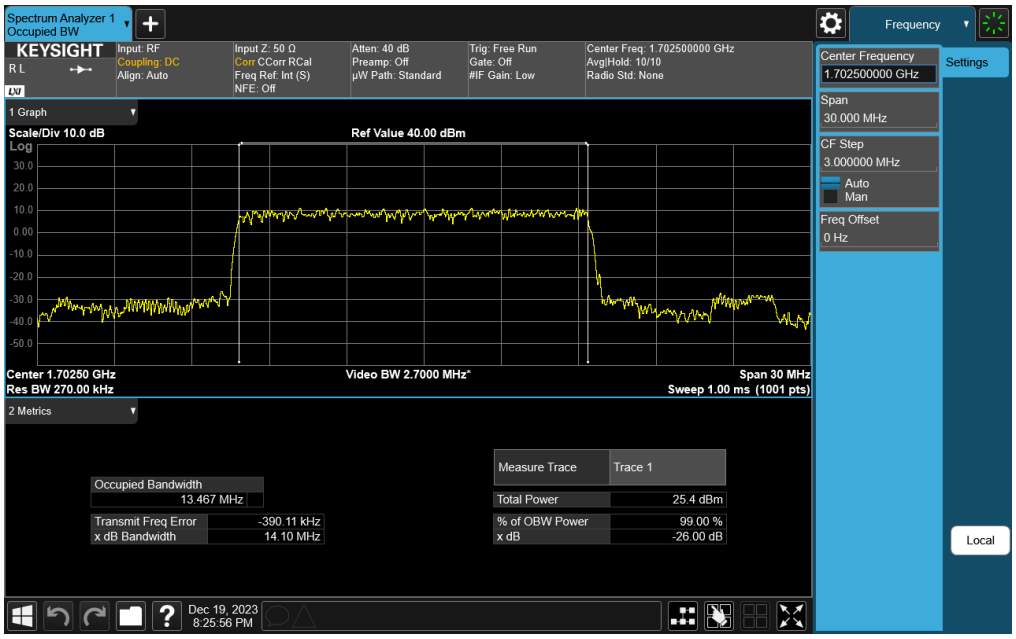
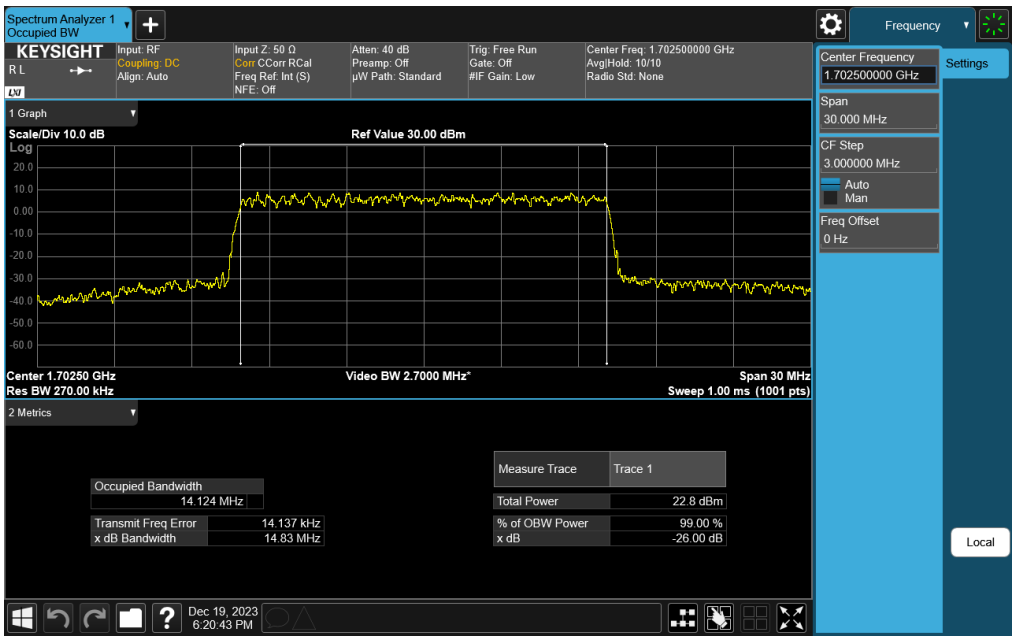
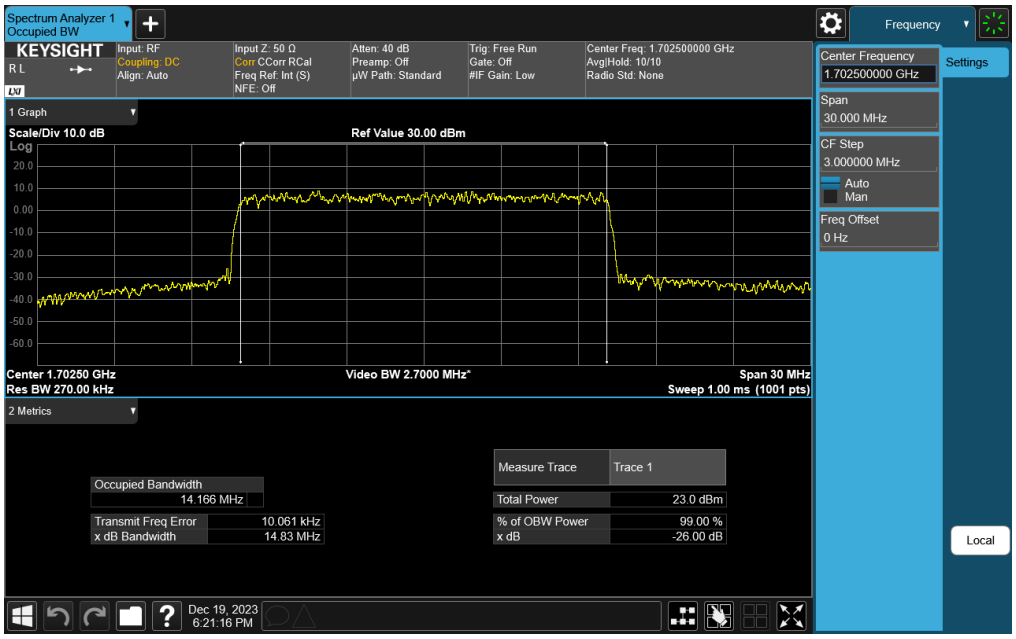


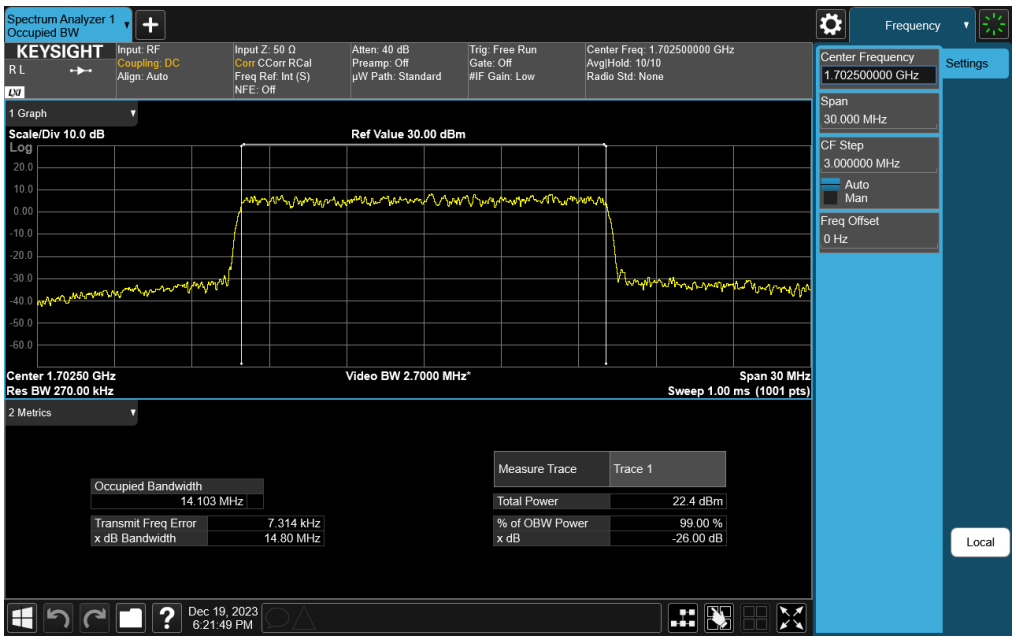
Plot 7-115. Occupied Bandwidth Plot (NR Band n70 - 15MHz DFT-s-OFDM π/2 BPSK - Full RB)



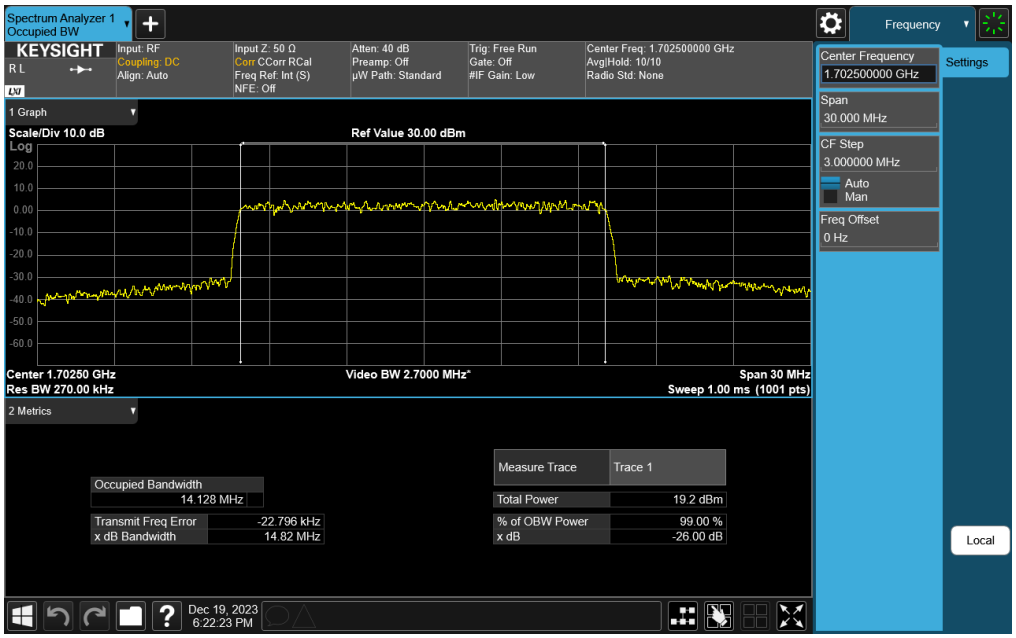
Plot 7-116. Occupied Bandwidth Plot (NR Band n70 - 15MHz QPSK - Full RB)



Plot 7-117. Occupied Bandwidth Plot (NR Band n70 - 15MHz CP-OFDM 16-QAM - Full RB)

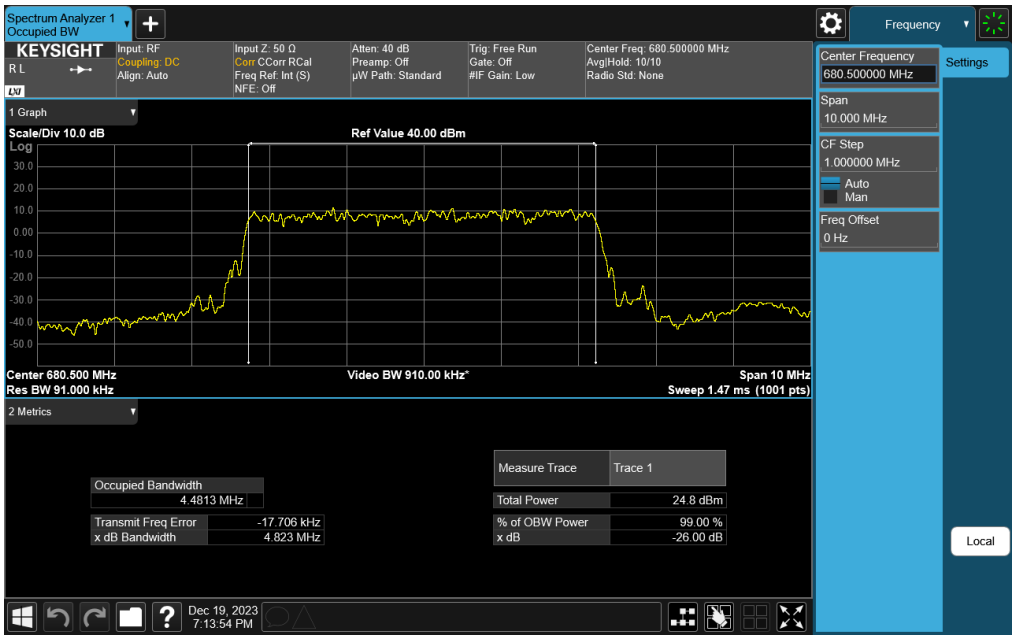


Plot 7-118. Occupied Bandwidth Plot (NR Band n70 - 15MHz CP-OFDM 64-QAM - Full RB)

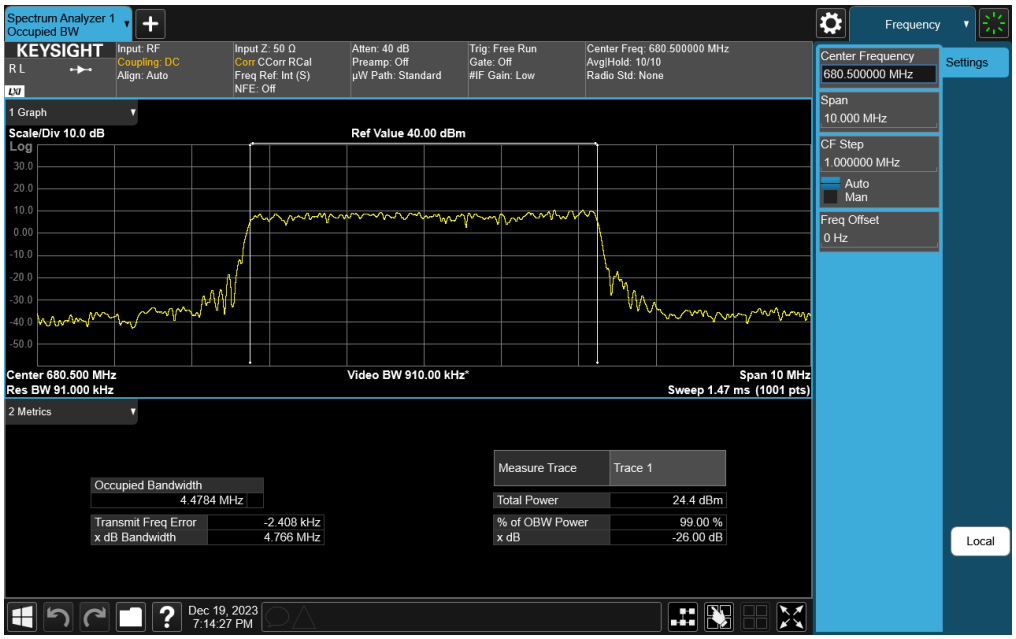


Plot 7-119. Occupied Bandwidth Plot (NR Band n70 - 15MHz CP-OFDM 256-QAM - Full RB)

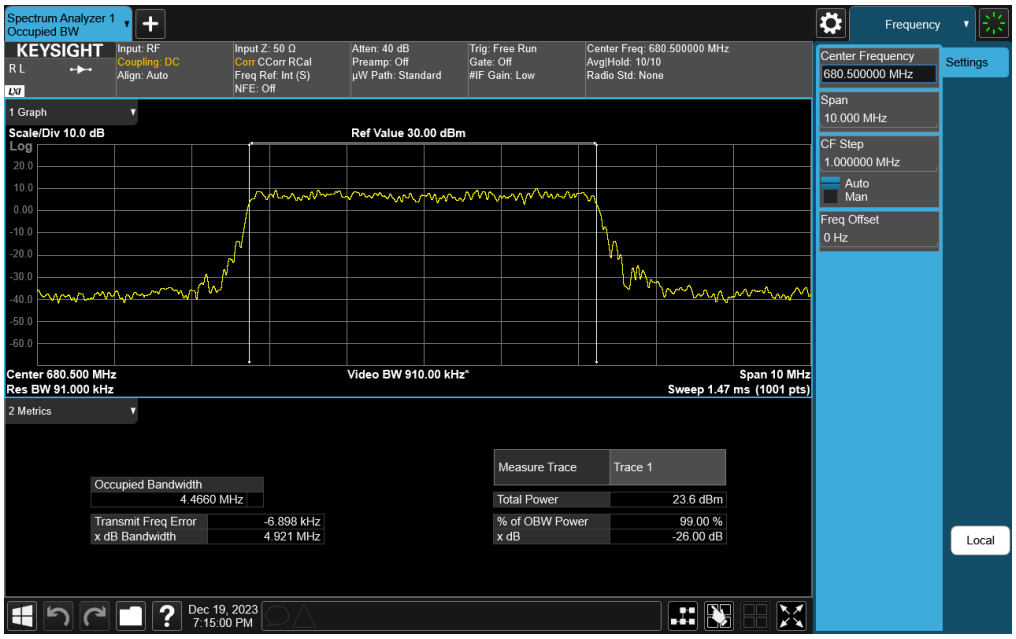
NR Band n71



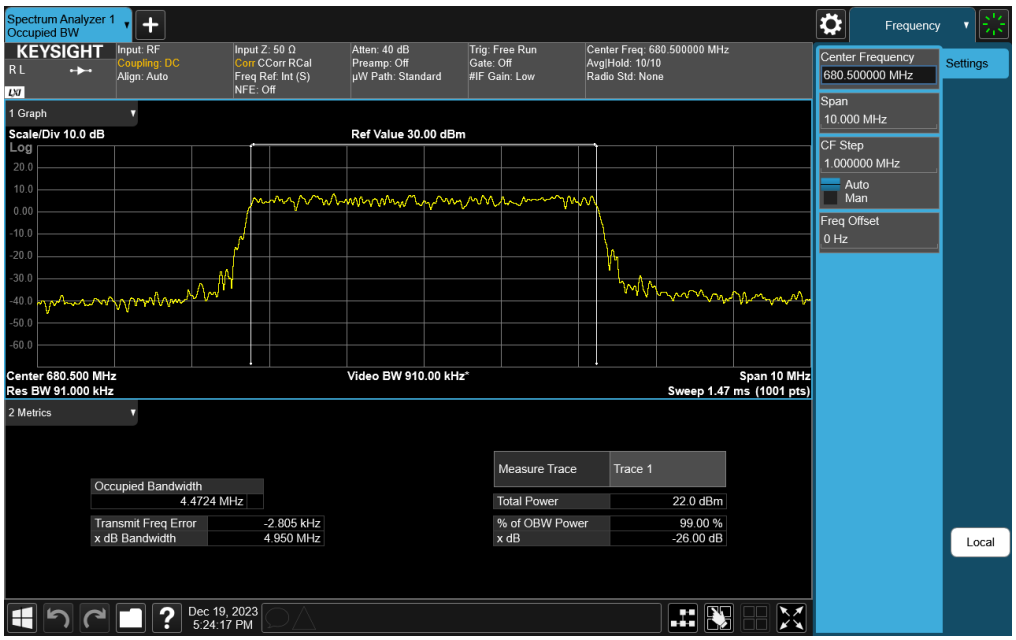
Plot 7-120. Occupied Bandwidth Plot (NR Band n71 - 5MHz DFT-s-OFDM π/2 BPSK - Full RB)



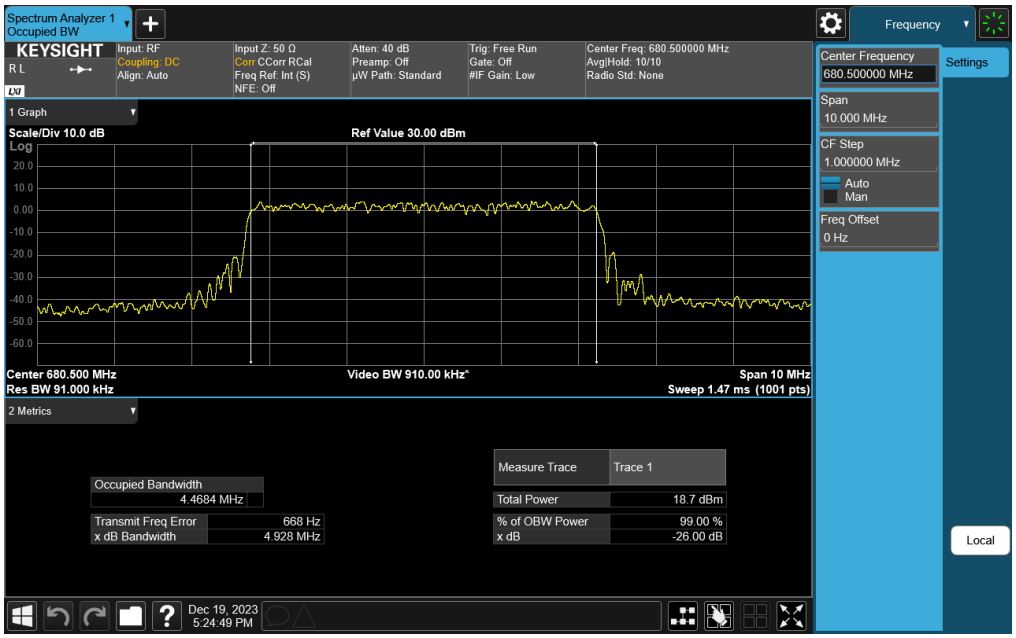
Plot 7-121. Occupied Bandwidth Plot (NR Band n71 - 5MHz DFT-s-OFDM QPSK - Full RB)



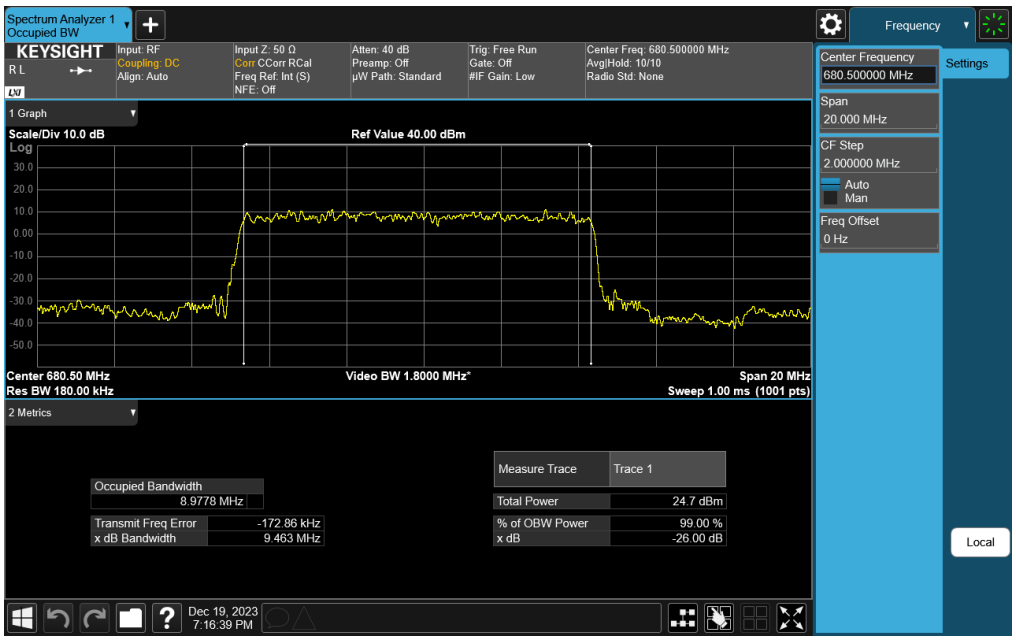
Plot 7-122. Occupied Bandwidth Plot (NR Band n71 - 5MHz DFT-s--OFDM 16-QAM - Full RB)



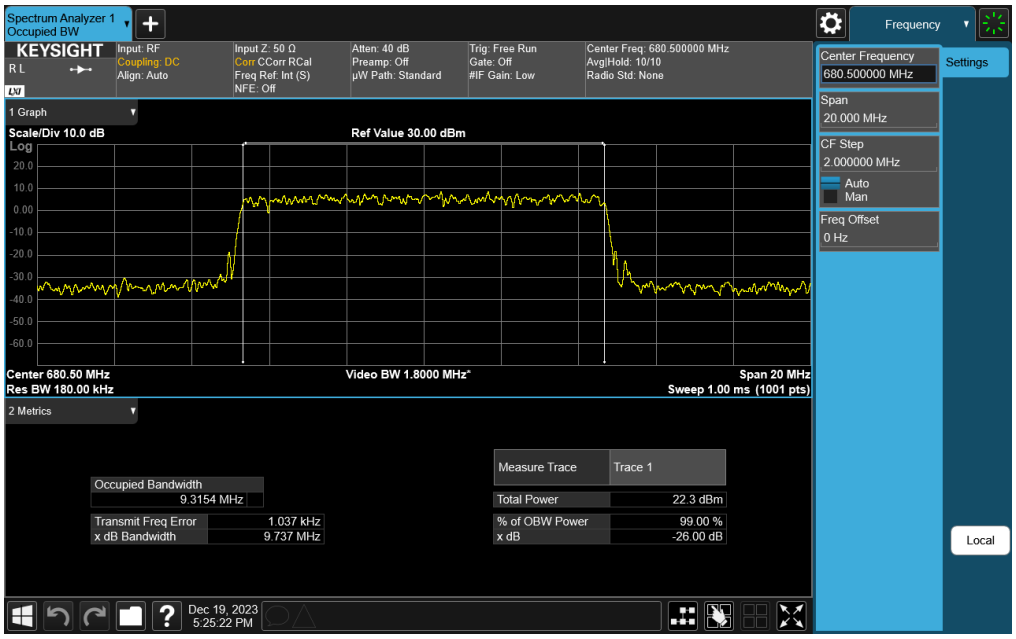
Plot 7-123. Occupied Bandwidth Plot (NR Band n71 - 5MHz CP-OFDM 64-QAM - Full RB)



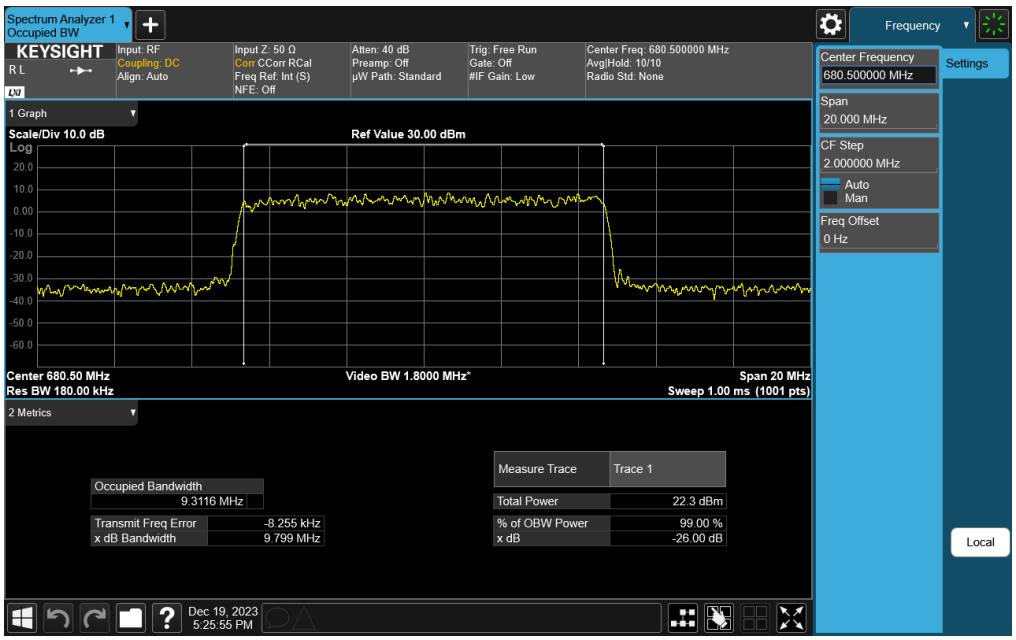
Plot 7-124. Occupied Bandwidth Plot (NR Band n71 - 5MHz CP-OFDM 256-QAM - Full RB)



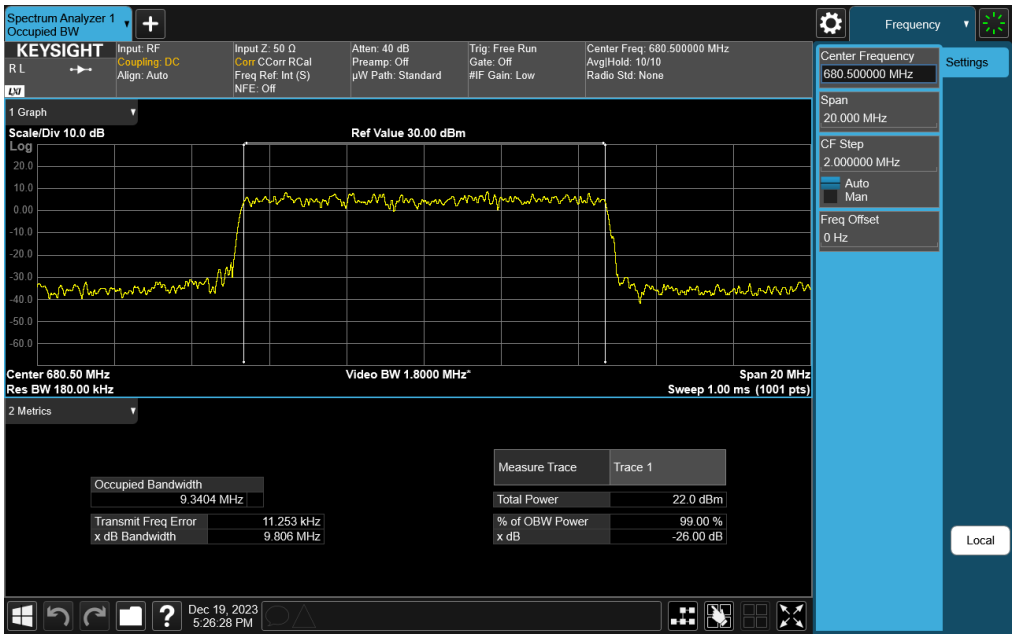
Plot 7-125. Occupied Bandwidth Plot (NR Band n71 - 10MHz DFT-s-OFDM π/2 BPSK - Full RB)



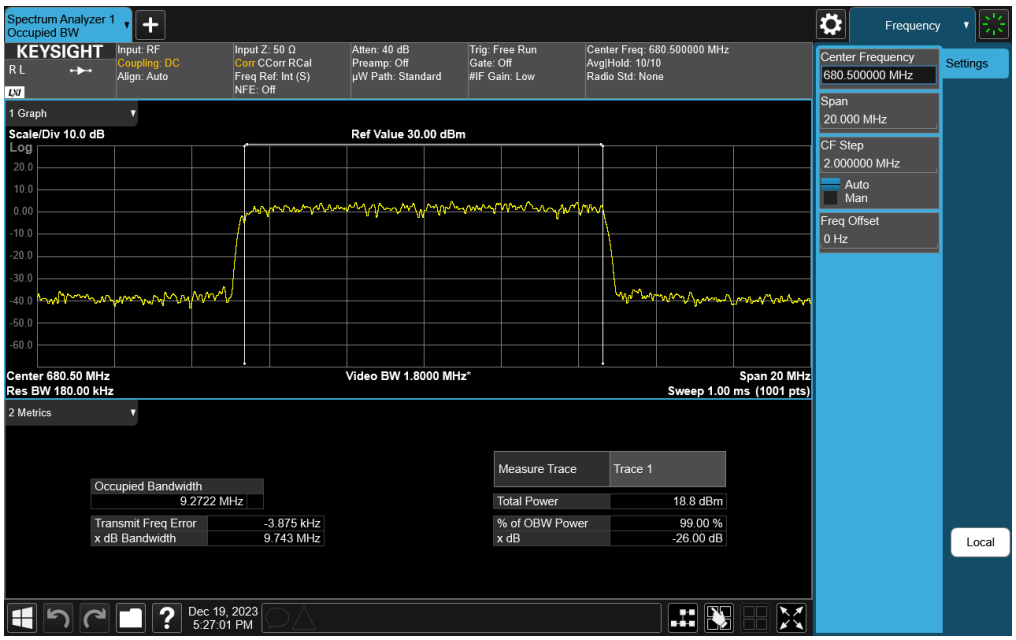
Plot 7-126. Occupied Bandwidth Plot (NR Band n71 - 10MHz CP-OFDM QPSK - Full RB)



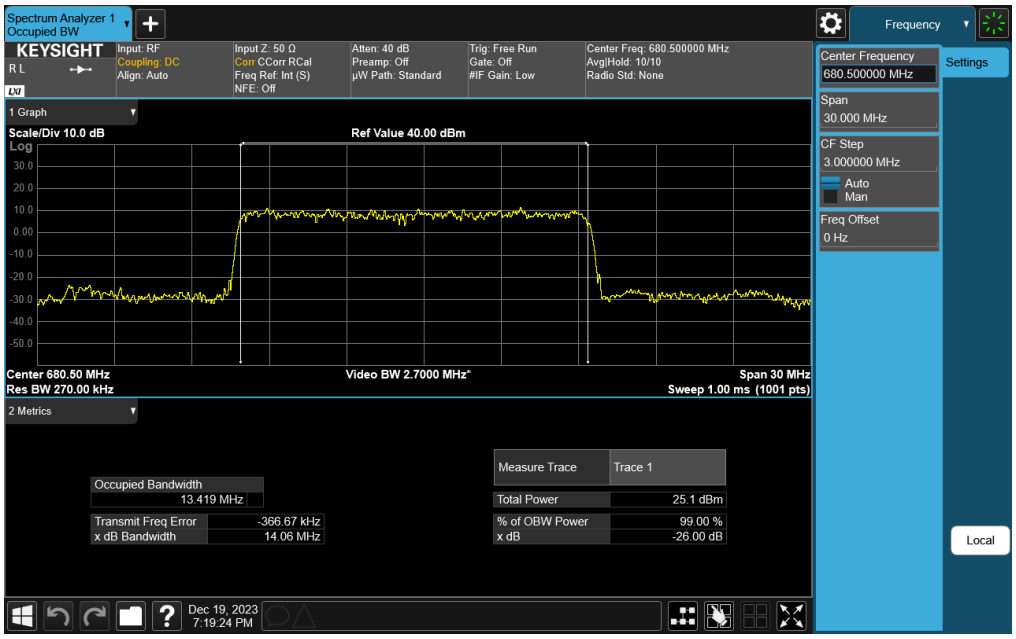
Plot 7-127. Occupied Bandwidth Plot (NR Band n71 - 10MHz CP-OFDM 16-QAM - Full RB)



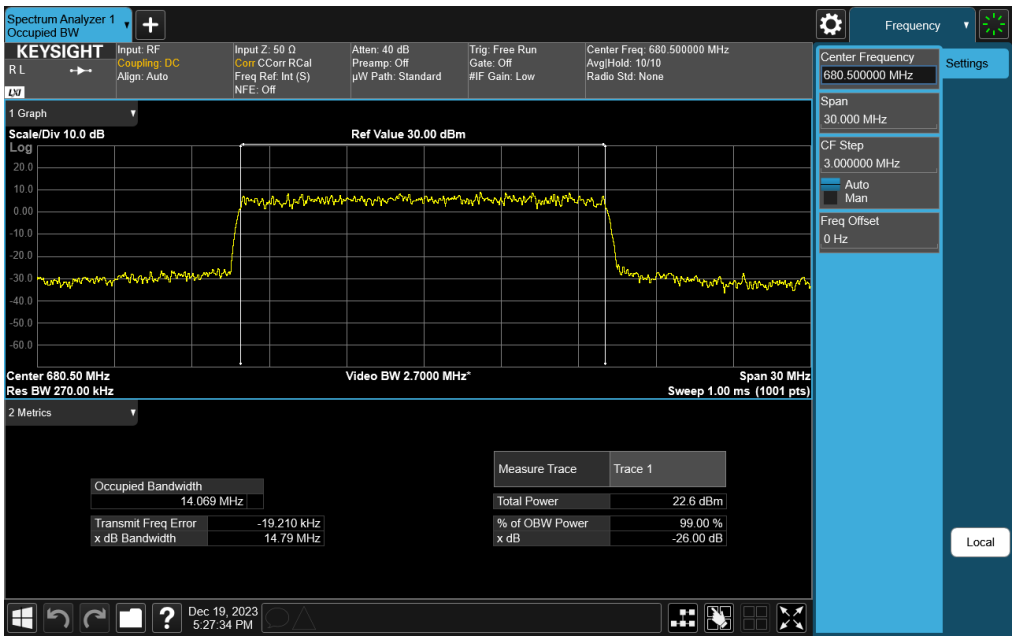
Plot 7-128. Occupied Bandwidth Plot (NR Band n71 - 10MHz CP-OFDM 64-QAM - Full RB)



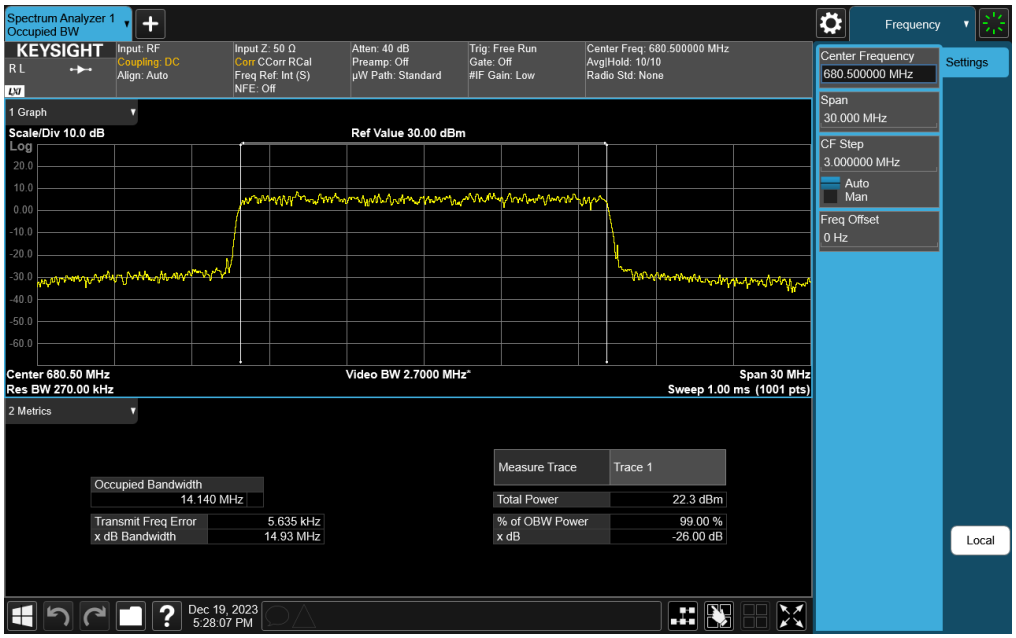
Plot 7-129. Occupied Bandwidth Plot (NR Band n71 - 10MHz CP-OFDM 256-QAM - Full RB)



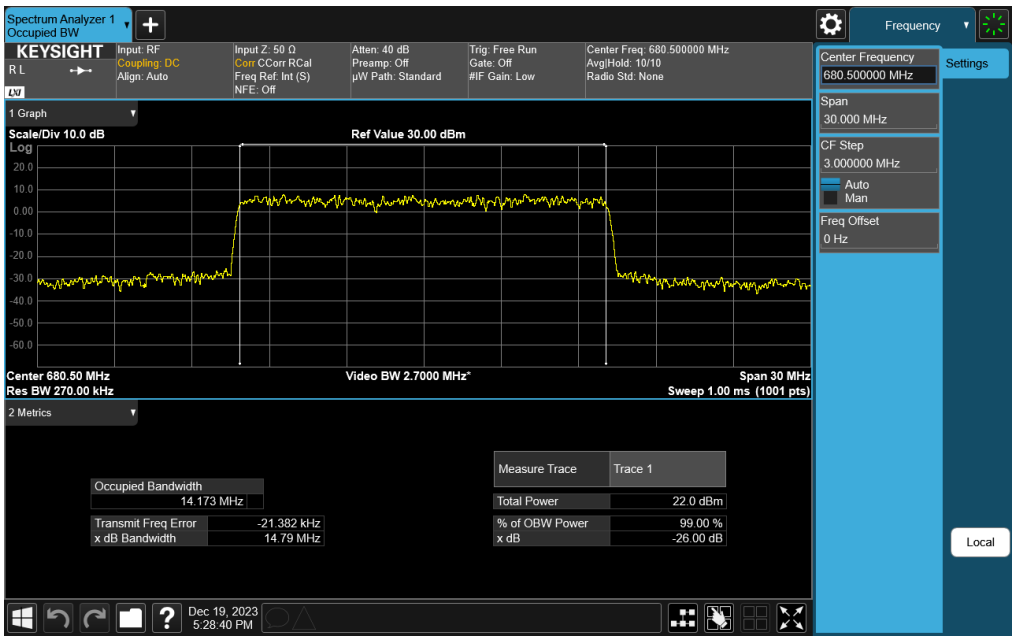
Plot 7-130. Occupied Bandwidth Plot (NR Band n71 - 15MHz DFT-s-OFDM π/2 BPSK - Full RB)



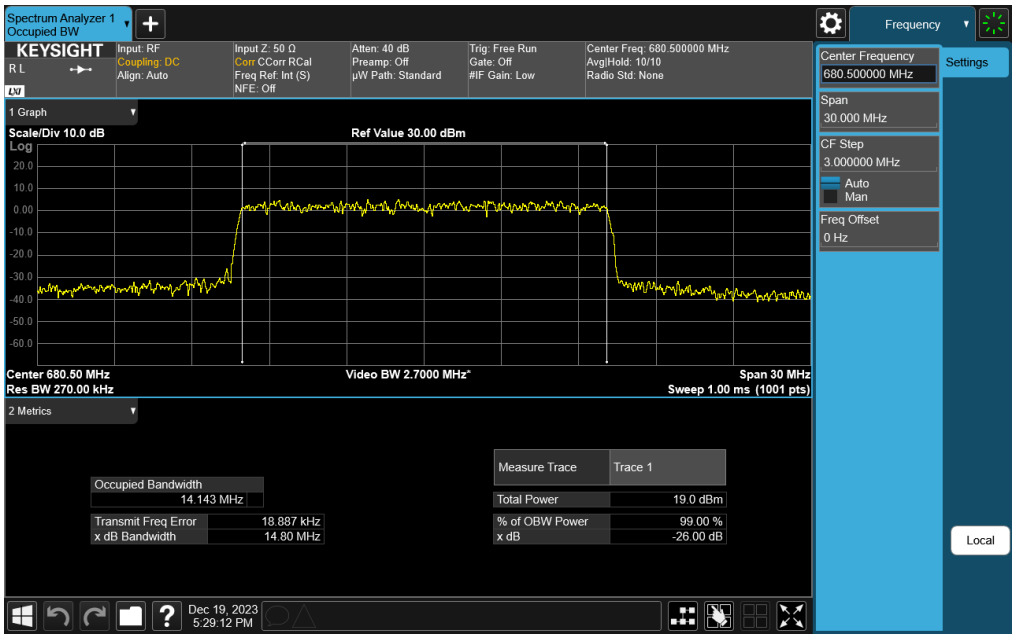
Plot 7-131. Occupied Bandwidth Plot (NR Band n71 - 15MHz QPSK - Full RB)



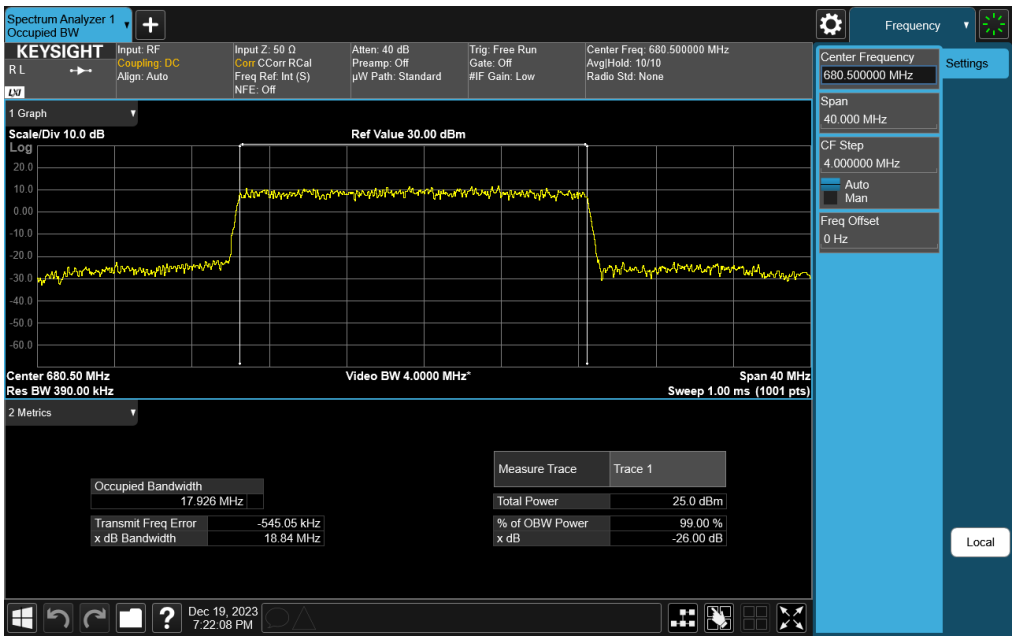
Plot 7-132. Occupied Bandwidth Plot (NR Band n71 - 15MHz CP-OFDM 16-QAM - Full RB)



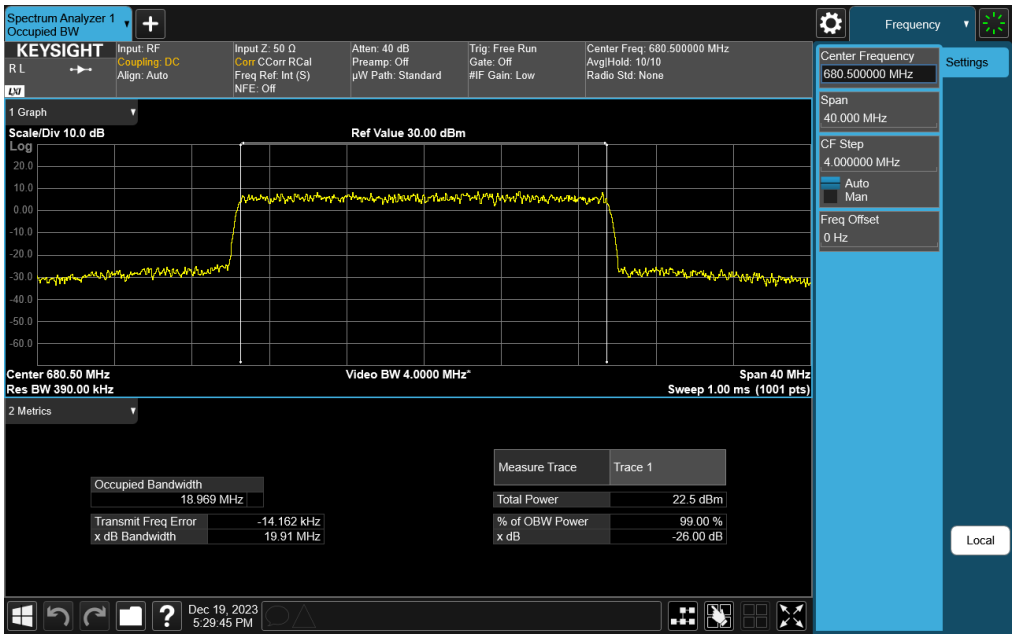
Plot 7-133. Occupied Bandwidth Plot (NR Band n71 - 15MHz CP-OFDM 64-QAM - Full RB)



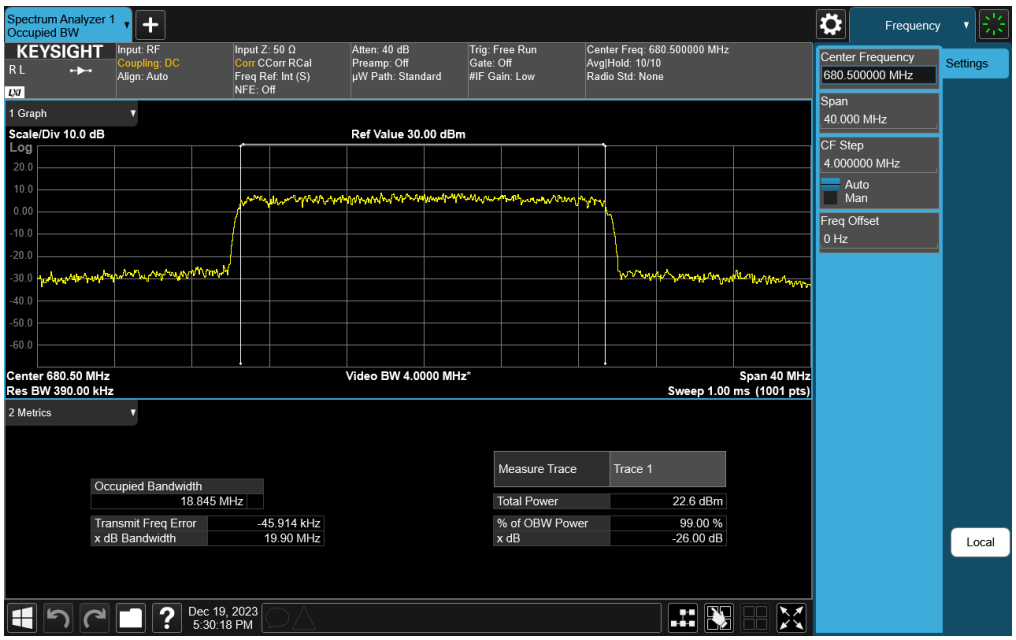
Plot 7-134. Occupied Bandwidth Plot (NR Band n71 - 15MHz CP-OFDM 256-QAM - Full RB)



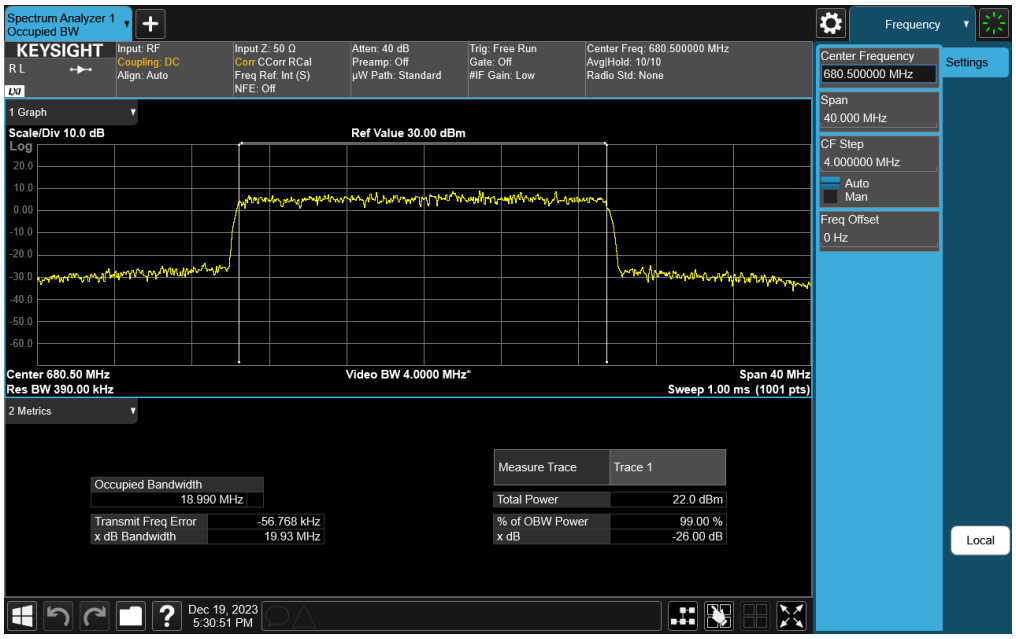
Plot 7-135. Occupied Bandwidth Plot (NR Band n71 - 20MHz DFT-s-OFDM π/2 BPSK - Full RB)



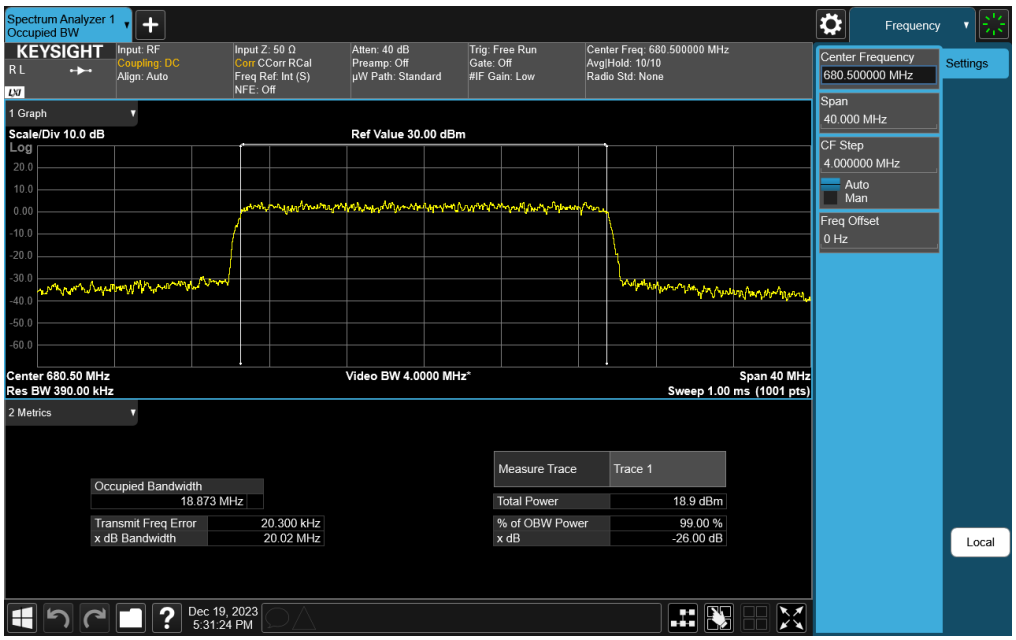
Plot 7-136. Occupied Bandwidth Plot (NR Band n71 - 20MHz CP-OFDM QPSK - Full RB)



Plot 7-137. Occupied Bandwidth Plot (NR Band n71 - 20MHz CP-OFDM 16-QAM - Full RB)

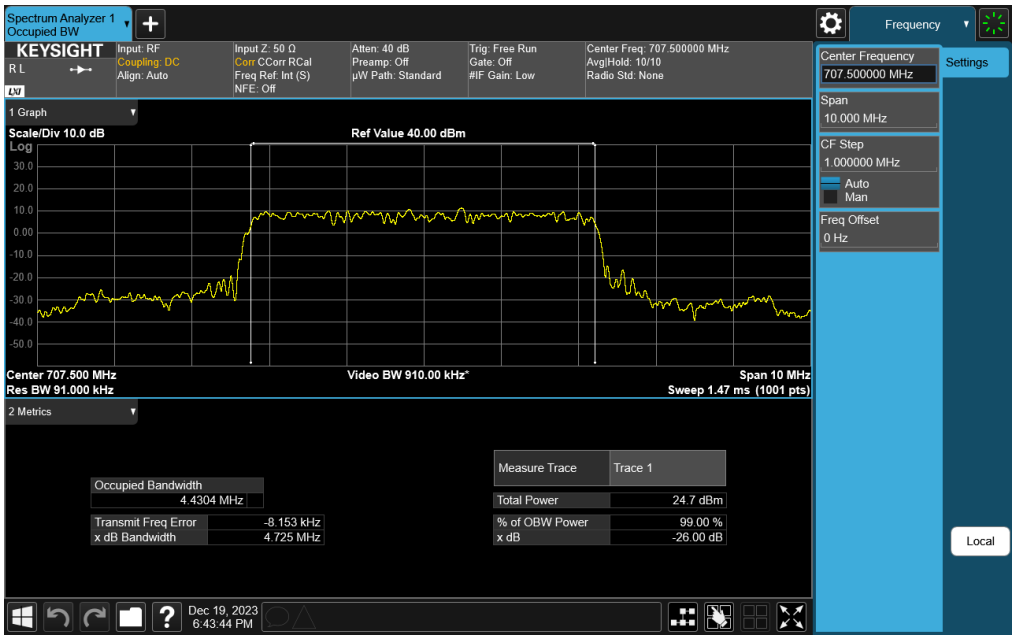


Plot 7-138. Occupied Bandwidth Plot (NR Band n71 - 20MHz CP-OFDM 64-QAM - Full RB)

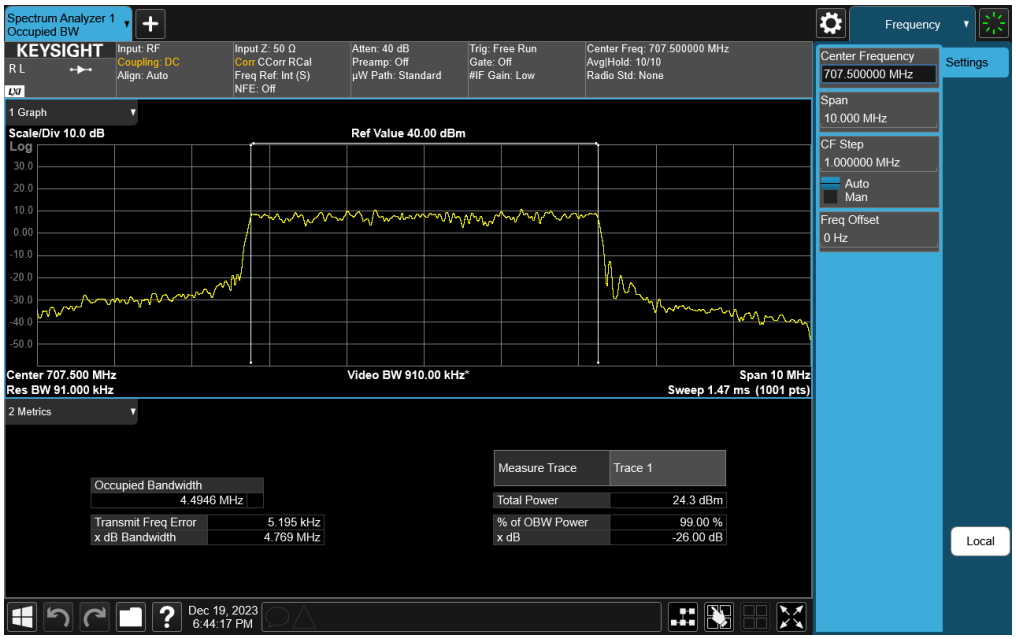


Plot 7-139. Occupied Bandwidth Plot (NR Band n71 - 20MHz CP-OFDM 256-QAM - Full RB)

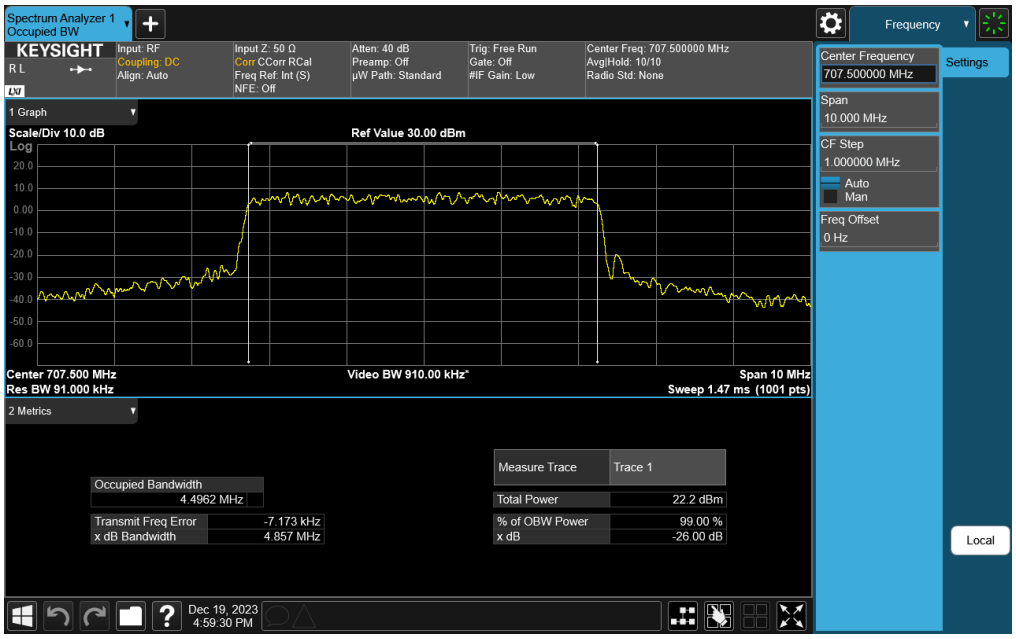
NR Band n12



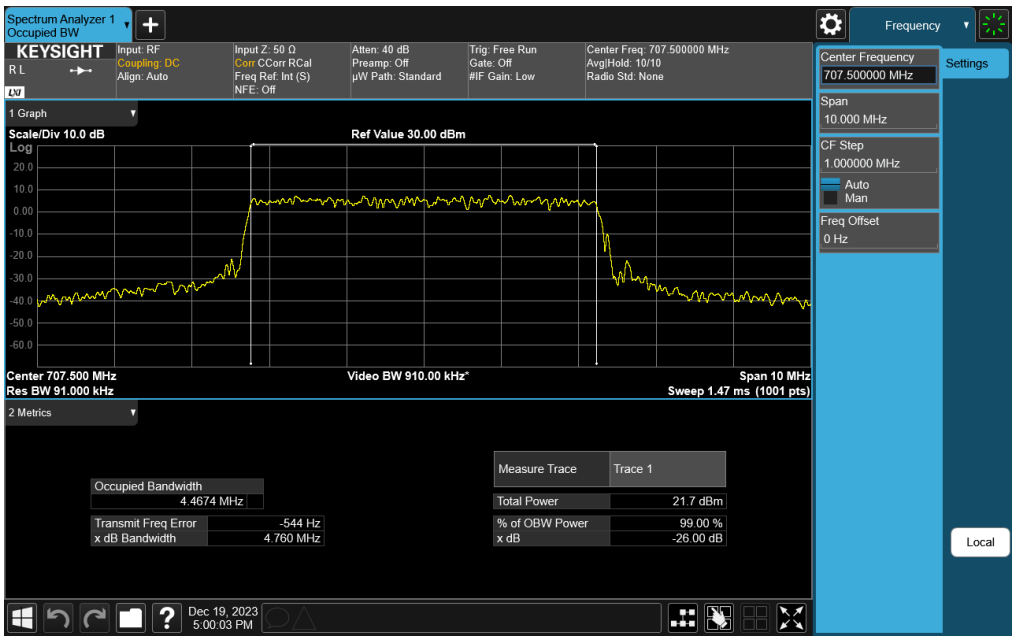
Plot 7-140. Occupied Bandwidth Plot (NR Band n12 - 5MHz DFT-s-OFDM π/2 BPSK - Full RB)



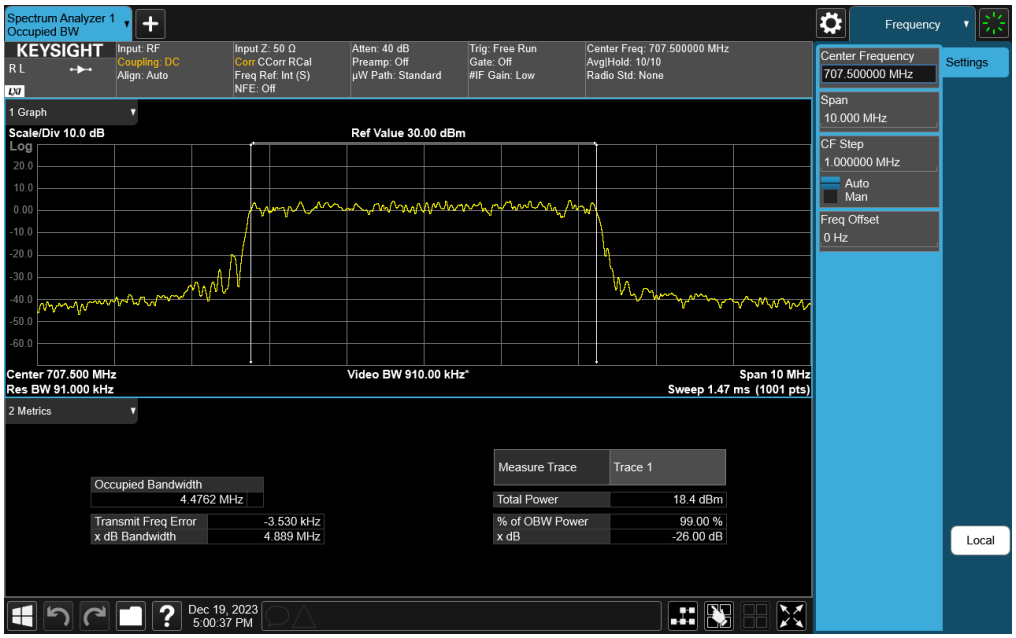
Plot 7-141. Occupied Bandwidth Plot (NR Band n12 - 5MHz DFT-s-OFDM QPSK - Full RB)



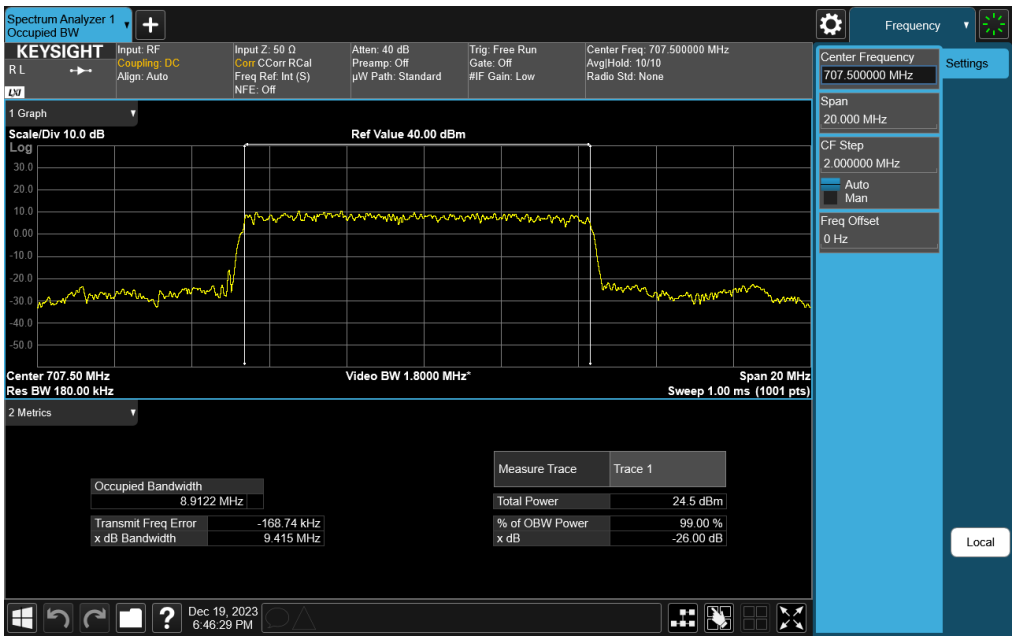
Plot 7-142. Occupied Bandwidth Plot (NR Band n12 - 5MHz CP-OFDM 16-QAM - Full RB)



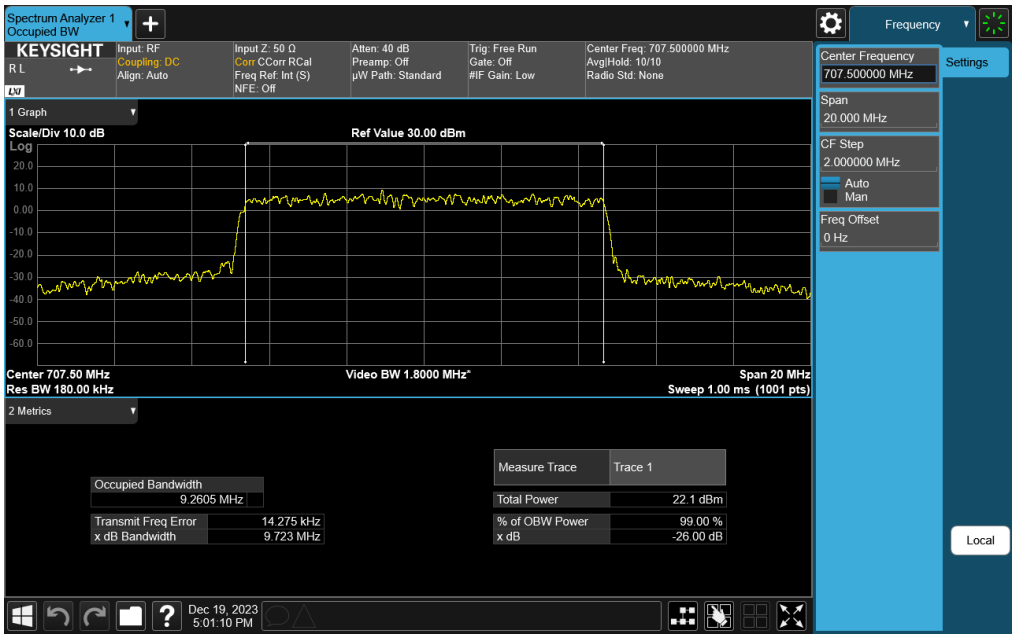
Plot 7-143. Occupied Bandwidth Plot (NR Band n12 - 5MHz CP-OFDM 64-QAM - Full RB)



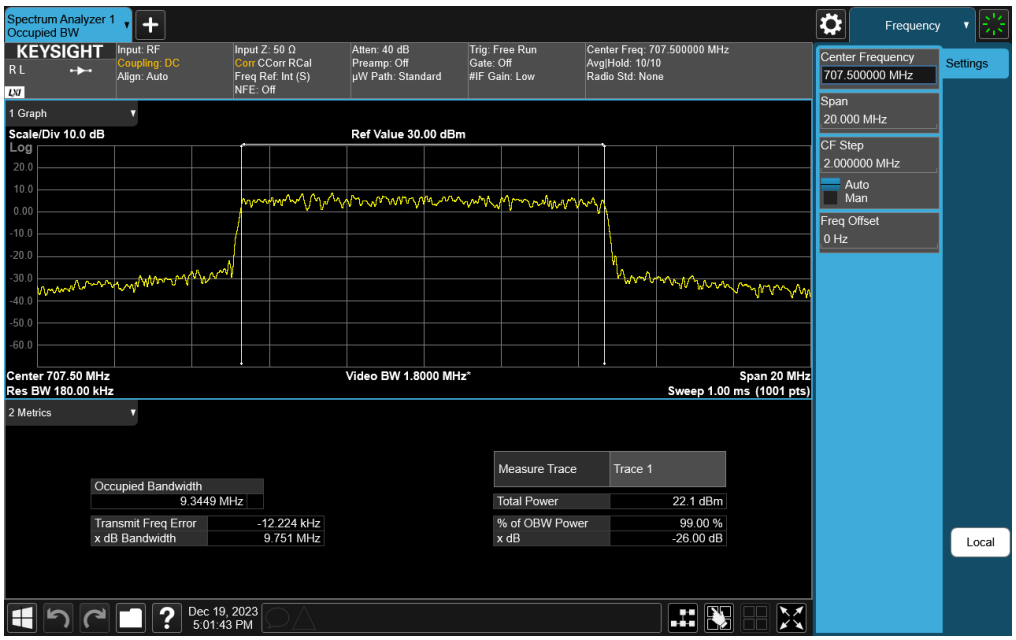
Plot 7-144. Occupied Bandwidth Plot (NR Band n12 - 5MHz CP-OFDM 256-QAM - Full RB)



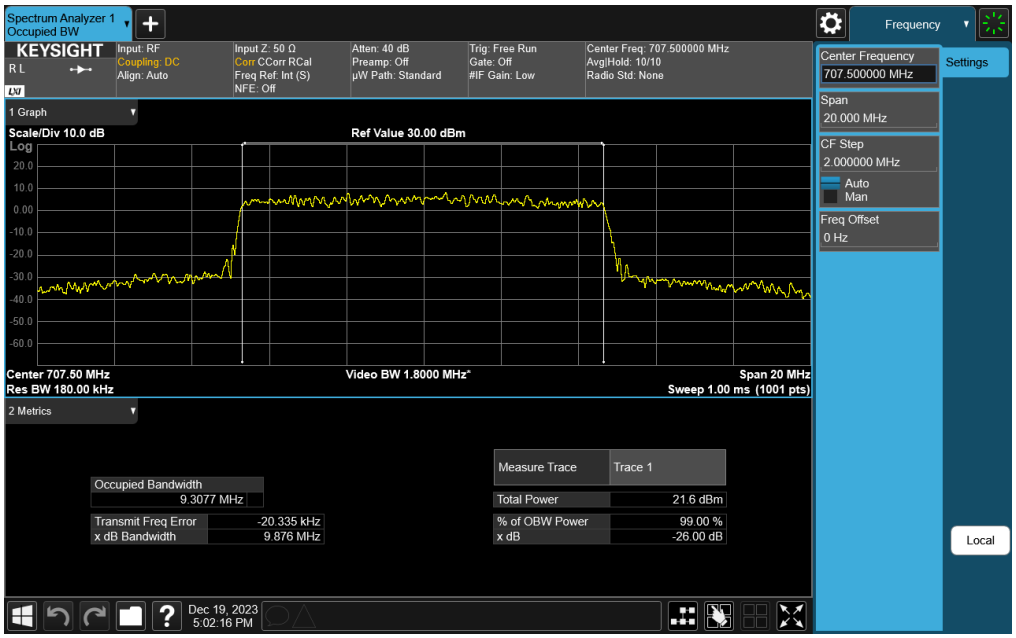
Plot 7-145. Occupied Bandwidth Plot (NR Band n12 - 10MHz DFT-s-OFDM π/2 BPSK - Full RB)



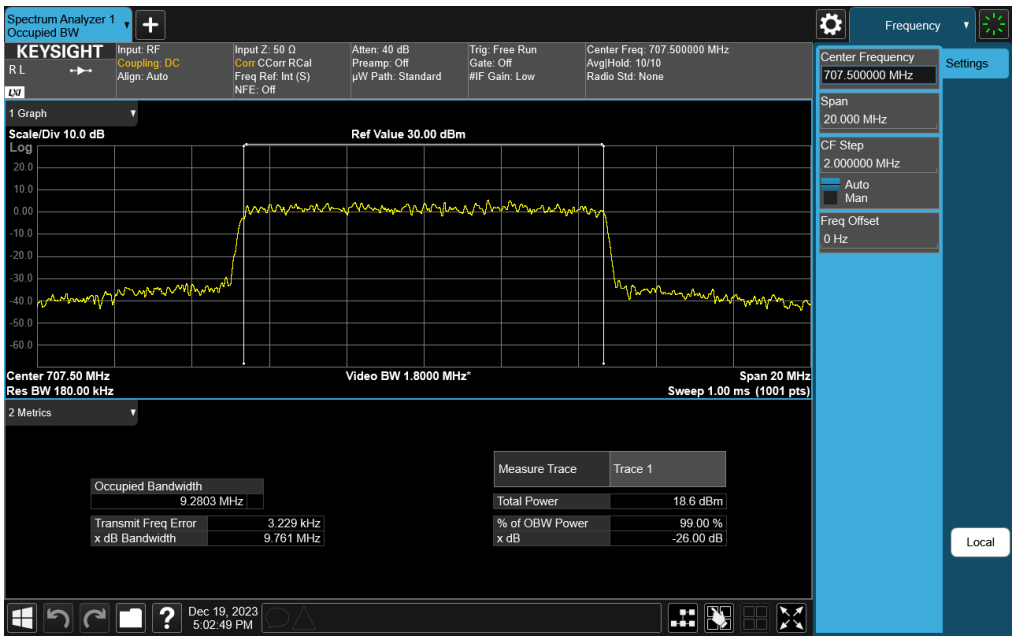
Plot 7-146. Occupied Bandwidth Plot (NR Band n12 - 10MHz CP-OFDM QPSK - Full RB)



Plot 7-147. Occupied Bandwidth Plot (NR Band n12 - 10MHz CP-OFDM 16-QAM - Full RB)

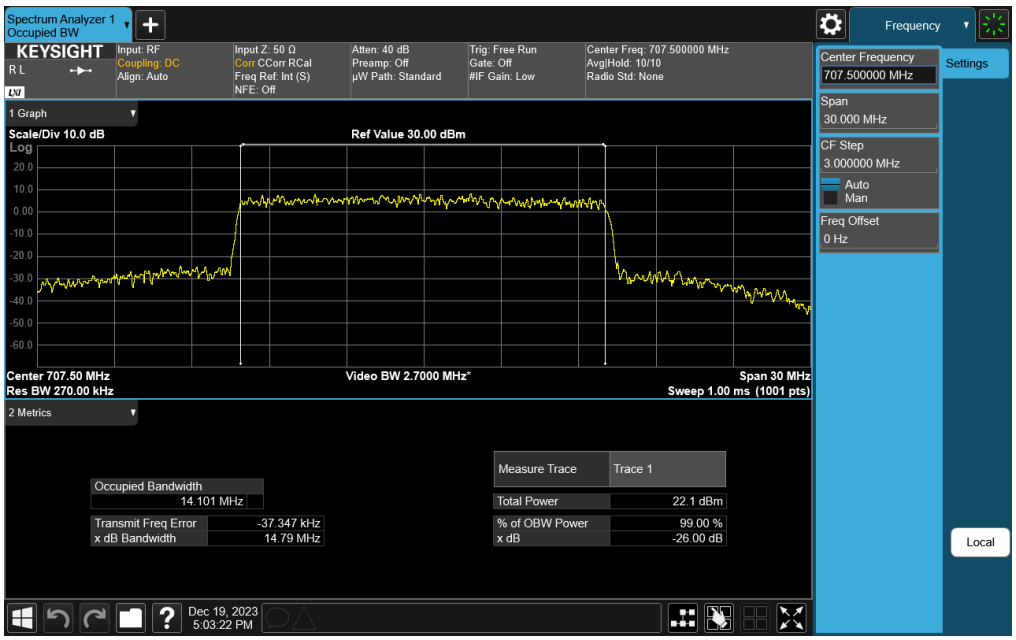


Plot 7-148. Occupied Bandwidth Plot (NR Band n12 - 10MHz CP-OFDM 64-QAM - Full RB)

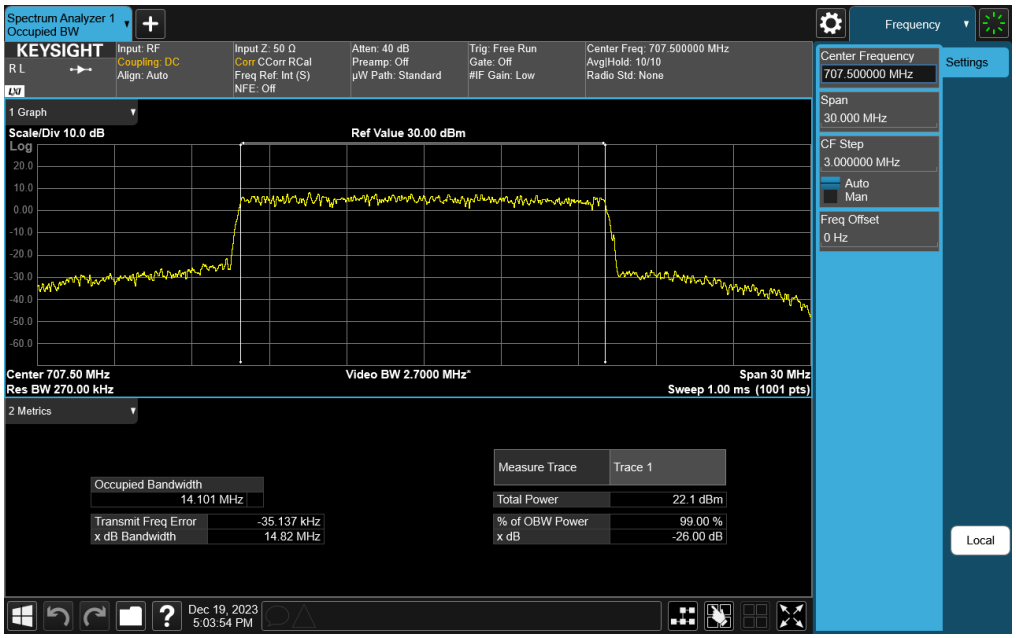


Plot 7-149. Occupied Bandwidth Plot (NR Band n12 - 10MHz CP-OFDM 256-QAM - Full RB)

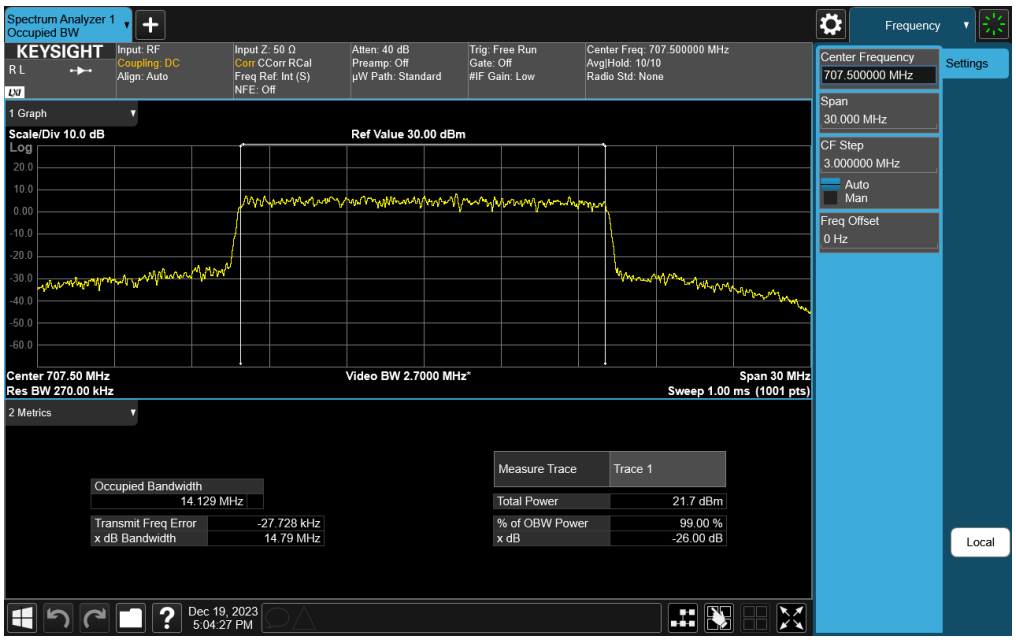
Plot 7-150. Occupied Bandwidth Plot (NR Band n12 - 15MHz DFT-s-OFDM π/2 BPSK - Full RB)



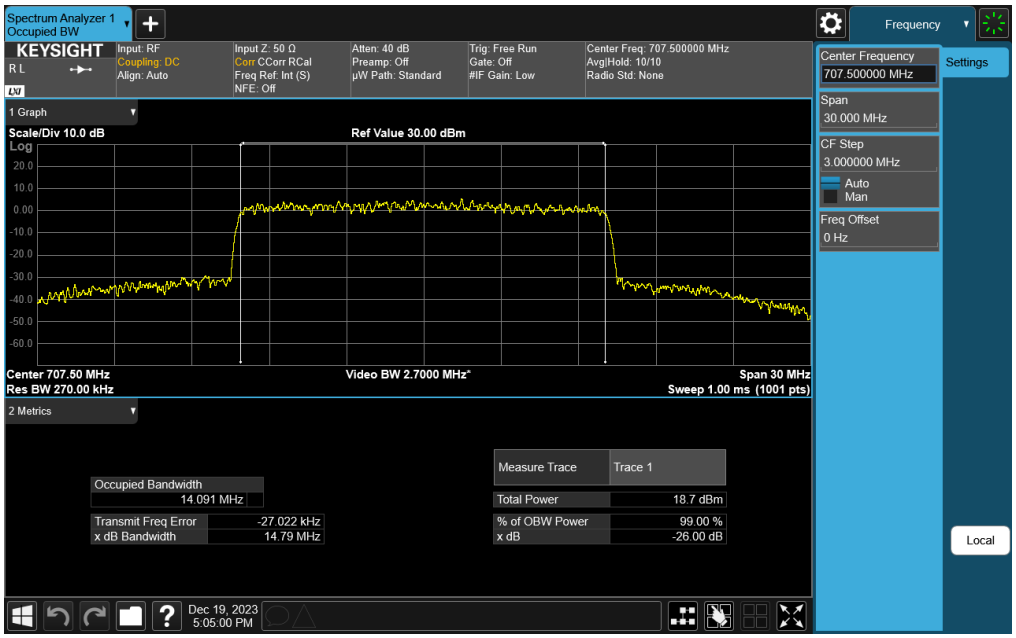
Plot 7-151. Occupied Bandwidth Plot (NR Band n12 - 15MHz CP-OFDM QPSK - Full RB)



Plot 7-152. Occupied Bandwidth Plot (NR Band n12 - 15MHz CP-OFDM 16-QAM - Full RB)

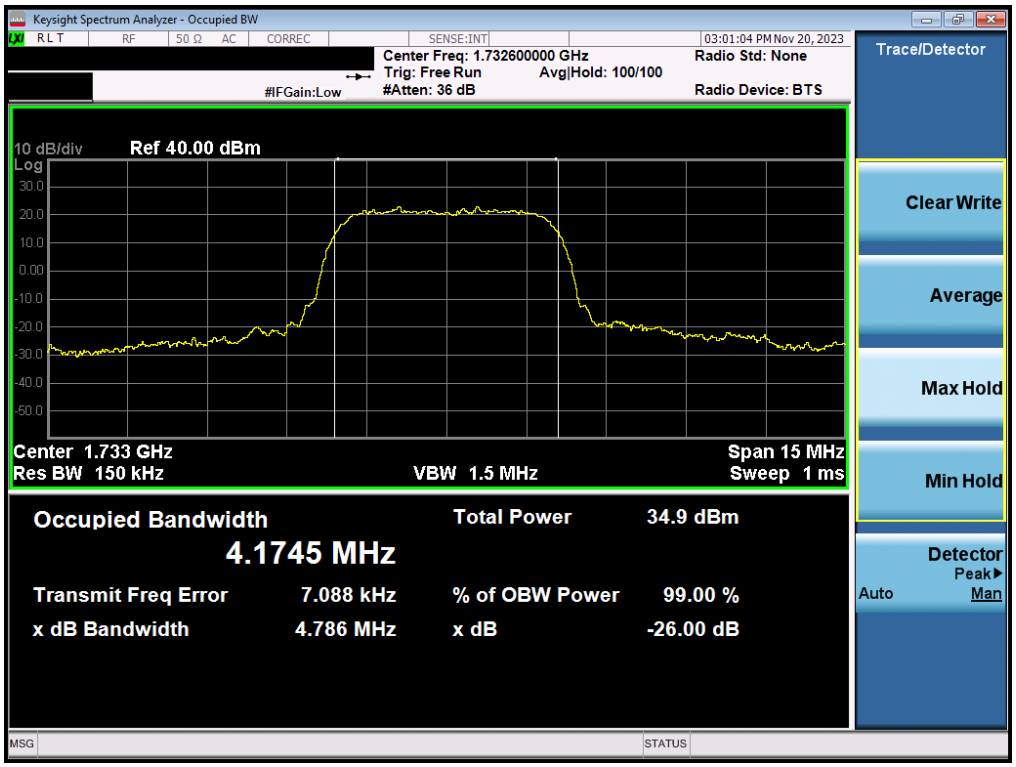


Plot 7-153. Occupied Bandwidth Plot (NR Band n12 - 15MHz CP-OFDM 64-QAM - Full RB)



Plot 7-154. Occupied Bandwidth Plot (NR Band n12 - 15MHz CP-OFDM 256-QAM - Full RB)

WCDMA AWS



Plot 7-155. Occupied Bandwidth Plot (WCDMA, Ch. 1413)

7.3 Spurious and Harmonic Emissions at Antenna Terminal

§2.1051, §27.53

Test Overview

The level of the carrier and the various conducted spurious and harmonic frequencies is measured by means of a calibrated spectrum analyzer. The spectrum is scanned from the lowest frequency generated in the equipment up to a frequency including its 10th harmonic. All out of band emissions are measured with a spectrum analyzer connected to the antenna terminal of the EUT while the EUT is operating at maximum power, and at the appropriate frequencies. All data rates were investigated to determine the worst case configuration. All modes of operation were investigated and the worst case configuration results are reported in this section. All ports were tested and only the worst case data were reported.

The minimum permissible attenuation level of any spurious emission is 43 + 10 $log_{10}(P_{[Watts]})$, where P is the transmitter power in Watts.

Test Procedure Used

KDB 971168 D01 v03r01 – Section 6.0

Test Settings

1. Start frequency was set to 30MHz and stop frequency was set to 18GHz (separated into at least two plots per channel)
2. RBW ≥ 100kHz
3. VBW ≥ 3 x RBW
4. Detector = RMS
5. Trace mode = max hold
6. Sweep time = auto couple
7. The trace was allowed to stabilize

Test Setup

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

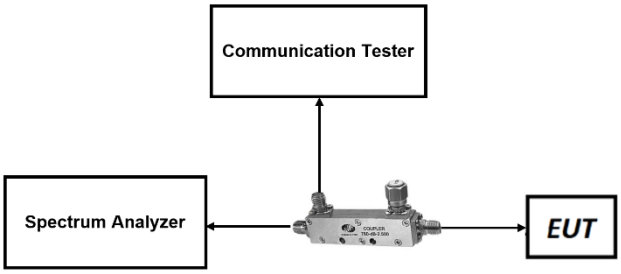


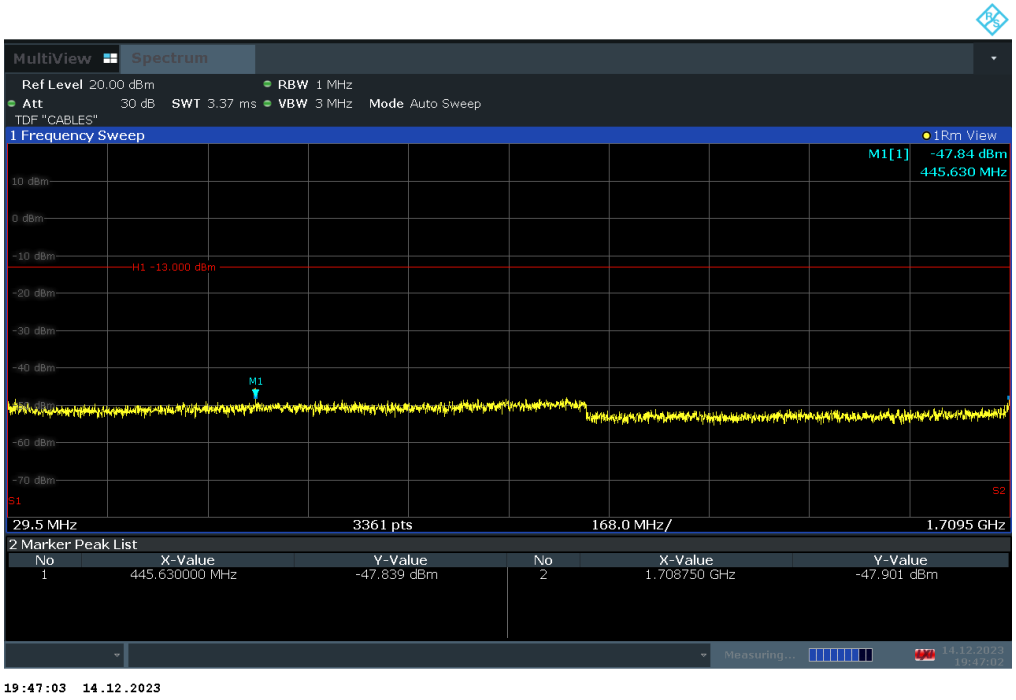
Figure 7-2. Test Instrument & Measurement Setup

Test Notes

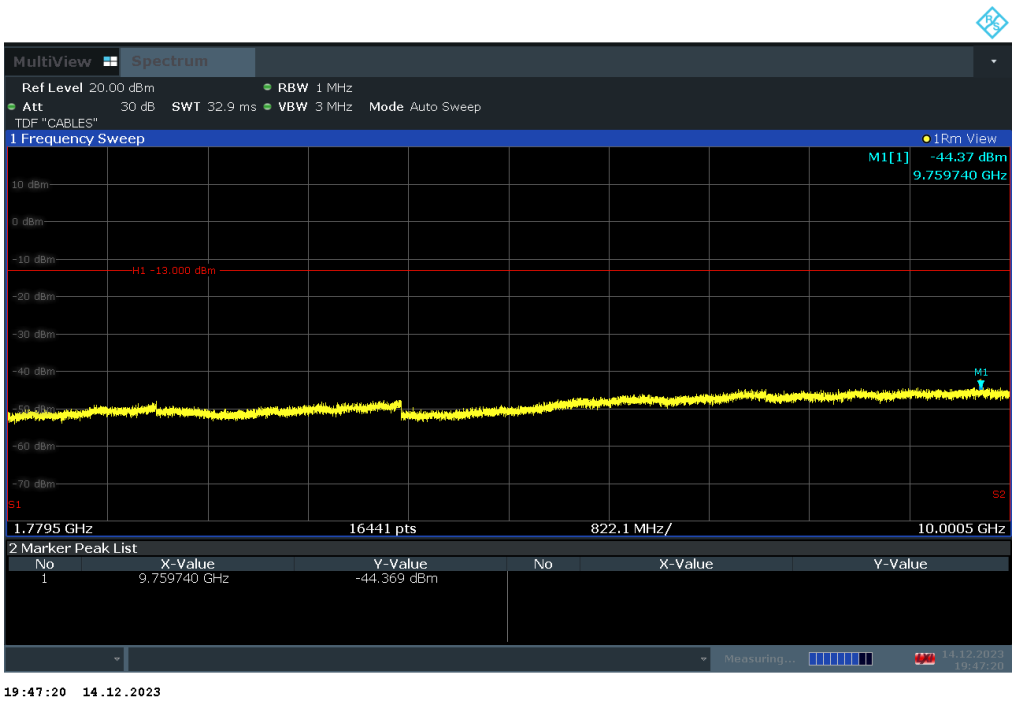
1. Per Part 27, compliance with the applicable limits is based on the use of measurement instrumentation employing a resolution bandwidth 100 kHz or greater for measurements below 1GHz. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emission are attenuated at least 26 dB below the transmitter power.

2. For NR operation, all subcarrier spacings (SCS) and transmission schemes (e.g. CP-OFDM and DFT-s-OFDM) were investigated to determine the worst case configuration. All modes of operation were investigated and the worst case configuration results are reported in this section.

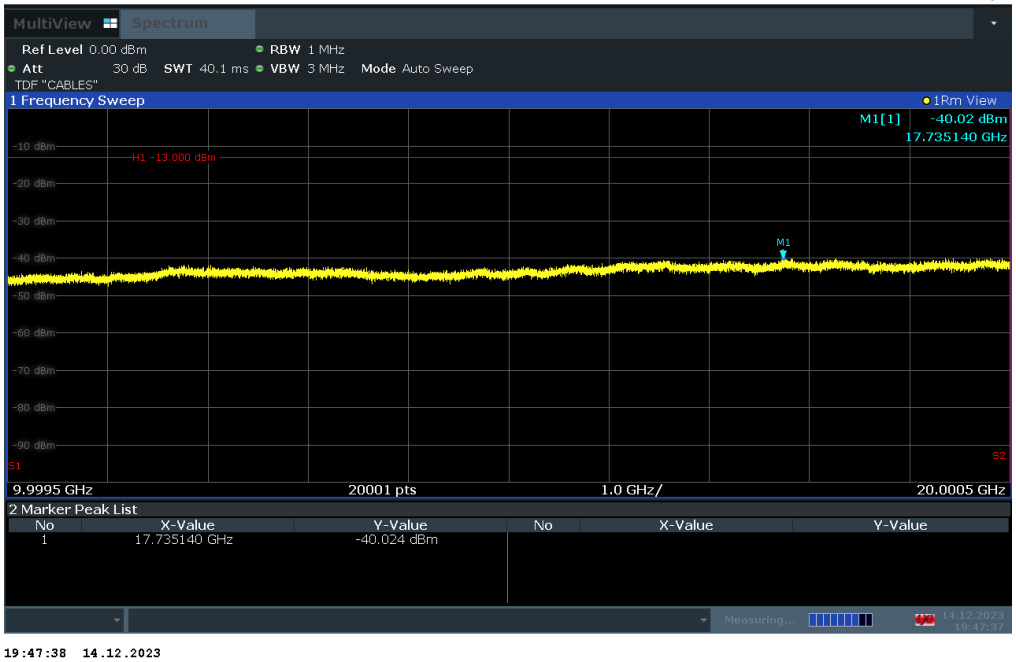
LTE Band 66/4



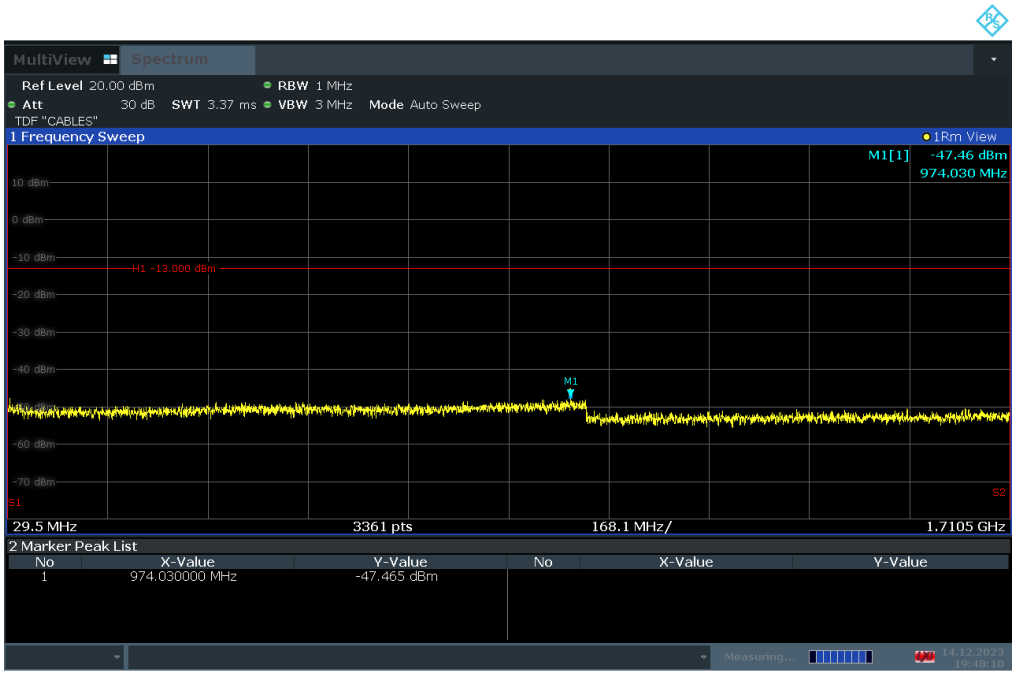
Plot 7-156. Conducted Spurious Plot (LTE Band 66/4 - 20MHz QPSK - RB Size 1, RB Offset 0 - Low Channel)



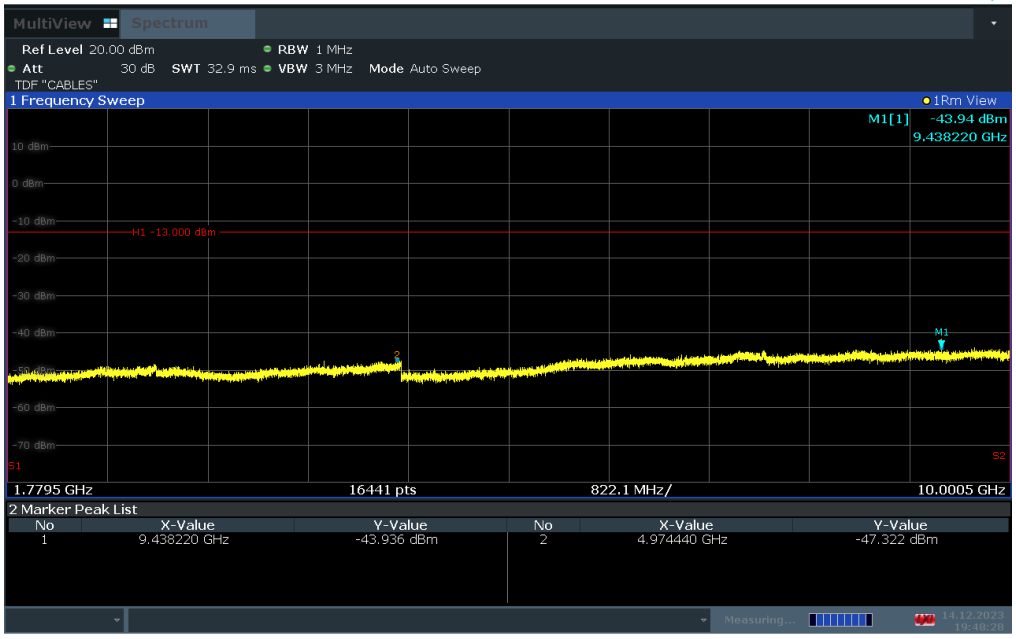
Plot 7-157. Conducted Spurious Plot (LTE Band 66/4 - 20MHz QPSK - RB Size 1, RB Offset 0 - Low Channel)



Plot 7-158. Conducted Spurious Plot (LTE Band 66/4 - 20MHz QPSK - RB Size 1, RB Offset 0 - Low Channel)

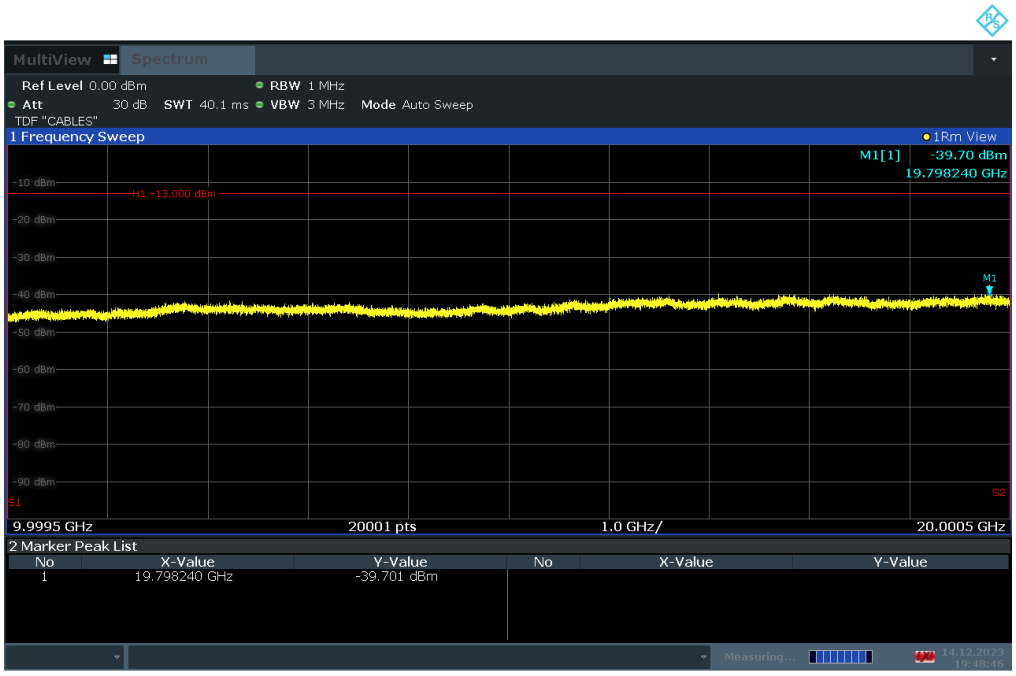


Plot 7-159. Conducted Spurious Plot (LTE Band 66/4 - 20MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel)



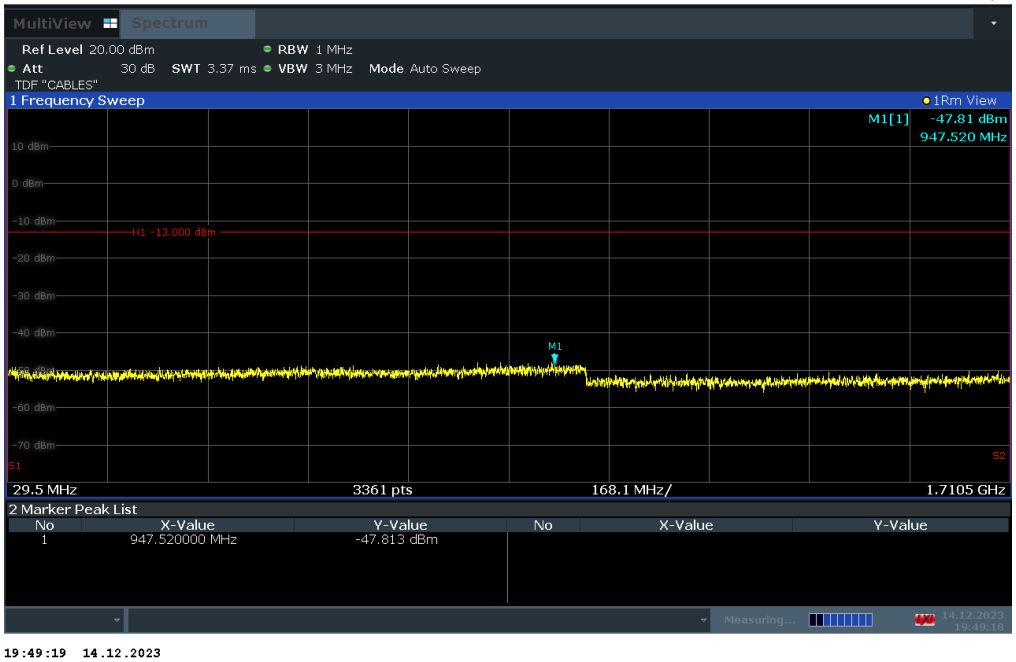
19:48:29 14.12.2023

Plot 7-160. Conducted Spurious Plot (LTE Band 66/4 - 20MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel)

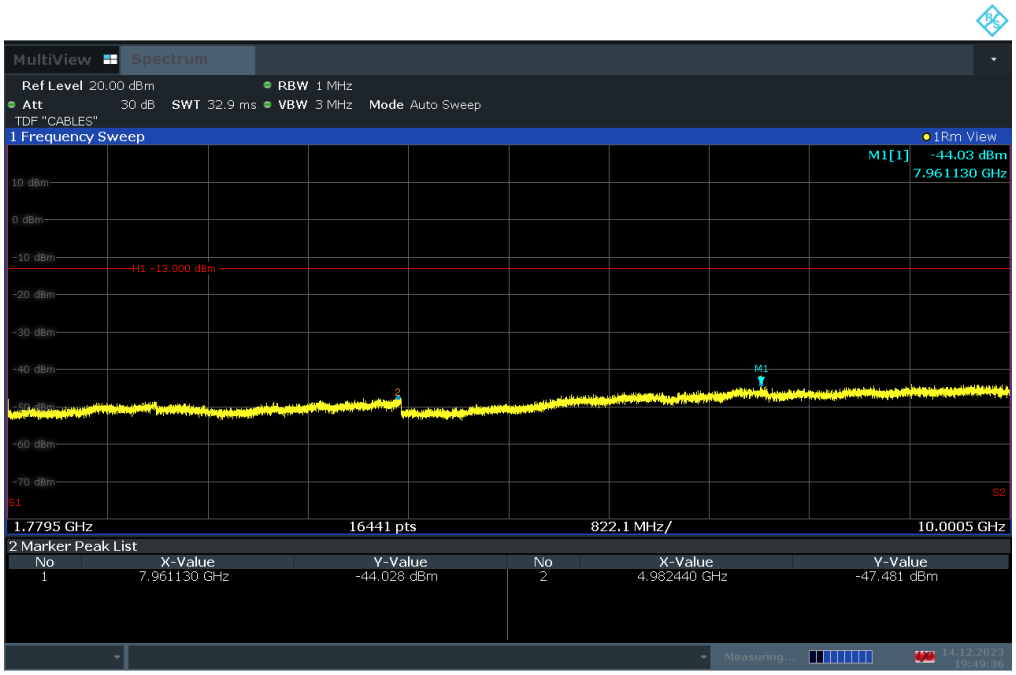


19:48:46 14.12.2023

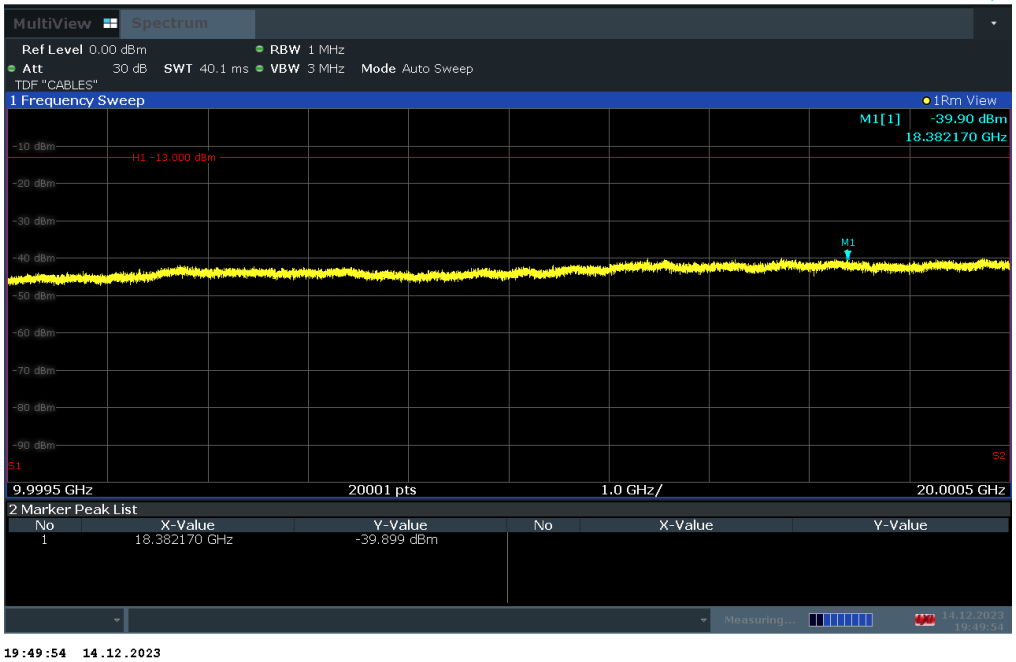
Plot 7-161. Conducted Spurious Plot (LTE Band 66/4 - 20MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel)



Plot 7-162. Conducted Spurious Plot (LTE Band 66/4 - 20MHz QPSK - RB Size 1, RB Offset 0 - High Channel)



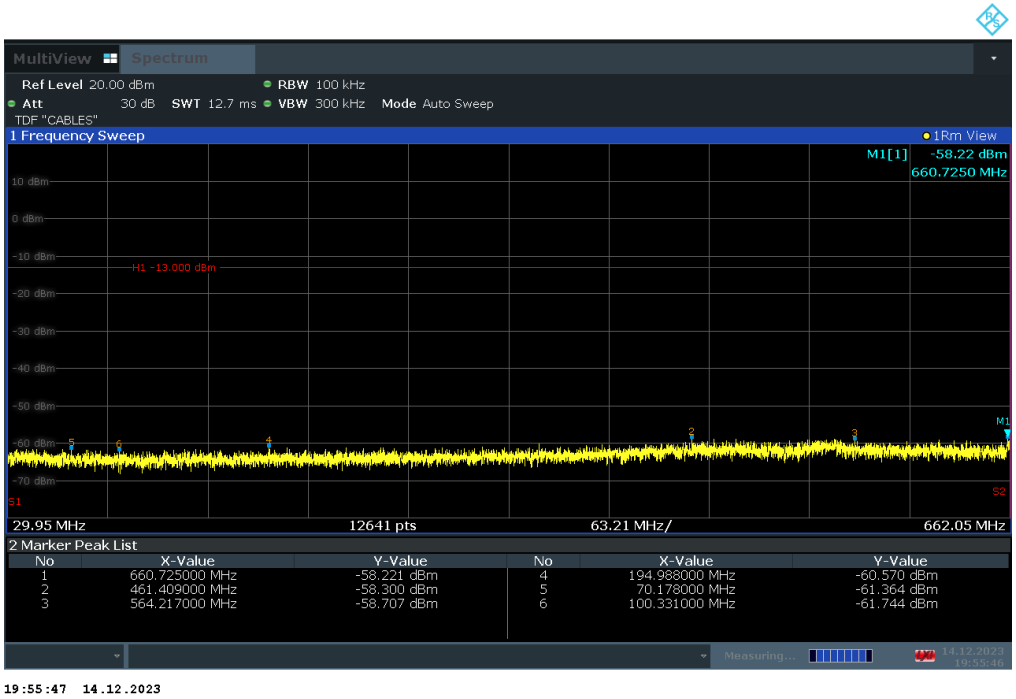
Plot 7-163. Conducted Spurious Plot (LTE Band 66/4 - 20MHz QPSK - RB Size 1, RB Offset 0 - High Channel)



19:49:54 14.12.2023

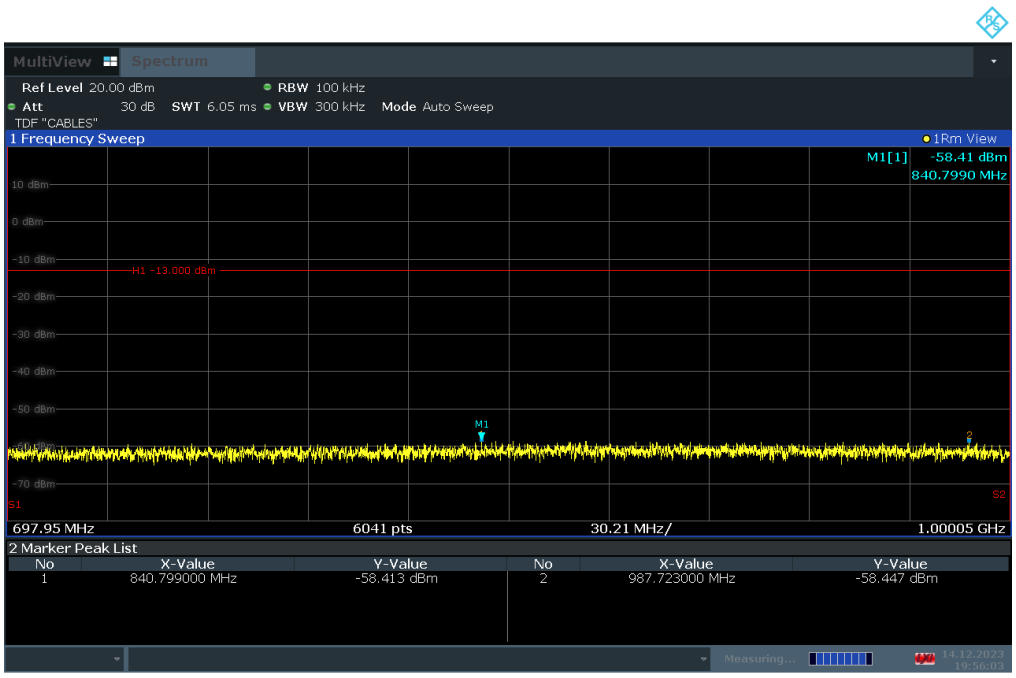
Plot 7-164. Conducted Spurious Plot (LTE Band 66/4 - 20MHz QPSK - RB Size 1, RB Offset 0 - High Channel)

LTE Band 71



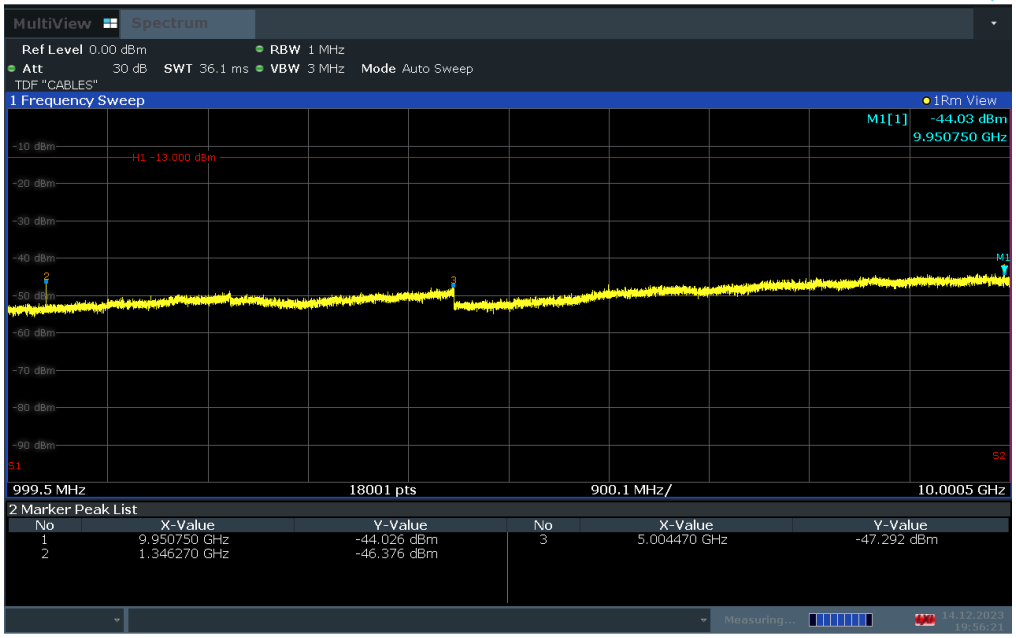
19:55:47 14.12.2023

Plot 7-165. Conducted Spurious Plot (LTE Band 71 - 20MHz QPSK - RB Size 1, RB Offset 0 - Low Channel)

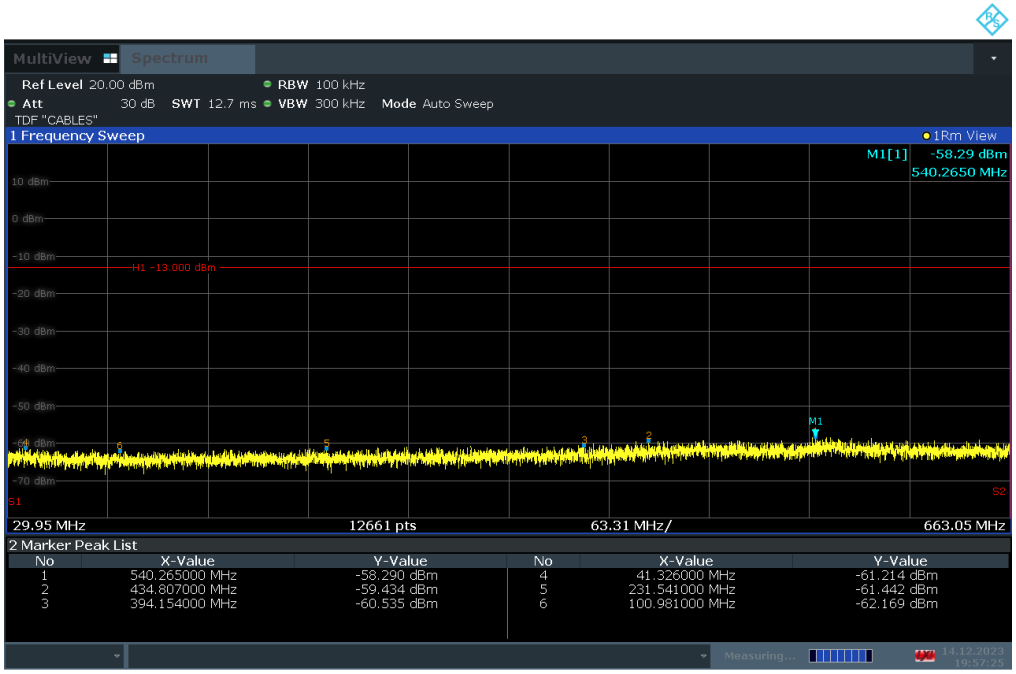


19:56:04 14.12.2023

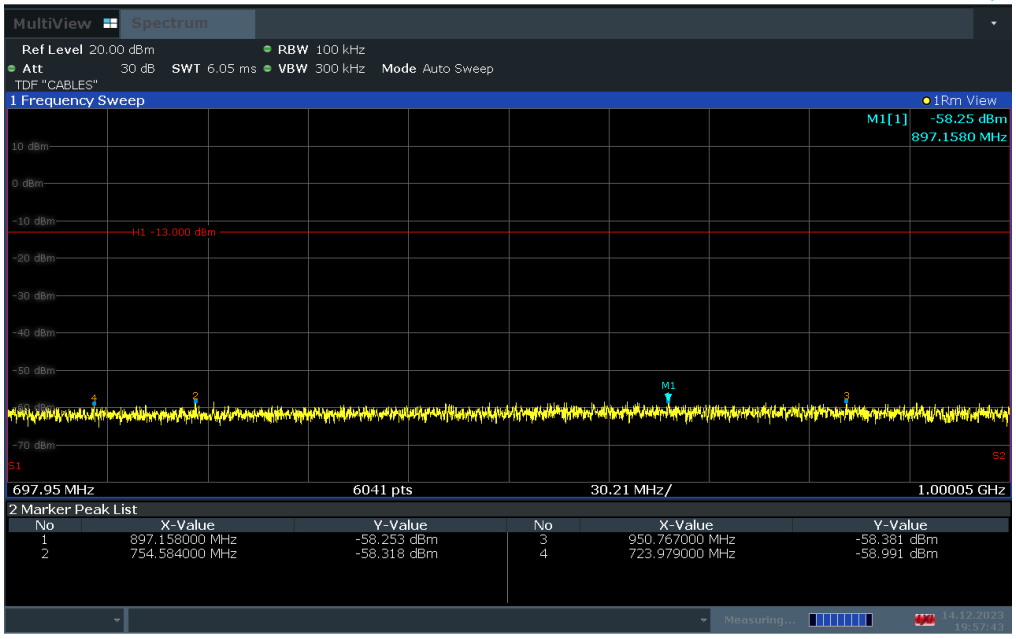
Plot 7-166. Conducted Spurious Plot (LTE Band 71 - 20MHz QPSK - RB Size 1, RB Offset 0 - Low Channel)



Plot 7-167. Conducted Spurious Plot (LTE Band 71 - 20MHz QPSK - RB Size 1, RB Offset 0 - Low Channel)

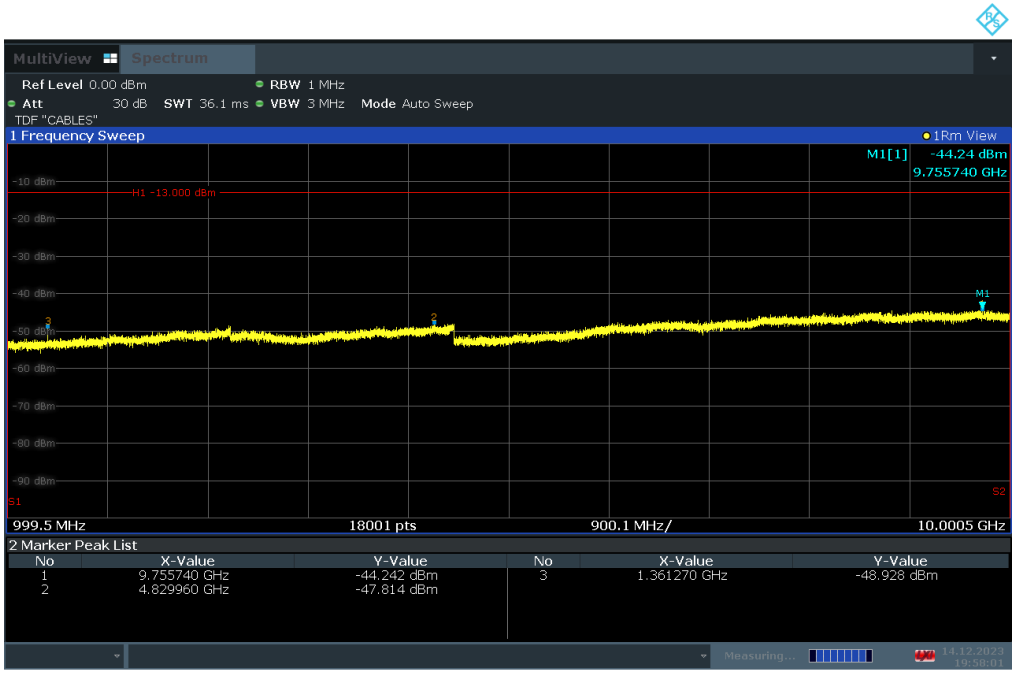


Plot 7-168. Conducted Spurious Plot (LTE Band 71 - 20MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel)



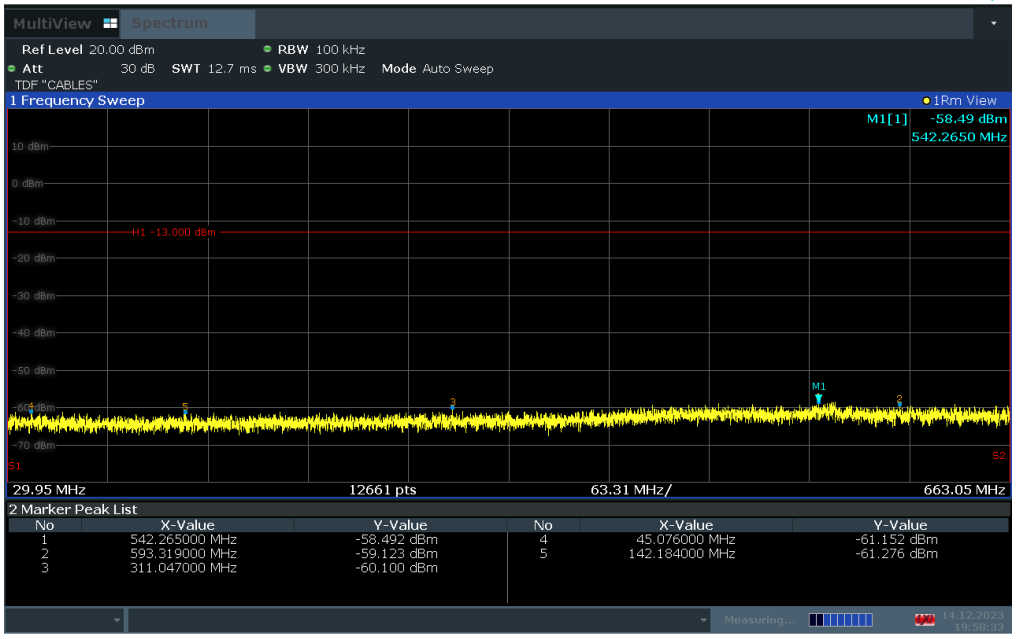
19:57:44 14.12.2023

Plot 7-169. Conducted Spurious Plot (LTE Band 71 - 20MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel)



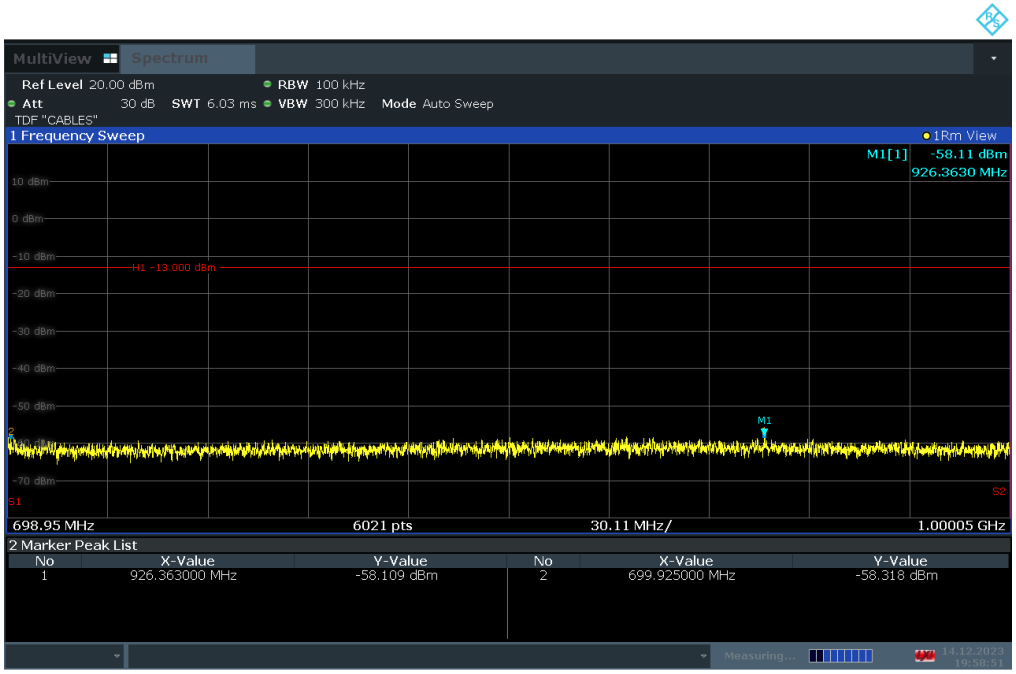
19:58:02 14.12.2023

Plot 7-170. Conducted Spurious Plot (LTE Band 71 - 20MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel)



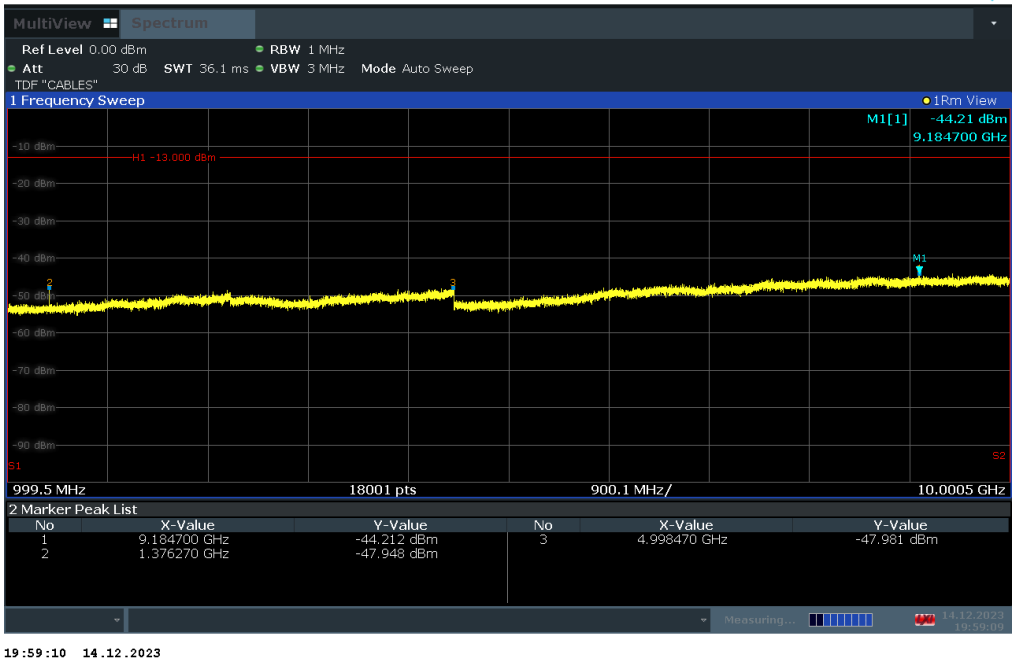
19:58:34 14.12.2023

Plot 7-171. Conducted Spurious Plot (LTE Band 71 - 20MHz QPSK - RB Size 1, RB Offset 0 - High Channel)



19:58:52 14.12.2023

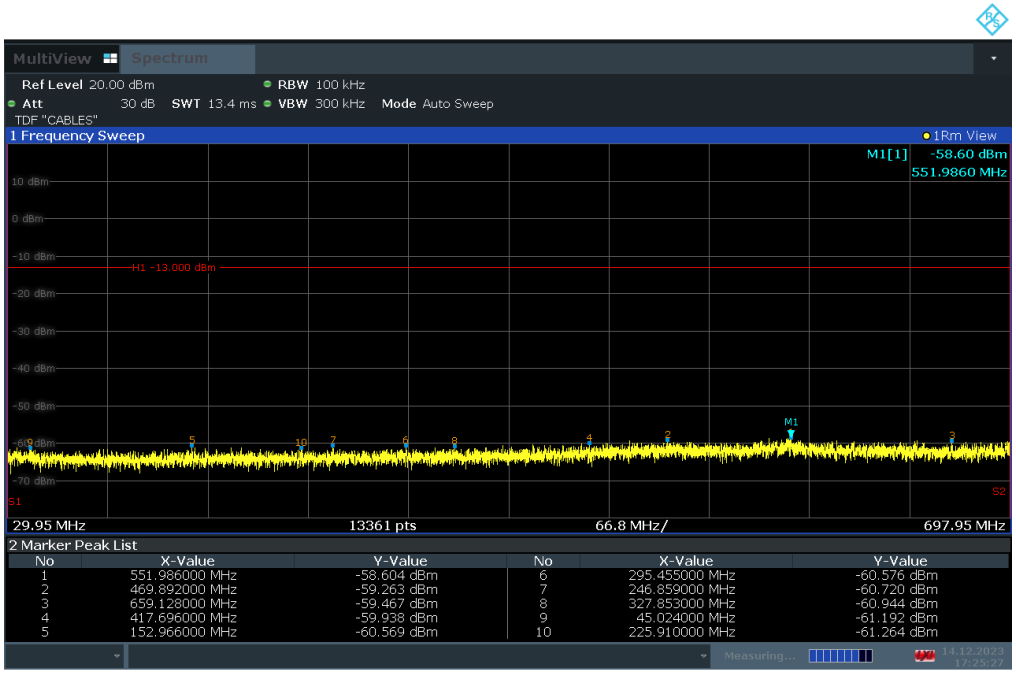
Plot 7-172. Conducted Spurious Plot (LTE Band 71 - 20MHz QPSK - RB Size 1, RB Offset 0 - High Channel)



19:59:10 14.12.2023

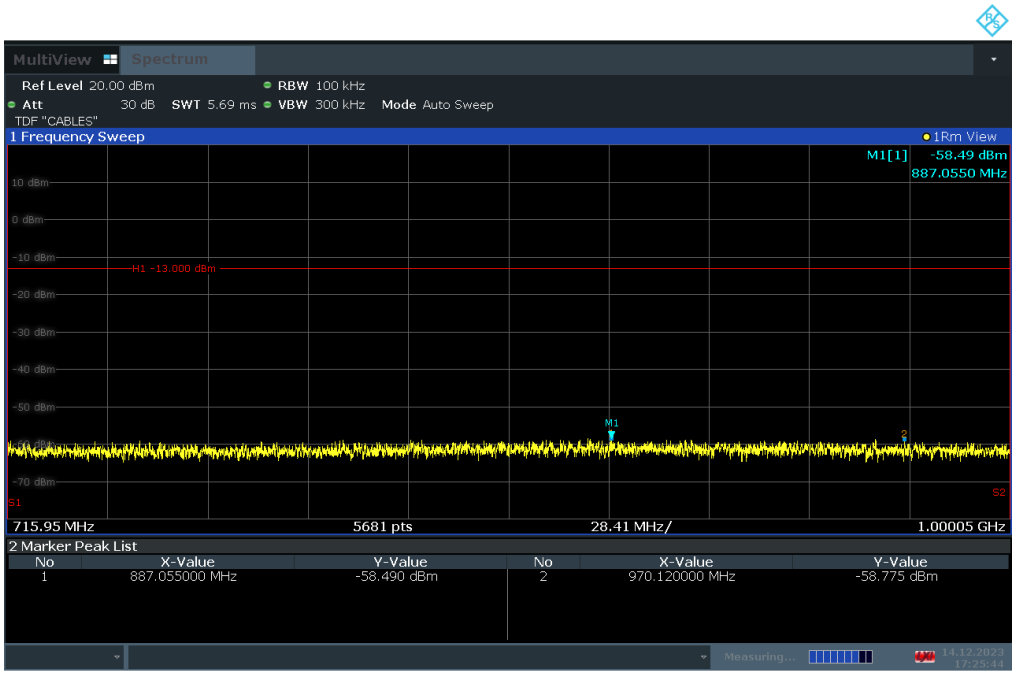
Plot 7-173. Conducted Spurious Plot (LTE Band 71 - 20MHz QPSK - RB Size 1, RB Offset 0 - High Channel)

LTE Band 12/17



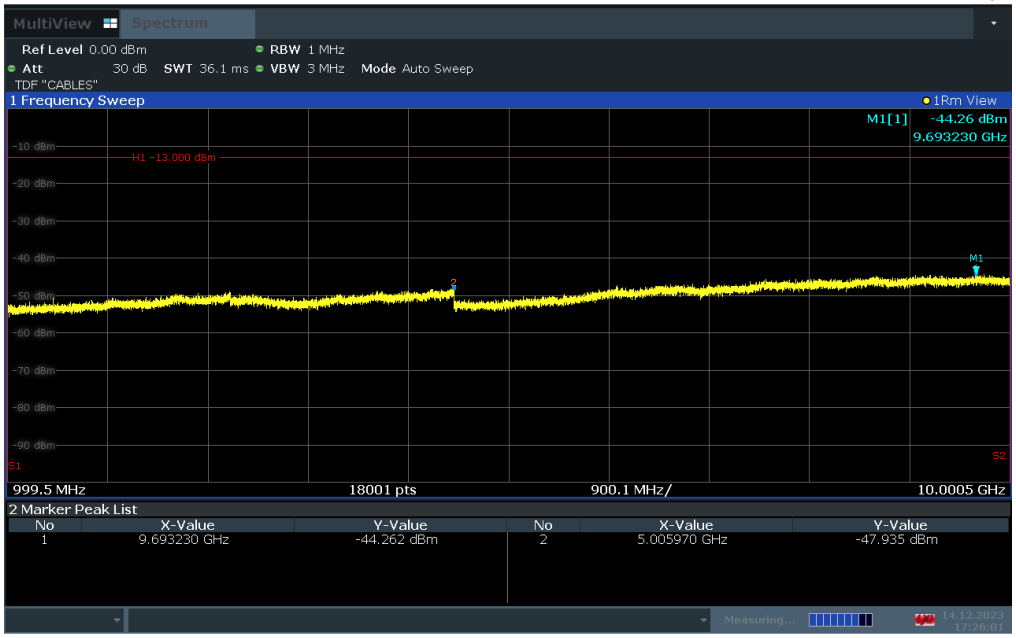
17:25:27 14.12.2023

Plot 7-174. Conducted Spurious Plot (LTE Band 12/17 - 10MHz QPSK - RB Size 1, RB Offset 0 - Low Channel)

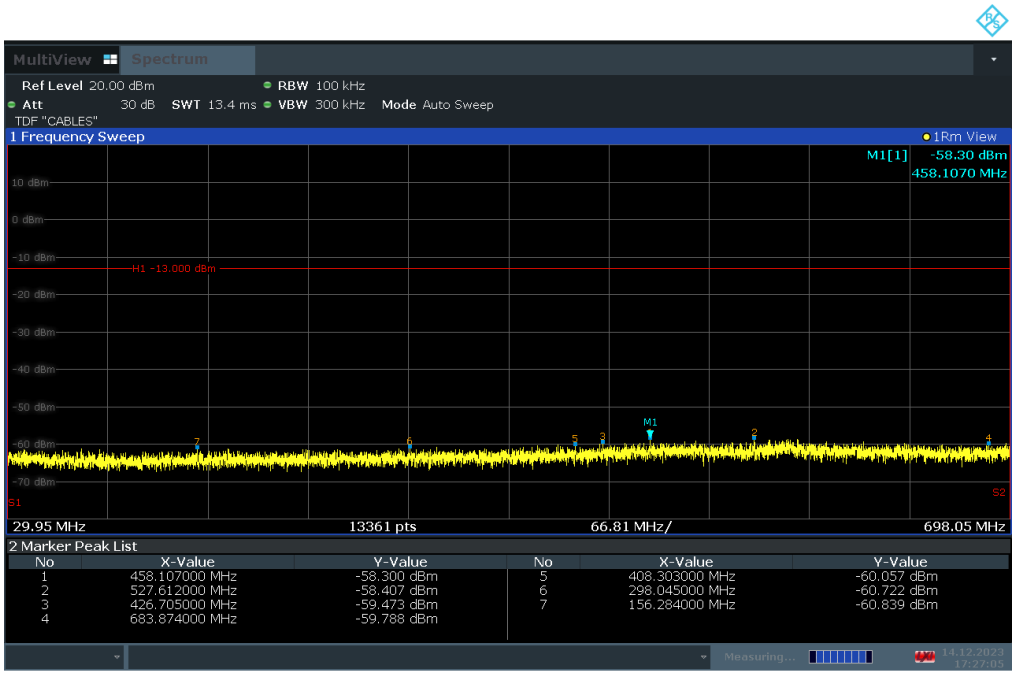


17:25:44 14.12.2023

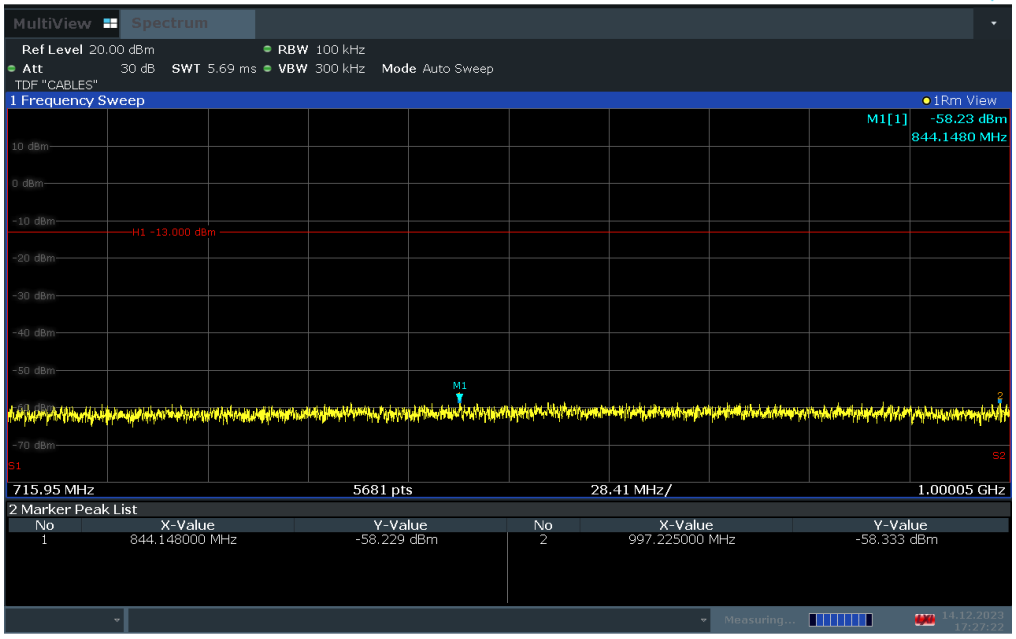
Plot 7-175. Conducted Spurious Plot (LTE Band 12/17 - 10MHz QPSK - RB Size 1, RB Offset 0 - Low Channel)



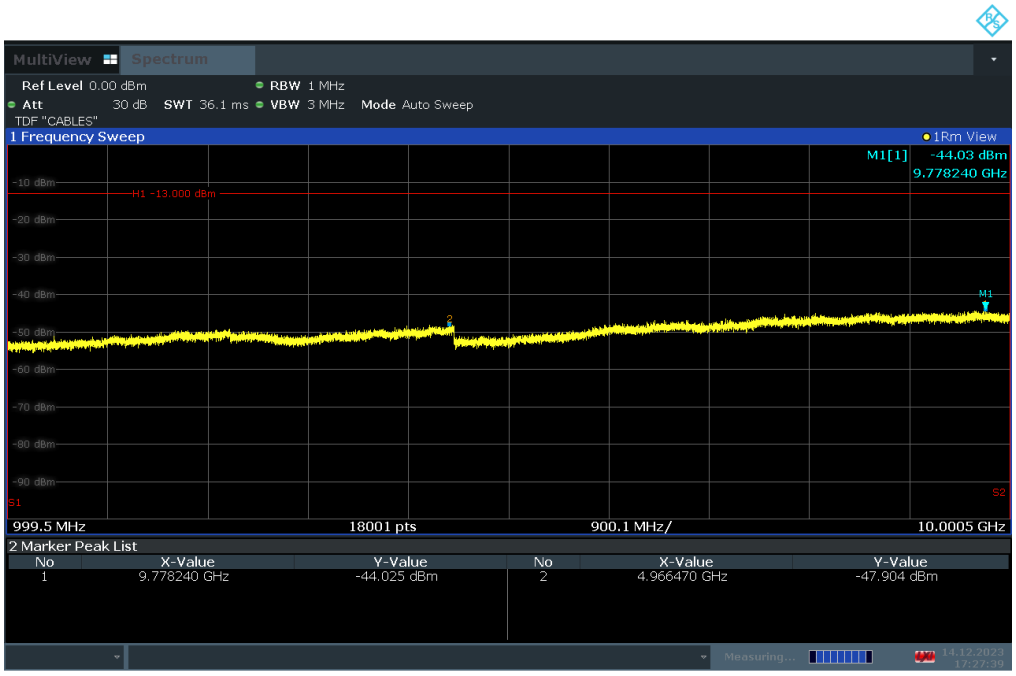
Plot 7-176. Conducted Spurious Plot (LTE Band 12/17 - 10MHz QPSK - RB Size 1, RB Offset 0 - Low Channel)



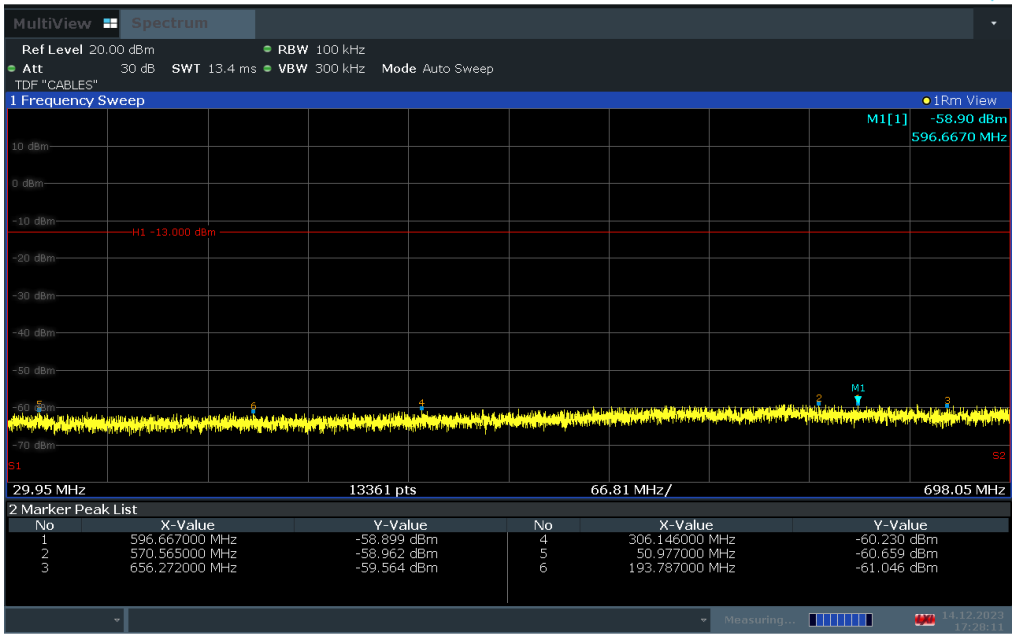
Plot 7-177. Conducted Spurious Plot (LTE Band 12/17 - 10MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel)



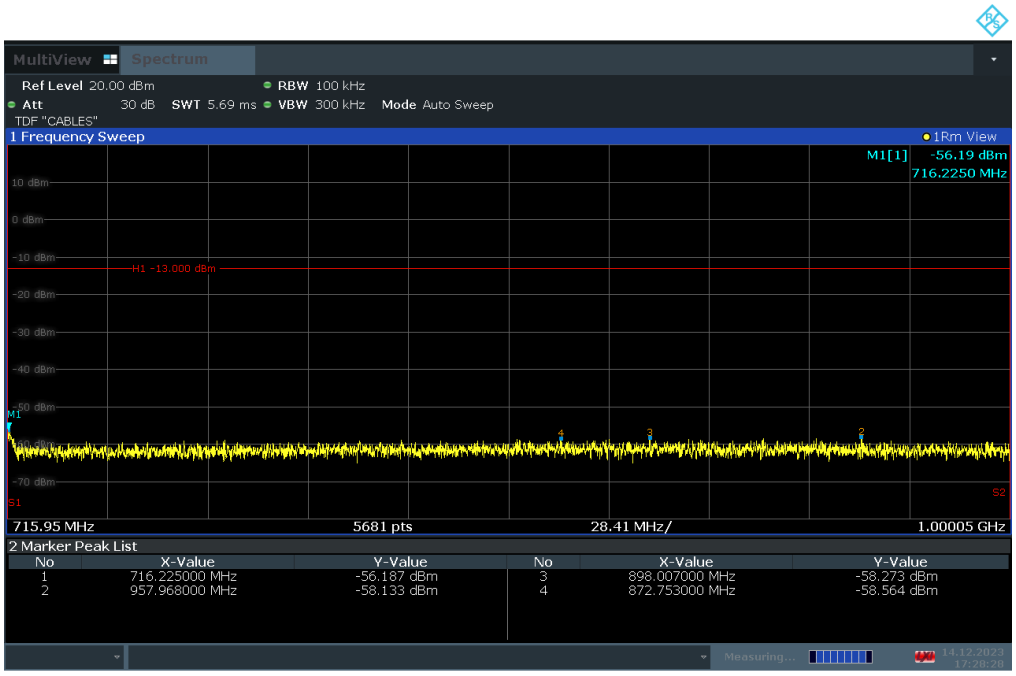
Plot 7-178. Conducted Spurious Plot (LTE Band 12/17 - 10MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel)



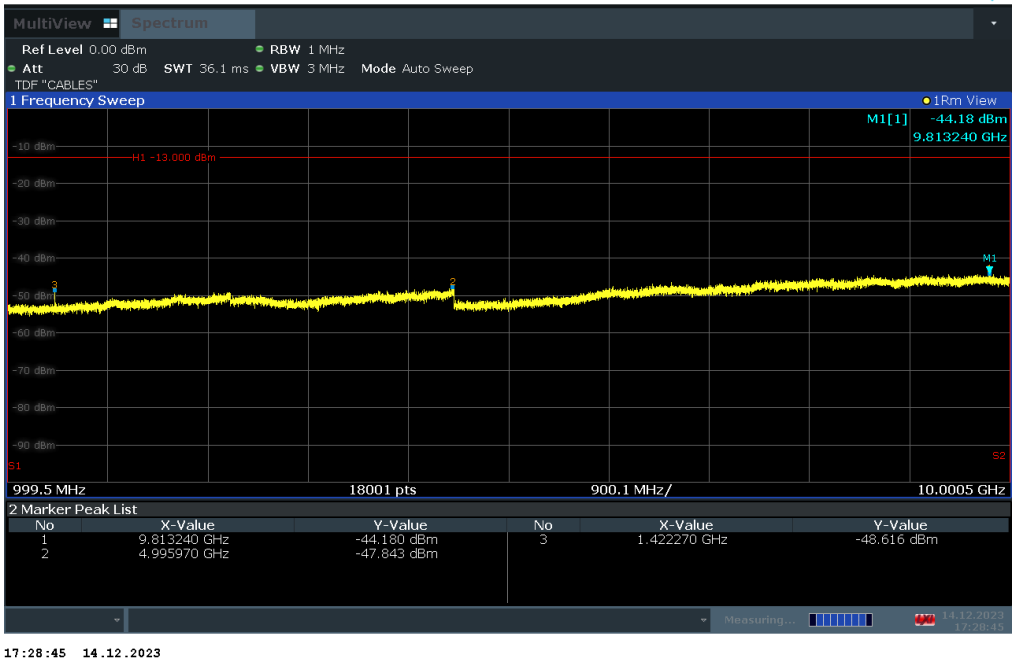
Plot 7-179. Conducted Spurious Plot (LTE Band 12/17 - 10MHz QPSK - RB Size 1, RB Offset 0 - Mid Channel)



Plot 7-180. Conducted Spurious Plot (LTE Band 12/17 - 10MHz QPSK - RB Size 1, RB Offset 0 - High Channel)



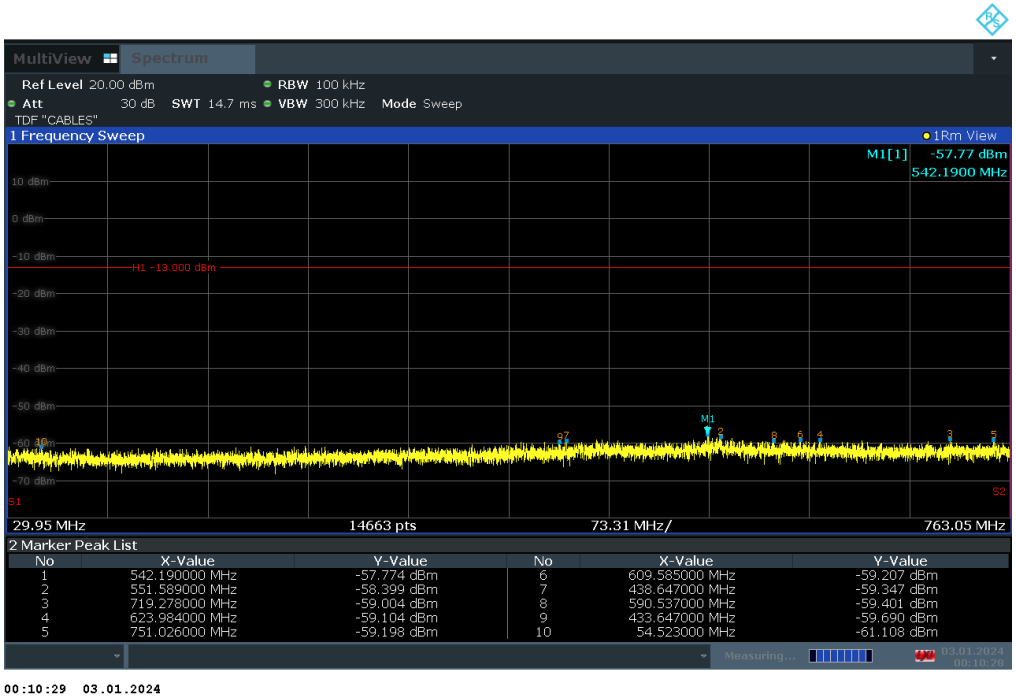
Plot 7-181. Conducted Spurious Plot (LTE Band 12/17 - 10MHz QPSK - RB Size 1, RB Offset 0 - High Channel)



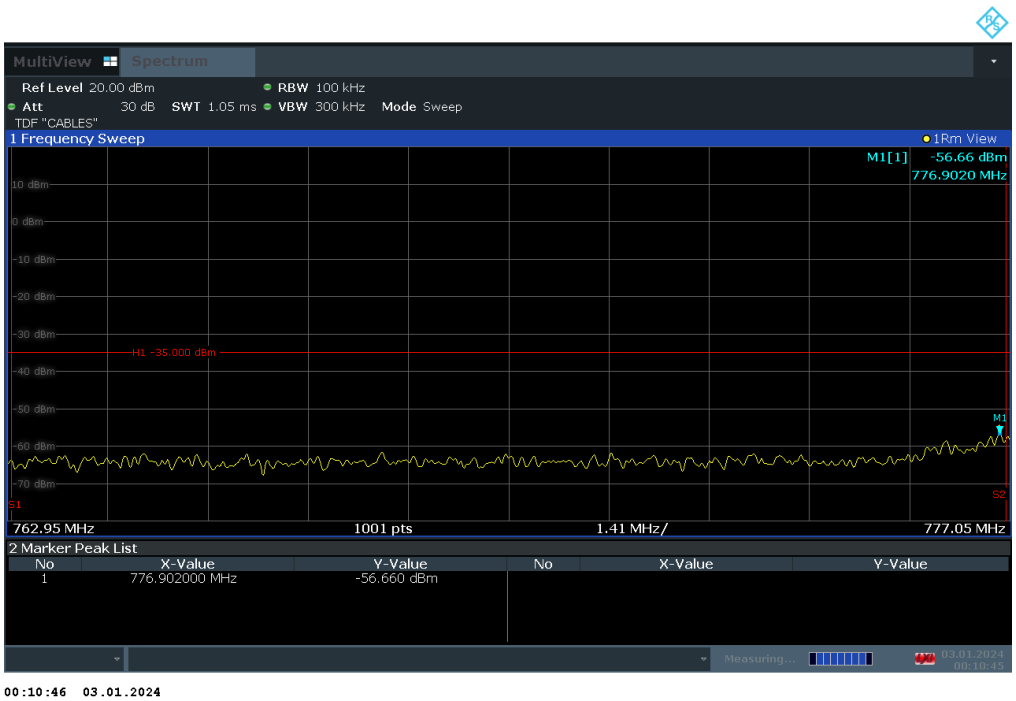
17:28:45 14.12.2023

Plot 7-182. Conducted Spurious Plot (LTE Band 12/17 - 10MHz QPSK - RB Size 1, RB Offset 0 - High Channel)

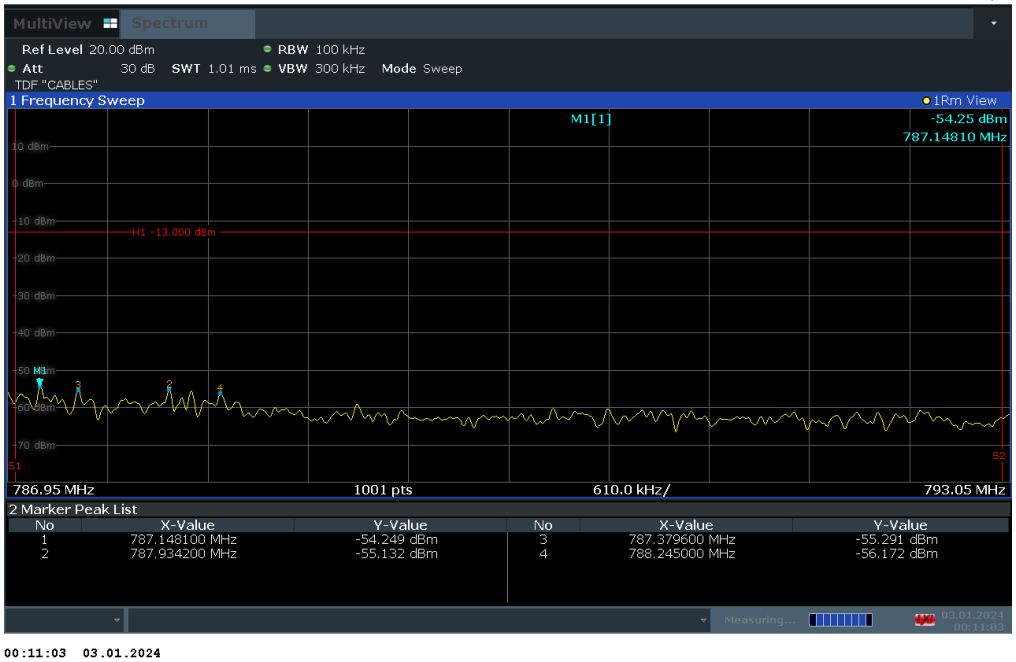
LTE Band 13



Plot 7-183. Conducted Spurious Plot (LTE Band 13 - 10MHz QPSK - RB Size 1, RB Offset 0)

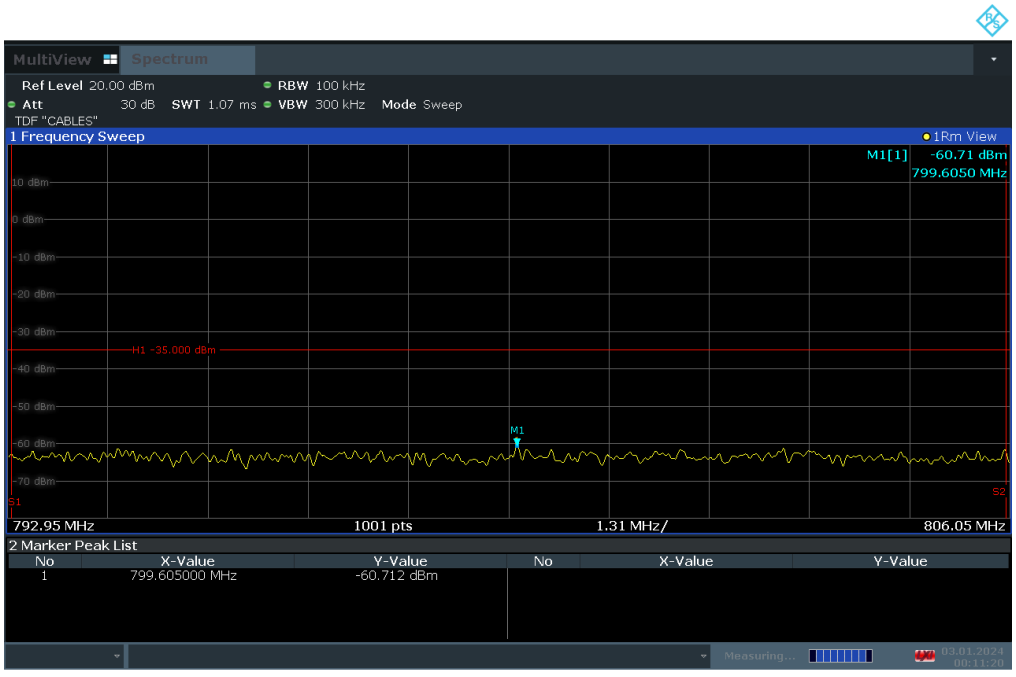


Plot 7-184. Conducted Spurious Plot (LTE Band 13 - 10MHz QPSK - RB Size 1, RB Offset 0)



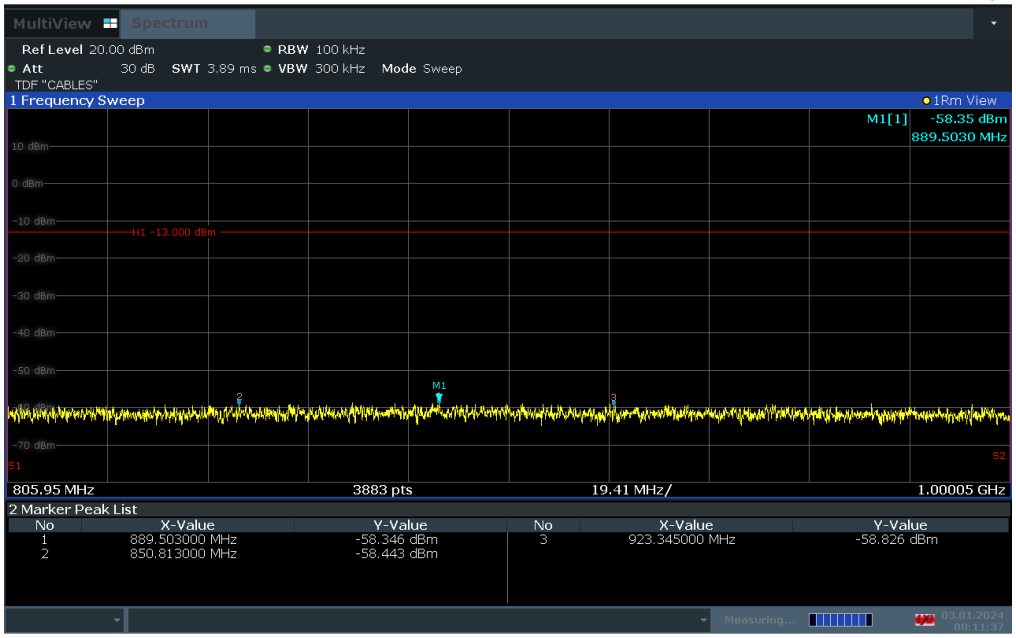
00:11:03 03.01.2024

Plot 7-185. Conducted Spurious Plot (LTE Band 13 - 10MHz QPSK - RB Size 1, RB Offset 0)



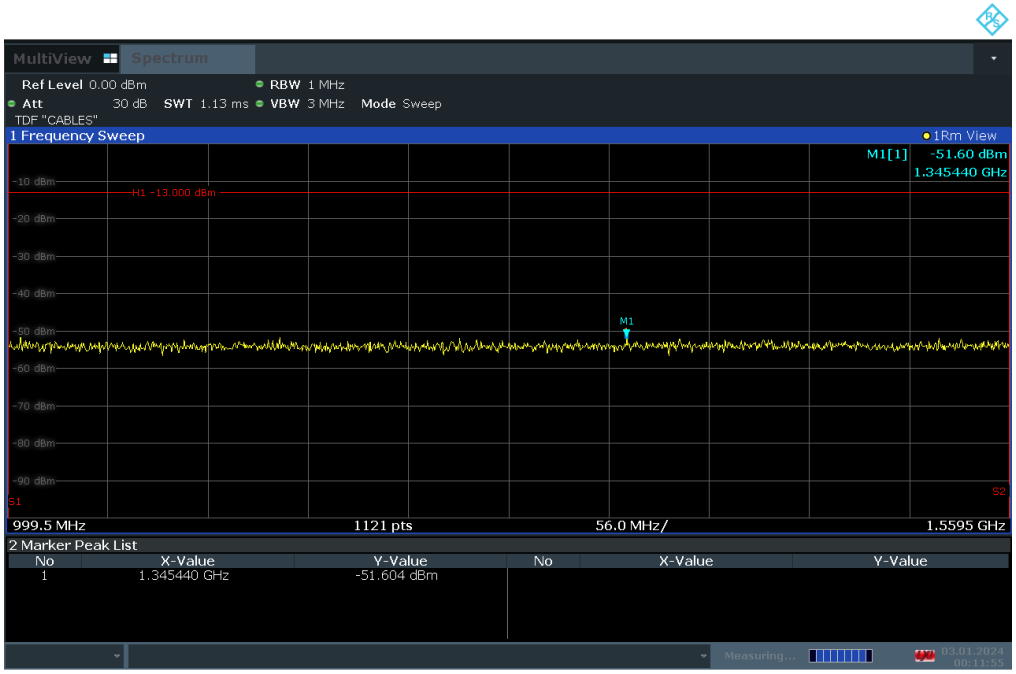
00:11:21 03.01.2024

Plot 7-186. Conducted Spurious Plot (LTE Band 13 - 10MHz QPSK - RB Size 1, RB Offset 0)



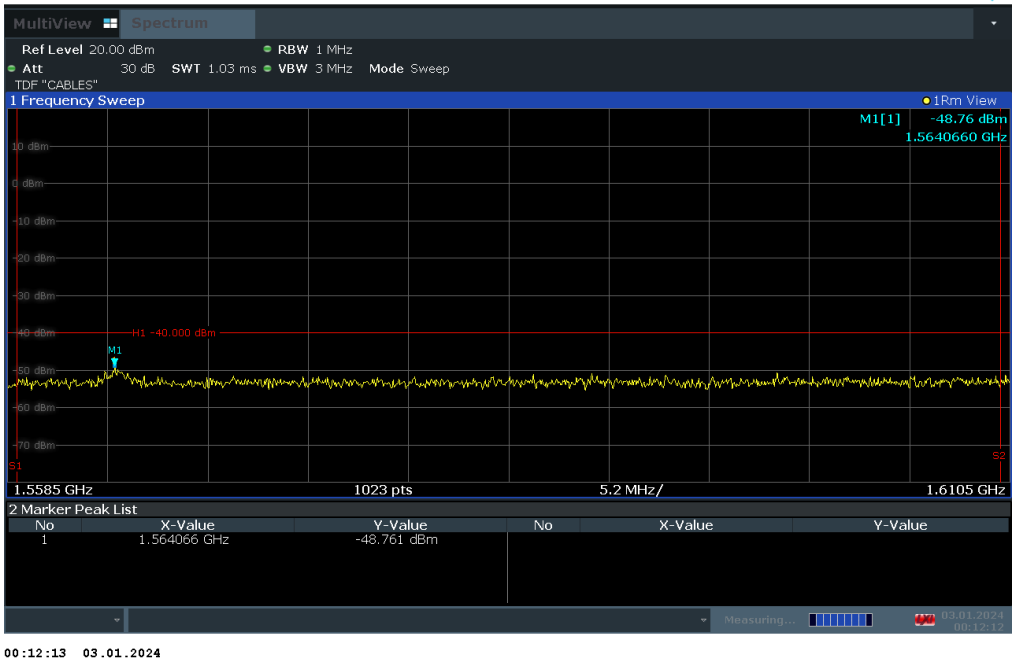
00:11:38 03.01.2024

Plot 7-187. Conducted Spurious Plot (LTE Band 13 - 10MHz QPSK - RB Size 1, RB Offset 0)

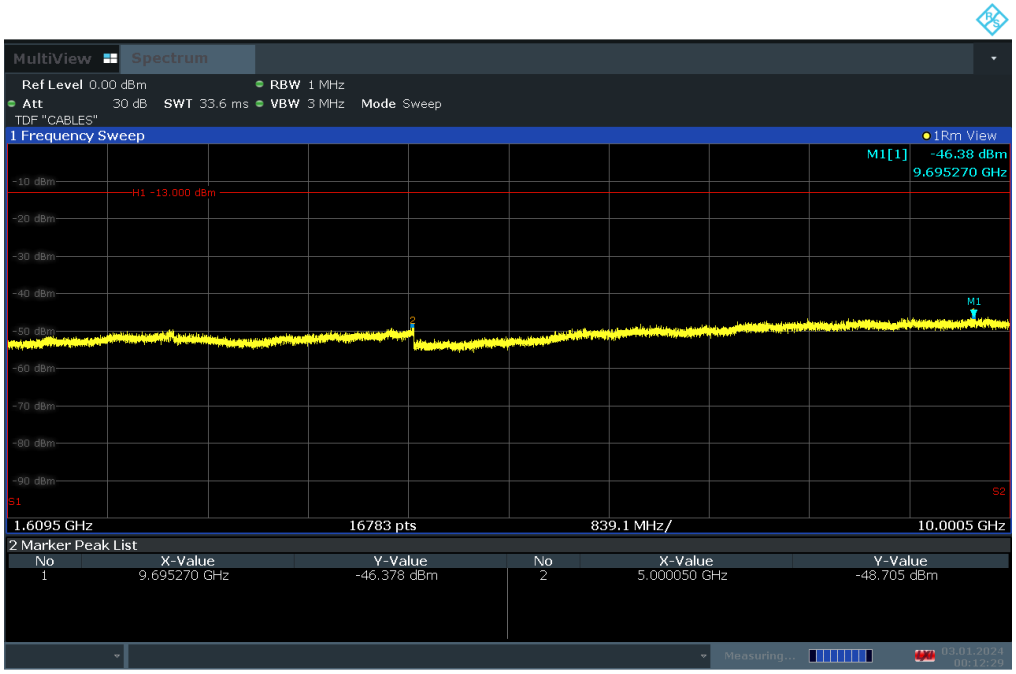


00:11:55 03.01.2024

Plot 7-188. Conducted Spurious Plot (LTE Band 13 - 10MHz QPSK - RB Size 1, RB Offset 0)

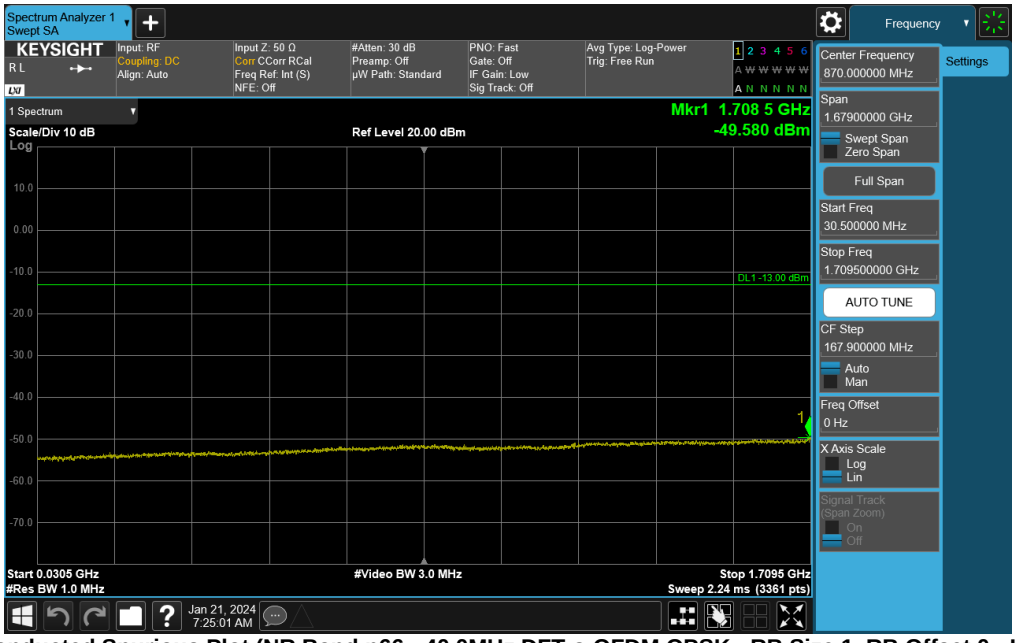


Plot 7-189. Conducted Spurious Plot (LTE Band 13 - 10MHz QPSK - RB Size 1, RB Offset 0)

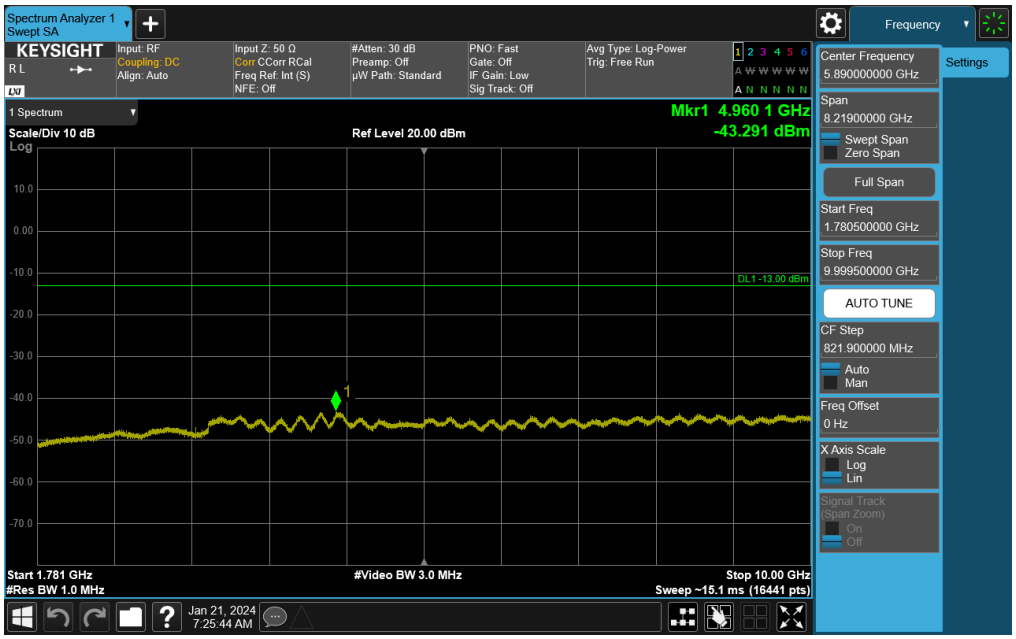


Plot 7-190. Conducted Spurious Plot (LTE Band 13 - 10MHz QPSK - RB Size 1, RB Offset 0)

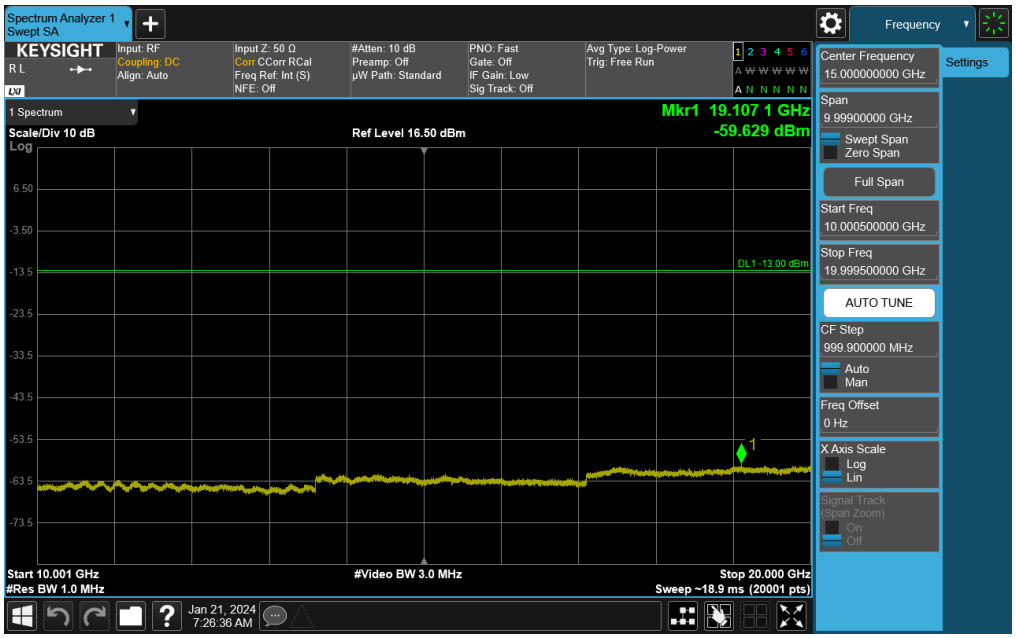
NR Band n66



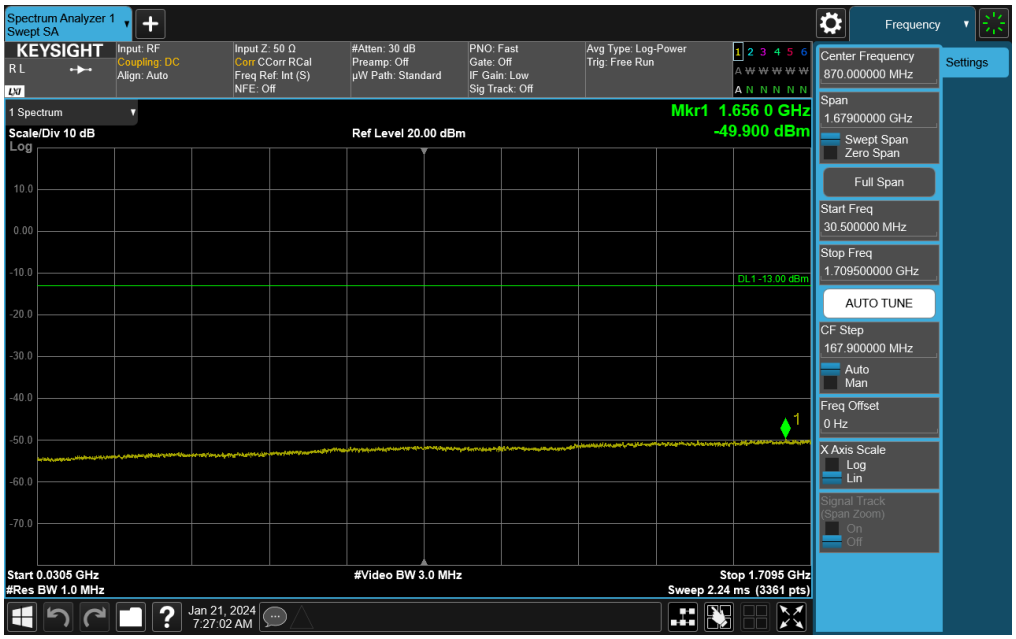
Plot 7-191. Conducted Spurious Plot (NR Band n66 - 40.0MHz DFT-s-OFDM QPSK - RB Size 1, RB Offset 0 - Low Channel)



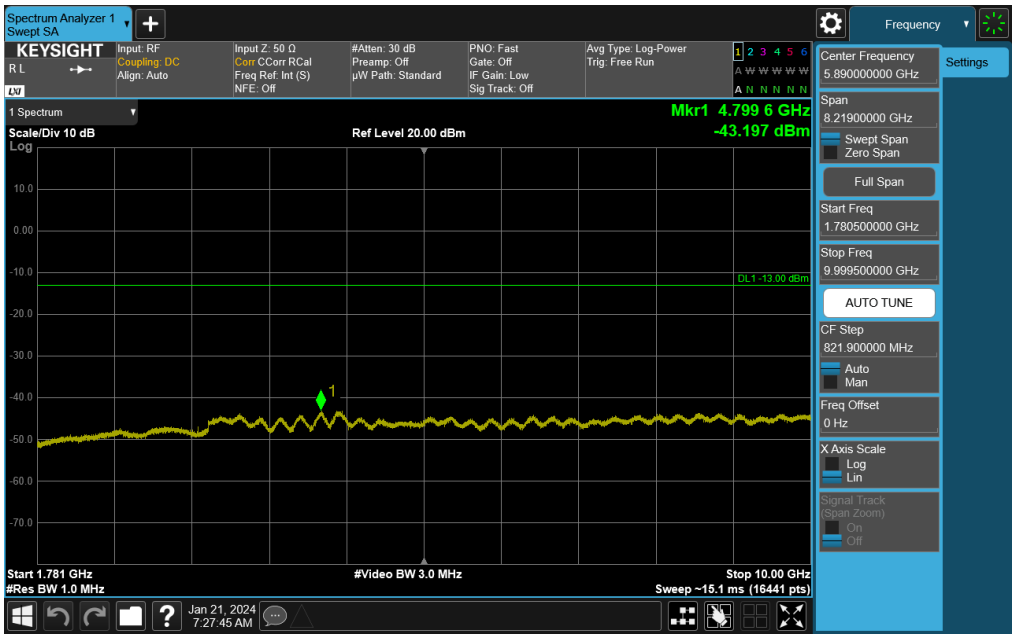
Plot 7-192. Conducted Spurious Plot (NR Band n66 - 40.0MHz DFT-s-OFDM QPSK - RB Size 1, RB Offset 0 - Low Channel)



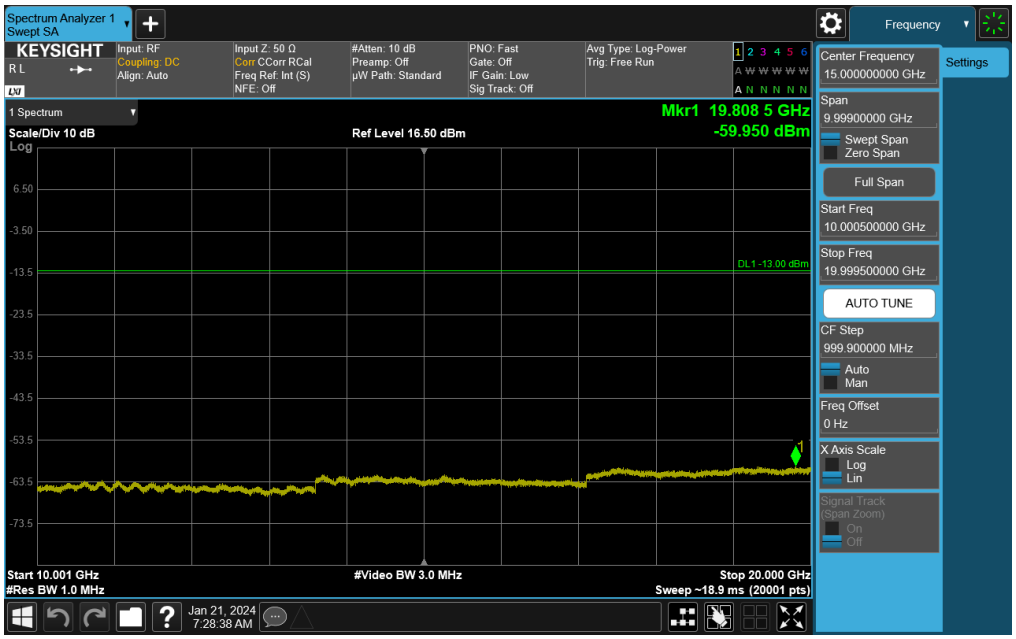
Plot 7-193. Conducted Spurious Plot (NR Band n66 - 40.0MHz DFT-s-OFDM QPSK - RB Size 1, RB Offset 0 - Low Channel)



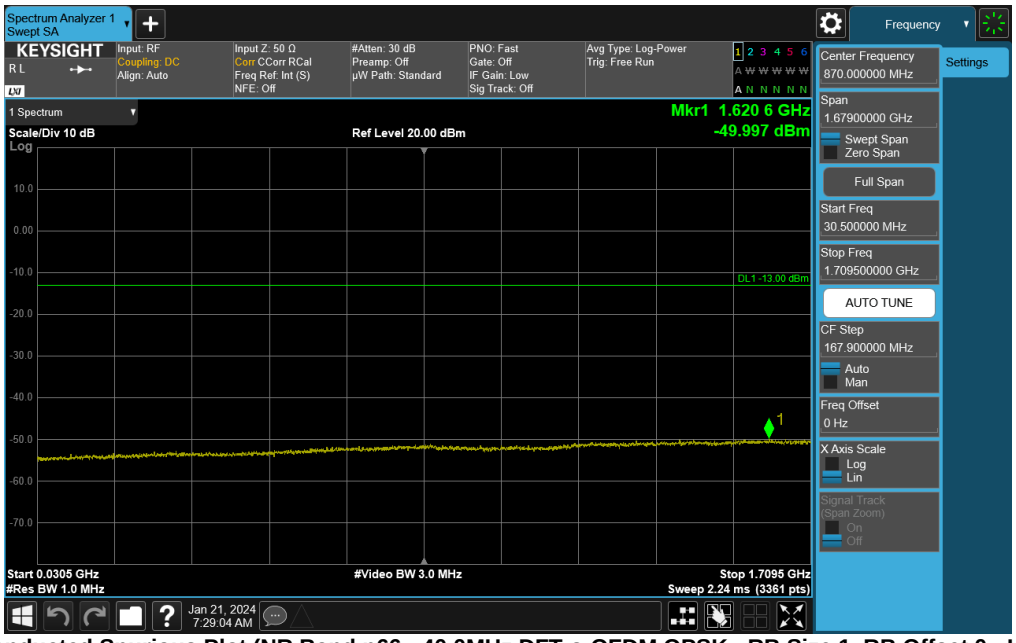
Plot 7-194. Conducted Spurious Plot (NR Band n66 - 40.0MHz DFT-s-OFDM QPSK - RB Size 1, RB Offset 0 - Mid Channel)



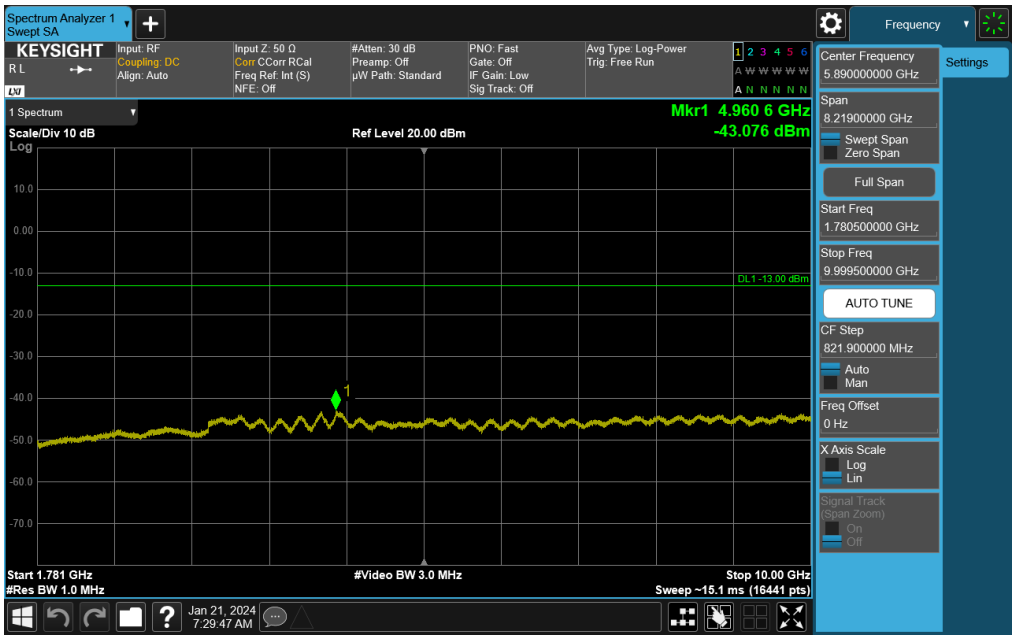
Plot 7-195. Conducted Spurious Plot (NR Band n66 - 40.0MHz DFT-s-OFDM QPSK - RB Size 1, RB Offset 0 - Mid Channel)



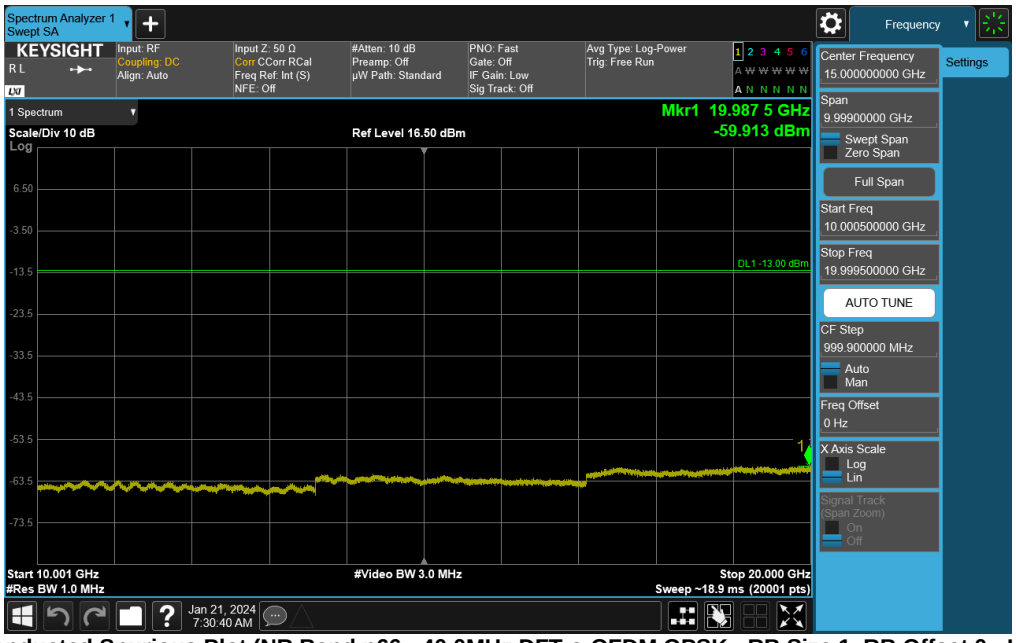
Plot 7-196. Conducted Spurious Plot (NR Band n66 - 40.0MHz DFT-s-OFDM QPSK - RB Size 1, RB Offset 0 - Mid Channel)



Plot 7-197. Conducted Spurious Plot (NR Band n66 - 40.0MHz DFT-s-OFDM QPSK - RB Size 1, RB Offset 0 - High Channel)

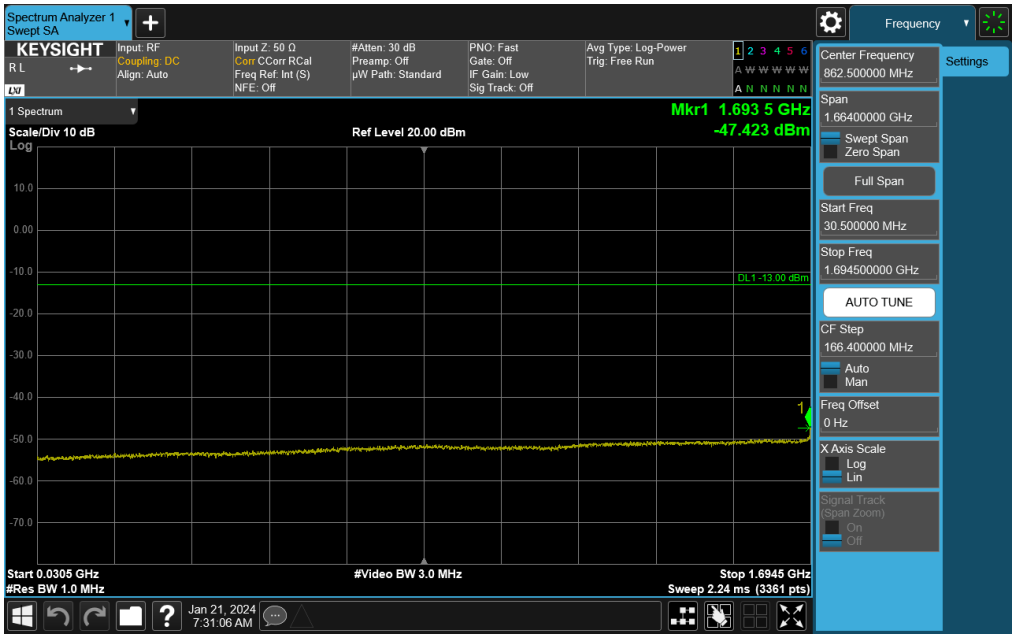


Plot 7-198. Conducted Spurious Plot (NR Band n66 - 40.0MHz DFT-s-OFDM QPSK - RB Size 1, RB Offset 0 - High Channel)

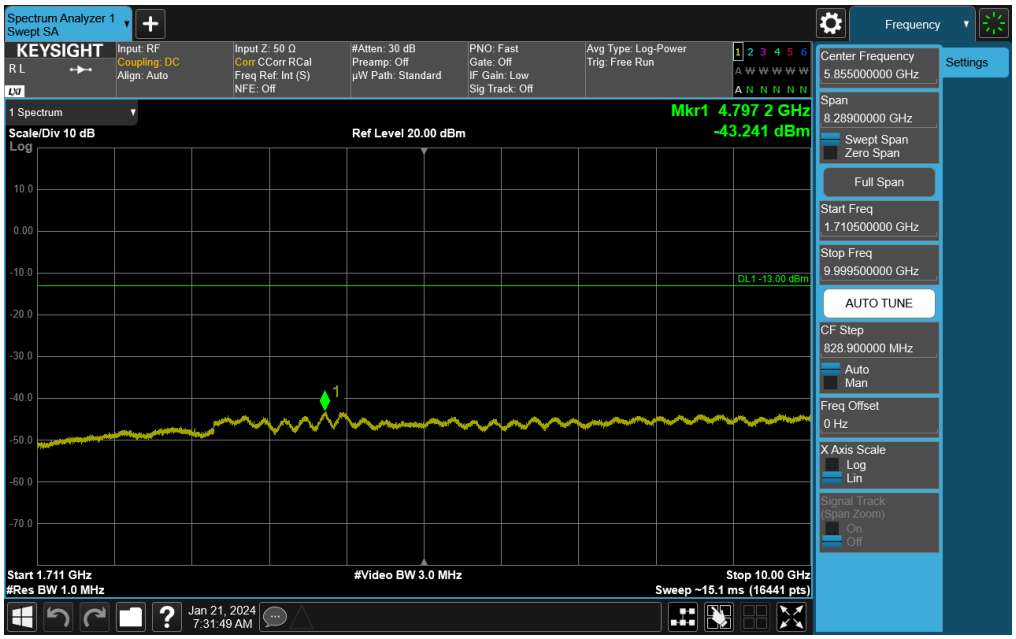


Plot 7-199. Conducted Spurious Plot (NR Band n66 - 40.0MHz DFT-s-OFDM QPSK - RB Size 1, RB Offset 0 - High Channel)

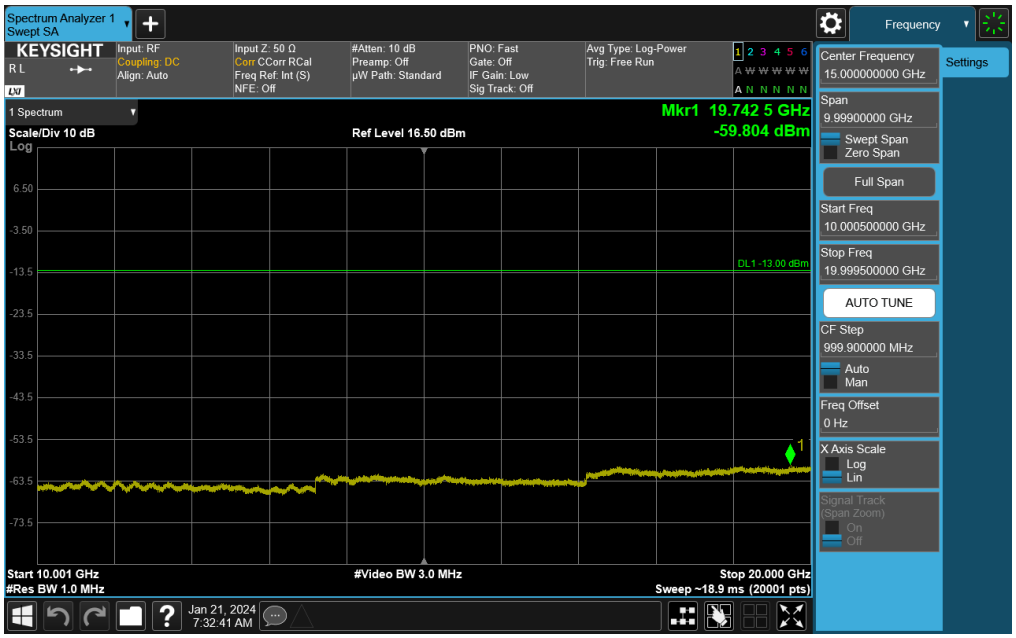
NR Band n70



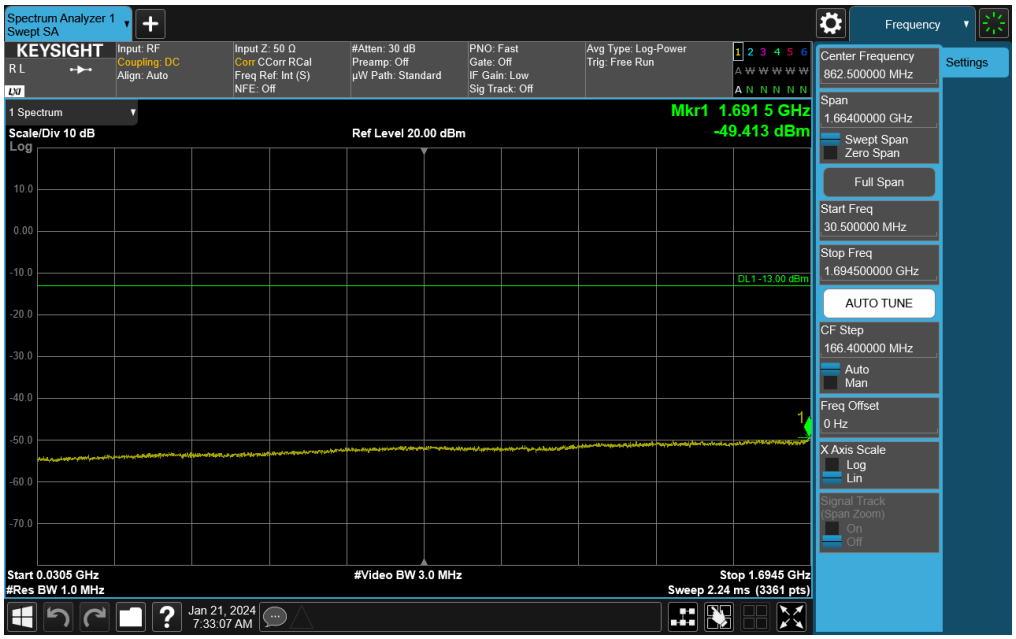
Plot 7-200. Conducted Spurious Plot (NR Band n70 -10.0MHz DFT-s-OFDM QPSK - RB Size 1, RB Offset 0 - Low Channel)



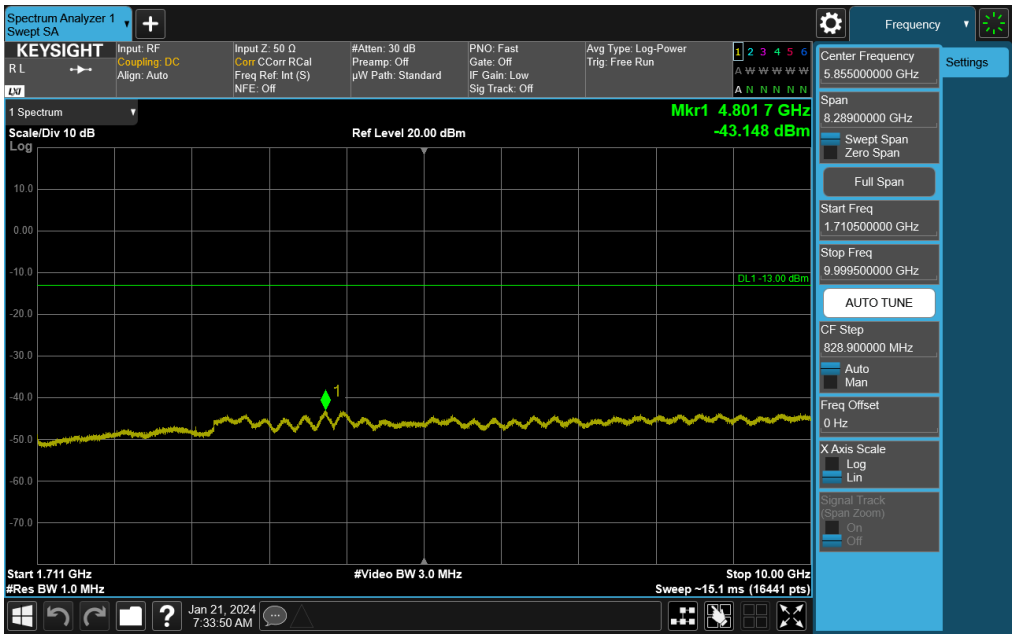
Plot 7-201. Conducted Spurious Plot (NR Band n70 - 10.0MHz DFT-s-OFDM QPSK - RB Size 1, RB Offset 0 - Low Channel)



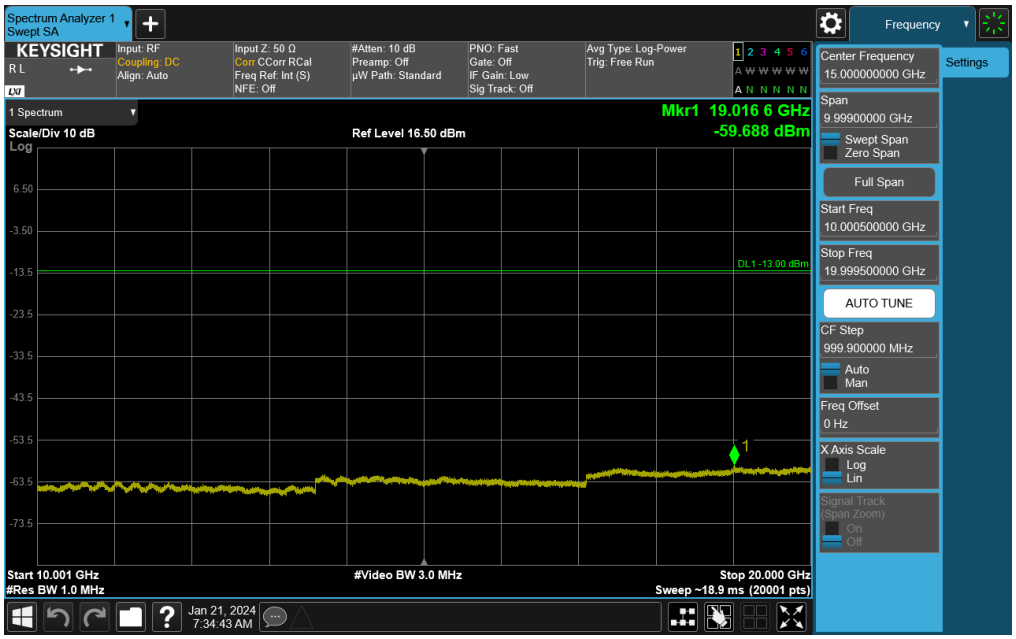
Plot 7-202. Conducted Spurious Plot (NR Band n70 - 10.0MHz DFT-s-OFDM QPSK - RB Size 1, RB Offset 0 - Low Channel)



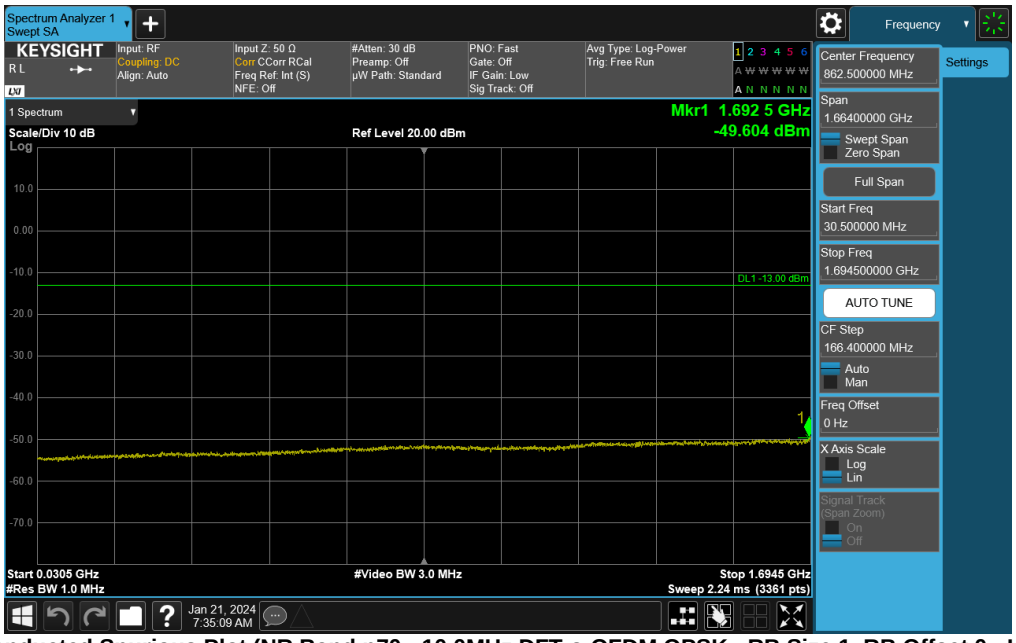
Plot 7-203. Conducted Spurious Plot (NR Band n70 - 15.0MHz DFT-s-OFDM QPSK - RB Size 1, RB Offset 0 - Mid Channel)



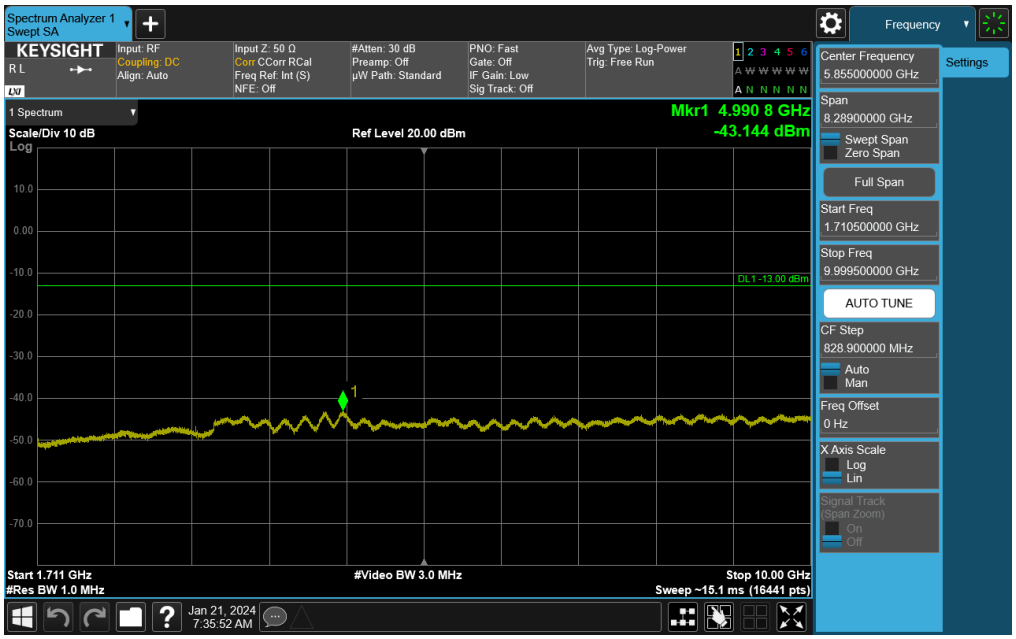
Plot 7-204. Conducted Spurious Plot (NR Band n70 - 15.0MHz DFT-s-OFDM QPSK - RB Size 1, RB Offset 0 - Mid Channel)



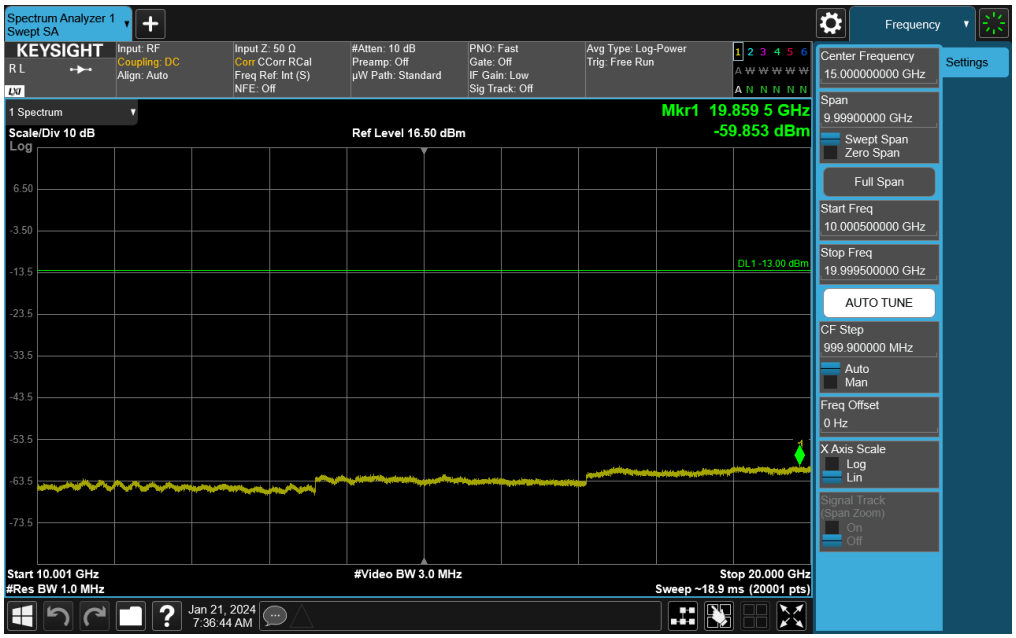
Plot 7-205. Conducted Spurious Plot (NR Band n70 - 15.0MHz DFT-s-OFDM QPSK - RB Size 1, RB Offset 0 - Mid Channel)



Plot 7-206. Conducted Spurious Plot (NR Band n70 - 10.0MHz DFT-s-OFDM QPSK - RB Size 1, RB Offset 0 - High Channel)

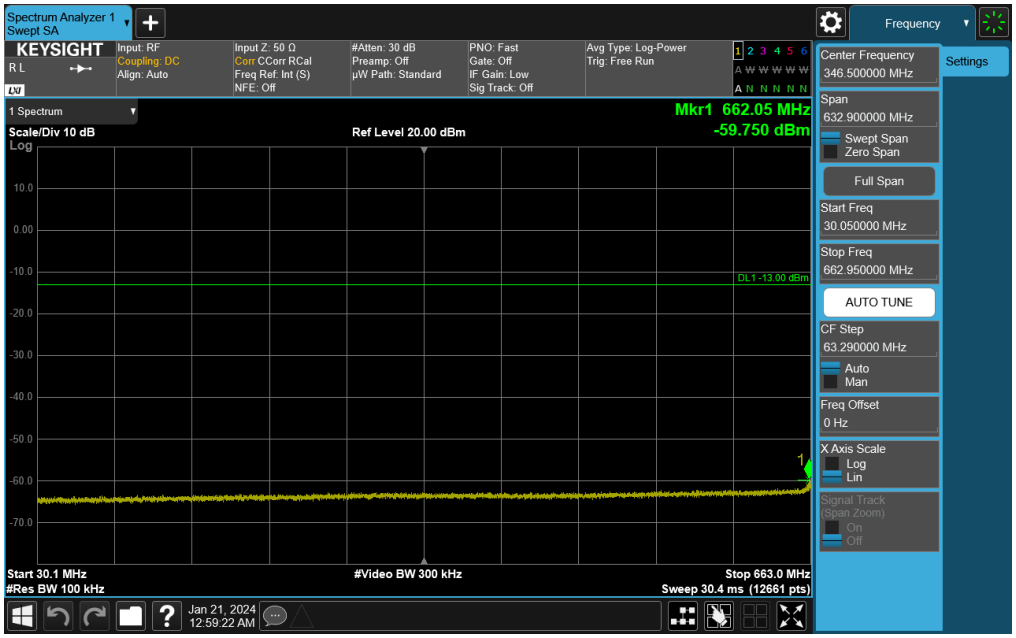


Plot 7-207. Conducted Spurious Plot (NR Band n70 - 10.0MHz DFT-s-OFDM QPSK - RB Size 1, RB Offset 0 - High Channel)

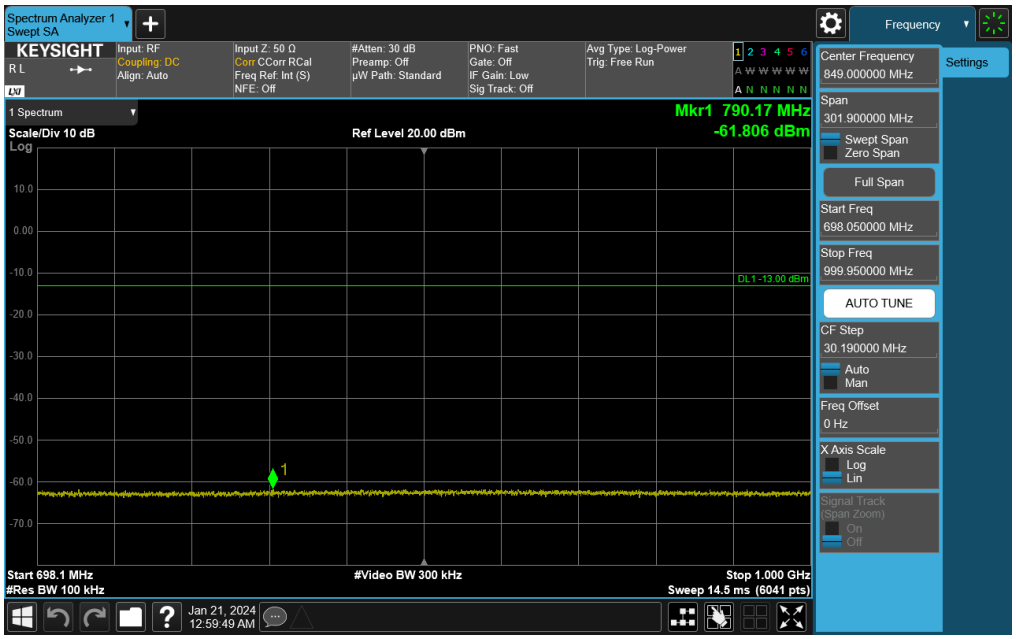


Plot 7-208. Conducted Spurious Plot (NR Band n70 - 10.0MHz DFT-s-OFDM QPSK - RB Size 1, RB Offset 0 - High Channel)

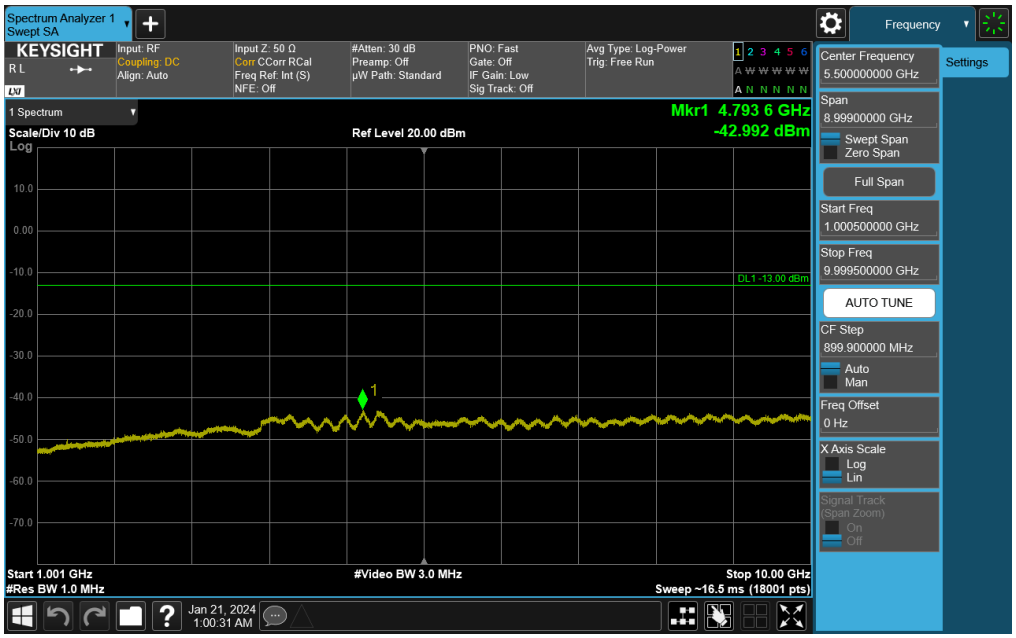
NR Band n71



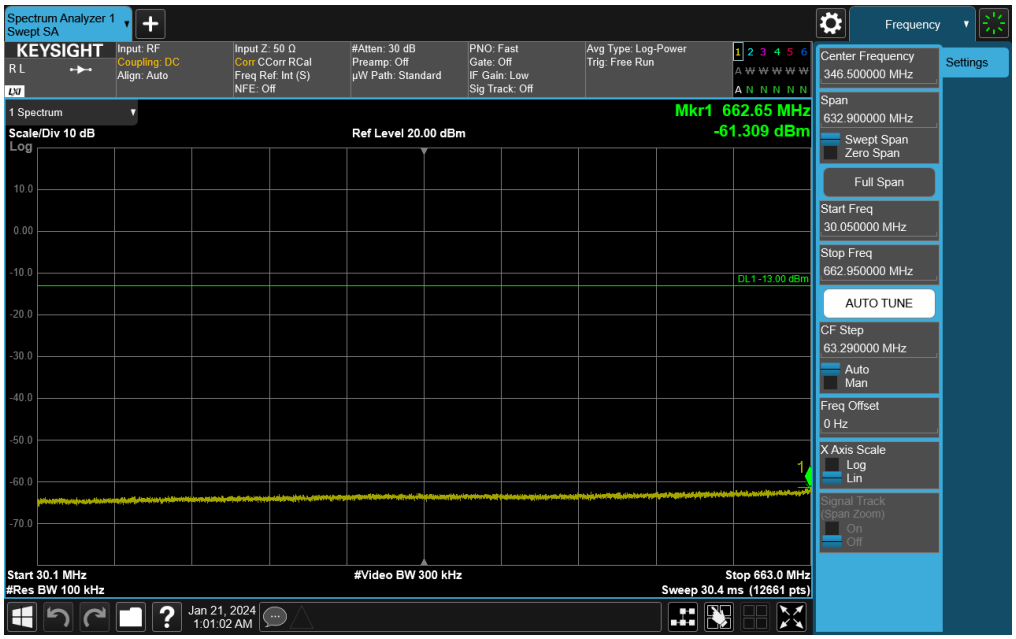
Plot 7-209. Conducted Spurious Plot (NR Band n71 -20.0MHz DFT-s-OFDM QPSK - RB Size 1, RB Offset 0 - Low Channel)



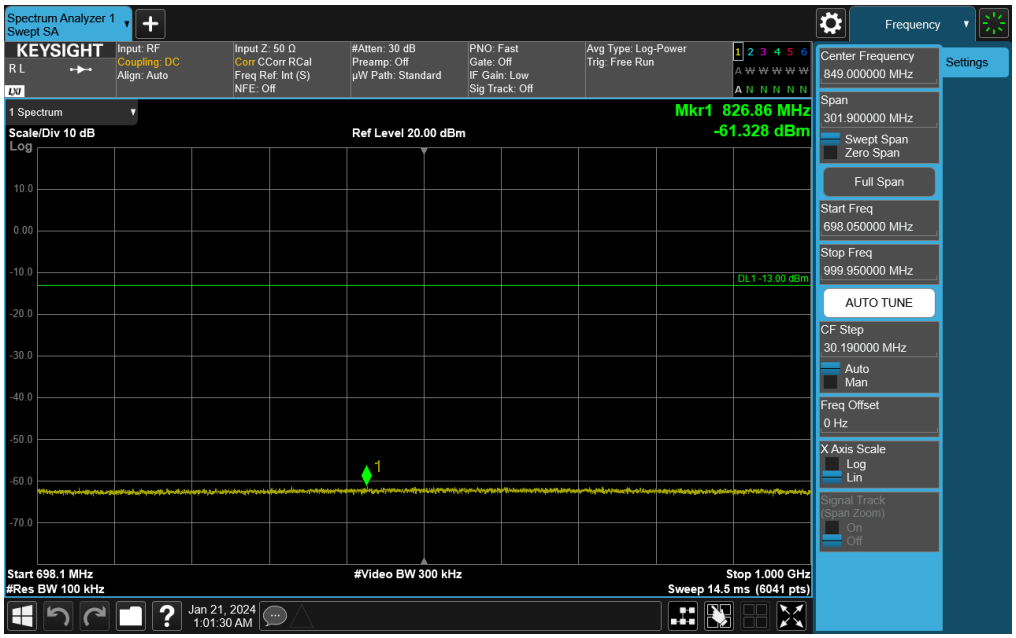
Plot 7-210. Conducted Spurious Plot (NR Band n71 - 20.0MHz DFT-s-OFDM QPSK - RB Size 1, RB Offset 0 - Low Channel)



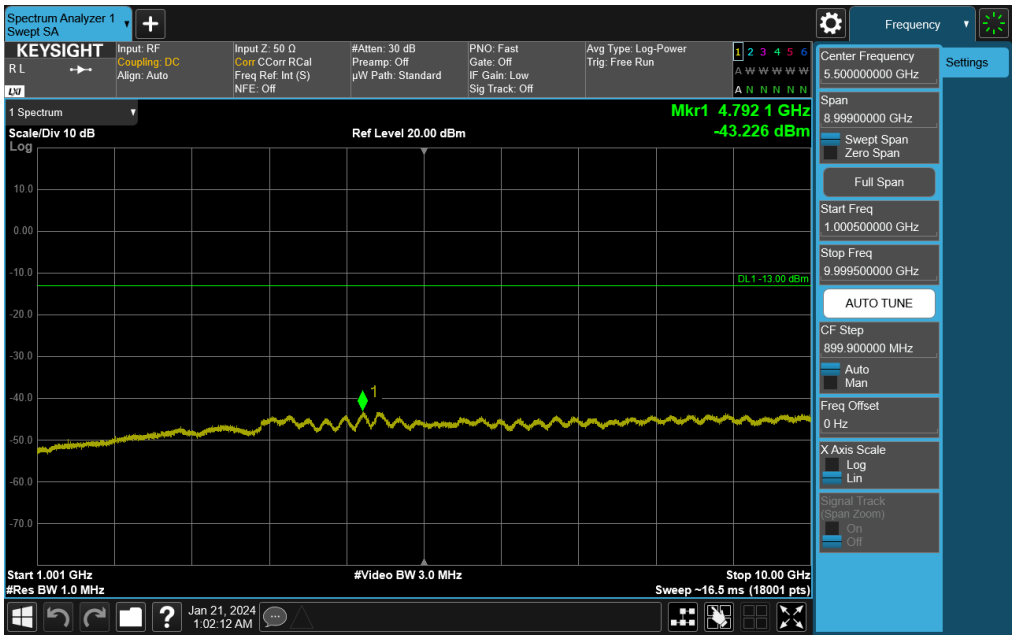
Plot 7-211. Conducted Spurious Plot (NR Band n71 - 20.0MHz DFT-s-OFDM QPSK - RB Size 1, RB Offset 0 - Low Channel)



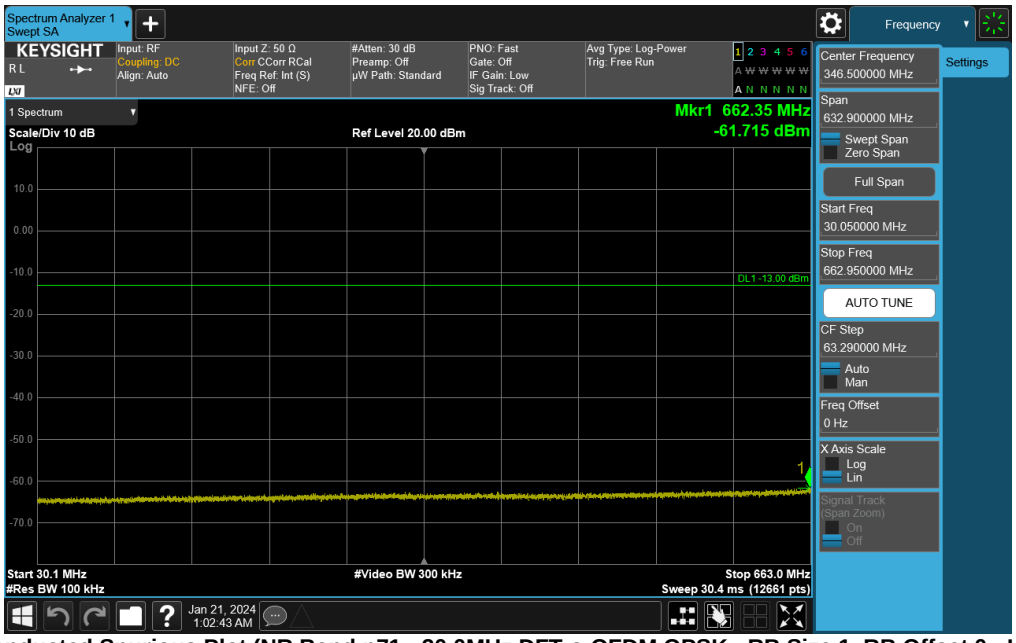
Plot 7-212. Conducted Spurious Plot (NR Band n71 - 20.0MHz DFT-s-OFDM QPSK - RB Size 1, RB Offset 0 - Mid Channel)



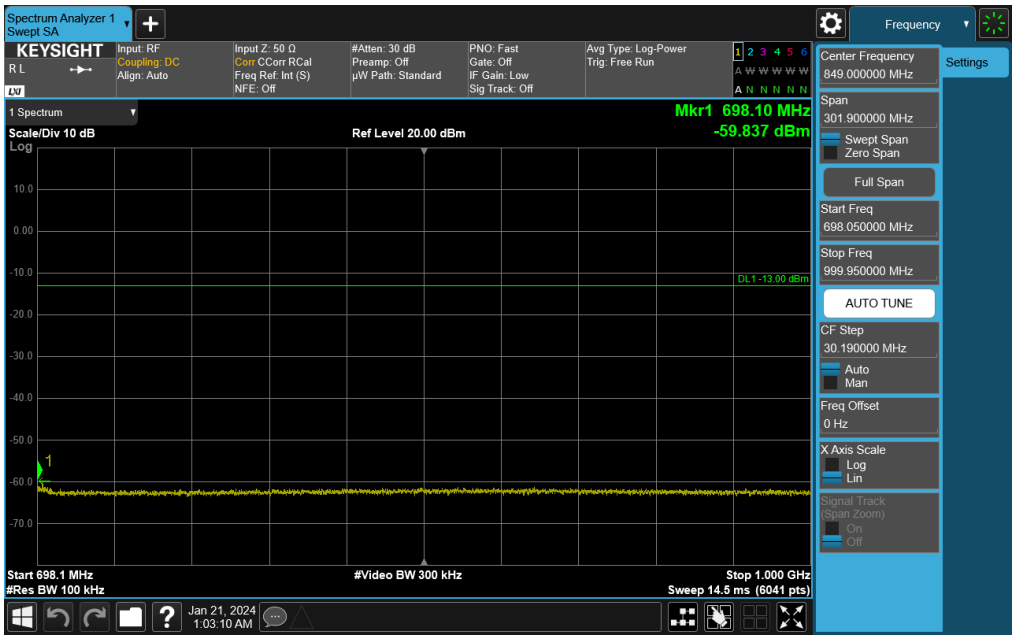
Plot 7-213. Conducted Spurious Plot (NR Band n71 - 20.0MHz DFT-s-OFDM QPSK - RB Size 1, RB Offset 0 - Mid Channel)



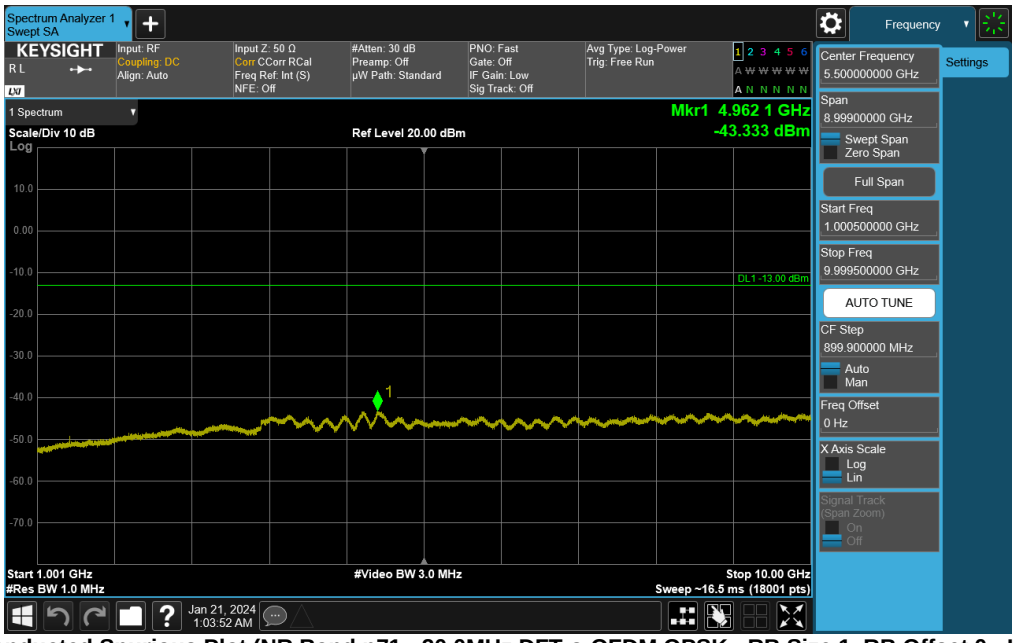
Plot 7-214. Conducted Spurious Plot (NR Band n71 - 20.0MHz DFT-s-OFDM QPSK - RB Size 1, RB Offset 0 - Mid Channel)



Plot 7-215. Conducted Spurious Plot (NR Band n71 - 20.0MHz DFT-s-OFDM QPSK - RB Size 1, RB Offset 0 - High Channel)

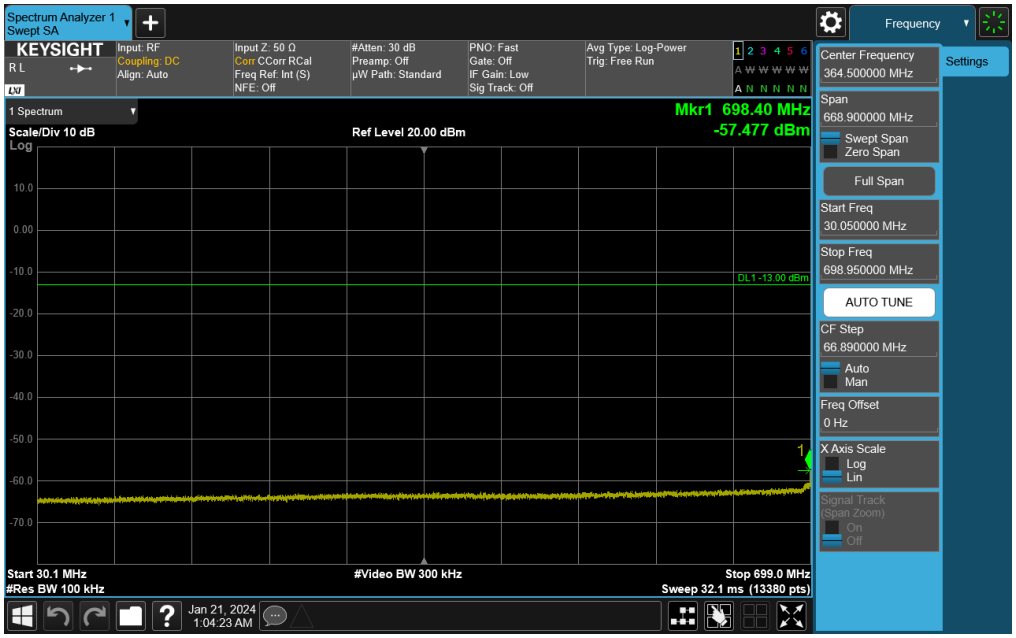


Plot 7-216. Conducted Spurious Plot (NR Band n71 - 20.0MHz DFT-s-OFDM QPSK - RB Size 1, RB Offset 0 - High Channel)

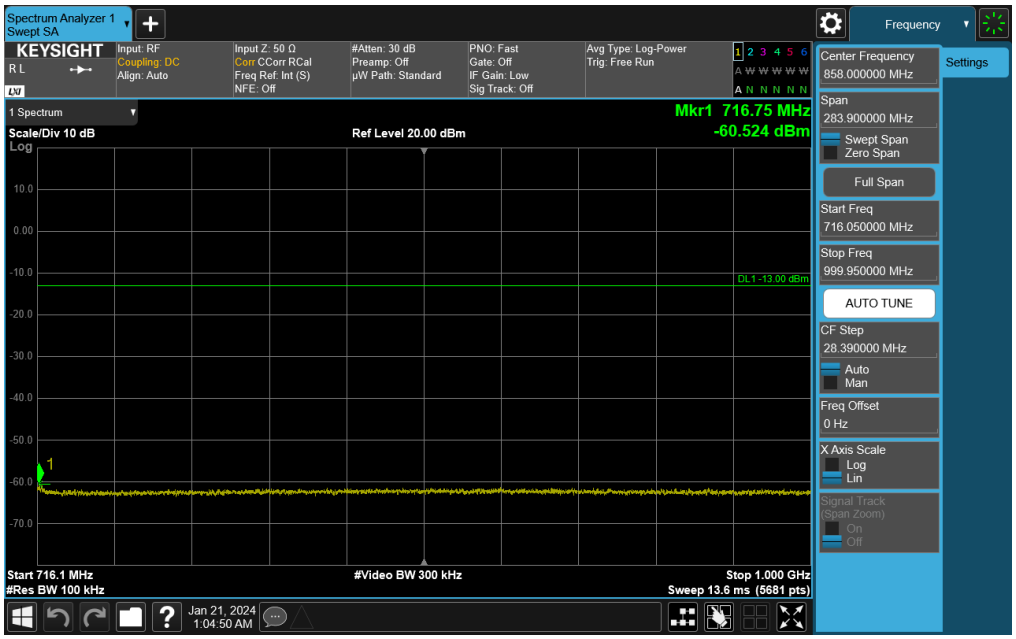


Plot 7-217. Conducted Spurious Plot (NR Band n71 - 20.0MHz DFT-s-OFDM QPSK - RB Size 1, RB Offset 0 - High Channel)

NR Band n12



Plot 7-218. Conducted Spurious Plot (NR Band n12 -15.0MHz DFT-s-OFDM QPSK - RB Size 1, RB Offset 0 - Low Channel)



Plot 7-219. Conducted Spurious Plot (NR Band n12 - 15.0MHz DFT-s-OFDM QPSK - RB Size 1, RB Offset 0 - Low Channel)