

# Probe EX3DV4

## SN:3898

Manufactured: October 9, 2012  
Calibrated: June 26, 2018

Calibrated for DASY/EASY Systems  
(Note: non-compatible with DASY2 system!)

## DASY/EASY - Parameters of Probe: EX3DV4 - SN:3898

### Basic Calibration Parameters

|                                                           | Sensor X | Sensor Y | Sensor Z | Unc (k=2)     |
|-----------------------------------------------------------|----------|----------|----------|---------------|
| Norm ( $\mu\text{V}/(\text{V}/\text{m})^2$ ) <sup>A</sup> | 0.38     | 0.35     | 0.32     | $\pm 10.1 \%$ |
| DCP (mV) <sup>B</sup>                                     | 100.1    | 103.5    | 96.5     |               |

### Modulation Calibration Parameters

| UID | Communication System Name |   | A<br>dB | B<br>dB $\sqrt{\mu\text{V}}$ | C   | D<br>dB | VR<br>mV | Unc <sup>E</sup><br>(k=2) |
|-----|---------------------------|---|---------|------------------------------|-----|---------|----------|---------------------------|
| 0   | CW                        | X | 0.0     | 0.0                          | 1.0 | 0.00    | 157.1    | $\pm 3.3 \%$              |
|     |                           | Y | 0.0     | 0.0                          | 1.0 |         | 155.4    |                           |
|     |                           | Z | 0.0     | 0.0                          | 1.0 |         | 161.2    |                           |

Note: For details on UID parameters see Appendix.

### Sensor Model Parameters

|   | C1<br>fF | C2<br>fF | $\alpha$<br>$\text{V}^{-1}$ | T1<br>$\text{ms}\cdot\text{V}^{-2}$ | T2<br>$\text{ms}\cdot\text{V}^{-1}$ | T3<br>ms | T4<br>$\text{V}^{-2}$ | T5<br>$\text{V}^{-1}$ | T6    |
|---|----------|----------|-----------------------------|-------------------------------------|-------------------------------------|----------|-----------------------|-----------------------|-------|
| X | 33.50    | 254.8    | 36.71                       | 7.139                               | 0.577                               | 5.024    | 0.179                 | 0.406                 | 1.006 |
| Y | 36.45    | 267.7    | 34.59                       | 7.843                               | 0.296                               | 5.019    | 1.545                 | 0.110                 | 1.005 |
| Z | 32.58    | 250.9    | 37.51                       | 6.306                               | 0.665                               | 5.034    | 0.000                 | 0.434                 | 1.007 |

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%.

<sup>A</sup> The uncertainties of Norm X,Y,Z do not affect the  $E^2$ -field uncertainty inside TSL (see Pages 5 and 6).

<sup>B</sup> Numerical linearization parameter: uncertainty not required.

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

## DASY/EASY - Parameters of Probe: EX3DV4 - SN:3898

### Calibration Parameter Determined in Head Tissue Simulating Media

| f (MHz) <sup>C</sup> | Relative Permittivity <sup>F</sup> | Conductivity (S/m) <sup>F</sup> | ConvF X | ConvF Y | ConvF Z | Alpha <sup>G</sup> | Depth <sup>G</sup> (mm) | Unc (k=2) |
|----------------------|------------------------------------|---------------------------------|---------|---------|---------|--------------------|-------------------------|-----------|
| 750                  | 41.9                               | 0.89                            | 10.63   | 10.63   | 10.63   | 0.51               | 0.80                    | ± 12.0 %  |
| 835                  | 41.5                               | 0.90                            | 10.07   | 10.07   | 10.07   | 0.50               | 0.80                    | ± 12.0 %  |
| 900                  | 41.5                               | 0.97                            | 9.82    | 9.82    | 9.82    | 0.39               | 0.89                    | ± 12.0 %  |
| 1750                 | 40.1                               | 1.37                            | 8.68    | 8.68    | 8.68    | 0.37               | 0.80                    | ± 12.0 %  |
| 1900                 | 40.0                               | 1.40                            | 8.35    | 8.35    | 8.35    | 0.35               | 0.85                    | ± 12.0 %  |
| 2000                 | 40.0                               | 1.40                            | 8.33    | 8.33    | 8.33    | 0.30               | 0.85                    | ± 12.0 %  |
| 2300                 | 39.5                               | 1.67                            | 7.97    | 7.97    | 7.97    | 0.32               | 0.85                    | ± 12.0 %  |
| 2450                 | 39.2                               | 1.80                            | 7.59    | 7.59    | 7.59    | 0.36               | 0.80                    | ± 12.0 %  |
| 2600                 | 39.0                               | 1.96                            | 7.37    | 7.37    | 7.37    | 0.36               | 0.86                    | ± 12.0 %  |
| 3500                 | 37.9                               | 2.91                            | 7.21    | 7.21    | 7.21    | 0.25               | 1.20                    | ± 13.1 %  |
| 5250                 | 35.9                               | 4.71                            | 5.40    | 5.40    | 5.40    | 0.40               | 1.80                    | ± 13.1 %  |
| 5600                 | 35.5                               | 5.07                            | 4.88    | 4.88    | 4.88    | 0.40               | 1.80                    | ± 13.1 %  |
| 5750                 | 35.4                               | 5.22                            | 5.09    | 5.09    | 5.09    | 0.40               | 1.80                    | ± 13.1 %  |

<sup>C</sup> Frequency validity above 300 MHz of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band. Frequency validity below 300 MHz is ± 10, 25, 40, 50 and 70 MHz for ConvF assessments at 30, 64, 128, 150 and 220 MHz respectively. Above 5 GHz frequency validity can be extended to ± 110 MHz.

<sup>F</sup> At frequencies below 3 GHz, the validity of tissue parameters ( $\epsilon$  and  $\sigma$ ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters ( $\epsilon$  and  $\sigma$ ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

<sup>G</sup> Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz and below ± 2% for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.

## DASY/EASY - Parameters of Probe: EX3DV4 - SN:3898

### Calibration Parameter Determined in Body Tissue Simulating Media

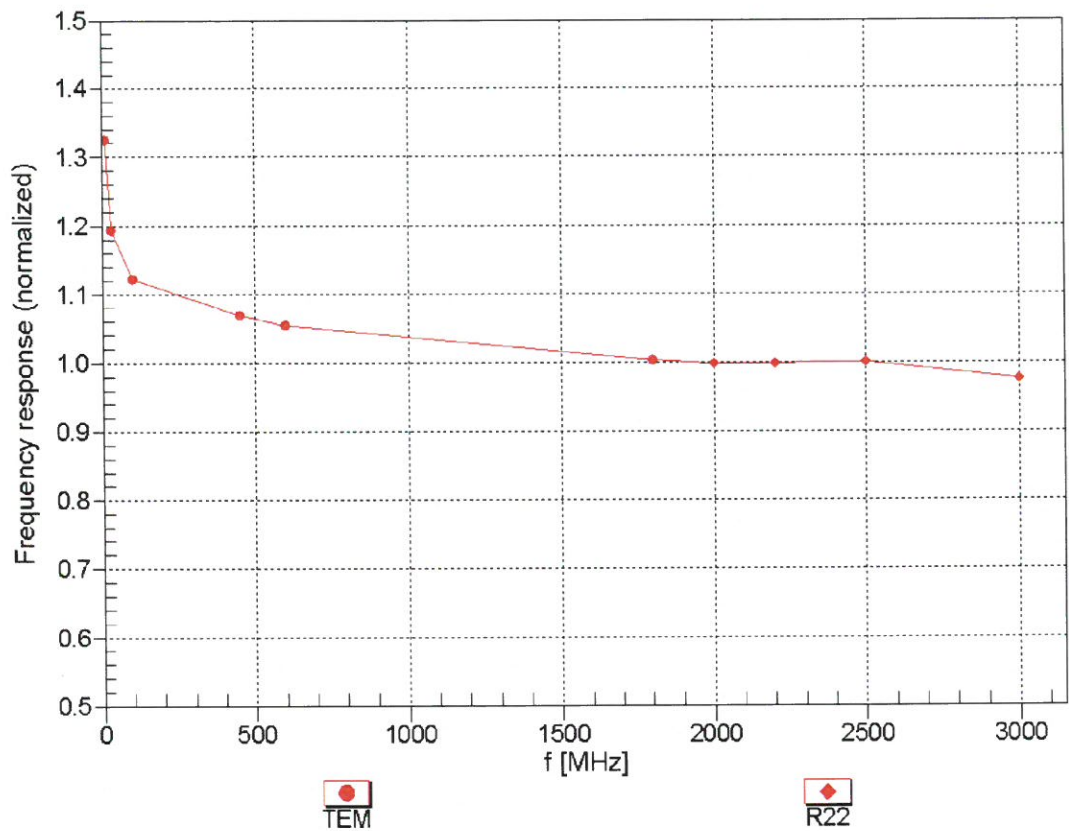
| f (MHz) <sup>C</sup> | Relative Permittivity <sup>F</sup> | Conductivity (S/m) <sup>F</sup> | ConvF X | ConvF Y | ConvF Z | Alpha <sup>G</sup> | Depth <sup>G</sup> (mm) | Unc (k=2) |
|----------------------|------------------------------------|---------------------------------|---------|---------|---------|--------------------|-------------------------|-----------|
| 750                  | 55.5                               | 0.96                            | 10.28   | 10.28   | 10.28   | 0.42               | 0.88                    | ± 12.0 %  |
| 835                  | 55.2                               | 0.97                            | 10.25   | 10.25   | 10.25   | 0.38               | 0.96                    | ± 12.0 %  |
| 900                  | 55.0                               | 1.05                            | 10.19   | 10.19   | 10.19   | 0.49               | 0.81                    | ± 12.0 %  |
| 1750                 | 53.4                               | 1.49                            | 8.28    | 8.28    | 8.28    | 0.40               | 0.85                    | ± 12.0 %  |
| 1900                 | 53.3                               | 1.52                            | 7.97    | 7.97    | 7.97    | 0.43               | 0.80                    | ± 12.0 %  |
| 2000                 | 53.3                               | 1.52                            | 8.15    | 8.15    | 8.15    | 0.34               | 0.90                    | ± 12.0 %  |
| 2300                 | 52.9                               | 1.81                            | 7.75    | 7.75    | 7.75    | 0.45               | 0.85                    | ± 12.0 %  |
| 2450                 | 52.7                               | 1.95                            | 7.61    | 7.61    | 7.61    | 0.36               | 0.87                    | ± 12.0 %  |
| 2600                 | 52.5                               | 2.16                            | 7.51    | 7.51    | 7.51    | 0.33               | 0.90                    | ± 12.0 %  |
| 3500                 | 51.3                               | 3.31                            | 6.99    | 6.99    | 6.99    | 0.25               | 1.25                    | ± 13.1 %  |
| 5250                 | 48.9                               | 5.36                            | 4.95    | 4.95    | 4.95    | 0.50               | 1.90                    | ± 13.1 %  |
| 5600                 | 48.5                               | 5.77                            | 4.17    | 4.17    | 4.17    | 0.50               | 1.90                    | ± 13.1 %  |
| 5750                 | 48.3                               | 5.94                            | 4.45    | 4.45    | 4.45    | 0.50               | 1.90                    | ± 13.1 %  |

<sup>C</sup> Frequency validity above 300 MHz of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band. Frequency validity below 300 MHz is ± 10, 25, 40, 50 and 70 MHz for ConvF assessments at 30, 64, 128, 150 and 220 MHz respectively. Above 5 GHz frequency validity can be extended to ± 110 MHz.

<sup>F</sup> At frequencies below 3 GHz, the validity of tissue parameters ( $\epsilon$  and  $\sigma$ ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters ( $\epsilon$  and  $\sigma$ ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

<sup>G</sup> Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz and below ± 2% for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.

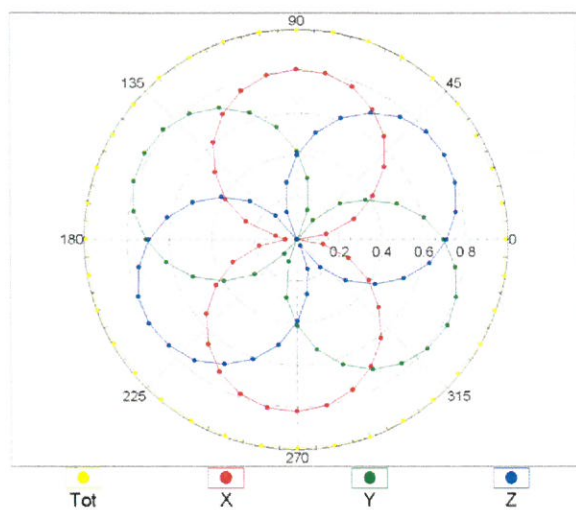
**Frequency Response of E-Field**  
(TEM-Cell:ifi110 EXX, Waveguide: R22)



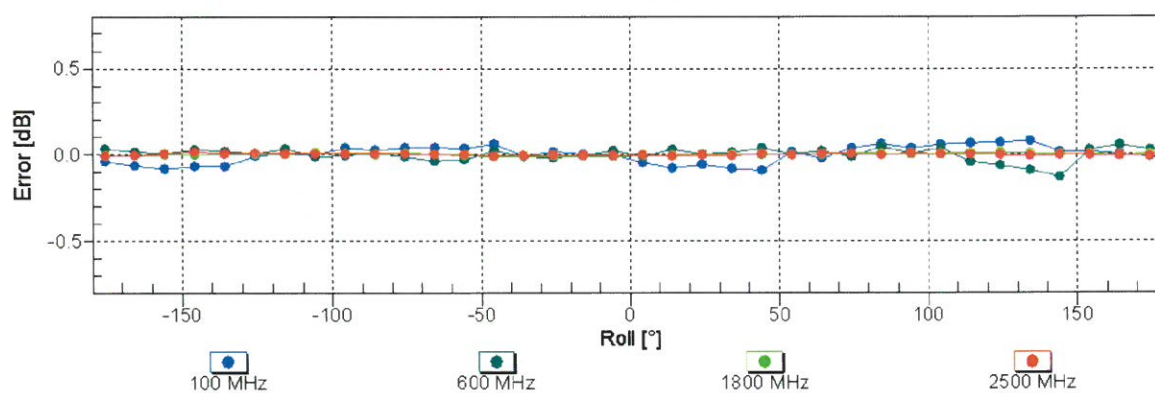
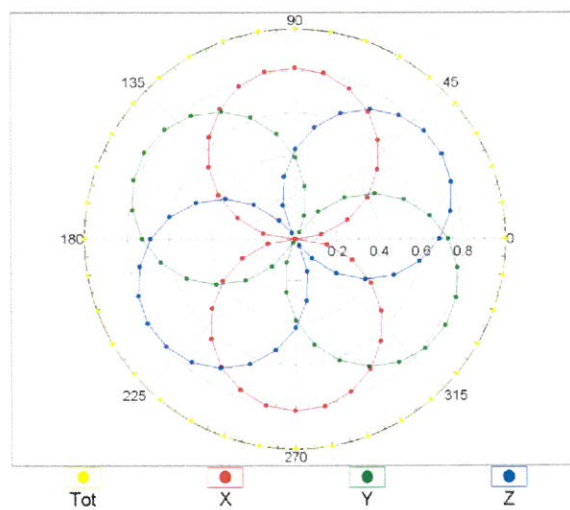
Uncertainty of Frequency Response of E-field:  $\pm 6.3\%$  (k=2)

## Receiving Pattern ( $\phi$ ), $\theta = 0^\circ$

f=600 MHz,TEM



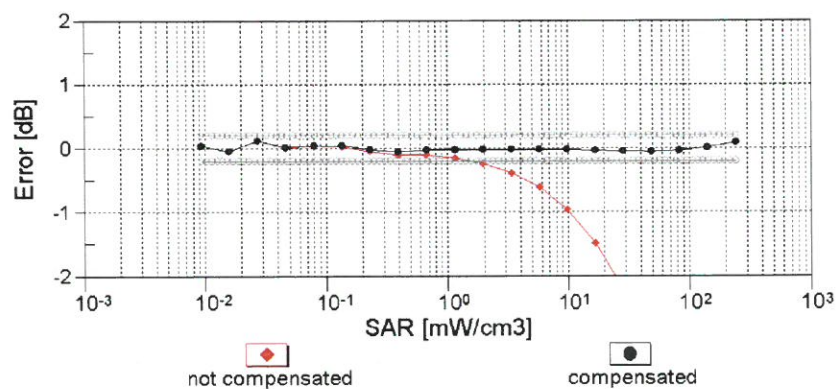
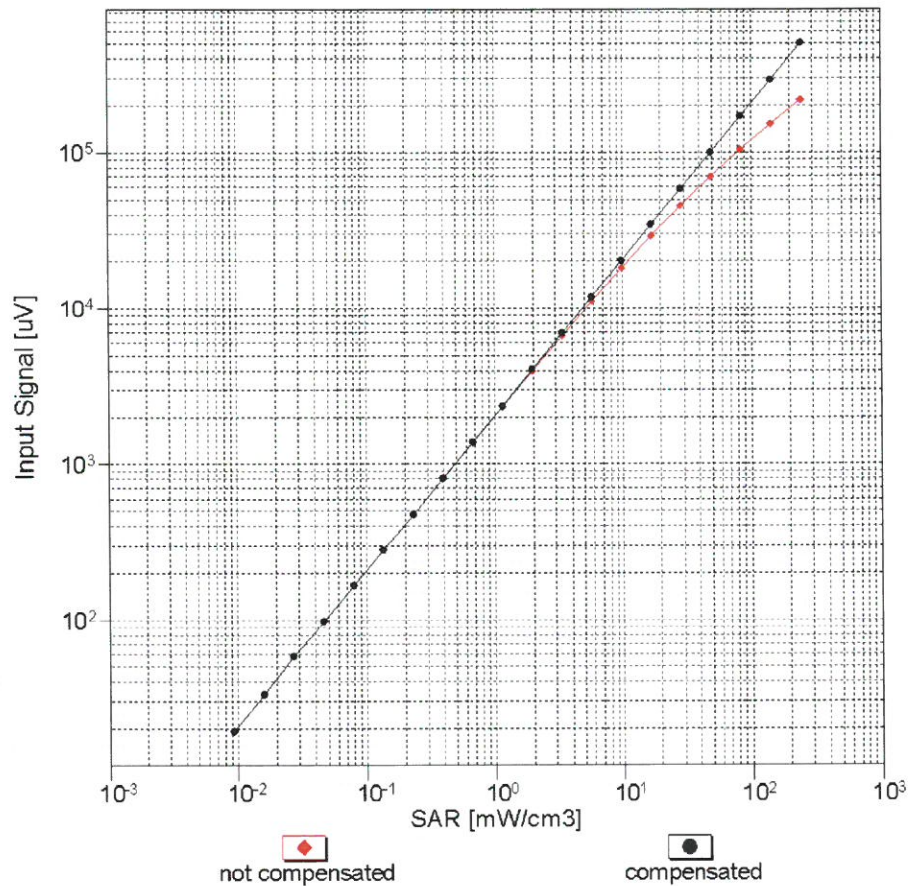
f=1800 MHz,R22



Uncertainty of Axial Isotropy Assessment:  $\pm 0.5\%$  ( $k=2$ )

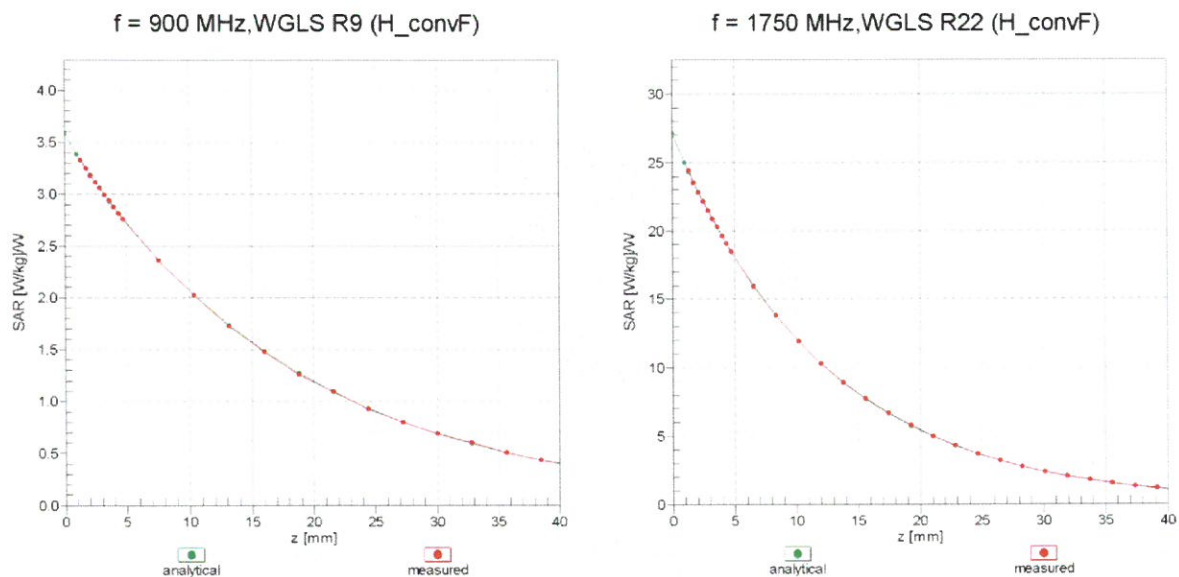


## Dynamic Range $f(\text{SAR}_{\text{head}})$ (TEM cell, $f_{\text{eval}} = 1900 \text{ MHz}$ )



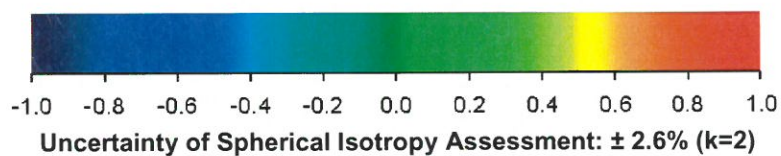
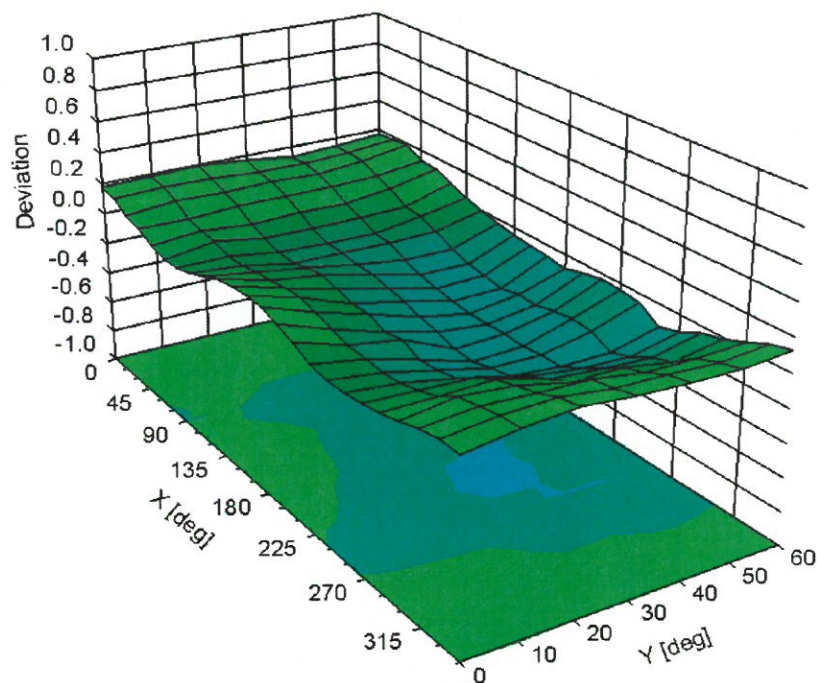
Uncertainty of Linearity Assessment:  $\pm 0.6\%$  ( $k=2$ )

## Conversion Factor Assessment



## Deviation from Isotropy in Liquid

Error ( $\phi, \vartheta$ ),  $f = 900 \text{ MHz}$





## DASY/EASY - Parameters of Probe: EX3DV4 - SN:3898

### Other Probe Parameters

|                                               |            |
|-----------------------------------------------|------------|
| Sensor Arrangement                            | Triangular |
| Connector Angle (°)                           | 114.3      |
| Mechanical Surface Detection Mode             | enabled    |
| Optical Surface Detection Mode                | disabled   |
| Probe Overall Length                          | 337 mm     |
| Probe Body Diameter                           | 10 mm      |
| Tip Length                                    | 9 mm       |
| Tip Diameter                                  | 2.5 mm     |
| Probe Tip to Sensor X Calibration Point       | 1 mm       |
| Probe Tip to Sensor Y Calibration Point       | 1 mm       |
| Probe Tip to Sensor Z Calibration Point       | 1 mm       |
| Recommended Measurement Distance from Surface | 1.4 mm     |

**Appendix: Modulation Calibration Parameters**

| UID           | Communication System Name                     |   | A<br>dB | B<br>dB/μV | C     | D<br>dB | VR<br>mV | Max<br>Unc <sup>E</sup><br>(k=2) |
|---------------|-----------------------------------------------|---|---------|------------|-------|---------|----------|----------------------------------|
| 0             | CW                                            | X | 0.00    | 0.00       | 1.00  | 0.00    | 157.1    | ± 3.3 %                          |
|               |                                               | Y | 0.00    | 0.00       | 1.00  |         | 155.4    |                                  |
|               |                                               | Z | 0.00    | 0.00       | 1.00  |         | 161.2    |                                  |
| 10010-<br>CAA | SAR Validation (Square, 100ms, 10ms)          | X | 1.69    | 62.30      | 7.79  | 10.00   | 20.0     | ± 9.6 %                          |
|               |                                               | Y | 1.95    | 64.48      | 9.01  |         | 20.0     |                                  |
|               |                                               | Z | 1.68    | 62.01      | 7.60  |         | 20.0     |                                  |
| 10011-<br>CAB | UMTS-FDD (WCDMA)                              | X | 0.80    | 65.60      | 13.41 | 0.00    | 150.0    | ± 9.6 %                          |
|               |                                               | Y | 0.95    | 67.23      | 14.93 |         | 150.0    |                                  |
|               |                                               | Z | 0.75    | 65.25      | 12.93 |         | 150.0    |                                  |
| 10012-<br>CAB | IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps)      | X | 1.02    | 62.94      | 14.30 | 0.41    | 150.0    | ± 9.6 %                          |
|               |                                               | Y | 1.10    | 63.60      | 14.93 |         | 150.0    |                                  |
|               |                                               | Z | 0.98    | 62.78      | 14.14 |         | 150.0    |                                  |
| 10013-<br>CAB | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps) | X | 4.55    | 66.53      | 16.78 | 1.46    | 150.0    | ± 9.6 %                          |
|               |                                               | Y | 4.65    | 66.67      | 16.87 |         | 150.0    |                                  |
|               |                                               | Z | 4.51    | 66.52      | 16.79 |         | 150.0    |                                  |
| 10021-<br>DAC | GSM-FDD (TDMA, GMSK)                          | X | 8.14    | 79.29      | 16.12 | 9.39    | 50.0     | ± 9.6 %                          |
|               |                                               | Y | 100.00  | 107.07     | 23.60 |         | 50.0     |                                  |
|               |                                               | Z | 6.38    | 76.49      | 15.18 |         | 50.0     |                                  |
| 10023-<br>DAC | GPRS-FDD (TDMA, GMSK, TN 0)                   | X | 5.81    | 75.34      | 14.76 | 9.57    | 50.0     | ± 9.6 %                          |
|               |                                               | Y | 100.00  | 106.62     | 23.45 |         | 50.0     |                                  |
|               |                                               | Z | 4.97    | 73.46      | 14.08 |         | 50.0     |                                  |
| 10024-<br>DAC | GPRS-FDD (TDMA, GMSK, TN 0-1)                 | X | 7.77    | 79.78      | 14.85 | 6.56    | 60.0     | ± 9.6 %                          |
|               |                                               | Y | 100.00  | 106.08     | 22.06 |         | 60.0     |                                  |
|               |                                               | Z | 3.60    | 72.65      | 12.43 |         | 60.0     |                                  |
| 10025-<br>DAC | EDGE-FDD (TDMA, 8PSK, TN 0)                   | X | 3.31    | 63.80      | 21.85 | 12.57   | 50.0     | ± 9.6 %                          |
|               |                                               | Y | 4.17    | 71.66      | 26.83 |         | 50.0     |                                  |
|               |                                               | Z | 3.08    | 61.66      | 20.50 |         | 50.0     |                                  |
| 10026-<br>DAC | EDGE-FDD (TDMA, 8PSK, TN 0-1)                 | X | 6.14    | 83.35      | 29.01 | 9.56    | 60.0     | ± 9.6 %                          |
|               |                                               | Y | 6.53    | 85.71      | 30.39 |         | 60.0     |                                  |
|               |                                               | Z | 5.99    | 82.71      | 28.72 |         | 60.0     |                                  |
| 10027-<br>DAC | GPRS-FDD (TDMA, GMSK, TN 0-1-2)               | X | 20.43   | 87.49      | 15.82 | 4.80    | 80.0     | ± 9.6 %                          |
|               |                                               | Y | 100.00  | 106.76     | 21.62 |         | 80.0     |                                  |
|               |                                               | Z | 1.69    | 67.80      | 9.68  |         | 80.0     |                                  |
| 10028-<br>DAC | GPRS-FDD (TDMA, GMSK, TN 0-1-2-3)             | X | 4.24    | 75.45      | 11.62 | 3.55    | 100.0    | ± 9.6 %                          |
|               |                                               | Y | 100.00  | 108.49     | 21.71 |         | 100.0    |                                  |
|               |                                               | Z | 0.57    | 61.66      | 6.21  |         | 100.0    |                                  |
| 10029-<br>DAC | EDGE-FDD (TDMA, 8PSK, TN 0-1-2)               | X | 4.18    | 75.36      | 24.61 | 7.80    | 80.0     | ± 9.6 %                          |
|               |                                               | Y | 4.29    | 76.26      | 25.26 |         | 80.0     |                                  |
|               |                                               | Z | 4.10    | 75.05      | 24.49 |         | 80.0     |                                  |
| 10030-<br>CAA | IEEE 802.15.1 Bluetooth (GFSK, DH1)           | X | 2.12    | 68.81      | 10.41 | 5.30    | 70.0     | ± 9.6 %                          |
|               |                                               | Y | 100.00  | 104.02     | 20.71 |         | 70.0     |                                  |
|               |                                               | Z | 1.40    | 65.35      | 8.84  |         | 70.0     |                                  |
| 10031-<br>CAA | IEEE 802.15.1 Bluetooth (GFSK, DH3)           | X | 0.25    | 60.00      | 3.83  | 1.88    | 100.0    | ± 9.6 %                          |
|               |                                               | Y | 100.00  | 101.00     | 17.48 |         | 100.0    |                                  |
|               |                                               | Z | 0.33    | 60.00      | 2.77  |         | 100.0    |                                  |

|           |                                                     |   |        |        |       |       |       |         |
|-----------|-----------------------------------------------------|---|--------|--------|-------|-------|-------|---------|
| 10032-CAA | IEEE 802.15.1 Bluetooth (GFSK, DH5)                 | X | 30.07  | 60.77  | 1.48  | 1.17  | 100.0 | ± 9.6 % |
|           |                                                     | Y | 100.00 | 101.88 | 17.11 |       | 100.0 |         |
|           |                                                     | Z | 0.00   | 174.94 | 38.25 |       | 100.0 |         |
| 10033-CAA | IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH1)           | X | 3.96   | 76.50  | 17.15 | 5.30  | 70.0  | ± 9.6 % |
|           |                                                     | Y | 7.49   | 87.27  | 21.85 |       | 70.0  |         |
|           |                                                     | Z | 3.58   | 74.96  | 16.33 |       | 70.0  |         |
| 10034-CAA | IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH3)           | X | 1.25   | 65.98  | 11.05 | 1.88  | 100.0 | ± 9.6 % |
|           |                                                     | Y | 2.14   | 73.11  | 15.33 |       | 100.0 |         |
|           |                                                     | Z | 1.05   | 64.23  | 9.81  |       | 100.0 |         |
| 10035-CAA | IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH5)           | X | 0.94   | 64.20  | 9.88  | 1.17  | 100.0 | ± 9.6 % |
|           |                                                     | Y | 1.53   | 70.07  | 13.85 |       | 100.0 |         |
|           |                                                     | Z | 0.79   | 62.58  | 8.60  |       | 100.0 |         |
| 10036-CAA | IEEE 802.15.1 Bluetooth (8-DPSK, DH1)               | X | 4.78   | 79.17  | 18.17 | 5.30  | 70.0  | ± 9.6 % |
|           |                                                     | Y | 10.80  | 92.72  | 23.61 |       | 70.0  |         |
|           |                                                     | Z | 4.26   | 77.37  | 17.29 |       | 70.0  |         |
| 10037-CAA | IEEE 802.15.1 Bluetooth (8-DPSK, DH3)               | X | 1.17   | 65.46  | 10.80 | 1.88  | 100.0 | ± 9.6 % |
|           |                                                     | Y | 1.93   | 71.93  | 14.84 |       | 100.0 |         |
|           |                                                     | Z | 1.00   | 63.85  | 9.61  |       | 100.0 |         |
| 10038-CAA | IEEE 802.15.1 Bluetooth (8-DPSK, DH5)               | X | 0.95   | 64.43  | 10.11 | 1.17  | 100.0 | ± 9.6 % |
|           |                                                     | Y | 1.54   | 70.39  | 14.12 |       | 100.0 |         |
|           |                                                     | Z | 0.80   | 62.79  | 8.82  |       | 100.0 |         |
| 10039-CAB | CDMA2000 (1xRTT, RC1)                               | X | 0.72   | 62.82  | 8.75  | 0.00  | 150.0 | ± 9.6 % |
|           |                                                     | Y | 1.38   | 69.54  | 13.32 |       | 150.0 |         |
|           |                                                     | Z | 0.58   | 61.03  | 7.20  |       | 150.0 |         |
| 10042-CAB | IS-54 / IS-136 FDD (TDMA/FDM, PI/4-DQPSK, Halfrate) | X | 2.41   | 67.55  | 10.58 | 7.78  | 50.0  | ± 9.6 % |
|           |                                                     | Y | 99.98  | 103.36 | 21.18 |       | 50.0  |         |
|           |                                                     | Z | 2.05   | 65.90  | 9.79  |       | 50.0  |         |
| 10044-CAA | IS-91/EIA/TIA-553 FDD (FDMA, FM)                    | X | 0.20   | 125.97 | 5.04  | 0.00  | 150.0 | ± 9.6 % |
|           |                                                     | Y | 0.01   | 112.04 | 10.35 |       | 150.0 |         |
|           |                                                     | Z | 0.61   | 133.03 | 4.06  |       | 150.0 |         |
| 10048-CAA | DECT (TDD, TDMA/FDM, GFSK, Full Slot, 24)           | X | 4.76   | 68.95  | 13.68 | 13.80 | 25.0  | ± 9.6 % |
|           |                                                     | Y | 7.25   | 74.59  | 15.66 |       | 25.0  |         |
|           |                                                     | Z | 4.64   | 68.33  | 13.48 |       | 25.0  |         |
| 10049-CAA | DECT (TDD, TDMA/FDM, GFSK, Double Slot, 12)         | X | 4.58   | 71.29  | 13.42 | 10.79 | 40.0  | ± 9.6 % |
|           |                                                     | Y | 8.45   | 78.87  | 16.13 |       | 40.0  |         |
|           |                                                     | Z | 4.34   | 70.47  | 13.12 |       | 40.0  |         |
| 10056-CAA | UMTS-TDD (TD-SCDMA, 1.28 Mcps)                      | X | 8.33   | 81.59  | 19.39 | 9.03  | 50.0  | ± 9.6 % |
|           |                                                     | Y | 21.27  | 96.66  | 24.69 |       | 50.0  |         |
|           |                                                     | Z | 7.46   | 79.75  | 18.62 |       | 50.0  |         |
| 10058-DAC | EDGE-FDD (TDMA, 8PSK, TN 0-1-2-3)                   | X | 3.41   | 71.82  | 22.32 | 6.55  | 100.0 | ± 9.6 % |
|           |                                                     | Y | 3.49   | 72.35  | 22.72 |       | 100.0 |         |
|           |                                                     | Z | 3.34   | 71.61  | 22.25 |       | 100.0 |         |
| 10059-CAB | IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps)            | X | 1.02   | 63.71  | 14.72 | 0.61  | 110.0 | ± 9.6 % |
|           |                                                     | Y | 1.11   | 64.39  | 15.38 |       | 110.0 |         |
|           |                                                     | Z | 0.99   | 63.57  | 14.57 |       | 110.0 |         |
| 10060-CAB | IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps)          | X | 3.43   | 87.68  | 21.53 | 1.30  | 110.0 | ± 9.6 % |
|           |                                                     | Y | 5.40   | 96.56  | 25.59 |       | 110.0 |         |
|           |                                                     | Z | 3.71   | 88.36  | 21.30 |       | 110.0 |         |

|           |                                                |   |      |       |       |      |       |         |
|-----------|------------------------------------------------|---|------|-------|-------|------|-------|---------|
| 10061-CAB | IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps)      | X | 1.81 | 74.31 | 19.15 | 2.04 | 110.0 | ± 9.6 % |
|           |                                                | Y | 1.95 | 75.61 | 20.26 |      | 110.0 |         |
|           |                                                | Z | 1.80 | 74.59 | 19.18 |      | 110.0 |         |
| 10062-CAC | IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps)       | X | 4.34 | 66.48 | 16.21 | 0.49 | 100.0 | ± 9.6 % |
|           |                                                | Y | 4.46 | 66.70 | 16.35 |      | 100.0 |         |
|           |                                                | Z | 4.30 | 66.43 | 16.19 |      | 100.0 |         |
| 10063-CAC | IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps)       | X | 4.35 | 66.57 | 16.30 | 0.72 | 100.0 | ± 9.6 % |
|           |                                                | Y | 4.47 | 66.77 | 16.43 |      | 100.0 |         |
|           |                                                | Z | 4.31 | 66.53 | 16.28 |      | 100.0 |         |
| 10064-CAC | IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps)      | X | 4.59 | 66.77 | 16.50 | 0.86 | 100.0 | ± 9.6 % |
|           |                                                | Y | 4.72 | 66.97 | 16.62 |      | 100.0 |         |
|           |                                                | Z | 4.54 | 66.73 | 16.49 |      | 100.0 |         |
| 10065-CAC | IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps)      | X | 4.46 | 66.60 | 16.56 | 1.21 | 100.0 | ± 9.6 % |
|           |                                                | Y | 4.58 | 66.80 | 16.69 |      | 100.0 |         |
|           |                                                | Z | 4.42 | 66.57 | 16.55 |      | 100.0 |         |
| 10066-CAC | IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps)      | X | 4.47 | 66.59 | 16.70 | 1.46 | 100.0 | ± 9.6 % |
|           |                                                | Y | 4.59 | 66.78 | 16.82 |      | 100.0 |         |
|           |                                                | Z | 4.43 | 66.57 | 16.70 |      | 100.0 |         |
| 10067-CAC | IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps)      | X | 4.76 | 66.88 | 17.18 | 2.04 | 100.0 | ± 9.6 % |
|           |                                                | Y | 4.87 | 67.01 | 17.27 |      | 100.0 |         |
|           |                                                | Z | 4.72 | 66.88 | 17.19 |      | 100.0 |         |
| 10068-CAC | IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps)      | X | 4.79 | 66.79 | 17.34 | 2.55 | 100.0 | ± 9.6 % |
|           |                                                | Y | 4.89 | 66.91 | 17.42 |      | 100.0 |         |
|           |                                                | Z | 4.76 | 66.81 | 17.37 |      | 100.0 |         |
| 10069-CAC | IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps)      | X | 4.85 | 66.83 | 17.53 | 2.67 | 100.0 | ± 9.6 % |
|           |                                                | Y | 4.96 | 66.93 | 17.60 |      | 100.0 |         |
|           |                                                | Z | 4.82 | 66.84 | 17.55 |      | 100.0 |         |
| 10071-CAB | IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 9 Mbps)  | X | 4.64 | 66.60 | 17.07 | 1.99 | 100.0 | ± 9.6 % |
|           |                                                | Y | 4.73 | 66.71 | 17.14 |      | 100.0 |         |
|           |                                                | Z | 4.61 | 66.60 | 17.09 |      | 100.0 |         |
| 10072-CAB | IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 12 Mbps) | X | 4.59 | 66.81 | 17.24 | 2.30 | 100.0 | ± 9.6 % |
|           |                                                | Y | 4.68 | 66.93 | 17.31 |      | 100.0 |         |
|           |                                                | Z | 4.56 | 66.82 | 17.26 |      | 100.0 |         |
| 10073-CAB | IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 18 Mbps) | X | 4.65 | 66.99 | 17.56 | 2.83 | 100.0 | ± 9.6 % |
|           |                                                | Y | 4.73 | 67.06 | 17.62 |      | 100.0 |         |
|           |                                                | Z | 4.63 | 67.03 | 17.60 |      | 100.0 |         |
| 10074-CAB | IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 24 Mbps) | X | 4.66 | 66.95 | 17.71 | 3.30 | 100.0 | ± 9.6 % |
|           |                                                | Y | 4.73 | 66.98 | 17.75 |      | 100.0 |         |
|           |                                                | Z | 4.64 | 67.00 | 17.76 |      | 100.0 |         |
| 10075-CAB | IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 36 Mbps) | X | 4.69 | 66.96 | 17.95 | 3.82 | 90.0  | ± 9.6 % |
|           |                                                | Y | 4.74 | 66.98 | 17.99 |      | 90.0  |         |
|           |                                                | Z | 4.67 | 67.01 | 18.00 |      | 90.0  |         |
| 10076-CAB | IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 48 Mbps) | X | 4.73 | 66.85 | 18.13 | 4.15 | 90.0  | ± 9.6 % |
|           |                                                | Y | 4.78 | 66.83 | 18.15 |      | 90.0  |         |
|           |                                                | Z | 4.72 | 66.91 | 18.18 |      | 90.0  |         |
| 10077-CAB | IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 54 Mbps) | X | 4.77 | 66.95 | 18.24 | 4.30 | 90.0  | ± 9.6 % |
|           |                                                | Y | 4.80 | 66.91 | 18.25 |      | 90.0  |         |
|           |                                                | Z | 4.75 | 67.02 | 18.30 |      | 90.0  |         |

|           |                                                     |   |        |        |       |      |       |         |
|-----------|-----------------------------------------------------|---|--------|--------|-------|------|-------|---------|
| 10081-CAB | CDMA2000 (1xRTT, RC3)                               | X | 0.38   | 60.00  | 6.39  | 0.00 | 150.0 | ± 9.6 % |
|           |                                                     | Y | 0.64   | 64.18  | 10.31 |      | 150.0 |         |
|           |                                                     | Z | 0.35   | 60.00  | 5.73  |      | 150.0 |         |
| 10082-CAB | IS-54 / IS-136 FDD (TDMA/FDM, PI/4-DQPSK, Fullrate) | X | 0.65   | 60.00  | 3.24  | 4.77 | 80.0  | ± 9.6 % |
|           |                                                     | Y | 0.59   | 60.00  | 3.58  |      | 80.0  |         |
|           |                                                     | Z | 0.77   | 60.00  | 2.82  |      | 80.0  |         |
| 10090-DAC | GPRS-FDD (TDMA, GMSK, TN 0-4)                       | X | 8.32   | 80.40  | 15.07 | 6.56 | 60.0  | ± 9.6 % |
|           |                                                     | Y | 100.00 | 106.11 | 22.09 |      | 60.0  |         |
|           |                                                     | Z | 3.81   | 73.14  | 12.63 |      | 60.0  |         |
| 10097-CAB | UMTS-FDD (HSDPA)                                    | X | 1.59   | 67.11  | 14.48 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                     | Y | 1.78   | 68.27  | 15.54 |      | 150.0 |         |
|           |                                                     | Z | 1.53   | 66.79  | 14.13 |      | 150.0 |         |
| 10098-CAB | UMTS-FDD (HSUPA, Subtest 2)                         | X | 1.56   | 67.03  | 14.45 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                     | Y | 1.74   | 68.21  | 15.51 |      | 150.0 |         |
|           |                                                     | Z | 1.49   | 66.72  | 14.09 |      | 150.0 |         |
| 10099-DAC | EDGE-FDD (TDMA, 8PSK, TN 0-4)                       | X | 6.18   | 83.46  | 29.05 | 9.56 | 60.0  | ± 9.6 % |
|           |                                                     | Y | 6.58   | 85.86  | 30.44 |      | 60.0  |         |
|           |                                                     | Z | 6.03   | 82.82  | 28.76 |      | 60.0  |         |
| 10100-CAD | LTE-FDD (SC-FDMA, 100% RB, 20 MHz, QPSK)            | X | 2.72   | 69.08  | 15.98 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                     | Y | 2.95   | 70.14  | 16.61 |      | 150.0 |         |
|           |                                                     | Z | 2.65   | 68.83  | 15.82 |      | 150.0 |         |
| 10101-CAD | LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)          | X | 2.93   | 66.79  | 15.42 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                     | Y | 3.08   | 67.40  | 15.80 |      | 150.0 |         |
|           |                                                     | Z | 2.87   | 66.64  | 15.31 |      | 150.0 |         |
| 10102-CAD | LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)          | X | 3.04   | 66.86  | 15.56 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                     | Y | 3.19   | 67.42  | 15.91 |      | 150.0 |         |
|           |                                                     | Z | 2.98   | 66.71  | 15.46 |      | 150.0 |         |
| 10103-CAD | LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK)            | X | 4.93   | 72.92  | 19.19 | 3.98 | 65.0  | ± 9.6 % |
|           |                                                     | Y | 5.26   | 74.03  | 19.74 |      | 65.0  |         |
|           |                                                     | Z | 4.58   | 71.89  | 18.80 |      | 65.0  |         |
| 10104-CAD | LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)          | X | 5.11   | 71.27  | 19.17 | 3.98 | 65.0  | ± 9.6 % |
|           |                                                     | Y | 5.30   | 71.90  | 19.52 |      | 65.0  |         |
|           |                                                     | Z | 5.01   | 71.07  | 19.11 |      | 65.0  |         |
| 10105-CAD | LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)          | X | 4.77   | 69.77  | 18.78 | 3.98 | 65.0  | ± 9.6 % |
|           |                                                     | Y | 5.03   | 70.66  | 19.26 |      | 65.0  |         |
|           |                                                     | Z | 4.43   | 68.53  | 18.24 |      | 65.0  |         |
| 10108-CAE | LTE-FDD (SC-FDMA, 100% RB, 10 MHz, QPSK)            | X | 2.33   | 68.44  | 15.78 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                     | Y | 2.54   | 69.44  | 16.43 |      | 150.0 |         |
|           |                                                     | Z | 2.26   | 68.22  | 15.60 |      | 150.0 |         |
| 10109-CAE | LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)          | X | 2.56   | 66.71  | 15.19 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                     | Y | 2.73   | 67.35  | 15.67 |      | 150.0 |         |
|           |                                                     | Z | 2.50   | 66.54  | 15.04 |      | 150.0 |         |
| 10110-CAE | LTE-FDD (SC-FDMA, 100% RB, 5 MHz, QPSK)             | X | 1.82   | 67.51  | 15.05 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                     | Y | 2.03   | 68.62  | 15.91 |      | 150.0 |         |
|           |                                                     | Z | 1.75   | 67.24  | 14.78 |      | 150.0 |         |
| 10111-CAE | LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)           | X | 2.27   | 67.71  | 15.18 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                     | Y | 2.48   | 68.62  | 15.97 |      | 150.0 |         |
|           |                                                     | Z | 2.19   | 67.44  | 14.91 |      | 150.0 |         |

|           |                                                |   |      |       |       |      |       |         |
|-----------|------------------------------------------------|---|------|-------|-------|------|-------|---------|
| 10112-CAE | LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)     | X | 2.69 | 66.83 | 15.30 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                | Y | 2.86 | 67.43 | 15.75 |      | 150.0 |         |
|           |                                                | Z | 2.63 | 66.68 | 15.17 |      | 150.0 |         |
| 10113-CAE | LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM)      | X | 2.41 | 67.96 | 15.37 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                | Y | 2.63 | 68.82 | 16.12 |      | 150.0 |         |
|           |                                                | Z | 2.34 | 67.71 | 15.11 |      | 150.0 |         |
| 10114-CAC | IEEE 802.11n (HT Greenfield, 13.5 Mbps, BPSK)  | X | 4.82 | 66.90 | 16.25 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                | Y | 4.93 | 67.13 | 16.33 |      | 150.0 |         |
|           |                                                | Z | 4.78 | 66.85 | 16.23 |      | 150.0 |         |
| 10115-CAC | IEEE 802.11n (HT Greenfield, 81 Mbps, 16-QAM)  | X | 5.06 | 66.97 | 16.28 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                | Y | 5.17 | 67.19 | 16.37 |      | 150.0 |         |
|           |                                                | Z | 5.02 | 66.92 | 16.27 |      | 150.0 |         |
| 10116-CAC | IEEE 802.11n (HT Greenfield, 135 Mbps, 64-QAM) | X | 4.89 | 67.06 | 16.26 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                | Y | 5.01 | 67.32 | 16.36 |      | 150.0 |         |
|           |                                                | Z | 4.85 | 67.00 | 16.23 |      | 150.0 |         |
| 10117-CAC | IEEE 802.11n (HT Mixed, 13.5 Mbps, BPSK)       | X | 4.81 | 66.81 | 16.22 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                | Y | 4.92 | 67.09 | 16.33 |      | 150.0 |         |
|           |                                                | Z | 4.76 | 66.73 | 16.19 |      | 150.0 |         |
| 10118-CAC | IEEE 802.11n (HT Mixed, 81 Mbps, 16-QAM)       | X | 5.14 | 67.19 | 16.40 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                | Y | 5.24 | 67.35 | 16.46 |      | 150.0 |         |
|           |                                                | Z | 5.10 | 67.13 | 16.39 |      | 150.0 |         |
| 10119-CAC | IEEE 802.11n (HT Mixed, 135 Mbps, 64-QAM)      | X | 4.90 | 67.08 | 16.27 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                | Y | 5.01 | 67.31 | 16.36 |      | 150.0 |         |
|           |                                                | Z | 4.86 | 67.03 | 16.26 |      | 150.0 |         |
| 10140-CAD | LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)     | X | 3.05 | 66.87 | 15.46 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                | Y | 3.21 | 67.43 | 15.82 |      | 150.0 |         |
|           |                                                | Z | 2.99 | 66.72 | 15.35 |      | 150.0 |         |
| 10141-CAD | LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)     | X | 3.18 | 67.08 | 15.69 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                | Y | 3.34 | 67.60 | 16.02 |      | 150.0 |         |
|           |                                                | Z | 3.13 | 66.95 | 15.59 |      | 150.0 |         |
| 10142-CAD | LTE-FDD (SC-FDMA, 100% RB, 3 MHz, QPSK)        | X | 1.54 | 66.93 | 13.93 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                | Y | 1.80 | 68.60 | 15.30 |      | 150.0 |         |
|           |                                                | Z | 1.45 | 66.43 | 13.44 |      | 150.0 |         |
| 10143-CAD | LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)      | X | 1.95 | 67.19 | 13.68 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                | Y | 2.31 | 69.19 | 15.25 |      | 150.0 |         |
|           |                                                | Z | 1.82 | 66.48 | 13.07 |      | 150.0 |         |
| 10144-CAD | LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)      | X | 1.68 | 64.49 | 11.75 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                | Y | 1.96 | 66.06 | 13.17 |      | 150.0 |         |
|           |                                                | Z | 1.59 | 63.95 | 11.21 |      | 150.0 |         |
| 10145-CAE | LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK)      | X | 0.60 | 60.00 | 6.23  | 0.00 | 150.0 | ± 9.6 % |
|           |                                                | Y | 0.81 | 61.91 | 8.55  |      | 150.0 |         |
|           |                                                | Z | 0.56 | 60.00 | 5.77  |      | 150.0 |         |
| 10146-CAE | LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)    | X | 0.80 | 59.27 | 5.40  | 0.00 | 150.0 | ± 9.6 % |
|           |                                                | Y | 1.09 | 61.29 | 7.29  |      | 150.0 |         |
|           |                                                | Z | 0.82 | 60.00 | 5.60  |      | 150.0 |         |
| 10147-CAE | LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM)    | X | 0.87 | 60.00 | 5.94  | 0.00 | 150.0 | ± 9.6 % |
|           |                                                | Y | 1.16 | 61.79 | 7.66  |      | 150.0 |         |
|           |                                                | Z | 0.83 | 60.00 | 5.66  |      | 150.0 |         |



|           |                                            |   |      |       |       |      |       |         |
|-----------|--------------------------------------------|---|------|-------|-------|------|-------|---------|
| 10149-CAD | LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)  | X | 2.57 | 66.78 | 15.24 | 0.00 | 150.0 | ± 9.6 % |
|           |                                            | Y | 2.74 | 67.43 | 15.72 |      | 150.0 |         |
|           |                                            | Z | 2.51 | 66.62 | 15.10 |      | 150.0 |         |
| 10150-CAD | LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)  | X | 2.70 | 66.90 | 15.35 | 0.00 | 150.0 | ± 9.6 % |
|           |                                            | Y | 2.87 | 67.49 | 15.80 |      | 150.0 |         |
|           |                                            | Z | 2.64 | 66.75 | 15.22 |      | 150.0 |         |
| 10151-CAD | LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK)    | X | 5.20 | 75.69 | 20.31 | 3.98 | 65.0  | ± 9.6 % |
|           |                                            | Y | 5.52 | 76.67 | 20.86 |      | 65.0  |         |
|           |                                            | Z | 5.11 | 75.61 | 20.30 |      | 65.0  |         |
| 10152-CAD | LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)  | X | 4.61 | 71.04 | 18.56 | 3.98 | 65.0  | ± 9.6 % |
|           |                                            | Y | 4.81 | 71.75 | 19.05 |      | 65.0  |         |
|           |                                            | Z | 4.51 | 70.85 | 18.48 |      | 65.0  |         |
| 10153-CAD | LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)  | X | 5.00 | 72.32 | 19.54 | 3.98 | 65.0  | ± 9.6 % |
|           |                                            | Y | 5.19 | 72.90 | 19.95 |      | 65.0  |         |
|           |                                            | Z | 4.91 | 72.18 | 19.49 |      | 65.0  |         |
| 10154-CAE | LTE-FDD (SC-FDMA, 50% RB, 10 MHz, QPSK)    | X | 1.86 | 67.89 | 15.29 | 0.00 | 150.0 | ± 9.6 % |
|           |                                            | Y | 2.08 | 69.04 | 16.17 |      | 150.0 |         |
|           |                                            | Z | 1.79 | 67.61 | 15.01 |      | 150.0 |         |
| 10155-CAE | LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)  | X | 2.27 | 67.76 | 15.22 | 0.00 | 150.0 | ± 9.6 % |
|           |                                            | Y | 2.49 | 68.66 | 16.00 |      | 150.0 |         |
|           |                                            | Z | 2.20 | 67.49 | 14.95 |      | 150.0 |         |
| 10156-CAE | LTE-FDD (SC-FDMA, 50% RB, 5 MHz, QPSK)     | X | 1.32 | 66.12 | 12.94 | 0.00 | 150.0 | ± 9.6 % |
|           |                                            | Y | 1.62 | 68.40 | 14.78 |      | 150.0 |         |
|           |                                            | Z | 1.21 | 65.37 | 12.25 |      | 150.0 |         |
| 10157-CAE | LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)   | X | 1.44 | 64.08 | 11.00 | 0.00 | 150.0 | ± 9.6 % |
|           |                                            | Y | 1.77 | 66.31 | 12.90 |      | 150.0 |         |
|           |                                            | Z | 1.32 | 63.32 | 10.28 |      | 150.0 |         |
| 10158-CAE | LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)  | X | 2.43 | 68.06 | 15.43 | 0.00 | 150.0 | ± 9.6 % |
|           |                                            | Y | 2.64 | 68.91 | 16.18 |      | 150.0 |         |
|           |                                            | Z | 2.35 | 67.80 | 15.18 |      | 150.0 |         |
| 10159-CAE | LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)   | X | 1.49 | 64.29 | 11.15 | 0.00 | 150.0 | ± 9.6 % |
|           |                                            | Y | 1.86 | 66.72 | 13.15 |      | 150.0 |         |
|           |                                            | Z | 1.37 | 63.47 | 10.40 |      | 150.0 |         |
| 10160-CAD | LTE-FDD (SC-FDMA, 50% RB, 15 MHz, QPSK)    | X | 2.40 | 68.04 | 15.67 | 0.00 | 150.0 | ± 9.6 % |
|           |                                            | Y | 2.57 | 68.70 | 16.20 |      | 150.0 |         |
|           |                                            | Z | 2.35 | 67.89 | 15.52 |      | 150.0 |         |
| 10161-CAD | LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)  | X | 2.58 | 66.83 | 15.17 | 0.00 | 150.0 | ± 9.6 % |
|           |                                            | Y | 2.76 | 67.47 | 15.69 |      | 150.0 |         |
|           |                                            | Z | 2.52 | 66.65 | 15.01 |      | 150.0 |         |
| 10162-CAD | LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)  | X | 2.69 | 67.09 | 15.34 | 0.00 | 150.0 | ± 9.6 % |
|           |                                            | Y | 2.87 | 67.70 | 15.84 |      | 150.0 |         |
|           |                                            | Z | 2.63 | 66.93 | 15.18 |      | 150.0 |         |
| 10166-CAE | LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)   | X | 3.02 | 68.47 | 18.56 | 3.01 | 150.0 | ± 9.6 % |
|           |                                            | Y | 3.28 | 69.67 | 19.13 |      | 150.0 |         |
|           |                                            | Z | 2.95 | 68.38 | 18.56 |      | 150.0 |         |
| 10167-CAE | LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM) | X | 3.50 | 70.86 | 18.74 | 3.01 | 150.0 | ± 9.6 % |
|           |                                            | Y | 4.10 | 73.43 | 19.89 |      | 150.0 |         |
|           |                                            | Z | 3.40 | 70.66 | 18.68 |      | 150.0 |         |

|           |                                            |   |       |       |       |      |       |         |
|-----------|--------------------------------------------|---|-------|-------|-------|------|-------|---------|
| 10168-CAE | LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM) | X | 4.03  | 73.94 | 20.55 | 3.01 | 150.0 | ± 9.6 % |
|           |                                            | Y | 4.82  | 76.89 | 21.76 |      | 150.0 |         |
|           |                                            | Z | 3.94  | 73.88 | 20.58 |      | 150.0 |         |
| 10169-CAD | LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK)      | X | 2.46  | 66.78 | 17.74 | 3.01 | 150.0 | ± 9.6 % |
|           |                                            | Y | 2.70  | 68.74 | 18.74 |      | 150.0 |         |
|           |                                            | Z | 2.40  | 66.57 | 17.67 |      | 150.0 |         |
| 10170-CAD | LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)    | X | 3.13  | 71.90 | 19.93 | 3.01 | 150.0 | ± 9.6 % |
|           |                                            | Y | 4.02  | 77.01 | 22.10 |      | 150.0 |         |
|           |                                            | Z | 3.04  | 71.59 | 19.85 |      | 150.0 |         |
| 10171-AAD | LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)    | X | 2.56  | 67.72 | 16.90 | 3.01 | 150.0 | ± 9.6 % |
|           |                                            | Y | 3.05  | 71.26 | 18.53 |      | 150.0 |         |
|           |                                            | Z | 2.48  | 67.35 | 16.74 |      | 150.0 |         |
| 10172-CAD | LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK)      | X | 3.45  | 76.49 | 22.88 | 6.02 | 65.0  | ± 9.6 % |
|           |                                            | Y | 4.20  | 81.33 | 25.11 |      | 65.0  |         |
|           |                                            | Z | 2.96  | 73.93 | 21.94 |      | 65.0  |         |
| 10173-CAD | LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)    | X | 5.68  | 83.32 | 23.55 | 6.02 | 65.0  | ± 9.6 % |
|           |                                            | Y | 11.31 | 96.53 | 28.08 |      | 65.0  |         |
|           |                                            | Z | 5.57  | 83.33 | 23.66 |      | 65.0  |         |
| 10174-CAD | LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)    | X | 3.51  | 74.90 | 19.90 | 6.02 | 65.0  | ± 9.6 % |
|           |                                            | Y | 6.94  | 87.20 | 24.49 |      | 65.0  |         |
|           |                                            | Z | 3.17  | 73.63 | 19.53 |      | 65.0  |         |
| 10175-CAE | LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK)      | X | 2.43  | 66.48 | 17.48 | 3.01 | 150.0 | ± 9.6 % |
|           |                                            | Y | 2.66  | 68.40 | 18.47 |      | 150.0 |         |
|           |                                            | Z | 2.37  | 66.26 | 17.40 |      | 150.0 |         |
| 10176-CAE | LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)    | X | 3.14  | 71.92 | 19.94 | 3.01 | 150.0 | ± 9.6 % |
|           |                                            | Y | 4.02  | 77.04 | 22.11 |      | 150.0 |         |
|           |                                            | Z | 3.04  | 71.61 | 19.86 |      | 150.0 |         |
| 10177-CAG | LTE-FDD (SC-FDMA, 1 RB, 5 MHz, QPSK)       | X | 2.45  | 66.60 | 17.56 | 3.01 | 150.0 | ± 9.6 % |
|           |                                            | Y | 2.68  | 68.55 | 18.56 |      | 150.0 |         |
|           |                                            | Z | 2.39  | 66.38 | 17.49 |      | 150.0 |         |
| 10178-CAE | LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)     | X | 3.12  | 71.76 | 19.84 | 3.01 | 150.0 | ± 9.6 % |
|           |                                            | Y | 3.98  | 76.80 | 21.99 |      | 150.0 |         |
|           |                                            | Z | 3.02  | 71.45 | 19.76 |      | 150.0 |         |
| 10179-CAE | LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM)    | X | 2.80  | 69.61 | 18.24 | 3.01 | 150.0 | ± 9.6 % |
|           |                                            | Y | 3.47  | 73.90 | 20.14 |      | 150.0 |         |
|           |                                            | Z | 2.71  | 69.24 | 18.10 |      | 150.0 |         |
| 10180-CAE | LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM)     | X | 2.56  | 67.69 | 16.87 | 3.01 | 150.0 | ± 9.6 % |
|           |                                            | Y | 3.04  | 71.19 | 18.49 |      | 150.0 |         |
|           |                                            | Z | 2.47  | 67.32 | 16.71 |      | 150.0 |         |
| 10181-CAD | LTE-FDD (SC-FDMA, 1 RB, 15 MHz, QPSK)      | X | 2.44  | 66.59 | 17.55 | 3.01 | 150.0 | ± 9.6 % |
|           |                                            | Y | 2.68  | 68.53 | 18.55 |      | 150.0 |         |
|           |                                            | Z | 2.39  | 66.37 | 17.48 |      | 150.0 |         |
| 10182-CAD | LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM)    | X | 3.11  | 71.74 | 19.83 | 3.01 | 150.0 | ± 9.6 % |
|           |                                            | Y | 3.97  | 76.76 | 21.97 |      | 150.0 |         |
|           |                                            | Z | 3.02  | 71.42 | 19.75 |      | 150.0 |         |
| 10183-AAC | LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM)    | X | 2.55  | 67.67 | 16.86 | 3.01 | 150.0 | ± 9.6 % |
|           |                                            | Y | 3.04  | 71.17 | 18.47 |      | 150.0 |         |
|           |                                            | Z | 2.47  | 67.30 | 16.70 |      | 150.0 |         |

|           |                                               |   |      |       |       |      |       |         |
|-----------|-----------------------------------------------|---|------|-------|-------|------|-------|---------|
| 10184-CAD | LTE-FDD (SC-FDMA, 1 RB, 3 MHz, QPSK)          | X | 2.45 | 66.62 | 17.57 | 3.01 | 150.0 | ± 9.6 % |
|           |                                               | Y | 2.69 | 68.58 | 18.58 |      | 150.0 |         |
|           |                                               | Z | 2.39 | 66.41 | 17.50 |      | 150.0 |         |
| 10185-CAD | LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM)        | X | 3.13 | 71.81 | 19.87 | 3.01 | 150.0 | ± 9.6 % |
|           |                                               | Y | 4.00 | 76.86 | 22.02 |      | 150.0 |         |
|           |                                               | Z | 3.03 | 71.50 | 19.79 |      | 150.0 |         |
| 10186-AAD | LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM)        | X | 2.56 | 67.72 | 16.89 | 3.01 | 150.0 | ± 9.6 % |
|           |                                               | Y | 3.05 | 71.24 | 18.51 |      | 150.0 |         |
|           |                                               | Z | 2.48 | 67.35 | 16.73 |      | 150.0 |         |
| 10187-CAE | LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)        | X | 2.46 | 66.71 | 17.66 | 3.01 | 150.0 | ± 9.6 % |
|           |                                               | Y | 2.70 | 68.66 | 18.66 |      | 150.0 |         |
|           |                                               | Z | 2.40 | 66.49 | 17.59 |      | 150.0 |         |
| 10188-CAE | LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)      | X | 3.22 | 72.44 | 20.27 | 3.01 | 150.0 | ± 9.6 % |
|           |                                               | Y | 4.17 | 77.76 | 22.50 |      | 150.0 |         |
|           |                                               | Z | 3.12 | 72.15 | 20.20 |      | 150.0 |         |
| 10189-AAE | LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)      | X | 2.61 | 68.09 | 17.16 | 3.01 | 150.0 | ± 9.6 % |
|           |                                               | Y | 3.14 | 71.76 | 18.84 |      | 150.0 |         |
|           |                                               | Z | 2.53 | 67.71 | 17.00 |      | 150.0 |         |
| 10193-CAC | IEEE 802.11n (HT Greenfield, 6.5 Mbps, BPSK)  | X | 4.21 | 66.53 | 15.88 | 0.00 | 150.0 | ± 9.6 % |
|           |                                               | Y | 4.34 | 66.78 | 16.05 |      | 150.0 |         |
|           |                                               | Z | 4.16 | 66.46 | 15.83 |      | 150.0 |         |
| 10194-CAC | IEEE 802.11n (HT Greenfield, 39 Mbps, 16-QAM) | X | 4.35 | 66.75 | 16.02 | 0.00 | 150.0 | ± 9.6 % |
|           |                                               | Y | 4.49 | 67.03 | 16.18 |      | 150.0 |         |
|           |                                               | Z | 4.30 | 66.68 | 15.98 |      | 150.0 |         |
| 10195-CAC | IEEE 802.11n (HT Greenfield, 65 Mbps, 64-QAM) | X | 4.38 | 66.77 | 16.04 | 0.00 | 150.0 | ± 9.6 % |
|           |                                               | Y | 4.52 | 67.05 | 16.20 |      | 150.0 |         |
|           |                                               | Z | 4.33 | 66.69 | 15.99 |      | 150.0 |         |
| 10196-CAC | IEEE 802.11n (HT Mixed, 6.5 Mbps, BPSK)       | X | 4.20 | 66.52 | 15.86 | 0.00 | 150.0 | ± 9.6 % |
|           |                                               | Y | 4.33 | 66.79 | 16.05 |      | 150.0 |         |
|           |                                               | Z | 4.14 | 66.44 | 15.81 |      | 150.0 |         |
| 10197-CAC | IEEE 802.11n (HT Mixed, 39 Mbps, 16-QAM)      | X | 4.36 | 66.76 | 16.03 | 0.00 | 150.0 | ± 9.6 % |
|           |                                               | Y | 4.50 | 67.03 | 16.19 |      | 150.0 |         |
|           |                                               | Z | 4.30 | 66.68 | 15.98 |      | 150.0 |         |
| 10198-CAC | IEEE 802.11n (HT Mixed, 65 Mbps, 64-QAM)      | X | 4.37 | 66.76 | 16.04 | 0.00 | 150.0 | ± 9.6 % |
|           |                                               | Y | 4.52 | 67.05 | 16.20 |      | 150.0 |         |
|           |                                               | Z | 4.32 | 66.68 | 15.99 |      | 150.0 |         |
| 10219-CAC | IEEE 802.11n (HT Mixed, 7.2 Mbps, BPSK)       | X | 4.15 | 66.55 | 15.83 | 0.00 | 150.0 | ± 9.6 % |
|           |                                               | Y | 4.28 | 66.82 | 16.02 |      | 150.0 |         |
|           |                                               | Z | 4.10 | 66.48 | 15.78 |      | 150.0 |         |
| 10220-CAC | IEEE 802.11n (HT Mixed, 43.3 Mbps, 16-QAM)    | X | 4.35 | 66.72 | 16.02 | 0.00 | 150.0 | ± 9.6 % |
|           |                                               | Y | 4.49 | 67.00 | 16.18 |      | 150.0 |         |
|           |                                               | Z | 4.29 | 66.64 | 15.97 |      | 150.0 |         |
| 10221-CAC | IEEE 802.11n (HT Mixed, 72.2 Mbps, 64-QAM)    | X | 4.39 | 66.72 | 16.03 | 0.00 | 150.0 | ± 9.6 % |
|           |                                               | Y | 4.53 | 66.99 | 16.19 |      | 150.0 |         |
|           |                                               | Z | 4.34 | 66.64 | 15.98 |      | 150.0 |         |
| 10222-CAC | IEEE 802.11n (HT Mixed, 15 Mbps, BPSK)        | X | 4.78 | 66.81 | 16.21 | 0.00 | 150.0 | ± 9.6 % |
|           |                                               | Y | 4.89 | 67.06 | 16.31 |      | 150.0 |         |
|           |                                               | Z | 4.74 | 66.74 | 16.18 |      | 150.0 |         |

|           |                                           |   |       |       |       |      |       |         |
|-----------|-------------------------------------------|---|-------|-------|-------|------|-------|---------|
| 10223-CAC | IEEE 802.11n (HT Mixed, 90 Mbps, 16-QAM)  | X | 5.03  | 66.98 | 16.31 | 0.00 | 150.0 | ± 9.6 % |
|           |                                           | Y | 5.16  | 67.24 | 16.41 |      | 150.0 |         |
|           |                                           | Z | 4.98  | 66.89 | 16.28 |      | 150.0 |         |
| 10224-CAC | IEEE 802.11n (HT Mixed, 150 Mbps, 64-QAM) | X | 4.82  | 66.93 | 16.19 | 0.00 | 150.0 | ± 9.6 % |
|           |                                           | Y | 4.93  | 67.18 | 16.30 |      | 150.0 |         |
|           |                                           | Z | 4.78  | 66.86 | 16.17 |      | 150.0 |         |
| 10225-CAB | UMTS-FDD (HSPA+)                          | X | 2.45  | 65.62 | 14.27 | 0.00 | 150.0 | ± 9.6 % |
|           |                                           | Y | 2.63  | 66.27 | 14.92 |      | 150.0 |         |
|           |                                           | Z | 2.39  | 65.42 | 14.03 |      | 150.0 |         |
| 10226-CAA | LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)  | X | 6.07  | 84.56 | 24.09 | 6.02 | 65.0  | ± 9.6 % |
|           |                                           | Y | 12.65 | 98.67 | 28.84 |      | 65.0  |         |
|           |                                           | Z | 5.97  | 84.66 | 24.24 |      | 65.0  |         |
| 10227-CAA | LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)  | X | 5.87  | 83.00 | 22.87 | 6.02 | 65.0  | ± 9.6 % |
|           |                                           | Y | 12.29 | 96.38 | 27.35 |      | 65.0  |         |
|           |                                           | Z | 5.76  | 83.06 | 23.00 |      | 65.0  |         |
| 10228-CAA | LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)    | X | 4.24  | 80.81 | 24.67 | 6.02 | 65.0  | ± 9.6 % |
|           |                                           | Y | 5.23  | 85.76 | 26.81 |      | 65.0  |         |
|           |                                           | Z | 4.17  | 80.87 | 24.82 |      | 65.0  |         |
| 10229-CAB | LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM)    | X | 5.73  | 83.43 | 23.60 | 6.02 | 65.0  | ± 9.6 % |
|           |                                           | Y | 11.43 | 96.70 | 28.14 |      | 65.0  |         |
|           |                                           | Z | 5.61  | 83.44 | 23.71 |      | 65.0  |         |
| 10230-CAB | LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM)    | X | 5.50  | 81.87 | 22.40 | 6.02 | 65.0  | ± 9.6 % |
|           |                                           | Y | 10.99 | 94.40 | 26.66 |      | 65.0  |         |
|           |                                           | Z | 5.38  | 81.86 | 22.49 |      | 65.0  |         |
| 10231-CAB | LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK)      | X | 4.08  | 79.97 | 24.26 | 6.02 | 65.0  | ± 9.6 % |
|           |                                           | Y | 5.00  | 84.80 | 26.37 |      | 65.0  |         |
|           |                                           | Z | 4.00  | 79.97 | 24.38 |      | 65.0  |         |
| 10232-CAD | LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)    | X | 5.72  | 83.41 | 23.59 | 6.02 | 65.0  | ± 9.6 % |
|           |                                           | Y | 11.41 | 96.67 | 28.13 |      | 65.0  |         |
|           |                                           | Z | 5.60  | 83.42 | 23.71 |      | 65.0  |         |
| 10233-CAD | LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM)    | X | 5.49  | 81.84 | 22.39 | 6.02 | 65.0  | ± 9.6 % |
|           |                                           | Y | 10.94 | 94.34 | 26.65 |      | 65.0  |         |
|           |                                           | Z | 5.36  | 81.82 | 22.48 |      | 65.0  |         |
| 10234-CAD | LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK)      | X | 3.95  | 79.28 | 23.86 | 6.02 | 65.0  | ± 9.6 % |
|           |                                           | Y | 4.83  | 84.00 | 25.95 |      | 65.0  |         |
|           |                                           | Z | 3.87  | 79.25 | 23.96 |      | 65.0  |         |
| 10235-CAD | LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)   | X | 5.72  | 83.43 | 23.60 | 6.02 | 65.0  | ± 9.6 % |
|           |                                           | Y | 11.42 | 96.72 | 28.15 |      | 65.0  |         |
|           |                                           | Z | 5.61  | 83.45 | 23.72 |      | 65.0  |         |
| 10236-CAD | LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM)   | X | 5.54  | 81.96 | 22.42 | 6.02 | 65.0  | ± 9.6 % |
|           |                                           | Y | 11.12 | 94.57 | 26.71 |      | 65.0  |         |
|           |                                           | Z | 5.42  | 81.94 | 22.52 |      | 65.0  |         |
| 10237-CAD | LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK)     | X | 4.07  | 79.98 | 24.27 | 6.02 | 65.0  | ± 9.6 % |
|           |                                           | Y | 5.00  | 84.82 | 26.39 |      | 65.0  |         |
|           |                                           | Z | 3.99  | 79.98 | 24.39 |      | 65.0  |         |
| 10238-CAD | LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM)   | X | 5.70  | 83.38 | 23.58 | 6.02 | 65.0  | ± 9.6 % |
|           |                                           | Y | 11.37 | 96.64 | 28.12 |      | 65.0  |         |
|           |                                           | Z | 5.59  | 83.39 | 23.69 |      | 65.0  |         |

|           |                                            |   |       |       |       |      |      |         |
|-----------|--------------------------------------------|---|-------|-------|-------|------|------|---------|
| 10239-CAD | LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM)    | X | 5.47  | 81.80 | 22.37 | 6.02 | 65.0 | ± 9.6 % |
|           |                                            | Y | 10.88 | 94.28 | 26.63 |      | 65.0 |         |
|           |                                            | Z | 5.35  | 81.78 | 22.47 |      | 65.0 |         |
| 10240-CAD | LTE-TDD (SC-FDMA, 1 RB, 15 MHz, QPSK)      | X | 4.07  | 79.96 | 24.26 | 6.02 | 65.0 | ± 9.6 % |
|           |                                            | Y | 4.99  | 84.79 | 26.38 |      | 65.0 |         |
|           |                                            | Z | 3.99  | 79.96 | 24.38 |      | 65.0 |         |
| 10241-CAA | LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM) | X | 6.35  | 78.70 | 24.11 | 6.98 | 65.0 | ± 9.6 % |
|           |                                            | Y | 6.91  | 80.72 | 25.10 |      | 65.0 |         |
|           |                                            | Z | 6.27  | 78.74 | 24.19 |      | 65.0 |         |
| 10242-CAA | LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM) | X | 5.57  | 76.13 | 22.96 | 6.98 | 65.0 | ± 9.6 % |
|           |                                            | Y | 6.08  | 78.17 | 23.98 |      | 65.0 |         |
|           |                                            | Z | 5.05  | 74.44 | 22.31 |      | 65.0 |         |
| 10243-CAA | LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)   | X | 4.72  | 73.18 | 22.56 | 6.98 | 65.0 | ± 9.6 % |
|           |                                            | Y | 4.94  | 74.18 | 23.15 |      | 65.0 |         |
|           |                                            | Z | 4.31  | 71.50 | 21.84 |      | 65.0 |         |
| 10244-CAB | LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM)   | X | 2.96  | 66.55 | 12.41 | 3.98 | 65.0 | ± 9.6 % |
|           |                                            | Y | 3.69  | 69.77 | 14.47 |      | 65.0 |         |
|           |                                            | Z | 2.79  | 65.91 | 11.95 |      | 65.0 |         |
| 10245-CAB | LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)   | X | 2.91  | 66.15 | 12.16 | 3.98 | 65.0 | ± 9.6 % |
|           |                                            | Y | 3.59  | 69.13 | 14.12 |      | 65.0 |         |
|           |                                            | Z | 2.75  | 65.53 | 11.70 |      | 65.0 |         |
| 10246-CAB | LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK)     | X | 2.67  | 68.55 | 13.80 | 3.98 | 65.0 | ± 9.6 % |
|           |                                            | Y | 3.49  | 72.60 | 16.33 |      | 65.0 |         |
|           |                                            | Z | 2.46  | 67.57 | 13.14 |      | 65.0 |         |
| 10247-CAD | LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)   | X | 3.27  | 68.31 | 14.54 | 3.98 | 65.0 | ± 9.6 % |
|           |                                            | Y | 3.73  | 70.43 | 16.12 |      | 65.0 |         |
|           |                                            | Z | 3.12  | 67.72 | 14.10 |      | 65.0 |         |
| 10248-CAD | LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)   | X | 3.26  | 67.83 | 14.30 | 3.98 | 65.0 | ± 9.6 % |
|           |                                            | Y | 3.69  | 69.80 | 15.81 |      | 65.0 |         |
|           |                                            | Z | 3.11  | 67.27 | 13.88 |      | 65.0 |         |
| 10249-CAD | LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK)     | X | 4.07  | 74.78 | 17.96 | 3.98 | 65.0 | ± 9.6 % |
|           |                                            | Y | 4.92  | 78.09 | 19.87 |      | 65.0 |         |
|           |                                            | Z | 3.87  | 74.17 | 17.56 |      | 65.0 |         |
| 10250-CAD | LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)  | X | 4.57  | 73.26 | 19.23 | 3.98 | 65.0 | ± 9.6 % |
|           |                                            | Y | 4.82  | 74.14 | 19.92 |      | 65.0 |         |
|           |                                            | Z | 4.48  | 73.13 | 19.13 |      | 65.0 |         |
| 10251-CAD | LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)  | X | 4.26  | 70.84 | 17.71 | 3.98 | 65.0 | ± 9.6 % |
|           |                                            | Y | 4.54  | 71.85 | 18.49 |      | 65.0 |         |
|           |                                            | Z | 4.15  | 70.58 | 17.53 |      | 65.0 |         |
| 10252-CAD | LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK)    | X | 5.07  | 77.67 | 20.79 | 3.98 | 65.0 | ± 9.6 % |
|           |                                            | Y | 5.49  | 79.08 | 21.65 |      | 65.0 |         |
|           |                                            | Z | 4.98  | 77.64 | 20.75 |      | 65.0 |         |
| 10253-CAD | LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)  | X | 4.55  | 70.71 | 18.29 | 3.98 | 65.0 | ± 9.6 % |
|           |                                            | Y | 4.75  | 71.39 | 18.80 |      | 65.0 |         |
|           |                                            | Z | 4.46  | 70.52 | 18.18 |      | 65.0 |         |
| 10254-CAD | LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)  | X | 4.88  | 71.79 | 19.11 | 3.98 | 65.0 | ± 9.6 % |
|           |                                            | Y | 5.08  | 72.38 | 19.57 |      | 65.0 |         |
|           |                                            | Z | 4.79  | 71.64 | 19.03 |      | 65.0 |         |

|           |                                             |   |      |       |       |      |      |         |
|-----------|---------------------------------------------|---|------|-------|-------|------|------|---------|
| 10255-CAD | LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK)     | X | 4.98 | 75.10 | 20.19 | 3.98 | 65.0 | ± 9.6 % |
|           |                                             | Y | 5.25 | 75.95 | 20.73 |      | 65.0 |         |
|           |                                             | Z | 4.89 | 75.02 | 20.17 |      | 65.0 |         |
| 10256-CAA | LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM) | X | 2.13 | 62.87 | 9.22  | 3.98 | 65.0 | ± 9.6 % |
|           |                                             | Y | 2.52 | 64.91 | 10.84 |      | 65.0 |         |
|           |                                             | Z | 2.02 | 62.37 | 8.79  |      | 65.0 |         |
| 10257-CAA | LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM) | X | 2.12 | 62.55 | 8.96  | 3.98 | 65.0 | ± 9.6 % |
|           |                                             | Y | 2.48 | 64.41 | 10.48 |      | 65.0 |         |
|           |                                             | Z | 2.01 | 62.08 | 8.53  |      | 65.0 |         |
| 10258-CAA | LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK)   | X | 1.84 | 63.71 | 10.17 | 3.98 | 65.0 | ± 9.6 % |
|           |                                             | Y | 2.32 | 66.67 | 12.46 |      | 65.0 |         |
|           |                                             | Z | 1.71 | 62.95 | 9.53  |      | 65.0 |         |
| 10259-CAB | LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)   | X | 3.77 | 70.27 | 16.30 | 3.98 | 65.0 | ± 9.6 % |
|           |                                             | Y | 4.18 | 71.99 | 17.58 |      | 65.0 |         |
|           |                                             | Z | 3.63 | 69.83 | 15.97 |      | 65.0 |         |
| 10260-CAB | LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)   | X | 3.80 | 70.03 | 16.19 | 3.98 | 65.0 | ± 9.6 % |
|           |                                             | Y | 4.20 | 71.70 | 17.44 |      | 65.0 |         |
|           |                                             | Z | 3.66 | 69.59 | 15.86 |      | 65.0 |         |
| 10261-CAB | LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK)     | X | 4.33 | 75.45 | 18.88 | 3.98 | 65.0 | ± 9.6 % |
|           |                                             | Y | 4.93 | 77.76 | 20.30 |      | 65.0 |         |
|           |                                             | Z | 4.19 | 75.10 | 18.64 |      | 65.0 |         |
| 10262-CAD | LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)   | X | 4.55 | 73.17 | 19.17 | 3.98 | 65.0 | ± 9.6 % |
|           |                                             | Y | 4.80 | 74.06 | 19.86 |      | 65.0 |         |
|           |                                             | Z | 4.46 | 73.02 | 19.06 |      | 65.0 |         |
| 10263-CAD | LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM)   | X | 4.26 | 70.83 | 17.70 | 3.98 | 65.0 | ± 9.6 % |
|           |                                             | Y | 4.53 | 71.83 | 18.48 |      | 65.0 |         |
|           |                                             | Z | 4.15 | 70.57 | 17.53 |      | 65.0 |         |
| 10264-CAD | LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK)     | X | 5.00 | 77.43 | 20.66 | 3.98 | 65.0 | ± 9.6 % |
|           |                                             | Y | 5.43 | 78.85 | 21.54 |      | 65.0 |         |
|           |                                             | Z | 4.92 | 77.38 | 20.62 |      | 65.0 |         |
| 10265-CAD | LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)  | X | 4.61 | 71.04 | 18.57 | 3.98 | 65.0 | ± 9.6 % |
|           |                                             | Y | 4.81 | 71.75 | 19.06 |      | 65.0 |         |
|           |                                             | Z | 4.51 | 70.85 | 18.48 |      | 65.0 |         |
| 10266-CAD | LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)  | X | 4.99 | 72.30 | 19.53 | 3.98 | 65.0 | ± 9.6 % |
|           |                                             | Y | 5.19 | 72.89 | 19.93 |      | 65.0 |         |
|           |                                             | Z | 4.90 | 72.16 | 19.48 |      | 65.0 |         |
| 10267-CAD | LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK)    | X | 5.19 | 75.64 | 20.29 | 3.98 | 65.0 | ± 9.6 % |
|           |                                             | Y | 5.51 | 76.62 | 20.84 |      | 65.0 |         |
|           |                                             | Z | 5.10 | 75.56 | 20.27 |      | 65.0 |         |
| 10268-CAD | LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)  | X | 5.29 | 71.37 | 19.30 | 3.98 | 65.0 | ± 9.6 % |
|           |                                             | Y | 5.47 | 71.91 | 19.61 |      | 65.0 |         |
|           |                                             | Z | 5.19 | 71.19 | 19.25 |      | 65.0 |         |
| 10269-CAD | LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)  | X | 5.31 | 71.06 | 19.19 | 3.98 | 65.0 | ± 9.6 % |
|           |                                             | Y | 5.49 | 71.57 | 19.50 |      | 65.0 |         |
|           |                                             | Z | 5.22 | 70.89 | 19.14 |      | 65.0 |         |
| 10270-CAD | LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK)    | X | 5.30 | 73.47 | 19.61 | 3.98 | 65.0 | ± 9.6 % |
|           |                                             | Y | 5.53 | 74.17 | 19.99 |      | 65.0 |         |
|           |                                             | Z | 5.20 | 73.35 | 19.60 |      | 65.0 |         |

|           |                                                                    |   |       |       |       |      |       |         |
|-----------|--------------------------------------------------------------------|---|-------|-------|-------|------|-------|---------|
| 10274-CAB | UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.10)                          | X | 2.29  | 66.13 | 14.25 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                    | Y | 2.47  | 66.83 | 14.96 |      | 150.0 |         |
|           |                                                                    | Z | 2.23  | 65.91 | 14.00 |      | 150.0 |         |
| 10275-CAB | UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.4)                           | X | 1.32  | 66.59 | 14.10 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                    | Y | 1.51  | 67.98 | 15.28 |      | 150.0 |         |
|           |                                                                    | Z | 1.26  | 66.25 | 13.73 |      | 150.0 |         |
| 10277-CAA | PHS (QPSK)                                                         | X | 1.63  | 59.43 | 4.89  | 9.03 | 50.0  | ± 9.6 % |
|           |                                                                    | Y | 1.57  | 59.68 | 5.07  |      | 50.0  |         |
|           |                                                                    | Z | 1.63  | 59.29 | 4.78  |      | 50.0  |         |
| 10278-CAA | PHS (QPSK, BW 884MHz, Rolloff 0.5)                                 | X | 2.63  | 63.98 | 9.72  | 9.03 | 50.0  | ± 9.6 % |
|           |                                                                    | Y | 2.84  | 65.76 | 10.99 |      | 50.0  |         |
|           |                                                                    | Z | 2.58  | 63.60 | 9.43  |      | 50.0  |         |
| 10279-CAA | PHS (QPSK, BW 884MHz, Rolloff 0.38)                                | X | 2.69  | 64.16 | 9.88  | 9.03 | 50.0  | ± 9.6 % |
|           |                                                                    | Y | 2.92  | 66.02 | 11.18 |      | 50.0  |         |
|           |                                                                    | Z | 2.64  | 63.76 | 9.57  |      | 50.0  |         |
| 10290-AAB | CDMA2000, RC1, SO55, Full Rate                                     | X | 0.62  | 61.39 | 7.67  | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                    | Y | 1.02  | 65.94 | 11.36 |      | 150.0 |         |
|           |                                                                    | Z | 0.51  | 60.05 | 6.35  |      | 150.0 |         |
| 10291-AAB | CDMA2000, RC3, SO55, Full Rate                                     | X | 0.38  | 60.00 | 6.37  | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                    | Y | 0.63  | 63.98 | 10.19 |      | 150.0 |         |
|           |                                                                    | Z | 0.35  | 60.00 | 5.71  |      | 150.0 |         |
| 10292-AAB | CDMA2000, RC3, SO32, Full Rate                                     | X | 0.41  | 61.21 | 7.36  | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                    | Y | 0.90  | 68.94 | 12.97 |      | 150.0 |         |
|           |                                                                    | Z | 0.33  | 60.00 | 5.92  |      | 150.0 |         |
| 10293-AAB | CDMA2000, RC3, SO3, Full Rate                                      | X | 0.57  | 64.08 | 9.36  | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                    | Y | 2.52  | 81.69 | 18.32 |      | 150.0 |         |
|           |                                                                    | Z | 0.38  | 60.78 | 6.83  |      | 150.0 |         |
| 10295-AAB | CDMA2000, RC1, SO3, 1/8th Rate 25 fr.                              | X | 11.92 | 85.30 | 21.36 | 9.03 | 50.0  | ± 9.6 % |
|           |                                                                    | Y | 11.21 | 86.84 | 22.82 |      | 50.0  |         |
|           |                                                                    | Z | 13.11 | 85.98 | 21.32 |      | 50.0  |         |
| 10297-AAC | LTE-FDD (SC-FDMA, 50% RB, 20 MHz, QPSK)                            | X | 2.34  | 68.56 | 15.85 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                    | Y | 2.56  | 69.55 | 16.50 |      | 150.0 |         |
|           |                                                                    | Z | 2.28  | 68.33 | 15.67 |      | 150.0 |         |
| 10298-AAC | LTE-FDD (SC-FDMA, 50% RB, 3 MHz, QPSK)                             | X | 0.86  | 62.32 | 9.15  | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                    | Y | 1.20  | 65.61 | 11.95 |      | 150.0 |         |
|           |                                                                    | Z | 0.75  | 61.28 | 8.12  |      | 150.0 |         |
| 10299-AAC | LTE-FDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM)                           | X | 1.21  | 62.02 | 8.36  | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                    | Y | 1.74  | 65.45 | 10.76 |      | 150.0 |         |
|           |                                                                    | Z | 1.09  | 61.22 | 7.63  |      | 150.0 |         |
| 10300-AAC | LTE-FDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)                           | X | 1.03  | 60.25 | 6.69  | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                    | Y | 1.33  | 62.10 | 8.32  |      | 150.0 |         |
|           |                                                                    | Z | 0.96  | 60.00 | 6.29  |      | 150.0 |         |
| 10301-AAA | IEEE 802.16e WiMAX (29:18, 5ms, 10MHz, QPSK, PUSC)                 | X | 4.31  | 65.34 | 16.95 | 4.17 | 50.0  | ± 9.6 % |
|           |                                                                    | Y | 4.42  | 65.42 | 17.16 |      | 50.0  |         |
|           |                                                                    | Z | 4.15  | 64.84 | 16.65 |      | 50.0  |         |
| 10302-AAA | IEEE 802.16e WiMAX (29:18, 5ms, 10MHz, QPSK, PUSC, 3 CTRL symbols) | X | 4.74  | 65.66 | 17.50 | 4.96 | 50.0  | ± 9.6 % |
|           |                                                                    | Y | 4.82  | 65.69 | 17.68 |      | 50.0  |         |
|           |                                                                    | Z | 4.80  | 66.29 | 17.83 |      | 50.0  |         |



|           |                                                                     |   |      |       |       |       |       |         |
|-----------|---------------------------------------------------------------------|---|------|-------|-------|-------|-------|---------|
| 10303-AAA | IEEE 802.16e WiMAX (31:15, 5ms, 10MHz, 64QAM, PUSC)                 | X | 4.57 | 65.85 | 17.64 | 4.96  | 50.0  | ± 9.6 % |
|           |                                                                     | Y | 4.58 | 65.30 | 17.47 |       | 50.0  |         |
|           |                                                                     | Z | 4.58 | 66.05 | 17.67 |       | 50.0  |         |
| 10304-AAA | IEEE 802.16e WiMAX (29:18, 5ms, 10MHz, 64QAM, PUSC)                 | X | 4.33 | 65.25 | 16.84 | 4.17  | 50.0  | ± 9.6 % |
|           |                                                                     | Y | 4.41 | 65.29 | 17.04 |       | 50.0  |         |
|           |                                                                     | Z | 4.30 | 65.25 | 16.76 |       | 50.0  |         |
| 10305-AAA | IEEE 802.16e WiMAX (31:15, 10ms, 10MHz, 64QAM, PUSC, 15 symbols)    | X | 4.08 | 67.52 | 18.43 | 6.02  | 35.0  | ± 9.6 % |
|           |                                                                     | Y | 3.93 | 66.47 | 18.38 |       | 35.0  |         |
|           |                                                                     | Z | 4.17 | 68.07 | 18.49 |       | 35.0  |         |
| 10306-AAA | IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 64QAM, PUSC, 18 symbols)    | X | 4.35 | 66.53 | 18.33 | 6.02  | 35.0  | ± 9.6 % |
|           |                                                                     | Y | 4.30 | 65.84 | 18.28 |       | 35.0  |         |
|           |                                                                     | Z | 4.40 | 66.91 | 18.39 |       | 35.0  |         |
| 10307-AAA | IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, QPSK, PUSC, 18 symbols)     | X | 4.24 | 66.57 | 18.22 | 6.02  | 35.0  | ± 9.6 % |
|           |                                                                     | Y | 4.18 | 65.84 | 18.17 |       | 35.0  |         |
|           |                                                                     | Z | 4.29 | 66.97 | 18.28 |       | 35.0  |         |
| 10308-AAA | IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 16QAM, PUSC)                | X | 4.22 | 66.79 | 18.37 | 6.02  | 35.0  | ± 9.6 % |
|           |                                                                     | Y | 4.15 | 66.02 | 18.31 |       | 35.0  |         |
|           |                                                                     | Z | 4.28 | 67.22 | 18.44 |       | 35.0  |         |
| 10309-AAA | IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 16QAM, AMC 2x3, 18 symbols) | X | 4.36 | 66.58 | 18.41 | 6.02  | 35.0  | ± 9.6 % |
|           |                                                                     | Y | 4.32 | 65.92 | 18.37 |       | 35.0  |         |
|           |                                                                     | Z | 4.41 | 66.96 | 18.47 |       | 35.0  |         |
| 10310-AAA | IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, QPSK, AMC 2x3, 18 symbols)  | X | 4.31 | 66.61 | 18.32 | 6.02  | 35.0  | ± 9.6 % |
|           |                                                                     | Y | 4.25 | 65.87 | 18.26 |       | 35.0  |         |
|           |                                                                     | Z | 4.36 | 67.01 | 18.39 |       | 35.0  |         |
| 10311-AAC | LTE-FDD (SC-FDMA, 100% RB, 15 MHz, QPSK)                            | X | 2.69 | 67.81 | 15.59 | 0.00  | 150.0 | ± 9.6 % |
|           |                                                                     | Y | 2.92 | 68.81 | 16.17 |       | 150.0 |         |
|           |                                                                     | Z | 2.63 | 67.57 | 15.43 |       | 150.0 |         |
| 10313-AAA | iDEN 1:3                                                            | X | 2.12 | 67.66 | 13.16 | 6.99  | 70.0  | ± 9.6 % |
|           |                                                                     | Y | 2.57 | 70.78 | 14.98 |       | 70.0  |         |
|           |                                                                     | Z | 1.99 | 66.93 | 12.72 |       | 70.0  |         |
| 10314-AAA | iDEN 1:6                                                            | X | 3.63 | 75.52 | 19.12 | 10.00 | 30.0  | ± 9.6 % |
|           |                                                                     | Y | 4.61 | 80.73 | 21.71 |       | 30.0  |         |
|           |                                                                     | Z | 3.57 | 74.98 | 18.73 |       | 30.0  |         |
| 10315-AAB | IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 96pc duty cycle)           | X | 0.94 | 62.92 | 14.24 | 0.17  | 150.0 | ± 9.6 % |
|           |                                                                     | Y | 1.03 | 63.65 | 14.93 |       | 150.0 |         |
|           |                                                                     | Z | 0.90 | 62.74 | 14.06 |       | 150.0 |         |
| 10316-AAB | IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 96pc duty cycle)       | X | 4.24 | 66.44 | 15.96 | 0.17  | 150.0 | ± 9.6 % |
|           |                                                                     | Y | 4.37 | 66.70 | 16.12 |       | 150.0 |         |
|           |                                                                     | Z | 4.19 | 66.38 | 15.93 |       | 150.0 |         |
| 10317-AAC | IEEE 802.11a WiFi 5 GHz (OFDM, 6 Mbps, 96pc duty cycle)             | X | 4.24 | 66.44 | 15.96 | 0.17  | 150.0 | ± 9.6 % |
|           |                                                                     | Y | 4.37 | 66.70 | 16.12 |       | 150.0 |         |
|           |                                                                     | Z | 4.19 | 66.38 | 15.93 |       | 150.0 |         |
| 10400-AAD | IEEE 802.11ac WiFi (20MHz, 64-QAM, 99pc duty cycle)                 | X | 4.30 | 66.72 | 15.98 | 0.00  | 150.0 | ± 9.6 % |
|           |                                                                     | Y | 4.45 | 67.02 | 16.15 |       | 150.0 |         |
|           |                                                                     | Z | 4.24 | 66.64 | 15.93 |       | 150.0 |         |
| 10401-AAD | IEEE 802.11ac WiFi (40MHz, 64-QAM, 99pc duty cycle)                 | X | 4.98 | 66.55 | 16.05 | 0.00  | 150.0 | ± 9.6 % |
|           |                                                                     | Y | 5.10 | 66.85 | 16.17 |       | 150.0 |         |
|           |                                                                     | Z | 4.92 | 66.44 | 16.00 |       | 150.0 |         |

|           |                                                                                 |   |        |        |       |      |       |         |
|-----------|---------------------------------------------------------------------------------|---|--------|--------|-------|------|-------|---------|
| 10402-AAD | IEEE 802.11ac WiFi (80MHz, 64-QAM, 99pc duty cycle)                             | X | 5.34   | 67.14  | 16.25 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                                 | Y | 5.45   | 67.41  | 16.34 |      | 150.0 |         |
|           |                                                                                 | Z | 5.29   | 67.06  | 16.22 |      | 150.0 |         |
| 10403-AAB | CDMA2000 (1xEV-DO, Rev. 0)                                                      | X | 0.62   | 61.39  | 7.67  | 0.00 | 115.0 | ± 9.6 % |
|           |                                                                                 | Y | 1.02   | 65.94  | 11.36 |      | 115.0 |         |
|           |                                                                                 | Z | 0.51   | 60.05  | 6.35  |      | 115.0 |         |
| 10404-AAB | CDMA2000 (1xEV-DO, Rev. A)                                                      | X | 0.62   | 61.39  | 7.67  | 0.00 | 115.0 | ± 9.6 % |
|           |                                                                                 | Y | 1.02   | 65.94  | 11.36 |      | 115.0 |         |
|           |                                                                                 | Z | 0.51   | 60.05  | 6.35  |      | 115.0 |         |
| 10406-AAB | CDMA2000, RC3, SO32, SCH0, Full Rate                                            | X | 79.25  | 113.76 | 26.41 | 0.00 | 100.0 | ± 9.6 % |
|           |                                                                                 | Y | 100.00 | 113.13 | 25.62 |      | 100.0 |         |
|           |                                                                                 | Z | 63.21  | 110.78 | 25.52 |      | 100.0 |         |
| 10410-AAD | LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9, Subframe Conf=4) | X | 4.42   | 82.55  | 18.88 | 3.23 | 80.0  | ± 9.6 % |
|           |                                                                                 | Y | 100.00 | 121.46 | 29.03 |      | 80.0  |         |
|           |                                                                                 | Z | 4.61   | 83.45  | 19.14 |      | 80.0  |         |
| 10415-AAA | IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc duty cycle)                       | X | 0.88   | 62.35  | 13.81 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                                 | Y | 0.98   | 63.10  | 14.52 |      | 150.0 |         |
|           |                                                                                 | Z | 0.85   | 62.15  | 13.60 |      | 150.0 |         |
| 10416-AAA | IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 99pc duty cycle)                   | X | 4.20   | 66.51  | 15.95 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                                 | Y | 4.34   | 66.78  | 16.12 |      | 150.0 |         |
|           |                                                                                 | Z | 4.15   | 66.43  | 15.91 |      | 150.0 |         |
| 10417-AAB | IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 99pc duty cycle)                       | X | 4.20   | 66.51  | 15.95 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                                 | Y | 4.34   | 66.78  | 16.12 |      | 150.0 |         |
|           |                                                                                 | Z | 4.15   | 66.43  | 15.91 |      | 150.0 |         |
| 10418-AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle, Long preamble)   | X | 4.20   | 66.71  | 16.01 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                                 | Y | 4.33   | 66.98  | 16.18 |      | 150.0 |         |
|           |                                                                                 | Z | 4.15   | 66.64  | 15.96 |      | 150.0 |         |
| 10419-AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle, Short preamble)  | X | 4.22   | 66.64  | 16.00 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                                 | Y | 4.35   | 66.91  | 16.16 |      | 150.0 |         |
|           |                                                                                 | Z | 4.16   | 66.57  | 15.95 |      | 150.0 |         |
| 10422-AAB | IEEE 802.11n (HT Greenfield, 7.2 Mbps, BPSK)                                    | X | 4.32   | 66.62  | 16.02 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                                 | Y | 4.46   | 66.88  | 16.17 |      | 150.0 |         |
|           |                                                                                 | Z | 4.27   | 66.55  | 15.97 |      | 150.0 |         |
| 10423-AAB | IEEE 802.11n (HT Greenfield, 43.3 Mbps, 16-QAM)                                 | X | 4.44   | 66.87  | 16.10 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                                 | Y | 4.59   | 67.15  | 16.26 |      | 150.0 |         |
|           |                                                                                 | Z | 4.38   | 66.79  | 16.05 |      | 150.0 |         |
| 10424-AAB | IEEE 802.11n (HT Greenfield, 72.2 Mbps, 64-QAM)                                 | X | 4.37   | 66.82  | 16.07 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                                 | Y | 4.52   | 67.10  | 16.24 |      | 150.0 |         |
|           |                                                                                 | Z | 4.32   | 66.73  | 16.03 |      | 150.0 |         |
| 10425-AAB | IEEE 802.11n (HT Greenfield, 15 Mbps, BPSK)                                     | X | 5.01   | 67.04  | 16.32 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                                 | Y | 5.13   | 67.27  | 16.40 |      | 150.0 |         |
|           |                                                                                 | Z | 4.98   | 67.00  | 16.31 |      | 150.0 |         |
| 10426-AAB | IEEE 802.11n (HT Greenfield, 90 Mbps, 16-QAM)                                   | X | 5.04   | 67.16  | 16.37 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                                 | Y | 5.14   | 67.33  | 16.43 |      | 150.0 |         |
|           |                                                                                 | Z | 5.00   | 67.12  | 16.36 |      | 150.0 |         |

|           |                                                                |   |       |        |       |      |       |         |
|-----------|----------------------------------------------------------------|---|-------|--------|-------|------|-------|---------|
| 10427-AAB | IEEE 802.11n (HT Greenfield, 150 Mbps, 64-QAM)                 | X | 4.99  | 66.91  | 16.24 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                | Y | 5.11  | 67.16  | 16.34 |      | 150.0 |         |
|           |                                                                | Z | 4.95  | 66.84  | 16.22 |      | 150.0 |         |
| 10430-AAB | LTE-FDD (OFDMA, 5 MHz, E-TM 3.1)                               | X | 4.13  | 72.41  | 18.13 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                | Y | 4.28  | 72.52  | 18.48 |      | 150.0 |         |
|           |                                                                | Z | 4.08  | 72.39  | 18.00 |      | 150.0 |         |
| 10431-AAB | LTE-FDD (OFDMA, 10 MHz, E-TM 3.1)                              | X | 3.79  | 67.01  | 15.72 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                | Y | 3.96  | 67.36  | 16.02 |      | 150.0 |         |
|           |                                                                | Z | 3.73  | 66.91  | 15.62 |      | 150.0 |         |
| 10432-AAB | LTE-FDD (OFDMA, 15 MHz, E-TM 3.1)                              | X | 4.13  | 66.90  | 15.96 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                | Y | 4.28  | 67.20  | 16.17 |      | 150.0 |         |
|           |                                                                | Z | 4.07  | 66.81  | 15.90 |      | 150.0 |         |
| 10433-AAB | LTE-FDD (OFDMA, 20 MHz, E-TM 3.1)                              | X | 4.39  | 66.85  | 16.10 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                | Y | 4.53  | 67.13  | 16.26 |      | 150.0 |         |
|           |                                                                | Z | 4.34  | 66.77  | 16.05 |      | 150.0 |         |
| 10434-AAA | W-CDMA (BS Test Model 1, 64 DPCH)                              | X | 4.16  | 72.87  | 17.65 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                | Y | 4.44  | 73.53  | 18.35 |      | 150.0 |         |
|           |                                                                | Z | 4.04  | 72.57  | 17.34 |      | 150.0 |         |
| 10435-AAC | LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9) | X | 4.14  | 81.62  | 18.53 | 3.23 | 80.0  | ± 9.6 % |
|           |                                                                | Y | 83.06 | 118.85 | 28.39 |      | 80.0  |         |
|           |                                                                | Z | 4.26  | 82.36  | 18.73 |      | 80.0  |         |
| 10447-AAB | LTE-FDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)                 | X | 2.97  | 66.44  | 14.21 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                | Y | 3.21  | 67.20  | 14.95 |      | 150.0 |         |
|           |                                                                | Z | 2.88  | 66.18  | 13.94 |      | 150.0 |         |
| 10448-AAB | LTE-FDD (OFDMA, 10 MHz, E-TM 3.1, Clipping 44%)                | X | 3.66  | 66.81  | 15.59 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                | Y | 3.83  | 67.16  | 15.89 |      | 150.0 |         |
|           |                                                                | Z | 3.60  | 66.71  | 15.49 |      | 150.0 |         |
| 10449-AAB | LTE-FDD (OFDMA, 15 MHz, E-TM 3.1, Clipping 44%)                | X | 3.97  | 66.72  | 15.86 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                | Y | 4.12  | 67.03  | 16.07 |      | 150.0 |         |
|           |                                                                | Z | 3.92  | 66.64  | 15.79 |      | 150.0 |         |
| 10450-AAB | LTE-FDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%)                | X | 4.20  | 66.62  | 15.95 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                | Y | 4.33  | 66.92  | 16.12 |      | 150.0 |         |
|           |                                                                | Z | 4.14  | 66.54  | 15.90 |      | 150.0 |         |
| 10451-AAA | W-CDMA (BS Test Model 1, 64 DPCH, Clipping 44%)                | X | 2.72  | 65.90  | 13.24 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                | Y | 3.02  | 67.01  | 14.24 |      | 150.0 |         |
|           |                                                                | Z | 2.61  | 65.51  | 12.86 |      | 150.0 |         |
| 10456-AAB | IEEE 802.11ac WiFi (160MHz, 64-QAM, 99pc duty cycle)           | X | 5.96  | 67.58  | 16.49 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                | Y | 6.03  | 67.79  | 16.56 |      | 150.0 |         |
|           |                                                                | Z | 5.93  | 67.56  | 16.51 |      | 150.0 |         |
| 10457-AAA | UMTS-FDD (DC-HSDPA)                                            | X | 3.59  | 65.29  | 15.69 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                | Y | 3.69  | 65.51  | 15.85 |      | 150.0 |         |
|           |                                                                | Z | 3.55  | 65.23  | 15.64 |      | 150.0 |         |
| 10458-AAA | CDMA2000 (1xEV-DO, Rev. B, 2 carriers)                         | X | 3.31  | 69.73  | 15.51 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                | Y | 3.83  | 71.70  | 17.00 |      | 150.0 |         |
|           |                                                                | Z | 3.11  | 68.88  | 14.86 |      | 150.0 |         |
| 10459-AAA | CDMA2000 (1xEV-DO, Rev. B, 3 carriers)                         | X | 4.77  | 69.37  | 17.77 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                | Y | 4.95  | 69.51  | 18.11 |      | 150.0 |         |
|           |                                                                | Z | 4.71  | 69.35  | 17.65 |      | 150.0 |         |

|           |                                                                   |   |       |        |       |      |       |         |
|-----------|-------------------------------------------------------------------|---|-------|--------|-------|------|-------|---------|
| 10460-AAA | UMTS-FDD (WCDMA, AMR)                                             | X | 0.70  | 66.43  | 14.16 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                   | Y | 0.85  | 68.30  | 15.90 |      | 150.0 |         |
|           |                                                                   | Z | 0.65  | 66.08  | 13.63 |      | 150.0 |         |
| 10461-AAA | LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK, UL Subframe=2,3,4,7,8,9)   | X | 3.38  | 81.02  | 19.35 | 3.29 | 80.0  | ± 9.6 % |
|           |                                                                   | Y | 18.99 | 104.98 | 26.63 |      | 80.0  |         |
|           |                                                                   | Z | 5.54  | 87.58  | 21.32 |      | 80.0  |         |
| 10462-AAA | LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9) | X | 0.73  | 60.00  | 7.20  | 3.23 | 80.0  | ± 9.6 % |
|           |                                                                   | Y | 0.69  | 60.00  | 7.03  |      | 80.0  |         |
|           |                                                                   | Z | 0.71  | 60.00  | 7.10  |      | 80.0  |         |
| 10463-AAA | LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) | X | 0.75  | 60.00  | 6.58  | 3.23 | 80.0  | ± 9.6 % |
|           |                                                                   | Y | 0.72  | 60.00  | 6.37  |      | 80.0  |         |
|           |                                                                   | Z | 0.73  | 60.00  | 6.47  |      | 80.0  |         |
| 10464-AAA | LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9)     | X | 1.98  | 73.80  | 16.11 | 3.23 | 80.0  | ± 9.6 % |
|           |                                                                   | Y | 9.51  | 93.98  | 22.84 |      | 80.0  |         |
|           |                                                                   | Z | 2.44  | 76.51  | 16.98 |      | 80.0  |         |
| 10465-AAA | LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)   | X | 0.73  | 60.00  | 7.14  | 3.23 | 80.0  | ± 9.6 % |
|           |                                                                   | Y | 0.69  | 60.00  | 6.96  |      | 80.0  |         |
|           |                                                                   | Z | 0.71  | 60.00  | 7.03  |      | 80.0  |         |
| 10466-AAA | LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)   | X | 0.75  | 60.00  | 6.54  | 3.23 | 80.0  | ± 9.6 % |
|           |                                                                   | Y | 0.73  | 60.00  | 6.32  |      | 80.0  |         |
|           |                                                                   | Z | 0.74  | 60.00  | 6.43  |      | 80.0  |         |
| 10467-AAC | LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9)     | X | 2.17  | 74.97  | 16.58 | 3.23 | 80.0  | ± 9.6 % |
|           |                                                                   | Y | 12.23 | 97.30  | 23.77 |      | 80.0  |         |
|           |                                                                   | Z | 2.80  | 78.23  | 17.61 |      | 80.0  |         |
| 10468-AAC | LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)   | X | 0.73  | 60.00  | 7.16  | 3.23 | 80.0  | ± 9.6 % |
|           |                                                                   | Y | 0.69  | 60.00  | 6.98  |      | 80.0  |         |
|           |                                                                   | Z | 0.71  | 60.00  | 7.06  |      | 80.0  |         |
| 10469-AAC | LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)   | X | 0.75  | 60.00  | 6.54  | 3.23 | 80.0  | ± 9.6 % |
|           |                                                                   | Y | 0.73  | 60.00  | 6.32  |      | 80.0  |         |
|           |                                                                   | Z | 0.73  | 60.00  | 6.43  |      | 80.0  |         |
| 10470-AAC | LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9)    | X | 2.17  | 74.98  | 16.58 | 3.23 | 80.0  | ± 9.6 % |
|           |                                                                   | Y | 12.41 | 97.50  | 23.82 |      | 80.0  |         |
|           |                                                                   | Z | 2.80  | 78.27  | 17.62 |      | 80.0  |         |
| 10471-AAC | LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)  | X | 0.73  | 60.00  | 7.14  | 3.23 | 80.0  | ± 9.6 % |
|           |                                                                   | Y | 0.69  | 60.00  | 6.96  |      | 80.0  |         |
|           |                                                                   | Z | 0.71  | 60.00  | 7.04  |      | 80.0  |         |
| 10472-AAC | LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)  | X | 0.75  | 60.00  | 6.52  | 3.23 | 80.0  | ± 9.6 % |
|           |                                                                   | Y | 0.73  | 60.00  | 6.30  |      | 80.0  |         |
|           |                                                                   | Z | 0.73  | 60.00  | 6.41  |      | 80.0  |         |
| 10473-AAC | LTE-TDD (SC-FDMA, 1 RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9)    | X | 2.15  | 74.90  | 16.54 | 3.23 | 80.0  | ± 9.6 % |
|           |                                                                   | Y | 12.25 | 97.31  | 23.76 |      | 80.0  |         |
|           |                                                                   | Z | 2.77  | 78.14  | 17.57 |      | 80.0  |         |
| 10474-AAC | LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)  | X | 0.73  | 60.00  | 7.14  | 3.23 | 80.0  | ± 9.6 % |
|           |                                                                   | Y | 0.69  | 60.00  | 6.96  |      | 80.0  |         |
|           |                                                                   | Z | 0.71  | 60.00  | 7.04  |      | 80.0  |         |
| 10475-AAC | LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)  | X | 0.75  | 60.00  | 6.52  | 3.23 | 80.0  | ± 9.6 % |
|           |                                                                   | Y | 0.72  | 60.00  | 6.30  |      | 80.0  |         |
|           |                                                                   | Z | 0.73  | 60.00  | 6.41  |      | 80.0  |         |

|           |                                                                     |   |      |       |       |      |      |         |
|-----------|---------------------------------------------------------------------|---|------|-------|-------|------|------|---------|
| 10477-AAC | LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)    | X | 0.73 | 60.00 | 7.12  | 3.23 | 80.0 | ± 9.6 % |
|           |                                                                     | Y | 0.69 | 60.00 | 6.93  |      | 80.0 |         |
|           |                                                                     | Z | 0.71 | 60.00 | 7.01  |      | 80.0 |         |
| 10478-AAC | LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)    | X | 0.75 | 60.00 | 6.51  | 3.23 | 80.0 | ± 9.6 % |
|           |                                                                     | Y | 0.73 | 60.00 | 6.28  |      | 80.0 |         |
|           |                                                                     | Z | 0.73 | 60.00 | 6.40  |      | 80.0 |         |
| 10479-AAA | LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK, UL Subframe=2,3,4,7,8,9)   | X | 5.85 | 83.63 | 20.79 | 3.23 | 80.0 | ± 9.6 % |
|           |                                                                     | Y | 8.18 | 88.90 | 23.01 |      | 80.0 |         |
|           |                                                                     | Z | 8.53 | 88.91 | 22.31 |      | 80.0 |         |
| 10480-AAA | LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9) | X | 2.10 | 66.63 | 12.28 | 3.23 | 80.0 | ± 9.6 % |
|           |                                                                     | Y | 3.93 | 73.79 | 15.45 |      | 80.0 |         |
|           |                                                                     | Z | 1.97 | 66.13 | 11.92 |      | 80.0 |         |
| 10481-AAA | LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) | X | 1.60 | 63.40 | 10.41 | 3.23 | 80.0 | ± 9.6 % |
|           |                                                                     | Y | 2.50 | 68.24 | 12.88 |      | 80.0 |         |
|           |                                                                     | Z | 1.47 | 62.78 | 9.97  |      | 80.0 |         |
| 10482-AAA | LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9)     | X | 1.17 | 61.84 | 10.15 | 2.23 | 80.0 | ± 9.6 % |
|           |                                                                     | Y | 1.70 | 66.03 | 13.07 |      | 80.0 |         |
|           |                                                                     | Z | 1.04 | 60.83 | 9.32  |      | 80.0 |         |
| 10483-AAA | LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)   | X | 1.35 | 60.48 | 8.79  | 2.23 | 80.0 | ± 9.6 % |
|           |                                                                     | Y | 1.93 | 64.30 | 11.40 |      | 80.0 |         |
|           |                                                                     | Z | 1.26 | 60.00 | 8.32  |      | 80.0 |         |
| 10484-AAA | LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)   | X | 1.35 | 60.23 | 8.65  | 2.23 | 80.0 | ± 9.6 % |
|           |                                                                     | Y | 1.87 | 63.68 | 11.09 |      | 80.0 |         |
|           |                                                                     | Z | 1.29 | 60.00 | 8.31  |      | 80.0 |         |
| 10485-AAC | LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9)     | X | 1.88 | 67.09 | 14.28 | 2.23 | 80.0 | ± 9.6 % |
|           |                                                                     | Y | 2.36 | 70.08 | 16.25 |      | 80.0 |         |
|           |                                                                     | Z | 1.78 | 66.60 | 13.86 |      | 80.0 |         |
| 10486-AAC | LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)   | X | 1.80 | 63.31 | 11.66 | 2.23 | 80.0 | ± 9.6 % |
|           |                                                                     | Y | 2.27 | 66.10 | 13.68 |      | 80.0 |         |
|           |                                                                     | Z | 1.68 | 62.61 | 11.10 |      | 80.0 |         |
| 10487-AAC | LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)   | X | 1.81 | 63.05 | 11.51 | 2.23 | 80.0 | ± 9.6 % |
|           |                                                                     | Y | 2.27 | 65.73 | 13.48 |      | 80.0 |         |
|           |                                                                     | Z | 1.69 | 62.37 | 10.95 |      | 80.0 |         |
| 10488-AAC | LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9)    | X | 2.51 | 68.98 | 16.62 | 2.23 | 80.0 | ± 9.6 % |
|           |                                                                     | Y | 2.78 | 70.26 | 17.49 |      | 80.0 |         |
|           |                                                                     | Z | 2.47 | 69.01 | 16.58 |      | 80.0 |         |
| 10489-AAC | LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)  | X | 2.67 | 66.69 | 15.42 | 2.23 | 80.0 | ± 9.6 % |
|           |                                                                     | Y | 2.89 | 67.66 | 16.19 |      | 80.0 |         |
|           |                                                                     | Z | 2.61 | 66.60 | 15.31 |      | 80.0 |         |
| 10490-AAC | LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)  | X | 2.75 | 66.60 | 15.38 | 2.23 | 80.0 | ± 9.6 % |
|           |                                                                     | Y | 2.98 | 67.54 | 16.14 |      | 80.0 |         |
|           |                                                                     | Z | 2.69 | 66.50 | 15.26 |      | 80.0 |         |
| 10491-AAC | LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9)    | X | 2.86 | 68.27 | 16.67 | 2.23 | 80.0 | ± 9.6 % |
|           |                                                                     | Y | 3.09 | 69.21 | 17.27 |      | 80.0 |         |
|           |                                                                     | Z | 2.82 | 68.27 | 16.67 |      | 80.0 |         |
| 10492-AAC | LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)  | X | 3.09 | 66.50 | 15.94 | 2.23 | 80.0 | ± 9.6 % |
|           |                                                                     | Y | 3.27 | 67.14 | 16.42 |      | 80.0 |         |
|           |                                                                     | Z | 3.04 | 66.46 | 15.90 |      | 80.0 |         |

|           |                                                                      |   |      |       |       |      |      |         |
|-----------|----------------------------------------------------------------------|---|------|-------|-------|------|------|---------|
| 10493-AAC | LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)   | X | 3.15 | 66.42 | 15.90 | 2.23 | 80.0 | ± 9.6 % |
|           |                                                                      | Y | 3.33 | 67.04 | 16.38 |      | 80.0 |         |
|           |                                                                      | Z | 3.10 | 66.36 | 15.86 |      | 80.0 |         |
| 10494-AAC | LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9)     | X | 3.03 | 69.31 | 17.04 | 2.23 | 80.0 | ± 9.6 % |
|           |                                                                      | Y | 3.29 | 70.42 | 17.69 |      | 80.0 |         |
|           |                                                                      | Z | 2.99 | 69.33 | 17.05 |      | 80.0 |         |
| 10495-AAC | LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)   | X | 3.11 | 66.74 | 16.18 | 2.23 | 80.0 | ± 9.6 % |
|           |                                                                      | Y | 3.28 | 67.38 | 16.62 |      | 80.0 |         |
|           |                                                                      | Z | 3.06 | 66.70 | 16.16 |      | 80.0 |         |
| 10496-AAC | LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)   | X | 3.20 | 66.62 | 16.16 | 2.23 | 80.0 | ± 9.6 % |
|           |                                                                      | Y | 3.37 | 67.21 | 16.58 |      | 80.0 |         |
|           |                                                                      | Z | 3.16 | 66.58 | 16.14 |      | 80.0 |         |
| 10497-AAA | LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK, UL Subframe=2,3,4,7,8,9)   | X | 0.93 | 60.00 | 7.61  | 2.23 | 80.0 | ± 9.6 % |
|           |                                                                      | Y | 1.02 | 60.56 | 8.96  |      | 80.0 |         |
|           |                                                                      | Z | 0.91 | 60.00 | 7.24  |      | 80.0 |         |
| 10498-AAA | LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9) | X | 1.12 | 60.00 | 6.46  | 2.23 | 80.0 | ± 9.6 % |
|           |                                                                      | Y | 1.14 | 60.00 | 7.43  |      | 80.0 |         |
|           |                                                                      | Z | 1.11 | 60.00 | 6.11  |      | 80.0 |         |
| 10499-AAA | LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) | X | 1.14 | 60.00 | 6.31  | 2.23 | 80.0 | ± 9.6 % |
|           |                                                                      | Y | 1.16 | 60.00 | 7.26  |      | 80.0 |         |
|           |                                                                      | Z | 1.14 | 60.00 | 5.95  |      | 80.0 |         |
| 10500-AAA | LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9)     | X | 2.15 | 68.03 | 15.31 | 2.23 | 80.0 | ± 9.6 % |
|           |                                                                      | Y | 2.52 | 70.13 | 16.75 |      | 80.0 |         |
|           |                                                                      | Z | 2.08 | 67.83 | 15.07 |      | 80.0 |         |
| 10501-AAA | LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)   | X | 2.20 | 65.05 | 13.30 | 2.23 | 80.0 | ± 9.6 % |
|           |                                                                      | Y | 2.58 | 67.10 | 14.82 |      | 80.0 |         |
|           |                                                                      | Z | 2.09 | 64.59 | 12.91 |      | 80.0 |         |
| 10502-AAA | LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)   | X | 2.22 | 64.87 | 13.13 | 2.23 | 80.0 | ± 9.6 % |
|           |                                                                      | Y | 2.62 | 66.93 | 14.66 |      | 80.0 |         |
|           |                                                                      | Z | 2.11 | 64.39 | 12.73 |      | 80.0 |         |
| 10503-AAC | LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9)     | X | 2.47 | 68.77 | 16.51 | 2.23 | 80.0 | ± 9.6 % |
|           |                                                                      | Y | 2.74 | 70.06 | 17.38 |      | 80.0 |         |
|           |                                                                      | Z | 2.43 | 68.80 | 16.47 |      | 80.0 |         |
| 10504-AAC | LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)   | X | 2.65 | 66.57 | 15.35 | 2.23 | 80.0 | ± 9.6 % |
|           |                                                                      | Y | 2.88 | 67.55 | 16.12 |      | 80.0 |         |
|           |                                                                      | Z | 2.60 | 66.48 | 15.23 |      | 80.0 |         |
| 10505-AAC | LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)   | X | 2.73 | 66.49 | 15.31 | 2.23 | 80.0 | ± 9.6 % |
|           |                                                                      | Y | 2.96 | 67.44 | 16.07 |      | 80.0 |         |
|           |                                                                      | Z | 2.67 | 66.39 | 15.19 |      | 80.0 |         |
| 10506-AAC | LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9)    | X | 3.00 | 69.17 | 16.97 | 2.23 | 80.0 | ± 9.6 % |
|           |                                                                      | Y | 3.27 | 70.28 | 17.61 |      | 80.0 |         |
|           |                                                                      | Z | 2.96 | 69.18 | 16.97 |      | 80.0 |         |
| 10507-AAC | LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)  | X | 3.10 | 66.67 | 16.14 | 2.23 | 80.0 | ± 9.6 % |
|           |                                                                      | Y | 3.27 | 67.32 | 16.58 |      | 80.0 |         |
|           |                                                                      | Z | 3.05 | 66.63 | 16.11 |      | 80.0 |         |

|           |                                                                     |   |      |       |       |      |       |         |
|-----------|---------------------------------------------------------------------|---|------|-------|-------|------|-------|---------|
| 10508-AAC | LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) | X | 3.19 | 66.54 | 16.11 | 2.23 | 80.0  | ± 9.6 % |
|           |                                                                     | Y | 3.36 | 67.14 | 16.53 |      | 80.0  |         |
|           |                                                                     | Z | 3.14 | 66.50 | 16.09 |      | 80.0  |         |
| 10509-AAC | LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9)   | X | 3.46 | 68.61 | 16.83 | 2.23 | 80.0  | ± 9.6 % |
|           |                                                                     | Y | 3.70 | 69.52 | 17.32 |      | 80.0  |         |
|           |                                                                     | Z | 3.41 | 68.57 | 16.83 |      | 80.0  |         |
| 10510-AAC | LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9) | X | 3.59 | 66.60 | 16.36 | 2.23 | 80.0  | ± 9.6 % |
|           |                                                                     | Y | 3.76 | 67.16 | 16.69 |      | 80.0  |         |
|           |                                                                     | Z | 3.54 | 66.54 | 16.35 |      | 80.0  |         |
| 10511-AAC | LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) | X | 3.67 | 66.49 | 16.34 | 2.23 | 80.0  | ± 9.6 % |
|           |                                                                     | Y | 3.83 | 67.01 | 16.65 |      | 80.0  |         |
|           |                                                                     | Z | 3.62 | 66.43 | 16.33 |      | 80.0  |         |
| 10512-AAC | LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9)   | X | 3.48 | 69.49 | 17.06 | 2.23 | 80.0  | ± 9.6 % |
|           |                                                                     | Y | 3.77 | 70.66 | 17.66 |      | 80.0  |         |
|           |                                                                     | Z | 3.43 | 69.44 | 17.05 |      | 80.0  |         |
| 10513-AAC | LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9) | X | 3.48 | 66.67 | 16.39 | 2.23 | 80.0  | ± 9.6 % |
|           |                                                                     | Y | 3.64 | 67.28 | 16.74 |      | 80.0  |         |
|           |                                                                     | Z | 3.43 | 66.60 | 16.38 |      | 80.0  |         |
| 10514-AAC | LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9) | X | 3.54 | 66.42 | 16.34 | 2.23 | 80.0  | ± 9.6 % |
|           |                                                                     | Y | 3.69 | 66.98 | 16.66 |      | 80.0  |         |
|           |                                                                     | Z | 3.49 | 66.35 | 16.33 |      | 80.0  |         |
| 10515-AAA | IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 99pc duty cycle)           | X | 0.84 | 62.48 | 13.81 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                     | Y | 0.94 | 63.27 | 14.57 |      | 150.0 |         |
|           |                                                                     | Z | 0.81 | 62.28 | 13.60 |      | 150.0 |         |
| 10516-AAA | IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 99pc duty cycle)         | X | 0.44 | 68.20 | 14.66 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                     | Y | 0.56 | 70.25 | 17.04 |      | 150.0 |         |
|           |                                                                     | Z | 0.42 | 68.39 | 14.03 |      | 150.0 |         |
| 10517-AAA | IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 99pc duty cycle)          | X | 0.67 | 63.87 | 14.00 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                     | Y | 0.78 | 65.03 | 15.13 |      | 150.0 |         |
|           |                                                                     | Z | 0.63 | 63.64 | 13.69 |      | 150.0 |         |
| 10518-AAB | IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 99pc duty cycle)           | X | 4.20 | 66.61 | 15.94 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                     | Y | 4.33 | 66.88 | 16.11 |      | 150.0 |         |
|           |                                                                     | Z | 4.14 | 66.53 | 15.90 |      | 150.0 |         |
| 10519-AAB | IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 99pc duty cycle)          | X | 4.33 | 66.77 | 16.03 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                     | Y | 4.48 | 67.04 | 16.20 |      | 150.0 |         |
|           |                                                                     | Z | 4.28 | 66.69 | 15.99 |      | 150.0 |         |
| 10520-AAB | IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 99pc duty cycle)          | X | 4.19 | 66.69 | 15.94 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                     | Y | 4.33 | 66.98 | 16.12 |      | 150.0 |         |
|           |                                                                     | Z | 4.14 | 66.61 | 15.89 |      | 150.0 |         |
| 10521-AAB | IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 99pc duty cycle)          | X | 4.12 | 66.64 | 15.91 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                     | Y | 4.27 | 66.95 | 16.10 |      | 150.0 |         |
|           |                                                                     | Z | 4.07 | 66.55 | 15.86 |      | 150.0 |         |
| 10522-AAB | IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 99pc duty cycle)          | X | 4.17 | 66.75 | 16.00 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                     | Y | 4.32 | 67.07 | 16.19 |      | 150.0 |         |
|           |                                                                     | Z | 4.11 | 66.65 | 15.94 |      | 150.0 |         |



|           |                                                            |   |      |       |       |      |       |         |
|-----------|------------------------------------------------------------|---|------|-------|-------|------|-------|---------|
| 10523-AAB | IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 99pc duty cycle) | X | 4.11 | 66.80 | 15.95 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                            | Y | 4.25 | 67.07 | 16.12 |      | 150.0 |         |
|           |                                                            | Z | 4.06 | 66.72 | 15.90 |      | 150.0 |         |
| 10524-AAB | IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 99pc duty cycle) | X | 4.12 | 66.74 | 16.01 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                            | Y | 4.27 | 67.03 | 16.18 |      | 150.0 |         |
|           |                                                            | Z | 4.07 | 66.66 | 15.95 |      | 150.0 |         |
| 10525-AAB | IEEE 802.11ac WiFi (20MHz, MCS0, 99pc duty cycle)          | X | 4.17 | 65.86 | 15.64 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                            | Y | 4.30 | 66.15 | 15.81 |      | 150.0 |         |
|           |                                                            | Z | 4.12 | 65.78 | 15.60 |      | 150.0 |         |
| 10526-AAB | IEEE 802.11ac WiFi (20MHz, MCS1, 99pc duty cycle)          | X | 4.28 | 66.11 | 15.75 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                            | Y | 4.42 | 66.42 | 15.93 |      | 150.0 |         |
|           |                                                            | Z | 4.22 | 66.02 | 15.70 |      | 150.0 |         |
| 10527-AAB | IEEE 802.11ac WiFi (20MHz, MCS2, 99pc duty cycle)          | X | 4.21 | 66.08 | 15.69 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                            | Y | 4.36 | 66.40 | 15.87 |      | 150.0 |         |
|           |                                                            | Z | 4.16 | 65.99 | 15.63 |      | 150.0 |         |
| 10528-AAB | IEEE 802.11ac WiFi (20MHz, MCS3, 99pc duty cycle)          | X | 4.22 | 66.10 | 15.72 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                            | Y | 4.37 | 66.41 | 15.90 |      | 150.0 |         |
|           |                                                            | Z | 4.17 | 66.01 | 15.67 |      | 150.0 |         |
| 10529-AAB | IEEE 802.11ac WiFi (20MHz, MCS4, 99pc duty cycle)          | X | 4.22 | 66.10 | 15.72 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                            | Y | 4.37 | 66.41 | 15.90 |      | 150.0 |         |
|           |                                                            | Z | 4.17 | 66.01 | 15.67 |      | 150.0 |         |
| 10531-AAB | IEEE 802.11ac WiFi (20MHz, MCS6, 99pc duty cycle)          | X | 4.18 | 66.09 | 15.68 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                            | Y | 4.34 | 66.44 | 15.88 |      | 150.0 |         |
|           |                                                            | Z | 4.13 | 65.99 | 15.63 |      | 150.0 |         |
| 10532-AAB | IEEE 802.11ac WiFi (20MHz, MCS7, 99pc duty cycle)          | X | 4.07 | 65.95 | 15.61 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                            | Y | 4.22 | 66.30 | 15.82 |      | 150.0 |         |
|           |                                                            | Z | 4.02 | 65.85 | 15.55 |      | 150.0 |         |
| 10533-AAB | IEEE 802.11ac WiFi (20MHz, MCS8, 99pc duty cycle)          | X | 4.23 | 66.18 | 15.72 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                            | Y | 4.38 | 66.49 | 15.90 |      | 150.0 |         |
|           |                                                            | Z | 4.17 | 66.09 | 15.67 |      | 150.0 |         |
| 10534-AAB | IEEE 802.11ac WiFi (40MHz, MCS0, 99pc duty cycle)          | X | 4.80 | 66.11 | 15.83 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                            | Y | 4.92 | 66.40 | 15.96 |      | 150.0 |         |
|           |                                                            | Z | 4.76 | 66.03 | 15.80 |      | 150.0 |         |
| 10535-AAB | IEEE 802.11ac WiFi (40MHz, MCS1, 99pc duty cycle)          | X | 4.83 | 66.22 | 15.89 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                            | Y | 4.96 | 66.53 | 16.02 |      | 150.0 |         |
|           |                                                            | Z | 4.79 | 66.13 | 15.86 |      | 150.0 |         |
| 10536-AAB | IEEE 802.11ac WiFi (40MHz, MCS2, 99pc duty cycle)          | X | 4.73 | 66.21 | 15.86 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                            | Y | 4.86 | 66.53 | 16.00 |      | 150.0 |         |
|           |                                                            | Z | 4.68 | 66.11 | 15.82 |      | 150.0 |         |
| 10537-AAB | IEEE 802.11ac WiFi (40MHz, MCS3, 99pc duty cycle)          | X | 4.80 | 66.26 | 15.89 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                            | Y | 4.92 | 66.51 | 15.99 |      | 150.0 |         |
|           |                                                            | Z | 4.76 | 66.19 | 15.86 |      | 150.0 |         |
| 10538-AAB | IEEE 802.11ac WiFi (40MHz, MCS4, 99pc duty cycle)          | X | 4.86 | 66.19 | 15.89 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                            | Y | 4.98 | 66.48 | 16.01 |      | 150.0 |         |
|           |                                                            | Z | 4.81 | 66.10 | 15.86 |      | 150.0 |         |
| 10540-AAB | IEEE 802.11ac WiFi (40MHz, MCS6, 99pc duty cycle)          | X | 4.79 | 66.14 | 15.88 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                            | Y | 4.91 | 66.45 | 16.01 |      | 150.0 |         |
|           |                                                            | Z | 4.74 | 66.05 | 15.85 |      | 150.0 |         |

|           |                                                    |   |      |       |       |      |       |         |
|-----------|----------------------------------------------------|---|------|-------|-------|------|-------|---------|
| 10541-AAB | IEEE 802.11ac WiFi (40MHz, MCS7, 99pc duty cycle)  | X | 4.78 | 66.07 | 15.83 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                    | Y | 4.90 | 66.37 | 15.96 |      | 150.0 |         |
|           |                                                    | Z | 4.73 | 65.98 | 15.80 |      | 150.0 |         |
| 10542-AAB | IEEE 802.11ac WiFi (40MHz, MCS8, 99pc duty cycle)  | X | 4.93 | 66.18 | 15.91 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                    | Y | 5.05 | 66.46 | 16.02 |      | 150.0 |         |
|           |                                                    | Z | 4.88 | 66.10 | 15.88 |      | 150.0 |         |
| 10543-AAB | IEEE 802.11ac WiFi (40MHz, MCS9, 99pc duty cycle)  | X | 5.02 | 66.31 | 16.00 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                    | Y | 5.12 | 66.51 | 16.07 |      | 150.0 |         |
|           |                                                    | Z | 4.97 | 66.25 | 15.98 |      | 150.0 |         |
| 10544-AAB | IEEE 802.11ac WiFi (80MHz, MCS0, 99pc duty cycle)  | X | 5.16 | 66.18 | 15.83 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                    | Y | 5.27 | 66.49 | 15.95 |      | 150.0 |         |
|           |                                                    | Z | 5.12 | 66.08 | 15.80 |      | 150.0 |         |
| 10545-AAB | IEEE 802.11ac WiFi (80MHz, MCS1, 99pc duty cycle)  | X | 5.34 | 66.65 | 16.03 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                    | Y | 5.43 | 66.87 | 16.10 |      | 150.0 |         |
|           |                                                    | Z | 5.30 | 66.59 | 16.02 |      | 150.0 |         |
| 10546-AAB | IEEE 802.11ac WiFi (80MHz, MCS2, 99pc duty cycle)  | X | 5.18 | 66.29 | 15.86 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                    | Y | 5.30 | 66.61 | 15.98 |      | 150.0 |         |
|           |                                                    | Z | 5.14 | 66.19 | 15.83 |      | 150.0 |         |
| 10547-AAB | IEEE 802.11ac WiFi (80MHz, MCS3, 99pc duty cycle)  | X | 5.28 | 66.47 | 15.95 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                    | Y | 5.37 | 66.69 | 16.02 |      | 150.0 |         |
|           |                                                    | Z | 5.26 | 66.43 | 15.94 |      | 150.0 |         |
| 10548-AAB | IEEE 802.11ac WiFi (80MHz, MCS4, 99pc duty cycle)  | X | 5.40 | 67.01 | 16.19 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                    | Y | 5.50 | 67.27 | 16.28 |      | 150.0 |         |
|           |                                                    | Z | 5.36 | 66.94 | 16.17 |      | 150.0 |         |
| 10550-AAB | IEEE 802.11ac WiFi (80MHz, MCS6, 99pc duty cycle)  | X | 5.27 | 66.57 | 16.01 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                    | Y | 5.34 | 66.74 | 16.06 |      | 150.0 |         |
|           |                                                    | Z | 5.24 | 66.54 | 16.02 |      | 150.0 |         |
| 10551-AAB | IEEE 802.11ac WiFi (80MHz, MCS7, 99pc duty cycle)  | X | 5.17 | 66.24 | 15.81 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                    | Y | 5.29 | 66.58 | 15.94 |      | 150.0 |         |
|           |                                                    | Z | 5.12 | 66.13 | 15.78 |      | 150.0 |         |
| 10552-AAB | IEEE 802.11ac WiFi (80MHz, MCS8, 99pc duty cycle)  | X | 5.16 | 66.30 | 15.84 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                    | Y | 5.28 | 66.61 | 15.96 |      | 150.0 |         |
|           |                                                    | Z | 5.12 | 66.21 | 15.81 |      | 150.0 |         |
| 10553-AAB | IEEE 802.11ac WiFi (80MHz, MCS9, 99pc duty cycle)  | X | 5.21 | 66.24 | 15.84 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                    | Y | 5.33 | 66.56 | 15.96 |      | 150.0 |         |
|           |                                                    | Z | 5.17 | 66.14 | 15.81 |      | 150.0 |         |
| 10554-AAC | IEEE 802.11ac WiFi (160MHz, MCS0, 99pc duty cycle) | X | 5.59 | 66.52 | 15.92 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                    | Y | 5.68 | 66.81 | 16.02 |      | 150.0 |         |
|           |                                                    | Z | 5.55 | 66.43 | 15.90 |      | 150.0 |         |
| 10555-AAC | IEEE 802.11ac WiFi (160MHz, MCS1, 99pc duty cycle) | X | 5.67 | 66.73 | 16.01 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                    | Y | 5.77 | 67.03 | 16.11 |      | 150.0 |         |
|           |                                                    | Z | 5.64 | 66.64 | 15.99 |      | 150.0 |         |
| 10556-AAC | IEEE 802.11ac WiFi (160MHz, MCS2, 99pc duty cycle) | X | 5.72 | 66.88 | 16.08 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                    | Y | 5.80 | 67.12 | 16.15 |      | 150.0 |         |
|           |                                                    | Z | 5.70 | 66.82 | 16.07 |      | 150.0 |         |
| 10557-AAC | IEEE 802.11ac WiFi (160MHz, MCS3, 99pc duty cycle) | X | 5.67 | 66.71 | 16.01 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                    | Y | 5.77 | 67.02 | 16.12 |      | 150.0 |         |
|           |                                                    | Z | 5.63 | 66.62 | 15.99 |      | 150.0 |         |

|           |                                                                 |   |      |       |       |      |       |         |
|-----------|-----------------------------------------------------------------|---|------|-------|-------|------|-------|---------|
| 10558-AAC | IEEE 802.11ac WiFi (160MHz, MCS4, 99pc duty cycle)              | X | 5.66 | 66.72 | 16.03 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                 | Y | 5.78 | 67.09 | 16.17 |      | 150.0 |         |
|           |                                                                 | Z | 5.61 | 66.60 | 16.00 |      | 150.0 |         |
| 10560-AAC | IEEE 802.11ac WiFi (160MHz, MCS6, 99pc duty cycle)              | X | 5.69 | 66.69 | 16.05 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                 | Y | 5.80 | 67.01 | 16.17 |      | 150.0 |         |
|           |                                                                 | Z | 5.65 | 66.58 | 16.02 |      | 150.0 |         |
| 10561-AAC | IEEE 802.11ac WiFi (160MHz, MCS7, 99pc duty cycle)              | X | 5.63 | 66.68 | 16.08 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                 | Y | 5.73 | 66.98 | 16.19 |      | 150.0 |         |
|           |                                                                 | Z | 5.59 | 66.58 | 16.05 |      | 150.0 |         |
| 10562-AAC | IEEE 802.11ac WiFi (160MHz, MCS8, 99pc duty cycle)              | X | 5.66 | 66.80 | 16.14 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                 | Y | 5.78 | 67.16 | 16.28 |      | 150.0 |         |
|           |                                                                 | Z | 5.62 | 66.69 | 16.11 |      | 150.0 |         |
| 10563-AAC | IEEE 802.11ac WiFi (160MHz, MCS9, 99pc duty cycle)              | X | 5.79 | 66.86 | 16.14 | 0.00 | 150.0 | ± 9.6 % |
|           |                                                                 | Y | 5.87 | 67.10 | 16.21 |      | 150.0 |         |
|           |                                                                 | Z | 5.75 | 66.76 | 16.11 |      | 150.0 |         |
| 10564-AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 99pc duty cycle)  | X | 4.51 | 66.62 | 16.08 | 0.46 | 150.0 | ± 9.6 % |
|           |                                                                 | Y | 4.64 | 66.88 | 16.23 |      | 150.0 |         |
|           |                                                                 | Z | 4.46 | 66.54 | 16.03 |      | 150.0 |         |
| 10565-AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 99pc duty cycle) | X | 4.70 | 67.05 | 16.41 | 0.46 | 150.0 | ± 9.6 % |
|           |                                                                 | Y | 4.84 | 67.30 | 16.55 |      | 150.0 |         |
|           |                                                                 | Z | 4.65 | 66.98 | 16.37 |      | 150.0 |         |
| 10566-AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 99pc duty cycle) | X | 4.53 | 66.83 | 16.19 | 0.46 | 150.0 | ± 9.6 % |
|           |                                                                 | Y | 4.67 | 67.10 | 16.35 |      | 150.0 |         |
|           |                                                                 | Z | 4.48 | 66.75 | 16.14 |      | 150.0 |         |
| 10567-AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 99pc duty cycle) | X | 4.58 | 67.28 | 16.61 | 0.46 | 150.0 | ± 9.6 % |
|           |                                                                 | Y | 4.71 | 67.54 | 16.75 |      | 150.0 |         |
|           |                                                                 | Z | 4.53 | 67.22 | 16.58 |      | 150.0 |         |
| 10568-AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 99pc duty cycle) | X | 4.42 | 66.49 | 15.88 | 0.46 | 150.0 | ± 9.6 % |
|           |                                                                 | Y | 4.56 | 66.80 | 16.06 |      | 150.0 |         |
|           |                                                                 | Z | 4.36 | 66.40 | 15.82 |      | 150.0 |         |
| 10569-AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 99pc duty cycle) | X | 4.57 | 67.56 | 16.77 | 0.46 | 150.0 | ± 9.6 % |
|           |                                                                 | Y | 4.70 | 67.77 | 16.89 |      | 150.0 |         |
|           |                                                                 | Z | 4.52 | 67.51 | 16.75 |      | 150.0 |         |
| 10570-AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 99pc duty cycle) | X | 4.56 | 67.29 | 16.63 | 0.46 | 150.0 | ± 9.6 % |
|           |                                                                 | Y | 4.70 | 67.54 | 16.77 |      | 150.0 |         |
|           |                                                                 | Z | 4.51 | 67.23 | 16.60 |      | 150.0 |         |
| 10571-AAA | IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 90pc duty cycle)       | X | 0.99 | 63.18 | 14.39 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                                 | Y | 1.08 | 63.86 | 15.05 |      | 130.0 |         |
|           |                                                                 | Z | 0.95 | 63.03 | 14.23 |      | 130.0 |         |
| 10572-AAA | IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 90pc duty cycle)       | X | 0.99 | 63.68 | 14.72 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                                 | Y | 1.08 | 64.39 | 15.40 |      | 130.0 |         |
|           |                                                                 | Z | 0.95 | 63.53 | 14.56 |      | 130.0 |         |
| 10573-AAA | IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc duty cycle)     | X | 1.02 | 76.26 | 18.43 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                                 | Y | 1.26 | 79.61 | 21.02 |      | 130.0 |         |
|           |                                                                 | Z | 1.03 | 76.65 | 18.05 |      | 130.0 |         |
| 10574-AAA | IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 90pc duty cycle)      | X | 1.02 | 68.60 | 17.28 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                                 | Y | 1.14 | 69.61 | 18.20 |      | 130.0 |         |
|           |                                                                 | Z | 0.98 | 68.56 | 17.15 |      | 130.0 |         |

|           |                                                                 |   |      |       |       |      |       |         |
|-----------|-----------------------------------------------------------------|---|------|-------|-------|------|-------|---------|
| 10575-AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty cycle)  | X | 4.28 | 66.36 | 16.06 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                                 | Y | 4.41 | 66.60 | 16.21 |      | 130.0 |         |
|           |                                                                 | Z | 4.24 | 66.30 | 16.03 |      | 130.0 |         |
| 10576-AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty cycle)  | X | 4.32 | 66.58 | 16.16 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                                 | Y | 4.44 | 66.81 | 16.31 |      | 130.0 |         |
|           |                                                                 | Z | 4.27 | 66.53 | 16.13 |      | 130.0 |         |
| 10577-AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc duty cycle) | X | 4.47 | 66.81 | 16.31 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                                 | Y | 4.61 | 67.04 | 16.45 |      | 130.0 |         |
|           |                                                                 | Z | 4.42 | 66.77 | 16.29 |      | 130.0 |         |
| 10578-AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty cycle) | X | 4.38 | 66.98 | 16.43 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                                 | Y | 4.51 | 67.21 | 16.57 |      | 130.0 |         |
|           |                                                                 | Z | 4.33 | 66.92 | 16.41 |      | 130.0 |         |
| 10579-AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 90pc duty cycle) | X | 4.12 | 66.04 | 15.59 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                                 | Y | 4.26 | 66.34 | 15.78 |      | 130.0 |         |
|           |                                                                 | Z | 4.07 | 65.96 | 15.54 |      | 130.0 |         |
| 10580-AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty cycle) | X | 4.15 | 66.07 | 15.59 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                                 | Y | 4.29 | 66.38 | 15.80 |      | 130.0 |         |
|           |                                                                 | Z | 4.09 | 65.99 | 15.54 |      | 130.0 |         |
| 10581-AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc duty cycle) | X | 4.29 | 67.05 | 16.40 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                                 | Y | 4.42 | 67.28 | 16.54 |      | 130.0 |         |
|           |                                                                 | Z | 4.25 | 67.00 | 16.37 |      | 130.0 |         |
| 10582-AAA | IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc duty cycle) | X | 4.04 | 65.78 | 15.35 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                                 | Y | 4.18 | 66.08 | 15.55 |      | 130.0 |         |
|           |                                                                 | Z | 3.99 | 65.70 | 15.30 |      | 130.0 |         |
| 10583-AAB | IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 90pc duty cycle)       | X | 4.28 | 66.36 | 16.06 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                                 | Y | 4.41 | 66.60 | 16.21 |      | 130.0 |         |
|           |                                                                 | Z | 4.24 | 66.30 | 16.03 |      | 130.0 |         |
| 10584-AAB | IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 90pc duty cycle)       | X | 4.32 | 66.58 | 16.16 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                                 | Y | 4.44 | 66.81 | 16.31 |      | 130.0 |         |
|           |                                                                 | Z | 4.27 | 66.53 | 16.13 |      | 130.0 |         |
| 10585-AAB | IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 90pc duty cycle)      | X | 4.47 | 66.81 | 16.31 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                                 | Y | 4.61 | 67.04 | 16.45 |      | 130.0 |         |
|           |                                                                 | Z | 4.42 | 66.77 | 16.29 |      | 130.0 |         |
| 10586-AAB | IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 90pc duty cycle)      | X | 4.38 | 66.98 | 16.43 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                                 | Y | 4.51 | 67.21 | 16.57 |      | 130.0 |         |
|           |                                                                 | Z | 4.33 | 66.92 | 16.41 |      | 130.0 |         |
| 10587-AAB | IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 90pc duty cycle)      | X | 4.12 | 66.04 | 15.59 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                                 | Y | 4.26 | 66.34 | 15.78 |      | 130.0 |         |
|           |                                                                 | Z | 4.07 | 65.96 | 15.54 |      | 130.0 |         |
| 10588-AAB | IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 90pc duty cycle)      | X | 4.15 | 66.07 | 15.59 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                                 | Y | 4.29 | 66.38 | 15.80 |      | 130.0 |         |
|           |                                                                 | Z | 4.09 | 65.99 | 15.54 |      | 130.0 |         |
| 10589-AAB | IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 90pc duty cycle)      | X | 4.29 | 67.05 | 16.40 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                                 | Y | 4.42 | 67.28 | 16.54 |      | 130.0 |         |
|           |                                                                 | Z | 4.25 | 67.00 | 16.37 |      | 130.0 |         |
| 10590-AAB | IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 90pc duty cycle)      | X | 4.04 | 65.78 | 15.35 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                                 | Y | 4.18 | 66.08 | 15.55 |      | 130.0 |         |
|           |                                                                 | Z | 3.99 | 65.70 | 15.30 |      | 130.0 |         |

|           |                                                       |   |      |       |       |      |       |         |
|-----------|-------------------------------------------------------|---|------|-------|-------|------|-------|---------|
| 10591-AAB | IEEE 802.11n (HT Mixed, 20MHz, MCS0, 90pc duty cycle) | X | 4.45 | 66.48 | 16.22 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                       | Y | 4.57 | 66.70 | 16.35 |      | 130.0 |         |
|           |                                                       | Z | 4.40 | 66.43 | 16.19 |      | 130.0 |         |
| 10592-AAB | IEEE 802.11n (HT Mixed, 20MHz, MCS1, 90pc duty cycle) | X | 4.56 | 66.76 | 16.34 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                       | Y | 4.69 | 66.99 | 16.47 |      | 130.0 |         |
|           |                                                       | Z | 4.51 | 66.70 | 16.31 |      | 130.0 |         |
| 10593-AAB | IEEE 802.11n (HT Mixed, 20MHz, MCS2, 90pc duty cycle) | X | 4.47 | 66.61 | 16.18 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                       | Y | 4.61 | 66.86 | 16.32 |      | 130.0 |         |
|           |                                                       | Z | 4.42 | 66.56 | 16.15 |      | 130.0 |         |
| 10594-AAB | IEEE 802.11n (HT Mixed, 20MHz, MCS3, 90pc duty cycle) | X | 4.53 | 66.81 | 16.36 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                       | Y | 4.66 | 67.05 | 16.50 |      | 130.0 |         |
|           |                                                       | Z | 4.48 | 66.75 | 16.33 |      | 130.0 |         |
| 10595-AAB | IEEE 802.11n (HT Mixed, 20MHz, MCS4, 90pc duty cycle) | X | 4.49 | 66.78 | 16.26 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                       | Y | 4.63 | 67.01 | 16.40 |      | 130.0 |         |
|           |                                                       | Z | 4.44 | 66.72 | 16.23 |      | 130.0 |         |
| 10596-AAB | IEEE 802.11n (HT Mixed, 20MHz, MCS5, 90pc duty cycle) | X | 4.42 | 66.72 | 16.24 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                       | Y | 4.56 | 66.97 | 16.38 |      | 130.0 |         |
|           |                                                       | Z | 4.37 | 66.66 | 16.20 |      | 130.0 |         |
| 10597-AAB | IEEE 802.11n (HT Mixed, 20MHz, MCS6, 90pc duty cycle) | X | 4.37 | 66.57 | 16.07 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                       | Y | 4.51 | 66.84 | 16.24 |      | 130.0 |         |
|           |                                                       | Z | 4.32 | 66.51 | 16.04 |      | 130.0 |         |
| 10598-AAB | IEEE 802.11n (HT Mixed, 20MHz, MCS7, 90pc duty cycle) | X | 4.37 | 66.85 | 16.38 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                       | Y | 4.51 | 67.10 | 16.52 |      | 130.0 |         |
|           |                                                       | Z | 4.33 | 66.80 | 16.35 |      | 130.0 |         |
| 10599-AAB | IEEE 802.11n (HT Mixed, 40MHz, MCS0, 90pc duty cycle) | X | 5.15 | 67.00 | 16.53 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                       | Y | 5.24 | 67.12 | 16.57 |      | 130.0 |         |
|           |                                                       | Z | 5.12 | 66.97 | 16.54 |      | 130.0 |         |
| 10600-AAB | IEEE 802.11n (HT Mixed, 40MHz, MCS1, 90pc duty cycle) | X | 5.25 | 67.36 | 16.68 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                       | Y | 5.32 | 67.41 | 16.68 |      | 130.0 |         |
|           |                                                       | Z | 5.23 | 67.37 | 16.71 |      | 130.0 |         |
| 10601-AAB | IEEE 802.11n (HT Mixed, 40MHz, MCS2, 90pc duty cycle) | X | 5.16 | 67.17 | 16.61 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                       | Y | 5.24 | 67.24 | 16.62 |      | 130.0 |         |
|           |                                                       | Z | 5.14 | 67.18 | 16.63 |      | 130.0 |         |
| 10602-AAB | IEEE 802.11n (HT Mixed, 40MHz, MCS3, 90pc duty cycle) | X | 5.23 | 67.10 | 16.49 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                       | Y | 5.32 | 67.26 | 16.54 |      | 130.0 |         |
|           |                                                       | Z | 5.20 | 67.09 | 16.50 |      | 130.0 |         |
| 10603-AAB | IEEE 802.11n (HT Mixed, 40MHz, MCS4, 90pc duty cycle) | X | 5.29 | 67.40 | 16.79 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                       | Y | 5.40 | 67.58 | 16.84 |      | 130.0 |         |
|           |                                                       | Z | 5.25 | 67.36 | 16.78 |      | 130.0 |         |
| 10604-AAB | IEEE 802.11n (HT Mixed, 40MHz, MCS5, 90pc duty cycle) | X | 5.15 | 66.92 | 16.52 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                       | Y | 5.29 | 67.24 | 16.65 |      | 130.0 |         |
|           |                                                       | Z | 5.10 | 66.83 | 16.49 |      | 130.0 |         |
| 10605-AAB | IEEE 802.11n (HT Mixed, 40MHz, MCS6, 90pc duty cycle) | X | 5.22 | 67.15 | 16.63 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                       | Y | 5.32 | 67.32 | 16.68 |      | 130.0 |         |
|           |                                                       | Z | 5.18 | 67.12 | 16.63 |      | 130.0 |         |
| 10606-AAB | IEEE 802.11n (HT Mixed, 40MHz, MCS7, 90pc duty cycle) | X | 5.03 | 66.64 | 16.22 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                       | Y | 5.10 | 66.76 | 16.25 |      | 130.0 |         |
|           |                                                       | Z | 5.00 | 66.63 | 16.23 |      | 130.0 |         |

|           |                                                   |   |      |       |       |      |       |         |
|-----------|---------------------------------------------------|---|------|-------|-------|------|-------|---------|
| 10607-AAB | IEEE 802.11ac WiFi (20MHz, MCS0, 90pc duty cycle) | X | 4.29 | 65.81 | 15.85 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                   | Y | 4.42 | 66.06 | 16.00 |      | 130.0 |         |
|           |                                                   | Z | 4.25 | 65.75 | 15.82 |      | 130.0 |         |
| 10608-AAB | IEEE 802.11ac WiFi (20MHz, MCS1, 90pc duty cycle) | X | 4.42 | 66.11 | 15.99 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                   | Y | 4.56 | 66.38 | 16.14 |      | 130.0 |         |
|           |                                                   | Z | 4.37 | 66.05 | 15.96 |      | 130.0 |         |
| 10609-AAB | IEEE 802.11ac WiFi (20MHz, MCS2, 90pc duty cycle) | X | 4.31 | 65.92 | 15.79 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                   | Y | 4.45 | 66.21 | 15.96 |      | 130.0 |         |
|           |                                                   | Z | 4.26 | 65.86 | 15.76 |      | 130.0 |         |
| 10610-AAB | IEEE 802.11ac WiFi (20MHz, MCS3, 90pc duty cycle) | X | 4.37 | 66.12 | 15.98 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                   | Y | 4.50 | 66.39 | 16.13 |      | 130.0 |         |
|           |                                                   | Z | 4.32 | 66.06 | 15.95 |      | 130.0 |         |
| 10611-AAB | IEEE 802.11ac WiFi (20MHz, MCS4, 90pc duty cycle) | X | 4.28 | 65.89 | 15.81 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                   | Y | 4.42 | 66.17 | 15.97 |      | 130.0 |         |
|           |                                                   | Z | 4.23 | 65.82 | 15.77 |      | 130.0 |         |
| 10612-AAB | IEEE 802.11ac WiFi (20MHz, MCS5, 90pc duty cycle) | X | 4.26 | 65.98 | 15.83 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                   | Y | 4.41 | 66.28 | 16.00 |      | 130.0 |         |
|           |                                                   | Z | 4.21 | 65.91 | 15.79 |      | 130.0 |         |
| 10613-AAB | IEEE 802.11ac WiFi (20MHz, MCS6, 90pc duty cycle) | X | 4.25 | 65.79 | 15.66 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                   | Y | 4.40 | 66.10 | 15.84 |      | 130.0 |         |
|           |                                                   | Z | 4.20 | 65.71 | 15.62 |      | 130.0 |         |
| 10614-AAB | IEEE 802.11ac WiFi (20MHz, MCS7, 90pc duty cycle) | X | 4.24 | 66.07 | 15.95 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                   | Y | 4.38 | 66.36 | 16.12 |      | 130.0 |         |
|           |                                                   | Z | 4.19 | 66.00 | 15.92 |      | 130.0 |         |
| 10615-AAB | IEEE 802.11ac WiFi (20MHz, MCS8, 90pc duty cycle) | X | 4.26 | 65.69 | 15.54 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                   | Y | 4.40 | 65.98 | 15.72 |      | 130.0 |         |
|           |                                                   | Z | 4.21 | 65.62 | 15.50 |      | 130.0 |         |
| 10616-AAB | IEEE 802.11ac WiFi (40MHz, MCS0, 90pc duty cycle) | X | 4.94 | 66.11 | 16.08 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                   | Y | 5.05 | 66.36 | 16.17 |      | 130.0 |         |
|           |                                                   | Z | 4.90 | 66.05 | 16.07 |      | 130.0 |         |
| 10617-AAB | IEEE 802.11ac WiFi (40MHz, MCS1, 90pc duty cycle) | X | 4.97 | 66.21 | 16.10 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                   | Y | 5.09 | 66.47 | 16.21 |      | 130.0 |         |
|           |                                                   | Z | 4.93 | 66.15 | 16.09 |      | 130.0 |         |
| 10618-AAB | IEEE 802.11ac WiFi (40MHz, MCS2, 90pc duty cycle) | X | 4.88 | 66.27 | 16.14 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                   | Y | 5.01 | 66.56 | 16.26 |      | 130.0 |         |
|           |                                                   | Z | 4.84 | 66.19 | 16.12 |      | 130.0 |         |
| 10619-AAB | IEEE 802.11ac WiFi (40MHz, MCS3, 90pc duty cycle) | X | 4.92 | 66.16 | 16.02 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                   | Y | 5.02 | 66.35 | 16.09 |      | 130.0 |         |
|           |                                                   | Z | 4.89 | 66.13 | 16.02 |      | 130.0 |         |
| 10620-AAB | IEEE 802.11ac WiFi (40MHz, MCS4, 90pc duty cycle) | X | 4.98 | 66.11 | 16.04 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                   | Y | 5.09 | 66.35 | 16.14 |      | 130.0 |         |
|           |                                                   | Z | 4.93 | 66.04 | 16.03 |      | 130.0 |         |
| 10621-AAB | IEEE 802.11ac WiFi (40MHz, MCS5, 90pc duty cycle) | X | 4.99 | 66.24 | 16.25 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                   | Y | 5.11 | 66.51 | 16.34 |      | 130.0 |         |
|           |                                                   | Z | 4.95 | 66.18 | 16.23 |      | 130.0 |         |
| 10622-AAB | IEEE 802.11ac WiFi (40MHz, MCS6, 90pc duty cycle) | X | 4.98 | 66.33 | 16.28 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                   | Y | 5.09 | 66.59 | 16.38 |      | 130.0 |         |
|           |                                                   | Z | 4.93 | 66.27 | 16.27 |      | 130.0 |         |

|           |                                                    |   |      |       |       |      |       |         |
|-----------|----------------------------------------------------|---|------|-------|-------|------|-------|---------|
| 10623-AAB | IEEE 802.11ac WiFi (40MHz, MCS7, 90pc duty cycle)  | X | 4.87 | 65.87 | 15.90 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                    | Y | 4.98 | 66.13 | 16.01 |      | 130.0 |         |
|           |                                                    | Z | 4.83 | 65.81 | 15.88 |      | 130.0 |         |
| 10624-AAB | IEEE 802.11ac WiFi (40MHz, MCS8, 90pc duty cycle)  | X | 5.06 | 66.14 | 16.11 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                    | Y | 5.18 | 66.39 | 16.20 |      | 130.0 |         |
|           |                                                    | Z | 5.02 | 66.09 | 16.10 |      | 130.0 |         |
| 10625-AAB | IEEE 802.11ac WiFi (40MHz, MCS9, 90pc duty cycle)  | X | 5.16 | 66.33 | 16.28 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                    | Y | 5.27 | 66.55 | 16.35 |      | 130.0 |         |
|           |                                                    | Z | 5.13 | 66.33 | 16.30 |      | 130.0 |         |
| 10626-AAB | IEEE 802.11ac WiFi (80MHz, MCS0, 90pc duty cycle)  | X | 5.28 | 66.12 | 16.04 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                    | Y | 5.38 | 66.40 | 16.13 |      | 130.0 |         |
|           |                                                    | Z | 5.25 | 66.05 | 16.02 |      | 130.0 |         |
| 10627-AAB | IEEE 802.11ac WiFi (80MHz, MCS1, 90pc duty cycle)  | X | 5.52 | 66.78 | 16.34 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                    | Y | 5.59 | 66.94 | 16.37 |      | 130.0 |         |
|           |                                                    | Z | 5.49 | 66.76 | 16.35 |      | 130.0 |         |
| 10628-AAB | IEEE 802.11ac WiFi (80MHz, MCS2, 90pc duty cycle)  | X | 5.27 | 66.08 | 15.91 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                    | Y | 5.37 | 66.36 | 16.01 |      | 130.0 |         |
|           |                                                    | Z | 5.23 | 66.00 | 15.89 |      | 130.0 |         |
| 10629-AAB | IEEE 802.11ac WiFi (80MHz, MCS3, 90pc duty cycle)  | X | 5.40 | 66.37 | 16.06 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                    | Y | 5.46 | 66.50 | 16.08 |      | 130.0 |         |
|           |                                                    | Z | 5.39 | 66.38 | 16.08 |      | 130.0 |         |
| 10630-AAB | IEEE 802.11ac WiFi (80MHz, MCS4, 90pc duty cycle)  | X | 5.59 | 67.15 | 16.45 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                    | Y | 5.68 | 67.36 | 16.51 |      | 130.0 |         |
|           |                                                    | Z | 5.56 | 67.10 | 16.45 |      | 130.0 |         |
| 10631-AAB | IEEE 802.11ac WiFi (80MHz, MCS5, 90pc duty cycle)  | X | 5.57 | 67.24 | 16.70 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                    | Y | 5.68 | 67.50 | 16.78 |      | 130.0 |         |
|           |                                                    | Z | 5.54 | 67.18 | 16.70 |      | 130.0 |         |
| 10632-AAB | IEEE 802.11ac WiFi (80MHz, MCS6, 90pc duty cycle)  | X | 5.54 | 67.06 | 16.63 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                    | Y | 5.59 | 67.12 | 16.61 |      | 130.0 |         |
|           |                                                    | Z | 5.53 | 67.09 | 16.67 |      | 130.0 |         |
| 10633-AAB | IEEE 802.11ac WiFi (80MHz, MCS7, 90pc duty cycle)  | X | 5.29 | 66.15 | 15.99 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                    | Y | 5.41 | 66.49 | 16.11 |      | 130.0 |         |
|           |                                                    | Z | 5.25 | 66.07 | 15.97 |      | 130.0 |         |
| 10634-AAB | IEEE 802.11ac WiFi (80MHz, MCS8, 90pc duty cycle)  | X | 5.33 | 66.38 | 16.16 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                    | Y | 5.44 | 66.66 | 16.26 |      | 130.0 |         |
|           |                                                    | Z | 5.29 | 66.31 | 16.14 |      | 130.0 |         |
| 10635-AAB | IEEE 802.11ac WiFi (80MHz, MCS9, 90pc duty cycle)  | X | 5.17 | 65.56 | 15.45 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                    | Y | 5.28 | 65.86 | 15.57 |      | 130.0 |         |
|           |                                                    | Z | 5.13 | 65.47 | 15.43 |      | 130.0 |         |
| 10636-AAC | IEEE 802.11ac WiFi (160MHz, MCS0, 90pc duty cycle) | X | 5.73 | 66.49 | 16.13 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                    | Y | 5.81 | 66.74 | 16.21 |      | 130.0 |         |
|           |                                                    | Z | 5.70 | 66.42 | 16.13 |      | 130.0 |         |
| 10637-AAC | IEEE 802.11ac WiFi (160MHz, MCS1, 90pc duty cycle) | X | 5.84 | 66.78 | 16.27 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                    | Y | 5.92 | 67.02 | 16.34 |      | 130.0 |         |
|           |                                                    | Z | 5.81 | 66.73 | 16.27 |      | 130.0 |         |
| 10638-AAC | IEEE 802.11ac WiFi (160MHz, MCS2, 90pc duty cycle) | X | 5.87 | 66.88 | 16.29 | 0.46 | 130.0 | ± 9.6 % |
|           |                                                    | Y | 5.95 | 67.09 | 16.35 |      | 130.0 |         |
|           |                                                    | Z | 5.85 | 66.83 | 16.30 |      | 130.0 |         |

|           |                                                        |   |       |       |       |       |       |         |
|-----------|--------------------------------------------------------|---|-------|-------|-------|-------|-------|---------|
| 10639-AAC | IEEE 802.11ac WiFi (160MHz, MCS3, 90pc duty cycle)     | X | 5.82  | 66.72 | 16.26 | 0.46  | 130.0 | ± 9.6 % |
|           |                                                        | Y | 5.91  | 66.98 | 16.34 |       | 130.0 |         |
|           |                                                        | Z | 5.78  | 66.65 | 16.25 |       | 130.0 |         |
| 10640-AAC | IEEE 802.11ac WiFi (160MHz, MCS4, 90pc duty cycle)     | X | 5.75  | 66.53 | 16.10 | 0.46  | 130.0 | ± 9.6 % |
|           |                                                        | Y | 5.87  | 66.88 | 16.23 |       | 130.0 |         |
|           |                                                        | Z | 5.71  | 66.44 | 16.08 |       | 130.0 |         |
| 10641-AAC | IEEE 802.11ac WiFi (160MHz, MCS5, 90pc duty cycle)     | X | 5.88  | 66.71 | 16.21 | 0.46  | 130.0 | ± 9.6 % |
|           |                                                        | Y | 5.95  | 66.92 | 16.27 |       | 130.0 |         |
|           |                                                        | Z | 5.86  | 66.66 | 16.22 |       | 130.0 |         |
| 10642-AAC | IEEE 802.11ac WiFi (160MHz, MCS6, 90pc duty cycle)     | X | 5.89  | 66.89 | 16.48 | 0.46  | 130.0 | ± 9.6 % |
|           |                                                        | Y | 5.99  | 67.17 | 16.57 |       | 130.0 |         |
|           |                                                        | Z | 5.86  | 66.81 | 16.47 |       | 130.0 |         |
| 10643-AAC | IEEE 802.11ac WiFi (160MHz, MCS7, 90pc duty cycle)     | X | 5.74  | 66.55 | 16.19 | 0.46  | 130.0 | ± 9.6 % |
|           |                                                        | Y | 5.83  | 66.83 | 16.28 |       | 130.0 |         |
|           |                                                        | Z | 5.70  | 66.47 | 16.17 |       | 130.0 |         |
| 10644-AAC | IEEE 802.11ac WiFi (160MHz, MCS8, 90pc duty cycle)     | X | 5.78  | 66.70 | 16.29 | 0.46  | 130.0 | ± 9.6 % |
|           |                                                        | Y | 5.90  | 67.04 | 16.41 |       | 130.0 |         |
|           |                                                        | Z | 5.74  | 66.61 | 16.27 |       | 130.0 |         |
| 10645-AAC | IEEE 802.11ac WiFi (160MHz, MCS9, 90pc duty cycle)     | X | 5.92  | 66.80 | 16.31 | 0.46  | 130.0 | ± 9.6 % |
|           |                                                        | Y | 6.01  | 67.03 | 16.37 |       | 130.0 |         |
|           |                                                        | Z | 5.89  | 66.74 | 16.30 |       | 130.0 |         |
| 10646-AAD | LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL Subframe=2,7)  | X | 6.65  | 88.74 | 30.05 | 9.30  | 60.0  | ± 9.6 % |
|           |                                                        | Y | 8.23  | 94.73 | 32.66 |       | 60.0  |         |
|           |                                                        | Z | 6.39  | 88.05 | 29.85 |       | 60.0  |         |
| 10647-AAC | LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Subframe=2,7) | X | 5.91  | 86.69 | 29.42 | 9.30  | 60.0  | ± 9.6 % |
|           |                                                        | Y | 7.10  | 91.84 | 31.77 |       | 60.0  |         |
|           |                                                        | Z | 5.69  | 86.07 | 29.25 |       | 60.0  |         |
| 10648-AAA | CDMA2000 (1x Advanced)                                 | X | 0.36  | 60.00 | 5.83  | 0.00  | 150.0 | ± 9.6 % |
|           |                                                        | Y | 0.50  | 61.68 | 8.36  |       | 150.0 |         |
|           |                                                        | Z | 0.33  | 60.00 | 5.17  |       | 150.0 |         |
| 10652-AAB | LTE-TDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)         | X | 3.05  | 65.69 | 15.32 | 2.23  | 80.0  | ± 9.6 % |
|           |                                                        | Y | 3.22  | 66.27 | 15.85 |       | 80.0  |         |
|           |                                                        | Z | 2.99  | 65.60 | 15.22 |       | 80.0  |         |
| 10653-AAB | LTE-TDD (OFDMA, 10 MHz, E-TM 3.1, Clipping 44%)        | X | 3.64  | 65.31 | 15.89 | 2.23  | 80.0  | ± 9.6 % |
|           |                                                        | Y | 3.77  | 65.67 | 16.17 |       | 80.0  |         |
|           |                                                        | Z | 3.60  | 65.24 | 15.85 |       | 80.0  |         |
| 10654-AAB | LTE-TDD (OFDMA, 15 MHz, E-TM 3.1, Clipping 44%)        | X | 3.68  | 64.97 | 15.98 | 2.23  | 80.0  | ± 9.6 % |
|           |                                                        | Y | 3.79  | 65.31 | 16.21 |       | 80.0  |         |
|           |                                                        | Z | 3.64  | 64.90 | 15.95 |       | 80.0  |         |
| 10655-AAB | LTE-TDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%)        | X | 3.77  | 64.89 | 16.03 | 2.23  | 80.0  | ± 9.6 % |
|           |                                                        | Y | 3.86  | 65.24 | 16.25 |       | 80.0  |         |
|           |                                                        | Z | 3.73  | 64.81 | 16.01 |       | 80.0  |         |
| 10658-AAA | Pulse Waveform (200Hz, 10%)                            | X | 3.54  | 68.51 | 11.98 | 10.00 | 50.0  | ± 9.6 % |
|           |                                                        | Y | 5.15  | 73.38 | 13.93 |       | 50.0  |         |
|           |                                                        | Z | 3.41  | 67.92 | 11.73 |       | 50.0  |         |
| 10659-AAA | Pulse Waveform (200Hz, 20%)                            | X | 2.16  | 66.64 | 10.02 | 6.99  | 60.0  | ± 9.6 % |
|           |                                                        | Y | 14.97 | 85.17 | 16.48 |       | 60.0  |         |
|           |                                                        | Z | 1.90  | 65.37 | 9.39  |       | 60.0  |         |



|           |                             |   |        |        |       |      |       |         |
|-----------|-----------------------------|---|--------|--------|-------|------|-------|---------|
| 10660-AAA | Pulse Waveform (200Hz, 40%) | X | 0.76   | 62.07  | 6.59  | 3.98 | 80.0  | ± 9.6 % |
|           |                             | Y | 100.00 | 100.31 | 18.54 |      | 80.0  |         |
|           |                             | Z | 0.57   | 60.16  | 5.36  |      | 80.0  |         |
| 10661-AAA | Pulse Waveform (200Hz, 60%) | X | 0.31   | 60.00  | 4.25  | 2.22 | 100.0 | ± 9.6 % |
|           |                             | Y | 100.00 | 98.70  | 16.90 |      | 100.0 |         |
|           |                             | Z | 0.31   | 60.00  | 3.71  |      | 100.0 |         |
| 10662-AAA | Pulse Waveform (200Hz, 80%) | X | 1.11   | 176.76 | 3.81  | 0.97 | 120.0 | ± 9.6 % |
|           |                             | Y | 100.00 | 88.63  | 11.90 |      | 120.0 |         |
|           |                             | Z | 0.42   | 169.81 | 5.95  |      | 120.0 |         |

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



Accredited by the Swiss Accreditation Service (SAS)

The Swiss Accreditation Service is one of the signatories to the EA  
Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 0108**

Client **B.V.ADT (Auden)**

Certificate No: **EX3-3650\_Jul18**

## CALIBRATION CERTIFICATE

Object **EX3DV4 - SN:3650**

Calibration procedure(s) **QA CAL-01.v9, QA CAL-14.v4, QA CAL-23.v5, QA CAL-25.v6  
Calibration procedure for dosimetric E-field probes**

Calibration date: **July 27, 2018**

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  $(22 \pm 3)^{\circ}\text{C}$  and humidity  $< 70\%$ .

Calibration Equipment used (M&TE critical for calibration)

| Primary Standards          | ID               | Cal Date (Certificate No.)        | Scheduled Calibration  |
|----------------------------|------------------|-----------------------------------|------------------------|
| Power meter NRP            | SN: 104778       | 04-Apr-18 (No. 217-02672/02673)   | Apr-19                 |
| Power sensor NRP-Z91       | SN: 103244       | 04-Apr-18 (No. 217-02672)         | Apr-19                 |
| Power sensor NRP-Z91       | SN: 103245       | 04-Apr-18 (No. 217-02673)         | Apr-19                 |
| Reference 20 dB Attenuator | SN: S5277 (20x)  | 04-Apr-18 (No. 217-02682)         | Apr-19                 |
| Reference Probe ES3DV2     | SN: 3013         | 30-Dec-17 (No. ES3-3013_Dec17)    | Dec-18                 |
| DAE4                       | SN: 660          | 21-Dec-17 (No. DAE4-660_Dec17)    | Dec-18                 |
| Secondary Standards        | ID               | Check Date (in house)             | Scheduled Check        |
| Power meter E4419B         | SN: GB41293874   | 06-Apr-16 (in house check Jun-18) | In house check: Jun-20 |
| Power sensor E4412A        | SN: MY41498087   | 06-Apr-16 (in house check Jun-18) | In house check: Jun-20 |
| Power sensor E4412A        | SN: 000110210    | 06-Apr-16 (in house check Jun-18) | In house check: Jun-20 |
| RF generator HP 8648C      | SN: US3642U01700 | 04-Aug-99 (in house check Jun-18) | In house check: Jun-20 |
| Network Analyzer E8358A    | SN: US41080477   | 31-Mar-14 (in house check Oct-17) | In house check: Oct-18 |

|                                                                                                                 |                                |                                          |                       |
|-----------------------------------------------------------------------------------------------------------------|--------------------------------|------------------------------------------|-----------------------|
| Calibrated by:                                                                                                  | Name<br><b>Claudio Leubler</b> | Function<br><b>Laboratory Technician</b> | Signature<br>         |
| Approved by:                                                                                                    | <b>Katja Pokovic</b>           | <b>Technical Manager</b>                 |                       |
| This calibration certificate shall not be reproduced except in full without written approval of the laboratory. |                                |                                          | Issued: July 28, 2018 |



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Accreditation No.: **SCS 0108**

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### Glossary:

|                          |                                                                                                                                                         |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| TSL                      | tissue simulating liquid                                                                                                                                |
| NORM <sub>x,y,z</sub>    | sensitivity in free space                                                                                                                               |
| ConvF                    | sensitivity in TSL / NORM <sub>x,y,z</sub>                                                                                                              |
| DCP                      | diode compression point                                                                                                                                 |
| CF                       | crest factor (1/duty_cycle) of the RF signal                                                                                                            |
| A, B, C, D               | modulation dependent linearization parameters                                                                                                           |
| Polarization $\varphi$   | $\varphi$ rotation around probe axis                                                                                                                    |
| Polarization $\vartheta$ | $\vartheta$ rotation around an axis that is in the plane normal to probe axis (at measurement center),<br>i.e., $\vartheta = 0$ is normal to probe axis |
| Connector Angle          | information used in DASY system to align probe sensor X to the robot coordinate system                                                                  |

### Calibration is Performed According to the Following Standards:

- 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
- IEC 62209-1, "Measurement procedure for the assessment of Specific Absorption Rate (SAR) from hand-held and body-mounted devices used next to the ear (frequency range of 300 MHz to 6 GHz)", July 2016
- IEC 62209-2, "Procedure to determine the Specific Absorption Rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)", March 2010
- KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

### Methods Applied and Interpretation of Parameters:

- NORM<sub>x,y,z</sub>**: Assessed for E-field polarization  $\vartheta = 0$  ( $f \leq 900$  MHz in TEM-cell;  $f > 1800$  MHz: R22 waveguide). NORM<sub>x,y,z</sub> are only intermediate values, i.e., the uncertainties of NORM<sub>x,y,z</sub> does not affect the E<sup>2</sup>-field uncertainty inside TSL (see below ConvF).
- NORM(f)<sub>x,y,z</sub>** = NORM<sub>x,y,z</sub> \* frequency\_response (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of ConvF.
- DCP<sub>x,y,z</sub>**: DCP are numerical linearization parameters assessed based on the data of power sweep with CW signal (no uncertainty required). DCP does not depend on frequency nor media.
- PAR**: PAR is the Peak to Average Ratio that is not calibrated but determined based on the signal characteristics
- A<sub>x,y,z</sub>; B<sub>x,y,z</sub>; C<sub>x,y,z</sub>; D<sub>x,y,z</sub>; VR<sub>x,y,z</sub>**: A, B, C, D are numerical linearization parameters assessed based on the data of power sweep for specific modulation signal. The parameters do not depend on frequency nor media. VR is the maximum calibration range expressed in RMS voltage across the diode.
- ConvF and Boundary Effect Parameters**: Assessed in flat phantom using E-field (or Temperature Transfer Standard for  $f \leq 800$  MHz) and inside waveguide using analytical field distributions based on power measurements for  $f > 800$  MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty values are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to NORM<sub>x,y,z</sub> \* ConvF whereby the uncertainty corresponds to that given for ConvF. A frequency dependent ConvF is used in DASY version 4.4 and higher which allows extending the validity from  $\pm 50$  MHz to  $\pm 100$  MHz.
- Spherical isotropy (3D deviation from isotropy)**: in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- Sensor Offset**: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.
- Connector Angle**: The angle is assessed using the information gained by determining the NORM<sub>x</sub> (no uncertainty required).

# Probe EX3DV4

## SN:3650

Manufactured: March 18, 2008  
Calibrated: July 27, 2018

**Calibrated for DASY/EASY Systems**  
(Note: non-compatible with DASY2 system!)

## DASY/EASY - Parameters of Probe: EX3DV4 - SN:3650

### Basic Calibration Parameters

|                                                           | Sensor X | Sensor Y | Sensor Z | Unc (k=2)     |
|-----------------------------------------------------------|----------|----------|----------|---------------|
| Norm ( $\mu\text{V}/(\text{V}/\text{m})^2$ ) <sup>A</sup> | 0.40     | 0.40     | 0.40     | $\pm 10.1 \%$ |
| DCP (mV) <sup>B</sup>                                     | 103.4    | 99.7     | 101.1    |               |

### Modulation Calibration Parameters

| UID | Communication System Name |   | A<br>dB | B<br>dB/ $\mu\text{V}$ | C   | D<br>dB | VR<br>mV | Unc <sup>E</sup><br>(k=2) |
|-----|---------------------------|---|---------|------------------------|-----|---------|----------|---------------------------|
| 0   | CW                        | X | 0.0     | 0.0                    | 1.0 | 0.00    | 148.9    | $\pm 3.3 \%$              |
|     |                           | Y | 0.0     | 0.0                    | 1.0 |         | 131.8    |                           |
|     |                           | Z | 0.0     | 0.0                    | 1.0 |         | 146.8    |                           |

Note: For details on UID parameters see Appendix.

### Sensor Model Parameters

|   | C1<br>fF | C2<br>fF | $\alpha$<br>$\text{V}^{-1}$ | T1<br>$\text{ms} \cdot \text{V}^{-2}$ | T2<br>$\text{ms} \cdot \text{V}^{-1}$ | T3<br>ms | T4<br>$\text{V}^{-2}$ | T5<br>$\text{V}^{-1}$ | T6    |
|---|----------|----------|-----------------------------|---------------------------------------|---------------------------------------|----------|-----------------------|-----------------------|-------|
| X | 25.57    | 186.1    | 34.29                       | 6.795                                 | 0.139                                 | 5.021    | 1.799                 | 0.000                 | 1.005 |
| Y | 44.46    | 346.1    | 38.30                       | 7.672                                 | 0.711                                 | 5.047    | 0.000                 | 0.618                 | 1.009 |
| Z | 45.96    | 341.9    | 35.52                       | 11.21                                 | 0.385                                 | 5.066    | 1.556                 | 0.255                 | 1.008 |

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%.

<sup>A</sup> The uncertainties of Norm X,Y,Z do not affect the  $E^2$ -field uncertainty inside TSL (see Pages 5 and 6).

<sup>B</sup> Numerical linearization parameter: uncertainty not required.

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

## DASY/EASY - Parameters of Probe: EX3DV4 - SN:3650

### Calibration Parameter Determined in Head Tissue Simulating Media

| f (MHz) <sup>C</sup> | Relative Permittivity <sup>F</sup> | Conductivity (S/m) <sup>F</sup> | ConvF X | ConvF Y | ConvF Z | Alpha <sup>G</sup> | Depth <sup>G</sup> (mm) | Unc (k=2) |
|----------------------|------------------------------------|---------------------------------|---------|---------|---------|--------------------|-------------------------|-----------|
| 750                  | 41.9                               | 0.89                            | 10.34   | 10.34   | 10.34   | 0.50               | 0.80                    | ± 12.0 %  |
| 835                  | 41.5                               | 0.90                            | 9.88    | 9.88    | 9.88    | 0.47               | 0.80                    | ± 12.0 %  |
| 900                  | 41.5                               | 0.97                            | 9.64    | 9.64    | 9.64    | 0.42               | 0.84                    | ± 12.0 %  |
| 1450                 | 40.5                               | 1.20                            | 8.79    | 8.79    | 8.79    | 0.39               | 0.80                    | ± 12.0 %  |
| 1640                 | 40.2                               | 1.31                            | 8.62    | 8.62    | 8.62    | 0.33               | 0.85                    | ± 12.0 %  |
| 1750                 | 40.1                               | 1.37                            | 8.60    | 8.60    | 8.60    | 0.36               | 0.80                    | ± 12.0 %  |
| 1900                 | 40.0                               | 1.40                            | 8.28    | 8.28    | 8.28    | 0.42               | 0.80                    | ± 12.0 %  |
| 2300                 | 39.5                               | 1.67                            | 8.03    | 8.03    | 8.03    | 0.34               | 0.95                    | ± 12.0 %  |
| 2450                 | 39.2                               | 1.80                            | 7.64    | 7.64    | 7.64    | 0.38               | 0.90                    | ± 12.0 %  |
| 2600                 | 39.0                               | 1.96                            | 7.48    | 7.48    | 7.48    | 0.34               | 0.95                    | ± 12.0 %  |
| 3500                 | 37.9                               | 2.91                            | 7.23    | 7.23    | 7.23    | 0.25               | 1.25                    | ± 13.1 %  |
| 5250                 | 35.9                               | 4.71                            | 5.46    | 5.46    | 5.46    | 0.40               | 1.80                    | ± 13.1 %  |
| 5600                 | 35.5                               | 5.07                            | 5.05    | 5.05    | 5.05    | 0.40               | 1.80                    | ± 13.1 %  |
| 5750                 | 35.4                               | 5.22                            | 5.33    | 5.33    | 5.33    | 0.40               | 1.80                    | ± 13.1 %  |

<sup>C</sup> Frequency validity above 300 MHz of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band. Frequency validity below 300 MHz is ± 10, 25, 40, 50 and 70 MHz for ConvF assessments at 30, 64, 128, 150 and 220 MHz respectively. Above 5 GHz frequency validity can be extended to ± 110 MHz.

<sup>F</sup> At frequencies below 3 GHz, the validity of tissue parameters ( $\epsilon$  and  $\sigma$ ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters ( $\epsilon$  and  $\sigma$ ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

<sup>G</sup> Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz and below ± 2% for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.

## DASY/EASY - Parameters of Probe: EX3DV4 - SN:3650

### Calibration Parameter Determined in Body Tissue Simulating Media

| f (MHz) <sup>C</sup> | Relative Permittivity <sup>F</sup> | Conductivity (S/m) <sup>F</sup> | ConvF X | ConvF Y | ConvF Z | Alpha <sup>G</sup> | Depth <sup>G</sup> (mm) | Unc (k=2) |
|----------------------|------------------------------------|---------------------------------|---------|---------|---------|--------------------|-------------------------|-----------|
| 750                  | 55.5                               | 0.96                            | 9.91    | 9.91    | 9.91    | 0.44               | 0.82                    | ± 12.0 %  |
| 835                  | 55.2                               | 0.97                            | 9.74    | 9.74    | 9.74    | 0.35               | 0.97                    | ± 12.0 %  |
| 1640                 | 53.7                               | 1.42                            | 8.59    | 8.59    | 8.59    | 0.38               | 0.84                    | ± 12.0 %  |
| 1750                 | 53.4                               | 1.49                            | 8.20    | 8.20    | 8.20    | 0.29               | 1.03                    | ± 12.0 %  |
| 1900                 | 53.3                               | 1.52                            | 7.89    | 7.89    | 7.89    | 0.38               | 0.85                    | ± 12.0 %  |
| 2300                 | 52.9                               | 1.81                            | 7.77    | 7.77    | 7.77    | 0.38               | 0.90                    | ± 12.0 %  |
| 2450                 | 52.7                               | 1.95                            | 7.61    | 7.61    | 7.61    | 0.33               | 0.96                    | ± 12.0 %  |
| 2600                 | 52.5                               | 2.16                            | 7.48    | 7.48    | 7.48    | 0.16               | 1.08                    | ± 12.0 %  |
| 3500                 | 51.3                               | 3.31                            | 7.10    | 7.10    | 7.10    | 0.26               | 1.20                    | ± 13.1 %  |
| 5250                 | 48.9                               | 5.36                            | 4.85    | 4.85    | 4.85    | 0.50               | 1.90                    | ± 13.1 %  |
| 5600                 | 48.5                               | 5.77                            | 4.32    | 4.32    | 4.32    | 0.50               | 1.90                    | ± 13.1 %  |
| 5750                 | 48.3                               | 5.94                            | 4.60    | 4.60    | 4.60    | 0.50               | 1.90                    | ± 13.1 %  |

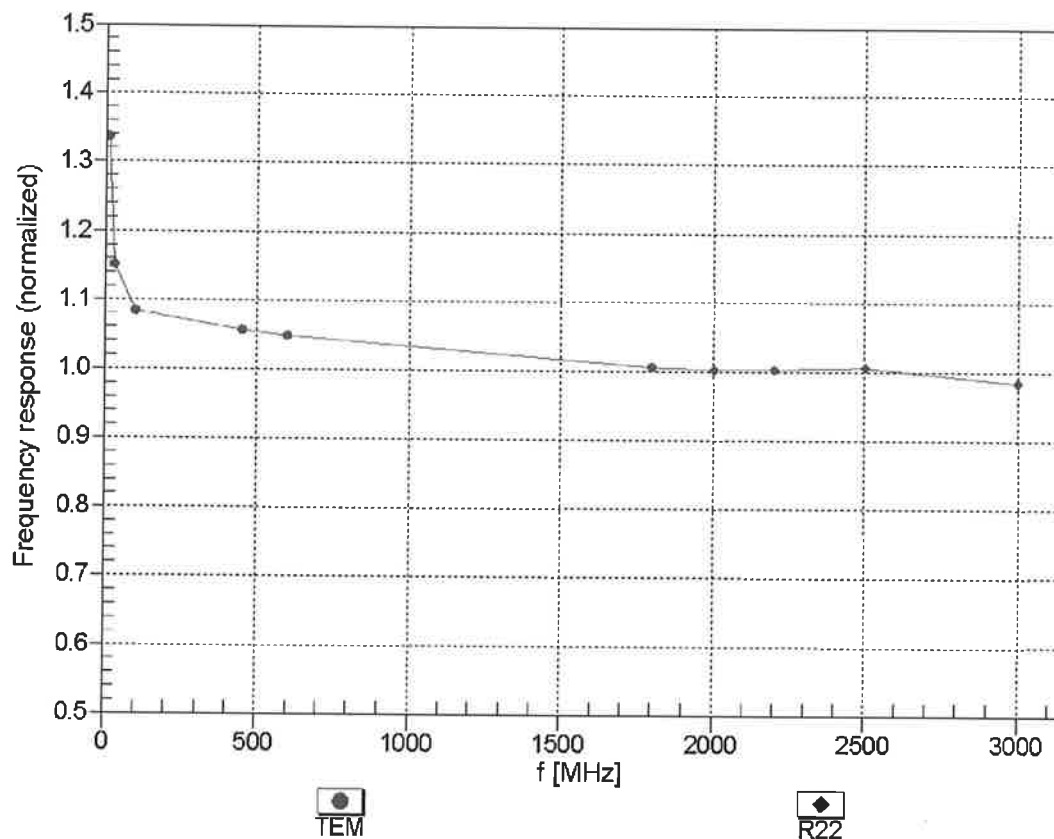
<sup>C</sup> Frequency validity above 300 MHz of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band. Frequency validity below 300 MHz is ± 10, 25, 40, 50 and 70 MHz for ConvF assessments at 30, 64, 128, 150 and 220 MHz respectively. Above 5 GHz frequency validity can be extended to ± 110 MHz.

<sup>F</sup> At frequencies below 3 GHz, the validity of tissue parameters ( $\epsilon$  and  $\sigma$ ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters ( $\epsilon$  and  $\sigma$ ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

<sup>G</sup> Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz and below ± 2% for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.

## Frequency Response of E-Field

(TEM-Cell: ifi110 EXX, Waveguide: R22)



Uncertainty of Frequency Response of E-field:  $\pm 6.3\%$  ( $k=2$ )