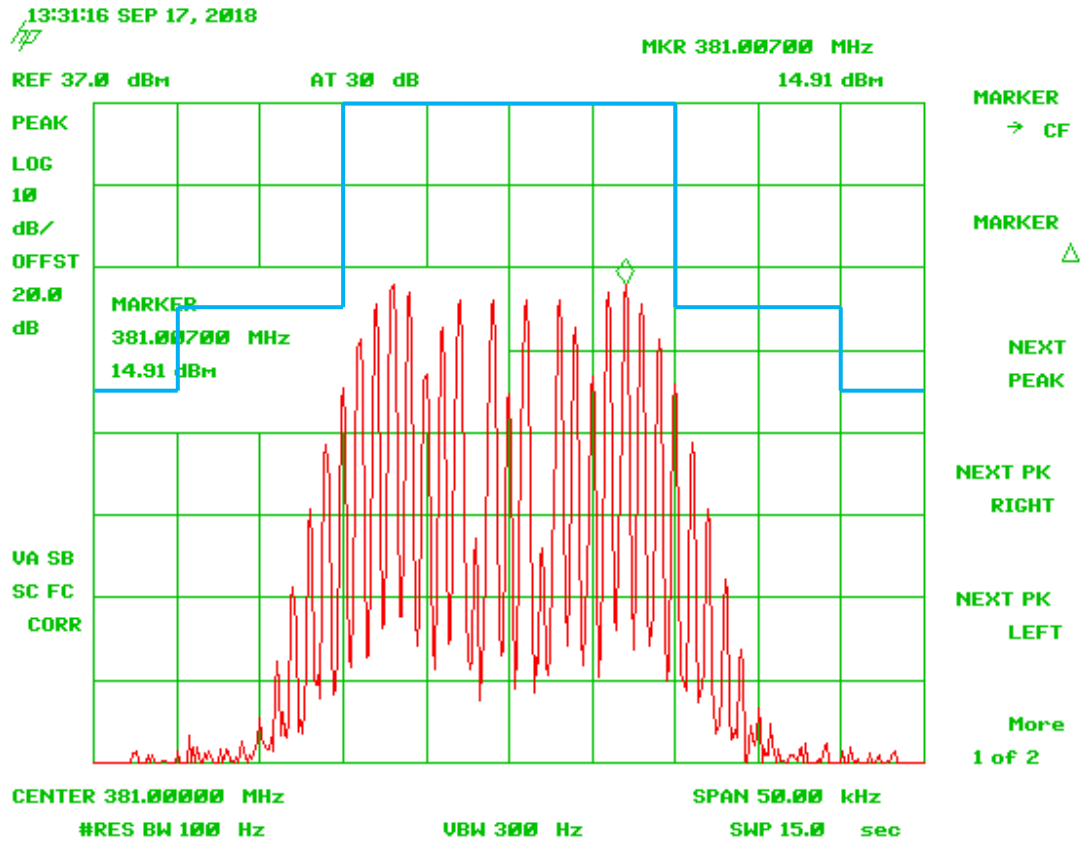


Figure 71. 381 MHz @ 25 kHz + 3.0 dB, Mask B

(Note: Test data for band 138-144 MHz and 380-400 MHz not applicable for FCC certification)

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
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18-0181
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SAFE-1000

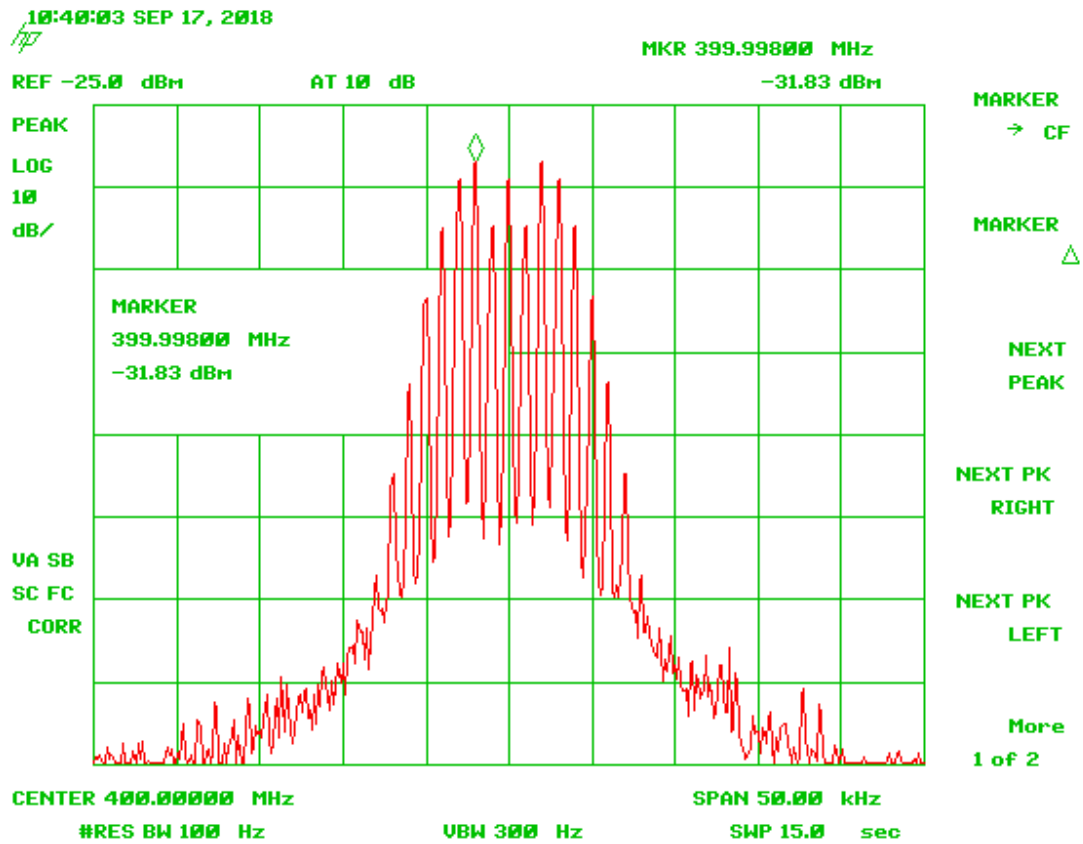


Figure 72. Input 400 MHz @ 12.5 kHz

(Note: Test data for band 138-144 MHz and 380-400 MHz not applicable for FCC certification)

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
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22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

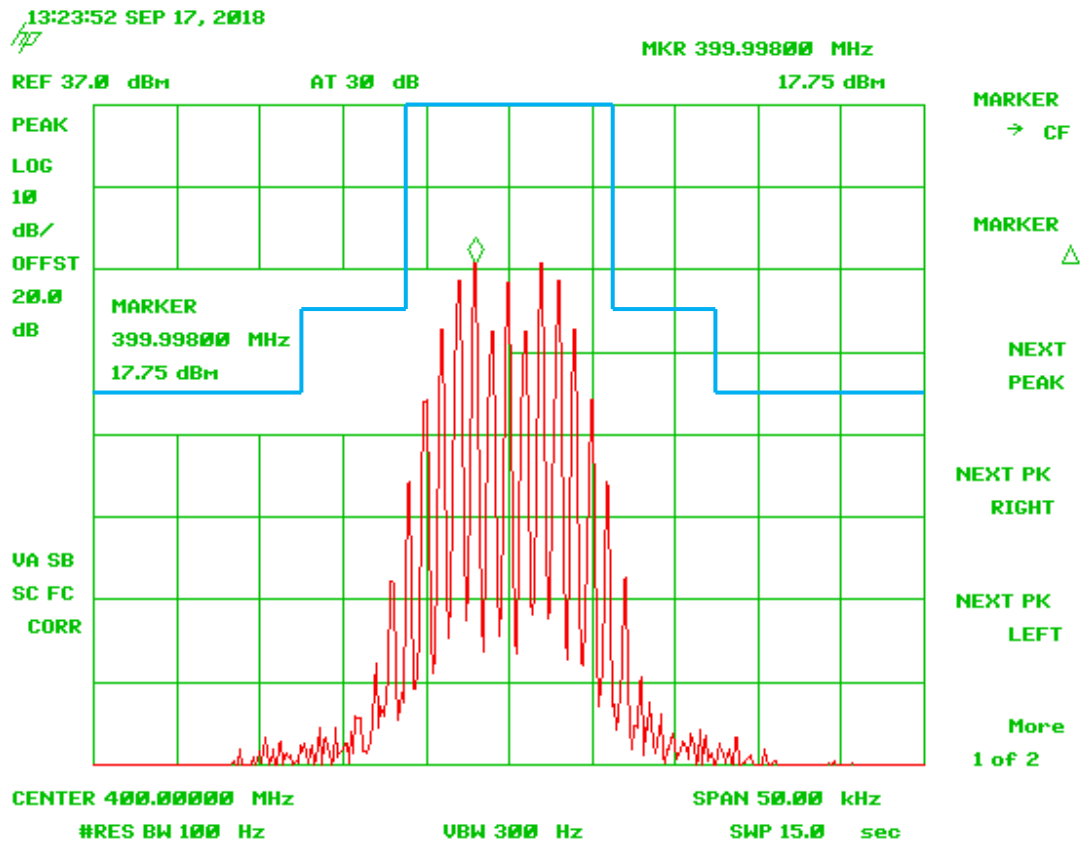


Figure 73. 400 MHz @ 12.5 kHz, Mask B

(Note: Test data for band 138-144 MHz and 380-400 MHz not applicable for FCC certification)

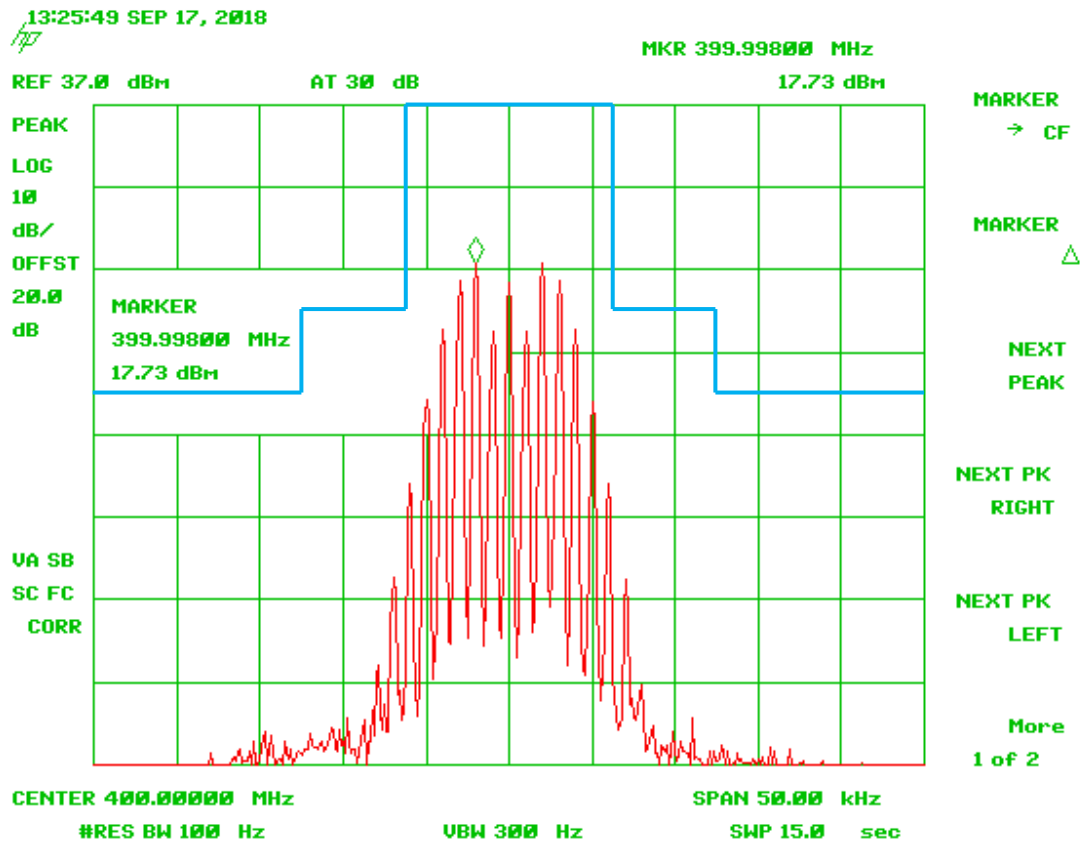


Figure 74. 400 MHz @ 12.5 kHz + 3.0 dB, Mask B

(Note: Test data for band 138-144 MHz and 380-400 MHz not applicable for FCC certification)

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

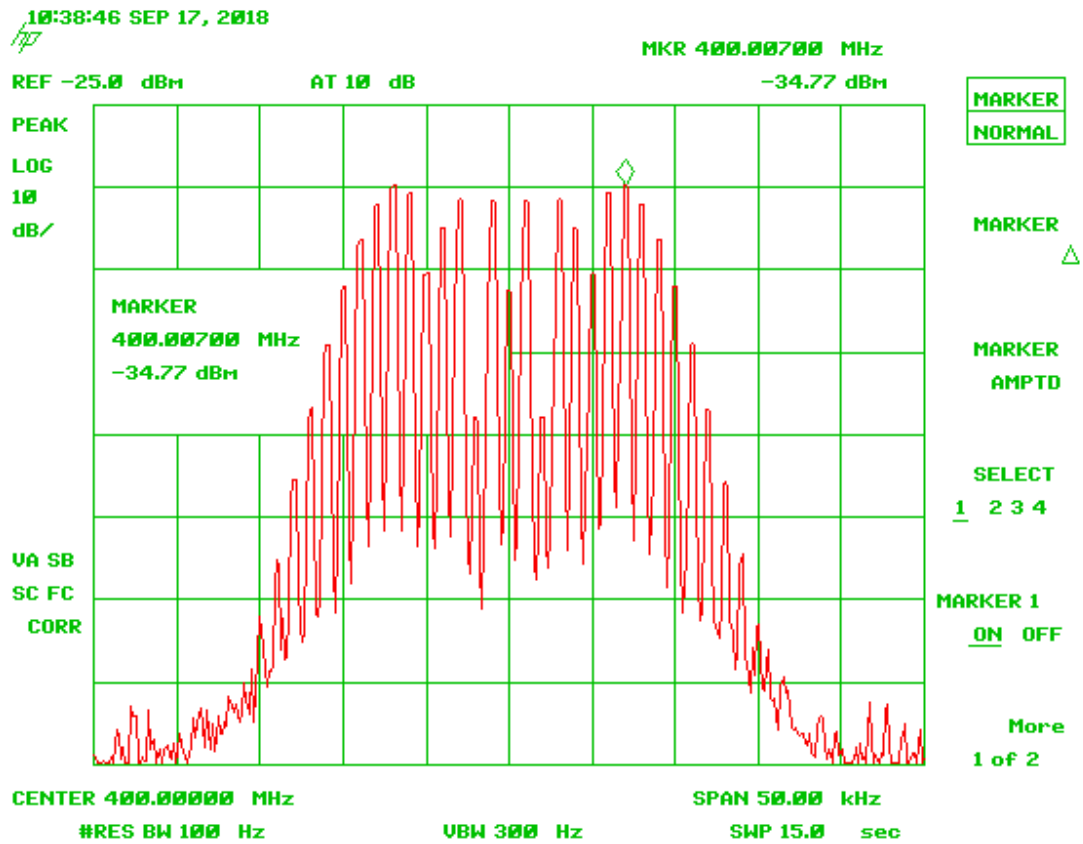


Figure 75. Input 400 MHz @ 25 kHz

(Note: Test data for band 138-144 MHz and 380-400 MHz not applicable for FCC certification)

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

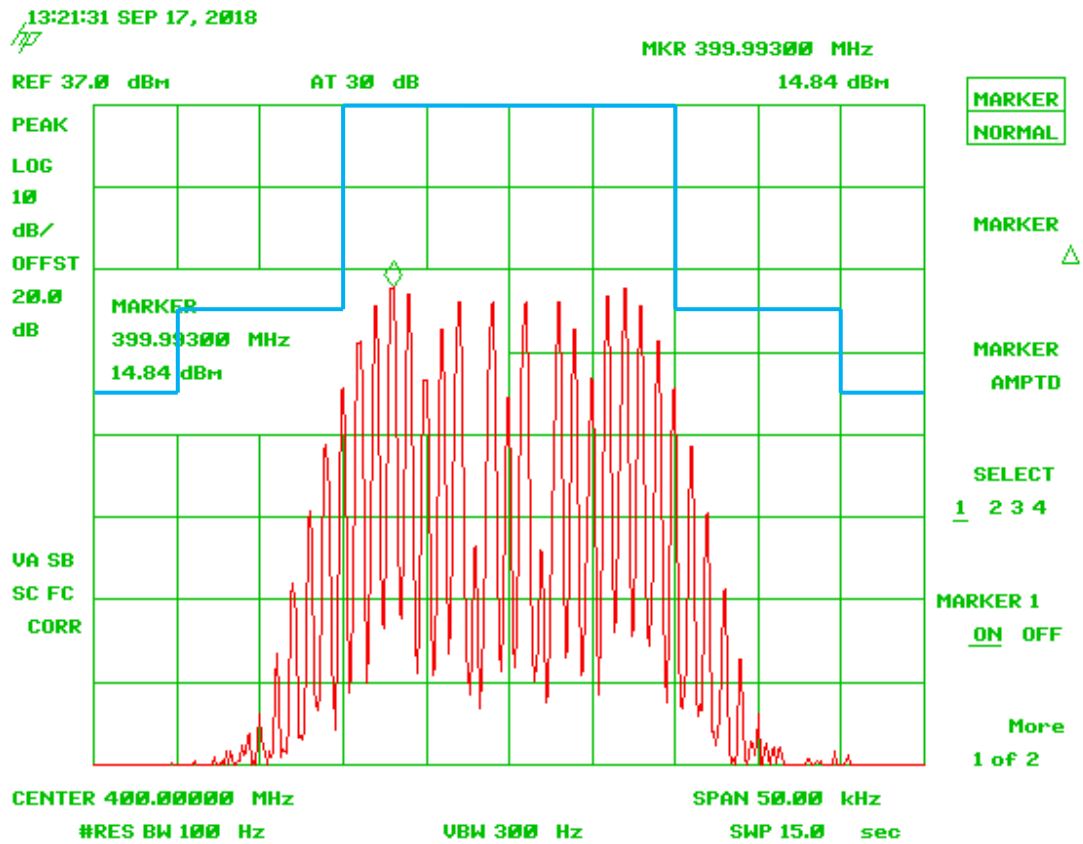


Figure 76. 400 MHz @ 25 kHz, Mask B

(Note: Test data for band 138-144 MHz and 380-400 MHz not applicable for FCC certification)

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

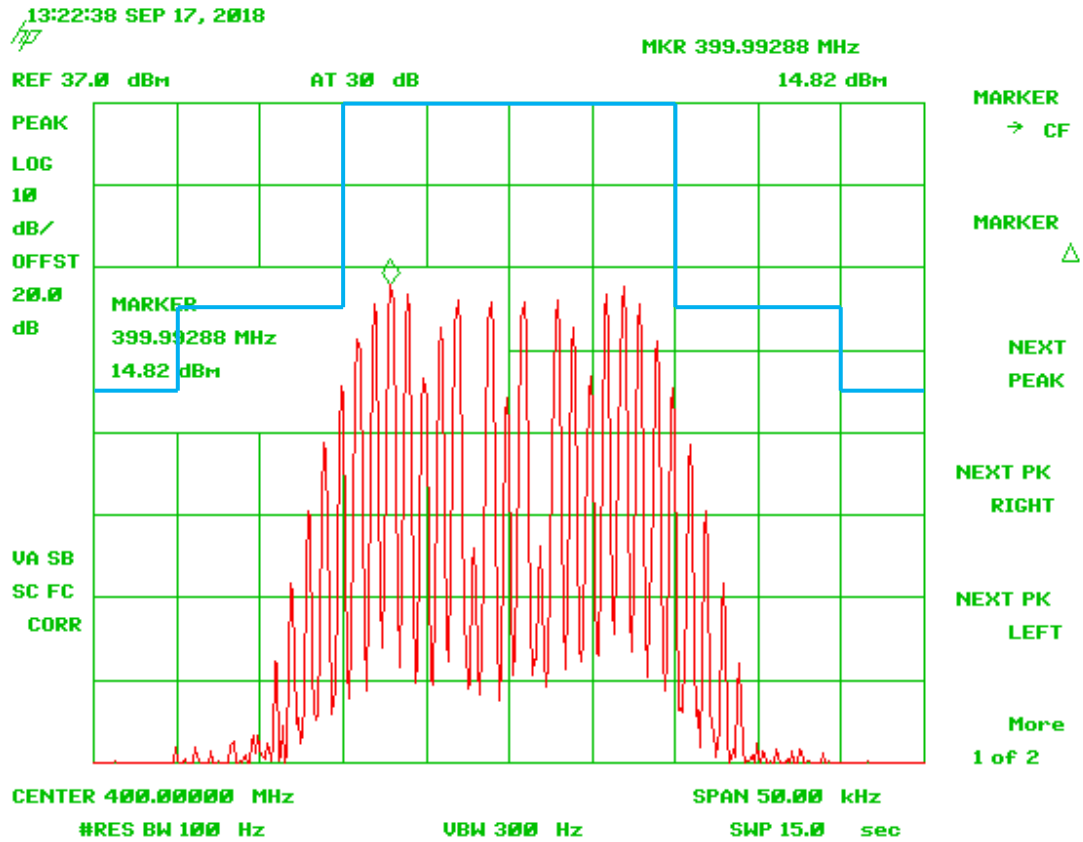


Figure 77. 400 MHz @ 25 kHz + 3.0 dB, Mask B

(Note: Test data for band 138-144 MHz and 380-400 MHz not applicable for FCC certification)

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
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18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

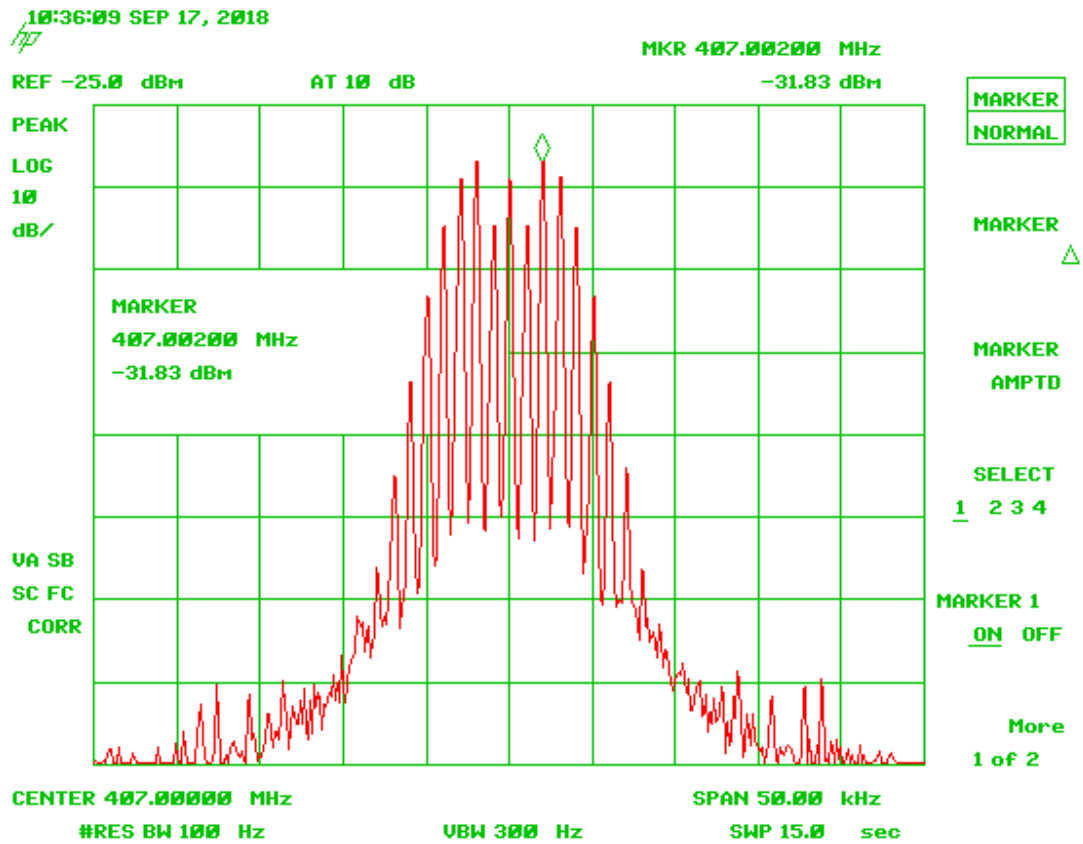


Figure 78. Input 407 MHz @ 12.5 kHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

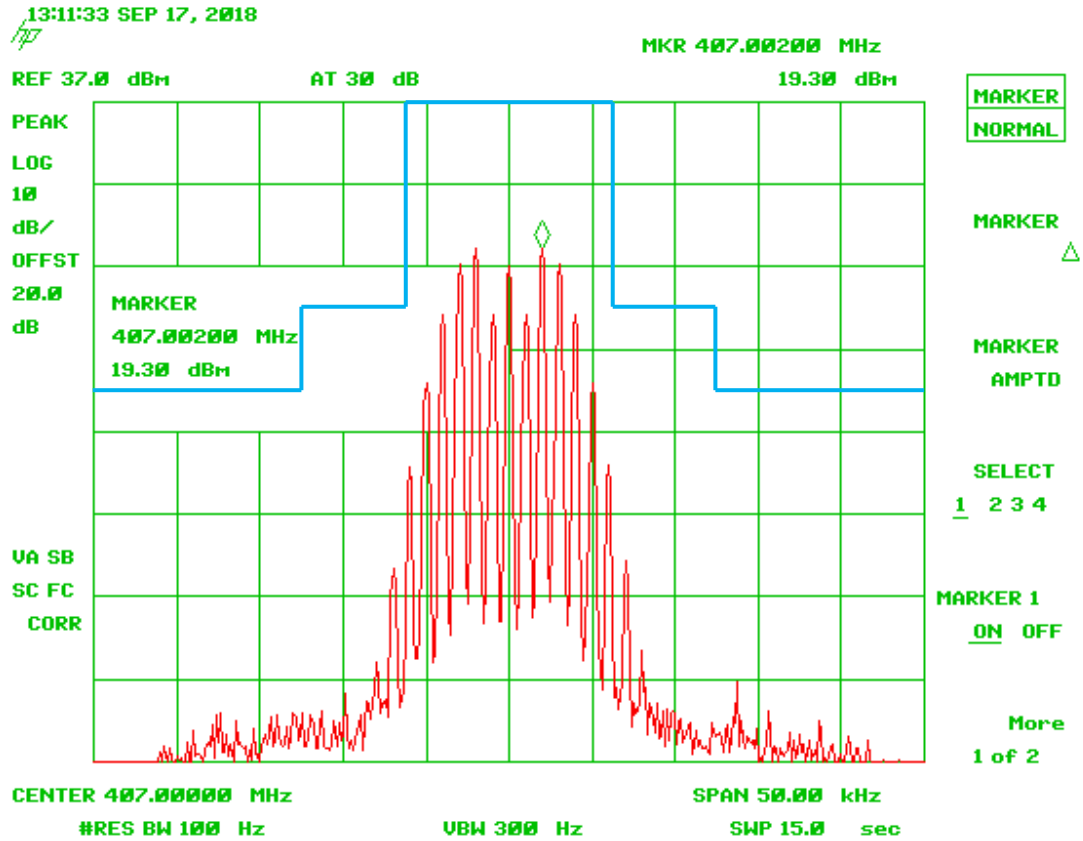


Figure 79. 407 MHz @ 12.5 kHz, Mask B

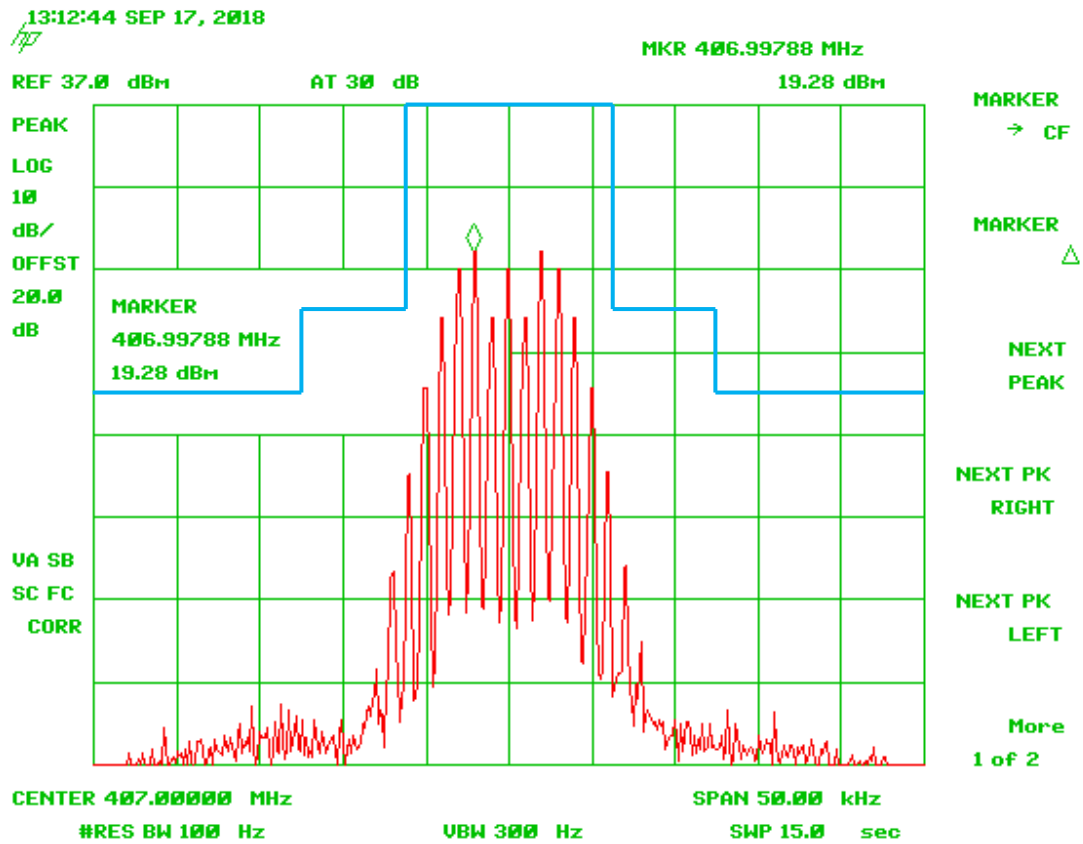


Figure 80. 407 MHz @ 12.5 kHz + 3.0 dB, Mask B

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
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Safe-Com Wireless
SAFE-1000

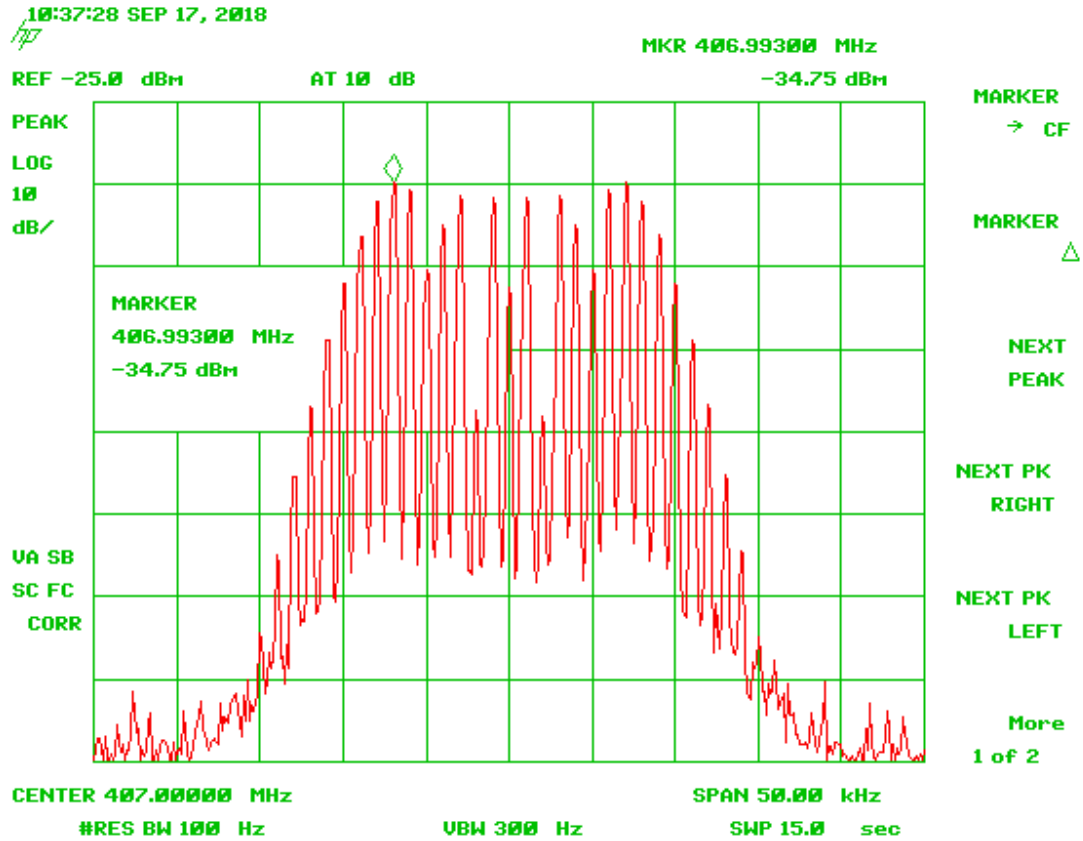


Figure 81. Input 407 MHz @ 25 kHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

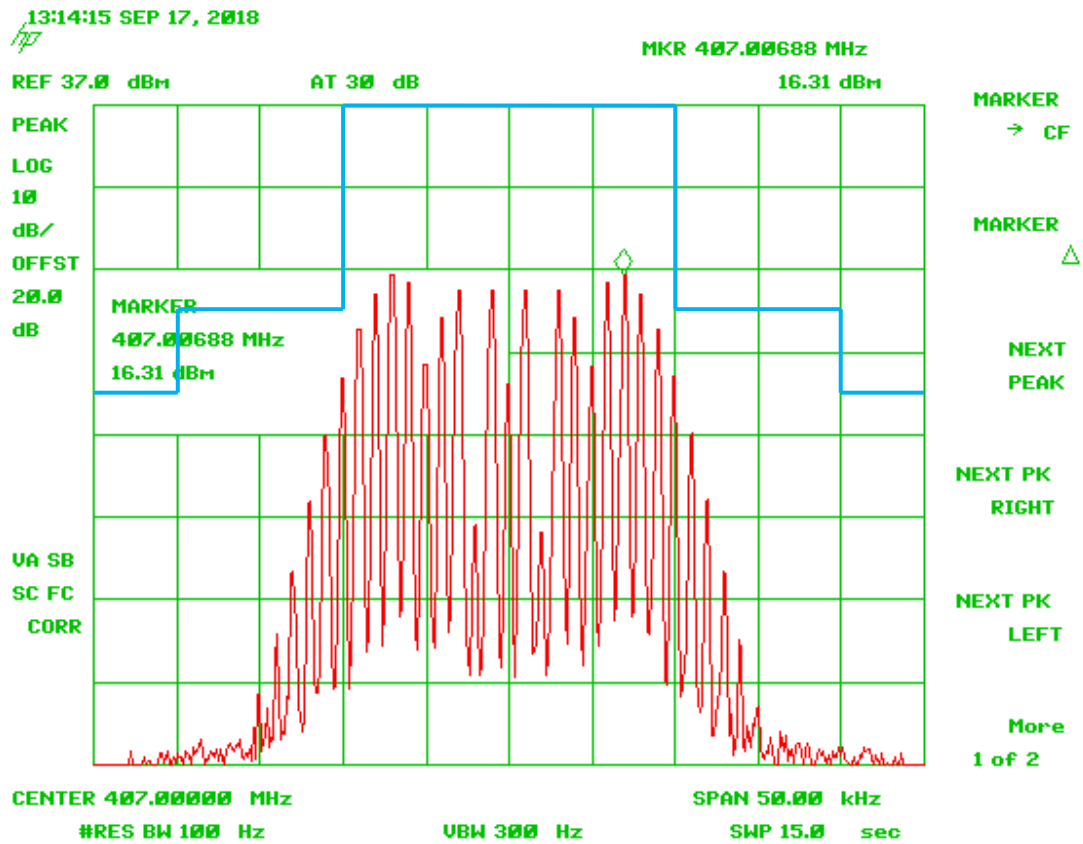


Figure 82. 407 MHz @ 25 kHz, Mask B

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

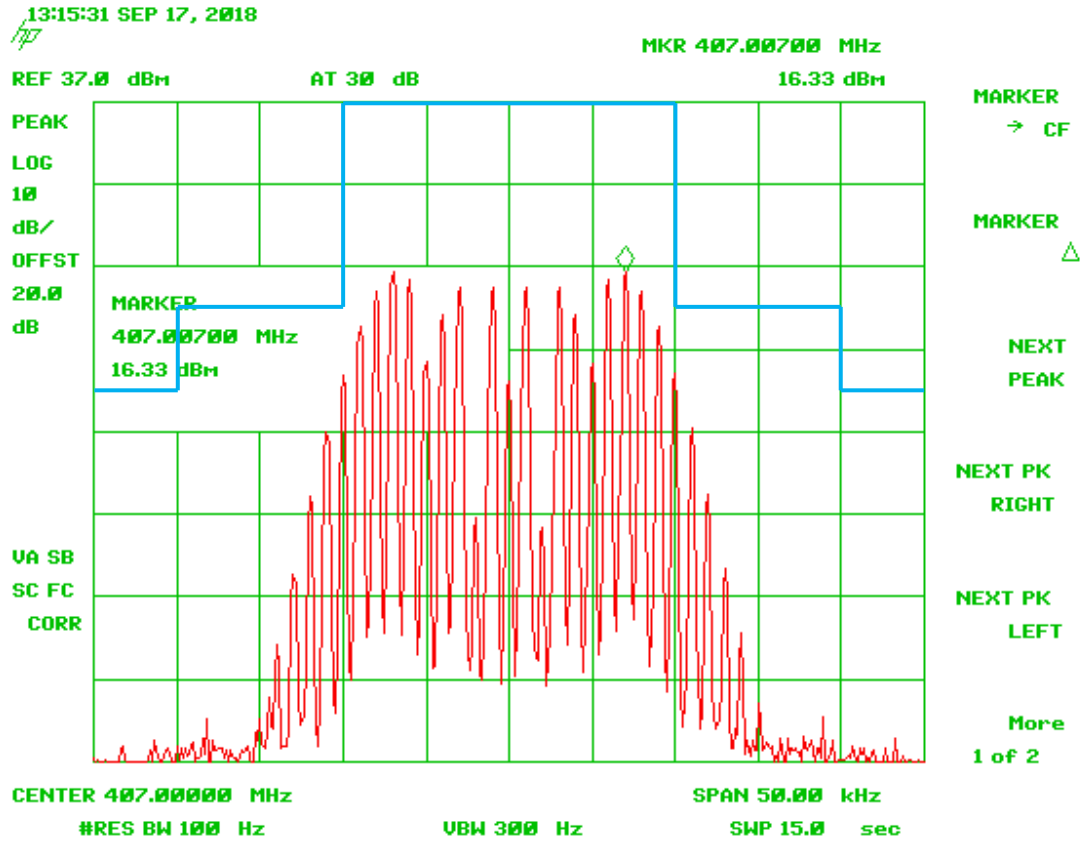


Figure 83. 407 MHz @ 25 kHz + 3.0 dB, Mask B

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

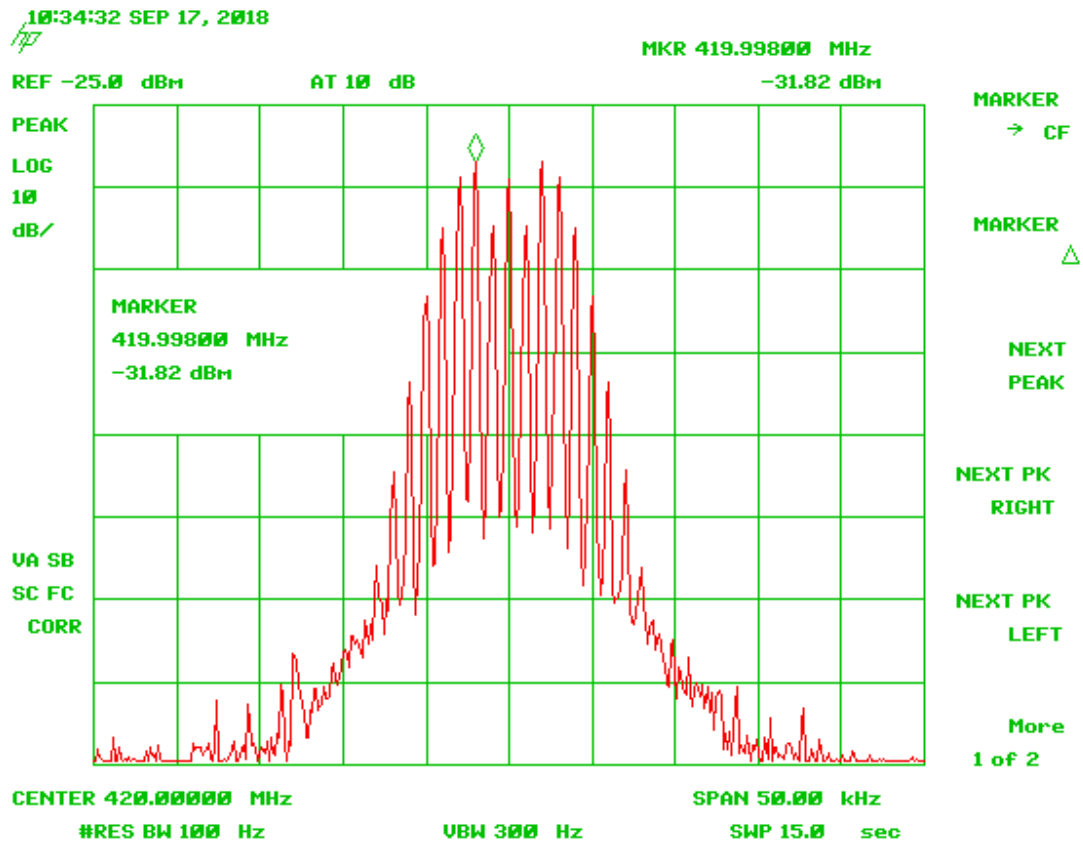


Figure 84. Input 420 MHz @ 12.5 kHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

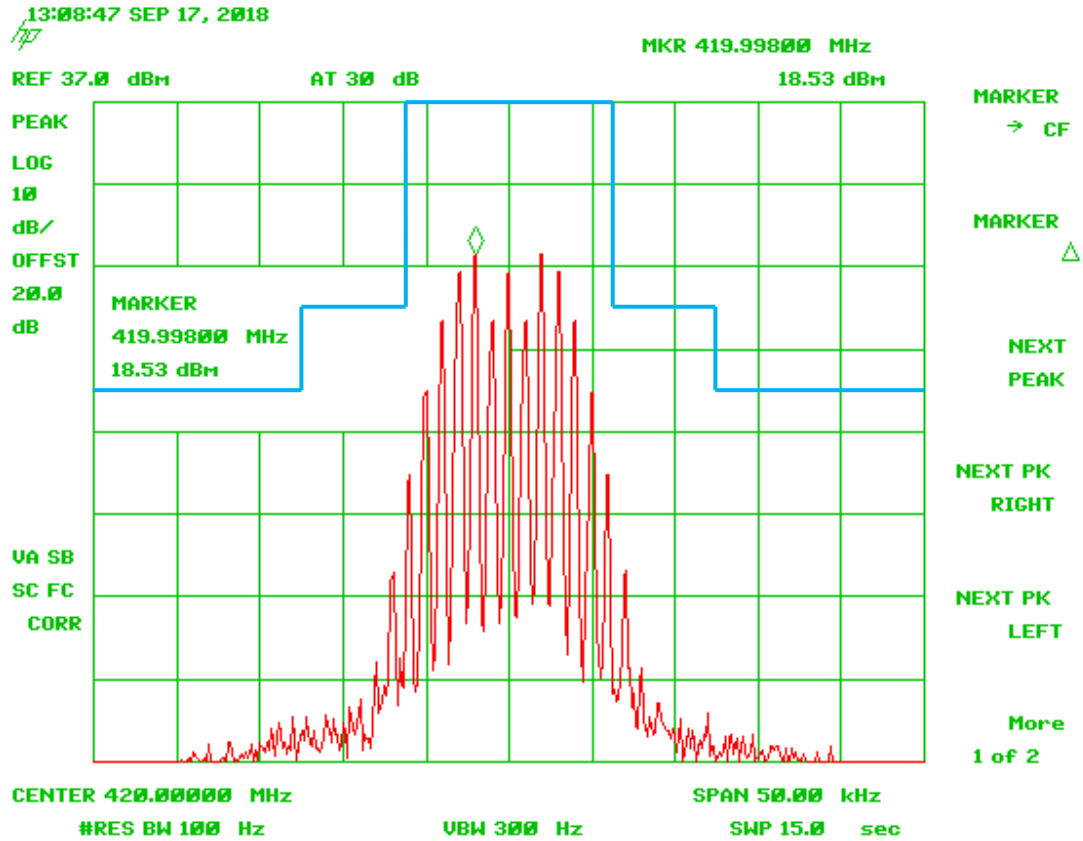


Figure 85. 420 MHz @ 12.5 kHz, Mask B

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

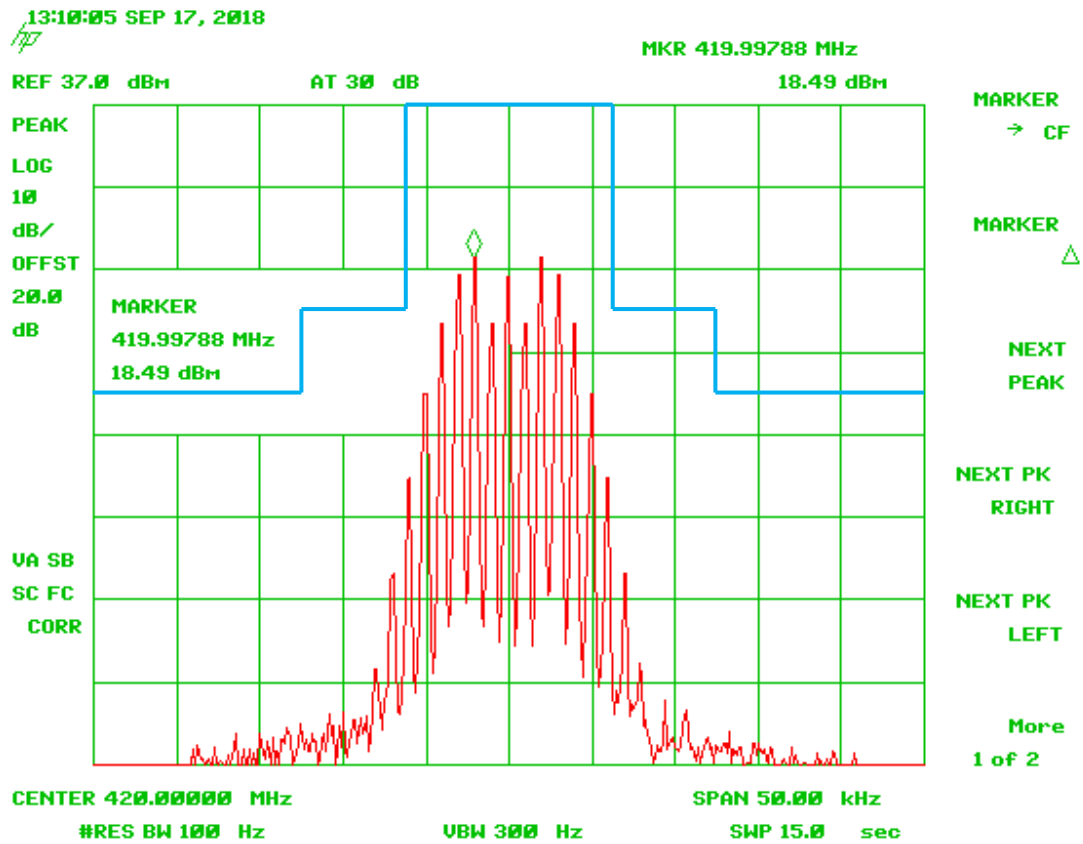


Figure 86. 420 MHz @ 12.5 kHz + 3.0 dB, Mask B

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
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Safe-Com Wireless
SAFE-1000

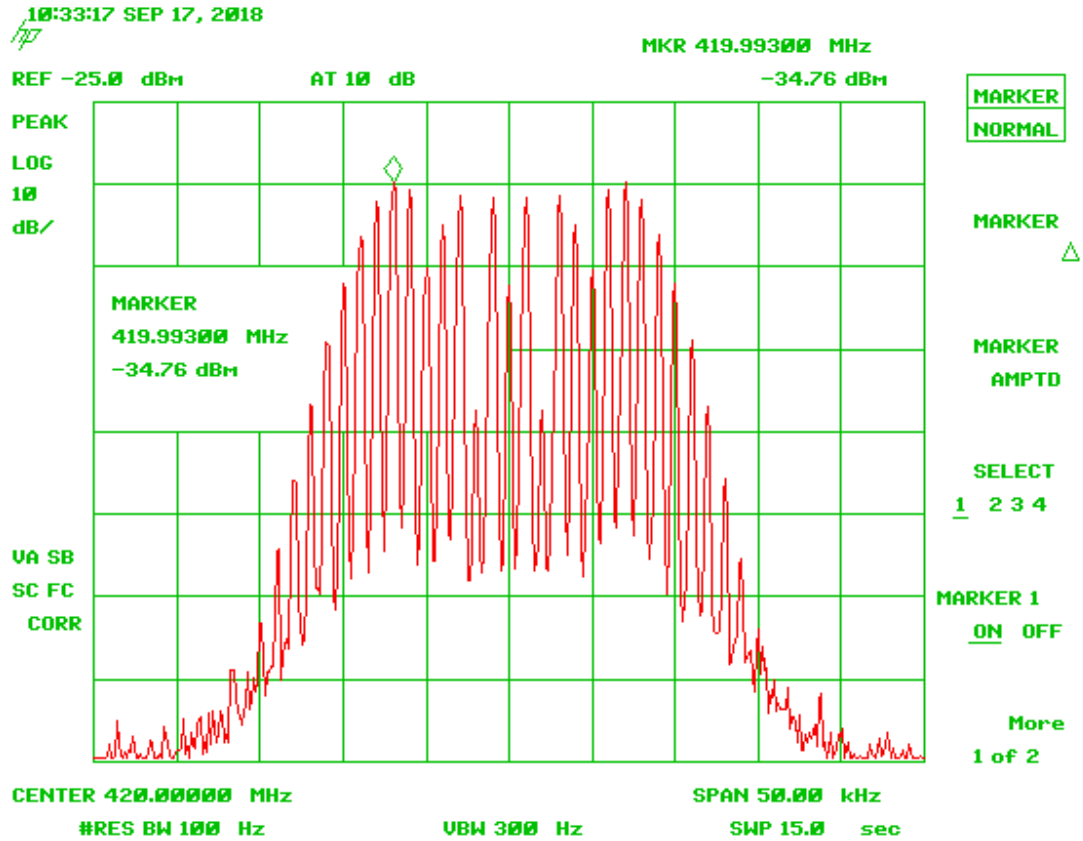


Figure 87. Input 420 MHz @ 25 kHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

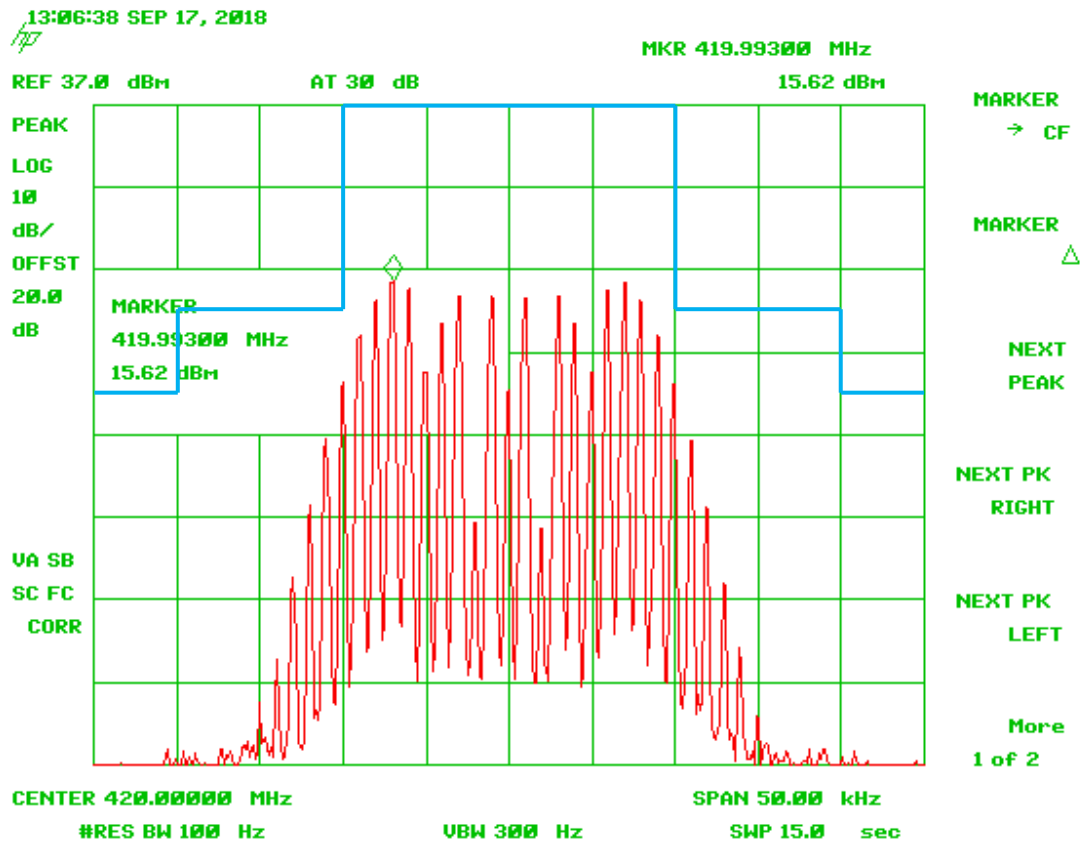


Figure 88. 420 MHz @ 25 kHz, Mask B

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

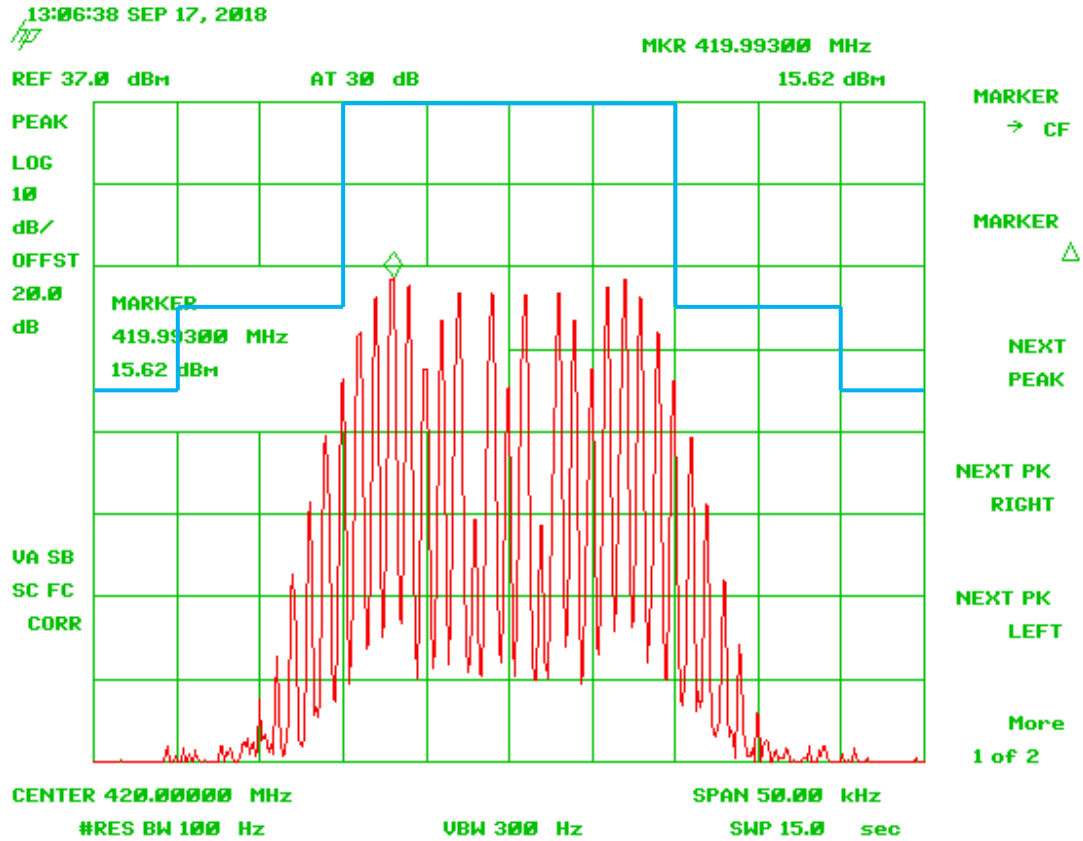


Figure 89. 420 MHz @ 25 kHz + 3.0 dB, Mask B

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

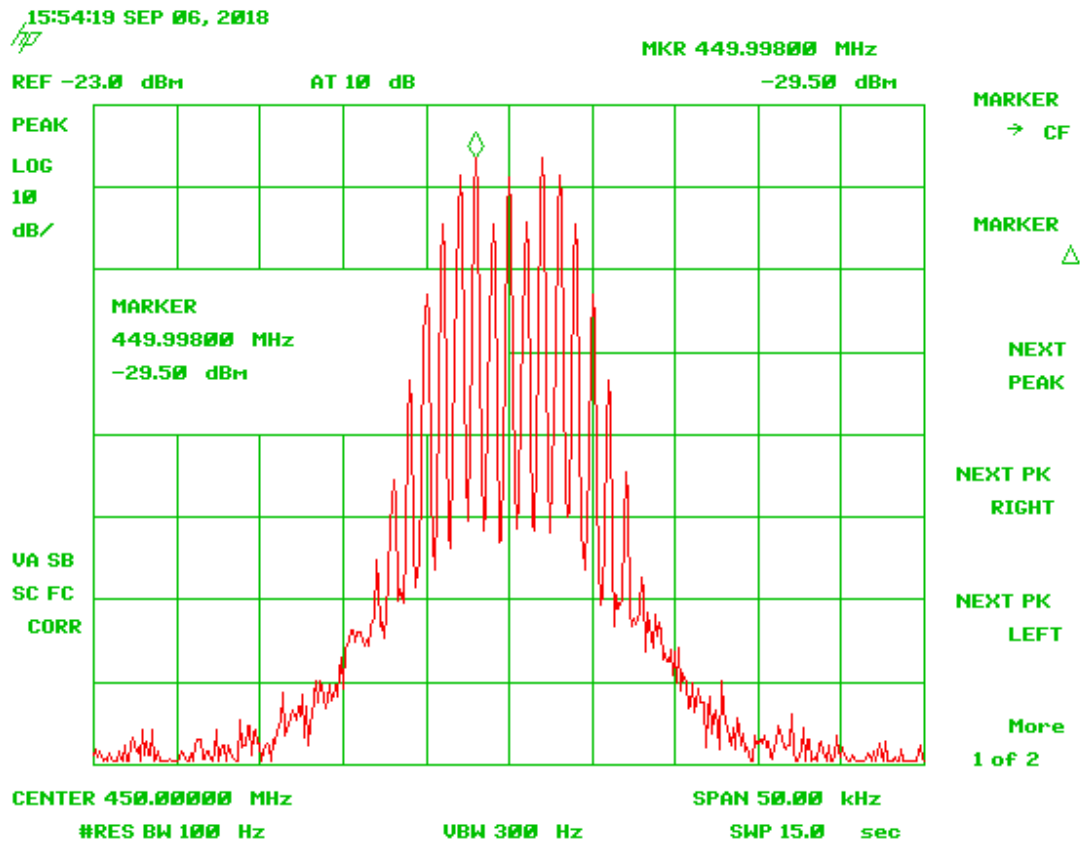


Figure 90. Input 450 MHz @ 12.5 kHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

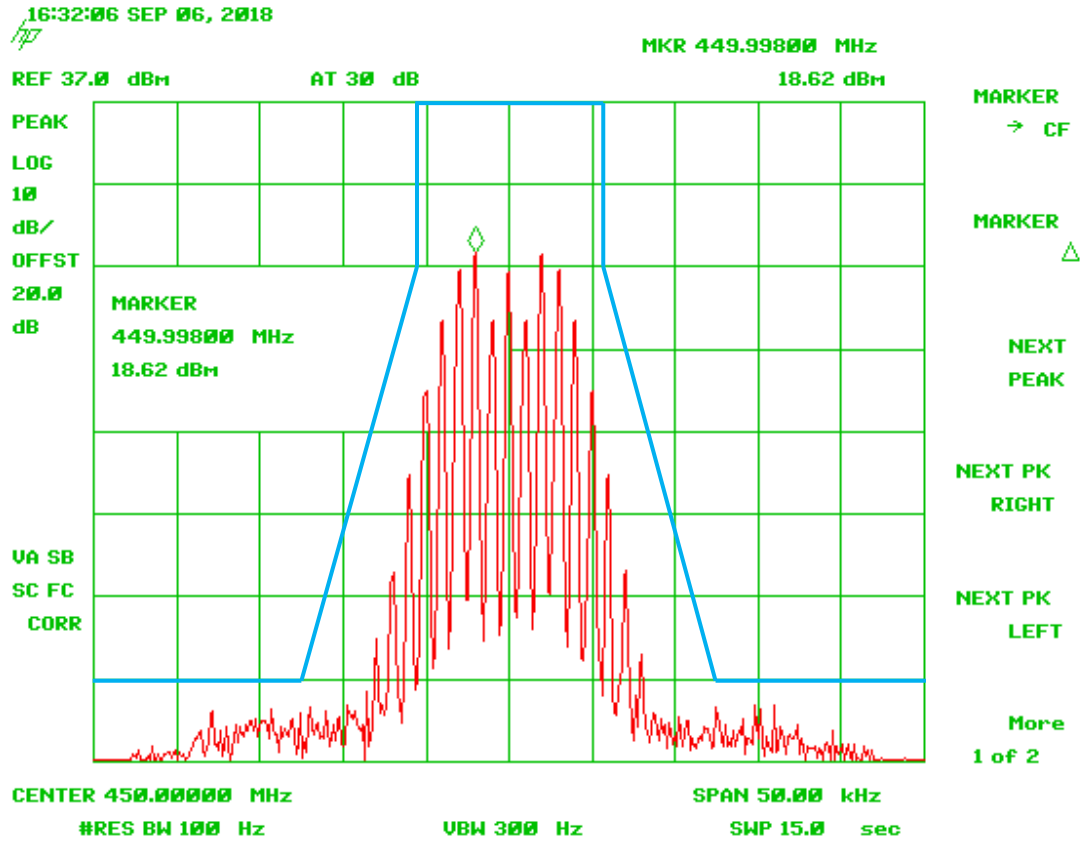


Figure 91. 450 MHz @ 12.5 kHz, Mask D

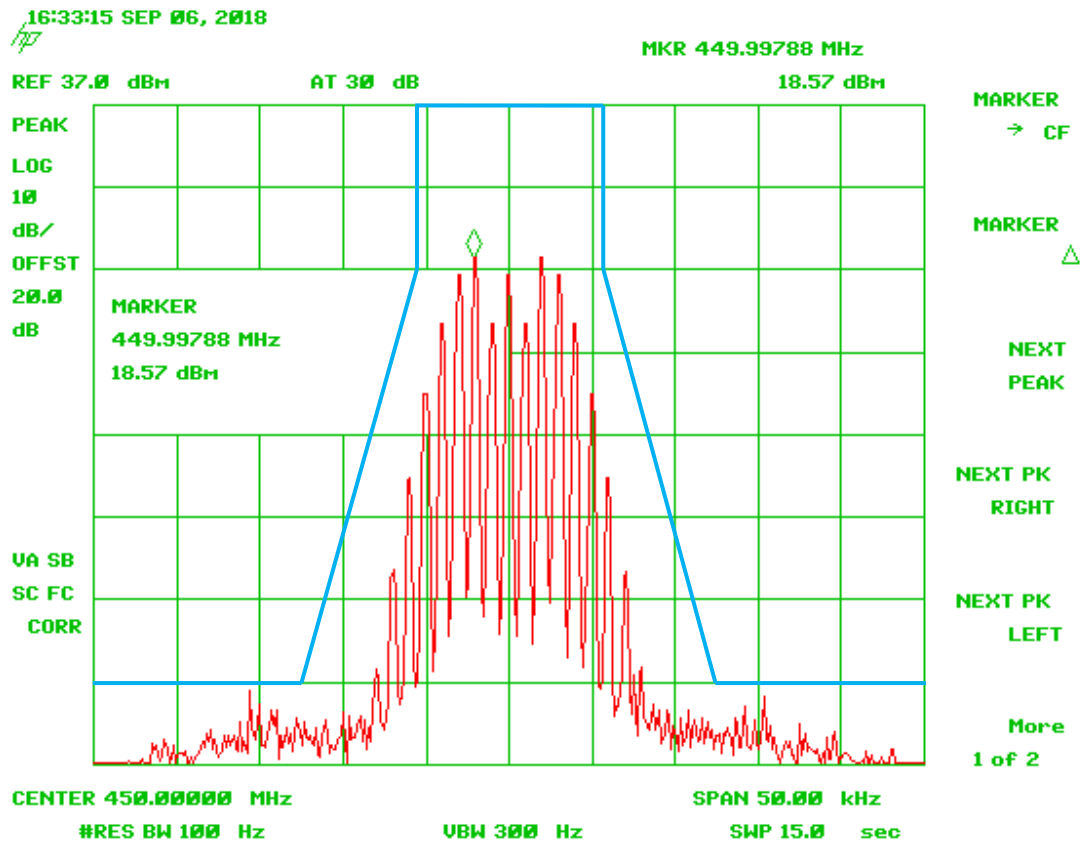


Figure 92. 450 MHz @ 12.5 kHz + 3.0 dB, Mask D

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
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SAFE-1000

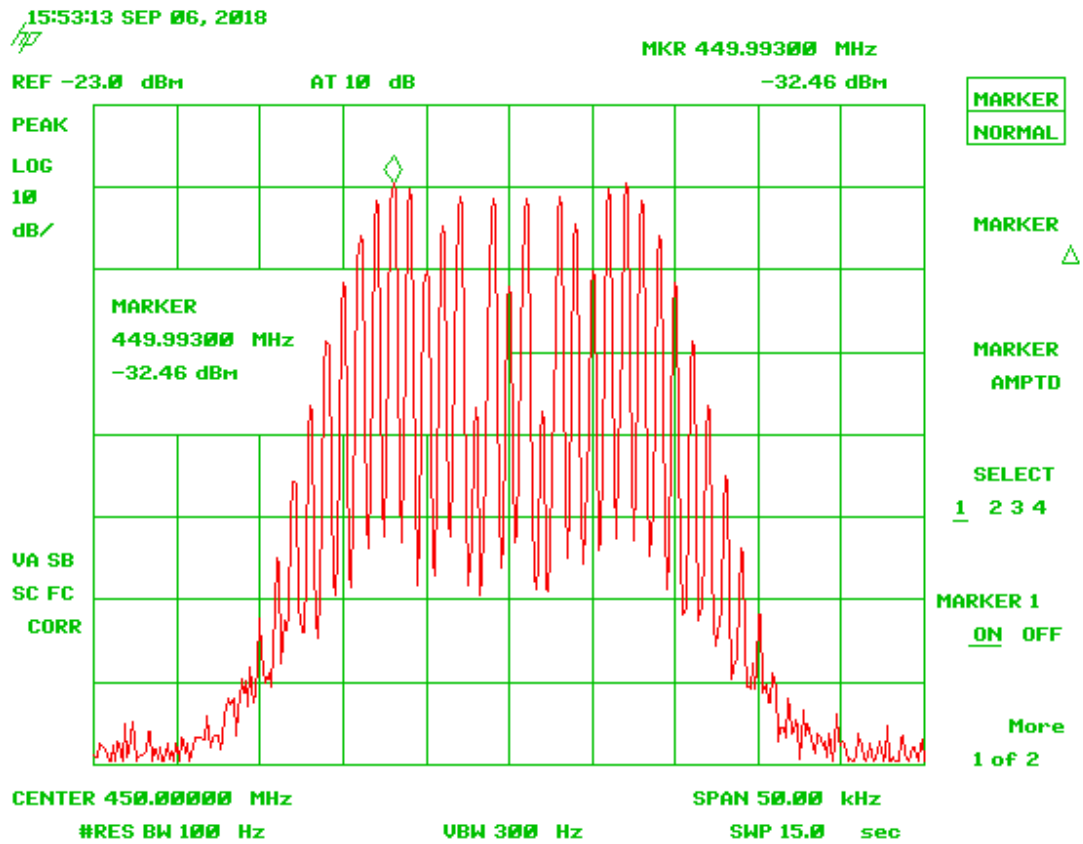


Figure 93. Input 450 MHz @ 25 kHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

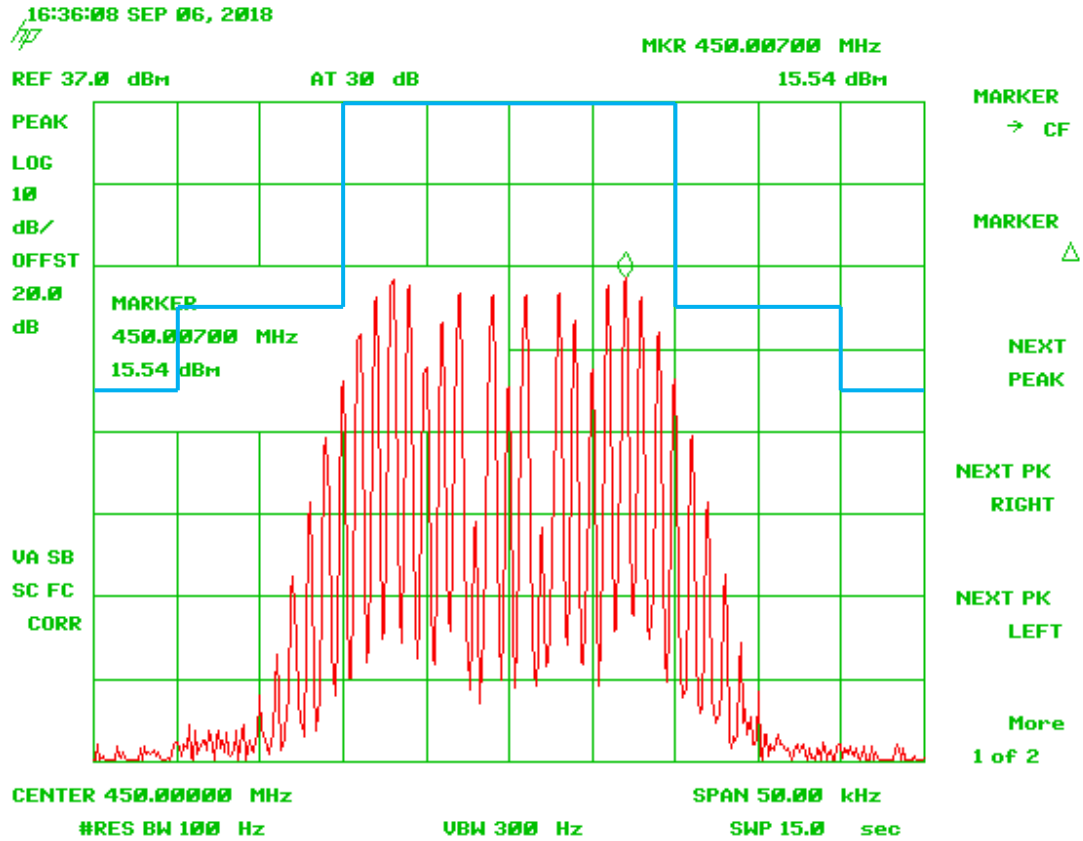


Figure 94. 450 MHz @ 25 kHz, Mask B

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

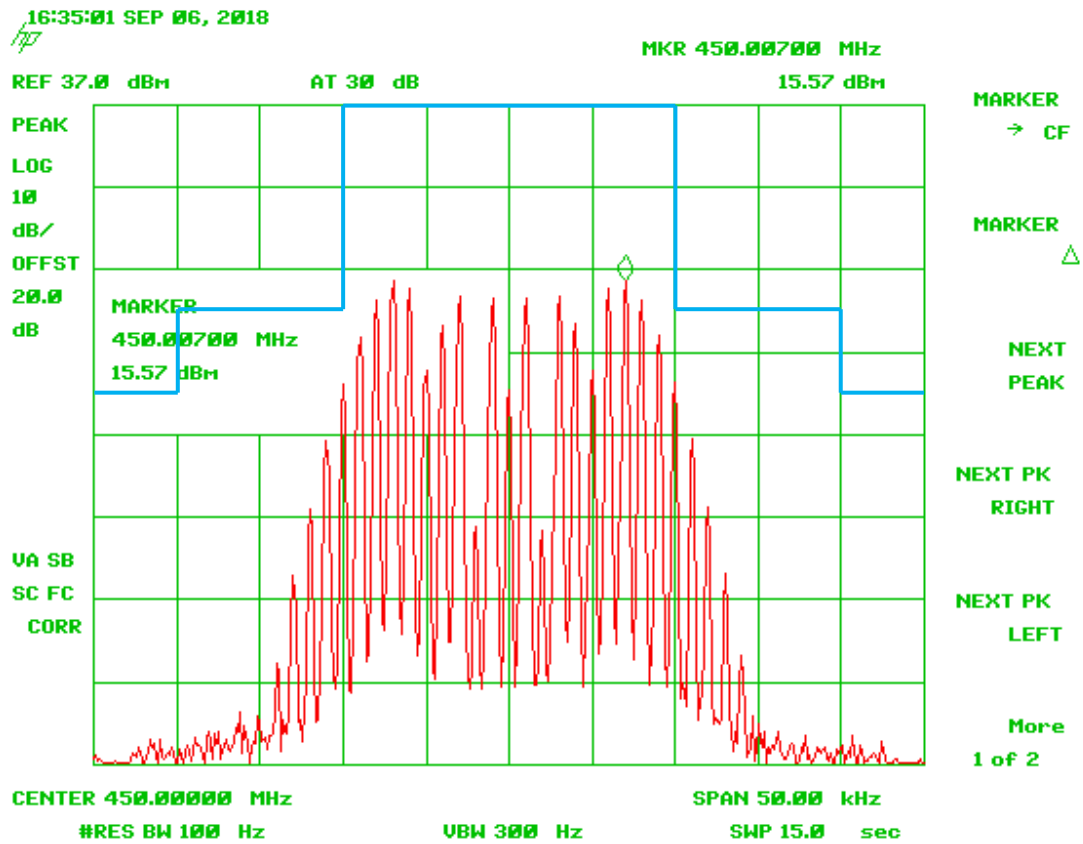


Figure 95. 450 MHz @ 25 kHz + 3.0 dB, Mask B

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

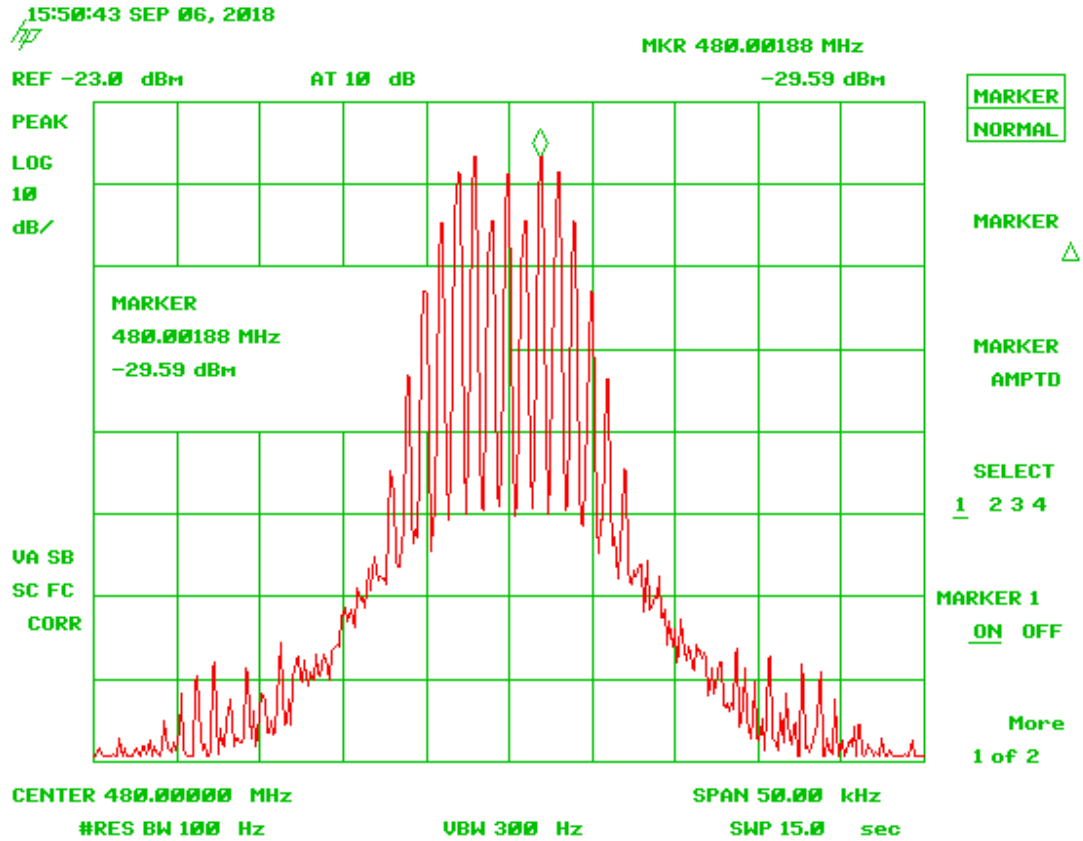


Figure 96. Input 480 MHz @ 12.5 kHz

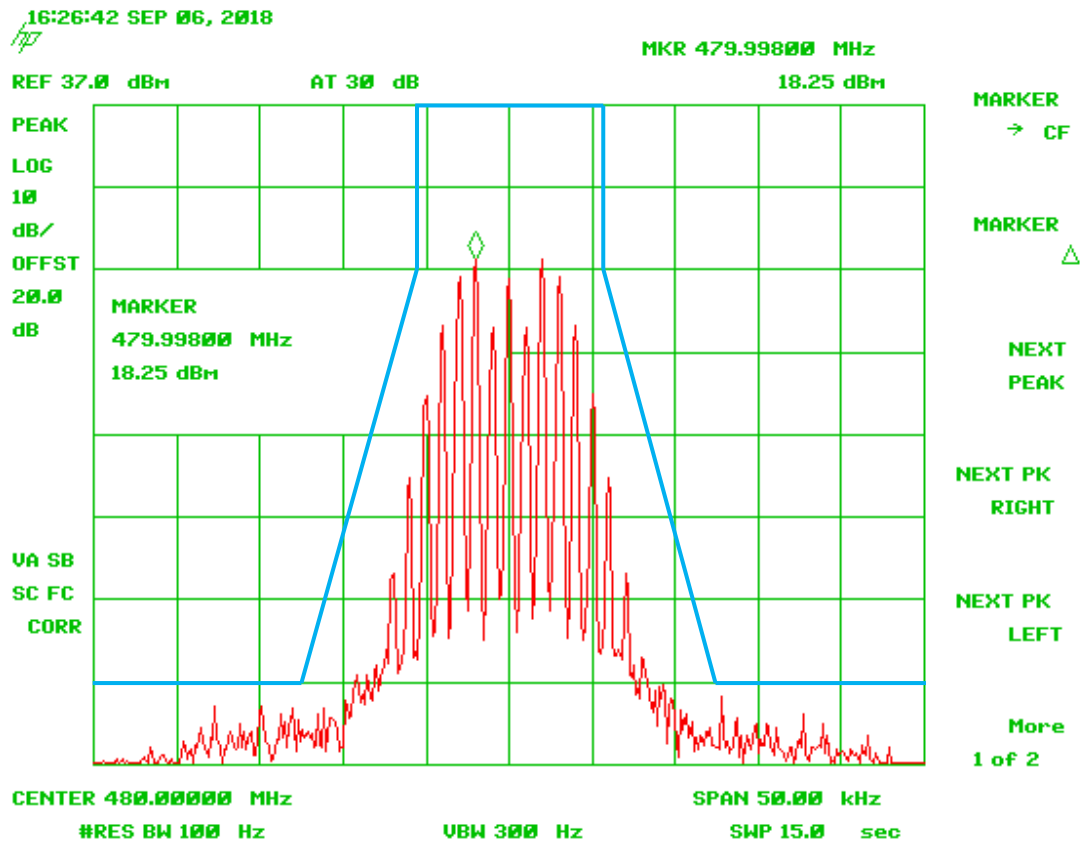


Figure 97. 480 MHz @ 12.5 kHz, Mask D

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

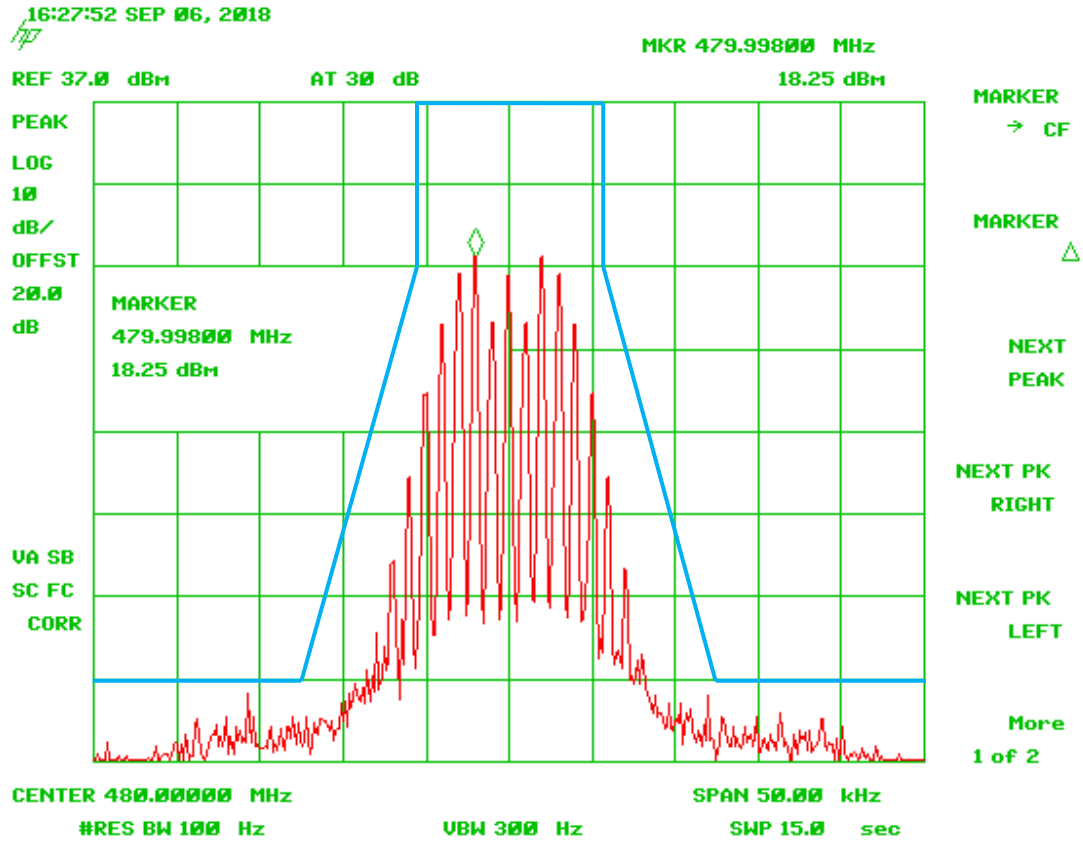


Figure 98. 480 MHz @ 12.5 kHz + 3.0 dB, Mask D

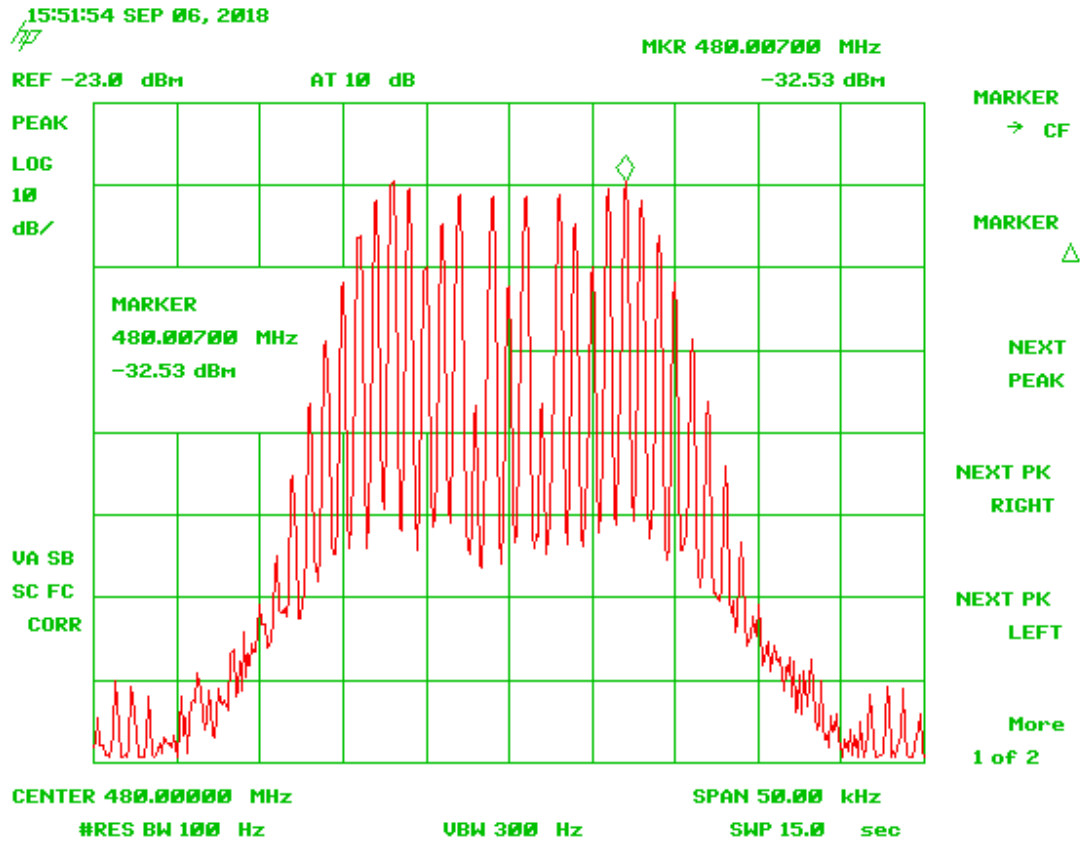


Figure 99. Input 480 MHz @ 25 kHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

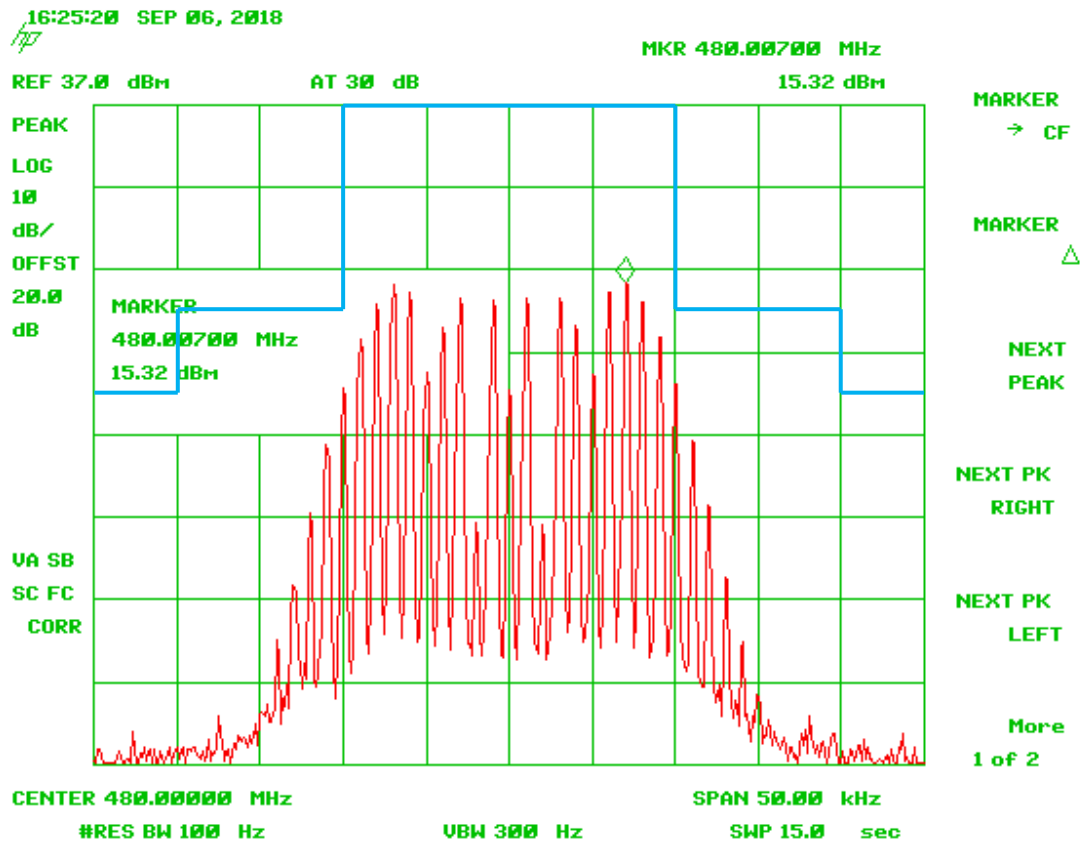


Figure 100. 480 MHz @ 25 kHz, Mask B

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

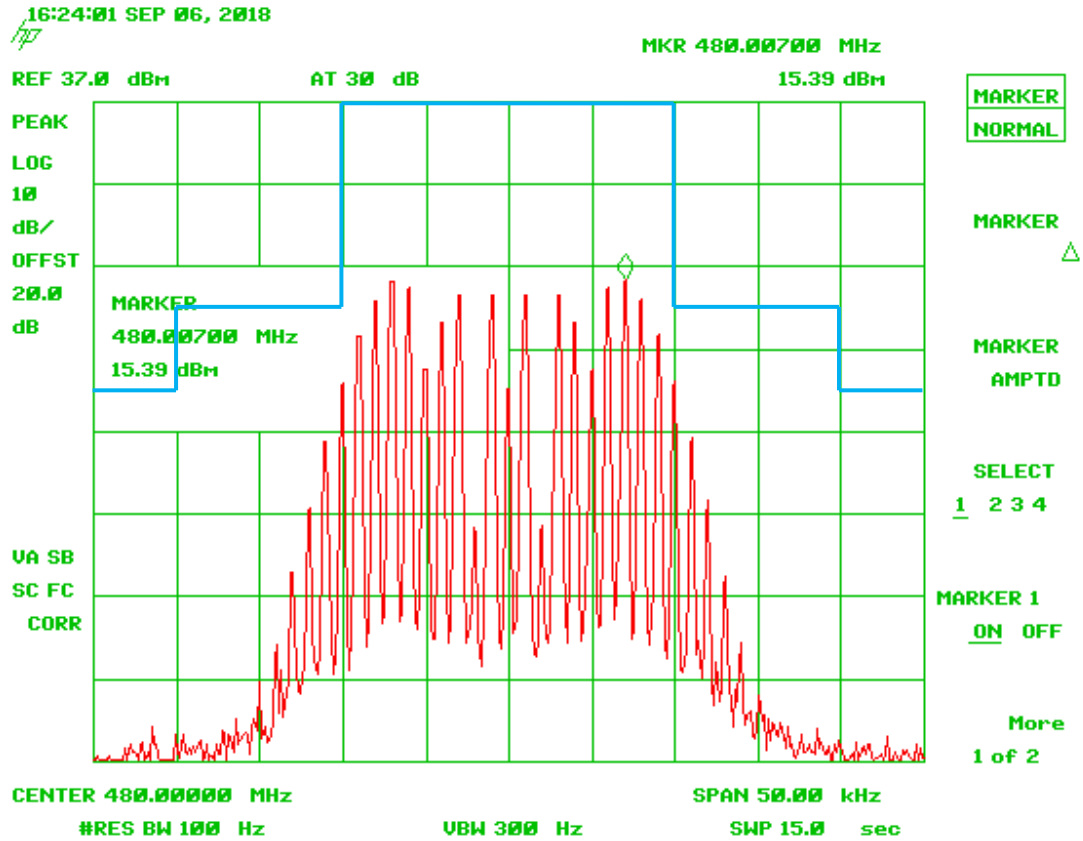


Figure 101. 480 MHz @ 25 kHz + 3.0 dB, Mask B

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

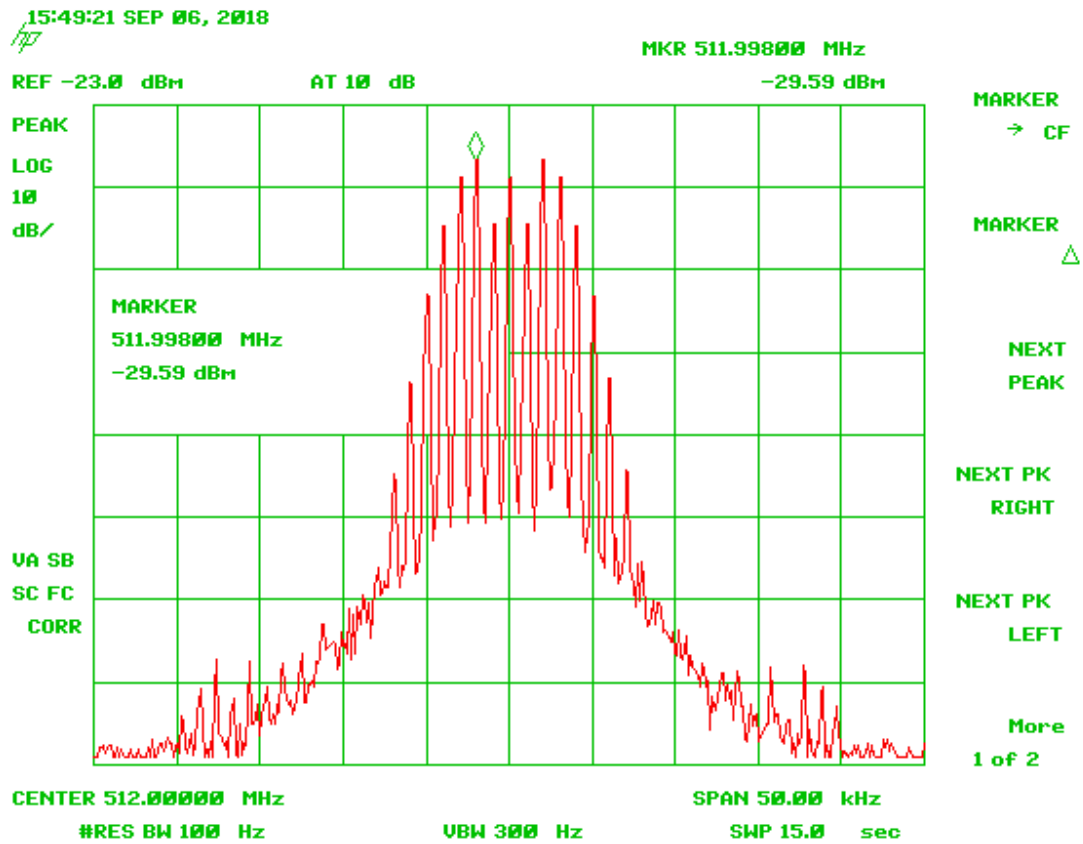


Figure 102. Input 512 MHz @ 12.5 kHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

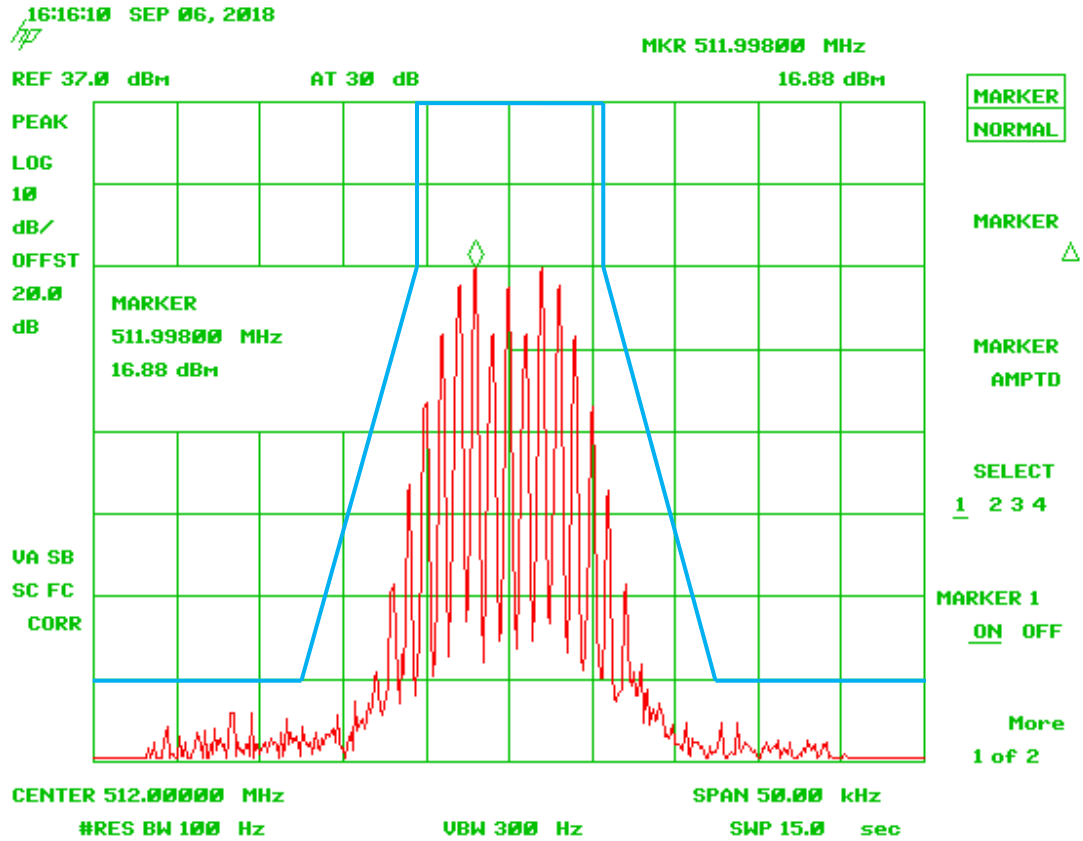


Figure 103. 512 MHz @ 12.5 kHz, Mask D

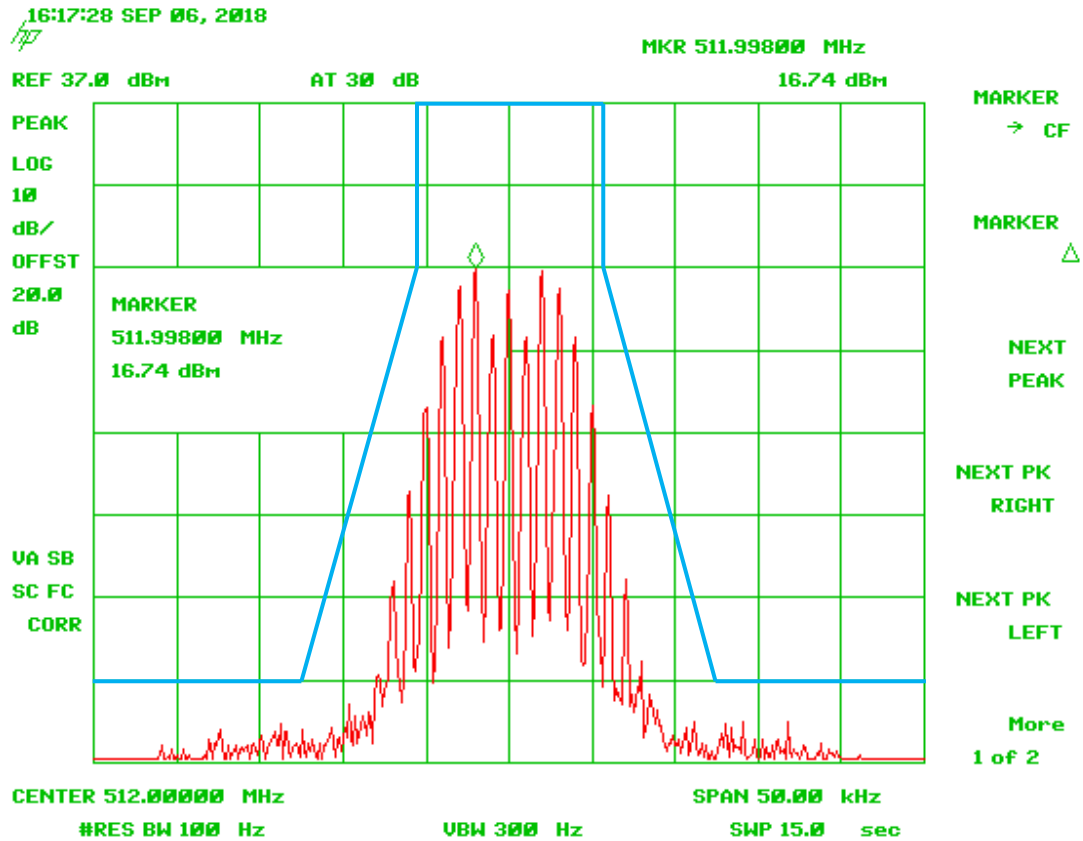


Figure 104. 512 MHz @ 12.5 kHz + 3.0 dB, Mask D

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

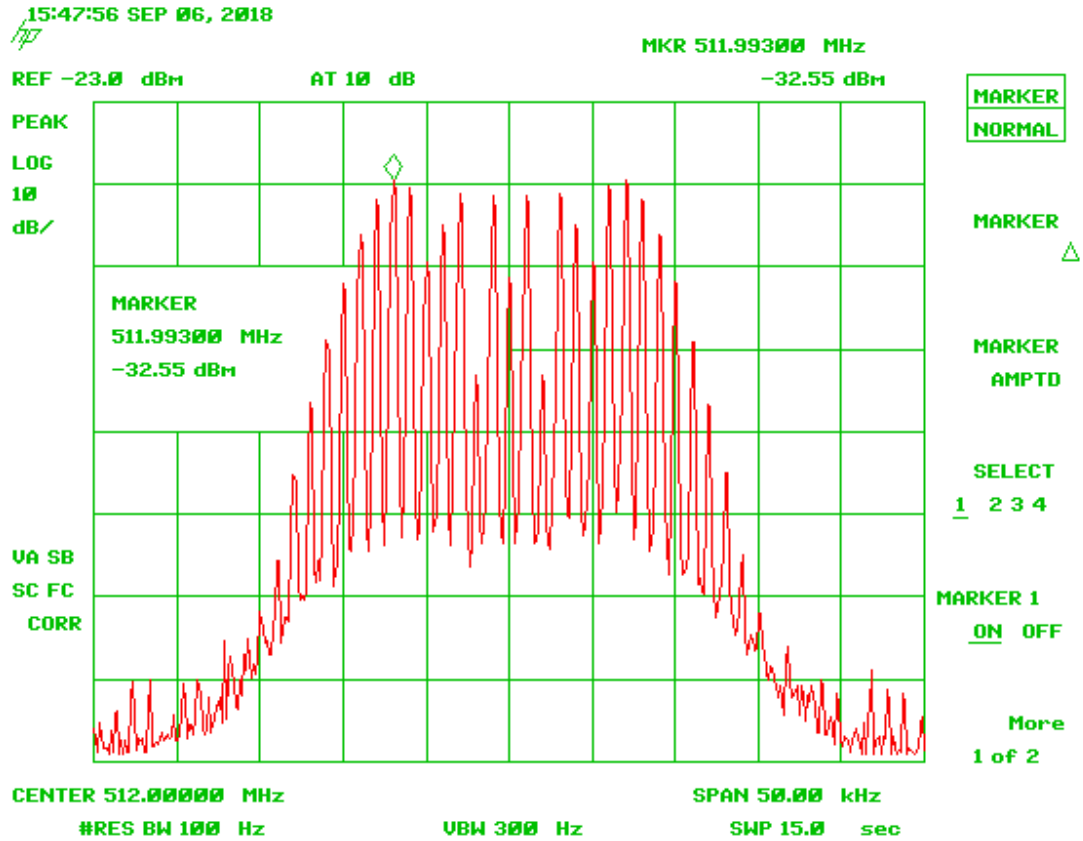


Figure 105. Input 512 MHz @ 25 kHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

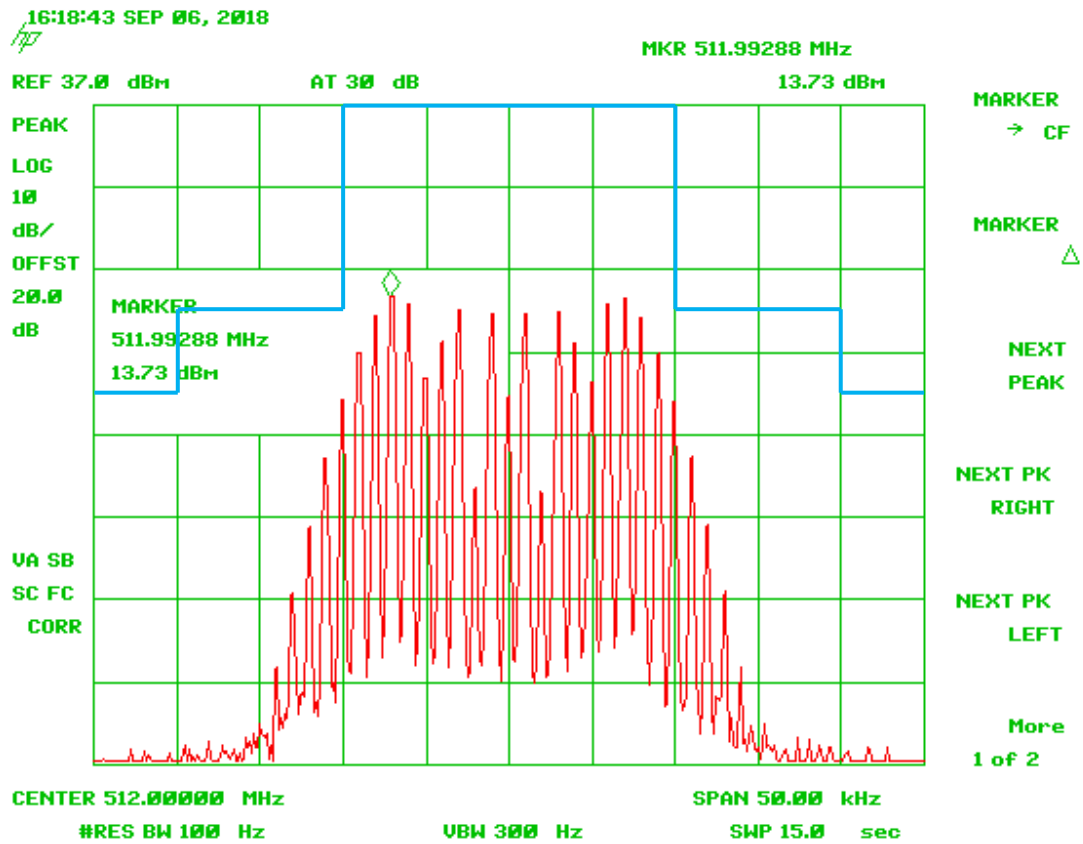


Figure 106. 512 MHz @ 25 kHz, Mask B

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

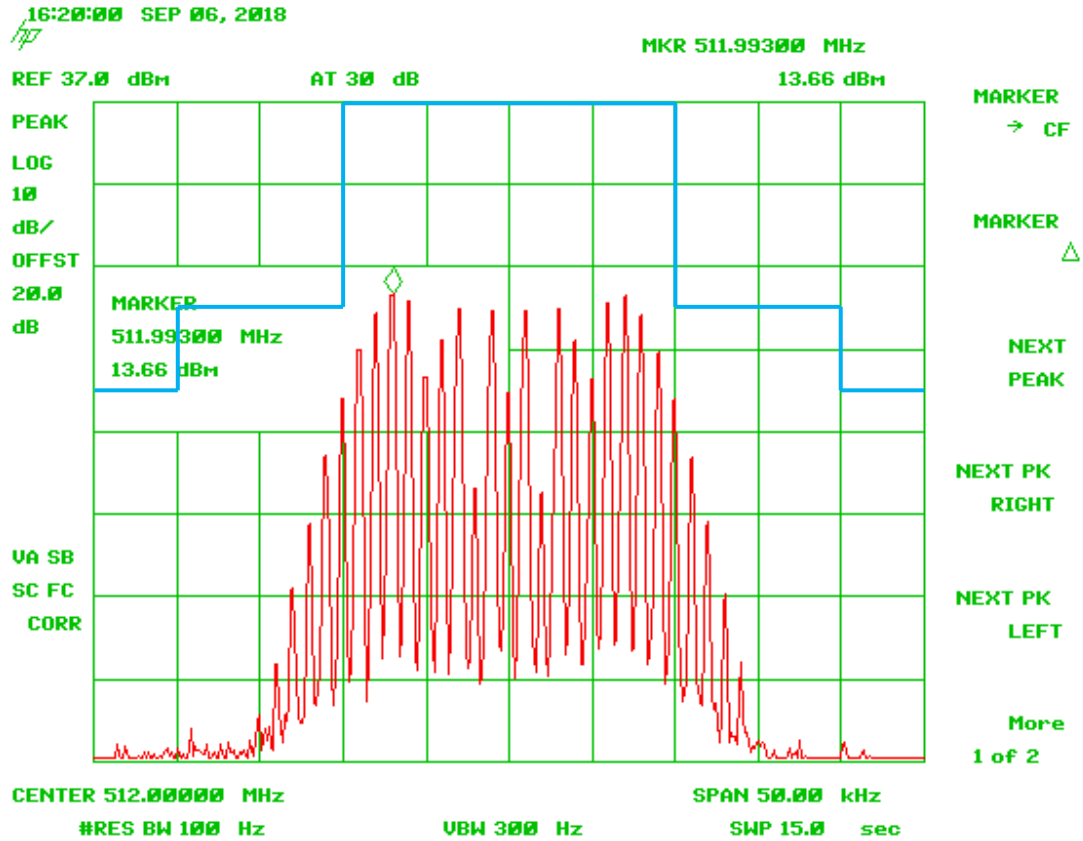


Figure 107. 512 MHz @ 25 kHz + 3.0, Mask B

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

2.13.3 700 MHz Channels

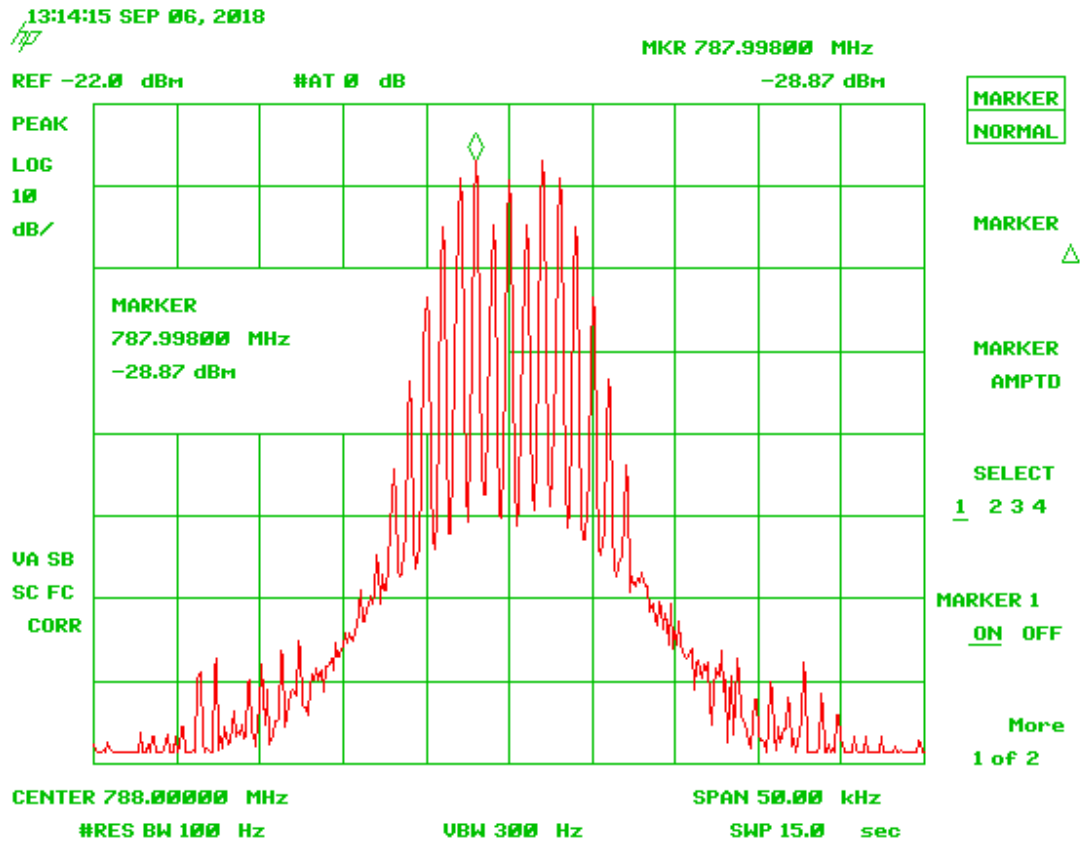


Figure 108. Input 788 MHz @ 12.5 kHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

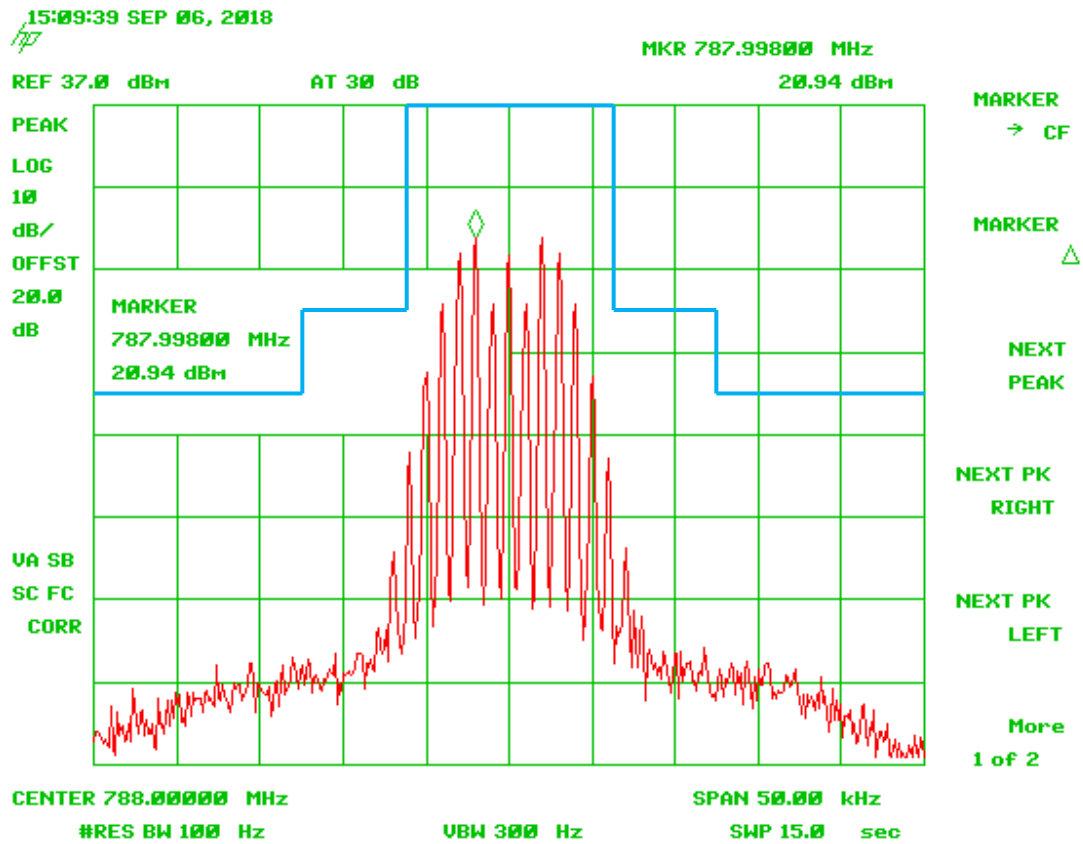


Figure 109. 788 MHz @ 12.5 kHz, Mask B

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

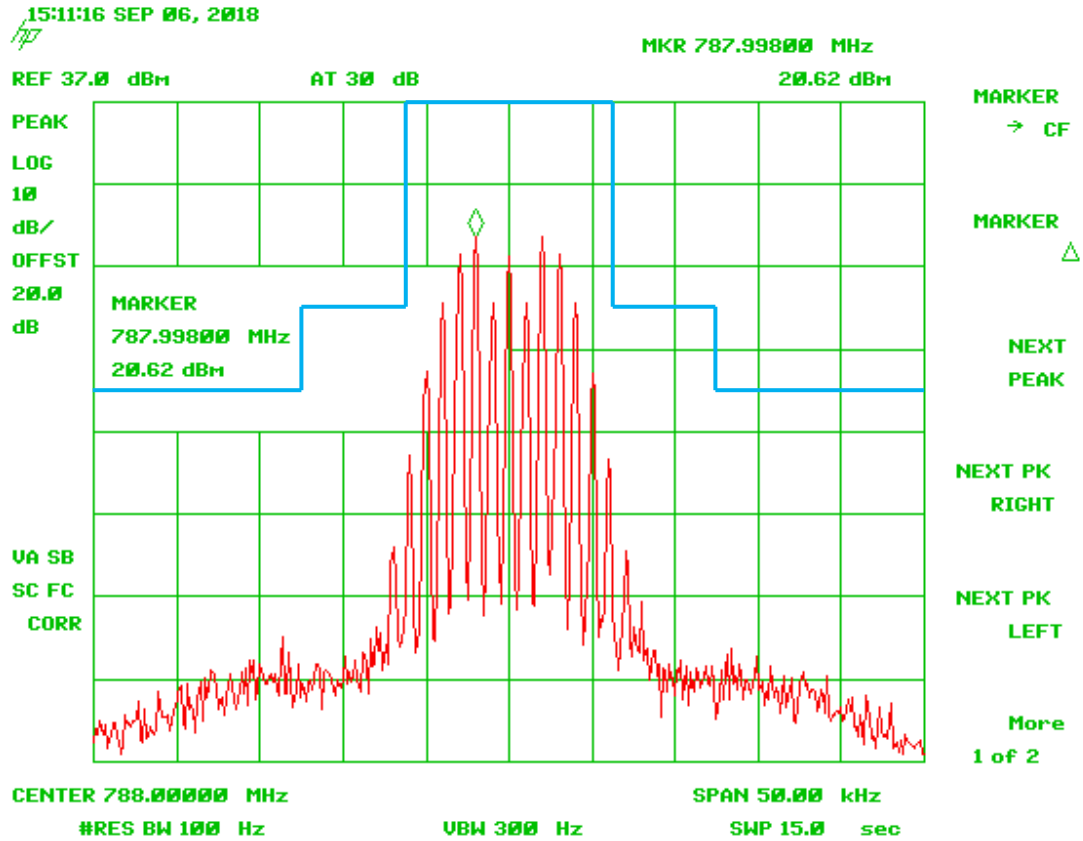


Figure 110. 788 MHz @ 12.5 kHz + 3.0 dB, Mask B

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

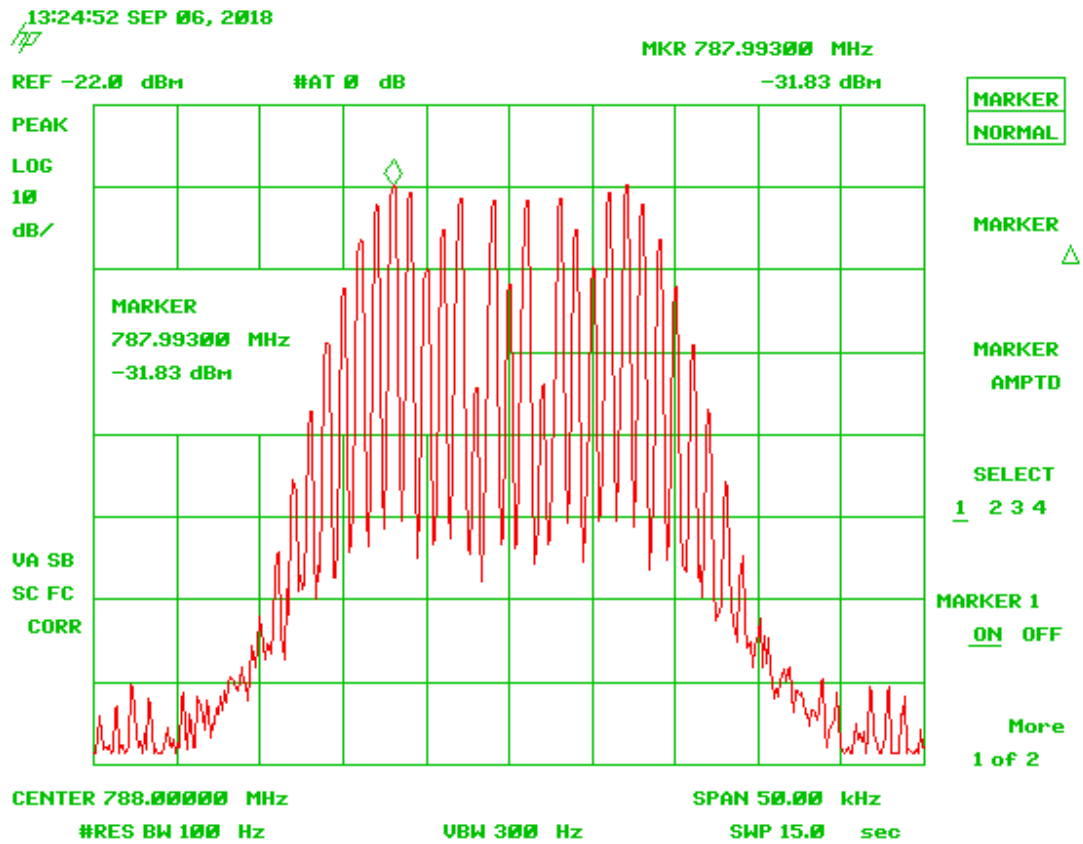


Figure 111. Input 788 MHz @ 25 kHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

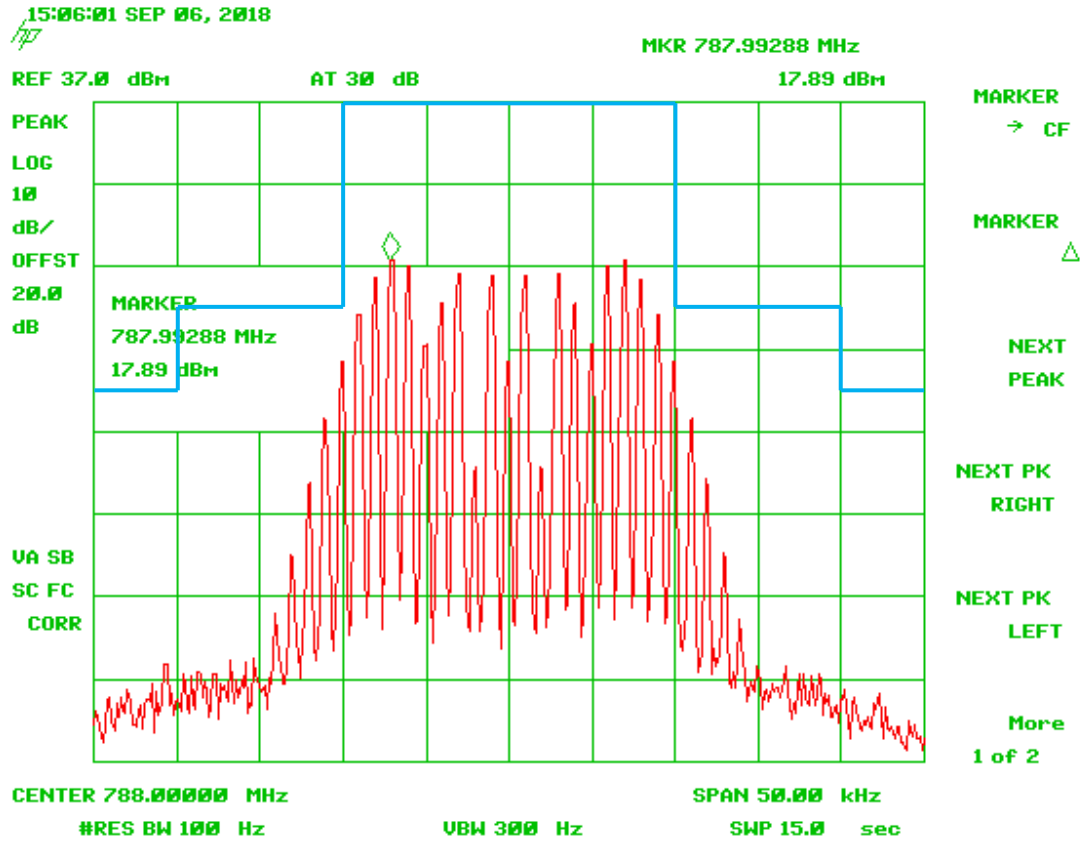


Figure 112. 788 MHz @ 25 kHz, Mask B

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

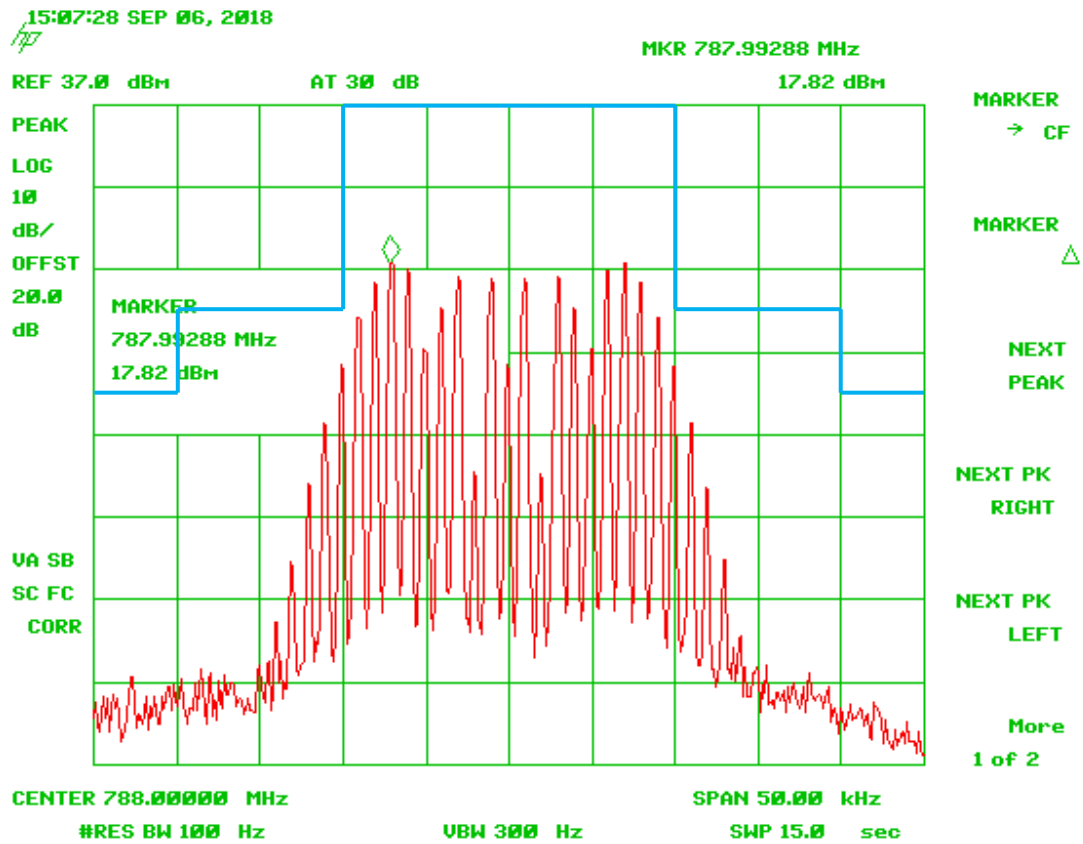


Figure 113. 788 MHz @ 25 kHz + 3.0 dB, Mask B

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

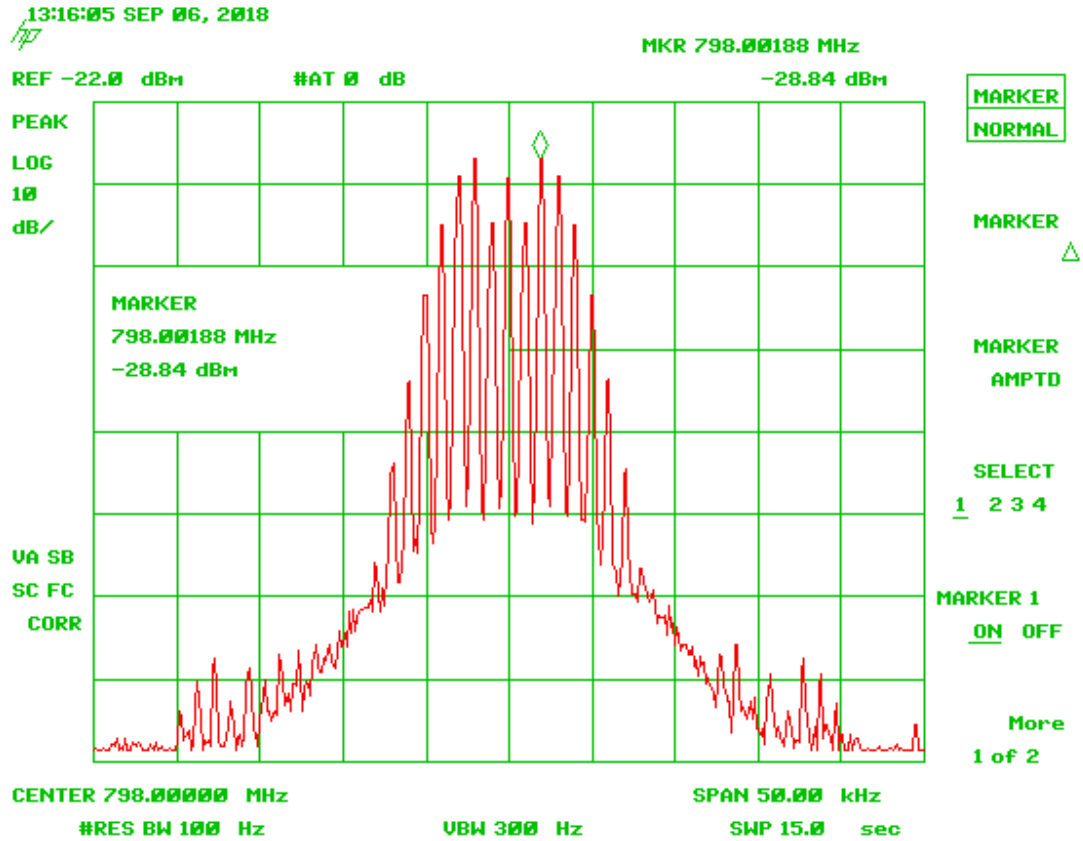


Figure 114. Input 798 MHz @ 12.5 kHz

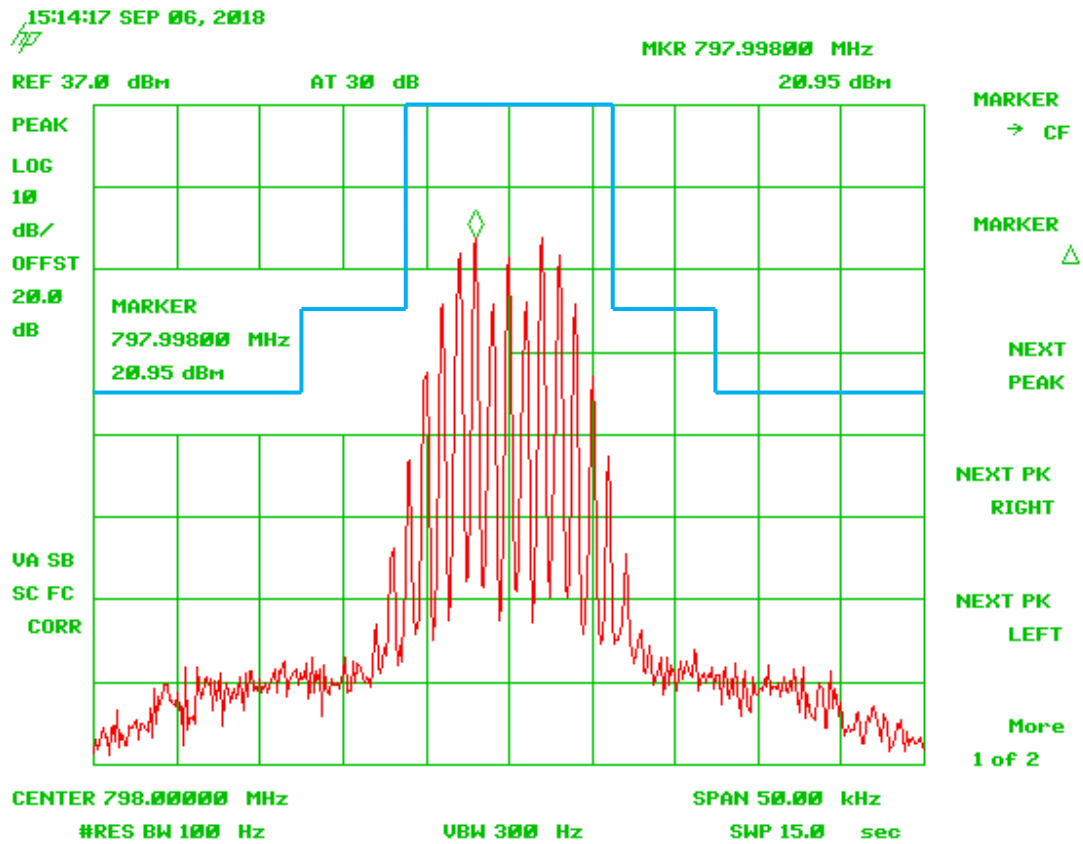


Figure 115. 798 MHz @ 12.5 kHz, Mask B

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

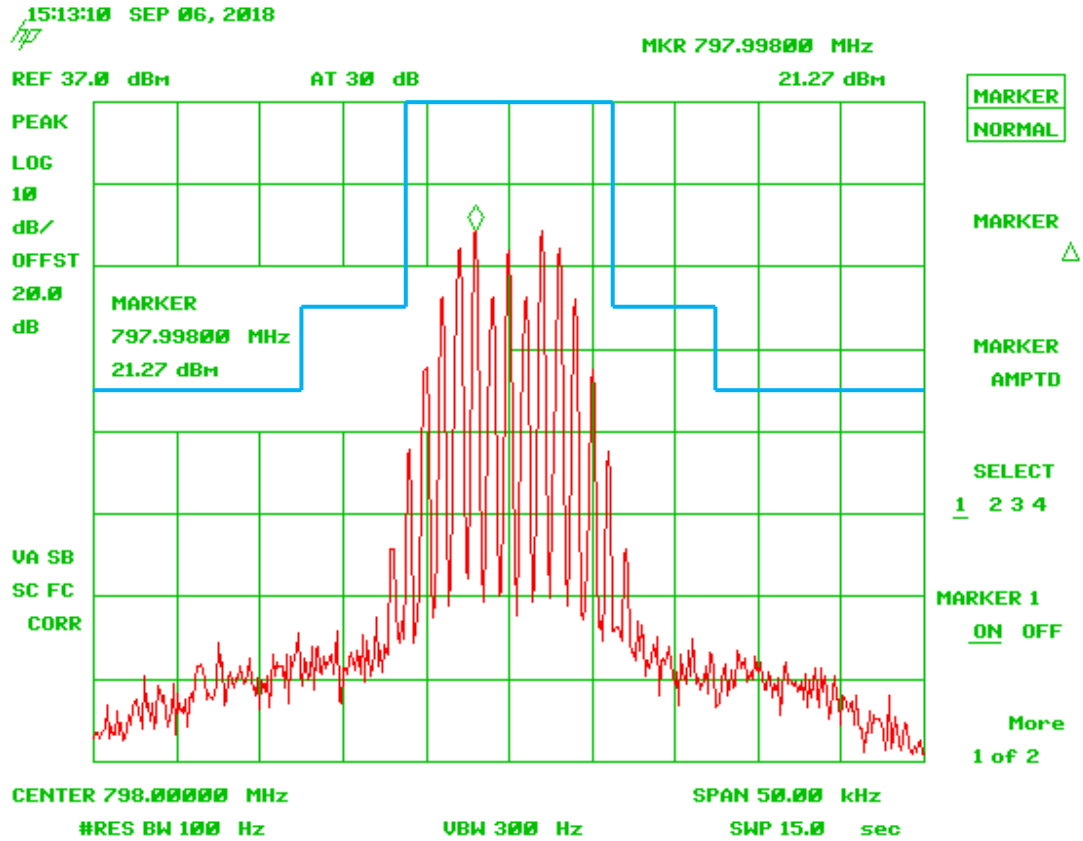


Figure 116. 798 MHz @ 12.5 kHz + 3.0 dB, Mask B

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

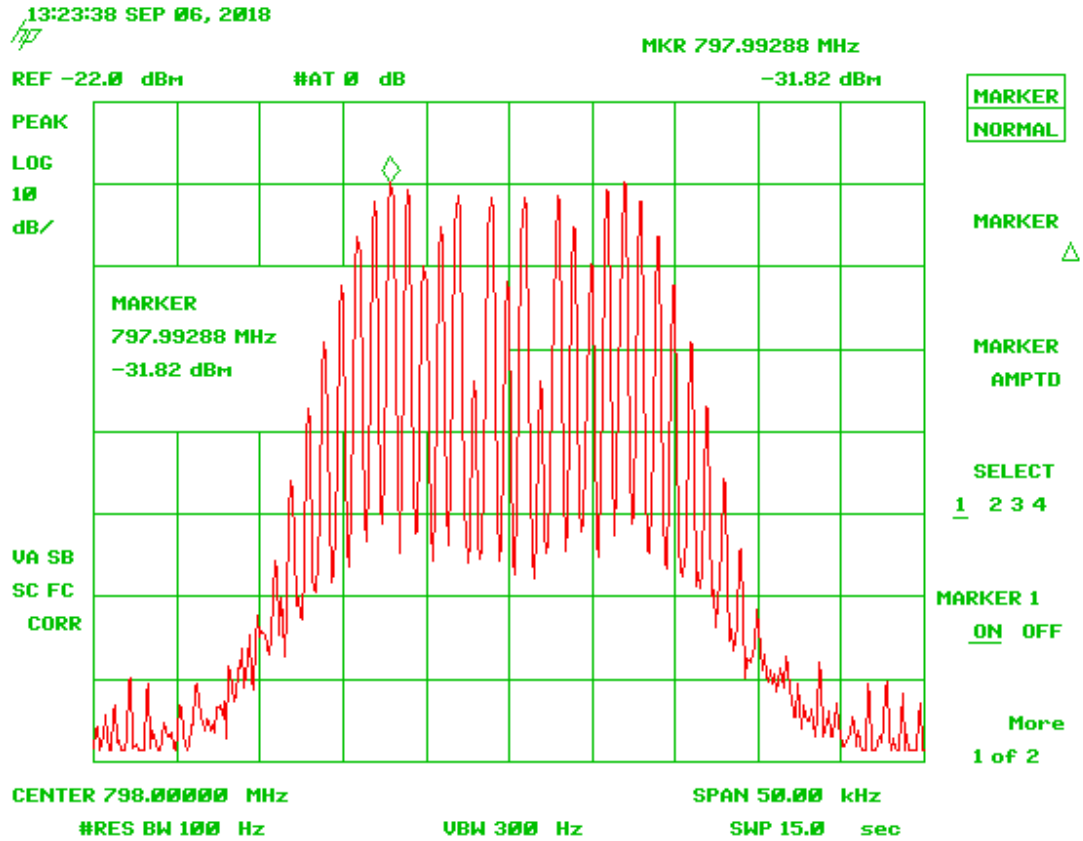


Figure 117. Input 798 MHz @ 25 kHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

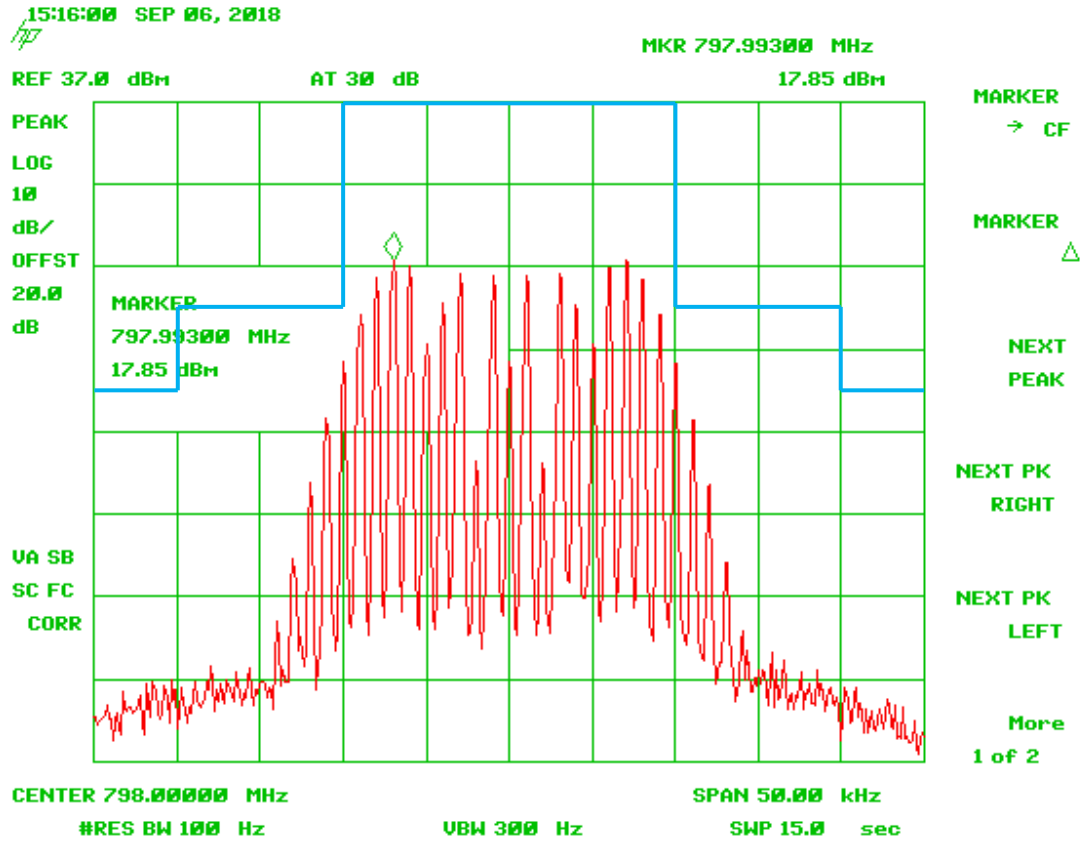


Figure 118. 798 MHz @ 25 kHz, Mask B

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

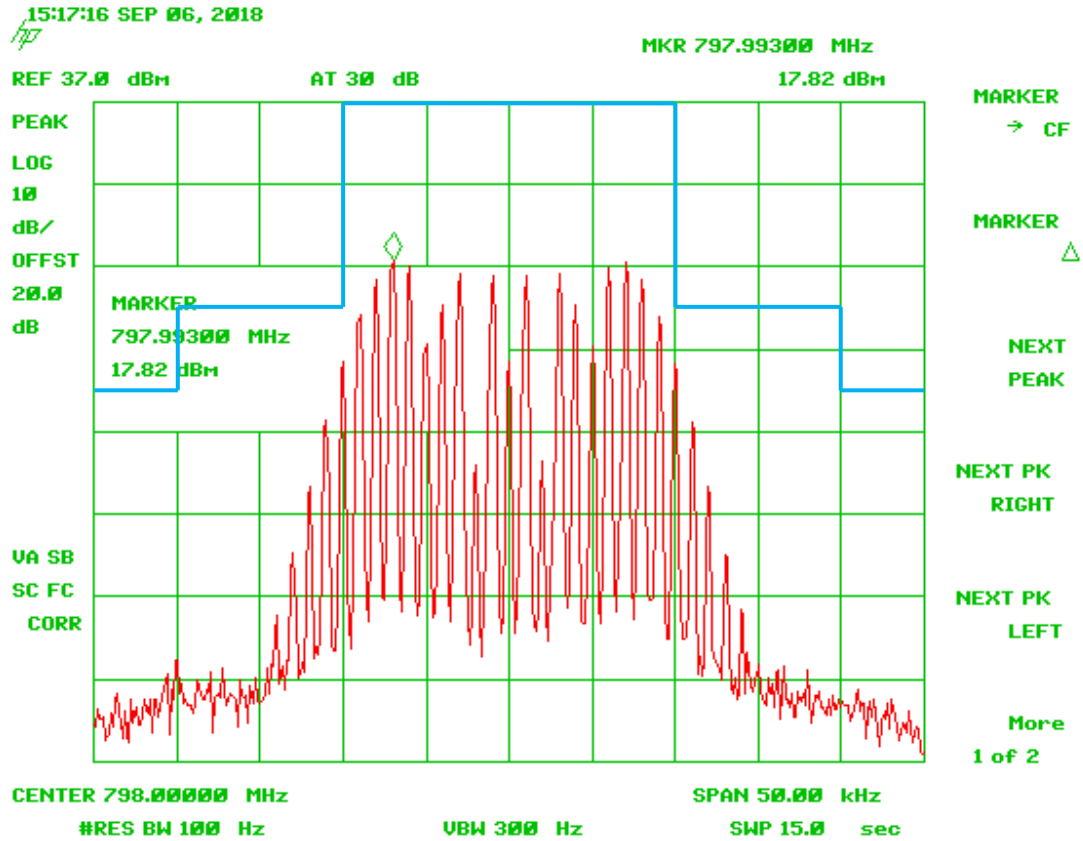


Figure 119. 798 MHz @ 25 kHz + 3.0 dB, Mask B

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

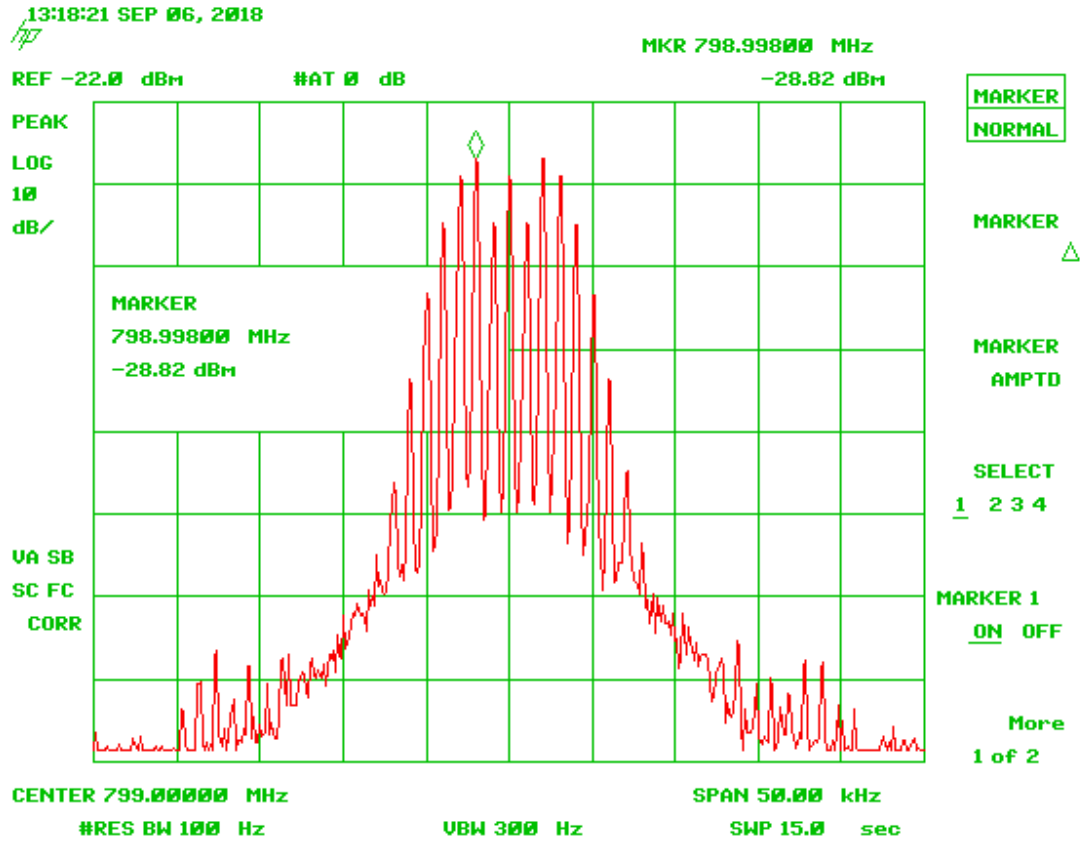


Figure 120. Input 799 MHz @ 12.5 kHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

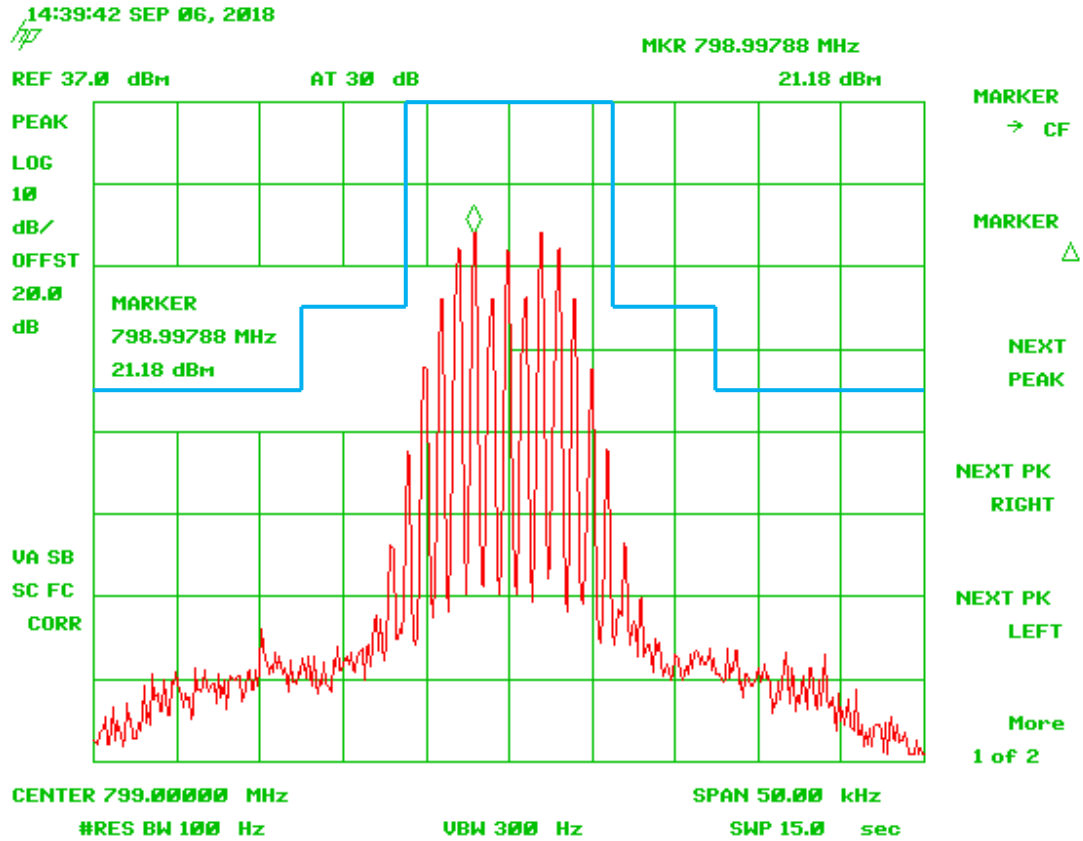


Figure 121. 799 MHz @ 12.5 MHz, Mask B

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

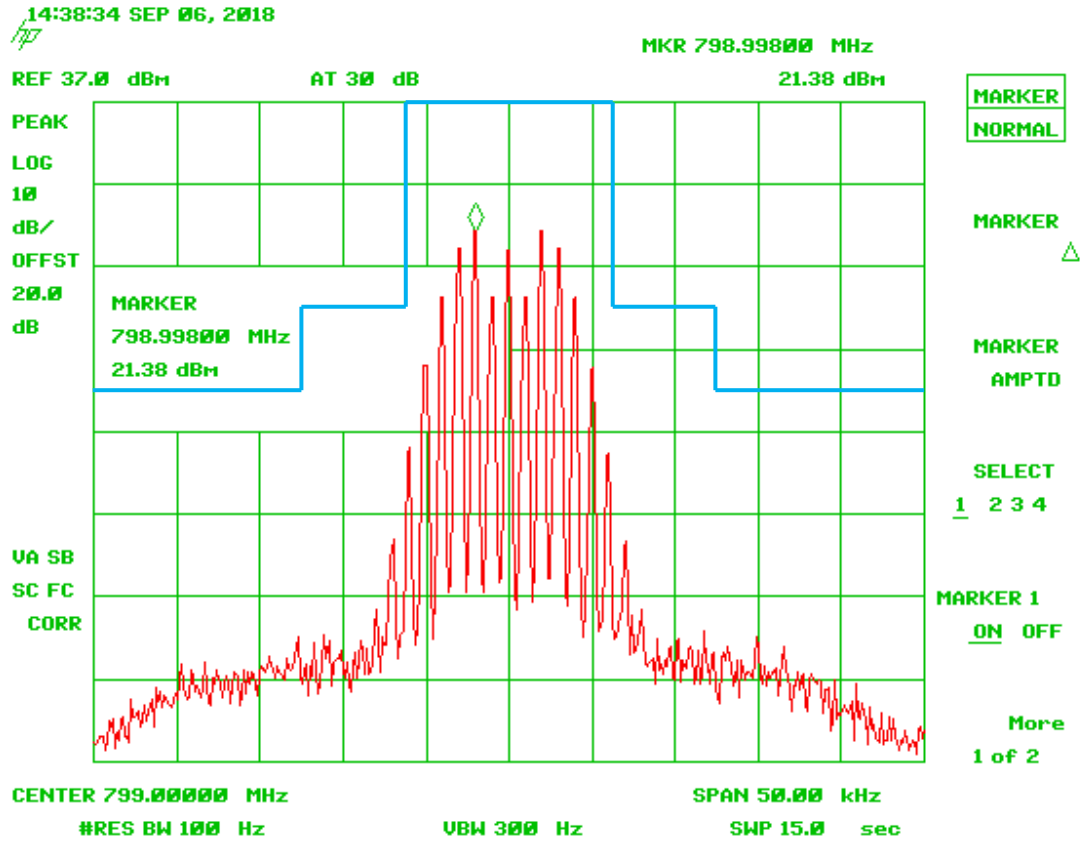


Figure 122. 799 MHz @ 12.5 kHz + 3.0 dB, Mask B

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

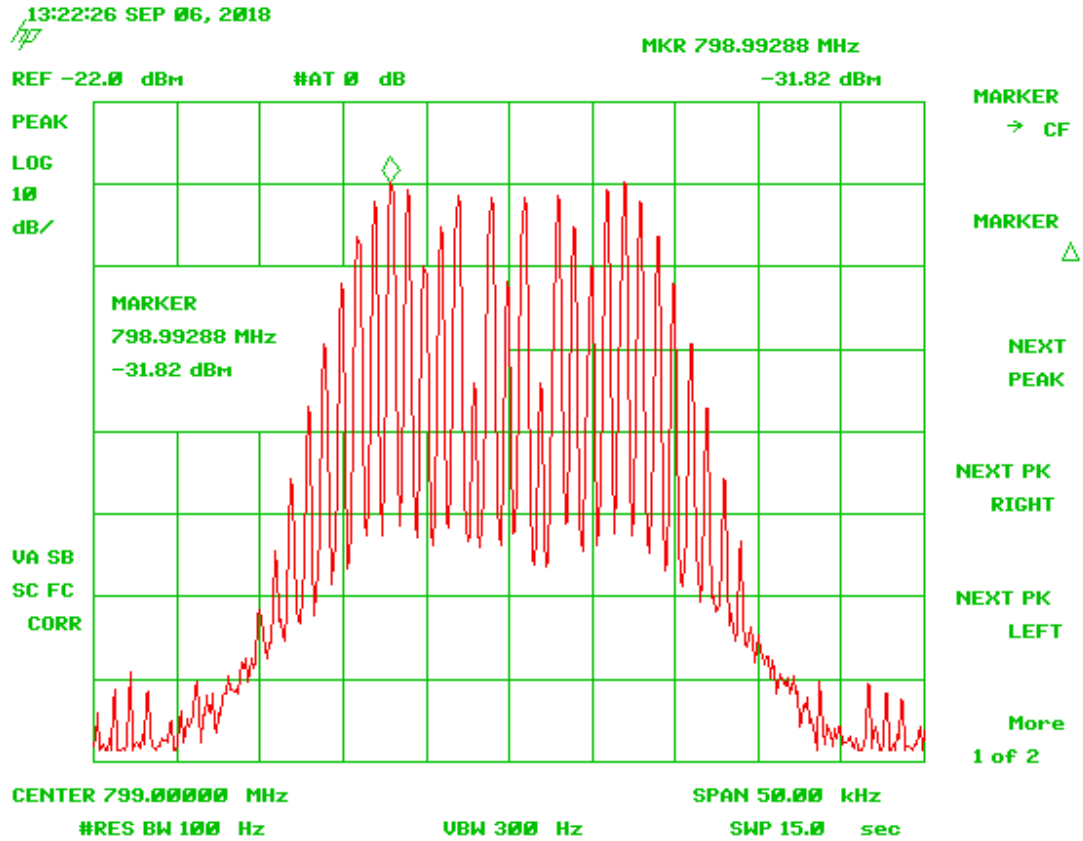


Figure 123. Input 799 MHz @ 25 kHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

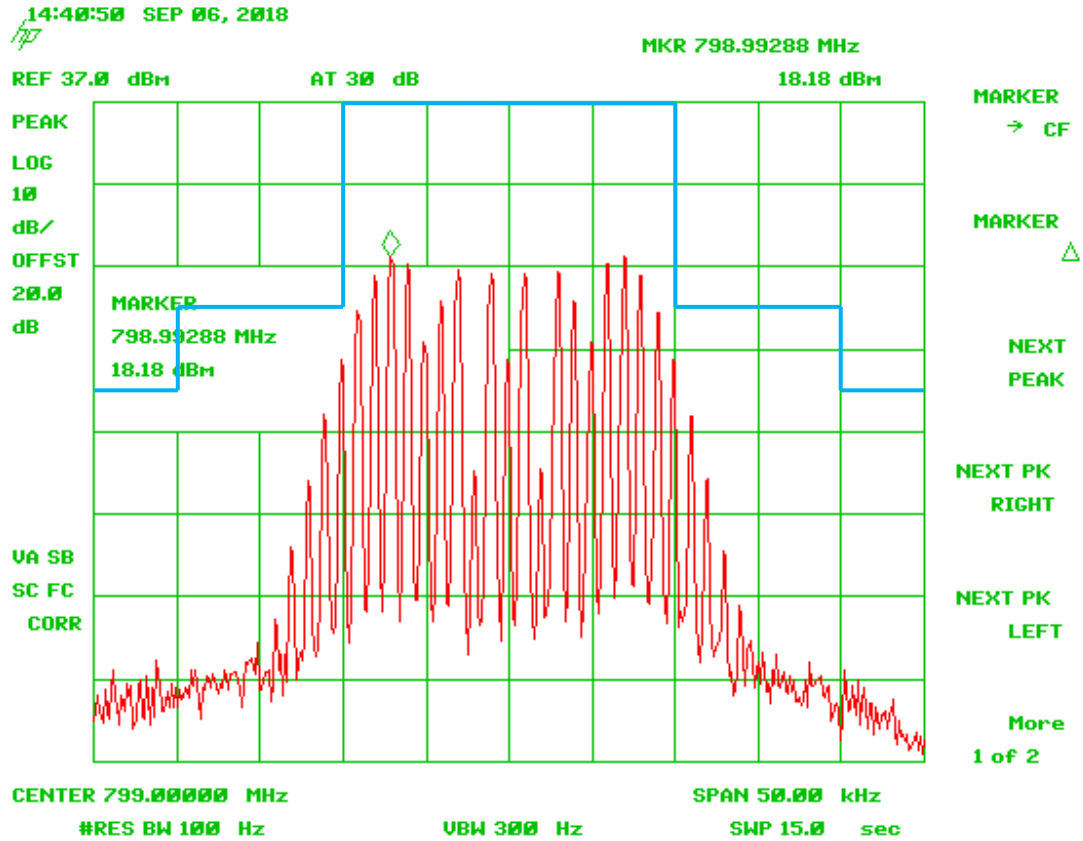


Figure 124. 799 MHz @ 25 kHz, Mask B

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

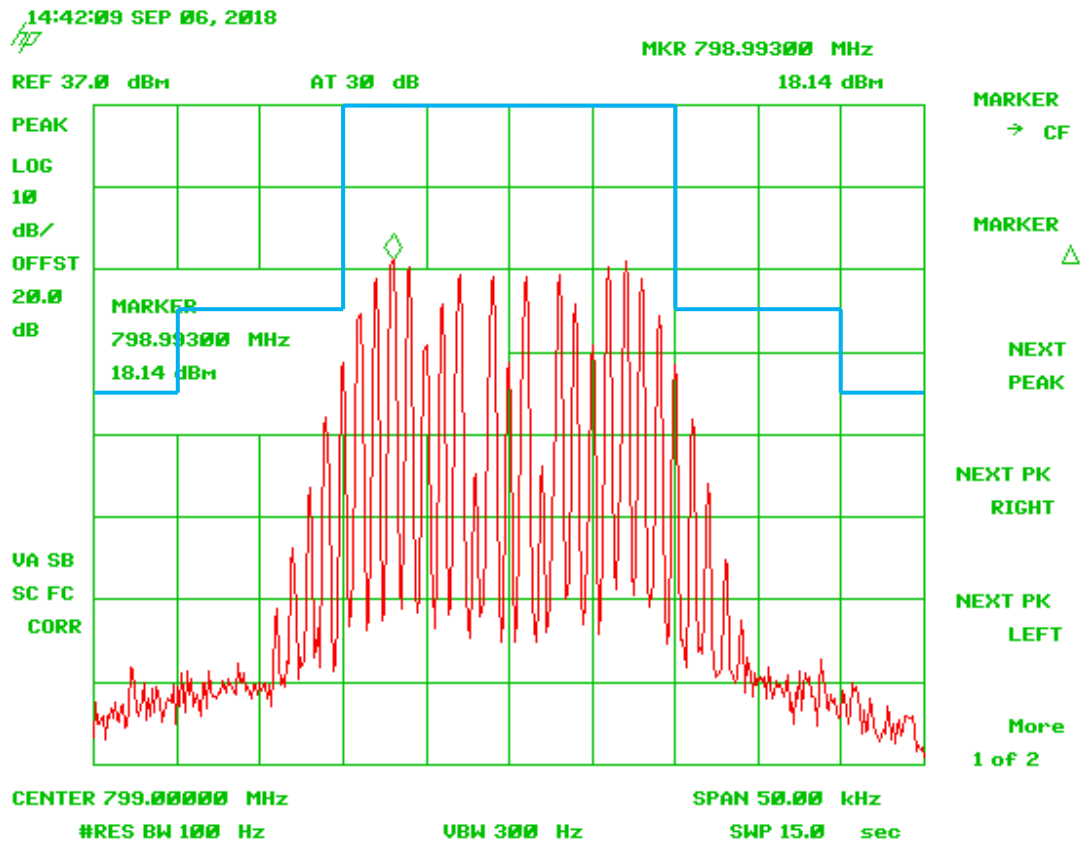


Figure 125. 799 MHz @ 25 kHz + 3.0 dB, Mask B

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

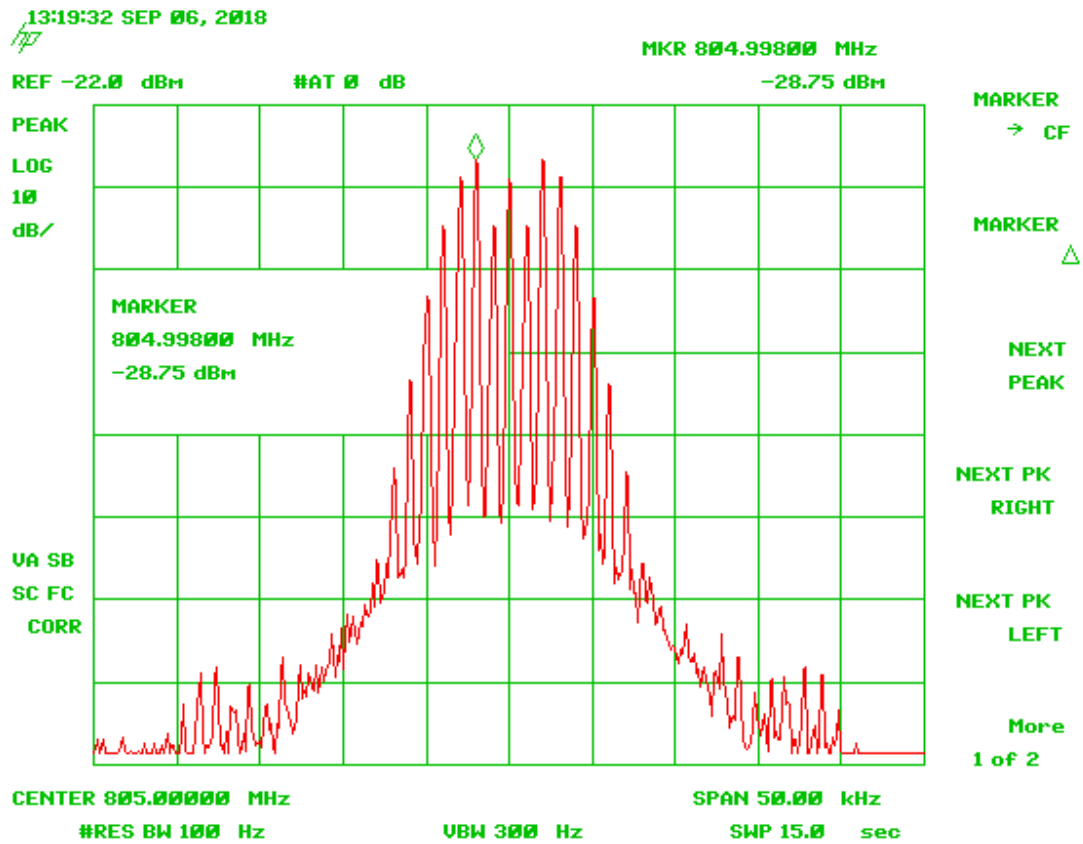


Figure 126. Input 805 MHz @ 12.5 kHz

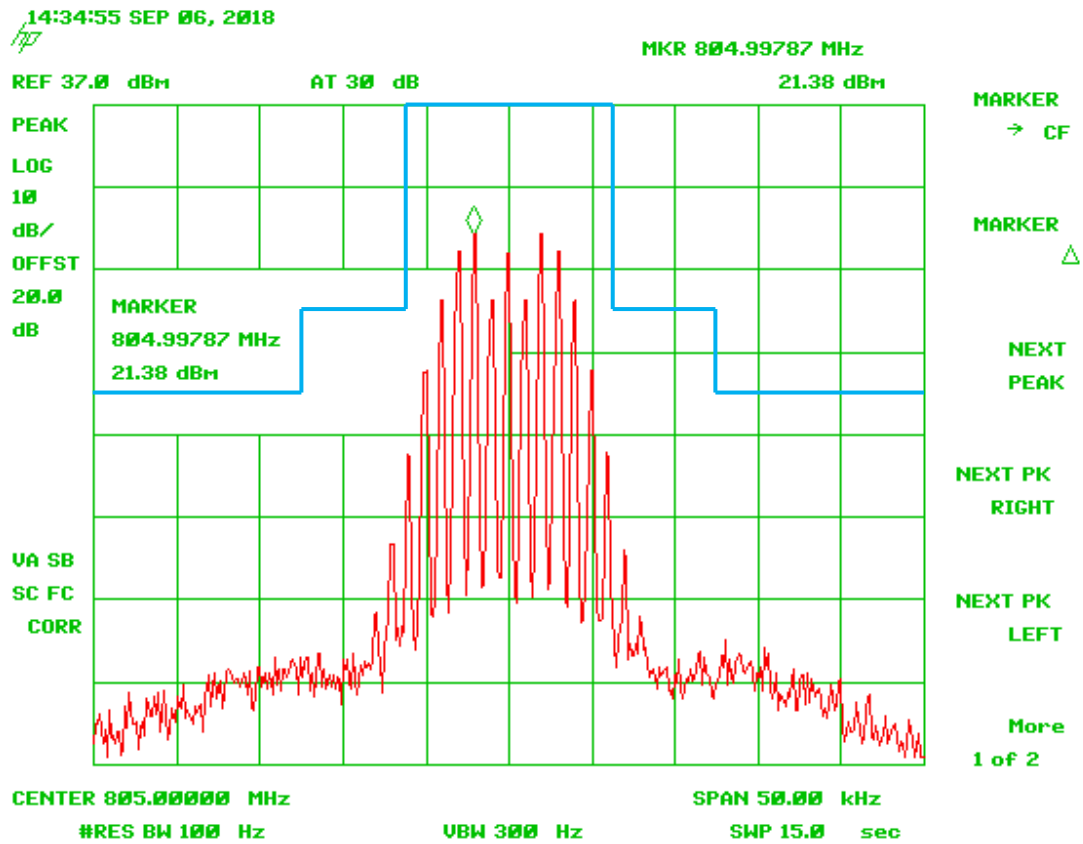


Figure 127. 805 MHz @ 12.5 kHz, Mask B

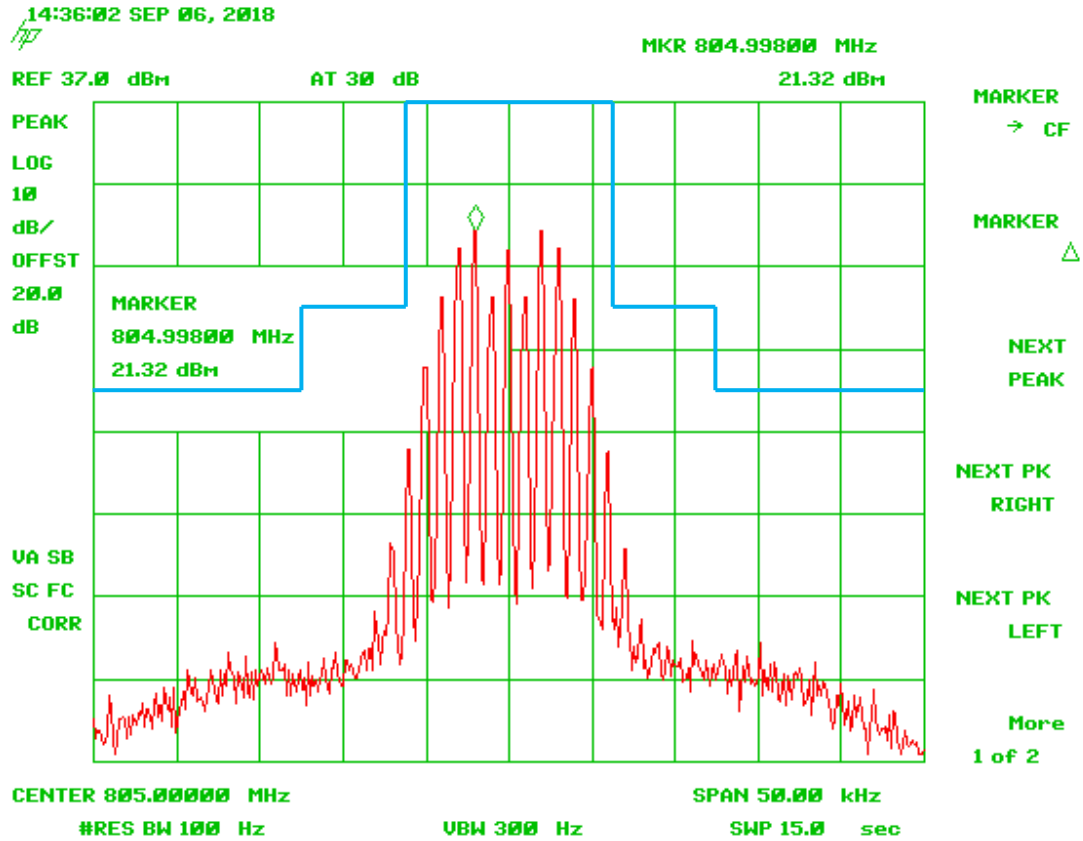


Figure 128. 805 MHz @ 12.5 kHz + 3.0 dB, Mask B

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

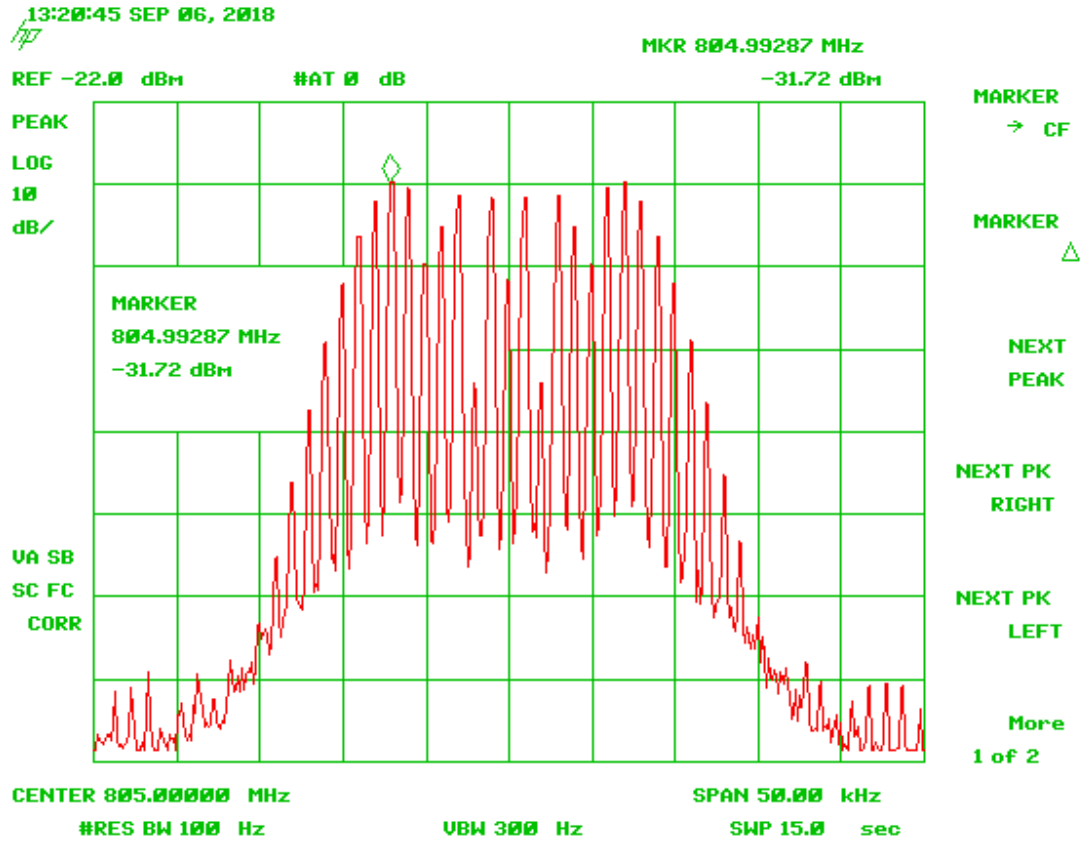


Figure 129. Input 805 MHz @ 25 kHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

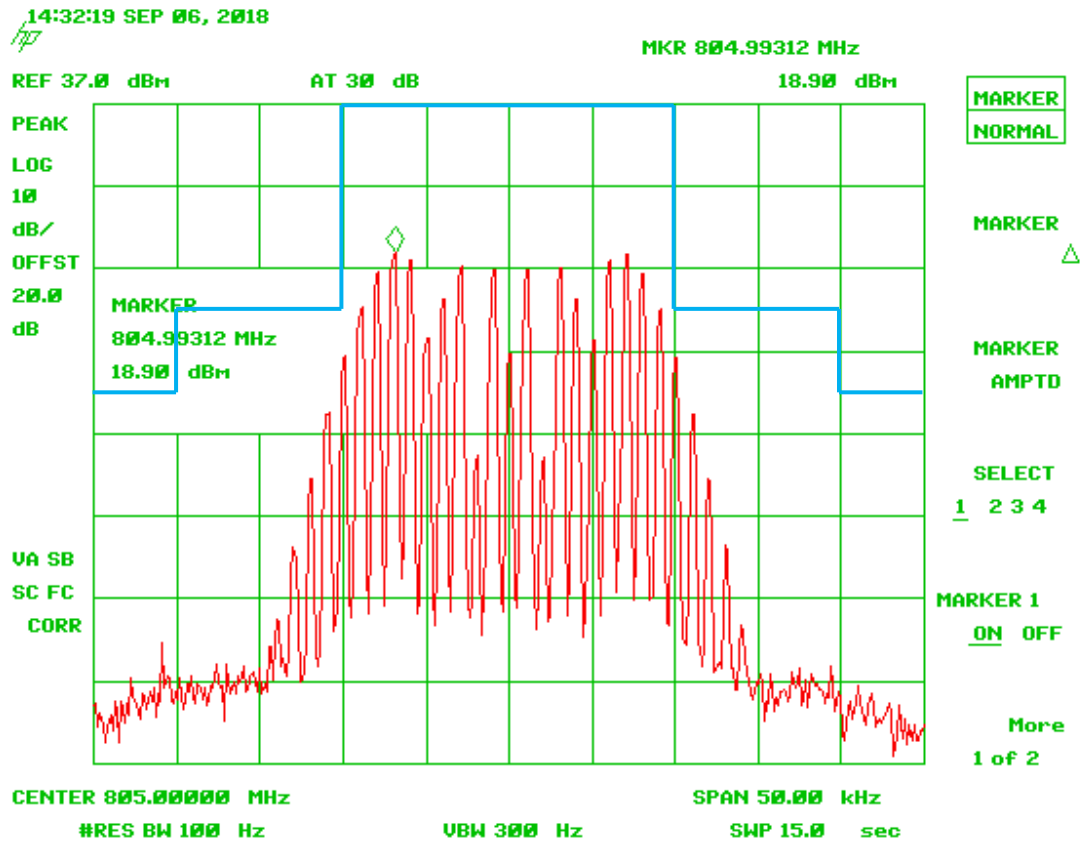


Figure 130. 805 MHz @ 25 kHz, Mask B

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

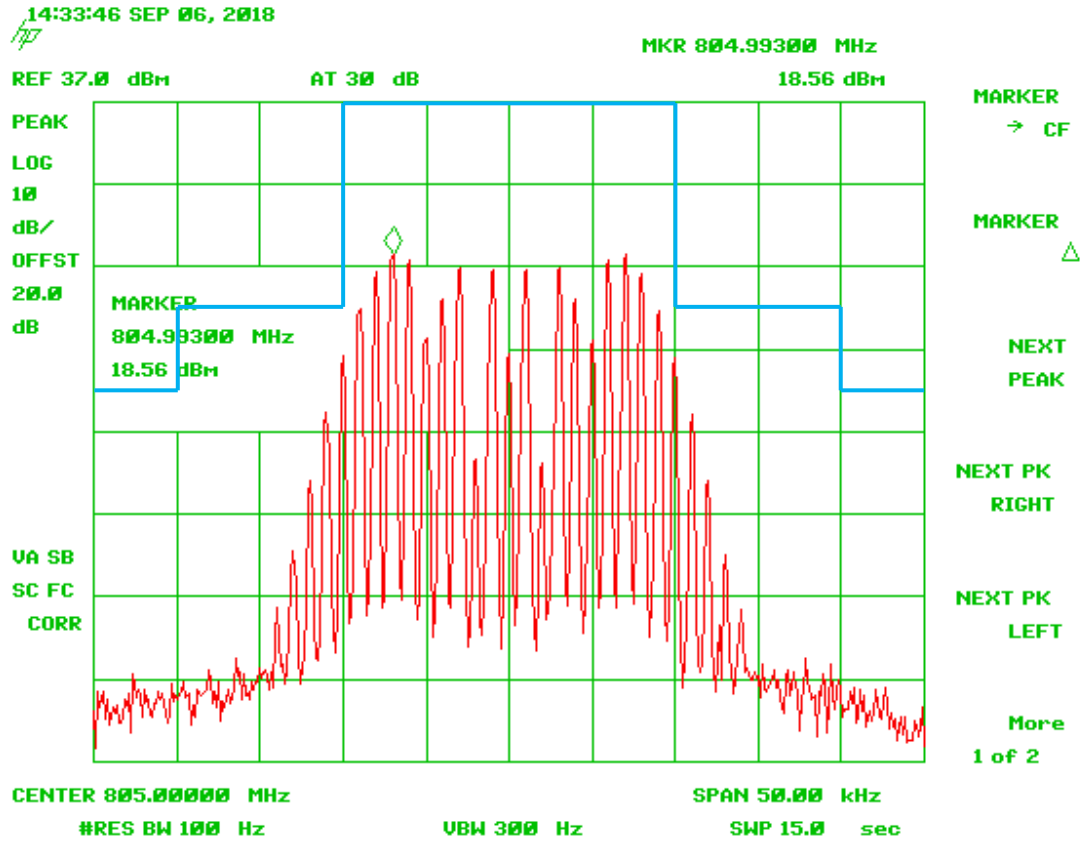


Figure 131. 805 MHz @ 25 kHz + 3.0 dB, Mask B

2.13.4 800 MHz Channel

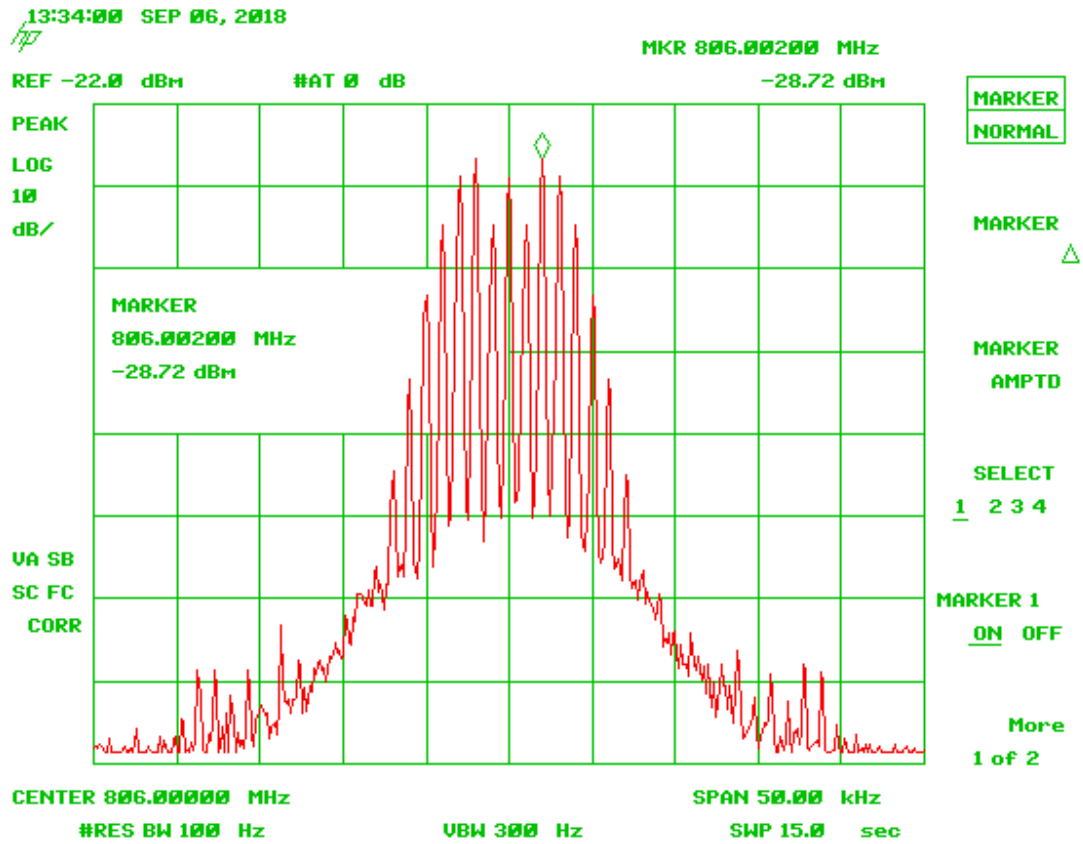


Figure 132. Input 806 MHz @ 12.5 kHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

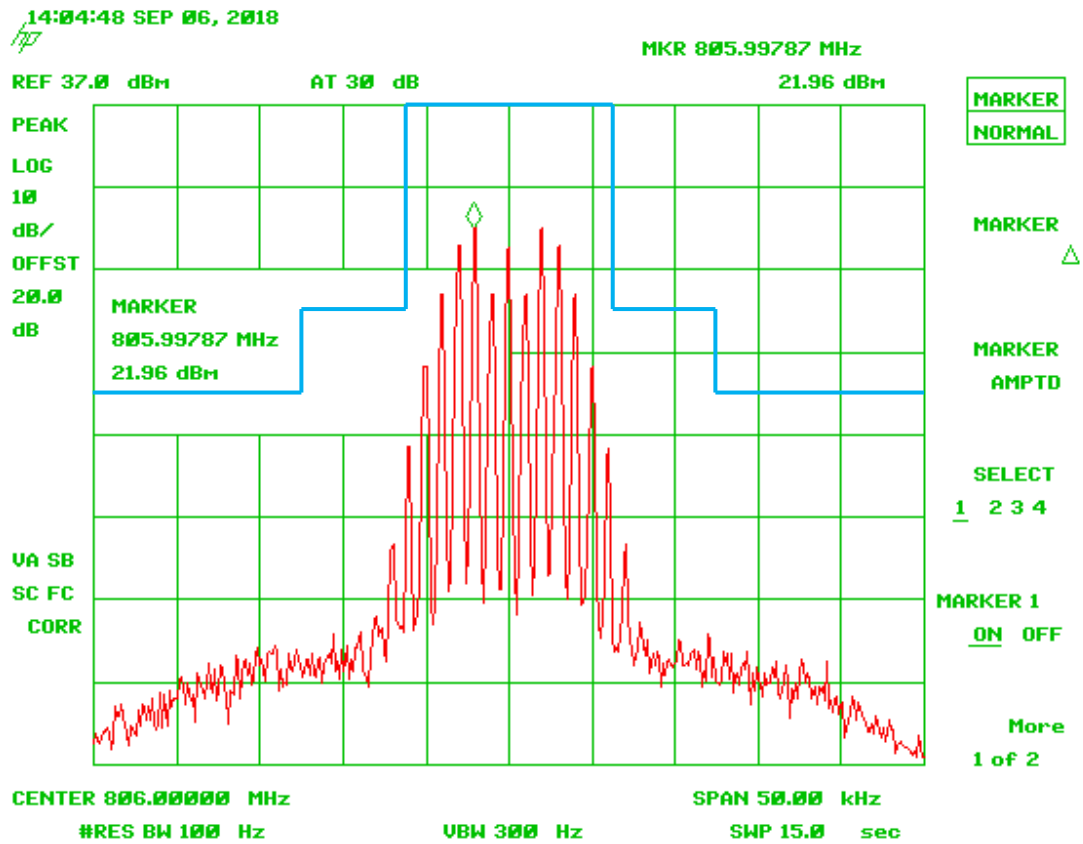


Figure 133. 806 MHz @ 12.5 kHz, Mask B

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

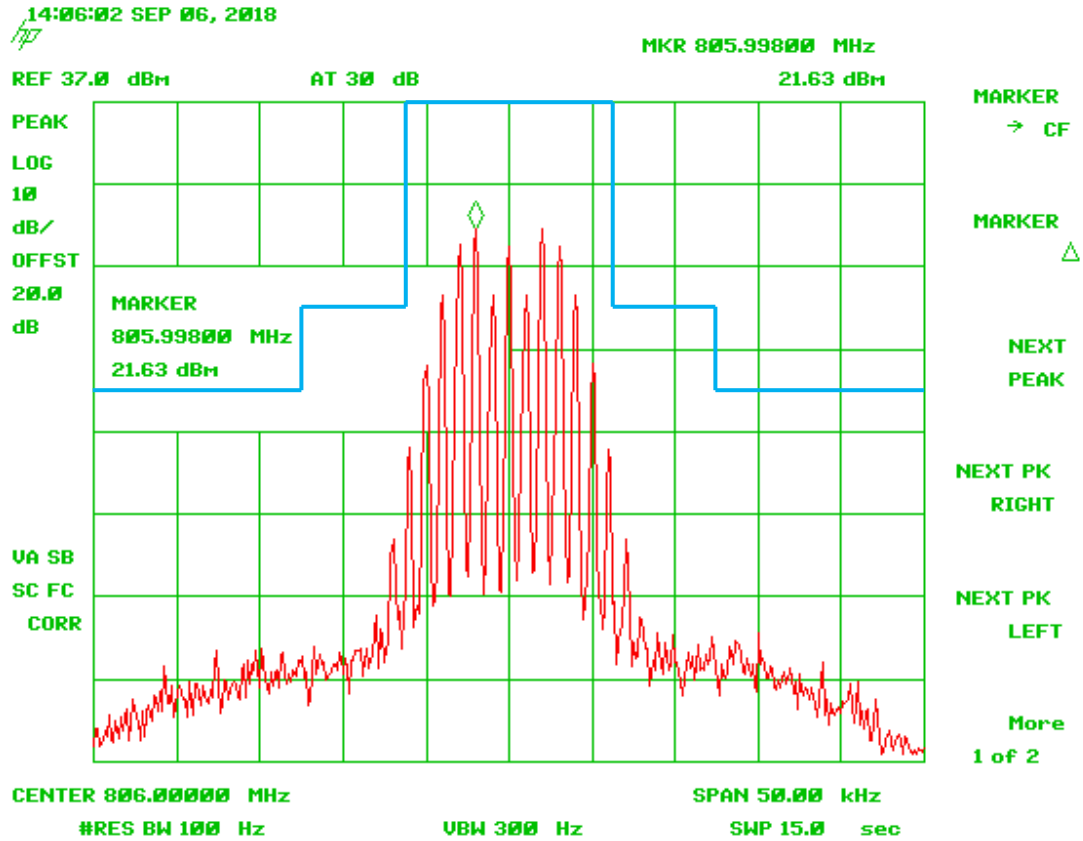


Figure 134. 806 MHz @ 12.5 kHz + 3.0 dB, Mask B

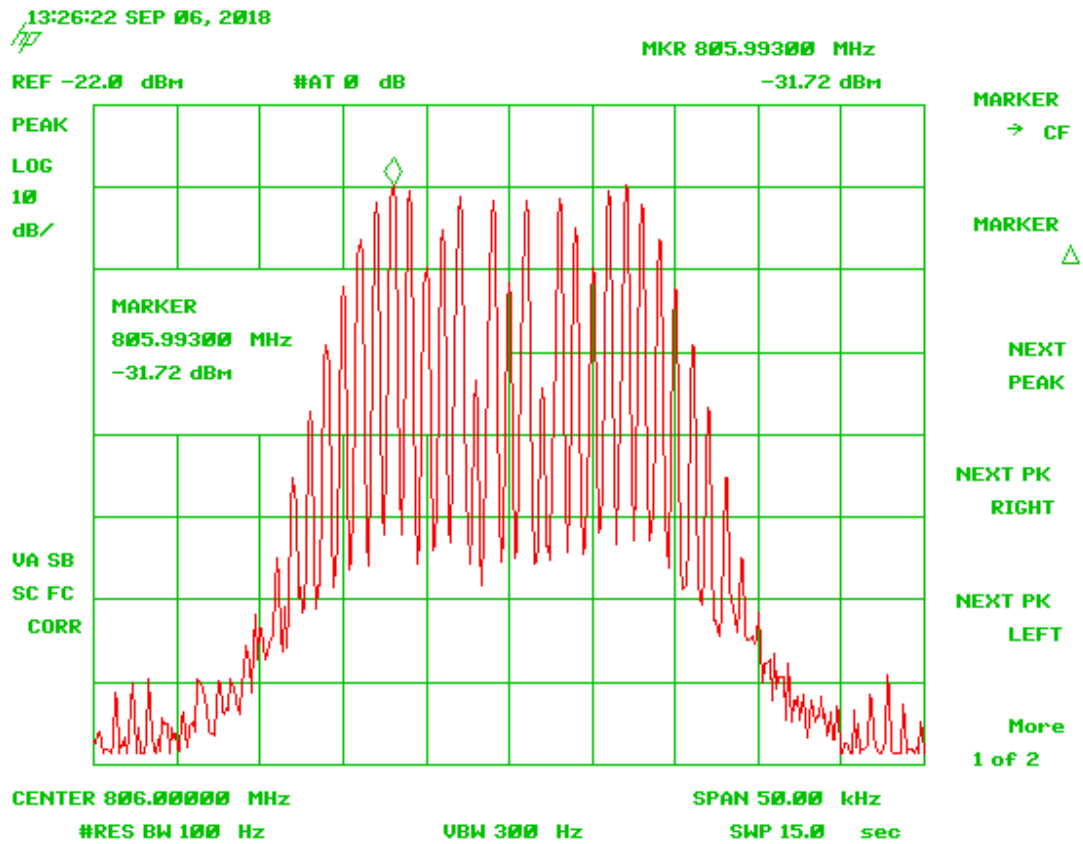


Figure 135. Input 806 MHz @ 25 kHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

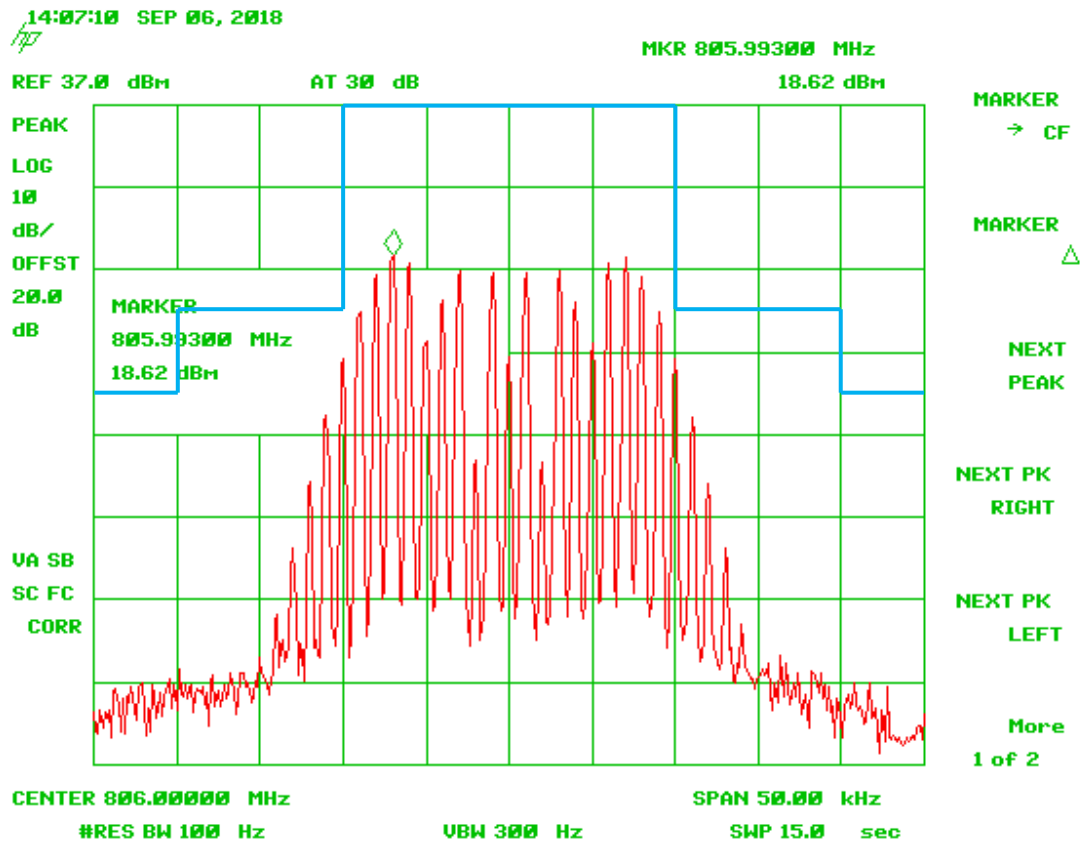


Figure 136. 806 MHz @ 25 kHz, Mask B

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

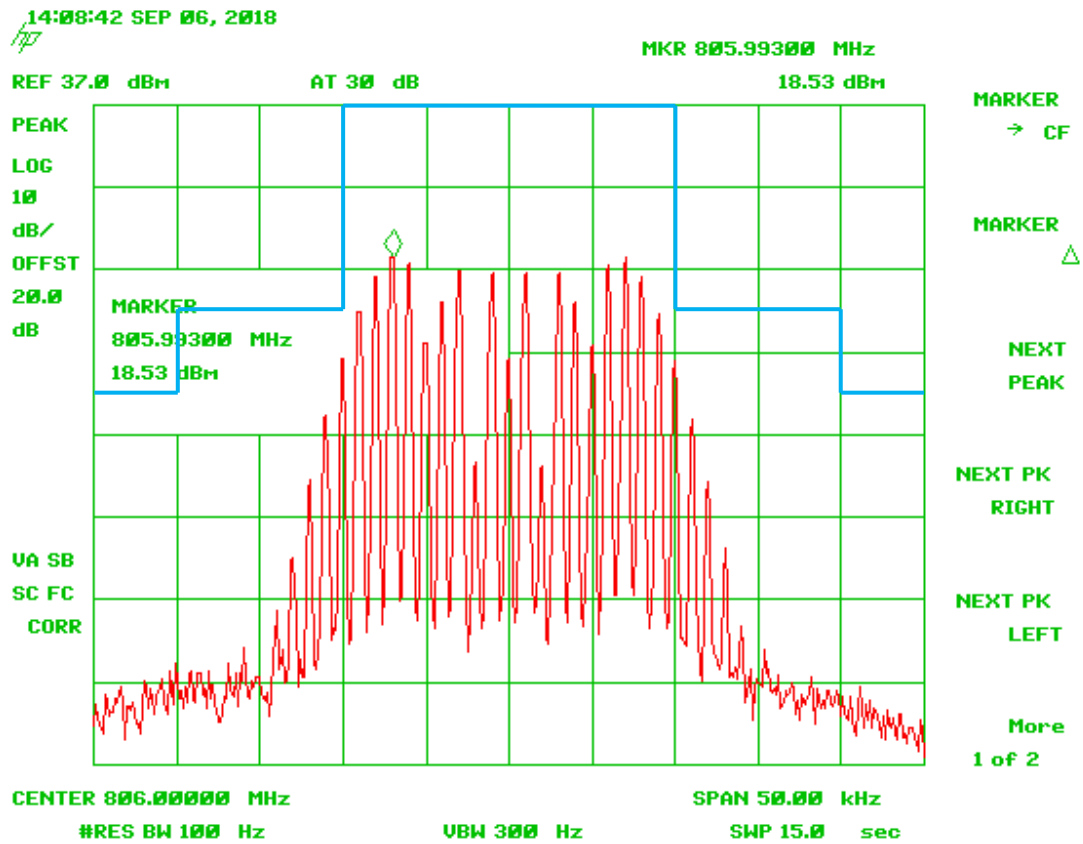


Figure 137. 806 MHz @ 25 kHz + 3.0 dB, Mask B

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

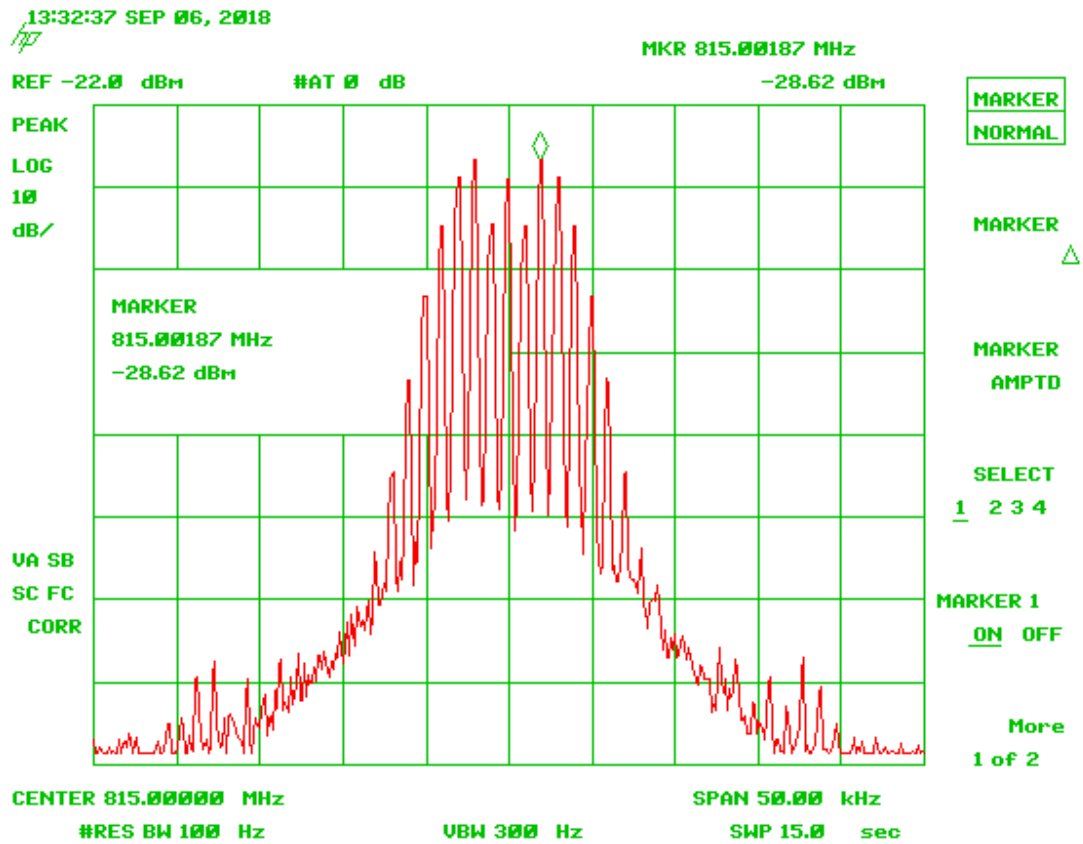


Figure 138. Input 815 MHz @ 12.5 kHz

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

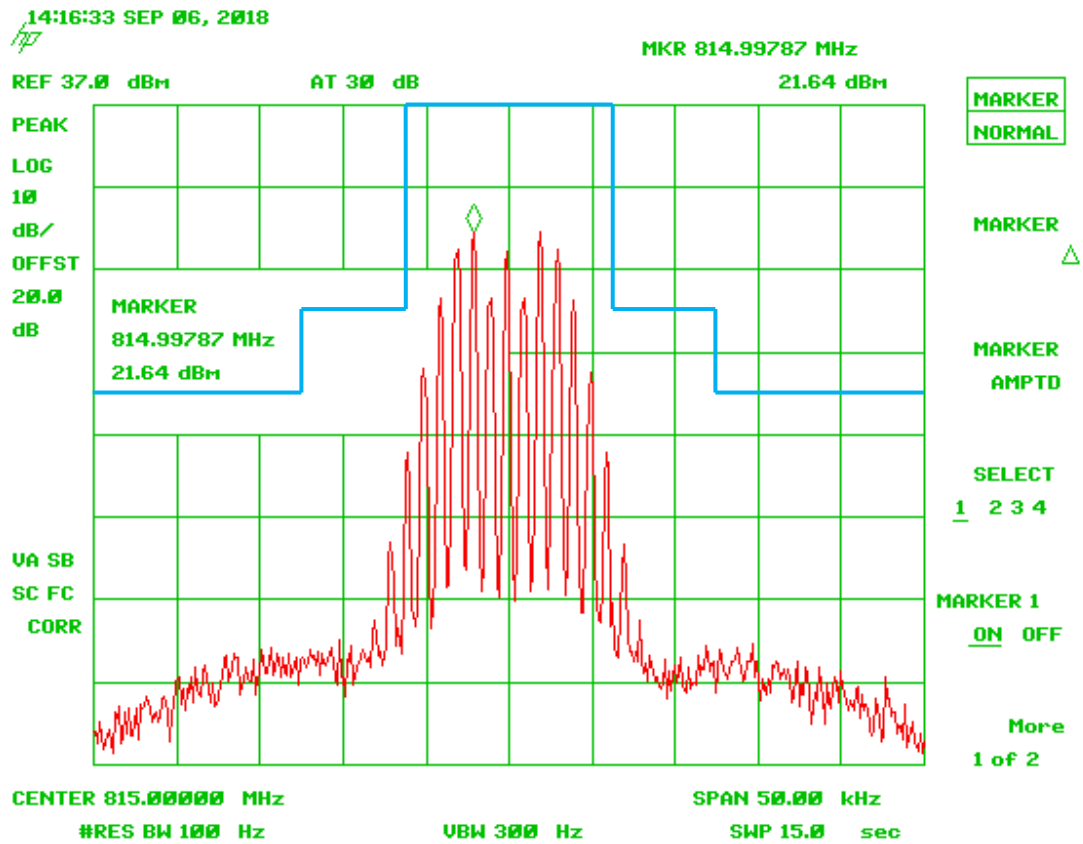


Figure 139. 815 MHz @ 12.5 kHz, Mask B

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

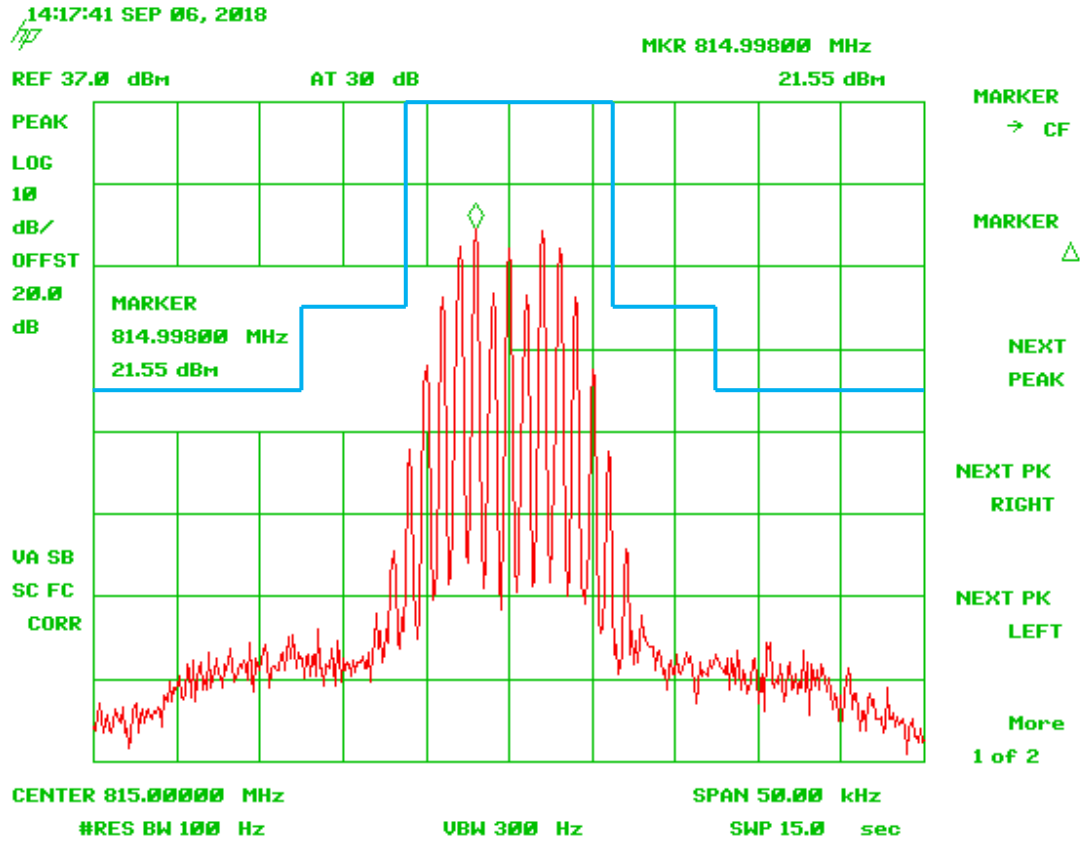


Figure 140. 815 MHz @ 12.5 kHz + 3.0 dB, Mask B

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

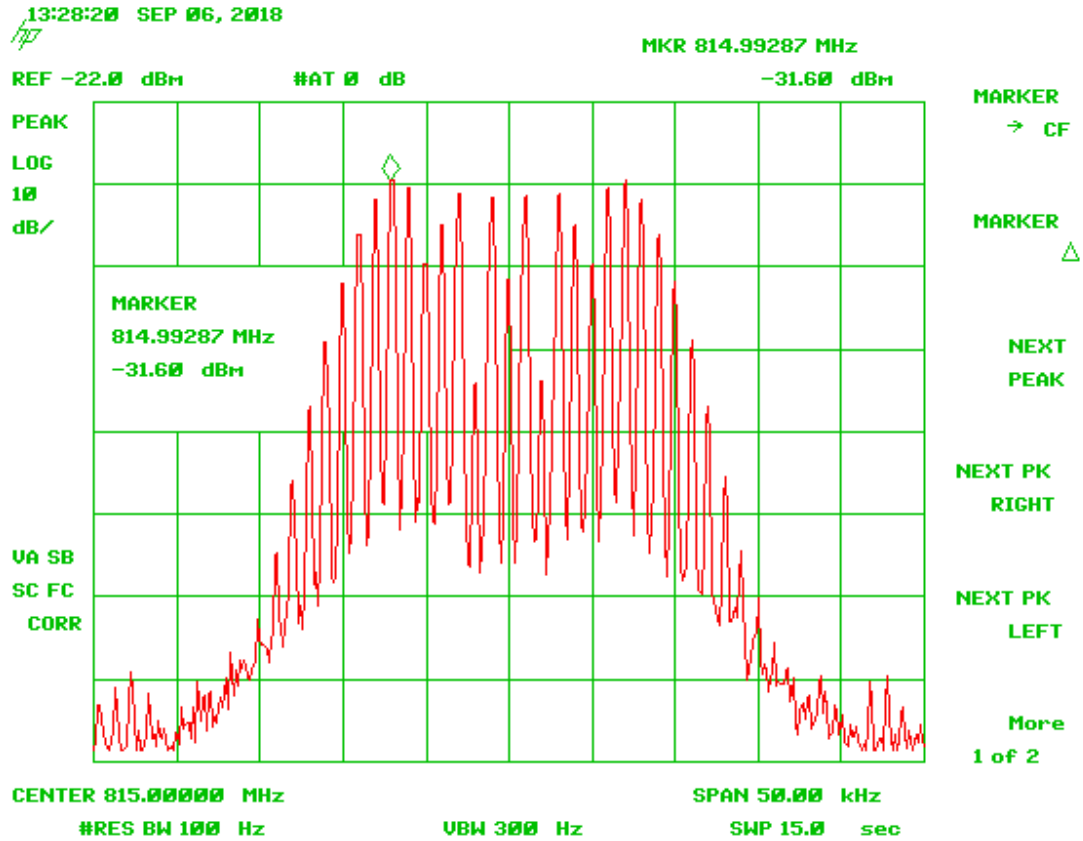


Figure 141. Input 815 MHz @ 25 kHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

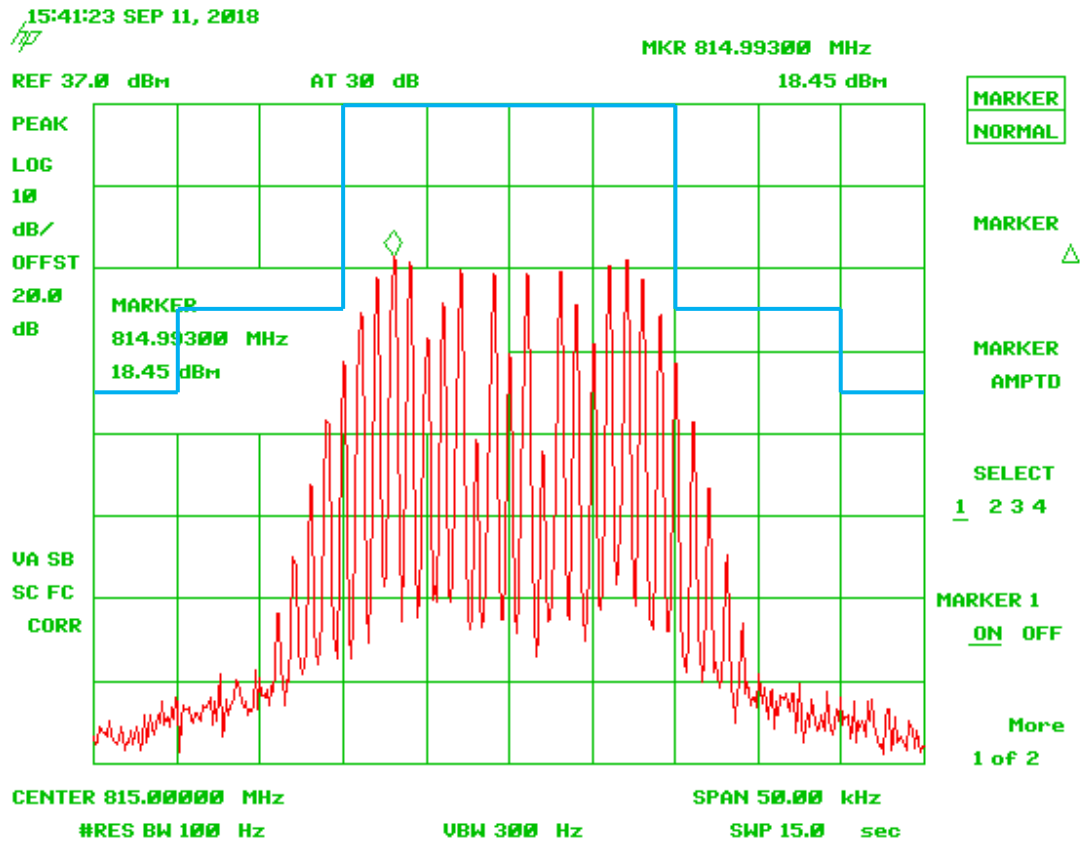


Figure 142. 815 MHz @ 25 kHz, Mask B

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

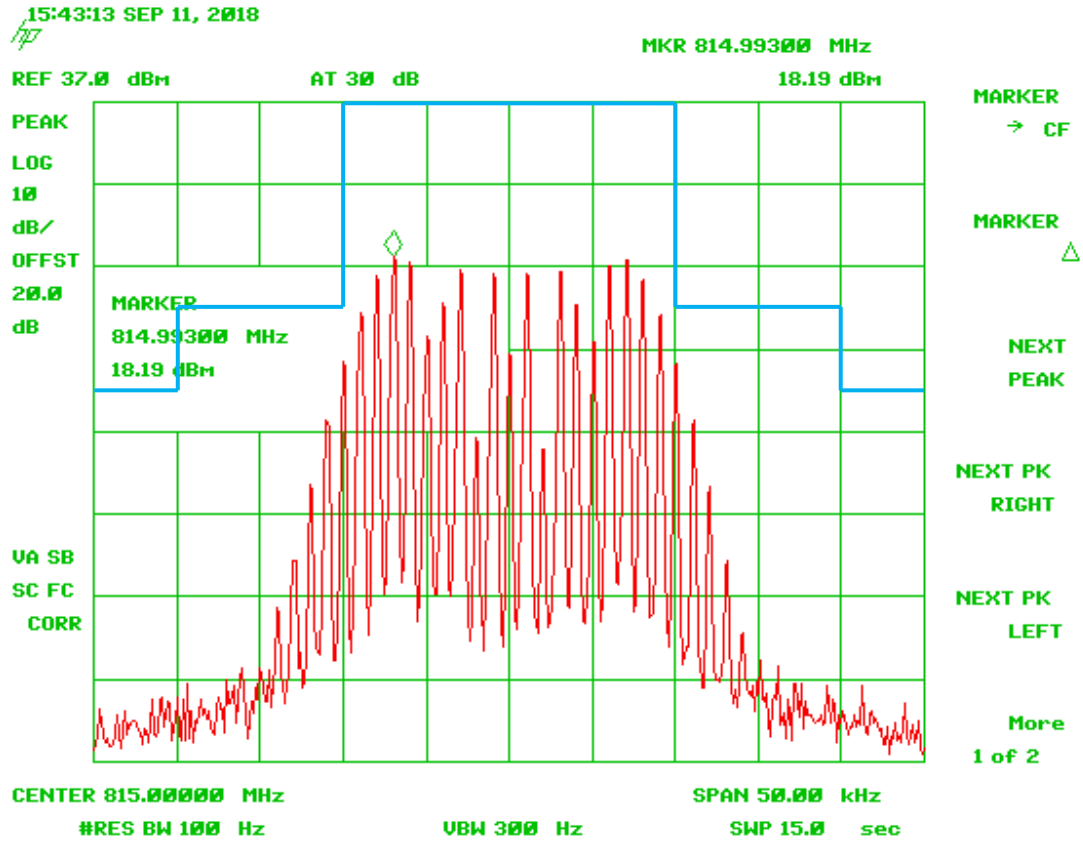


Figure 143. 815 MHz @ 25 kHz +3.0 dB, Mask B

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

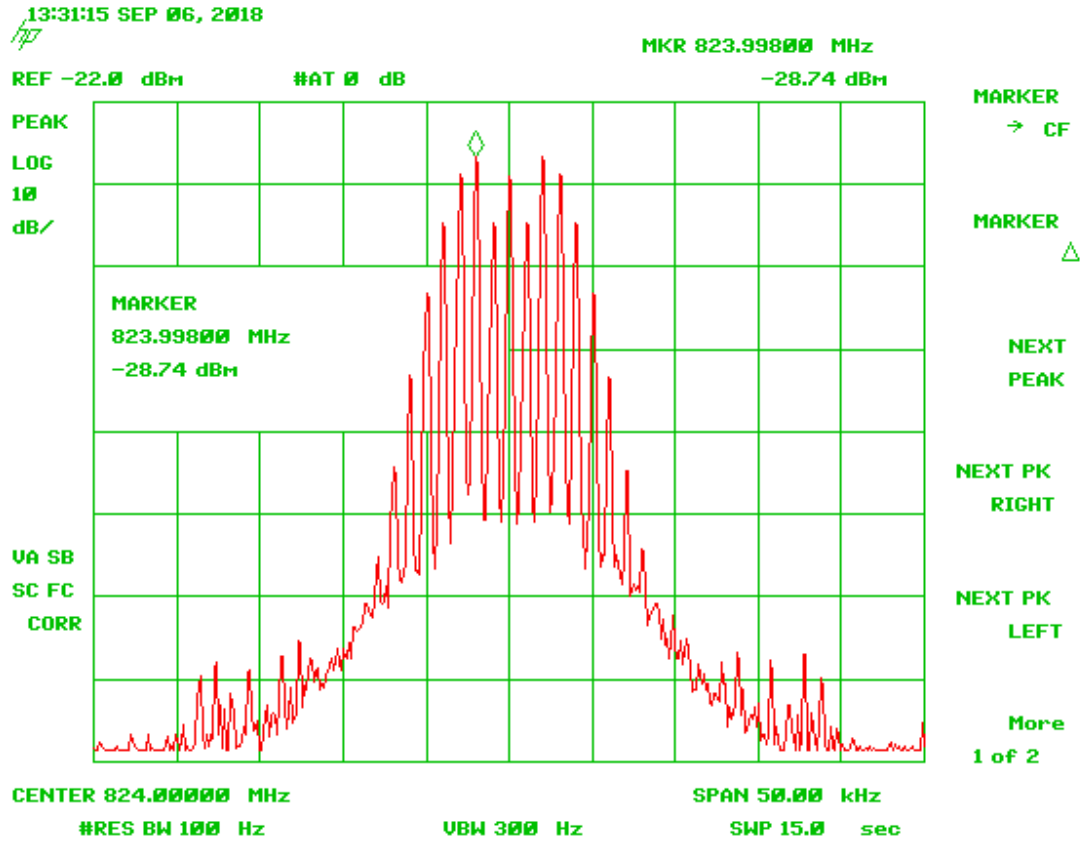


Figure 144. Input 824 MHz @ 12.5 kHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

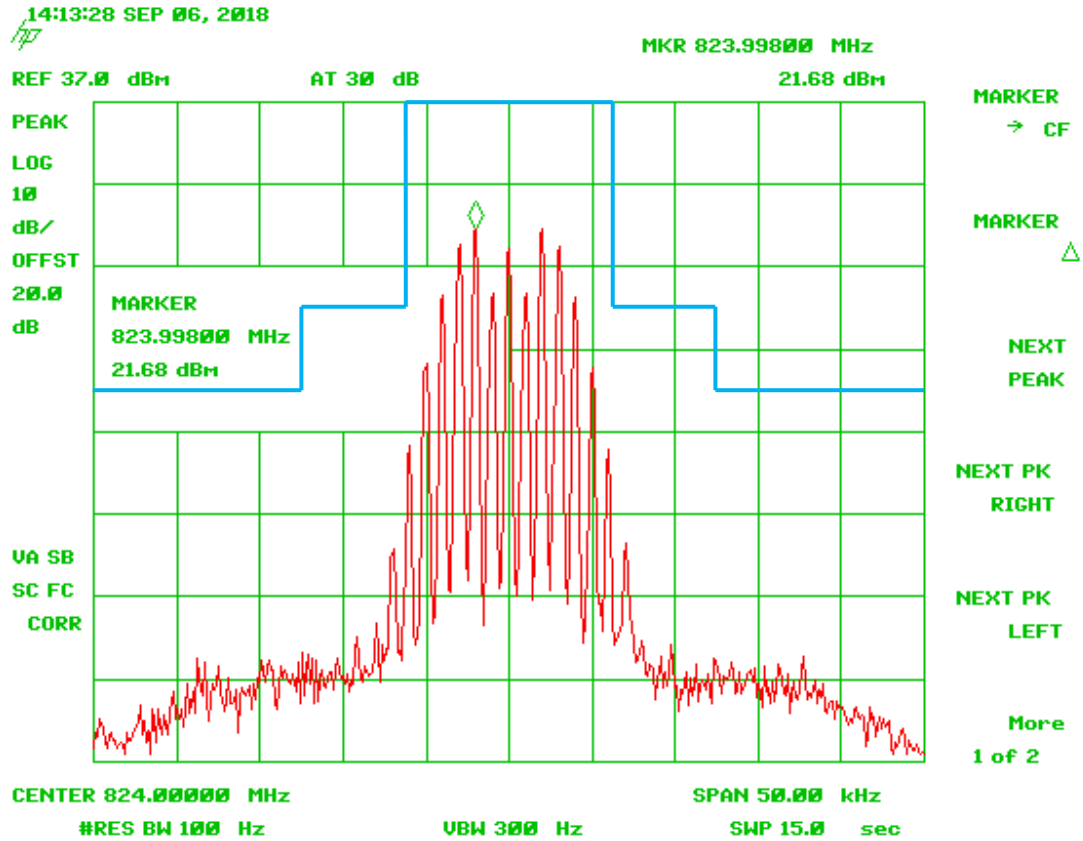


Figure 145. 824 MHz @ 12.5 kHz, Mask B

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

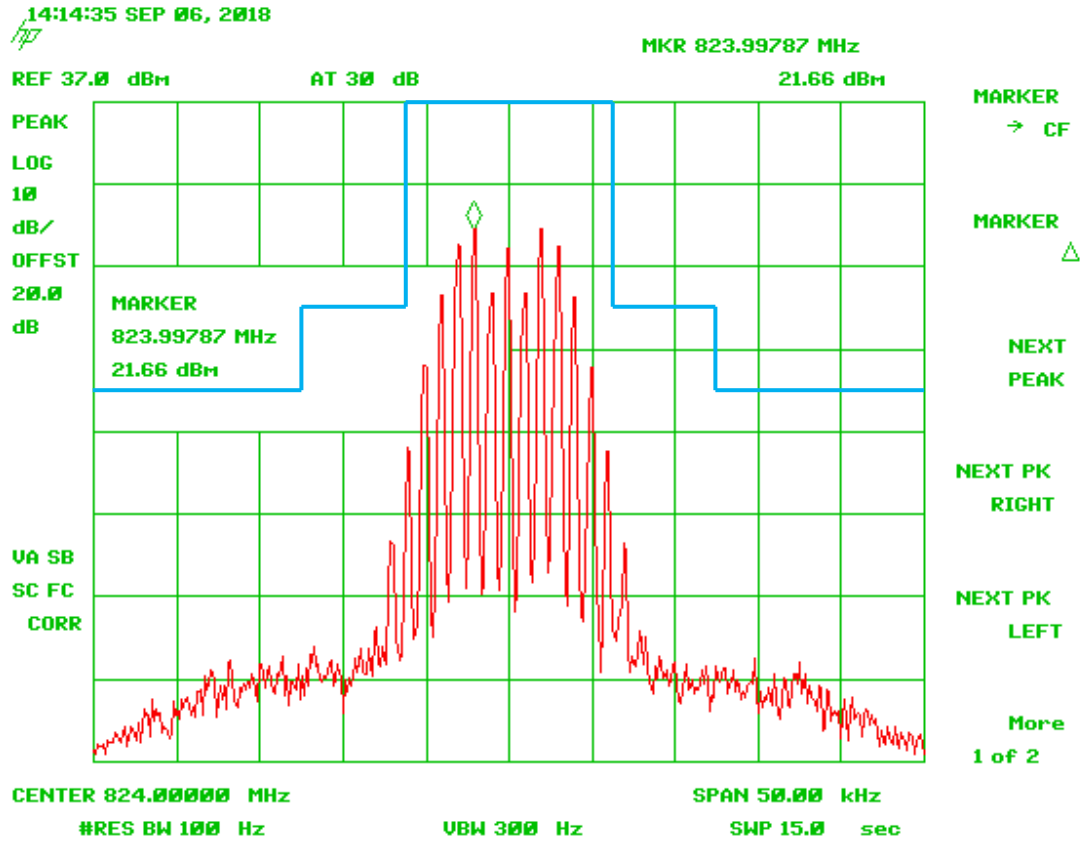


Figure 146. 824 MHz @ 12.5 kHz + 3.0 dB, Mask B

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

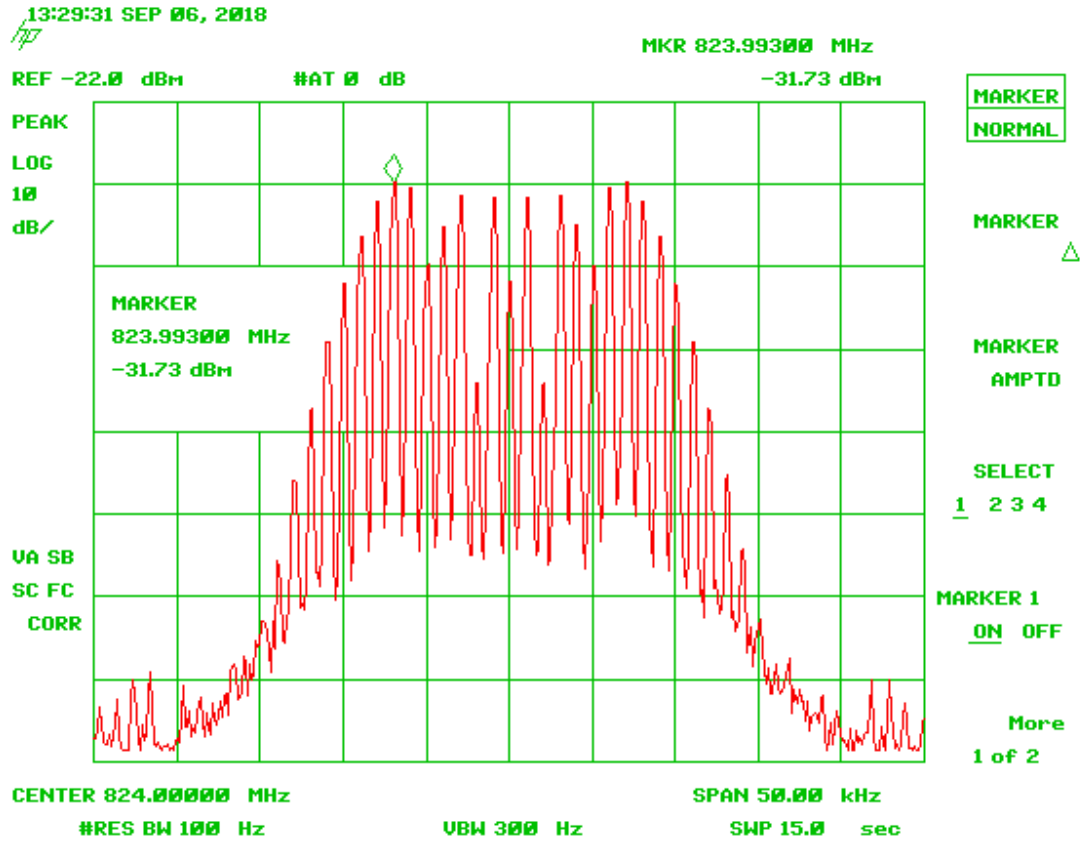


Figure 147. Input 824 MHz @ 25 kHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

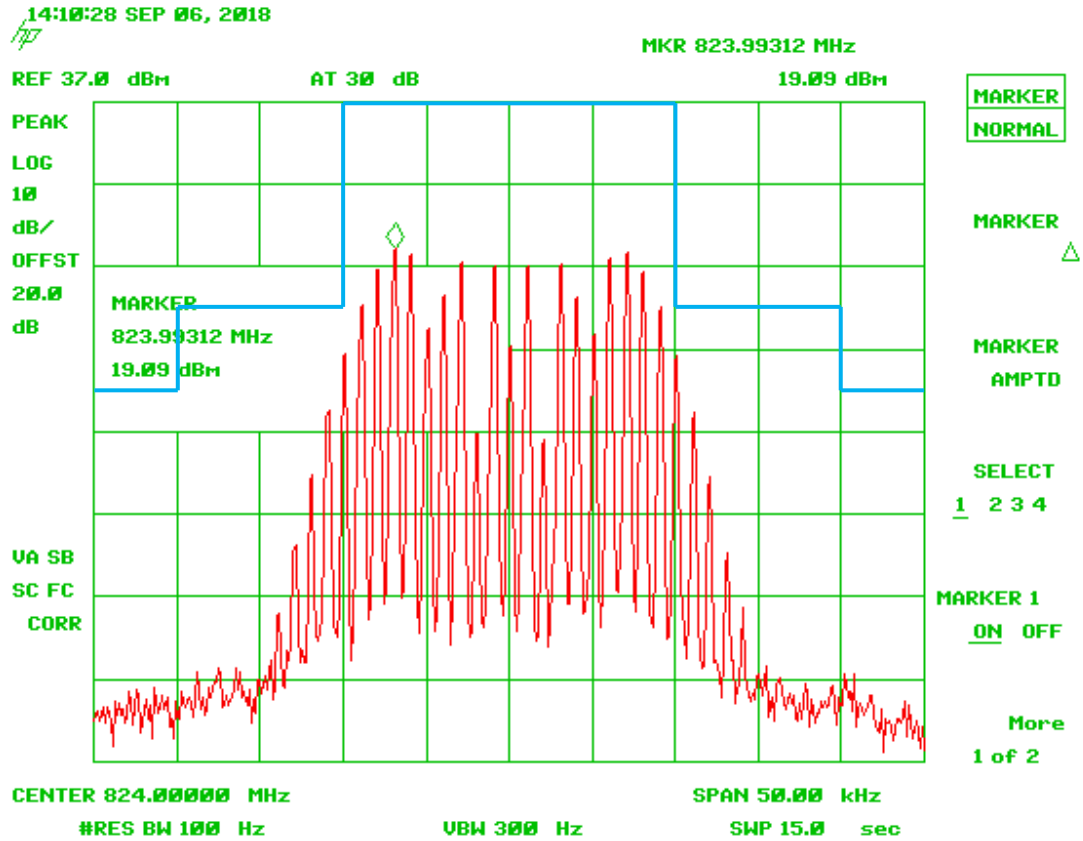


Figure 148. 824 MHz @ 25 kHz, Mask B

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

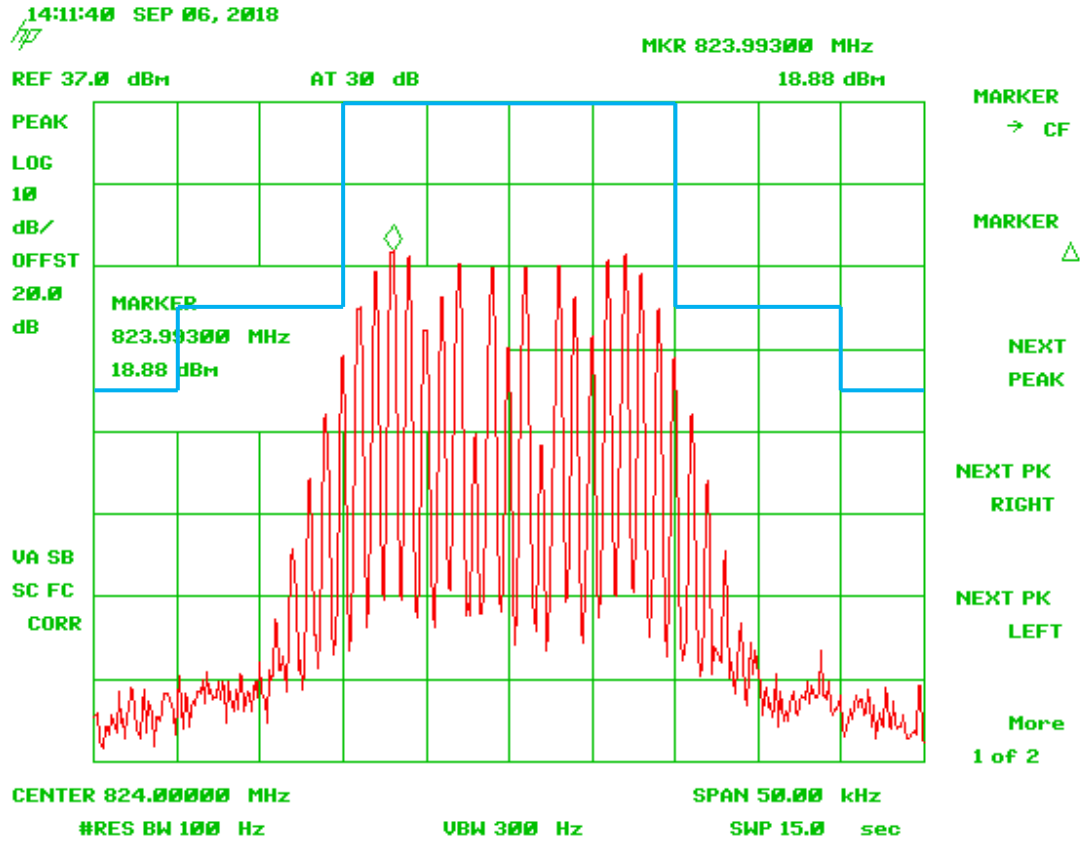


Figure 149. 824 MHz @ 25 kHz + 3.0 dB, Mask B

2.13.5 900 MHz Channel

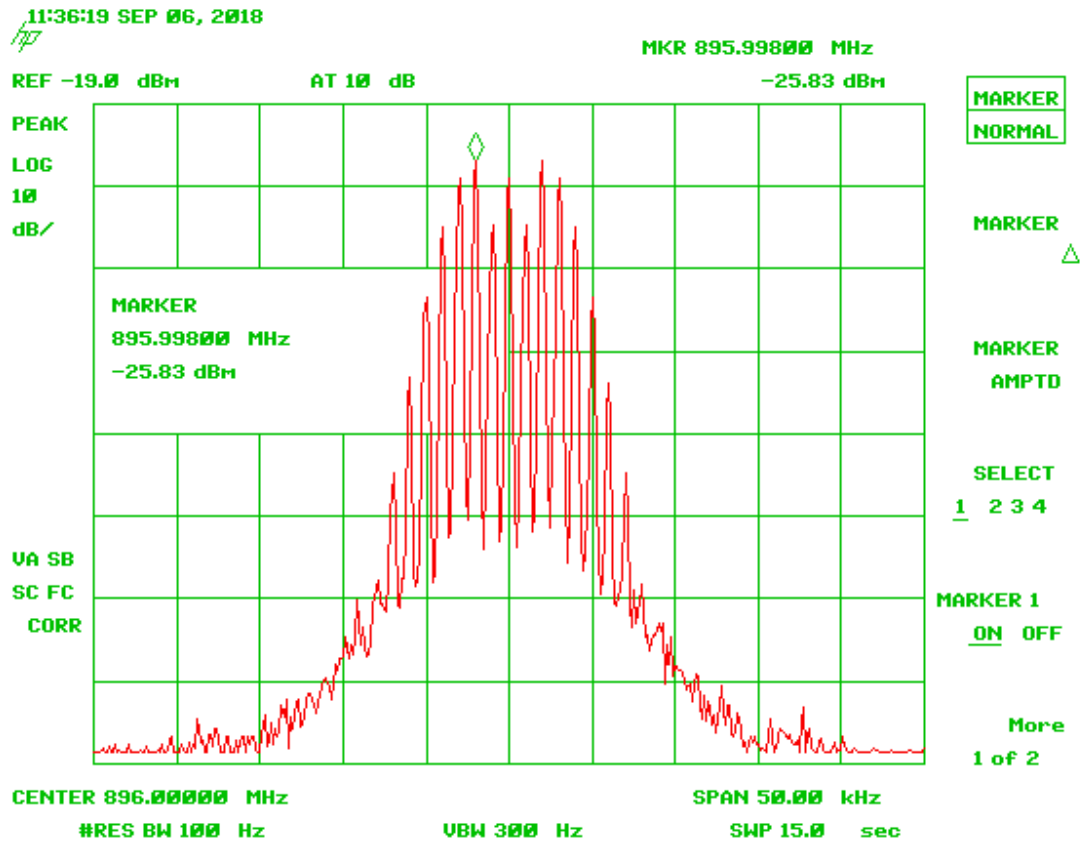


Figure 150. Input 896 MHz @ 12.5 kHz

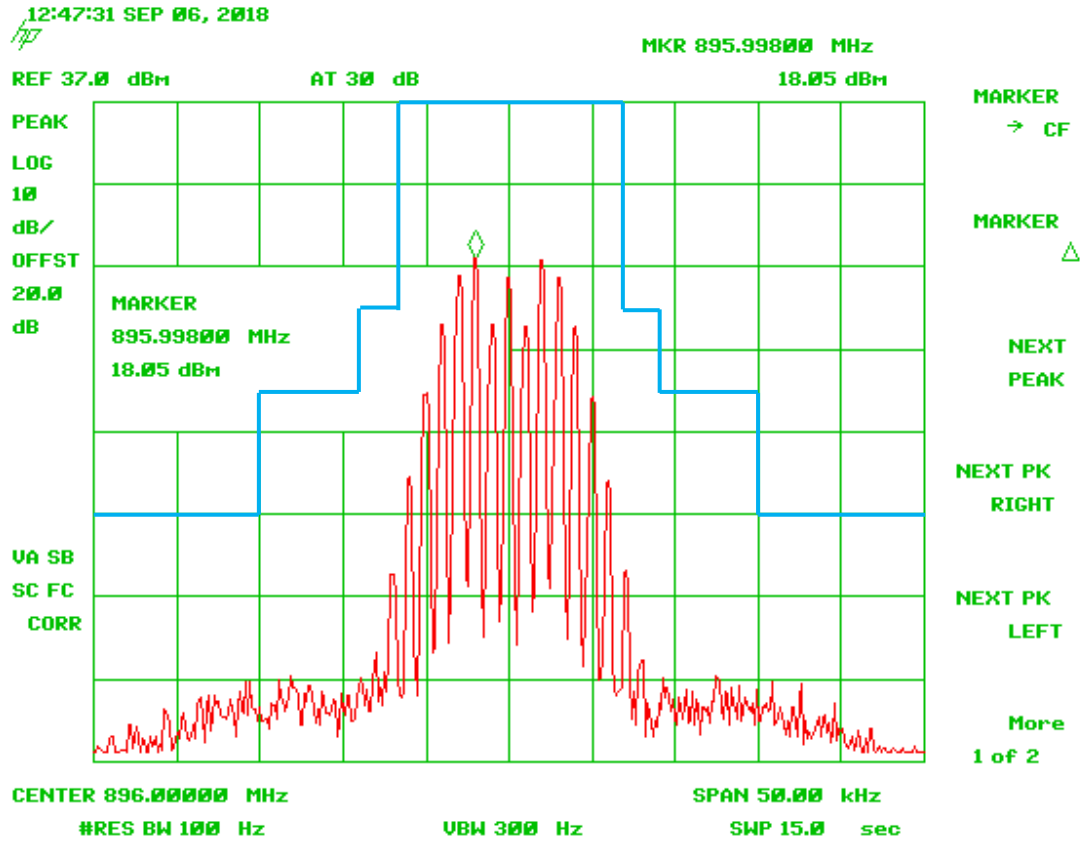


Figure 151. 896 MHz @ 12.5 kHz, Mask I

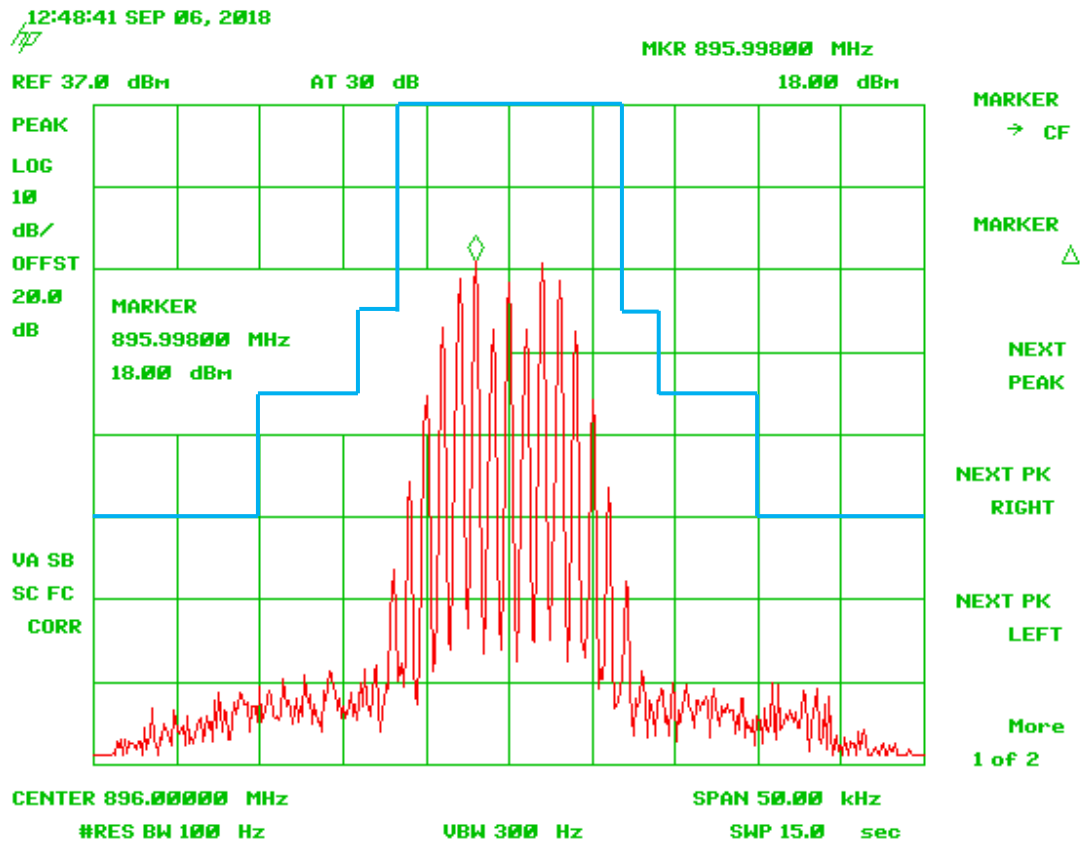


Figure 152. 896 MHz @ 12.5 + 3.0 dB, Mask I

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

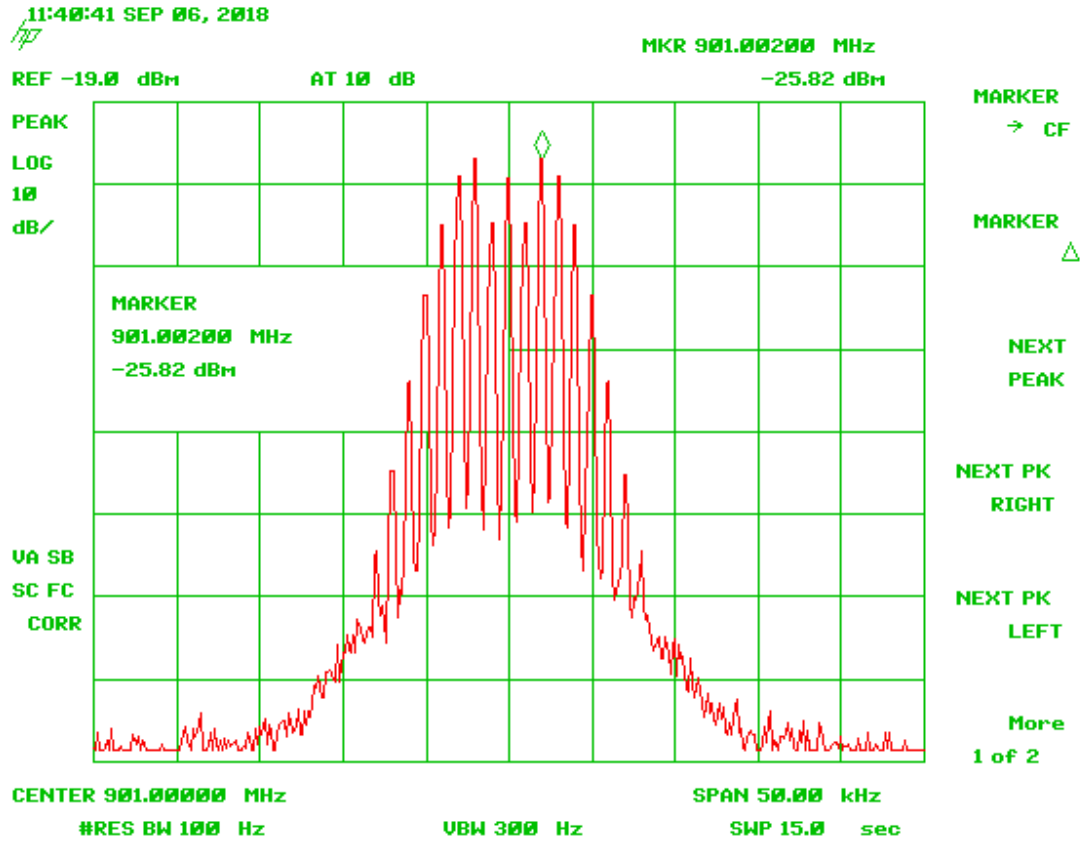


Figure 153. Input 901 MHz @ 12.5 kHz

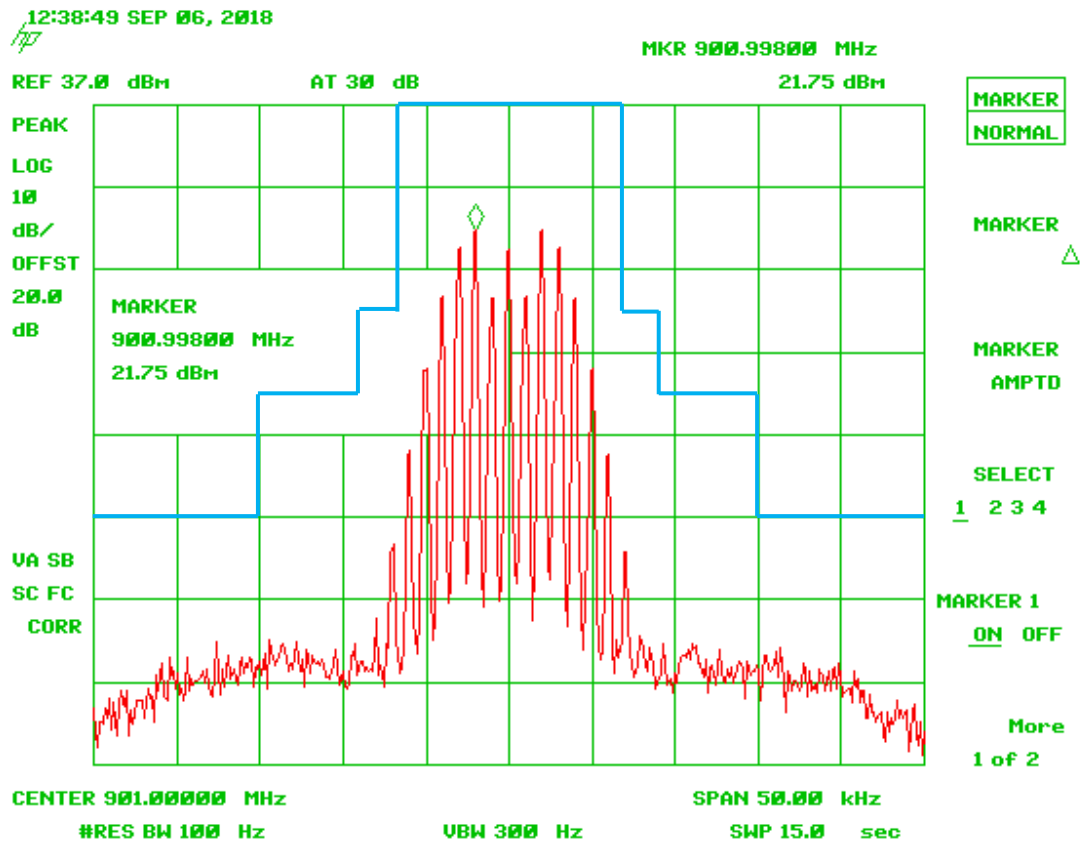


Figure 154. 901 MHz @ 12.5 kHz, Mask I

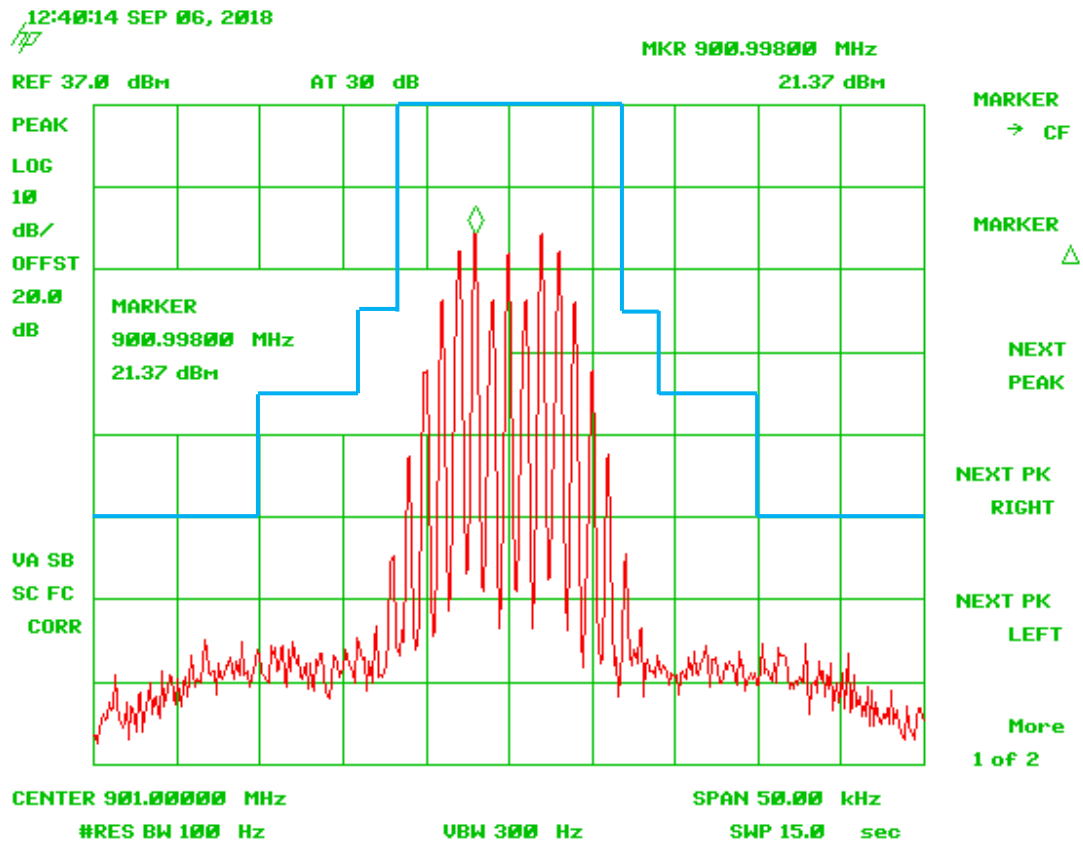


Figure 155. 901 MHz @ 12.5 kHz + 3.0 dB, Mask I

2.14 Spurious Emissions (FCC Section 90.219(d)(e)(3) and RSS-131, 6.5) - Uplink

Spurious Emissions from a signal booster must not exceed -13 dBm within any 100 kHz measurement bandwidth.

2.14.1 Radiated Spurious Emissions Measurement

The EUT was tested in a semi-anechoic chamber. The EUT was set on a turntable with the EUT positioned 3m from the receiving antenna. A spectrum analyzer was used to measure the emissions and verify that the levels met the requirements for Radiated Emissions. The EUT was tested by rotating it 360° with the receiving antenna in both the vertical then horizontal position. The receive antenna was elevated from 1 m to 4 m to ensure that the maximum emission was captured. A signal generator was used to provide a signal to exercise the channel cards within the EUT. The EUT output was terminated with a 50 ohm non-radiating load.

The RBW was set to 100 KHz for measurements below 1 GHz and 1 MHz for measurements above 1 GHz. The VBW was 3 times the RBW.

FCC limit = -13 dBm (Assuming EIPR)

Radiated emission limit = $-13 \text{ dBm} - 20 \log(3\text{m}) + 104.8 = 82.25 \text{ dBuV/m}$

The following plots show the worst-case results, which were measured with the antennas in both horizontal and vertical position.

2.14.1.1 VHF Radiated Spurious Emissions Plots

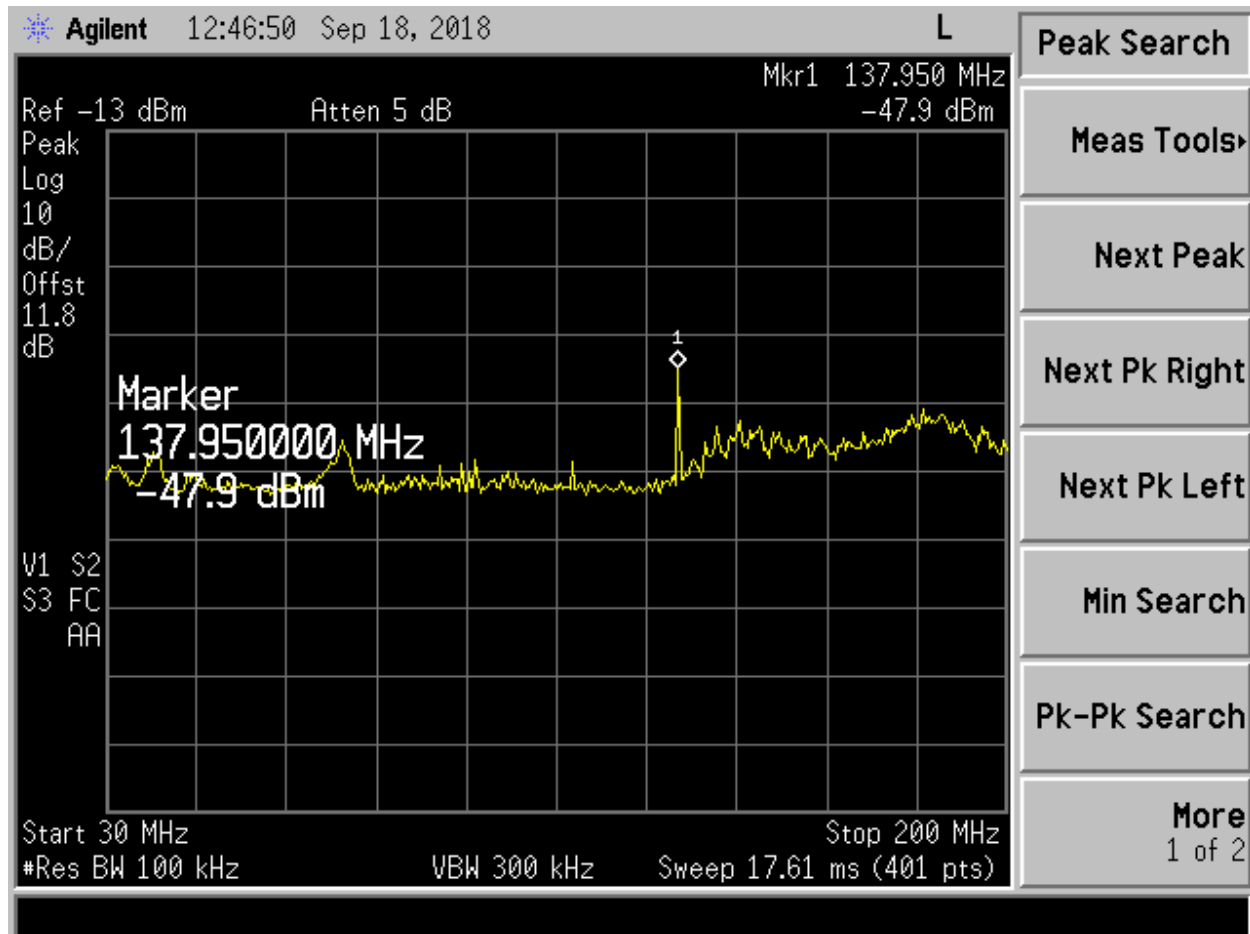


Figure 156. 138 MHz Horizontal, 30 – 200 MHz

(Note: Test data for band 138-144 MHz and 380-400 MHz not applicable for FCC certification)

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

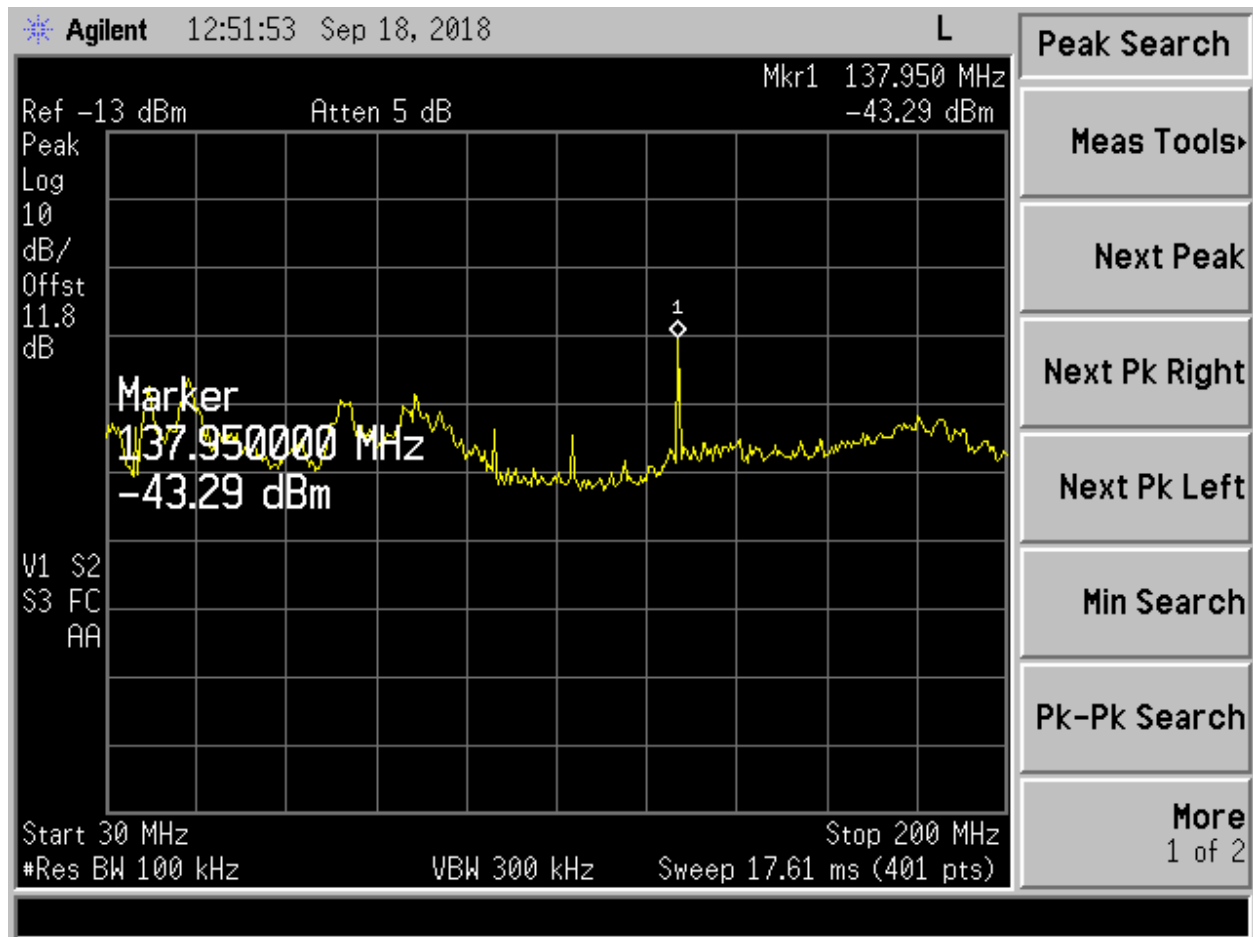


Figure 157. 138 MHz Vertical, 30 – 200 MHz

(Note: Test data for band 138-144 MHz and 380-400 MHz not applicable for FCC certification)

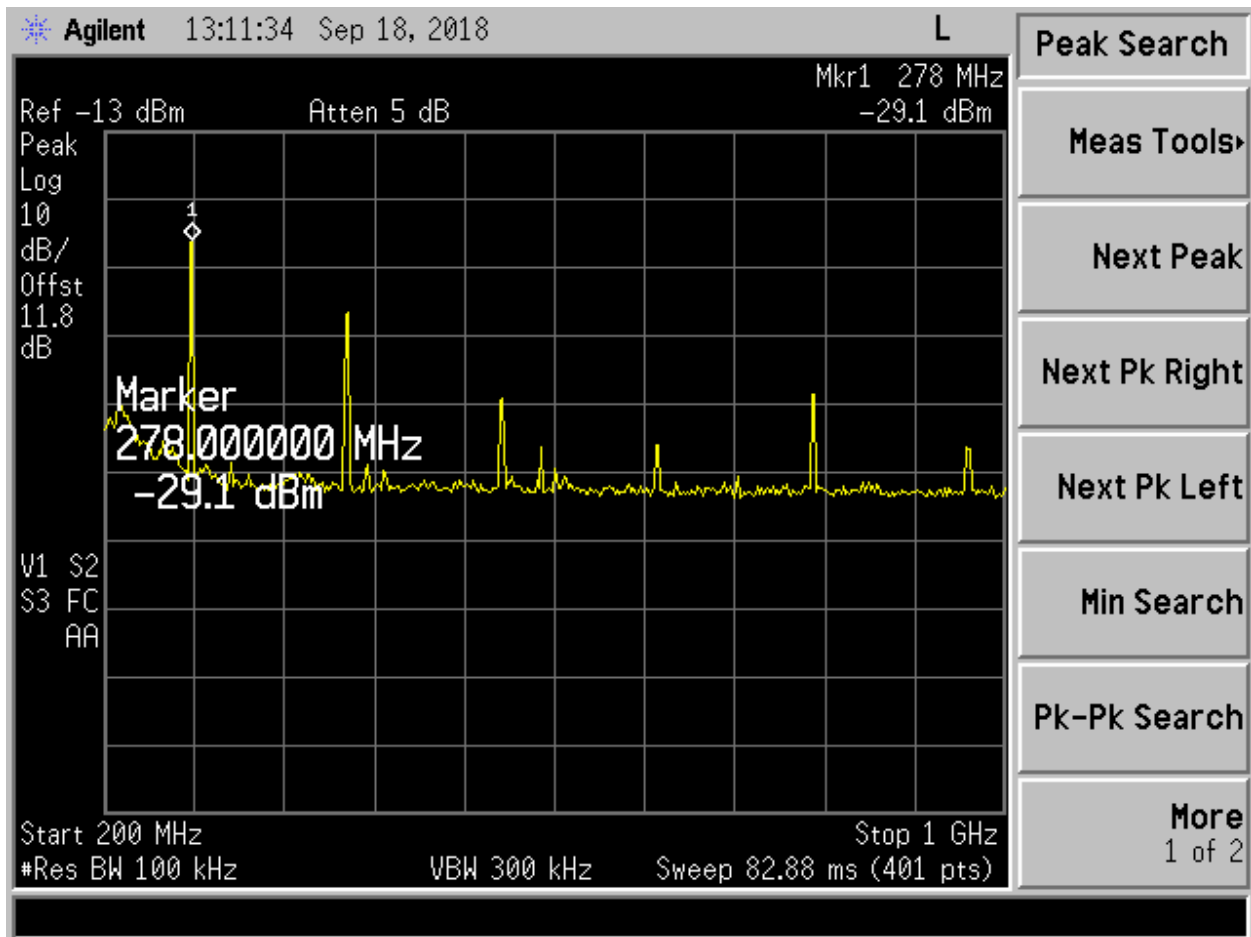


Figure 158. 138 MHz Horizontal, 200 MHz - 1 GHz

(Note: Test data for band 138-144 MHz and 380-400 MHz not applicable for FCC certification)

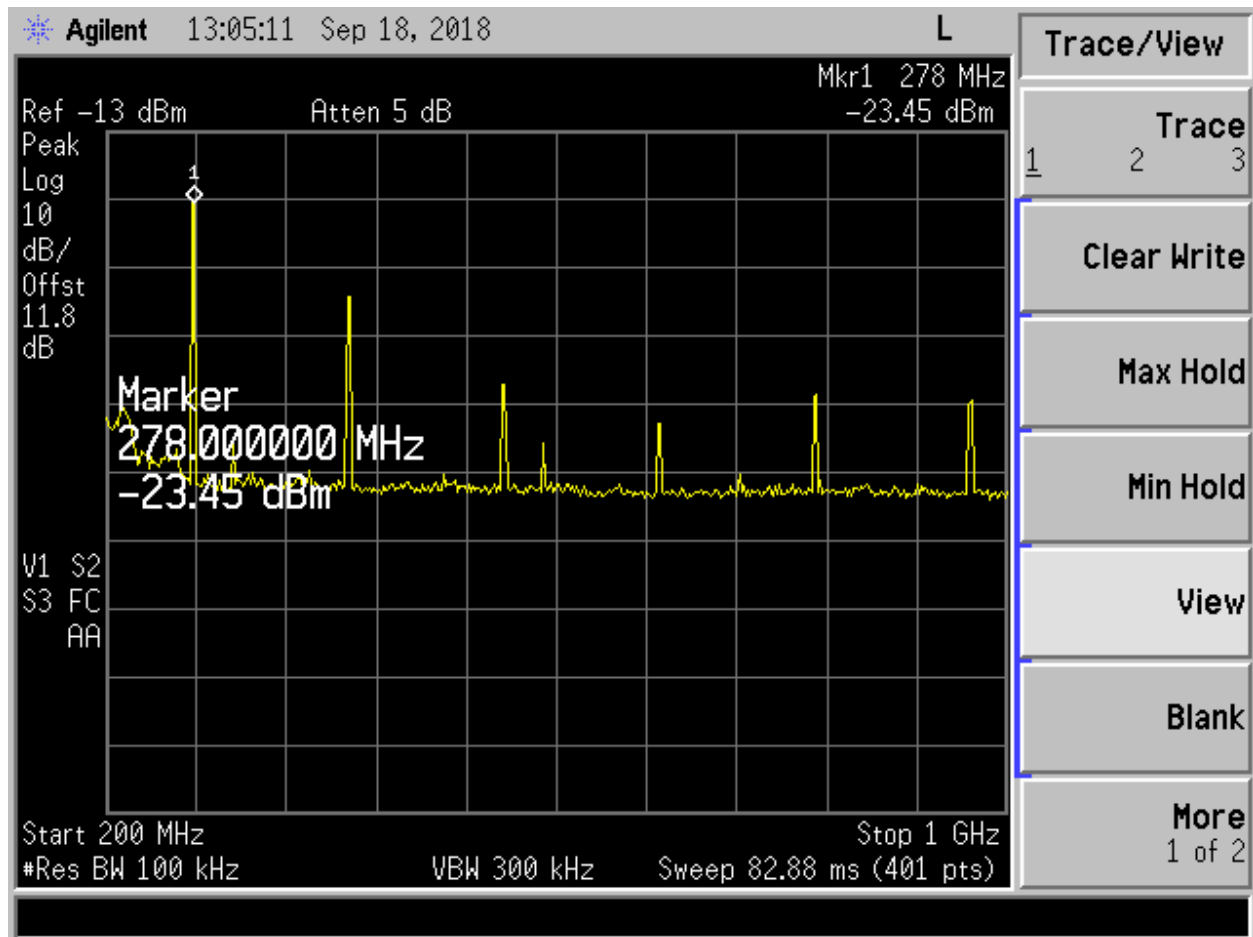


Figure 159. 138 MHz Vertical, 200 MHz - 1 GHz

(Note: Test data for band 138-144 MHz and 380-400 MHz not applicable for FCC certification)

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

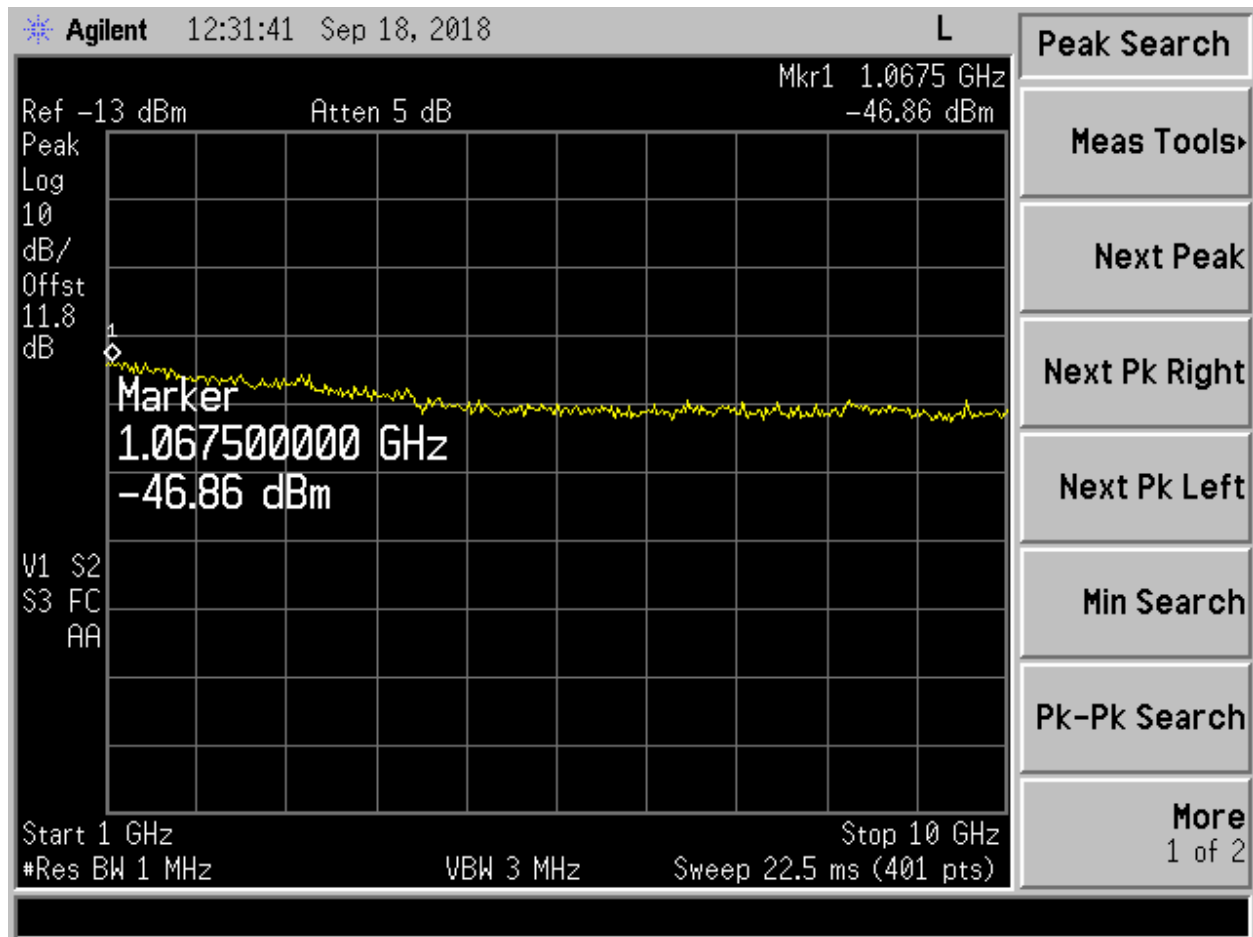


Figure 160. 138 MHz Horizontal, 1 – 10 GHz

(Note: Test data for band 138-144 MHz and 380-400 MHz not applicable for FCC certification)

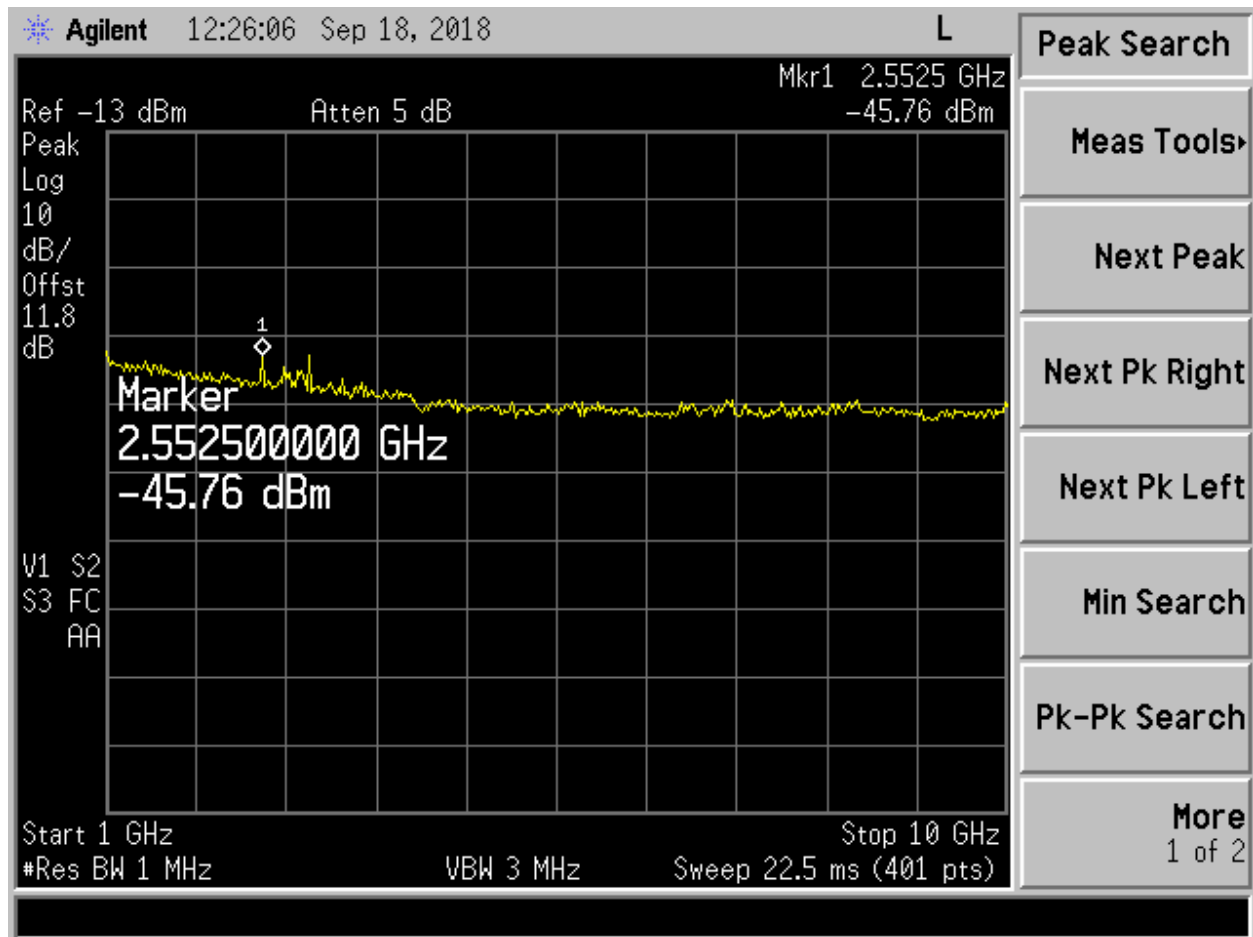


Figure 161. 138 MHz Vertical, 1 – 10 GHz

(Note: Test data for band 138-144 MHz and 380-400 MHz not applicable for FCC certification)

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
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September 10, 2018
Safe-Com Wireless
SAFE-1000

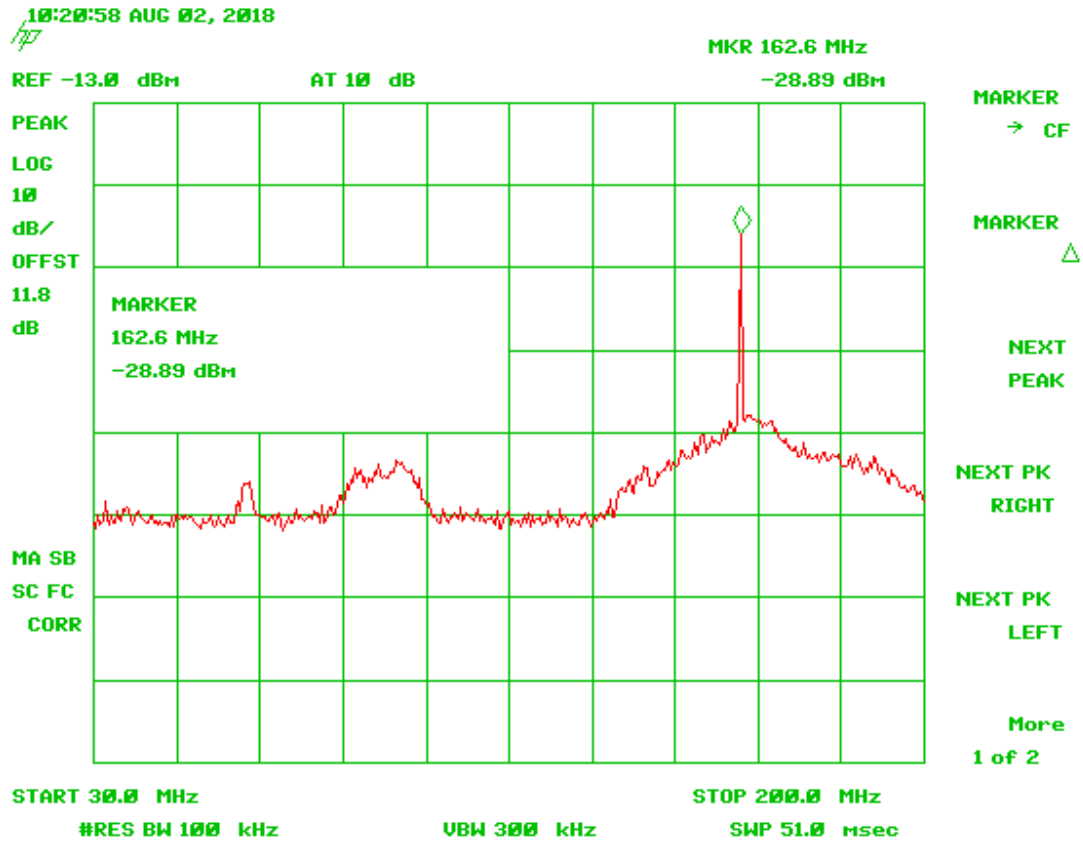


Figure 162. 162 MHz Horizontal, 30 – 200 MHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

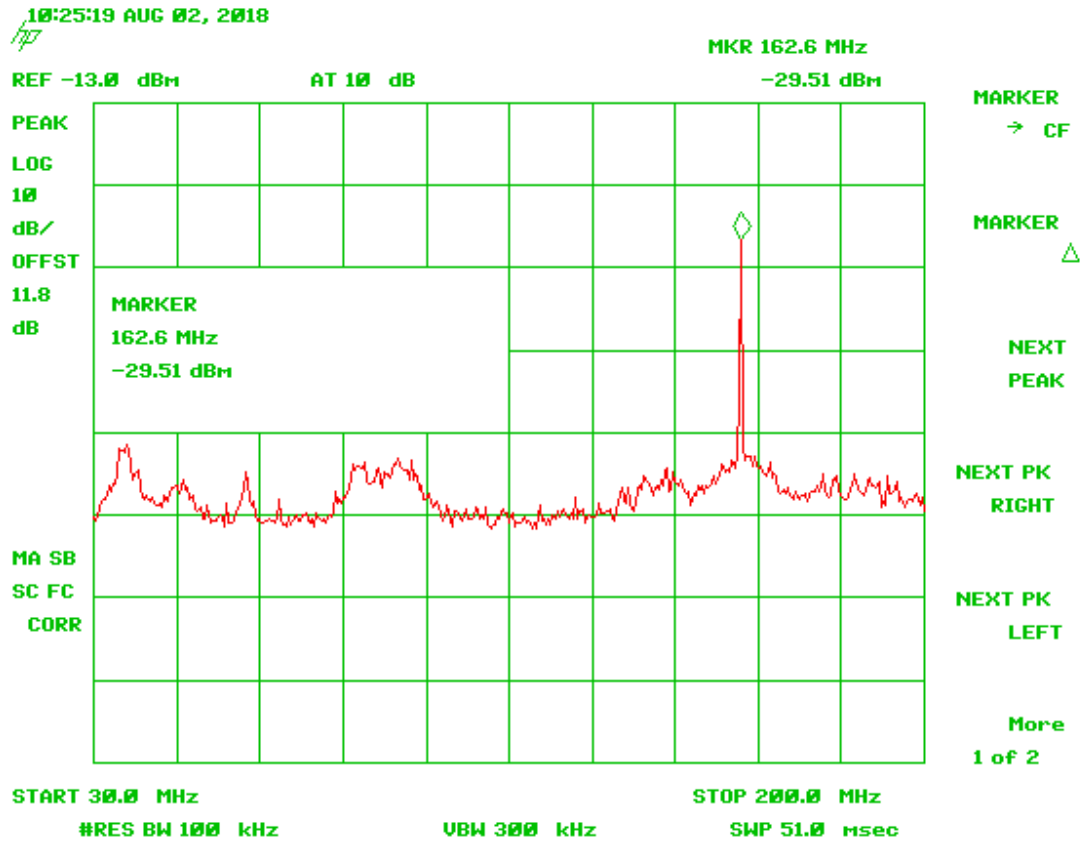


Figure 163. 162 MHz Vertical, 30 - 200 MHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

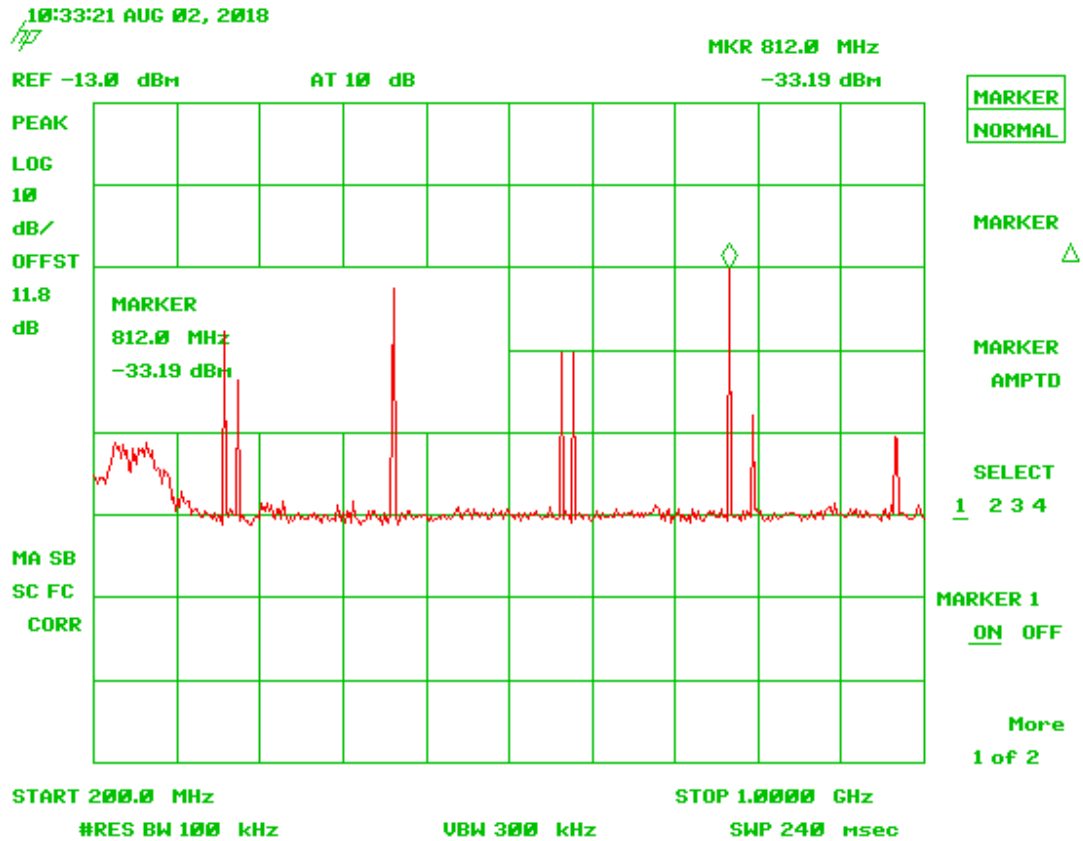


Figure 164. 162 MHz Horizontal, 200 MHz - 1 GHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

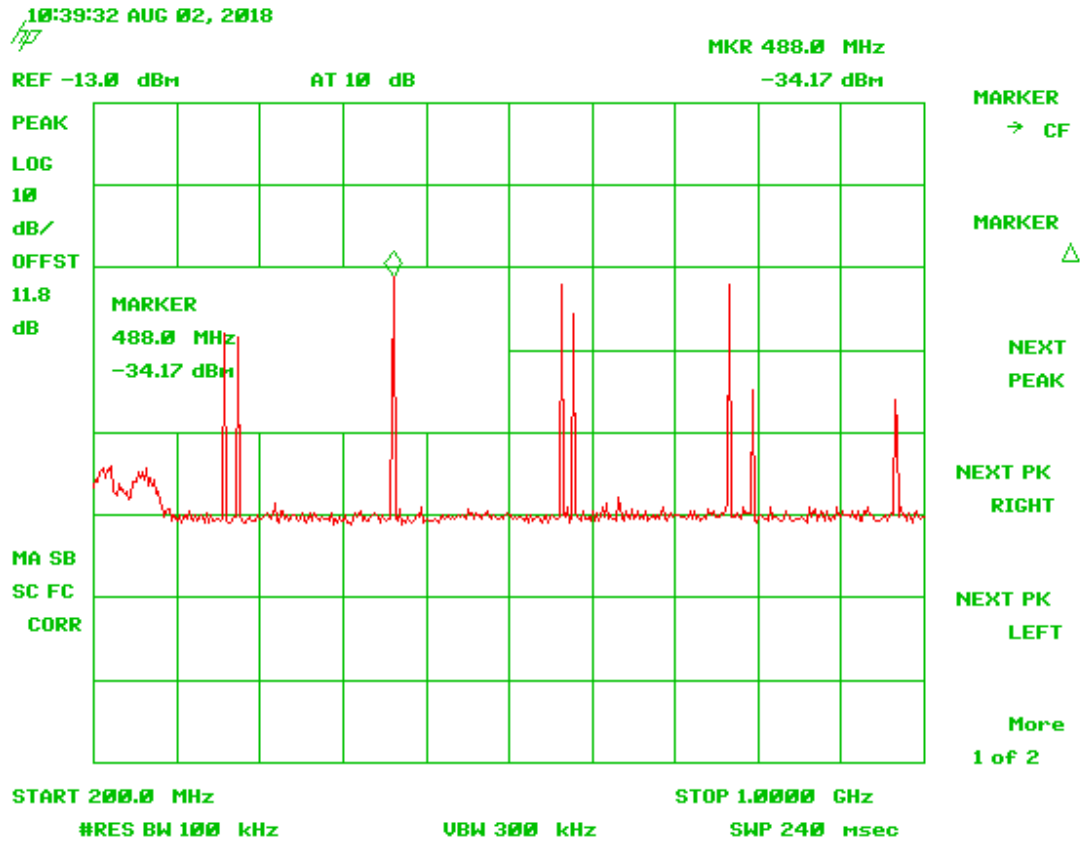


Figure 165. 162 MHz Vertical, 200 MHz – 1 GHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

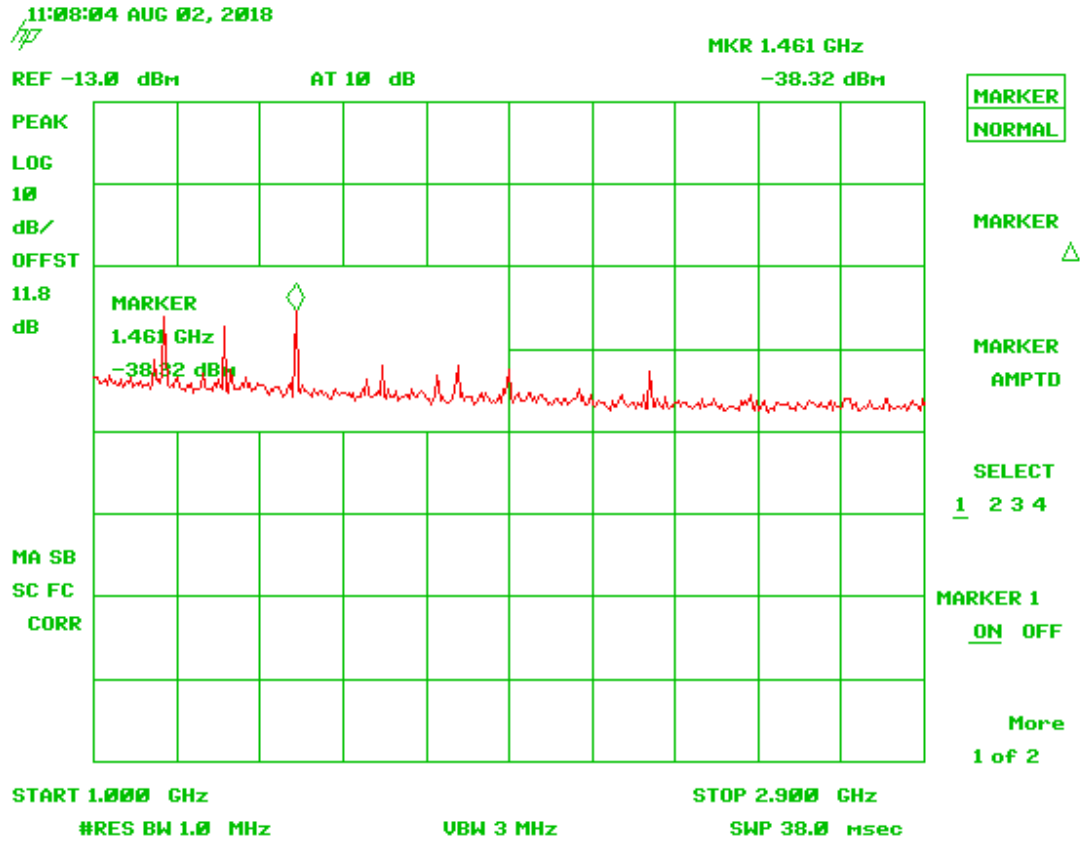


Figure 166. 162 MHz Horizontal, 1 – 2.9 GHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

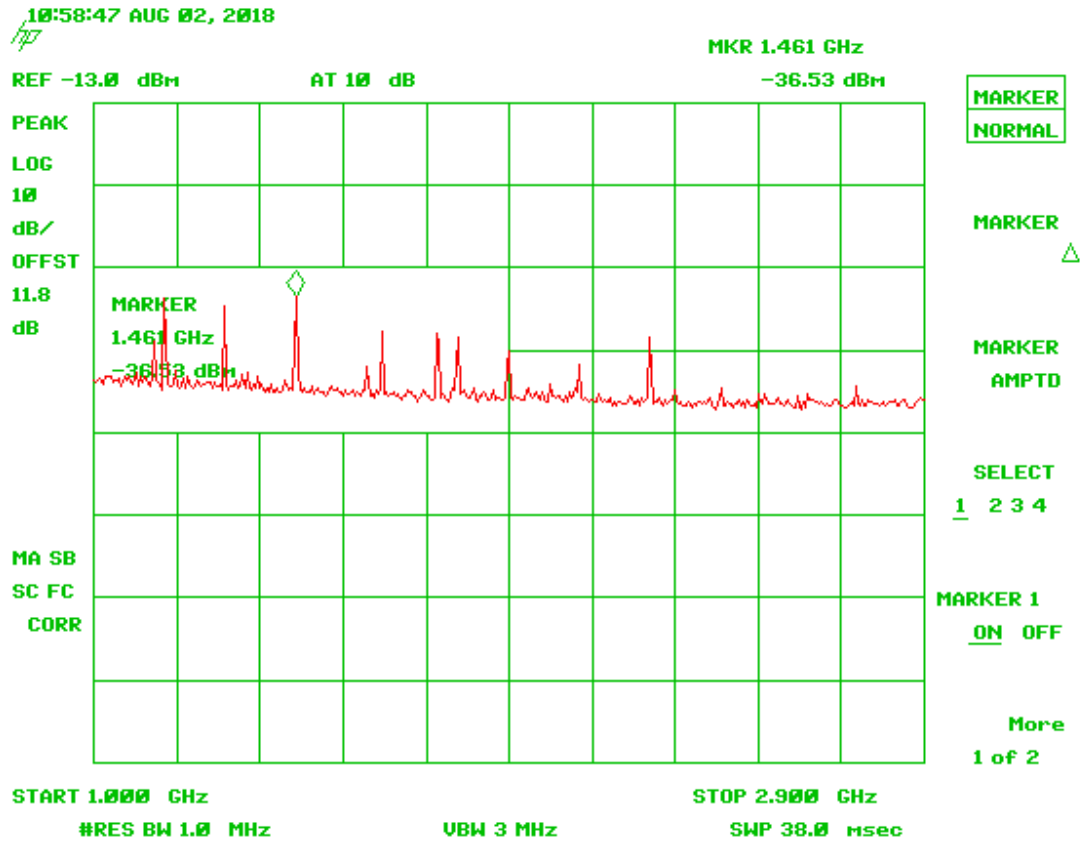


Figure 167. 162 MHz Vertical, 1 - 2.9 GHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

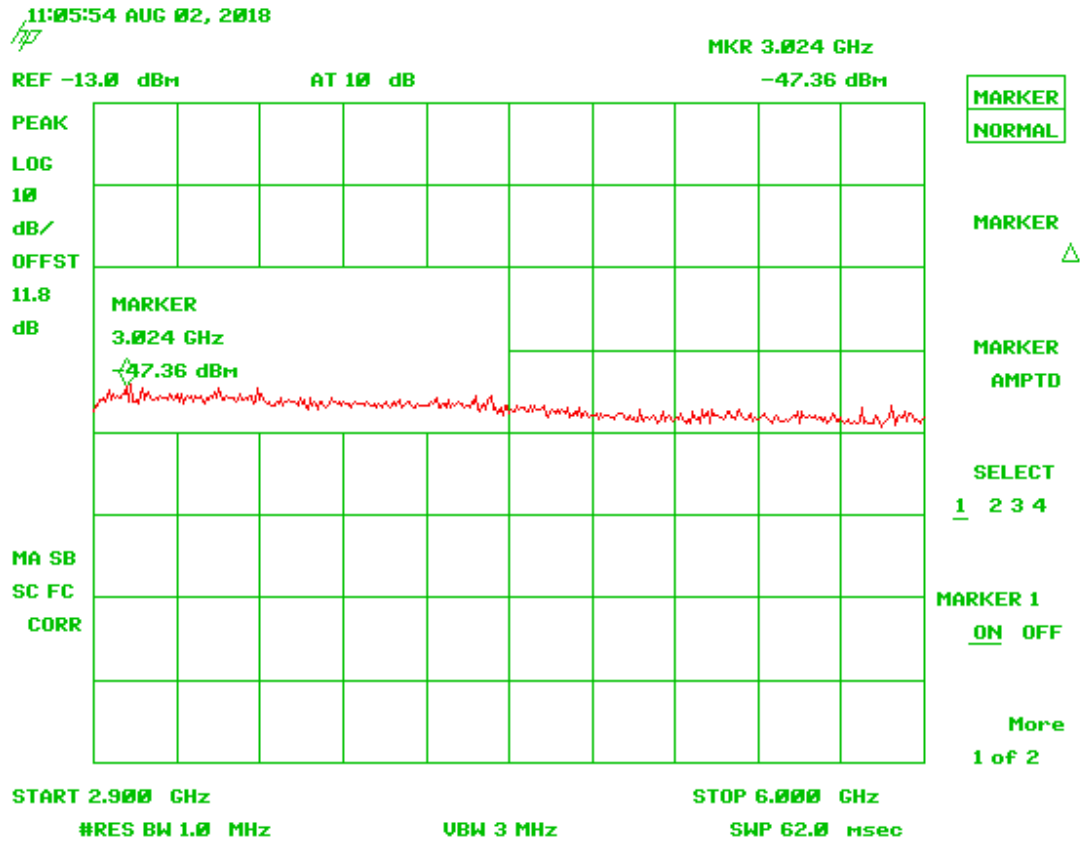


Figure 168. 162 MHz Horizontal, 2.9 – 6 GHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

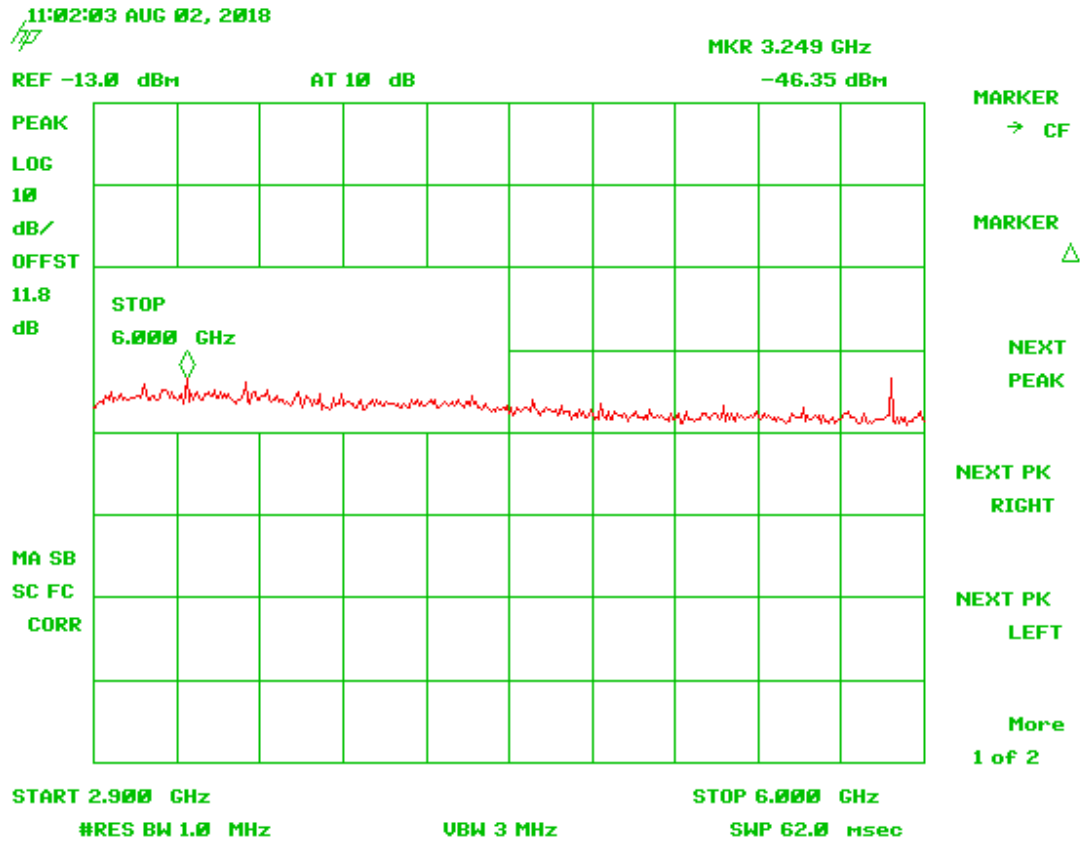


Figure 169. 162 MHz Vertical, 2.9 - 6 GHz

U.S. Tech Test Report:
 FCC ID:
 IC:
 Report Number:
 Issue Date:
 Customer:
 Model:

FCC Part 90 Certification
 2AKSM-SAFE2
 22303-SAFE2
 18-0181
 September 10, 2018
 Safe-Com Wireless
 SAFE-1000

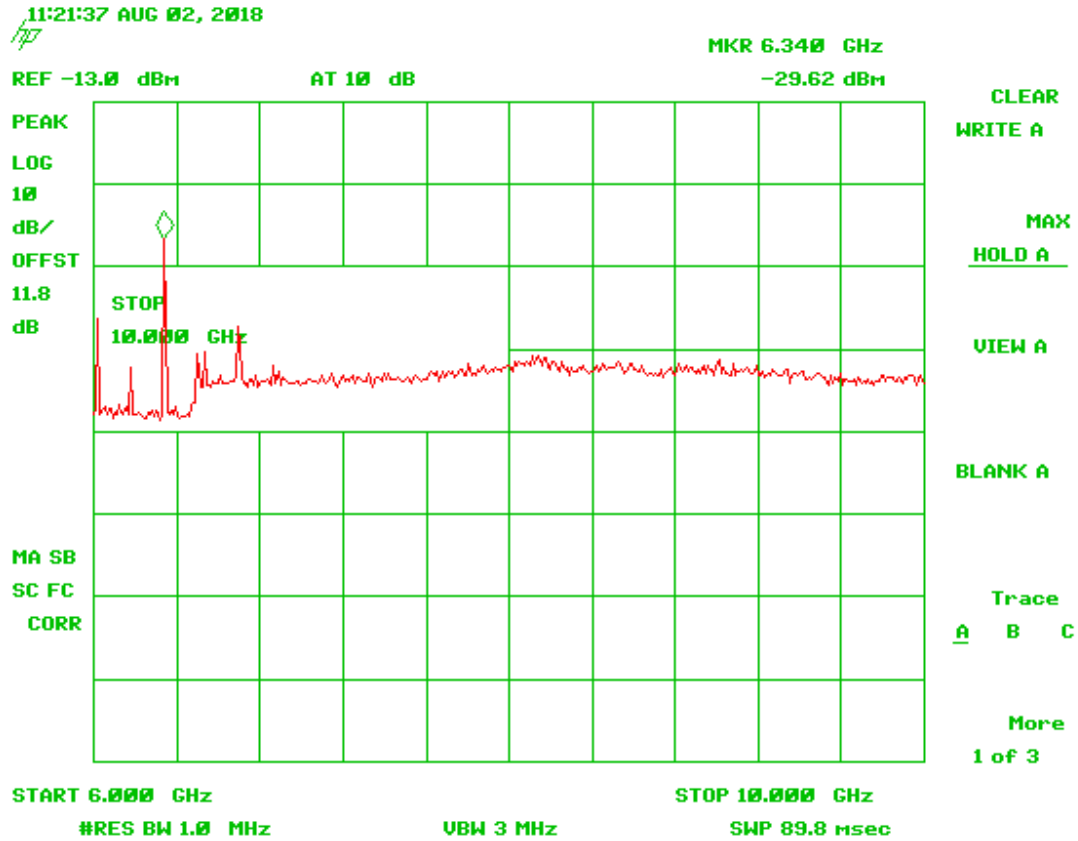


Figure 170. 162 MHz Horizontal, 6 - 10 GHz

U.S. Tech Test Report:
 FCC ID:
 IC:
 Report Number:
 Issue Date:
 Customer:
 Model:

FCC Part 90 Certification
 2AKSM-SAFE2
 22303-SAFE2
 18-0181
 September 10, 2018
 Safe-Com Wireless
 SAFE-1000

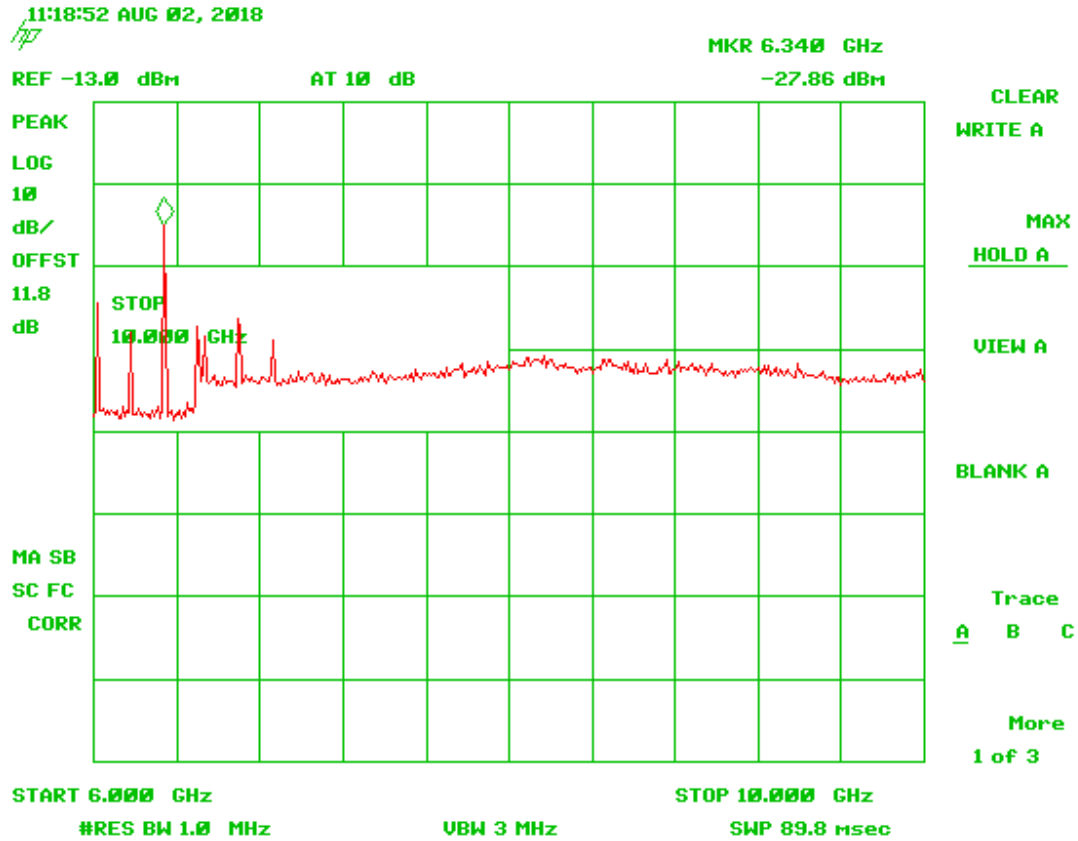


Figure 171. 162 MHz Vertical, 6 – 10 GHz

2.14.1.2 UHF Radiated Spurious Emissions Plots

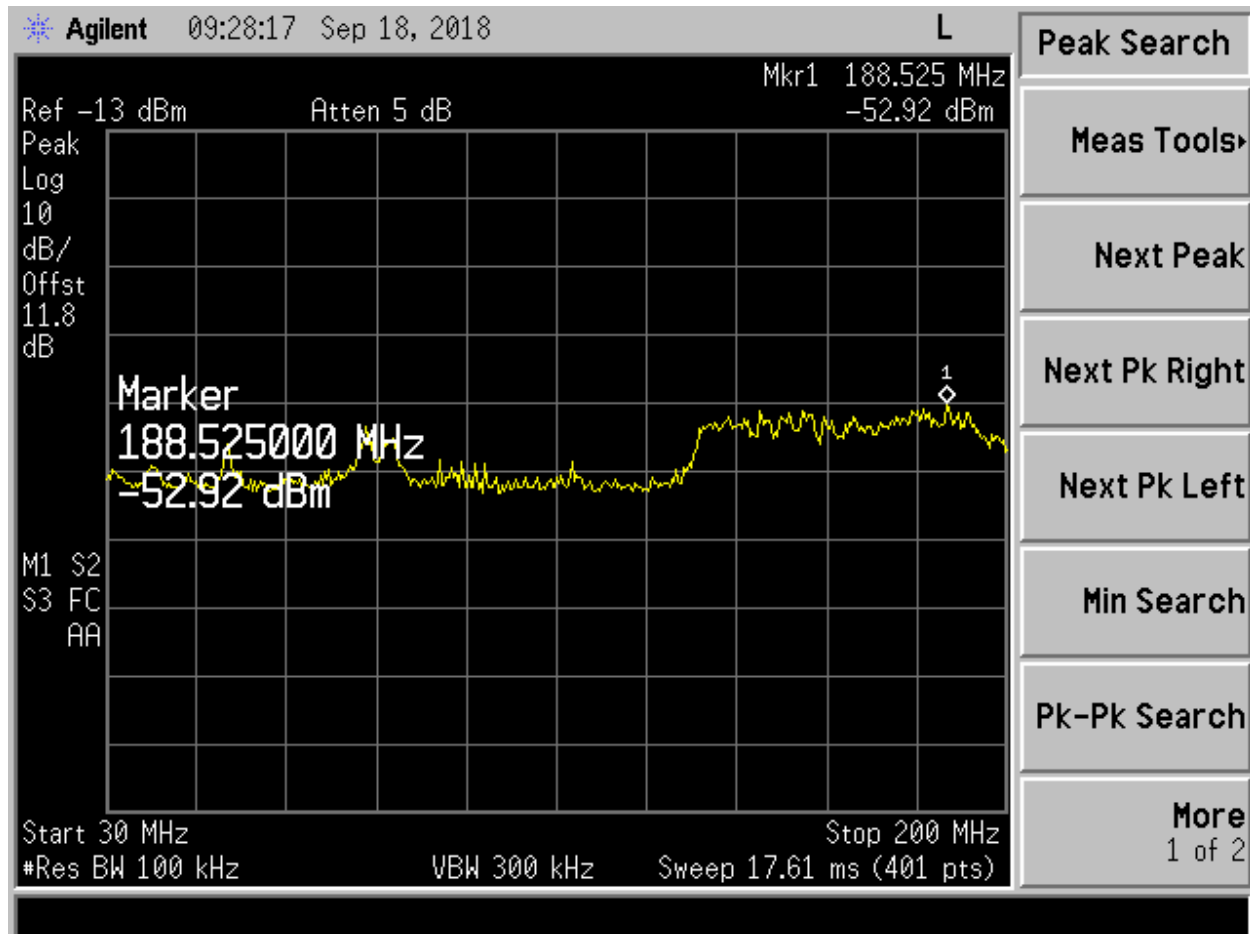


Figure 172. 380 MHz Horizontal, 30 – 200 MHz

(Note: Test data for band 138-144 MHz and 380-400 MHz not applicable for FCC certification)

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

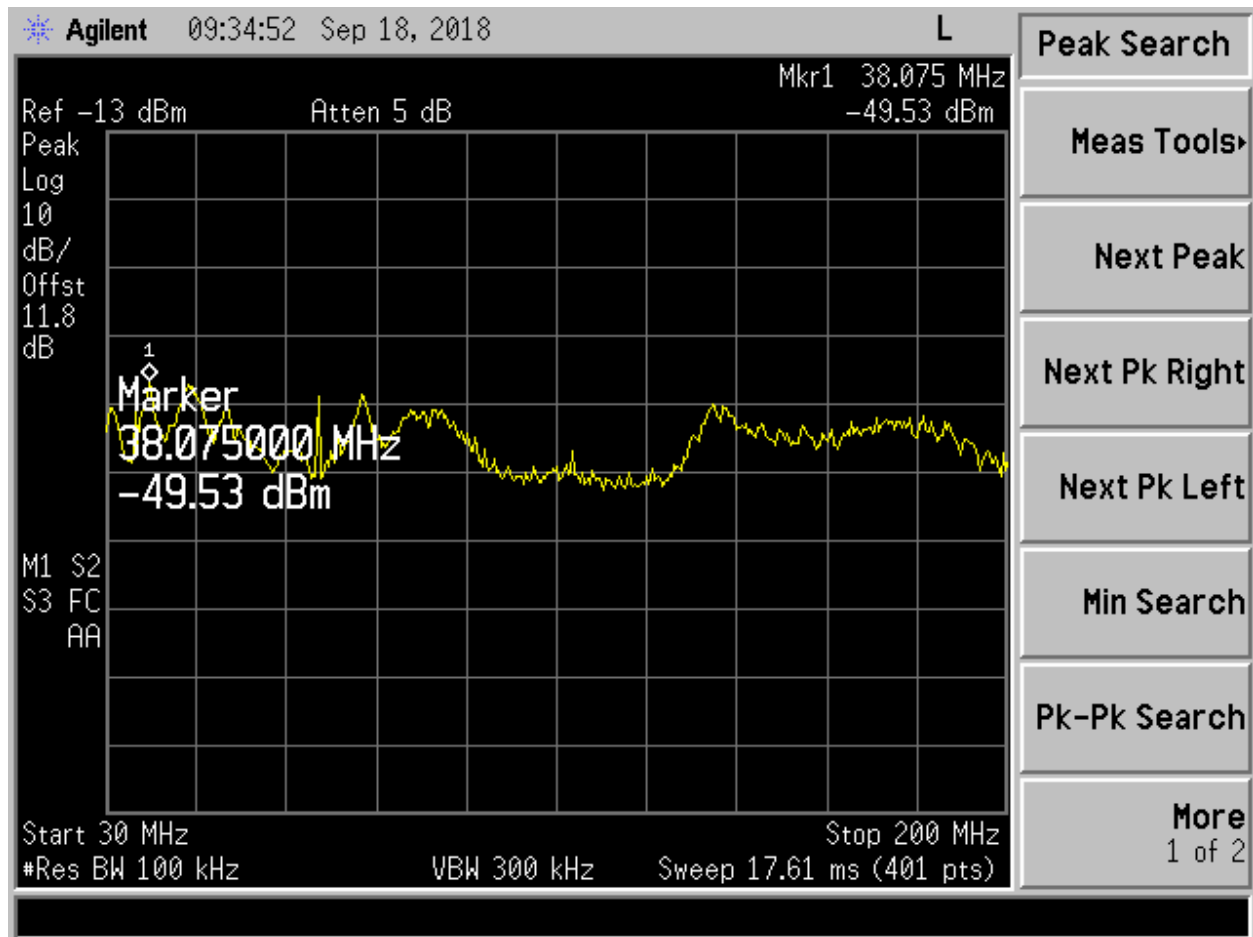


Figure 173. 380 MHz Vertical, 30 – 200 MHz

(Note: Test data for band 138-144 MHz and 380-400 MHz not applicable for FCC certification)

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

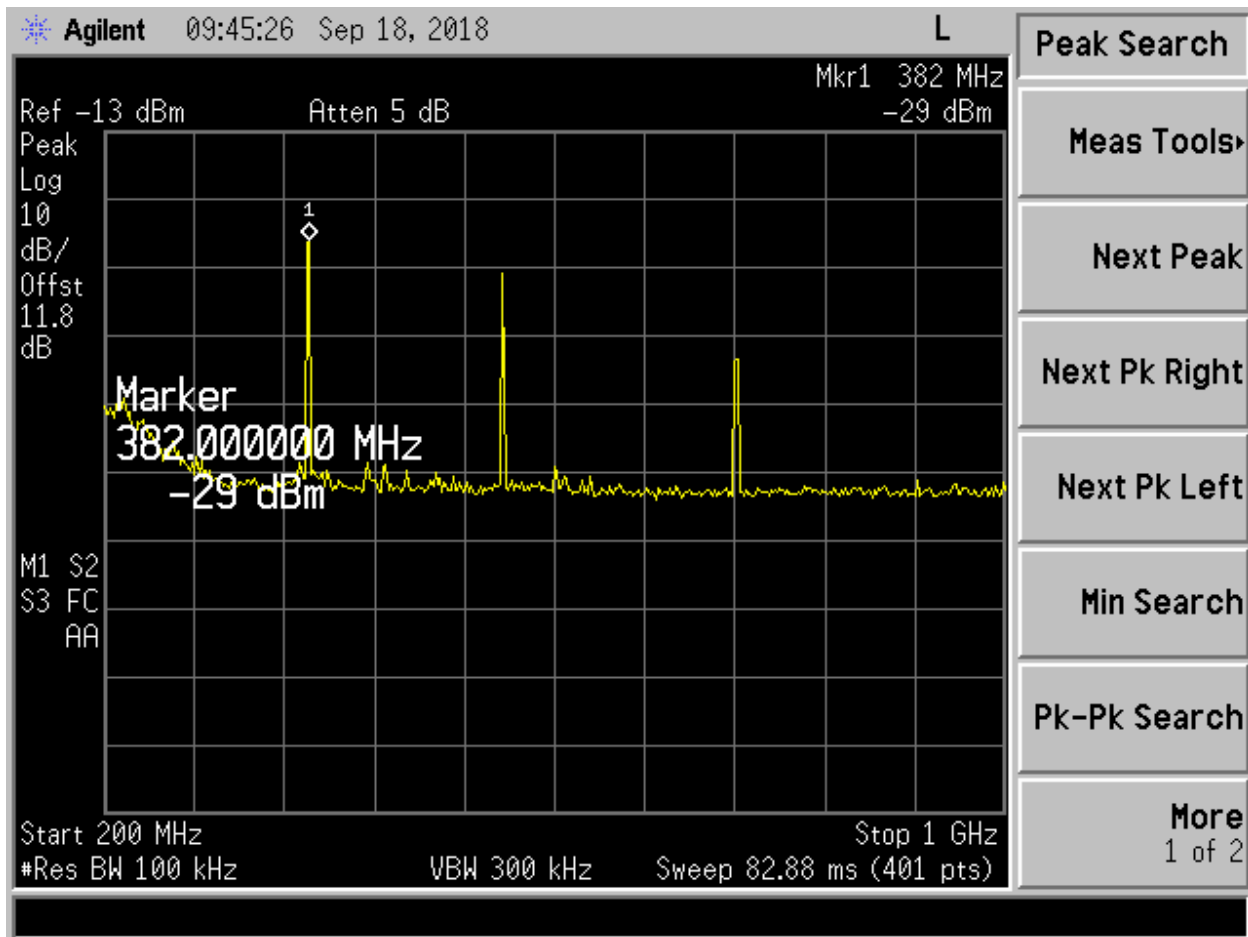


Figure 174. 380 MHz Horizontal, 200 MHz – 1 GHz

(Note: Test data for band 138-144 MHz and 380-400 MHz not applicable for FCC certification)

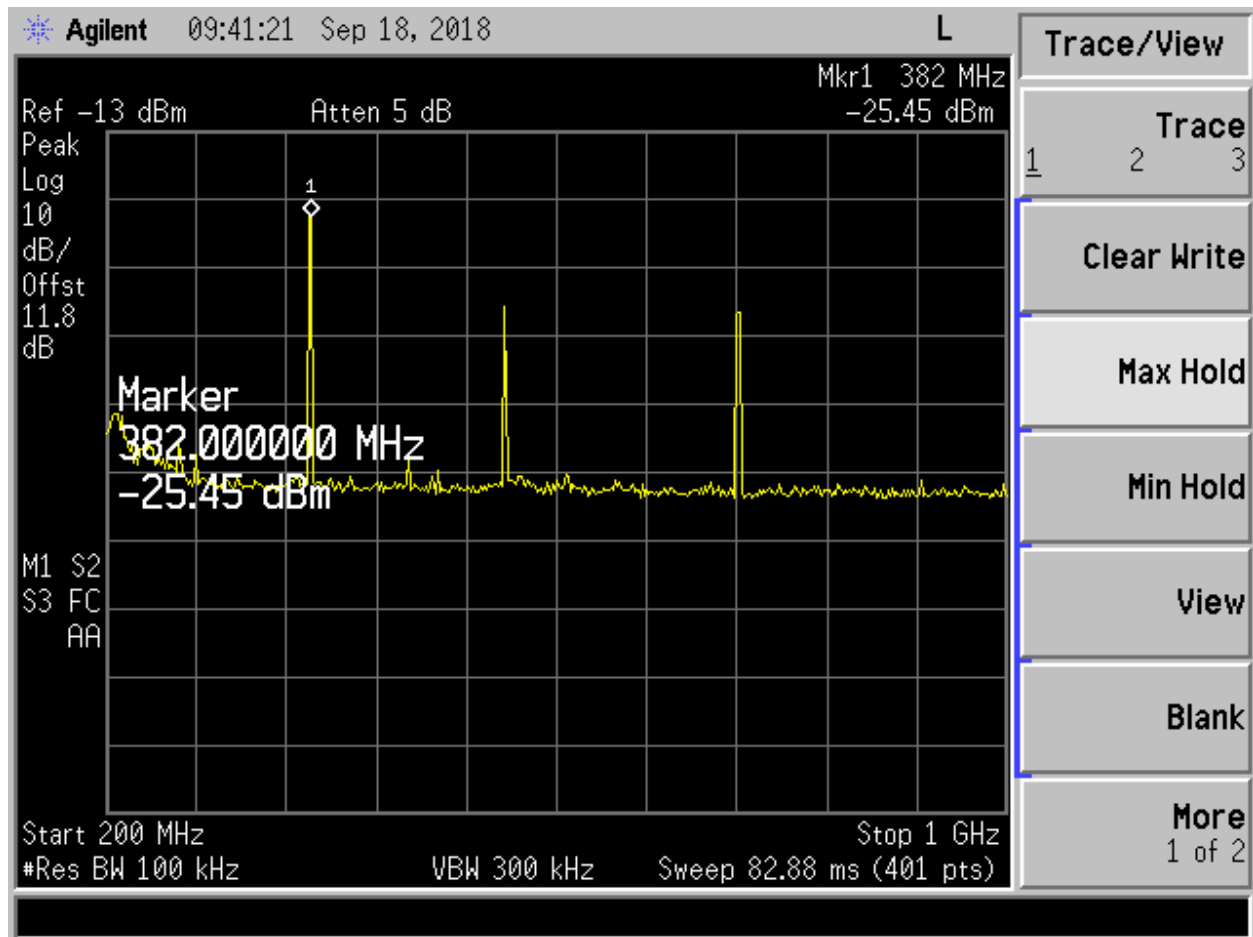


Figure 175. 380 MHz Vertical, 200 MHz – 1 GHz

(Note: Test data for band 138-144 MHz and 380-400 MHz not applicable for FCC certification)

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

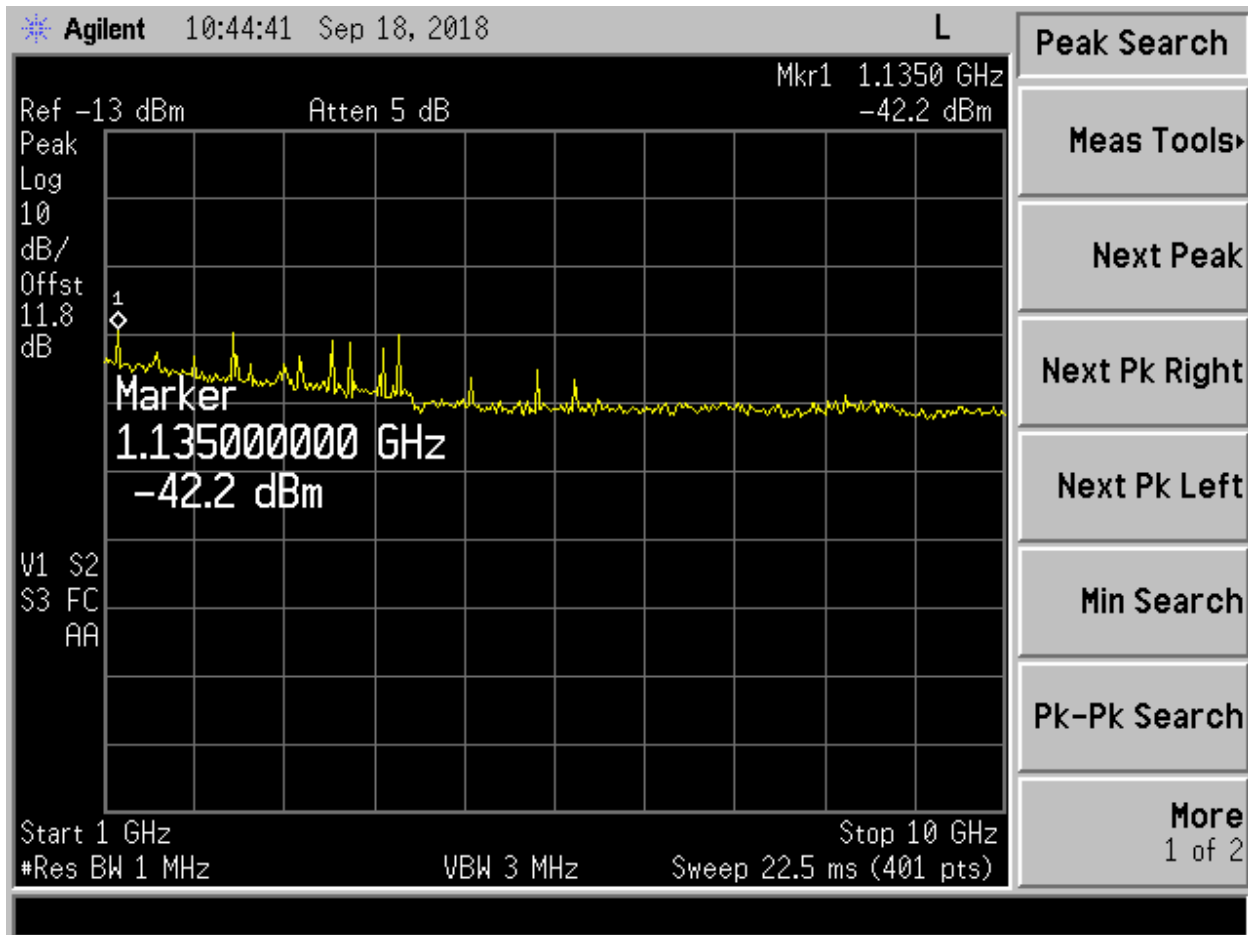


Figure 176. 380 MHz Horizontal, 1 - 10 GHz

(Note: Test data for band 138-144 MHz and 380-400 MHz not applicable for FCC certification)

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

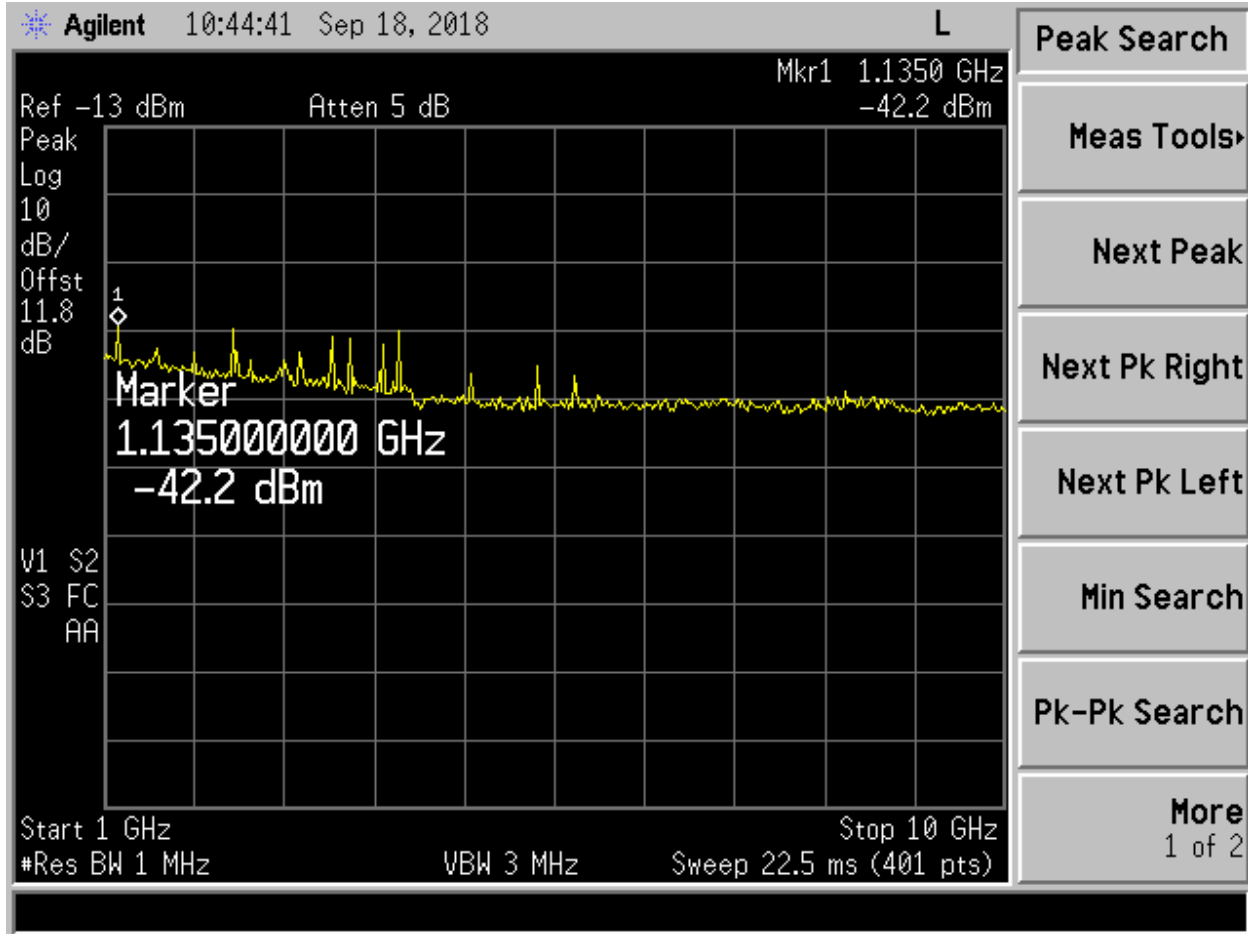


Figure 177. 380 MHz Vertical, 1 - 10 GHz

(Note: Test data for band 138-144 MHz and 380-400 MHz not applicable for FCC certification)

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

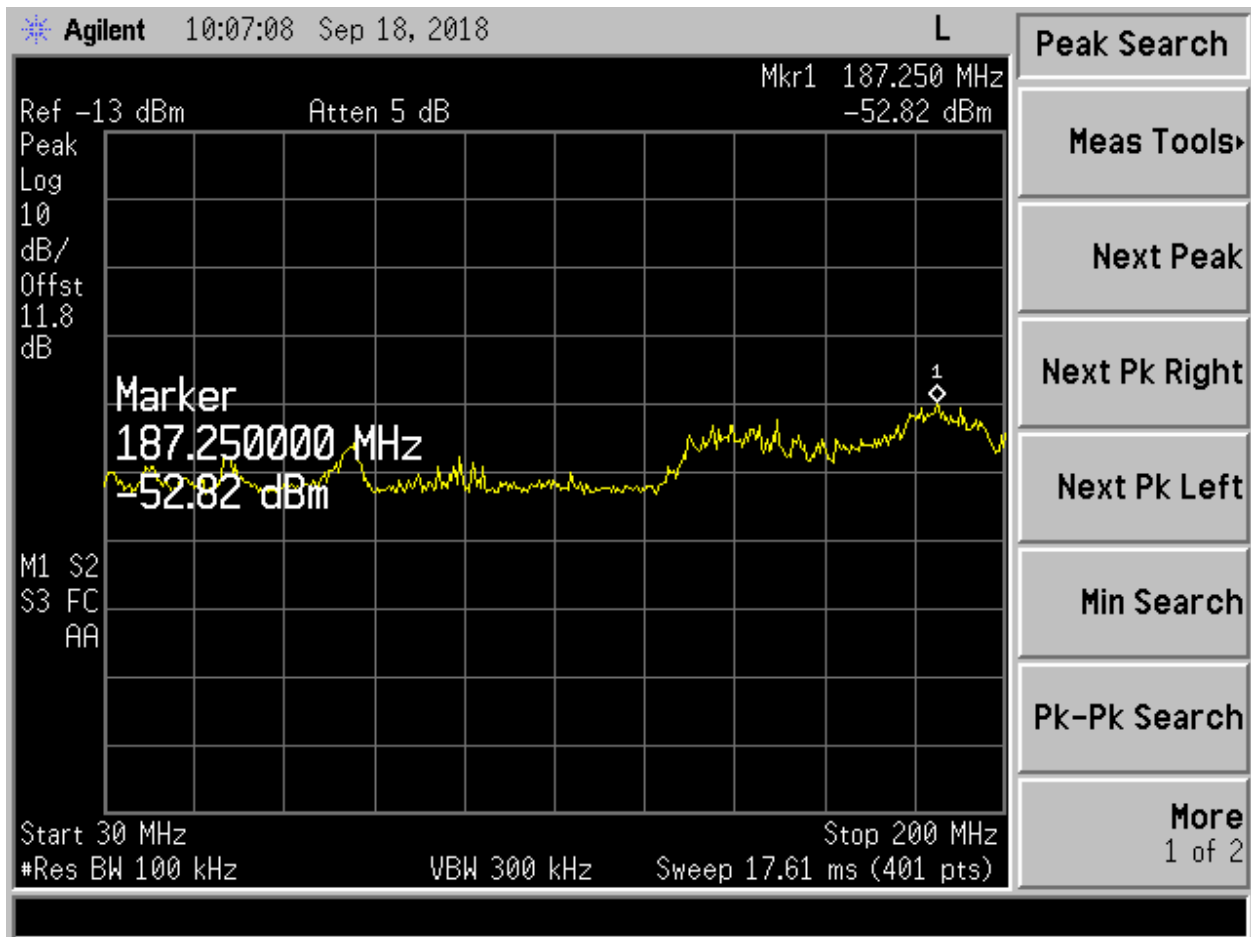


Figure 178. 407 MHz Horizontal, 30 – 200 MHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
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Safe-Com Wireless
SAFE-1000

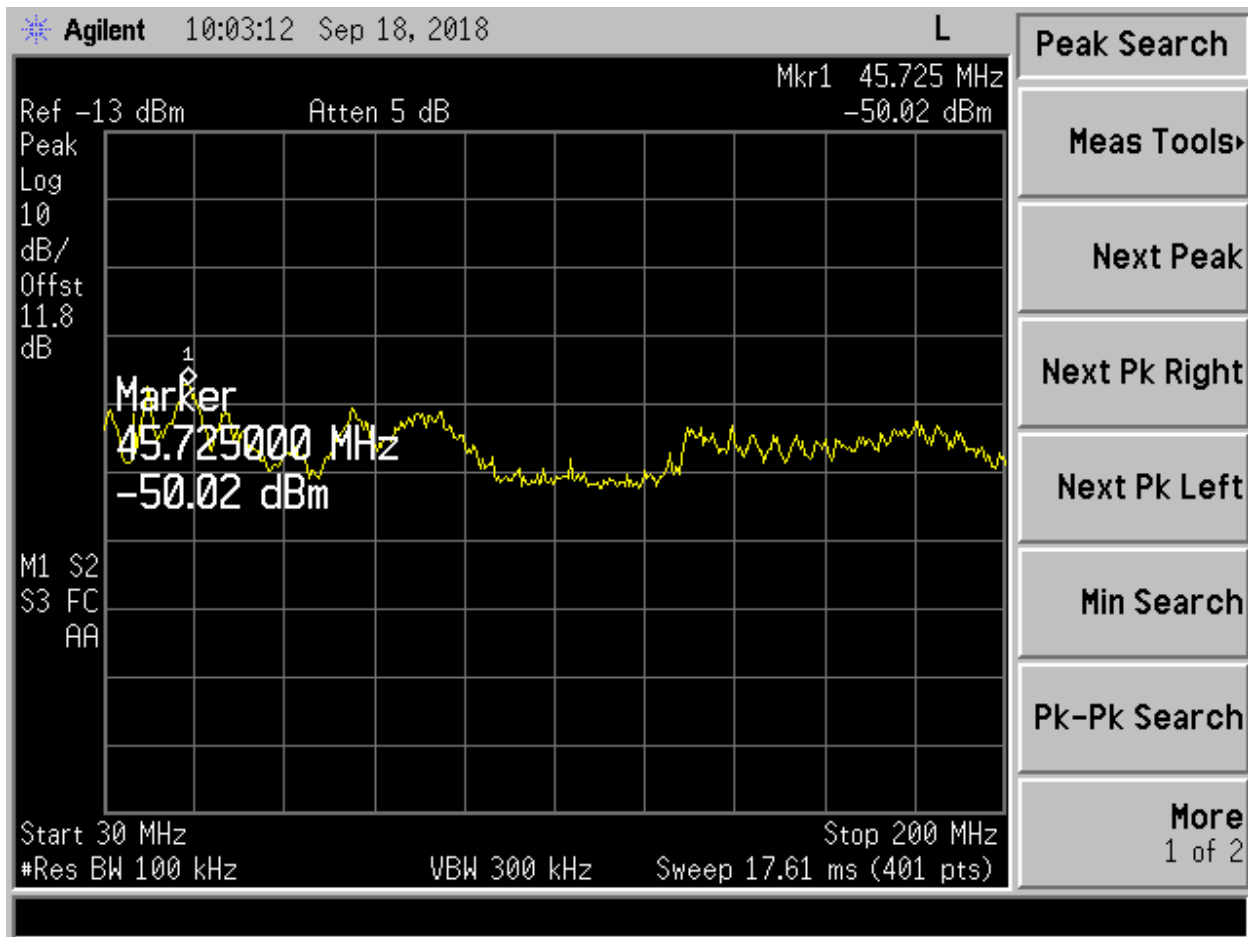


Figure 179. 407 MHz Vertical, 30 – 200 MHz

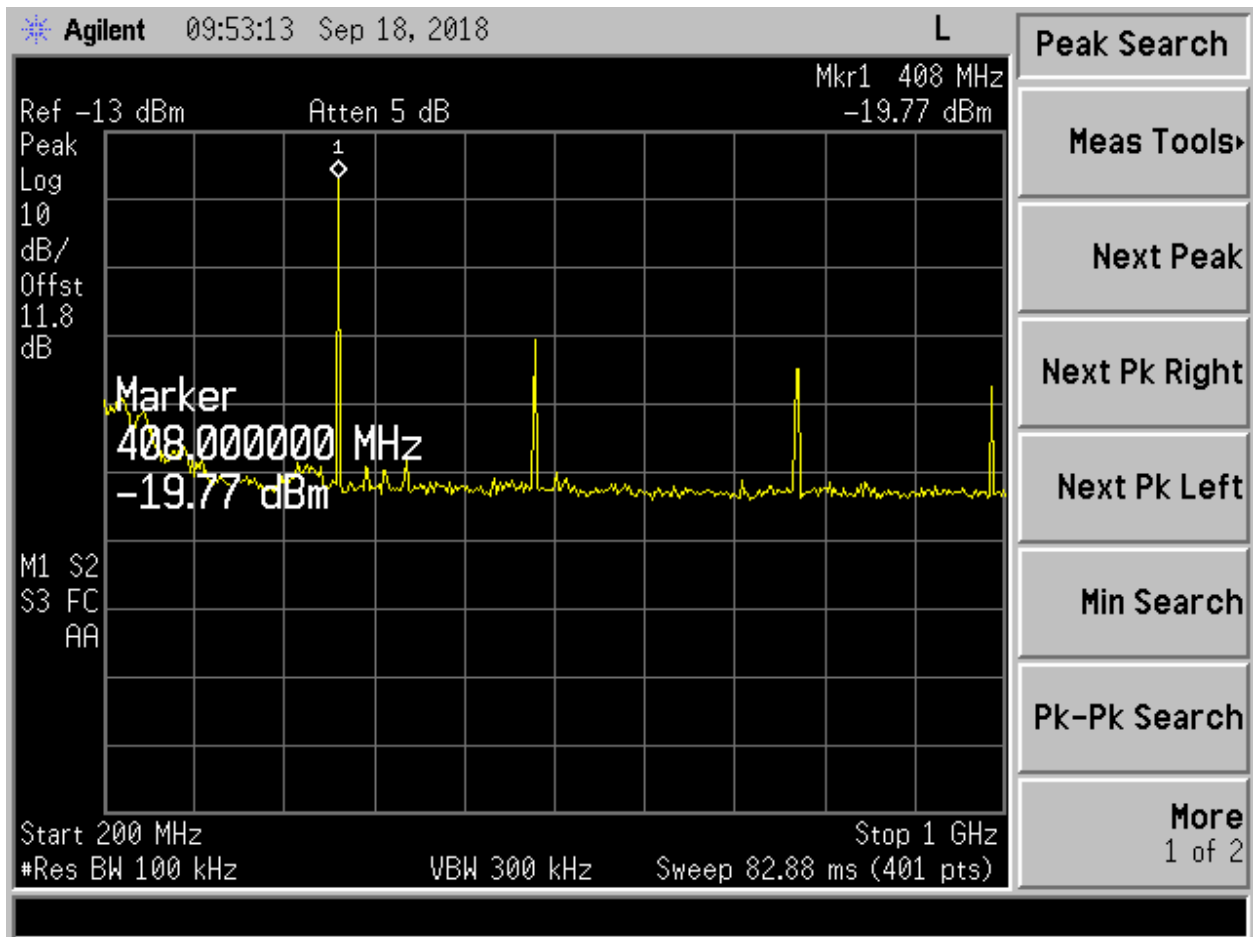


Figure 180. 407 MHz Horizontal, 200 MHz – 1 GHz

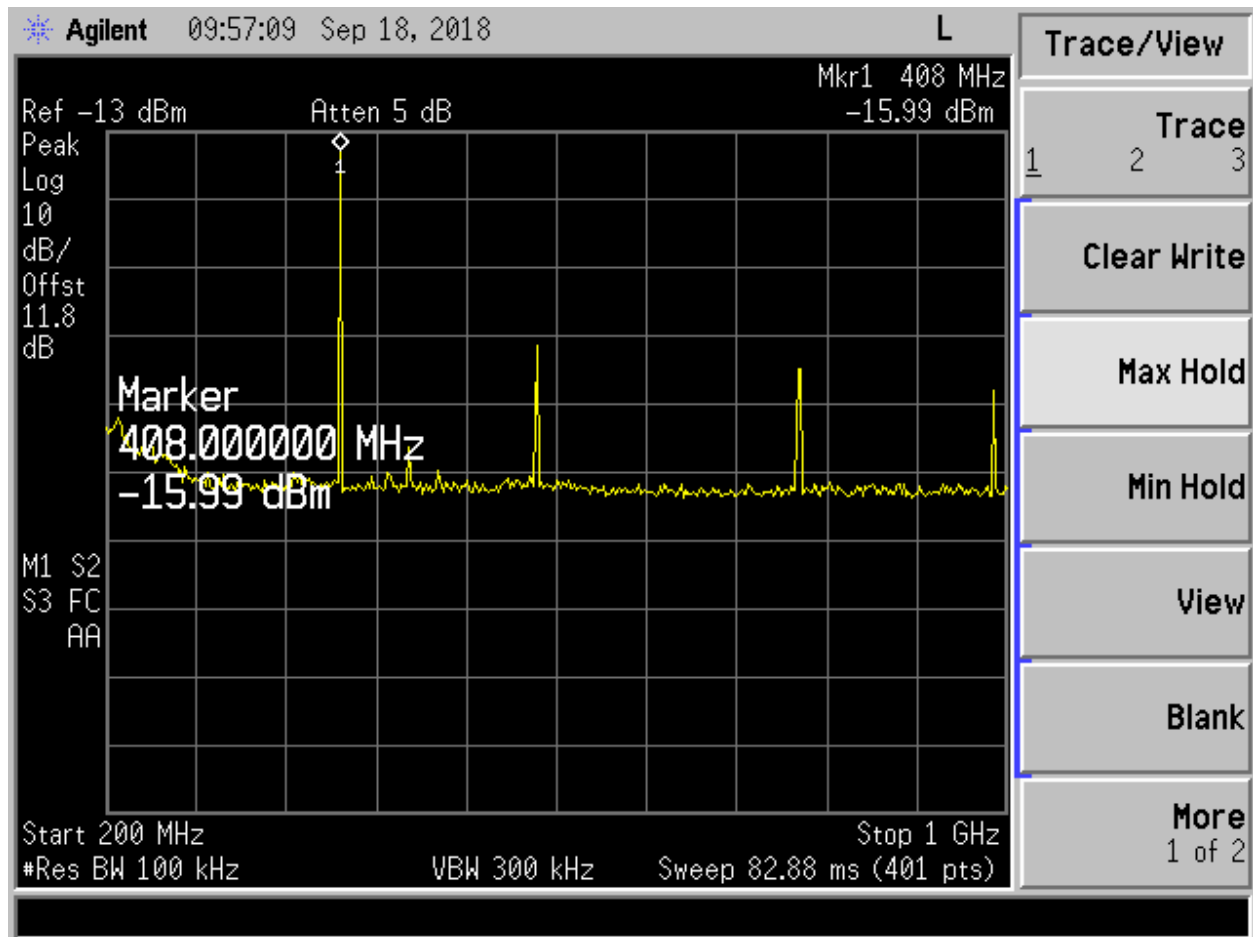


Figure 181. 407 MHz Vertical, 200 MHz – 1 GHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

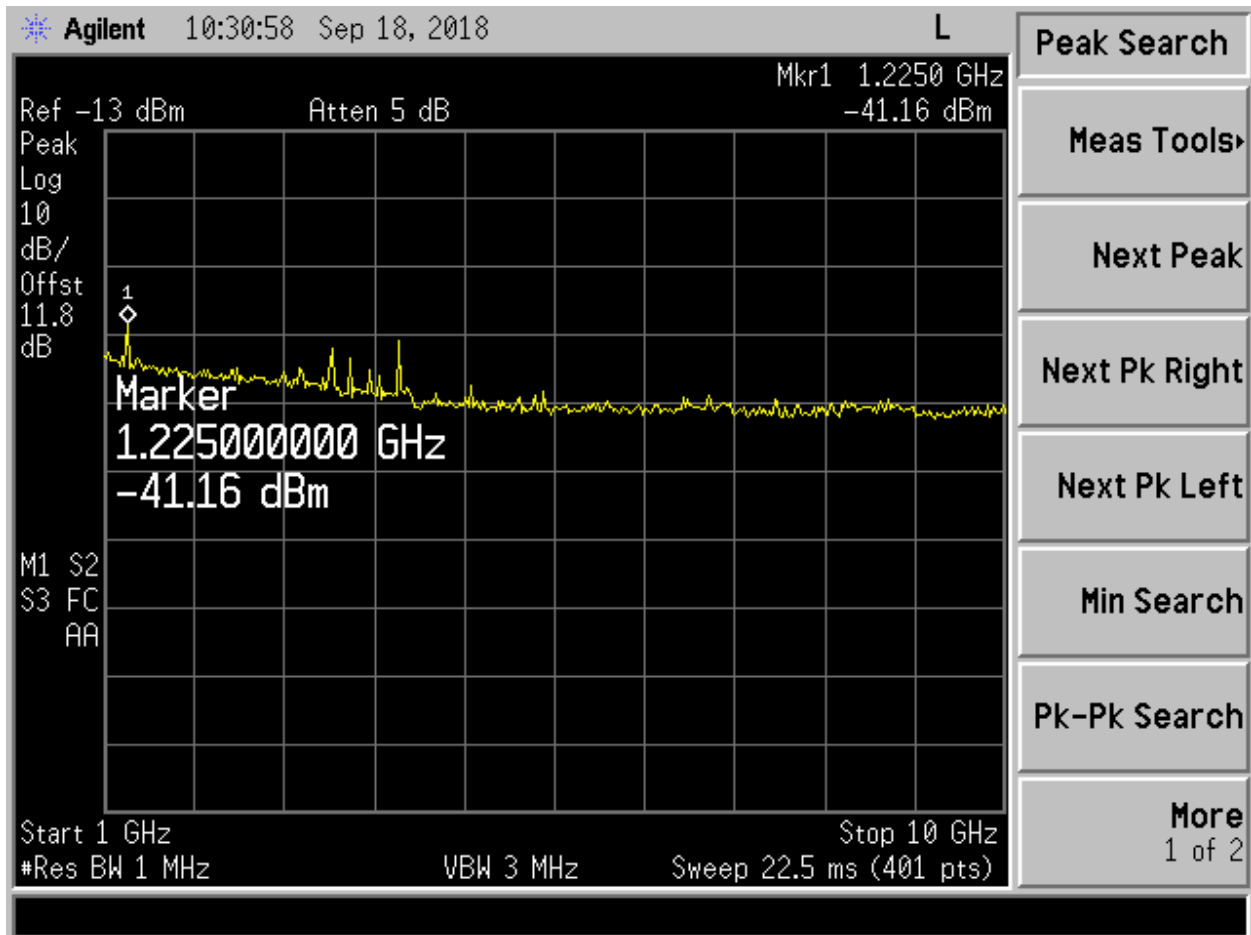


Figure 182. 407 MHz Horizontal, 1 - 10 GHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

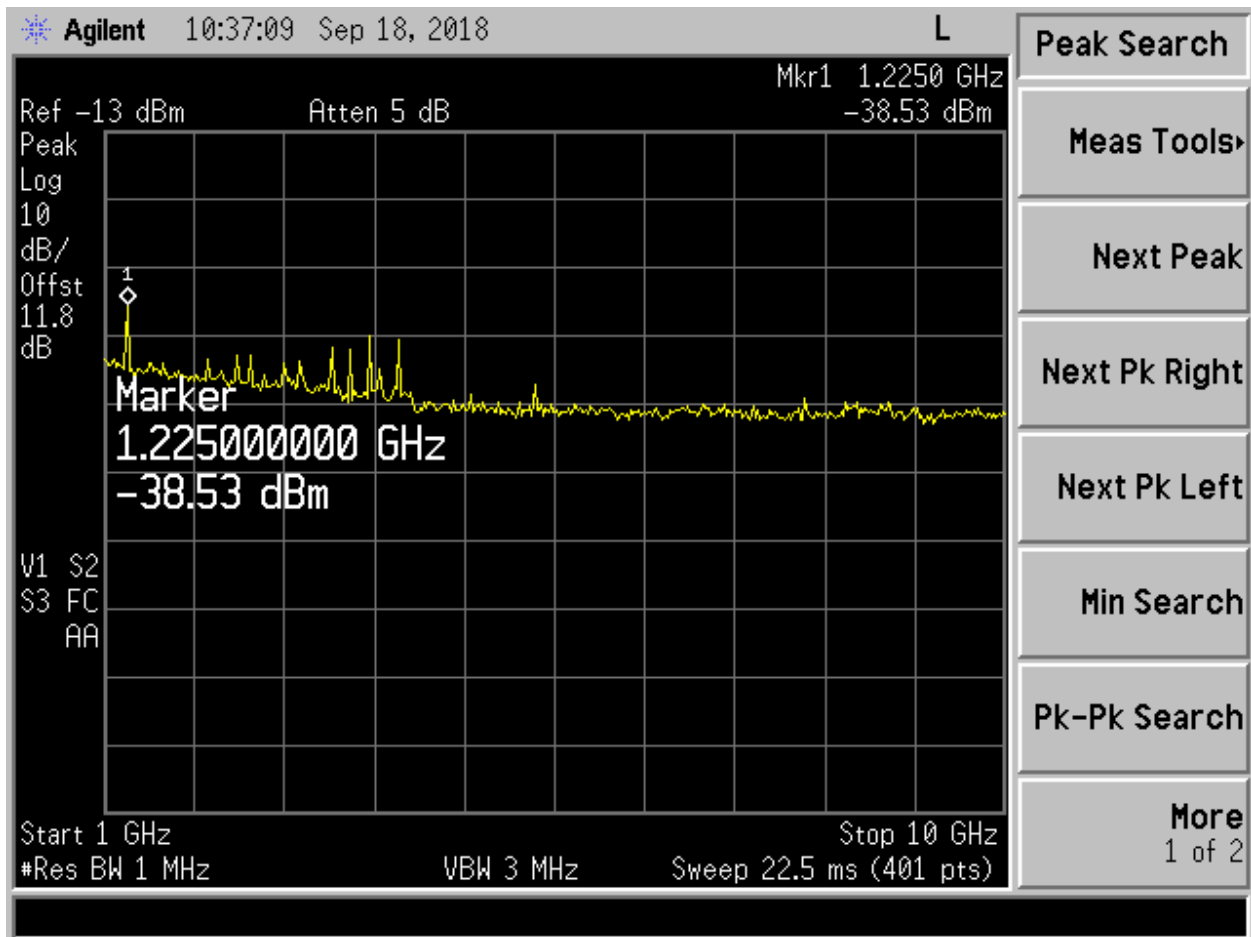


Figure 183. 407 MHz Vertical, 1 - 10 GHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

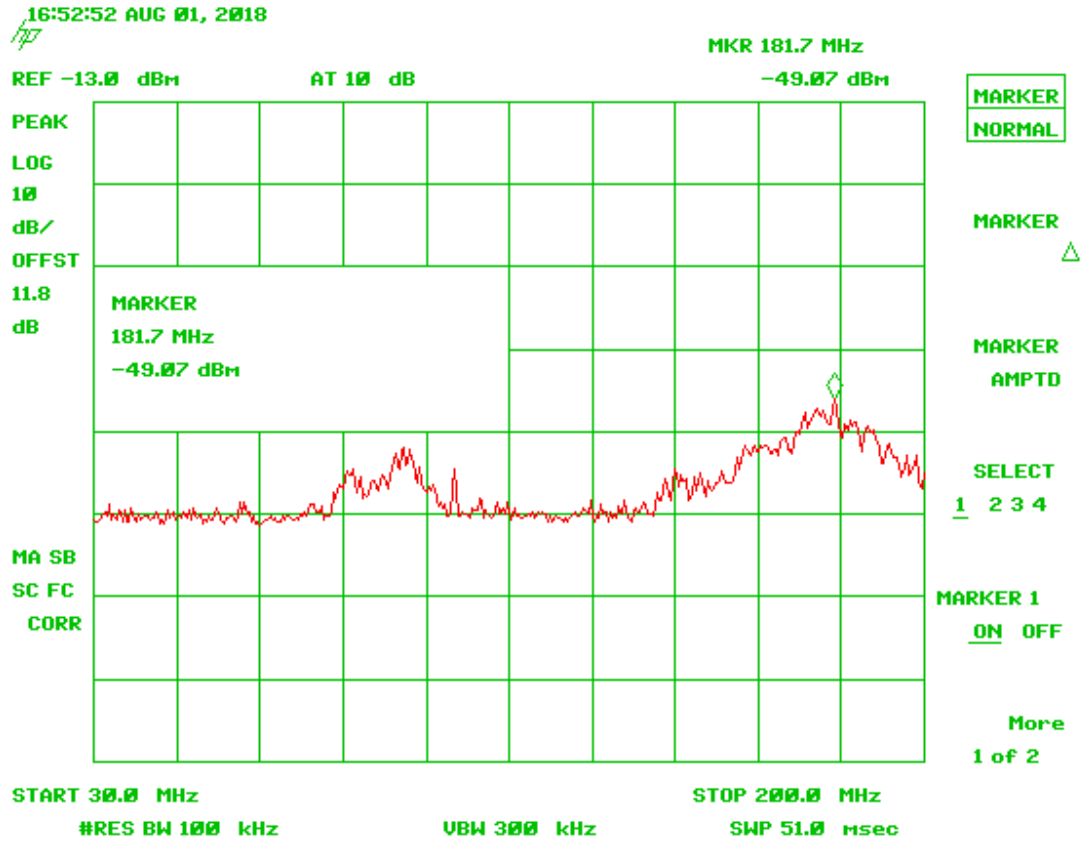


Figure 184. 481 MHz Horizontal, 30 - 200 MHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

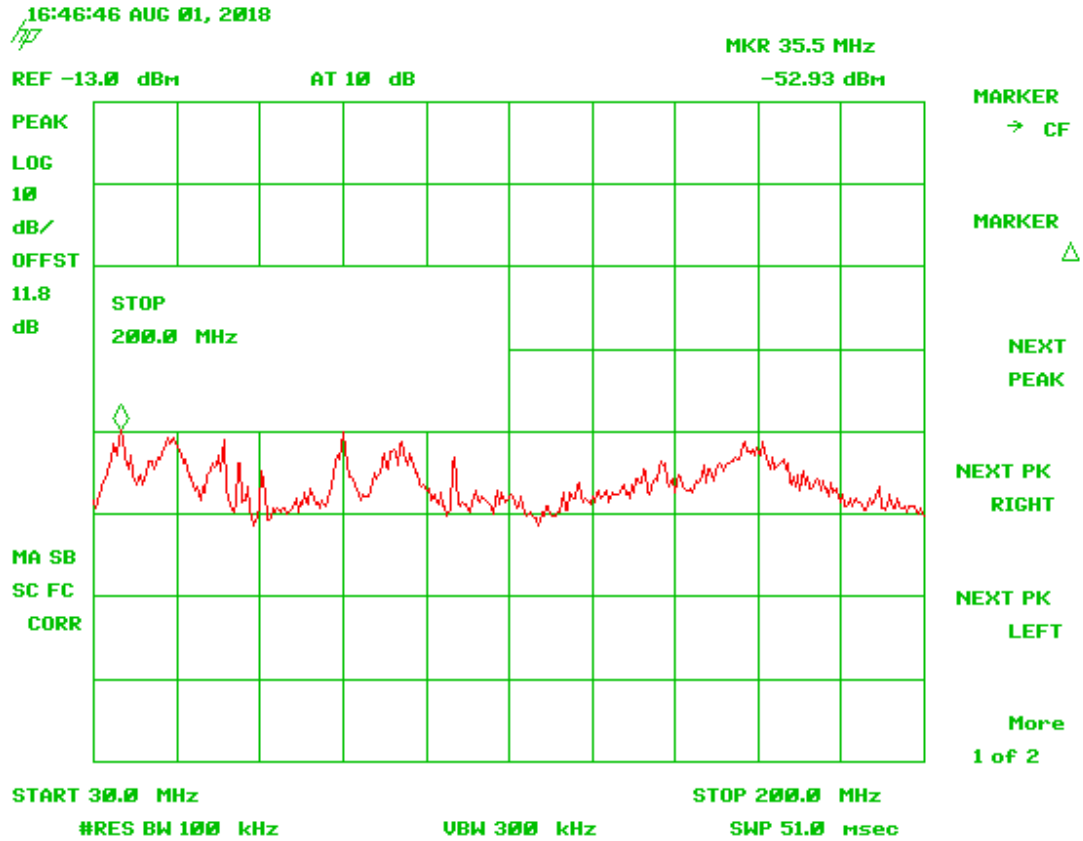


Figure 185. 481 MHz Vertical, 30 - 200 MHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

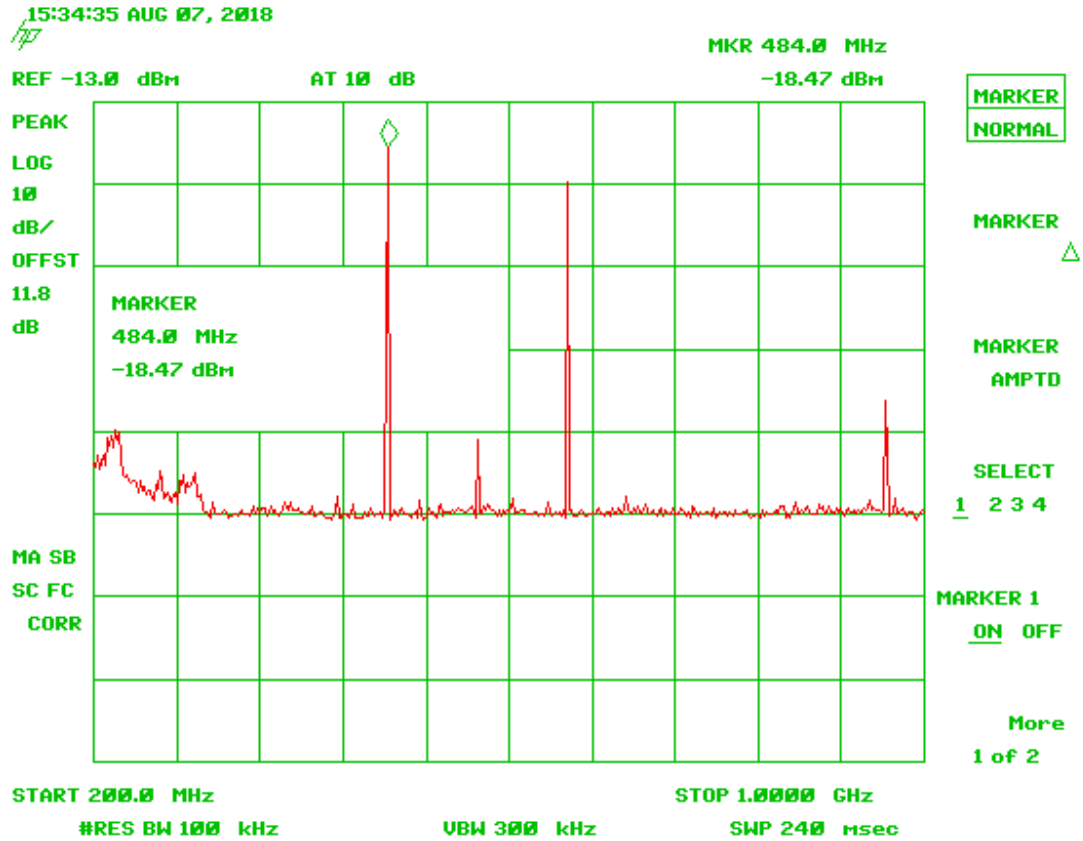


Figure 186. 481 MHz Horizontal, 200 MHz - 1 GHz

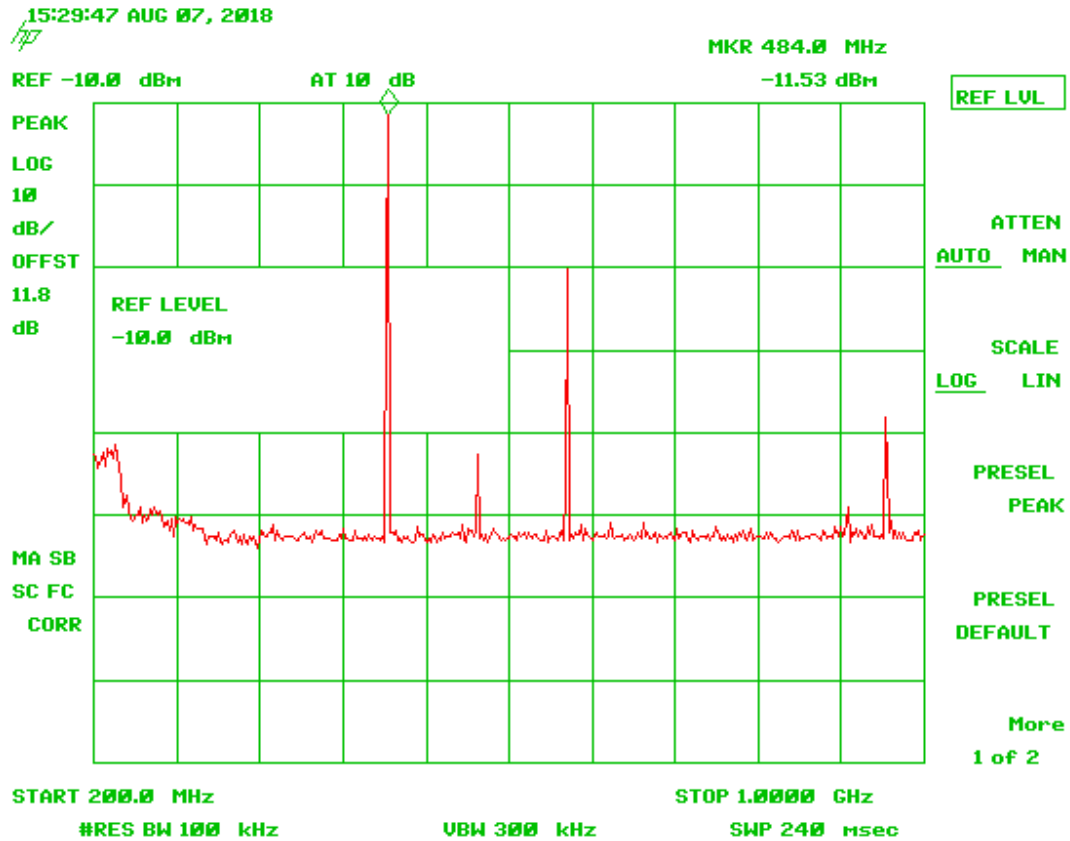


Figure 187. 481 MHz Vertical, 200 MHz - 1 GHz

Note: All spurious emissions other than fundamental and harmonics are below the -13 dBm limit level.

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
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September 10, 2018
Safe-Com Wireless
SAFE-1000

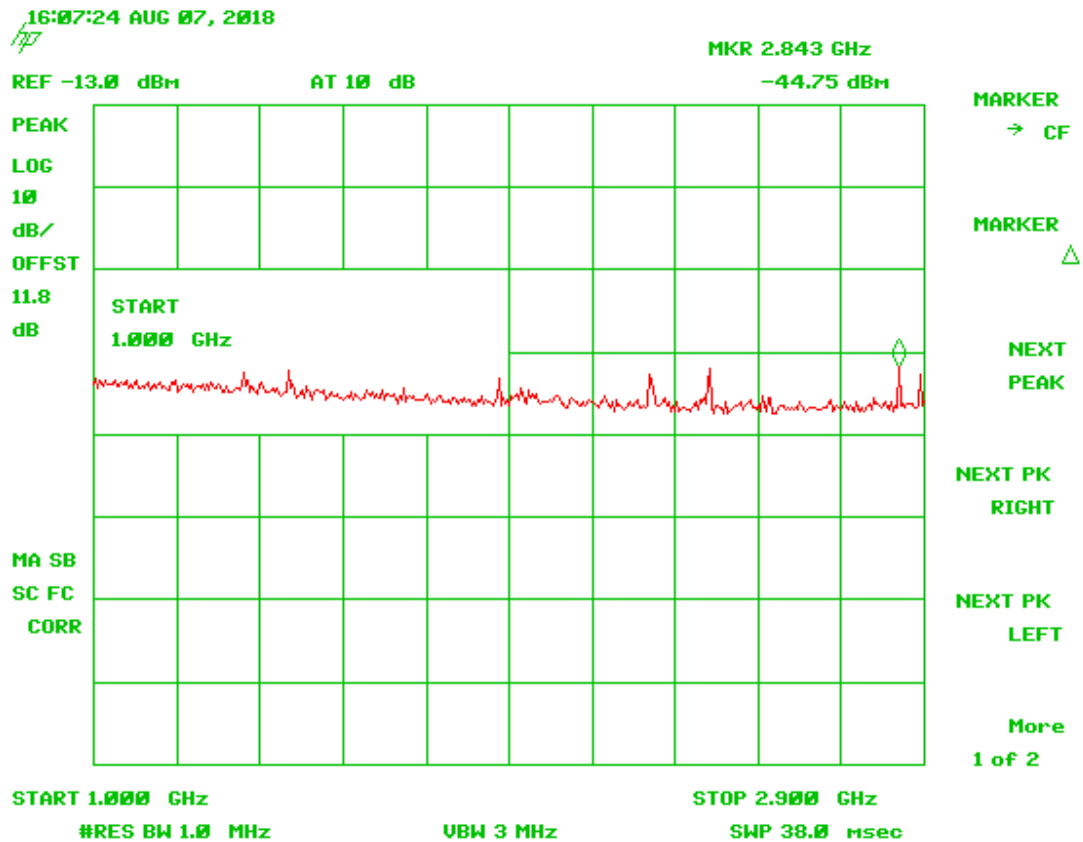


Figure 188. 481 MHz Horizontal, 1 – 2.9 GHz

U.S. Tech Test Report:
 FCC ID:
 IC:
 Report Number:
 Issue Date:
 Customer:
 Model:

FCC Part 90 Certification
 2AKSM-SAFE2
 22303-SAFE2
 18-0181
 September 10, 2018
 Safe-Com Wireless
 SAFE-1000

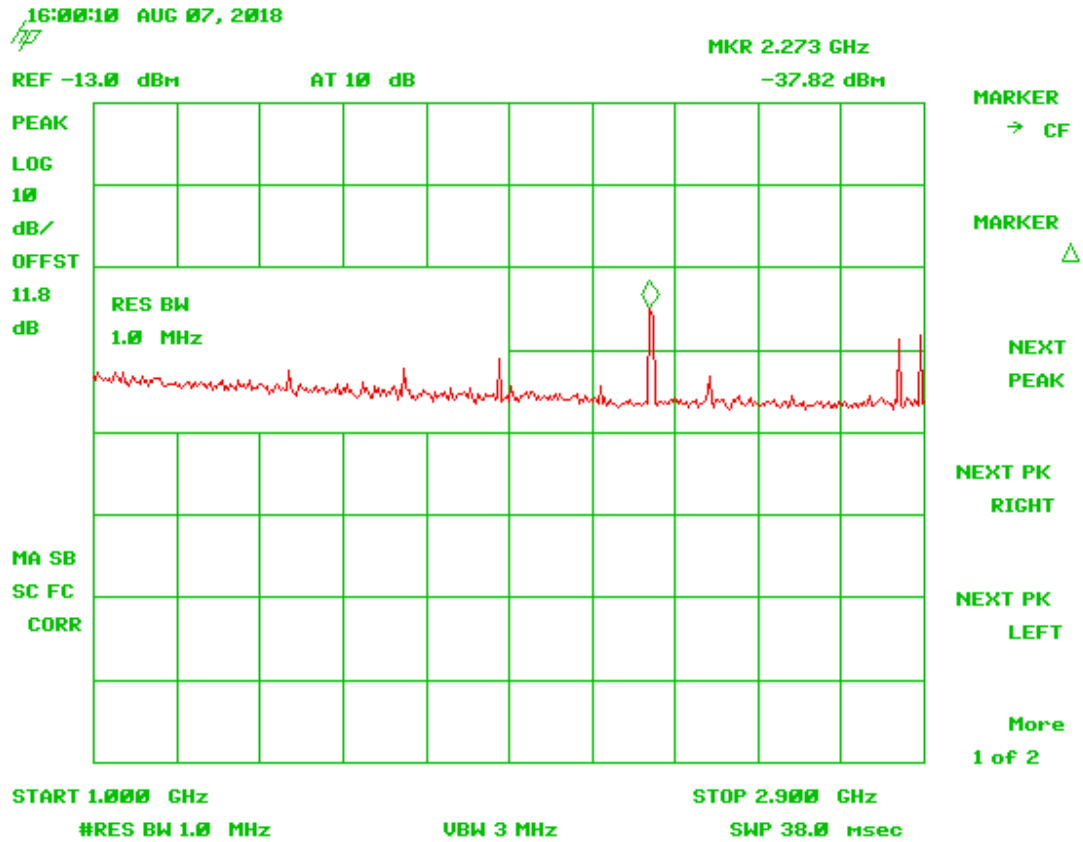


Figure 189. 481 MHz Vertical, 1 – 2.9 GHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

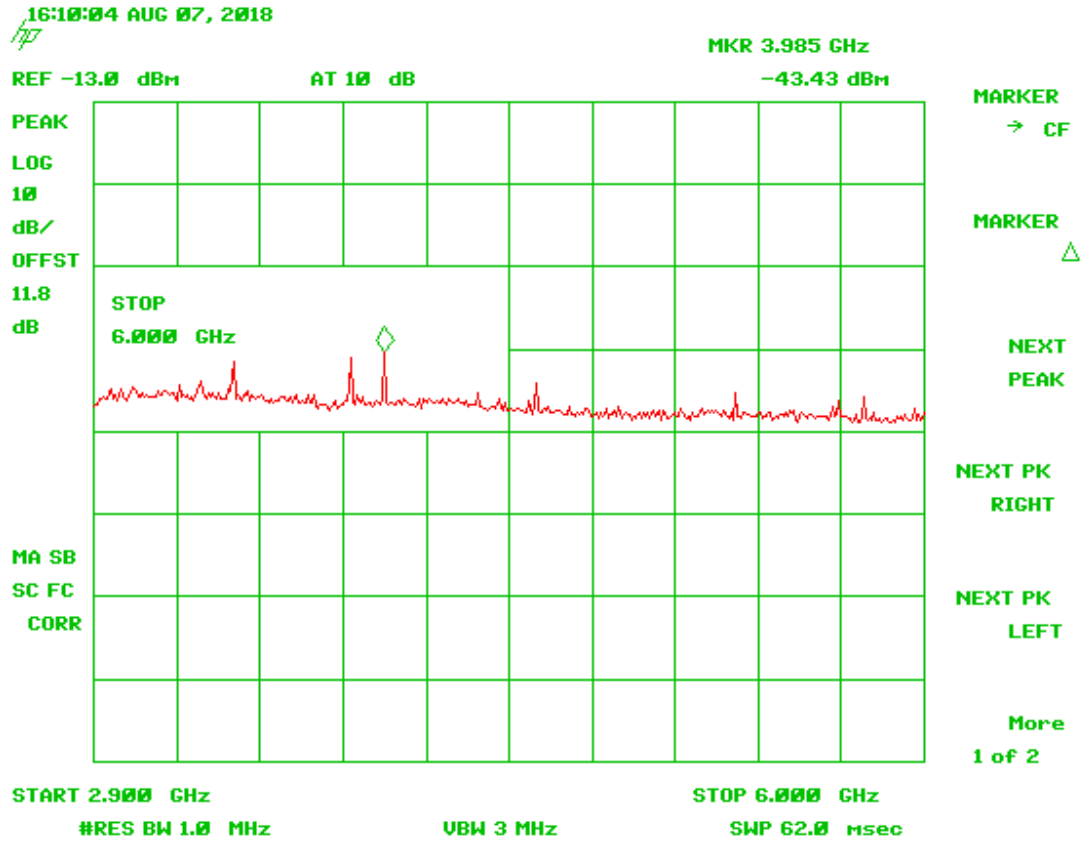


Figure 190. 481 MHz Horizontal, 2.9 - 6 GHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

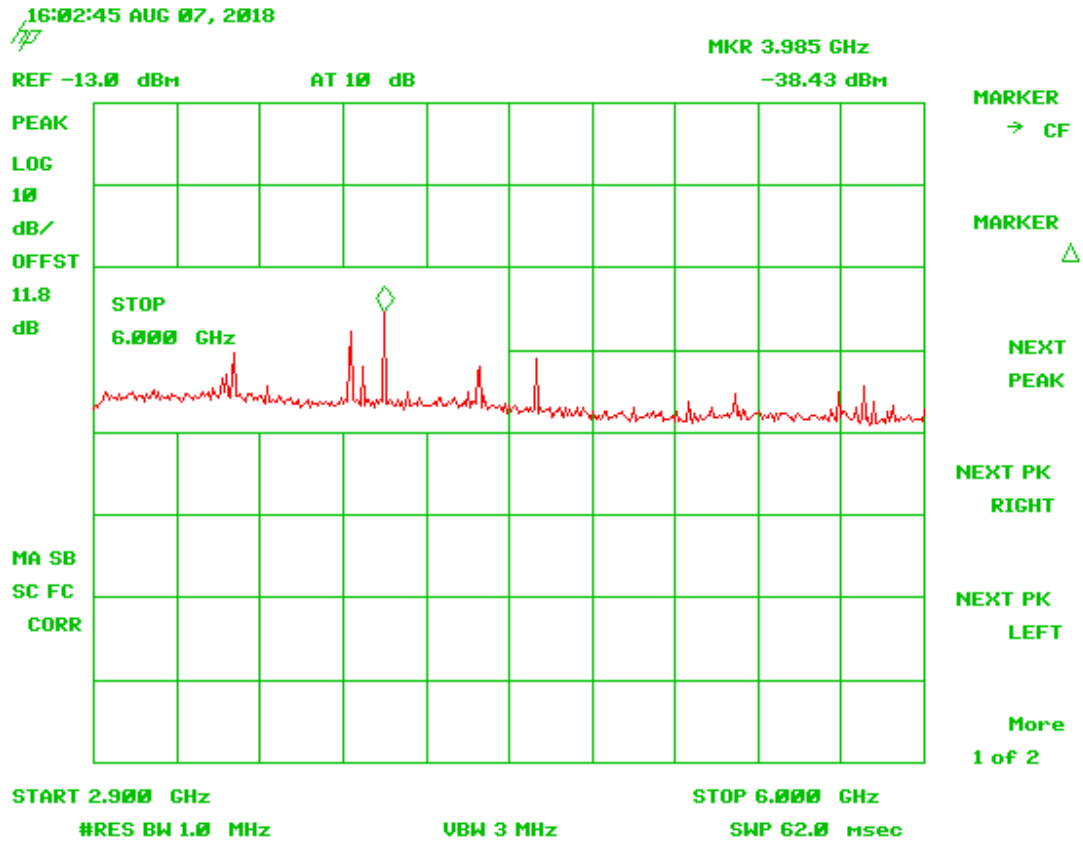


Figure 191. 481 MHz Vertical, 2.9 – 6 GHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

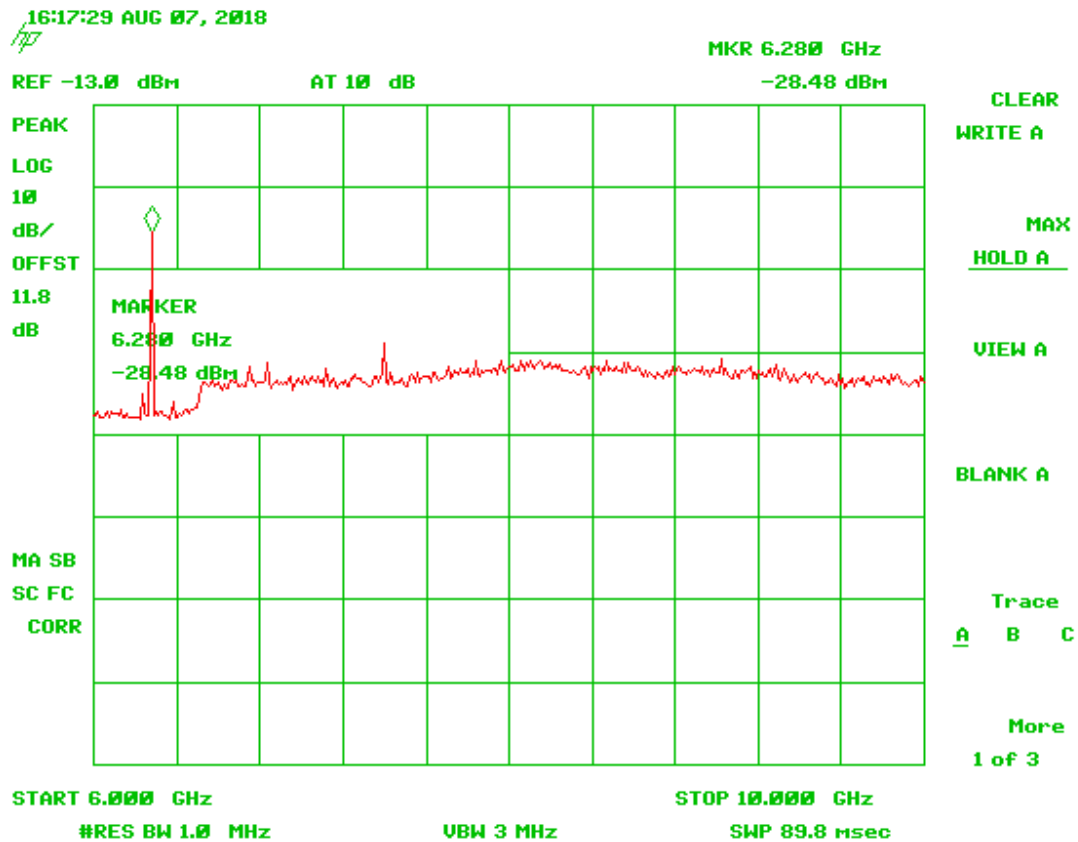


Figure 192. 481 MHz Horizontal, 6 - 10 GHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

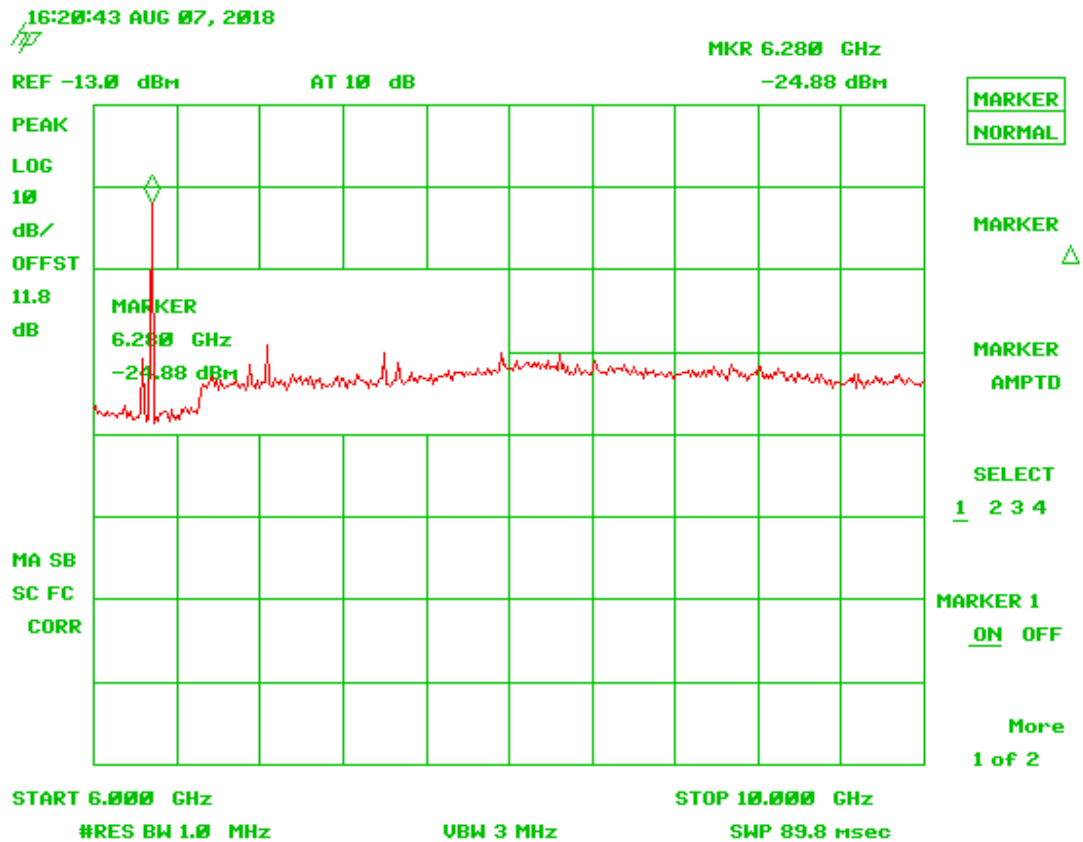


Figure 193. 481 MHz Vertical, 6 - 10 GHz

2.14.1.3 700 MHz Radiated Spurious Emissions Plots

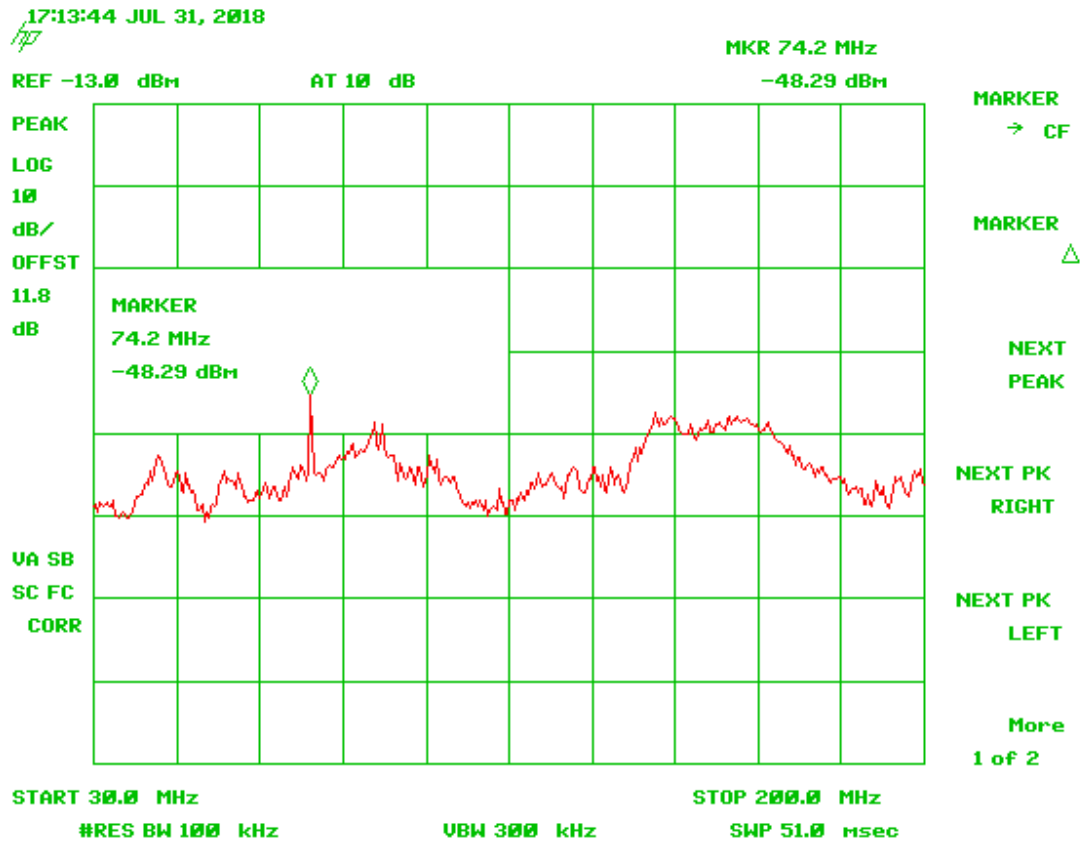


Figure 194. 805 MHz Horizontal, 30 – 200 MHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

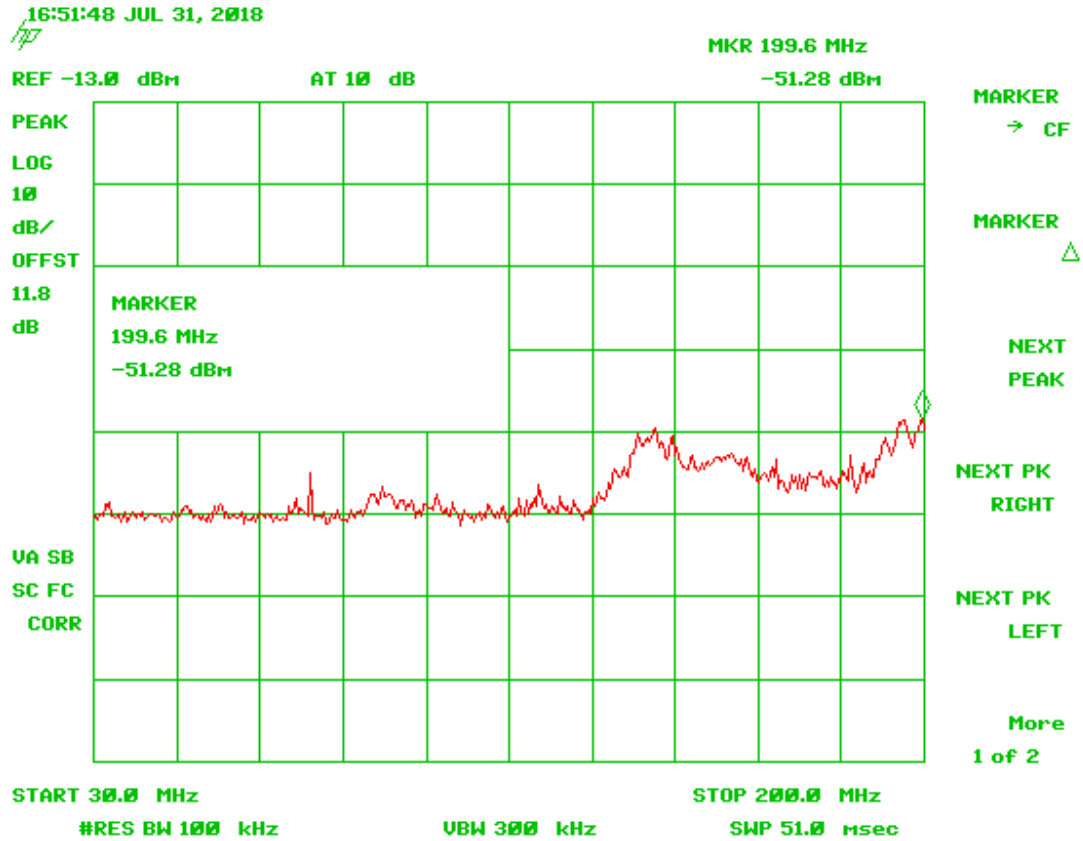


Figure 195. 805 MHz Vertical, 30 - 200 MHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

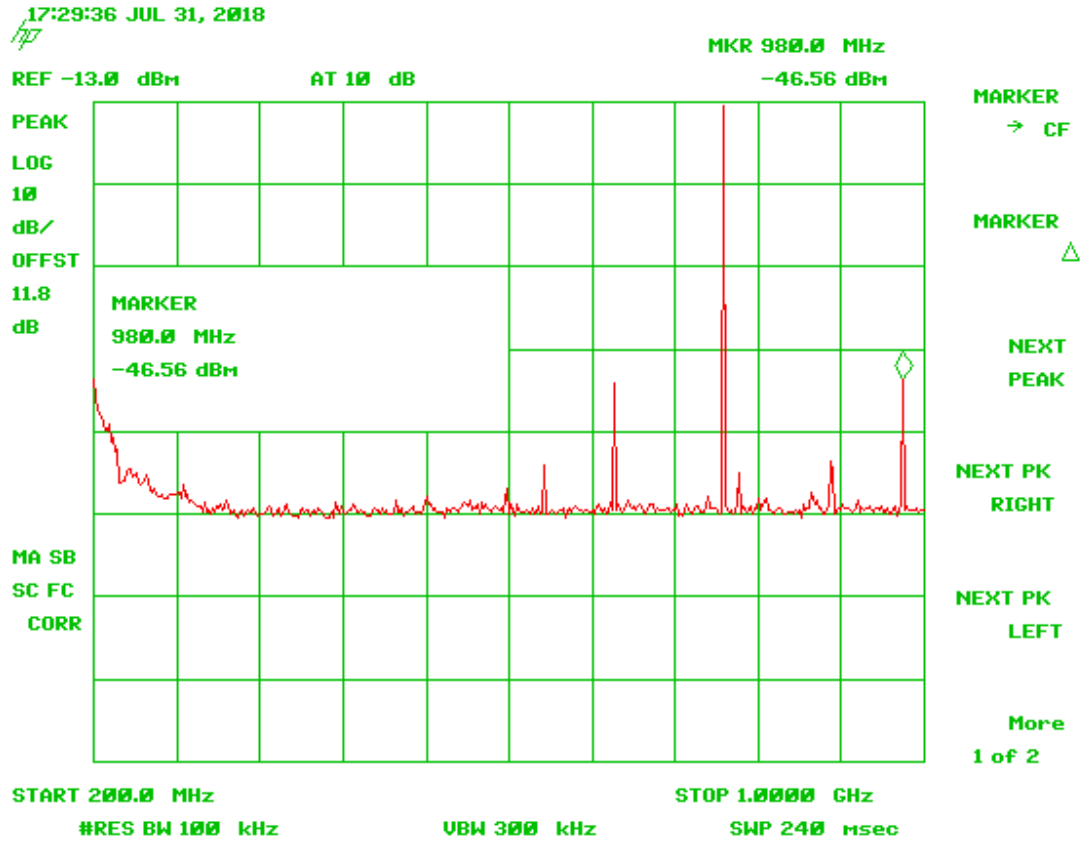


Figure 196. 805 MHz Horizontal, 200 MHz - 1 GHz

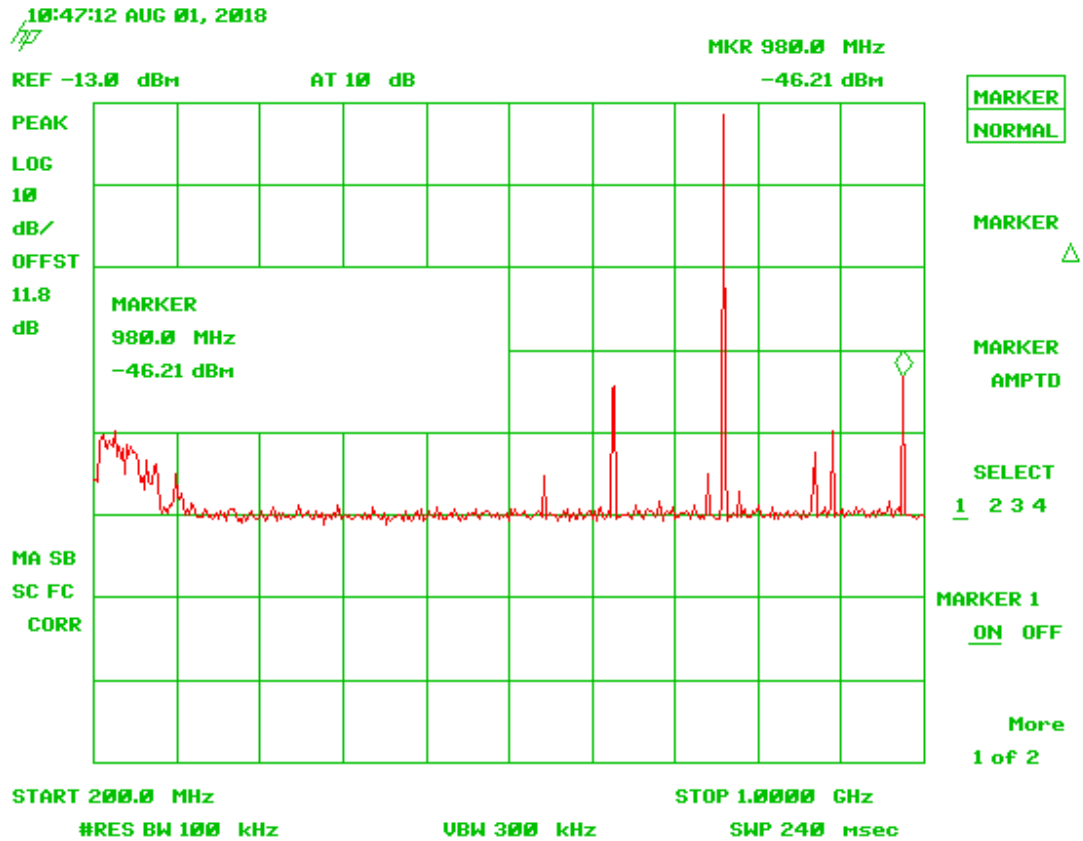


Figure 197. 805 MHz Vertical, 200 MHz - 1 GHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

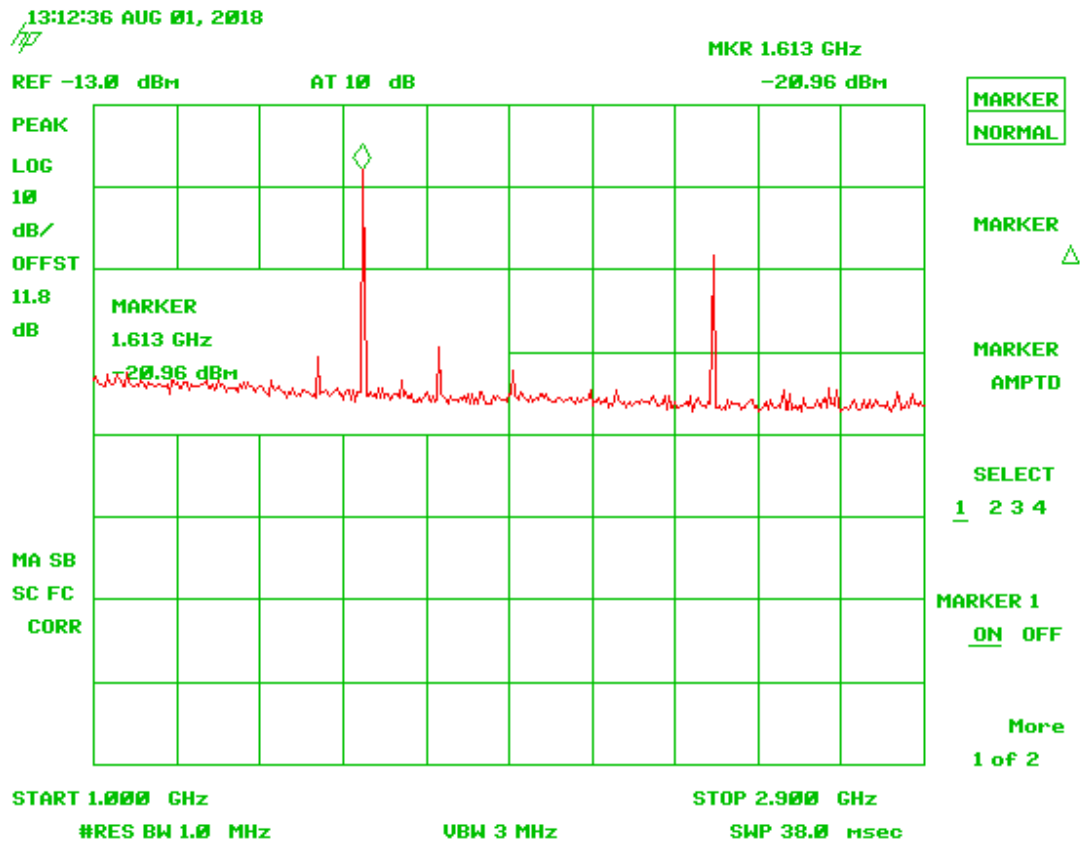


Figure 198. 805 MHz Horizontal, 1 – 2.9 GHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

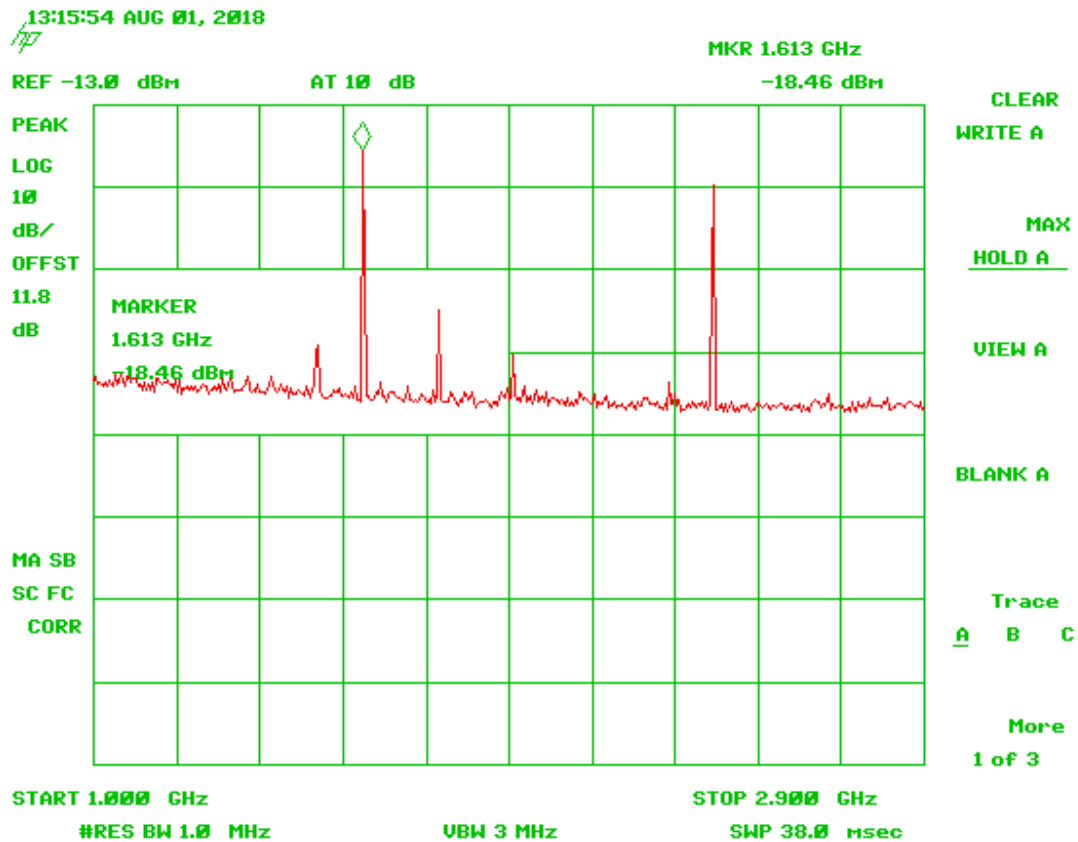


Figure 199. 805 MHz Vertical, 1 – 2.9 GHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

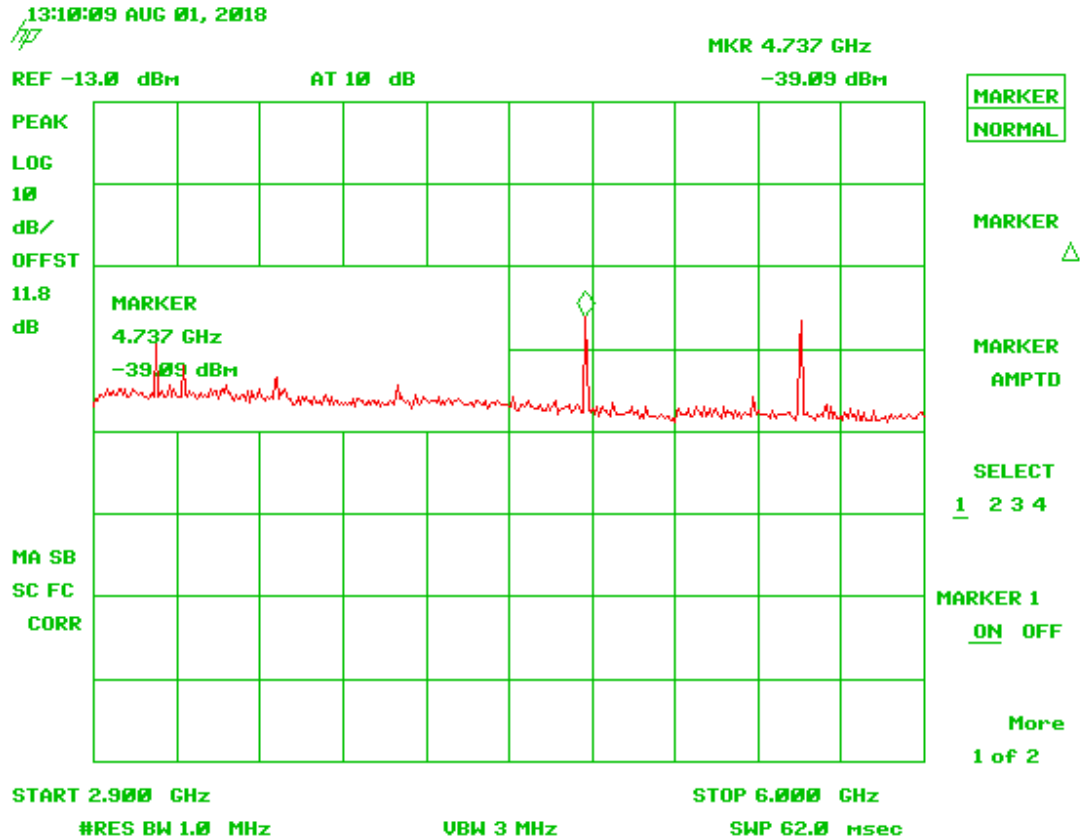


Figure 200. 805 MHz Horizontal, 2.9 - 6 GHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

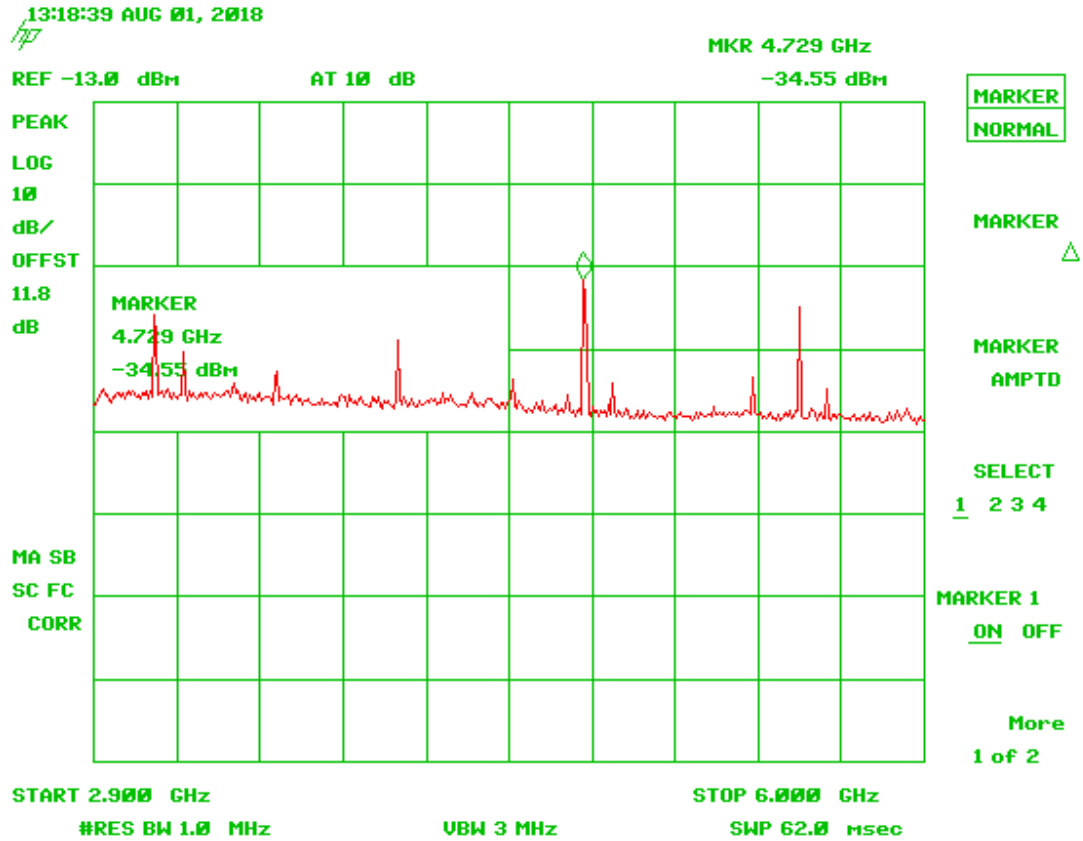


Figure 201. 805 MHz Vertical, 2.9 – 6 GHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

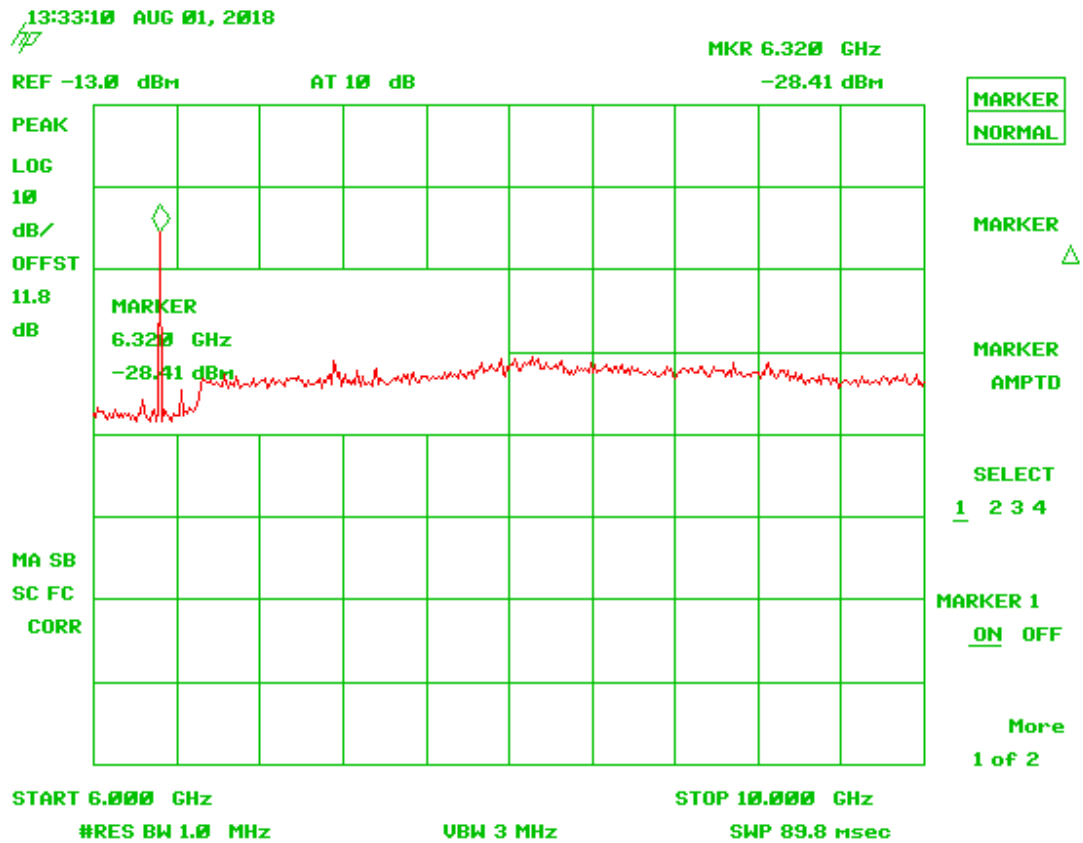


Figure 202. 805 MHz Horizontal, 6 – 10 GHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

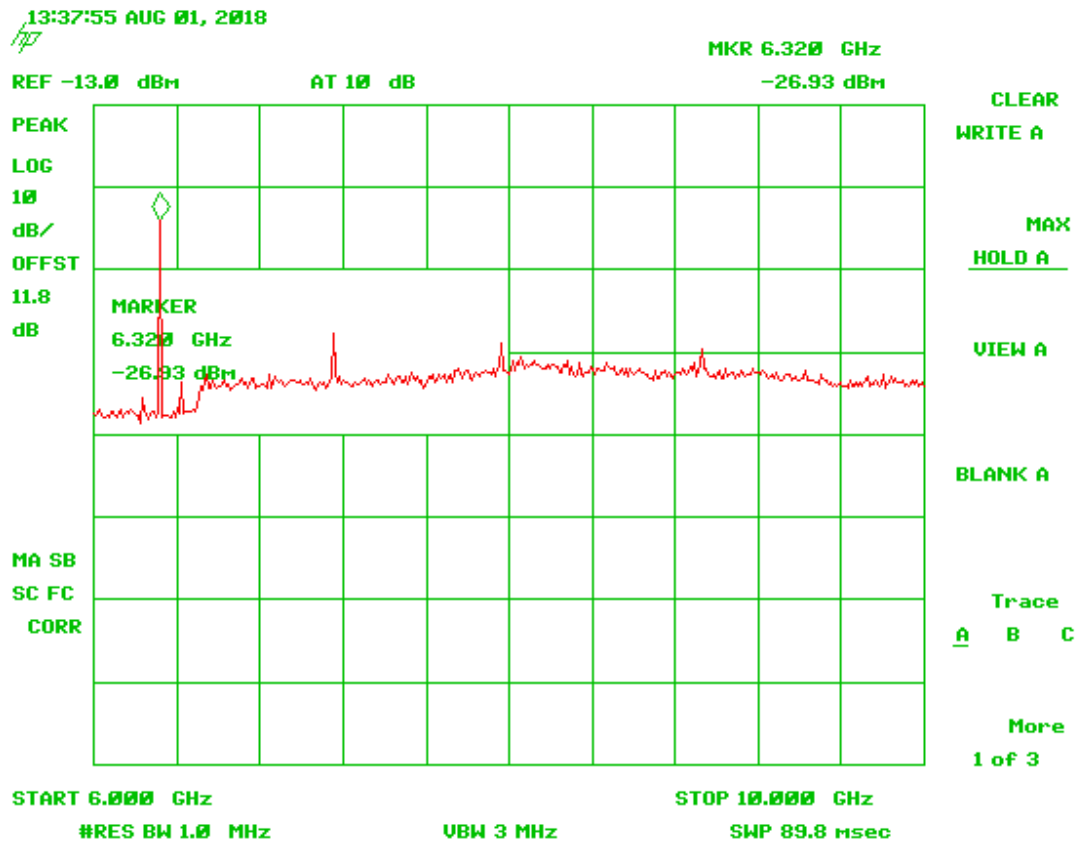


Figure 203. 805 MHz Vertical, 6 – 10 GHz

2.14.1.4 800 MHz Radiated Spurious Emissions Plots

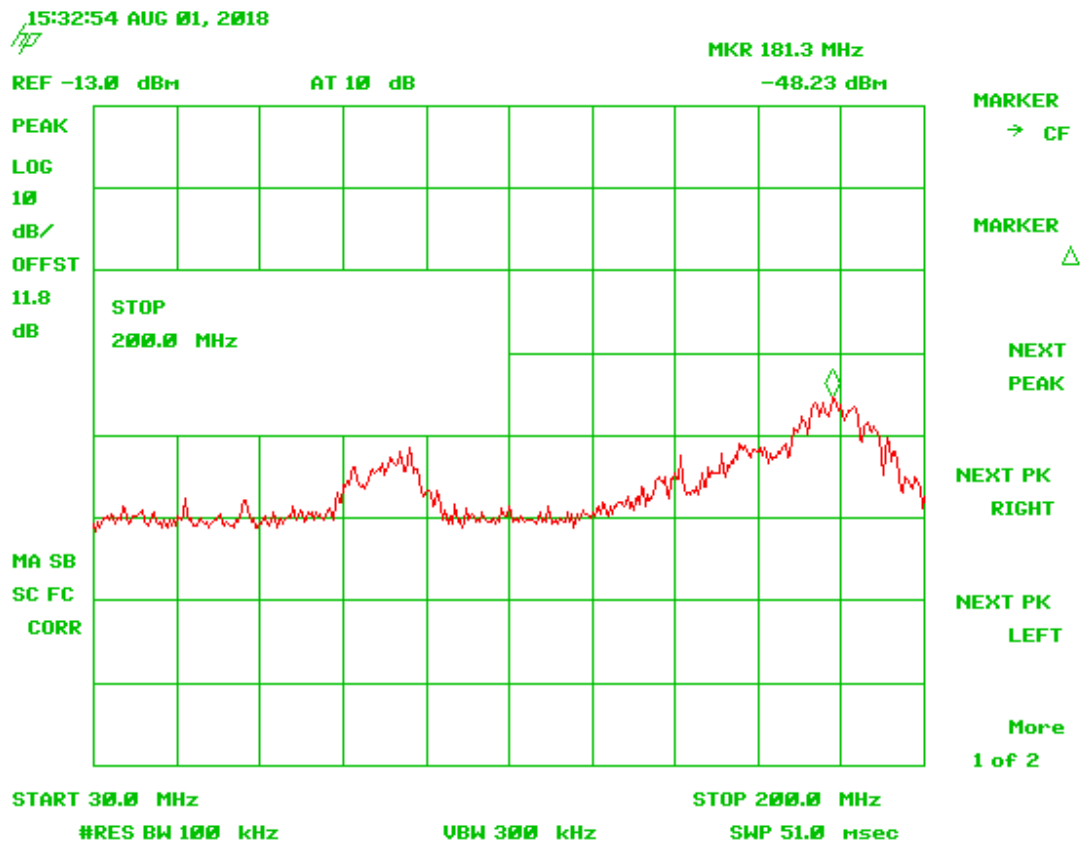


Figure 204. 824 MHz Horizontal, 30 – 200 MHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

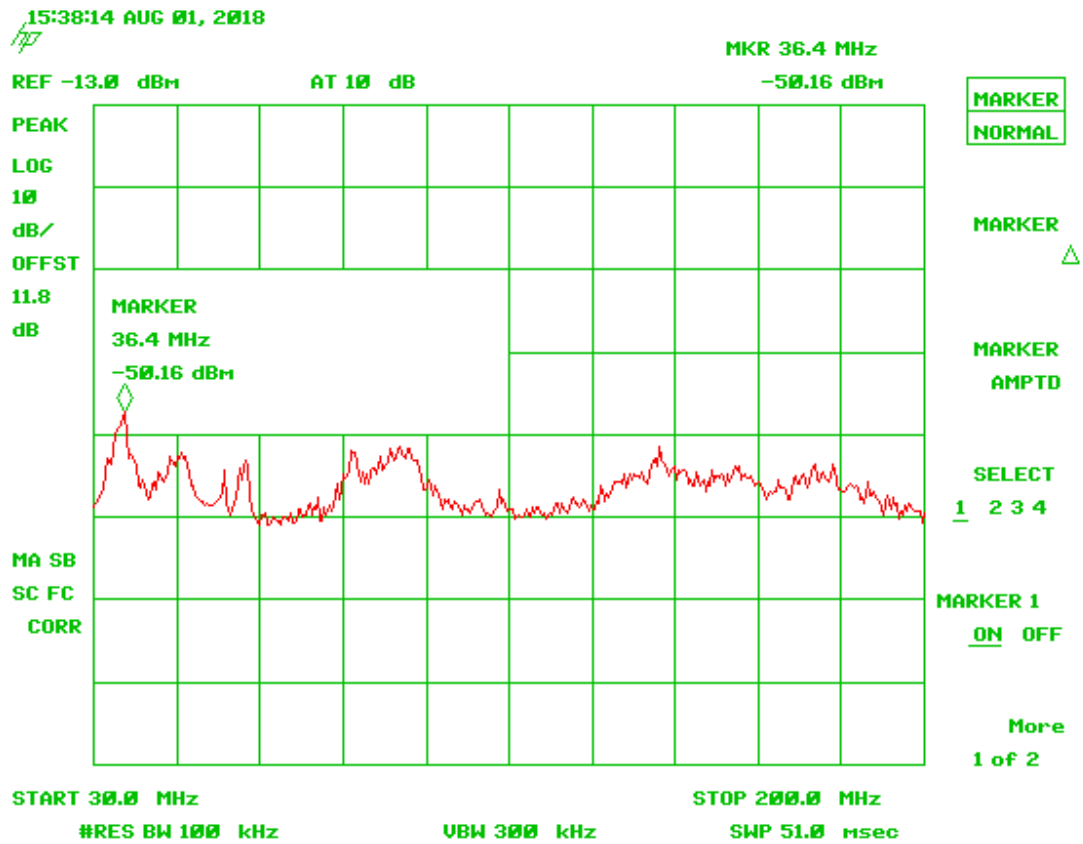


Figure 205. 824 MHz Vertical, 30 - 200 MHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

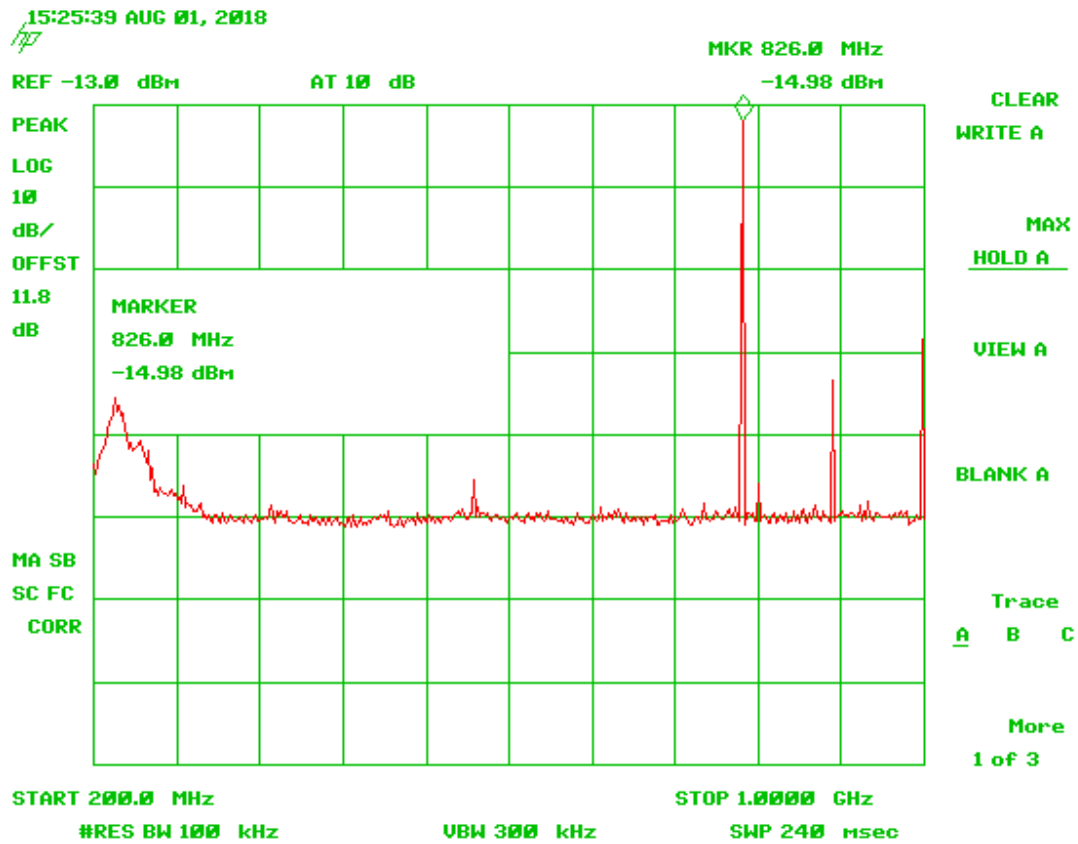


Figure 206. 824 MHz Horizontal 200 MHz - 1 GHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

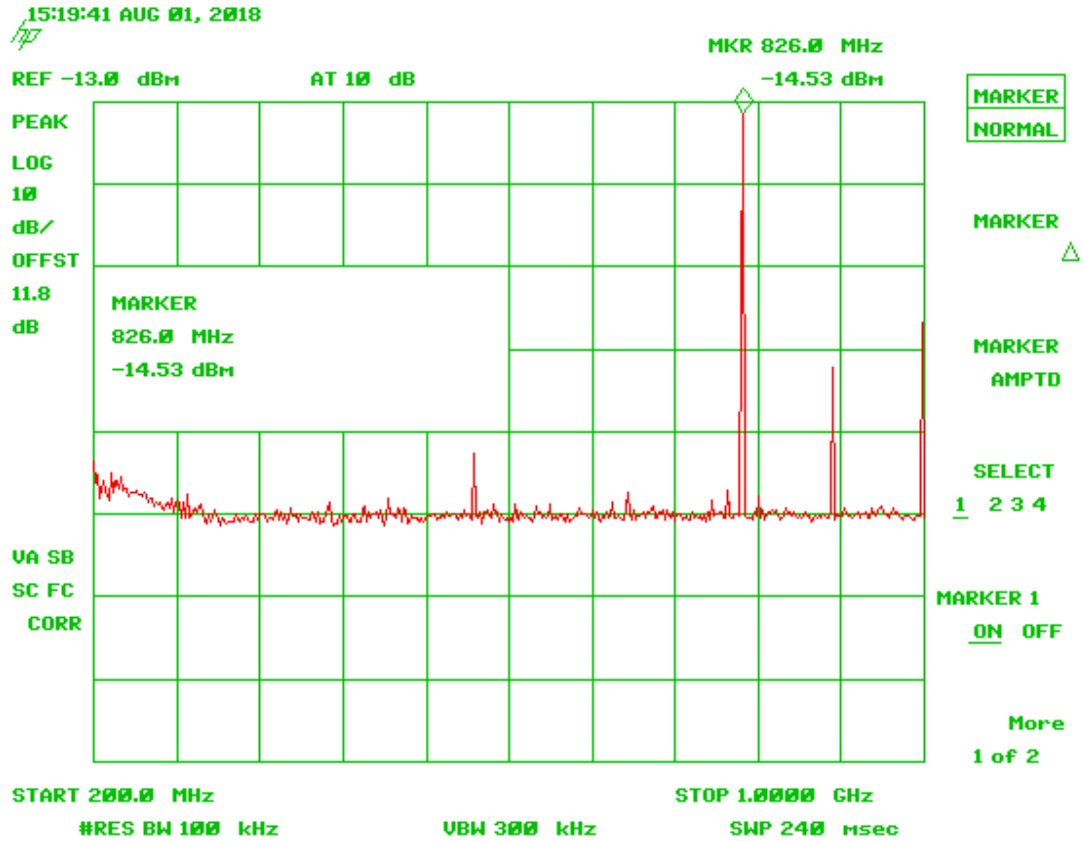


Figure 207. 824 MHz Vertical, 200 MHz – 1 GHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

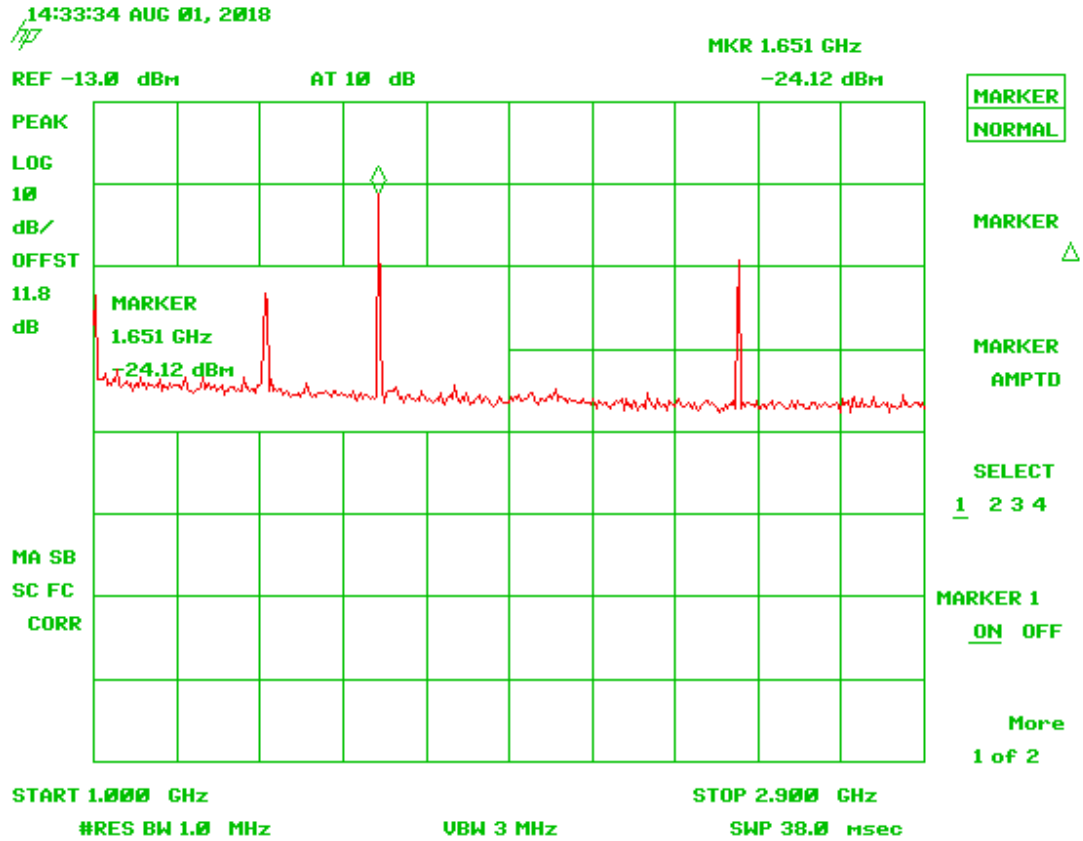


Figure 208. 824 MHz Horizontal, 1 – 2.9 GHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

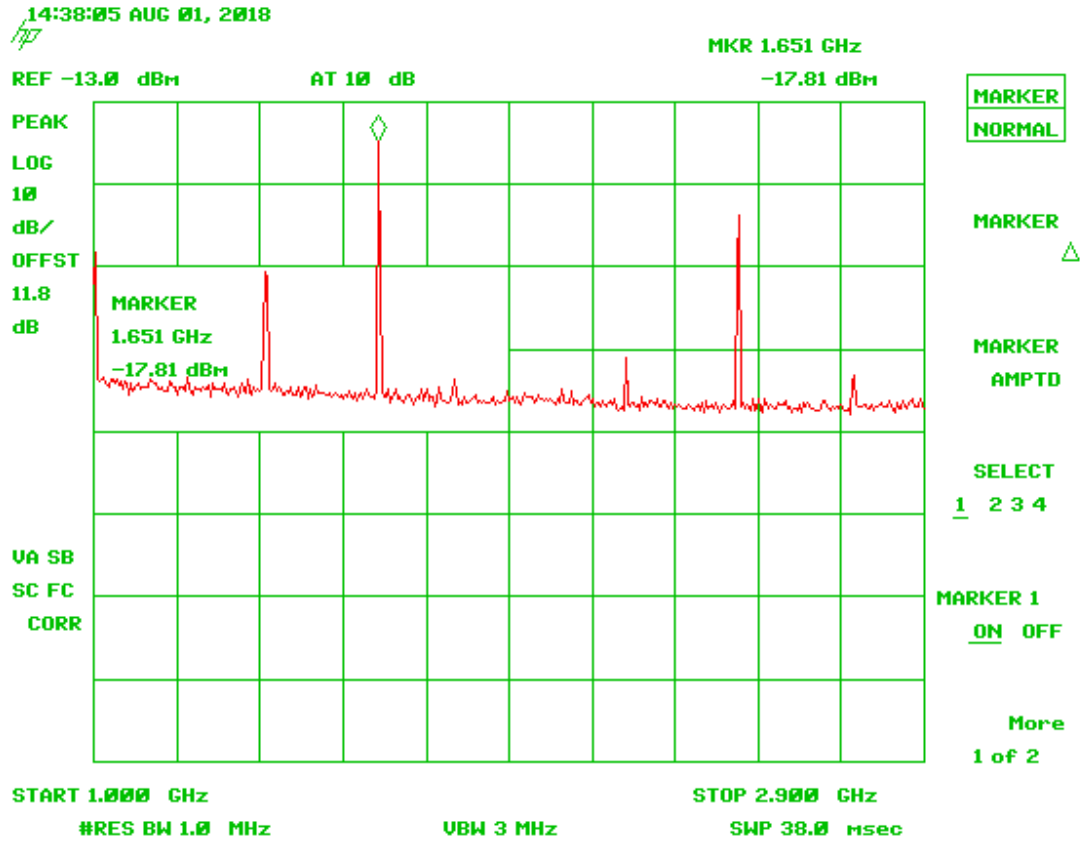


Figure 209. 824 MHz Vertical, 1 – 2.9 GHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

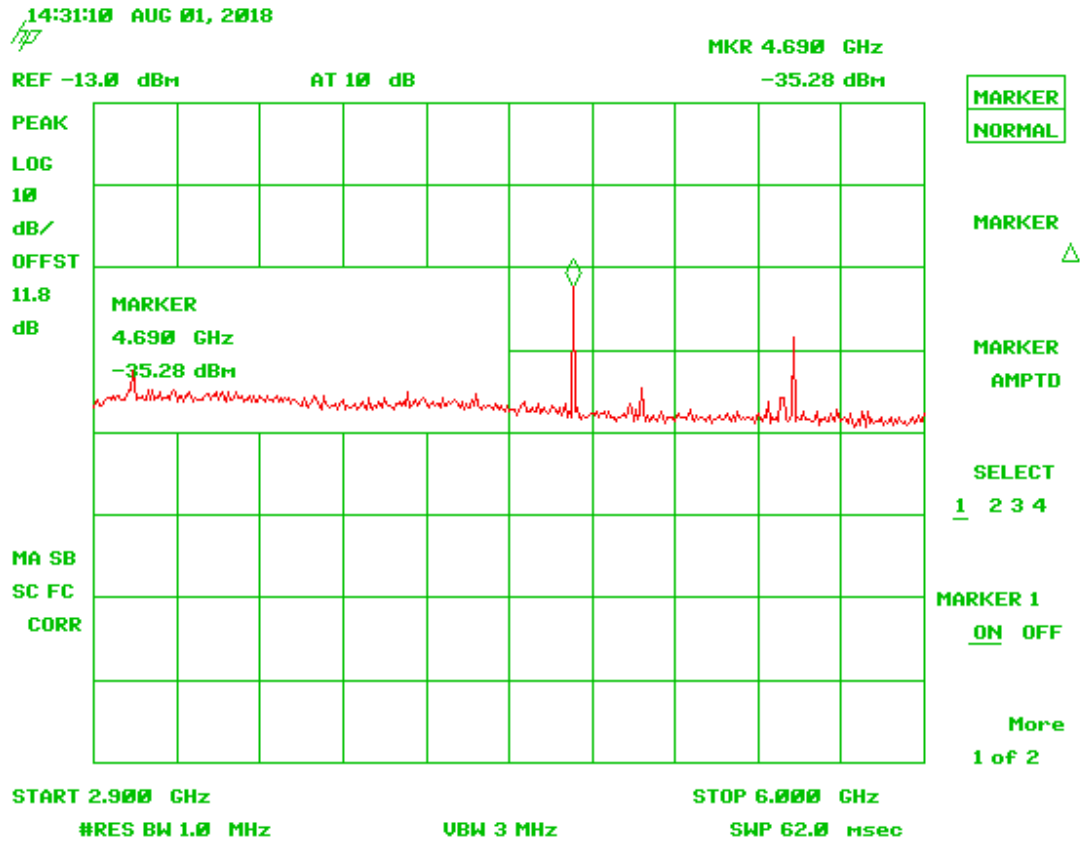


Figure 210. 824 MHz Horizontal 2.9 - 6 GHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

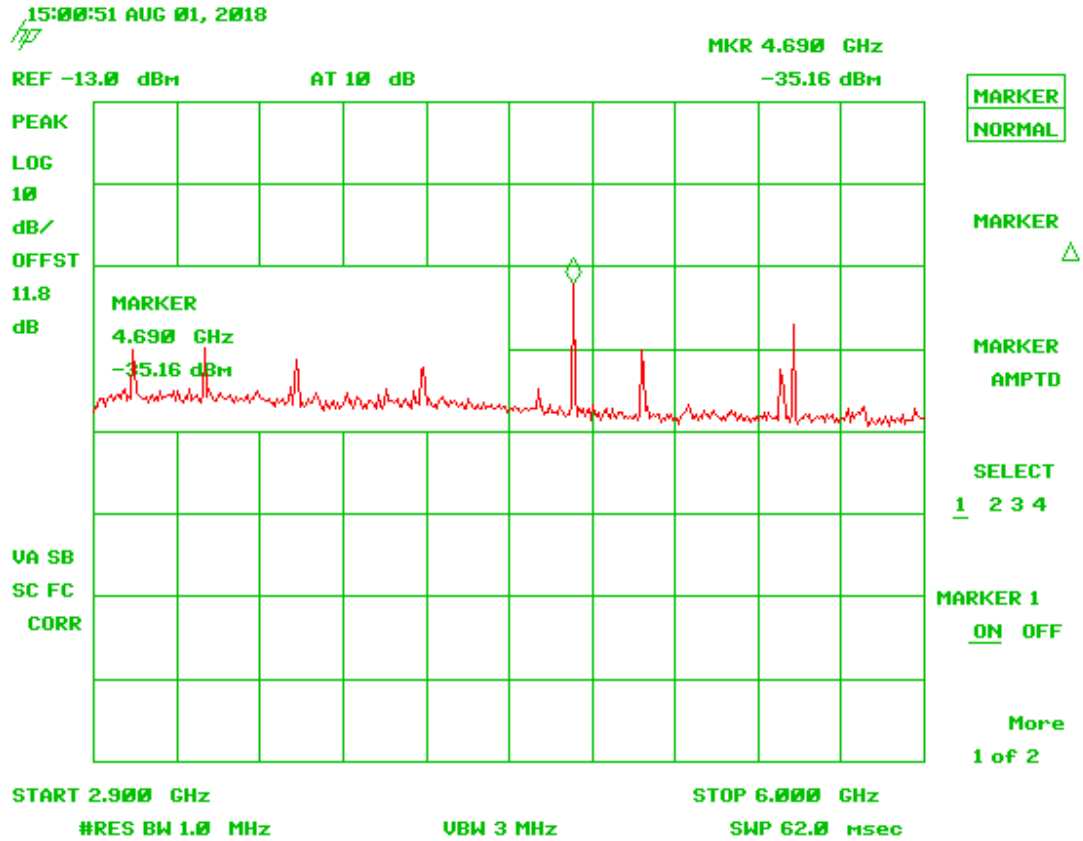


Figure 211. 824 MHz Vertical 2.9 - 6 GHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

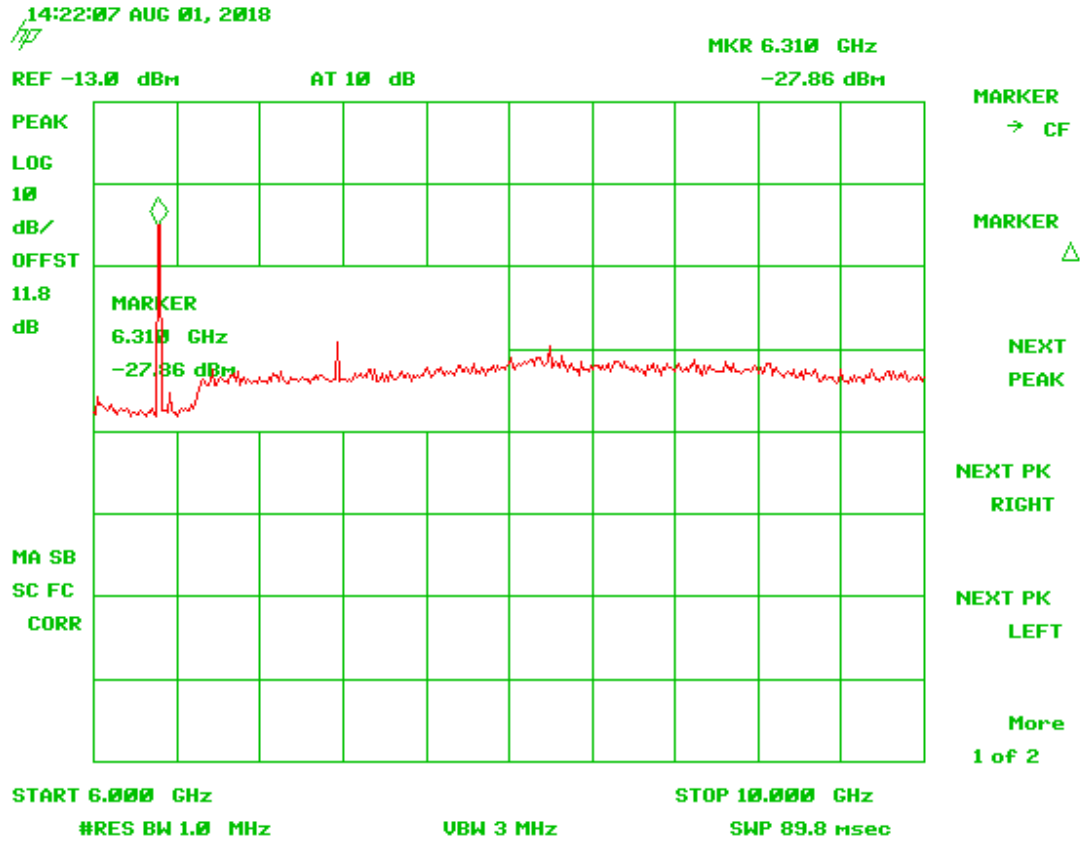


Figure 212. 824 MHz Horizontal, 6 – 10 GHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

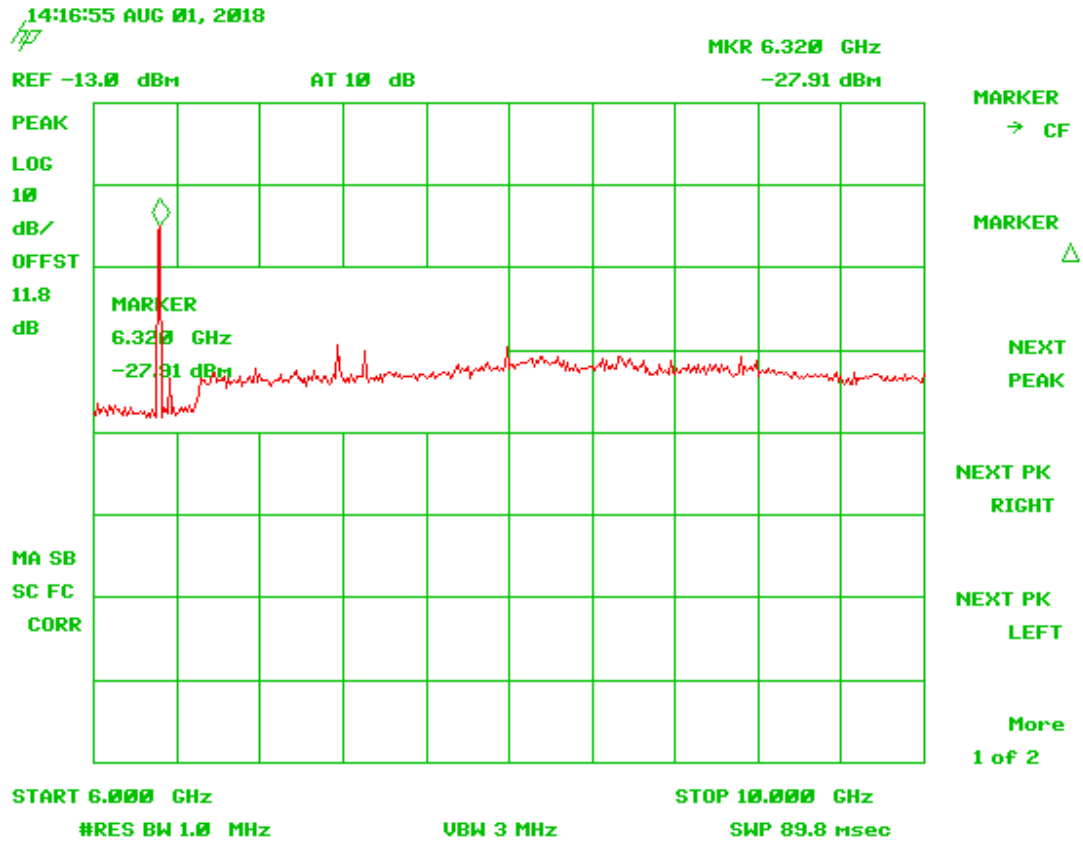


Figure 213. 824 MHz Vertical, 6 – 10 GHz

2.14.1.5 900 MHz Radiated Spurious Emissions Plots

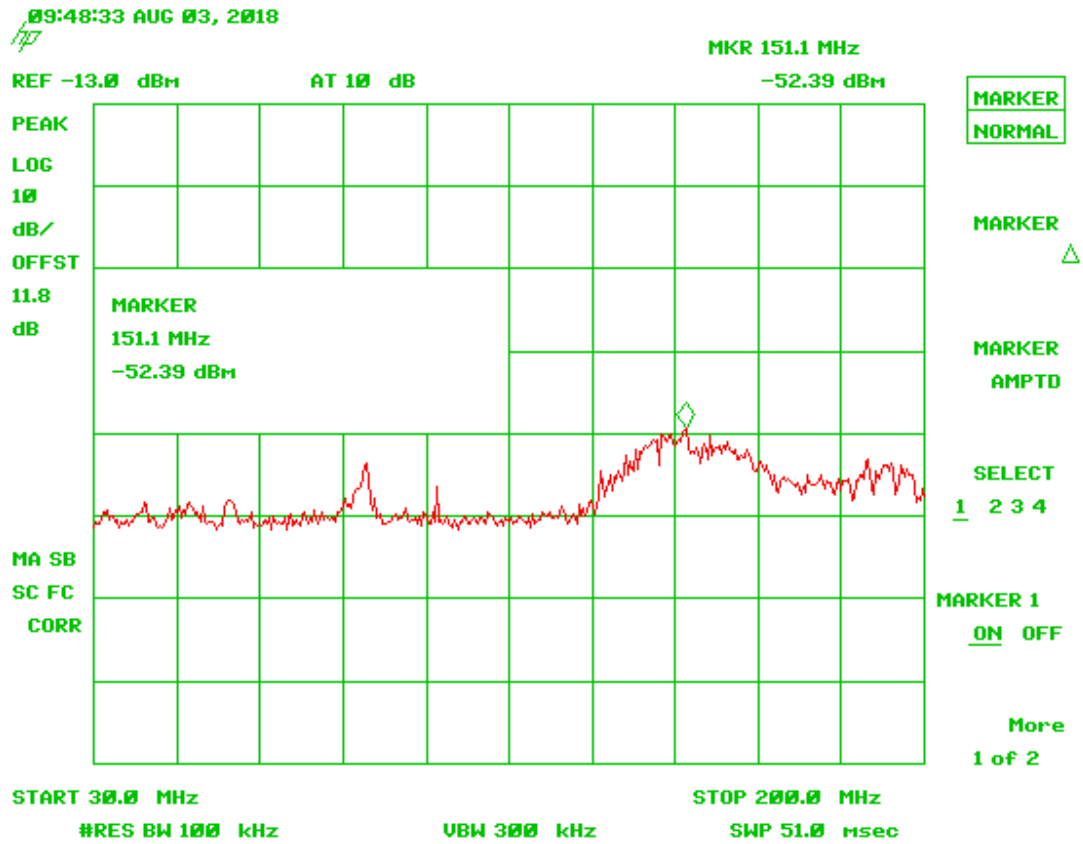


Figure 214. 901 MHz Horizontal, 30 - 200 MHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

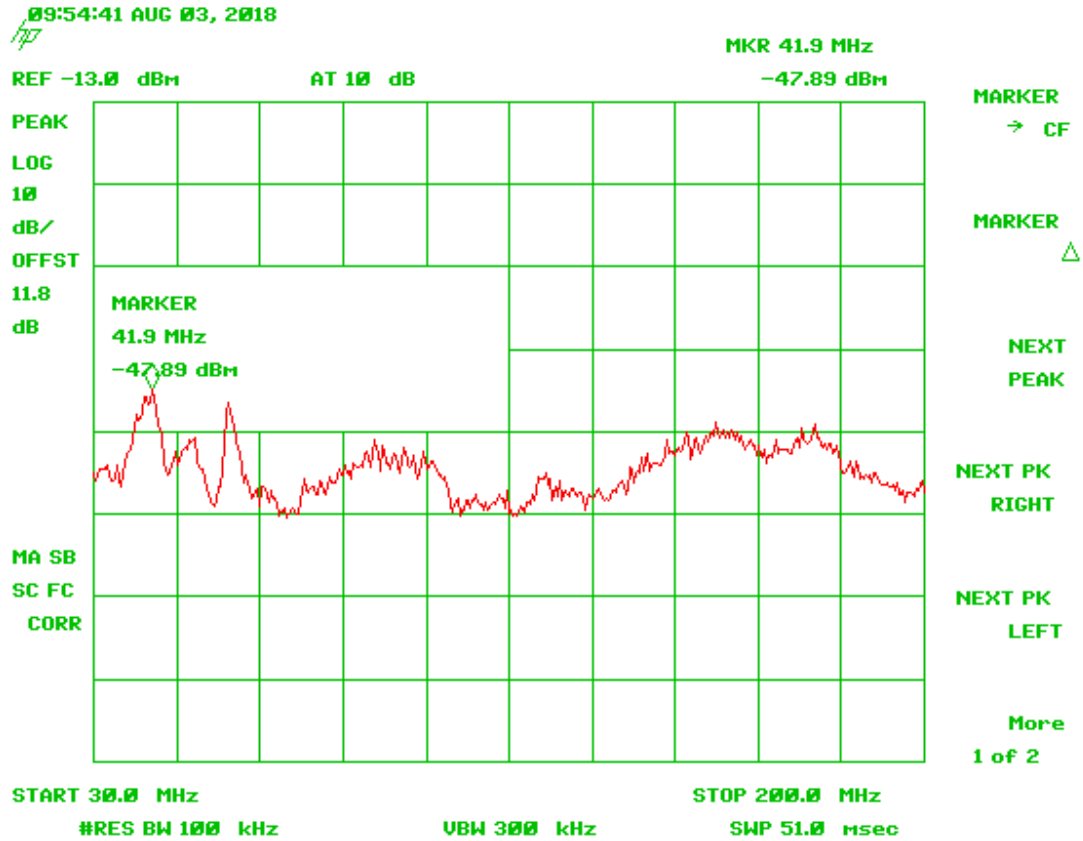


Figure 215. 901 MHz Vertical, 30 - 200 MHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

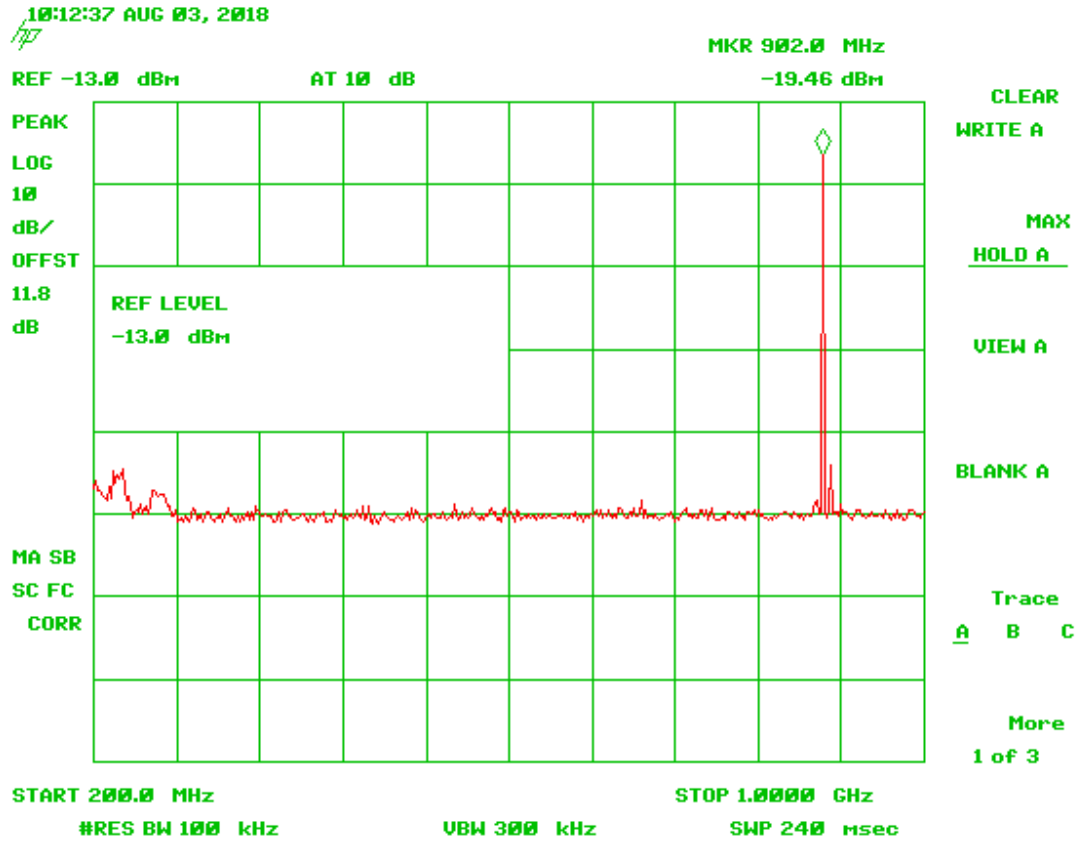


Figure 216. 901 MHz Horizontal, 200 MHz - 1 GHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

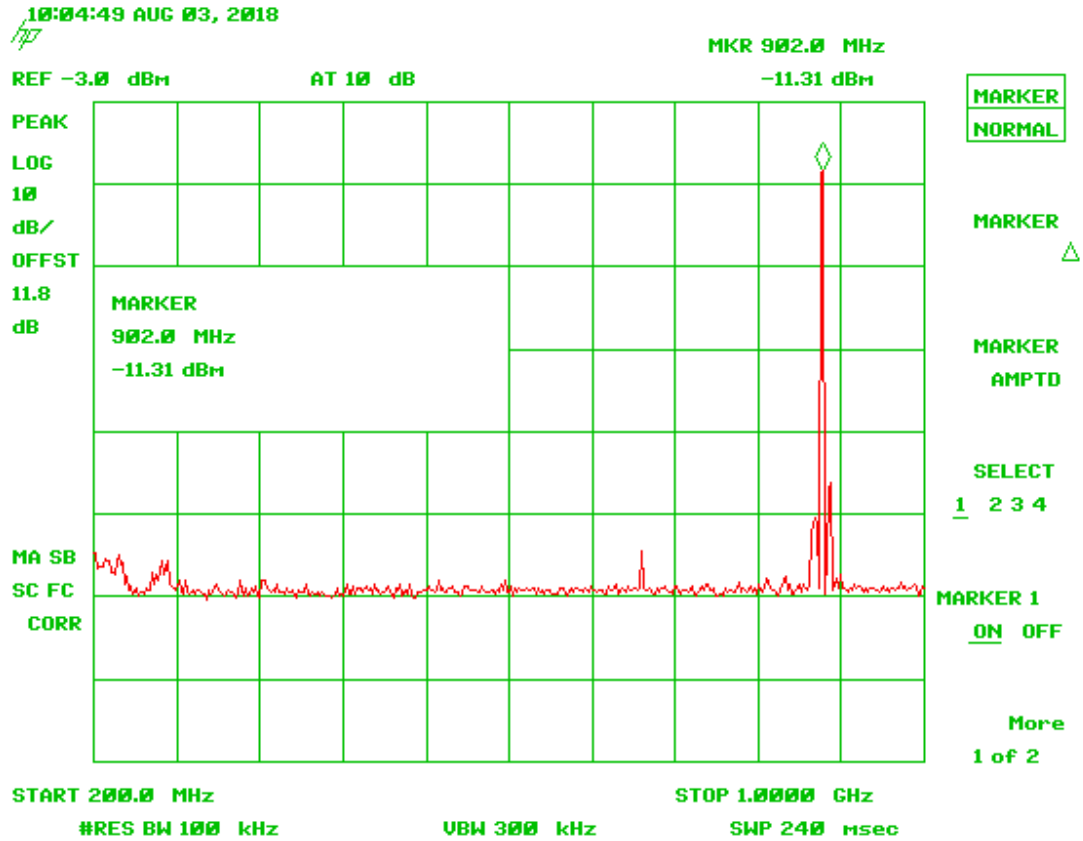


Figure 217. 901 MHz Vertical, 200 MHz - 1 GHz

U.S. Tech Test Report:
 FCC ID:
 IC:
 Report Number:
 Issue Date:
 Customer:
 Model:

FCC Part 90 Certification
 2AKSM-SAFE2
 22303-SAFE2
 18-0181
 September 10, 2018
 Safe-Com Wireless
 SAFE-1000

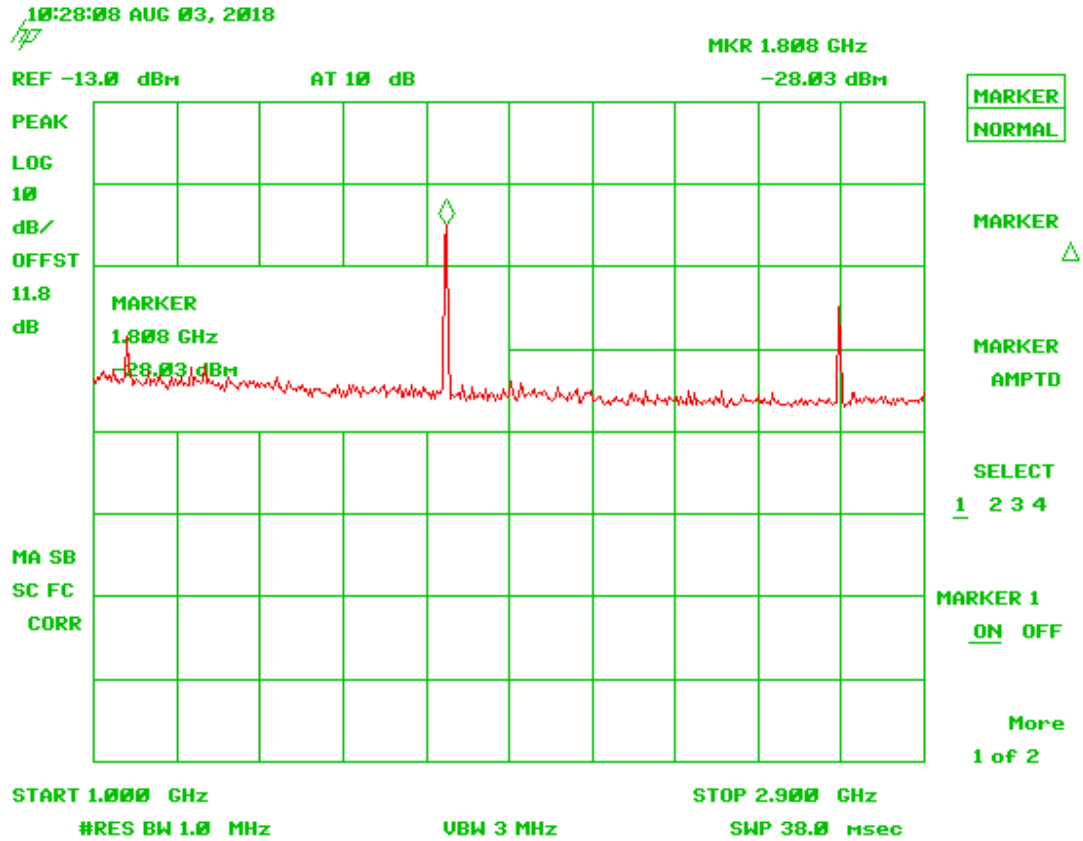


Figure 218. 901 MHz Horizontal, 1 – 2.9 GHZ

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

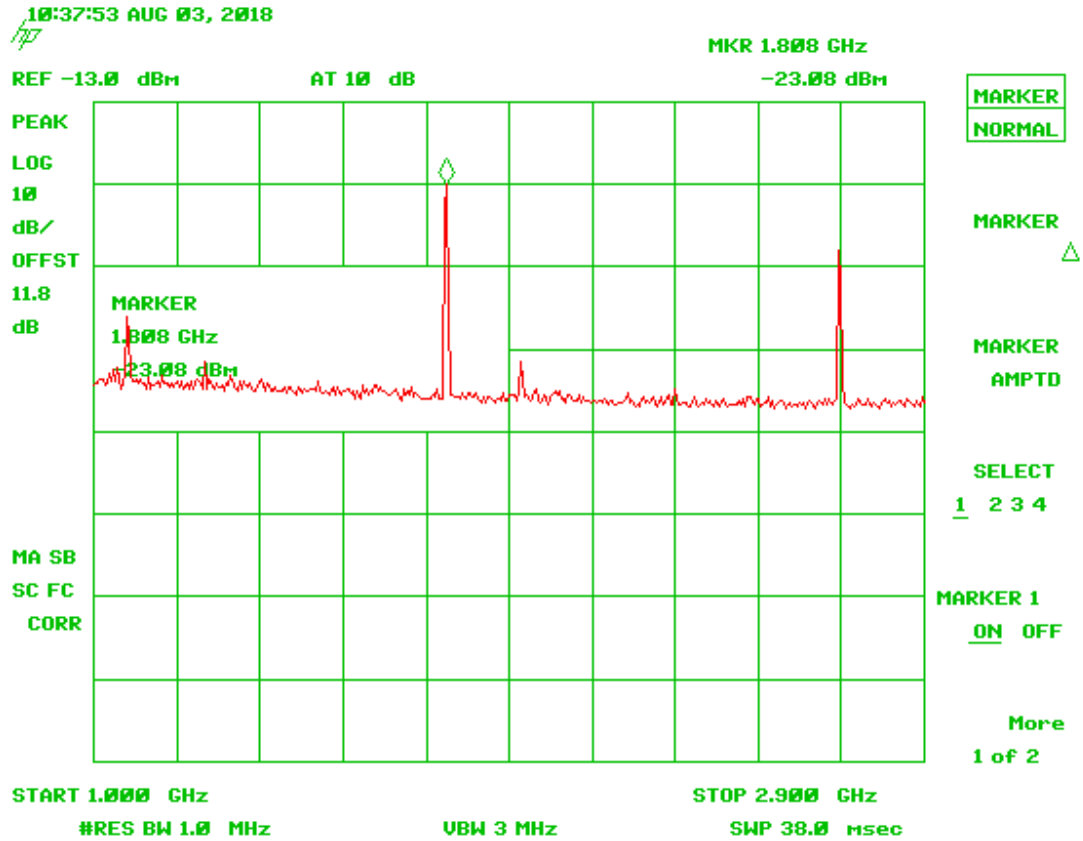


Figure 219. 901 MHz Vertical, 1 – 2.9 GHZ

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

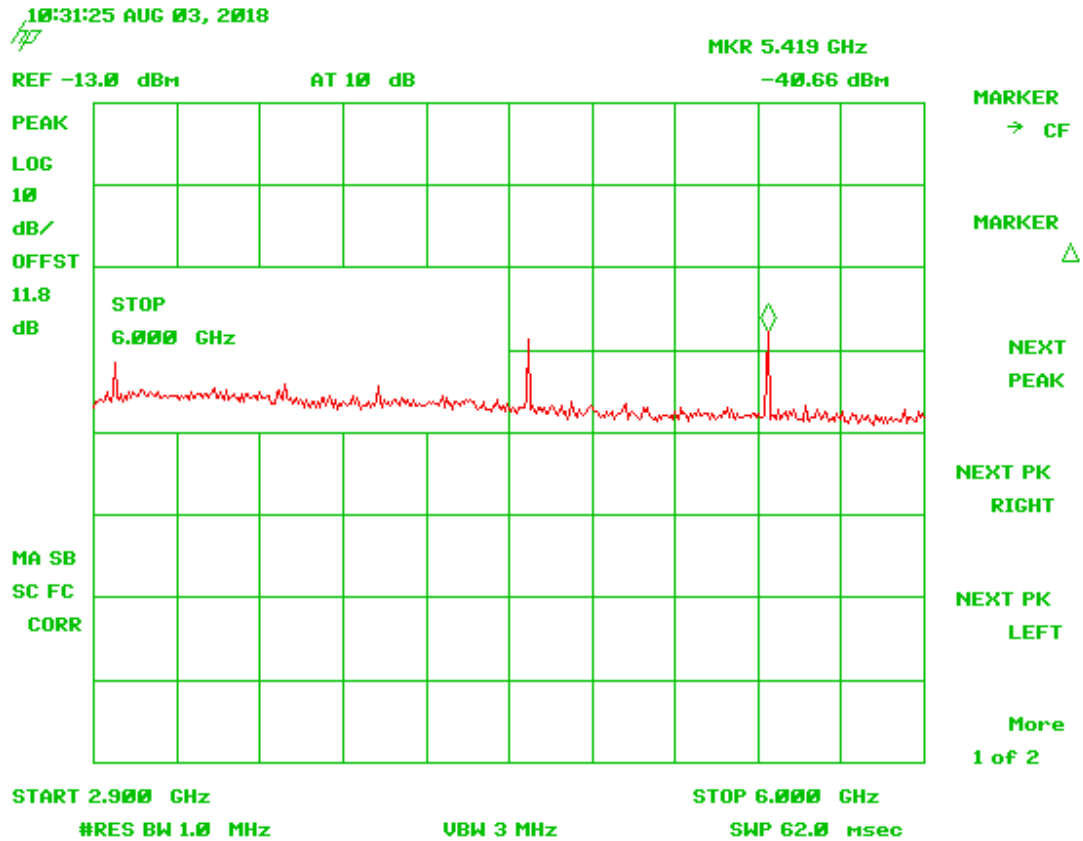


Figure 220. 901 MHz Horizontal, 2.9 - 6 GHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

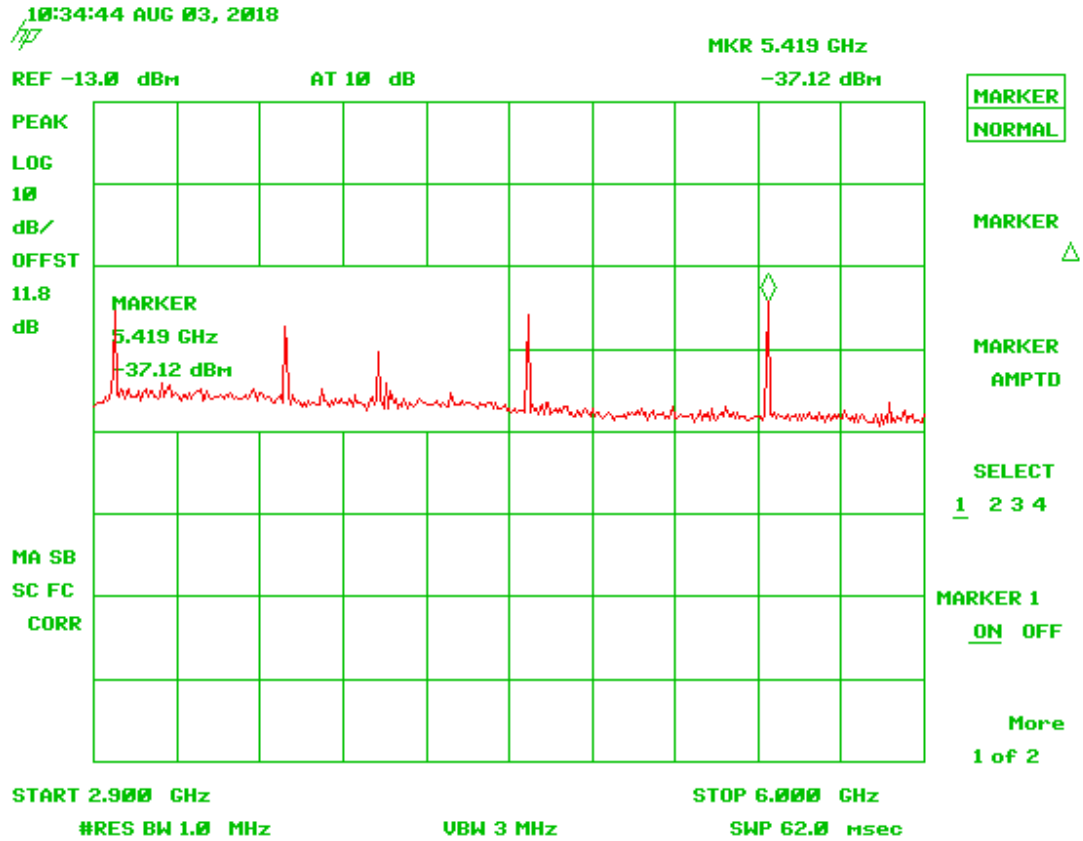


Figure 221. 901 MHz Vertical, 2.9 - 6 GHz

U.S. Tech Test Report:
 FCC ID:
 IC:
 Report Number:
 Issue Date:
 Customer:
 Model:

FCC Part 90 Certification
 2AKSM-SAFE2
 22303-SAFE2
 18-0181
 September 10, 2018
 Safe-Com Wireless
 SAFE-1000

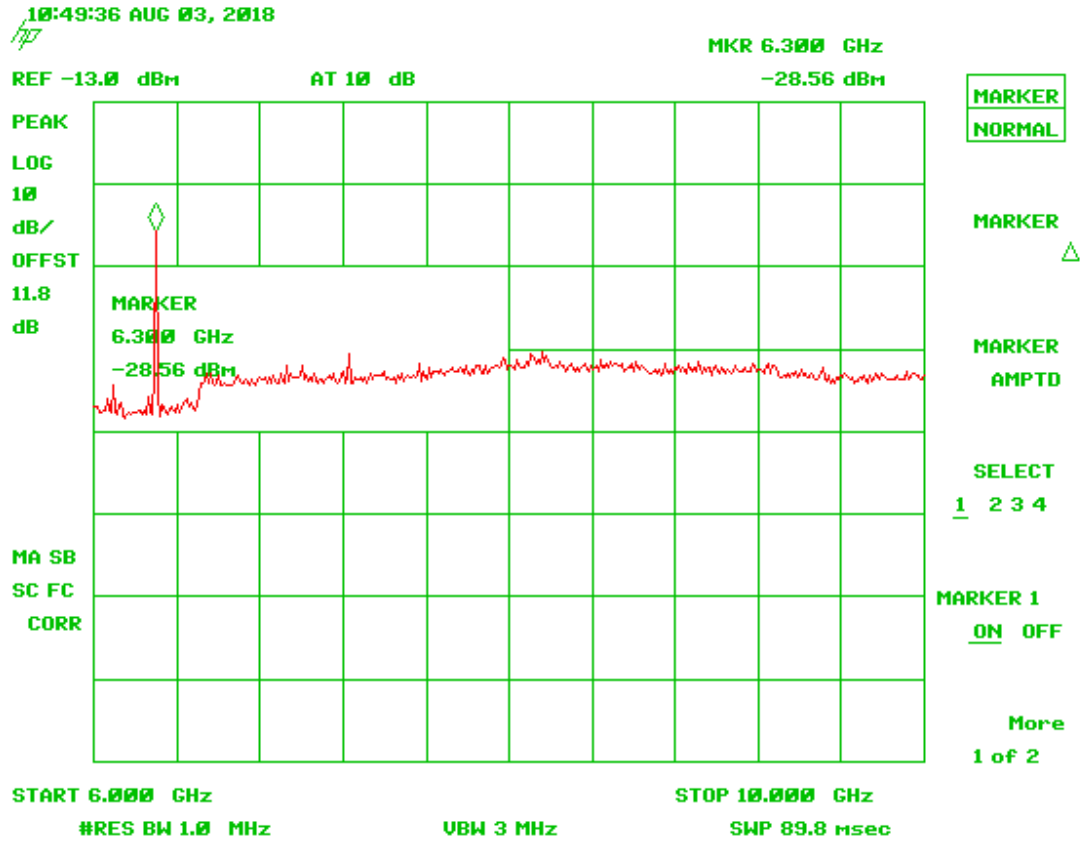


Figure 222. 901 MHz Horizontal, 6 – 10 GHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

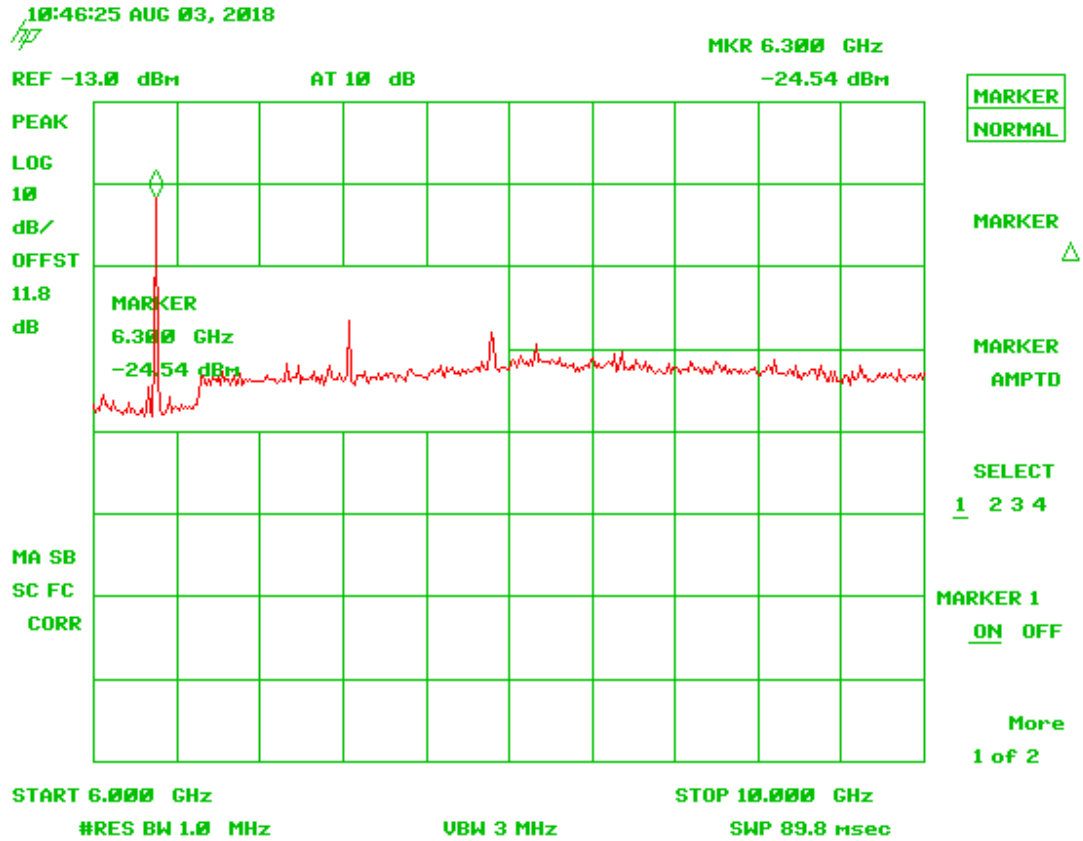


Figure 223. 901 MHz Vertical, 6 – 10 GHz

2.14.2 Conducted Spurious Emissions Measurement (90.219(e)(4), RSS-131, 6.5)

The EUT was connected to a spectrum analyzer through a 20 dB attenuator. All cable and attenuator losses were input into the spectrum analyzer as a combination of reference level offset and correction factors as needed to ensure the accuracy of the readings obtained.

A CW signal was used to set the center frequency of the transmitter. The RF input signal level was set to at least 0.2 dB below the ACG threshold.

The RBW was set to 100 KHz for measurements below 1 GHz and 1 MHz for measurements above 1 GHz. The VBW was 3 times the RBW.

Limit = -13 dBm

Emissions were investigated from 30 MHz to the 10th harmonic of the applicable frequency band of concern.

The following plots show the worst-case measurements.

2.14.2.1 VHF Conducted Spurious Emissions

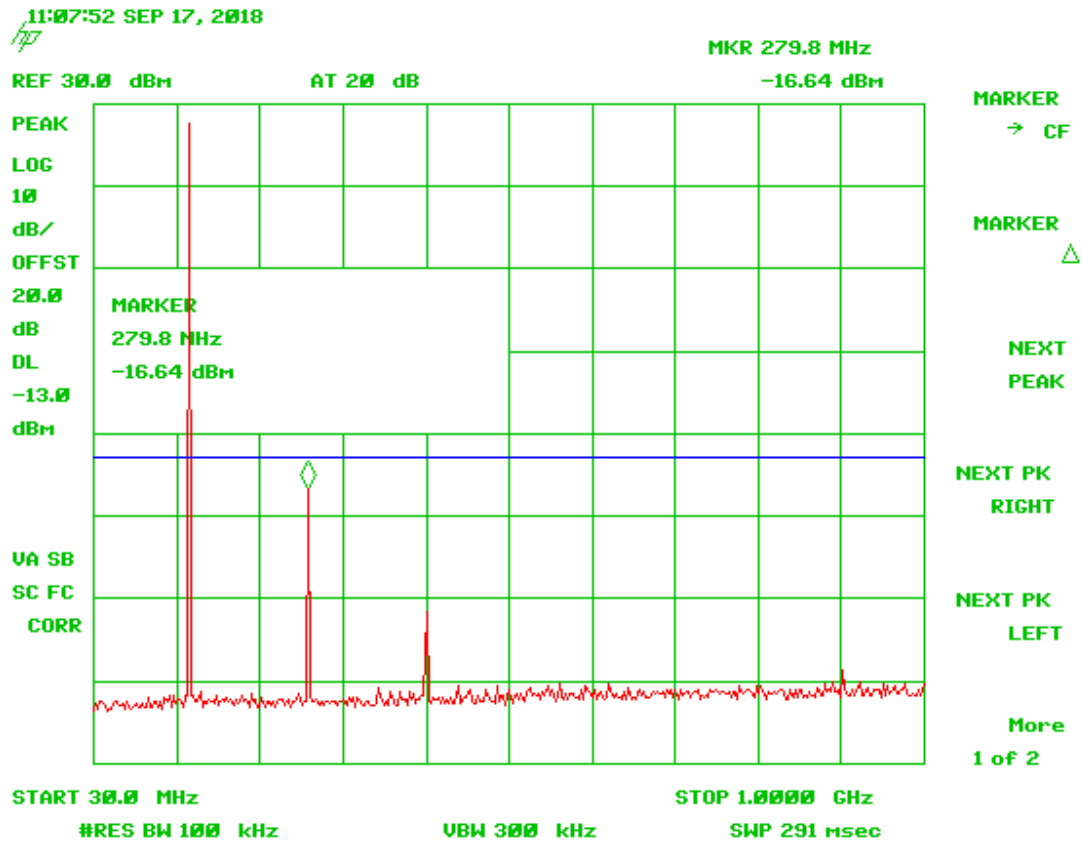


Figure 224. 138 MHz below 1 GHz

Note: All spurious emissions other than the fundamental are below -13 dBm.
(Test data for band 138-144 MHz and 380-400 MHz not applicable for FCC certification)

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

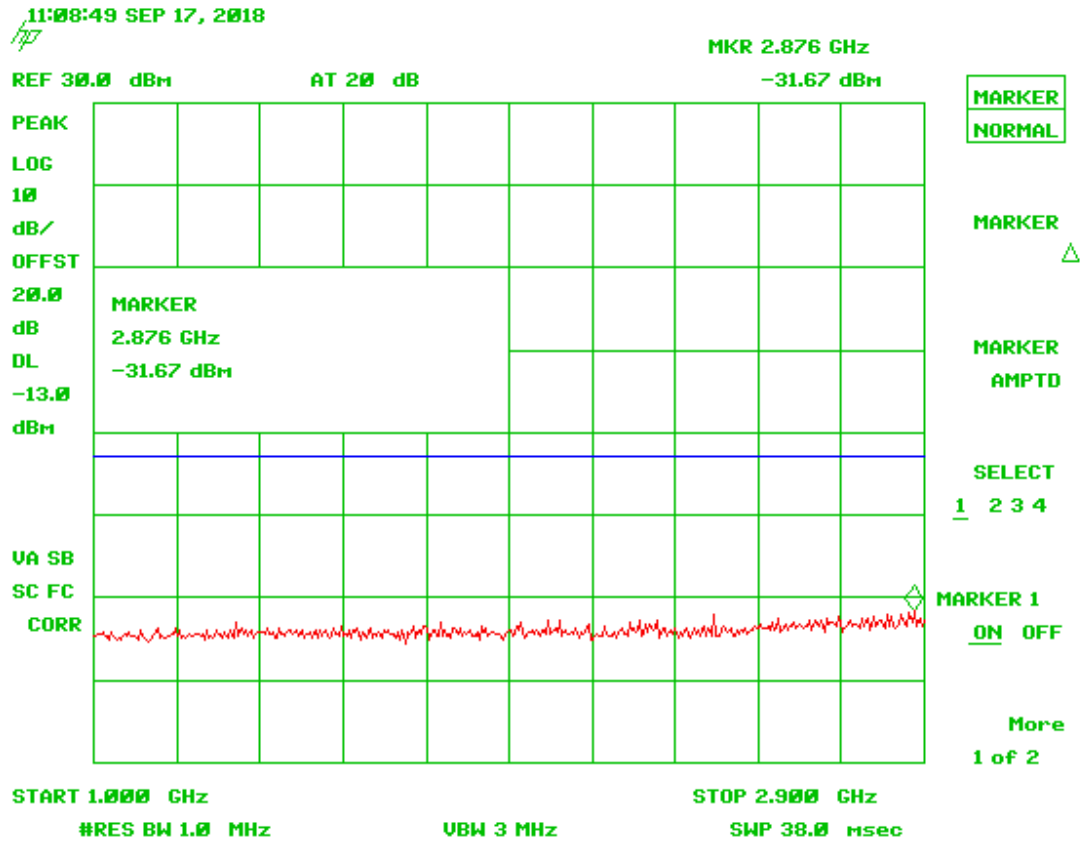


Figure 225. 138 MHz above 1 GHz

(Test data for band 138-144 MHz and 380-400 MHz not applicable for FCC certification)

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

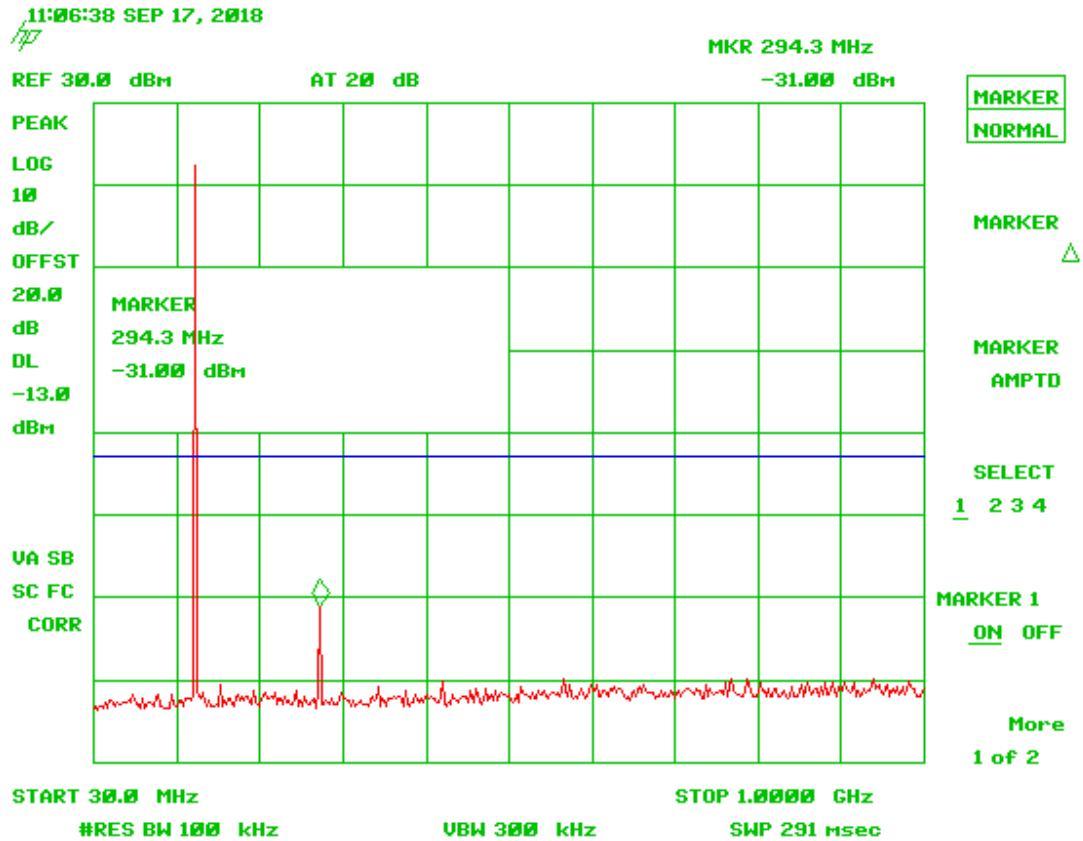


Figure 226. 145 MHz below 1 GHz

Note: All spurious emissions other than the fundamental are below -13 dBm.

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

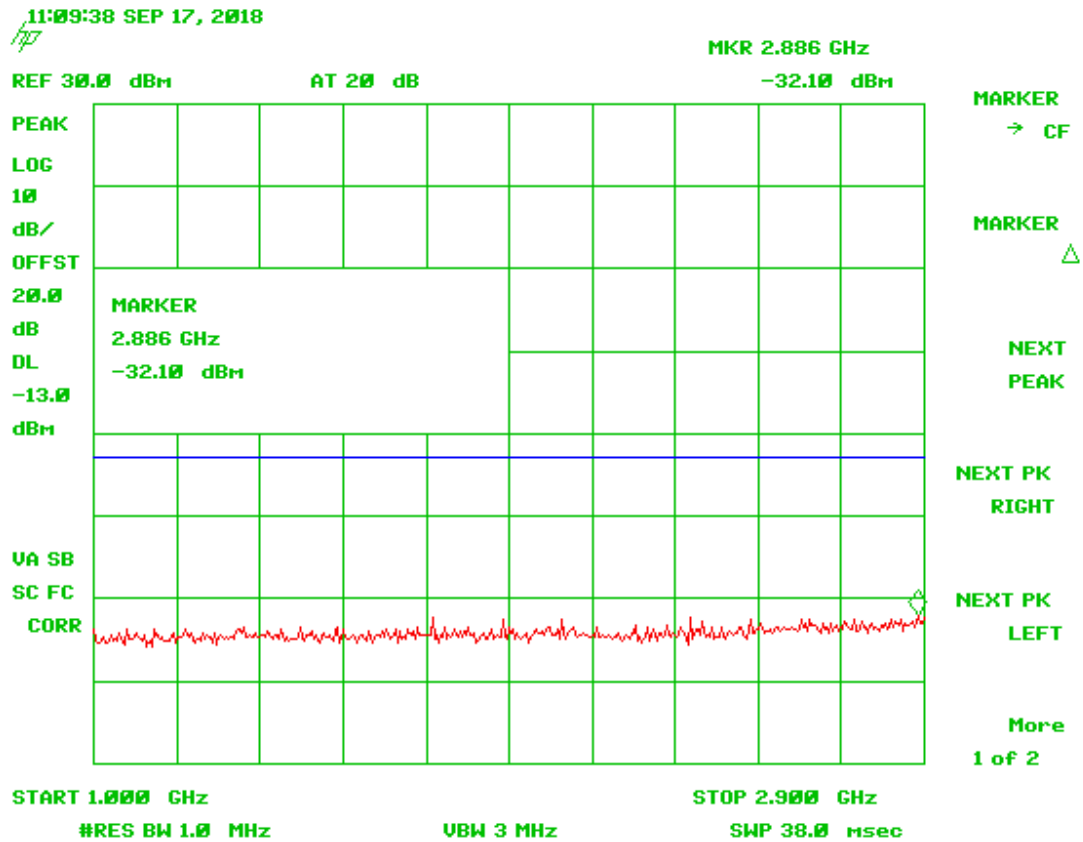


Figure 227. 145 MHz above 1 GHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

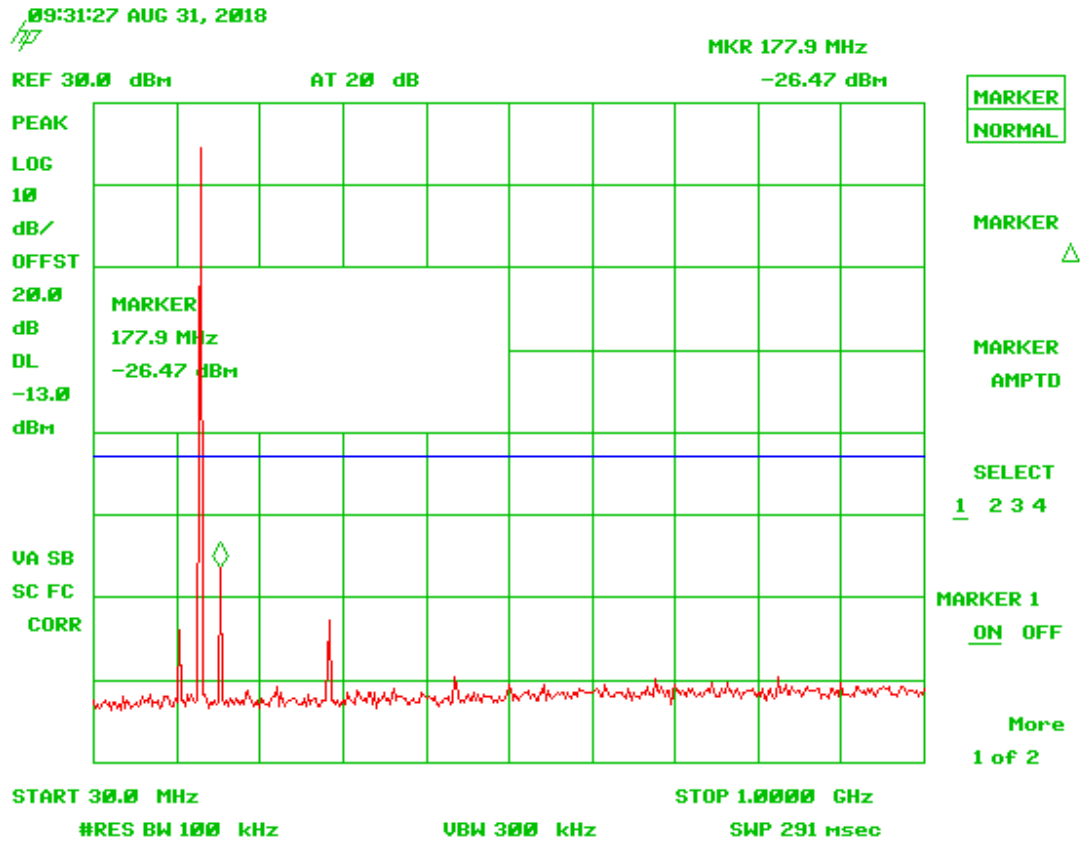


Figure 228. 150 MHz below 1 GHz

Note: All spurious emissions other than the fundamental are below -13 dBm.

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

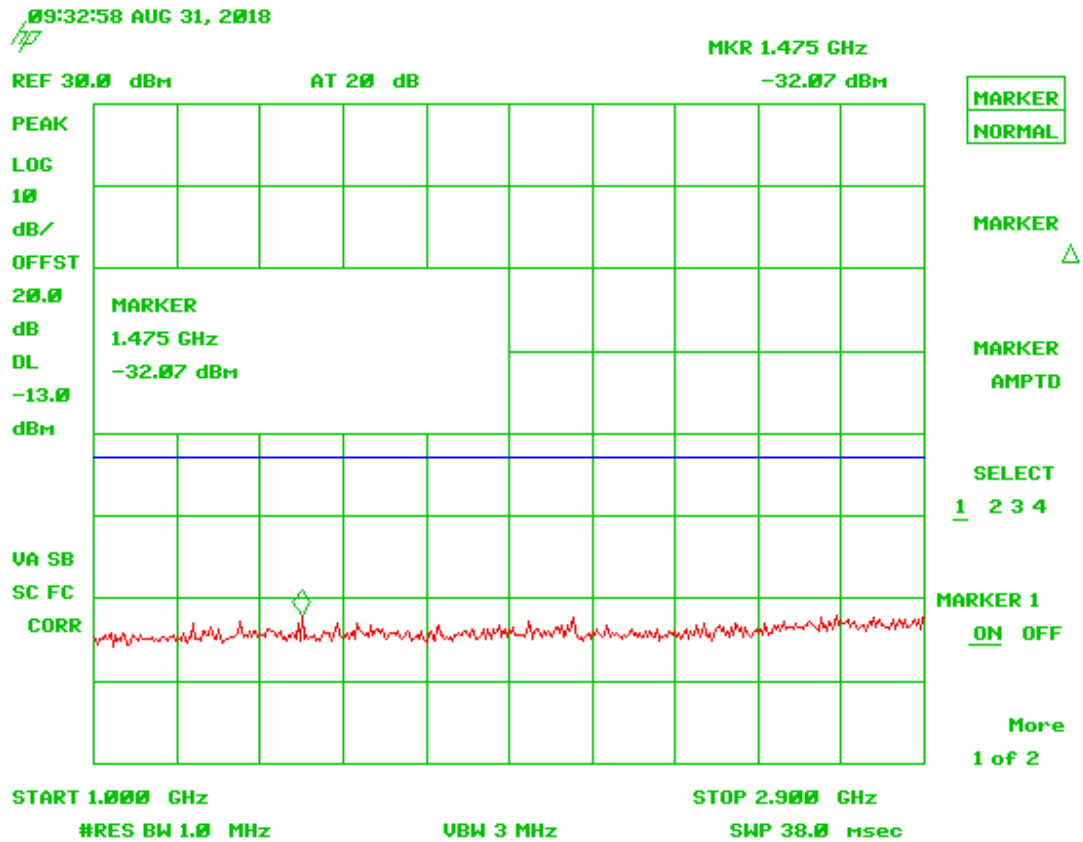


Figure 229. 150 MHz, above 1 GHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

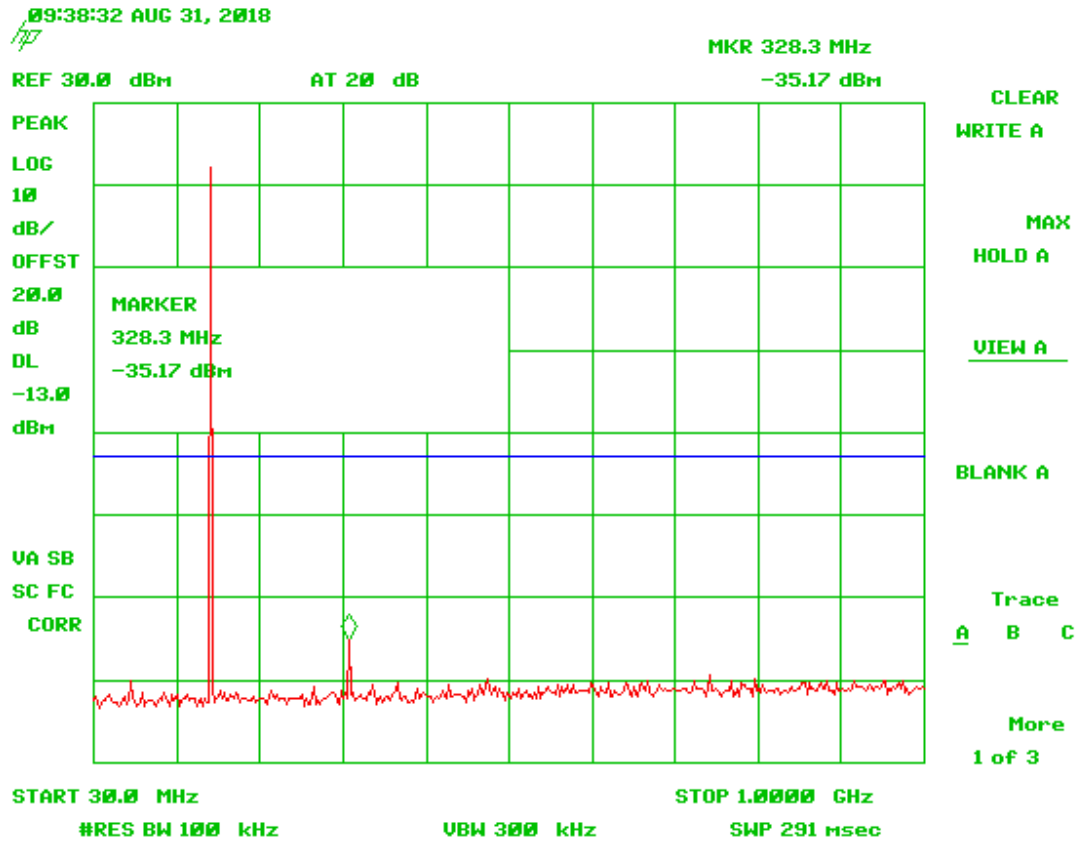


Figure 230. 162 MHz below 1 GHz

Note: All spurious emissions other than the fundamental are below -13 dBm.

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Date:
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE2
22303-SAFE2
18-0181
September 10, 2018
Safe-Com Wireless
SAFE-1000

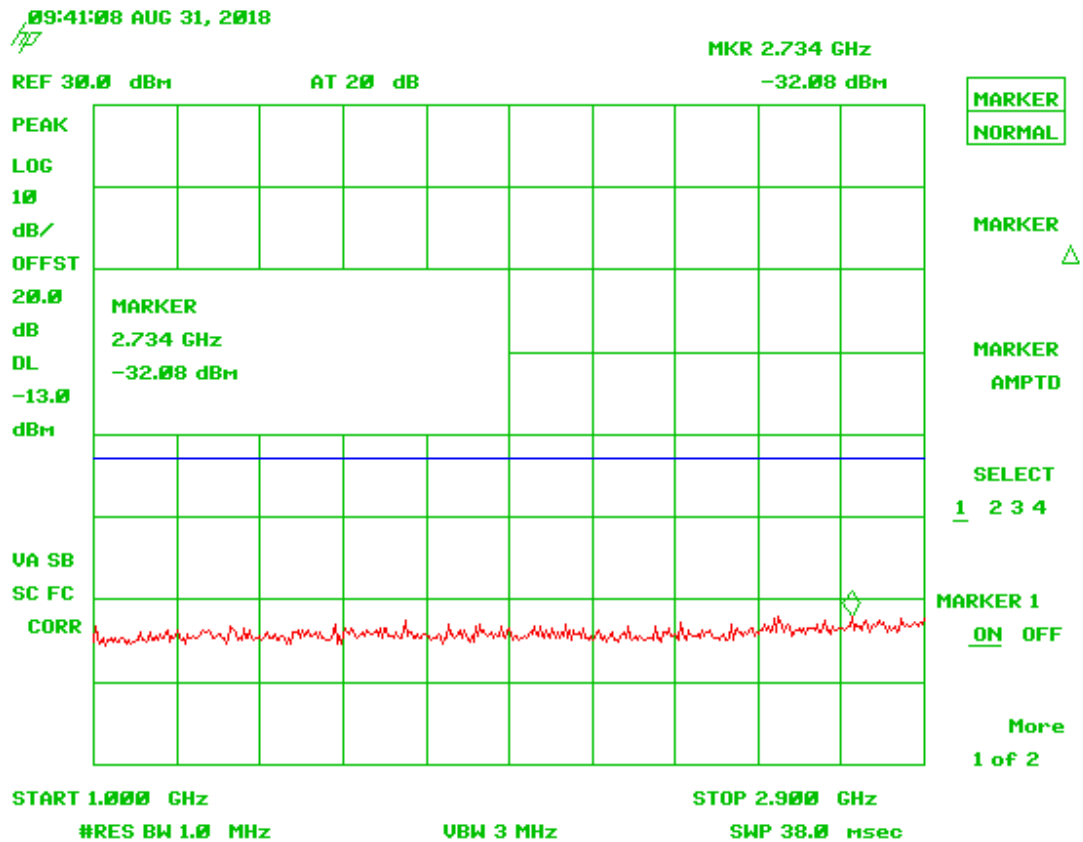


Figure 231. 162 MHz, above 1 GHz

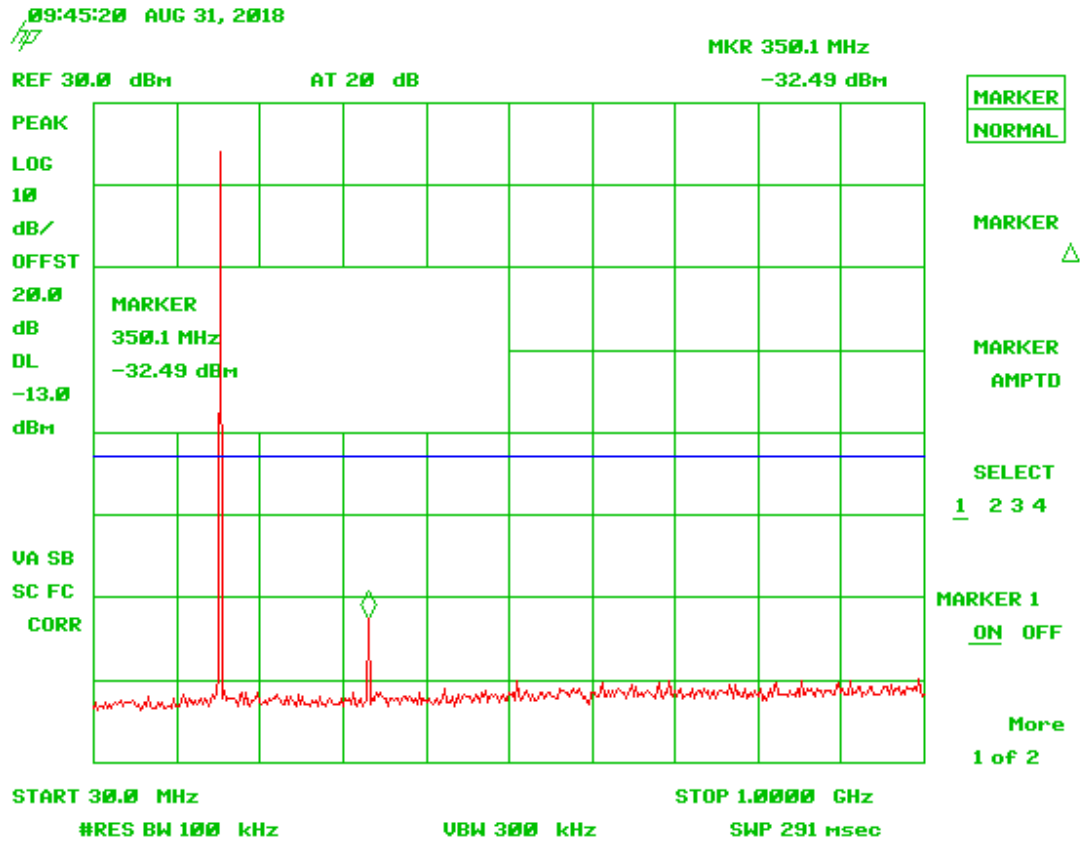


Figure 232. 174 MHz below 1 GHz

Note: All spurious emissions other than the fundamental are below -13 dBm.