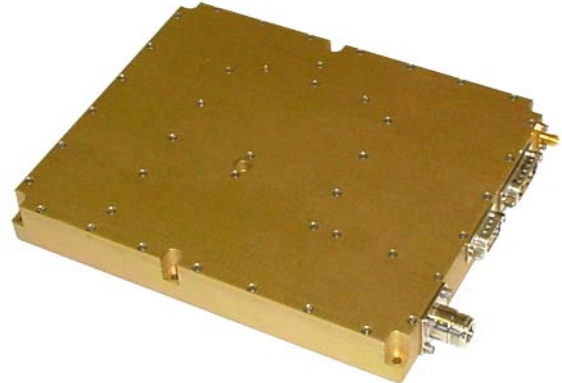


Solid State Personal Communication Power Amplifier

7018 – PCM3R3SDQ
869 - 894 MHz / 20 Watts CDMA

CELLULAR AMPLIFIER MODULE FOR SMALL BASE STATIONS AND REPEATERS

The PCM3R3SDQ (SKU # 7018) is suitable for single and Multi-Channel CDMA base station and repeaters applications in the Cellular frequency range. Also suitable for GSM and TDMA applications, this amplifier utilizes linear LDMOS power devices that provide excellent linearity and low distortions, high gain, and wide dynamic range. Exceptional performance, long term reliability, and high efficiency are achieved by employing advanced matching networks and combining techniques, EMI/RFI filters, machined housing, and qualified components. Empower RF's ISO9001 Quality Assurance Program assures consistent performance and the highest reliability.



- Solid-state linear design
- Small and lightweight
- Suitable for GSM, TDMA and Multi-Carrier CDMA Application
- 50 Ohm Input/Output impedance
- High reliability and ruggedness

ELECTRICAL SPECIFICATIONS @ T=25°C, VDD=+28VDC; 50Ω System

Characteristics	Rating	Limit
Frequency Response	869 – 894MHz	Min
RF Input Power Range	-30dBm to -10dBm CDMA Power	Min
Power Output CDMA Per IS-97 standard	20Watts Multi-channel, 30Watts single channel Overall conditions	Min
Gain Window (Overall conditions)	54dB ±1dB within input dynamic range	Min
Gain Variation vs. Frequency	±0.5dB overall Frequency	Max
Gain Flatness over operating frequency range	±0.2dB over any 5MHz	Max
Gain variation over operating temperature range	±1dB	Max
ACPR @ 20Watt 4 Channels HPA Module Output Port With HP E4433B source	Measured by marker function @ any input dynamic range [fc ±885KHz @ 30KHz RBW, 100Hz VBW]; -38.5dBc [fc ±1.98MHz @ 30KHz RBW, 100Hz VBW]; -40.5dBc	Min
Intermodulation Distortions	-60dBc with 2 – tones @ 20Watt output	Typ
Harmonics	2 nd : -40dBc, 3 rd : -60dBc	Max
Input/Output VSWR @ 50ohm	-20dB (50 ohm reference)	Max
Noise Receive Band (20Watts output)	-34dBm (30KHz RBW) @ receive band	Max
Reverse IMD and Load VSWR	Output Isolator	
Conducted Emission	DC Power and Control line include RFI filters	
Output Protection	Infinite VSWR, all phases with forward output power up to 50 Watts	Min
Load Stability	VSWR ∞ : 1, all phases	Nom
Supply Voltage	28 ±1.0VDC	Nom
Current Consumption @ Pout = 20Watts	8.0Amp	Typ

MECHANICAL SPECIFICATIONS

Parameter	Value	Units
Dimensions (including heatsink)	6.7" x 8.1" x 1.1"	Max
Weight	3.5lb.	Max
RF Connectors Input / Output (SMA / SMA optional)	SMA F / Type-N female	
DC and Alarms / Interface	D-sub 15 Pins, DC Pins, AMP P/N 717TWB17W2P	
Cooling	Heatsink + External airflow	

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ENVIRONMENTAL CHARACTERISTICS (Design to Meet)

Parameter	Symbol	Min	Typ	Max	Unit
Operating Temperature		-20°C to +60°C			Min
Relative Humidity		0 to 90% Non-condensing			Min
Altitude		10,000 feet			Min
Shock and Vibration		Normal Truck transportation			Min

PROTECTIONS

Input Overdrive		+6dBm			Max
Load VSWR @ 50 W output power		∞ @ all load phase & amplitude for duration of 1 minute 3:1 @ all load phase & amplitude continuous			Nom
Thermal Overload		85°C shutdown			Max

INTERFACE CONNECTORS

D-Sub, 9-Pin - Control

Pin #	Description	Specifications
1	GND	Ground
2	Over Power Alarm	TTL
3	VSWR Alarm	TTL
4	Temperature Monitor	Analog
5	Over Temp Alarm	TTL
6	Mute	Enable: TTL "Low" Disable: TTL "High"
7	GND	Ground
8	Forward Power Monitor	Analog
9	N/C	

D-Sub, 3-Pin - DC

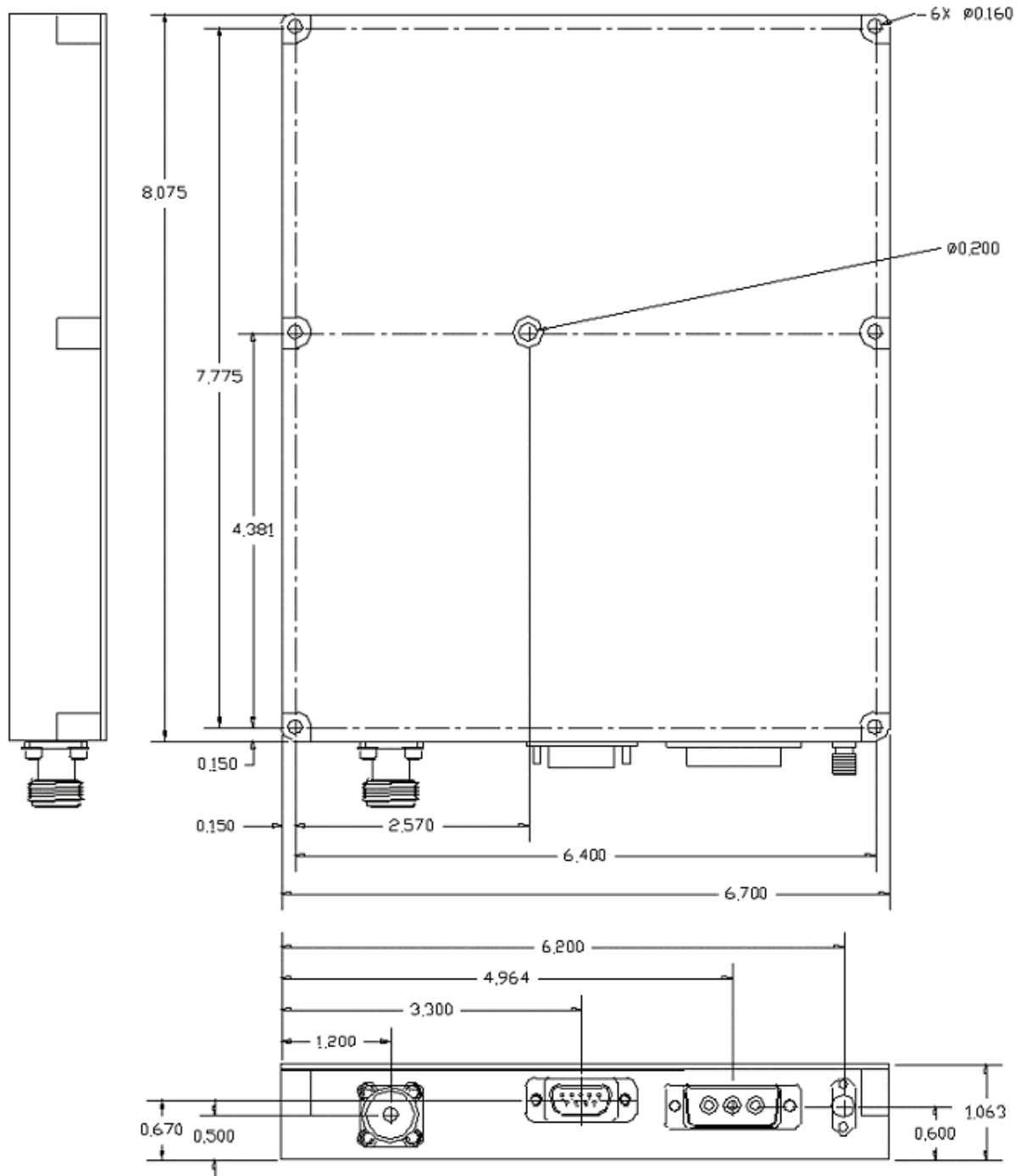
Pin #	Description	Specifications
A1	VDD	+27VDC
A2	GND	Ground
A3	N/C	

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OUTLINE DRAWING



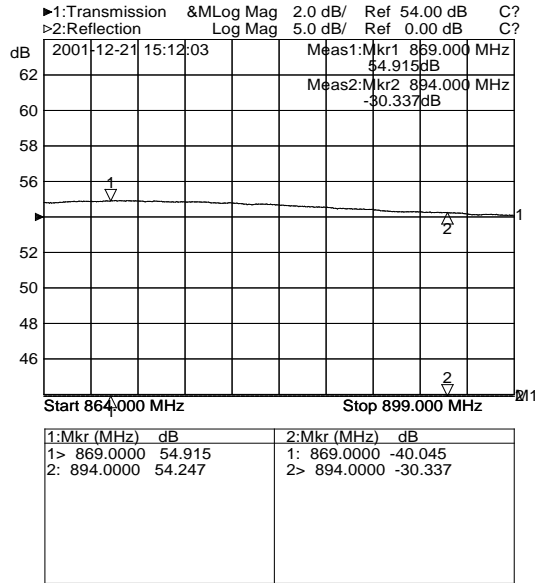
Solid State Personal Communication Power Amplifier

7018 – PCM3R3SDQ

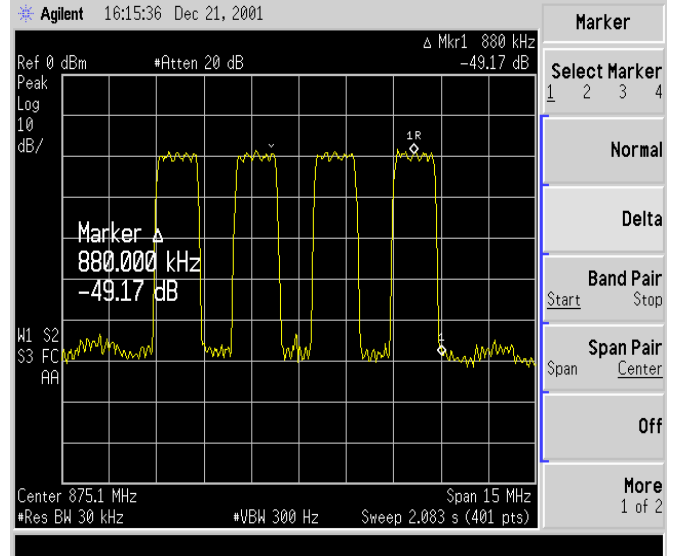
869 - 894 MHz / 20 Watts CDMA

TYPICAL DATA PLOTS

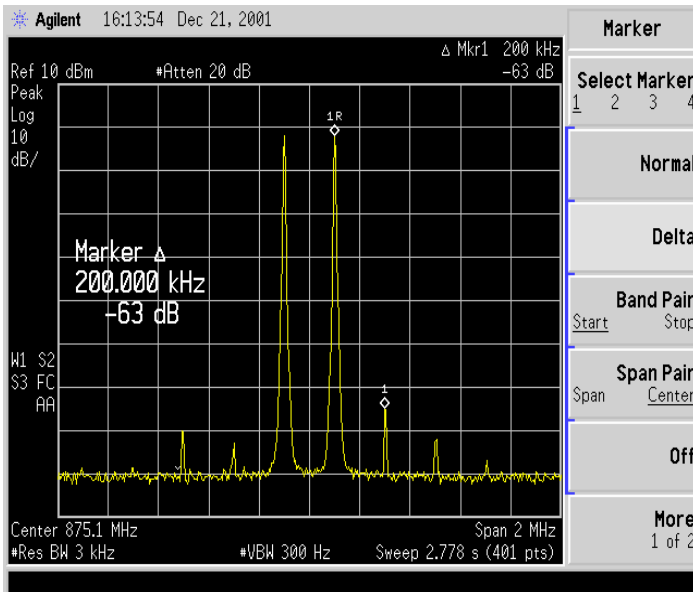
Small Signal Gain @ Pin = -10dBm, Id = 6.2A



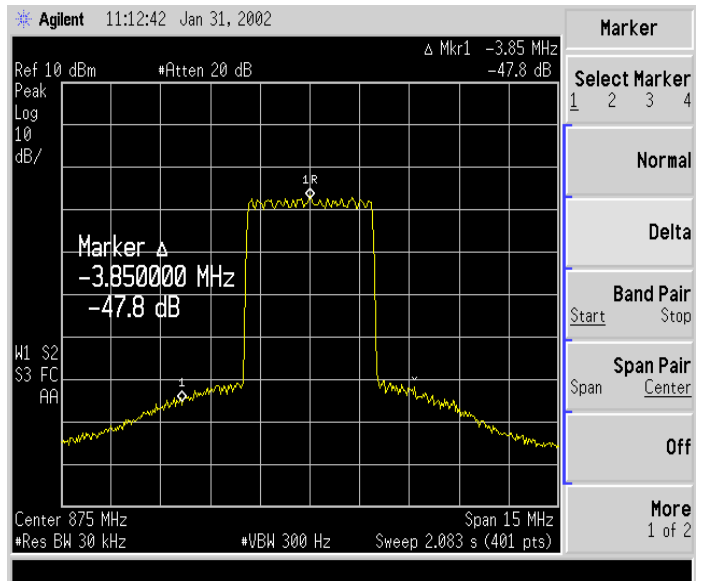
CDMA 4 FA with spacing @ 20W Composite



2-Tone CW @ 20W Composite (8A @ 28V)



20W CDMA with 3 Carriers @ 1.98MHz (8A @ 28V)





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