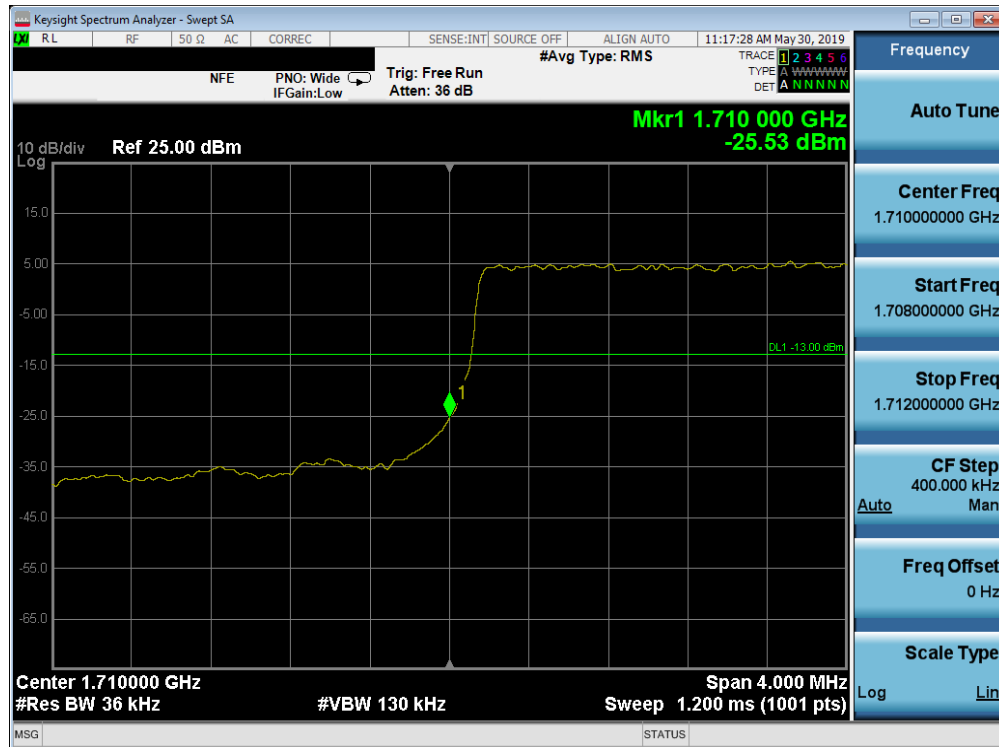
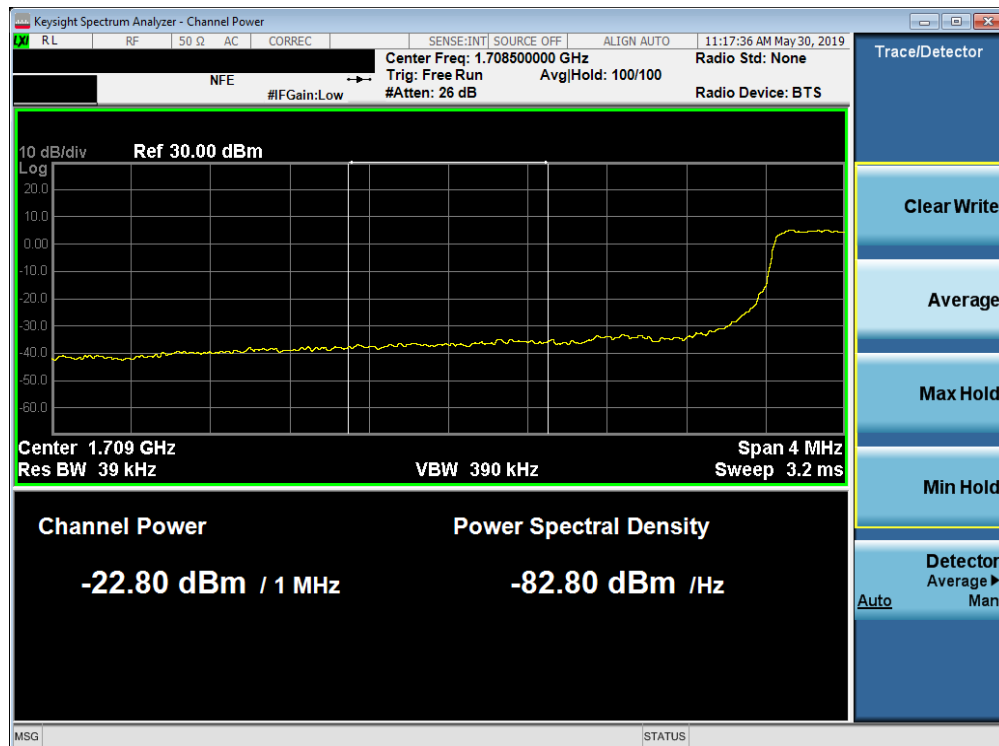


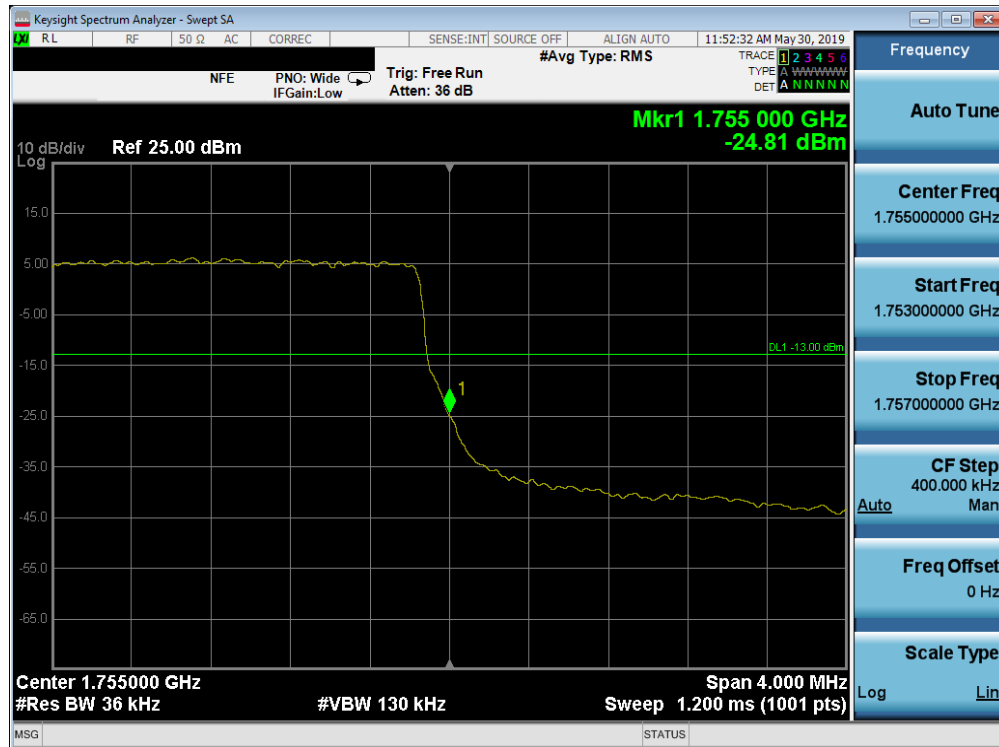


Plot 7-250. Lower Band Edge Plot (Band 66/4 - 3.0MHz QPSK - Full RB Configuration)

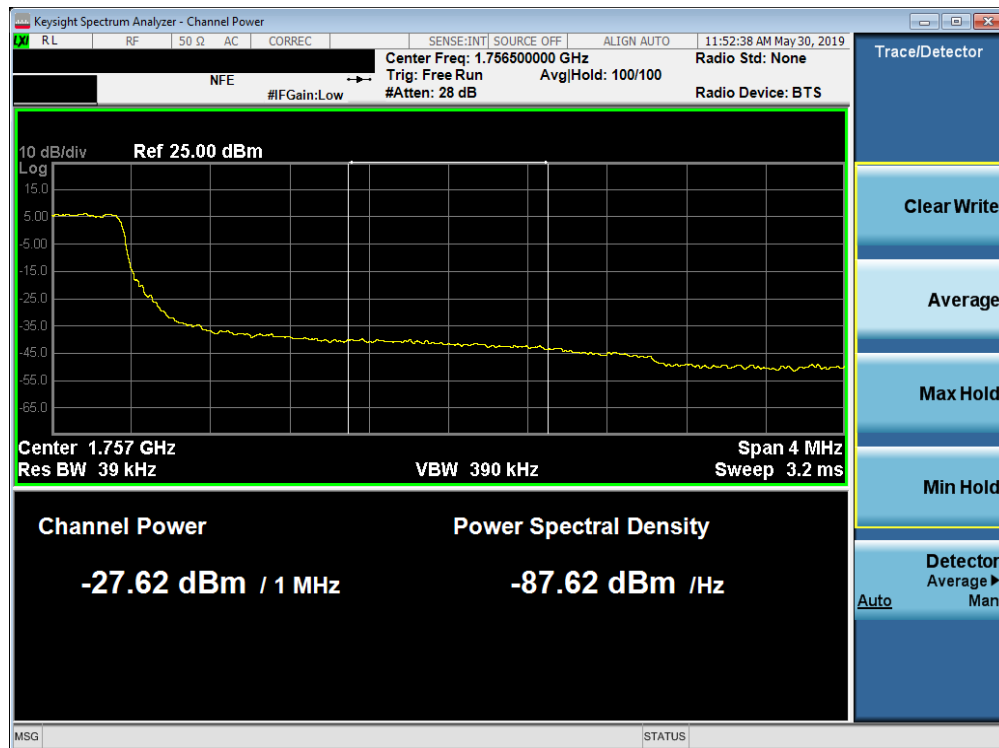


Plot 7-251. Lower Extended Band Edge Plot (Band 66/4 - 3.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-03.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 151 of 331

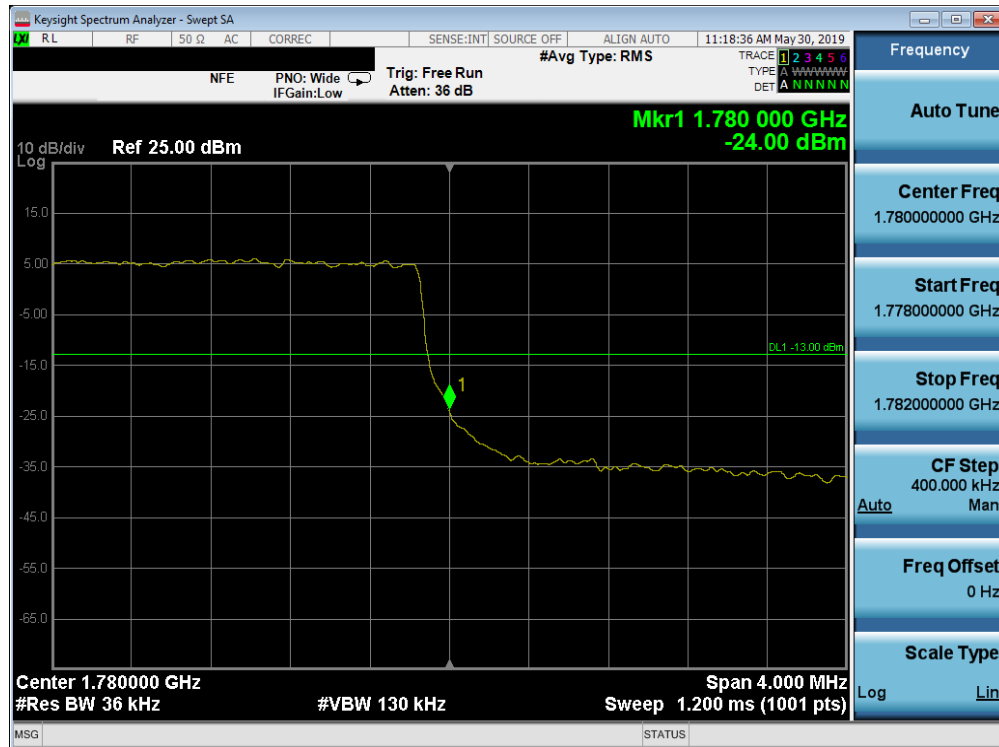


Plot 7-252. Upper Band Edge Plot (Band 4 - 3.0MHz QPSK - Full RB Configuration)

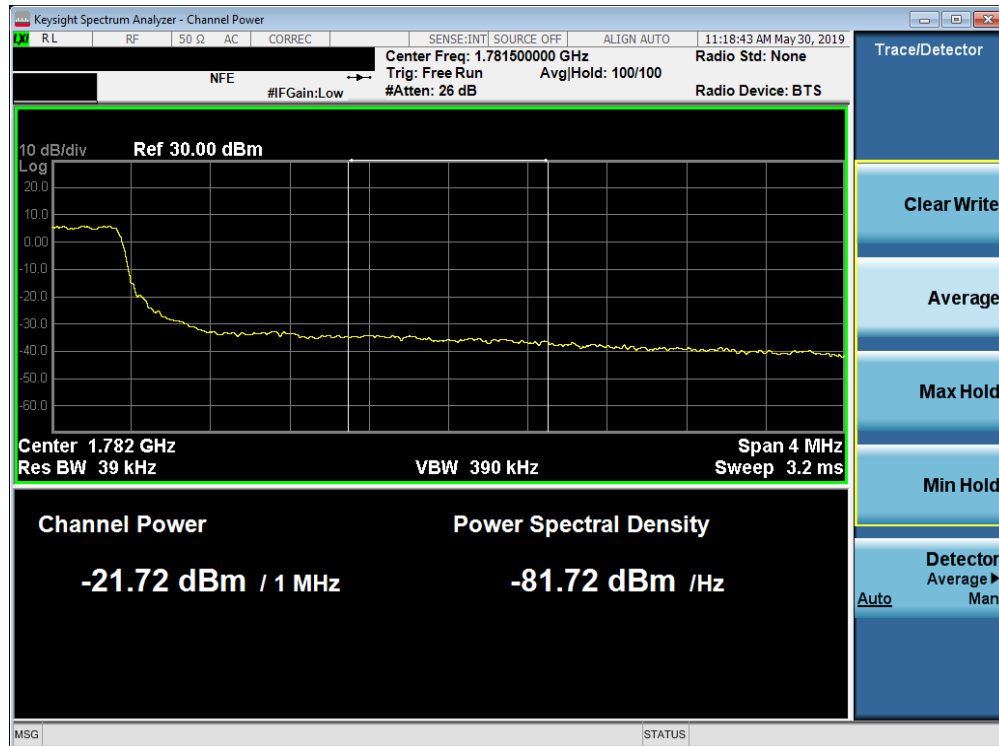


Plot 7-253. Upper Extended Band Edge Plot (Band 4 - 3.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-03.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 152 of 331

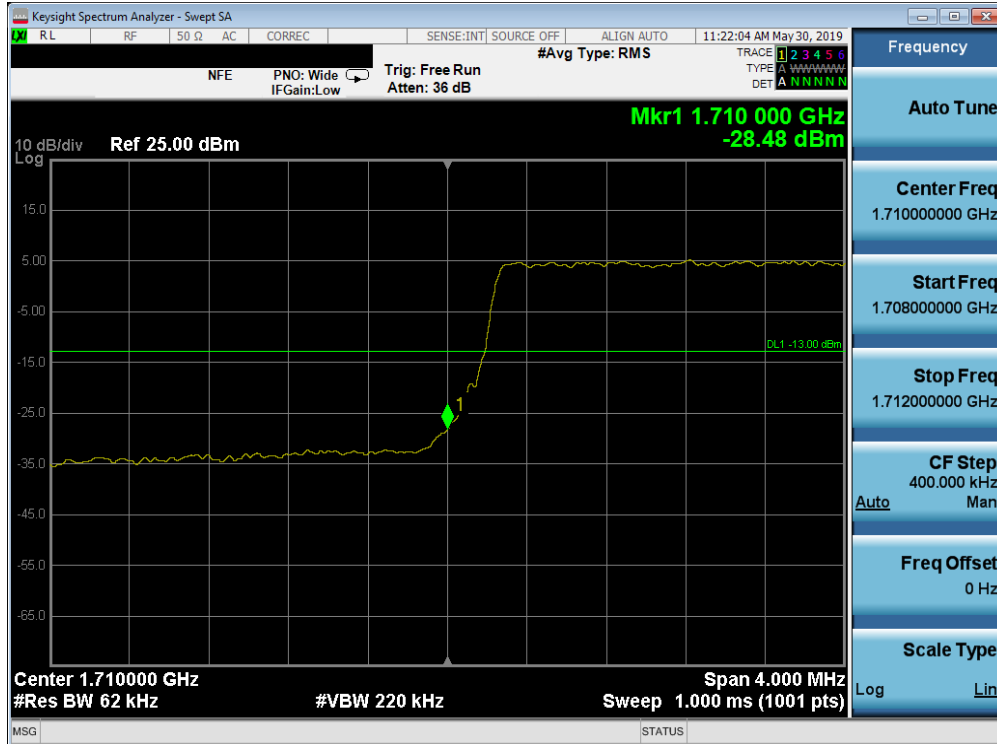


Plot 7-254. Upper Band Edge Plot (Band 66 - 3.0MHz QPSK - Full RB Configuration)

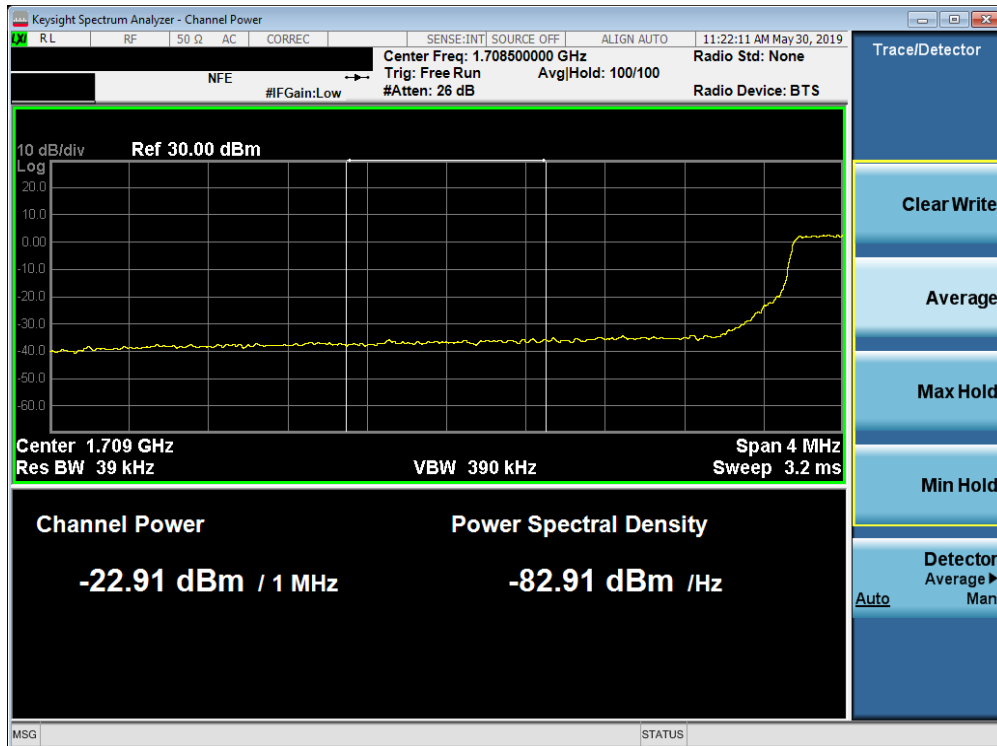


Plot 7-255. Upper Extended Band Edge Plot (Band 66 - 3.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-03.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 153 of 331

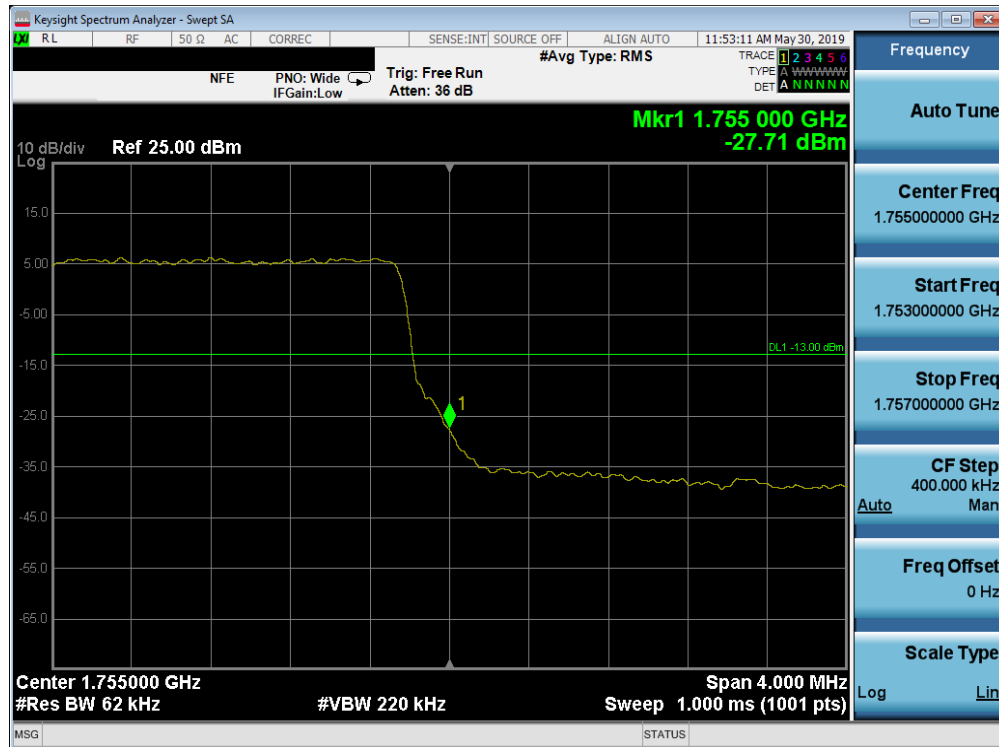


Plot 7-256. Lower Band Edge Plot (Band 66/4 - 5.0MHz QPSK - Full RB Configuration)

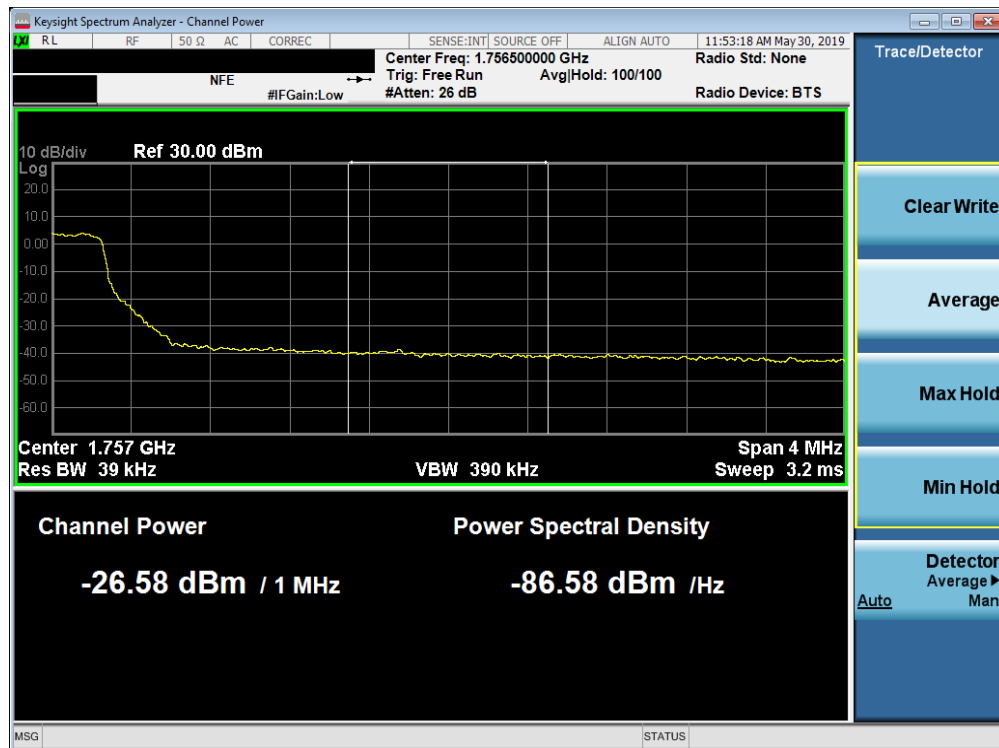


Plot 7-257. Lower Extended Band Edge Plot (Band 66/4 - 5.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-03.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 154 of 331

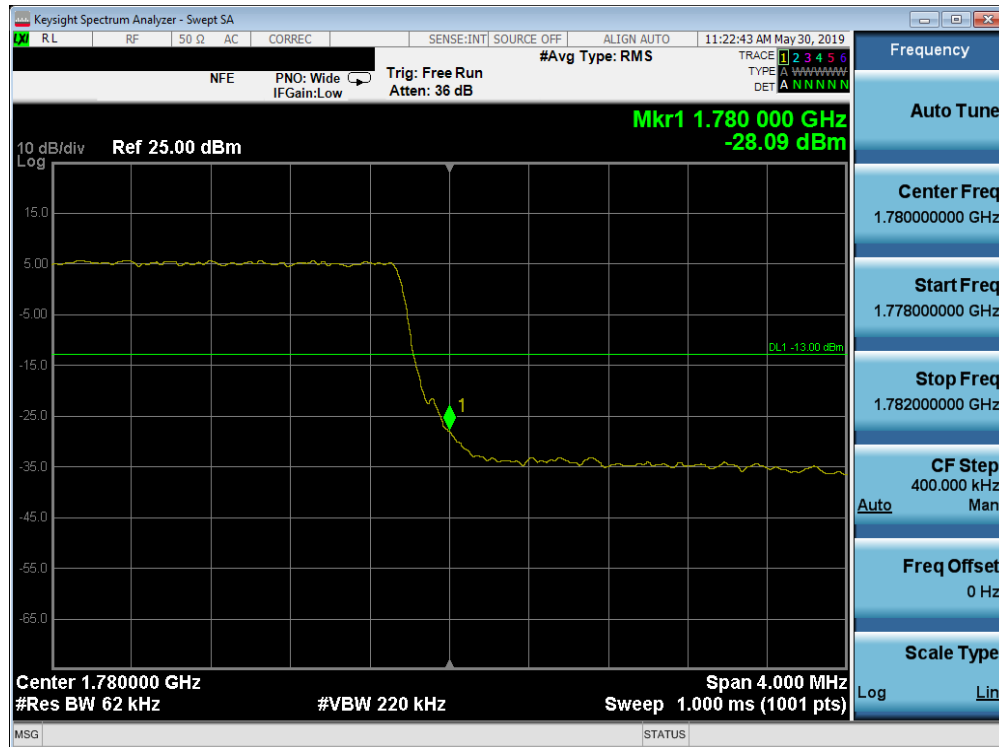


Plot 7-258. Upper Band Edge Plot (Band 4 - 5.0MHz QPSK - Full RB Configuration)

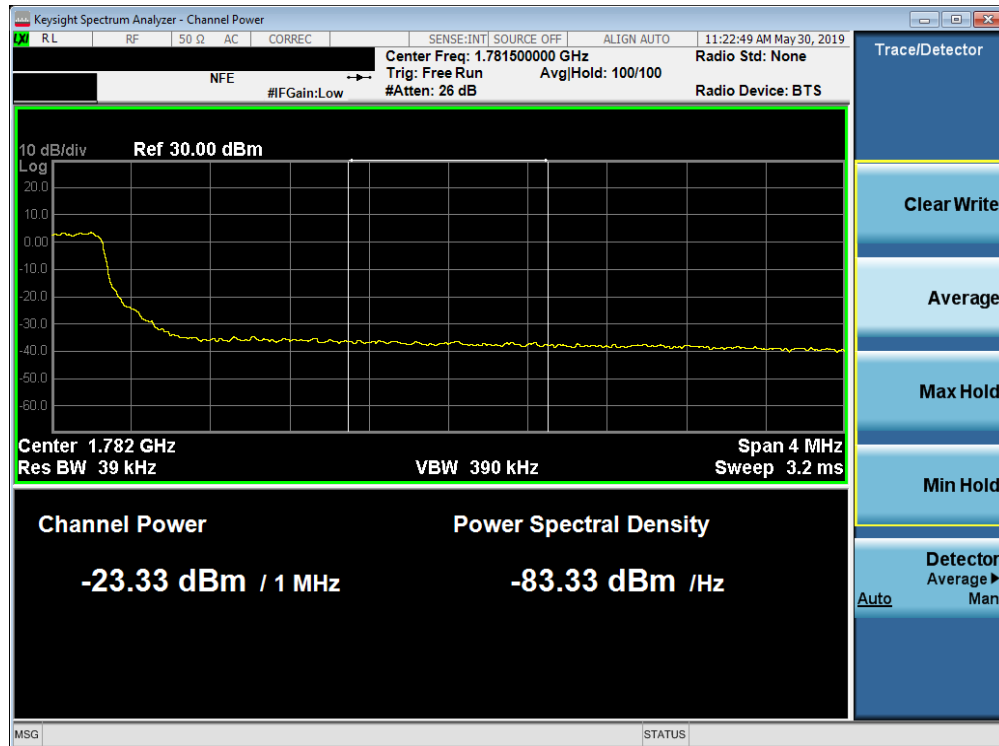


Plot 7-259. Upper Extended Band Edge Plot (Band 4 - 5.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-03.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 155 of 331

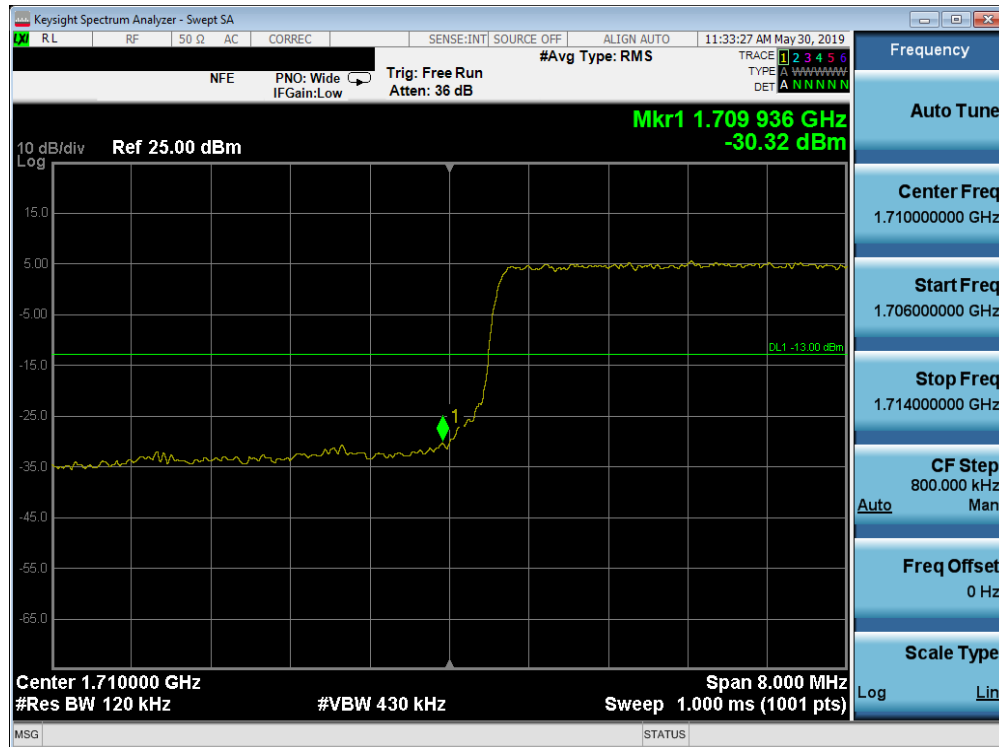


Plot 7-260. Upper Band Edge Plot (Band 66 - 5.0MHz QPSK - Full RB Configuration)

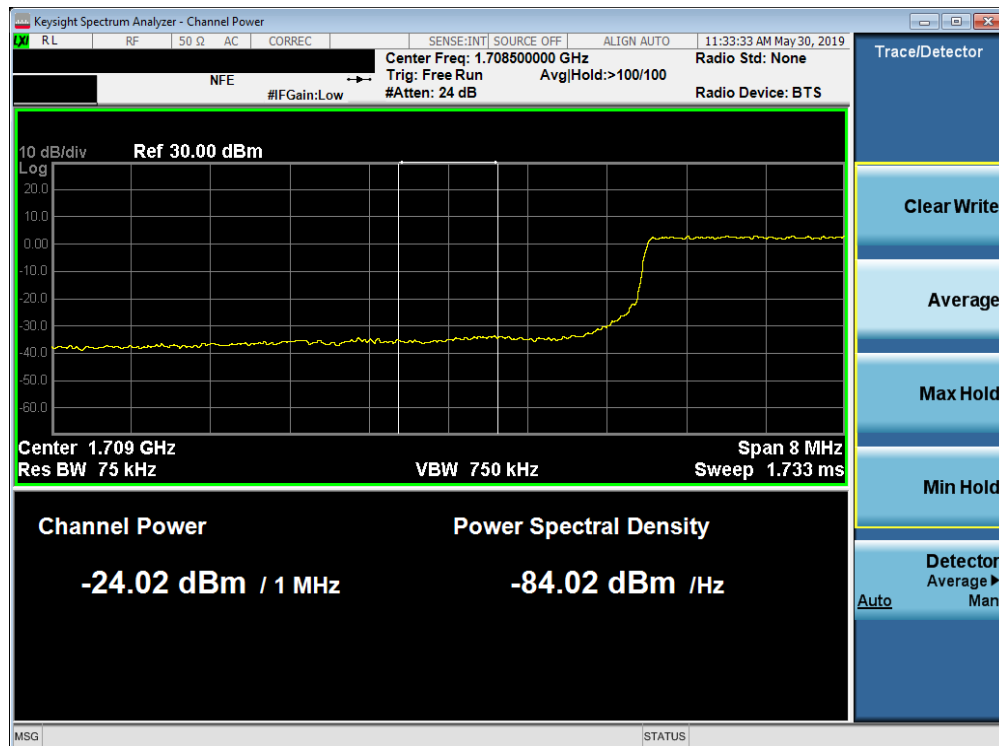


Plot 7-261. Upper Extended Band Edge Plot (Band 66 - 5.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-03.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 156 of 331

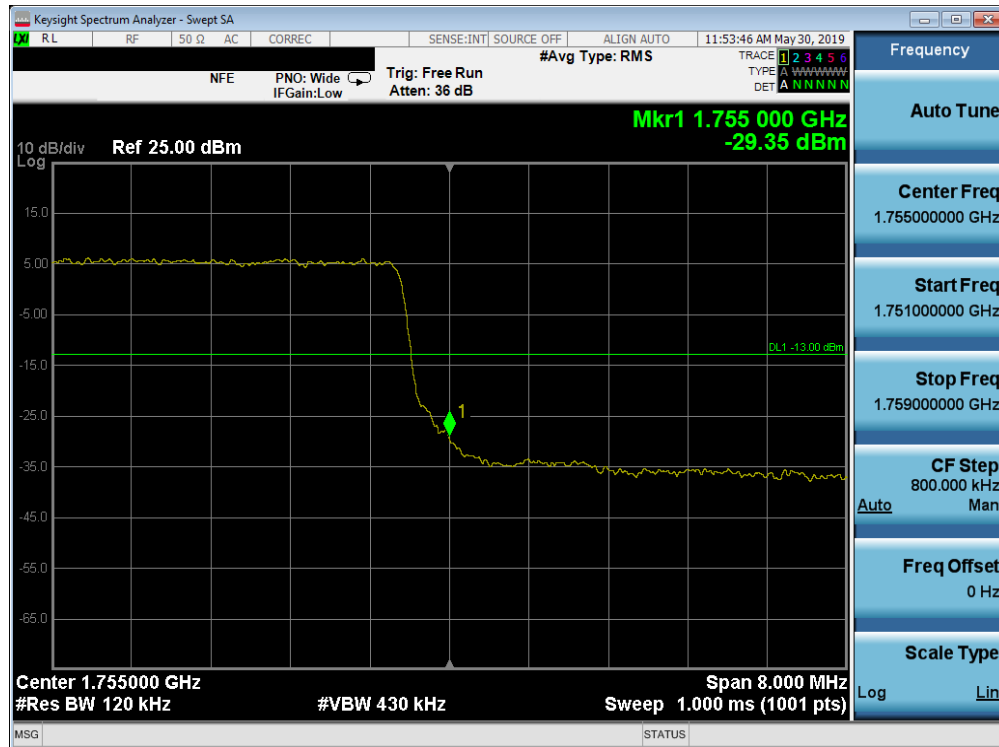


Plot 7-262. Lower Band Edge Plot (Band 66/4 - 10.0MHz QPSK - Full RB Configuration)

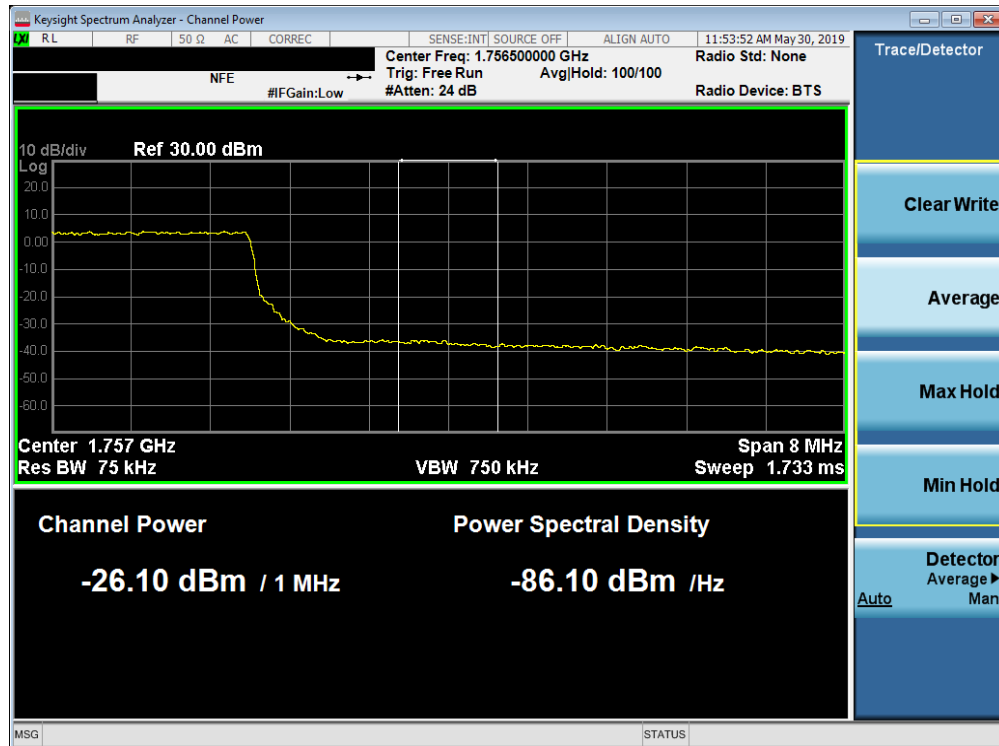


Plot 7-263. Lower Extended Band Edge Plot (Band 66/4 - 10.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-03.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 157 of 331

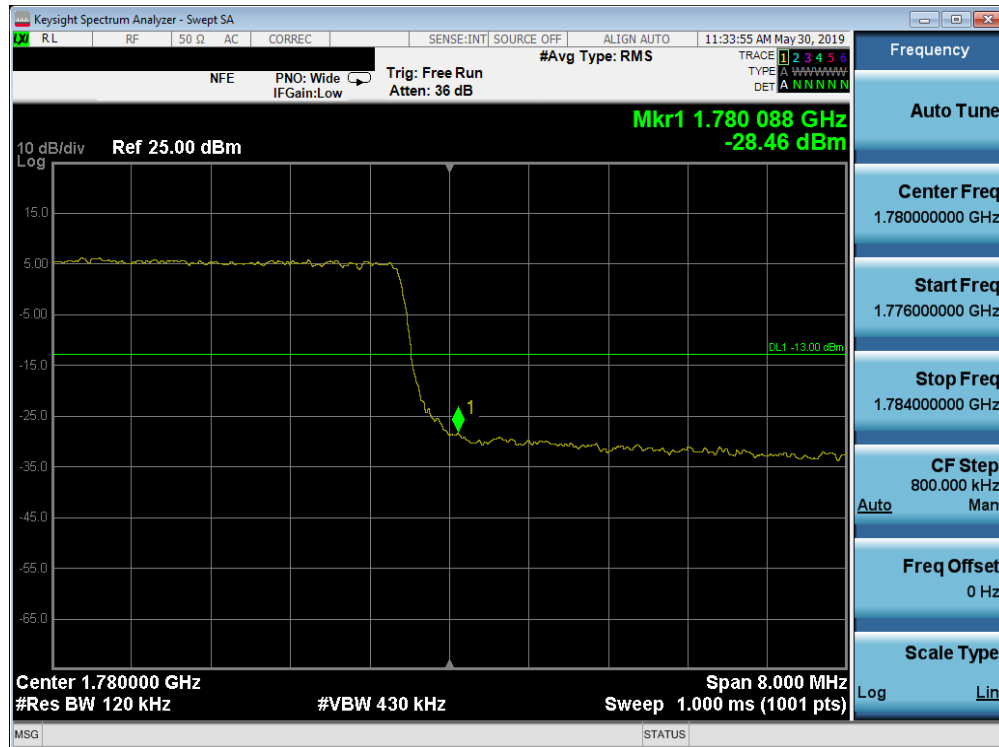


Plot 7-264. Upper Band Edge Plot (Band 4 - 10.0MHz QPSK - Full RB Configuration)

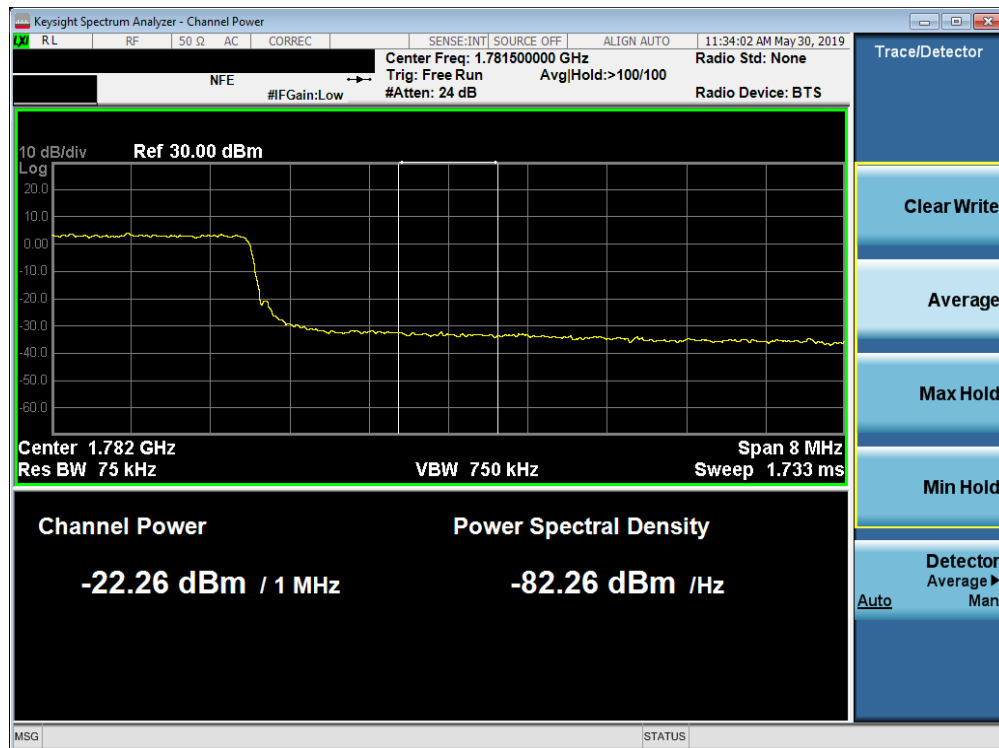


Plot 7-265. Upper Extended Band Edge Plot (Band 4 - 10.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-03.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 158 of 331

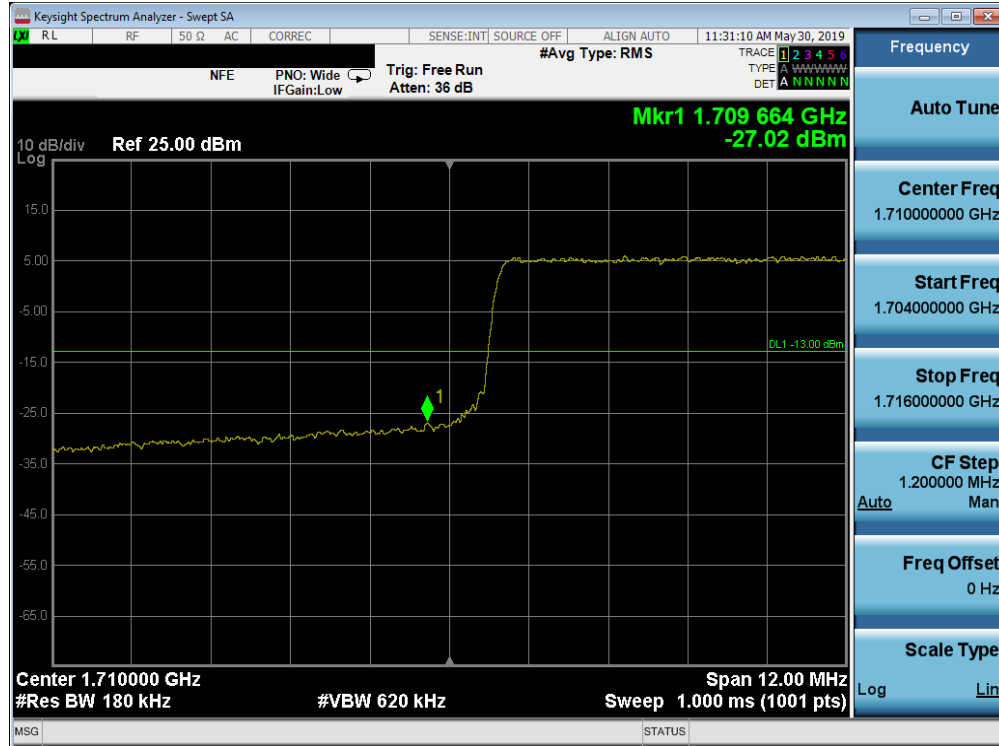


Plot 7-266. Upper Band Edge Plot (Band 66 - 10.0MHz QPSK - Full RB Configuration)

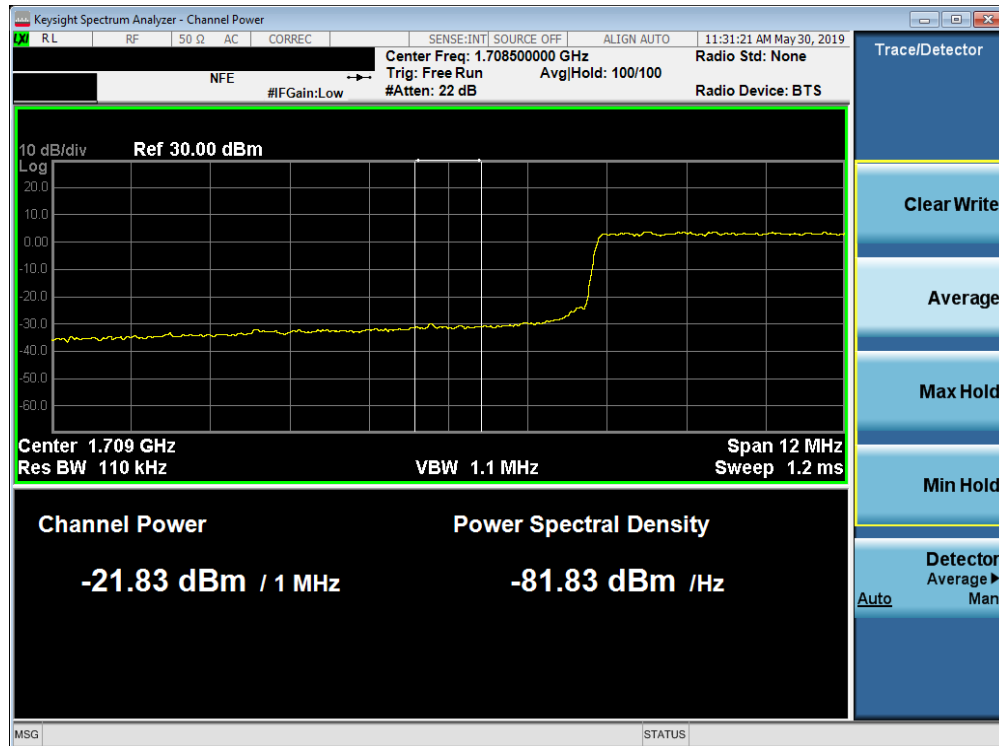


Plot 7-267. Upper Extended Band Edge Plot (Band 66 - 10.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-03.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 159 of 331

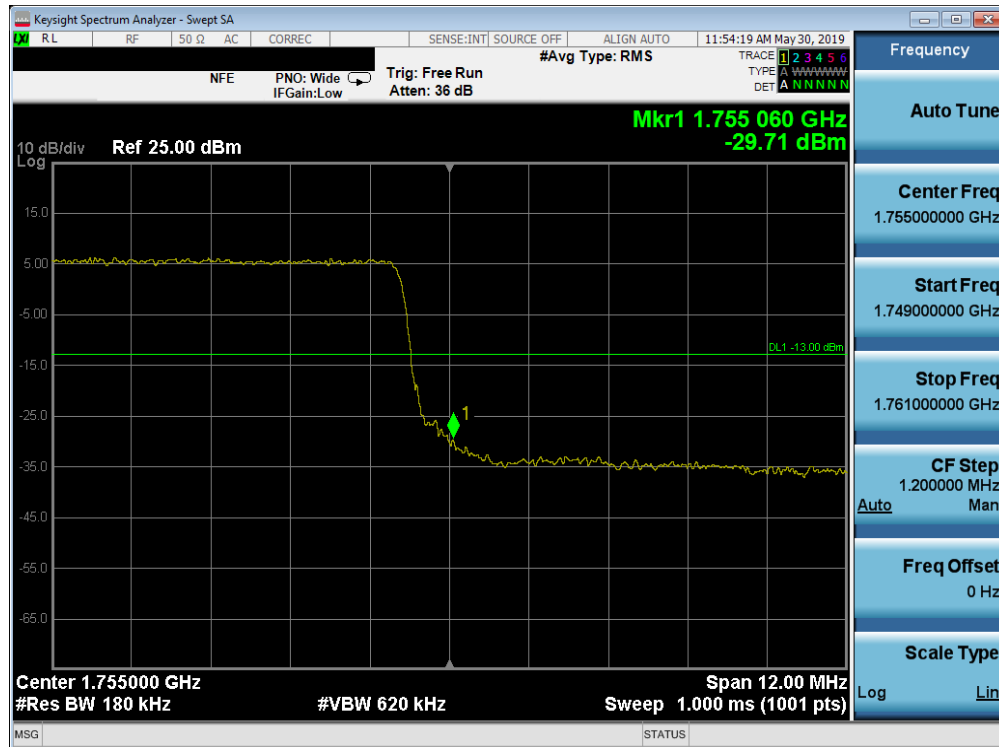


Plot 7-268. Lower Band Edge Plot (Band 66/4 - 15.0MHz QPSK - Full RB Configuration)

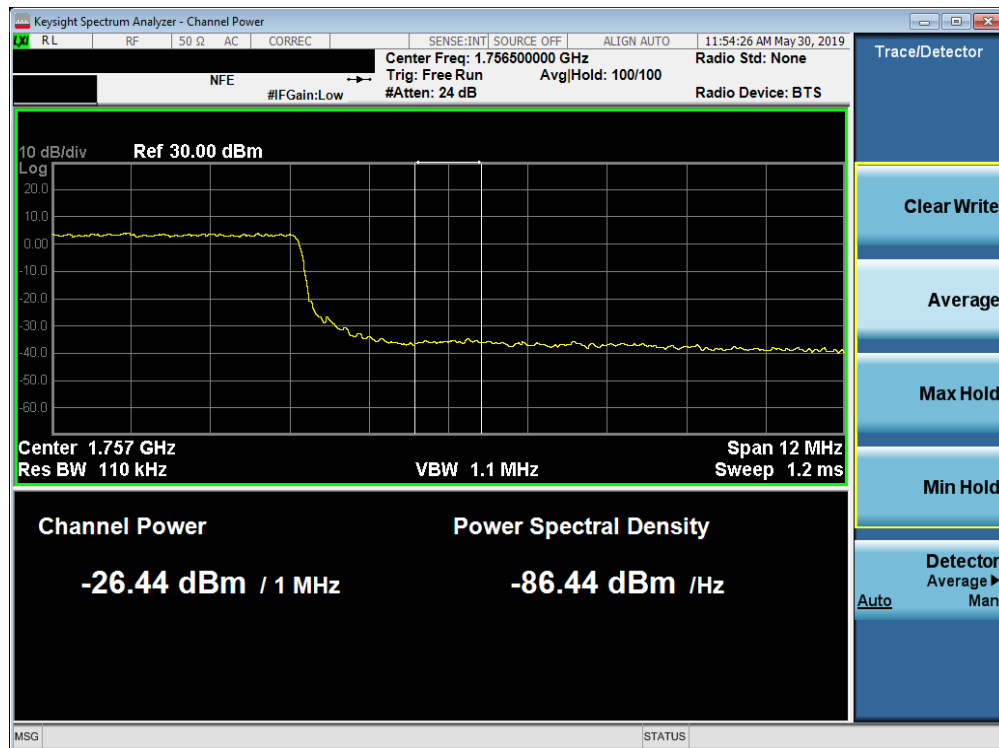


Plot 7-269. Lower Extended Band Edge Plot (Band 66/4 - 15.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-03.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 160 of 331

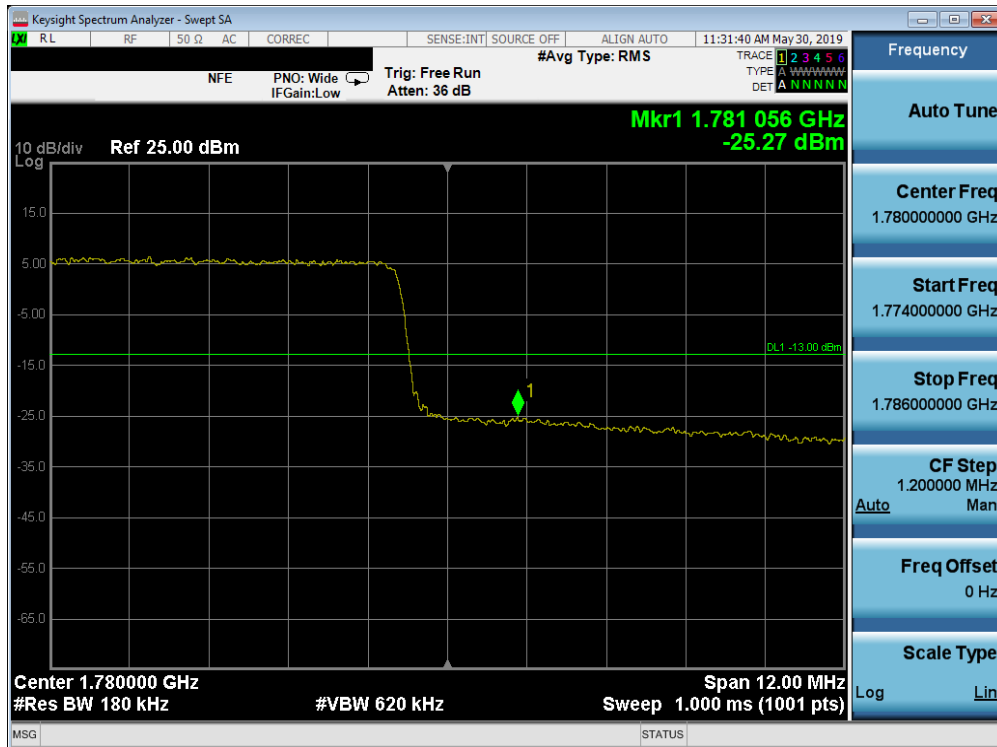


Plot 7-270. Upper Band Edge Plot (Band 4 - 15.0MHz QPSK - Full RB Configuration)

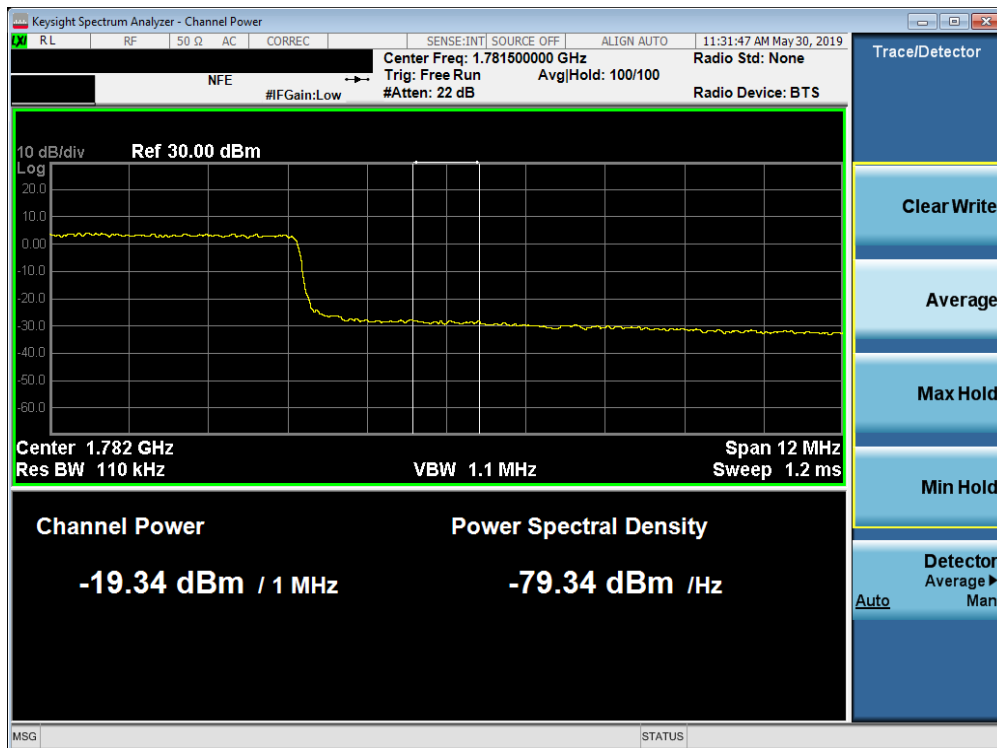


Plot 7-271. Upper Extended Band Edge Plot (Band 4 - 15.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-03.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 161 of 331

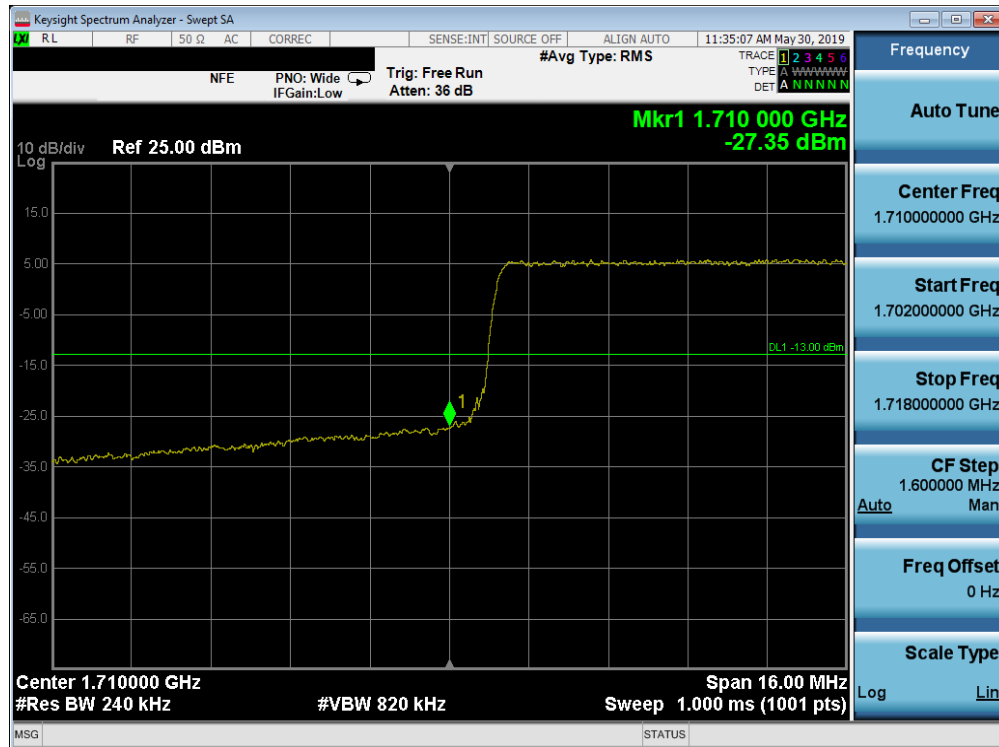


Plot 7-272. Upper Band Edge Plot (Band 66 - 15.0MHz QPSK - Full RB Configuration)

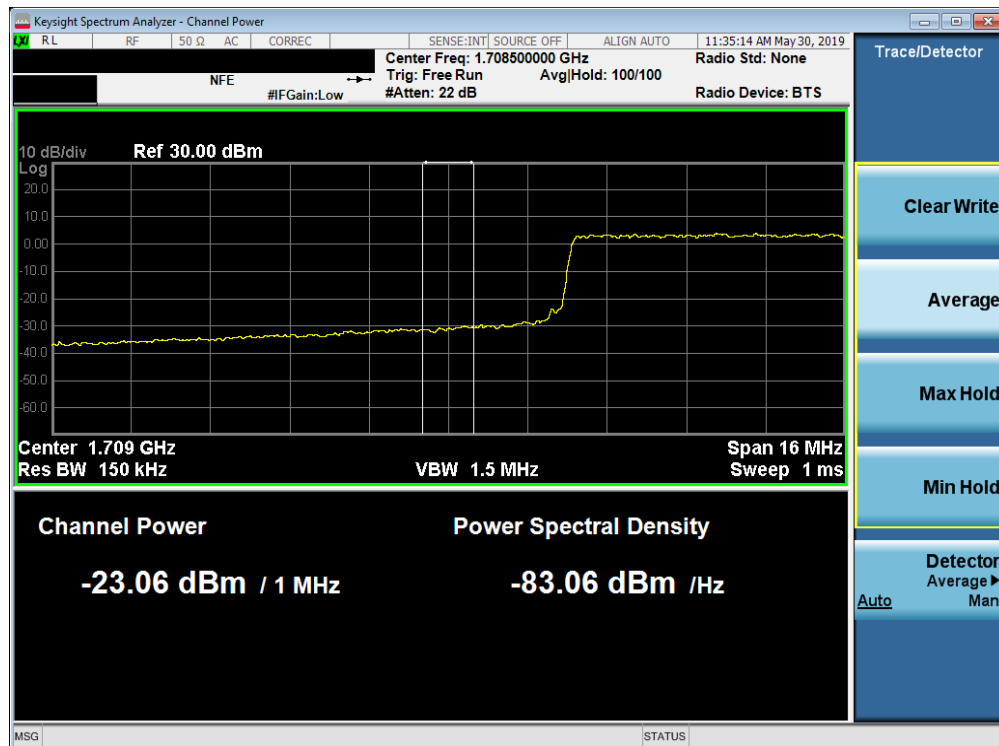


Plot 7-273. Upper Extended Band Edge Plot (Band 66 - 15.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-03.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 162 of 331

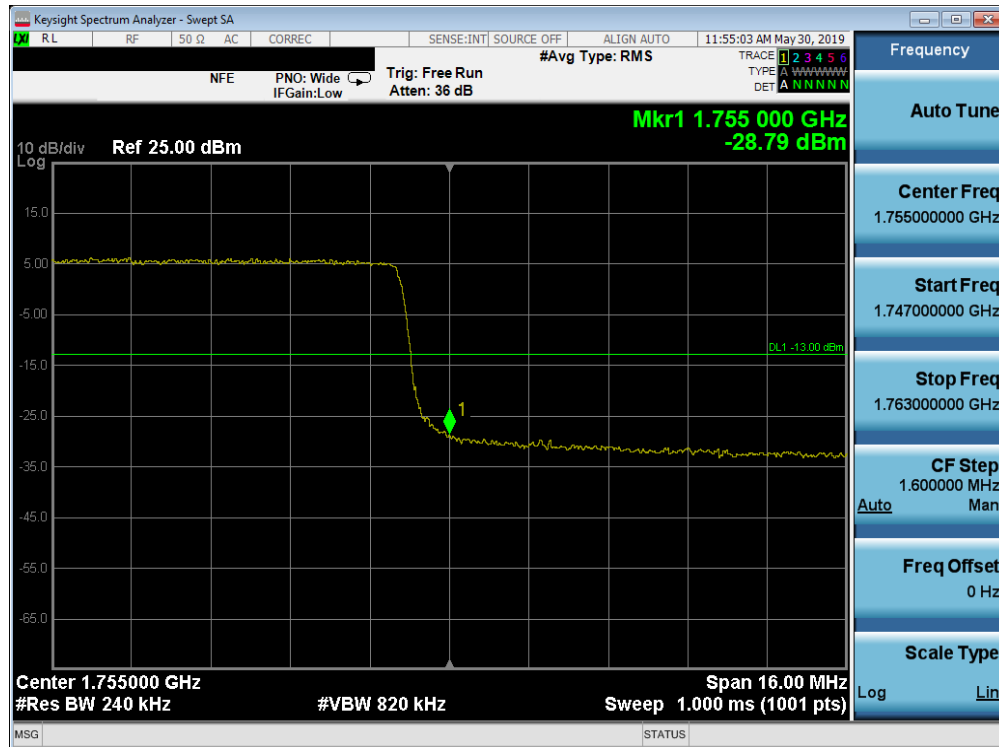


Plot 7-274. Lower Band Edge Plot (Band 66/4 - 20.0MHz QPSK - Full RB Configuration)

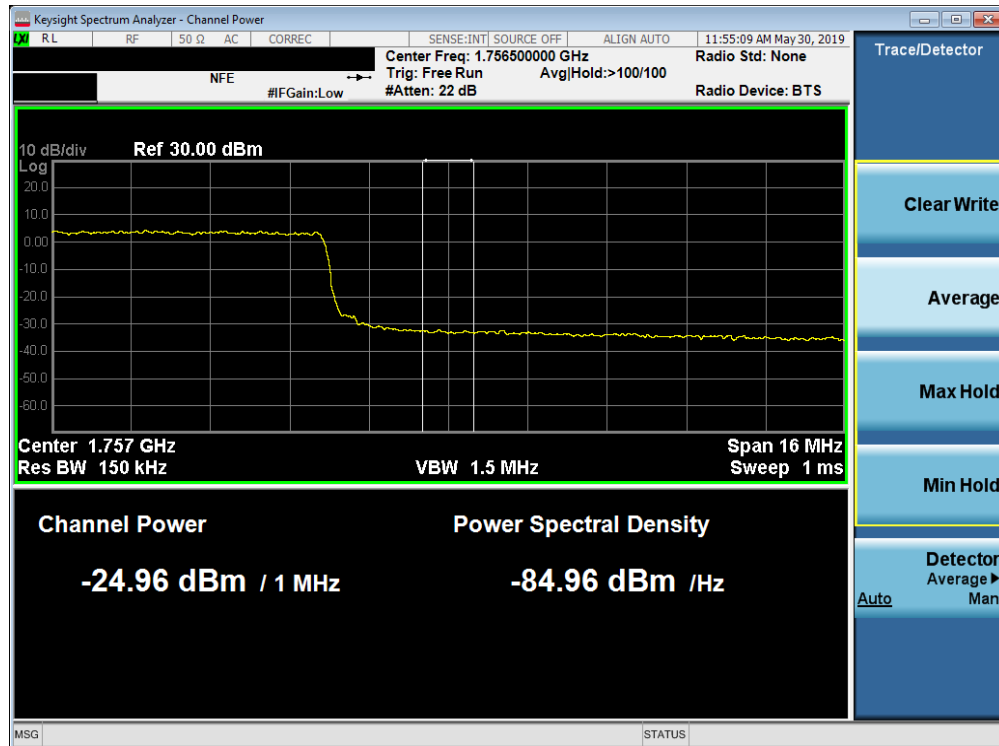


Plot 7-275. Lower Extended Band Edge Plot (Band 66/4 - 20.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-03.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 163 of 331

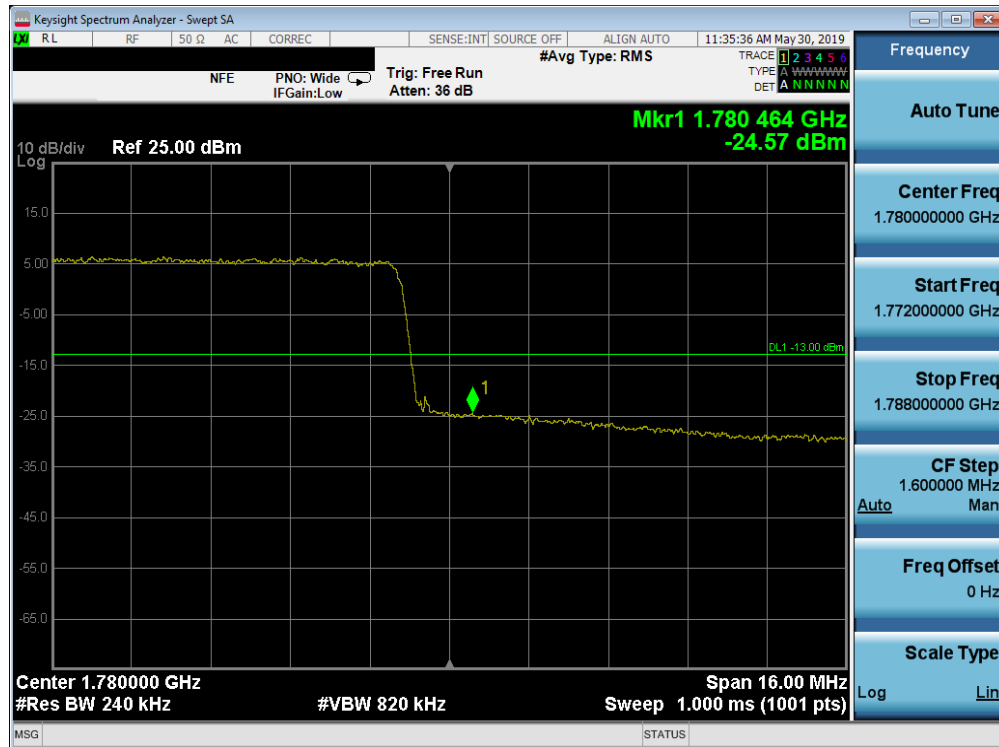


Plot 7-276. Upper Band Edge Plot (Band 4 - 20.0MHz QPSK - Full RB Configuration)

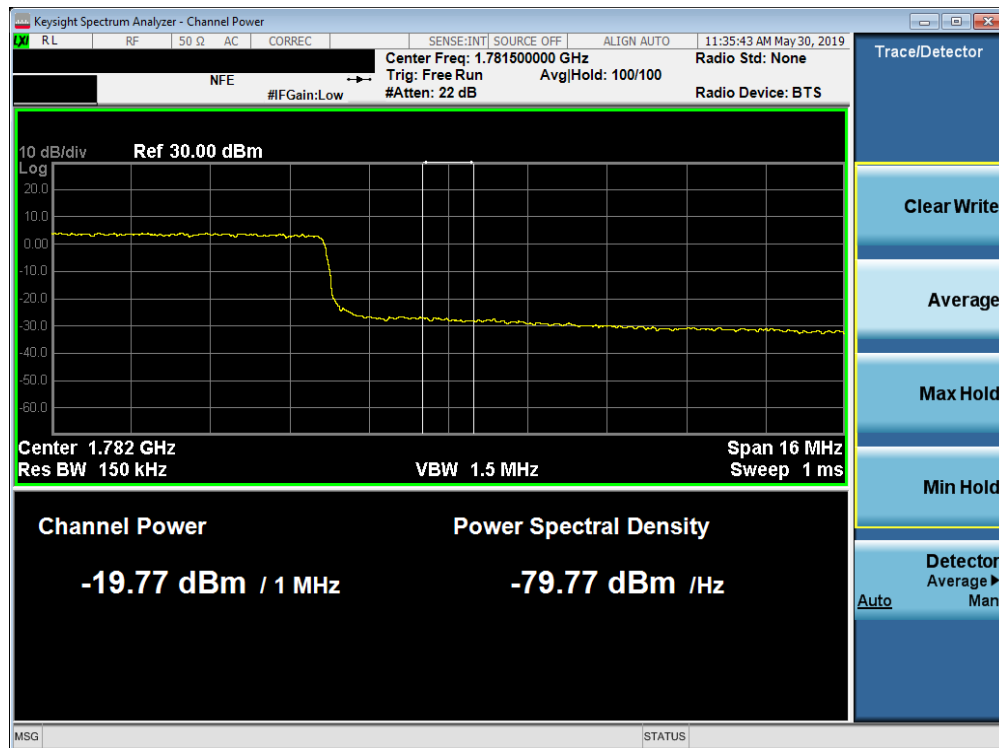


Plot 7-277. Upper Extended Band Edge Plot (Band 4 - 20.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-03.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 164 of 331



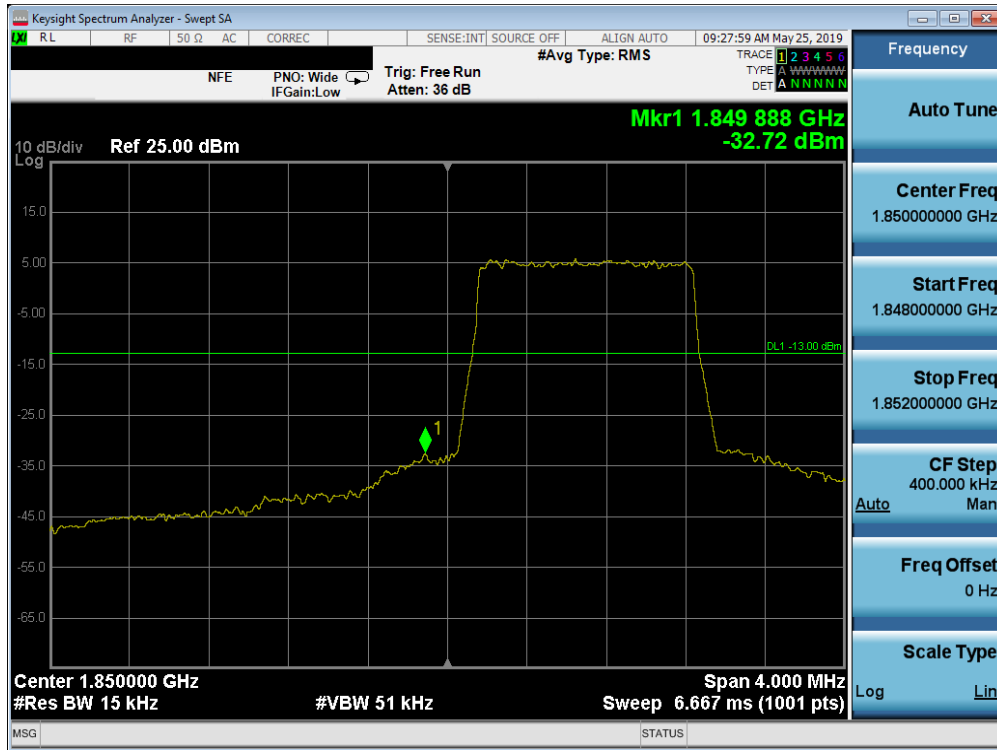
Plot 7-278. Upper Band Edge Plot (Band 66 - 20.0MHz QPSK - Full RB Configuration)



Plot 7-279. Upper Extended Band Edge Plot (Band 66 - 20.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-03.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 165 of 331

Band 25/2



Plot 7-280. Lower Band Edge Plot (Band 25/2 - 1.4MHz QPSK - Full RB Configuration)

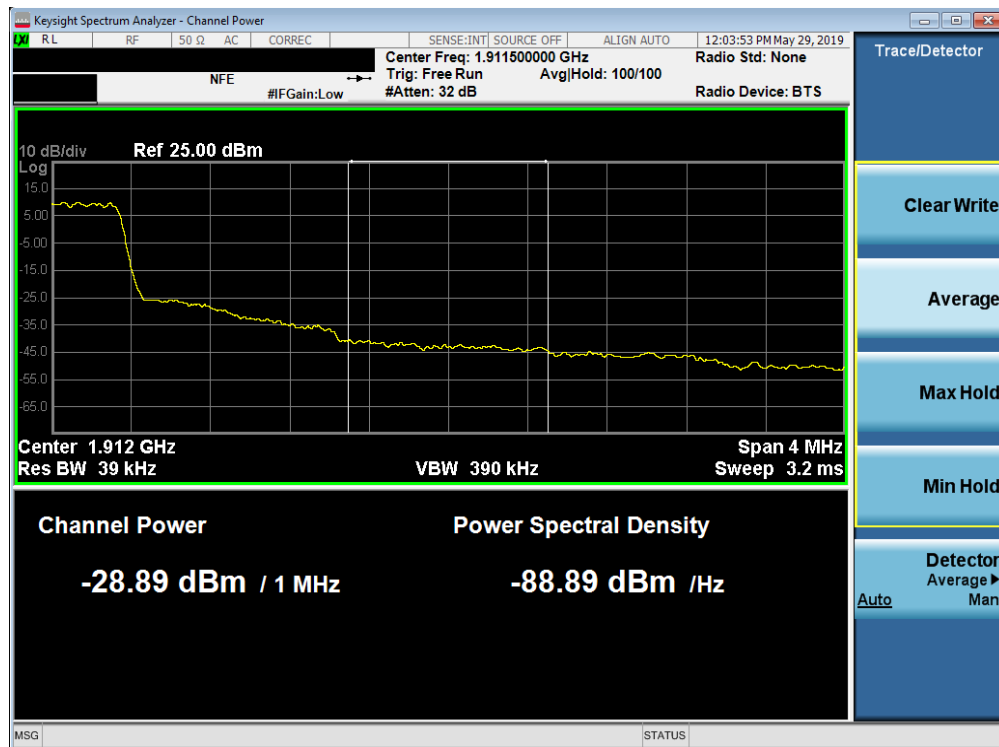


Plot 7-281. Lower Extended Band Edge Plot (Band 25/2 - 1.4MHz QPSK - Full RB Configuration)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-03.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 166 of 331



Plot 7-282. Upper Band Edge Plot (Band 2 - 1.4MHz QPSK - Full RB Configuration)

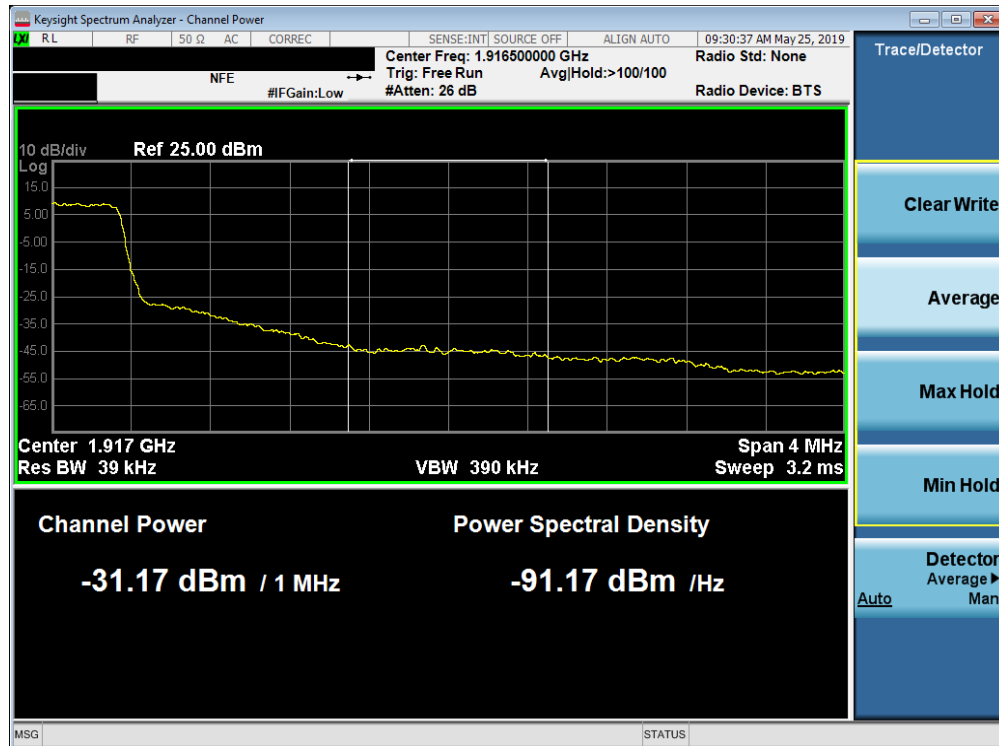


Plot 7-283. Upper Extended Band Edge Plot (Band 2 - 1.4MHz QPSK - Full RB Configuration)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-03.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 167 of 331

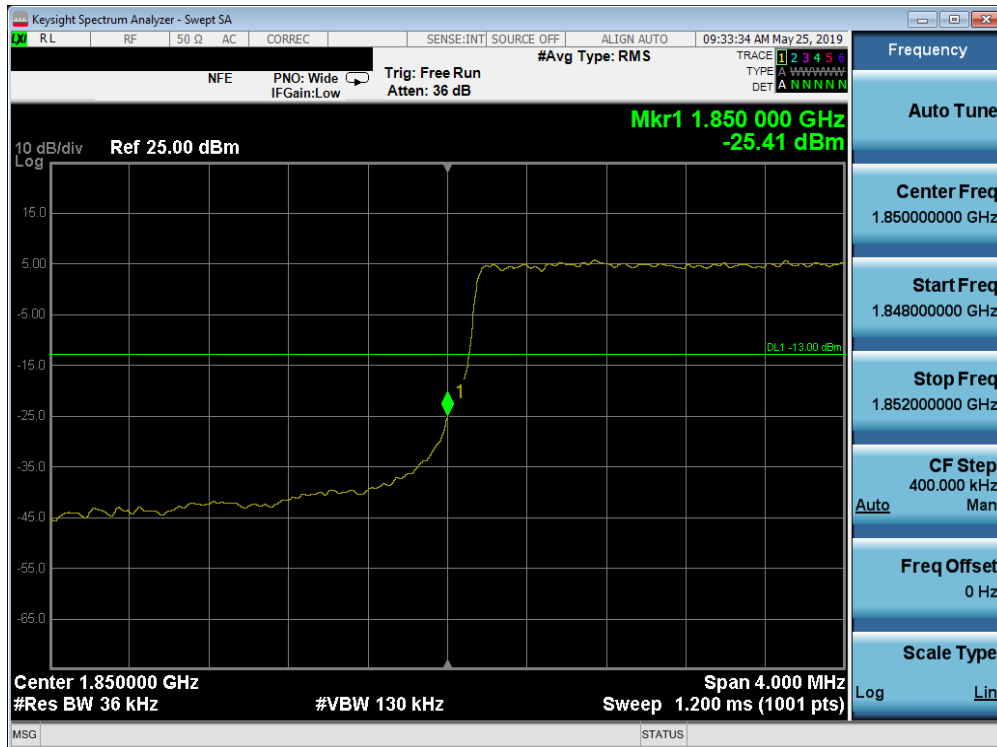


Plot 7-284. Upper Band Edge Plot (Band 25 - 1.4MHz QPSK - Full RB Configuration)

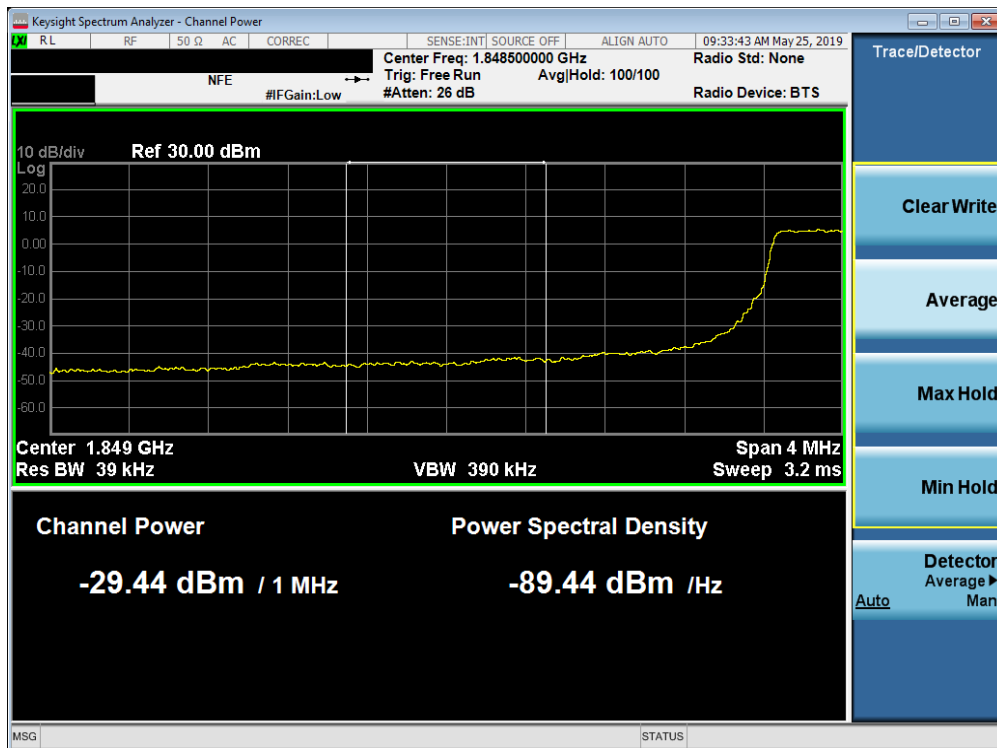


Plot 7-285. Upper Extended Band Edge Plot (Band 25 - 1.4MHz QPSK - Full RB Configuration)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-03.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 168 of 331

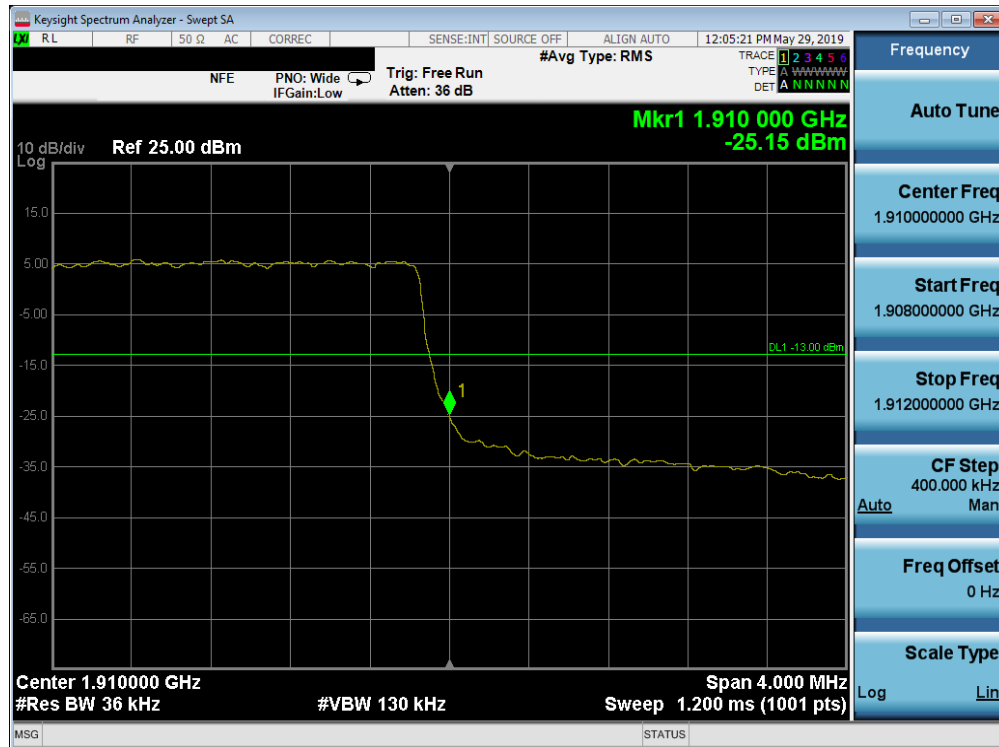


Plot 7-286. Lower Band Edge Plot (Band 25/2 - 3.0MHz QPSK - Full RB Configuration)

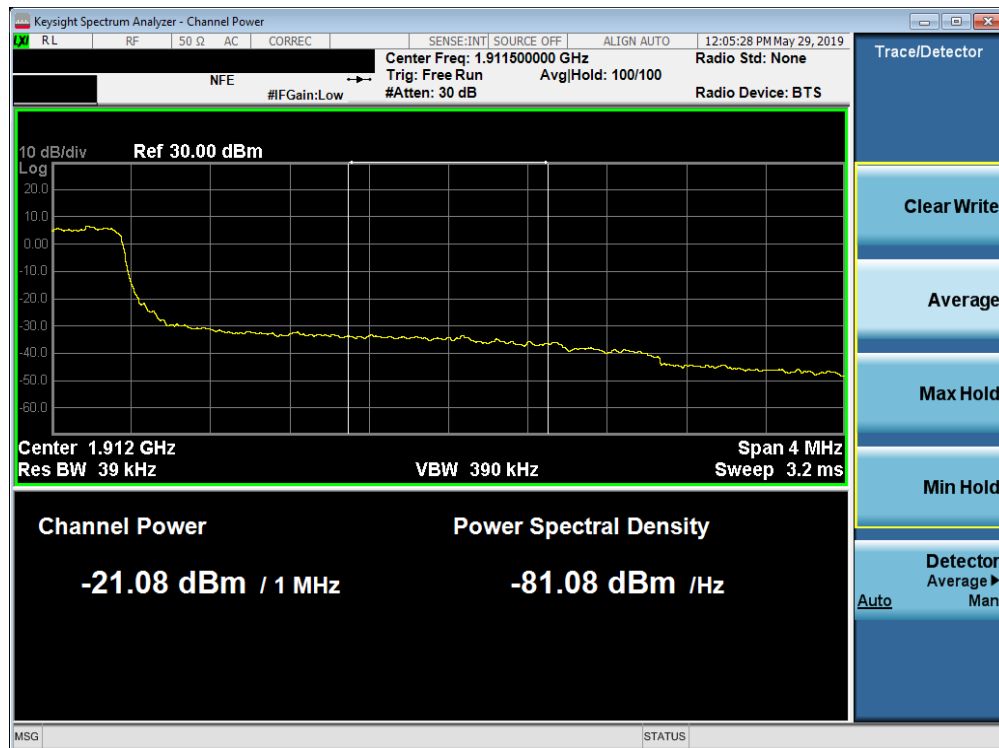


Plot 7-287. Lower Extended Band Edge Plot (Band 25/2 - 3.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-03.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 169 of 331



Plot 7-288. Upper Band Edge Plot (Band 2 - 3.0MHz QPSK - Full RB Configuration)

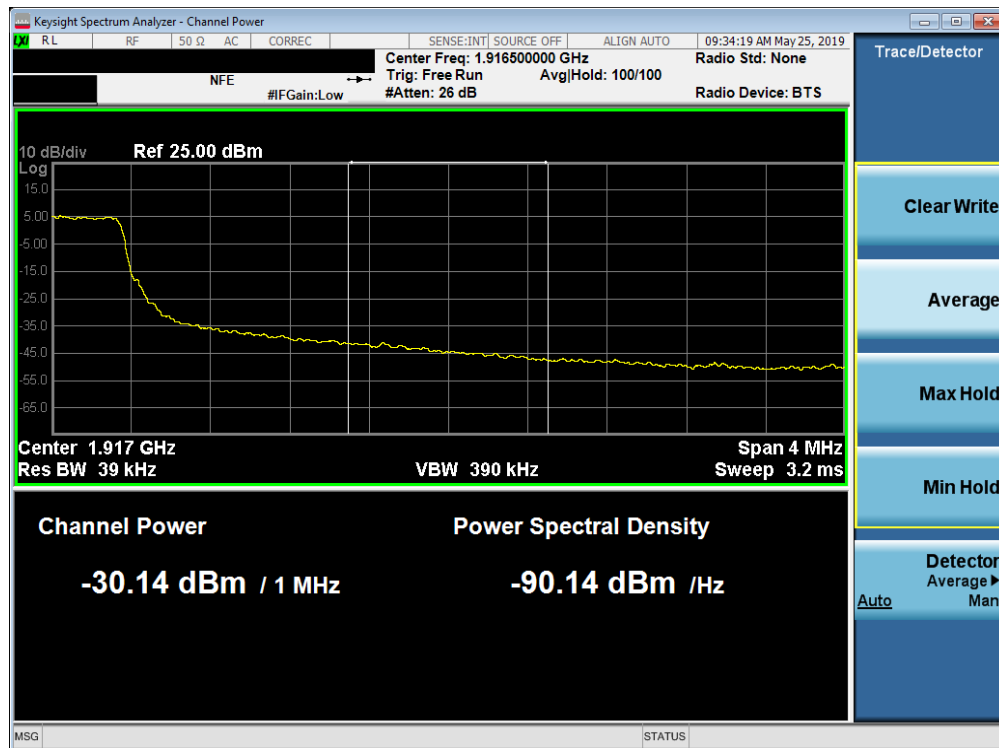


Plot 7-289. Upper Extended Band Edge Plot (Band 2 - 3.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-03.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 170 of 331

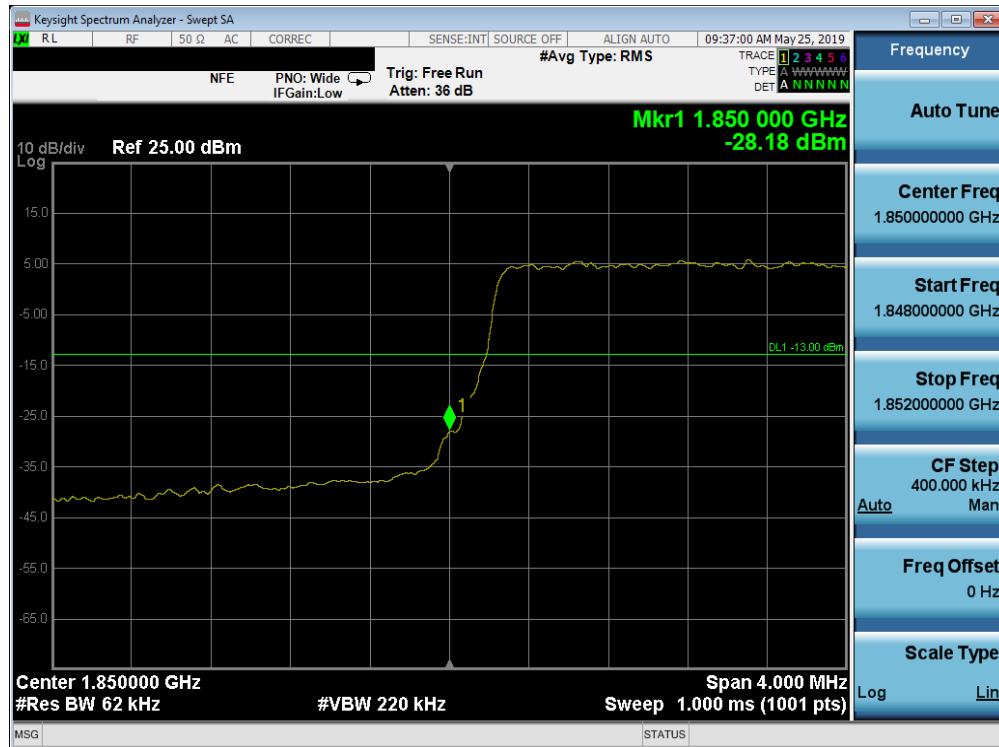


Plot 7-290. Upper Band Edge Plot (Band 25 - 3.0MHz QPSK - Full RB Configuration)

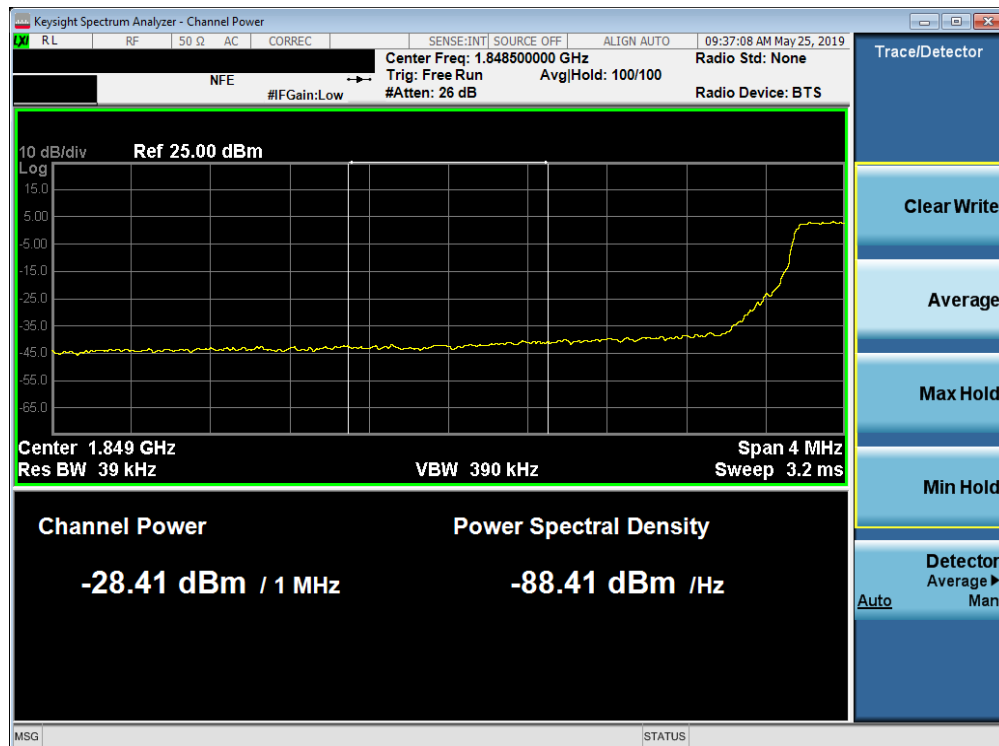


Plot 7-291. Upper Extended Band Edge Plot (Band 25 - 3.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-03.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 171 of 331



Plot 7-292. Lower Band Edge Plot (Band 25/2 - 5.0MHz QPSK - Full RB Configuration)

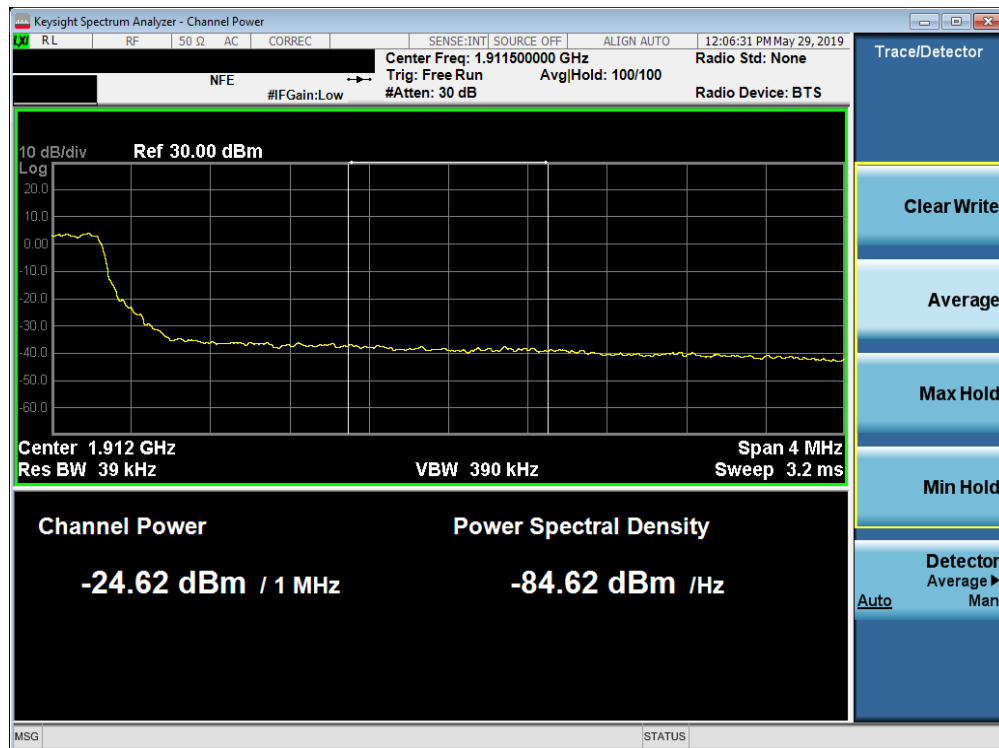


Plot 7-293. Lower Extended Band Edge Plot (Band 25/2 - 5.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-03.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 172 of 331

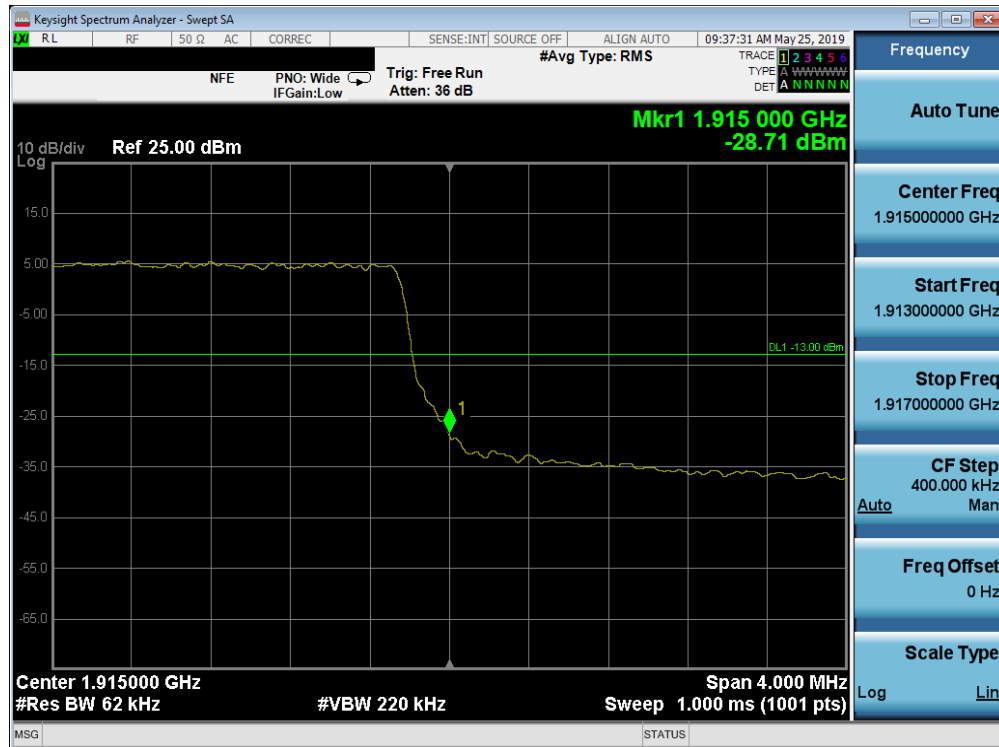


Plot 7-294. Upper Band Edge Plot (Band 2 - 5.0MHz QPSK - Full RB Configuration)

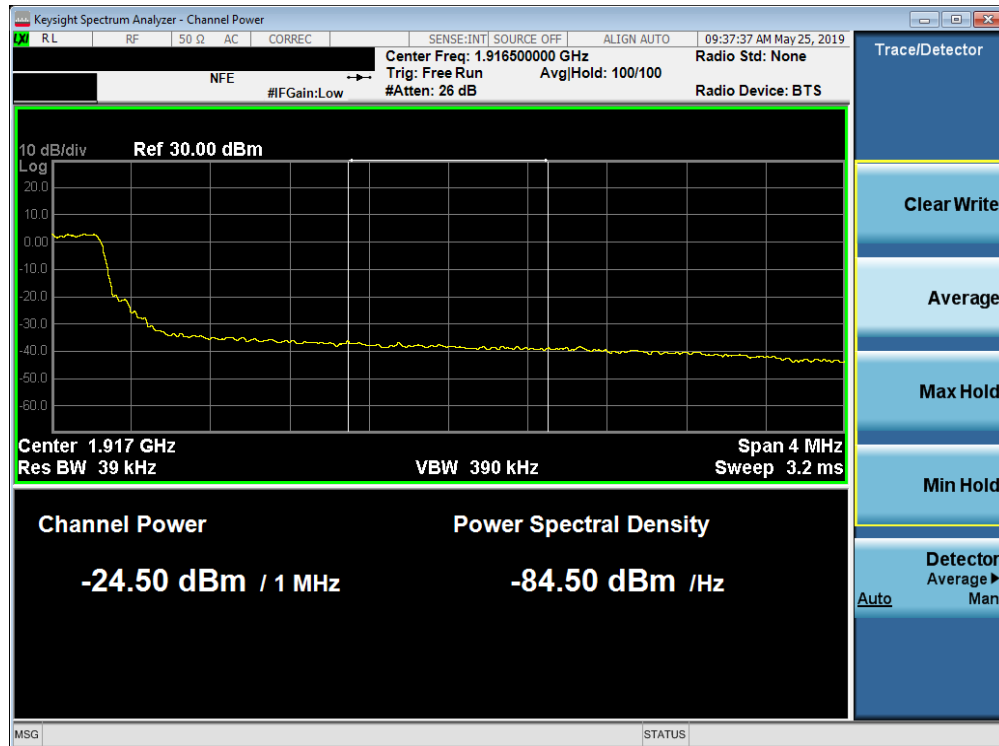


Plot 7-295. Upper Extended Band Edge Plot (Band 2 - 5.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-03.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 173 of 331

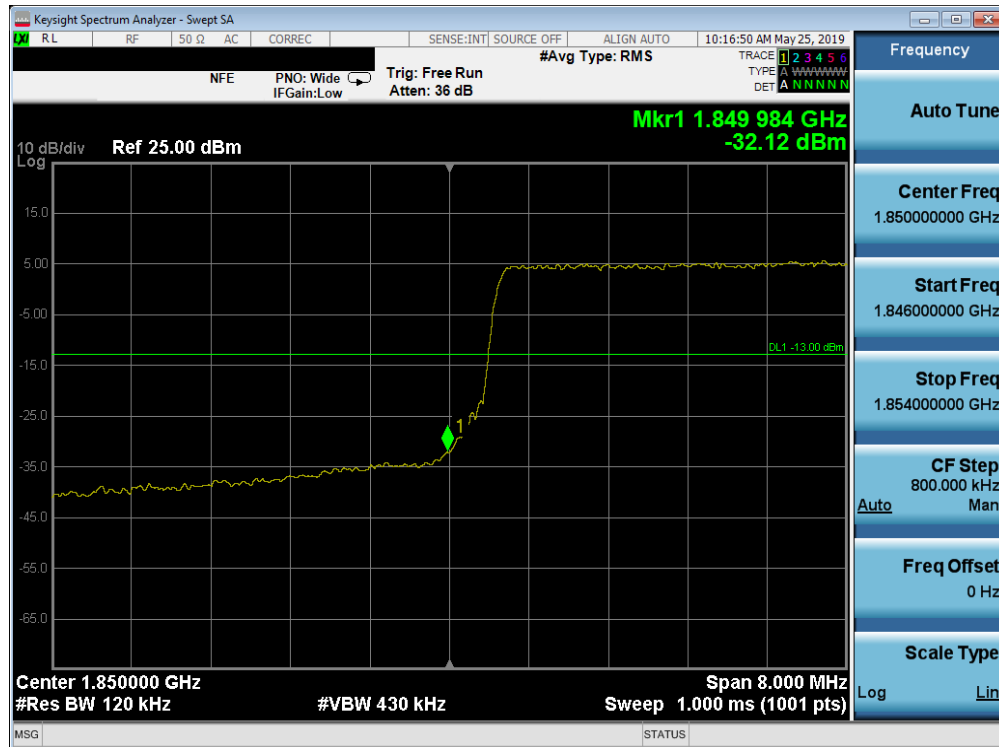


Plot 7-296. Upper Band Edge Plot (Band 25 - 5.0MHz QPSK - Full RB Configuration)

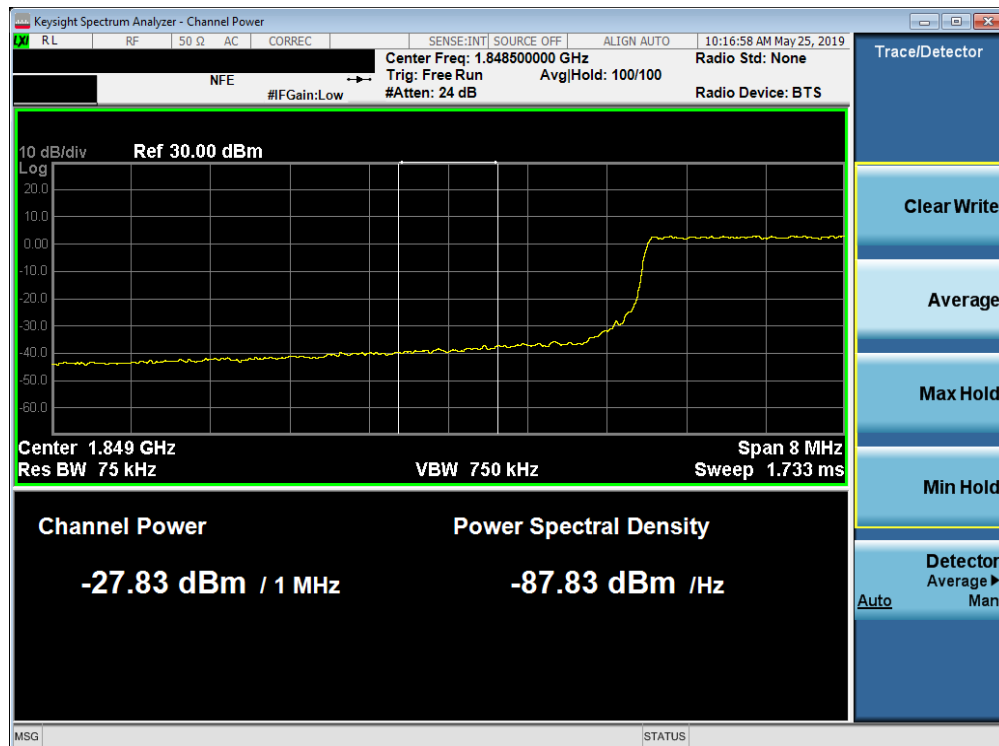


Plot 7-297. Upper Extended Band Edge Plot (Band 25 - 5.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-03.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 174 of 331



Plot 7-298. Lower Band Edge Plot (Band 25/2 - 10.0MHz QPSK - Full RB Configuration)

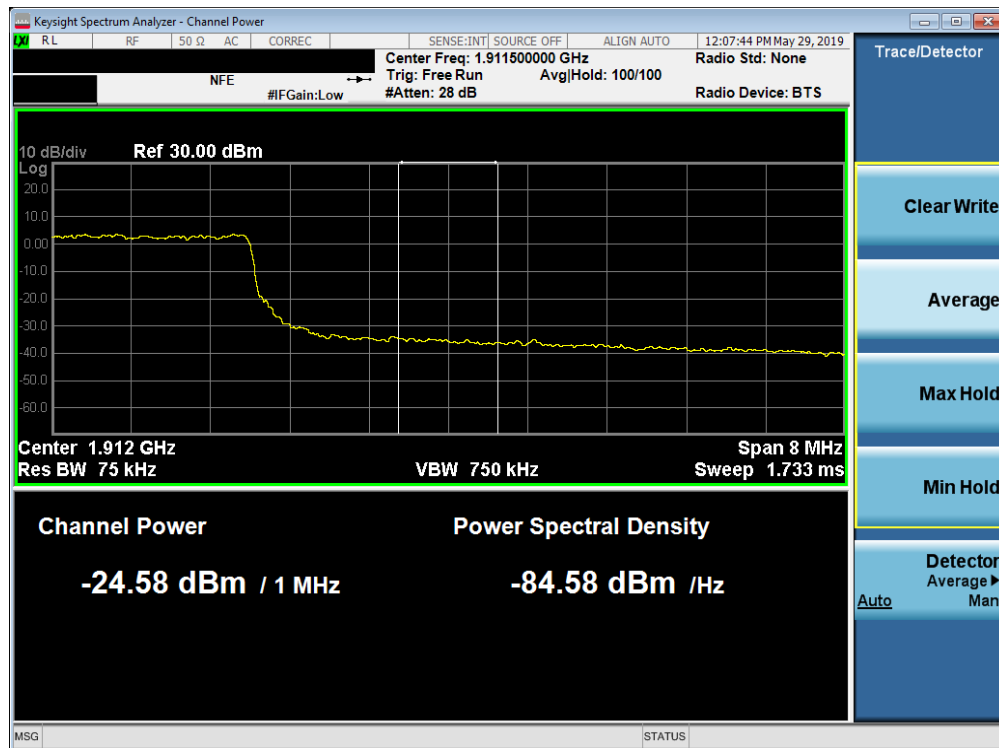


Plot 7-299. Lower Extended Band Edge Plot (Band 25/2 - 10.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-03.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 175 of 331

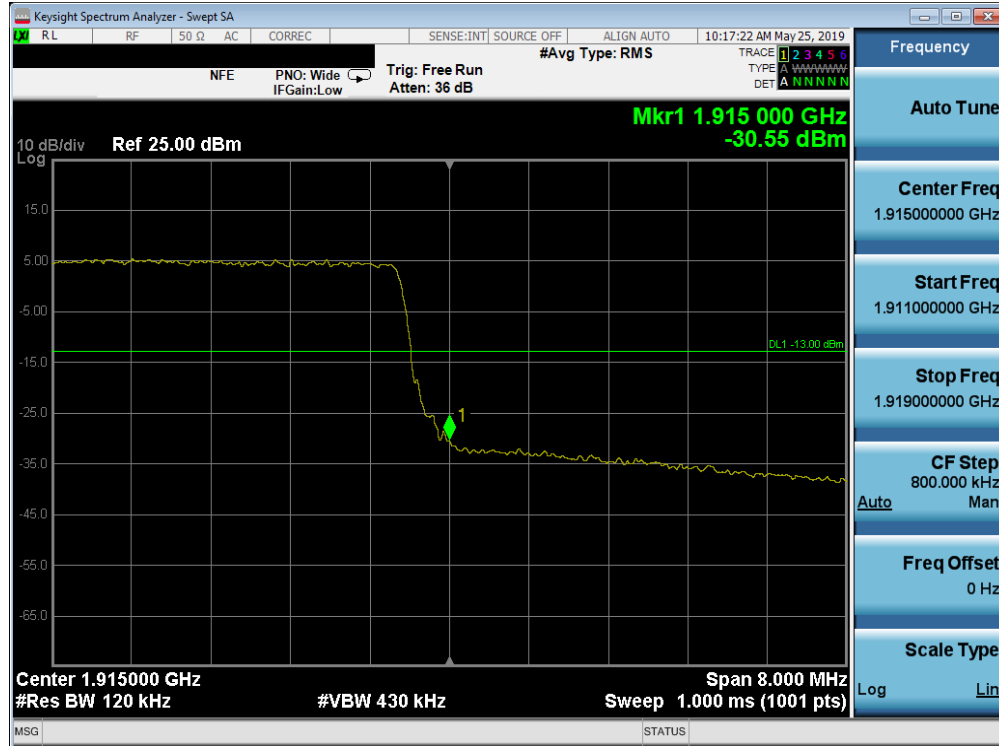


Plot 7-300. Upper Band Edge Plot (Band 2 - 10.0MHz QPSK - Full RB Configuration)

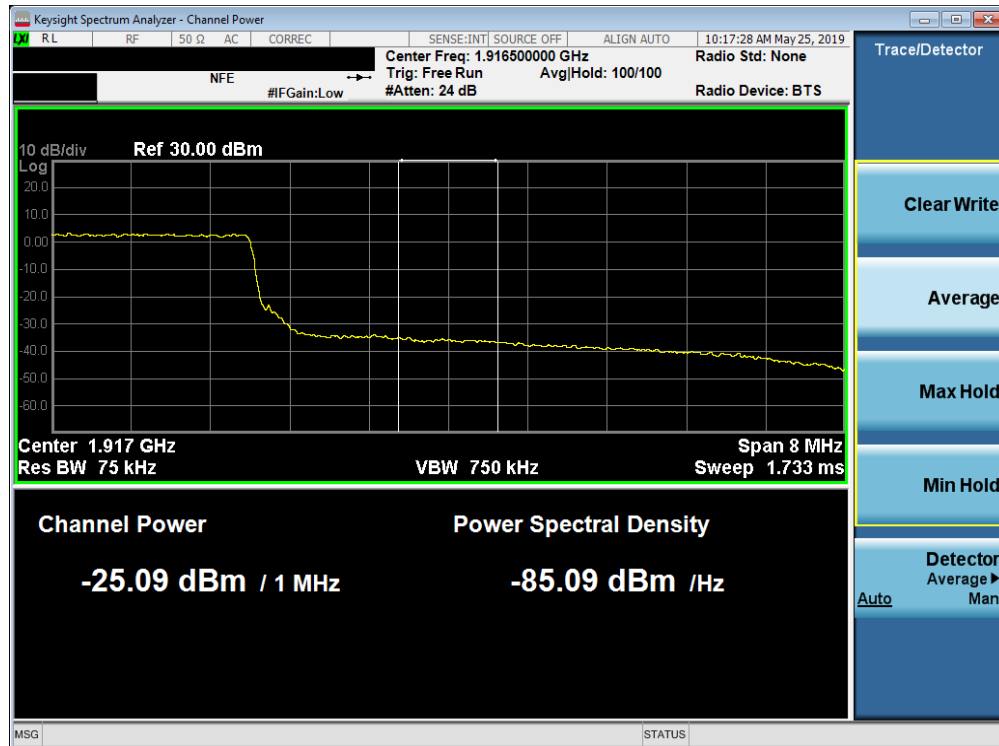


Plot 7-301. Upper Extended Band Edge Plot (Band 2 - 10.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-03.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 176 of 331

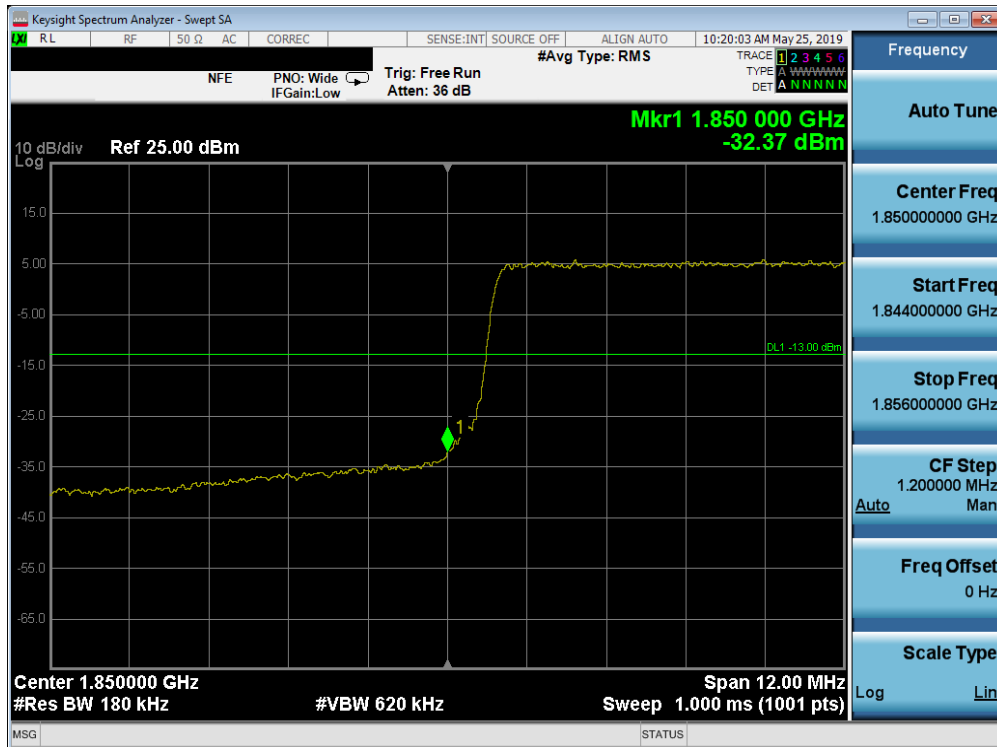


Plot 7-302. Upper Band Edge Plot (Band 25 - 10.0MHz QPSK - Full RB Configuration)

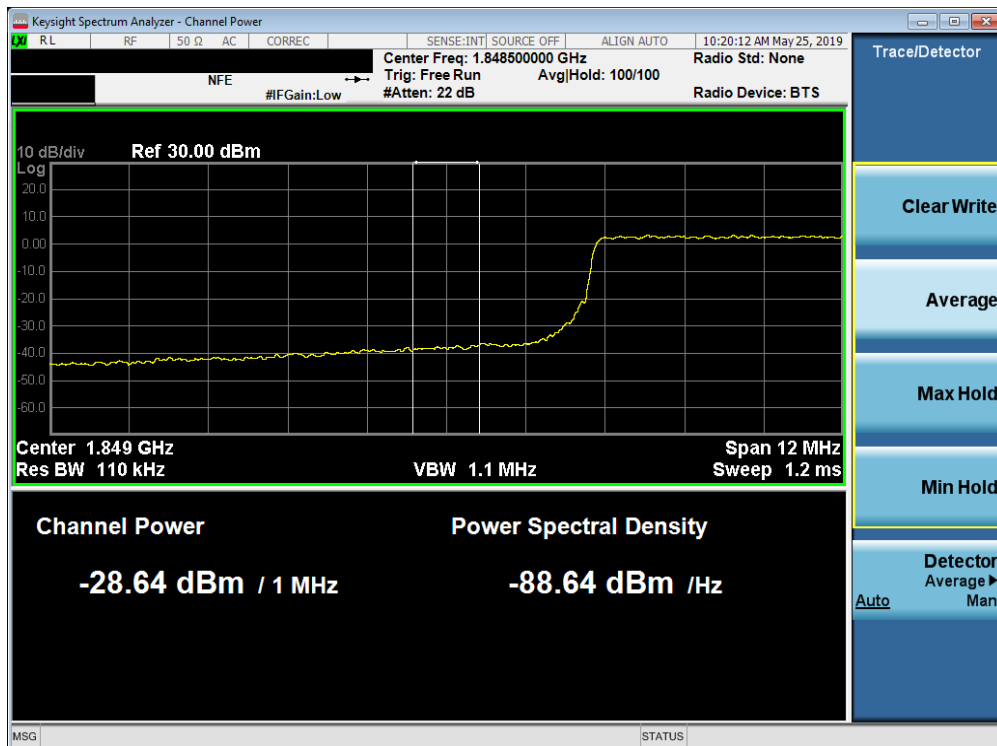


Plot 7-303. Upper Extended Band Edge Plot (Band 25 - 10.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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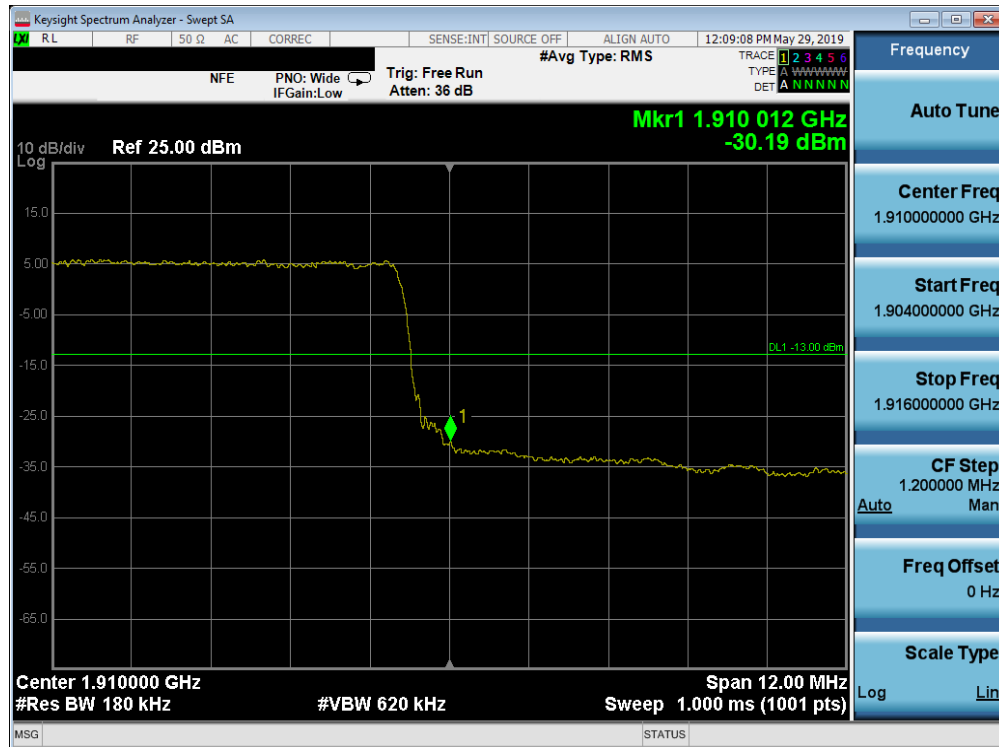


Plot 7-304. Lower Band Edge Plot (Band 25/2 - 15.0MHz QPSK - Full RB Configuration)

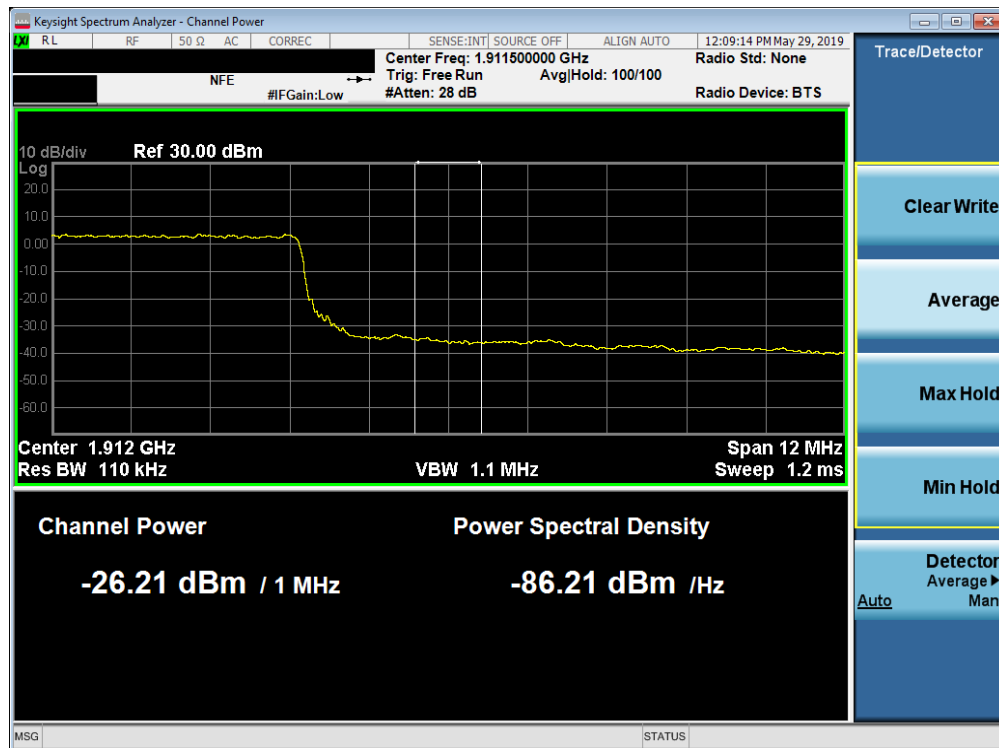


Plot 7-305. Lower Extended Band Edge Plot (Band 25/2 - 15.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-03.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 178 of 331

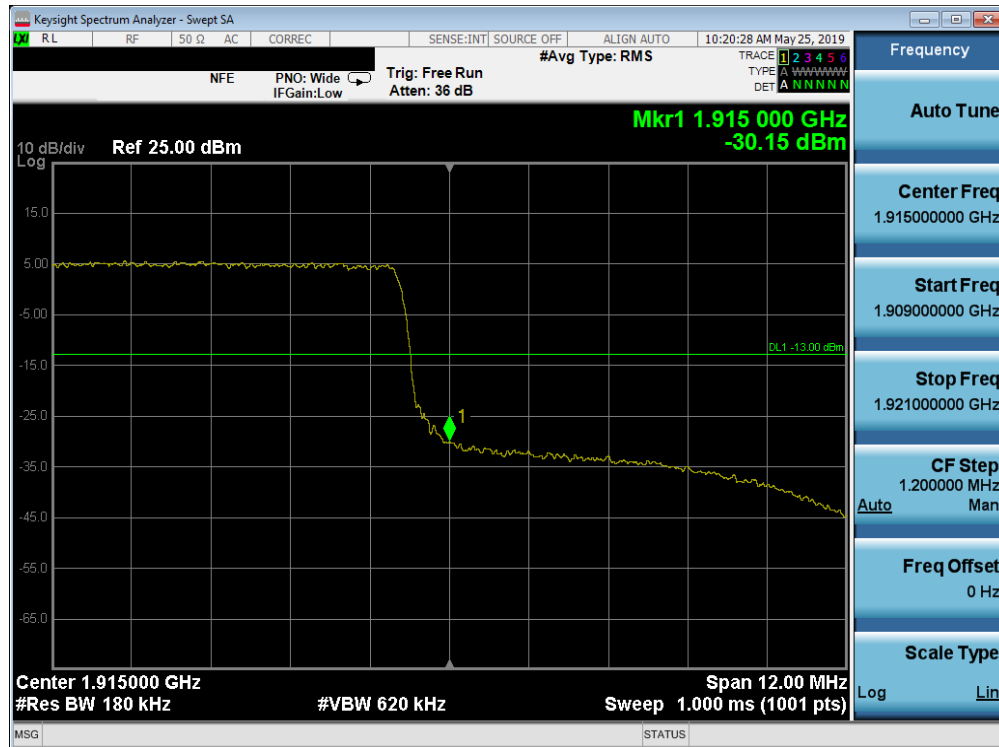


Plot 7-306. Upper Band Edge Plot (Band 2 - 15.0MHz QPSK - Full RB Configuration)

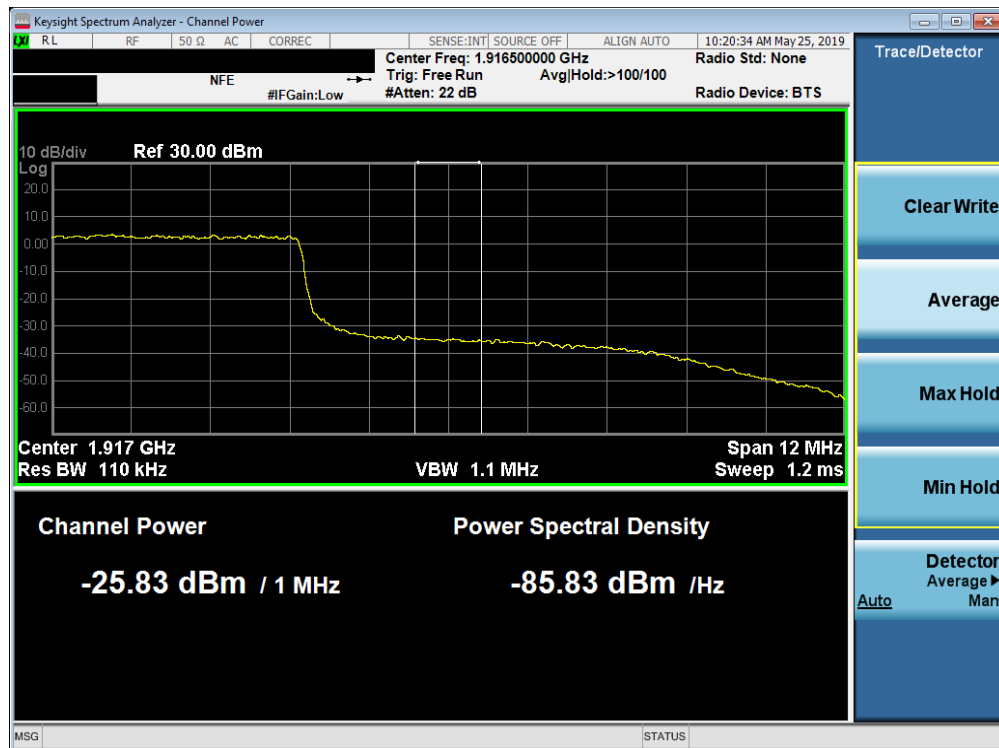


Plot 7-307. Upper Extended Band Edge Plot (Band 2 - 15.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-03.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 179 of 331

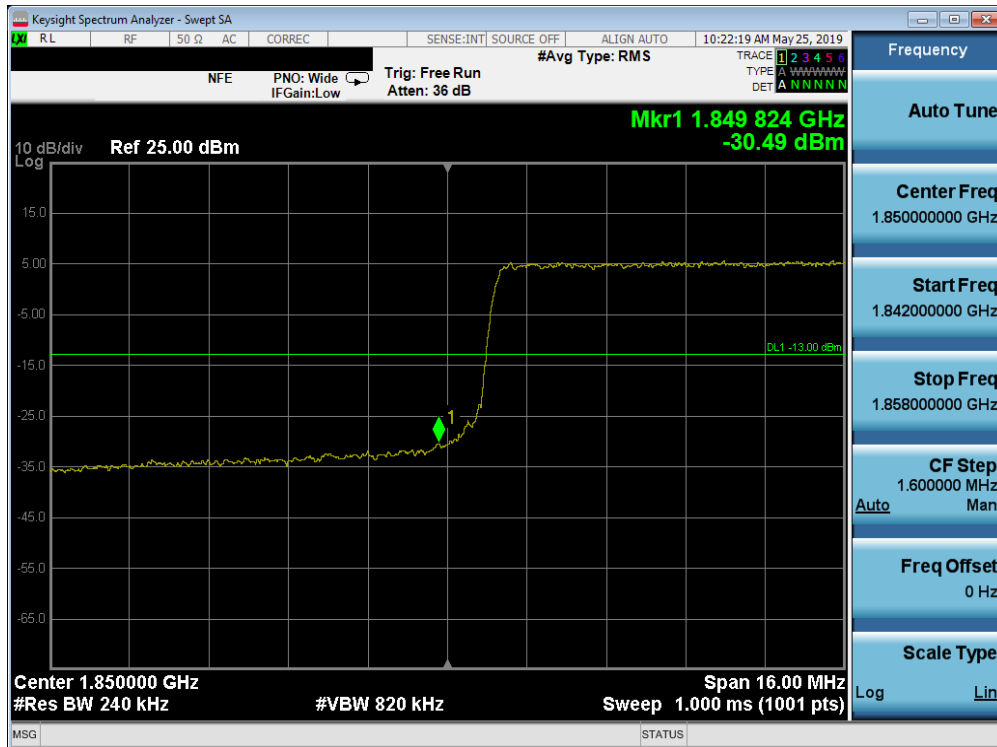


Plot 7-308. Upper Band Edge Plot (Band 25 - 15.0MHz QPSK - Full RB Configuration)

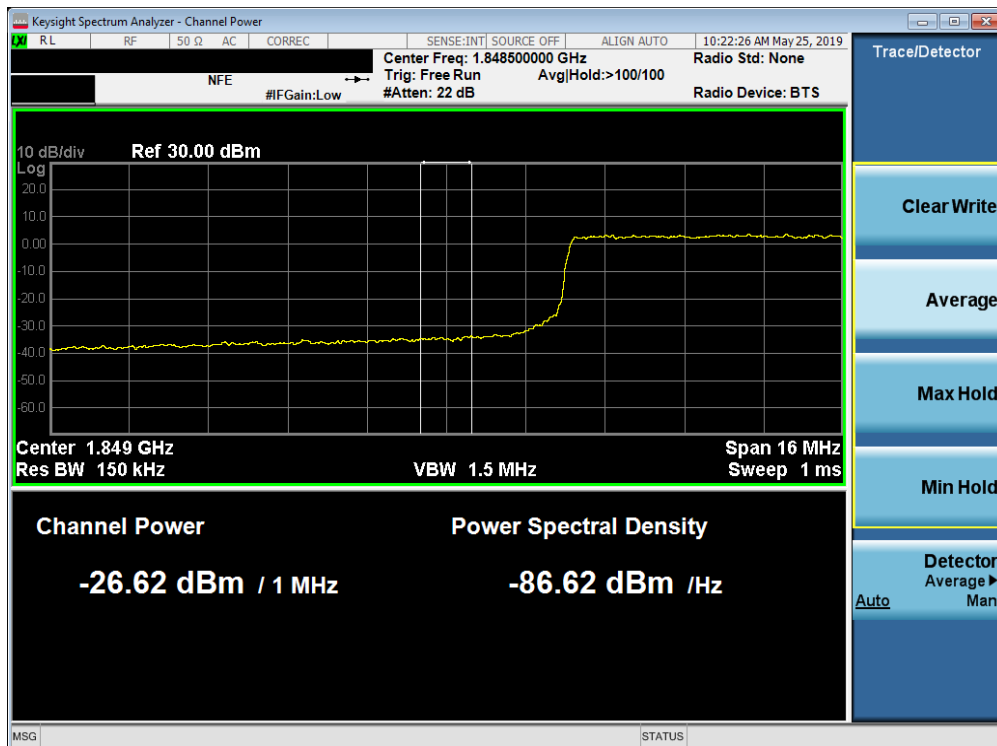


Plot 7-309. Upper Extended Band Edge Plot (Band 25 - 15.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-03.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 180 of 331

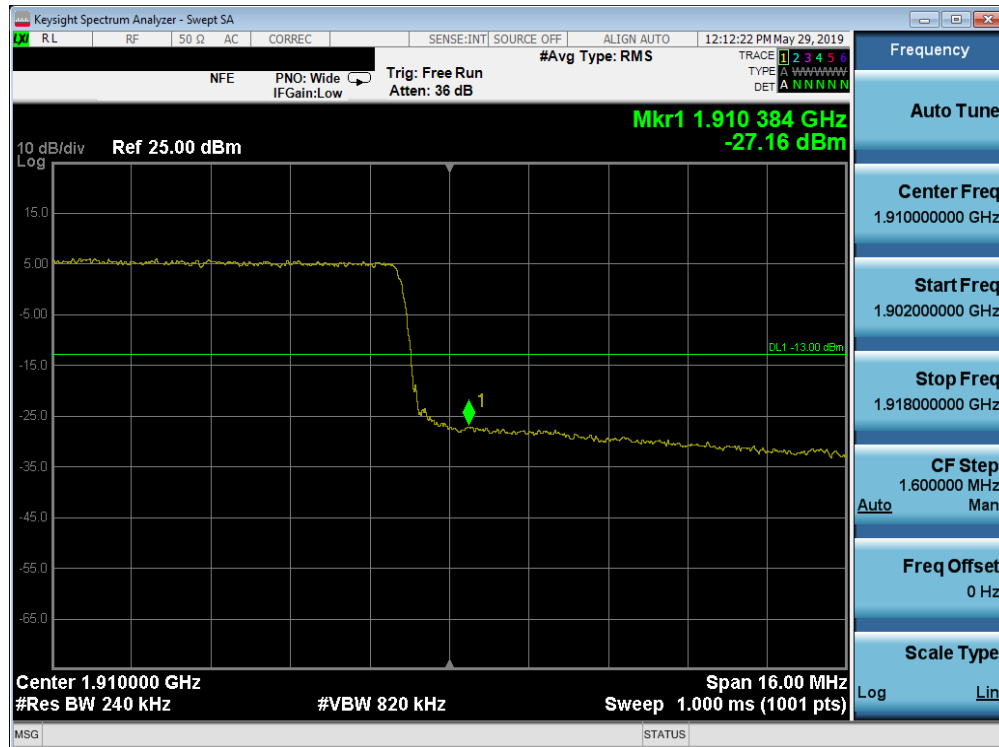


Plot 7-310. Lower Band Edge Plot (Band 25/2 - 20.0MHz QPSK - Full RB Configuration)

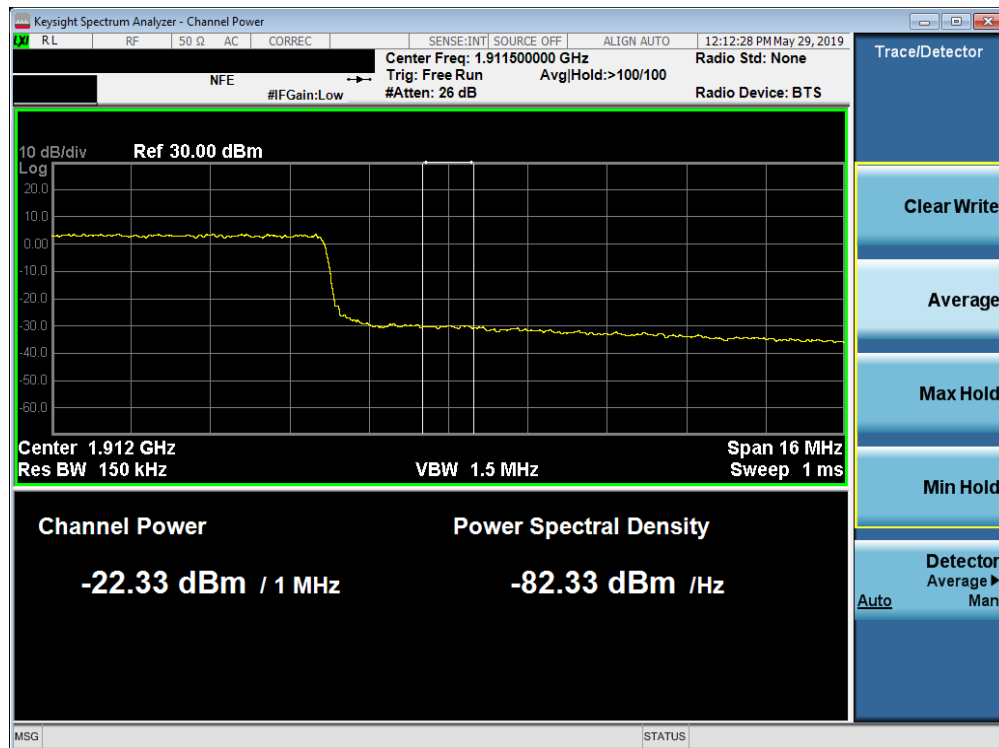


Plot 7-311. Lower Extended Band Edge Plot (Band 25/2 - 20.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-03.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 181 of 331



Plot 7-312. Upper Band Edge Plot (Band 2 - 20.0MHz QPSK - Full RB Configuration)

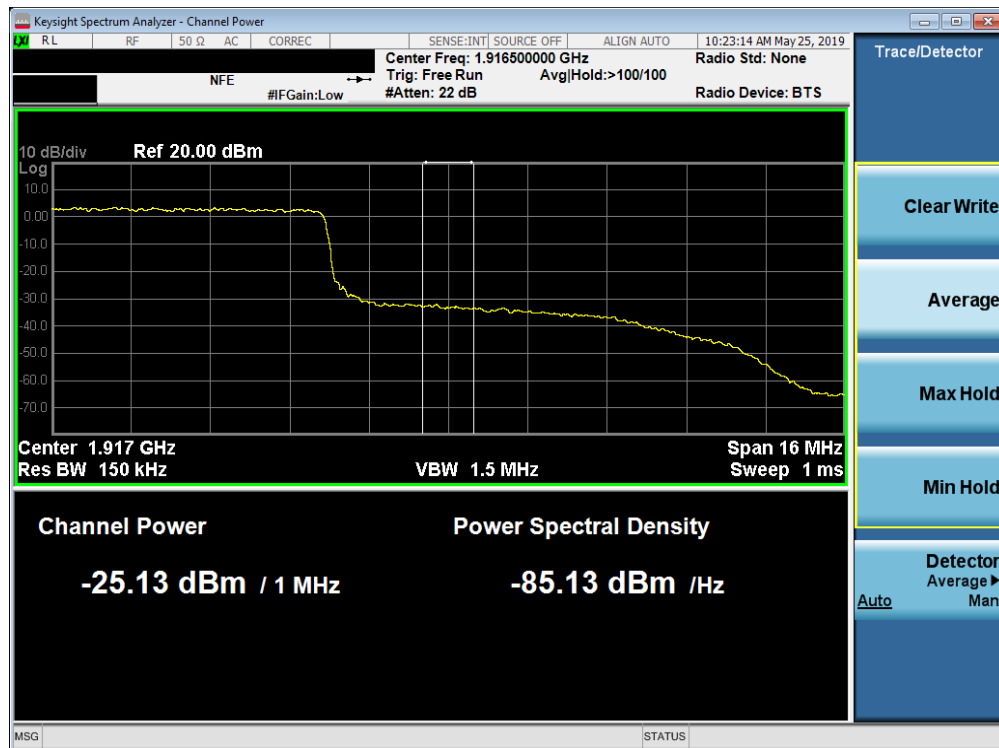


Plot 7-313. Upper Extended Band Edge Plot (Band 2 - 20.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-03.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 182 of 331



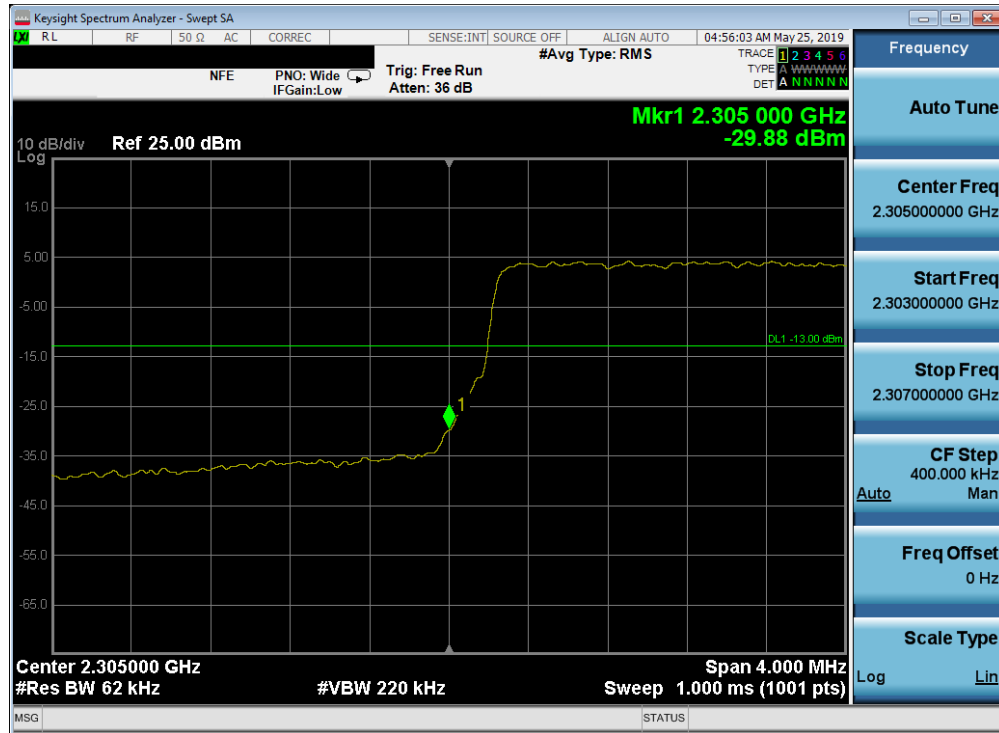
Plot 7-314. Upper Band Edge Plot (Band 25 - 20.0MHz QPSK - Full RB Configuration)



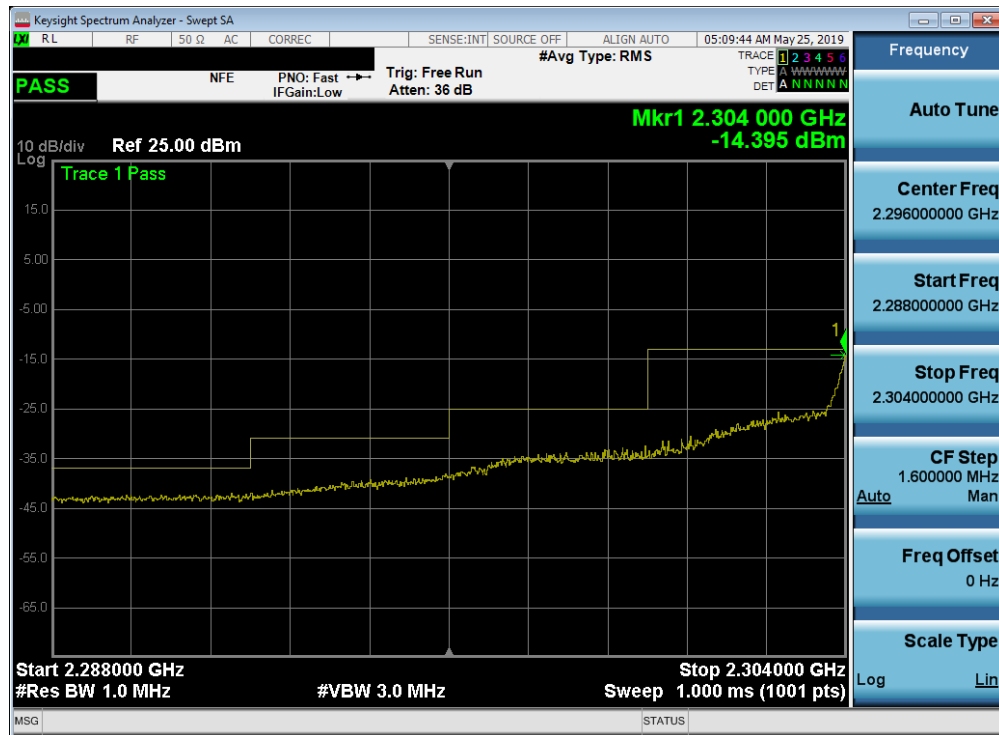
Plot 7-315. Upper Extended Band Edge Plot (Band 25 - 20.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-03.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 183 of 331

Band 30



Plot 7-316. Lower Band Edge Plot (Band 30 - 5.0MHz QPSK - Full RB Configuration)



Plot 7-317. Lower Extended Band Edge Plot (Band 30 - 5.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-03.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 184 of 331

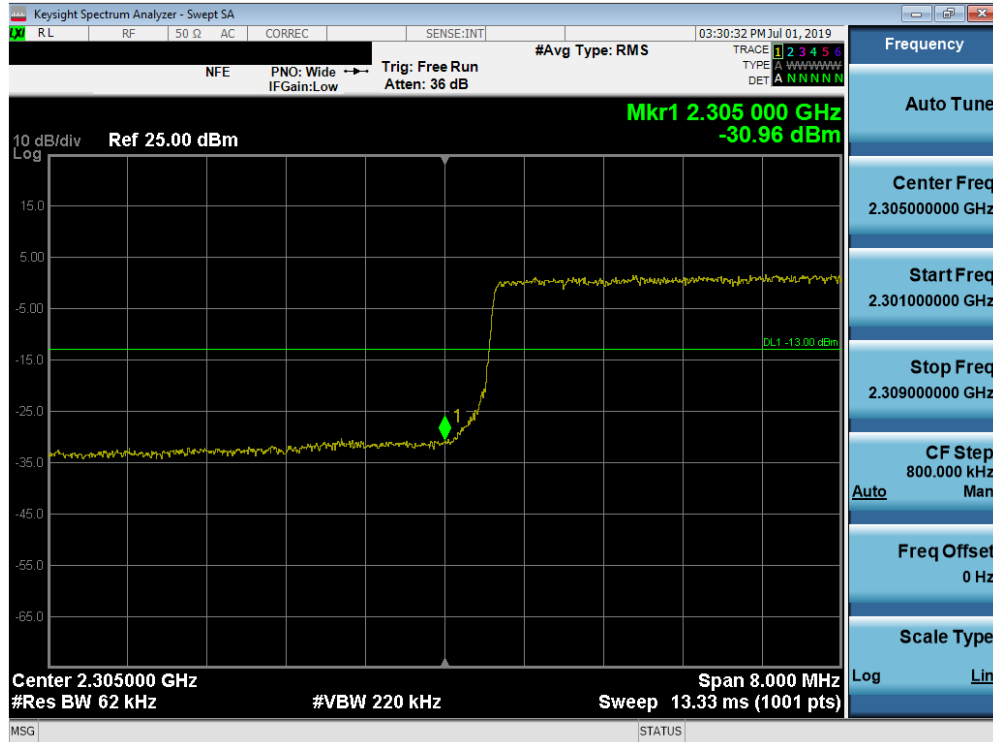


Plot 7-318. Upper Band Edge Plot (Band 30 - 5.0MHz QPSK - Full RB Configuration)



Plot 7-319. Upper Extended Band Edge Plot (Band 30 - 5.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-03.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 185 of 331

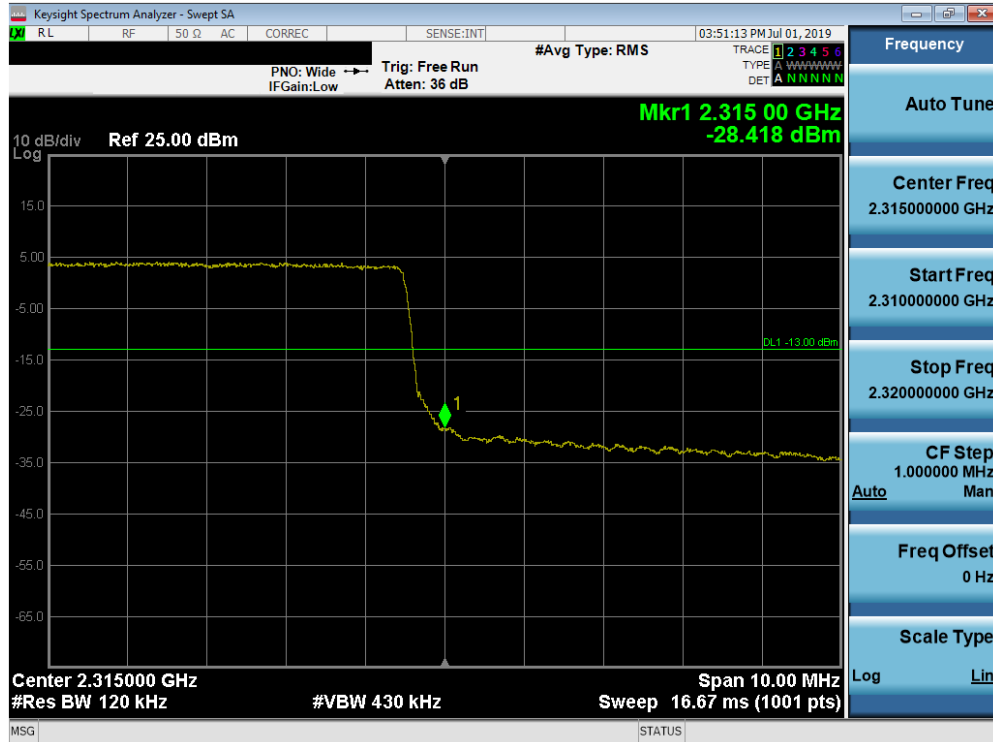


Plot 7-320. Lower Band Edge Plot (Band 30 - 10.0MHz QPSK - Full RB Configuration)



Plot 7-321. Lower Extended Band Edge Plot (Band 30 - 10.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-03.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 186 of 331



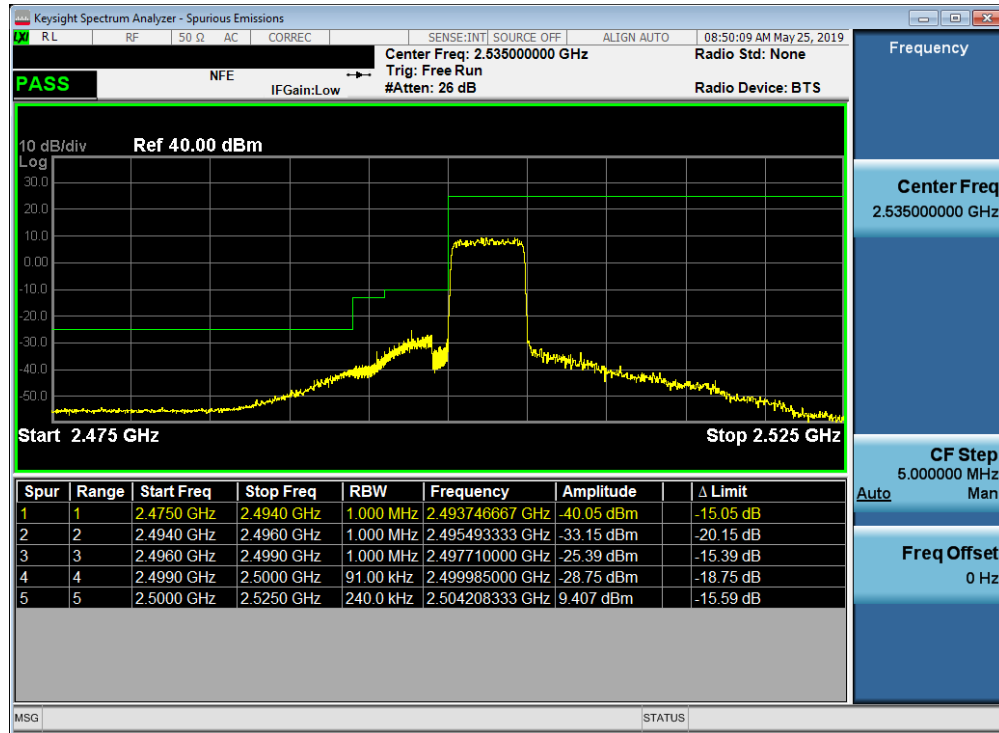
Plot 7-322. Upper Band Edge Plot (Band 30 - 10.0MHz QPSK - Full RB Configuration)



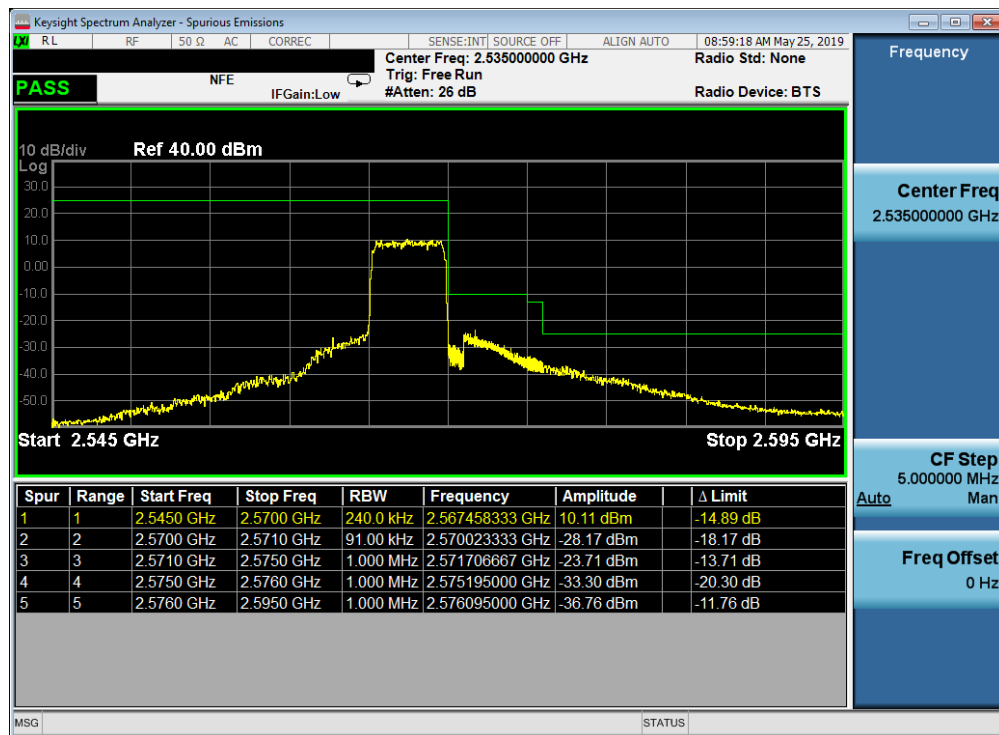
Plot 7-323. Upper Extended Band Edge Plot (Band 30 - 10.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-03.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 187 of 331

Band 7

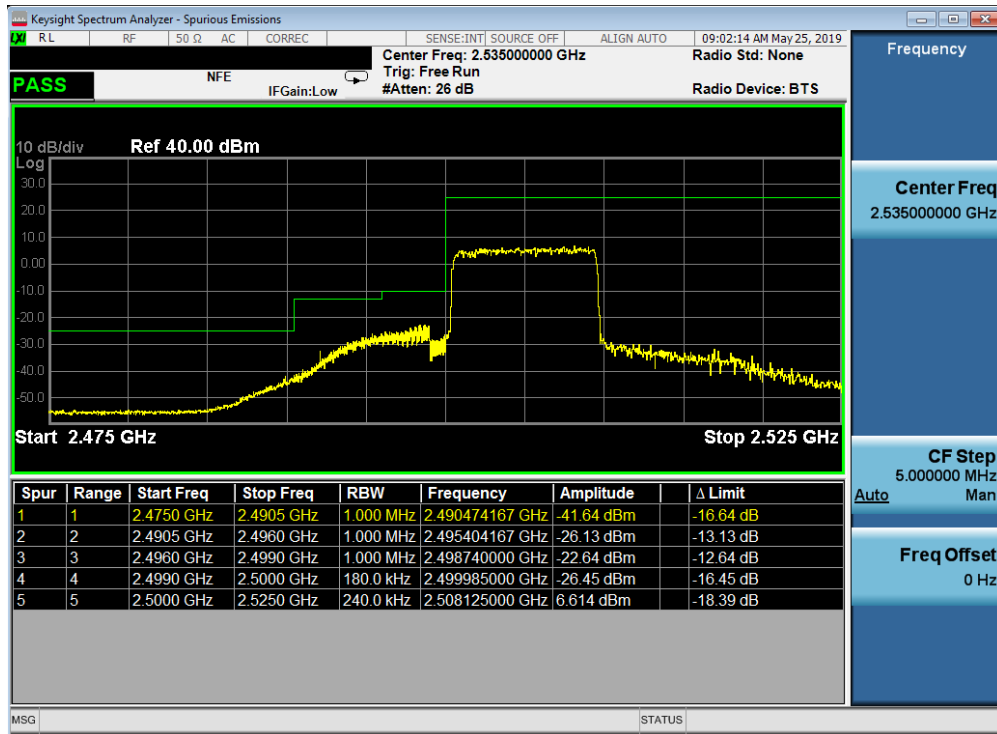


Plot 7-324. Lower ACP Plot (Band 7 - 5.0MHz QPSK - Full RB Configuration)

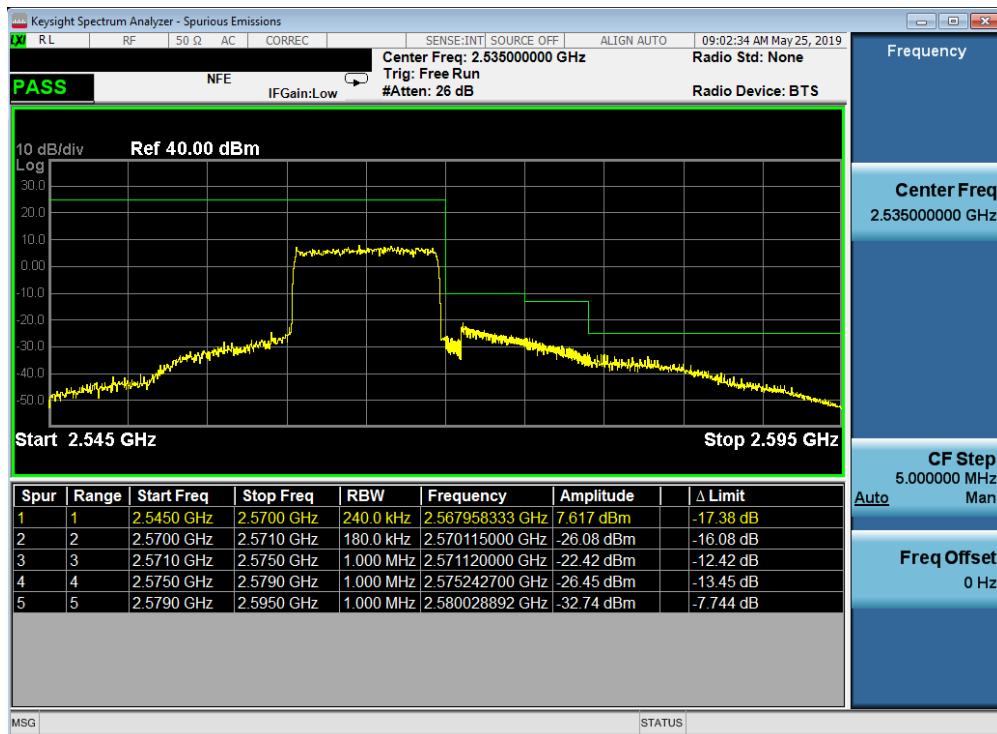


Plot 7-325. Upper ACP Plot (Band 7 - 5.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-03.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 188 of 331

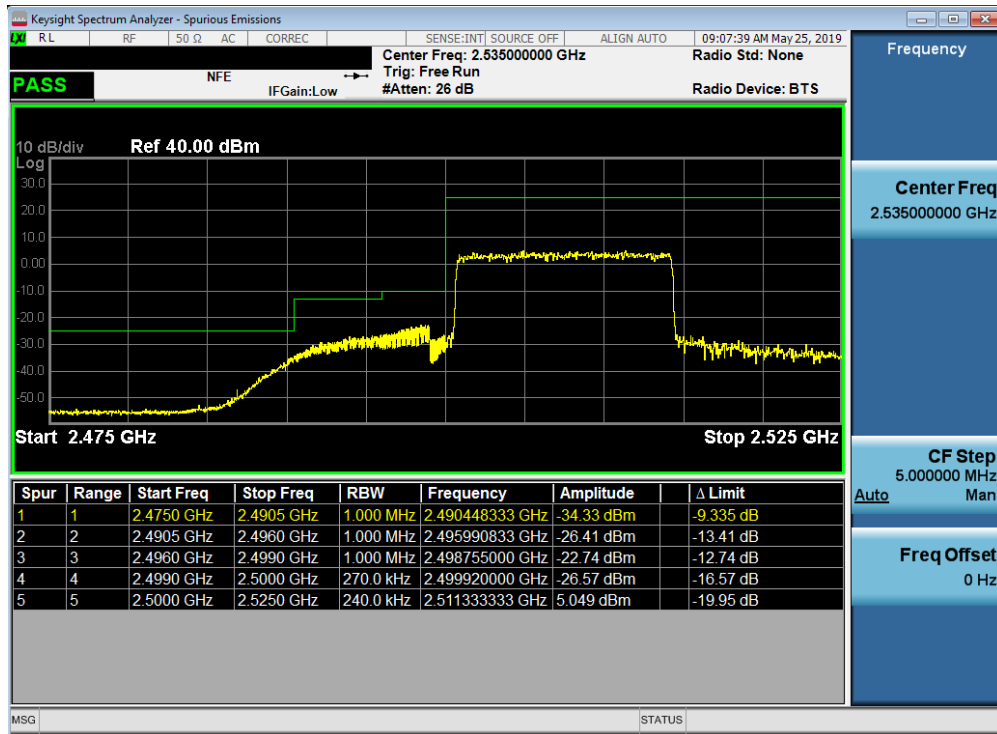


Plot 7-326. Lower ACP Plot (Band 7 - 10.0MHz QPSK - Full RB Configuration)

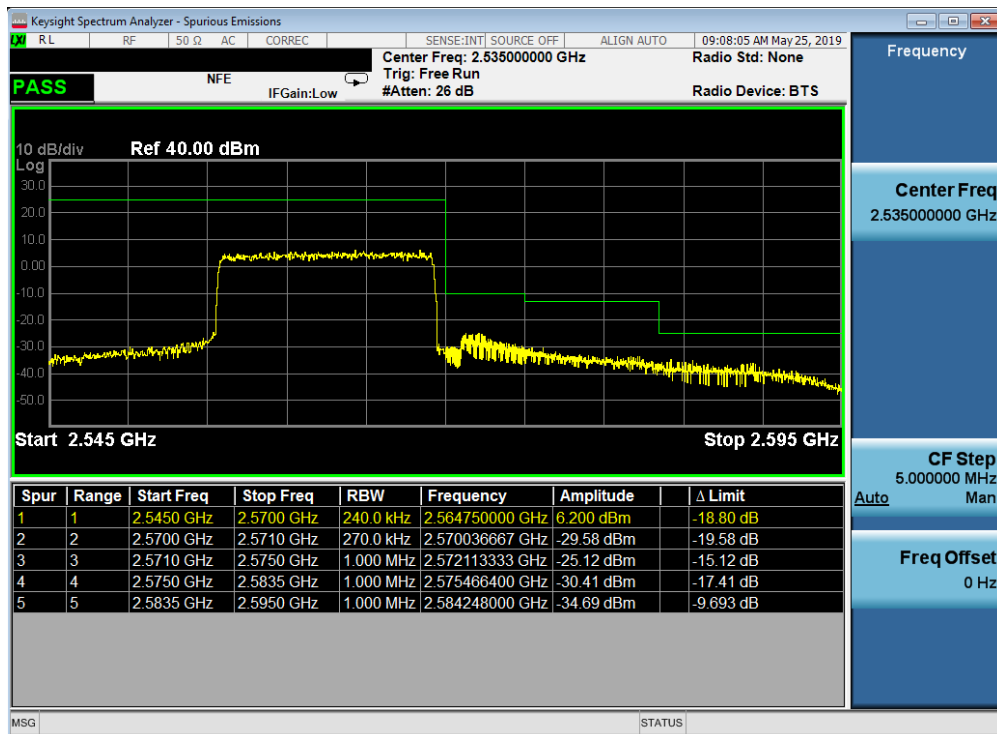


Plot 7-327. Upper ACP Plot (Band 7 - 10.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-03.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 189 of 331

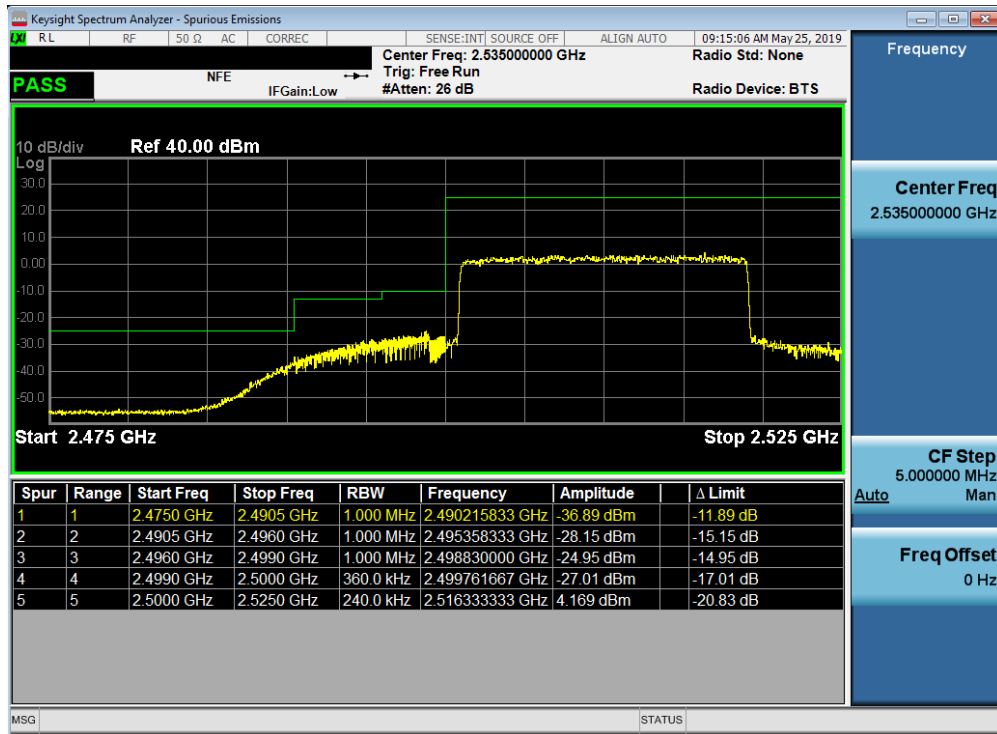


Plot 7-328. Lower ACP Plot (Band 7 - 15.0MHz QPSK - Full RB Configuration)

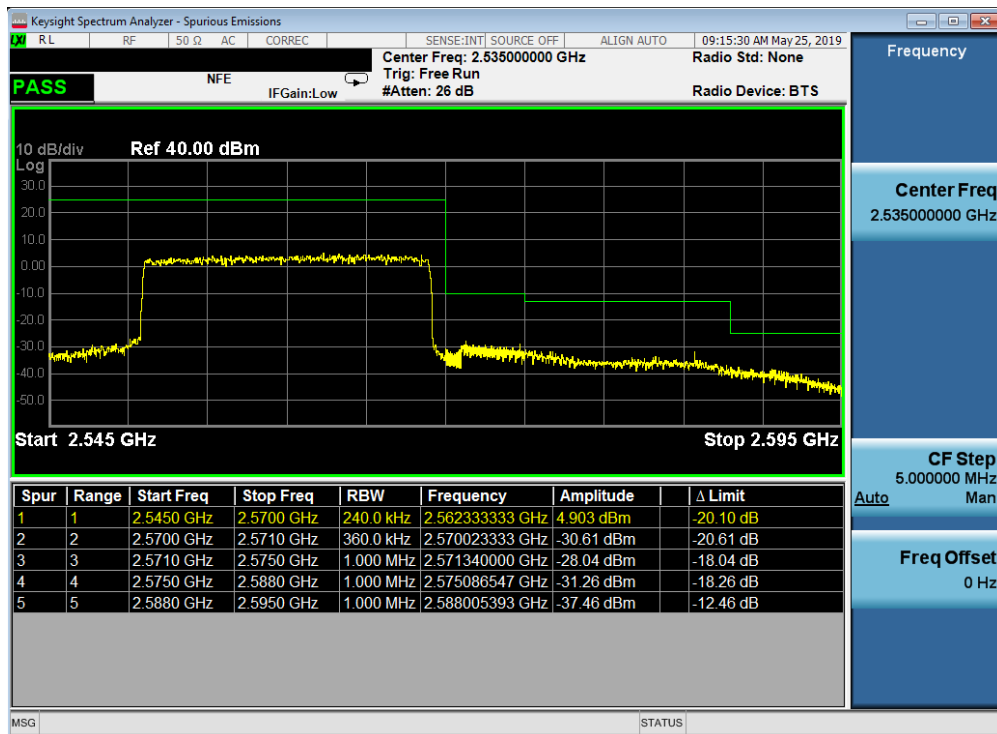


Plot 7-329. Upper ACP Plot (Band 7 - 15.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-03.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 190 of 331



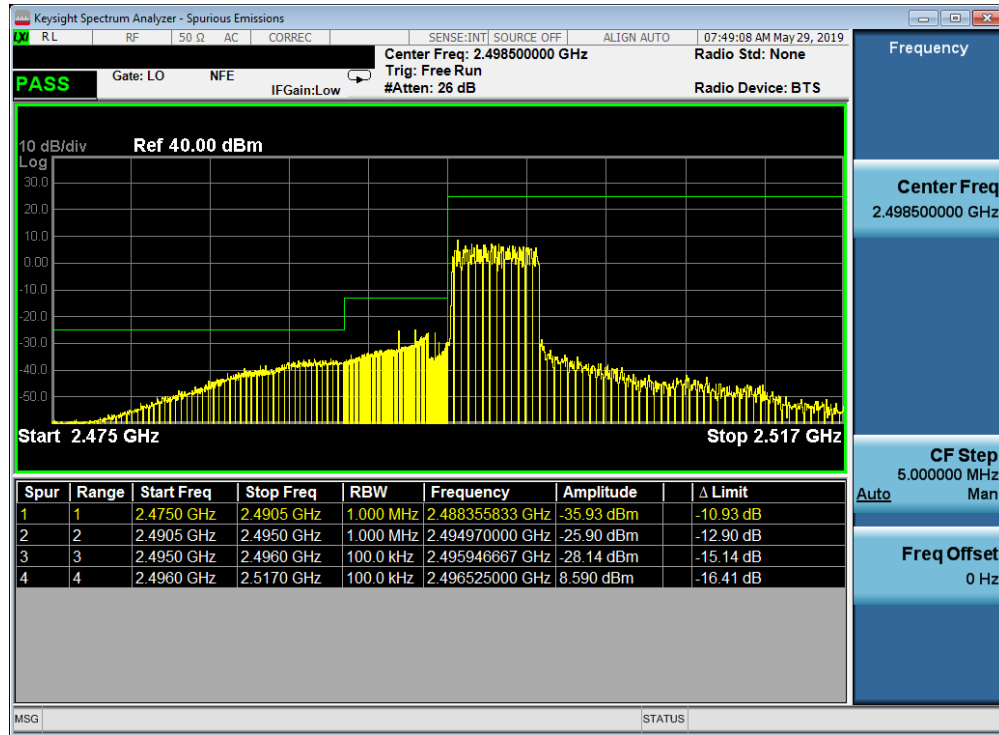
Plot 7-330. Lower ACP Plot (Band 7 - 20.0MHz QPSK - Full RB Configuration)



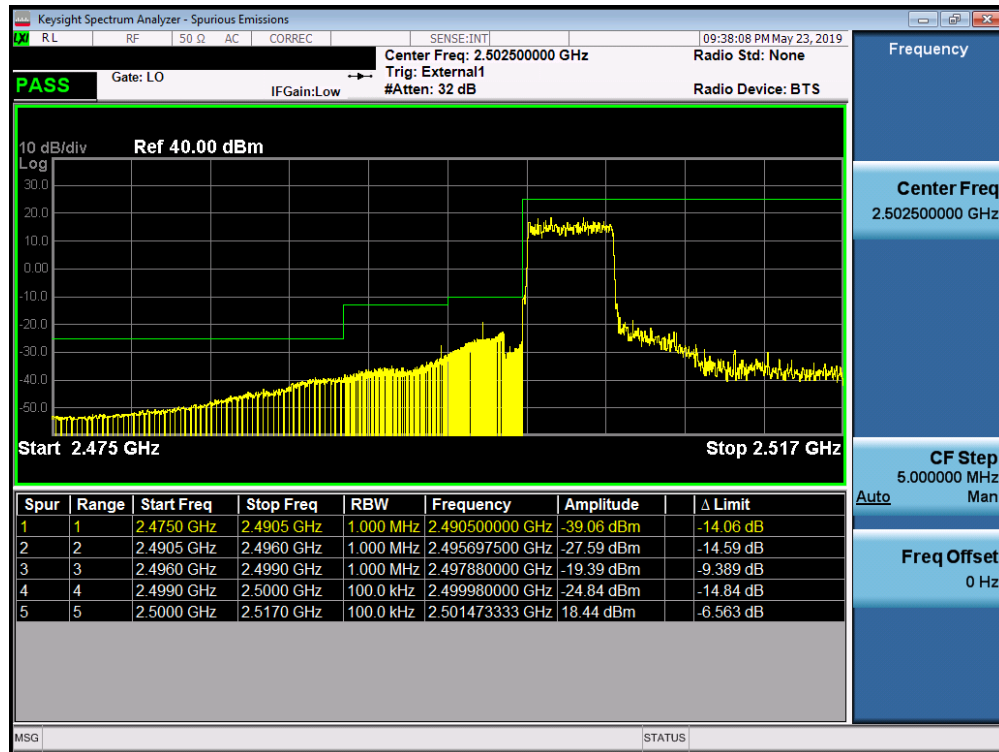
Plot 7-331. Upper ACP Plot (Band 7 - 20.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-03.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 191 of 331

Band 41 PC2

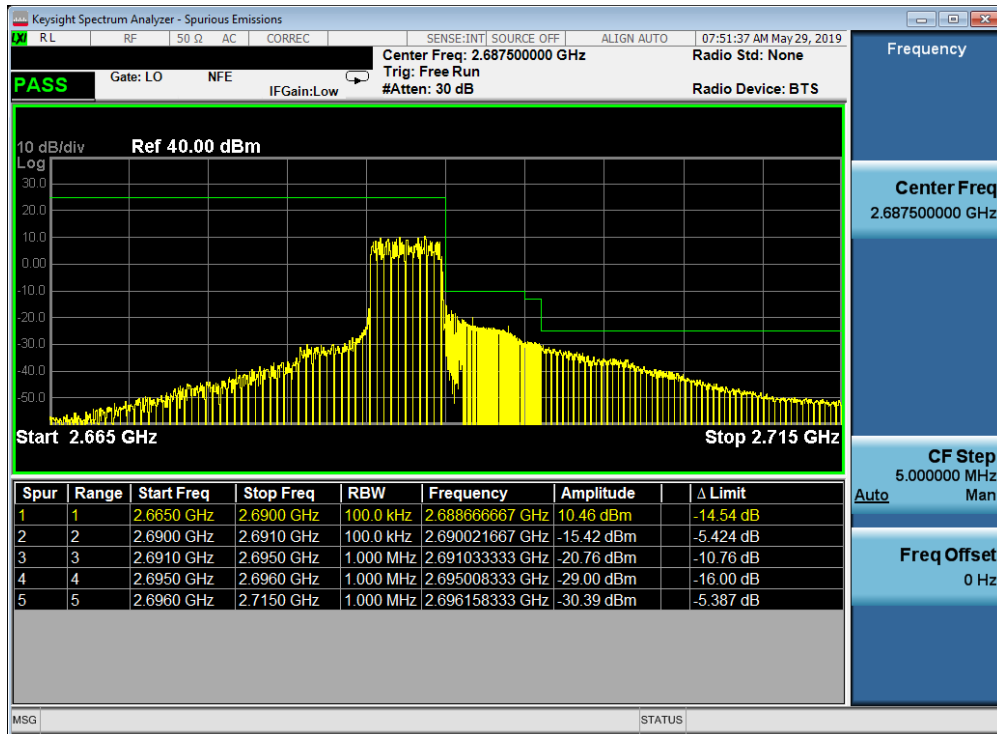


Plot 7-332. Lower ACP Plot at 2496MHz (Band 41 - 5.0MHz QPSK - Full RB Configuration)

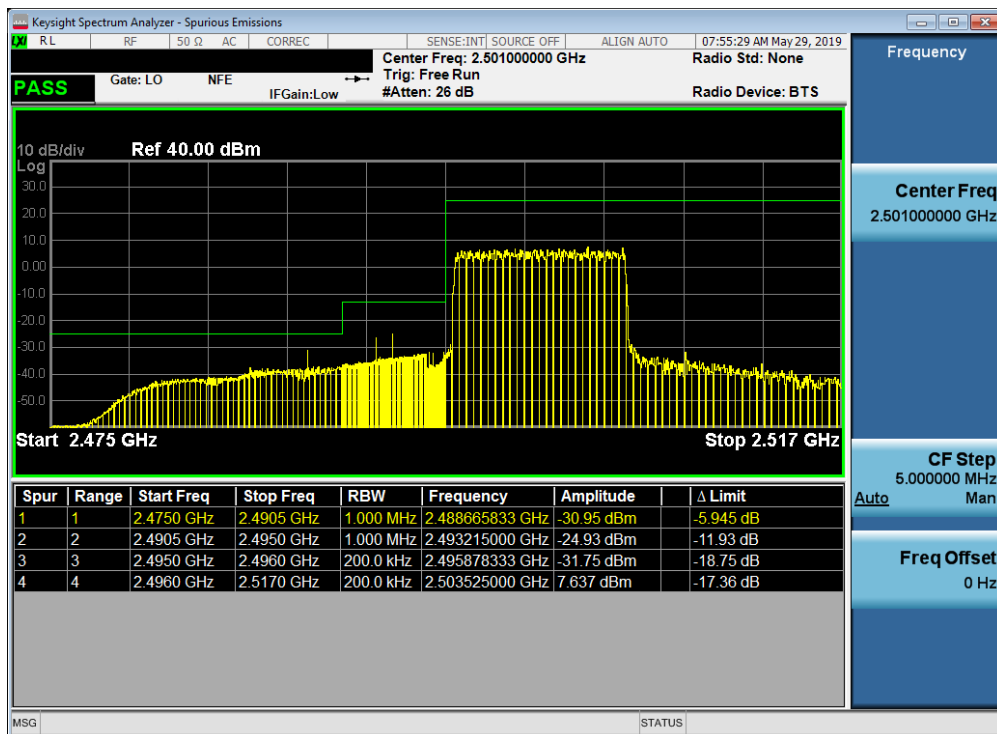


Plot 7-333. Lower ACP Plot at 2500MHz (Band 41 - 5.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-03.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 192 of 331

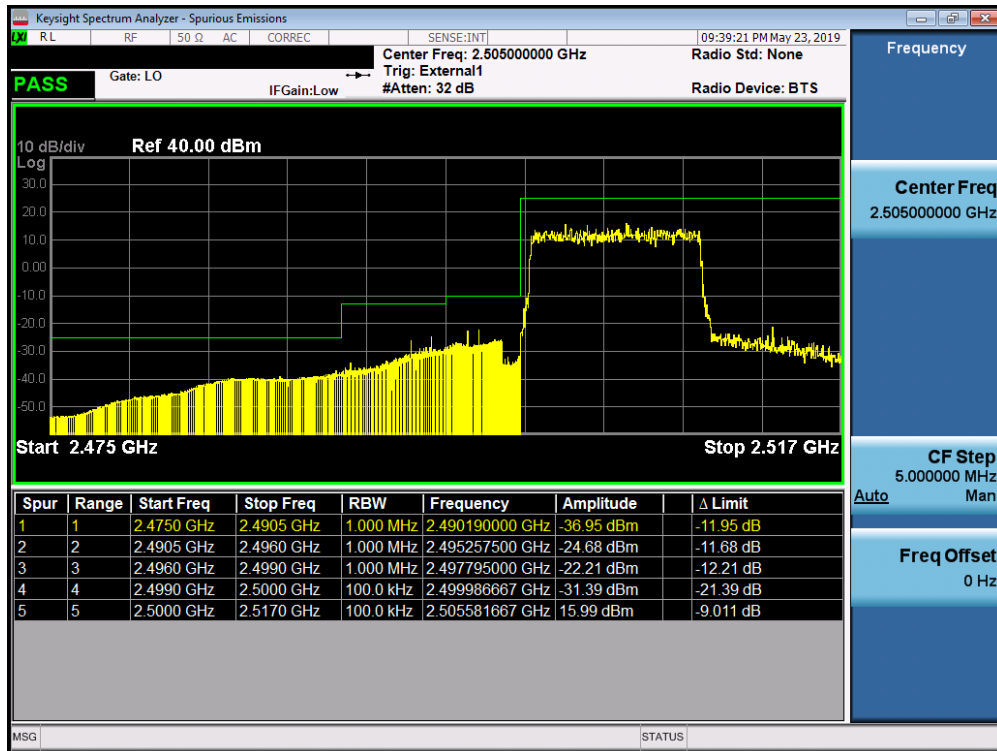


Plot 7-334. Upper ACP Plot (Band 41 - 5.0MHz QPSK - Full RB Configuration)

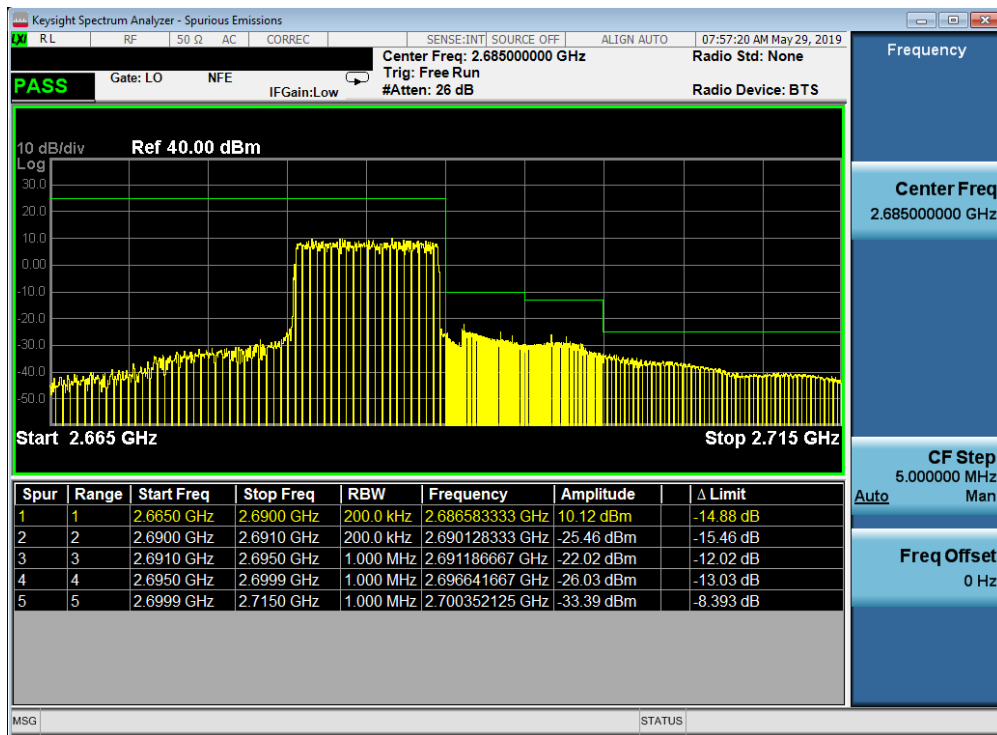


Plot 7-335. Lower ACP Plot at 2496MHz (Band 41 - 10.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-03.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 193 of 331

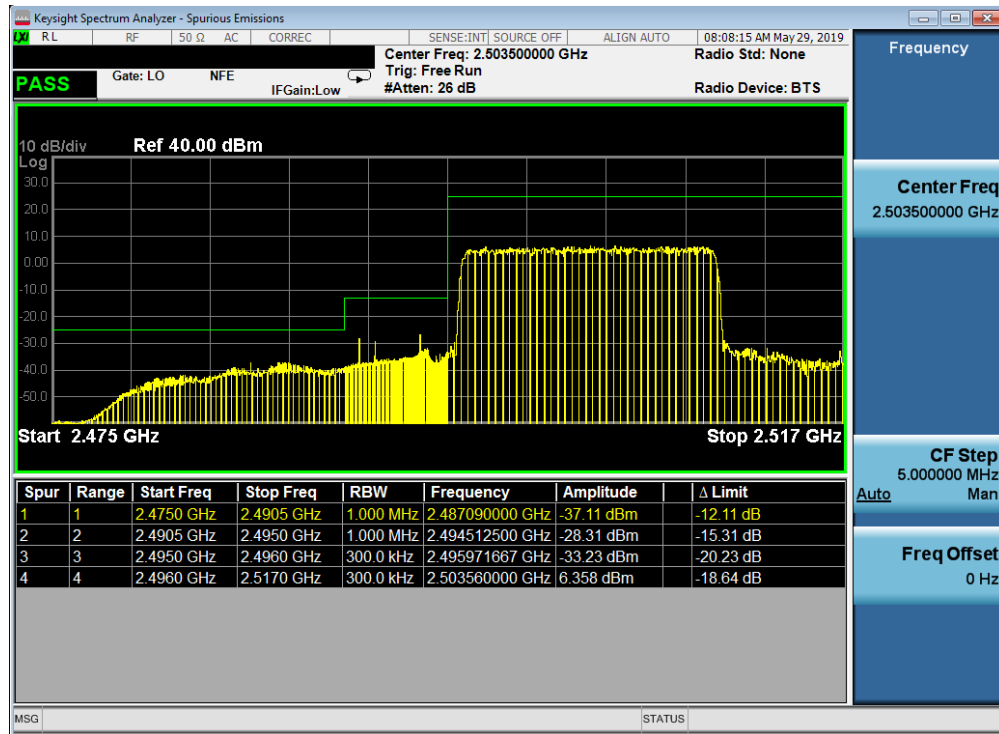


Plot 7-336. Lower ACP Plot at 2500MHz (Band 41 - 10.0MHz QPSK - Full RB Configuration)

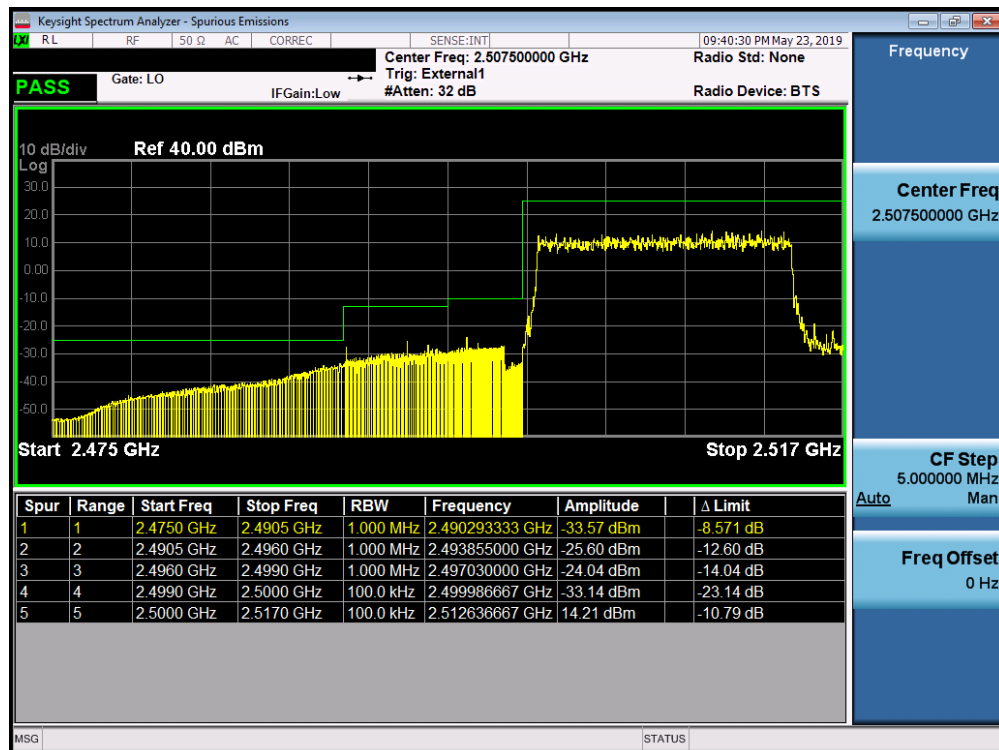


Plot 7-337. Upper ACP Plot (Band 41 - 10.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)		SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-03.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset			Page 194 of 331

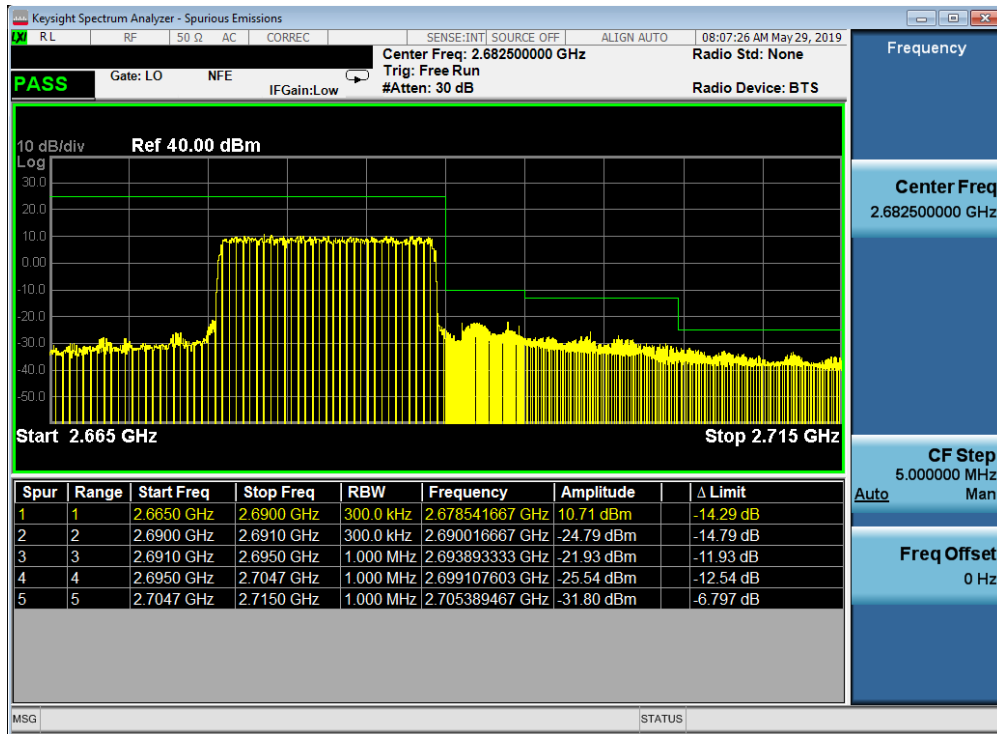


Plot 7-338. Lower ACP Plot at 2496MHz (Band 41 - 15.0MHz QPSK - Full RB Configuration)

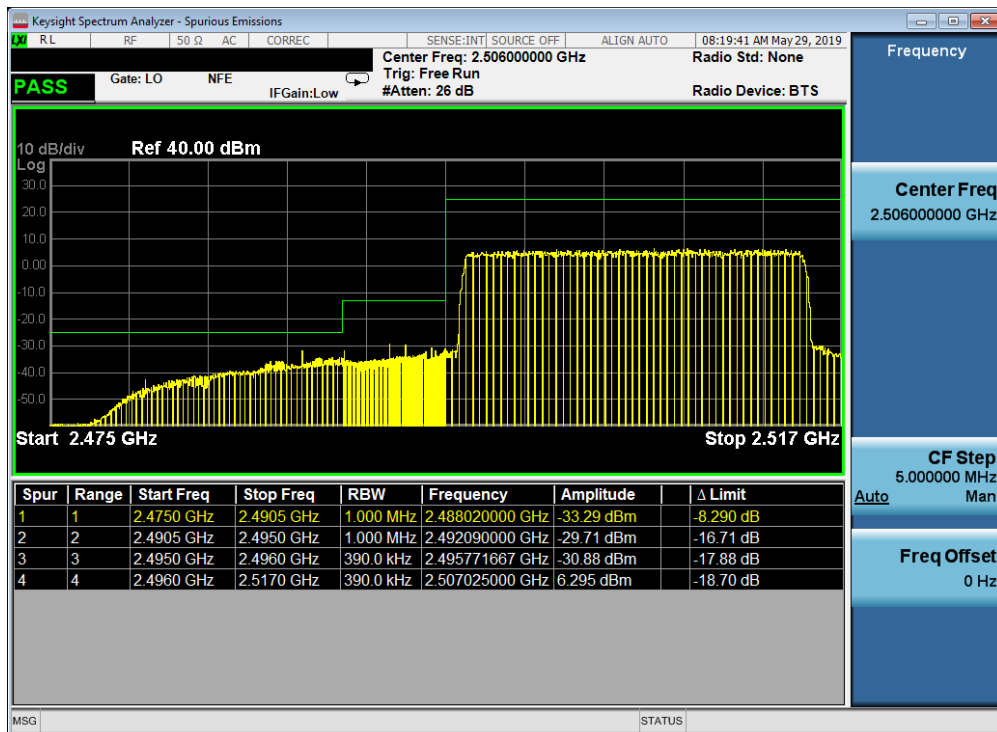


Plot 7-339. Lower ACP Plot at 2500MHz (Band 41 - 15.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-03.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 195 of 331

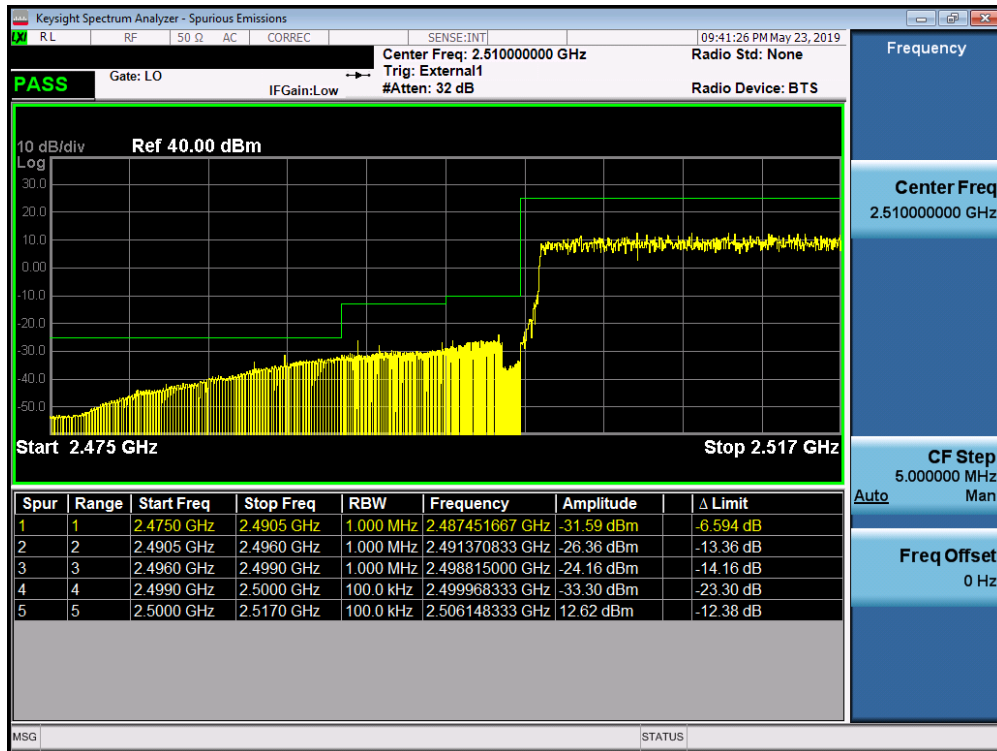


Plot 7-340. Upper ACP Plot (Band 41 - 15.0MHz QPSK - Full RB Configuration)

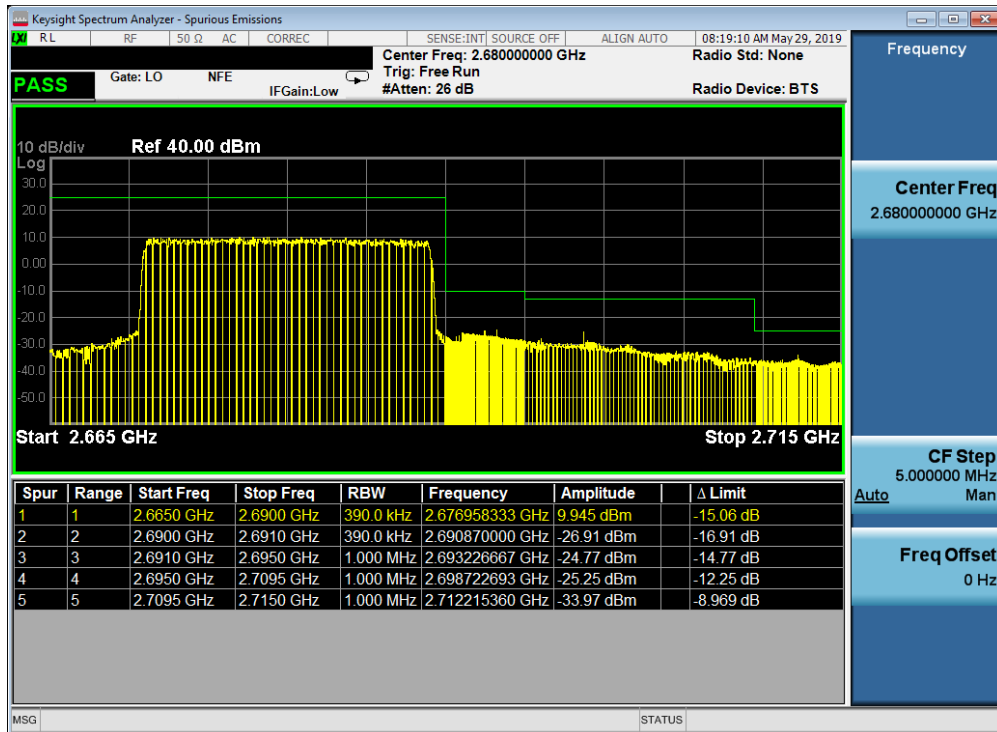


Plot 7-341. Lower ACP Plot at 2496MHz (Band 41 - 20.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-03.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 196 of 331



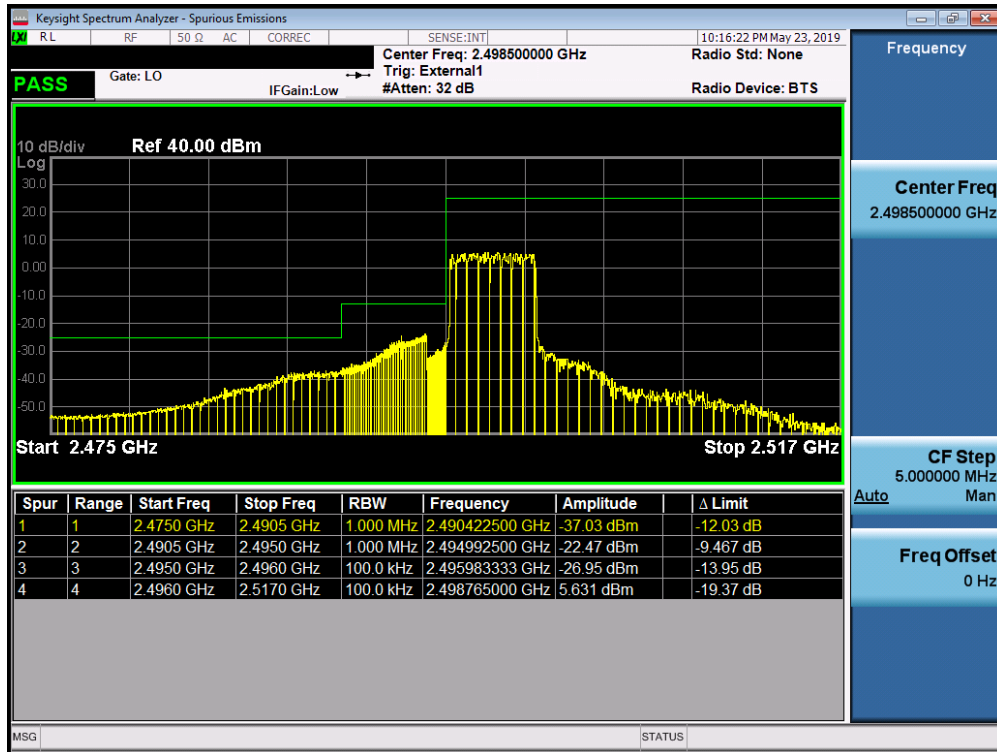
Plot 7-342. Lower ACP Plot at 2500MHz (Band 41 - 20.0MHz QPSK - Full RB Configuration)



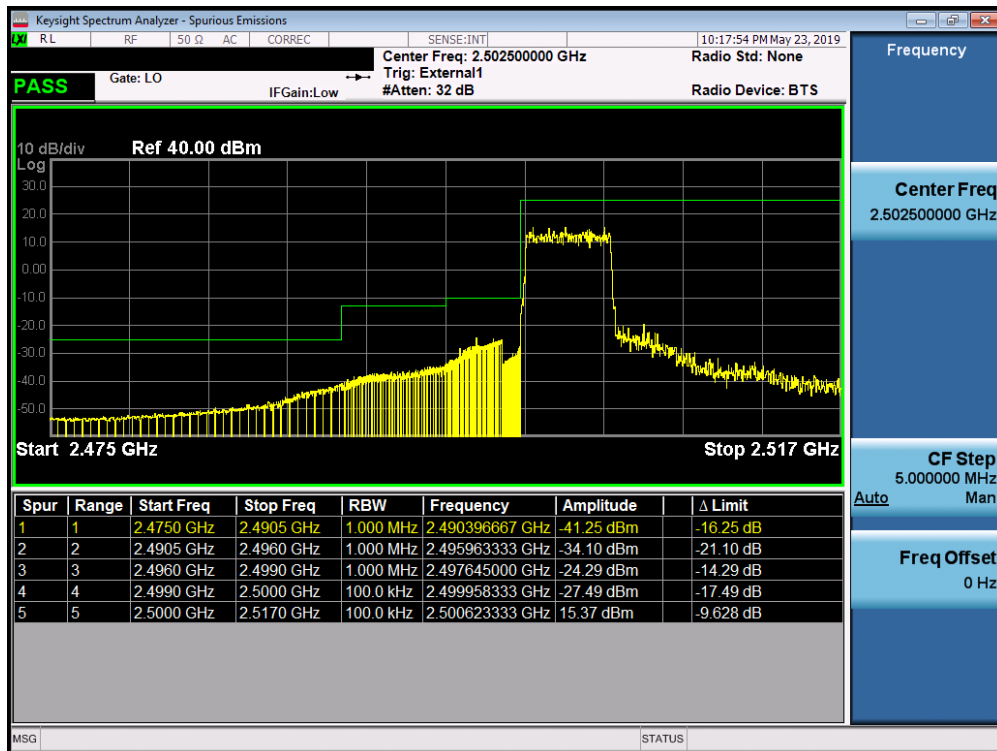
Plot 7-343. Upper ACP Plot (Band 41 - 20.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-03.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 197 of 331

Band 41 PC3

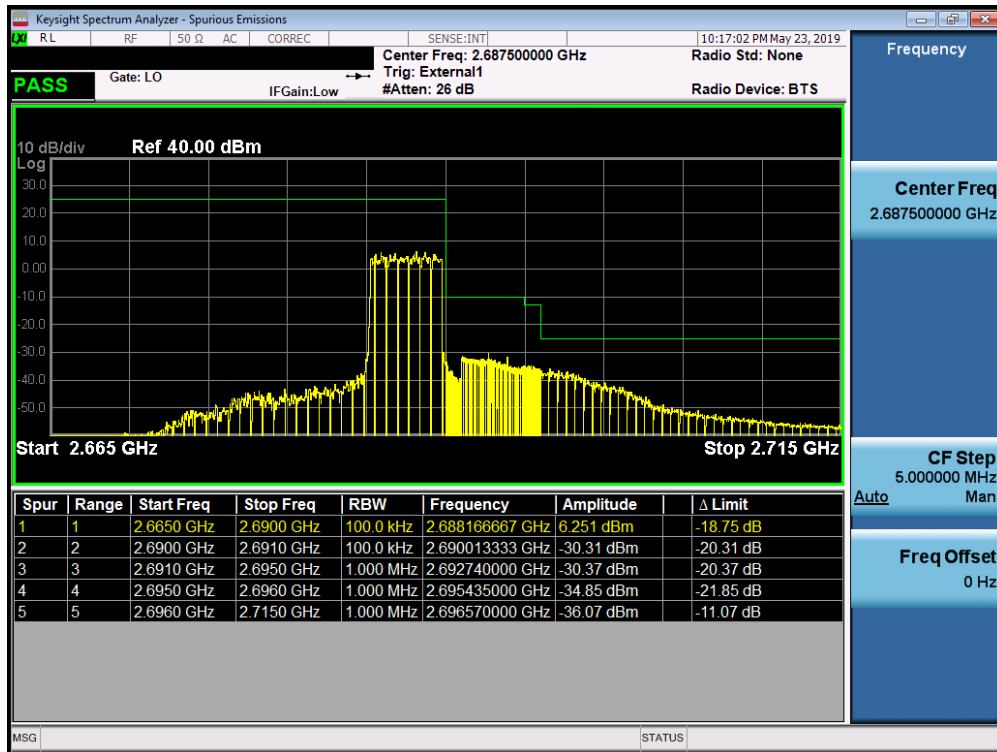


Plot 7-344. Lower ACP Plot at 2496MHz (Band 41 - 5.0MHz QPSK - Full RB Configuration)

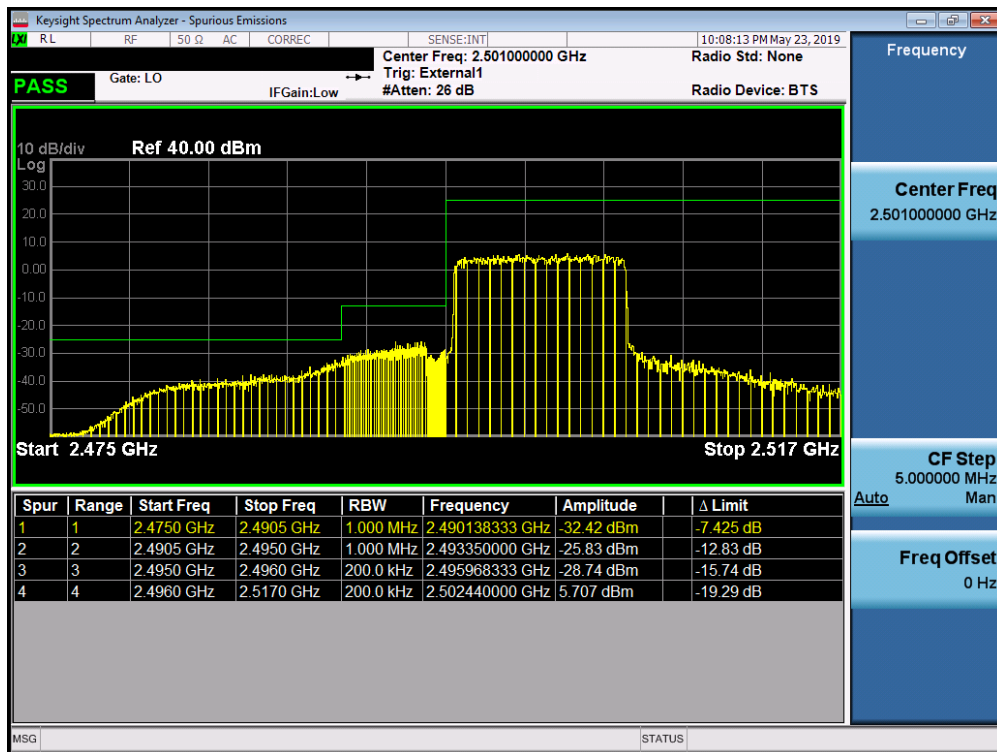


Plot 7-345. Lower ACP Plot at 2500MHz (Band 41 - 5.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-03.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 198 of 331

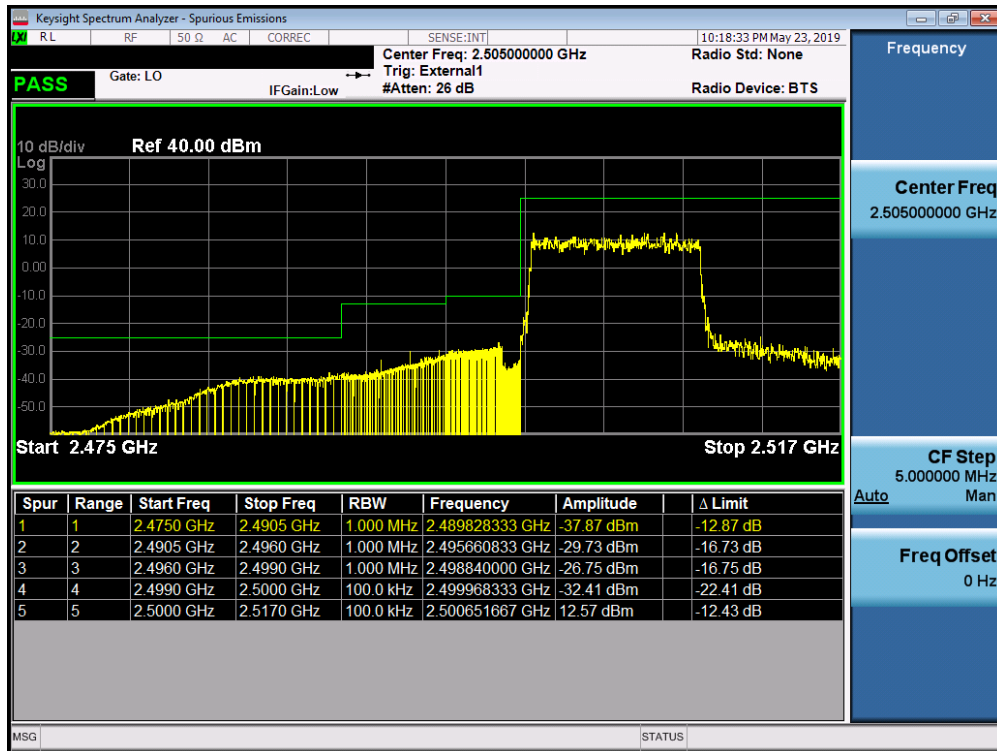


Plot 7-346. Upper ACP Plot (Band 41 - 5.0MHz QPSK - Full RB Configuration)

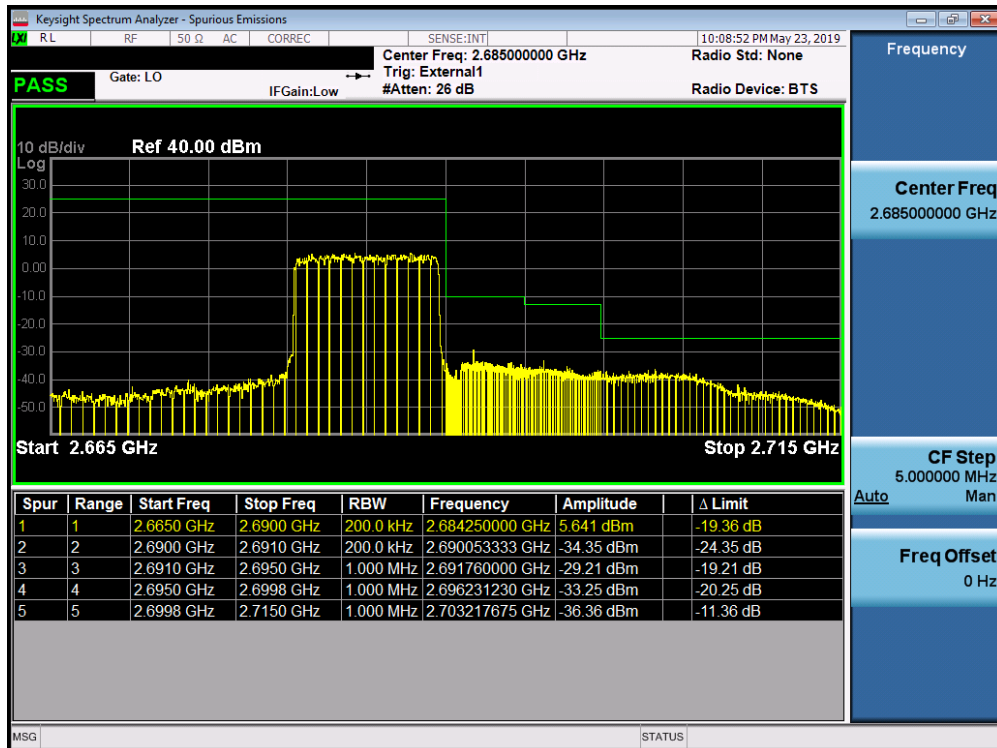


Plot 7-347. Lower ACP Plot at 2496MHz (Band 41 - 10.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMN970U	MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1905220084-03.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 199 of 331

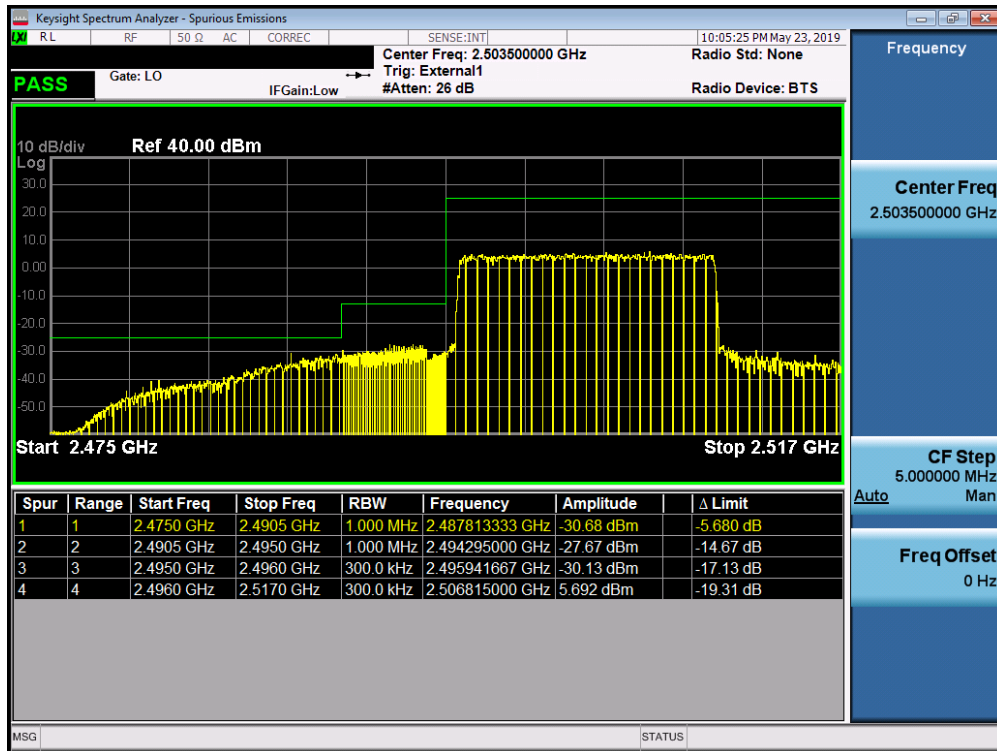


Plot 7-348. Lower ACP Plot at 2500MHz (Band 41 - 10.0MHz QPSK - Full RB Configuration)

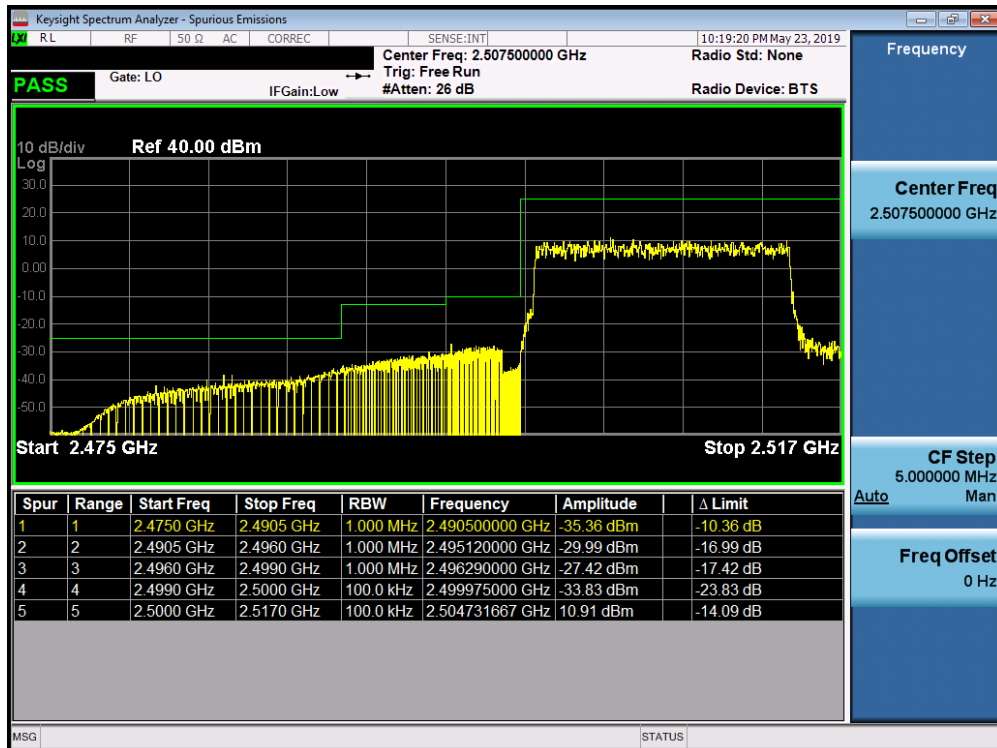


Plot 7-349. Upper ACP Plot (Band 41 - 10.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-03.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 200 of 331

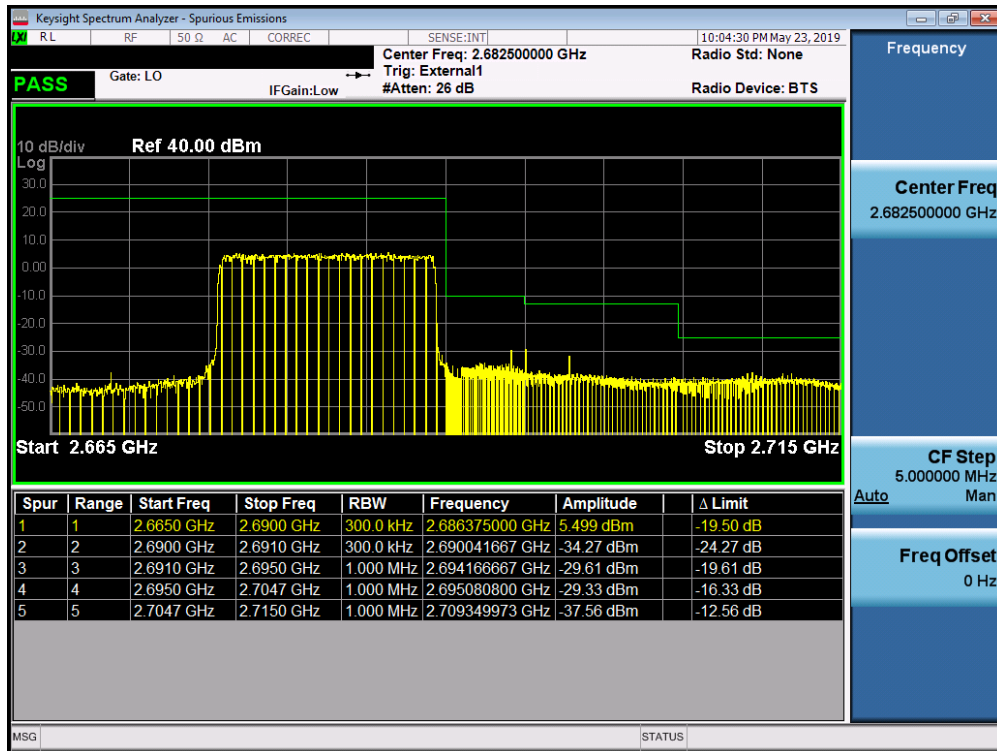


Plot 7-350. Lower ACP Plot at 2496MHz (Band 41 - 15.0MHz QPSK - Full RB Configuration)

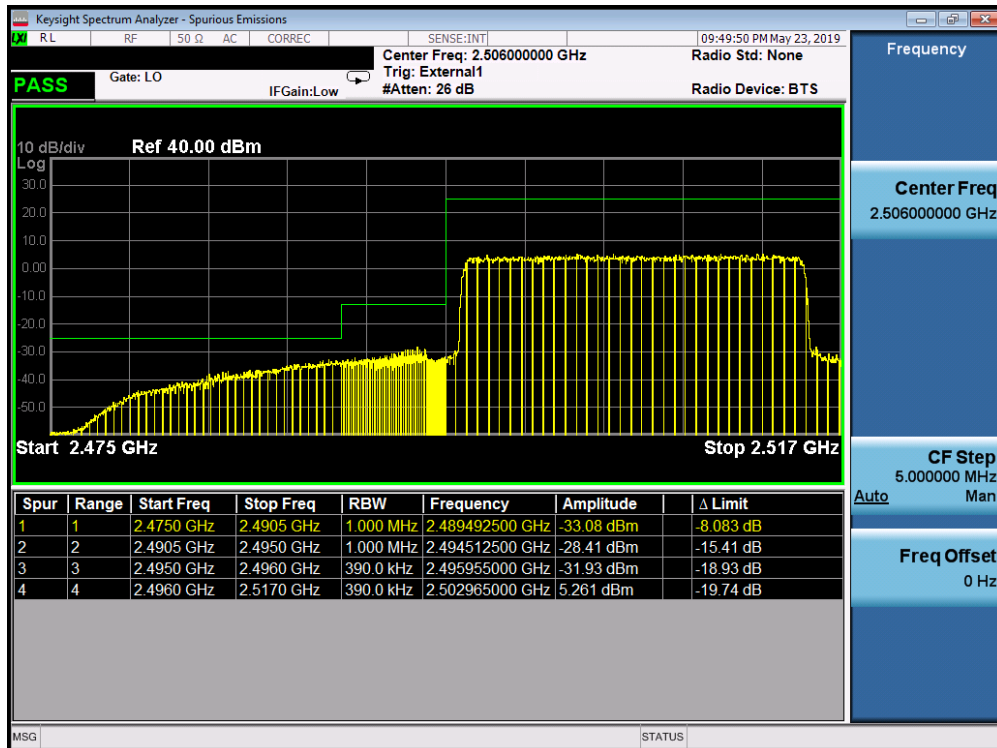


Plot 7-351. Lower ACP Plot at 2500MHz (Band 41 - 15.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-03.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 201 of 331

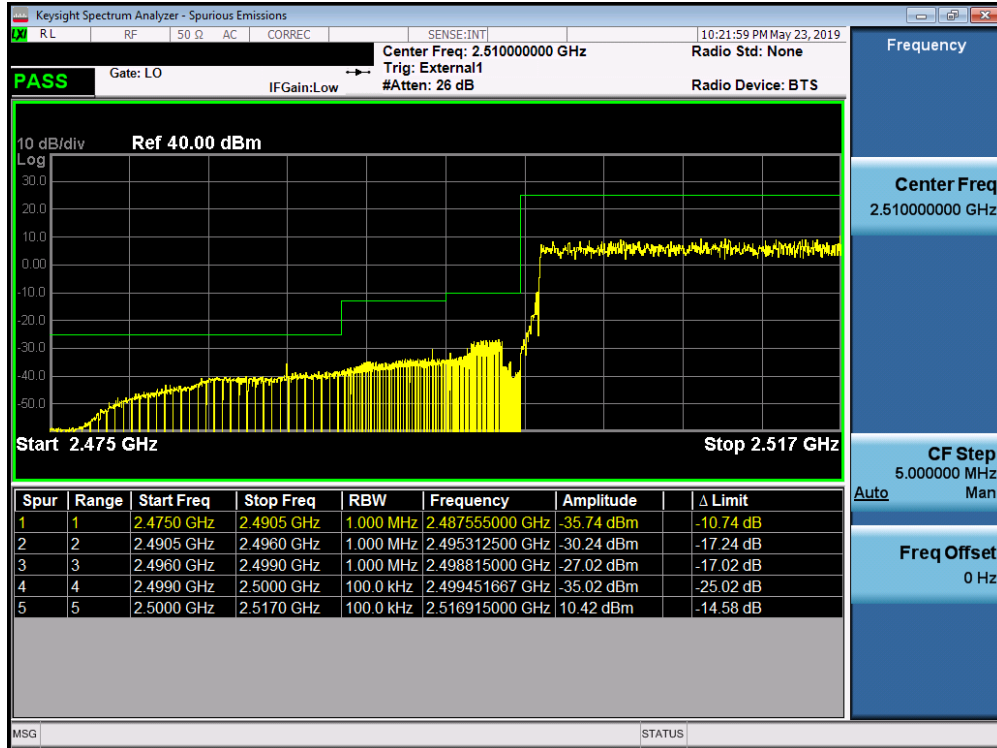


Plot 7-352. Upper ACP Plot (Band 41 - 15.0MHz QPSK - Full RB Configuration)

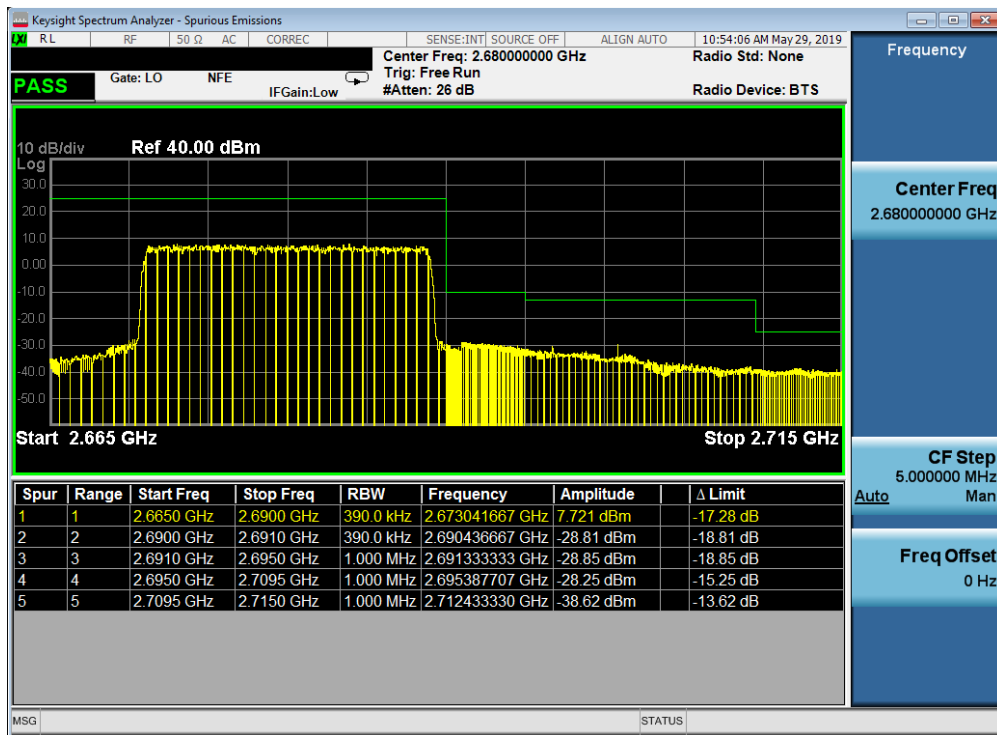


Plot 7-353. Lower ACP Plot at 2496MHz (Band 41 - 20.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-03.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 202 of 331



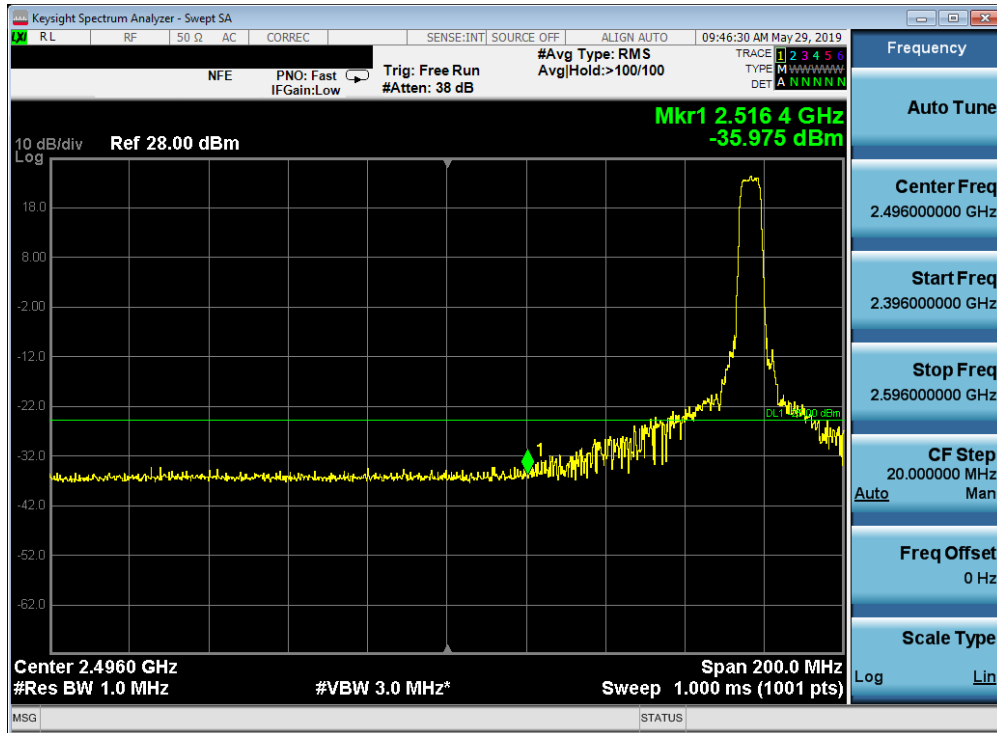
Plot 7-354. Lower ACP Plot at 2500MHz (Band 41 - 20.0MHz QPSK - Full RB Configuration)



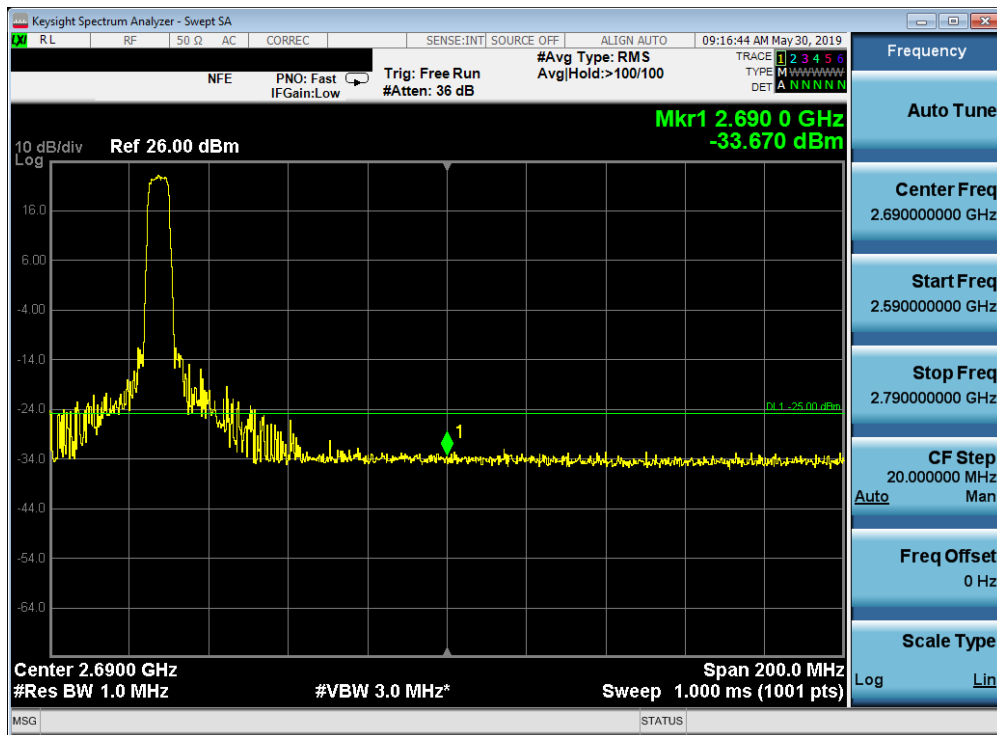
Plot 7-355. Upper ACP Plot (Band 41 - 20.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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Band 38

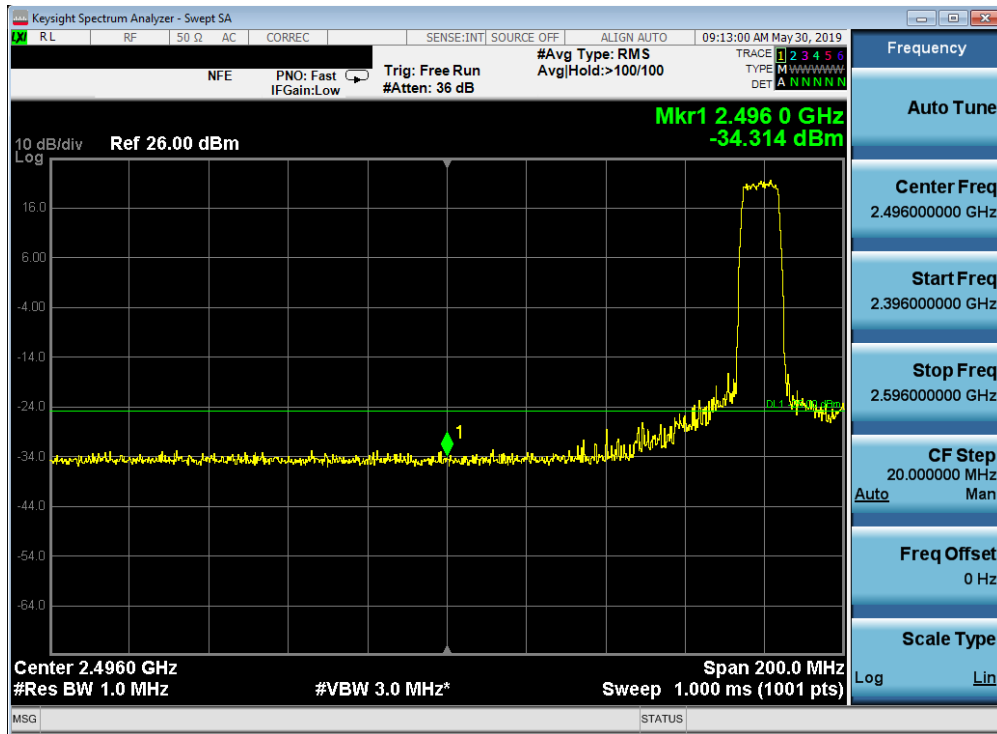


Plot 7-356. Lower ACP Plot (Band 38 - 5.0MHz QPSK - Full RB Configuration)

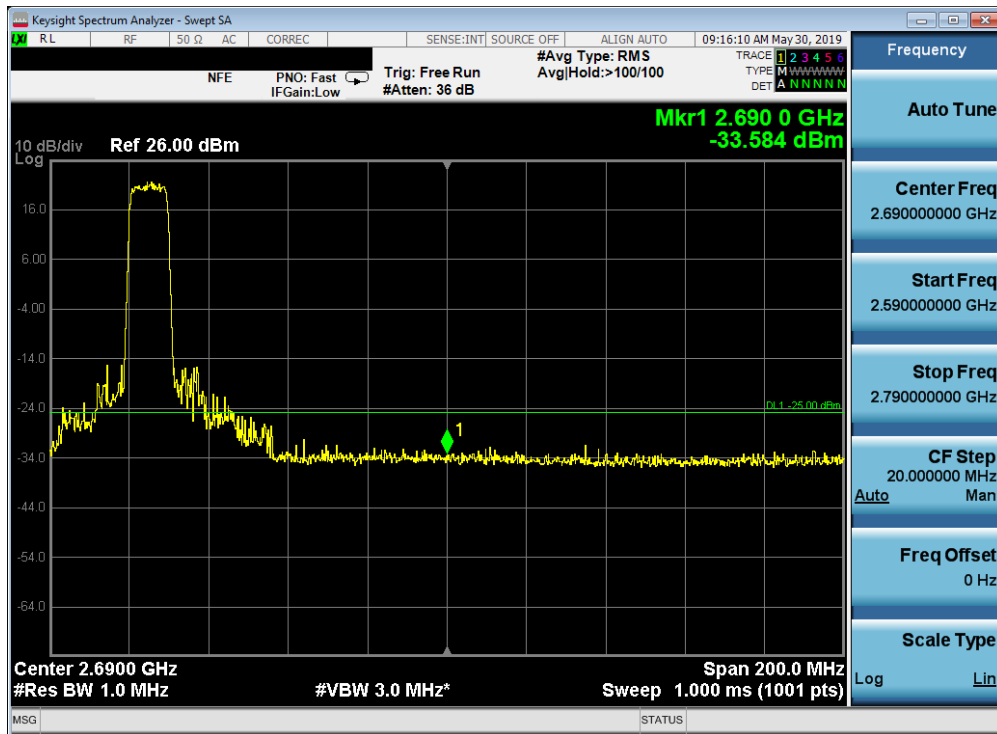


Plot 7-357. Upper ACP Plot (Band 38 - 5.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-03.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 204 of 331

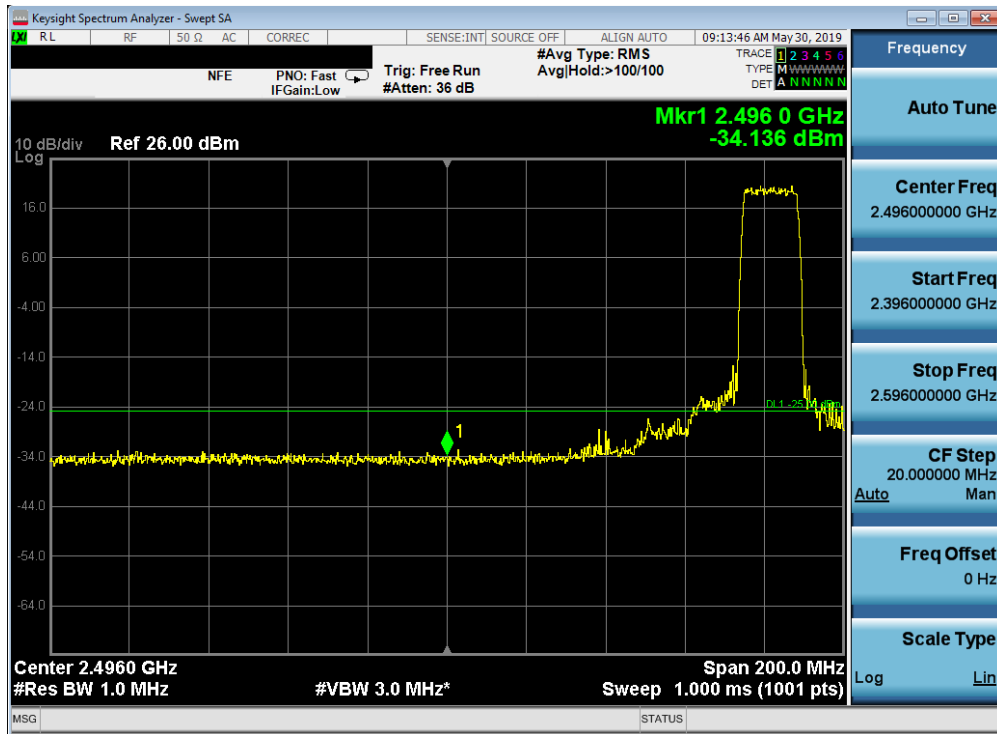


Plot 7-358. Lower ACP Plot (Band 38 - 10.0MHz QPSK - Full RB Configuration)

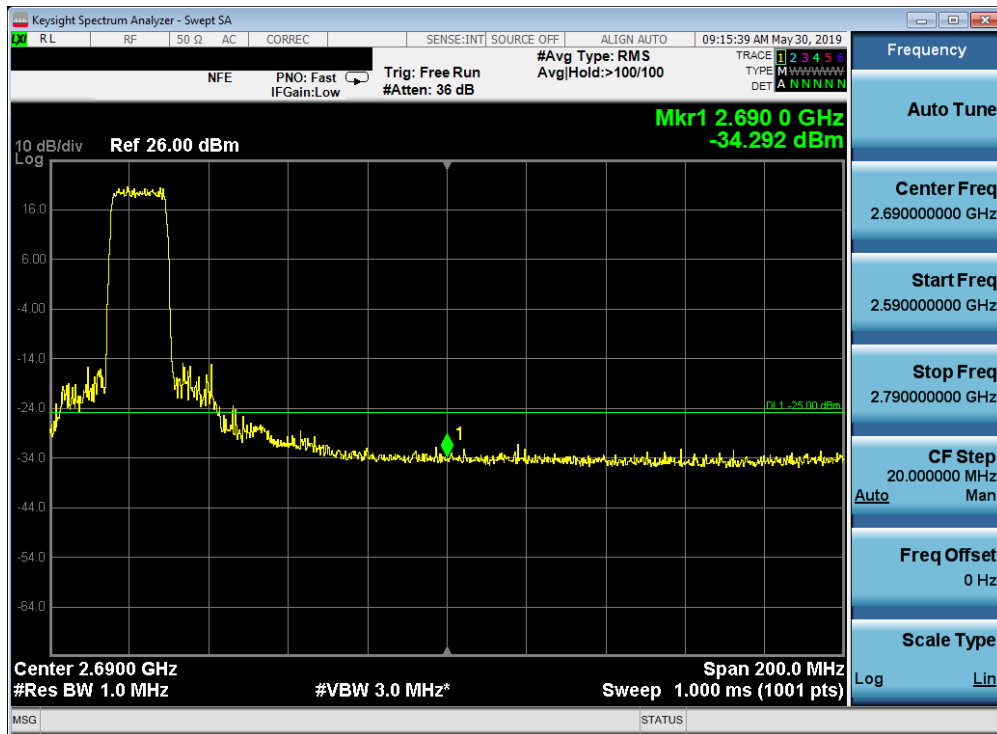


Plot 7-359. Upper ACP Plot (Band 38 - 10.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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Plot 7-360. Lower ACP Plot (Band 38 - 15.0MHz QPSK - Full RB Configuration)



Plot 7-361. Upper ACP Plot (Band 38 - 15.0MHz QPSK - Full RB Configuration)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-03.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 206 of 331

7.5 Peak-Average Ratio

Test Overview

A peak to average ratio measurement is performed at the conducted port of the EUT. The spectrum analyzers Complementary Cumulative Distribution Function (CCDF) measurement profile is used to determine the largest deviation between the average and the peak power of the EUT in a given bandwidth. The CCDF curve shows how much time the peak waveform spends at or above a given average power level. The percent of time the signal spends at or above the level defines the probability for that particular power level.

Test Procedure Used

KDB 971168 D01 v03r01 – Section 5.7.1

Test Settings

1. The signal analyzer's CCDF measurement profile is enabled
2. Frequency = carrier center frequency
3. Measurement BW $\geq$ OBW or specified reference bandwidth
4. The signal analyzer was set to collect one million samples to generate the CCDF curve
5. The measurement interval was set depending on the type of signal analyzed. For continuous signals (>98% duty cycle), the measurement interval was set to 1ms.

Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.

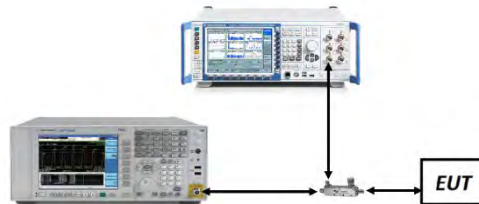


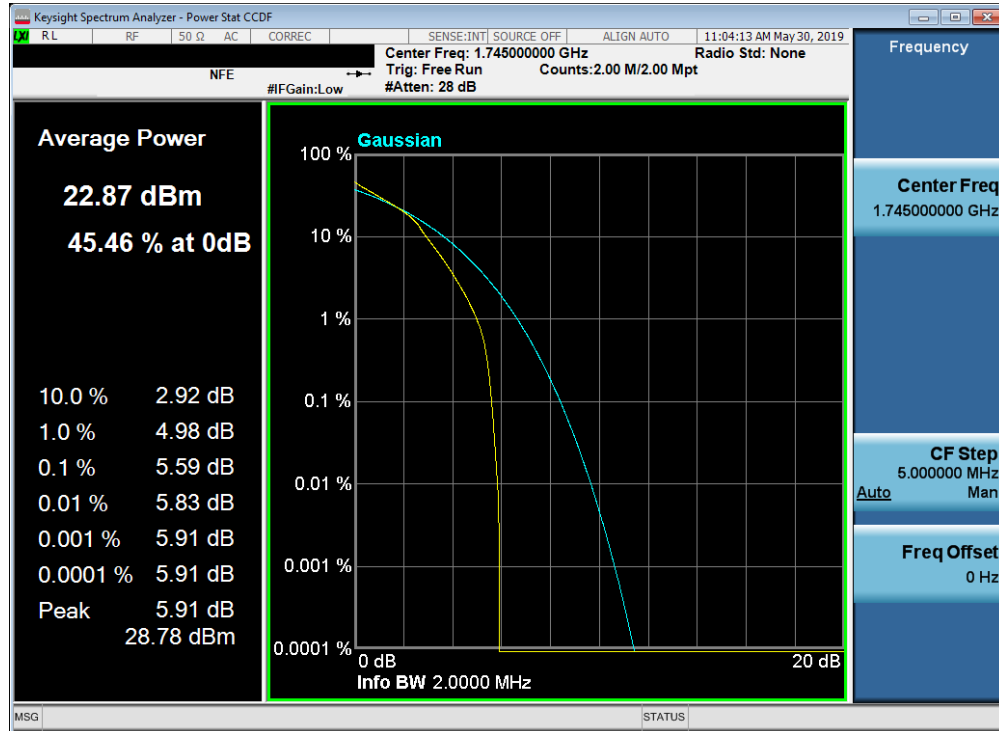
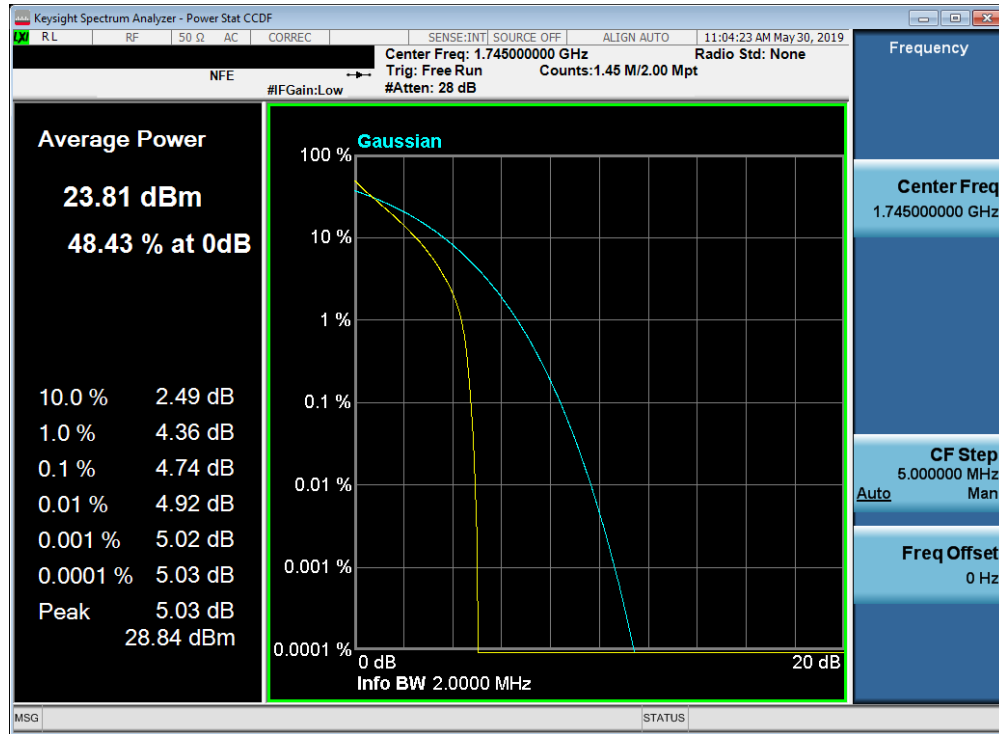
Figure 7-4. Test Instrument & Measurement Setup

Test Notes

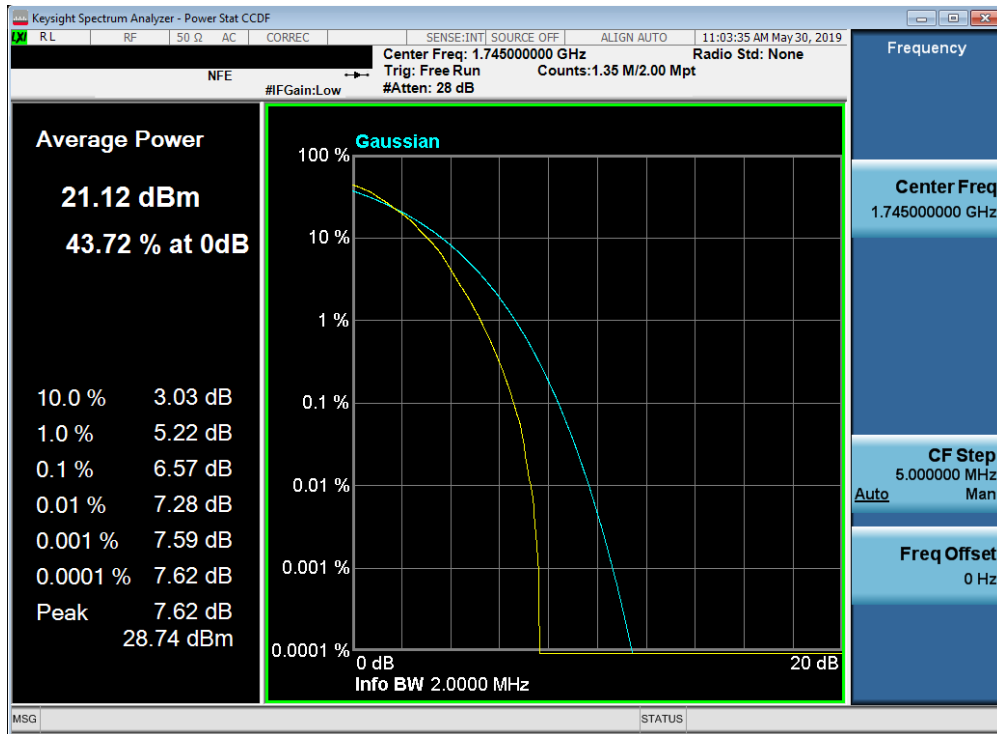
None.

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-03.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 208 of 331

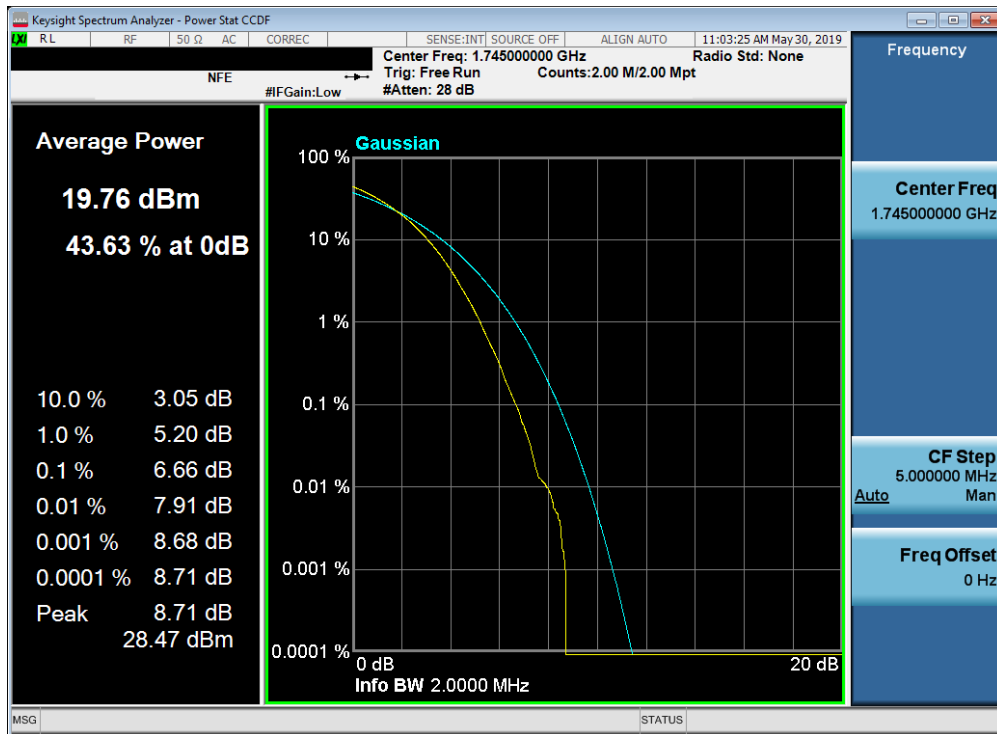
Band 66/4



FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-03.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 209 of 331

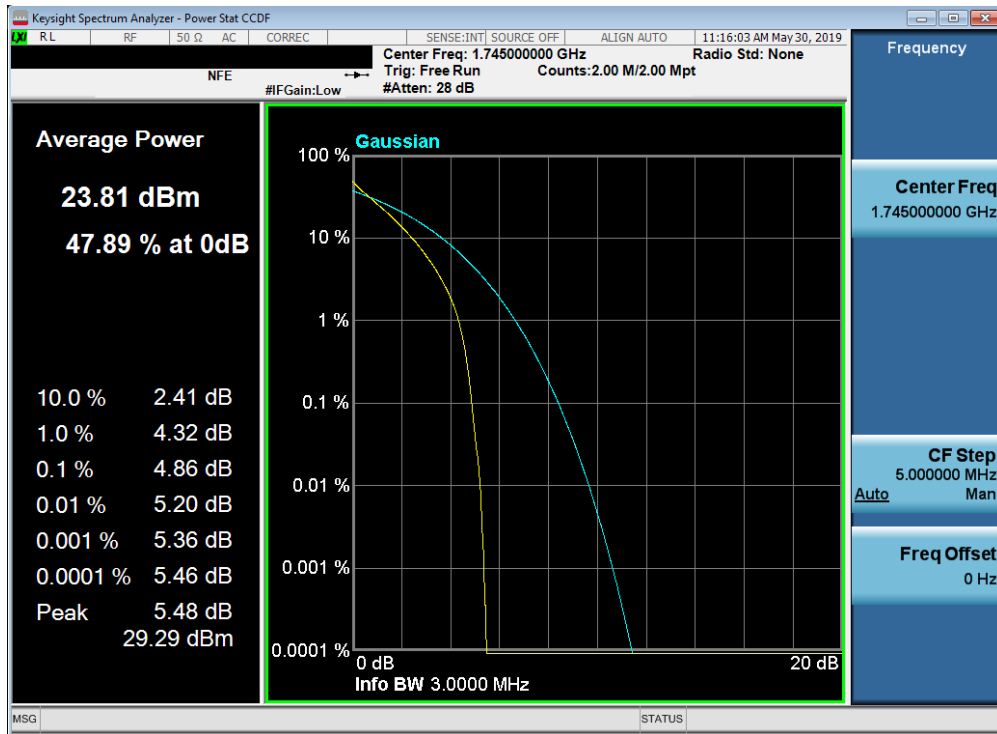


Plot 7-366. PAR Plot (Band 66/4 - 1.4MHz 64-QAM - Full RB Configuration)

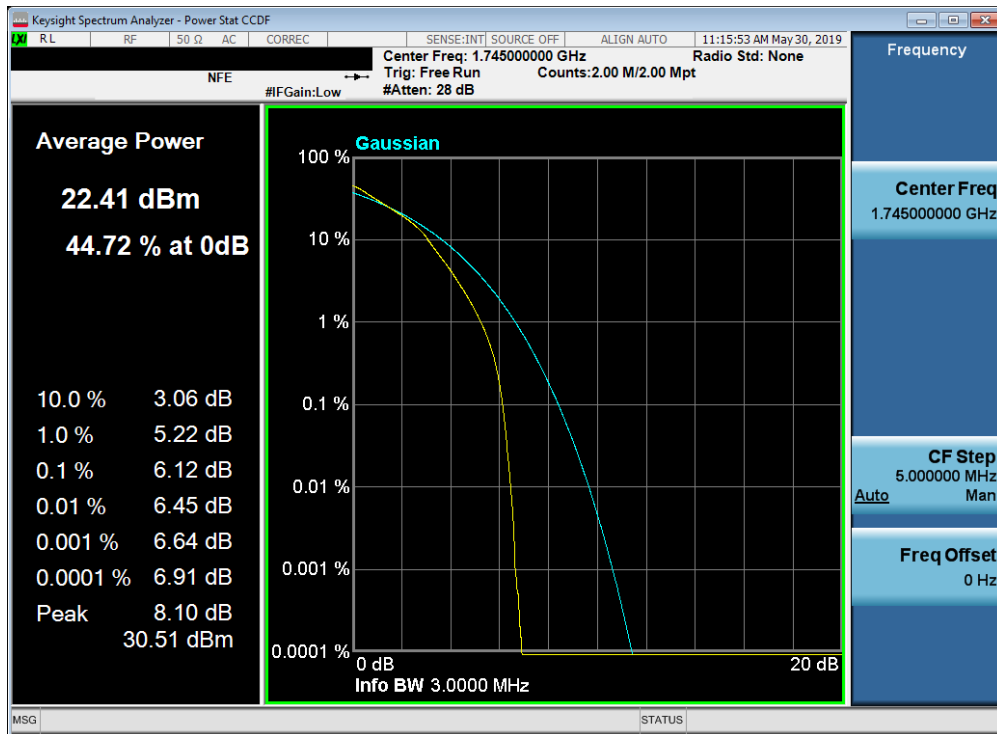


Plot 7-367. PAR Plot (Band 66/4 - 1.4MHz 256-QAM - Full RB Configuration)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-03.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 210 of 331

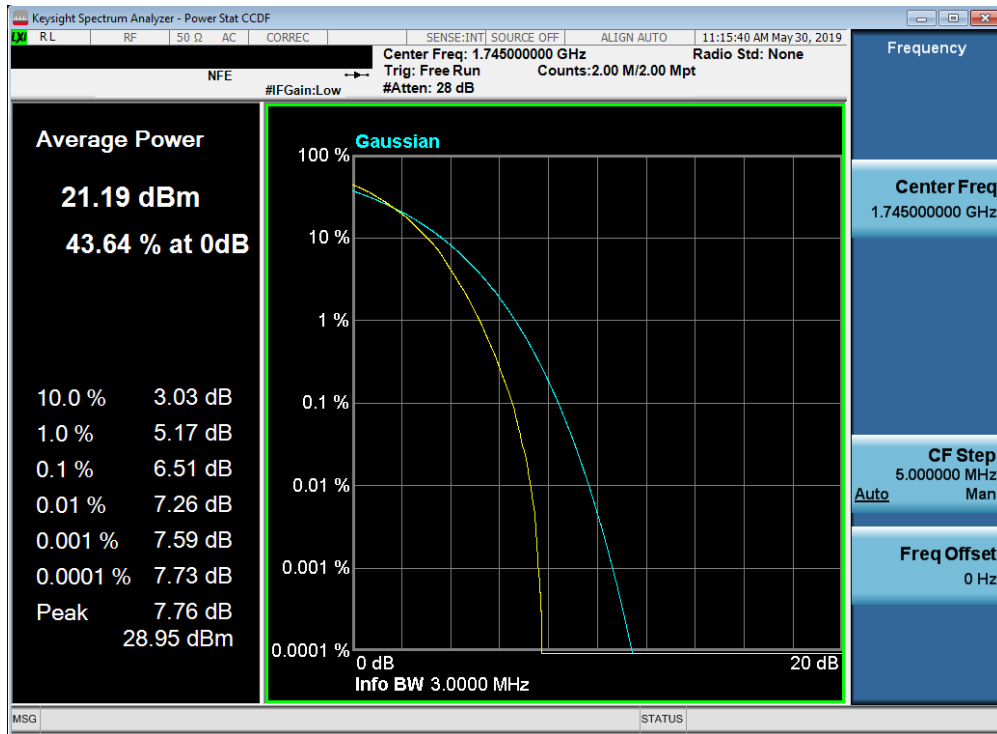


Plot 7-368. PAR Plot (Band 66/4 – 3.0MHz QPSK - Full RB Configuration)

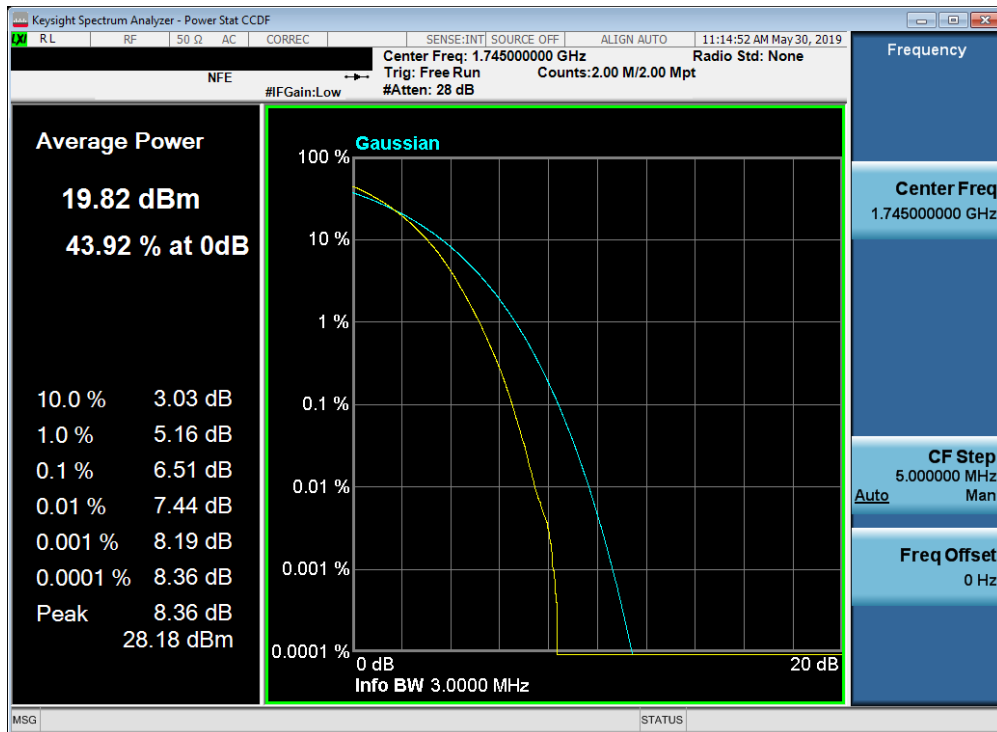


Plot 7-369. PAR Plot (Band 66/4 – 3.0MHz 16-QAM - Full RB Configuration)

FCC ID: A3LSMN970U	MEASUREMENT REPORT (CERTIFICATION)			Approved by: Quality Manager
Test Report S/N: 1M1905220084-03.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 211 of 331



Plot 7-370. PAR Plot (Band 66/4 - 3.0MHz 64-QAM - Full RB Configuration)



Plot 7-371. PAR Plot (Band 66/4 - 3.0MHz 256-QAM - Full RB Configuration)

FCC ID: A3LSMN970U	PCTEST ENGINEERING LABORATORY, INC.	MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1905220084-03.A3L	Test Dates: 05/22 - 07/10/2019	EUT Type: Portable Handset		Page 212 of 331