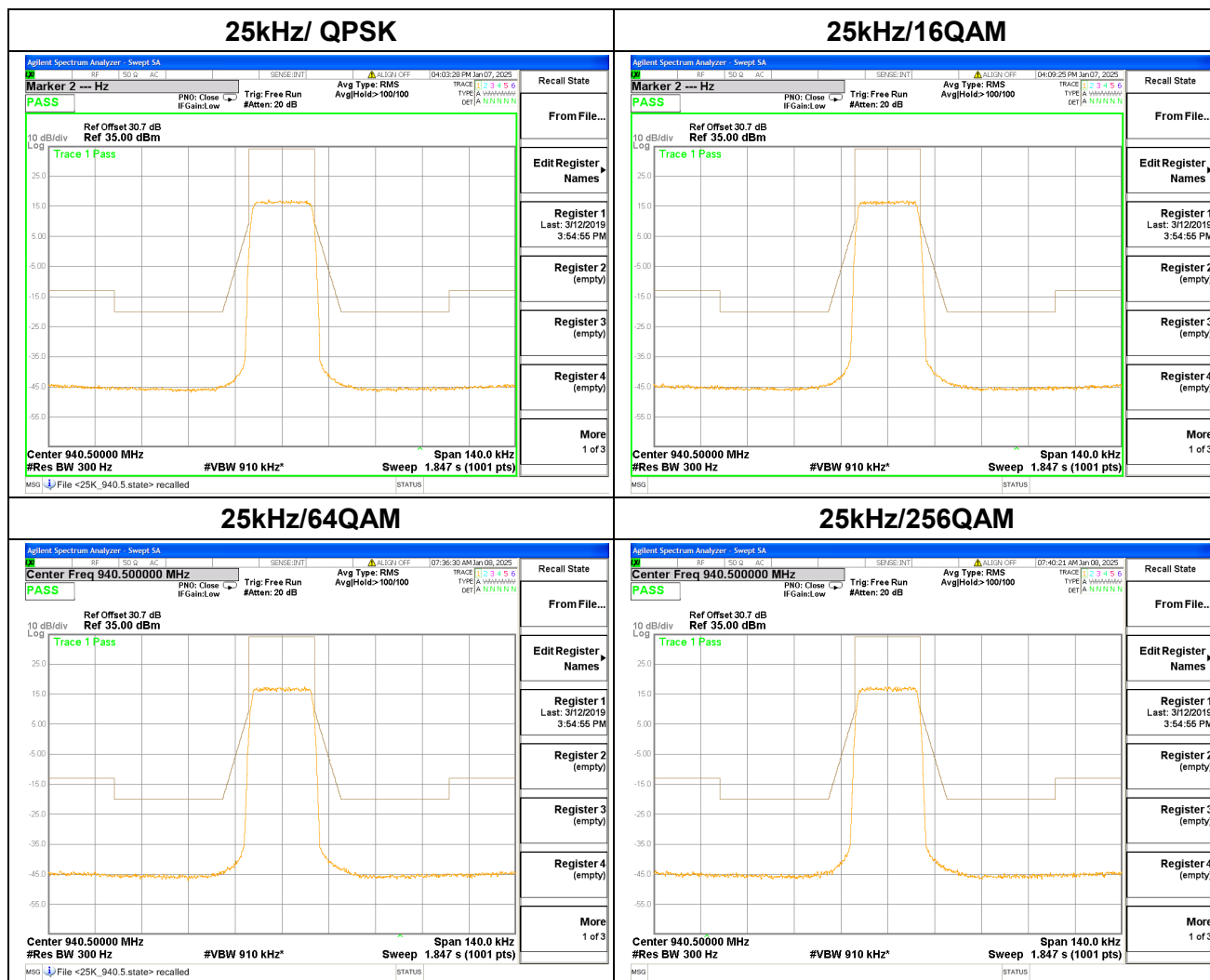
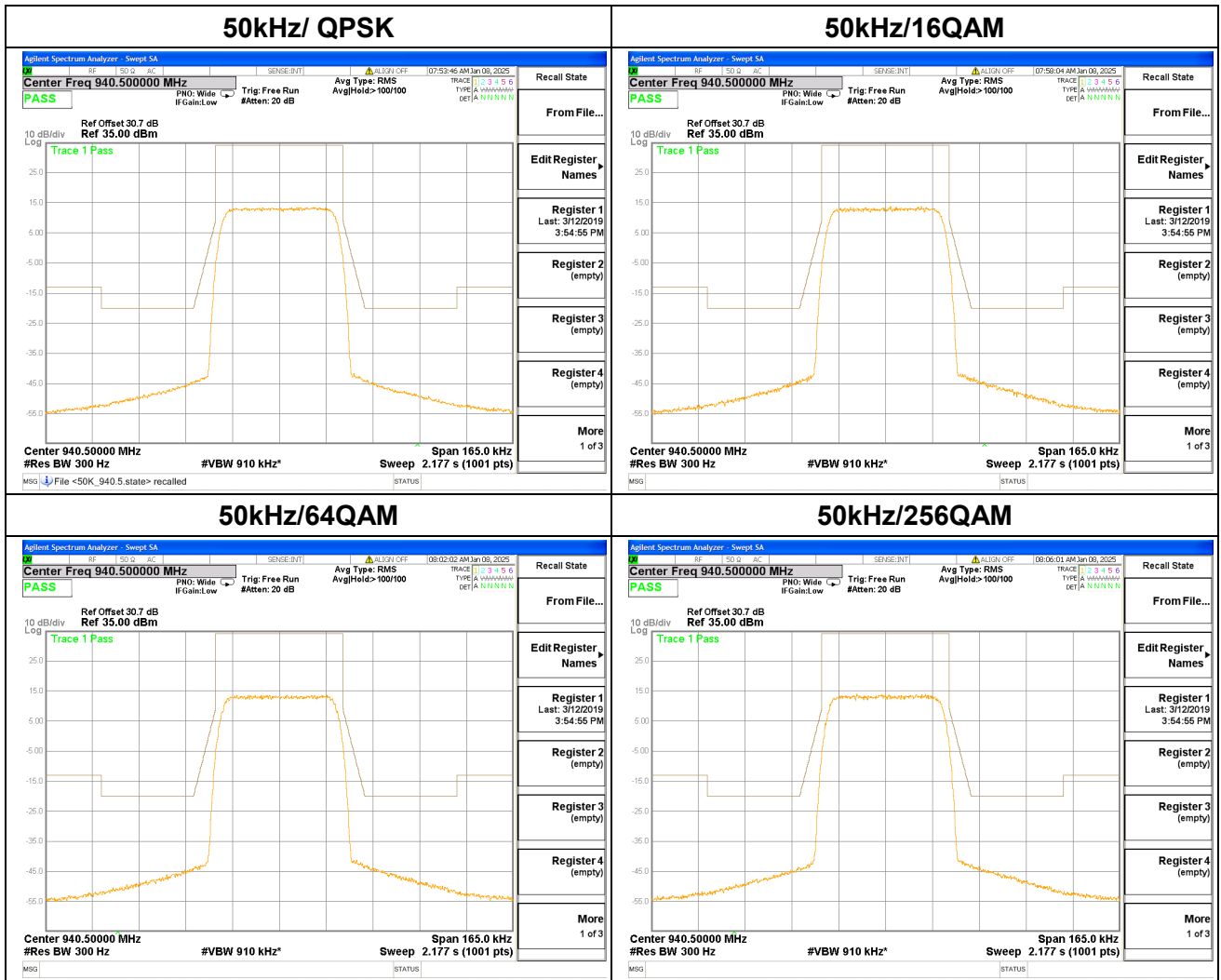


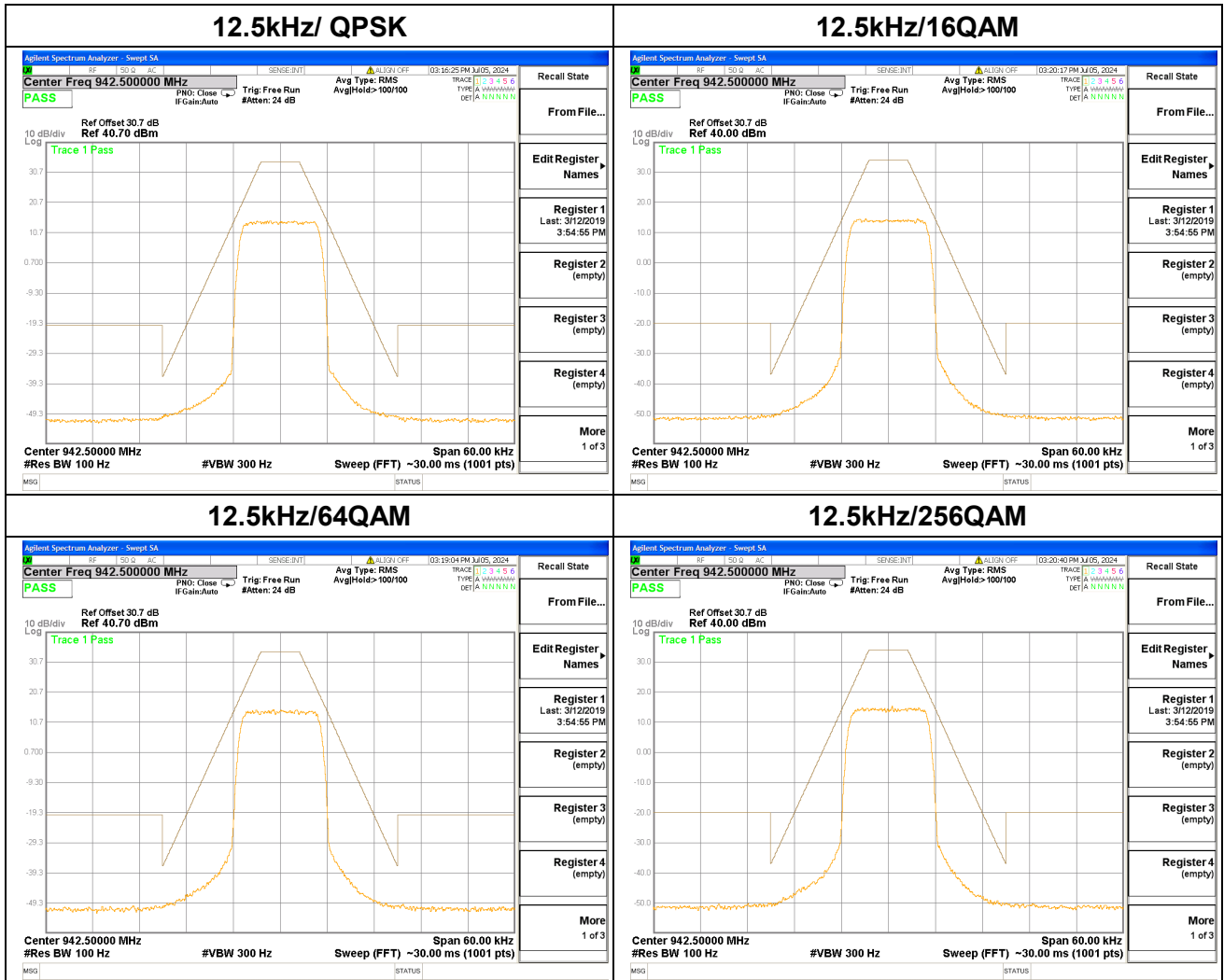


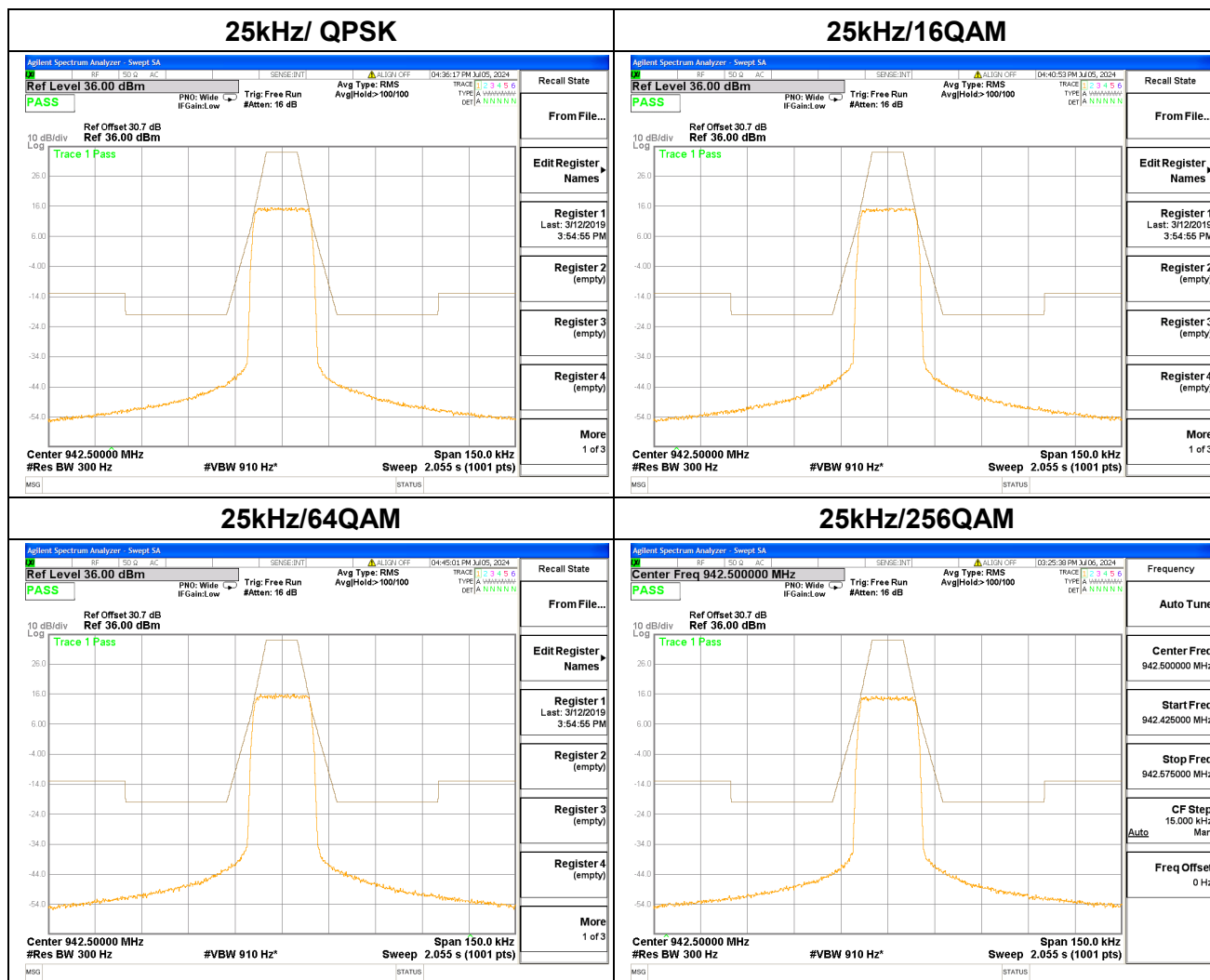


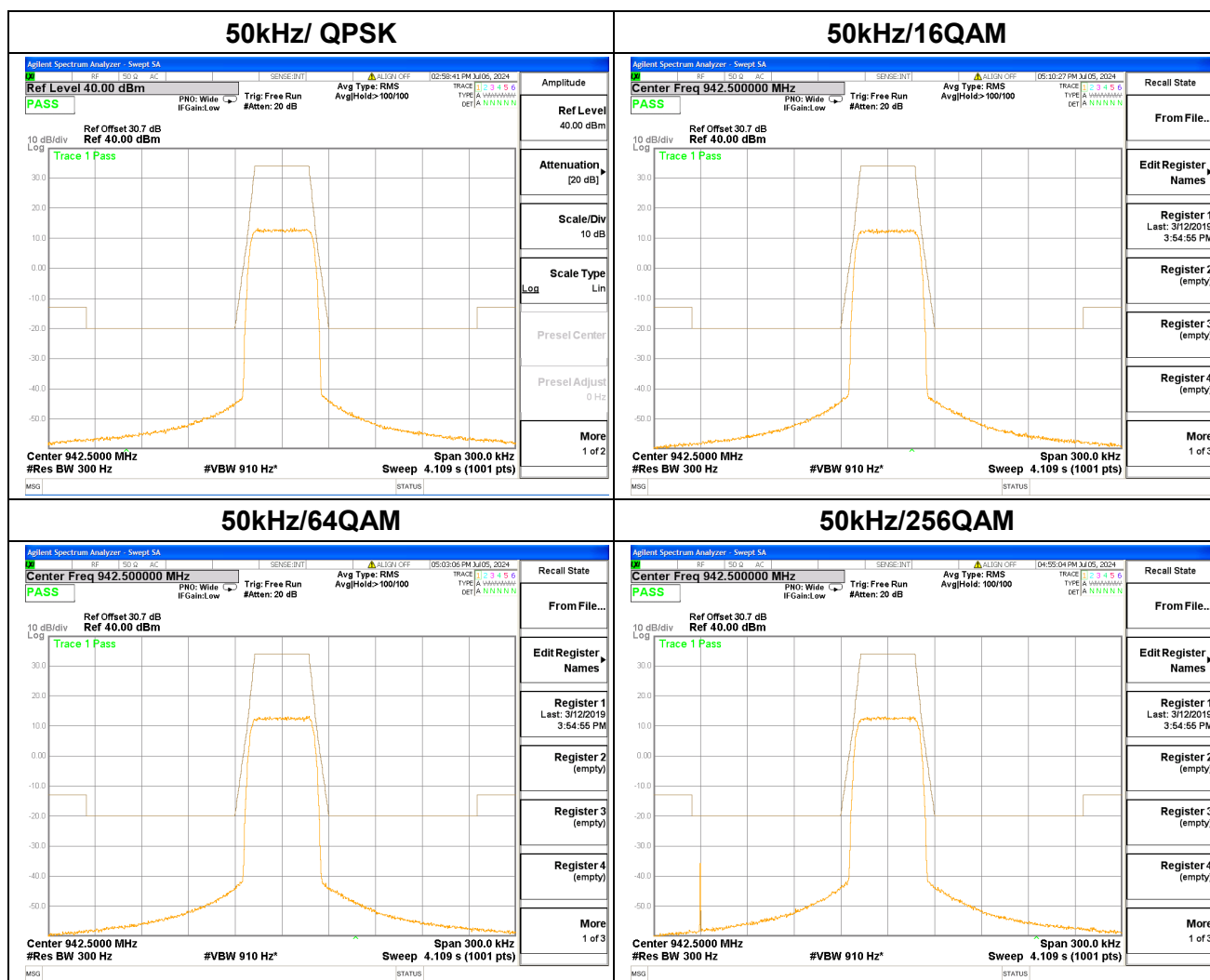


REPORT No.: SZ24060164W02

Nominal Frequency: 942.50 MHz Tx Port: Channel H



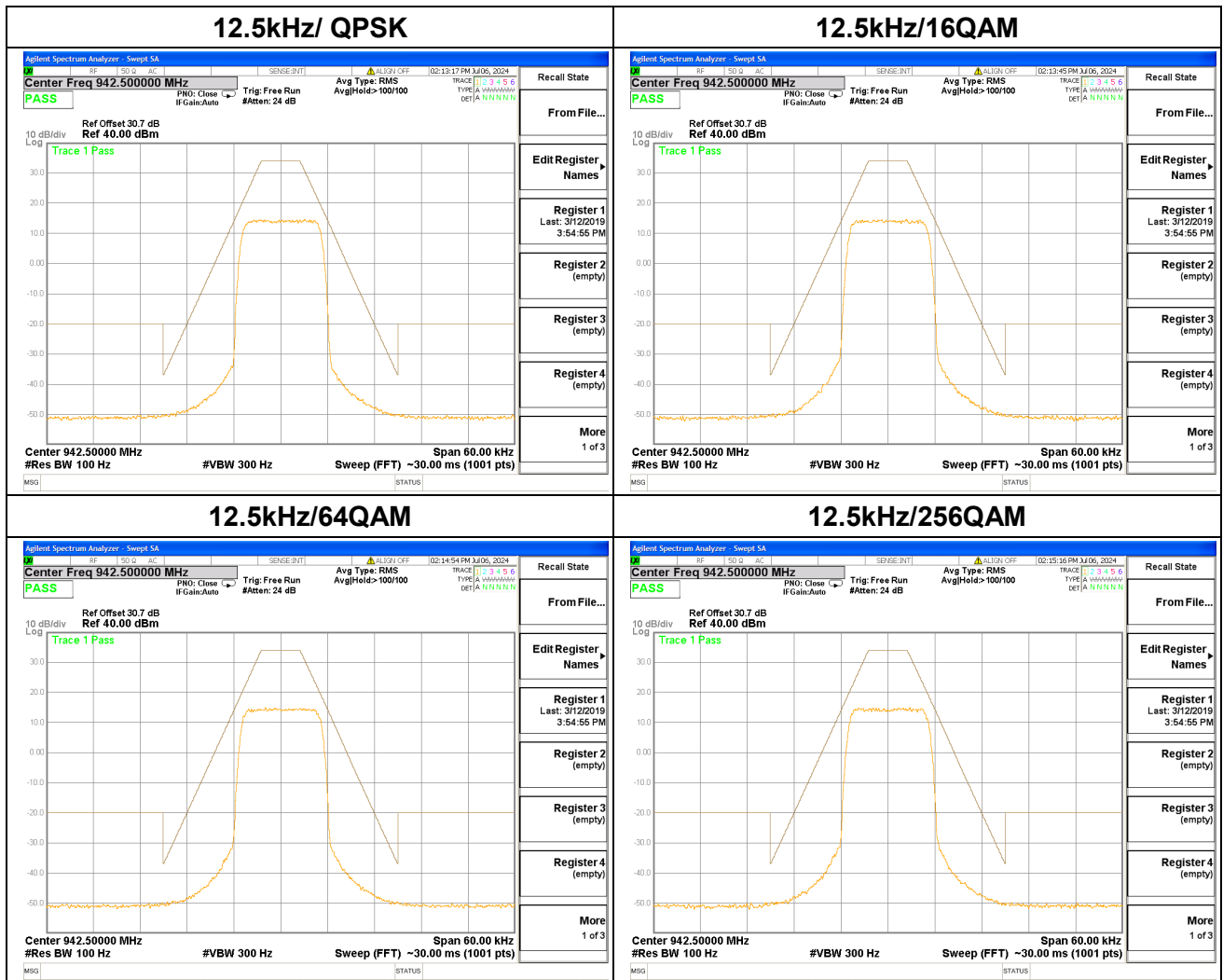






REPORT No.: SZ24060164W02

Nominal Frequency: 942.50 MHz Tx Port: Channel V



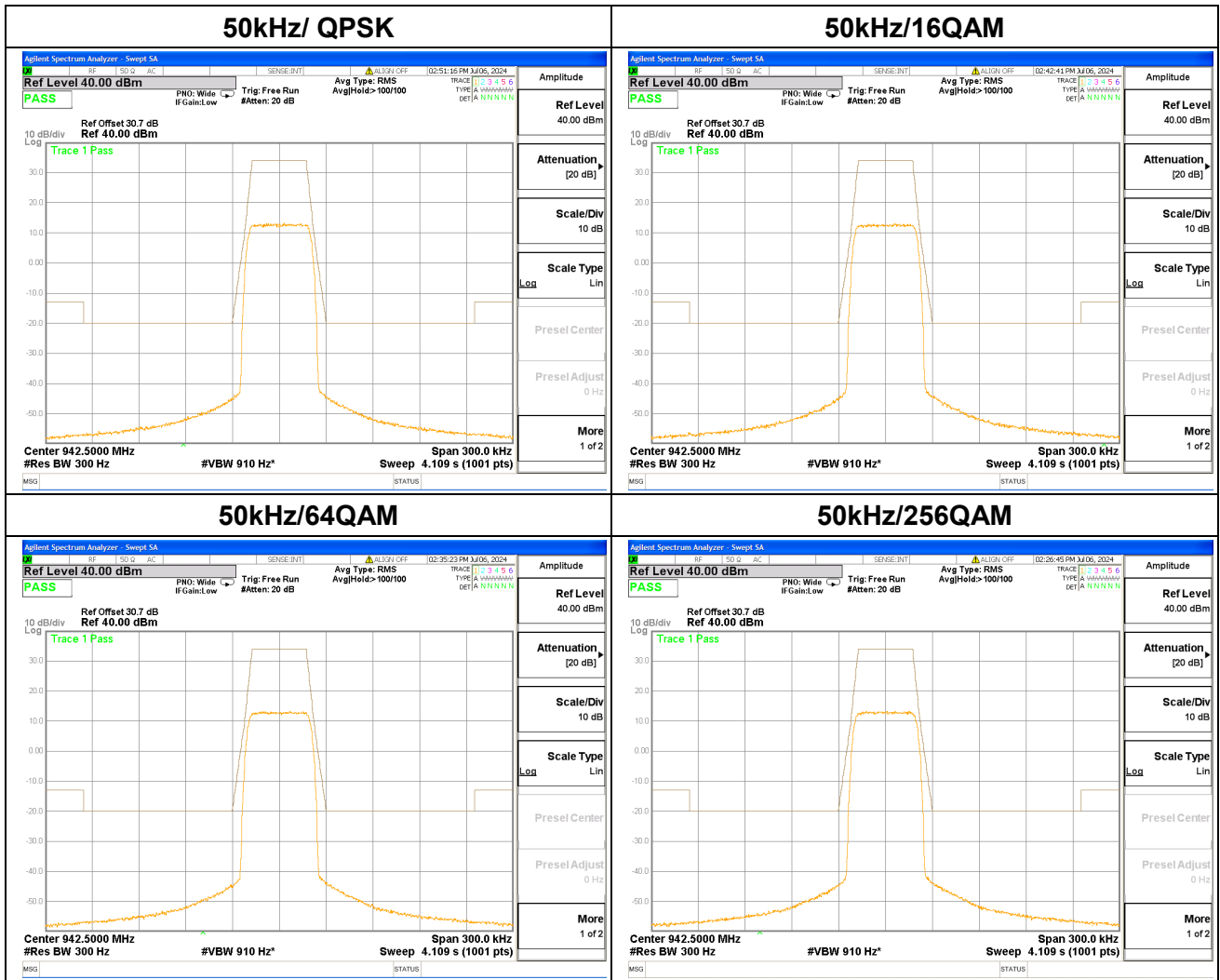
Shenzhen Morlab Communication Technology Co., Ltd.  
FL, 1-3, Building A, FeiYang Science Park, No.8 LongChang Road,  
Block67, BaoAn District, ShenZhen , GuangDong Province, P. R. China

Tel: 86-755-36698555  
Http://www.morlab.cn

Fax: 86-755-36698525  
E-mail: service@morlab.cn

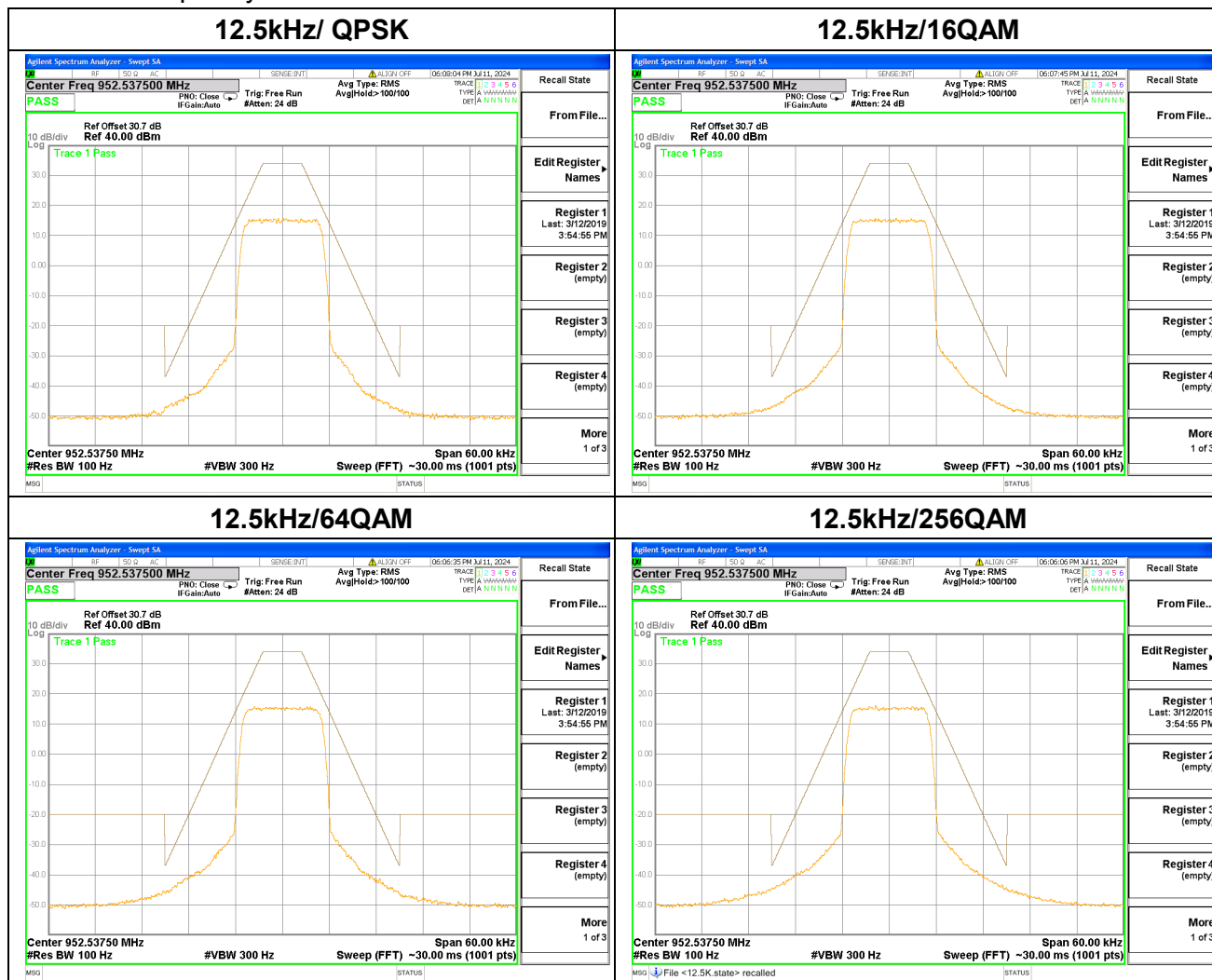


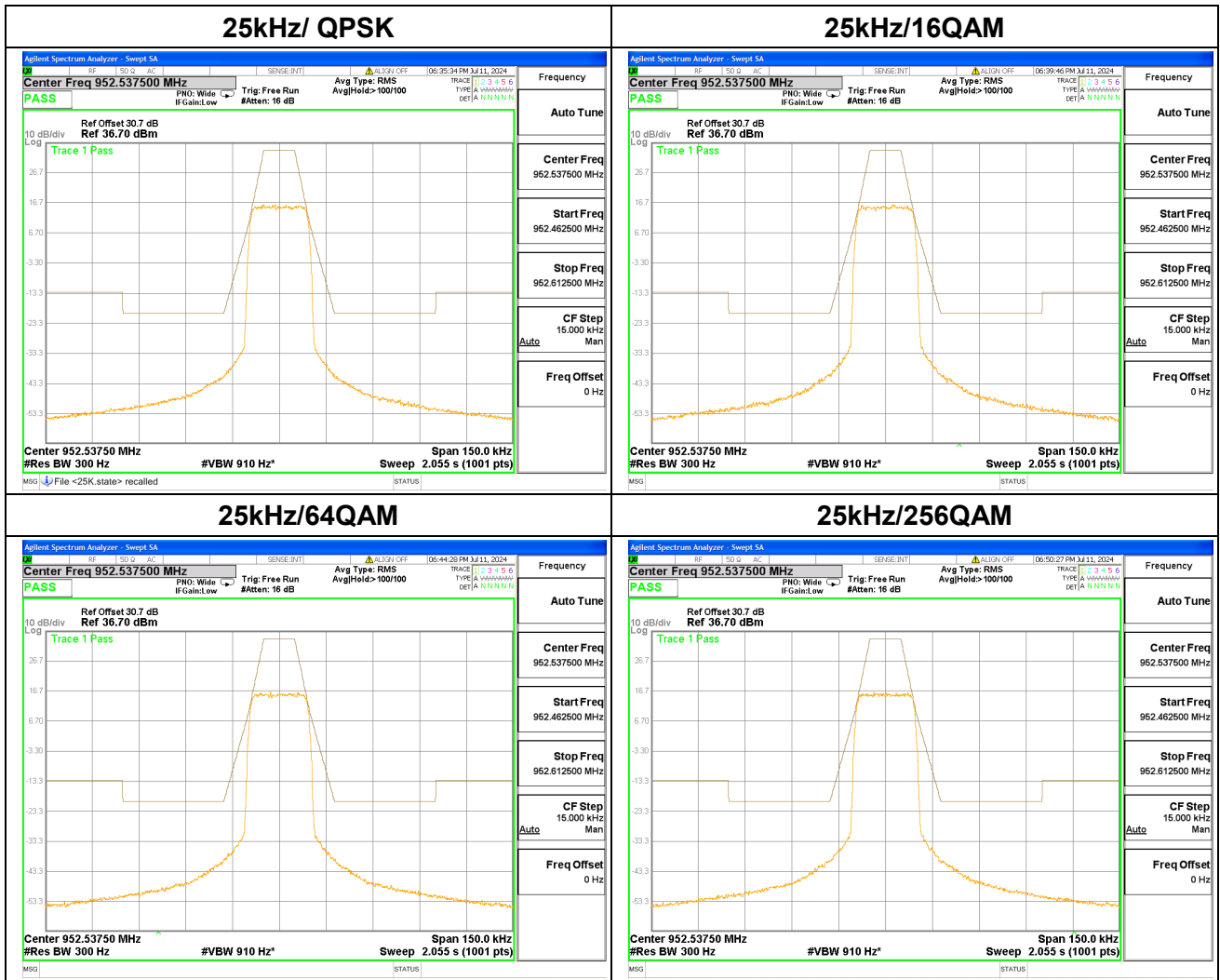
E-mail: [service@morlab.cn](mailto:service@morlab.cn)

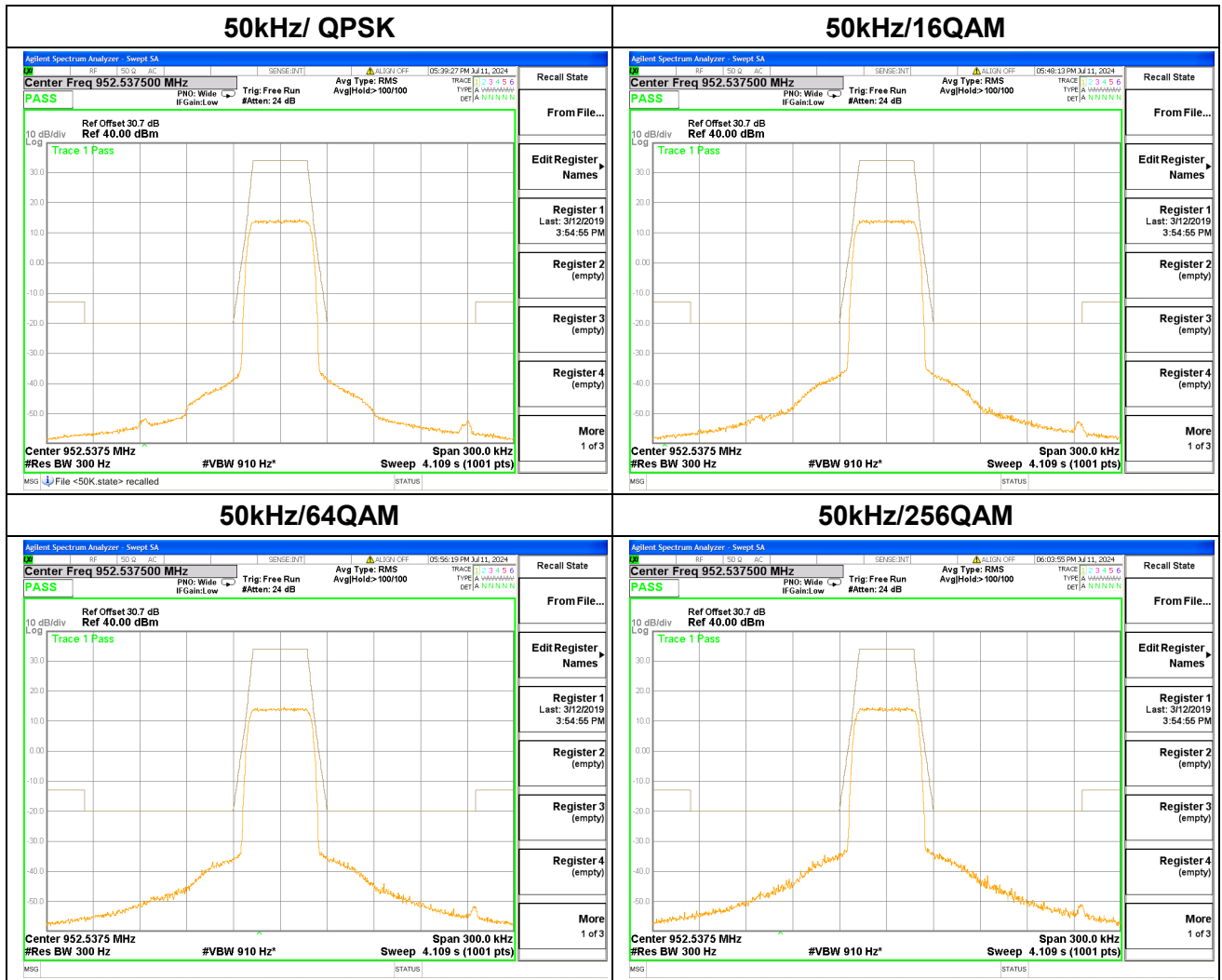




Nominal Frequency: 952.5375 MHz Tx Port: Channel H



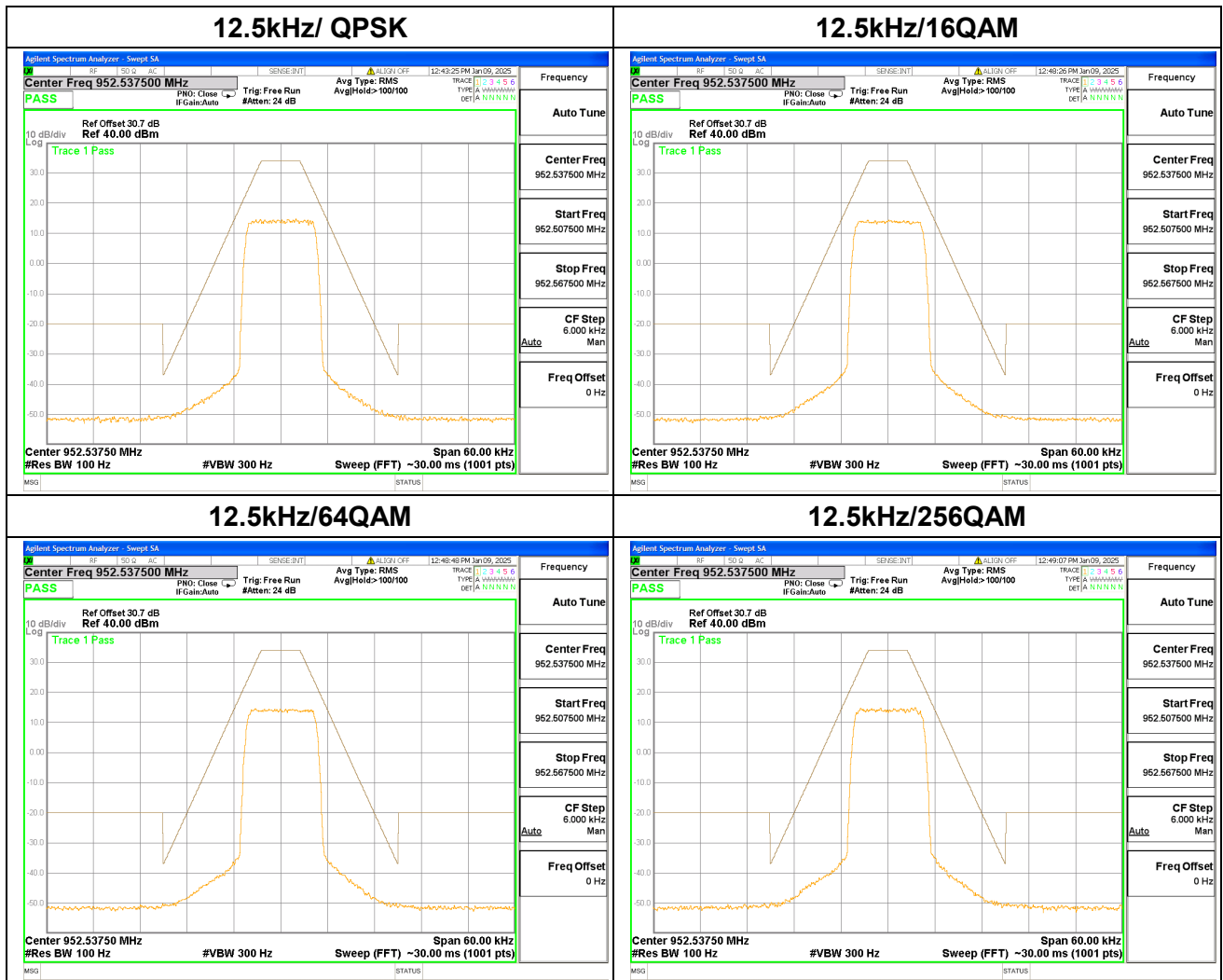


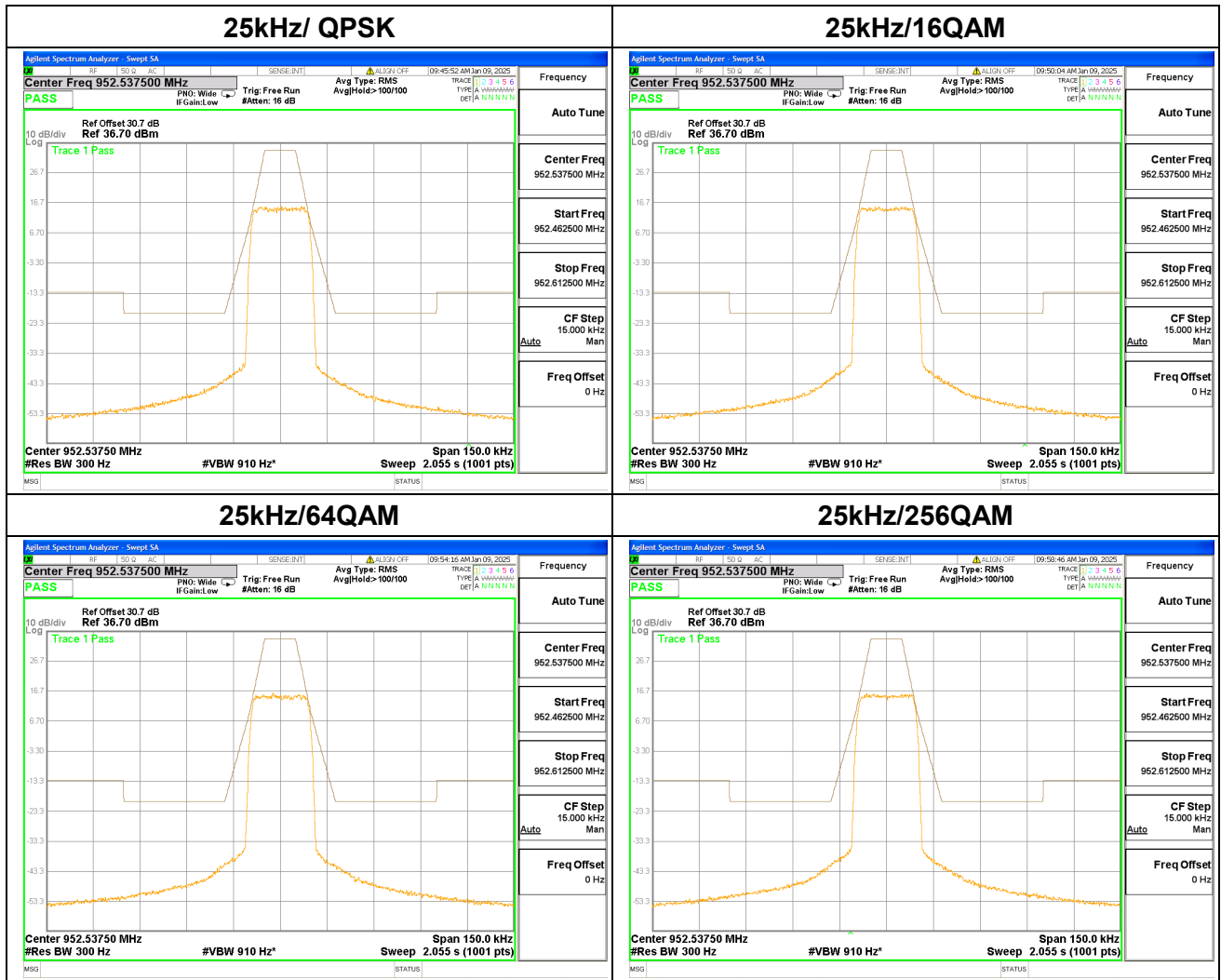


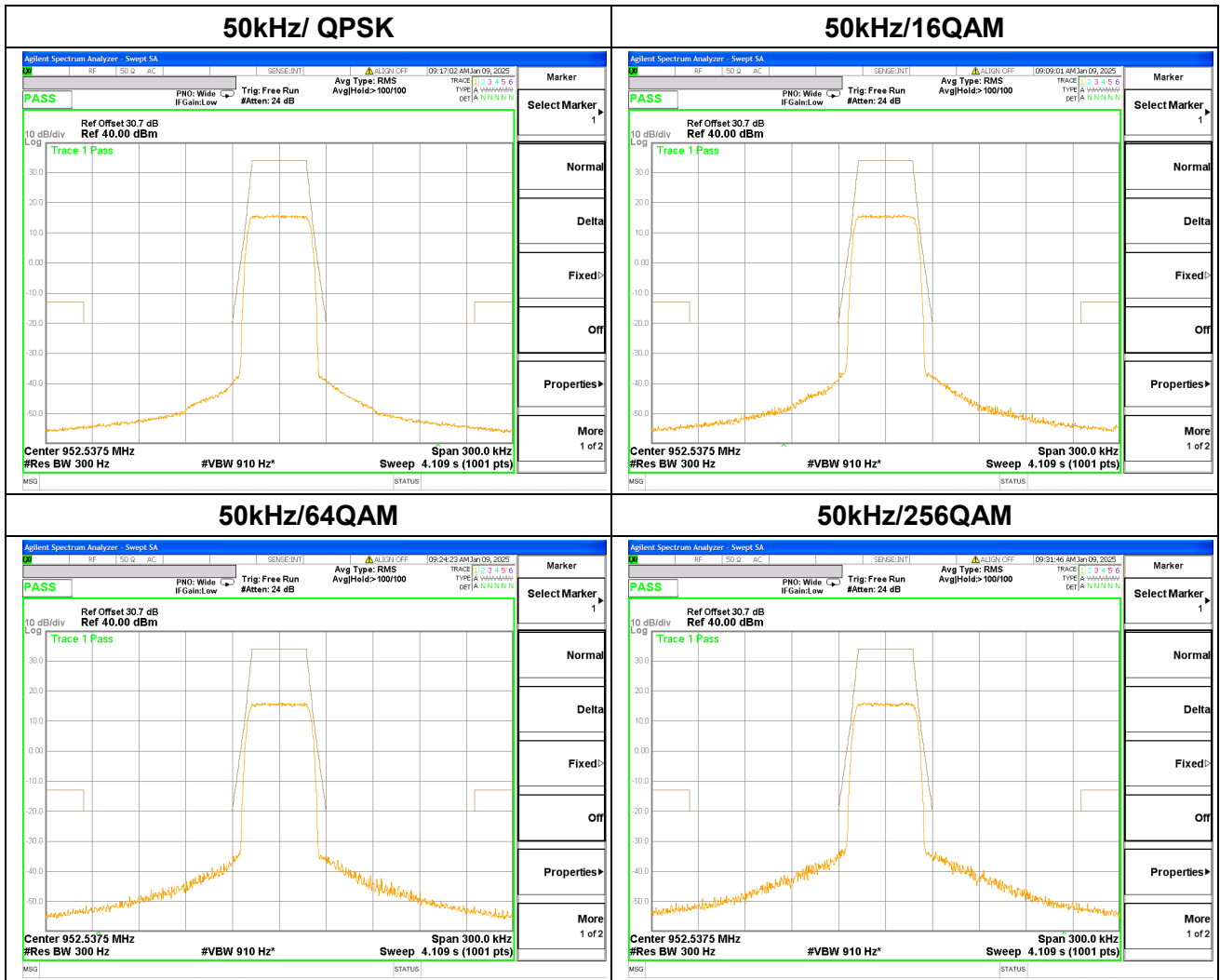


REPORT No.: SZ24060164W02

Nominal Frequency: 952.5375 MHz Tx Port: Channel V







## 2.4. Radiated Spurious Emissions

### 2.4.1. Requirement

According to FCC section 2.1053 and section 24.133(a). For operations in the 930-931 MHz & 940-941 MHz band, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power within the licensed band(s) of operation, measured in watts, in accordance with the following:

(1) On any frequency outside the 930-931 MHz & 940-941 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least  $43 + 10 \log(P)$  dB; According to FCC section 2.1053, 101.111 section

When using transmissions employing digital modulation techniques on the 900 MHz multiple address frequencies with a 12.5 KHz bandwidth, the power of any emission must be attenuated below the unmodulated carrier power of the transmitter (P) in accordance with the following schedule:

- (i) On any frequency removed from the center of the authorized bandwidth by a displacement frequency greater than 15 KHz: At least 50 plus  $10 \log_{10}(P)$  or 70 decibels, whichever is the lesser attenuation.

When using transmissions employing digital modulation techniques on the 900 MHz multiple address frequencies with a bandwidth greater than 12.5 KHz, the power of any emission must be attenuated below the unmodulated carrier power of the transmitter (P) in accordance with the following schedule:

On any frequency removed from the center of the authorized bandwidth by a displacement frequency ( $f_d$  in KHz) of more than 5 KHz up to and including 10 KHz: At least  $83 \log_{10}(f_d/5)$  decibels

### 2.4.2. Test Result

**Note 1:** No discrete emissions were detected.

**Note 2:** The power of the EUT transmitting frequency should be ignored.

**Note 3:** N/A means the frequency is the basic frequency; they are no need to verdict.

**Note 4:** For measurements below 1GHz the resolution bandwidth is set to 100 kHz for peak detection measurements. For measurements above 1GHz the resolution bandwidth is set to 1MHz for peak measurements.

**Note 5:** All bandwidth and modulation were considered and evaluated respectively by performing full test; only the worst cases were recorded in this test report.

**Note 6:** The received power level is the measured power adjusted for measurement antenna gain, connecting cable loss, and any external signal amplification or attenuation used in the test



configuration. Mathematically, as in Equation:

$$P_R = P_{\text{meas}} - G_R + L_C - G_{\text{amp}}$$

where

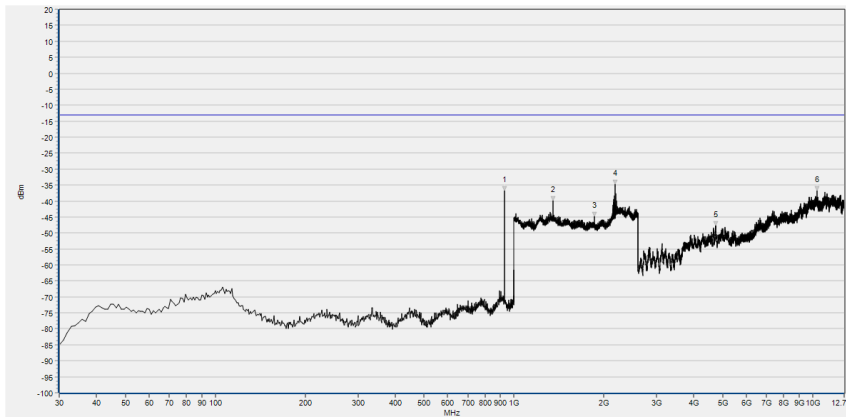
$P_{\text{meas}}$  measured power level, in dBm;

$G_R$  gain of the receive (measurement) antenna, in dBi;

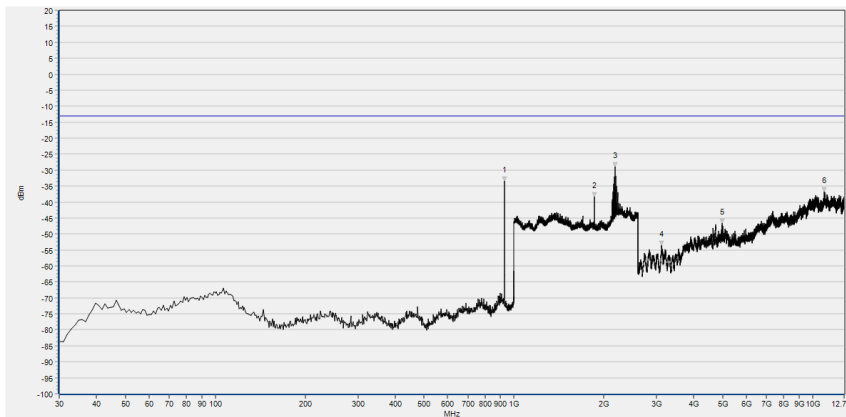
$L_C$  signal loss in the measurement cable, in dB;

$G_{\text{amp}}$  value of external amplification, in dB.

## Nominal Frequency 928.5375MHz, 50kHz BW, 256QAM

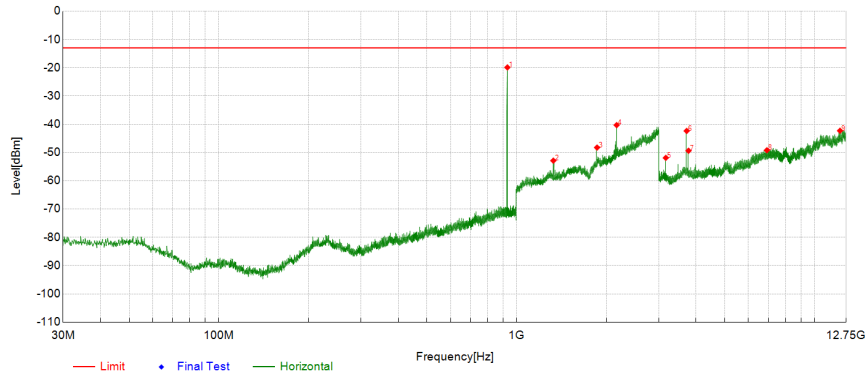


| No. | Fre.(MHz) | PK (dBm) | Limit (dBm) | Antenna | Verdict |
|-----|-----------|----------|-------------|---------|---------|
| 1   | 928.220   | -36.85   | -13.00      | H       | NA      |
| 2   | 1349.580  | -39.85   | -13.00      | H       | PASS    |
| 3   | 1857.303  | -44.91   | -13.00      | H       | PASS    |
| 4   | 2181.273  | -34.75   | -13.00      | H       | PASS    |
| 5   | 4724.504  | -47.66   | -13.00      | H       | PASS    |
| 6   | 10346.781 | -36.79   | -13.00      | H       | PASS    |

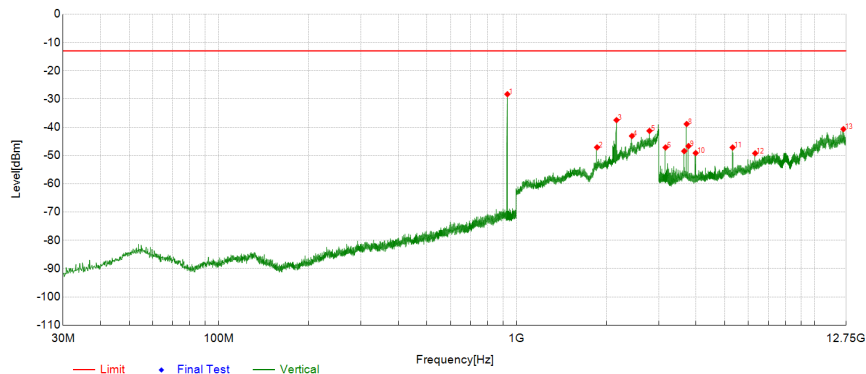


| No. | Fre.(MHz) | PK (dBm) | Limit (dBm) | Antenna | Verdict |
|-----|-----------|----------|-------------|---------|---------|
| 1   | 928.220   | -33.45   | -13.00      | V       | NA      |
| 2   | 1856.663  | -38.38   | -13.00      | V       | PASS    |
| 3   | 2183.193  | -29.01   | -13.00      | V       | PASS    |
| 4   | 3122.359  | -53.53   | -13.00      | V       | PASS    |
| 5   | 4977.378  | -46.58   | -13.00      | V       | PASS    |
| 6   | 10941.126 | -36.83   | -13.00      | V       | PASS    |

### Nominal Frequency 930.5MHz, 50kHz BW, 256QAM



| No. | Fre.(MHz)  | PK (dBm) | Limit (dBm) | Antenna | Verdict |
|-----|------------|----------|-------------|---------|---------|
| 1   | 930.645    | -19.90   | -13.00      | H       | NA      |
| 2   | 1327.5     | -52.87   | -13.00      | H       | PASS    |
| 3   | 1861.25    | -48.25   | -13.00      | H       | PASS    |
| 4   | 2165.5     | -40.31   | -13.00      | H       | PASS    |
| 5   | 3167.2209  | -51.88   | -13.00      | H       | PASS    |
| 6   | 3722.0236  | -42.35   | -13.00      | H       | PASS    |
| 7   | 3775.1638  | -49.37   | -13.00      | H       | PASS    |
| 8   | 6920.671   | -49.20   | -13.00      | H       | PASS    |
| 9   | 12179.5965 | -42.28   | -13.00      | H       | PASS    |



| No. | Fre.(MHz) | PK (dBm) | Limit (dBm) | Antenna | Verdict |
|-----|-----------|----------|-------------|---------|---------|
| 1   | 930.645   | -28.31   | -13.00      | V       | NA      |
| 2   | 1861.25   | -47.11   | -13.00      | V       | PASS    |
| 3   | 2163.25   | -37.47   | -13.00      | V       | PASS    |
| 4   | 2437.5    | -43.09   | -13.00      | V       | PASS    |
| 5   | 2792      | -41.27   | -13.00      | V       | PASS    |
| 6   | 3161.3706 | -47.14   | -13.00      | V       | PASS    |

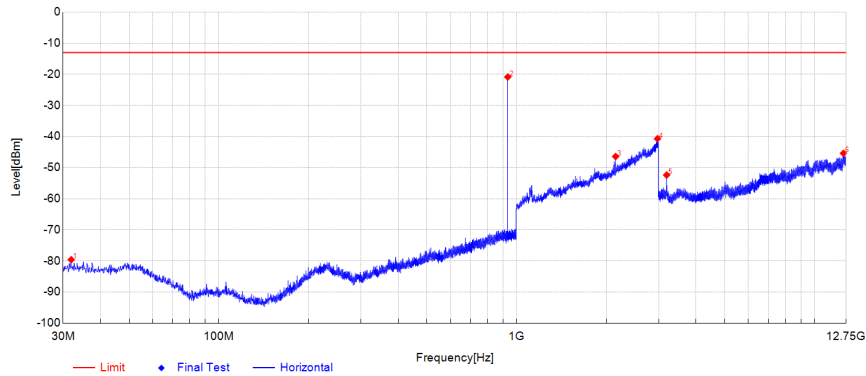


REPORT No.: SZ24060164W02

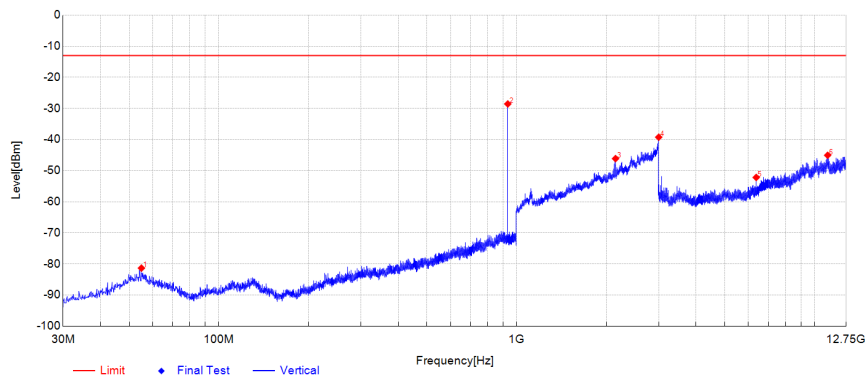
|    |           |        |        |   |      |
|----|-----------|--------|--------|---|------|
| 7  | 3652.3076 | -48.45 | -13.00 | V | PASS |
| 8  | 3722.0236 | -38.85 | -13.00 | V | PASS |
| 9  | 3775.1638 | -46.66 | -13.00 | V | PASS |
| 10 | 3991.1371 | -49.13 | -13.00 | V | PASS |
| 11 | 5308.4279 | -47.15 | -13.00 | V | PASS |
| 12 | 6322.4786 | -49.22 | -13.00 | V | PASS |
| 13 | 12509.163 | -40.66 | -13.00 | V | PASS |



### Nominal Frequency 933.5MHz, 50kHz BW, 256QAM

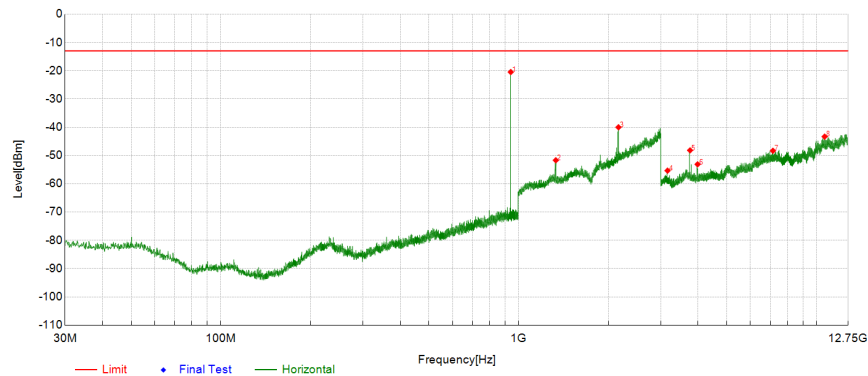


| No. | Fre.(MHz)  | PK (dBm) | Limit (dBm) | Antenna | Verdict |
|-----|------------|----------|-------------|---------|---------|
| 1   | 31.94      | -79.59   | -13.0       | H       | PASS    |
| 2   | 933.555    | -20.85   | -           | H       | NA      |
| 3   | 2148       | -46.42   | -13.0       | H       | PASS    |
| 4   | 2970       | -40.69   | -13.0       | H       | PASS    |
| 5   | 3187.2094  | -52.38   | -13.0       | H       | PASS    |
| 6   | 12504.2877 | -45.38   | -13.0       | H       | PASS    |

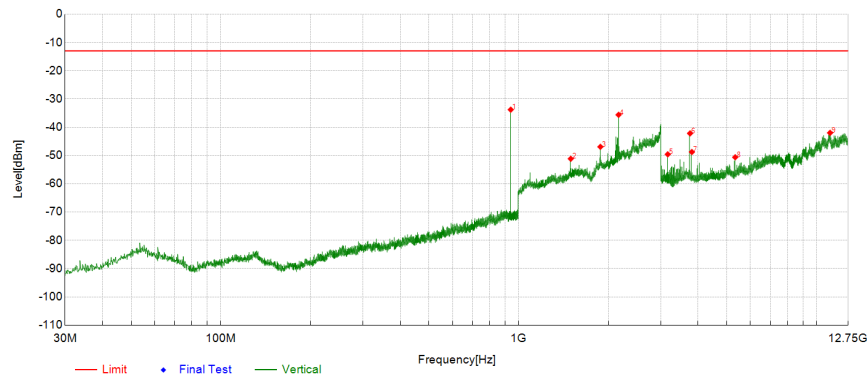


| No. | Fre.(MHz)  | PK (dBm) | Limit (dBm) | Antenna | Verdict |
|-----|------------|----------|-------------|---------|---------|
| 1   | 54.9775    | -81.33   | -13.0       | V       | PASS    |
| 2   | 933.555    | -28.54   | -           | V       | NA      |
| 3   | 2147       | -46.13   | -13.0       | V       | PASS    |
| 4   | 2998.5     | -39.24   | -13.0       | V       | PASS    |
| 5   | 6372.6936  | -52.18   | -13.0       | V       | PASS    |
| 6   | 11067.0659 | -45.05   | -13.0       | V       | PASS    |

## Nominal Frequency 940.5MHz, 50kHz BW, 256QAM



| No. | Fre.(MHz)  | PK (dBm) | Limit (dBm) | Antenna | Verdict |
|-----|------------|----------|-------------|---------|---------|
| 1   | 940.5875   | -20.47   | -13.00      | H       | NA      |
| 2   | 1332.5     | -51.68   | -13.00      | H       | PASS    |
| 3   | 2162.75    | -40.01   | -13.00      | H       | PASS    |
| 4   | 3160.883   | -55.35   | -13.00      | H       | PASS    |
| 5   | 3762.0006  | -48.16   | -13.00      | H       | PASS    |
| 6   | 3987.2369  | -53.11   | -13.00      | H       | PASS    |
| 7   | 7137.6194  | -48.33   | -13.00      | H       | PASS    |
| 8   | 10646.8198 | -43.32   | -13.00      | H       | PASS    |

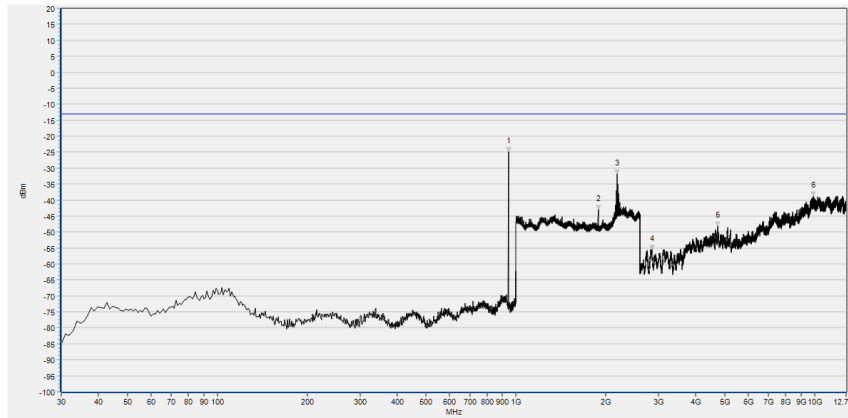


| No. | Fre.(MHz) | PK (dBm) | Limit (dBm) | Antenna | Verdict |
|-----|-----------|----------|-------------|---------|---------|
| 1   | 940.5875  | -33.78   | -13.00      | V       | NA      |
| 2   | 1495.75   | -51.14   | -13.00      | V       | PASS    |
| 3   | 1881      | -46.92   | -13.00      | V       | PASS    |
| 4   | 2164.75   | -35.59   | -13.00      | V       | PASS    |
| 5   | 3166.2458 | -49.58   | -13.00      | V       | PASS    |
| 6   | 3762.0006 | -42.17   | -13.00      | V       | PASS    |
| 7   | 3815.6283 | -48.75   | -13.00      | V       | PASS    |
| 8   | 5333.2917 | -50.62   | -13.00      | V       | PASS    |

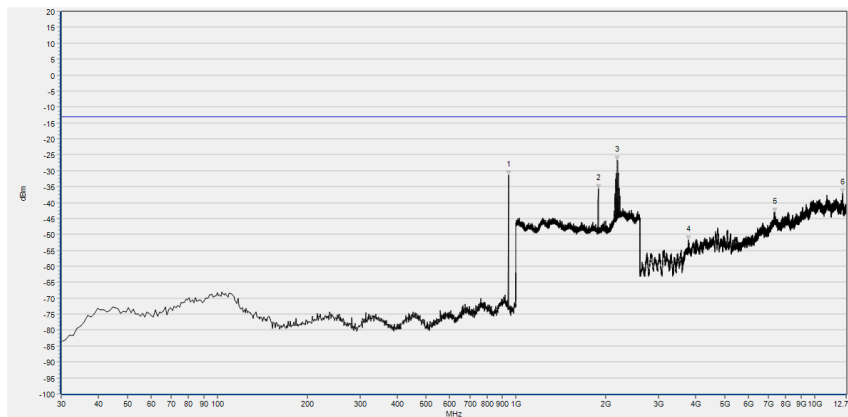


|   |            |        |        |   |      |
|---|------------|--------|--------|---|------|
| 9 | 11103.1427 | -41.98 | -13.00 | V | PASS |
|---|------------|--------|--------|---|------|

## Nominal Frequency 942.5MHz, 50kHz BW, 256QAM

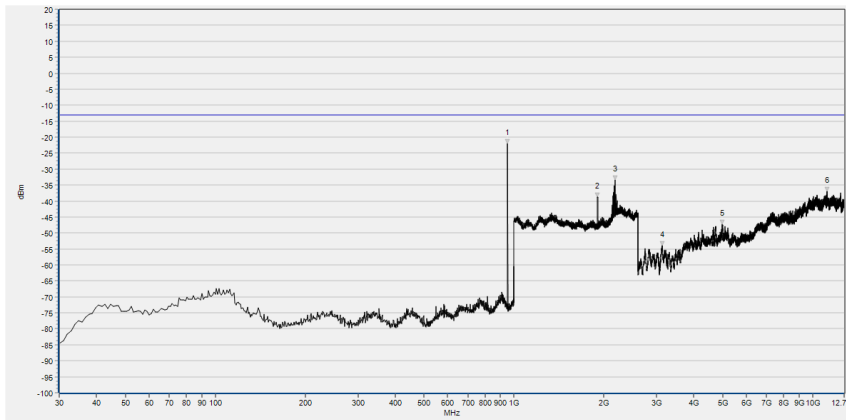


| No. | Fre.(MHz) | PK (dBm) | Limit (dBm) | Antenna | Verdict |
|-----|-----------|----------|-------------|---------|---------|
| 1   | 942.770   | -25.02   | -13.00      | H       | NA      |
| 2   | 1884.834  | -42.95   | -13.00      | H       | PASS    |
| 3   | 2183.193  | -31.90   | -13.00      | H       | PASS    |
| 4   | 2849.182  | -55.54   | -13.00      | H       | PASS    |
| 5   | 4739.271  | -48.17   | -13.00      | H       | PASS    |
| 6   | 9909.329  | -38.76   | -13.00      | H       | PASS    |

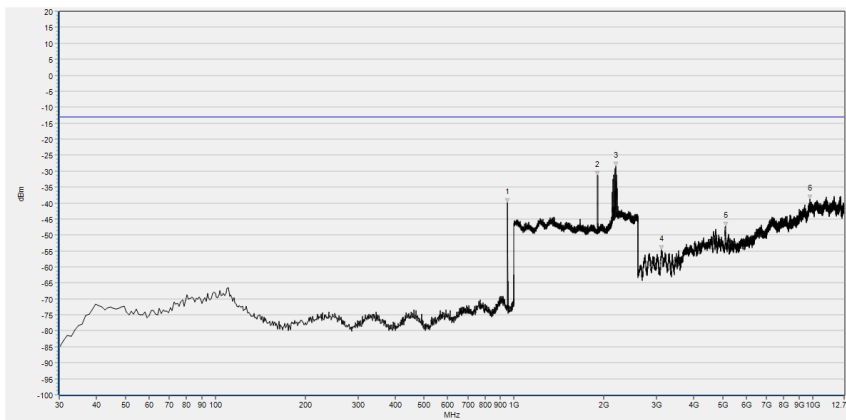


| No. | Fre.(MHz) | PK (dBm) | Limit (dBm) | Antenna | Verdict |
|-----|-----------|----------|-------------|---------|---------|
| 1   | 942.770   | -31.38   | -13.00      | V       | NA      |
| 2   | 1884.834  | -35.57   | -13.00      | V       | PASS    |
| 3   | 2185.754  | -26.64   | -13.00      | V       | PASS    |
| 4   | 3770.231  | -51.72   | -13.00      | V       | PASS    |
| 5   | 7356.601  | -42.96   | -13.00      | V       | PASS    |
| 6   | 12417.758 | -36.96   | -13.00      | V       | PASS    |

### Nominal Frequency 952.5375MHz, 50kHz BW, 256QAM



| No. | Fre.(MHz) | PK (dBm) | Limit (dBm) | Antenna | Verdict |
|-----|-----------|----------|-------------|---------|---------|
| 1   | 952.470   | -21.99   | -13.00      | H       | NA      |
| 2   | 1904.682  | -38.72   | -13.00      | H       | PASS    |
| 3   | 2184.474  | -33.44   | -13.00      | H       | PASS    |
| 4   | 3127.896  | -53.94   | -13.00      | H       | PASS    |
| 5   | 4984.761  | -47.19   | -13.00      | H       | PASS    |
| 6   | 11142.317 | -36.95   | -13.00      | H       | PASS    |



| No. | Fre.(MHz) | PK (dBm) | Limit (dBm) | Antenna | Verdict |
|-----|-----------|----------|-------------|---------|---------|
| 1   | 952.470   | -39.98   | -13.00      | V       | NA      |
| 2   | 1904.682  | -31.39   | -13.00      | V       | PASS    |
| 3   | 2189.596  | -28.51   | -13.00      | V       | PASS    |
| 4   | 3118.667  | -54.72   | -13.00      | V       | PASS    |
| 5   | 5102.891  | -47.33   | -13.00      | V       | PASS    |
| 6   | 9813.348  | -38.74   | -13.00      | V       | PASS    |

## 2.5. Frequency Stability

### 2.5.1. Requirement

According to FCC section 2.1055, FCC section 24.135.e and FCC section 101.107 frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block. According to FCC section 24.135, the test conditions are:

The frequency stability of the transmitter shall be maintained within  $\pm 0.0001$  percent ( $\pm 1$  ppm) of the center frequency over a temperature variation of  $-30^{\circ}\text{C}$  to  $+50^{\circ}\text{C}$  at normal supply voltage, and over a variation in the primary supply voltage of 85 percent to 115 percent of the rated supply voltage at a temperature of  $20^{\circ}\text{C}$ .

### 2.5.2. Test Results

| 928.5375MHz QPSK 12.5kHz<br>Limit =Within Authorized Band |             |                             |                |                 |        |
|-----------------------------------------------------------|-------------|-----------------------------|----------------|-----------------|--------|
| Voltage (%)                                               | Power (VDC) | Temp ( $^{\circ}\text{C}$ ) | Fre. Dev. (Hz) | Deviation (ppm) | Result |
| 100                                                       | 24.0        | +20(Ref)                    | 16             | 0.017           | PASS   |
| 100                                                       |             | -40                         | 18             | 0.019           |        |
| 100                                                       |             | -30                         | -21            | -0.023          |        |
| 100                                                       |             | -20                         | -11            | -0.012          |        |
| 100                                                       |             | -10                         | 16             | 0.017           |        |
| 100                                                       |             | 0                           | 13             | 0.014           |        |
| 100                                                       |             | +10                         | 15             | 0.016           |        |
| 100                                                       |             | +20                         | 3              | 0.003           |        |
| 100                                                       |             | +30                         | 13             | 0.014           |        |
| 100                                                       |             | +40                         | 20             | <b>0.022</b>    |        |
| 100                                                       |             | +50                         | -18            | -0.019          |        |
| 100                                                       |             | +60                         | 15             | 0.016           |        |
| 100                                                       |             | +70                         | -17            | -0.018          |        |
| 115                                                       | 60          | +20                         | -23            | -0.025          |        |
| 85                                                        | 10.5        | +20                         | 16             | 0.017           |        |



| 928.5375MHz QPSK 25kHz<br>Limit =Within Authorized Band |             |           |                |                 |        |
|---------------------------------------------------------|-------------|-----------|----------------|-----------------|--------|
| Voltage (%)                                             | Power (VDC) | Temp (°C) | Fre. Dev. (Hz) | Deviation (ppm) | Result |
| 100                                                     | 24.0        | +20(Ref)  | 13             | 0.014           | PASS   |
| 100                                                     |             | -40       | 6              | 0.006           |        |
| 100                                                     |             | -30       | 14             | 0.015           |        |
| 100                                                     |             | -20       | 17             | 0.018           |        |
| 100                                                     |             | -10       | -16            | -0.017          |        |
| 100                                                     |             | 0         | 13             | 0.014           |        |
| 100                                                     |             | +10       | 23             | <b>0.025</b>    |        |
| 100                                                     |             | +20       | 17             | 0.018           |        |
| 100                                                     |             | +30       | 12             | 0.013           |        |
| 100                                                     |             | +40       | 20             | 0.022           |        |
| 100                                                     |             | +50       | 23             | <b>0.025</b>    |        |
| 100                                                     |             | +60       | 10             | 0.011           |        |
| 100                                                     |             | +70       | 14             | 0.015           |        |
| 115                                                     | 60          | +20       | 16             | 0.017           |        |
| 85                                                      | 10.5        | +20       | 20             | 0.022           |        |



| 928.5375MHz QPSK 50kHz<br>Limit =Within Authorized Band |             |           |                |                 |        |
|---------------------------------------------------------|-------------|-----------|----------------|-----------------|--------|
| Voltage (%)                                             | Power (VDC) | Temp (°C) | Fre. Dev. (Hz) | Deviation (ppm) | Result |
| 100                                                     | 24.0        | +20(Ref)  | 14             | 0.015           | PASS   |
| 100                                                     |             | -40       | 18             | 0.019           |        |
| 100                                                     |             | -30       | 17             | 0.018           |        |
| 100                                                     |             | -20       | 18             | 0.019           |        |
| 100                                                     |             | -10       | -8             | -0.009          |        |
| 100                                                     |             | 0         | 16             | 0.017           |        |
| 100                                                     |             | +10       | 16             | 0.017           |        |
| 100                                                     |             | +20       | 13             | 0.014           |        |
| 100                                                     |             | +30       | 20             | <b>0.022</b>    |        |
| 100                                                     |             | +40       | 15             | 0.016           |        |
| 100                                                     |             | +50       | -19            | -0.020          |        |
| 100                                                     |             | +60       | 0              | 0.000           |        |
| 100                                                     |             | +70       | 18             | 0.019           |        |
| 115                                                     | 60          | +20       | 17             | 0.018           |        |
| 85                                                      | 10.5        | +20       | 16             | 0.017           |        |



| 930.5MHz QPSK 12.5kHz<br>Limit =Within Authorized Band |             |           |                |                 |        |
|--------------------------------------------------------|-------------|-----------|----------------|-----------------|--------|
| Voltage (%)                                            | Power (VDC) | Temp (°C) | Fre. Dev. (Hz) | Deviation (ppm) | Result |
| 100                                                    | 24.0        | +20(Ref)  | -13            | -0.014          | PASS   |
| 100                                                    |             | -40       | -20            | -0.022          |        |
| 100                                                    |             | -30       | 6              | 0.006           |        |
| 100                                                    |             | -20       | 17             | 0.018           |        |
| 100                                                    |             | -10       | 10             | 0.011           |        |
| 100                                                    |             | 0         | 13             | 0.014           |        |
| 100                                                    |             | +10       | 14             | 0.015           |        |
| 100                                                    |             | +20       | 14             | 0.015           |        |
| 100                                                    |             | +30       | 20             | <b>0.022</b>    |        |
| 100                                                    |             | +40       | 17             | 0.018           |        |
| 100                                                    |             | +50       | -9             | -0.010          |        |
| 100                                                    |             | +60       | 20             | <b>0.022</b>    |        |
| 100                                                    |             | +70       | 20             | <b>0.022</b>    |        |
| 115                                                    | 60          | +20       | 11             | 0.012           |        |
| 85                                                     | 10.5        | +20       | 17             | 0.018           |        |



| 930.5MHz QPSK 25.0kHz<br>Limit =Within Authorized Band |             |           |                |                 |        |
|--------------------------------------------------------|-------------|-----------|----------------|-----------------|--------|
| Voltage (%)                                            | Power (VDC) | Temp (°C) | Fre. Dev. (Hz) | Deviation (ppm) | Result |
| 100                                                    | 24.0        | +20(Ref)  | 15             | 0.016           | PASS   |
| 100                                                    |             | -40       | -8             | -0.009          |        |
| 100                                                    |             | -30       | 20             | 0.021           |        |
| 100                                                    |             | -20       | -23            | -0.025          |        |
| 100                                                    |             | -10       | 8              | 0.009           |        |
| 100                                                    |             | 0         | 20             | 0.021           |        |
| 100                                                    |             | +10       | 17             | 0.018           |        |
| 100                                                    |             | +20       | 16             | 0.017           |        |
| 100                                                    |             | +30       | 8              | 0.009           |        |
| 100                                                    |             | +40       | 13             | 0.014           |        |
| 100                                                    |             | +50       | 10             | 0.011           |        |
| 100                                                    |             | +60       | 18             | 0.019           |        |
| 100                                                    |             | +70       | 22             | <b>0.024</b>    |        |
| 115                                                    | 60          | +20       | -19            | -0.020          |        |
| 85                                                     | 10.5        | +20       | 11             | 0.012           |        |



| 930.5MHz QPSK 50.0kHz<br>Limit =Within Authorized Band |             |           |                |                 |        |
|--------------------------------------------------------|-------------|-----------|----------------|-----------------|--------|
| Voltage (%)                                            | Power (VDC) | Temp (°C) | Fre. Dev. (Hz) | Deviation (ppm) | Result |
| 100                                                    | 24.0        | +20(Ref)  | -22            | -0.024          | PASS   |
| 100                                                    |             | -40       | -23            | -0.025          |        |
| 100                                                    |             | -30       | 6              | 0.006           |        |
| 100                                                    |             | -20       | 13             | 0.014           |        |
| 100                                                    |             | -10       | 20             | <b>0.021</b>    |        |
| 100                                                    |             | 0         | -3             | -0.003          |        |
| 100                                                    |             | +10       | 17             | 0.018           |        |
| 100                                                    |             | +20       | 18             | 0.019           |        |
| 100                                                    |             | +30       | 19             | 0.020           |        |
| 100                                                    |             | +40       | 20             | <b>0.021</b>    |        |
| 100                                                    |             | +50       | -3             | -0.003          |        |
| 100                                                    |             | +60       | 14             | 0.015           |        |
| 100                                                    |             | +70       | 3              | 0.003           |        |
| 115                                                    | 60          | +20       | 18             | 0.019           |        |
| 85                                                     | 10.5        | +20       | 8              | 0.009           |        |



| 933.5MHz QPSK 12.5kHz<br>Limit =Within Authorized Band |             |           |                |                 |        |
|--------------------------------------------------------|-------------|-----------|----------------|-----------------|--------|
| Voltage (%)                                            | Power (VDC) | Temp (°C) | Fre. Dev. (Hz) | Deviation (ppm) | Result |
| 100                                                    | 24.0        | +20(Ref)  | 18             | 0.019           | PASS   |
| 100                                                    |             | -40       | 16             | 0.017           |        |
| 100                                                    |             | -30       | 1              | 0.001           |        |
| 100                                                    |             | -20       | 20             | <b>0.021</b>    |        |
| 100                                                    |             | -10       | 20             | <b>0.021</b>    |        |
| 100                                                    |             | 0         | -8             | -0.009          |        |
| 100                                                    |             | +10       | 13             | 0.014           |        |
| 100                                                    |             | +20       | 14             | 0.015           |        |
| 100                                                    |             | +30       | 7              | 0.007           |        |
| 100                                                    |             | +40       | 14             | 0.015           |        |
| 100                                                    |             | +50       | 15             | 0.016           |        |
| 100                                                    |             | +60       | 3              | 0.003           |        |
| 100                                                    |             | +70       | 18             | 0.019           |        |
| 115                                                    | 60          | +20       | -7             | -0.007          |        |
| 85                                                     | 10.5        | +20       | 20             | <b>0.021</b>    |        |



| 933.5MHz QPSK 25.0kHz<br>Limit =Within Authorized Band |             |           |                |                 |        |
|--------------------------------------------------------|-------------|-----------|----------------|-----------------|--------|
| Voltage (%)                                            | Power (VDC) | Temp (°C) | Fre. Dev. (Hz) | Deviation (ppm) | Result |
| 100                                                    | 24.0        | +20(Ref)  | 13             | 0.014           | PASS   |
| 100                                                    |             | -40       | -8             | -0.009          |        |
| 100                                                    |             | -30       | 19             | <b>0.020</b>    |        |
| 100                                                    |             | -20       | 9              | 0.010           |        |
| 100                                                    |             | -10       | 19             | <b>0.020</b>    |        |
| 100                                                    |             | 0         | 7              | 0.007           |        |
| 100                                                    |             | +10       | 14             | 0.015           |        |
| 100                                                    |             | +20       | -19            | -0.020          |        |
| 100                                                    |             | +30       | 3              | 0.003           |        |
| 100                                                    |             | +40       | 13             | 0.014           |        |
| 100                                                    |             | +50       | 19             | <b>0.020</b>    |        |
| 100                                                    |             | +60       | 16             | 0.017           |        |
| 100                                                    |             | +70       | 1              | 0.001           |        |
| 115                                                    | 60          | +20       | 17             | 0.018           |        |
| 85                                                     | 10.5        | +20       | -2             | -0.002          |        |



| 933.5MHz QPSK 50.0kHz<br>Limit =Within Authorized Band |             |           |                |                 |        |
|--------------------------------------------------------|-------------|-----------|----------------|-----------------|--------|
| Voltage (%)                                            | Power (VDC) | Temp (°C) | Fre. Dev. (Hz) | Deviation (ppm) | Result |
| 100                                                    | 24.0        | +20(Ref)  | 14             | 0.015           | PASS   |
| 100                                                    |             | -40       | 18             | 0.019           |        |
| 100                                                    |             | -30       | 8              | 0.009           |        |
| 100                                                    |             | -20       | 18             | 0.019           |        |
| 100                                                    |             | -10       | 14             | 0.015           |        |
| 100                                                    |             | 0         | 23             | <b>0.025</b>    |        |
| 100                                                    |             | +10       | 4              | 0.004           |        |
| 100                                                    |             | +20       | 13             | 0.014           |        |
| 100                                                    |             | +30       | 18             | 0.019           |        |
| 100                                                    |             | +40       | 2              | 0.002           |        |
| 100                                                    |             | +50       | 20             | 0.021           |        |
| 100                                                    |             | +60       | -11            | -0.012          |        |
| 100                                                    |             | +70       | 20             | 0.021           |        |
| 115                                                    | 60          | +20       | 8              | 0.009           |        |
| 85                                                     | 10.5        | +20       | 15             | 0.016           |        |



| 940.5MHz QPSK 12.5kHz<br>Limit =Within Authorized Band |             |           |                |                 |        |
|--------------------------------------------------------|-------------|-----------|----------------|-----------------|--------|
| Voltage (%)                                            | Power (VDC) | Temp (°C) | Fre. Dev. (Hz) | Deviation (ppm) | Result |
| 100                                                    | 24.0        | +20(Ref)  | 15             | 0.016           | PASS   |
| 100                                                    |             | -40       | -15            | -0.016          |        |
| 100                                                    |             | -30       | -13            | -0.014          |        |
| 100                                                    |             | -20       | 16             | 0.017           |        |
| 100                                                    |             | -10       | -23            | -0.025          |        |
| 100                                                    |             | 0         | -5             | -0.005          |        |
| 100                                                    |             | +10       | 18             | 0.019           |        |
| 100                                                    |             | +20       | 3              | 0.003           |        |
| 100                                                    |             | +30       | 15             | 0.016           |        |
| 100                                                    |             | +40       | 22             | <b>0.024</b>    |        |
| 100                                                    |             | +50       | -2             | -0.002          |        |
| 100                                                    |             | +60       | 19             | 0.020           |        |
| 100                                                    |             | +70       | -4             | -0.004          |        |
| 115                                                    | 60          | +20       | 16             | 0.017           |        |
| 85                                                     | 10.5        | +20       | -9             | -0.010          |        |



| 940.5MHz QPSK 25.0kHz<br>Limit =Within Authorized Band |             |           |                |                 |        |
|--------------------------------------------------------|-------------|-----------|----------------|-----------------|--------|
| Voltage (%)                                            | Power (VDC) | Temp (°C) | Fre. Dev. (Hz) | Deviation (ppm) | Result |
| 100                                                    | 24.0        | +20(Ref)  | -1             | -0.001          | PASS   |
| 100                                                    |             | -40       | 14             | 0.015           |        |
| 100                                                    |             | -30       | -3             | -0.003          |        |
| 100                                                    |             | -20       | 18             | 0.019           |        |
| 100                                                    |             | -10       | 13             | 0.014           |        |
| 100                                                    |             | 0         | 20             | 0.021           |        |
| 100                                                    |             | +10       | 18             | 0.019           |        |
| 100                                                    |             | +20       | 22             | <b>0.023</b>    |        |
| 100                                                    |             | +30       | -10            | -0.011          |        |
| 100                                                    |             | +40       | 19             | 0.020           |        |
| 100                                                    |             | +50       | 19             | 0.020           |        |
| 100                                                    |             | +60       | -21            | -0.022          |        |
| 100                                                    |             | +70       | 19             | 0.020           |        |
| 115                                                    | 60          | +20       | 5              | 0.005           |        |
| 85                                                     | 10.5        | +20       | -1             | -0.001          |        |



| 940.5MHz QPSK 50.0kHz<br>Limit =Within Authorized Band |             |           |                |                 |        |
|--------------------------------------------------------|-------------|-----------|----------------|-----------------|--------|
| Voltage (%)                                            | Power (VDC) | Temp (°C) | Fre. Dev. (Hz) | Deviation (ppm) | Result |
| 100                                                    | 24.0        | +20(Ref)  | 16             | 0.017           | PASS   |
| 100                                                    |             | -40       | 11             | 0.012           |        |
| 100                                                    |             | -30       | 16             | 0.017           |        |
| 100                                                    |             | -20       | 15             | 0.016           |        |
| 100                                                    |             | -10       | 2              | 0.002           |        |
| 100                                                    |             | 0         | 16             | 0.017           |        |
| 100                                                    |             | +10       | 17             | 0.018           |        |
| 100                                                    |             | +20       | 13             | 0.014           |        |
| 100                                                    |             | +30       | -23            | -0.024          |        |
| 100                                                    |             | +40       | -9             | -0.010          |        |
| 100                                                    |             | +50       | 19             | <b>0.020</b>    |        |
| 100                                                    |             | +60       | 16             | 0.017           |        |
| 100                                                    |             | +70       | -5             | -0.005          |        |
| 115                                                    | 60          | +20       | 13             | 0.014           |        |
| 85                                                     | 10.5        | +20       | 16             | 0.017           |        |



| 942.5MHz QPSK 12.5kHz<br>Limit =Within Authorized Band |             |           |                |                 |        |
|--------------------------------------------------------|-------------|-----------|----------------|-----------------|--------|
| Voltage (%)                                            | Power (VDC) | Temp (°C) | Fre. Dev. (Hz) | Deviation (ppm) | Result |
| 100                                                    | 24.0        | +20(Ref)  | 17             | 0.018           | PASS   |
| 100                                                    |             | -40       | 15             | 0.016           |        |
| 100                                                    |             | -30       | 0              | 0.000           |        |
| 100                                                    |             | -20       | 14             | 0.015           |        |
| 100                                                    |             | -10       | 13             | 0.014           |        |
| 100                                                    |             | 0         | -16            | -0.017          |        |
| 100                                                    |             | +10       | -14            | -0.015          |        |
| 100                                                    |             | +20       | -21            | -0.022          |        |
| 100                                                    |             | +30       | -20            | -0.021          |        |
| 100                                                    |             | +40       | 20             | <b>0.021</b>    |        |
| 100                                                    |             | +50       | -8             | -0.008          |        |
| 100                                                    |             | +60       | 14             | 0.015           |        |
| 100                                                    |             | +70       | 15             | 0.016           |        |
| 115                                                    | 60          | +20       | 16             | 0.017           |        |
| 85                                                     | 10.5        | +20       | 17             | 0.018           |        |



| 942.5MHz QPSK 25.0kHz<br>Limit =Within Authorized Band |             |           |                |                 |        |
|--------------------------------------------------------|-------------|-----------|----------------|-----------------|--------|
| Voltage (%)                                            | Power (VDC) | Temp (°C) | Fre. Dev. (Hz) | Deviation (ppm) | Result |
| 100                                                    | 24.0        | +20(Ref)  | -2             | -0.002          | PASS   |
| 100                                                    |             | -40       | 14             | 0.015           |        |
| 100                                                    |             | -30       | 14             | 0.015           |        |
| 100                                                    |             | -20       | 11             | 0.012           |        |
| 100                                                    |             | -10       | 20             | 0.021           |        |
| 100                                                    |             | 0         | 19             | 0.020           |        |
| 100                                                    |             | +10       | 17             | 0.018           |        |
| 100                                                    |             | +20       | 21             | <b>0.022</b>    |        |
| 100                                                    |             | +30       | 10             | 0.011           |        |
| 100                                                    |             | +40       | 20             | 0.021           |        |
| 100                                                    |             | +50       | 15             | 0.016           |        |
| 100                                                    |             | +60       | -22            | -0.023          |        |
| 100                                                    |             | +70       | -7             | -0.007          |        |
| 115                                                    | 60          | +20       | 13             | 0.014           |        |
| 85                                                     | 10.5        | +20       | -21            | -0.022          |        |



| 942.5MHz QPSK 50.0kHz<br>Limit =Within Authorized Band |             |           |                |                 |        |
|--------------------------------------------------------|-------------|-----------|----------------|-----------------|--------|
| Voltage (%)                                            | Power (VDC) | Temp (°C) | Fre. Dev. (Hz) | Deviation (ppm) | Result |
| 100                                                    | 24.0        | +20(Ref)  | 13             | 0.014           | PASS   |
| 100                                                    |             | -40       | 15             | 0.016           |        |
| 100                                                    |             | -30       | 14             | 0.015           |        |
| 100                                                    |             | -20       | 16             | 0.017           |        |
| 100                                                    |             | -10       | -21            | -0.022          |        |
| 100                                                    |             | 0         | 8              | 0.008           |        |
| 100                                                    |             | +10       | 15             | 0.016           |        |
| 100                                                    |             | +20       | 17             | 0.018           |        |
| 100                                                    |             | +30       | 15             | 0.016           |        |
| 100                                                    |             | +40       | 17             | 0.018           |        |
| 100                                                    |             | +50       | -8             | -0.008          |        |
| 100                                                    |             | +60       | 14             | 0.015           |        |
| 100                                                    |             | +70       | 23             | <b>0.024</b>    |        |
| 115                                                    | 60          | +20       | 15             | 0.016           |        |
| 85                                                     | 10.5        | +20       | 2              | 0.002           |        |



| 952.5375MHz QPSK 12.5kHz<br>Limit =Within Authorized Band |             |           |                |                 |        |
|-----------------------------------------------------------|-------------|-----------|----------------|-----------------|--------|
| Voltage (%)                                               | Power (VDC) | Temp (°C) | Fre. Dev. (Hz) | Deviation (ppm) | Result |
| 100                                                       | 24.0        | +20(Ref)  | 14             | 0.015           | PASS   |
| 100                                                       |             | -40       | 16             | 0.017           |        |
| 100                                                       |             | -30       | 21             | <b>0.022</b>    |        |
| 100                                                       |             | -20       | -14            | -0.015          |        |
| 100                                                       |             | -10       | -13            | -0.014          |        |
| 100                                                       |             | 0         | -4             | -0.004          |        |
| 100                                                       |             | +10       | 15             | 0.016           |        |
| 100                                                       |             | +20       | 17             | 0.018           |        |
| 100                                                       |             | +30       | -22            | -0.023          |        |
| 100                                                       |             | +40       | 2              | 0.002           |        |
| 100                                                       |             | +50       | 17             | 0.018           |        |
| 100                                                       |             | +60       | -22            | -0.023          |        |
| 100                                                       |             | +70       | 4              | 0.004           |        |
| 115                                                       | 60          | +20       | 19             | 0.020           |        |
| 85                                                        | 10.5        | +20       | 16             | 0.017           |        |



| 952.5375MHz QPSK 25.0kHz<br>Limit =Within Authorized Band |             |           |                |                 |        |
|-----------------------------------------------------------|-------------|-----------|----------------|-----------------|--------|
| Voltage (%)                                               | Power (VDC) | Temp (°C) | Fre. Dev. (Hz) | Deviation (ppm) | Result |
| 100                                                       | 24.0        | +20(Ref)  | 20             | <b>0.021</b>    | PASS   |
| 100                                                       |             | -40       | 7              | 0.007           |        |
| 100                                                       |             | -30       | 19             | 0.020           |        |
| 100                                                       |             | -20       | 15             | 0.016           |        |
| 100                                                       |             | -10       | 13             | 0.014           |        |
| 100                                                       |             | 0         | 19             | 0.020           |        |
| 100                                                       |             | +10       | -1             | -0.001          |        |
| 100                                                       |             | +20       | 13             | 0.014           |        |
| 100                                                       |             | +30       | -9             | -0.009          |        |
| 100                                                       |             | +40       | 18             | 0.019           |        |
| 100                                                       |             | +50       | 19             | 0.020           |        |
| 100                                                       |             | +60       | 0              | 0.000           |        |
| 100                                                       |             | +70       | 20             | <b>0.021</b>    |        |
| 115                                                       | 60          | +20       | 7              | 0.007           |        |
| 85                                                        | 10.5        | +20       | 17             | 0.018           |        |



| 952.5375MHz QPSK 50.0kHz<br>Limit =Within Authorized Band |             |           |                |                 |        |
|-----------------------------------------------------------|-------------|-----------|----------------|-----------------|--------|
| Voltage (%)                                               | Power (VDC) | Temp (°C) | Fre. Dev. (Hz) | Deviation (ppm) | Result |
| 100                                                       | 24.0        | +20(Ref)  | 18             | 0.019           | PASS   |
| 100                                                       |             | -40       | 0              | 0.000           |        |
| 100                                                       |             | -30       | 17             | 0.018           |        |
| 100                                                       |             | -20       | 11             | 0.012           |        |
| 100                                                       |             | -10       | 15             | 0.016           |        |
| 100                                                       |             | 0         | 19             | 0.020           |        |
| 100                                                       |             | +10       | 14             | 0.015           |        |
| 100                                                       |             | +20       | 13             | 0.014           |        |
| 100                                                       |             | +30       | 20             | 0.021           |        |
| 100                                                       |             | +40       | 14             | 0.015           |        |
| 100                                                       |             | +50       | 23             | <b>0.024</b>    |        |
| 100                                                       |             | +60       | 17             | 0.018           |        |
| 100                                                       |             | +70       | -17            | -0.018          |        |
| 115                                                       | 60          | +20       | 2              | 0.002           |        |
| 85                                                        | 10.5        | +20       | 13             | 0.014           |        |



## Annex A Test Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for test performed on the EUT as specified in CISPR 16-1-2:

| Test items                          | Uncertainty   |
|-------------------------------------|---------------|
| Output Power                        | $\pm 2.22$ dB |
| Bandwidth                           | $\pm 5\%$     |
| Conducted Spurious Emission         | $\pm 2.77$ dB |
| Band Edge                           | $\pm 2.77$ dB |
| Equivalent Isotropic Radiated Power | $\pm 2.22$ dB |
| Radiated Spurious Emissions         | $\pm 6$ dB    |

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of  $k=2$ .



## Annex B Testing Laboratory Information

### 1. Identification of the Responsible Testing Laboratory

|                            |                                                                                                                                    |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| <b>Company Name:</b>       | Shenzhen Morlab Communications Technology Co., Ltd.                                                                                |
| <b>Laboratory Address:</b> | FL.1-3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China |
| <b>Telephone:</b>          | +86 755 36698555                                                                                                                   |
| <b>Facsimile:</b>          | +86 755 36698525                                                                                                                   |

### 2. Identification of the Responsible Testing Location

|                 |                                                                                                                                    |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------|
| <b>Name:</b>    | Shenzhen Morlab Communications Technology Co., Ltd.                                                                                |
| <b>Address:</b> | FL.1-3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China |

### 3. Facilities and Accreditations

All measurement facilities used to collect the measurement data are located at FL.3, Building A, FeiYang Science Park, Block 67, BaoAn District, Shenzhen, 518101 P. R. China. The test site is constructed in conformance with the requirements of ANSI C63.10-2013 and CISPR Publication 22; the FCC designation number is CN1192, the test firm registration number is 226174.



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#### 4. Test Equipment Utilized

##### 4.1 Conducted Test Equipment

| Equipment Name            | Serial No.             | Type            | Manufacturer | Cal. Date  | Cal. Due   |
|---------------------------|------------------------|-----------------|--------------|------------|------------|
| Attenuator 1              | (N/A.)                 | 30.0dB          | Resnet       | N/A        | N/A        |
| Attenuator 2              | (N/A.)                 | 30.0dB          | Resnet       | N/A        | N/A        |
| EXA Signal Analyzer       | MY51511149             | N9020A          | Agilent      | 2024.06.19 | 2025.06.18 |
| RF Cable<br>(30MHz-26GHz) | CB01                   | RF01            | Morlab       | N/A        | N/A        |
| SMA Connector             | CN01                   | RF03            | HUBER-SUHNER | N/A        | N/A        |
| Temperature Chamber       | S022177101<br>00089002 | KMT-36LF<br>1A0 | KOMEG        | 2024.09.11 | 2025.09.10 |

##### 4.2 List of Software Used

| Description    | Manufacturer | Software Version |
|----------------|--------------|------------------|
| MORLAB EMCR    | MORLAB       | V1.2             |
| TS+ [JS36-RSE] | Tonscend     | 5.0.0            |



**4.3 Radiated Test Equipment**

| Equipment Name                 | Type            | Serial No.  | Manufacturer | Cal. Date | Cal. Due  |
|--------------------------------|-----------------|-------------|--------------|-----------|-----------|
| Bi-Log Antenna                 | VULB 9163       | 9163-274    | SCHWARZBECK  | 2024/6/29 | 2025/6/28 |
| Horn Antenna                   | BBHA 9120D      | 9120D-963   | SCHWARZBECK  | 2024/6/3  | 2025/6/2  |
| Signal Analyzer                | N9020A          | MY56060145  | Agilent      | 2024/5/30 | 2025/5/29 |
| Preamplifier<br>(2GHz-18GHz)   | S020180L3203    | 61171/61172 | LUCIX CORP.  | 2024/5/30 | 2025/5/29 |
| Preamplifier<br>(10MHz-6GHz)   | S10M100L3802    | 46732       | LUCIX CORP.  | 2024/5/30 | 2025/5/29 |
| RF Coaxial Cable<br>(DC-18GHz) | PE330           | MRE001      | Pasternack   | 2024/5/30 | 2025/5/29 |
| RF Coaxial Cable<br>(DC-18GHz) | CLU18           | MRE002      | Pasternack   | 2024/5/30 | 2025/5/29 |
| RF Coaxial Cable<br>(DC-18GHz) | CLU18           | MRE003      | Pasternack   | 2024/5/30 | 2025/5/29 |
| RF Coaxial Cable<br>(DC-40GHz) | QA360-40-KK-0.5 | 22290045    | Qualwave     | 2024/7/3  | 2025/7/2  |
| RF Coaxial Cable<br>(DC-40GHz) | QA360-40-KKF-2  | 22290046    | Qualwave     | 2024/7/3  | 2025/7/2  |
| RF Coaxial Cable<br>(DC-18GHz) | QA500-18-NN-5   | 22120181    | Qualwave     | 2024/7/3  | 2025/7/2  |

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