

| Channel | Frequency | RB | RB | Power | EIRP Density | Limit | | |
|-----------------|----------------|----------------|----------------|------------------|--------------|-------------|--|--|
| Bandwidth | (MHz) | Size | Offset | Density | (dBm/5MHz) | (dBm /5MHz) | | |
| (MHz) | | | | (dBm/5MHz) | | | | |
| DFT-s-OFDM QPSK | | | | | | | | |
| | | 12 | 6 | 22.23 | 23.51 | < 23.98 | | |
| | | 1 | 1 | 22.44 | 23.72 | < 23.98 | | |
| | 0007.5 | 1 | 23 | 22.40 | 23.68 | < 23.98 | | |
| | 2307.5 | 25 | 0 | 22.03 | 23.31 | < 23.98 | | |
| | | 1 | 24 | 21.84 | 23.12 | < 23.98 | | |
| | | 1 | 0 | 22.34 | 23.62 | < 23.98 | | |
| | | 12 | 6 | 22.52 | 23.80 | < 23.98 | | |
| | | 1 | 1 | 22.07 | 23.35 | < 23.98 | | |
| E | 0040.0 | 1 | 23 | 22.17 | 23.45 | < 23.98 | | |
| 5 | 2310.0 | 25 | 0 | 22.03 | 23.31 | < 23.98 | | |
| | | 1 | 24 | 22.22 | 23.50 | < 23.98 | | |
| | | 1 | 0 | 22.58 | 23.86 | < 23.98 | | |
| | | 12 | 6 | 22.50 | 23.78 | < 23.98 | | |
| | | 1 | 1 | 22.27 | 23.55 | < 23.98 | | |
| | | 1 | 23 | 22.11 | 23.39 | < 23.98 | | |
| | 2312.5 | 25 | 0 | 22.02 | 23.30 | < 23.98 | | |
| | | 1 | 24 | 22.17 | 23.45 | < 23.98 | | |
| | | 1 | 0 | 22.06 | 23.34 | < 23.98 | | |
| | | 25 | 12 | 22.52 | 23.80 | < 23.98 | | |
| | | 1 | 1 | 22.34 | 23.62 | < 23.98 | | |
| | | 1 | 50 | 22.39 | 23.67 | < 23.98 | | |
| 10 | 2310.0 | 50 | 0 | 19.40 | 20.68 | < 23.98 | | |
| | | 1 | 51 | 22.08 | 23.36 | < 23.98 | | |
| | | 1 | 0 | 22.49 | 23.77 | < 23.98 | | |
| Note: The EIR | P (dBm/5MHz) = | = Output Power | (dBm/5MHz) + / | Antenna Gain (dł | Bi) | | | |



| Channel | Frequency | RB | RB | Power | EIRP Density | Limit | | |
|------------------|--------------|----------------|----------------|------------------|--------------|-------------|--|--|
| Bandwidth | (MHz) | Size | Offset | Density | (dBm/5MHz) | (dBm /5MHz) | | |
| (MHz) | | | | (dBm/5MHz) | | | | |
| DFT-s-OFDM 16QAM | | | | | | | | |
| | | 12 | 6 | 21.90 | 23.18 | < 23.98 | | |
| | | 1 | 1 | 21.89 | 23.17 | < 23.98 | | |
| | | 1 | 23 | 21.16 | 22.44 | < 23.98 | | |
| | 2307.5 | 25 | 0 | 21.09 | 22.37 | < 23.98 | | |
| | | 1 | 24 | 20.50 | 21.78 | < 23.98 | | |
| | | 1 | 0 | 21.88 | 23.16 | < 23.98 | | |
| | | 12 | 6 | 22.12 | 23.40 | < 23.98 | | |
| | | 1 | 1 | 20.89 | 22.17 | < 23.98 | | |
| _ | | 1 | 23 | 21.89 | 23.17 | < 23.98 | | |
| 5 | 2310.0 | 25 | 0 | 21.02 | 22.30 | < 23.98 | | |
| | | 1 | 24 | 21.49 | 22.77 | < 23.98 | | |
| | | 1 | 0 | 20.90 | 22.18 | < 23.98 | | |
| | | 12 | 6 | 22.09 | 23.37 | < 23.98 | | |
| | | 1 | 1 | 21.37 | 22.65 | < 23.98 | | |
| | | 1 | 23 | 21.40 | 22.68 | < 23.98 | | |
| | 2312.5 | 25 | 0 | 21.05 | 22.33 | < 23.98 | | |
| | | 1 | 24 | 20.81 | 22.09 | < 23.98 | | |
| | | 1 | 0 | 21.24 | 22.52 | < 23.98 | | |
| | | 25 | 12 | 22.07 | 23.35 | < 23.98 | | |
| | | 1 | 1 | 21.58 | 22.86 | < 23.98 | | |
| | | 1 | 50 | 21.63 | 22.91 | < 23.98 | | |
| 10 | 2310.0 | 50 | 0 | 18.83 | 20.11 | < 23.98 | | |
| | | 1 | 51 | 20.32 | 21.60 | < 23.98 | | |
| | | 1 | 0 | 20.34 | 21.62 | < 23.98 | | |
| Note: The EIR | P (dBm/5MHz) | = Output Power | (dBm/5MHz) + A | Antenna Gain (dł | Bi) | | | |



| Channel | Frequency | RB | RB | Power | EIRP Density | Limit | | |
|------------------|----------------|----------------|---------------|-----------------|--------------|---------|--|--|
| Bandwidth | (MHz) | Size | Offset | Density | (dBm/5MHz) | (dBm | | |
| (MHz) | | | | (dBm/5MHz) | | /5MHz) | | |
| DFT-s-OFDM 64QAM | | | | | | | | |
| | | 12 | 6 | 20.68 | 21.96 | < 23.98 | | |
| | | 1 | 1 | 19.14 | 20.42 | < 23.98 | | |
| | 0007 5 | 1 | 23 | 20.12 | 21.40 | < 23.98 | | |
| | 2307.5 | 25 | 0 | 20.56 | 21.84 | < 23.98 | | |
| | | 1 | 24 | 19.66 | 20.94 | < 23.98 | | |
| | | 1 | 0 | 19.52 | 20.80 | < 23.98 | | |
| | | 12 | 6 | 20.45 | 21.73 | < 23.98 | | |
| | | 1 | 1 | 19.33 | 20.61 | < 23.98 | | |
| _ | 0040.0 | 1 | 23 | 19.38 | 20.66 | < 23.98 | | |
| 5 | 2310.0 | 25 | 0 | 20.63 | 21.91 | < 23.98 | | |
| | | 1 | 24 | 19.25 | 20.53 | < 23.98 | | |
| | | 1 | 0 | 19.34 | 20.62 | < 23.98 | | |
| | | 12 | 6 | 20.48 | 21.76 | < 23.98 | | |
| | | 1 | 1 | 20.28 | 21.56 | < 23.98 | | |
| | | 1 | 23 | 19.36 | 20.64 | < 23.98 | | |
| | 2312.5 | 25 | 0 | 20.62 | 21.90 | < 23.98 | | |
| | | 1 | 24 | 19.17 | 20.45 | < 23.98 | | |
| | | 1 | 0 | 20.32 | 21.60 | < 23.98 | | |
| | | 25 | 12 | 20.74 | 22.02 | < 23.98 | | |
| | | 1 | 1 | 20.96 | 22.24 | < 23.98 | | |
| 40 | 0040.0 | 1 | 50 | 19.42 | 20.70 | < 23.98 | | |
| 10 | 2310.0 | 50 | 0 | 17.96 | 19.24 | < 23.98 | | |
| | | 1 | 51 | 20.28 | 21.56 | < 23.98 | | |
| | | 1 | 0 | 20.09 | 21.37 | < 23.98 | | |
| Note: The EIR | P (dBm/5MHz) = | Output Power (| dBm/5MHz) + A | ntenna Gain (dB | i) | | | |



| Channel | Frequency | RB | RB | Power | EIRP Density | Limit | | | |
|-------------------|----------------|----------------|---------------|------------------|--------------|---------|--|--|--|
| Bandwidth | (MHz) | Size | Offset | Density | (dBm/5MHz) | (dBm | | | |
| (MHz) | | | | (dBm/5MHz) | | /5MHz) | | | |
| DFT-s-OFDM 256QAM | | | | | | | | | |
| | | 12 | 6 | 18.44 | 19.72 | < 23.98 | | | |
| | | 1 | 1 | 17.90 | 19.18 | < 23.98 | | | |
| | | 1 | 23 | 18.06 | 19.34 | < 23.98 | | | |
| | 2307.5 | 25 | 0 | 18.22 | 19.50 | < 23.98 | | | |
| | | 1 | 24 | 18.30 | 19.58 | < 23.98 | | | |
| | | 1 | 0 | 17.64 | 18.92 | < 23.98 | | | |
| | | 12 | 6 | 18.40 | 19.68 | < 23.98 | | | |
| | | 1 | 1 | 17.51 | 18.79 | < 23.98 | | | |
| _ | | 1 | 23 | 18.75 | 20.03 | < 23.98 | | | |
| 5 | 2310.0 | 25 | 0 | 18.47 | 19.75 | < 23.98 | | | |
| | | 1 | 24 | 17.75 | 19.03 | < 23.98 | | | |
| | | 1 | 0 | 17.76 | 19.04 | < 23.98 | | | |
| | | 12 | 6 | 18.44 | 19.72 | < 23.98 | | | |
| | | 1 | 1 | 17.86 | 19.14 | < 23.98 | | | |
| | | 1 | 23 | 17.46 | 18.74 | < 23.98 | | | |
| | 2312.5 | 25 | 0 | 18.52 | 19.80 | < 23.98 | | | |
| | | 1 | 24 | 17.82 | 19.10 | < 23.98 | | | |
| | | 1 | 0 | 17.98 | 19.26 | < 23.98 | | | |
| | | 25 | 12 | 18.32 | 19.60 | < 23.98 | | | |
| | | 1 | 1 | 17.38 | 18.66 | < 23.98 | | | |
| | | 1 | 50 | 17.48 | 18.76 | < 23.98 | | | |
| 10 | 2310.0 | 50 | 0 | 15.57 | 16.85 | < 23.98 | | | |
| | | 1 | 51 | 16.56 | 17.84 | < 23.98 | | | |
| | | 1 | 0 | 16.57 | 17.85 | < 23.98 | | | |
| Note: The EIR | P (dBm/5MHz) = | Output Power (| dBm/5MHz) + A | Antenna Gain (dB | i) | | | | |



| Channel | Frequency | RB | RB | Power | EIRP Density | Limit | | |
|---------------|----------------|------------------|---------------|-----------------|--------------|-------------|--|--|
| Bandwidth | (MHz) | Size | Offset | Density | (dBm/5MHz) | (dBm /5MHz) | | |
| (MHz) | | | | (dBm/5MHz) | | | | |
| CP-OFDM QPSK | | | | | | | | |
| | | 13 | 6 | 21.43 | 22.71 | < 23.98 | | |
| | | 1 | 1 | 21.51 | 22.79 | < 23.98 | | |
| | | 1 | 23 | 21.43 | 22.71 | < 23.98 | | |
| | 2307.5 | 25 | 0 | 22.02 | 23.30 | < 23.98 | | |
| | | 1 | 24 | 19.77 | 21.05 | < 23.98 | | |
| | | 1 | 0 | 19.93 | 21.21 | < 23.98 | | |
| | | 13 | 6 | 21.22 | 22.50 | < 23.98 | | |
| | | 1 | 1 | 19.66 | 20.94 | < 23.98 | | |
| | | 1 | 23 | 20.73 | 22.01 | < 23.98 | | |
| 5 | 2310.0 | 25 | 0 | 20.04 | 21.32 | < 23.98 | | |
| | | 1 | 24 | 19.93 | 21.21 | < 23.98 | | |
| | | 1 | 0 | 20.16 | 21.44 | < 23.98 | | |
| | | 13 | 6 | 21.47 | 22.75 | < 23.98 | | |
| | | 1 | 1 | 21.22 | 22.50 | < 23.98 | | |
| | | 1 | 23 | 21.25 | 22.53 | < 23.98 | | |
| | 2312.5 | 25 | 0 | 19.94 | 21.22 | < 23.98 | | |
| | | 1 | 24 | 19.64 | 20.92 | < 23.98 | | |
| | | 1 | 0 | 20.05 | 21.33 | < 23.98 | | |
| | | 26 | 13 | 21.57 | 22.85 | < 23.98 | | |
| | | 1 | 1 | 21.35 | 22.63 | < 23.98 | | |
| | | 1 | 50 | 21.71 | 22.99 | < 23.98 | | |
| 10 | 2310.0 | 52 | 0 | 17.19 | 18.47 | < 23.98 | | |
| | | 1 | 51 | 20.07 | 21.35 | < 23.98 | | |
| | | 1 | 0 | 20.35 | 21.63 | < 23.98 | | |
| Note: The EIR | P (dBm/5MHz) = | = Output Power (| dBm/5MHz) + A | ntenna Gain (dB | ii) | | | |



| Channel | Frequency | RB | RB | Power | EIRP Density | Limit | | |
|---------------|----------------|------------------|---------------|-----------------|--------------|-------------|--|--|
| Bandwidth | (MHz) | Size | Offset | Density | (dBm/5MHz) | (dBm /5MHz) | | |
| (MHz) | | | | (dBm/5MHz) | | | | |
| CP-OFDM 16QAM | | | | | | | | |
| | | 13 | 6 | 21.01 | 22.29 | < 23.98 | | |
| | | 1 | 1 | 20.74 | 22.02 | < 23.98 | | |
| | | 1 | 23 | 21.23 | 22.51 | < 23.98 | | |
| | 2307.5 | 25 | 0 | 21.47 | 22.75 | < 23.98 | | |
| | | 1 | 24 | 19.90 | 21.18 | < 23.98 | | |
| | | 1 | 0 | 21.42 | 22.70 | < 23.98 | | |
| | | 13 | 6 | 21.16 | 22.44 | < 23.98 | | |
| | | 1 | 1 | 19.48 | 20.76 | < 23.98 | | |
| _ | | 1 | 23 | 21.22 | 22.50 | < 23.98 | | |
| 5 | 2310.0 | 25 | 0 | 19.94 | 21.22 | < 23.98 | | |
| | | 1 | 24 | 19.15 | 20.43 | < 23.98 | | |
| | | 1 | 0 | 19.57 | 20.85 | < 23.98 | | |
| | | 13 | 6 | 21.20 | 22.48 | < 23.98 | | |
| | | 1 | 1 | 20.30 | 21.58 | < 23.98 | | |
| | | 1 | 23 | 20.94 | 22.22 | < 23.98 | | |
| | 2312.5 | 25 | 0 | 20.14 | 21.42 | < 23.98 | | |
| | | 1 | 24 | 20.08 | 21.36 | < 23.98 | | |
| | | 1 | 0 | 19.83 | 21.11 | < 23.98 | | |
| | | 26 | 13 | 20.93 | 22.21 | < 23.98 | | |
| | | 1 | 1 | 20.67 | 21.95 | < 23.98 | | |
| | | 1 | 50 | 21.08 | 22.36 | < 23.98 | | |
| 10 | 2310.0 | 52 | 0 | 17.02 | 18.30 | < 23.98 | | |
| | | 1 | 51 | 20.30 | 21.58 | < 23.98 | | |
| | | 1 | 0 | 19.56 | 20.84 | < 23.98 | | |
| Note: The EIR | P (dBm/5MHz) = | = Output Power (| dBm/5MHz) + A | ntenna Gain (dB | i) | | | |



| Channel | Frequency | RB | RB | Power | EIRP Density | Limit | | |
|---------------|----------------|------------------|----------------|-----------------|--------------|-------------|--|--|
| Bandwidth | (MHz) | Size | Offset | Density | (dBm/5MHz) | (dBm /5MHz) | | |
| (MHz) | | | | (dBm/5MHz) | | | | |
| CP-OFDM 64QAM | | | | | | | | |
| | | 13 | 6 | 19.68 | 20.96 | < 23.98 | | |
| | | 1 | 1 | 19.85 | 21.13 | < 23.98 | | |
| | | 1 | 23 | 18.81 | 20.09 | < 23.98 | | |
| | 2307.5 | 25 | 0 | 20.48 | 21.76 | < 23.98 | | |
| | | 1 | 24 | 20.22 | 21.50 | < 23.98 | | |
| | | 1 | 0 | 18.31 | 19.59 | < 23.98 | | |
| | | 13 | 6 | 19.49 | 20.77 | < 23.98 | | |
| | | 1 | 1 | 20.58 | 21.86 | < 23.98 | | |
| _ | | 1 | 23 | 20.45 | 21.73 | < 23.98 | | |
| 5 | 2310.0 | 25 | 0 | 18.68 | 19.96 | < 23.98 | | |
| | | 1 | 24 | 19.84 | 21.12 | < 23.98 | | |
| | | 1 | 0 | 19.32 | 20.60 | < 23.98 | | |
| | | 13 | 6 | 19.40 | 20.68 | < 23.98 | | |
| | | 1 | 1 | 19.31 | 20.59 | < 23.98 | | |
| | | 1 | 23 | 18.79 | 20.07 | < 23.98 | | |
| | 2312.5 | 25 | 0 | 19.75 | 21.03 | < 23.98 | | |
| | | 1 | 24 | 19.26 | 20.54 | < 23.98 | | |
| | | 1 | 0 | 19.32 | 20.60 | < 23.98 | | |
| | | 26 | 13 | 19.70 | 20.98 | < 23.98 | | |
| | | 1 | 1 | 20.17 | 21.45 | < 23.98 | | |
| | | 1 | 50 | 19.79 | 21.07 | < 23.98 | | |
| 10 | 2310.0 | 52 | 0 | 17.00 | 18.28 | < 23.98 | | |
| | | 1 | 51 | 19.87 | 21.15 | < 23.98 | | |
| | | 1 | 0 | 19.75 | 21.03 | < 23.98 | | |
| Note: The EIR | P (dBm/5MHz) = | = Output Power (| (dBm/5MHz) + A | ntenna Gain (dB | ii) | | | |



| Channel | Frequency | RB | RB | Power | EIRP Density | Limit | | |
|----------------|----------------|------------------|---------------|-----------------|--------------|-------------|--|--|
| Bandwidth | (MHz) | Size | Offset | Density | (dBm/5MHz) | (dBm /5MHz) | | |
| (MHz) | | | | (dBm/5MHz) | | | | |
| CP-OFDM 256QAM | | | | | | | | |
| | | 13 | 6 | 16.48 | 17.76 | < 23.98 | | |
| | | 1 | 1 | 17.10 | 18.38 | < 23.98 | | |
| | | 1 | 23 | 17.20 | 18.48 | < 23.98 | | |
| | 2307.5 | 25 | 0 | 18.44 | 19.72 | < 23.98 | | |
| | | 1 | 24 | 16.39 | 17.67 | < 23.98 | | |
| | | 1 | 0 | 16.65 | 17.93 | < 23.98 | | |
| | | 13 | 6 | 16.26 | 17.54 | < 23.98 | | |
| | | 1 | 1 | 17.01 | 18.29 | < 23.98 | | |
| | | 1 | 23 | 17.35 | 18.63 | < 23.98 | | |
| 5 | 2310.0 | 25 | 0 | 16.20 | 17.48 | < 23.98 | | |
| | | 1 | 24 | 16.95 | 18.23 | < 23.98 | | |
| | | 1 | 0 | 17.12 | 18.40 | < 23.98 | | |
| | | 13 | 6 | 18.00 | 19.28 | < 23.98 | | |
| | | 1 | 1 | 16.97 | 18.25 | < 23.98 | | |
| | | 1 | 23 | 16.78 | 18.06 | < 23.98 | | |
| | 2312.5 | 25 | 0 | 16.22 | 17.50 | < 23.98 | | |
| | | 1 | 24 | 16.81 | 18.09 | < 23.98 | | |
| | | 1 | 0 | 16.92 | 18.20 | < 23.98 | | |
| | | 26 | 13 | 16.55 | 17.83 | < 23.98 | | |
| | | 1 | 1 | 17.59 | 18.87 | < 23.98 | | |
| | | 1 | 50 | 16.60 | 17.88 | < 23.98 | | |
| 10 | 2310.0 | 52 | 0 | 13.81 | 15.09 | < 23.98 | | |
| | | 1 | 51 | 18.00 | 19.28 | < 23.98 | | |
| | | 1 | 0 | 17.15 | 18.43 | < 23.98 | | |
| Note: The EIR | P (dBm/5MHz) = | = Output Power (| dBm/5MHz) + A | ntenna Gain (dB | ii) | | | |

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3.2 FREQUENCY STABILITY MEASUREMENT

3.2.1 LIMITS OF FREQUENCY STABILIITY MEASUREMENT

The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

3.2.2 TEST PROCEDURE

- a. Device is placed at the oven room. The oven room could control the temperatures and humidity. Power warm up is at least 15 min and power applied should perform before recording frequency error.
- b. EUT is connected the external power supply to control the DC input power. The test voltage range is from minimum to maximum working voltage. Each step shall be record the frequency error rate.
- c. The temperature range step is 10 degrees in this test items. All temperature levels shall be hold the $\pm 0.5^{\circ}$ C during the measurement testing. The each temperature step shall be at least 0.5 hours, consider the EUT could be test under the stability condition.
- **NOTE:** The frequency error was recorded frequency error from the communication simulator.

OVEN ROOM

ANTENNA

EXTERNAL POWER SOURCE

COMMUNICATION SIMULATOR

3.2.3 TEST SETUP

3.2.4 TEST RESULTS

DC POWER SUPPLY

Please Refer to module RM520N-NA report.

EUT



3.3 OCCUPIED BANDWIDTH MEASUREMENT

3.3.1 LIMITS OF OCCUPIED BANDWIDTH MEASUREMENT

The width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5 % of the total mean power of a given emission.

3.3.2 TEST SETUP



3.3.3 TEST PROCEDURES

- a. The conducted occupied bandwidth used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.
- b. Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth.

3.3.4 TEST RESULTS

Please Refer to module RM520N-NA report.

Tel: +86 (0557) 368 1008



3.4 BAND EDGE MEASUREMENT

3.4.1 LIMITS OF BAND EDGE MEASUREMENT

Power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P) dB$. In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.(n2/n5/n25/n66)

According to FCC 27.53(g) specified that For operations in the 600 MHz band and the 698-746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least 43 + 10 log (P) dB. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed. (n12/ n71)

According to FCC 27.53(m)(4) specified that For mobile digital stations, the attenuation factor shall be not less than 40 + 10 log (P) dB on all frequencies between the channel edge and 5 megahertz from the channel edge, $43 + 10 \log (P) dB$ on all frequencies between 5 megahertz and X megahertz from the channel edge, and 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less that $43 + 10 \log (P) dB$ on all frequencies between 2490.5 MHz and 2496 MHz and 55 + 10 log (P) dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees. For mobile digital stations, in the 1 megahertz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least two percent may be employed.(n7/n41)

According to FCC 27.53(I)(2) specified that For mobile operations in the 3700-3980 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed -13 dBm/MHz. Compliance with this paragraph (I)(2) is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater. However, in the 1 megahertz bands immediately outside and adjacent to the licensee's frequency block, the minimum resolution bandwidth for the measurement shall be either one percent of the emission bandwidth of the fundamental emission of the transmitter or 350 kHz. In the bands between 1 and 5 MHz removed from the licensee's frequency block, the minimum resolution bandwidth for the measurement shall be 500 kHz.(n77/n78)

According to FCC 27.53(n)(2) specified that For mobile operations in the 3450-3550 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed -13 dBm/MHz. Compliance with this paragraph (n)(2) is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater. However, in the 1 megahertz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of



the fundamental emission of the transmitter may be employed, but limited to a maximum of 200 kHz. In the bands between 1 and 5 MHz removed from the licensee's frequency block, the minimum resolution bandwidth for the measurement shall be 500 kHz. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

3.4.2 TEST SETUP





3.4.3 TEST PROCEDURES

- a) Connect the transmitter to the spectrum analyzer via coaxial cable while ensuring proper impedance matching.
- b) Tune the analyzer to the nominal center frequency of the emission bandwidth

(EBW).

- c) Set the resolution bandwidth (RBW) \ge 1% EBW in the 1MHz band immediately outside and adjacent to the band edge.
- d) Beyond the 1MHz band from the band edge, RBW=1MHz was used.
- e) Set the video bandwidth (VBW) to \ge 3 x RBW.
- f) Select the average power (RMS) display detector.
- g) Set the number of measurement points to \geq 1001.
- h) Use auto-coupled sweep time.
- i) Perform the measurement over an interval of time when the transmission is continuous and at its maximum power level.
- j) The RF fundamental frequency should be excluded against the limit line in the operating frequency band and use RBW is10KHz or 100KHz.
- k) Record the max trace plot into the test report.

3.4.4 TEST RESULTS

Please Refer to module RM520N-NA report.

Tel: +86 (0557) 368 1008



3.5 CONDUCTED SPURIOUS EMISSIONS

3.5.1 LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT

The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least 43 +10 log10(P) dB. The limit of emission is equal to -13dBm.

For 5G NR n41:

The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least 55 +10 log10(P) dB. The limit of emission is equal to -25dBm.

3.5.2 TEST PROCEDURE

- a. The EUT makes a phone call to the communication simulator. All measurements were done at low, middle and high operational frequency range.
- Measuring frequency range is from 9kHz up to a frequency including its 10th harmonic. 10dB attenuation pad is connected with spectrum. RBW=1MHz and VBW=3MHz is used for conducted emission measurement.

3.5.3 TEST SETUP



3.5.4 TEST RESULTS

Please Refer to module RM520N-NA report.



3.6 RADIATED EMISSION MEASUREMENT

3.6.1 LIMITS OF RADIATED EMISSION MEASUREMENT

The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least 43 +10 log10(P) dB. The limit of emission is equal to -13dBm.

For 5G NR n7/n41:

The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least 55 +10 log10(P) dB. The limit of emission is equal to -25dBm.

3.6.2 TEST PROCEDURES

- a. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.
- b. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a TX cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to "Read Value " of step a. Record the power level of S.G.
- c. EIRP = Output power level of S.G TX cable loss + Antenna gain of substitution horn.
- d. E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole, E.R.P power = E.I.P.R power 2.15dBi.

NOTE: The resolution bandwidth of spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz.

3.6.3 DEVIATION FROM TEST STANDARD

No deviation



3.6.4 TEST SETUP

< Frequency Range below 30MHz >



< Frequency Range 30MHz~1GHz >





<Frequency Range above 1GHz>



Note: Above 1G is a directional antenna depends on the EUT height and the antenna 3dB beamwidth both, refer to section 7.3 of CISPR 16-2-3.

For the actual test configuration, please refer to the attached file (Test Setup Photo).



3.6.5 TEST RESULTS

NOTE1: The 9K~30MHz amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required in the report.

NOTE2: The measurement range is 30M to the tenth harmonic of the highest fundamental frequency, For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report

SA N2

ANT2 Channel: 376000

Frequency: 1880MHz

Test result:

| Frequency (MHz) | Power (dBm) | Limited (dBm) | Polarization |
|--------------------|----------------|------------------|--------------|
| 1156.80 | -79.44 | -13.00 | Vertical |
| 1506.80 | -75.79 | -13.00 | Vertical |
| 2446.34 | -75.70 | -13.00 | Vertical |
| 3105.00 | -81.75 | -13.00 | Vertical |
| 3549.00 | -79.71 | -13.00 | Vertical |
| 4719.00 | -87.80 | -13.00 | Vertical |

SA N5

ANT0 Channel: 165300

Frequency: 826.5MHz

Test result:

| Frequency (MHz) | Power (dBm) | Limited (dBm) | Polarization |
|--------------------|----------------|------------------|--------------|
| 1151.20 | -79.46 | -13.00 | Vertical |
| 1512.40 | -76.00 | -13.00 | Vertical |
| 2446.01 | -73.27 | -13.00 | Vertical |
| 3054.00 | -82.73 | -13.00 | Vertical |
| 3561.00 | -80.06 | -13.00 | Vertical |
| 4665.00 | -87.98 | -13.00 | Vertical |

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SA N7

ANT1 Channel: 141500

Frequency: 707.5MHz

Test result:

| Frequency (MHz) | Power (dBm) | Limited (dBm) | Polarization |
|--------------------|----------------|------------------|--------------|
| 3054.00 | -82.73 | -13.00 | Vertical |
| 3561.00 | -80.06 | -13.00 | Vertical |
| 4665.00 | -87.98 | -13.00 | Vertical |
| 3123.00 | -82.05 | -13.00 | Vertical |
| 3585.00 | -80.12 | -13.00 | Vertical |
| 4683.00 | -87.81 | -13.00 | Vertical |

SA N12

ANT0 Channel: 141500

Frequency: 707.5MHz

| Frequency (MHz) | Power (dBm) | Limited (dBm) | Polarization |
|--------------------|----------------|------------------|--------------|
| 1144.20 | -79.85 | -13.00 | Vertical |
| 1457.80 | -76.46 | -13.00 | Vertical |
| 2414.36 | -75.26 | -13.00 | Vertical |
| 3078.00 | -82.00 | -13.00 | Vertical |
| 3558.00 | -79.74 | -13.00 | Vertical |
| 4695.00 | -87.36 | -13.00 | Vertical |



SA N13

ANT0 Channel: 156400

Frequency: 779.5MHz

Test result:

| Frequency (MHz) | Power (dBm) | Limited (dBm) | Polarization |
|--------------------|----------------|------------------|--------------|
| 1144.20 | -79.68 | -13.00 | Vertical |
| 1512.40 | -76.02 | -13.00 | Vertical |
| 2415.87 | -75.47 | -13.00 | Vertical |
| 3111.00 | -81.74 | -13.00 | Vertical |
| 3483.00 | -79.98 | -13.00 | Vertical |
| 4677.00 | -87.65 | -13.00 | Vertical |

SAN14

ANT0 Channel: 158600

Frequency: 793MHz

| Frequency (MHz) | Power (dBm) | Limited (dBm) | Polarization |
|--------------------|----------------|------------------|--------------|
| 1155.40 | -79.40 | -13.00 | Vertical |
| 1536.20 | -76.43 | -13.00 | Vertical |
| 2415.03 | -74.38 | -13.00 | Vertical |
| 3114.00 | -81.78 | -13.00 | Vertical |
| 3477.00 | -80.36 | -13.00 | Vertical |
| 4704.00 | -87.33 | -13.00 | Vertical |



SA N25

ANT2 Channel: 376500

Frequency: 1882.5MHz

Test result:

| Frequency (MHz) | Power (dBm) | Limited (dBm) | Polarization |
|--------------------|----------------|------------------|--------------|
| 1155.40 | -79.40 | -13.00 | Vertical |
| 1497.00 | -75.77 | -13.00 | Vertical |
| 2457.45 | -75.44 | -13.00 | Vertical |
| 3069.00 | -82.37 | -13.00 | Vertical |
| 3597.00 | -79.73 | -13.00 | Vertical |
| 4722.00 | -87.88 | -13.00 | Vertical |

SA N26

ANT0 Channel: 16380

Frequency: 819MHz

| Frequency (MHz) | Power (dBm) | Limited (dBm) | Polarization |
|--------------------|----------------|------------------|--------------|
| 1165.20 | -79.60 | -13.00 | Vertical |
| 1488.60 | -76.09 | -13.00 | Vertical |
| 2415.45 | -76.66 | -13.00 | Vertical |
| 3471.00 | -80.40 | -13.00 | Vertical |
| 4719.00 | -87.58 | -13.00 | Vertical |
| 5121.00 | -86.25 | -13.00 | Vertical |



SA N30

ANT2 Channel: 462000

Frequency: 2310MHz

Test result:

| Frequency (MHz) | Power (dBm) | Limited (dBm) | Polarization |
|--------------------|----------------|------------------|--------------|
| 1172.20 | -79.74 | -13.00 | Vertical |
| 1618.80 | -79.10 | -13.00 | Vertical |
| 2373.40 | -77.78 | -13.00 | Vertical |
| 3480.00 | -80.20 | -13.00 | Vertical |
| 4251.00 | -88.83 | -13.00 | Vertical |
| 4707.00 | -87.66 | -13.00 | Vertical |

SA N38

ANT2 Channel: 519000

Frequency: 2595MHz

| Frequency (MHz) | Power (dBm) | Limited (dBm) | Polarization |
|--------------------|----------------|------------------|--------------|
| 1092.40 | -82.20 | -25.00 | Vertical |
| 1602.00 | -79.07 | -25.00 | Vertical |
| 2452.86 | -75.10 | -25.00 | Vertical |
| 1092.40 | -82.20 | -25.00 | Vertical |
| 1602.00 | -79.07 | -25.00 | Vertical |
| 2452.86 | -75.10 | -25.00 | Vertical |



SA N41

ANT0 Channel: 518598

Frequency: 2592.99MHz

Test result:

| Frequency (MHz) | Power (dBm) | Limited (dBm) | Polarization |
|--------------------|----------------|------------------|--------------|
| 1331.80 | -78.95 | -25.00 | Vertical |
| 1515.20 | -76.00 | -25.00 | Vertical |
| 2479.99 | -77.07 | -25.00 | Vertical |
| 3117.00 | -81.89 | -25.00 | Vertical |
| 4005.00 | -89.68 | -25.00 | Vertical |
| 5265.00 | -85.64 | -25.00 | Vertical |

SA N66

ANT2 Channel: 349000

Frequency: 1745MHz

| Frequency (MHz) | Power (dBm) | Limited (dBm) | Polarization |
|--------------------|----------------|------------------|--------------|
| 1168.00 | -79.75 | -13.00 | Vertical |
| 1494.20 | -75.90 | -13.00 | Vertical |
| 2401.59 | -74.33 | -13.00 | Vertical |
| 3117.00 | -81.84 | -13.00 | Vertical |
| 4455.00 | -88.86 | -13.00 | Vertical |
| 4707.00 | -87.32 | -13.00 | Vertical |



SA N71

ANT0 Channel: 136100

Frequency: 680.5MHz

Test result:

| Frequency (MHz) | Power (dBm) | Limited (dBm) | Polarization |
|--------------------|----------------|------------------|--------------|
| 1130.20 | -80.55 | -13.00 | Vertical |
| 1543.20 | -76.60 | -13.00 | Vertical |
| 2437.99 | -76.18 | -13.00 | Vertical |
| 3132.00 | -82.11 | -13.00 | Vertical |
| 3975.00 | -89.60 | -13.00 | Vertical |
| 4617.00 | -87.74 | -13.00 | Vertical |

SA N77

ANT0 Channel: 650000

Frequency: 3750MHz

| Frequency (MHz) | Power (dBm) | Limited (dBm) | Polarization |
|--------------------|----------------|------------------|--------------|
| 1138.60 | -80.07 | -30.00 | Vertical |
| 1401.80 | -78.03 | -30.00 | Vertical |
| 2153.60 | -79.14 | -30.00 | Vertical |
| 3096.00 | -81.76 | -30.00 | Vertical |
| 4020.00 | -89.84 | -30.00 | Vertical |
| 4701.00 | -87.23 | -30.00 | Vertical |



SA N78

ANT0 Channel: 636666

Frequency: 3549.99MHz

| Frequency (MHz) | Power (dBm) | Limited (dBm) | Polarization |
|--------------------|----------------|------------------|--------------|
| 1169.40 | -79.54 | -30.00 | Vertical |
| 1558.60 | -77.09 | -30.00 | Vertical |
| 2355.20 | -77.93 | -30.00 | Vertical |
| 3078.00 | -81.93 | -30.00 | Vertical |
| 4422.00 | -88.91 | -30.00 | Vertical |
| 4695.00 | -87.31 | -30.00 | Vertical |



3.7 PEAK TO AVERAGE RATIO

3.7.1 LIMITS OF PEAK TO AVERAGE RATIO MEASUREMENT

In measuring transmissions in this band using an average power technique, the peak to-average ratio (PAR) of the transmission may not exceed 13 dB

3.7.2 TEST SETUP



3.7.3 TEST PROCEDURES

- 1. Set resolution/measurement bandwidth \geq signal's occupied bandwidth;
- 2. Set the number of counts to a value that stabilizes the measured CCDF curve;
- 3. Record the maximum PAPR level associated with a probability of 0.1%.

3.7.4 TEST RESULTS

Please Refer to module RM520N-NA report.



4 INFORMATION ON THE TESTING LABORATORIES

We, Huarui 7layers High Technology (Suzhou) Co., Ltd. ,were founded in 2020 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

Huarui 7Layers High Technology (Suzhou) Co., Ltd. Lab Address: Tower N, Innovation Center, 88 Zuyi Road, High-tech District, Suzhou City, Anhui Province, China Accredited Test Lab Cert 6613.01

If you have any comments, please feel free to contact us at the following:

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5 MODIFICATIONS RECORDERS FOR ENGINEERING

CHANGES TO THE EUT BY THE LAB

No any modifications are made to the EUT by the lab during the test.

6 APPENDIX

Please Refer to module RM520N-NA report.

--END---