



EX3DV4- SN:3898

June 27, 2017

| | | | | | | | | |
|-----------|---|---|------|-------|-------|------|-------|---------|
| 10460-AAA | UMTS-FDD (WCDMA, AMR) | X | 0.87 | 67.88 | 15.88 | 0.00 | 150.0 | ± 9.6 % |
| | | Y | 0.94 | 69.24 | 16.74 | | 150.0 | |
| | | Z | 0.87 | 67.84 | 15.86 | | 150.0 | |
| 10461-AAA | LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK, UL Subframe=2,3,4,7,8,9) | X | 1.73 | 71.22 | 15.78 | 3.29 | 80.0 | ± 9.6 % |
| | | Y | 2.48 | 76.95 | 18.34 | | 80.0 | |
| | | Z | 1.60 | 71.21 | 16.16 | | 80.0 | |
| 10462-AAA | LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9) | X | 0.76 | 60.00 | 7.08 | 3.23 | 80.0 | ± 9.6 % |
| | | Y | 0.72 | 60.00 | 7.19 | | 80.0 | |
| | | Z | 0.71 | 60.00 | 7.22 | | 80.0 | |
| 10463-AAA | LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) | X | 0.78 | 60.00 | 6.47 | 3.23 | 80.0 | ± 9.6 % |
| | | Y | 0.74 | 60.00 | 6.54 | | 80.0 | |
| | | Z | 0.73 | 60.00 | 6.57 | | 80.0 | |
| 10464-AAA | LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9) | X | 1.37 | 68.23 | 13.96 | 3.23 | 80.0 | ± 9.6 % |
| | | Y | 1.86 | 72.93 | 16.20 | | 80.0 | |
| | | Z | 1.28 | 68.36 | 14.37 | | 80.0 | |
| 10465-AAA | LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9) | X | 0.76 | 60.00 | 7.02 | 3.23 | 80.0 | ± 9.6 % |
| | | Y | 0.72 | 60.00 | 7.12 | | 80.0 | |
| | | Z | 0.71 | 60.00 | 7.16 | | 80.0 | |
| 10466-AAA | LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) | X | 0.78 | 60.00 | 6.44 | 3.23 | 80.0 | ± 9.6 % |
| | | Y | 0.74 | 60.00 | 6.50 | | 80.0 | |
| | | Z | 0.73 | 60.00 | 6.53 | | 80.0 | |
| 10467-AAB | LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9) | X | 1.41 | 68.72 | 14.20 | 3.23 | 80.0 | ± 9.6 % |
| | | Y | 1.97 | 73.73 | 16.55 | | 80.0 | |
| | | Z | 1.32 | 68.86 | 14.63 | | 80.0 | |
| 10468-AAB | LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9) | X | 0.76 | 60.00 | 7.04 | 3.23 | 80.0 | ± 9.6 % |
| | | Y | 0.72 | 60.00 | 7.14 | | 80.0 | |
| | | Z | 0.71 | 60.00 | 7.18 | | 80.0 | |
| 10469-AAB | LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) | X | 0.78 | 60.00 | 6.44 | 3.23 | 80.0 | ± 9.6 % |
| | | Y | 0.74 | 60.00 | 6.50 | | 80.0 | |
| | | Z | 0.73 | 60.00 | 6.54 | | 80.0 | |
| 10470-AAB | LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9) | X | 1.41 | 68.72 | 14.19 | 3.23 | 80.0 | ± 9.6 % |
| | | Y | 1.97 | 73.75 | 16.55 | | 80.0 | |
| | | Z | 1.32 | 68.86 | 14.63 | | 80.0 | |
| 10471-AAB | LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9) | X | 0.76 | 60.00 | 7.02 | 3.23 | 80.0 | ± 9.6 % |
| | | Y | 0.72 | 60.00 | 7.13 | | 80.0 | |
| | | Z | 0.71 | 60.00 | 7.17 | | 80.0 | |
| 10472-AAB | LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) | X | 0.78 | 60.00 | 6.42 | 3.23 | 80.0 | ± 9.6 % |
| | | Y | 0.74 | 60.00 | 6.48 | | 80.0 | |
| | | Z | 0.73 | 60.00 | 6.52 | | 80.0 | |
| 10473-AAB | LTE-TDD (SC-FDMA, 1 RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9) | X | 1.41 | 68.68 | 14.18 | 3.23 | 80.0 | ± 9.6 % |
| | | Y | 1.96 | 73.71 | 16.53 | | 80.0 | |
| | | Z | 1.31 | 68.82 | 14.61 | | 80.0 | |
| 10474-AAB | LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9) | X | 0.76 | 60.00 | 7.02 | 3.23 | 80.0 | ± 9.6 % |
| | | Y | 0.72 | 60.00 | 7.13 | | 80.0 | |
| | | Z | 0.71 | 60.00 | 7.17 | | 80.0 | |
| 10475-AAB | LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) | X | 0.78 | 60.00 | 6.42 | 3.23 | 80.0 | ± 9.6 % |
| | | Y | 0.74 | 60.00 | 6.48 | | 80.0 | |
| | | Z | 0.73 | 60.00 | 6.52 | | 80.0 | |

Certificate No: EX3-3898_Jun17

Page 27 of 38



EX3DV4- SN:3898

June 27, 2017

| | | | | | | | | |
|-----------|---|---|------|-------|-------|------|------|---------|
| 10477-AAB | LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9) | X | 0.76 | 60.00 | 7.00 | 3.23 | 80.0 | ± 9.6 % |
| | | Y | 0.72 | 60.00 | 7.10 | | 80.0 | |
| | | Z | 0.71 | 60.00 | 7.14 | | 80.0 | |
| 10478-AAB | LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) | X | 0.78 | 60.00 | 6.41 | 3.23 | 80.0 | ± 9.6 % |
| | | Y | 0.74 | 60.00 | 6.47 | | 80.0 | |
| | | Z | 0.73 | 60.00 | 6.51 | | 80.0 | |
| 10479-AAA | LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK, UL Subframe=2,3,4,7,8,9) | X | 3.51 | 75.91 | 18.12 | 3.23 | 80.0 | ± 9.6 % |
| | | Y | 4.65 | 80.42 | 20.02 | | 80.0 | |
| | | Z | 3.35 | 76.12 | 18.41 | | 80.0 | |
| 10480-AAA | LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9) | X | 2.06 | 66.11 | 12.01 | 3.23 | 80.0 | ± 9.6 % |
| | | Y | 2.44 | 68.39 | 13.17 | | 80.0 | |
| | | Z | 2.00 | 66.36 | 12.23 | | 80.0 | |
| 10481-AAA | LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) | X | 1.64 | 63.45 | 10.41 | 3.23 | 80.0 | ± 9.6 % |
| | | Y | 1.83 | 64.88 | 11.25 | | 80.0 | |
| | | Z | 1.57 | 63.52 | 10.52 | | 80.0 | |
| 10482-AAA | LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9) | X | 1.34 | 62.39 | 10.63 | 2.23 | 80.0 | ± 9.6 % |
| | | Y | 1.43 | 63.31 | 11.29 | | 80.0 | |
| | | Z | 1.27 | 62.21 | 10.58 | | 80.0 | |
| 10483-AAA | LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9) | X | 1.46 | 60.79 | 8.98 | 2.23 | 80.0 | ± 9.6 % |
| | | Y | 1.54 | 61.54 | 9.56 | | 80.0 | |
| | | Z | 1.36 | 60.41 | 8.74 | | 80.0 | |
| 10484-AAA | LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) | X | 1.45 | 60.53 | 8.83 | 2.23 | 80.0 | ± 9.6 % |
| | | Y | 1.53 | 61.21 | 9.38 | | 80.0 | |
| | | Z | 1.36 | 60.16 | 8.59 | | 80.0 | |
| 10485-AAB | LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9) | X | 1.93 | 66.25 | 13.91 | 2.23 | 80.0 | ± 9.6 % |
| | | Y | 2.08 | 67.57 | 14.73 | | 80.0 | |
| | | Z | 1.84 | 66.09 | 13.95 | | 80.0 | |
| 10486-AAB | LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9) | X | 1.94 | 63.48 | 11.80 | 2.23 | 80.0 | ± 9.6 % |
| | | Y | 2.04 | 64.22 | 12.34 | | 80.0 | |
| | | Z | 1.86 | 63.28 | 11.73 | | 80.0 | |
| 10487-AAB | LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) | X | 1.96 | 63.26 | 11.66 | 2.23 | 80.0 | ± 9.6 % |
| | | Y | 2.04 | 63.94 | 12.17 | | 80.0 | |
| | | Z | 1.87 | 63.04 | 11.57 | | 80.0 | |
| 10488-AAB | LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9) | X | 2.53 | 67.95 | 16.02 | 2.23 | 80.0 | ± 9.6 % |
| | | Y | 2.66 | 68.95 | 16.66 | | 80.0 | |
| | | Z | 2.42 | 67.64 | 16.03 | | 80.0 | |
| 10489-AAB | LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9) | X | 2.77 | 66.35 | 15.13 | 2.23 | 80.0 | ± 9.6 % |
| | | Y | 2.84 | 66.94 | 15.57 | | 80.0 | |
| | | Z | 2.67 | 66.13 | 15.12 | | 80.0 | |
| 10490-AAB | LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) | X | 2.85 | 66.30 | 15.10 | 2.23 | 80.0 | ± 9.6 % |
| | | Y | 2.92 | 66.85 | 15.53 | | 80.0 | |
| | | Z | 2.75 | 66.08 | 15.09 | | 80.0 | |
| 10491-AAB | LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9) | X | 2.93 | 67.67 | 16.24 | 2.23 | 80.0 | ± 9.6 % |
| | | Y | 3.03 | 68.38 | 16.73 | | 80.0 | |
| | | Z | 2.81 | 67.35 | 16.23 | | 80.0 | |
| 10492-AAB | LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9) | X | 3.21 | 66.36 | 15.71 | 2.23 | 80.0 | ± 9.6 % |
| | | Y | 3.26 | 66.76 | 16.05 | | 80.0 | |
| | | Z | 3.11 | 66.10 | 15.68 | | 80.0 | |

Certificate No: EX3-3898_Jun17

Page 28 of 38



EX3DV4- SN:3898

June 27, 2017

| | | | | | | | | |
|-----------|--|---|------|-------|-------|------|------|---------|
| 10493-AAB | LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) | X | 3.27 | 66.30 | 15.68 | 2.23 | 80.0 | ± 9.6 % |
| | | Y | 3.32 | 66.68 | 16.01 | | 80.0 | |
| | | Z | 3.17 | 66.04 | 15.65 | | 80.0 | |
| 10494-AAB | LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9) | X | 3.07 | 68.52 | 16.54 | 2.23 | 80.0 | ± 9.6 % |
| | | Y | 3.18 | 69.34 | 17.07 | | 80.0 | |
| | | Z | 2.94 | 68.19 | 16.54 | | 80.0 | |
| 10495-AAB | LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9) | X | 3.24 | 66.58 | 15.93 | 2.23 | 80.0 | ± 9.6 % |
| | | Y | 3.29 | 66.98 | 16.26 | | 80.0 | |
| | | Z | 3.13 | 66.30 | 15.90 | | 80.0 | |
| 10496-AAB | LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) | X | 3.33 | 66.50 | 15.93 | 2.23 | 80.0 | ± 9.6 % |
| | | Y | 3.38 | 66.87 | 16.25 | | 80.0 | |
| | | Z | 3.23 | 66.23 | 15.91 | | 80.0 | |
| 10497-AAA | LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK, UL Subframe=2,3,4,7,8,9) | X | 1.02 | 60.00 | 7.99 | 2.23 | 80.0 | ± 9.6 % |
| | | Y | 1.01 | 60.00 | 8.17 | | 80.0 | |
| | | Z | 0.98 | 60.00 | 7.95 | | 80.0 | |
| 10498-AAA | LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9) | X | 1.18 | 60.00 | 6.81 | 2.23 | 80.0 | ± 9.6 % |
| | | Y | 1.17 | 60.00 | 6.95 | | 80.0 | |
| | | Z | 1.14 | 60.00 | 6.72 | | 80.0 | |
| 10499-AAA | LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) | X | 1.20 | 60.00 | 6.66 | 2.23 | 80.0 | ± 9.6 % |
| | | Y | 1.19 | 60.00 | 6.79 | | 80.0 | |
| | | Z | 1.16 | 60.00 | 6.55 | | 80.0 | |
| 10500-AAA | LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9) | X | 2.18 | 67.02 | 14.79 | 2.23 | 80.0 | ± 9.6 % |
| | | Y | 2.32 | 68.22 | 15.55 | | 80.0 | |
| | | Z | 2.08 | 66.80 | 14.82 | | 80.0 | |
| 10501-AAA | LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9) | X | 2.31 | 64.90 | 13.20 | 2.23 | 80.0 | ± 9.6 % |
| | | Y | 2.41 | 65.65 | 13.74 | | 80.0 | |
| | | Z | 2.22 | 64.72 | 13.17 | | 80.0 | |
| 10502-AAA | LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) | X | 2.34 | 64.77 | 13.06 | 2.23 | 80.0 | ± 9.6 % |
| | | Y | 2.43 | 65.49 | 13.58 | | 80.0 | |
| | | Z | 2.25 | 64.59 | 13.02 | | 80.0 | |
| 10503-AAB | LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9) | X | 2.51 | 67.79 | 15.92 | 2.23 | 80.0 | ± 9.6 % |
| | | Y | 2.63 | 68.78 | 16.57 | | 80.0 | |
| | | Z | 2.39 | 67.48 | 15.93 | | 80.0 | |
| 10504-AAB | LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9) | X | 2.75 | 66.25 | 15.06 | 2.23 | 80.0 | ± 9.6 % |
| | | Y | 2.83 | 66.84 | 15.51 | | 80.0 | |
| | | Z | 2.66 | 66.03 | 15.05 | | 80.0 | |
| 10505-AAB | LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) | X | 2.83 | 66.21 | 15.04 | 2.23 | 80.0 | ± 9.6 % |
| | | Y | 2.91 | 66.76 | 15.47 | | 80.0 | |
| | | Z | 2.73 | 65.99 | 15.02 | | 80.0 | |
| 10506-AAB | LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9) | X | 3.05 | 68.40 | 16.47 | 2.23 | 80.0 | ± 9.6 % |
| | | Y | 3.16 | 69.22 | 17.00 | | 80.0 | |
| | | Z | 2.92 | 68.07 | 16.47 | | 80.0 | |
| 10507-AAB | LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9) | X | 3.22 | 66.51 | 15.89 | 2.23 | 80.0 | ± 9.6 % |
| | | Y | 3.27 | 66.92 | 16.22 | | 80.0 | |
| | | Z | 3.12 | 66.24 | 15.86 | | 80.0 | |



EX3DV4- SN:3898

June 27, 2017

| | | | | | | | | |
|-----------|---|---|------|-------|-------|------|-------|---------|
| 10508-AAB | LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) | X | 3.32 | 66.43 | 15.89 | 2.23 | 80.0 | ± 9.6 % |
| | | Y | 3.37 | 66.80 | 16.20 | | 80.0 | |
| | | Z | 3.21 | 66.16 | 15.86 | | 80.0 | |
| 10509-AAB | LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9) | X | 3.55 | 68.19 | 16.49 | 2.23 | 80.0 | ± 9.6 % |
| | | Y | 3.64 | 68.78 | 16.90 | | 80.0 | |
| | | Z | 3.42 | 67.89 | 16.49 | | 80.0 | |
| 10510-AAB | LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9) | X | 3.74 | 66.59 | 16.18 | 2.23 | 80.0 | ± 9.6 % |
| | | Y | 3.77 | 66.88 | 16.45 | | 80.0 | |
| | | Z | 3.63 | 66.30 | 16.15 | | 80.0 | |
| 10511-AAB | LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) | X | 3.82 | 66.51 | 16.18 | 2.23 | 80.0 | ± 9.6 % |
| | | Y | 3.85 | 66.78 | 16.44 | | 80.0 | |
| | | Z | 3.71 | 66.23 | 16.15 | | 80.0 | |
| 10512-AAB | LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9) | X | 3.53 | 68.87 | 16.64 | 2.23 | 80.0 | ± 9.6 % |
| | | Y | 3.65 | 69.60 | 17.11 | | 80.0 | |
| | | Z | 3.39 | 68.55 | 16.65 | | 80.0 | |
| 10513-AAB | LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9) | X | 3.62 | 66.62 | 16.20 | 2.23 | 80.0 | ± 9.6 % |
| | | Y | 3.66 | 66.94 | 16.48 | | 80.0 | |
| | | Z | 3.51 | 66.32 | 16.17 | | 80.0 | |
| 10514-AAB | LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) | X | 3.68 | 66.43 | 16.16 | 2.23 | 80.0 | ± 9.6 % |
| | | Y | 3.72 | 66.71 | 16.42 | | 80.0 | |
| | | Z | 3.58 | 66.13 | 16.13 | | 80.0 | |
| 10515-AAA | IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 99pc duty cycle) | X | 0.99 | 63.31 | 14.64 | 0.00 | 150.0 | ± 9.6 % |
| | | Y | 1.01 | 63.68 | 14.99 | | 150.0 | |
| | | Z | 0.99 | 63.31 | 14.65 | | 150.0 | |
| 10516-AAA | IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 99pc duty cycle) | X | 0.57 | 68.71 | 16.68 | 0.00 | 150.0 | ± 9.6 % |
| | | Y | 0.65 | 71.13 | 18.13 | | 150.0 | |
| | | Z | 0.57 | 68.55 | 16.63 | | 150.0 | |
| 10517-AAA | IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 99pc duty cycle) | X | 0.82 | 64.86 | 15.16 | 0.00 | 150.0 | ± 9.6 % |
| | | Y | 0.85 | 65.57 | 15.72 | | 150.0 | |
| | | Z | 0.83 | 64.83 | 15.16 | | 150.0 | |
| 10518-AAA | IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 99pc duty cycle) | X | 4.32 | 66.96 | 16.17 | 0.00 | 150.0 | ± 9.6 % |
| | | Y | 4.35 | 67.04 | 16.27 | | 150.0 | |
| | | Z | 4.31 | 66.97 | 16.19 | | 150.0 | |
| 10519-AAA | IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 99pc duty cycle) | X | 4.46 | 67.11 | 16.26 | 0.00 | 150.0 | ± 9.6 % |
| | | Y | 4.49 | 67.19 | 16.35 | | 150.0 | |
| | | Z | 4.45 | 67.12 | 16.27 | | 150.0 | |
| 10520-AAA | IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 99pc duty cycle) | X | 4.32 | 67.04 | 16.17 | 0.00 | 150.0 | ± 9.6 % |
| | | Y | 4.35 | 67.12 | 16.27 | | 150.0 | |
| | | Z | 4.31 | 67.04 | 16.19 | | 150.0 | |
| 10521-AAA | IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 99pc duty cycle) | X | 4.25 | 66.99 | 16.15 | 0.00 | 150.0 | ± 9.6 % |
| | | Y | 4.28 | 67.08 | 16.25 | | 150.0 | |
| | | Z | 4.24 | 66.99 | 16.16 | | 150.0 | |
| 10522-AAA | IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 99pc duty cycle) | X | 4.29 | 67.08 | 16.22 | 0.00 | 150.0 | ± 9.6 % |
| | | Y | 4.32 | 67.17 | 16.32 | | 150.0 | |
| | | Z | 4.27 | 67.07 | 16.22 | | 150.0 | |

Certificate No: EX3-3898_Jun17

Page 30 of 38



EX3DV4- SN:3898

June 27, 2017

| | | | | | | | | |
|-----------|--|---|------|-------|-------|------|-------|---------|
| 10523-AAA | IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 99pc duty cycle) | X | 4.24 | 67.16 | 16.19 | 0.00 | 150.0 | ± 9.6 % |
| | | Y | 4.27 | 67.25 | 16.30 | | 150.0 | |
| | | Z | 4.23 | 67.18 | 16.21 | | 150.0 | |
| 10524-AAA | IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 99pc duty cycle) | X | 4.25 | 67.08 | 16.24 | 0.00 | 150.0 | ± 9.6 % |
| | | Y | 4.28 | 67.17 | 16.34 | | 150.0 | |
| | | Z | 4.24 | 67.08 | 16.25 | | 150.0 | |
| 10525-AAA | IEEE 802.11ac WiFi (20MHz, MCS0, 99pc duty cycle) | X | 4.30 | 66.23 | 15.88 | 0.00 | 150.0 | ± 9.6 % |
| | | Y | 4.32 | 66.32 | 15.98 | | 150.0 | |
| | | Z | 4.29 | 66.24 | 15.90 | | 150.0 | |
| 10526-AAA | IEEE 802.11ac WiFi (20MHz, MCS1, 99pc duty cycle) | X | 4.40 | 66.47 | 15.98 | 0.00 | 150.0 | ± 9.6 % |
| | | Y | 4.43 | 66.56 | 16.08 | | 150.0 | |
| | | Z | 4.39 | 66.47 | 15.99 | | 150.0 | |
| 10527-AAA | IEEE 802.11ac WiFi (20MHz, MCS2, 99pc duty cycle) | X | 4.34 | 66.45 | 15.93 | 0.00 | 150.0 | ± 9.6 % |
| | | Y | 4.37 | 66.54 | 16.03 | | 150.0 | |
| | | Z | 4.33 | 66.45 | 15.94 | | 150.0 | |
| 10528-AAA | IEEE 802.11ac WiFi (20MHz, MCS3, 99pc duty cycle) | X | 4.35 | 66.46 | 15.96 | 0.00 | 150.0 | ± 9.6 % |
| | | Y | 4.38 | 66.56 | 16.06 | | 150.0 | |
| | | Z | 4.34 | 66.46 | 15.97 | | 150.0 | |
| 10529-AAA | IEEE 802.11ac WiFi (20MHz, MCS4, 99pc duty cycle) | X | 4.35 | 66.46 | 15.96 | 0.00 | 150.0 | ± 9.6 % |
| | | Y | 4.38 | 66.56 | 16.06 | | 150.0 | |
| | | Z | 4.34 | 66.46 | 15.97 | | 150.0 | |
| 10531-AAA | IEEE 802.11ac WiFi (20MHz, MCS6, 99pc duty cycle) | X | 4.31 | 66.46 | 15.92 | 0.00 | 150.0 | ± 9.6 % |
| | | Y | 4.34 | 66.56 | 16.03 | | 150.0 | |
| | | Z | 4.30 | 66.45 | 15.93 | | 150.0 | |
| 10532-AAA | IEEE 802.11ac WiFi (20MHz, MCS7, 99pc duty cycle) | X | 4.20 | 66.33 | 15.86 | 0.00 | 150.0 | ± 9.6 % |
| | | Y | 4.23 | 66.43 | 15.96 | | 150.0 | |
| | | Z | 4.19 | 66.33 | 15.87 | | 150.0 | |
| 10533-AAA | IEEE 802.11ac WiFi (20MHz, MCS8, 99pc duty cycle) | X | 4.35 | 66.55 | 15.96 | 0.00 | 150.0 | ± 9.6 % |
| | | Y | 4.39 | 66.64 | 16.06 | | 150.0 | |
| | | Z | 4.34 | 66.55 | 15.98 | | 150.0 | |
| 10534-AAA | IEEE 802.11ac WiFi (40MHz, MCS0, 99pc duty cycle) | X | 4.92 | 66.42 | 16.02 | 0.00 | 150.0 | ± 9.6 % |
| | | Y | 4.95 | 66.49 | 16.11 | | 150.0 | |
| | | Z | 4.91 | 66.42 | 16.04 | | 150.0 | |
| 10535-AAA | IEEE 802.11ac WiFi (40MHz, MCS1, 99pc duty cycle) | X | 4.95 | 66.52 | 16.07 | 0.00 | 150.0 | ± 9.6 % |
| | | Y | 4.98 | 66.59 | 16.16 | | 150.0 | |
| | | Z | 4.94 | 66.51 | 16.09 | | 150.0 | |
| 10536-AAA | IEEE 802.11ac WiFi (40MHz, MCS2, 99pc duty cycle) | X | 4.85 | 66.53 | 16.05 | 0.00 | 150.0 | ± 9.6 % |
| | | Y | 4.87 | 66.61 | 16.14 | | 150.0 | |
| | | Z | 4.84 | 66.52 | 16.07 | | 150.0 | |
| 10537-AAA | IEEE 802.11ac WiFi (40MHz, MCS3, 99pc duty cycle) | X | 4.92 | 66.56 | 16.07 | 0.00 | 150.0 | ± 9.6 % |
| | | Y | 4.95 | 66.63 | 16.16 | | 150.0 | |
| | | Z | 4.92 | 66.56 | 16.10 | | 150.0 | |
| 10538-AAA | IEEE 802.11ac WiFi (40MHz, MCS4, 99pc duty cycle) | X | 4.97 | 66.48 | 16.07 | 0.00 | 150.0 | ± 9.6 % |
| | | Y | 5.00 | 66.56 | 16.15 | | 150.0 | |
| | | Z | 4.96 | 66.47 | 16.09 | | 150.0 | |
| 10540-AAA | IEEE 802.11ac WiFi (40MHz, MCS6, 99pc duty cycle) | X | 4.90 | 66.44 | 16.07 | 0.00 | 150.0 | ± 9.6 % |
| | | Y | 4.93 | 66.52 | 16.16 | | 150.0 | |
| | | Z | 4.90 | 66.43 | 16.09 | | 150.0 | |

Certificate No: EX3-3898_Jun17

Page 31 of 38



EX3DV4- SN:3898

June 27, 2017

| | | | | | | | | |
|-----------|---|---|------|-------|-------|------|-------|---------|
| 10541-AAA | IEEE 802.11ac WiFi (40MHz, MCS7, 99pc duty cycle) | X | 4.90 | 66.40 | 16.03 | 0.00 | 150.0 | ± 9.6 % |
| | | Y | 4.92 | 66.46 | 16.11 | | 150.0 | |
| | | Z | 4.89 | 66.39 | 16.04 | | 150.0 | |
| 10542-AAA | IEEE 802.11ac WiFi (40MHz, MCS8, 99pc duty cycle) | X | 5.05 | 66.48 | 16.09 | 0.00 | 150.0 | ± 9.6 % |
| | | Y | 5.07 | 66.55 | 16.17 | | 150.0 | |
| | | Z | 5.04 | 66.48 | 16.10 | | 150.0 | |
| 10543-AAA | IEEE 802.11ac WiFi (40MHz, MCS9, 99pc duty cycle) | X | 5.12 | 66.59 | 16.17 | 0.00 | 150.0 | ± 9.6 % |
| | | Y | 5.15 | 66.65 | 16.25 | | 150.0 | |
| | | Z | 5.12 | 66.59 | 16.19 | | 150.0 | |
| 10544-AAA | IEEE 802.11ac WiFi (80MHz, MCS0, 99pc duty cycle) | X | 5.27 | 66.48 | 16.01 | 0.00 | 150.0 | ± 9.6 % |
| | | Y | 5.30 | 66.55 | 16.09 | | 150.0 | |
| | | Z | 5.27 | 66.47 | 16.03 | | 150.0 | |
| 10545-AAA | IEEE 802.11ac WiFi (80MHz, MCS1, 99pc duty cycle) | X | 5.43 | 66.89 | 16.18 | 0.00 | 150.0 | ± 9.6 % |
| | | Y | 5.46 | 66.97 | 16.26 | | 150.0 | |
| | | Z | 5.43 | 66.89 | 16.20 | | 150.0 | |
| 10546-AAA | IEEE 802.11ac WiFi (80MHz, MCS2, 99pc duty cycle) | X | 5.30 | 66.59 | 16.04 | 0.00 | 150.0 | ± 9.6 % |
| | | Y | 5.33 | 66.66 | 16.12 | | 150.0 | |
| | | Z | 5.30 | 66.57 | 16.05 | | 150.0 | |
| 10547-AAA | IEEE 802.11ac WiFi (80MHz, MCS3, 99pc duty cycle) | X | 5.39 | 66.74 | 16.11 | 0.00 | 150.0 | ± 9.6 % |
| | | Y | 5.41 | 66.81 | 16.19 | | 150.0 | |
| | | Z | 5.39 | 66.75 | 16.14 | | 150.0 | |
| 10548-AAA | IEEE 802.11ac WiFi (80MHz, MCS4, 99pc duty cycle) | X | 5.49 | 67.22 | 16.33 | 0.00 | 150.0 | ± 9.6 % |
| | | Y | 5.52 | 67.32 | 16.42 | | 150.0 | |
| | | Z | 5.48 | 67.21 | 16.34 | | 150.0 | |
| 10550-AAA | IEEE 802.11ac WiFi (80MHz, MCS6, 99pc duty cycle) | X | 5.37 | 66.82 | 16.16 | 0.00 | 150.0 | ± 9.6 % |
| | | Y | 5.39 | 66.89 | 16.25 | | 150.0 | |
| | | Z | 5.37 | 66.84 | 16.20 | | 150.0 | |
| 10551-AAA | IEEE 802.11ac WiFi (80MHz, MCS7, 99pc duty cycle) | X | 5.29 | 66.55 | 15.99 | 0.00 | 150.0 | ± 9.6 % |
| | | Y | 5.31 | 66.62 | 16.07 | | 150.0 | |
| | | Z | 5.28 | 66.52 | 16.01 | | 150.0 | |
| 10552-AAA | IEEE 802.11ac WiFi (80MHz, MCS8, 99pc duty cycle) | X | 5.28 | 66.62 | 16.03 | 0.00 | 150.0 | ± 9.6 % |
| | | Y | 5.31 | 66.69 | 16.11 | | 150.0 | |
| | | Z | 5.28 | 66.61 | 16.05 | | 150.0 | |
| 10553-AAA | IEEE 802.11ac WiFi (80MHz, MCS9, 99pc duty cycle) | X | 5.33 | 66.55 | 16.02 | 0.00 | 150.0 | ± 9.6 % |
| | | Y | 5.35 | 66.61 | 16.10 | | 150.0 | |
| | | Z | 5.32 | 66.53 | 16.04 | | 150.0 | |
| 10554-AAA | IEEE 1602.11ac WiFi (160MHz, MCS0, 99pc duty cycle) | X | 5.70 | 66.81 | 16.09 | 0.00 | 150.0 | ± 9.6 % |
| | | Y | 5.73 | 66.87 | 16.16 | | 150.0 | |
| | | Z | 5.70 | 66.79 | 16.10 | | 150.0 | |
| 10555-AAA | IEEE 1602.11ac WiFi (160MHz, MCS1, 99pc duty cycle) | X | 5.78 | 66.99 | 16.17 | 0.00 | 150.0 | ± 9.6 % |
| | | Y | 5.80 | 67.06 | 16.24 | | 150.0 | |
| | | Z | 5.78 | 66.97 | 16.18 | | 150.0 | |
| 10556-AAA | IEEE 1602.11ac WiFi (160MHz, MCS2, 99pc duty cycle) | X | 5.82 | 67.12 | 16.22 | 0.00 | 150.0 | ± 9.6 % |
| | | Y | 5.85 | 67.19 | 16.30 | | 150.0 | |
| | | Z | 5.83 | 67.12 | 16.24 | | 150.0 | |
| 10557-AAA | IEEE 1602.11ac WiFi (160MHz, MCS3, 99pc duty cycle) | X | 5.78 | 67.00 | 16.18 | 0.00 | 150.0 | ± 9.6 % |
| | | Y | 5.80 | 67.06 | 16.25 | | 150.0 | |
| | | Z | 5.78 | 66.98 | 16.19 | | 150.0 | |

Certificate No: EX3-3898_Jun17

Page 32 of 38



EX3DV4- SN:3898

June 27, 2017

| | | | | | | | | |
|-----------|---|---|------|-------|-------|------|-------|---------|
| 10558-AAA | IEEE 1602.11ac WiFi (160MHz, MCS4, 99pc duty cycle) | X | 5.77 | 67.00 | 16.19 | 0.00 | 150.0 | ± 9.6 % |
| | | Y | 5.80 | 67.07 | 16.27 | | 150.0 | |
| | | Z | 5.76 | 66.96 | 16.20 | | 150.0 | |
| 10560-AAA | IEEE 1602.11ac WiFi (160MHz, MCS6, 99pc duty cycle) | X | 5.80 | 66.97 | 16.21 | 0.00 | 150.0 | ± 9.6 % |
| | | Y | 5.83 | 67.03 | 16.29 | | 150.0 | |
| | | Z | 5.80 | 66.94 | 16.23 | | 150.0 | |
| 10561-AAA | IEEE 1602.11ac WiFi (160MHz, MCS7, 99pc duty cycle) | X | 5.73 | 66.94 | 16.23 | 0.00 | 150.0 | ± 9.6 % |
| | | Y | 5.76 | 67.01 | 16.31 | | 150.0 | |
| | | Z | 5.73 | 66.92 | 16.25 | | 150.0 | |
| 10562-AAA | IEEE 1602.11ac WiFi (160MHz, MCS8, 99pc duty cycle) | X | 5.77 | 67.07 | 16.30 | 0.00 | 150.0 | ± 9.6 % |
| | | Y | 5.80 | 67.15 | 16.38 | | 150.0 | |
| | | Z | 5.77 | 67.04 | 16.31 | | 150.0 | |
| 10563-AAA | IEEE 1602.11ac WiFi (160MHz, MCS9, 99pc duty cycle) | X | 5.88 | 67.08 | 16.27 | 0.00 | 150.0 | ± 9.6 % |
| | | Y | 5.91 | 67.16 | 16.35 | | 150.0 | |
| | | Z | 5.88 | 67.06 | 16.28 | | 150.0 | |
| 10564-AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 99pc duty cycle) | X | 4.62 | 66.91 | 16.26 | 0.46 | 150.0 | ± 9.6 % |
| | | Y | 4.65 | 67.00 | 16.37 | | 150.0 | |
| | | Z | 4.62 | 66.92 | 16.27 | | 150.0 | |
| 10565-AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 99pc duty cycle) | X | 4.82 | 67.35 | 16.60 | 0.46 | 150.0 | ± 9.6 % |
| | | Y | 4.84 | 67.41 | 16.69 | | 150.0 | |
| | | Z | 4.81 | 67.36 | 16.62 | | 150.0 | |
| 10566-AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 99pc duty cycle) | X | 4.65 | 67.13 | 16.38 | 0.46 | 150.0 | ± 9.6 % |
| | | Y | 4.68 | 67.22 | 16.48 | | 150.0 | |
| | | Z | 4.64 | 67.13 | 16.40 | | 150.0 | |
| 10567-AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 99pc duty cycle) | X | 4.70 | 67.59 | 16.80 | 0.46 | 150.0 | ± 9.6 % |
| | | Y | 4.72 | 67.63 | 16.88 | | 150.0 | |
| | | Z | 4.69 | 67.60 | 16.83 | | 150.0 | |
| 10568-AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 99pc duty cycle) | X | 4.52 | 66.74 | 16.04 | 0.46 | 150.0 | ± 9.6 % |
| | | Y | 4.56 | 66.86 | 16.17 | | 150.0 | |
| | | Z | 4.51 | 66.72 | 16.04 | | 150.0 | |
| 10569-AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 99pc duty cycle) | X | 4.69 | 67.86 | 16.96 | 0.46 | 150.0 | ± 9.6 % |
| | | Y | 4.72 | 67.90 | 17.03 | | 150.0 | |
| | | Z | 4.69 | 67.89 | 17.00 | | 150.0 | |
| 10570-AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 99pc duty cycle) | X | 4.68 | 67.60 | 16.83 | 0.46 | 150.0 | ± 9.6 % |
| | | Y | 4.71 | 67.65 | 16.91 | | 150.0 | |
| | | Z | 4.67 | 67.61 | 16.85 | | 150.0 | |
| 10571-AAA | IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 90pc duty cycle) | X | 1.14 | 63.82 | 14.89 | 0.46 | 130.0 | ± 9.6 % |
| | | Y | 1.15 | 64.13 | 15.24 | | 130.0 | |
| | | Z | 1.12 | 63.61 | 14.84 | | 130.0 | |
| 10572-AAA | IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 90pc duty cycle) | X | 1.14 | 64.32 | 15.21 | 0.46 | 130.0 | ± 9.6 % |
| | | Y | 1.16 | 64.65 | 15.58 | | 130.0 | |
| | | Z | 1.13 | 64.09 | 15.17 | | 130.0 | |
| 10573-AAA | IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc duty cycle) | X | 1.07 | 74.72 | 18.97 | 0.46 | 130.0 | ± 9.6 % |
| | | Y | 1.28 | 78.28 | 20.78 | | 130.0 | |
| | | Z | 0.96 | 73.37 | 18.65 | | 130.0 | |
| 10574-AAA | IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 90pc duty cycle) | X | 1.18 | 68.96 | 17.73 | 0.46 | 130.0 | ± 9.6 % |
| | | Y | 1.21 | 69.63 | 18.27 | | 130.0 | |
| | | Z | 1.15 | 68.56 | 17.65 | | 130.0 | |



EX3DV4- SN:3898

June 27, 2017

| | | | | | | | | |
|-----------|---|---|------|-------|-------|------|-------|---------|
| 10575-AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty cycle) | X | 4.39 | 66.58 | 16.17 | 0.46 | 130.0 | ± 9.6 % |
| | | Y | 4.42 | 66.67 | 16.29 | | 130.0 | |
| | | Z | 4.38 | 66.59 | 16.19 | | 130.0 | |
| 10576-AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty cycle) | X | 4.42 | 66.82 | 16.28 | 0.46 | 130.0 | ± 9.6 % |
| | | Y | 4.45 | 66.90 | 16.39 | | 130.0 | |
| | | Z | 4.41 | 66.83 | 16.31 | | 130.0 | |
| 10577-AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc duty cycle) | X | 4.57 | 67.04 | 16.43 | 0.46 | 130.0 | ± 9.6 % |
| | | Y | 4.60 | 67.12 | 16.53 | | 130.0 | |
| | | Z | 4.56 | 67.05 | 16.45 | | 130.0 | |
| 10578-AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty cycle) | X | 4.49 | 67.21 | 16.56 | 0.46 | 130.0 | ± 9.6 % |
| | | Y | 4.51 | 67.28 | 16.65 | | 130.0 | |
| | | Z | 4.48 | 67.22 | 16.59 | | 130.0 | |
| 10579-AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 90pc duty cycle) | X | 4.22 | 66.25 | 15.71 | 0.46 | 130.0 | ± 9.6 % |
| | | Y | 4.25 | 66.38 | 15.85 | | 130.0 | |
| | | Z | 4.21 | 66.24 | 15.71 | | 130.0 | |
| 10580-AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty cycle) | X | 4.24 | 66.27 | 15.70 | 0.46 | 130.0 | ± 9.6 % |
| | | Y | 4.28 | 66.41 | 15.85 | | 130.0 | |
| | | Z | 4.23 | 66.24 | 15.70 | | 130.0 | |
| 10581-AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc duty cycle) | X | 4.40 | 67.30 | 16.54 | 0.46 | 130.0 | ± 9.6 % |
| | | Y | 4.43 | 67.38 | 16.64 | | 130.0 | |
| | | Z | 4.39 | 67.32 | 16.57 | | 130.0 | |
| 10582-AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc duty cycle) | X | 4.14 | 65.99 | 15.46 | 0.46 | 130.0 | ± 9.6 % |
| | | Y | 4.18 | 66.13 | 15.62 | | 130.0 | |
| | | Z | 4.12 | 65.96 | 15.46 | | 130.0 | |
| 10583-AAA | IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 90pc duty cycle) | X | 4.39 | 66.58 | 16.17 | 0.46 | 130.0 | ± 9.6 % |
| | | Y | 4.42 | 66.67 | 16.29 | | 130.0 | |
| | | Z | 4.38 | 66.59 | 16.19 | | 130.0 | |
| 10584-AAA | IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 90pc duty cycle) | X | 4.42 | 66.82 | 16.28 | 0.46 | 130.0 | ± 9.6 % |
| | | Y | 4.45 | 66.90 | 16.39 | | 130.0 | |
| | | Z | 4.41 | 66.83 | 16.31 | | 130.0 | |
| 10585-AAA | IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 90pc duty cycle) | X | 4.57 | 67.04 | 16.43 | 0.46 | 130.0 | ± 9.6 % |
| | | Y | 4.60 | 67.12 | 16.53 | | 130.0 | |
| | | Z | 4.56 | 67.05 | 16.45 | | 130.0 | |
| 10586-AAA | IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 90pc duty cycle) | X | 4.49 | 67.21 | 16.56 | 0.46 | 130.0 | ± 9.6 % |
| | | Y | 4.51 | 67.28 | 16.65 | | 130.0 | |
| | | Z | 4.48 | 67.22 | 16.59 | | 130.0 | |
| 10587-AAA | IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 90pc duty cycle) | X | 4.22 | 66.25 | 15.71 | 0.46 | 130.0 | ± 9.6 % |
| | | Y | 4.25 | 66.38 | 15.85 | | 130.0 | |
| | | Z | 4.21 | 66.24 | 15.71 | | 130.0 | |
| 10588-AAA | IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 90pc duty cycle) | X | 4.24 | 66.27 | 15.70 | 0.46 | 130.0 | ± 9.6 % |
| | | Y | 4.28 | 66.41 | 15.85 | | 130.0 | |
| | | Z | 4.23 | 66.24 | 15.70 | | 130.0 | |
| 10589-AAA | IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 90pc duty cycle) | X | 4.40 | 67.30 | 16.54 | 0.46 | 130.0 | ± 9.6 % |
| | | Y | 4.43 | 67.38 | 16.64 | | 130.0 | |
| | | Z | 4.39 | 67.32 | 16.57 | | 130.0 | |
| 10590-AAA | IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 90pc duty cycle) | X | 4.14 | 65.99 | 15.46 | 0.46 | 130.0 | ± 9.6 % |
| | | Y | 4.18 | 66.13 | 15.62 | | 130.0 | |
| | | Z | 4.12 | 65.96 | 15.46 | | 130.0 | |

Certificate No: EX3-3898_Jun17

Page 34 of 38



EX3DV4- SN:3898

June 27, 2017

| | | | | | | | | |
|-----------|---|---|------|-------|-------|------|-------|---------|
| 10591-AAA | IEEE 802.11n (HT Mixed, 20MHz, MCS0, 90pc duty cycle) | X | 4.55 | 66.71 | 16.33 | 0.46 | 130.0 | ± 9.6 % |
| | | Y | 4.58 | 66.79 | 16.43 | | 130.0 | |
| | | Z | 4.54 | 66.72 | 16.35 | | 130.0 | |
| 10592-AAA | IEEE 802.11n (HT Mixed, 20MHz, MCS1, 90pc duty cycle) | X | 4.66 | 66.97 | 16.44 | 0.46 | 130.0 | ± 9.6 % |
| | | Y | 4.68 | 67.05 | 16.55 | | 130.0 | |
| | | Z | 4.65 | 66.98 | 16.47 | | 130.0 | |
| 10593-AAA | IEEE 802.11n (HT Mixed, 20MHz, MCS2, 90pc duty cycle) | X | 4.57 | 66.83 | 16.29 | 0.46 | 130.0 | ± 9.6 % |
| | | Y | 4.60 | 66.92 | 16.40 | | 130.0 | |
| | | Z | 4.56 | 66.84 | 16.31 | | 130.0 | |
| 10594-AAA | IEEE 802.11n (HT Mixed, 20MHz, MCS3, 90pc duty cycle) | X | 4.63 | 67.03 | 16.47 | 0.46 | 130.0 | ± 9.6 % |
| | | Y | 4.66 | 67.11 | 16.57 | | 130.0 | |
| | | Z | 4.62 | 67.04 | 16.49 | | 130.0 | |
| 10595-AAA | IEEE 802.11n (HT Mixed, 20MHz, MCS4, 90pc duty cycle) | X | 4.59 | 67.00 | 16.37 | 0.46 | 130.0 | ± 9.6 % |
| | | Y | 4.62 | 67.08 | 16.48 | | 130.0 | |
| | | Z | 4.58 | 67.00 | 16.39 | | 130.0 | |
| 10596-AAA | IEEE 802.11n (HT Mixed, 20MHz, MCS5, 90pc duty cycle) | X | 4.52 | 66.92 | 16.34 | 0.46 | 130.0 | ± 9.6 % |
| | | Y | 4.55 | 67.02 | 16.46 | | 130.0 | |
| | | Z | 4.51 | 66.92 | 16.36 | | 130.0 | |
| 10597-AAA | IEEE 802.11n (HT Mixed, 20MHz, MCS6, 90pc duty cycle) | X | 4.47 | 66.79 | 16.19 | 0.46 | 130.0 | ± 9.6 % |
| | | Y | 4.50 | 66.89 | 16.31 | | 130.0 | |
| | | Z | 4.46 | 66.78 | 16.20 | | 130.0 | |
| 10598-AAA | IEEE 802.11n (HT Mixed, 20MHz, MCS7, 90pc duty cycle) | X | 4.48 | 67.08 | 16.50 | 0.46 | 130.0 | ± 9.6 % |
| | | Y | 4.51 | 67.15 | 16.60 | | 130.0 | |
| | | Z | 4.47 | 67.09 | 16.52 | | 130.0 | |
| 10599-AAA | IEEE 802.11n (HT Mixed, 40MHz, MCS0, 90pc duty cycle) | X | 5.24 | 67.14 | 16.59 | 0.46 | 130.0 | ± 9.6 % |
| | | Y | 5.26 | 67.22 | 16.69 | | 130.0 | |
| | | Z | 5.24 | 67.17 | 16.63 | | 130.0 | |
| 10600-AAA | IEEE 802.11n (HT Mixed, 40MHz, MCS1, 90pc duty cycle) | X | 5.31 | 67.40 | 16.69 | 0.46 | 130.0 | ± 9.6 % |
| | | Y | 5.34 | 67.51 | 16.81 | | 130.0 | |
| | | Z | 5.31 | 67.43 | 16.73 | | 130.0 | |
| 10601-AAA | IEEE 802.11n (HT Mixed, 40MHz, MCS2, 90pc duty cycle) | X | 5.24 | 67.31 | 16.67 | 0.46 | 130.0 | ± 9.6 % |
| | | Y | 5.27 | 67.39 | 16.76 | | 130.0 | |
| | | Z | 5.25 | 67.36 | 16.72 | | 130.0 | |
| 10602-AAA | IEEE 802.11n (HT Mixed, 40MHz, MCS3, 90pc duty cycle) | X | 5.30 | 67.20 | 16.52 | 0.46 | 130.0 | ± 9.6 % |
| | | Y | 5.33 | 67.30 | 16.63 | | 130.0 | |
| | | Z | 5.29 | 67.21 | 16.55 | | 130.0 | |
| 10603-AAA | IEEE 802.11n (HT Mixed, 40MHz, MCS4, 90pc duty cycle) | X | 5.36 | 67.49 | 16.82 | 0.46 | 130.0 | ± 9.6 % |
| | | Y | 5.39 | 67.59 | 16.92 | | 130.0 | |
| | | Z | 5.35 | 67.49 | 16.85 | | 130.0 | |
| 10604-AAA | IEEE 802.11n (HT Mixed, 40MHz, MCS5, 90pc duty cycle) | X | 5.23 | 67.04 | 16.56 | 0.46 | 130.0 | ± 9.6 % |
| | | Y | 5.26 | 67.13 | 16.66 | | 130.0 | |
| | | Z | 5.22 | 67.02 | 16.58 | | 130.0 | |
| 10605-AAA | IEEE 802.11n (HT Mixed, 40MHz, MCS6, 90pc duty cycle) | X | 5.29 | 67.25 | 16.66 | 0.46 | 130.0 | ± 9.6 % |
| | | Y | 5.32 | 67.35 | 16.78 | | 130.0 | |
| | | Z | 5.29 | 67.26 | 16.69 | | 130.0 | |
| 10606-AAA | IEEE 802.11n (HT Mixed, 40MHz, MCS7, 90pc duty cycle) | X | 5.11 | 66.78 | 16.27 | 0.46 | 130.0 | ± 9.6 % |
| | | Y | 5.14 | 66.88 | 16.39 | | 130.0 | |
| | | Z | 5.11 | 66.80 | 16.31 | | 130.0 | |

Certificate No: EX3-3898_Jun17

Page 35 of 38



EX3DV4- SN:3898

June 27, 2017

| | | | | | | | | |
|-----------|---|---|------|-------|-------|------|-------|---------|
| 10607-AAA | IEEE 802.11ac WiFi (20MHz, MCS0, 90pc duty cycle) | X | 4.40 | 66.05 | 15.97 | 0.46 | 130.0 | ± 9.6 % |
| | | Y | 4.43 | 66.14 | 16.08 | | 130.0 | |
| | | Z | 4.39 | 66.06 | 16.00 | | 130.0 | |
| 10608-AAA | IEEE 802.11ac WiFi (20MHz, MCS1, 90pc duty cycle) | X | 4.52 | 66.33 | 16.10 | 0.46 | 130.0 | ± 9.6 % |
| | | Y | 4.55 | 66.43 | 16.21 | | 130.0 | |
| | | Z | 4.51 | 66.34 | 16.13 | | 130.0 | |
| 10609-AAA | IEEE 802.11ac WiFi (20MHz, MCS2, 90pc duty cycle) | X | 4.41 | 66.15 | 15.91 | 0.46 | 130.0 | ± 9.6 % |
| | | Y | 4.45 | 66.26 | 16.03 | | 130.0 | |
| | | Z | 4.40 | 66.16 | 15.93 | | 130.0 | |
| 10610-AAA | IEEE 802.11ac WiFi (20MHz, MCS3, 90pc duty cycle) | X | 4.47 | 66.34 | 16.10 | 0.46 | 130.0 | ± 9.6 % |
| | | Y | 4.50 | 66.44 | 16.21 | | 130.0 | |
| | | Z | 4.46 | 66.36 | 16.12 | | 130.0 | |
| 10611-AAA | IEEE 802.11ac WiFi (20MHz, MCS4, 90pc duty cycle) | X | 4.38 | 66.11 | 15.92 | 0.46 | 130.0 | ± 9.6 % |
| | | Y | 4.41 | 66.22 | 16.04 | | 130.0 | |
| | | Z | 4.37 | 66.12 | 15.94 | | 130.0 | |
| 10612-AAA | IEEE 802.11ac WiFi (20MHz, MCS5, 90pc duty cycle) | X | 4.35 | 66.19 | 15.93 | 0.46 | 130.0 | ± 9.6 % |
| | | Y | 4.39 | 66.31 | 16.06 | | 130.0 | |
| | | Z | 4.34 | 66.18 | 15.94 | | 130.0 | |
| 10613-AAA | IEEE 802.11ac WiFi (20MHz, MCS6, 90pc duty cycle) | X | 4.35 | 66.00 | 15.77 | 0.46 | 130.0 | ± 9.6 % |
| | | Y | 4.39 | 66.13 | 15.90 | | 130.0 | |
| | | Z | 4.34 | 66.00 | 15.79 | | 130.0 | |
| 10614-AAA | IEEE 802.11ac WiFi (20MHz, MCS7, 90pc duty cycle) | X | 4.34 | 66.30 | 16.07 | 0.46 | 130.0 | ± 9.6 % |
| | | Y | 4.37 | 66.40 | 16.18 | | 130.0 | |
| | | Z | 4.33 | 66.31 | 16.10 | | 130.0 | |
| 10615-AAA | IEEE 802.11ac WiFi (20MHz, MCS8, 90pc duty cycle) | X | 4.36 | 65.90 | 15.65 | 0.46 | 130.0 | ± 9.6 % |
| | | Y | 4.40 | 66.04 | 15.79 | | 130.0 | |
| | | Z | 4.35 | 65.90 | 15.67 | | 130.0 | |
| 10616-AAA | IEEE 802.11ac WiFi (40MHz, MCS0, 90pc duty cycle) | X | 5.03 | 66.30 | 16.16 | 0.46 | 130.0 | ± 9.6 % |
| | | Y | 5.06 | 66.38 | 16.26 | | 130.0 | |
| | | Z | 5.03 | 66.31 | 16.19 | | 130.0 | |
| 10617-AAA | IEEE 802.11ac WiFi (40MHz, MCS1, 90pc duty cycle) | X | 5.05 | 66.37 | 16.17 | 0.46 | 130.0 | ± 9.6 % |
| | | Y | 5.09 | 66.47 | 16.28 | | 130.0 | |
| | | Z | 5.05 | 66.38 | 16.20 | | 130.0 | |
| 10618-AAA | IEEE 802.11ac WiFi (40MHz, MCS2, 90pc duty cycle) | X | 4.97 | 66.45 | 16.23 | 0.46 | 130.0 | ± 9.6 % |
| | | Y | 5.00 | 66.54 | 16.33 | | 130.0 | |
| | | Z | 4.97 | 66.45 | 16.26 | | 130.0 | |
| 10619-AAA | IEEE 802.11ac WiFi (40MHz, MCS3, 90pc duty cycle) | X | 5.00 | 66.32 | 16.09 | 0.46 | 130.0 | ± 9.6 % |
| | | Y | 5.04 | 66.42 | 16.20 | | 130.0 | |
| | | Z | 5.01 | 66.34 | 16.13 | | 130.0 | |
| 10620-AAA | IEEE 802.11ac WiFi (40MHz, MCS4, 90pc duty cycle) | X | 5.06 | 66.27 | 16.11 | 0.46 | 130.0 | ± 9.6 % |
| | | Y | 5.09 | 66.36 | 16.22 | | 130.0 | |
| | | Z | 5.05 | 66.27 | 16.14 | | 130.0 | |
| 10621-AAA | IEEE 802.11ac WiFi (40MHz, MCS5, 90pc duty cycle) | X | 5.08 | 66.45 | 16.34 | 0.46 | 130.0 | ± 9.6 % |
| | | Y | 5.11 | 66.51 | 16.42 | | 130.0 | |
| | | Z | 5.08 | 66.46 | 16.37 | | 130.0 | |
| 10622-AAA | IEEE 802.11ac WiFi (40MHz, MCS6, 90pc duty cycle) | X | 5.07 | 66.51 | 16.37 | 0.46 | 130.0 | ± 9.6 % |
| | | Y | 5.09 | 66.59 | 16.45 | | 130.0 | |
| | | Z | 5.06 | 66.52 | 16.40 | | 130.0 | |

Certificate No: EX3-3898_Jun17

Page 36 of 38



EX3DV4- SN:3898

June 27, 2017

| | | | | | | | | |
|---------------|--|---|------|-------|-------|------|-------|---------|
| 10623- AAA | IEEE 802.11ac WiFi (40MHz, MCS7, 90pc duty cycle) | X | 4.96 | 66.07 | 15.99 | 0.46 | 130.0 | ± 9.6 % |
| | | Y | 4.99 | 66.16 | 16.09 | | 130.0 | |
| | | Z | 4.96 | 66.07 | 16.02 | | 130.0 | |
| 10624- AAA | IEEE 802.11ac WiFi (40MHz, MCS8, 90pc duty cycle) | X | 5.15 | 66.33 | 16.19 | 0.46 | 130.0 | ± 9.6 % |
| | | Y | 5.18 | 66.41 | 16.29 | | 130.0 | |
| | | Z | 5.15 | 66.34 | 16.22 | | 130.0 | |
| 10625- AAA | IEEE 802.11ac WiFi (40MHz, MCS9, 90pc duty cycle) | X | 5.25 | 66.51 | 16.35 | 0.46 | 130.0 | ± 9.6 % |
| | | Y | 5.27 | 66.57 | 16.43 | | 130.0 | |
| | | Z | 5.25 | 66.56 | 16.40 | | 130.0 | |
| 10626- AAA | IEEE 802.11ac WiFi (80MHz, MCS0, 90pc duty cycle) | X | 5.37 | 66.32 | 16.12 | 0.46 | 130.0 | ± 9.6 % |
| | | Y | 5.40 | 66.40 | 16.21 | | 130.0 | |
| | | Z | 5.37 | 66.32 | 16.15 | | 130.0 | |
| 10627- AAA | IEEE 802.11ac WiFi (80MHz, MCS1, 90pc duty cycle) | X | 5.58 | 66.89 | 16.38 | 0.46 | 130.0 | ± 9.6 % |
| | | Y | 5.61 | 66.98 | 16.48 | | 130.0 | |
| | | Z | 5.58 | 66.90 | 16.42 | | 130.0 | |
| 10628- AAA | IEEE 802.11ac WiFi (80MHz, MCS2, 90pc duty cycle) | X | 5.35 | 66.26 | 15.99 | 0.46 | 130.0 | ± 9.6 % |
| | | Y | 5.38 | 66.35 | 16.09 | | 130.0 | |
| | | Z | 5.35 | 66.25 | 16.01 | | 130.0 | |
| 10629- AAA | IEEE 802.11ac WiFi (80MHz, MCS3, 90pc duty cycle) | X | 5.47 | 66.50 | 16.11 | 0.46 | 130.0 | ± 9.6 % |
| | | Y | 5.50 | 66.59 | 16.21 | | 130.0 | |
| | | Z | 5.48 | 66.54 | 16.15 | | 130.0 | |
| 10630- AAA | IEEE 802.11ac WiFi (80MHz, MCS4, 90pc duty cycle) | X | 5.62 | 67.17 | 16.45 | 0.46 | 130.0 | ± 9.6 % |
| | | Y | 5.67 | 67.30 | 16.57 | | 130.0 | |
| | | Z | 5.62 | 67.15 | 16.47 | | 130.0 | |
| 10631- AAA | IEEE 802.11ac WiFi (80MHz, MCS5, 90pc duty cycle) | X | 5.65 | 67.38 | 16.76 | 0.46 | 130.0 | ± 9.6 % |
| | | Y | 5.68 | 67.44 | 16.84 | | 130.0 | |
| | | Z | 5.65 | 67.38 | 16.79 | | 130.0 | |
| 10632- AAA | IEEE 802.11ac WiFi (80MHz, MCS6, 90pc duty cycle) | X | 5.61 | 67.17 | 16.67 | 0.46 | 130.0 | ± 9.6 % |
| | | Y | 5.63 | 67.23 | 16.75 | | 130.0 | |
| | | Z | 5.62 | 67.22 | 16.73 | | 130.0 | |
| 10633- AAA | IEEE 802.11ac WiFi (80MHz, MCS7, 90pc duty cycle) | X | 5.38 | 66.36 | 16.08 | 0.46 | 130.0 | ± 9.6 % |
| | | Y | 5.41 | 66.43 | 16.17 | | 130.0 | |
| | | Z | 5.37 | 66.34 | 16.10 | | 130.0 | |
| 10634- AAA | IEEE 802.11ac WiFi (80MHz, MCS8, 90pc duty cycle) | X | 5.42 | 66.59 | 16.25 | 0.46 | 130.0 | ± 9.6 % |
| | | Y | 5.45 | 66.66 | 16.34 | | 130.0 | |
| | | Z | 5.42 | 66.59 | 16.28 | | 130.0 | |
| 10635- AAA | IEEE 802.11ac WiFi (80MHz, MCS9, 90pc duty cycle) | X | 5.25 | 65.74 | 15.52 | 0.46 | 130.0 | ± 9.6 % |
| | | Y | 5.29 | 65.85 | 15.64 | | 130.0 | |
| | | Z | 5.25 | 65.72 | 15.54 | | 130.0 | |
| 10636- AAA | IEEE 1602.11ac WiFi (160MHz, MCS0, 90pc duty cycle) | X | 5.81 | 66.67 | 16.21 | 0.46 | 130.0 | ± 9.6 % |
| | | Y | 5.84 | 66.74 | 16.30 | | 130.0 | |
| | | Z | 5.82 | 66.67 | 16.24 | | 130.0 | |
| 10637- AAA | IEEE 1602.11ac WiFi (160MHz, MCS1, 90pc duty cycle) | X | 5.91 | 66.92 | 16.32 | 0.46 | 130.0 | ± 9.6 % |
| | | Y | 5.94 | 67.00 | 16.42 | | 130.0 | |
| | | Z | 5.91 | 66.92 | 16.35 | | 130.0 | |
| 10638- AAA | IEEE 1602.11ac WiFi (160MHz, MCS2, 90pc duty cycle) | X | 5.95 | 67.05 | 16.36 | 0.46 | 130.0 | ± 9.6 % |
| | | Y | 5.98 | 67.13 | 16.46 | | 130.0 | |
| | | Z | 5.96 | 67.06 | 16.40 | | 130.0 | |

Certificate No: EX3-3898_Jun17

Page 37 of 38



EX3DV4- SN:3898

June 27, 2017

| | | | | | | | | |
|-----------|--|---|------|-------|-------|------|-------|---------|
| 10639-AAA | IEEE 1602.11ac WiFi (160MHz, MCS3, 90pc duty cycle) | X | 5.90 | 66.89 | 16.33 | 0.46 | 130.0 | ± 9.6 % |
| | | Y | 5.93 | 66.97 | 16.42 | | 130.0 | |
| | | Z | 5.90 | 66.89 | 16.36 | | 130.0 | |
| 10640-AAA | IEEE 1602.11ac WiFi (160MHz, MCS4, 90pc duty cycle) | X | 5.83 | 66.70 | 16.17 | 0.46 | 130.0 | ± 9.6 % |
| | | Y | 5.86 | 66.79 | 16.27 | | 130.0 | |
| | | Z | 5.83 | 66.67 | 16.19 | | 130.0 | |
| 10641-AAA | IEEE 1602.11ac WiFi (160MHz, MCS5, 90pc duty cycle) | X | 5.95 | 66.83 | 16.26 | 0.46 | 130.0 | ± 9.6 % |
| | | Y | 5.98 | 66.93 | 16.36 | | 130.0 | |
| | | Z | 5.95 | 66.84 | 16.29 | | 130.0 | |
| 10642-AAA | IEEE 1602.11ac WiFi (160MHz, MCS6, 90pc duty cycle) | X | 5.98 | 67.06 | 16.55 | 0.46 | 130.0 | ± 9.6 % |
| | | Y | 6.00 | 67.13 | 16.63 | | 130.0 | |
| | | Z | 5.98 | 67.06 | 16.58 | | 130.0 | |
| 10643-AAA | IEEE 1602.11ac WiFi (160MHz, MCS7, 90pc duty cycle) | X | 5.81 | 66.70 | 16.25 | 0.46 | 130.0 | ± 9.6 % |
| | | Y | 5.84 | 66.79 | 16.35 | | 130.0 | |
| | | Z | 5.81 | 66.69 | 16.27 | | 130.0 | |
| 10644-AAA | IEEE 1602.11ac WiFi (160MHz, MCS8, 90pc duty cycle) | X | 5.86 | 66.86 | 16.35 | 0.46 | 130.0 | ± 9.6 % |
| | | Y | 5.89 | 66.95 | 16.45 | | 130.0 | |
| | | Z | 5.86 | 66.84 | 16.37 | | 130.0 | |
| 10645-AAA | IEEE 1602.11ac WiFi (160MHz, MCS9, 90pc duty cycle) | X | 5.99 | 66.94 | 16.36 | 0.46 | 130.0 | ± 9.6 % |
| | | Y | 6.02 | 67.02 | 16.45 | | 130.0 | |
| | | Z | 6.00 | 66.95 | 16.39 | | 130.0 | |
| 10646-AAC | LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL Subframe=2,7) | X | 6.69 | 86.81 | 28.67 | 9.30 | 60.0 | ± 9.6 % |
| | | Y | 7.72 | 91.33 | 30.89 | | 60.0 | |
| | | Z | 5.52 | 83.14 | 27.53 | | 60.0 | |
| 10647-AAB | LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Subframe=2,7) | X | 5.99 | 84.97 | 28.10 | 9.30 | 60.0 | ± 9.6 % |
| | | Y | 6.77 | 88.96 | 30.17 | | 60.0 | |
| | | Z | 4.99 | 81.44 | 26.98 | | 60.0 | |
| 10648-AAA | CDMA2000 (1x Advanced) | X | 0.51 | 61.86 | 8.44 | 0.00 | 150.0 | ± 9.6 % |
| | | Y | 0.54 | 62.46 | 8.97 | | 150.0 | |
| | | Z | 0.50 | 61.70 | 8.25 | | 150.0 | |

^E Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.



ANNEX E: D750V3 Dipole Calibration Certificate



In Collaboration with
s p e a g
CALIBRATION LABORATORY

Add: No.51 Xueyuan Road, Haidian District, Beijing, 100191, China
Tel: +86-10-62304633-2079 Fax: +86-10-62304633-2504
E-mail: ctl@chinattl.com http://www.chinattl.cn



中国认可
国际互认
校准
CALIBRATION
CNAS L0570

Client

TA(Shanghai)

Certificate No: Z17-97113

CALIBRATION CERTIFICATE

Object D750V3 - SN: 1045

Calibration Procedure(s) FF-Z11-003-01
Calibration Procedures for dipole validation kits

Calibration date: August 27, 2017

This calibration Certificate documents the traceability to national standards, which realize the physical units of measurements(SI). The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature(22 ± 3)°C and humidity<70%.

Calibration Equipment used (M&TE critical for calibration)

| Primary Standards | ID # | Cal Date(Calibrated by, Certificate No.) | Scheduled Calibration |
|-------------------------|------------|--|-----------------------|
| Power Meter NRVD | 102083 | 22-Sep-16 (CTTL, No.J16X06809) | Sep-17 |
| Power sensor NRV-Z5 | 100595 | 22-Sep-16 (CTTL, No.J16X06809) | Sep-17 |
| Reference Probe EX3DV4 | SN 3617 | 23-Jan-17(SPEAG, No.EX3-3617_Jan17) | Jan-18 |
| DAE4 | SN 1331 | 19-Jan-17(CTTL-SPEAG, No.Z17-97015) | Jan-18 |
| Secondary Standards | ID # | Cal Date(Calibrated by, Certificate No.) | Scheduled Calibration |
| Signal Generator E4438C | MY49071430 | 13-Jan-17 (CTTL, No.J17X00286) | Jan-18 |
| Network Analyzer E5071C | MY46110673 | 13-Jan-17 (CTTL, No.J17X00285) | Jan-18 |

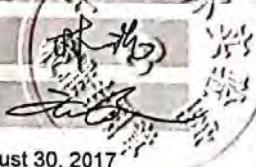
Calibrated by:

Name: Zhao Jing Function: SAR Test Engineer



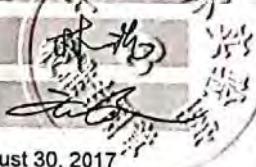
Reviewed by:

Lin Hao SAR Test Engineer



Approved by:

Qi Dianyuan SAR Project Leader



Issued: August 30, 2017

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.



In Collaboration with
s p e a g
CALIBRATION LABORATORY

Add: No.51 Xueyuan Road, Haidian District, Beijing, 100191, China
Tel: +86-10-62304633-2079 Fax: +86-10-62304633-2504
E-mail: ttl@chinattl.com http://www.chinattl.cn

Glossary:

| | |
|-------|--------------------------------|
| TSL | tissue simulating liquid |
| ConvF | sensitivity in TSL / NORMx,y,z |
| N/A | not applicable or not measured |

Calibration is Performed According to the Following Standards:

- a) IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
- b) IEC 62209-1, "Measurement procedure for assessment of specific absorption rate of human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices- Part 1: Device used next to the ear (Frequency range of 300MHz to 6GHz)", July 2016
- c) IEC 62209-2, "Procedure to measure the Specific Absorption Rate (SAR) For wireless communication devices used in close proximity to the human body (frequency range of 30MHz to 6GHz)", March 2010
- d) KDB865664, SAR Measurement Requirements for 100 MHz to 6 GHz

Additional Documentation:

- e) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

- *Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL:* The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- *Feed Point Impedance and Return Loss:* These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- *Electrical Delay:* One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- *SAR measured:* SAR measured at the stated antenna input power.
- *SAR normalized:* SAR as measured, normalized to an input power of 1 W at the antenna connector.
- *SAR for nominal TSL parameters:* The measured TSL parameters are used to calculate the nominal SAR result.

The reported uncertainty of measurement is stated as the standard uncertainty of Measurement multiplied by the coverage factor k=2, which for a normal distribution Corresponds to a coverage probability of approximately 95%.