

## 1.4-1.9GHz/110Watt/Module

Model Number: KN1650M51A

The model KN1650M51A is a multi-octave high power amplifier operating between 1.4GHz and 1.9GHz and offering a wide dynamic Range with 110 Watts typical saturated power. The employment of gallium nitride and chip-and-wire technology in manufacturing ensures this module state-of-the-art power performance with excellent power-to-volume ratio. It is ideal for jamming, EMC, test and measurement applications.

### FEATURES:

- Narrowband & High power;
- High Efficiency;
- Great Linearity;
- Small Size & Light Weight;
- Low Distortion

### ELECTRICAL SPECIFICATIONS @ +28.0VDC, 25°C, 50Ω

| Parameter                | Symbol              | Minimum | Typical | Maximum | Units |
|--------------------------|---------------------|---------|---------|---------|-------|
| Operating Frequency      | BW                  | 1.4     |         | 1.9     | GHz   |
| RF Output Power P1       | P1                  |         | 110     |         | Watt  |
| Power Gain               | Gp                  |         | 51      |         | dB    |
| Power Gain Flatness      | Δ Gp                |         | ±1.5    |         | dB    |
| Input Return Loss        | S <sub>11</sub>     |         |         | -10     | dB    |
| Harmonics @80W           | H                   |         | -10     |         | dBc   |
| Spurious Signals         | Spur                |         | -55     |         | dBc   |
| In/Output Impedance      |                     |         | 50      |         | Ω     |
| Operating Voltage        | V <sub>DC</sub>     | 24      | 28      | 32      | Volt  |
| DC Current @100W         | I <sub>DD</sub>     |         | 13      |         | Amp   |
| Switching Time @1kHz TTL | T <sub>on/off</sub> |         | 2       | 5       | uSec  |

### MECHANICAL SPECIFICATIONS

| Parameter              | Value                            | Units     | Limits  |
|------------------------|----------------------------------|-----------|---------|
| Dimensions             | 200x150x30 [7.87x5.9x1.18]       | mm [inch] | Maximum |
| Weight                 | 2.5 [5.5]                        | kg [lbs]  | Maximum |
| RF Connectors Input    | SMA, Female                      |           |         |
| RF Connectors Output   | Type-N, Female                   |           |         |
| DC Interface Connector | Hybrid,D-sub 7 Pin, Male         |           |         |
| Cooling                | External Heatsink (Not Supplied) |           |         |

### ENVIRONMENTAL CHARACTERISTICS (Design to Meet)

| Parameter                          | Minimum | Typical | Maximum | Units | Notes   |
|------------------------------------|---------|---------|---------|-------|---------|
| Operating Temperature              | -20     |         | 60      | °C    |         |
| Non-operating Temperature          | -25     |         | 65      | °C    | Storage |
| Relative Humidity (non-condensing) |         |         | 95      | %     |         |

### Absolute Maximum Rating

|                              |   |
|------------------------------|---|
| Input RF drive level without | +5 dBm (Max)  |
| Load VSWR @ POUT =80W        | ∞ @ all load phase & amplitude for duration of 1 minute;<br>3:1 @ all load phase & amplitude continuous |
| Thermal Overload             | 85°C @ heatsink [restored @ 60°C]   |

*Focus on Your Application*

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Specifications subject to change without notice

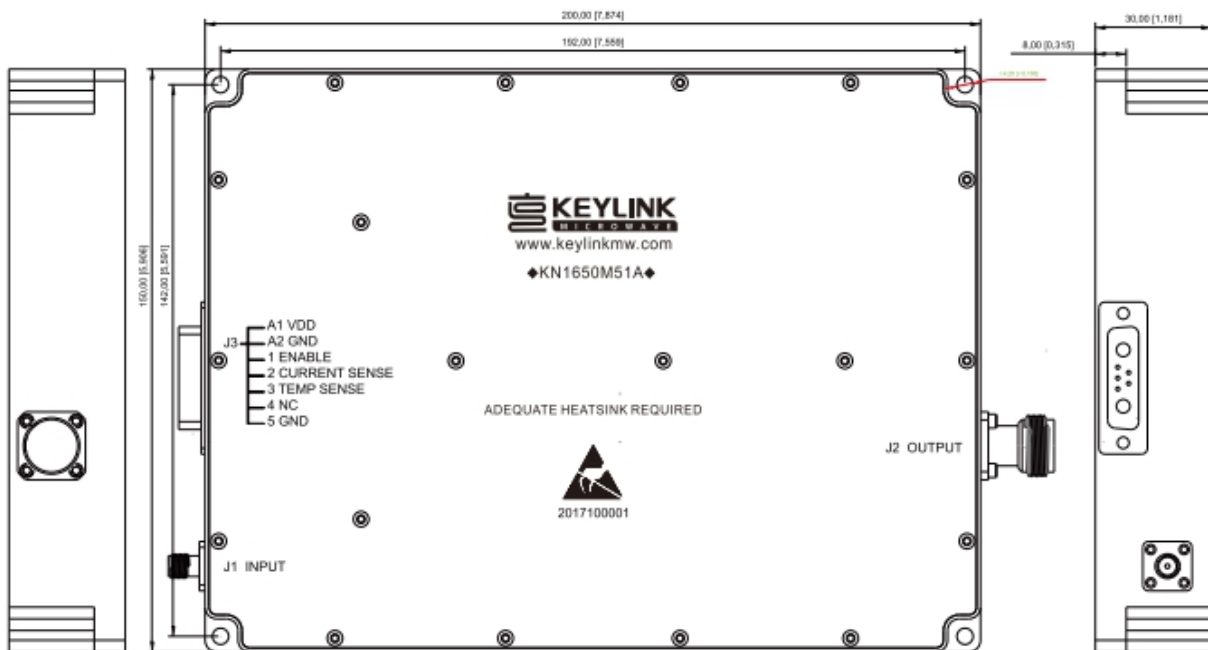
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DC INTERFACE CONNECTOR

| Pin # | Description   | Specifications  |
|-------|---------------|---|
| A1    | VDD           | 28V <sub>DC</sub>   |
| A2    | GND           | Ground  |
| 1     | ENABLE        | Amplifier Enable: TTL Logic High (3.3V) (Internally Pulled-Low) |
| 2     | CURRENT SENSE | Analog voltage relative to I <sub>DD</sub> @ 100mV per Ampere   |
| 3     | TEMP SENSE    | Analog voltage relative to Module's Temperature @ 10 mV/°C      |
| 4     | NC            | Not Connect   |
| 5     | GND           | Ground  |

OUTLINE DRAWING (All dimensions in mm [inch])



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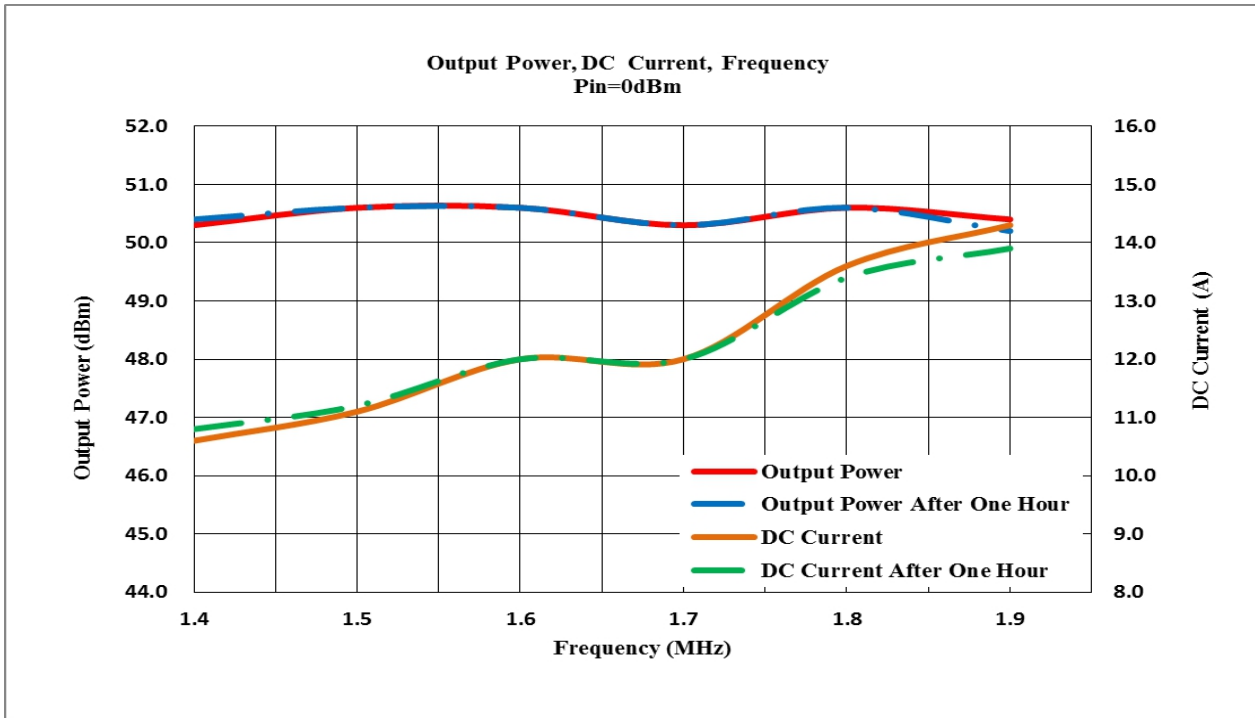
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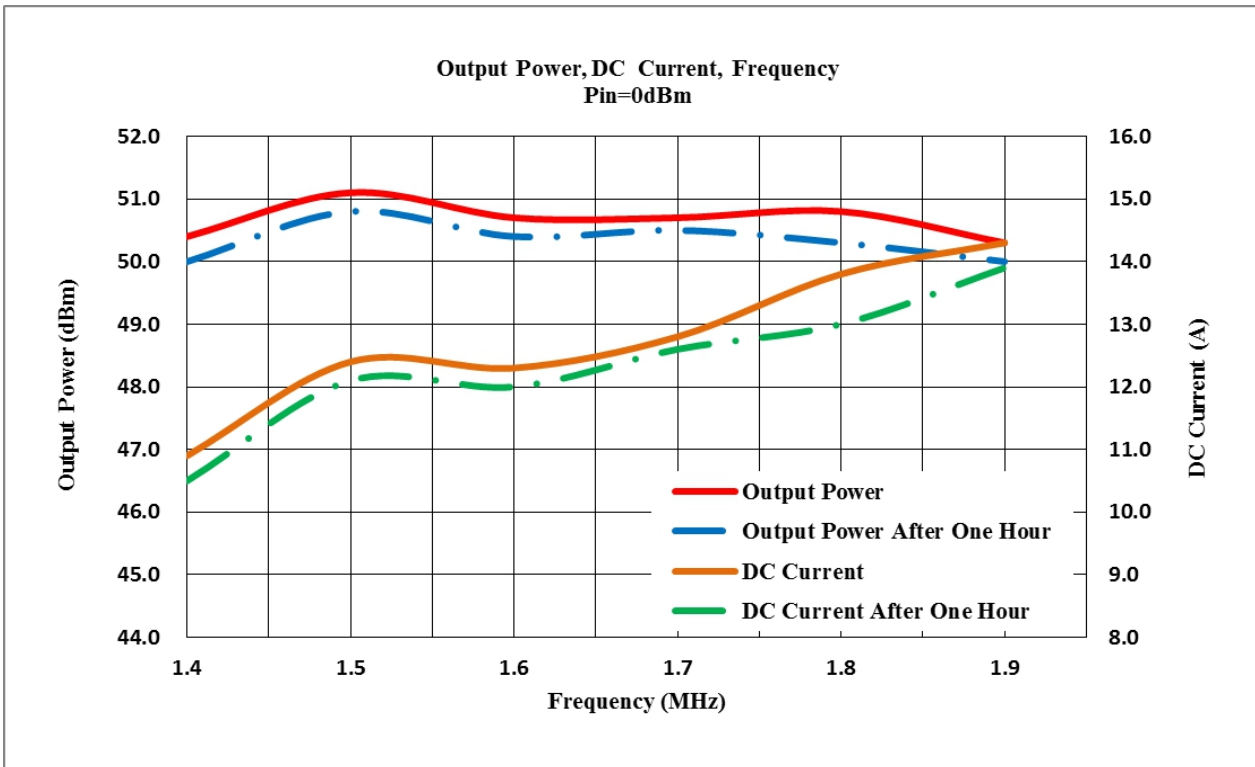
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TYPICAL PERFORMANCE PLOTS (For reference only)

Graph1: Output Power (Low temp.  $-20\pm 3^{\circ}\text{C}$ )



Graph2: Output Power (High temp.  $+60\pm 3^{\circ}\text{C}$ )



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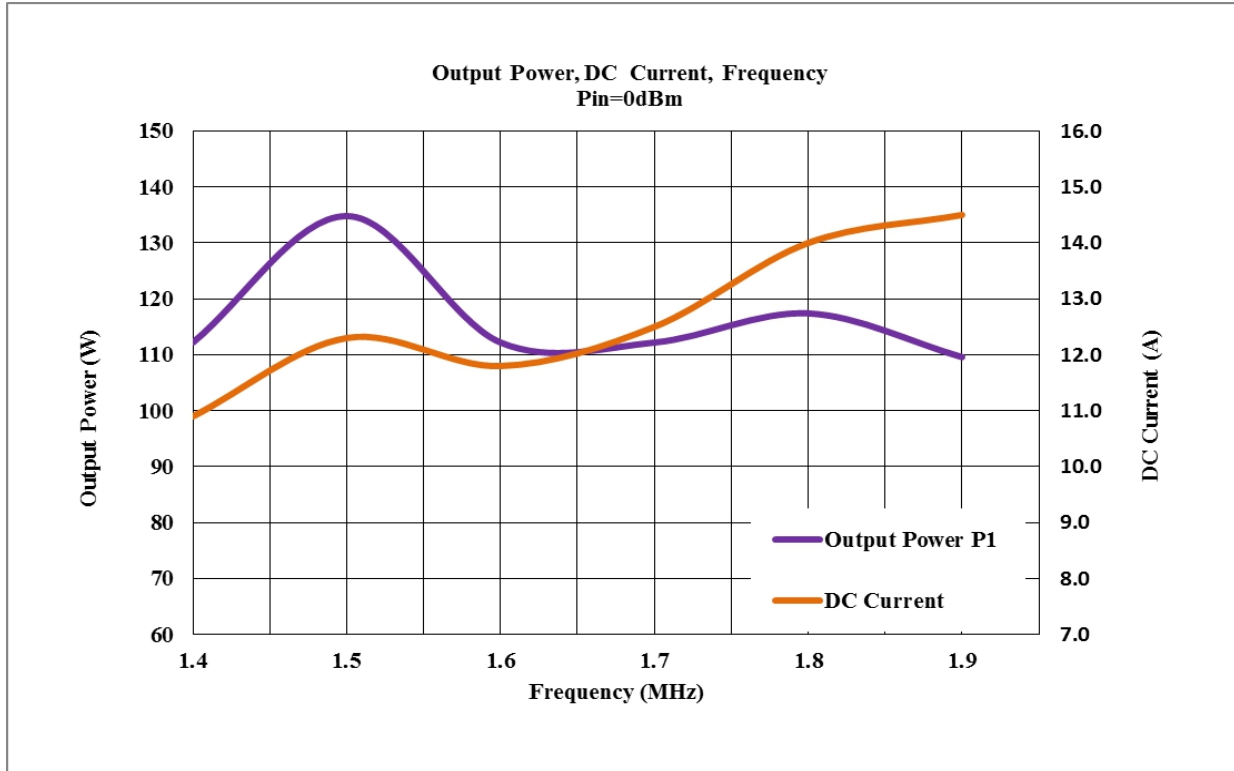
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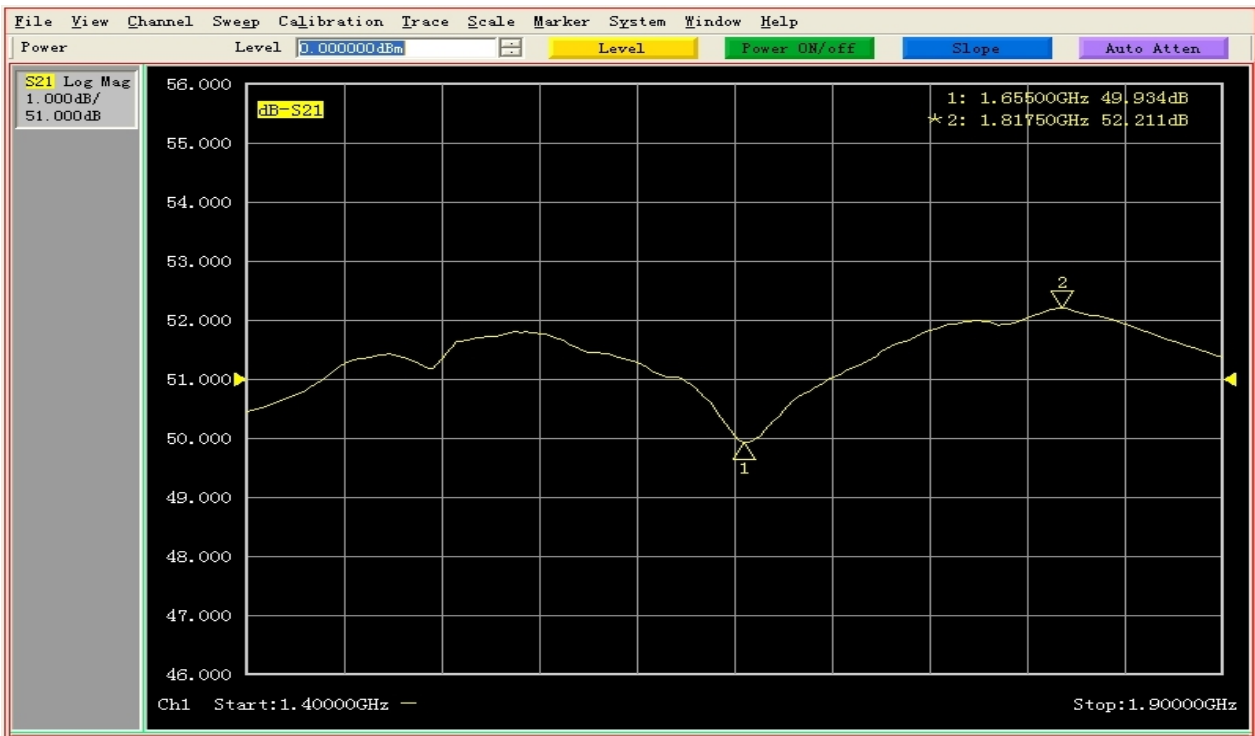
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Graph3: Output Power (Normal temp. +25±3°C)



Power Gain:



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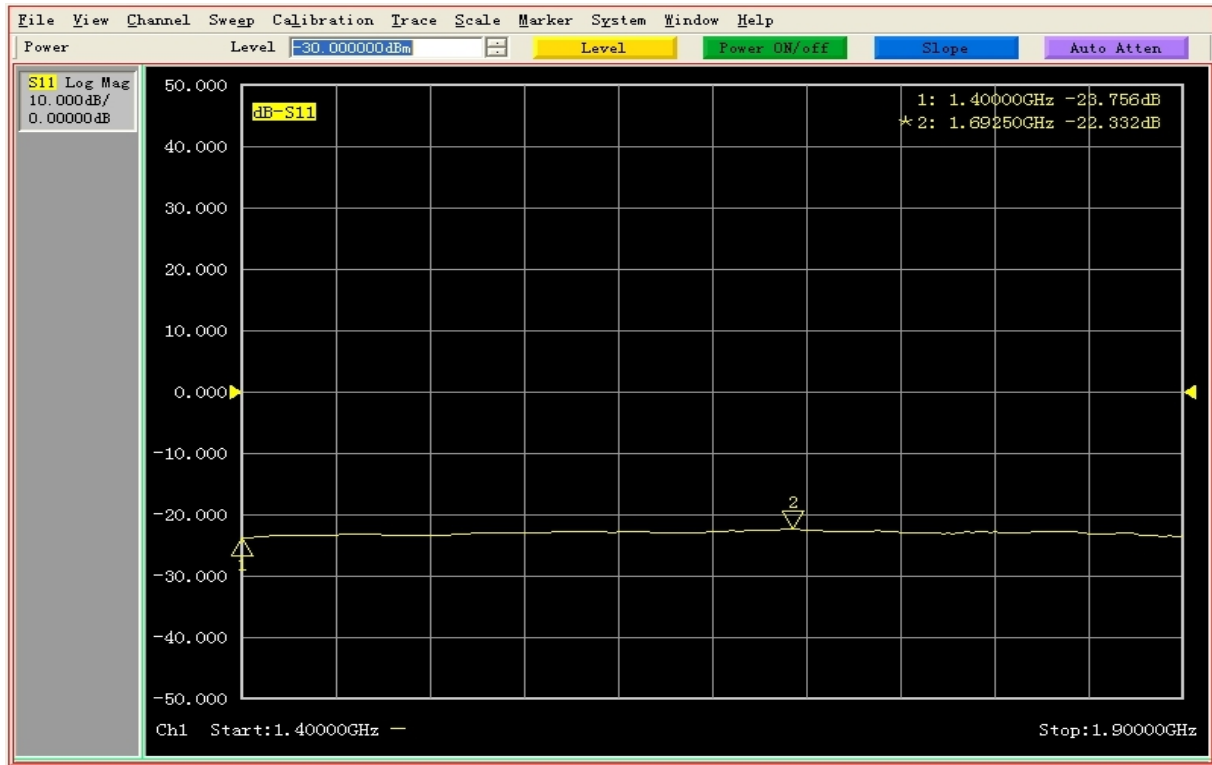
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## 1.4-1.9GHz/110Watt/Module

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Input Return Loss:



**Note:** Adequate heatsink required.

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