

3. Peak EIRP Power density

3.1. Test Equipment

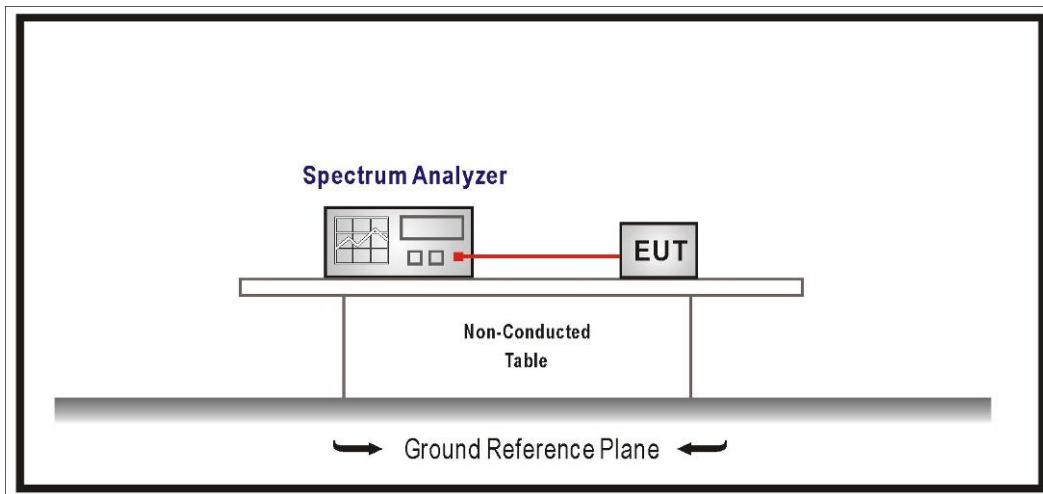
The following test equipments are used during the test:

Peak EIRP Power Density / SR7

| Instrument | Manufacturer | Model No. | Serial No | Next Cal. Date |
|-------------------|--------------|-----------|------------|----------------|
| Spectrum Analyzer | Agilent | N9010A | US47140172 | 2012/07/13 |

Note: 1. All equipments that need to calibrate are with calibration period of 1 year.

3.2. Test Setup



3.3. Test Limit

Base and fixed stations are limited to 25 watts/25 MHz equivalent isotropically radiated power (EIRP). In any event, the peak EIRP power density shall not exceed 1 Watt in any one megahertz slice of spectrum.

| Bandwidth (MHz) | EIRP limit | | EIRP power density | |
|--------------------|------------|-------|--------------------|-----------|
| | (W) | (dBm) | (W/MHz) | (dBm/MHz) |
| 3.5 | 3.5 | 35.44 | 1 | 30 |
| 5.0 | 5.0 | 36.99 | | |
| 7.0 | 7.0 | 38.45 | | |
| 10.0 | 10.0 | 40.00 | | |

3.4. Test Procedure

1. Connect the transmitter to the spectrum analyzer via coaxial cable.
2. Tune the analyzer to the nominal center frequency of the emission bandwidth (EBW).
3. Set the span to twice the nominal EBW (span = 2 x EBW).
4. Set the resolution bandwidth (RBW) to 1 MHz.
5. Set the video bandwidth (VBW) to $\geq 3 \times$ RBW.
6. Select the average power (RMS) display detector.
7. Set the number of measurement points to ≥ 1001 .
8. Use auto-coupled sweep time.
9. Perform the measurement over an interval of time when the transmission is continuous and at its maximum power level.
10. Utilize trace averaging over 100 traces in the power averaging mode.
11. Find the maximum trace amplitude (peak search) and record.
12. Adjust the recorded level by applying appropriate correction factors for the measurement set-up.
13. Determine the EIRP by adding the effective antenna gain to the adjusted power level.

3.5. Test Specification

FCC CFR Title 47 Part 90 Subpart Z, KDB 965270

3.6. Uncertainty

The measurement uncertainty is defined as ± 1.27 dB

3.7. Test Result

| | |
|-----------|--------------------------------------|
| Product | CBS 3.65GHz |
| Test Item | Peak EIRP Power Density |
| Test Mode | Mode 1: Transmit (3.5MHz BW_QPSK1/2) |

3.5MHz Bandwidth, Antenna Gain: 16dBi

| Centre Frequency (MHz) | Power Density (dBm/MHz) | | Maximum Power Density (dBm/MHz) | Maximum Radiated Power Density (dBm/MHz) | Limit (dBm/MHz) |
|---------------------------|----------------------------|-------|---------------------------------------|--|--------------------|
| | Ant0 | Ant1 | | | |
| 3651.75 | 9.26 | 10.57 | 12.97 | 28.97 | ≤30 |
| 3662.50 | 8.46 | 9.30 | 11.91 | 27.91 | ≤30 |
| 3673.25 | 10.25 | 9.93 | 13.10 | 29.10 | ≤30 |

Maximum Power Density = Power Density (ANT 0 + ANT 1)

Maximum Radiated Power Density = Maximum Power Density + Antenna Gain

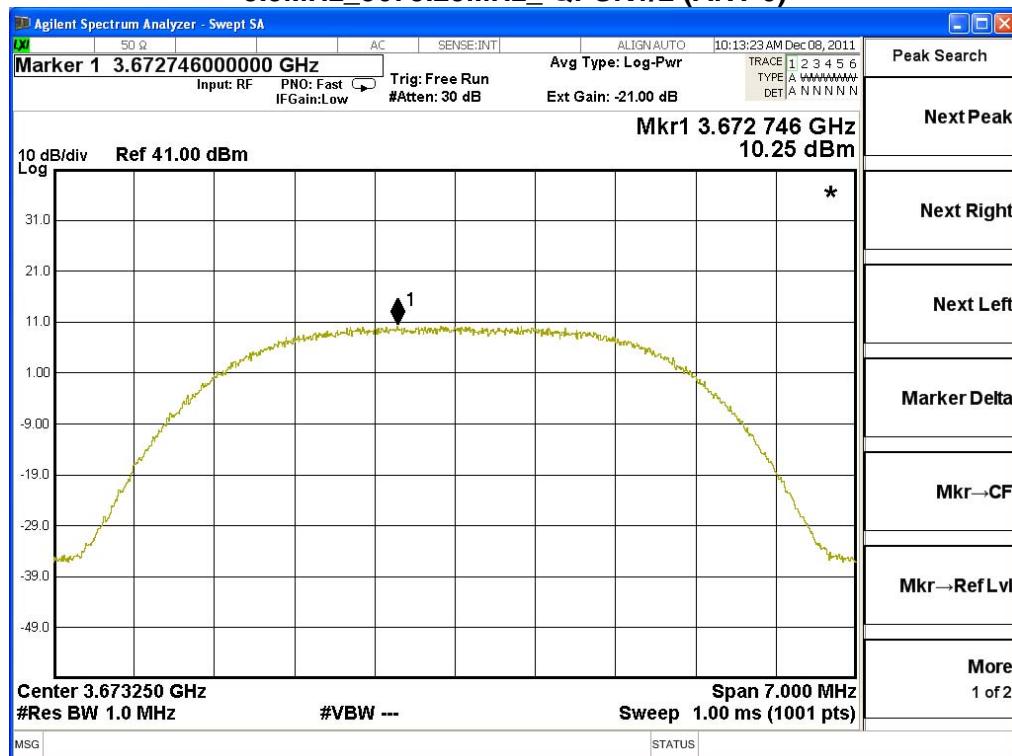
3.5MHz_3651.75MHz_QPSK1/2 (ANT 0)



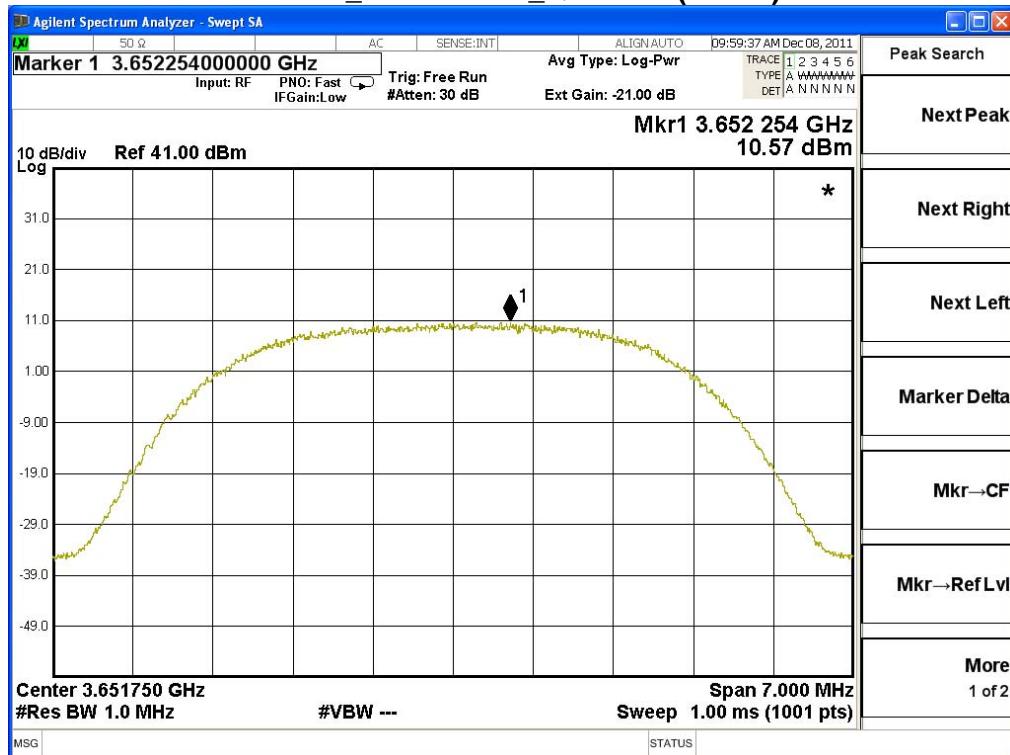
3.5MHz_3662.5MHz_ QPSK1/2 (ANT 0)



3.5MHz_3673.25MHz_ QPSK1/2 (ANT 0)



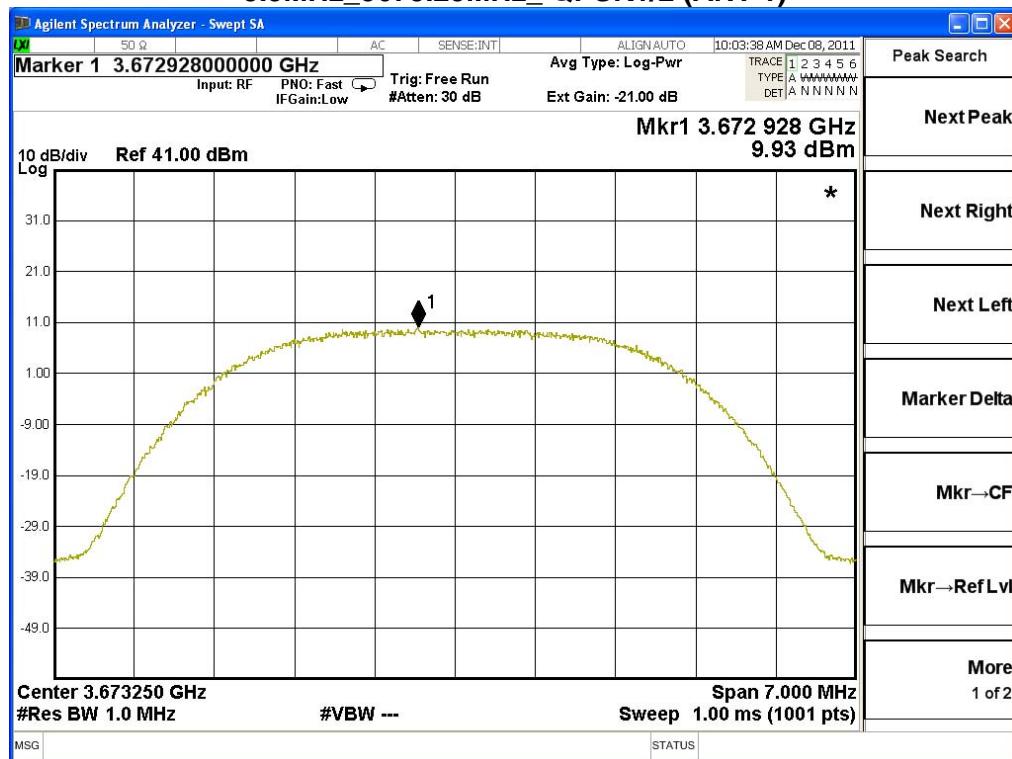
3.5MHz_3651.75MHz_QPSK1/2 (ANT 1)



3.5MHz_3662.5MHz_QPSK1/2 (ANT 1)



3.5MHz_3673.25MHz_QPSK1/2 (ANT 1)



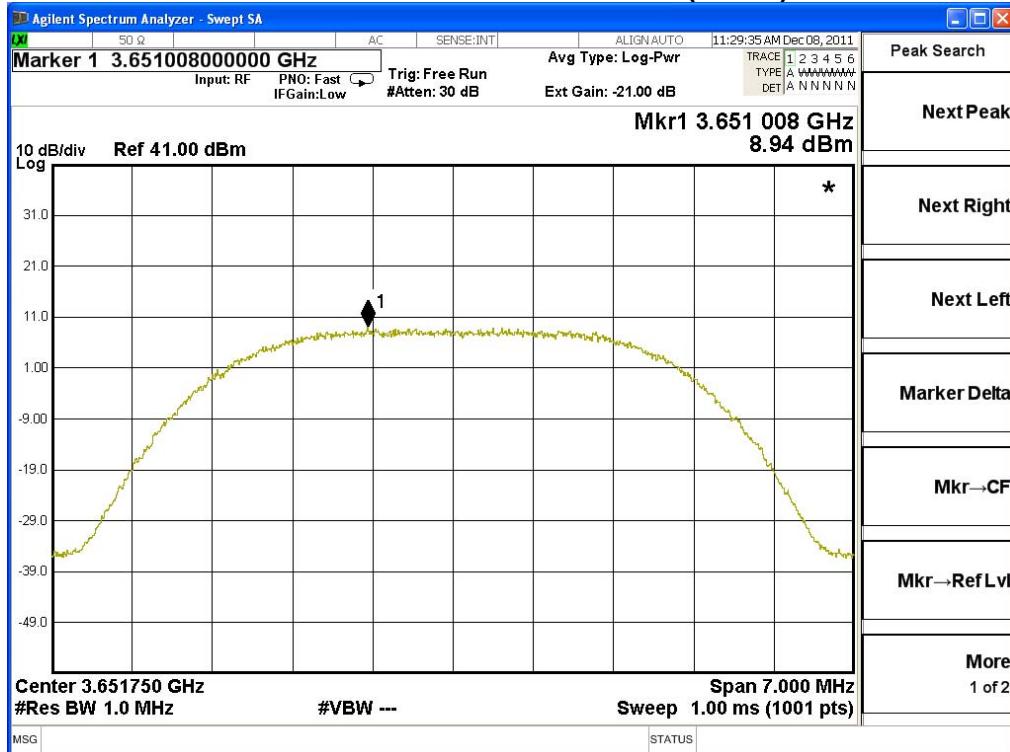
| | |
|-----------|---------------------------------------|
| Product | CBS 3.65GHz |
| Test Item | Peak EIRP Power Density |
| Test Mode | Mode 2: Transmit (3.5MHz BW_16QAM1/2) |

3.5MHz Bandwidth, Antenna Gain: 16dBi

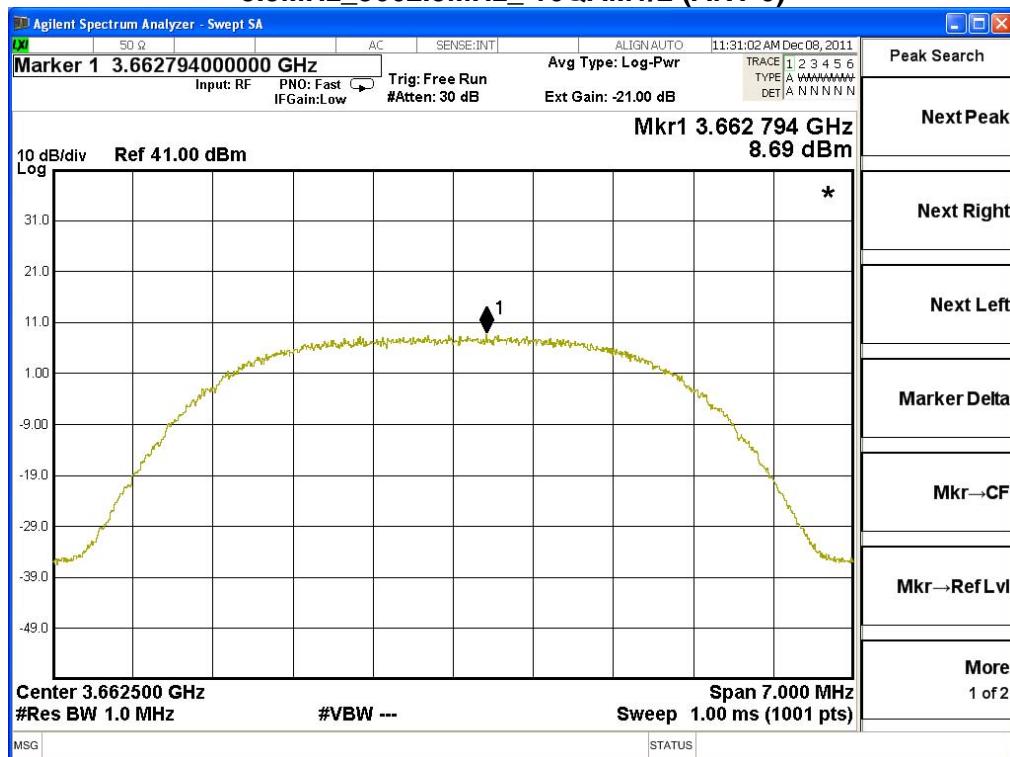
| Centre Frequency (MHz) | Power Density (dBm/MHz) | | Maximum Power Density (dBm/MHz) | Maximum Radiated Power Density (dBm/MHz) | Limit (dBm/MHz) |
|---------------------------|----------------------------|-------|---------------------------------------|--|--------------------|
| | Ant0 | Ant1 | | | |
| 3651.75 | 8.94 | 11.17 | 13.21 | 29.21 | ≤30 |
| 3662.50 | 8.69 | 9.91 | 12.35 | 28.35 | ≤30 |
| 3673.25 | 10.96 | 10.55 | 13.77 | 29.77 | ≤30 |

Maximum Power Density = Power Density (ANT 0 + ANT 1)

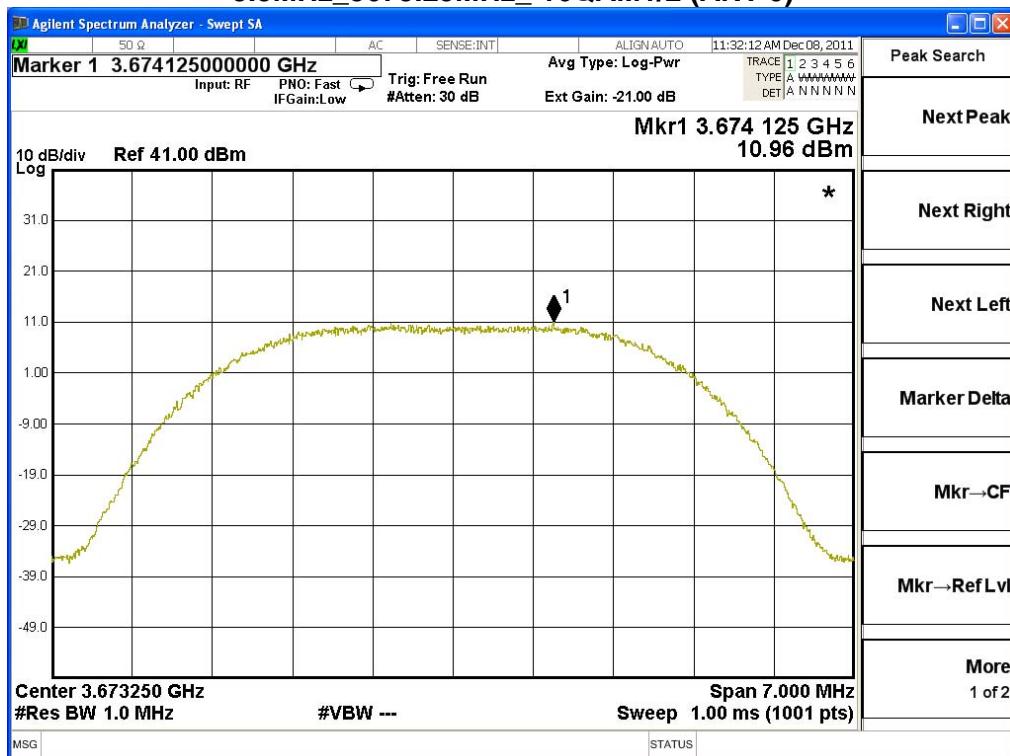
Maximum Radiated Power Density = Maximum Power Density + Antenna Gain

3.5MHz_3651.75MHz_16QAM1/2 (ANT 0)

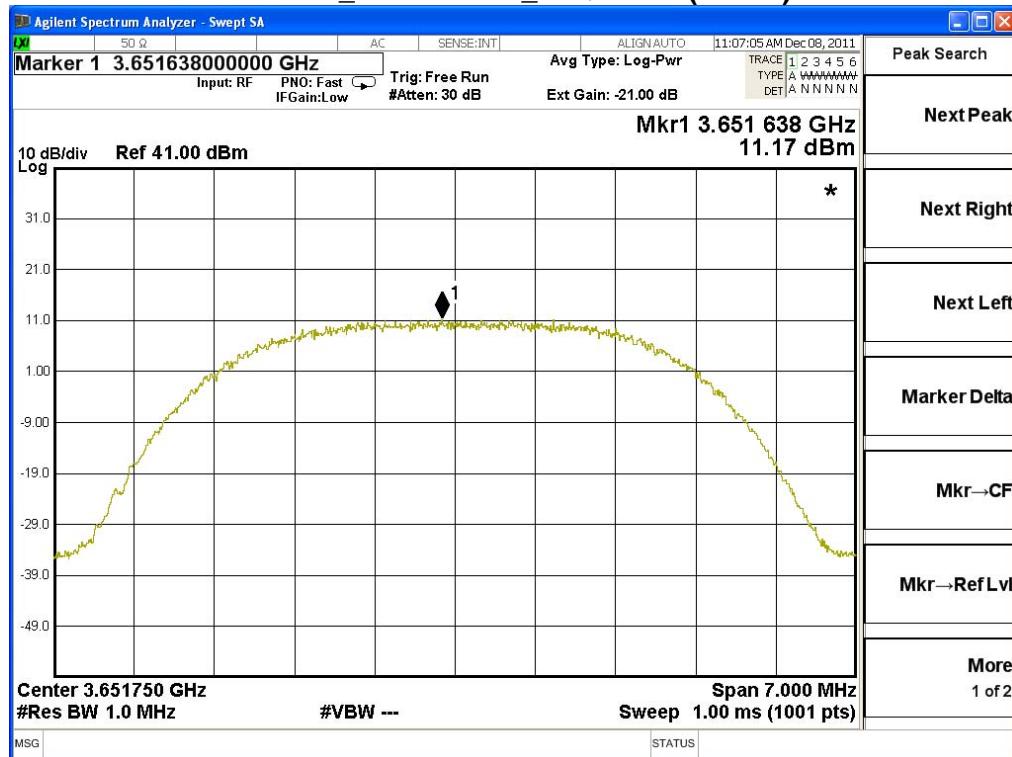
3.5MHz_3662.5MHz_ 16QAM1/2 (ANT 0)



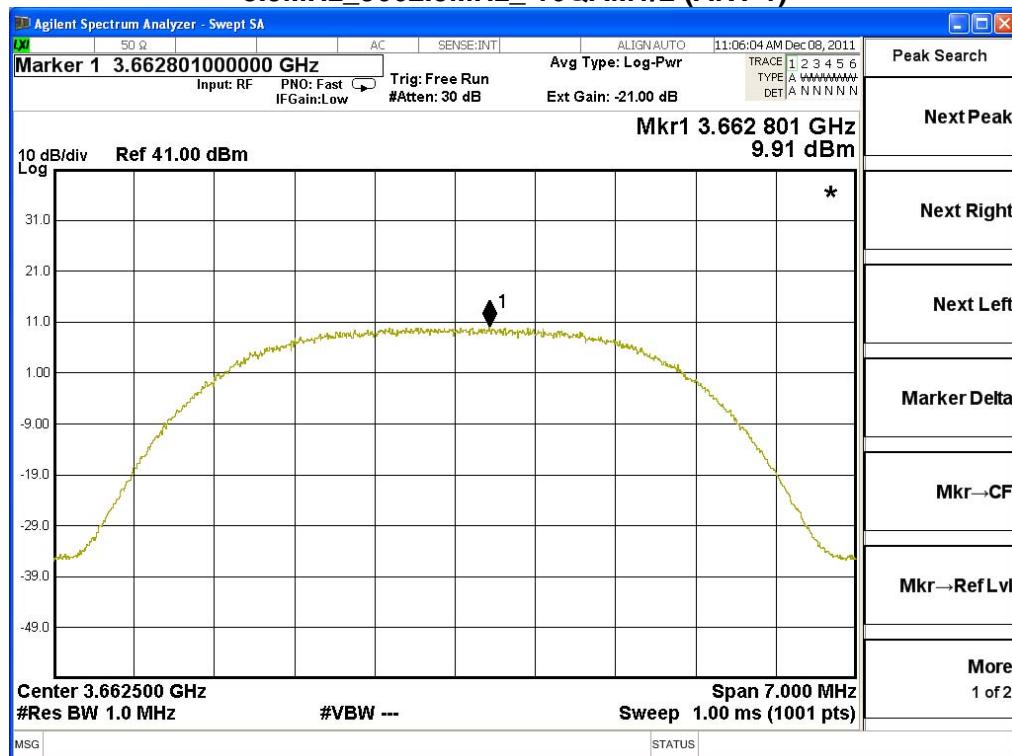
3.5MHz_3673.25MHz_ 16QAM1/2 (ANT 0)



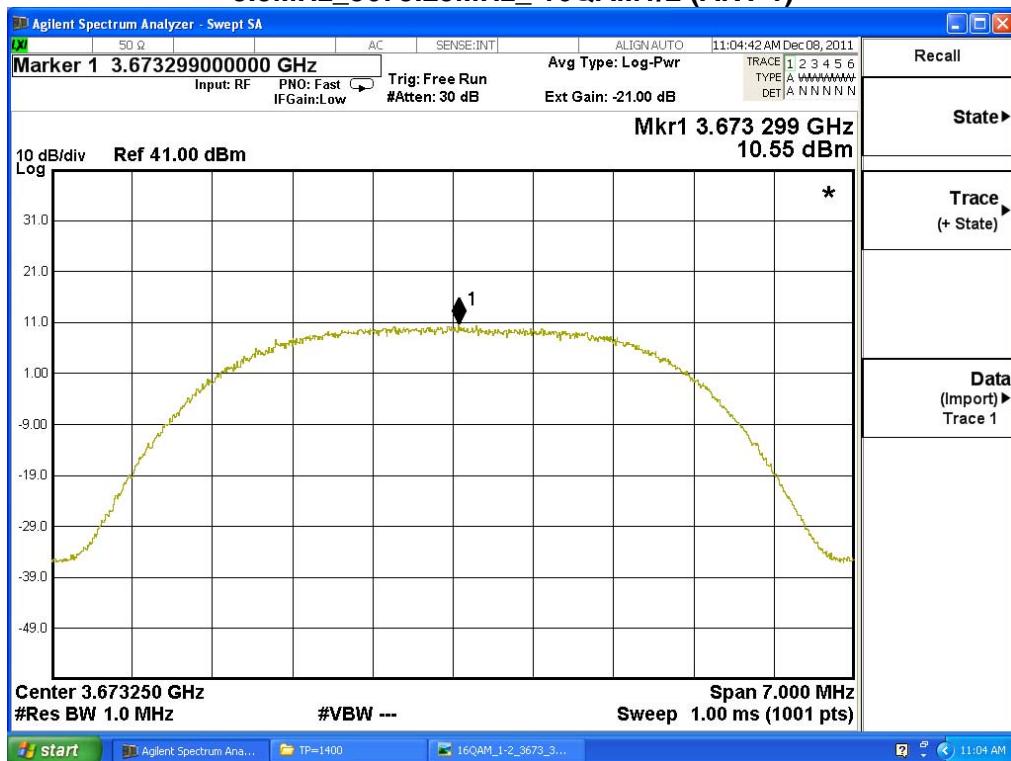
3.5MHz_3651.75MHz_16QAM1/2 (ANT 1)



3.5MHz_3662.5MHz_16QAM1/2 (ANT 1)



3.5MHz_3673.25MHz_ 16QAM1/2 (ANT 1)



| | |
|-----------|---------------------------------------|
| Product | CBS 3.65GHz |
| Test Item | Peak EIRP Power Density |
| Test Mode | Mode 3: Transmit (3.5MHz BW_64QAM2/3) |

3.5MHz Bandwidth, Antenna Gain: 16dBi

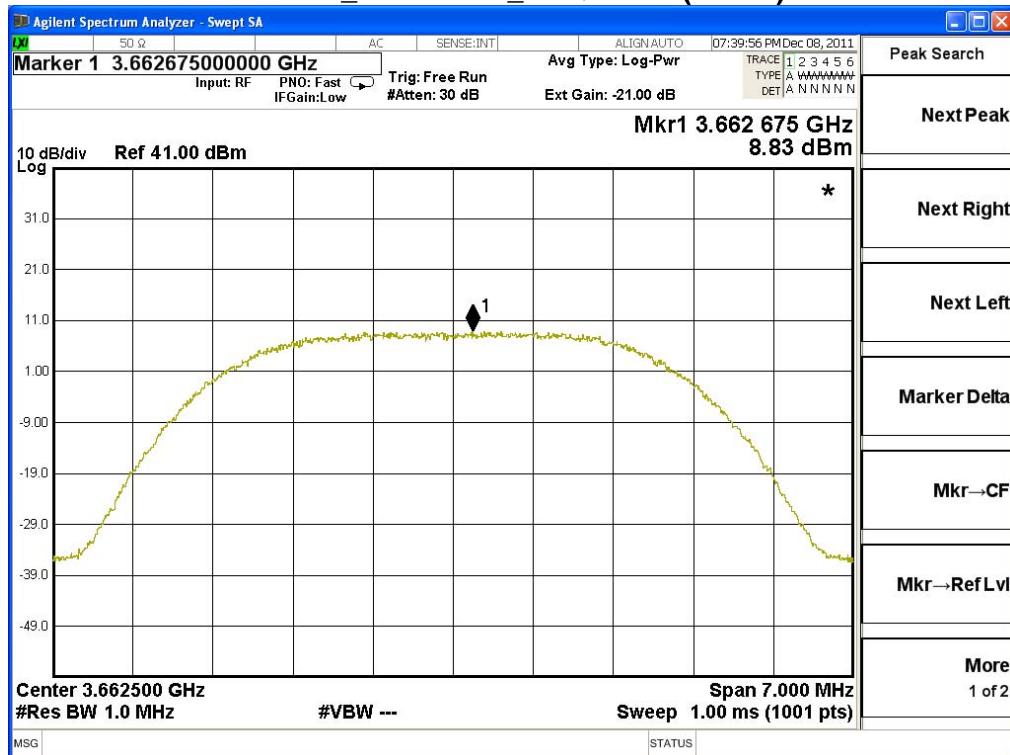
| Centre Frequency (MHz) | Power Density (dBm/MHz) | | Maximum Power Density (dBm/MHz) | Maximum Radiated Power Density (dBm/MHz) | Limit (dBm/MHz) |
|---------------------------|----------------------------|------|---------------------------------------|--|--------------------|
| | Ant0 | Ant1 | | | |
| 3651.75 | 9.16 | 9.82 | 12.51 | 28.51 | ≤30 |
| 3662.50 | 8.83 | 9.56 | 12.22 | 28.22 | ≤30 |
| 3673.25 | 10.61 | 9.64 | 13.16 | 29.16 | ≤30 |

Maximum Power Density = Power Density (ANT 0 + ANT 1)

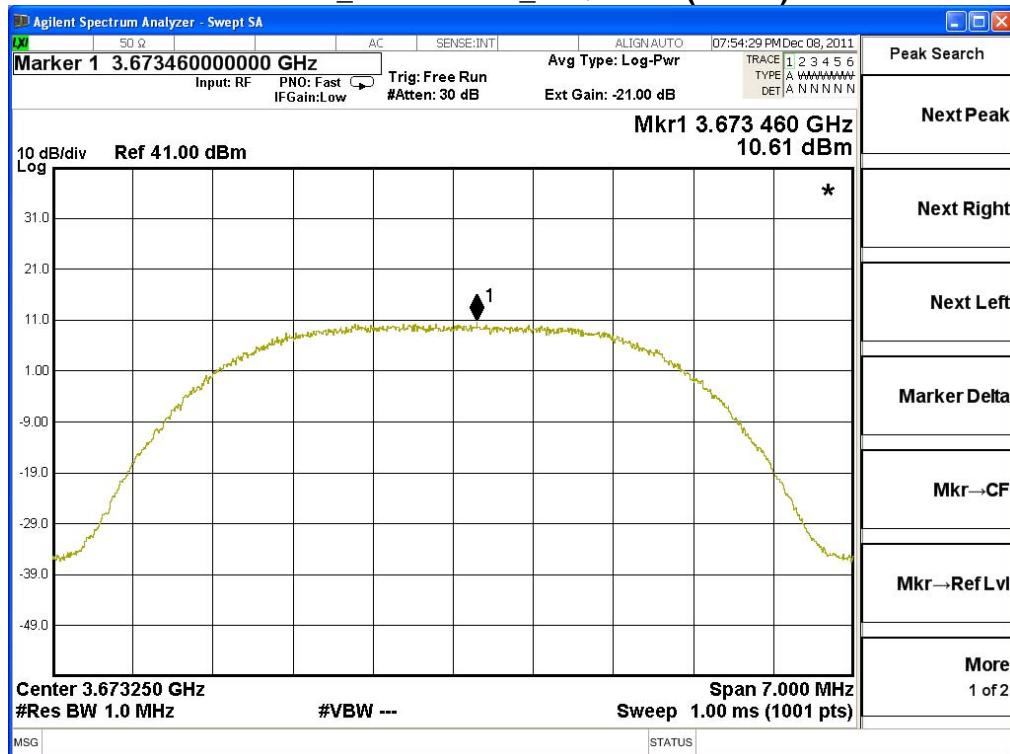
Maximum Radiated Power Density = Maximum Power Density + Antenna Gain

3.5MHz_3651.75MHz_64QAM2/3 (ANT 0)

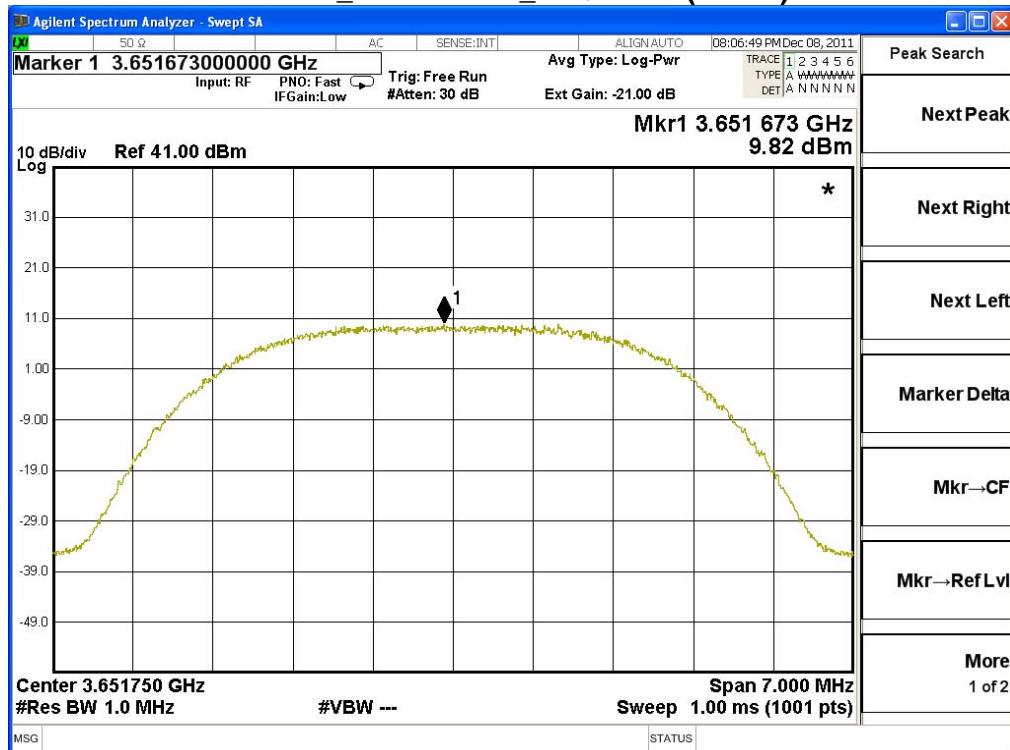
3.5MHz_3662.5MHz_64QAM2/3 (ANT 0)



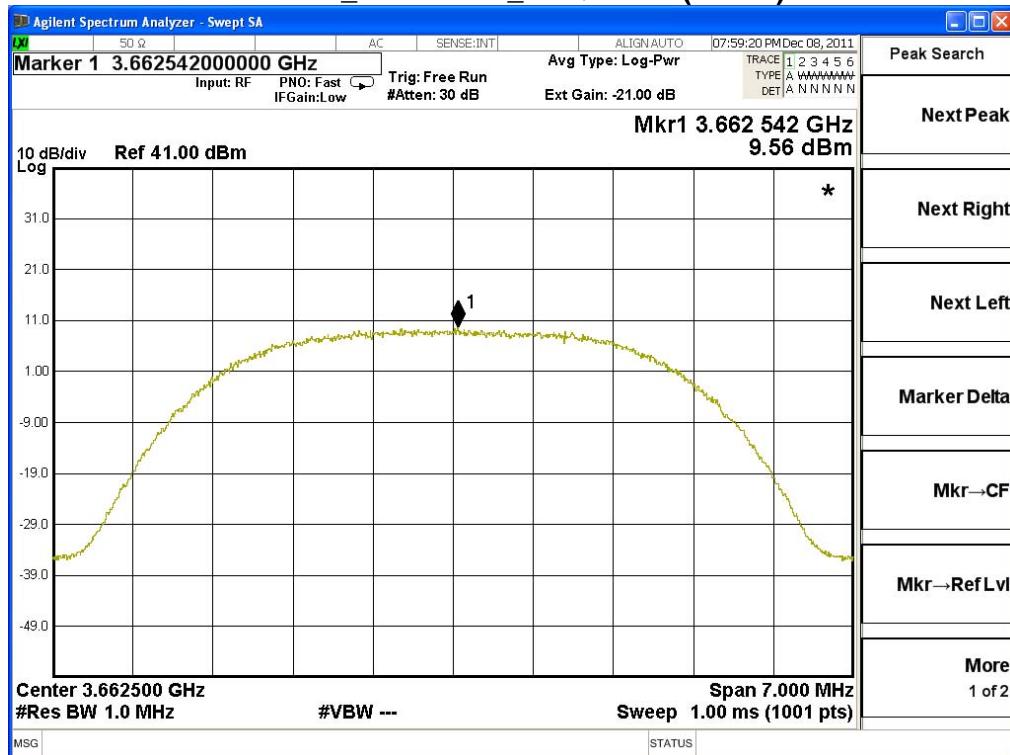
3.5MHz_3673.25MHz_64QAM2/3 (ANT 0)



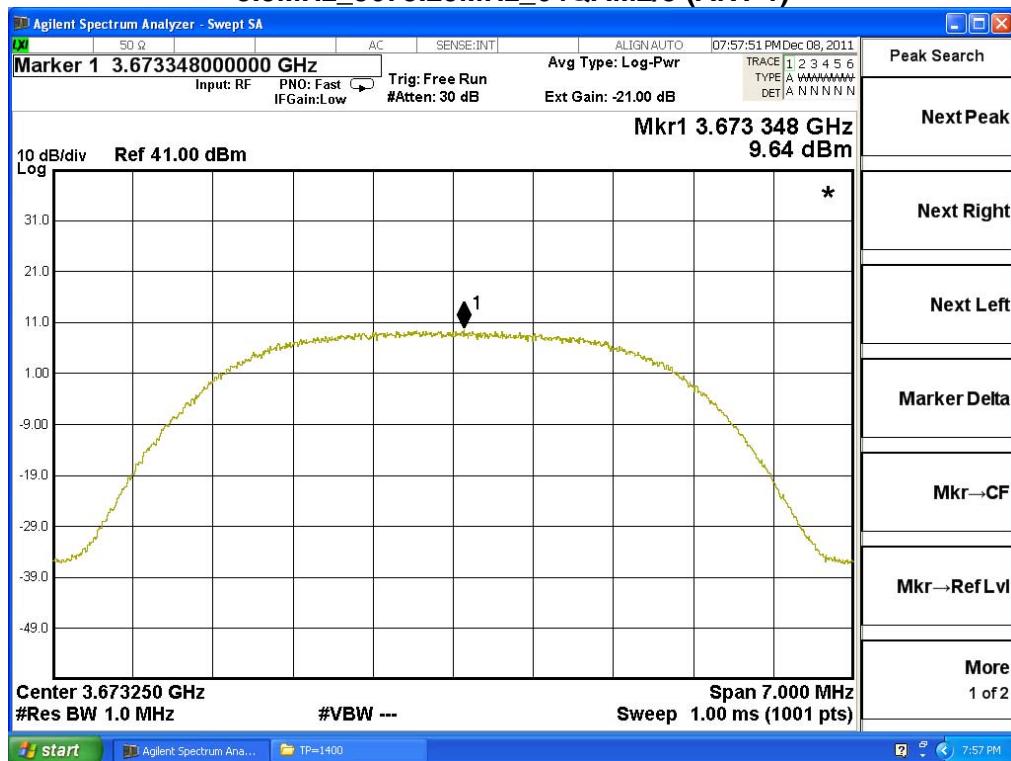
3.5MHz_3651.75MHz_64QAM2/3 (ANT 1)



3.5MHz_3662.5MHz_64QAM2/3 (ANT 1)



3.5MHz_3673.25MHz_64QAM2/3 (ANT 1)



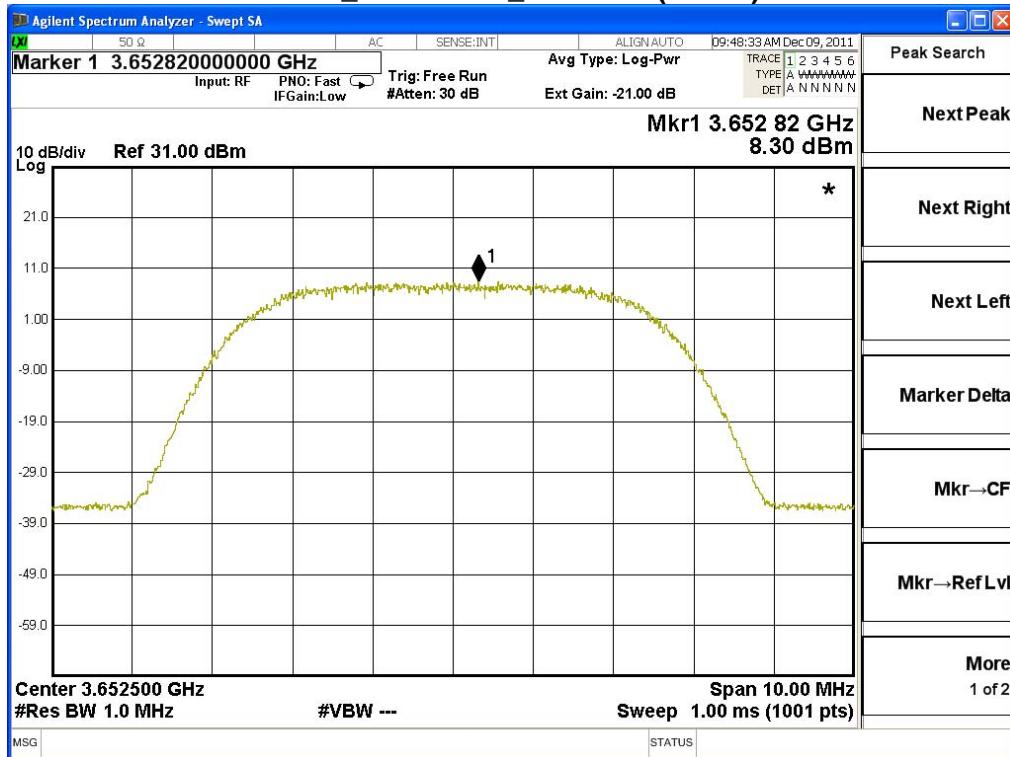
| | |
|-----------|------------------------------------|
| Product | CBS 3.65GHz |
| Test Item | Peak EIRP Power Density |
| Test Mode | Mode 4: Transmit (5MHz BW_QPSK3/4) |

5MHz Bandwidth, Antenna Gain: 16dBi

| Centre Frequency (MHz) | Power Density (dBm/MHz) | | Maximum Power Density (dBm/MHz) | Maximum Radiated Power Density (dBm/MHz) | Limit (dBm/MHz) |
|---------------------------|----------------------------|-------|---------------------------------------|--|--------------------|
| | Ant0 | Ant1 | | | |
| 3652.5 | 8.30 | 11.06 | 12.91 | 28.91 | ≤30 |
| 3662.5 | 8.50 | 9.91 | 12.27 | 28.27 | ≤30 |
| 3672.5 | 9.38 | 10.58 | 13.03 | 29.03 | ≤30 |

Maximum Power Density = Power Density (ANT 0 + ANT 1)

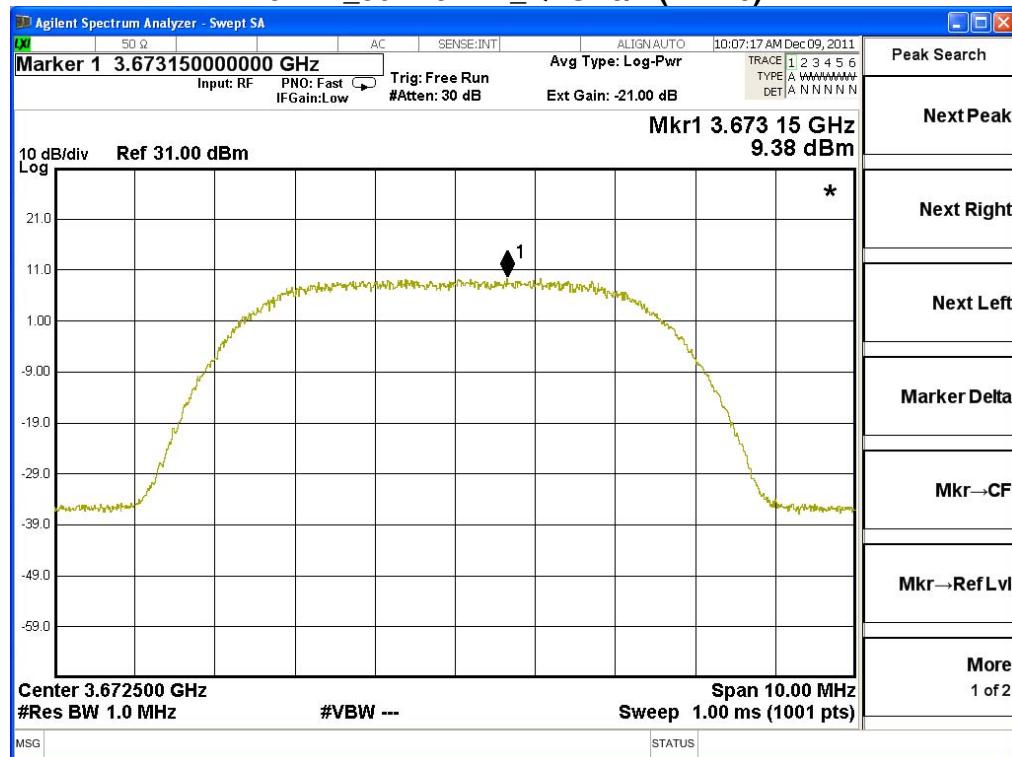
Maximum Radiated Power Density = Maximum Power Density + Antenna Gain

5MHz_3652.5MHz_QPSK3/4 (ANT 0)

5MHz_3662.5MHz_QPSK3/4 (ANT 0)



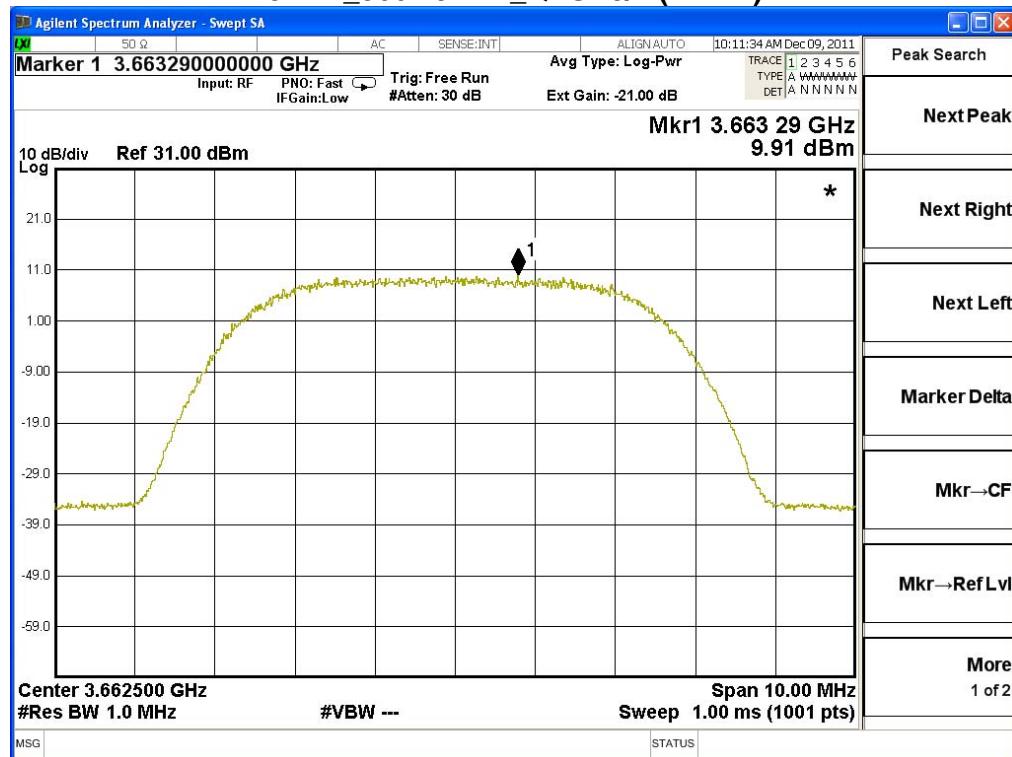
5MHz_3672.5MHz_QPSK3/4 (ANT 0)



5MHz_3652.5MHz_QPSK3/4 (ANT 1)



5MHz_3662.5MHz_QPSK3/4 (ANT 1)



5MHz_3672.5MHz_QPSK3/4 (ANT 1)



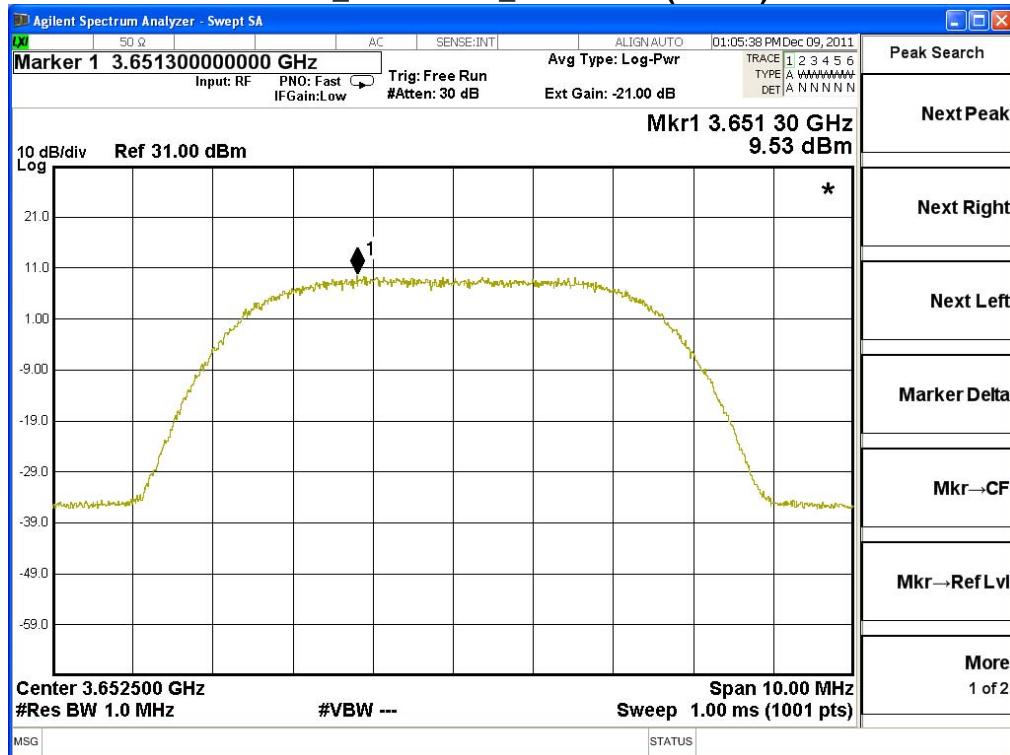
| | |
|-----------|-------------------------------------|
| Product | CBS 3.65GHz |
| Test Item | Peak EIRP Power Density |
| Test Mode | Mode 5: Transmit (5MHz BW_16QAM1/2) |

5MHz Bandwidth, Antenna Gain: 16dBi

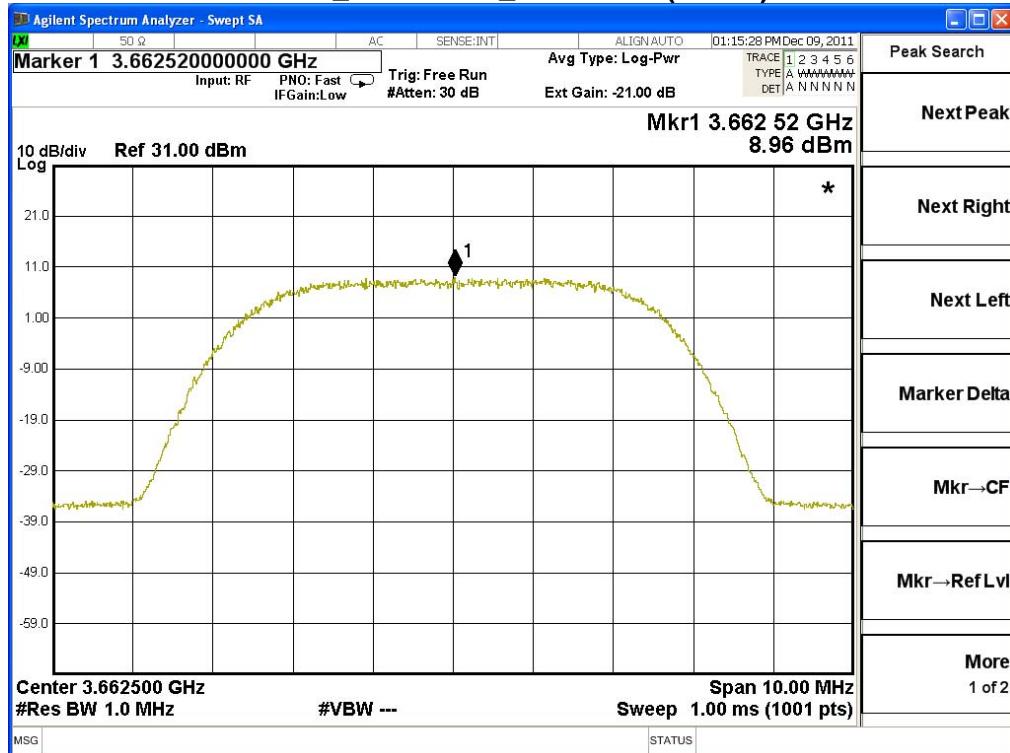
| Centre Frequency (MHz) | Power Density (dBm/MHz) | | Maximum Power Density (dBm/MHz) | Maximum Radiated Power Density (dBm/MHz) | Limit (dBm/MHz) |
|---------------------------|----------------------------|------|---------------------------------------|--|--------------------|
| | Ant0 | Ant1 | | | |
| 3652.5 | 9.53 | 9.80 | 12.68 | 28.68 | ≤30 |
| 3662.5 | 8.96 | 9.28 | 12.13 | 28.13 | ≤30 |
| 3672.5 | 10.48 | 9.91 | 13.21 | 29.21 | ≤30 |

Maximum Power Density = Power Density (ANT 0 + ANT 1)

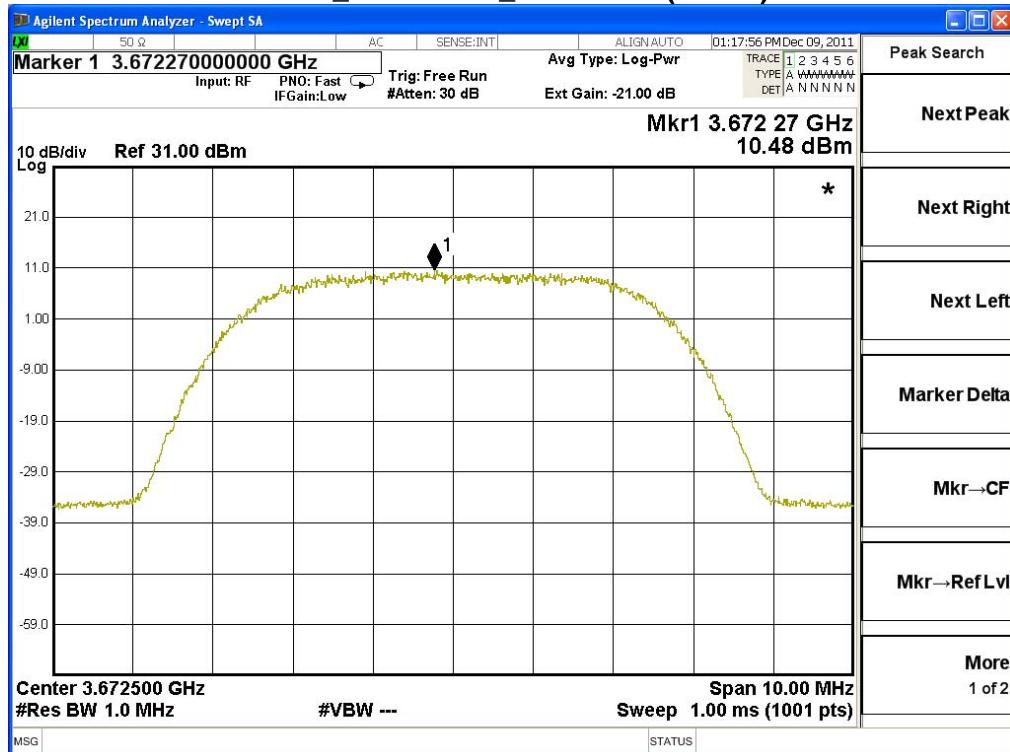
Maximum Radiated Power Density = Maximum Power Density + Antenna Gain

5MHz_3652.5MHz_16QAM1/2 (ANT 0)

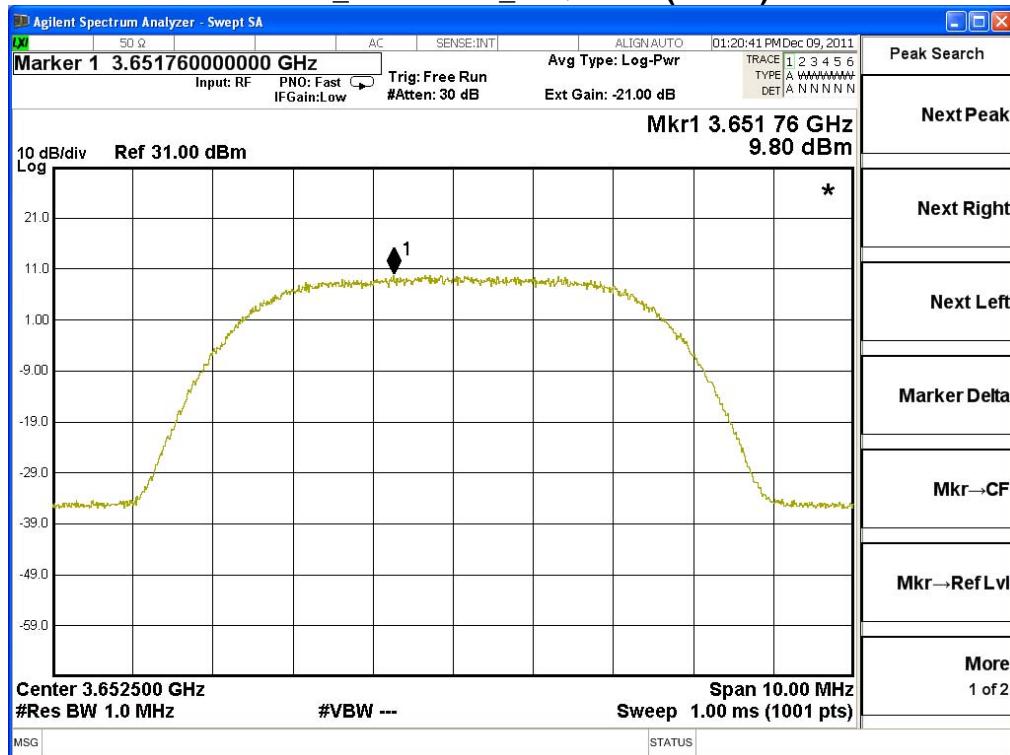
5MHz_3662.5MHz_16QAM1/2 (ANT 0)



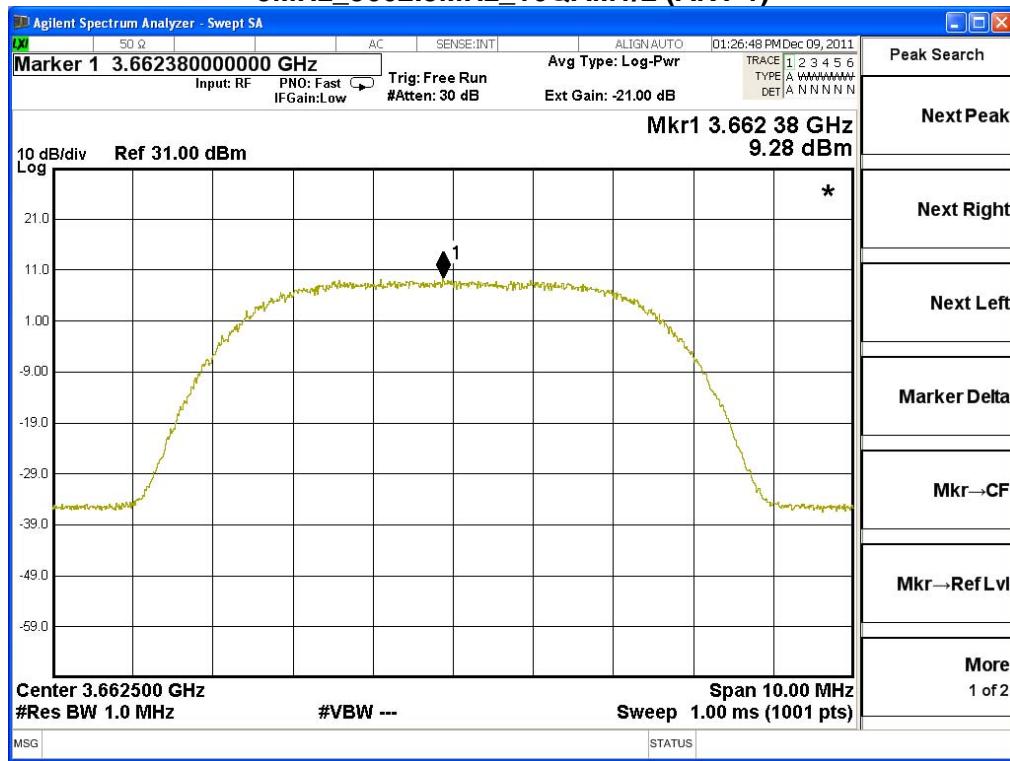
5MHz_3672.5MHz_16QAM1/2 (ANT 0)



5MHz_3652.5MHz_16QAM1/2 (ANT 1)



5MHz_3662.5MHz_16QAM1/2 (ANT 1)



5MHz_3672.5MHz_16QAM1/2 (ANT 1)



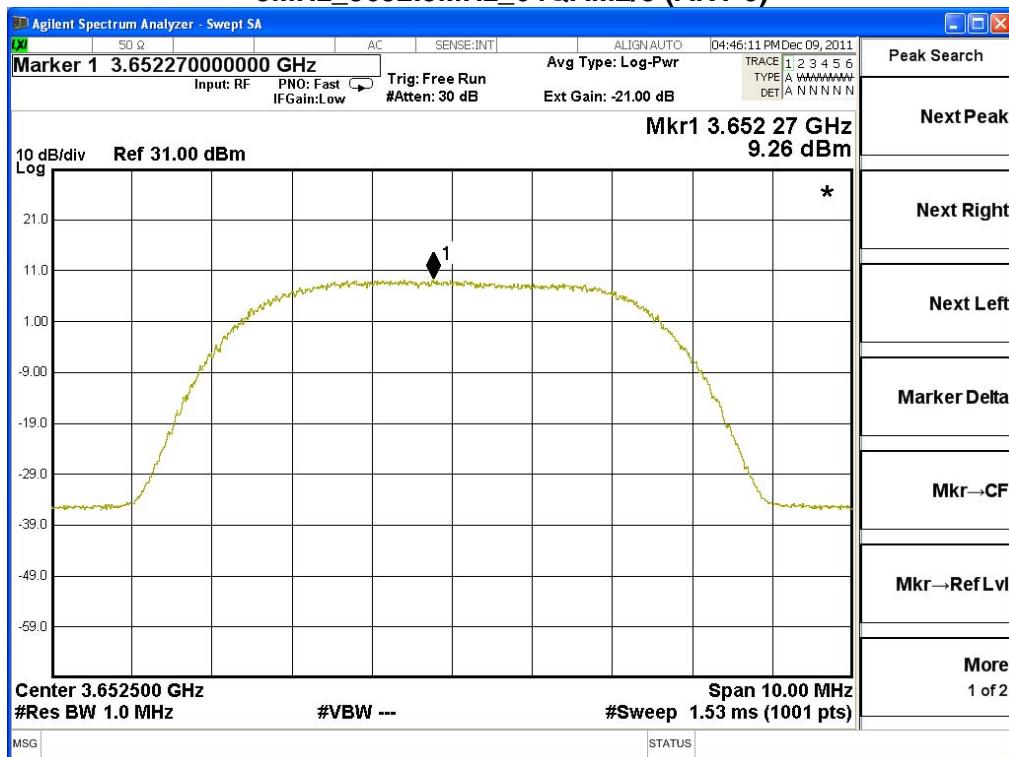
| | |
|-----------|-------------------------------------|
| Product | CBS 3.65GHz |
| Test Item | Peak EIRP Power Density |
| Test Mode | Mode 6: Transmit (5MHz BW_64QAM2/3) |

5MHz Bandwidth, Antenna Gain: 16dBi

| Centre Frequency (MHz) | Power Density (dBm/MHz) | | Maximum Power Density (dBm/MHz) | Maximum Radiated Power Density (dBm/MHz) | Limit (dBm/MHz) |
|---------------------------|----------------------------|------|---------------------------------------|--|--------------------|
| | Ant0 | Ant1 | | | |
| 3652.5 | 9.26 | 9.80 | 12.55 | 28.55 | ≤30 |
| 3662.5 | 7.82 | 8.66 | 11.27 | 27.27 | ≤30 |
| 3672.5 | 9.65 | 9.78 | 12.73 | 28.73 | ≤30 |

Maximum Power Density = Power Density (ANT 0 + ANT 1)

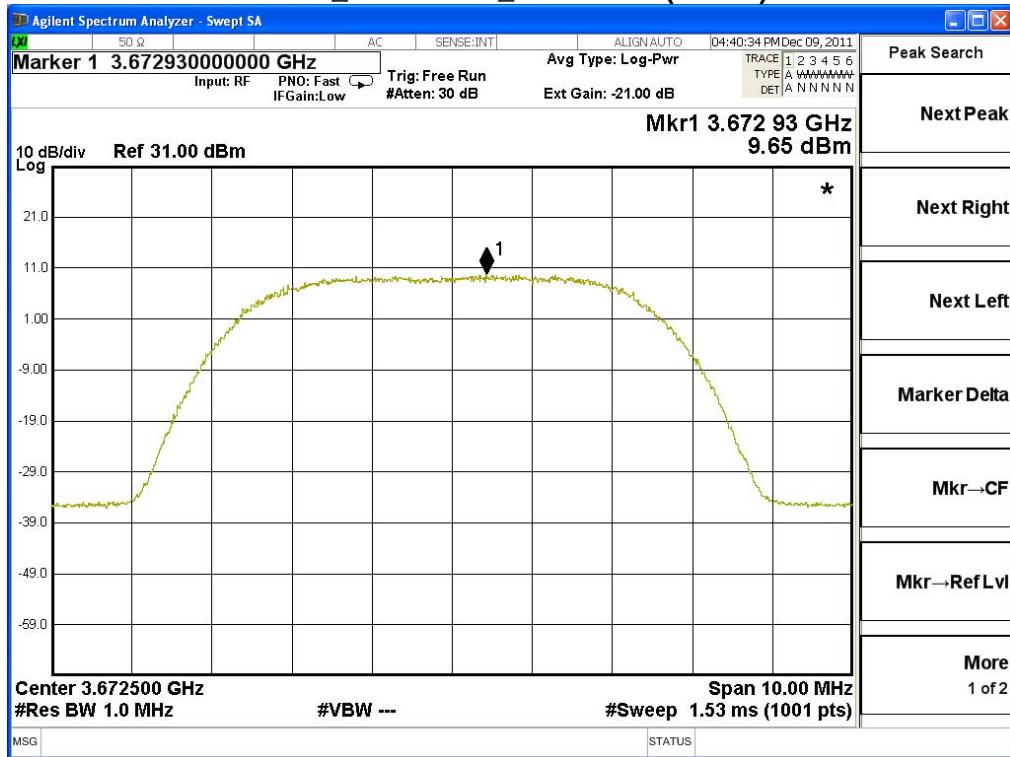
Maximum Radiated Power Density = Maximum Power Density + Antenna Gain

5MHz_3652.5MHz_64QAM2/3 (ANT 0)

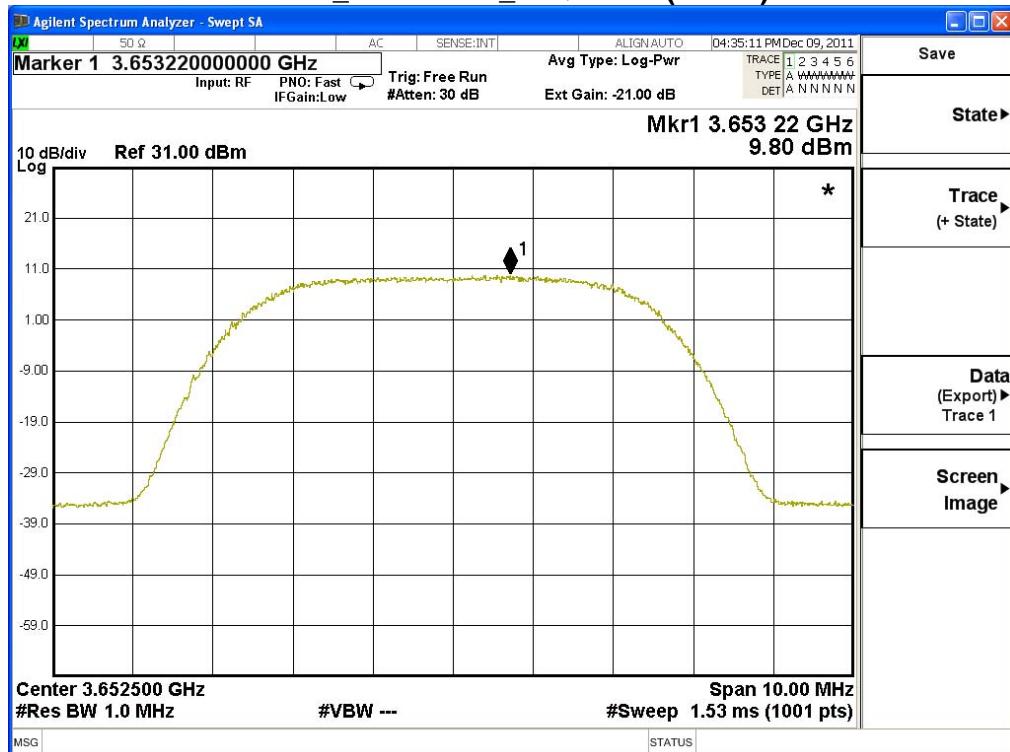
5MHz_3662.5MHz_64QAM2/3 (ANT 0)



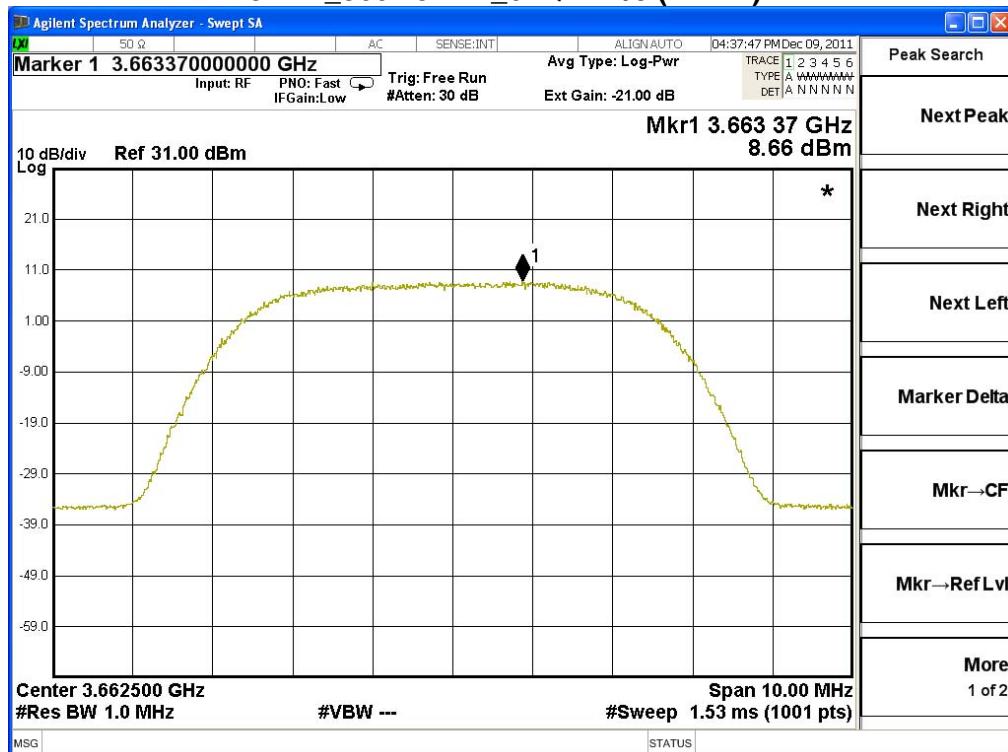
5MHz_3672.5MHz_64QAM2/3 (ANT 0)



5MHz_3652.5MHz_64QAM2/3 (ANT 1)



5MHz_3662.5MHz_64QAM2/3 (ANT 1)



5MHz_3672.5MHz_64QAM2/3 (ANT 1)

