



Appendix A

Transmitter Output Power

According to FCC Part 2.1046 & Part24.232



Conducted Power of Transmitter

Table 1 Measurement Results(CDMA)

| TEST CONDITIONS (TN/VN) | RF Output Power(Conducted) | | | | | |
|----------------------------|-----------------------------|-------|-----------------------------|-------|-------------------------------|-------|
| | Channel 25(B) 1851.25MHz | | Channel 600(M) 1880.0MHz | | Channel 1175(T) 1908.75MHz | |
| | dBm | | dBm | | dBm | |
| | Measured | Limit | Measured | Limit | Measured | Limit |
| TM1 | 23.85 | 33.0 | 23.79 | 33.0 | 23.76 | 33.0 |
| TM3 | 23.89 | 33.0 | 23.77 | 33.0 | 23.75 | 33.0 |
| Subtype 0 | 23.67 | 33.0 | 23.52 | 33.0 | 23.57 | 33.0 |
| Subtype 2 | 23.55 | 33.0 | 23.58 | 33.0 | 23.55 | 33.0 |



Table 2 Measurement Results(LTE) BAND 2

| RF Output Power(Conducted) BAND 2 | | | | |
|-----------------------------------|------------|---------|----------------|--------------|
| Test Mode | TN/VN | | | |
| | Modulation | RB | Measured (dBm) | Limit (dBm) |
| Channel (B) 1.4MHz(BW) | QPSK | 1RB#0 | 23.27 | 33.0 |
| | | 1RB#max | 23.36 | 33.0 |
| | | 3RB#2 | 23.22 | 33.0 |
| | | Full | 22.14 | 33.0 |
| | 16QAM | 1RB#0 | 22.05 | 33.0 |
| | | 1RB#max | 22.08 | 33.0 |
| | | 3RB#2 | 22.42 | 33.0 |
| | | Full | 21.29 | 33.0 |
| Channel (B) 3MHz(BW) | QPSK | 1RB#0 | 23.17 | 33.0 |
| | | 1RB#max | 23.28 | 33.0 |
| | | 8RB#4 | 22.22 | 33.0 |
| | | Full | 22.14 | 33.0 |
| | 16QAM | 1RB#0 | 21.74 | 33.0 |
| | | 1RB#max | 21.89 | 33.0 |
| | | 8RB#4 | 21.43 | 33.0 |
| | | Full | 21.23 | 33.0 |
| Channel (B) 5MHz(BW) | QPSK | 1RB#0 | 23.16 | 33.0 |
| | | 1RB#max | 23.22 | 33.0 |
| | | 12RB#6 | 22.18 | 33.0 |
| | | Full | 22.2 | 33.0 |
| | 16QAM | 1RB#0 | 22.36 | 33.0 |
| | | 1RB#max | 22.32 | 33.0 |
| | | 12RB#6 | 21.07 | 33.0 |
| | | Full | 21.45 | 33.0 |
| Channel (B) 10MHz(BW) | QPSK | 1RB#0 | 23.19 | 33.0 |
| | | 1RB#max | 23.15 | 33.0 |
| | | 25RB#6 | 22.14 | 33.0 |
| | | Full | 22.11 | 33.0 |
| | 16QAM | 1RB#0 | 21.96 | 33.0 |
| | | 1RB#max | 21.92 | 33.0 |
| | | 25RB#13 | 21.18 | 33.0 |



| | | | | |
|---------------------------|-------|---------|-------|-------|
| | | Full | 21.3 | 33.0 |
| Channel (M) 1.4MHz(BW) | QPSK | 1RB#0 | 23.31 | 33.0 |
| | | 1RB#max | 23.27 | 33.0 |
| | | 3RB#2 | 23.11 | 33.0 |
| | | Full | 22.21 | 33.0 |
| | 16QAM | 1RB#0 | 22.02 | 33.0 |
| | | 1RB#max | 21.98 | 33.0 |
| | | 3RB#2 | 22.45 | 33.0 |
| | | Full | 21.27 | 33.0 |
| Channel (M) 3MHz(BW) | QPSK | 1RB#0 | 23.09 | 33.0 |
| | | 1RB#max | 23.12 | 33.0 |
| | | 8RB#4 | 22.11 | 33.0 |
| | | Full | 22.06 | 33.0 |
| | 16QAM | 1RB#0 | 22.02 | 33.0 |
| | | 1RB#max | 22.07 | 33.0 |
| | | 8RB#4 | 21.33 | 33.0 |
| | | Full | 21.11 | 33.0 |
| Channel (M) 5MHz(BW) | QPSK | 1RB#0 | 23.13 | 33.0 |
| | | 1RB#max | 23.15 | 33.0 |
| | | 12RB#6 | 22.07 | 33.0 |
| | | Full | 22.09 | 33.0 |
| | 16QAM | 1RB#0 | 21.89 | 33.0 |
| | | 1RB#max | 21.92 | 33.0 |
| | | 12RB#6 | 20.78 | 33.0 |
| | | Full | 21.31 | 33.0 |
| Channel (M) 10MHz(BW) | QPSK | 1RB#0 | 23.18 | 33.0 |
| | | 1RB#max | 23.05 | 33.0 |
| | | 25RB#13 | 22.1 | 33.0 |
| | | Full | 22.13 | 33.0 |
| | 16QAM | 1RB#0 | 21.79 | 33.0 |
| | | 1RB#max | 21.72 | 33.0 |
| | | 25RB#13 | 21.19 | 33.0 |
| | | Full | 21.35 | 33.0 |
| Channel (T) 1.4MHz(BW) | QPSK | 1RB#0 | 23.23 | 33.0 |
| | | 1RB#max | 23.16 | 33.0 |
| | | 3RB#25 | 23.11 | 33.0 |
| | | Full | 22.14 | 33.0 |
| | | | 1RB#0 | 22.46 |



| | | | | |
|--------------------------|-------|---------|-------|------|
| | 16QAM | 1RB#max | 22.39 | 33.0 |
| | | 3RB#2 | 21.99 | 33.0 |
| | | Full | 21.27 | 33.0 |
| Channel (T) 3MHz(BW) | QPSK | 1RB#0 | 23.16 | 33.0 |
| | | 1RB#max | 22.96 | 33.0 |
| | | 8RB#4 | 22.04 | 33.0 |
| | | Full | 22.07 | 33.0 |
| | 16QAM | 1RB#0 | 22.36 | 33.0 |
| | | 1RB#max | 22.08 | 33.0 |
| | | 8RB#4 | 21.02 | 33.0 |
| | | Full | 21.19 | 33.0 |
| Channel (T) 5MHz(BW) | QPSK | 1RB#0 | 23.25 | 33.0 |
| | | 1RB#max | 23.21 | 33.0 |
| | | 12RB#6 | 22.20 | 33.0 |
| | | Full | 22.24 | 33.0 |
| | 16QAM | 1RB#0 | 22.34 | 33.0 |
| | | 1RB#max | 22.15 | 33.0 |
| | | 12RB#6 | 21.09 | 33.0 |
| | | Full | 21.55 | 33.0 |
| Channel (T) 10MHz(BW) | QPSK | 1RB#0 | 23.06 | 33.0 |
| | | 1RB#max | 22.98 | 33.0 |
| | | 25RB#13 | 21.97 | 33.0 |
| | | Full | 22.05 | 33.0 |
| | 16QAM | 1RB#0 | 21.67 | 33.0 |
| | | 1RB#max | 21.81 | 33.0 |
| | | 25RB#13 | 21.06 | 33.0 |
| | | Full | 21.16 | 33.0 |



Effective Isotropic Radiated Power of Transmitter (EIRP)

Table 3 Substitution Results(CDMA)

| Test Mode | Freq. [MHz] | Meas. Level [dBm] | Substitution Antenna Type | SGP [dBm] | Substitution Gain [dBi] | Cable Loss [dB] | Substitution Level (EIRP) [dBm] | FCC limit [dBm] | Result |
|-----------|-------------|-------------------|---------------------------|-----------|-------------------------|-----------------|---------------------------------|-----------------|--------|
| TM1 | 1851.25 | 27.30 | Horn Ant. | 23.83 | 4.5 | 1 | 27.33 | 33 | Pass |
| TM1 | 1880.0 | 27.24 | Horn Ant. | 23.78 | 4.5 | 1 | 27.28 | 33 | Pass |
| TM1 | 1908.75 | 27.21 | Horn Ant. | 23.49 | 4.8 | 1 | 27.29 | 33 | Pass |
| TM3 | 1851.25 | 27.34 | Horn Ant. | 23.82 | 4.5 | 1 | 27.32 | 33 | Pass |
| TM3 | 1880.0 | 27.22 | Horn Ant. | 23.77 | 4.5 | 1 | 27.27 | 33 | Pass |
| TM3 | 1908.75 | 27.20 | Horn Ant. | 23.43 | 4.8 | 1 | 27.23 | 33 | Pass |
| Subtype 0 | 1851.25 | 27.12 | Horn Ant. | 23.61 | 4.5 | 1 | 27.11 | 33 | Pass |
| Subtype 0 | 1880.0 | 26.97 | Horn Ant. | 23.49 | 4.5 | 1 | 26.99 | 33 | Pass |
| Subtype 0 | 1908.75 | 27.02 | Horn Ant. | 23.25 | 4.8 | 1 | 27.05 | 33 | Pass |
| Subtype 2 | 1851.25 | 27.00 | Horn Ant. | 23.56 | 4.5 | 1 | 27.06 | 33 | Pass |
| Subtype 2 | 1880.0 | 27.03 | Horn Ant. | 23.62 | 4.5 | 1 | 27.12 | 33 | Pass |
| Subtype 2 | 1908.75 | 27.00 | Horn Ant. | 23.29 | 4.8 | 1 | 27.09 | 33 | Pass |



Table 4 Substitution Results (LTE)Band 2

| Test Mode | | | Meas. Level [dBm] | Substitution Antenna Type | SGP[dBm] | Substitution Gain [dBi] | Cable Loss [dB] | Substitution Level (EIRP) [dBm] | FCC limit [dBm] | Result |
|---------------------------|------------|-----------|-------------------|---------------------------|----------|-------------------------|-----------------|---------------------------------|-----------------|--------|
| Channel | Modulation | RB | | | | | | | | |
| Channel (B) 1.4MHz(BW) | QPSK | 1 RB/#0 | 26.72 | Horn Ant. | 23.28 | 4.5 | 1 | 26.78 | 33 | Pass |
| | | 1 RB/#max | 26.81 | Horn Ant. | 23.33 | 4.5 | 1 | 26.83 | 33 | Pass |
| | | 3 RB/#2 | 26.67 | Horn Ant. | 23.25 | 4.5 | 1 | 26.75 | 33 | Pass |
| | | Full | 25.59 | Horn Ant. | 22.02 | 4.5 | 1 | 25.52 | 33 | Pass |
| | 16QAM | 1 RB/#0 | 25.50 | Horn Ant. | 22.03 | 4.5 | 1 | 25.53 | 33 | Pass |
| | | 1 RB/#max | 25.53 | Horn Ant. | 22.08 | 4.5 | 1 | 25.58 | 33 | Pass |
| | | 3 RB/#2 | 25.87 | Horn Ant. | 22.31 | 4.5 | 1 | 25.81 | 33 | Pass |
| | | Full | 24.74 | Horn Ant. | 21.21 | 4.5 | 1 | 24.71 | 33 | Pass |
| Channel (B) 3MHz(BW) | QPSK | 1 RB/#0 | 26.62 | Horn Ant. | 23.15 | 4.5 | 1 | 26.65 | 33 | Pass |
| | | 1 RB/#max | 26.73 | Horn Ant. | 23.22 | 4.5 | 1 | 26.72 | 33 | Pass |
| | | 8 RB/#4 | 25.67 | Horn Ant. | 22.11 | 4.5 | 1 | 25.61 | 33 | Pass |
| | | Full | 25.59 | Horn Ant. | 22.15 | 4.5 | 1 | 25.65 | 33 | Pass |
| | 16QAM | 1 RB/#0 | 25.19 | Horn Ant. | 21.72 | 4.5 | 1 | 25.22 | 33 | Pass |
| | | 1 RB/#max | 25.34 | Horn Ant. | 21.81 | 4.5 | 1 | 25.31 | 33 | Pass |
| | | 8 RB/#4 | 24.88 | Horn Ant. | 21.32 | 4.5 | 1 | 24.82 | 33 | Pass |
| | | Full | 24.68 | Horn Ant. | 21.27 | 4.5 | 1 | 24.77 | 33 | Pass |



| | | | | | | | | | | |
|---------------------------|-------|-----------|-------|-----------|-------|-----|---|-------|----|------|
| Channel (B) 5MHz(BW) | QPSK | 1 RB/#0 | 26.61 | Horn Ant. | 23.12 | 4.5 | 1 | 26.62 | 33 | Pass |
| | | 1 RB/#max | 26.67 | Horn Ant. | 23.15 | 4.5 | 1 | 26.65 | 33 | Pass |
| | | 12 RB/#6 | 25.63 | Horn Ant. | 22.18 | 4.5 | 1 | 25.68 | 33 | Pass |
| | | Full | 25.65 | Horn Ant. | 22.11 | 4.5 | 1 | 25.61 | 33 | Pass |
| | 16QAM | 1 RB/#0 | 25.81 | Horn Ant. | 22.33 | 4.5 | 1 | 25.83 | 33 | Pass |
| | | 1 RB/#max | 25.77 | Horn Ant. | 22.29 | 4.5 | 1 | 25.79 | 33 | Pass |
| | | 12 RB/#6 | 24.52 | Horn Ant. | 21.05 | 4.5 | 1 | 24.55 | 33 | Pass |
| | | Full | 24.90 | Horn Ant. | 21.36 | 4.5 | 1 | 24.86 | 33 | Pass |
| Channel (B) 10MHz(BW) | QPSK | 1 RB/#0 | 26.64 | Horn Ant. | 23.16 | 4.5 | 1 | 26.66 | 33 | Pass |
| | | 1 RB/#max | 26.60 | Horn Ant. | 23.17 | 4.5 | 1 | 26.67 | 33 | Pass |
| | | 25 RB/#13 | 25.59 | Horn Ant. | 22.14 | 4.5 | 1 | 25.64 | 33 | Pass |
| | | Full | 25.56 | Horn Ant. | 22.08 | 4.5 | 1 | 25.58 | 33 | Pass |
| | 16QAM | 1 RB/#0 | 25.41 | Horn Ant. | 21.95 | 4.5 | 1 | 25.45 | 33 | Pass |
| | | 1 RB/#max | 25.37 | Horn Ant. | 21.88 | 4.5 | 1 | 25.38 | 33 | Pass |
| | | 25 RB/#13 | 24.63 | Horn Ant. | 21.06 | 4.5 | 1 | 24.56 | 33 | Pass |
| | | Full | 24.75 | Horn Ant. | 21.22 | 4.5 | 1 | 24.72 | 33 | Pass |
| Channel (M) 1.4MHz(BW) | QPSK | 1 RB/#0 | 26.76 | Horn Ant. | 23.28 | 4.5 | 1 | 26.78 | 33 | Pass |
| | | 1 RB/#max | 26.72 | Horn Ant. | 23.2 | 4.5 | 1 | 26.70 | 33 | Pass |
| | | 3 RB/#2 | 26.56 | Horn Ant. | 23.02 | 4.5 | 1 | 26.52 | 33 | Pass |



| | | | | | | | | | | | |
|-------------------------|-------------------------|-----------|-----------|-----------|-----------|-------|-----|-------|-------|------|------|
| | | Full | 25.66 | Horn Ant. | 22.17 | 4.5 | 1 | 25.67 | 33 | Pass | |
| | 16QAM | 1 RB/#0 | 25.47 | Horn Ant. | 21.99 | 4.5 | 1 | 25.49 | 33 | Pass | |
| | | 1 RB/#max | 25.43 | Horn Ant. | 21.96 | 4.5 | 1 | 25.46 | 33 | Pass | |
| | | 3 RB/#2 | 25.90 | Horn Ant. | 22.42 | 4.5 | 1 | 25.92 | 33 | Pass | |
| | | Full | 24.72 | Horn Ant. | 21.28 | 4.5 | 1 | 24.78 | 33 | Pass | |
| Channel (M) 3MHz(BW) | QPSK | 1 RB/#0 | 26.54 | Horn Ant. | 23.01 | 4.5 | 1 | 26.51 | 33 | Pass | |
| | | 1 RB/#max | 26.57 | Horn Ant. | 23.05 | 4.5 | 1 | 26.55 | 33 | Pass | |
| | | 8 RB/#4 | 25.56 | Horn Ant. | 22.08 | 4.5 | 1 | 25.58 | 33 | Pass | |
| | | Full | 25.51 | Horn Ant. | 22.02 | 4.5 | 1 | 25.52 | 33 | Pass | |
| | 16QAM | 1 RB/#0 | 25.47 | Horn Ant. | 22.03 | 4.5 | 1 | 25.53 | 33 | Pass | |
| | | 1 RB/#max | 25.52 | Horn Ant. | 22.08 | 4.5 | 1 | 25.58 | 33 | Pass | |
| | | 8 RB/#4 | 24.78 | Horn Ant. | 21.21 | 4.5 | 1 | 24.71 | 33 | Pass | |
| | | Full | 24.56 | Horn Ant. | 21.09 | 4.5 | 1 | 24.59 | 33 | Pass | |
| | Channel (M) 5MHz(BW) | QPSK | 1 RB/#0 | 26.58 | Horn Ant. | 23.02 | 4.5 | 1 | 26.52 | 33 | Pass |
| | | | 1 RB/#max | 26.60 | Horn Ant. | 23.13 | 4.5 | 1 | 26.63 | 33 | Pass |
| 12 RB/#6 | | | 25.52 | Horn Ant. | 22.07 | 4.5 | 1 | 25.57 | 33 | Pass | |
| Full | | | 25.54 | Horn Ant. | 22.09 | 4.5 | 1 | 25.59 | 33 | Pass | |
| 16QAM | | 1 RB/#0 | 25.34 | Horn Ant. | 21.92 | 4.5 | 1 | 25.42 | 33 | Pass | |
| | | 1 RB/#max | 25.37 | Horn Ant. | 21.89 | 4.5 | 1 | 25.39 | 33 | Pass | |
| | | | | | | | | | | | |



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|---------------------------|-------|-----------|-------|-----------|-------|-----|---|-------|----|------|
| | | 12 RB/#6 | 24.23 | Horn Ant. | 20.81 | 4.5 | 1 | 24.31 | 33 | Pass |
| | | Full | 24.76 | Horn Ant. | 21.22 | 4.5 | 1 | 24.72 | 33 | Pass |
| Channel (M) 10MHz(BW) | QPSK | 1 RB/#0 | 26.63 | Horn Ant. | 23.15 | 4.5 | 1 | 26.65 | 33 | Pass |
| | | 1 RB/#max | 26.50 | Horn Ant. | 23.02 | 4.5 | 1 | 26.52 | 33 | Pass |
| | | 25 RB/#13 | 25.55 | Horn Ant. | 22.07 | 4.5 | 1 | 25.57 | 33 | Pass |
| | | Full | 25.58 | Horn Ant. | 22.02 | 4.5 | 1 | 25.52 | 33 | Pass |
| | 16QAM | 1 RB/#0 | 25.24 | Horn Ant. | 21.81 | 4.5 | 1 | 25.31 | 33 | Pass |
| | | 1 RB/#max | 25.17 | Horn Ant. | 21.73 | 4.5 | 1 | 25.23 | 33 | Pass |
| | | 25 RB/#13 | 24.64 | Horn Ant. | 21.11 | 4.5 | 1 | 24.61 | 33 | Pass |
| | | Full | 24.80 | Horn Ant. | 21.24 | 4.5 | 1 | 24.74 | 33 | Pass |
| Channel (T) 1.4MHz(BW) | QPSK | 1 RB/#0 | 26.68 | Horn Ant. | 22.93 | 4.8 | 1 | 26.73 | 33 | Pass |
| | | 1 RB/#max | 26.61 | Horn Ant. | 22.85 | 4.8 | 1 | 26.65 | 33 | Pass |
| | | 3 RB/#2 | 26.56 | Horn Ant. | 22.79 | 4.8 | 1 | 26.59 | 33 | Pass |
| | | Full | 25.59 | Horn Ant. | 21.83 | 4.8 | 1 | 25.63 | 33 | Pass |
| | 16QAM | 1 RB/#0 | 25.91 | Horn Ant. | 22.15 | 4.8 | 1 | 25.95 | 33 | Pass |
| | | 1 RB/#max | 25.84 | Horn Ant. | 22.08 | 4.8 | 1 | 25.88 | 33 | Pass |
| | | 3 RB/#2 | 25.44 | Horn Ant. | 21.72 | 4.8 | 1 | 25.52 | 33 | Pass |
| | | Full | 24.72 | Horn Ant. | 20.96 | 4.8 | 1 | 24.76 | 33 | Pass |
| Channel (T) | QPSK | 1 RB/#0 | 26.61 | Horn Ant. | 22.87 | 4.8 | 1 | 26.67 | 33 | Pass |



| | | | | | | | | | | |
|---------------------------------|-------|--------------|-------|--------------|-------|-----|---|-------|----|------|
| 3MHz(B W) | | 1 RB/#max | 26.41 | Horn Ant. | 22.64 | 4.8 | 1 | 26.44 | 33 | Pass |
| | | 8 RB/#4 | 25.49 | Horn Ant. | 21.65 | 4.8 | 1 | 25.45 | 33 | Pass |
| | | Full | 25.52 | Horn Ant. | 21.77 | 4.8 | 1 | 25.57 | 33 | Pass |
| | 16QAM | 1 RB/#0 | 25.81 | Horn Ant. | 22.03 | 4.8 | 1 | 25.83 | 33 | Pass |
| | | 1 RB/#max | 25.53 | Horn Ant. | 21.82 | 4.8 | 1 | 25.62 | 33 | Pass |
| | | 8 RB/#4 | 24.47 | Horn Ant. | 20.62 | 4.8 | 1 | 24.42 | 33 | Pass |
| | | Full | 24.64 | Horn Ant. | 20.81 | 4.8 | 1 | 24.61 | 33 | Pass |
| Channel (T) 5MHz(B W) | QPSK | 1 RB/#0 | 26.71 | Horn Ant. | 22.93 | 4.8 | 1 | 26.73 | 33 | Pass |
| | | 1 RB/#max | 26.66 | Horn Ant. | 22.88 | 4.8 | 1 | 26.68 | 33 | Pass |
| | | 12 RB/#6 | 25.65 | Horn Ant. | 21.81 | 4.8 | 1 | 25.61 | 33 | Pass |
| | | Full | 25.69 | Horn Ant. | 21.86 | 4.8 | 1 | 25.66 | 33 | Pass |
| | 16QAM | 1 RB/#0 | 25.79 | Horn Ant. | 21.91 | 4.8 | 1 | 25.71 | 33 | Pass |
| | | 1 RB/#max | 25.60 | Horn Ant. | 21.85 | 4.8 | 1 | 25.65 | 33 | Pass |
| | | 12 RB/#6 | 24.54 | Horn Ant. | 20.72 | 4.8 | 1 | 24.52 | 33 | Pass |
| | | Full | 25.00 | Horn Ant. | 21.24 | 4.8 | 1 | 25.04 | 33 | Pass |
| Channel (T) 10MHz(B W) | QPSK | 1 RB/#0 | 26.51 | Horn Ant. | 22.75 | 4.8 | 1 | 26.55 | 33 | Pass |
| | | 1 RB/#max | 26.43 | Horn Ant. | 22.68 | 4.8 | 1 | 26.48 | 33 | Pass |
| | | 25 RB/#13 | 25.42 | Horn Ant. | 21.67 | 4.8 | 1 | 25.47 | 33 | Pass |
| | | Full | 25.50 | Horn Ant. | 21.76 | 4.8 | 1 | 25.56 | 33 | Pass |



| | | | | | | | | | |
|-------|-----------|-------|-----------|-------|-----|---|-------|----|------|
| 16QAM | 1 RB/#0 | 25.12 | Horn Ant. | 21.41 | 4.8 | 1 | 25.21 | 33 | Pass |
| | 1 RB/#max | 25.26 | Horn Ant. | 21.49 | 4.8 | 1 | 25.29 | 33 | Pass |
| | 25 RB/#13 | 24.51 | Horn Ant. | 20.76 | 4.8 | 1 | 24.56 | 33 | Pass |
| | Full | 24.61 | Horn Ant. | 20.82 | 4.8 | 1 | 24.62 | 33 | Pass |

Note: a, For getting the EIRP (Efficient Isotropic Radiated Power) in substitution method, the following formula should take to calculate it,

$$\text{EIRP [dBm]} = \text{SGP [dBm]} - \text{Cable Loss [dB]} + \text{Gain [dBi]}$$

b, SGP=Signal Generator Level

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