

WV Communications



Model SYS1018 - 370-450MHz 10KW Power Amplifier System

DESCRIPTION

In support of test ranges around the world WV Communications has designed, manufactures the industry's most efficient high power amplifier. At 50% efficiency, from AC input power to RF output power, the model SYS1018 10KW amplifier system utilizes WV's building block approach to produce 10KW of output power in the UHF band. The amplifier system utilizes eight (8) of WV's standard model PA1026 Amplifier drawers (same amplifier drawer used on all UHF amplifier systems) with their outputs combined using an 8-way radial combiner to produce over 10KW of output power across the frequency band of 370-450MHz. Four (4) 28VDC power supply drawers power the amplifier drawers, with each power supply providing the DC power to two (2) amplifier drawers. Each power supply drawer is equipped with six (6) power supply modules, three (3) for each power amplifier drawer. The power supply drawer has built-in N+1 redundancy since only two (2) power supply modules are required to power an amplifier drawer. During normal operation the current is shared across all three (3) power supply modules, however should one module fail the remaining two (2) modules can handle the full load.

Digital Amplifier controller, equipped with a touch screen LCD color display, provides all of the control and reporting functions of the amplifier system. Equipped with an Ethernet interface, the amplifier system can be locally or remotely controlled. In addition, to providing control of the output power, in the 'Control' screen the system operator can select the mode of operation (ALC or VVA) of the amplifier, and control the RF switches connected to the amplifier system for routing the RF output. In the 'Status' screen, the amplifier controller provides the system operator with information on the overall system performance, as well as the parameters associated with every amplifier drawer RF Power Transistor and every power supply drawer status. The controller's 'Setup' screen is utilized to configure the system, from IP addresses to initial start-up configuration, to alarm trigger points, while the 'Fault' screen indicates any and all faults in the amplifier system.

SPECIFICATIONS

Frequency Range:	370-450 MHz
Output Power:	10KW Minimum at 1dB Compression
RF Gain:	75dB Nominal
Small Signal Gain Flatness:	± 1.5 dB Maximum into 1.05:1 VSWR
RF Input Power:	-5dBm to +3dBm
Maximum RF Input Power:	+10dBm Maximum w/o Damage
Input & Output Impedance:	50 Ω Nominal
Input VSWR:	1.50:1 Maximum (Ref 50 Ω)
Harmonic Signal Levels:	Integral Low Pass Filter 2 nd : -60dBc Maximum 3 rd -7 th : -80dBc Maximum
Spurious Signal Levels:	-55dBc Maximum over 370 - 450MHz -80dBc Maximum over 1 - 370MHz & 450 - 3000MHz
RF Output Connector:	3 1/8" EIA Flange
Output Power Control:	23dB Minimum
RF Output Turn-On Time:	<50mSec after RF power received
RF Output Sample:	-70dBc from Output Power Level
Local Control/Status:	Via Color Touchscreen LCD
Remote Control/Status:	RS232 & Ethernet (UDP/IP)
Cooling:	Forced Air Via Integral Front Panel Intake and Rear Panel Exhaust Fans
Over-Temp Protection:	8-Way Combiner at 110°C, Load at 210°C
AC Input Power:	170-264 VAC, 47-63 Hz, 3 Phase at 28KW Maximum (20KW Typical at 10KW RF Output Power)



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