

Multi-Channel RF Power Amplifier

Model 7T2.5KP-2C/8C

278-305 MHz

2500 W/Channel - 8 Channel Mode

7500 W/Channel - Dual Channel Mode

The 7T2500P-8C/2C Multi-Channel RF Power Amplifier is designed to enable parallel transmit (B1 shimming) applications and be switch matrixed to provide two outputs at greater power. The unit operates 278 - 305 MHz with 8 Channels at 2500 W per channel or in Dual Channel Mode with 7500 W per channel.

The unit supports the Pulse Width and Duty Cycle need of state-of-the-art MRI systems and offers superior signal integrity with best in class Droop, Linearity, Phase and Rise/Fall Times.

Engineered for demanding NMR and MRI applications, the 7T2.5KP-2C/8C offers comprehensive interface monitoring, advanced control features, and robust fault protection. The design ensures seamless integration in the system, with reliable performance in critical environments.



7T2.5KP-2C/8C

Specifications

Parameter	Specification	
	8 Channel Mode	Dual Channel Mode
Electrical Specifications		
Operating Frequency	278 - 305 MHz	
Pulse Power into 50 Ohms	2500 W (min.)	7500 W (min.)
CW Power	50 W (min.)	2000 W (min.)
Pulse Width	20 - 100 msec (typ.)	
Linearity (± 1 dB, Class AB)	2500 W (min.)	7500 W (min.)
Gain (0 dBm Input)	+64 dB (nom.)	+69.5 dB (nom.)
Gain Flatness	± 2 dB (typ.)	
Harmonic Content ($2^{nd}/3^{rd}$)	-20 dBc/-12 dBc (typ.)	
Input/Output Impedance	50 Ohms (nom.)	
Input VSWR	Less than 2:1	
Duty Cycle	10% (max.)	
Amplitude Rise/Fall Time	500 nsec (typ.)	
Amplitude Droop	5% to 20 msec (typ.), 8% (max.)	
Phase Change / Output Power	12° to Rated Power (typ.), 25° (max.)	
Phase Error overpulse	5° to 10 msec duration (typ.)	
Noise Figure	12 dB (typ.)	
Output Noise (blanked)	20 dB over thermal (typ.)	
Blanking Delay	1 μ sec (typ.), on/off, TTL Signal	
Mechanical and Environmental Specifications		
Cooling	Internal Forced Air, Front to Back Flow	
Operating Temperature	+10 °C to +40 °C	
AC Line Voltage	208 VAC, $\pm 10\%$, 47-63 Hz	
Rack Mount Cabinet Size	76" H x 25" W x 41" D (approx.)	
Compliance	CE, IEC-60601-01 upon request	

Contact CPC today to discuss a solution to fit your system requirements.

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System Features:

Protection functions:

- Maximum forward power
- Maximum VSWR
- Over temperature
- Power supply over voltage
- Under-Voltage
- Over-Voltage
- Over Current
- Duty Cycle
- Pulse Width
- Thermal
- Comm
- Interconnect
- TR Bias

Controls, front panel:

- AC power on/off
- Fault reset
- TR Bias Disable

Connectors, patch panel:

- AC mains, Receptacles, EMI filtered
- RF input: 8W8 (F)
- RF output: Type N (F) (Multi) / Type 7/16 (F) (Dual)
- Noise blanking / Interface: DB25 (F)
- Fwd/Ref RF sample: 8W8 (F)
- Protective ground: threaded bolt (1/4-20 NC)

Front panel indicators:

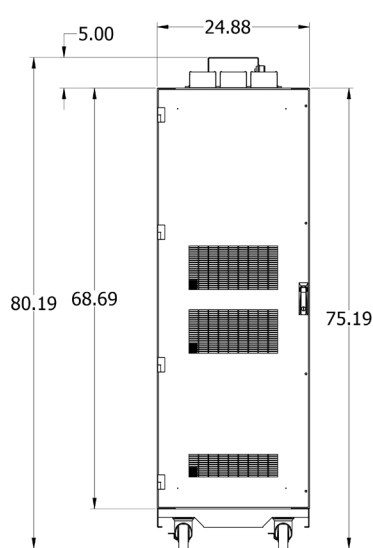
- AC power on
- Status LCD Display
- Summary Fault
- Blanking (Gate)
- TR Fault
- Dual Mode

Interface functions:

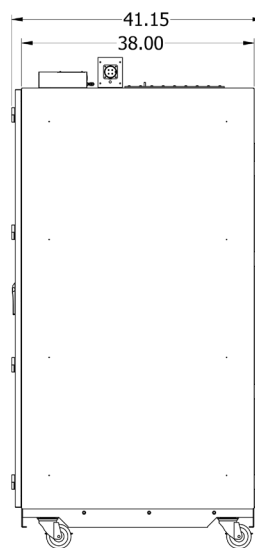
(C= Control Input F= Flag Output)

- Unblank (C)
- Dual/Multi Mode Configuration (C/F)
- CW mode (C/F)
- Standby (C/F)
- Shutdown (C/F)
- Fault Reset (C/F)
- Power supply (F)
- RF overdrive (F)
- Thermal (F)
- VSWR (F)
- Under-Voltage (F)
- Over-Voltage (F)
- Over-Current (F)
- Duty Cycle (F)
- Pulse Width (F)

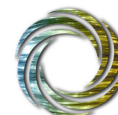
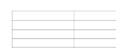
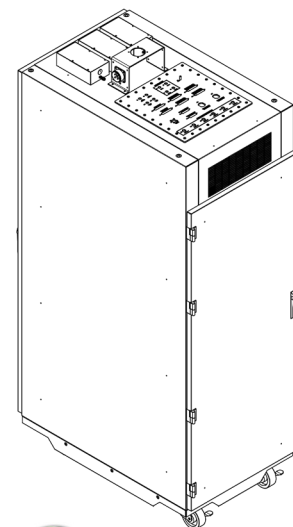
Outline Drawing



FRONT VIEW



SIDE VIEW



CPC Amps
Communication Power Corporation