## ELECTRICAL SPECIFICATIONS @ 220Vac, 25°C ambient, 50Ω System

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specifications</th>
<th>Frequency (MHz)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symbol</td>
<td>Min Typ Max</td>
<td>5200 5300 5400 5500 5600 5700 5800 5900</td>
</tr>
<tr>
<td>Notes</td>
<td></td>
<td>x x x x x x x x</td>
</tr>
<tr>
<td>Power Amplifier Final Test</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Date</td>
<td>Job Number</td>
<td>SKU No.</td>
</tr>
<tr>
<td>June 26, 2023</td>
<td>17765</td>
<td>2240-001</td>
</tr>
<tr>
<td>Power Amplifier Final Test</td>
<td></td>
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</tr>
</tbody>
</table>

### Operating Frequency - BW
- **symbol**: BW A
- **min**: 5200 MHz
- **typ**: 5300 MHz
- **max**: 5900 MHz
- **unit**: MHz
- **notes**: x x x x x x x x
- **Pri**: P

### Min. **P** for **P**out = 800Wpk
- (500µS PW, DC = 20%, MGC and Gated Input)
- **P**in = -4 dBm
- **record**: x x x x x x x x
- **Pri**: P

### Min. **P** for **P**out = 800Wpk
- (200nS PW, DC = 4%, MGC and Gated Input)
- **P**in = -15 dBm
- **record**: x x x x x x x x
- **Pri**: P

### Drop @ 800Wpk: 500µS PW, DC = 20%
- (MGC and Gated Input)
- **P**in = 1 dBm
- **record**: x x x x x x x x
- **Pri**: P

### Drop @ 800Wpk: 200nS PW, DC = 4%
- (MGC and Gated Input)
- **P**in = 1 dBm
- **record**: x x x x x x x x
- **Pri**: P

### Pulse Characteristics, **P**out = 800Wpk
- (500µS PW, DC = 20%, MGC and Gated Input)
- **T**rise = 20 nSec
- **T**fall = 20 nSec
- **record**: x x x x x x x x
- **Pri**: P

### Pulse Characteristics, **P**out = 800Wpk
- (200nS PW, DC = 4%, MGC and Gated Input)
- **T**rise = 20 nSec
- **T**fall = 20 nSec
- **record**: x x x x x x x x
- **Pri**: P

### Harmonics @ **P**OUT_PULSE = 800WPK
- **2nd**: -25 dBc
- **3rd**: -30 dBc
- **record**: < -60 < -60 < -60 < -60 < -60 < -60 < -60 < -60
- **Pri**: P

### Input Return Loss
- **S11**: -10 dB
- **plot**: 1

### Small Gain Flatness
- **±G**: ±3.5 dB
- **plot**: 1

### Gain @ Shutdown Condition, **P** = 0dBm
- **G** = -35 dB
- **plot**: 3

### Gain Adjustment Range
- (500µS Pulse Width, MGC mode and gated input)
- **V** = 20 dB
- **plot**: 2

### Spurious Signals
- **Spur**: -60 dBc
- **record**: < -60 < -60 < -60 < -60 < -60 < -60 < -60 < -60
- **Pri**: P

### Noise Power density
- **N** = -100 dBm/1MHz
- **record**: < -105
- **Pri**: P

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**ACCEPTANCE TEST DATA**
### ELECTRICAL SPECIFICATIONS (cont.) @ 220VAC, 25°C ambient, 500 System

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specifications</th>
<th>Frequency (MHz)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Voltage</td>
<td>( V_{AC} )</td>
<td>200 208 220 V Record</td>
</tr>
<tr>
<td>Current Consumption (DC)</td>
<td>( I_{DC} )</td>
<td>A Record</td>
</tr>
<tr>
<td>Power Consumption @ ( P_{OUT} = 800 \text{Wpk} ) (50µs PW, DC=20%, MGC and Gated Input)</td>
<td>( P_D )</td>
<td>1.5 kVA Record</td>
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<tr>
<td>Power Consumption @ ( P_{OUT} = 200 \text{Wpk} ) (50µs PW, DC=20%, MGC and Gated Input)</td>
<td>( P_D )</td>
<td>1 kVA Record</td>
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<tr>
<td>Power Consumption @ Shutdown</td>
<td>( P_{DSS} )</td>
<td>KVA Record 0.19</td>
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<tr>
<td>Quiescent Power Consumption</td>
<td>( P_{Q} )</td>
<td>KVA Record 0.06</td>
</tr>
<tr>
<td>NTE Test @ limiter threshold</td>
<td>( P_{NTE} )</td>
<td>60.5 dBm Record</td>
</tr>
<tr>
<td>Input Overdrive - Shutdown</td>
<td>( P_{IOC} )</td>
<td>10 dBm Verify</td>
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<tr>
<td>VSWR - Shutdown</td>
<td>VSWR</td>
<td>2.01 Verify</td>
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<tr>
<td>Thermal Overload - Shutdown</td>
<td>( T_{I} )</td>
<td>95 °C Verify</td>
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### INTERFACE

<table>
<thead>
<tr>
<th>System Controller</th>
<th>SW/WF</th>
<th>NTE</th>
<th>Max MGC</th>
<th>Set Point</th>
<th>Fwd/Rev.</th>
<th>Watt/DB</th>
<th>USB</th>
<th>RS232/RS422</th>
<th>Monitors</th>
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<tr>
<td></td>
<td>Version</td>
<td>dBm</td>
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<td>( \sqrt{\text{✓}} )</td>
<td>( \sqrt{\text{✓}} )</td>
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</tbody>
</table>
Plot 1 - Small Signal Gain and Input Return Loss (Peak)

Top Curve: Small Signal Gain @ P_{IN} = -30dBm
Bottom Curve: Input Return Loss
Reference: 0dB, 10dB/div.

Plot 2 - Gain adjustment range

Top Curve (Trace Memory): Maximum Gain (MGC Mode and P_{IN} = -30dBm)
Bottom Curve (Active Trace): Minimum Gain (MGC Mode and P_{IN} = -30dBm)
Reference: 40dB, 10dB/div.

Plot 3 - Gain at shutdown condition

Top Curve (Trace Memory): Maximum Gain (MGC Mode and P_{IN} = -30dBm)
Reference: 0dB, 10dB/div.
Bottom Curve (Active Trace): Gain at Shutdown (MGC Mode and P_{IN} = 0dBm)
Performance Plots

Plot 4 - Pulse Performance - 500µs PW and DC=20%

Pulse at 59dBm Peak Average

Yellow Trace = Blanking signal, Blue trace = RF Envelope, Green trace = sig gen trigger

Plot 5 - Pulse Performance - Typical Rise time - 500µs PW and DC=20%

Pulse at 59dBm Peak Average, Guard Interval = 3.5µs

Yellow Trace = Blanking signal, Blue trace = RF Envelope, Green trace = sig gen trigger

Plot 6 - Pulse Performance - Typical Fall time - 500µs PW and DC=20%

Pulse at 59dBm Peak Average

Yellow Trace = Blanking signal, Blue trace = RF Envelope, Green trace = sig gen trigger

Plot 7 - Pulse Performance - 500µs PW and DC=20%

Pulse at 59dBm Peak Average, Guard Interval = 3.5µs

Yellow Trace = Blanking signal, Blue trace = RF Envelope, Green trace = sig gen trigger
### Performance Plots

**Plot 8 - Pulse Performance - 200ns PW and DC=4%**

- Pulse at 59dBm Peak Average
- Yellow Trace = Blanking signal (20% duty-cycle), Blue trace = RF Envelope, Green trace = sig gen trigger
- Measurement Menu and Display Menu

**Plot 9 - Pulse Performance - Typical Rise time - 200ns PW and DC=4%**

- Pulse at 59dBm Peak Average, Guard Interval = 700ns
- Yellow Trace = Blanking signal (20% duty-cycle), Blue trace = RF Envelope, Green trace = sig gen trigger
- Measurement Menu and Display Menu

**Plot 10 - Pulse Performance - Typical Fall time - 200ns PW and DC=4%**

- Pulse at 59dBm Peak Average
- Yellow Trace = Blanking signal (20% duty-cycle), Blue trace = RF Envelope, Green trace = sig gen trigger
- Measurement Menu and Display Menu

**Plot 11 - Pulse Performance - 200ns PW and DC=4%**

- Pulse at 59dBm Peak Average
- Yellow Trace = Blanking signal (20% duty-cycle), Blue trace = RF Envelope, Green trace = sig gen trigger
- Measurement Menu and Display Menu
Plot 12 - Pulse Performance - 2.1ms PW and DC=20%

Pulse at 53dBm Peak Average

Yellow Trace = Blanking signal, Blue trace = RF Envelope, Green trace = sig gen trigger

Plot 13 - Pulse Performance - Typical Rise time - 2.1ms PW and DC=20%

Pulse at 53dBm Peak Average, Guard Interval = 50µs

Yellow Trace = Blanking signal, Blue trace = RF Envelope, Green trace = sig gen trigger

Plot 14 - Pulse Performance - Typical Fall time - 2.1ms PW and DC=20%

Pulse at 53dBm Peak Average

Yellow Trace = Blanking signal, Blue trace = RF Envelope, Green trace = sig gen trigger

Plot 15 - Pulse Performance - 2.1ms PW and DC=20%

Pulse at 53dBm Peak Average, Guard Interval = 50µs

Yellow Trace = Blanking signal, Blue trace = RF Envelope, Green trace = sig gen trigger

Pulse at 53dBm Peak Average, Guard Interval = 50µs

Yellow Trace = Blanking signal, Blue trace = RF Envelope, Green trace = sig gen trigger

LCL

<table>
<thead>
<tr>
<th>Gate Ctrl</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gate 1 2 3 4</td>
</tr>
</tbody>
</table>

Select

Marker 1 2

Trace Control

1 of 2

Time: -4.35us
Pow: 15.52 dBm

ΔT: 2.10ms
Avg: 53.02 dBm

Peak: 53.97 dBm
Pkt-Avg: 0.95 dB
<table>
<thead>
<tr>
<th>Frequency (GHz)</th>
<th>Measurement Method</th>
<th>500μS pulse width, 20% DC @</th>
<th>200nS pulse width, 4% DC @</th>
<th>2.1mS pulse width, 20% DC @</th>
<th>Limits</th>
<th>P/F</th>
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<tbody>
<tr>
<td>5.4</td>
<td>External Test Equipment</td>
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<td>5.6</td>
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<td>59.4</td>
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