



CTK Co., Ltd.
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 Tel: +82-31-339-9970
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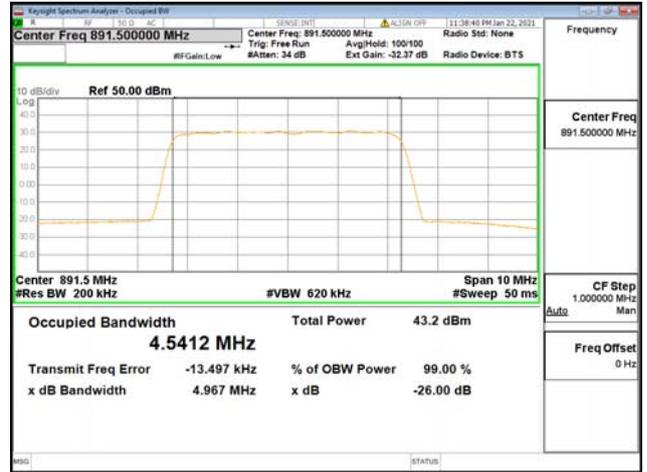
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**BW 10MHz+5MHz, Multi 2 carrier(Non-Contiguous), 2Tx, Top
 ANT 1**

QPSK



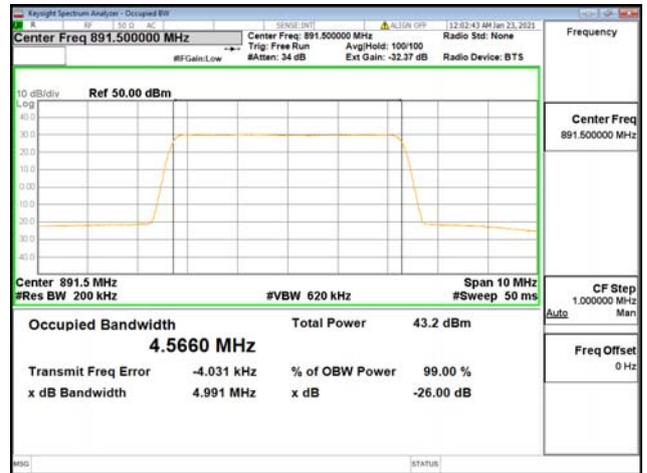
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64QAM



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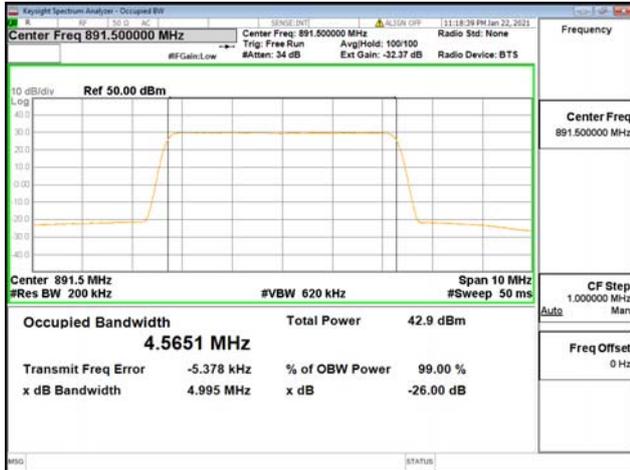


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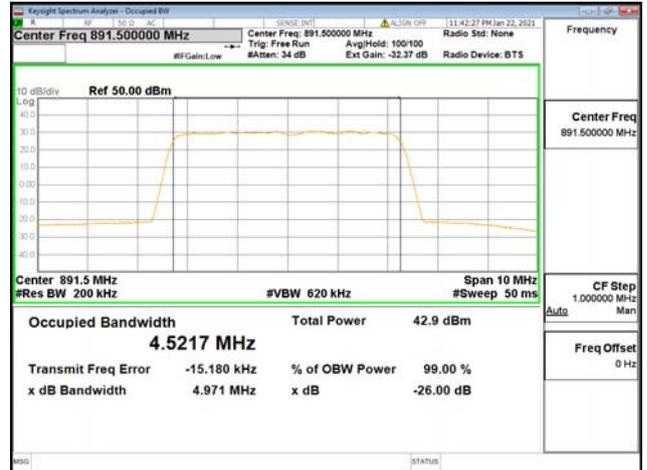
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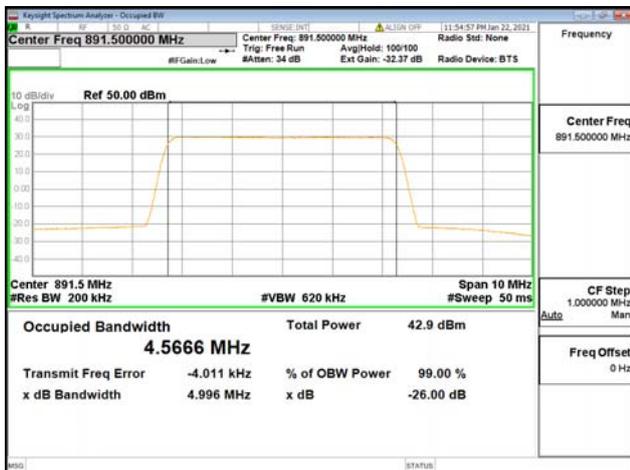
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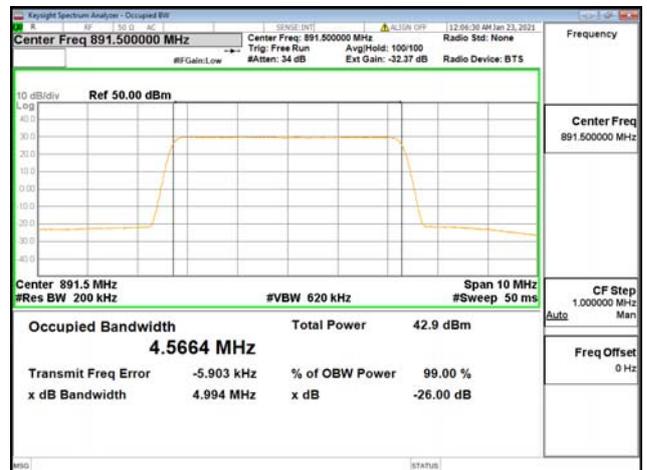
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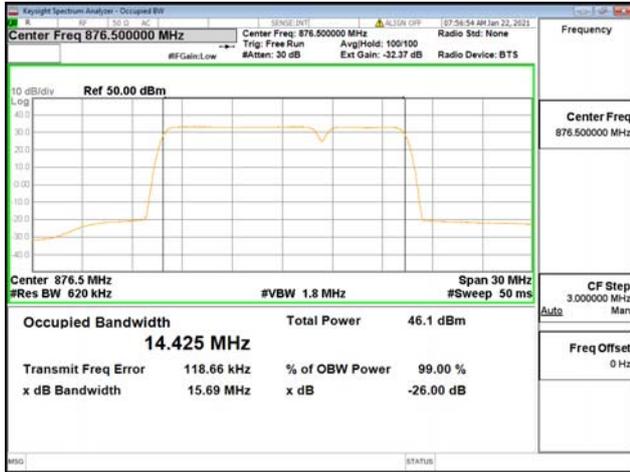


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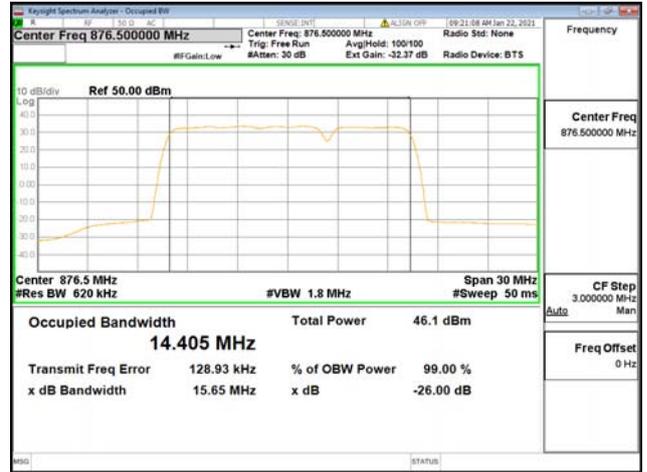
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**BW 10MHz+5MHz, Multi 2 carrier(Contiguous), 4Tx, Bottom
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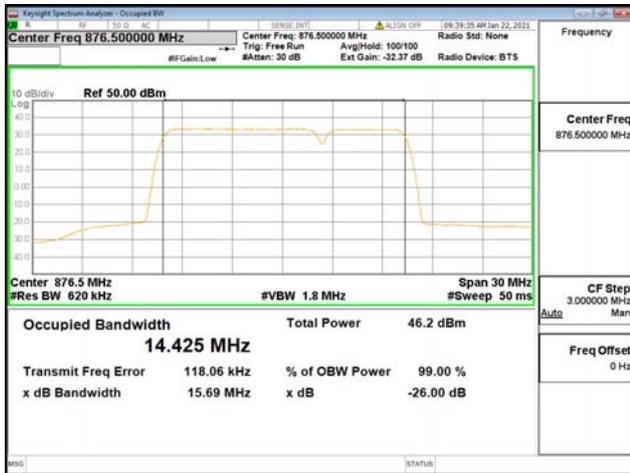
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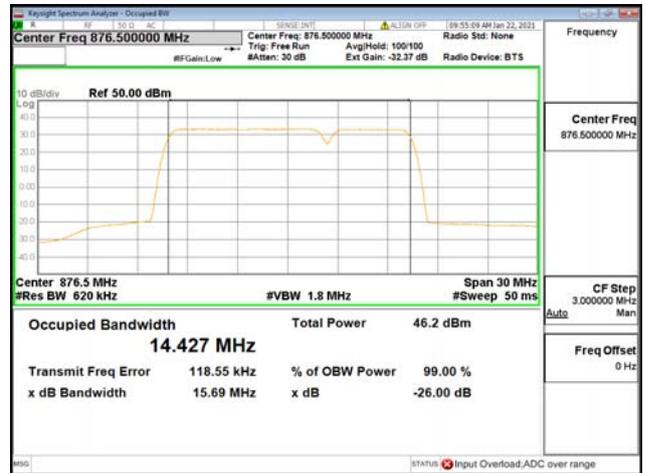
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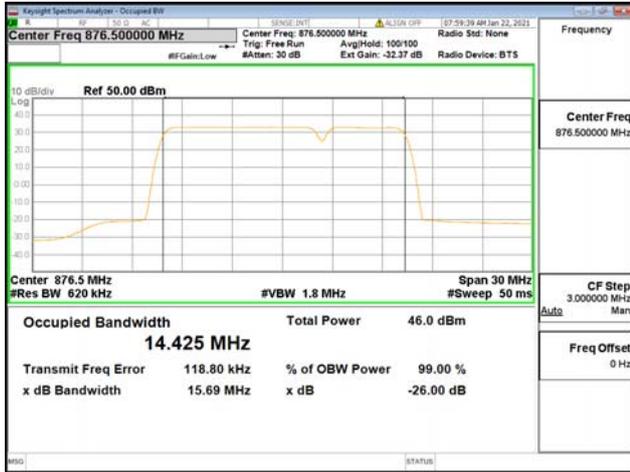
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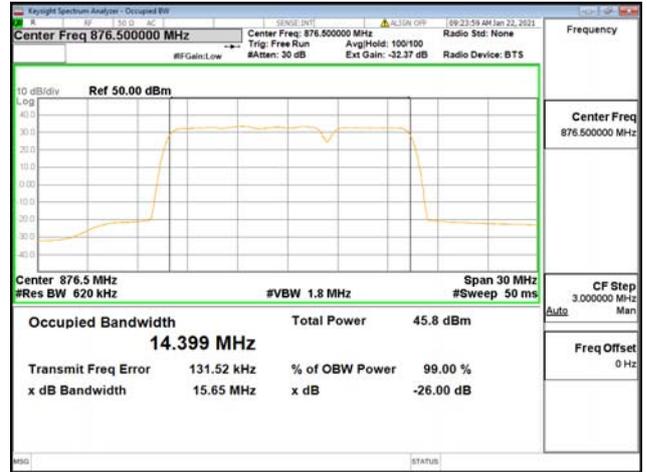


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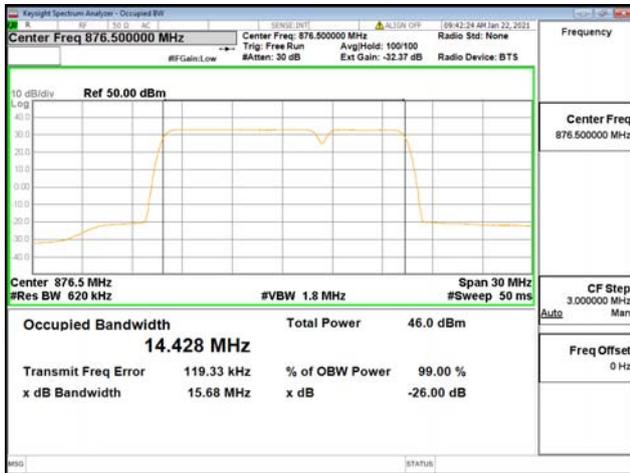
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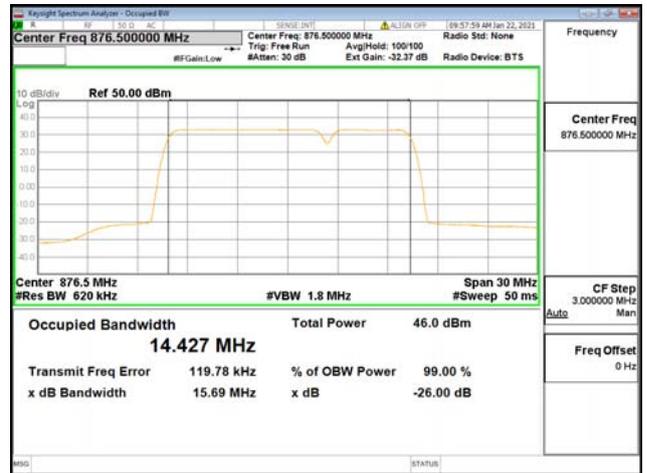
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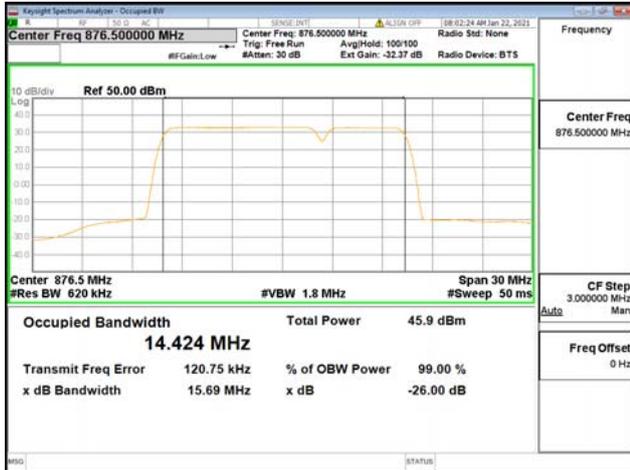
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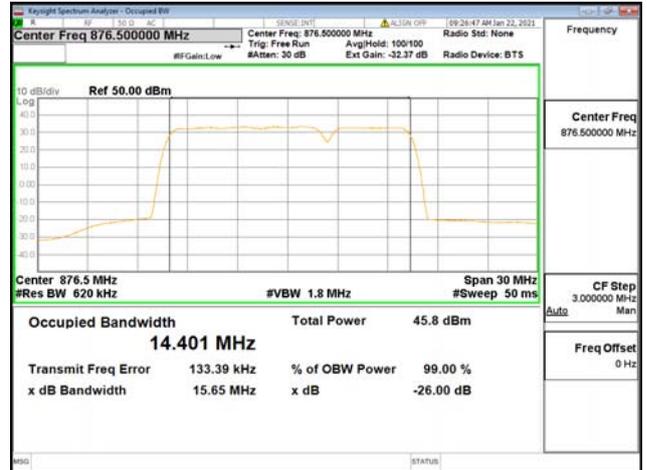


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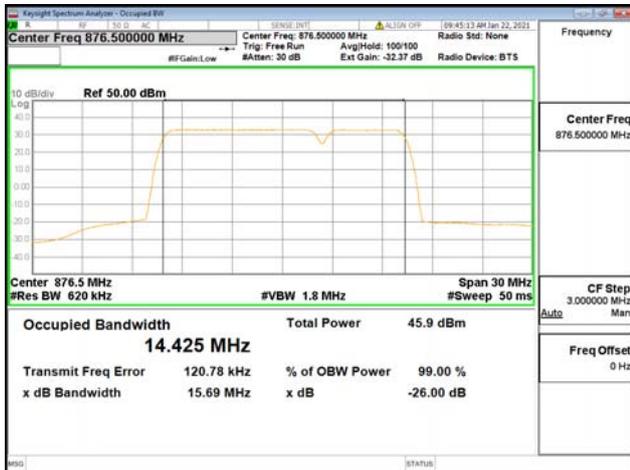
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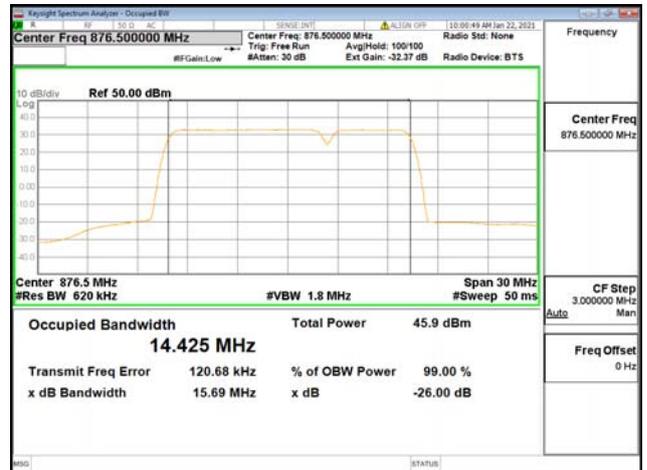
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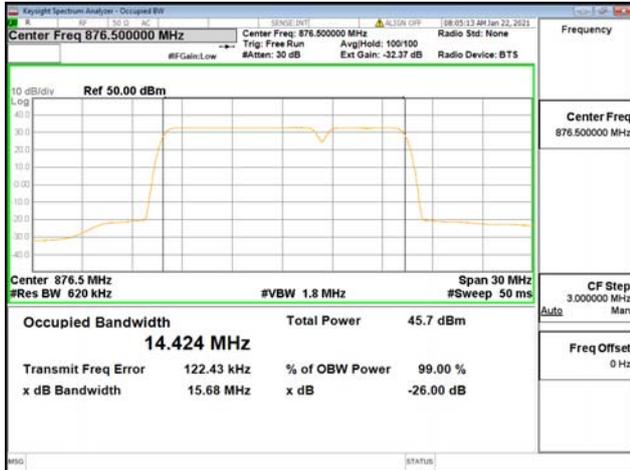
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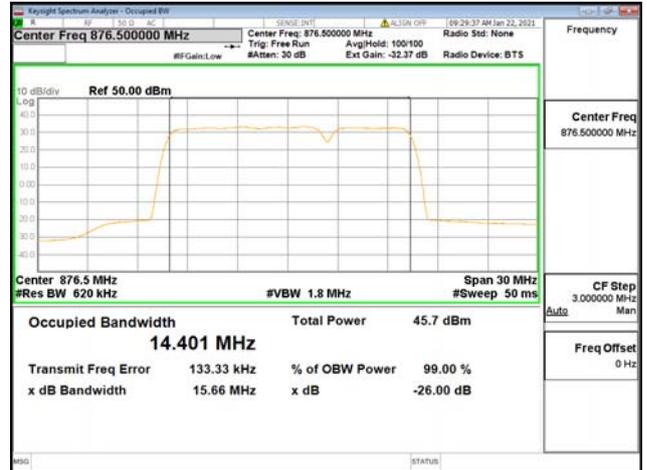


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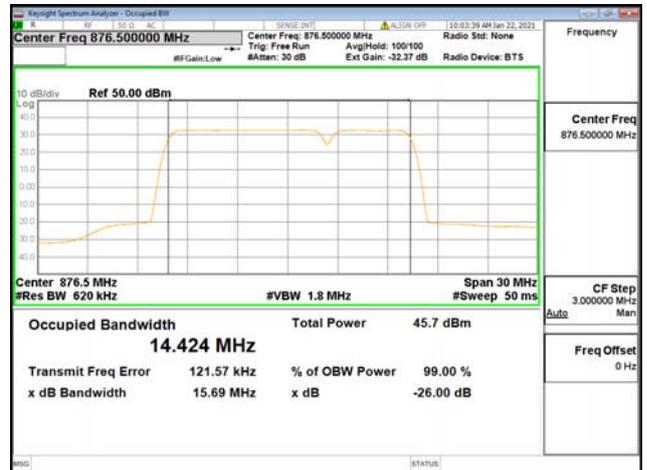
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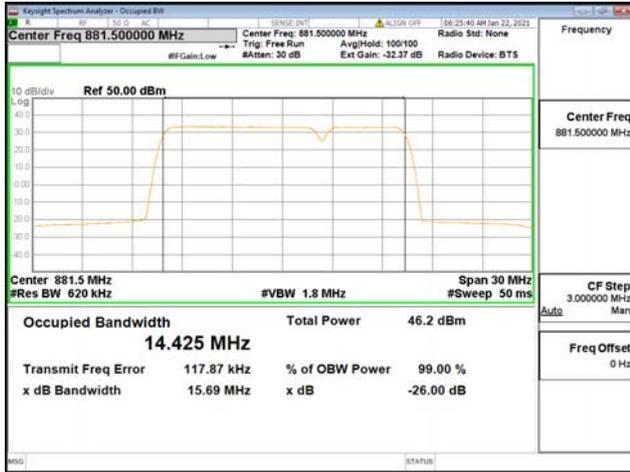


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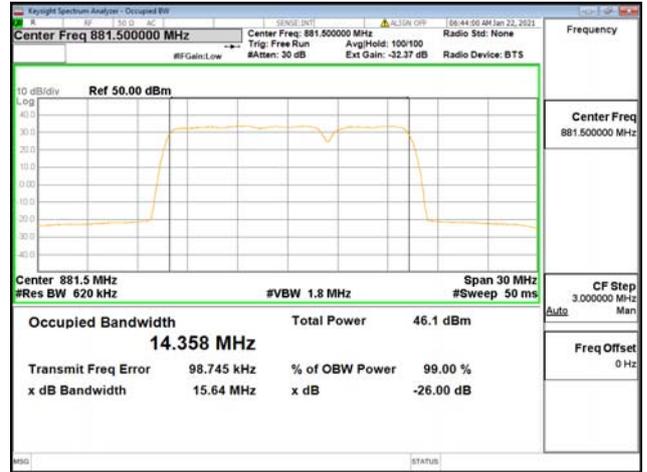
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**BW 10MHz+5MHz, Multi 2 carrier(Contiguous), 4Tx, Middle
 ANT 1**

QPSK



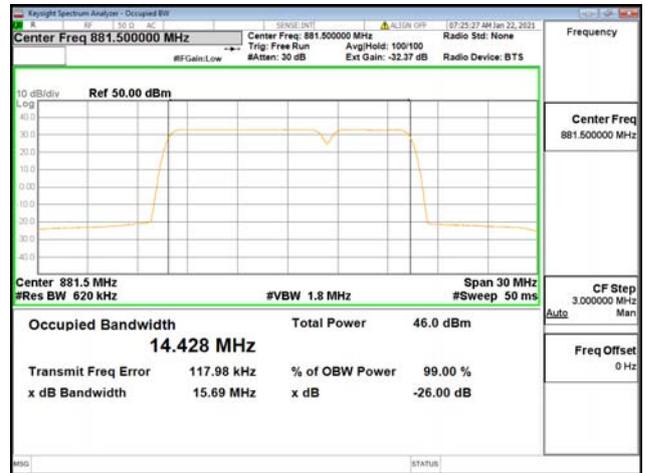
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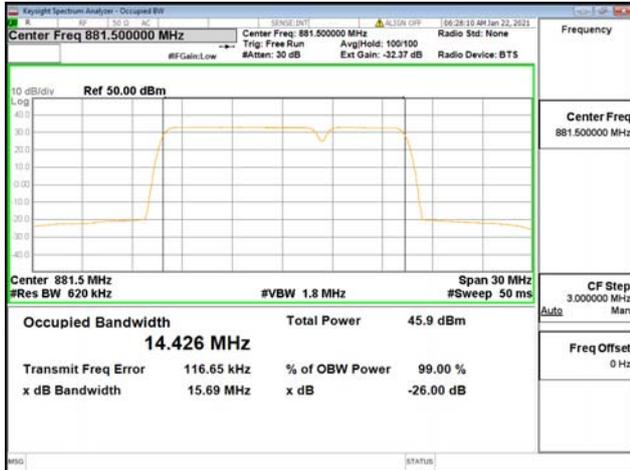


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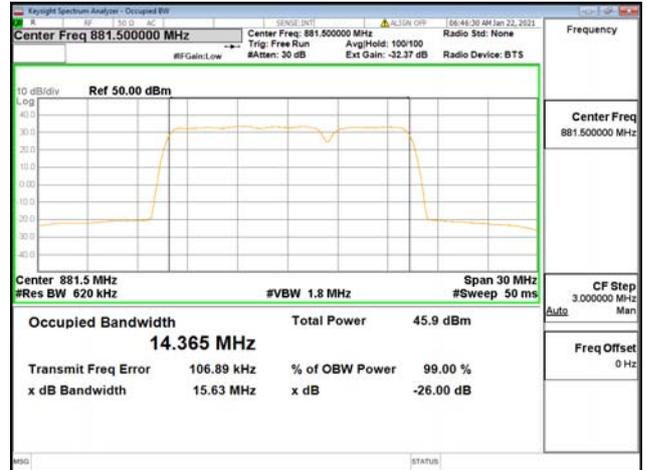
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ANT 2

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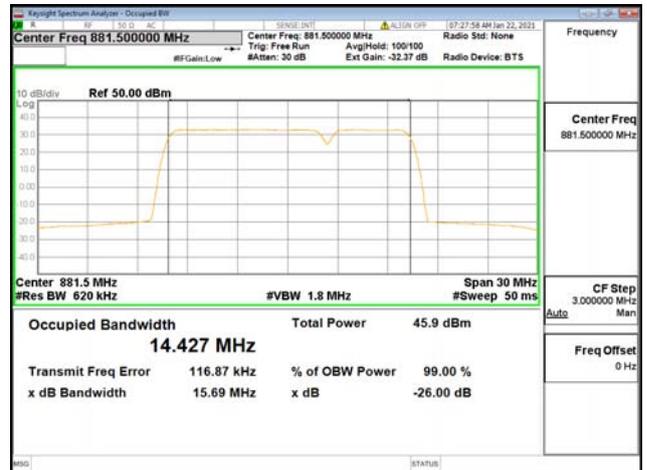
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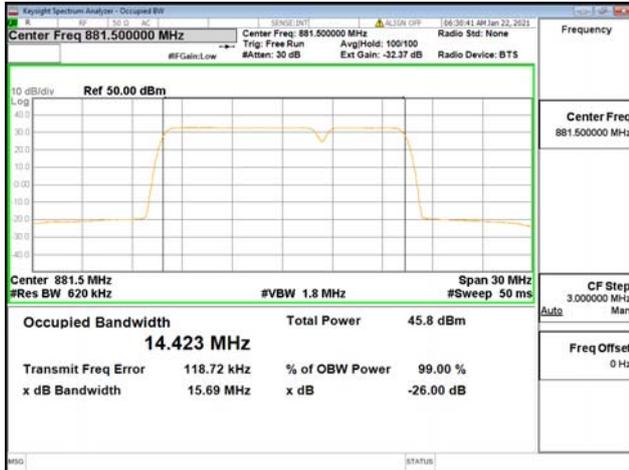
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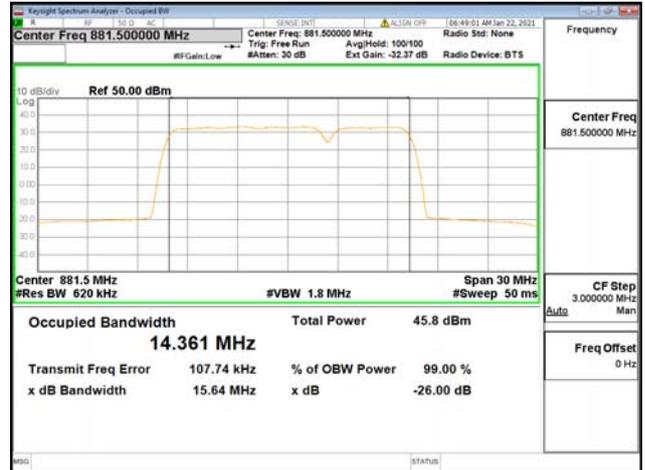


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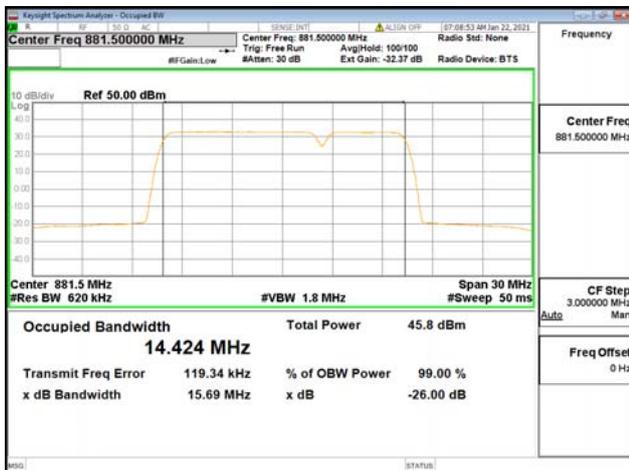
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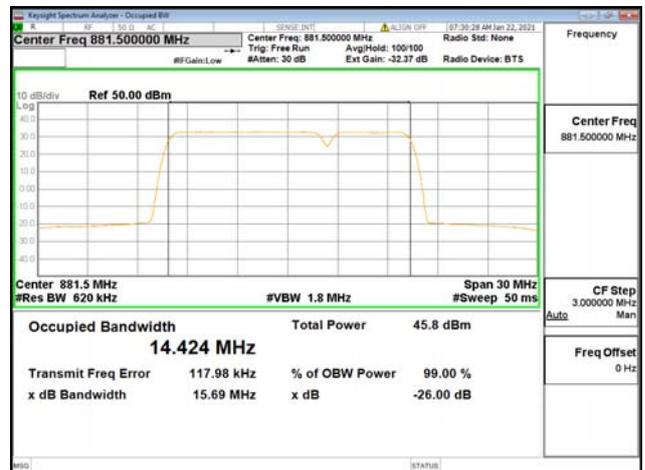
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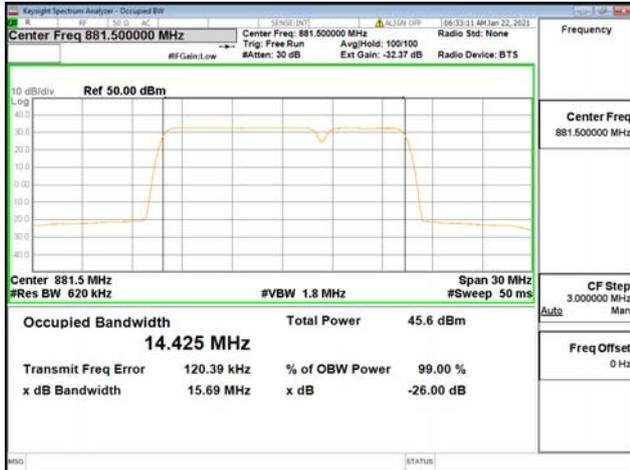
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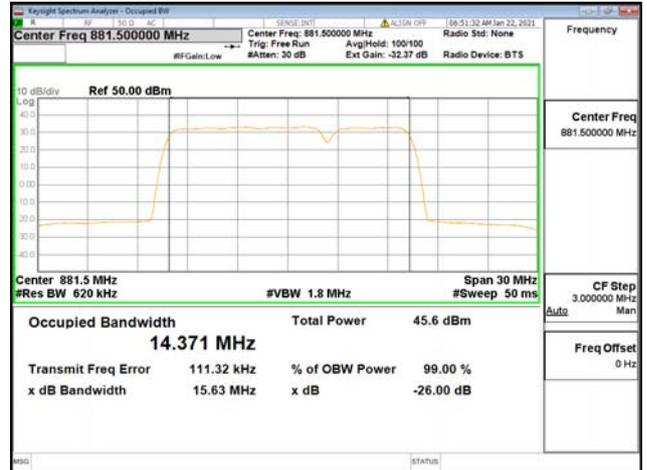


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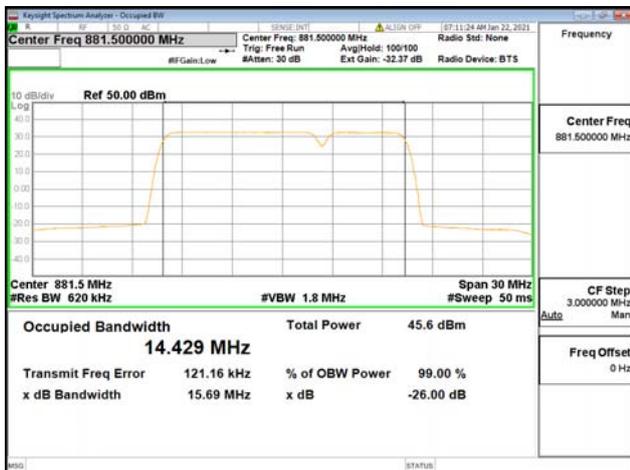
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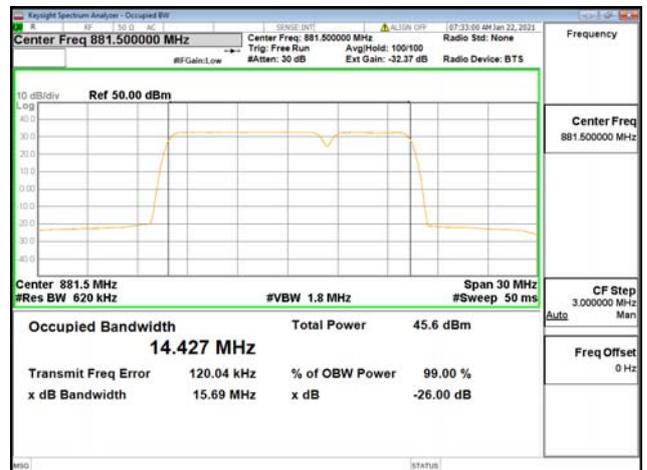
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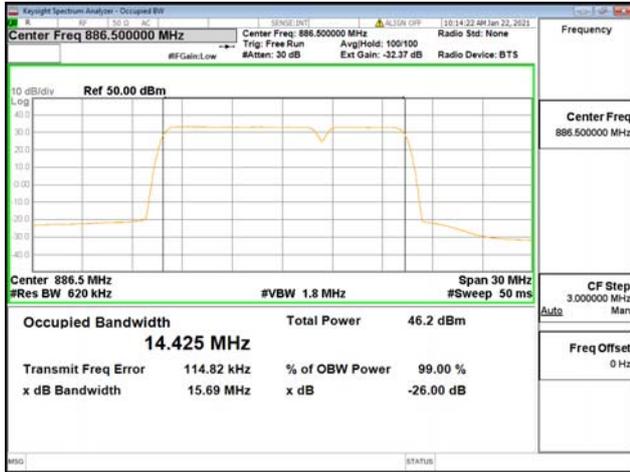
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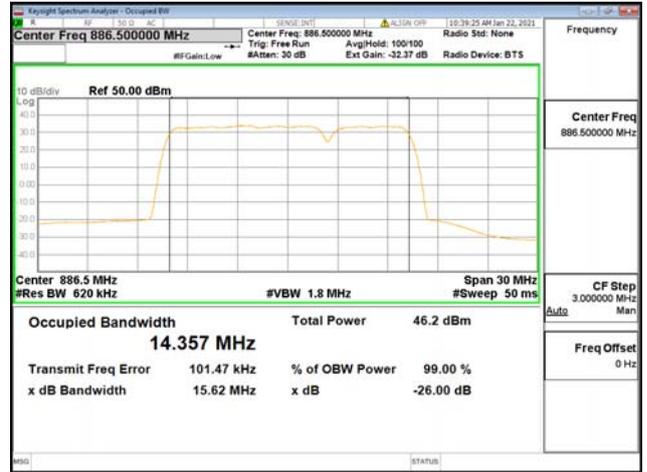


**BW 10MHz+5MHz, Multi 2 carrier(Contiguous), 4Tx, Top
 ANT 1**

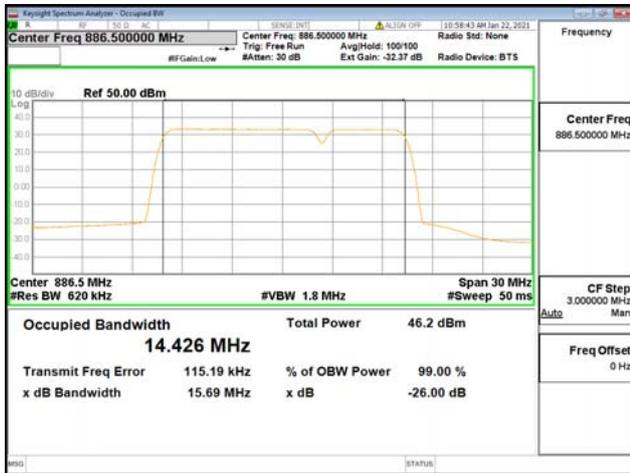
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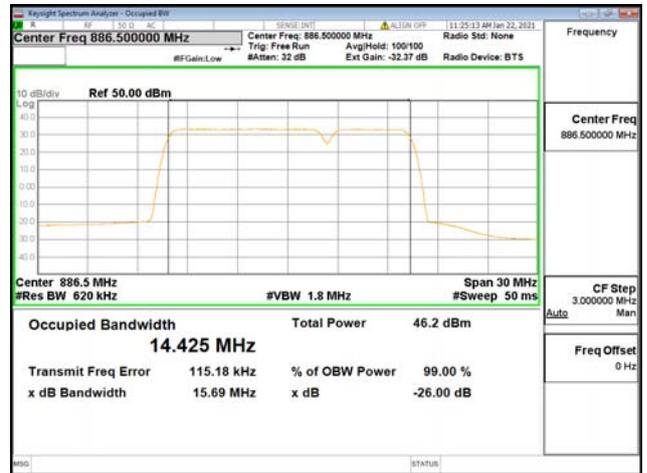
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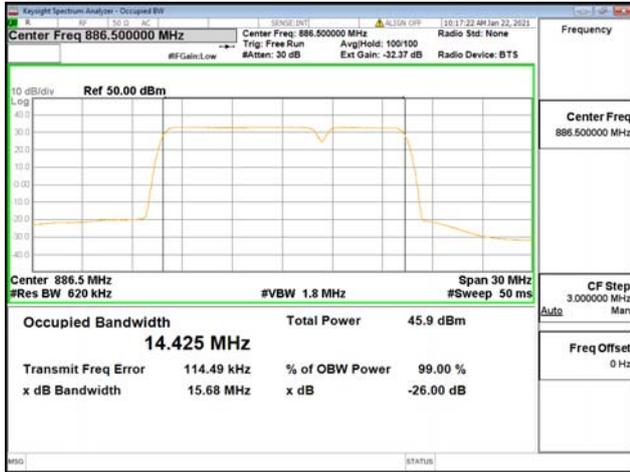


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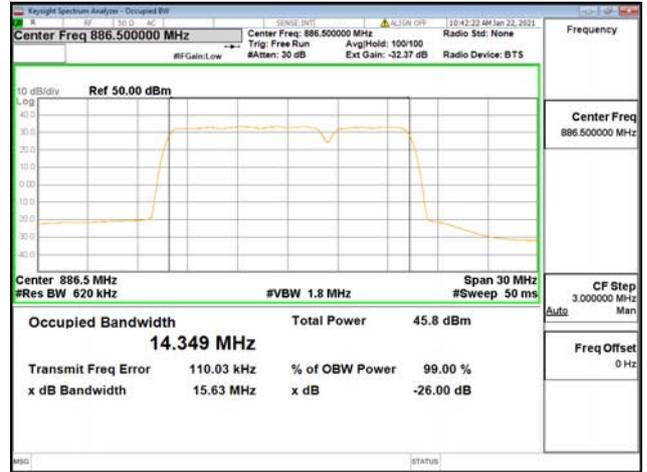
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ANT 2

QPSK



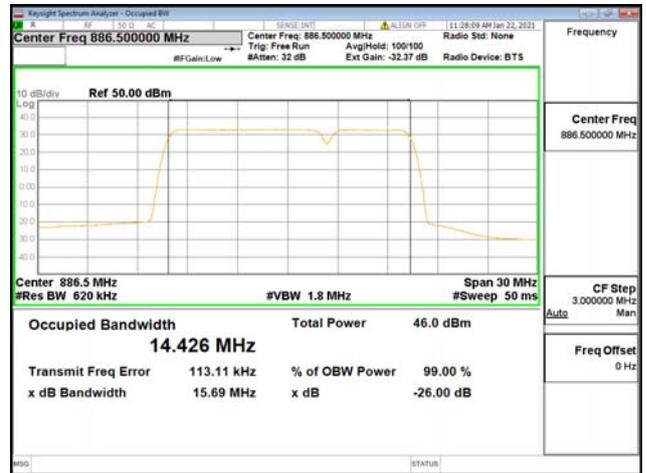
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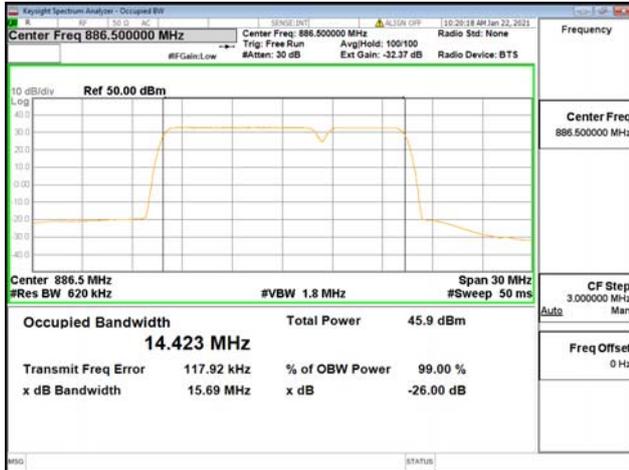
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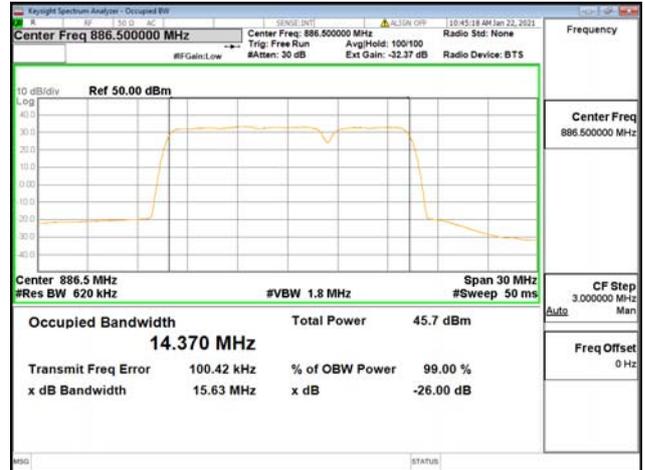


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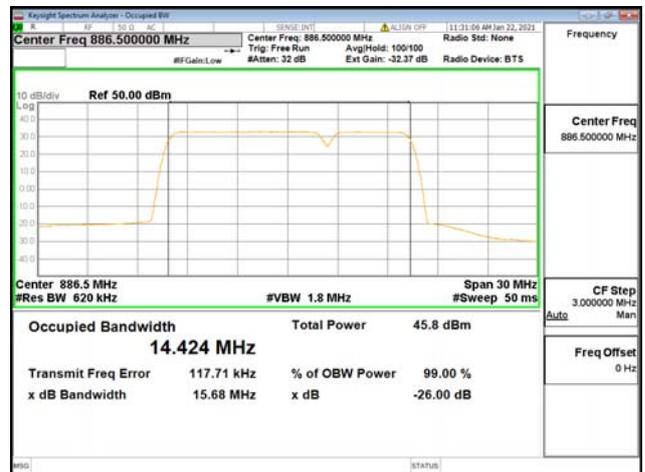
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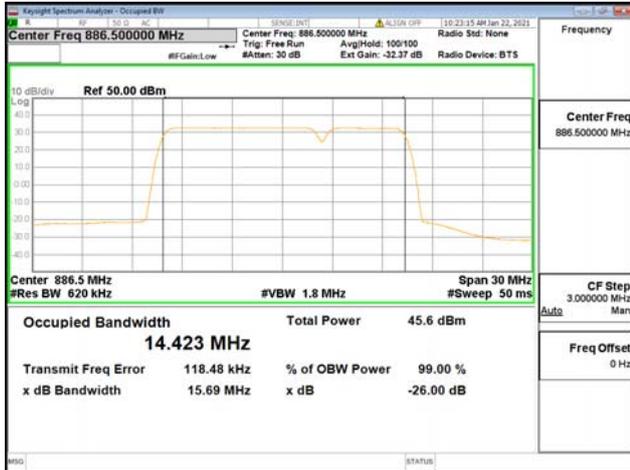
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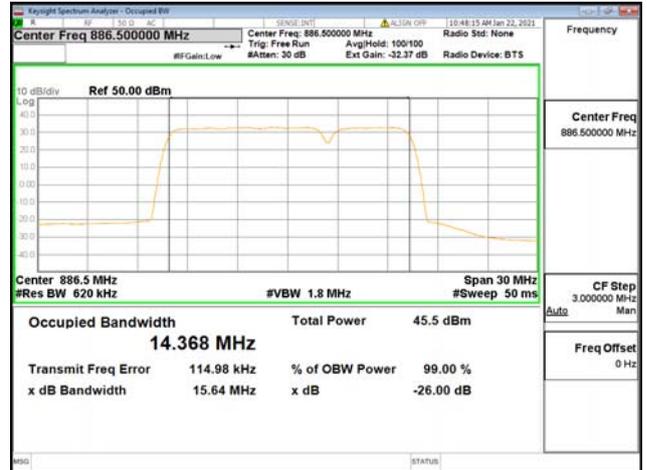


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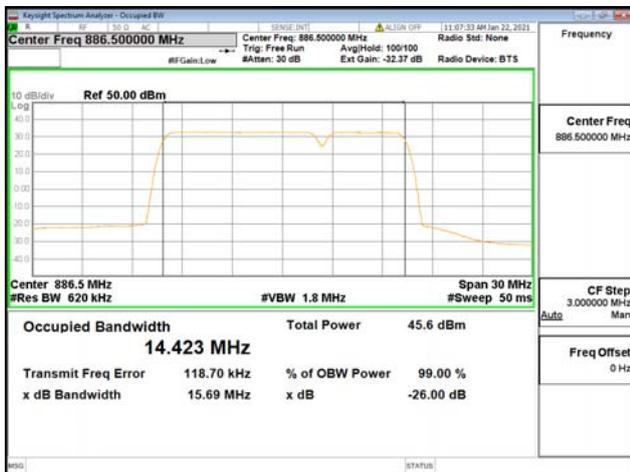
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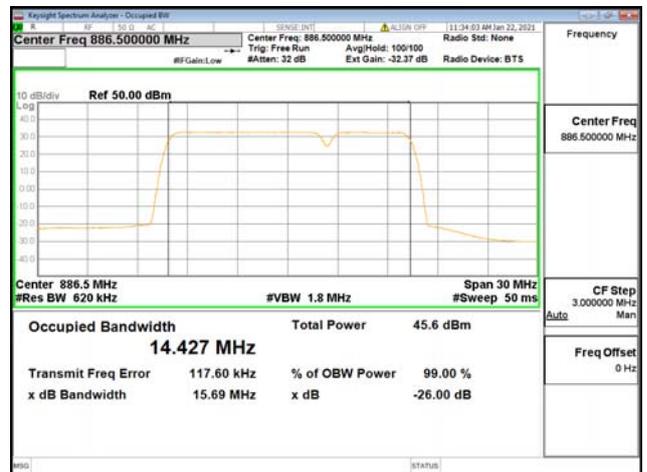
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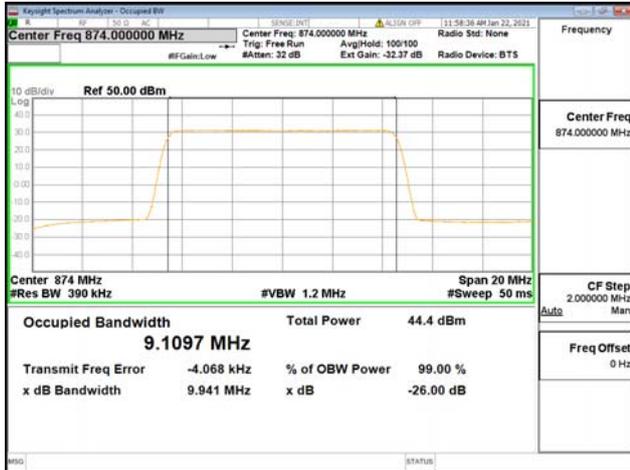


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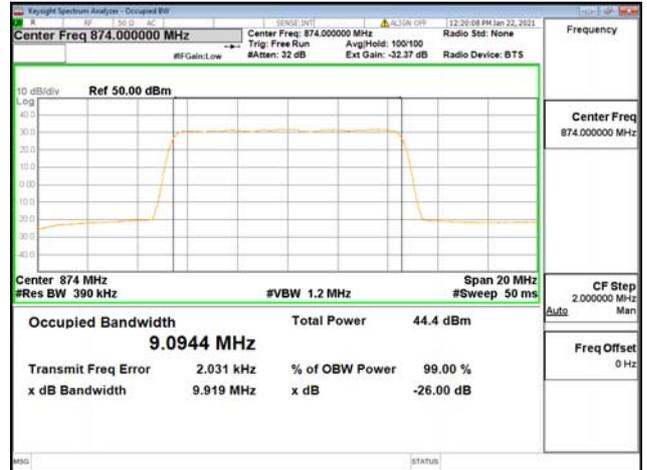
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**BW 10MHz+5MHz, Multi 2 carrier(Non-Contiguous), 4Tx, Bottom
 ANT 1**

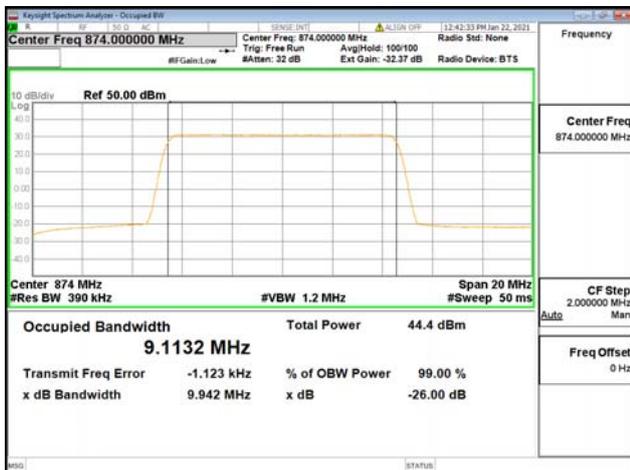
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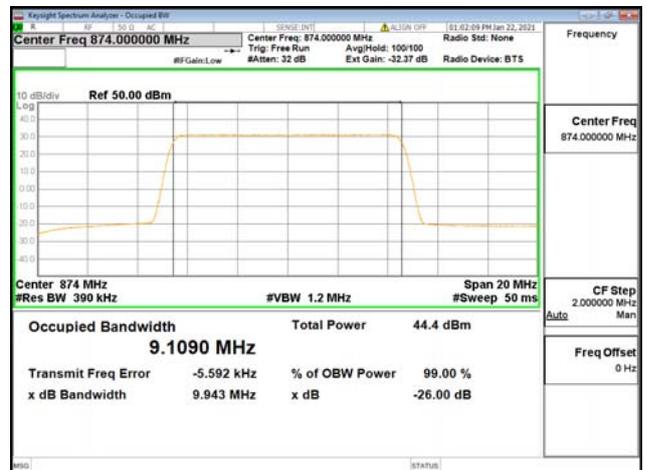
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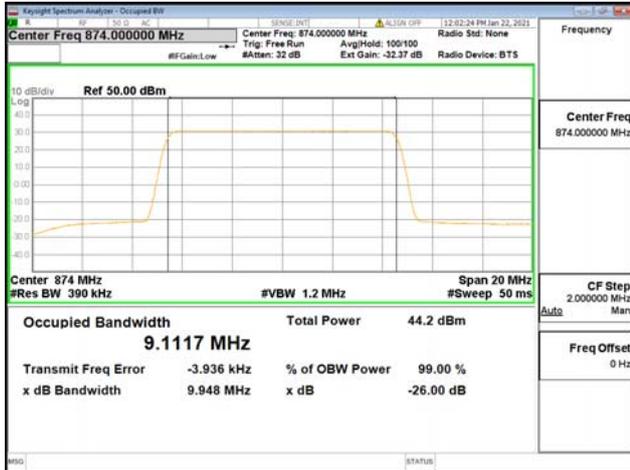


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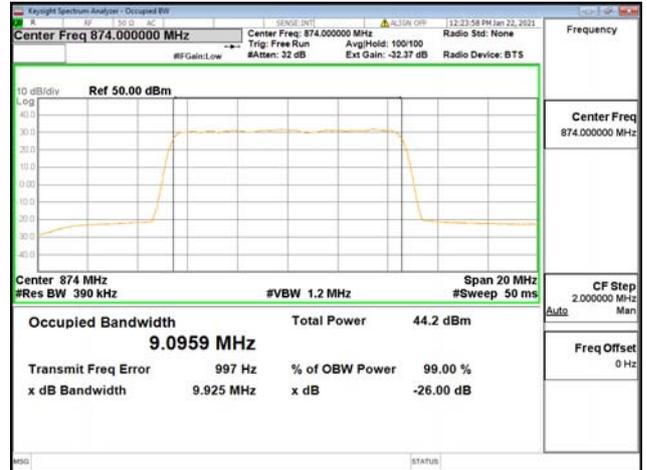
Report No.:
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ANT 2

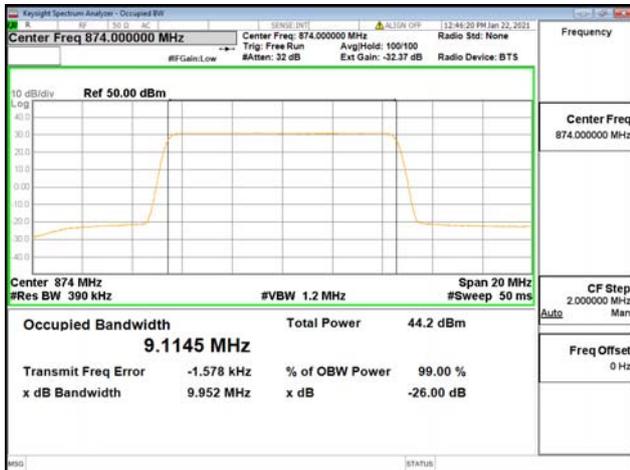
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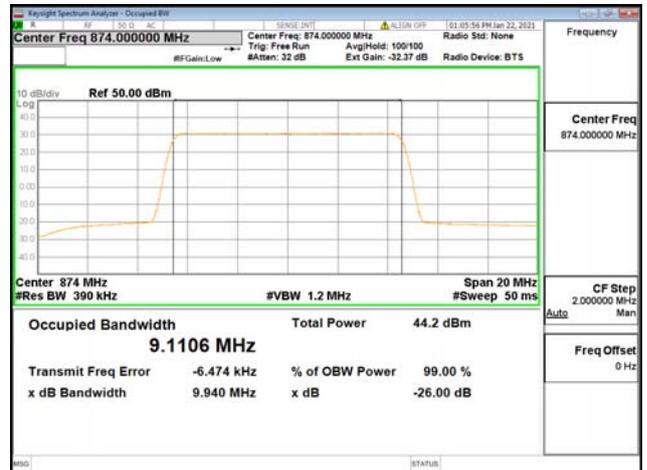
16QAM



64QAM



256QAM





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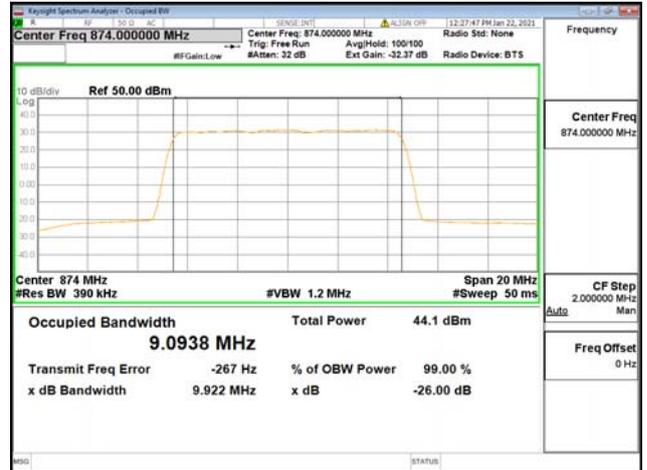
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ANT 3

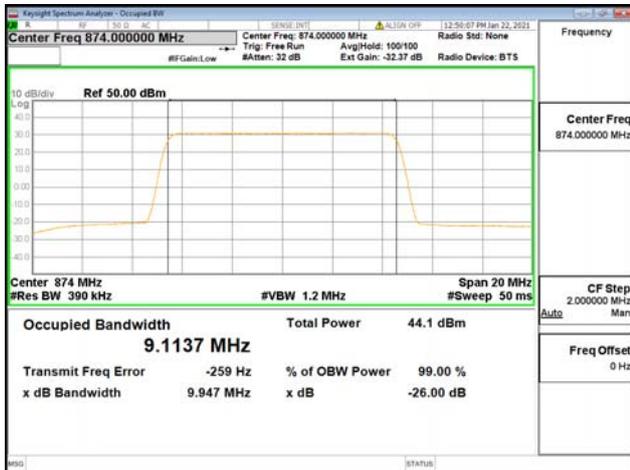
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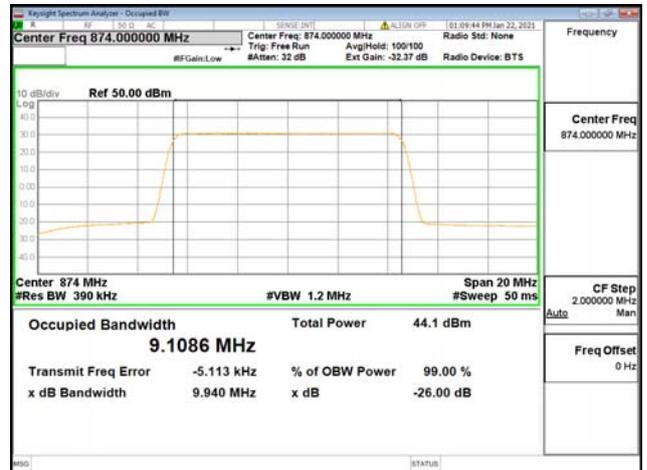
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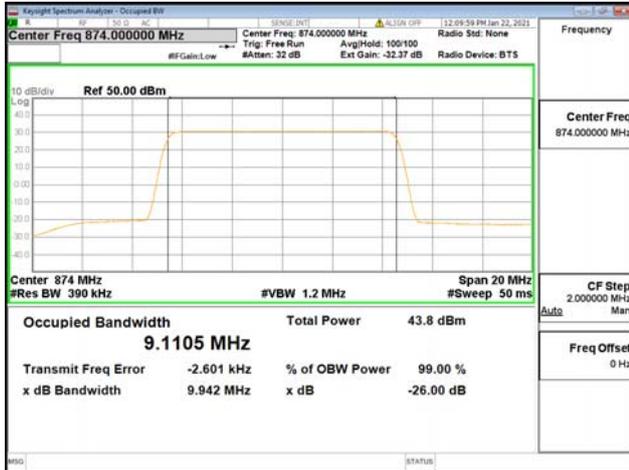


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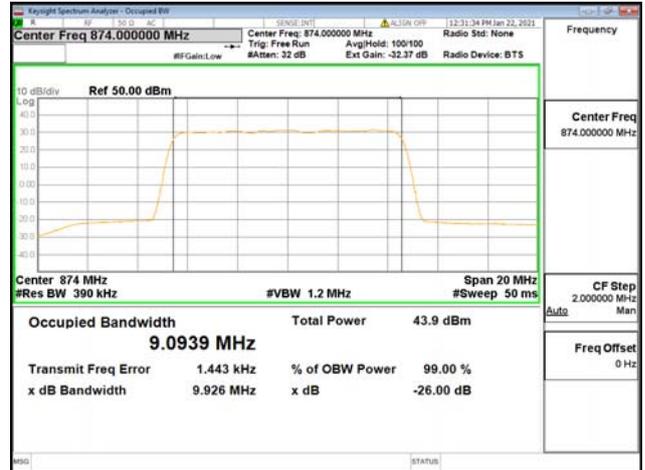
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ANT 4

QPSK



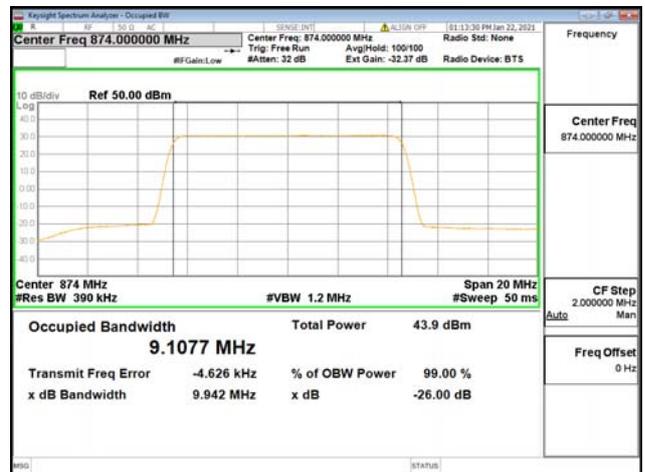
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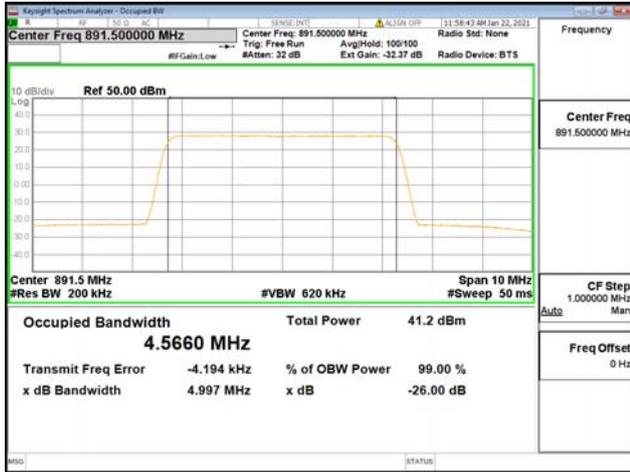


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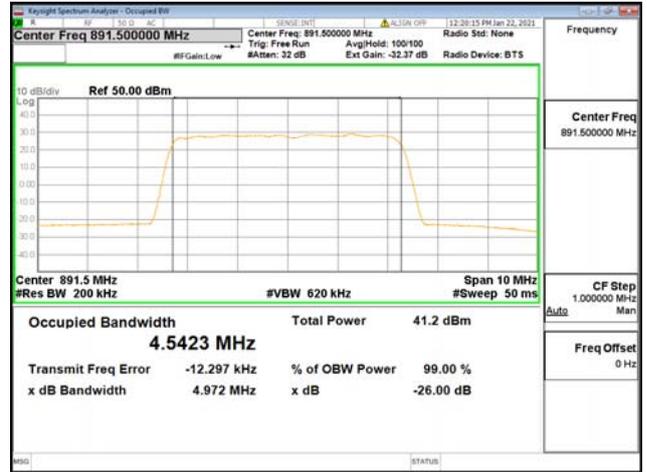
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**BW 10MHz+5MHz, Multi 2 carrier(Non-Contiguous), 4Tx, Top
 ANT 1**

QPSK



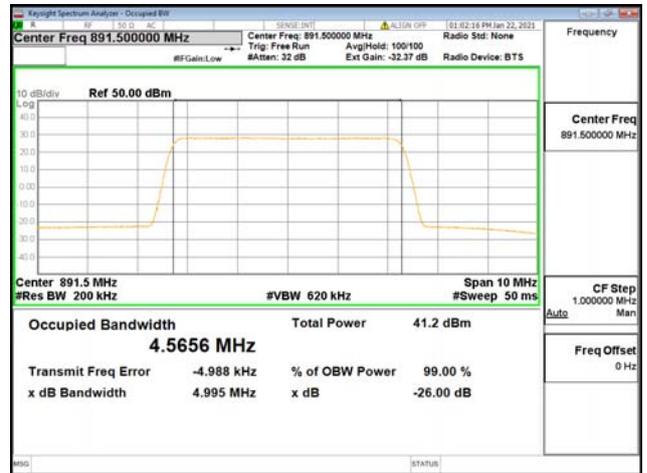
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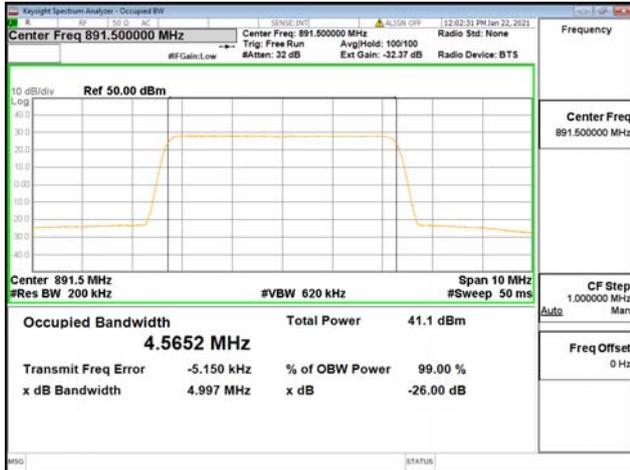


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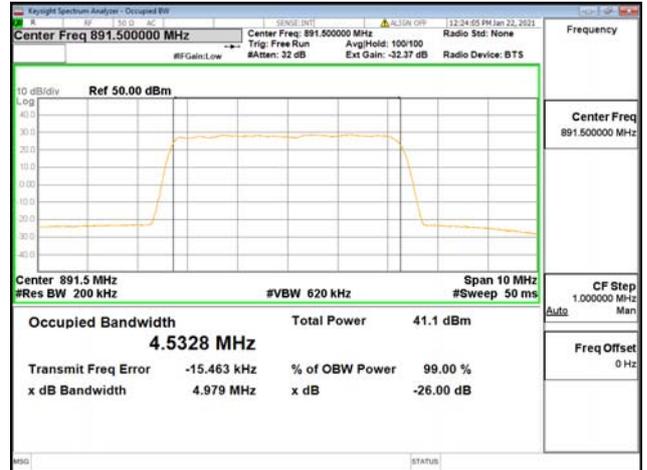
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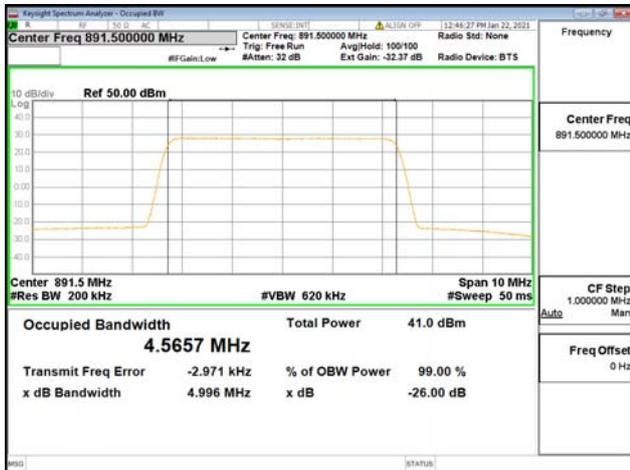
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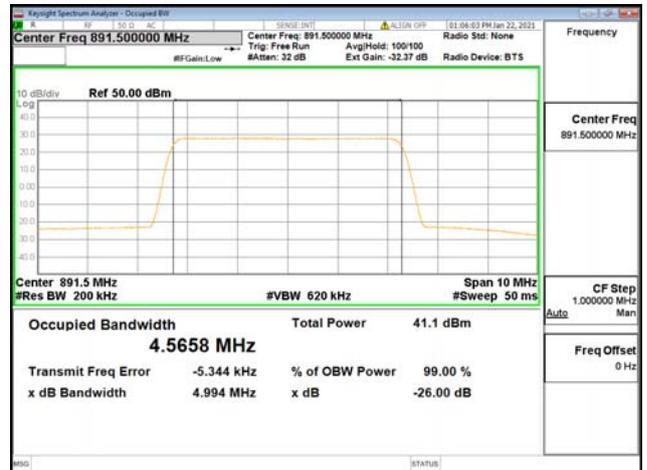
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64QAM



256QAM



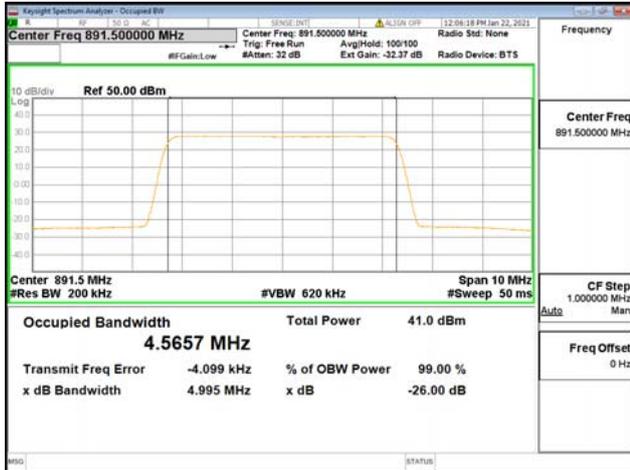


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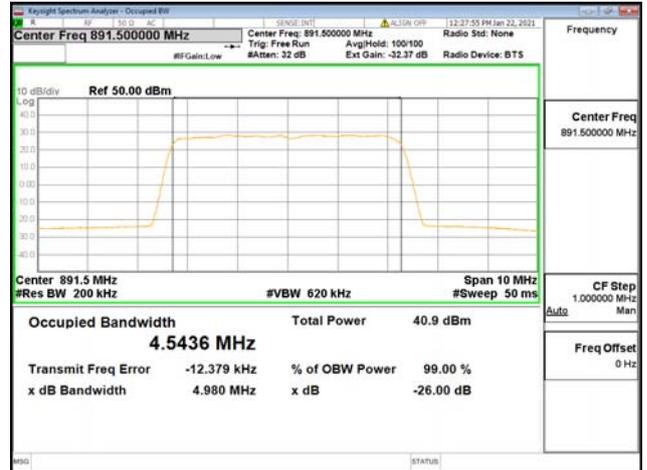
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ANT 3

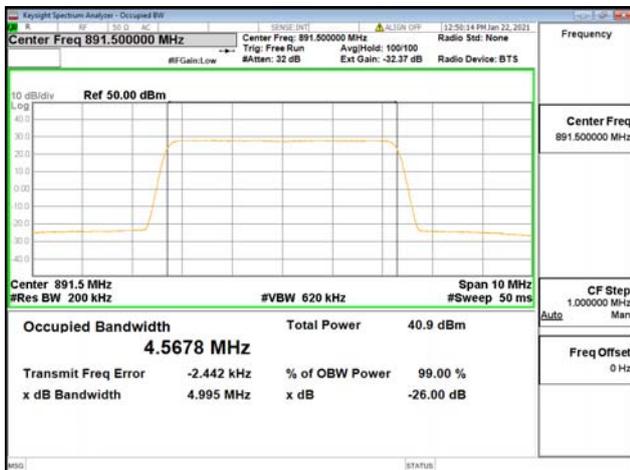
QPSK



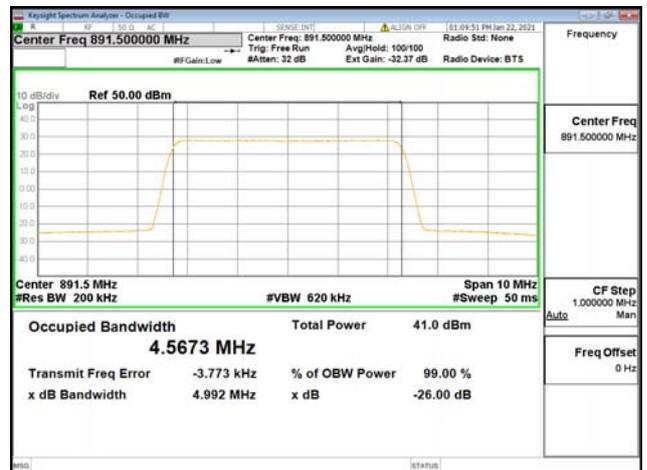
16QAM



64QAM



256QAM



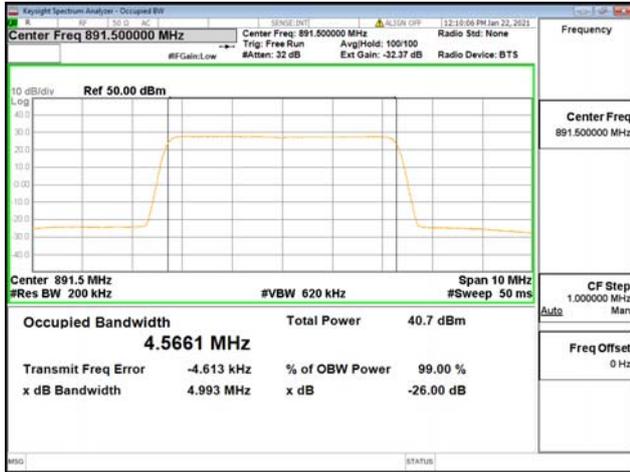


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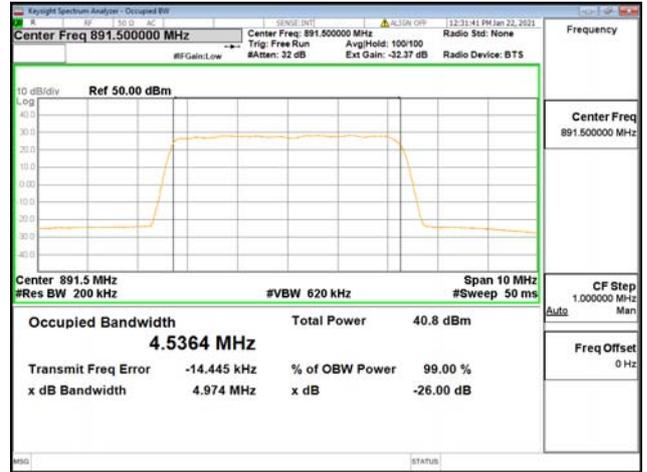
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ANT 4

QPSK



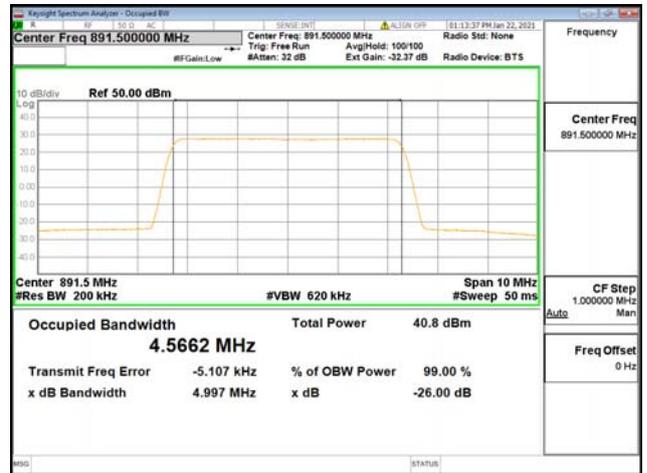
16QAM



64QAM



256QAM



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6. Spurious Emission at Antenna Terminal

§ 22.917 Emission limitations for cellular equipment.

The rules in this section govern the spectral characteristics of emissions in the Cellular Radiotelephone Service.

(a) Out of band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.

(b) Measurement procedure. Compliance with these rules is based on the use of measurement instrumentation employing a reference bandwidth as follows:

(1) In the spectrum below 1 GHz, instrumentation should employ a reference bandwidth of 100 kHz or greater. 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. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy, provided that the measured power is integrated over the full required reference bandwidth (i.e., 100 kHz or 1 percent of emission bandwidth, as specified). 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 emissions are attenuated at least 26 dB below the transmitter power.

(2) In the spectrum above 1 GHz, instrumentation should employ a reference bandwidth of 1 MHz.

(c) Alternative out of band emission limit. Licensees in this service may establish an alternative out of band emission limit to be used at specified band edge(s) in specified geographical areas, in lieu of that set forth in this section, pursuant to a private contractual arrangement of all affected licensees and applicants. In this event, each party to such contract shall maintain a copy of the contract in their station files and disclose it to prospective assignees or transferees and, upon request, to the FCC.

(d) Interference caused by out of band emissions. If any emission from a transmitter operating in this service results in interference to users of another radio service, the FCC may require a greater attenuation of that emission than specified in this section.

Test Procedures :

The RF Output of the transceiver was connected to a spectrum analyzer through appropriate attenuation.

The resolution bandwidth of the spectrum analyzer was set at 100 kHz(below 1 GHz), 1 MHz(Above 1 GHz). Sufficient scans were taken to show any out of band emissions up to 10th harmonic.

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Notes :

1. In 9 kHz - 10 kHz and 150 kHz - 30 MHz bands, RBW was reduced to 1% and 10% of the reference bandwidth for measuring unwanted emission level (typically, 100 kHz if the authorized frequency band is below 1 GHz) and power was integrated. (1% = +20 dB, 10% = +10 dB)
2. Due to 2 x 2 MIMO operation, limit is **-16.01 dBm** (-13 dBm - 10*Log(2)) per KDB Publication 662911 D01 Multiple Transmitter Output v02r01.
Due to 4 x 4 MIMO operation, limit is **-19.02 dBm** (-13 dBm - 10*Log(4)) per KDB Publication 662911 D01 Multiple Transmitter Output v02r01.
3. The highest power level measured in a narrower RBW (relative to the specified reference bandwidth) can be scaled by applying a correction factor determined from: $10 \log [(reference\ bandwidth) / (resolution\ or\ measurement\ bandwidth)]$.

Example : Band Edge correction factor: $10 \log(1MHz/100kHz)$

Adding band edge correction factor value and result value dose not exceed the reference value.

4. 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 its at maximum power, and at the appropriate frequencies.

All modulation types were investigated to determine the worst case configuration.

All modulation types of operation were investigated and the worst case configuration results are reported in this section.

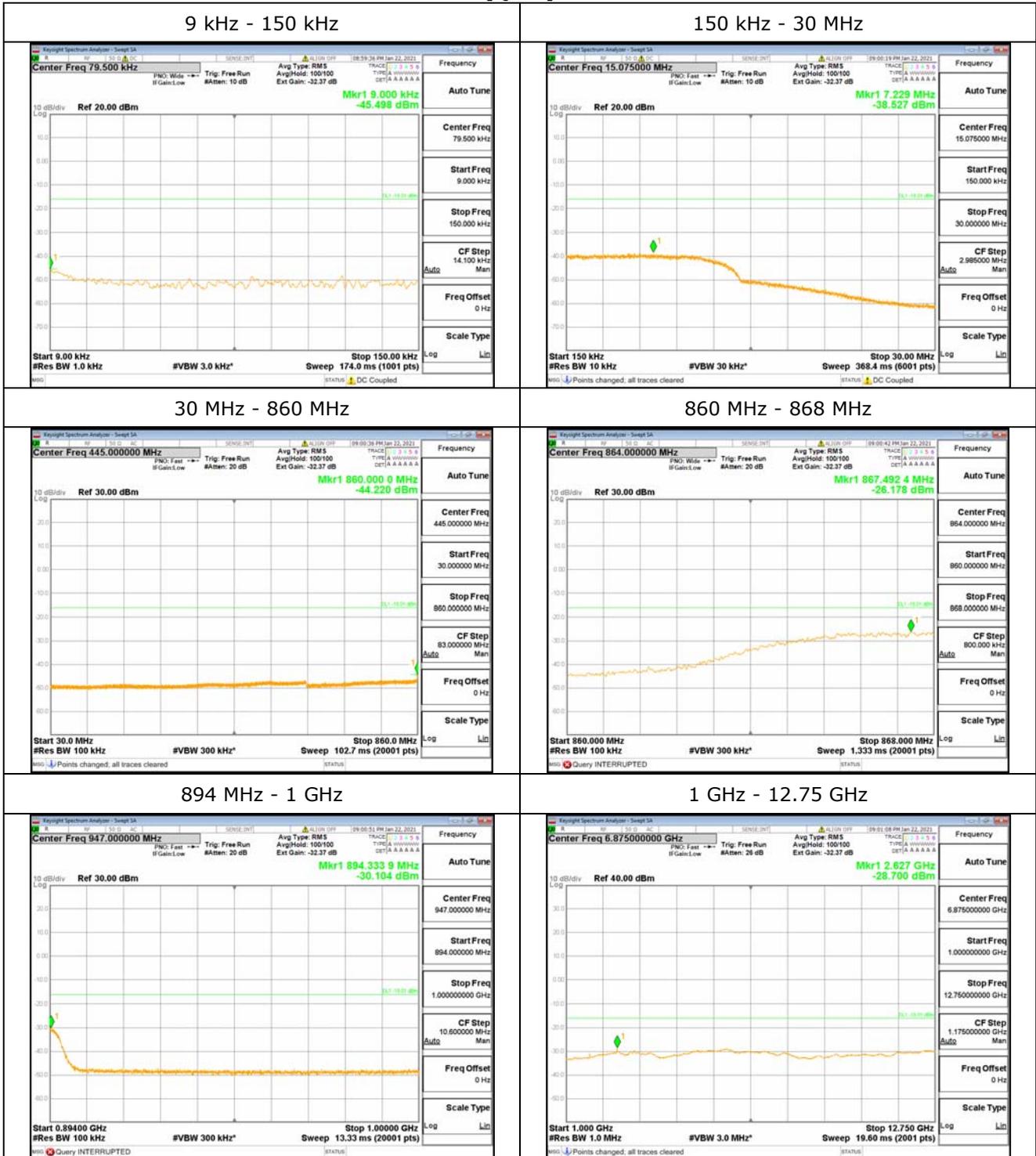


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Spurious Emissions at antenna terminal

**BW 10MHz+5MHz, Multi 2 carrier(Contiguous), 2Tx, Bottom
 ANT 1
 [QPSK]**





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[16QAM]

9 kHz - 150 kHz



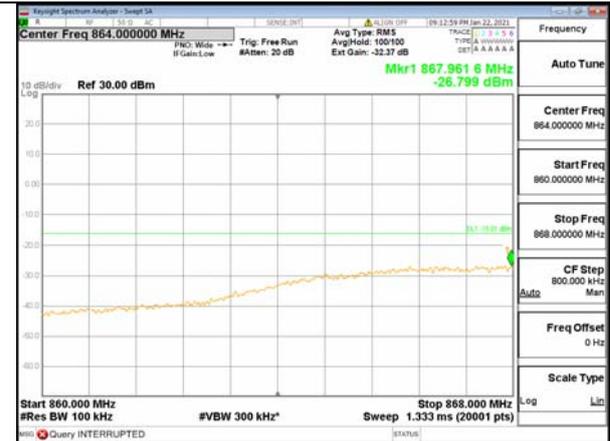
150 kHz - 30 MHz



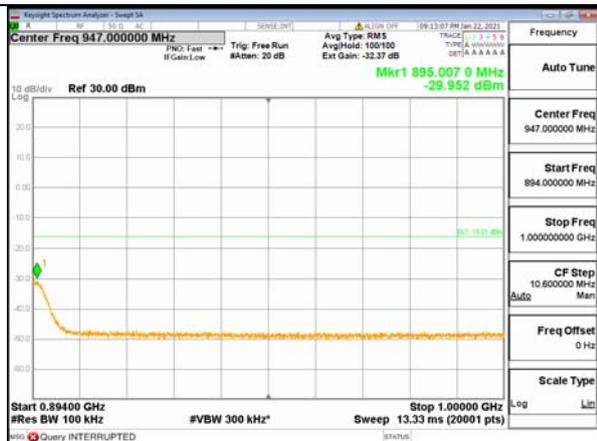
30 MHz - 860 MHz



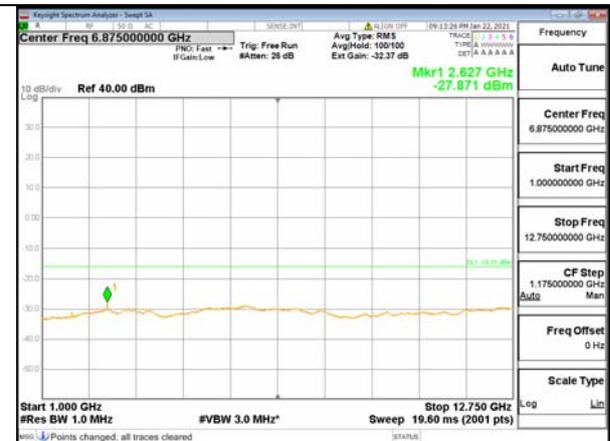
860 MHz - 868 MHz



894 MHz - 1 GHz



1 GHz - 12.75 GHz



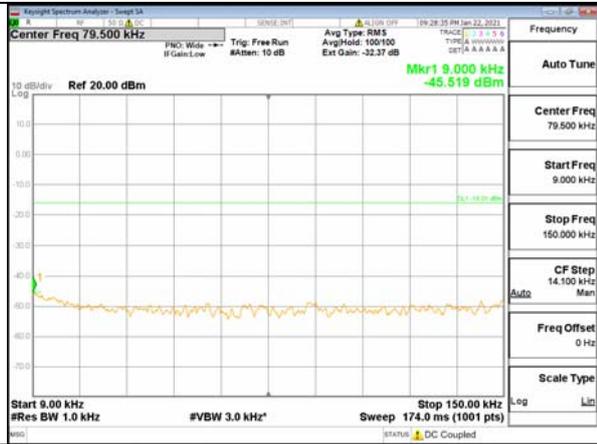


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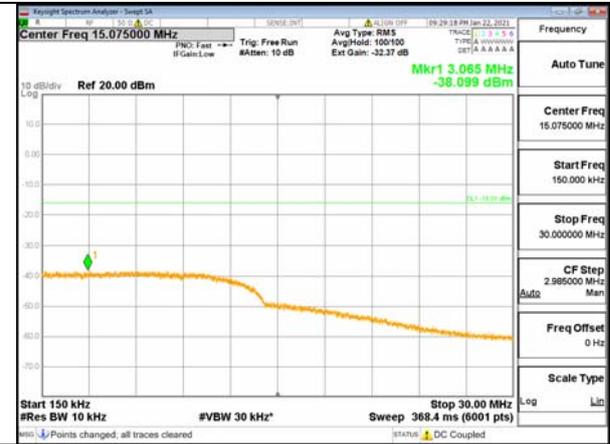
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[64QAM]

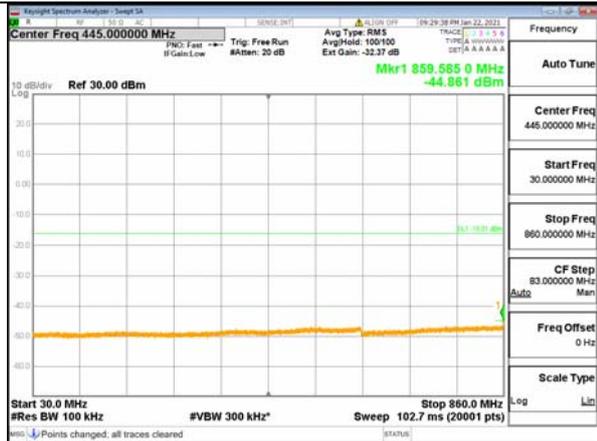
9 kHz - 150 kHz



150 kHz - 30 MHz



30 MHz - 860 MHz



860 MHz - 868 MHz



894 MHz - 1 GHz



1 GHz - 12.75 GHz

