

# 1. Frequency Stability

## 1.1 30k\_SISO\_20MHz

### 1.1.1 Test Result

| 5G NR n78d SCS=30kHz SISO 20MHz |                 |               |            |                |                  |                       |                |         |
|---------------------------------|-----------------|---------------|------------|----------------|------------------|-----------------------|----------------|---------|
| Modulation                      | Frequency (MHz) | RB Allocation | Temp. (°C) | Volt.          | Freq. Error (Hz) | Freq. vs. rated (ppm) |                | Verdict |
|                                 |                 |               |            |                |                  | Result                | Limit          |         |
| DFT-s-OFDM PI/2 BPSK            | 3624.99         | Outer_Full    | 20         | LV             | -30.70           | -0.0085               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               |            | HV             | -31.20           | -0.0086               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | -30        | NV             | -19.50           | -0.0054               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | -20        | NV             | -15.80           | -0.0044               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | -10        | NV             | -20.20           | -0.0056               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | 0          | NV             | -13.80           | -0.0038               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | 10         | NV             | -25.30           | -0.0070               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | 20         | NV             | -41.30           | -0.0114               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | 30         | NV             | -35.80           | -0.0099               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | 40         | NV             | -16.20           | -0.0045               | >=-2.5 & <=2.5 | Pass    |
| 50                              | NV              | -15.50        | -0.0043    | >=-2.5 & <=2.5 | Pass             |                       |                |         |
| DFT-s-OFDM QPSK                 | 3624.99         | Outer_Full    | 20         | LV             | -20.90           | -0.0058               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               |            | HV             | -36.40           | -0.0100               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | -30        | NV             | -18.30           | -0.0050               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | -20        | NV             | -32.90           | -0.0091               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | -10        | NV             | 12.50            | 0.0034                | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | 0          | NV             | -14.10           | -0.0039               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | 10         | NV             | -28.10           | -0.0078               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | 20         | NV             | -14.40           | -0.0040               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | 30         | NV             | -26.40           | -0.0073               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | 40         | NV             | -28.30           | -0.0078               | >=-2.5 & <=2.5 | Pass    |
| 50                              | NV              | -29.90        | -0.0082    | >=-2.5 & <=2.5 | Pass             |                       |                |         |
| DFT-s-OFDM 16 QAM               | 3624.99         | Outer_Full    | 20         | LV             | -14.10           | -0.0039               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               |            | HV             | -20.70           | -0.0057               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | -30        | NV             | -19.30           | -0.0053               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | -20        | NV             | -27.50           | -0.0076               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | -10        | NV             | -26.10           | -0.0072               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | 0          | NV             | -9.40            | -0.0026               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | 10         | NV             | -18.10           | -0.0050               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | 20         | NV             | -35.70           | -0.0098               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | 30         | NV             | -21.60           | -0.0060               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | 40         | NV             | -25.20           | -0.0070               | >=-2.5 & <=2.5 | Pass    |
| 50                              | NV              | -41.90        | -0.0116    | >=-2.5 & <=2.5 | Pass             |                       |                |         |
| DFT-s-OFDM 64 QAM               | 3624.99         | Outer_Full    | 20         | LV             | -9.00            | -0.0025               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               |            | HV             | -18.10           | -0.0050               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | -30        | NV             | -33.40           | -0.0092               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | -20        | NV             | -12.70           | -0.0035               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | -10        | NV             | -22.70           | -0.0063               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | 0          | NV             | -19.10           | -0.0053               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | 10         | NV             | -30.70           | -0.0085               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | 20         | NV             | -9.90            | -0.0027               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | 30         | NV             | -29.40           | -0.0081               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | 40         | NV             | -37.50           | -0.0103               | >=-2.5 & <=2.5 | Pass    |
| 50                              | NV              | -28.40        | -0.0078    | >=-2.5 & <=2.5 | Pass             |                       |                |         |
| DFT-s-OFDM 256 QAM              | 3624.99         | Outer_Full    | 20         | LV             | -9.30            | -0.0026               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               |            | HV             | -18.30           | -0.0050               | >=-2.5 & <=2.5 | Pass    |

|                 |         |            |     |    |        |         |                |      |
|-----------------|---------|------------|-----|----|--------|---------|----------------|------|
|                 |         |            | -30 | NV | -27.00 | -0.0074 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | -20 | NV | -7.70  | -0.0021 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | -10 | NV | -20.70 | -0.0057 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 0   | NV | -33.70 | -0.0093 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 10  | NV | -9.50  | -0.0026 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 20  | NV | -18.50 | -0.0051 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 30  | NV | -5.30  | -0.0015 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 40  | NV | -29.70 | -0.0082 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 50  | NV | -10.30 | -0.0028 | >=-2.5 & <=2.5 | Pass |
| CP-OFDM QPSK    | 3624.99 | Outer_Full | 20  | LV | -19.30 | -0.0053 | >=-2.5 & <=2.5 | Pass |
|                 |         |            |     | HV | -8.40  | -0.0023 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | -30 | NV | -22.00 | -0.0061 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | -20 | NV | -5.50  | -0.0015 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | -10 | NV | -10.30 | -0.0028 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 0   | NV | -21.30 | -0.0059 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 10  | NV | -31.20 | -0.0086 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 20  | NV | -1.80  | -0.0005 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 30  | NV | -1.80  | -0.0005 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 40  | NV | -2.70  | -0.0007 | >=-2.5 & <=2.5 | Pass |
| CP-OFDM 16 QAM  | 3624.99 | Outer_Full | 20  | LV | -5.70  | -0.0016 | >=-2.5 & <=2.5 | Pass |
|                 |         |            |     | HV | -24.50 | -0.0068 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | -30 | NV | -12.10 | -0.0033 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | -20 | NV | -23.70 | -0.0065 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | -10 | NV | -22.30 | -0.0062 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 0   | NV | -23.10 | -0.0064 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 10  | NV | -17.00 | -0.0047 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 20  | NV | -13.40 | -0.0037 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 30  | NV | -38.30 | -0.0106 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 40  | NV | -2.10  | -0.0006 | >=-2.5 & <=2.5 | Pass |
| CP-OFDM 64 QAM  | 3624.99 | Outer_Full | 20  | LV | -29.00 | -0.0080 | >=-2.5 & <=2.5 | Pass |
|                 |         |            |     | HV | -25.90 | -0.0071 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | -30 | NV | -13.00 | -0.0036 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | -20 | NV | -16.10 | -0.0044 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | -10 | NV | -16.80 | -0.0046 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 0   | NV | -23.30 | -0.0064 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 10  | NV | -28.60 | -0.0079 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 20  | NV | -10.70 | -0.0030 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 30  | NV | -20.90 | -0.0058 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 40  | NV | -23.70 | -0.0065 | >=-2.5 & <=2.5 | Pass |
| CP-OFDM 256 QAM | 3624.99 | Outer_Full | 20  | LV | -12.40 | -0.0034 | >=-2.5 & <=2.5 | Pass |
|                 |         |            |     | HV | -12.20 | -0.0034 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | -30 | NV | -16.00 | -0.0044 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | -20 | NV | -19.40 | -0.0054 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | -10 | NV | -24.50 | -0.0068 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 0   | NV | -22.80 | -0.0063 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 10  | NV | -24.90 | -0.0069 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 20  | NV | -2.50  | -0.0007 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 30  | NV | -18.30 | -0.0050 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 40  | NV | -17.20 | -0.0047 | >=-2.5 & <=2.5 | Pass |
| CP-OFDM 256 QAM | 3624.99 | Outer_Full | 50  | NV | -22.30 | -0.0062 | >=-2.5 & <=2.5 | Pass |
|                 |         |            |     | NV | -22.30 | -0.0062 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 50  | NV | -22.30 | -0.0062 | >=-2.5 & <=2.5 | Pass |
|                 |         |            |     | NV | -22.30 | -0.0062 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 50  | NV | -22.30 | -0.0062 | >=-2.5 & <=2.5 | Pass |
|                 |         |            |     | NV | -22.30 | -0.0062 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 50  | NV | -22.30 | -0.0062 | >=-2.5 & <=2.5 | Pass |
|                 |         |            |     | NV | -22.30 | -0.0062 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 50  | NV | -22.30 | -0.0062 | >=-2.5 & <=2.5 | Pass |
|                 |         |            |     | NV | -22.30 | -0.0062 | >=-2.5 & <=2.5 | Pass |

1.2 30k\_SISO\_30MHz

## 1.2.1 Test Result

| 5G NR n78d SCS=30kHz SISO 30MHz |                 |               |            |       |                  |                       |                |         |
|---------------------------------|-----------------|---------------|------------|-------|------------------|-----------------------|----------------|---------|
| Modulation                      | Frequency (MHz) | RB Allocation | Temp. (°C) | Volt. | Freq. Error (Hz) | Freq. vs. rated (ppm) |                | Verdict |
|                                 |                 |               |            |       |                  | Result                | Limit          |         |
| DFT-s-OFDM PI/2 BPSK            | 3624.99         | Outer_Full    | 20         | LV    | 5.20             | 0.0014                | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               |            | HV    | 13.40            | 0.0037                | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | -30        | NV    | -28.70           | -0.0079               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | -20        | NV    | -27.70           | -0.0076               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | -10        | NV    | -18.40           | -0.0051               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | 0          | NV    | -20.60           | -0.0057               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | 10         | NV    | -11.60           | -0.0032               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | 20         | NV    | 5.20             | 0.0014                | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | 30         | NV    | -11.60           | -0.0032               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | 40         | NV    | -26.80           | -0.0074               | >=-2.5 & <=2.5 | Pass    |
| DFT-s-OFDM QPSK                 | 3624.99         | Outer_Full    | 20         | LV    | -18.50           | -0.0051               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               |            | HV    | -5.70            | -0.0016               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | -30        | NV    | -8.00            | -0.0022               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | -20        | NV    | -31.10           | -0.0086               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | -10        | NV    | -15.70           | -0.0043               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | 0          | NV    | -11.00           | -0.0030               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | 10         | NV    | -22.40           | -0.0062               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | 20         | NV    | -13.20           | -0.0036               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | 30         | NV    | -32.40           | -0.0089               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | 40         | NV    | -5.40            | -0.0015               | >=-2.5 & <=2.5 | Pass    |
| DFT-s-OFDM 16 QAM               | 3624.99         | Outer_Full    | 20         | LV    | -27.00           | -0.0074               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               |            | HV    | -20.20           | -0.0056               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | -30        | NV    | -37.40           | -0.0103               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | -20        | NV    | -5.80            | -0.0016               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | -10        | NV    | -23.00           | -0.0063               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | 0          | NV    | -6.60            | -0.0018               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | 10         | NV    | -20.90           | -0.0058               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | 20         | NV    | -23.50           | -0.0065               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | 30         | NV    | -7.80            | -0.0022               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | 40         | NV    | -6.70            | -0.0018               | >=-2.5 & <=2.5 | Pass    |
| DFT-s-OFDM 64 QAM               | 3624.99         | Outer_Full    | 20         | LV    | -24.90           | -0.0069               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               |            | HV    | -20.00           | -0.0055               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | -30        | NV    | -33.40           | -0.0092               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | -20        | NV    | -25.90           | -0.0071               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | -10        | NV    | -14.50           | -0.0040               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | 0          | NV    | -29.70           | -0.0082               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | 10         | NV    | -5.80            | -0.0016               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | 20         | NV    | -12.20           | -0.0034               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | 30         | NV    | -25.20           | -0.0070               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | 40         | NV    | -22.20           | -0.0061               | >=-2.5 & <=2.5 | Pass    |
| DFT-s-OFDM 256 QAM              | 3624.99         | Outer_Full    | 20         | LV    | -28.20           | -0.0078               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               |            | HV    | -10.10           | -0.0028               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | -30        | NV    | -36.90           | -0.0102               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | -20        | NV    | -3.50            | -0.0010               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | -10        | NV    | -19.90           | -0.0055               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | 0          | NV    | -15.70           | -0.0043               | >=-2.5 & <=2.5 | Pass    |
| DFT-s-OFDM 256 QAM              | 3624.99         | Outer_Full    | 10         | NV    | -5.20            | -0.0014               | >=-2.5 & <=2.5 | Pass    |

|                 |         |            |     |    |        |         |                |      |
|-----------------|---------|------------|-----|----|--------|---------|----------------|------|
|                 |         |            | 20  | NV | -18.60 | -0.0051 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 30  | NV | -6.70  | -0.0018 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 40  | NV | -11.60 | -0.0032 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 50  | NV | -23.80 | -0.0066 | >=-2.5 & <=2.5 | Pass |
| CP-OFDM QPSK    | 3624.99 | Outer_Full | 20  | LV | -10.20 | -0.0028 | >=-2.5 & <=2.5 | Pass |
|                 |         |            |     | HV | -9.40  | -0.0026 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | -30 | NV | -8.30  | -0.0023 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | -20 | NV | -6.80  | -0.0019 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | -10 | NV | -17.70 | -0.0049 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 0   | NV | -15.10 | -0.0042 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 10  | NV | -19.20 | -0.0053 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 20  | NV | -23.60 | -0.0065 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 30  | NV | -18.80 | -0.0052 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 40  | NV | -30.00 | -0.0083 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 50  | NV | -6.10  | -0.0017 | >=-2.5 & <=2.5 | Pass |
| CP-OFDM 16 QAM  | 3624.99 | Outer_Full | 20  | LV | -17.20 | -0.0047 | >=-2.5 & <=2.5 | Pass |
|                 |         |            |     | HV | -31.80 | -0.0088 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | -30 | NV | -20.60 | -0.0057 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | -20 | NV | -26.60 | -0.0073 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | -10 | NV | -38.10 | -0.0105 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 0   | NV | -17.60 | -0.0049 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 10  | NV | -24.40 | -0.0067 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 20  | NV | -15.00 | -0.0041 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 30  | NV | -26.30 | -0.0073 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 40  | NV | -26.00 | -0.0072 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 50  | NV | -6.90  | -0.0019 | >=-2.5 & <=2.5 | Pass |
| CP-OFDM 64 QAM  | 3624.99 | Outer_Full | 20  | LV | -29.60 | -0.0082 | >=-2.5 & <=2.5 | Pass |
|                 |         |            |     | HV | -25.80 | -0.0071 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | -30 | NV | -19.30 | -0.0053 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | -20 | NV | -18.90 | -0.0052 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | -10 | NV | -15.80 | -0.0044 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 0   | NV | -16.60 | -0.0046 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 10  | NV | -20.40 | -0.0056 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 20  | NV | -16.40 | -0.0045 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 30  | NV | -28.20 | -0.0078 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 40  | NV | -17.40 | -0.0048 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 50  | NV | -29.40 | -0.0081 | >=-2.5 & <=2.5 | Pass |
| CP-OFDM 256 QAM | 3624.99 | Outer_Full | 20  | LV | -10.90 | -0.0030 | >=-2.5 & <=2.5 | Pass |
|                 |         |            |     | HV | -10.00 | -0.0028 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | -30 | NV | -8.90  | -0.0025 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | -20 | NV | -25.90 | -0.0071 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | -10 | NV | -8.30  | -0.0023 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 0   | NV | -23.10 | -0.0064 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 10  | NV | -22.90 | -0.0063 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 20  | NV | -27.90 | -0.0077 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 30  | NV | -11.90 | -0.0033 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 40  | NV | -8.90  | -0.0025 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 50  | NV | -12.50 | -0.0034 | >=-2.5 & <=2.5 | Pass |

### 1.3 30k\_SISO\_40MHz

#### 1.3.1 Test Result

| 5G NR n78d SCS=30kHz SISO 40MHz |           |    |       |       |             |                       |         |
|---------------------------------|-----------|----|-------|-------|-------------|-----------------------|---------|
| Modulation                      | Frequency | RB | Temp. | Volt. | Freq. Error | Freq. vs. rated (ppm) | Verdict |

|                      | (MHz)   | Allocation | (°C) |    | (Hz)   | Result  | Limit          |      |
|----------------------|---------|------------|------|----|--------|---------|----------------|------|
| DFT-s-OFDM PI/2 BPSK | 3624.99 | Outer_Full | 20   | LV | -15.00 | -0.0041 | >=-2.5 & <=2.5 | Pass |
|                      |         |            |      | HV | -2.50  | -0.0007 | >=-2.5 & <=2.5 | Pass |
|                      |         |            | -30  | NV | -20.80 | -0.0057 | >=-2.5 & <=2.5 | Pass |
|                      |         |            | -20  | NV | -25.60 | -0.0071 | >=-2.5 & <=2.5 | Pass |
|                      |         |            | -10  | NV | -8.50  | -0.0023 | >=-2.5 & <=2.5 | Pass |
|                      |         |            | 0    | NV | -29.20 | -0.0081 | >=-2.5 & <=2.5 | Pass |
|                      |         |            | 10   | NV | -23.80 | -0.0066 | >=-2.5 & <=2.5 | Pass |
|                      |         |            | 20   | NV | -14.00 | -0.0039 | >=-2.5 & <=2.5 | Pass |
|                      |         |            | 30   | NV | -13.00 | -0.0036 | >=-2.5 & <=2.5 | Pass |
|                      |         |            | 40   | NV | -32.10 | -0.0089 | >=-2.5 & <=2.5 | Pass |
| DFT-s-OFDM QPSK      | 3624.99 | Outer_Full | 20   | LV | -10.80 | -0.0030 | >=-2.5 & <=2.5 | Pass |
|                      |         |            |      | HV | -19.30 | -0.0053 | >=-2.5 & <=2.5 | Pass |
|                      |         |            | -30  | NV | -5.80  | -0.0016 | >=-2.5 & <=2.5 | Pass |
|                      |         |            | -20  | NV | -25.60 | -0.0071 | >=-2.5 & <=2.5 | Pass |
|                      |         |            | -10  | NV | -37.20 | -0.0103 | >=-2.5 & <=2.5 | Pass |
|                      |         |            | 0    | NV | -16.80 | -0.0046 | >=-2.5 & <=2.5 | Pass |
|                      |         |            | 10   | NV | -2.50  | -0.0007 | >=-2.5 & <=2.5 | Pass |
|                      |         |            | 20   | NV | -12.90 | -0.0036 | >=-2.5 & <=2.5 | Pass |
|                      |         |            | 30   | NV | -18.30 | -0.0050 | >=-2.5 & <=2.5 | Pass |
|                      |         |            | 40   | NV | -33.20 | -0.0092 | >=-2.5 & <=2.5 | Pass |
| DFT-s-OFDM 16 QAM    | 3624.99 | Outer_Full | 20   | LV | -12.30 | -0.0034 | >=-2.5 & <=2.5 | Pass |
|                      |         |            |      | HV | -6.20  | -0.0017 | >=-2.5 & <=2.5 | Pass |
|                      |         |            | -30  | NV | -11.40 | -0.0031 | >=-2.5 & <=2.5 | Pass |
|                      |         |            | -20  | NV | -19.40 | -0.0054 | >=-2.5 & <=2.5 | Pass |
|                      |         |            | -10  | NV | -6.80  | -0.0019 | >=-2.5 & <=2.5 | Pass |
|                      |         |            | 0    | NV | -10.50 | -0.0029 | >=-2.5 & <=2.5 | Pass |
|                      |         |            | 10   | NV | -22.40 | -0.0062 | >=-2.5 & <=2.5 | Pass |
|                      |         |            | 20   | NV | -27.40 | -0.0076 | >=-2.5 & <=2.5 | Pass |
|                      |         |            | 30   | NV | -24.10 | -0.0066 | >=-2.5 & <=2.5 | Pass |
|                      |         |            | 40   | NV | -17.60 | -0.0049 | >=-2.5 & <=2.5 | Pass |
| DFT-s-OFDM 64 QAM    | 3624.99 | Outer_Full | 20   | LV | 14.50  | 0.0040  | >=-2.5 & <=2.5 | Pass |
|                      |         |            |      | HV | 10.10  | 0.0028  | >=-2.5 & <=2.5 | Pass |
|                      |         |            | -30  | NV | -30.90 | -0.0085 | >=-2.5 & <=2.5 | Pass |
|                      |         |            | -20  | NV | -24.30 | -0.0067 | >=-2.5 & <=2.5 | Pass |
|                      |         |            | -10  | NV | -33.90 | -0.0094 | >=-2.5 & <=2.5 | Pass |
|                      |         |            | 0    | NV | -9.20  | -0.0025 | >=-2.5 & <=2.5 | Pass |
|                      |         |            | 10   | NV | -13.10 | -0.0036 | >=-2.5 & <=2.5 | Pass |
|                      |         |            | 20   | NV | -21.80 | -0.0060 | >=-2.5 & <=2.5 | Pass |
|                      |         |            | 30   | NV | -40.60 | -0.0112 | >=-2.5 & <=2.5 | Pass |
|                      |         |            | 40   | NV | -16.00 | -0.0044 | >=-2.5 & <=2.5 | Pass |
| DFT-s-OFDM 256 QAM   | 3624.99 | Outer_Full | 20   | LV | 3.40   | 0.0009  | >=-2.5 & <=2.5 | Pass |
|                      |         |            |      | HV | -21.50 | -0.0059 | >=-2.5 & <=2.5 | Pass |
|                      |         |            | -30  | NV | -33.50 | -0.0092 | >=-2.5 & <=2.5 | Pass |
|                      |         |            | -20  | NV | -8.60  | -0.0024 | >=-2.5 & <=2.5 | Pass |
|                      |         |            | -10  | NV | -36.30 | -0.0100 | >=-2.5 & <=2.5 | Pass |
|                      |         |            | 0    | NV | -40.00 | -0.0110 | >=-2.5 & <=2.5 | Pass |
|                      |         |            | 10   | NV | -25.60 | -0.0071 | >=-2.5 & <=2.5 | Pass |
|                      |         |            | 20   | NV | -8.80  | -0.0024 | >=-2.5 & <=2.5 | Pass |
|                      |         |            | 30   | NV | -5.10  | -0.0014 | >=-2.5 & <=2.5 | Pass |
|                      |         |            | 40   | NV | -18.30 | -0.0050 | >=-2.5 & <=2.5 | Pass |
| CP-OFDM QPSK         | 3624.99 | Outer_Full | 20   | LV | -22.70 | -0.0063 | >=-2.5 & <=2.5 | Pass |

|                 |         |            |     |    |        |         |                |      |
|-----------------|---------|------------|-----|----|--------|---------|----------------|------|
|                 |         |            |     | HV | -17.30 | -0.0048 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | -30 | NV | -17.40 | -0.0048 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | -20 | NV | -18.40 | -0.0051 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | -10 | NV | 3.60   | 0.0010  | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 0   | NV | -9.20  | -0.0025 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 10  | NV | -5.50  | -0.0015 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 20  | NV | -7.80  | -0.0022 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 30  | NV | -4.40  | -0.0012 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 40  | NV | -28.70 | -0.0079 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 50  | NV | -19.10 | -0.0053 | >=-2.5 & <=2.5 | Pass |
| CP-OFDM 16 QAM  | 3624.99 | Outer_Full | 20  | LV | 10.20  | 0.0028  | >=-2.5 & <=2.5 | Pass |
|                 |         |            |     | HV | -23.90 | -0.0066 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | -30 | NV | -5.60  | -0.0015 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | -20 | NV | -11.90 | -0.0033 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | -10 | NV | -26.90 | -0.0074 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 0   | NV | -16.20 | -0.0045 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 10  | NV | -10.00 | -0.0028 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 20  | NV | -13.20 | -0.0036 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 30  | NV | -21.20 | -0.0058 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 40  | NV | -12.70 | -0.0035 | >=-2.5 & <=2.5 | Pass |
| CP-OFDM 64 QAM  | 3624.99 | Outer_Full | 20  | LV | -17.10 | -0.0047 | >=-2.5 & <=2.5 | Pass |
|                 |         |            |     | HV | -21.80 | -0.0060 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | -30 | NV | -16.20 | -0.0045 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | -20 | NV | -28.60 | -0.0079 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | -10 | NV | -7.10  | -0.0020 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 0   | NV | -24.20 | -0.0067 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 10  | NV | -24.20 | -0.0067 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 20  | NV | -32.80 | -0.0090 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 30  | NV | -20.30 | -0.0056 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 40  | NV | 5.20   | 0.0014  | >=-2.5 & <=2.5 | Pass |
| CP-OFDM 256 QAM | 3624.99 | Outer_Full | 20  | LV | -10.90 | -0.0030 | >=-2.5 & <=2.5 | Pass |
|                 |         |            |     | HV | 16.70  | 0.0046  | >=-2.5 & <=2.5 | Pass |
|                 |         |            | -30 | NV | -25.50 | -0.0070 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | -20 | NV | -4.90  | -0.0014 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | -10 | NV | -23.80 | -0.0066 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 0   | NV | 2.00   | 0.0006  | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 10  | NV | 11.30  | 0.0031  | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 20  | NV | -19.40 | -0.0054 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 30  | NV | -13.40 | -0.0037 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 40  | NV | -6.60  | -0.0018 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 50  | NV | -30.10 | -0.0083 | >=-2.5 & <=2.5 | Pass |
|                 |         |            |     | NV | -30.10 | -0.0083 | >=-2.5 & <=2.5 | Pass |

## 1.4 30k\_SISO\_50MHz

### 1.4.1 Test Result

| 5G NR n78d SCS=30kHz SISO 50MHz |                 |               |            |       |                  |                       |                |         |
|---------------------------------|-----------------|---------------|------------|-------|------------------|-----------------------|----------------|---------|
| Modulation                      | Frequency (MHz) | RB Allocation | Temp. (°C) | Volt. | Freq. Error (Hz) | Freq. vs. rated (ppm) |                | Verdict |
|                                 |                 |               |            |       |                  | Result                | Limit          |         |
| DFT-s-OFDM PI/2 BPSK            | 3624.99         | Outer_Full    | 20         | LV    | -9.70            | -0.0027               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               |            | HV    | -22.60           | -0.0062               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | -30        | NV    | -30.20           | -0.0083               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | -20        | NV    | -13.90           | -0.0038               | >=-2.5 & <=2.5 | Pass    |

|                    |         |            |         |                |        |         |                |      |
|--------------------|---------|------------|---------|----------------|--------|---------|----------------|------|
|                    |         |            | -10     | NV             | -9.50  | -0.0026 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 0       | NV             | -21.80 | -0.0060 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 10      | NV             | -28.70 | -0.0079 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 20      | NV             | -16.30 | -0.0045 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 30      | NV             | -23.40 | -0.0065 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 40      | NV             | -11.80 | -0.0033 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 50      | NV             | -8.00  | -0.0022 | >=-2.5 & <=2.5 | Pass |
| DFT-s-OFDM QPSK    | 3624.99 | Outer_Full | 20      | LV             | -24.90 | -0.0069 | >=-2.5 & <=2.5 | Pass |
|                    |         |            |         | HV             | -28.90 | -0.0080 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -30     | NV             | -15.40 | -0.0042 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -20     | NV             | -14.40 | -0.0040 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -10     | NV             | -21.70 | -0.0060 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 0       | NV             | -23.10 | -0.0064 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 10      | NV             | 13.10  | 0.0036  | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 20      | NV             | -19.40 | -0.0054 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 30      | NV             | -30.10 | -0.0083 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 40      | NV             | -13.30 | -0.0037 | >=-2.5 & <=2.5 | Pass |
| 50                 | NV      | -12.30     | -0.0034 | >=-2.5 & <=2.5 | Pass   |         |                |      |
| DFT-s-OFDM 16 QAM  | 3624.99 | Outer_Full | 20      | LV             | -13.80 | -0.0038 | >=-2.5 & <=2.5 | Pass |
|                    |         |            |         | HV             | -21.70 | -0.0060 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -30     | NV             | 1.50   | 0.0004  | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -20     | NV             | -15.20 | -0.0042 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -10     | NV             | -17.80 | -0.0049 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 0       | NV             | -16.70 | -0.0046 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 10      | NV             | -13.40 | -0.0037 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 20      | NV             | -24.80 | -0.0068 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 30      | NV             | -24.20 | -0.0067 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 40      | NV             | -18.00 | -0.0050 | >=-2.5 & <=2.5 | Pass |
| 50                 | NV      | 4.10       | 0.0011  | >=-2.5 & <=2.5 | Pass   |         |                |      |
| DFT-s-OFDM 64 QAM  | 3624.99 | Outer_Full | 20      | LV             | -18.90 | -0.0052 | >=-2.5 & <=2.5 | Pass |
|                    |         |            |         | HV             | -34.70 | -0.0096 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -30     | NV             | -8.80  | -0.0024 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -20     | NV             | -32.00 | -0.0088 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -10     | NV             | -20.00 | -0.0055 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 0       | NV             | -9.80  | -0.0027 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 10      | NV             | -22.70 | -0.0063 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 20      | NV             | -12.00 | -0.0033 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 30      | NV             | -5.90  | -0.0016 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 40      | NV             | -17.60 | -0.0049 | >=-2.5 & <=2.5 | Pass |
| 50                 | NV      | -12.30     | -0.0034 | >=-2.5 & <=2.5 | Pass   |         |                |      |
| DFT-s-OFDM 256 QAM | 3624.99 | Outer_Full | 20      | LV             | 4.70   | 0.0013  | >=-2.5 & <=2.5 | Pass |
|                    |         |            |         | HV             | -27.10 | -0.0075 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -30     | NV             | -23.00 | -0.0063 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -20     | NV             | -26.90 | -0.0074 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -10     | NV             | -24.40 | -0.0067 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 0       | NV             | -33.90 | -0.0094 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 10      | NV             | -32.20 | -0.0089 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 20      | NV             | -9.70  | -0.0027 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 30      | NV             | -14.00 | -0.0039 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 40      | NV             | -19.00 | -0.0052 | >=-2.5 & <=2.5 | Pass |
| 50                 | NV      | -35.30     | -0.0097 | >=-2.5 & <=2.5 | Pass   |         |                |      |
| CP-OFDM QPSK       | 3624.99 | Outer_Full | 20      | LV             | -11.30 | -0.0031 | >=-2.5 & <=2.5 | Pass |
|                    |         |            |         | HV             | -24.80 | -0.0068 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -30     | NV             | -35.70 | -0.0098 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -20     | NV             | -26.60 | -0.0073 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -10     | NV             | -34.60 | -0.0095 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 0       | NV             | -12.60 | -0.0035 | >=-2.5 & <=2.5 | Pass |

|                 |         |            |     |    |        |         |                |      |
|-----------------|---------|------------|-----|----|--------|---------|----------------|------|
|                 |         |            | 10  | NV | -21.10 | -0.0058 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 20  | NV | -9.00  | -0.0025 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 30  | NV | -7.00  | -0.0019 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 40  | NV | -28.50 | -0.0079 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 50  | NV | -28.80 | -0.0079 | >=-2.5 & <=2.5 | Pass |
| CP-OFDM 16 QAM  | 3624.99 | Outer_Full | 20  | LV | -14.40 | -0.0040 | >=-2.5 & <=2.5 | Pass |
|                 |         |            |     | HV | -7.30  | -0.0020 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | -30 | NV | -23.50 | -0.0065 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | -20 | NV | 6.00   | 0.0017  | >=-2.5 & <=2.5 | Pass |
|                 |         |            | -10 | NV | -19.50 | -0.0054 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 0   | NV | -26.60 | -0.0073 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 10  | NV | -5.30  | -0.0015 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 20  | NV | -21.70 | -0.0060 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 30  | NV | -8.00  | -0.0022 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 40  | NV | -24.70 | -0.0068 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 50  | NV | -12.40 | -0.0034 | >=-2.5 & <=2.5 | Pass |
| CP-OFDM 64 QAM  | 3624.99 | Outer_Full | 20  | LV | -15.10 | -0.0042 | >=-2.5 & <=2.5 | Pass |
|                 |         |            |     | HV | -27.40 | -0.0076 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | -30 | NV | -6.90  | -0.0019 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | -20 | NV | -44.50 | -0.0123 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | -10 | NV | -13.20 | -0.0036 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 0   | NV | -6.20  | -0.0017 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 10  | NV | -14.30 | -0.0039 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 20  | NV | -32.80 | -0.0090 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 30  | NV | -34.10 | -0.0094 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 40  | NV | -28.80 | -0.0079 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 50  | NV | -13.90 | -0.0038 | >=-2.5 & <=2.5 | Pass |
| CP-OFDM 256 QAM | 3624.99 | Outer_Full | 20  | LV | -28.40 | -0.0078 | >=-2.5 & <=2.5 | Pass |
|                 |         |            |     | HV | -13.80 | -0.0038 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | -30 | NV | -35.70 | -0.0098 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | -20 | NV | -11.80 | -0.0033 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | -10 | NV | -25.70 | -0.0071 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 0   | NV | -18.90 | -0.0052 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 10  | NV | -26.70 | -0.0074 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 20  | NV | -7.60  | -0.0021 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 30  | NV | -27.00 | -0.0074 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 40  | NV | -19.80 | -0.0055 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 50  | NV | -21.60 | -0.0060 | >=-2.5 & <=2.5 | Pass |

## 1.5 30k\_SISO\_60MHz

### 1.5.1 Test Result

| 5G NR n78d SCS=30kHz SISO 60MHz |                 |               |            |       |                  |                       |                |         |
|---------------------------------|-----------------|---------------|------------|-------|------------------|-----------------------|----------------|---------|
| Modulation                      | Frequency (MHz) | RB Allocation | Temp. (°C) | Volt. | Freq. Error (Hz) | Freq. vs. rated (ppm) |                | Verdict |
|                                 |                 |               |            |       |                  | Result                | Limit          |         |
| DFT-s-OFDM PI/2 BPSK            | 3624.99         | Outer_Full    | 20         | LV    | -7.60            | -0.0021               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               |            | HV    | -29.10           | -0.0080               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | -30        | NV    | -40.60           | -0.0112               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | -20        | NV    | -32.40           | -0.0089               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | -10        | NV    | -18.00           | -0.0050               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | 0          | NV    | -22.00           | -0.0061               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | 10         | NV    | -24.90           | -0.0069               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | 20         | NV    | -24.80           | -0.0068               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | 30         | NV    | -12.30           | -0.0034               | >=-2.5 & <=2.5 | Pass    |



|                    |         |            |     |    |        |         |                |      |
|--------------------|---------|------------|-----|----|--------|---------|----------------|------|
|                    |         |            | 40  | NV | -24.30 | -0.0067 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 50  | NV | -23.10 | -0.0064 | >=-2.5 & <=2.5 | Pass |
| DFT-s-OFDM QPSK    | 3624.99 | Outer_Full | 20  | LV | -24.70 | -0.0068 | >=-2.5 & <=2.5 | Pass |
|                    |         |            |     | HV | -17.30 | -0.0048 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -30 | NV | -28.40 | -0.0078 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -20 | NV | -35.10 | -0.0097 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -10 | NV | -26.20 | -0.0072 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 0   | NV | -15.30 | -0.0042 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 10  | NV | -16.80 | -0.0046 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 20  | NV | 7.00   | 0.0019  | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 30  | NV | -17.30 | -0.0048 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 40  | NV | 5.20   | 0.0014  | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 50  | NV | -36.20 | -0.0100 | >=-2.5 & <=2.5 | Pass |
| DFT-s-OFDM 16 QAM  | 3624.99 | Outer_Full | 20  | LV | -13.80 | -0.0038 | >=-2.5 & <=2.5 | Pass |
|                    |         |            |     | HV | -33.00 | -0.0091 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -30 | NV | -22.50 | -0.0062 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -20 | NV | -21.50 | -0.0059 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -10 | NV | -32.20 | -0.0089 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 0   | NV | -26.50 | -0.0073 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 10  | NV | -40.30 | -0.0111 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 20  | NV | -39.10 | -0.0108 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 30  | NV | -8.80  | -0.0024 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 40  | NV | -17.80 | -0.0049 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 50  | NV | -47.70 | -0.0132 | >=-2.5 & <=2.5 | Pass |
| DFT-s-OFDM 64 QAM  | 3624.99 | Outer_Full | 20  | LV | -27.90 | -0.0077 | >=-2.5 & <=2.5 | Pass |
|                    |         |            |     | HV | -22.10 | -0.0061 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -30 | NV | -27.60 | -0.0076 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -20 | NV | -16.40 | -0.0045 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -10 | NV | -9.50  | -0.0026 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 0   | NV | -21.60 | -0.0060 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 10  | NV | -39.20 | -0.0108 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 20  | NV | -12.80 | -0.0035 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 30  | NV | -14.80 | -0.0041 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 40  | NV | -36.50 | -0.0101 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 50  | NV | -26.00 | -0.0072 | >=-2.5 & <=2.5 | Pass |
| DFT-s-OFDM 256 QAM | 3624.99 | Outer_Full | 20  | LV | -26.60 | -0.0073 | >=-2.5 & <=2.5 | Pass |
|                    |         |            |     | HV | -30.10 | -0.0083 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -30 | NV | -21.90 | -0.0060 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -20 | NV | -11.20 | -0.0031 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -10 | NV | -17.70 | -0.0049 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 0   | NV | -30.90 | -0.0085 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 10  | NV | -42.70 | -0.0118 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 20  | NV | -25.10 | -0.0069 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 30  | NV | -30.50 | -0.0084 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 40  | NV | -34.90 | -0.0096 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 50  | NV | -23.90 | -0.0066 | >=-2.5 & <=2.5 | Pass |
| CP-OFDM QPSK       | 3624.99 | Outer_Full | 20  | LV | -26.70 | -0.0074 | >=-2.5 & <=2.5 | Pass |
|                    |         |            |     | HV | -28.20 | -0.0078 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -30 | NV | -9.00  | -0.0025 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -20 | NV | -40.10 | -0.0111 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -10 | NV | -15.60 | -0.0043 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 0   | NV | -9.30  | -0.0026 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 10  | NV | -23.40 | -0.0065 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 20  | NV | -34.60 | -0.0095 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 30  | NV | -5.90  | -0.0016 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 40  | NV | -47.40 | -0.0131 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 50  | NV | -22.70 | -0.0063 | >=-2.5 & <=2.5 | Pass |

|                 |         |            |     |    |        |         |                |      |
|-----------------|---------|------------|-----|----|--------|---------|----------------|------|
| CP-OFDM 16 QAM  | 3624.99 | Outer_Full | 20  | LV | -23.40 | -0.0065 | >=-2.5 & <=2.5 | Pass |
|                 |         |            |     | HV | -20.30 | -0.0056 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | -30 | NV | -22.10 | -0.0061 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | -20 | NV | -16.80 | -0.0046 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | -10 | NV | -8.00  | -0.0022 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 0   | NV | -60.10 | -0.0166 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 10  | NV | -22.90 | -0.0063 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 20  | NV | -13.20 | -0.0036 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 30  | NV | -29.50 | -0.0081 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 40  | NV | -22.90 | -0.0063 | >=-2.5 & <=2.5 | Pass |
| CP-OFDM 64 QAM  | 3624.99 | Outer_Full | 20  | LV | -3.90  | -0.0011 | >=-2.5 & <=2.5 | Pass |
|                 |         |            |     | HV | -18.30 | -0.0050 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | -30 | NV | -12.50 | -0.0034 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | -20 | NV | -9.30  | -0.0026 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | -10 | NV | -5.70  | -0.0016 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 0   | NV | -16.90 | -0.0047 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 10  | NV | -12.70 | -0.0035 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 20  | NV | -28.30 | -0.0078 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 30  | NV | -19.30 | -0.0053 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 40  | NV | -31.70 | -0.0087 | >=-2.5 & <=2.5 | Pass |
| CP-OFDM 256 QAM | 3624.99 | Outer_Full | 20  | LV | -5.80  | -0.0016 | >=-2.5 & <=2.5 | Pass |
|                 |         |            |     | HV | -20.60 | -0.0057 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | -30 | NV | -35.00 | -0.0097 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | -20 | NV | -16.70 | -0.0046 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | -10 | NV | -18.90 | -0.0052 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 0   | NV | 3.50   | 0.0010  | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 10  | NV | -19.30 | -0.0053 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 20  | NV | -40.10 | -0.0111 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 30  | NV | -11.60 | -0.0032 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 40  | NV | -22.40 | -0.0062 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 50  | NV | 13.40  | 0.0037  | >=-2.5 & <=2.5 | Pass |
|                 |         |            |     |    |        |         |                |      |

## 1.6 30k\_SISO\_70MHz

### 1.6.1 Test Result

| 5G NR n78d SCS=30kHz SISO 70MHz |                 |               |            |       |                  |                       |                |         |
|---------------------------------|-----------------|---------------|------------|-------|------------------|-----------------------|----------------|---------|
| Modulation                      | Frequency (MHz) | RB Allocation | Temp. (°C) | Volt. | Freq. Error (Hz) | Freq. vs. rated (ppm) |                | Verdict |
|                                 |                 |               |            |       |                  | Result                | Limit          |         |
| DFT-s-OFDM PI/2 BPSK            | 3624.99         | Outer_Full    | 20         | LV    | -34.60           | -0.0095               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               |            | HV    | -16.00           | -0.0044               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | -30        | NV    | -17.70           | -0.0049               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | -20        | NV    | -20.10           | -0.0055               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | -10        | NV    | -18.40           | -0.0051               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | 0          | NV    | -13.40           | -0.0037               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | 10         | NV    | -14.30           | -0.0039               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | 20         | NV    | -20.00           | -0.0055               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | 30         | NV    | -13.80           | -0.0038               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | 40         | NV    | -21.90           | -0.0060               | >=-2.5 & <=2.5 | Pass    |
| DFT-s-OFDM QPSK                 | 3624.99         | Outer_Full    | 20         | LV    | -34.20           | -0.0094               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               |            | HV    | -16.60           | -0.0046               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | -30        | NV    | -7.60            | -0.0021               | >=-2.5 & <=2.5 | Pass    |

|                    |         |            |     |    |        |         |                |      |
|--------------------|---------|------------|-----|----|--------|---------|----------------|------|
|                    |         |            | -20 | NV | -31.50 | -0.0087 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -10 | NV | -31.10 | -0.0086 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 0   | NV | -21.30 | -0.0059 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 10  | NV | -17.40 | -0.0048 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 20  | NV | -16.40 | -0.0045 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 30  | NV | -28.30 | -0.0078 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 40  | NV | -17.30 | -0.0048 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 50  | NV | -40.20 | -0.0111 | >=-2.5 & <=2.5 | Pass |
| DFT-s-OFDM 16 QAM  | 3624.99 | Outer_Full | 20  | LV | -27.40 | -0.0076 | >=-2.5 & <=2.5 | Pass |
|                    |         |            |     | HV | -13.50 | -0.0037 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -30 | NV | -15.80 | -0.0044 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -20 | NV | -4.50  | -0.0012 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -10 | NV | -34.70 | -0.0096 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 0   | NV | -8.60  | -0.0024 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 10  | NV | -23.10 | -0.0064 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 20  | NV | -23.90 | -0.0066 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 30  | NV | -4.80  | -0.0013 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 40  | NV | -6.50  | -0.0018 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 50  | NV | -18.40 | -0.0051 | >=-2.5 & <=2.5 | Pass |
|                    |         |            |     |    |        |         |                |      |
| DFT-s-OFDM 64 QAM  | 3624.99 | Outer_Full | 20  | LV | -26.50 | -0.0073 | >=-2.5 & <=2.5 | Pass |
|                    |         |            |     | HV | -50.30 | -0.0139 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -30 | NV | -26.60 | -0.0073 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -20 | NV | -11.80 | -0.0033 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -10 | NV | -31.30 | -0.0086 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 0   | NV | -37.70 | -0.0104 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 10  | NV | -29.20 | -0.0081 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 20  | NV | -17.40 | -0.0048 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 30  | NV | -24.20 | -0.0067 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 40  | NV | -24.80 | -0.0068 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 50  | NV | -10.50 | -0.0029 | >=-2.5 & <=2.5 | Pass |
|                    |         |            |     |    |        |         |                |      |
| DFT-s-OFDM 256 QAM | 3624.99 | Outer_Full | 20  | LV | -29.80 | -0.0082 | >=-2.5 & <=2.5 | Pass |
|                    |         |            |     | HV | -11.60 | -0.0032 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -30 | NV | -29.20 | -0.0081 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -20 | NV | -19.80 | -0.0055 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -10 | NV | -11.90 | -0.0033 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 0   | NV | -12.00 | -0.0033 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 10  | NV | -6.20  | -0.0017 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 20  | NV | -26.80 | -0.0074 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 30  | NV | -24.00 | -0.0066 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 40  | NV | -35.70 | -0.0098 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 50  | NV | -22.40 | -0.0062 | >=-2.5 & <=2.5 | Pass |
|                    |         |            |     |    |        |         |                |      |
| CP-OFDM QPSK       | 3624.99 | Outer_Full | 20  | LV | -22.20 | -0.0061 | >=-2.5 & <=2.5 | Pass |
|                    |         |            |     | HV | -10.80 | -0.0030 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -30 | NV | -17.80 | -0.0049 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -20 | NV | -41.10 | -0.0113 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -10 | NV | -21.20 | -0.0058 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 0   | NV | -31.10 | -0.0086 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 10  | NV | -13.30 | -0.0037 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 20  | NV | -22.00 | -0.0061 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 30  | NV | -22.30 | -0.0062 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 40  | NV | -15.80 | -0.0044 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 50  | NV | -26.90 | -0.0074 | >=-2.5 & <=2.5 | Pass |
|                    |         |            |     |    |        |         |                |      |
| CP-OFDM 16 QAM     | 3624.99 | Outer_Full | 20  | LV | -23.80 | -0.0066 | >=-2.5 & <=2.5 | Pass |
|                    |         |            |     | HV | -9.00  | -0.0025 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -30 | NV | -25.70 | -0.0071 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -20 | NV | -21.80 | -0.0060 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -10 | NV | -7.30  | -0.0020 | >=-2.5 & <=2.5 | Pass |

|                 |         |            |     |    |        |         |                |      |
|-----------------|---------|------------|-----|----|--------|---------|----------------|------|
|                 |         |            | 0   | NV | -11.20 | -0.0031 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 10  | NV | -27.60 | -0.0076 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 20  | NV | -11.80 | -0.0033 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 30  | NV | -33.30 | -0.0092 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 40  | NV | -27.40 | -0.0076 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 50  | NV | -5.80  | -0.0016 | >=-2.5 & <=2.5 | Pass |
| CP-OFDM 64 QAM  | 3624.99 | Outer_Full | 20  | LV | -4.40  | -0.0012 | >=-2.5 & <=2.5 | Pass |
|                 |         |            |     | HV | 2.90   | 0.0008  | >=-2.5 & <=2.5 | Pass |
|                 |         |            | -30 | NV | -12.50 | -0.0034 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | -20 | NV | -9.90  | -0.0027 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | -10 | NV | -24.20 | -0.0067 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 0   | NV | -31.10 | -0.0086 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 10  | NV | -28.30 | -0.0078 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 20  | NV | -12.70 | -0.0035 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 30  | NV | -31.70 | -0.0087 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 40  | NV | -22.00 | -0.0061 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 50  | NV | -28.00 | -0.0077 | >=-2.5 & <=2.5 | Pass |
|                 |         |            |     |    |        |         |                |      |
| CP-OFDM 256 QAM | 3624.99 | Outer_Full | 20  | LV | -22.70 | -0.0063 | >=-2.5 & <=2.5 | Pass |
|                 |         |            |     | HV | -6.40  | -0.0018 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | -30 | NV | -20.30 | -0.0056 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | -20 | NV | -29.20 | -0.0081 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | -10 | NV | -22.40 | -0.0062 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 0   | NV | -40.20 | -0.0111 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 10  | NV | -32.20 | -0.0089 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 20  | NV | -18.40 | -0.0051 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 30  | NV | -15.00 | -0.0041 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 40  | NV | -11.80 | -0.0033 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 50  | NV | -12.50 | -0.0034 | >=-2.5 & <=2.5 | Pass |
|                 |         |            |     |    |        |         |                |      |

## 1.7 30k\_SISO\_80MHz

### 1.7.1 Test Result

| 5G NR n78d SCS=30kHz SISO 80MHz |                 |               |            |       |                  |                       |                |         |
|---------------------------------|-----------------|---------------|------------|-------|------------------|-----------------------|----------------|---------|
| Modulation                      | Frequency (MHz) | RB Allocation | Temp. (°C) | Volt. | Freq. Error (Hz) | Freq. vs. rated (ppm) |                | Verdict |
|                                 |                 |               |            |       |                  | Result                | Limit          |         |
| DFT-s-OFDM PI/2 BPSK            | 3624.99         | Outer_Full    | 20         | LV    | -27.50           | -0.0076               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               |            | HV    | -22.30           | -0.0062               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | -30        | NV    | -26.70           | -0.0074               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | -20        | NV    | -15.80           | -0.0044               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | -10        | NV    | 3.80             | 0.0010                | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | 0          | NV    | -1.00            | -0.0003               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | 10         | NV    | -30.20           | -0.0083               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | 20         | NV    | -17.60           | -0.0049               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | 30         | NV    | -4.90            | -0.0014               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | 40         | NV    | -7.40            | -0.0020               | >=-2.5 & <=2.5 | Pass    |
| DFT-s-OFDM QPSK                 | 3624.99         | Outer_Full    | 50         | NV    | -2.40            | -0.0007               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | 20         | LV    | -3.40            | -0.0009               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               |            | HV    | -32.20           | -0.0089               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | -30        | NV    | -20.20           | -0.0056               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | -20        | NV    | -40.30           | -0.0111               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | -10        | NV    | -13.10           | -0.0036               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | 0          | NV    | -25.40           | -0.0070               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | 10         | NV    | -9.40            | -0.0026               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | 20         | NV    | -10.60           | -0.0029               | >=-2.5 & <=2.5 | Pass    |

|                    |         |            |                   |                |            |         |                |        |
|--------------------|---------|------------|-------------------|----------------|------------|---------|----------------|--------|
|                    |         |            | 30                | NV             | -38.70     | -0.0107 | >=-2.5 & <=2.5 | Pass   |
|                    |         |            | 40                | NV             | -12.60     | -0.0035 | >=-2.5 & <=2.5 | Pass   |
|                    |         |            | 50                | NV             | -35.50     | -0.0098 | >=-2.5 & <=2.5 | Pass   |
| DFT-s-OFDM 16 QAM  | 3624.99 | Outer_Full | 20                | LV             | -4.60      | -0.0013 | >=-2.5 & <=2.5 | Pass   |
|                    |         |            |                   | HV             | -18.90     | -0.0052 | >=-2.5 & <=2.5 | Pass   |
|                    |         |            | -30               | NV             | -15.50     | -0.0043 | >=-2.5 & <=2.5 | Pass   |
|                    |         |            | -20               | NV             | -20.30     | -0.0056 | >=-2.5 & <=2.5 | Pass   |
|                    |         |            | -10               | NV             | -9.10      | -0.0025 | >=-2.5 & <=2.5 | Pass   |
|                    |         |            | 0                 | NV             | -19.10     | -0.0053 | >=-2.5 & <=2.5 | Pass   |
|                    |         |            | 10                | NV             | -22.60     | -0.0062 | >=-2.5 & <=2.5 | Pass   |
|                    |         |            | 20                | NV             | -9.60      | -0.0026 | >=-2.5 & <=2.5 | Pass   |
|                    |         |            | 30                | NV             | -32.90     | -0.0091 | >=-2.5 & <=2.5 | Pass   |
|                    |         |            | 40                | NV             | -32.80     | -0.0090 | >=-2.5 & <=2.5 | Pass   |
|                    |         |            | 50                | NV             | -20.20     | -0.0056 | >=-2.5 & <=2.5 | Pass   |
|                    |         |            | DFT-s-OFDM 64 QAM | 3624.99        | Outer_Full | 20      | LV             | -32.80 |
| HV                 | -27.20  | -0.0075    |                   |                |            |         | >=-2.5 & <=2.5 | Pass   |
| -30                | NV      | -17.30     |                   |                |            | -0.0048 | >=-2.5 & <=2.5 | Pass   |
| -20                | NV      | -61.80     |                   |                |            | -0.0170 | >=-2.5 & <=2.5 | Pass   |
| -10                | NV      | -10.20     |                   |                |            | -0.0028 | >=-2.5 & <=2.5 | Pass   |
| 0                  | NV      | -13.60     |                   |                |            | -0.0038 | >=-2.5 & <=2.5 | Pass   |
| 10                 | NV      | -11.00     |                   |                |            | -0.0030 | >=-2.5 & <=2.5 | Pass   |
| 20                 | NV      | -40.70     |                   |                |            | -0.0112 | >=-2.5 & <=2.5 | Pass   |
| 30                 | NV      | -34.80     |                   |                |            | -0.0096 | >=-2.5 & <=2.5 | Pass   |
| 40                 | NV      | -16.90     |                   |                |            | -0.0047 | >=-2.5 & <=2.5 | Pass   |
| 50                 | NV      | -21.70     | -0.0060           | >=-2.5 & <=2.5 | Pass       |         |                |        |
| DFT-s-OFDM 256 QAM | 3624.99 | Outer_Full | 20                | LV             | -14.90     | -0.0041 | >=-2.5 & <=2.5 | Pass   |
|                    |         |            |                   | HV             | -2.60      | -0.0007 | >=-2.5 & <=2.5 | Pass   |
|                    |         |            | -30               | NV             | -25.90     | -0.0071 | >=-2.5 & <=2.5 | Pass   |
|                    |         |            | -20               | NV             | -20.40     | -0.0056 | >=-2.5 & <=2.5 | Pass   |
|                    |         |            | -10               | NV             | -22.80     | -0.0063 | >=-2.5 & <=2.5 | Pass   |
|                    |         |            | 0                 | NV             | -22.40     | -0.0062 | >=-2.5 & <=2.5 | Pass   |
|                    |         |            | 10                | NV             | -13.50     | -0.0037 | >=-2.5 & <=2.5 | Pass   |
|                    |         |            | 20                | NV             | -28.70     | -0.0079 | >=-2.5 & <=2.5 | Pass   |
|                    |         |            | 30                | NV             | -18.00     | -0.0050 | >=-2.5 & <=2.5 | Pass   |
| 40                 | NV      | -11.80     | -0.0033           | >=-2.5 & <=2.5 | Pass       |         |                |        |
| 50                 | NV      | -23.90     | -0.0066           | >=-2.5 & <=2.5 | Pass       |         |                |        |
| CP-OFDM QPSK       | 3624.99 | Outer_Full | 20                | LV             | -23.60     | -0.0065 | >=-2.5 & <=2.5 | Pass   |
|                    |         |            |                   | HV             | -12.20     | -0.0034 | >=-2.5 & <=2.5 | Pass   |
|                    |         |            | -30               | NV             | -28.10     | -0.0078 | >=-2.5 & <=2.5 | Pass   |
|                    |         |            | -20               | NV             | -14.20     | -0.0039 | >=-2.5 & <=2.5 | Pass   |
|                    |         |            | -10               | NV             | -22.30     | -0.0062 | >=-2.5 & <=2.5 | Pass   |
|                    |         |            | 0                 | NV             | -10.70     | -0.0030 | >=-2.5 & <=2.5 | Pass   |
|                    |         |            | 10                | NV             | -19.60     | -0.0054 | >=-2.5 & <=2.5 | Pass   |
|                    |         |            | 20                | NV             | -12.30     | -0.0034 | >=-2.5 & <=2.5 | Pass   |
|                    |         |            | 30                | NV             | -30.10     | -0.0083 | >=-2.5 & <=2.5 | Pass   |
| 40                 | NV      | -15.10     | -0.0042           | >=-2.5 & <=2.5 | Pass       |         |                |        |
| 50                 | NV      | -22.20     | -0.0061           | >=-2.5 & <=2.5 | Pass       |         |                |        |
| CP-OFDM 16 QAM     | 3624.99 | Outer_Full | 20                | LV             | -24.00     | -0.0066 | >=-2.5 & <=2.5 | Pass   |
|                    |         |            |                   | HV             | -33.80     | -0.0093 | >=-2.5 & <=2.5 | Pass   |
|                    |         |            | -30               | NV             | -15.00     | -0.0041 | >=-2.5 & <=2.5 | Pass   |
|                    |         |            | -20               | NV             | -32.90     | -0.0091 | >=-2.5 & <=2.5 | Pass   |
|                    |         |            | -10               | NV             | -17.70     | -0.0049 | >=-2.5 & <=2.5 | Pass   |
|                    |         |            | 0                 | NV             | -21.50     | -0.0059 | >=-2.5 & <=2.5 | Pass   |
|                    |         |            | 10                | NV             | -23.60     | -0.0065 | >=-2.5 & <=2.5 | Pass   |
|                    |         |            | 20                | NV             | -11.00     | -0.0030 | >=-2.5 & <=2.5 | Pass   |
|                    |         |            | 30                | NV             | -22.80     | -0.0063 | >=-2.5 & <=2.5 | Pass   |
| 40                 | NV      | -19.60     | -0.0054           | >=-2.5 & <=2.5 | Pass       |         |                |        |

|                 |         |            |     |    |        |         |                |      |
|-----------------|---------|------------|-----|----|--------|---------|----------------|------|
|                 |         |            | 50  | NV | -26.10 | -0.0072 | >=-2.5 & <=2.5 | Pass |
| CP-OFDM 64 QAM  | 3624.99 | Outer_Full | 20  | LV | -14.10 | -0.0039 | >=-2.5 & <=2.5 | Pass |
|                 |         |            |     | HV | -13.90 | -0.0038 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | -30 | NV | -35.20 | -0.0097 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | -20 | NV | -5.80  | -0.0016 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | -10 | NV | -22.60 | -0.0062 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 0   | NV | -34.10 | -0.0094 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 10  | NV | -32.80 | -0.0090 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 20  | NV | -22.50 | -0.0062 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 30  | NV | -18.20 | -0.0050 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 40  | NV | -29.70 | -0.0082 | >=-2.5 & <=2.5 | Pass |
| CP-OFDM 256 QAM | 3624.99 | Outer_Full | 20  | LV | -17.90 | -0.0049 | >=-2.5 & <=2.5 | Pass |
|                 |         |            |     | HV | -20.40 | -0.0056 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | -30 | NV | -11.90 | -0.0033 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | -20 | NV | -16.50 | -0.0046 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | -10 | NV | -23.80 | -0.0066 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 0   | NV | -21.20 | -0.0058 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 10  | NV | -14.70 | -0.0041 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 20  | NV | -3.60  | -0.0010 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 30  | NV | -12.00 | -0.0033 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 40  | NV | -26.10 | -0.0072 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 50  | NV | -33.90 | -0.0094 | >=-2.5 & <=2.5 | Pass |

## 1.8 30k\_SISO\_90MHz

### 1.8.1 Test Result

| 5G NR n78d SCS=30kHz SISO 90MHz |                 |               |            |       |                  |                       |                |         |
|---------------------------------|-----------------|---------------|------------|-------|------------------|-----------------------|----------------|---------|
| Modulation                      | Frequency (MHz) | RB Allocation | Temp. (°C) | Volt. | Freq. Error (Hz) | Freq. vs. rated (ppm) |                | Verdict |
|                                 |                 |               |            |       |                  | Result                | Limit          |         |
| DFT-s-OFDM PI/2 BPSK            | 3624.99         | Outer_Full    | 20         | LV    | -15.80           | -0.0044               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               |            | HV    | -5.10            | -0.0014               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | -30        | NV    | -9.70            | -0.0027               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | -20        | NV    | -18.90           | -0.0052               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | -10        | NV    | -9.60            | -0.0026               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | 0          | NV    | 6.00             | 0.0017                | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | 10         | NV    | -8.10            | -0.0022               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | 20         | NV    | -25.30           | -0.0070               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | 30         | NV    | -18.30           | -0.0050               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | 40         | NV    | -6.60            | -0.0018               | >=-2.5 & <=2.5 | Pass    |
| DFT-s-OFDM QPSK                 | 3624.99         | Outer_Full    | 20         | LV    | -35.20           | -0.0097               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               |            | HV    | -22.70           | -0.0063               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | -30        | NV    | -11.90           | -0.0033               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | -20        | NV    | -16.10           | -0.0044               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | -10        | NV    | -24.40           | -0.0067               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | 0          | NV    | -20.50           | -0.0057               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | 10         | NV    | -22.70           | -0.0063               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | 20         | NV    | -28.80           | -0.0079               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | 30         | NV    | -13.20           | -0.0036               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               | 40         | NV    | -23.50           | -0.0065               | >=-2.5 & <=2.5 | Pass    |
| DFT-s-OFDM 16 QAM               | 3624.99         | Outer_Full    | 20         | LV    | -6.00            | -0.0017               | >=-2.5 & <=2.5 | Pass    |
|                                 |                 |               |            | HV    | -9.50            | -0.0026               | >=-2.5 & <=2.5 | Pass    |

|                    |         |            |     |    |        |         |                |      |
|--------------------|---------|------------|-----|----|--------|---------|----------------|------|
|                    |         |            | -30 | NV | -23.30 | -0.0064 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -20 | NV | -11.20 | -0.0031 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -10 | NV | 2.40   | 0.0007  | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 0   | NV | -21.50 | -0.0059 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 10  | NV | -21.90 | -0.0060 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 20  | NV | -22.60 | -0.0062 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 30  | NV | -5.60  | -0.0015 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 40  | NV | -16.70 | -0.0046 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 50  | NV | -5.50  | -0.0015 | >=-2.5 & <=2.5 | Pass |
| DFT-s-OFDM 64 QAM  | 3624.99 | Outer_Full | 20  | LV | -14.30 | -0.0039 | >=-2.5 & <=2.5 | Pass |
|                    |         |            |     | HV | -7.10  | -0.0020 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -30 | NV | -18.00 | -0.0050 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -20 | NV | -28.40 | -0.0078 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -10 | NV | -30.00 | -0.0083 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 0   | NV | -18.20 | -0.0050 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 10  | NV | -26.50 | -0.0073 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 20  | NV | -18.20 | -0.0050 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 30  | NV | -9.50  | -0.0026 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 40  | NV | -28.80 | -0.0079 | >=-2.5 & <=2.5 | Pass |
| DFT-s-OFDM 256 QAM | 3624.99 | Outer_Full | 20  | LV | -15.20 | -0.0042 | >=-2.5 & <=2.5 | Pass |
|                    |         |            |     | HV | -17.40 | -0.0048 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -30 | NV | -35.40 | -0.0098 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -20 | NV | -8.60  | -0.0024 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -10 | NV | -25.40 | -0.0070 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 0   | NV | 13.30  | 0.0037  | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 10  | NV | -24.50 | -0.0068 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 20  | NV | -12.90 | -0.0036 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 30  | NV | 7.00   | 0.0019  | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 40  | NV | -18.60 | -0.0051 | >=-2.5 & <=2.5 | Pass |
| CP-OFDM QPSK       | 3624.99 | Outer_Full | 20  | LV | -4.10  | -0.0011 | >=-2.5 & <=2.5 | Pass |
|                    |         |            |     | HV | -9.60  | -0.0026 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -30 | NV | -15.50 | -0.0043 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -20 | NV | -24.10 | -0.0066 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -10 | NV | 11.20  | 0.0031  | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 0   | NV | -14.70 | -0.0041 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 10  | NV | 10.10  | 0.0028  | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 20  | NV | -22.20 | -0.0061 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 30  | NV | -29.70 | -0.0082 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 40  | NV | -18.70 | -0.0052 | >=-2.5 & <=2.5 | Pass |
| CP-OFDM 16 QAM     | 3624.99 | Outer_Full | 20  | LV | -17.80 | -0.0049 | >=-2.5 & <=2.5 | Pass |
|                    |         |            |     | HV | -16.30 | -0.0045 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -30 | NV | -17.10 | -0.0047 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -20 | NV | -9.50  | -0.0026 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -10 | NV | -5.90  | -0.0016 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 0   | NV | -10.30 | -0.0028 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 10  | NV | -23.20 | -0.0064 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 20  | NV | -15.40 | -0.0042 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 30  | NV | -30.30 | -0.0084 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 40  | NV | -25.60 | -0.0071 | >=-2.5 & <=2.5 | Pass |
| CP-OFDM 64 QAM     | 3624.99 | Outer_Full | 20  | LV | -15.70 | -0.0043 | >=-2.5 & <=2.5 | Pass |
|                    |         |            |     | HV | -5.40  | -0.0015 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -30 | NV | -4.20  | -0.0012 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -20 | NV | -14.20 | -0.0039 | >=-2.5 & <=2.5 | Pass |

|                 |         |            |     |    |        |         |                |      |
|-----------------|---------|------------|-----|----|--------|---------|----------------|------|
|                 |         |            | -10 | NV | -16.40 | -0.0045 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 0   | NV | -17.80 | -0.0049 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 10  | NV | -22.40 | -0.0062 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 20  | NV | -1.70  | -0.0005 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 30  | NV | -10.10 | -0.0028 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 40  | NV | -23.10 | -0.0064 | >=-2.5 & <=2.5 | Pass |
| CP-OFDM 256 QAM | 3624.99 | Outer_Full | 50  | NV | -28.70 | -0.0079 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 20  | LV | -26.80 | -0.0074 | >=-2.5 & <=2.5 | Pass |
|                 |         |            |     | HV | -25.90 | -0.0071 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | -30 | NV | 7.20   | 0.0020  | >=-2.5 & <=2.5 | Pass |
|                 |         |            | -20 | NV | -19.80 | -0.0055 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | -10 | NV | 1.20   | 0.0003  | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 0   | NV | -27.70 | -0.0076 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 10  | NV | -20.50 | -0.0057 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 20  | NV | -17.10 | -0.0047 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 30  | NV | -16.20 | -0.0045 | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 40  | NV | 1.60   | 0.0004  | >=-2.5 & <=2.5 | Pass |
|                 |         |            | 50  | NV | -26.80 | -0.0074 | >=-2.5 & <=2.5 | Pass |

## 1.9 30k\_SISO\_100MHz

### 1.9.1 Test Result

| 5G NR n78d SCS=30kHz SISO 100MHz |                 |               |            |       |                  |                       |                |         |
|----------------------------------|-----------------|---------------|------------|-------|------------------|-----------------------|----------------|---------|
| Modulation                       | Frequency (MHz) | RB Allocation | Temp. (°C) | Volt. | Freq. Error (Hz) | Freq. vs. rated (ppm) |                | Verdict |
|                                  |                 |               |            |       |                  | Result                | Limit          |         |
| DFT-s-OFDM PI/2 BPSK             | 3624.99         | Outer_Full    | 20         | LV    | -23.20           | -0.0064               | >=-2.5 & <=2.5 | Pass    |
|                                  |                 |               |            | HV    | -34.80           | -0.0096               | >=-2.5 & <=2.5 | Pass    |
|                                  |                 |               | -30        | NV    | -24.70           | -0.0068               | >=-2.5 & <=2.5 | Pass    |
|                                  |                 |               | -20        | NV    | -26.90           | -0.0074               | >=-2.5 & <=2.5 | Pass    |
|                                  |                 |               | -10        | NV    | -10.50           | -0.0029               | >=-2.5 & <=2.5 | Pass    |
|                                  |                 |               | 0          | NV    | -17.00           | -0.0047               | >=-2.5 & <=2.5 | Pass    |
|                                  |                 |               | 10         | NV    | -30.70           | -0.0085               | >=-2.5 & <=2.5 | Pass    |
|                                  |                 |               | 20         | NV    | -27.00           | -0.0074               | >=-2.5 & <=2.5 | Pass    |
|                                  |                 |               | 30         | NV    | -29.00           | -0.0080               | >=-2.5 & <=2.5 | Pass    |
|                                  |                 |               | 40         | NV    | -25.20           | -0.0070               | >=-2.5 & <=2.5 | Pass    |
| DFT-s-OFDM QPSK                  | 3624.99         | Outer_Full    | 20         | LV    | -22.80           | -0.0063               | >=-2.5 & <=2.5 | Pass    |
|                                  |                 |               |            | HV    | -29.50           | -0.0081               | >=-2.5 & <=2.5 | Pass    |
|                                  |                 |               | -30        | NV    | -25.60           | -0.0071               | >=-2.5 & <=2.5 | Pass    |
|                                  |                 |               | -20        | NV    | -17.80           | -0.0049               | >=-2.5 & <=2.5 | Pass    |
|                                  |                 |               | -10        | NV    | -39.20           | -0.0108               | >=-2.5 & <=2.5 | Pass    |
|                                  |                 |               | 0          | NV    | -18.00           | -0.0050               | >=-2.5 & <=2.5 | Pass    |
|                                  |                 |               | 10         | NV    | -12.00           | -0.0033               | >=-2.5 & <=2.5 | Pass    |
|                                  |                 |               | 20         | NV    | -26.40           | -0.0073               | >=-2.5 & <=2.5 | Pass    |
|                                  |                 |               | 30         | NV    | -18.10           | -0.0050               | >=-2.5 & <=2.5 | Pass    |
|                                  |                 |               | 40         | NV    | -8.10            | -0.0022               | >=-2.5 & <=2.5 | Pass    |
| DFT-s-OFDM 16 QAM                | 3624.99         | Outer_Full    | 20         | LV    | -15.20           | -0.0042               | >=-2.5 & <=2.5 | Pass    |
|                                  |                 |               |            | HV    | -33.20           | -0.0092               | >=-2.5 & <=2.5 | Pass    |
|                                  |                 |               | -30        | NV    | 2.90             | 0.0008                | >=-2.5 & <=2.5 | Pass    |
|                                  |                 |               | -20        | NV    | -21.70           | -0.0060               | >=-2.5 & <=2.5 | Pass    |
|                                  |                 |               | -10        | NV    | -29.00           | -0.0080               | >=-2.5 & <=2.5 | Pass    |
|                                  |                 |               | 0          | NV    | -5.40            | -0.0015               | >=-2.5 & <=2.5 | Pass    |
|                                  |                 |               | 10         | NV    | -30.30           | -0.0084               | >=-2.5 & <=2.5 | Pass    |



|                    |         |            |     |    |        |         |                |      |
|--------------------|---------|------------|-----|----|--------|---------|----------------|------|
|                    |         |            | 20  | NV | -33.80 | -0.0093 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 30  | NV | -29.20 | -0.0081 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 40  | NV | -22.20 | -0.0061 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 50  | NV | -28.30 | -0.0078 | >=-2.5 & <=2.5 | Pass |
| DFT-s-OFDM 64 QAM  | 3624.99 | Outer_Full | 20  | LV | -4.20  | -0.0012 | >=-2.5 & <=2.5 | Pass |
|                    |         |            |     | HV | -34.50 | -0.0095 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -30 | NV | -23.10 | -0.0064 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -20 | NV | -2.70  | -0.0007 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -10 | NV | -22.80 | -0.0063 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 0   | NV | -8.30  | -0.0023 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 10  | NV | -27.90 | -0.0077 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 20  | NV | -33.50 | -0.0092 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 30  | NV | -7.50  | -0.0021 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 40  | NV | -25.90 | -0.0071 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 50  | NV | -16.80 | -0.0046 | >=-2.5 & <=2.5 | Pass |
| DFT-s-OFDM 256 QAM | 3624.99 | Outer_Full | 20  | LV | -29.30 | -0.0081 | >=-2.5 & <=2.5 | Pass |
|                    |         |            |     | HV | -16.00 | -0.0044 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -30 | NV | -33.70 | -0.0093 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -20 | NV | -19.50 | -0.0054 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -10 | NV | -17.20 | -0.0047 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 0   | NV | -28.50 | -0.0079 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 10  | NV | -16.30 | -0.0045 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 20  | NV | -29.00 | -0.0080 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 30  | NV | -26.40 | -0.0073 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 40  | NV | -27.10 | -0.0075 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 50  | NV | -17.70 | -0.0049 | >=-2.5 & <=2.5 | Pass |
| CP-OFDM QPSK       | 3624.99 | Outer_Full | 20  | LV | -11.80 | -0.0033 | >=-2.5 & <=2.5 | Pass |
|                    |         |            |     | HV | -16.10 | -0.0044 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -30 | NV | -16.30 | -0.0045 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -20 | NV | -28.50 | -0.0079 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -10 | NV | -14.30 | -0.0039 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 0   | NV | -14.60 | -0.0040 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 10  | NV | -30.70 | -0.0085 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 20  | NV | -16.90 | -0.0047 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 30  | NV | -22.20 | -0.0061 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 40  | NV | -27.50 | -0.0076 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 50  | NV | -20.30 | -0.0056 | >=-2.5 & <=2.5 | Pass |
| CP-OFDM 16 QAM     | 3624.99 | Outer_Full | 20  | LV | -8.00  | -0.0022 | >=-2.5 & <=2.5 | Pass |
|                    |         |            |     | HV | -13.00 | -0.0036 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -30 | NV | -27.70 | -0.0076 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -20 | NV | -17.70 | -0.0049 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -10 | NV | -8.60  | -0.0024 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 0   | NV | -30.20 | -0.0083 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 10  | NV | -35.10 | -0.0097 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 20  | NV | -28.90 | -0.0080 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 30  | NV | 5.60   | 0.0015  | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 40  | NV | -40.30 | -0.0111 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 50  | NV | -17.50 | -0.0048 | >=-2.5 & <=2.5 | Pass |
| CP-OFDM 64 QAM     | 3624.99 | Outer_Full | 20  | LV | -23.40 | -0.0065 | >=-2.5 & <=2.5 | Pass |
|                    |         |            |     | HV | -21.50 | -0.0059 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -30 | NV | -24.50 | -0.0068 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -20 | NV | -15.90 | -0.0044 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | -10 | NV | -19.20 | -0.0053 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 0   | NV | -14.30 | -0.0039 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 10  | NV | -44.80 | -0.0124 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 20  | NV | -11.30 | -0.0031 | >=-2.5 & <=2.5 | Pass |
|                    |         |            | 30  | NV | -6.80  | -0.0019 | >=-2.5 & <=2.5 | Pass |

|                 |         |            |     |    |        |         |                                  |      |
|-----------------|---------|------------|-----|----|--------|---------|----------------------------------|------|
|                 |         |            | 40  | NV | -14.10 | -0.0039 | $\geq -2.5 \text{ \& } \leq 2.5$ | Pass |
|                 |         |            | 50  | NV | -14.70 | -0.0041 | $\geq -2.5 \text{ \& } \leq 2.5$ | Pass |
| CP-OFDM 256 QAM | 3624.99 | Outer_Full | 20  | LV | -19.90 | -0.0055 | $\geq -2.5 \text{ \& } \leq 2.5$ | Pass |
|                 |         |            |     | HV | -23.60 | -0.0065 | $\geq -2.5 \text{ \& } \leq 2.5$ | Pass |
|                 |         |            | -30 | NV | -35.50 | -0.0098 | $\geq -2.5 \text{ \& } \leq 2.5$ | Pass |
|                 |         |            | -20 | NV | -38.80 | -0.0107 | $\geq -2.5 \text{ \& } \leq 2.5$ | Pass |
|                 |         |            | -10 | NV | -7.00  | -0.0019 | $\geq -2.5 \text{ \& } \leq 2.5$ | Pass |
|                 |         |            | 0   | NV | -5.60  | -0.0015 | $\geq -2.5 \text{ \& } \leq 2.5$ | Pass |
|                 |         |            | 10  | NV | -15.90 | -0.0044 | $\geq -2.5 \text{ \& } \leq 2.5$ | Pass |
|                 |         |            | 20  | NV | -8.00  | -0.0022 | $\geq -2.5 \text{ \& } \leq 2.5$ | Pass |
|                 |         |            | 30  | NV | -25.00 | -0.0069 | $\geq -2.5 \text{ \& } \leq 2.5$ | Pass |
|                 |         |            | 40  | NV | -19.70 | -0.0054 | $\geq -2.5 \text{ \& } \leq 2.5$ | Pass |
|                 |         |            | 50  | NV | -24.50 | -0.0068 | $\geq -2.5 \text{ \& } \leq 2.5$ | Pass |