HD Communications Corp.

HD32142
SOLID STATE PULSE HIGH POWER AMPLIFIER

FEATURES

Small form factor rack-mounted system
High power GaN pulse devices
Instantaneous bandwidth
Suitable for X-Band high power linear pulse applications
Built-in protection circuits
High reliability and ruggedness



ELECTRICAL SPECIFICATIONS

Parameter	Specification			Notes
Model Number	-	HD32142-400	HD32142-800	
Operating Frequency Range	9.6 - 9.9 GHz			
Peak Output Power (Min)	-	400 Watt	800 Watt	20% Duty Cycle
Output Power Flatness	0 to +2 dB			Over operating & Temp Range
Input Power	0 - 5 dBm			Pulsed
Saturated Gain (Min)	-	56 dB	59 dB	
Output Power Control	6 dB, 1 dB steps			
Pulse Width	0.35 µSec - 50 µSec			Measured @ 50% pt.
Duty Cycle	20 % Max			
Pulse Repetition Frequency (PRF)	5 KHz Max, ±5% staggering			
Rise / Fall Time	75 nSec			
Droop	<0.8 dB Max			50 µSec PW, 20% duty
Input / Output VSWR	1.5 : 1			Relative to 50 Ohm
Harmonics	-60 dBc Max			Internal Harmonics Filter
Phase drift within pulse	7.5° Max (Linear)			
Out of Band Spurious levels	-65 dBc Max			
Over Temp. Alarm	ON: TTL Low >75°C OFF: TTL High <70°C			
Load VSWR	2.5 : 1			Without damage
Gate Control Inputs	PA OFF: TTL High PA ON: TTL Low			TTL pulse precedes RF by 2 µSec
AC Input Voltage	230 VAC, ±10%, 50 Hz ±3 Hz			
AC Power Consumption	-	<1.0 kVA	2.2 kVA	
Noise Figure	<12 dB			Input VVA increases NF for the system
Detected RF Output	Pout = 0: V_{DET} = 0 - 5 VDC Pout = Max: V_{DET} = 4 - 4.5 VDC			Continuous DC Voltage
Phase Noise	-70 dBc/Hz @ 100 Hz from carrier			

ENVIRONMENTAL CHARACTERISTICS

Parameter	Specification	Notes
Operating Ambient Temperature	-20 to +55°C	MIL-STD 810F, 502.4/501.4
Storage Temperature	-30 to +70°C	MIL-STD 810F, 502.4/501.4
Relative Humidity	95% @ 40°C	MIL-STD 810F, Method 507.4
Shock (Bump)	25 g for 6 mSec, 2-3 Bumps/Sec. 400 Bumps	MIL-STD 810F, Method 516.5
Vibrations	$2m/S^2$ from 20 -500 Hz	MIL-STD 810F, Method 514.5
Altitude	5160 m	MIL-STD 810F, Method 500.4
EMI/EMC	Conducted Susceptibility, Radiated Emissions	MIL STD 461E, Method CS101 MIL STD 461E, Method RE102

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MECHANICAL SPECIFICATIONS

Parameter	Specification			Notes
Dimensions W x H x D	-	R3U	R6U	Rack mounted chassis
Weight	-	20 Kg.	TBD	
RF Input Connector - Rear	Type N (F)			
RF Output Connector - Rear	WR 90 UG 136B/U (Choke Flange)			Aluminum w threaded holes
RF Sample Port - Front	SMA (F) Jack			0 - 6 dBm
Detected RF Power - Front	BNC (F)			Pulsed DC
AC Power - Rear	Amphenol, 97 - 3102A-2209 P (3 pin)			or equivalent
Transmit Gating Signal - Rear	SMA (F) Jack			Gating control input signal
Monitor & Control - Rear	Ethernet RJ-45 circular connector TCP/IP RS232 D-sub 9S port for redundancy			
Cooling	Built in Fan Cooling			

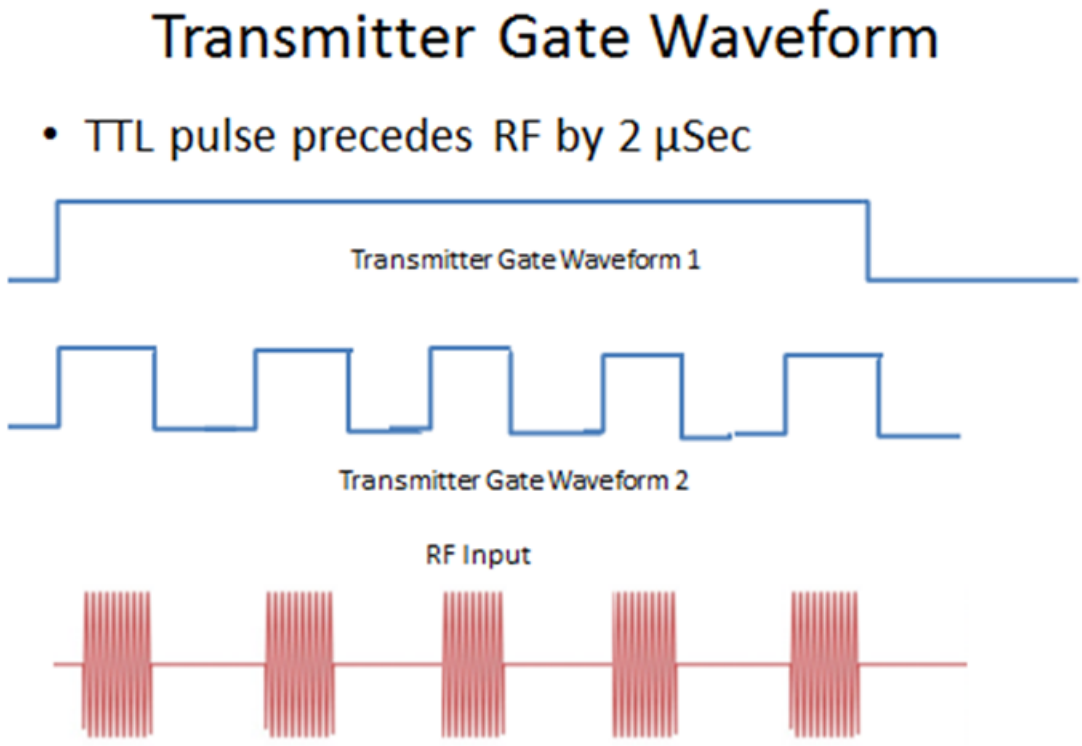


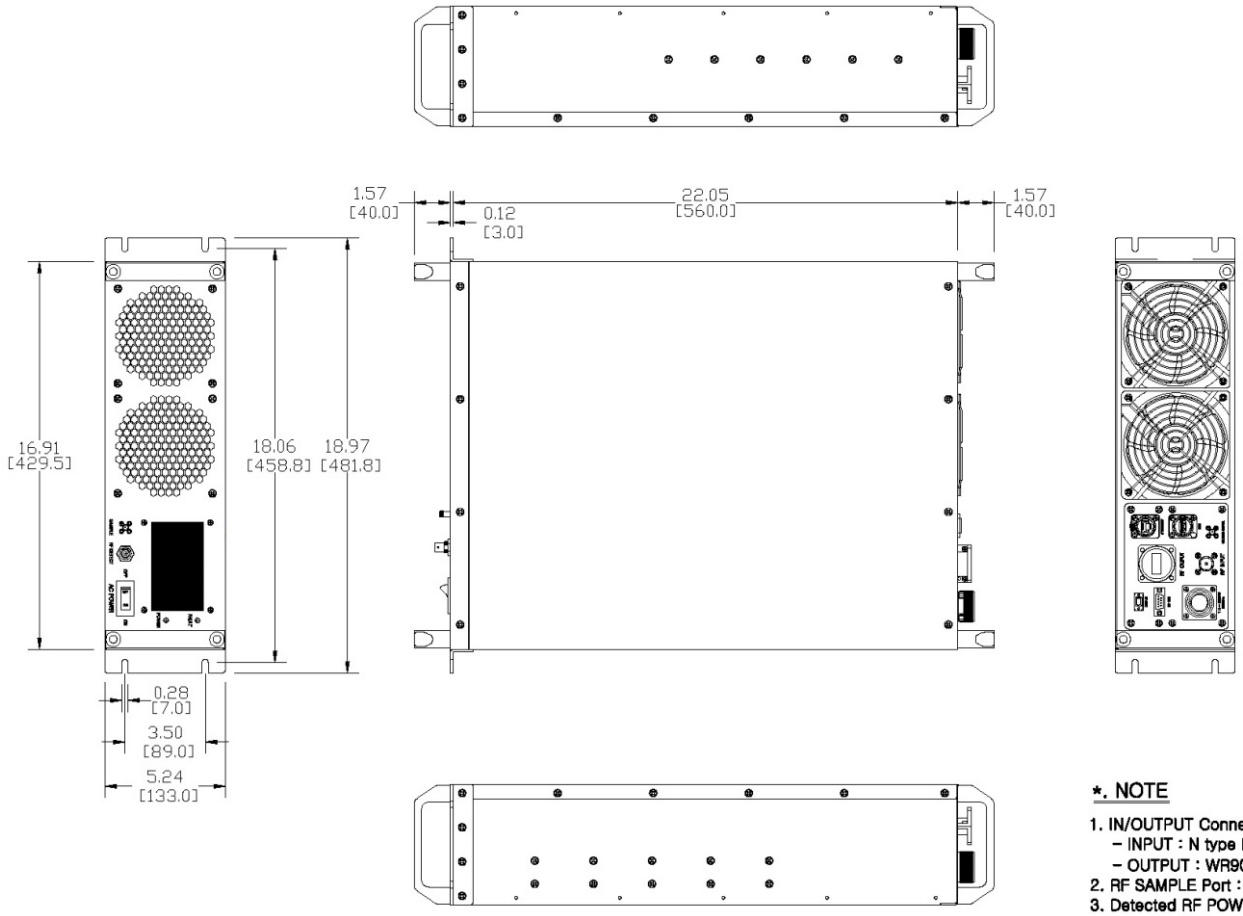
Fig.1

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OUTLINE DRAWING - R3U



*. NOTE

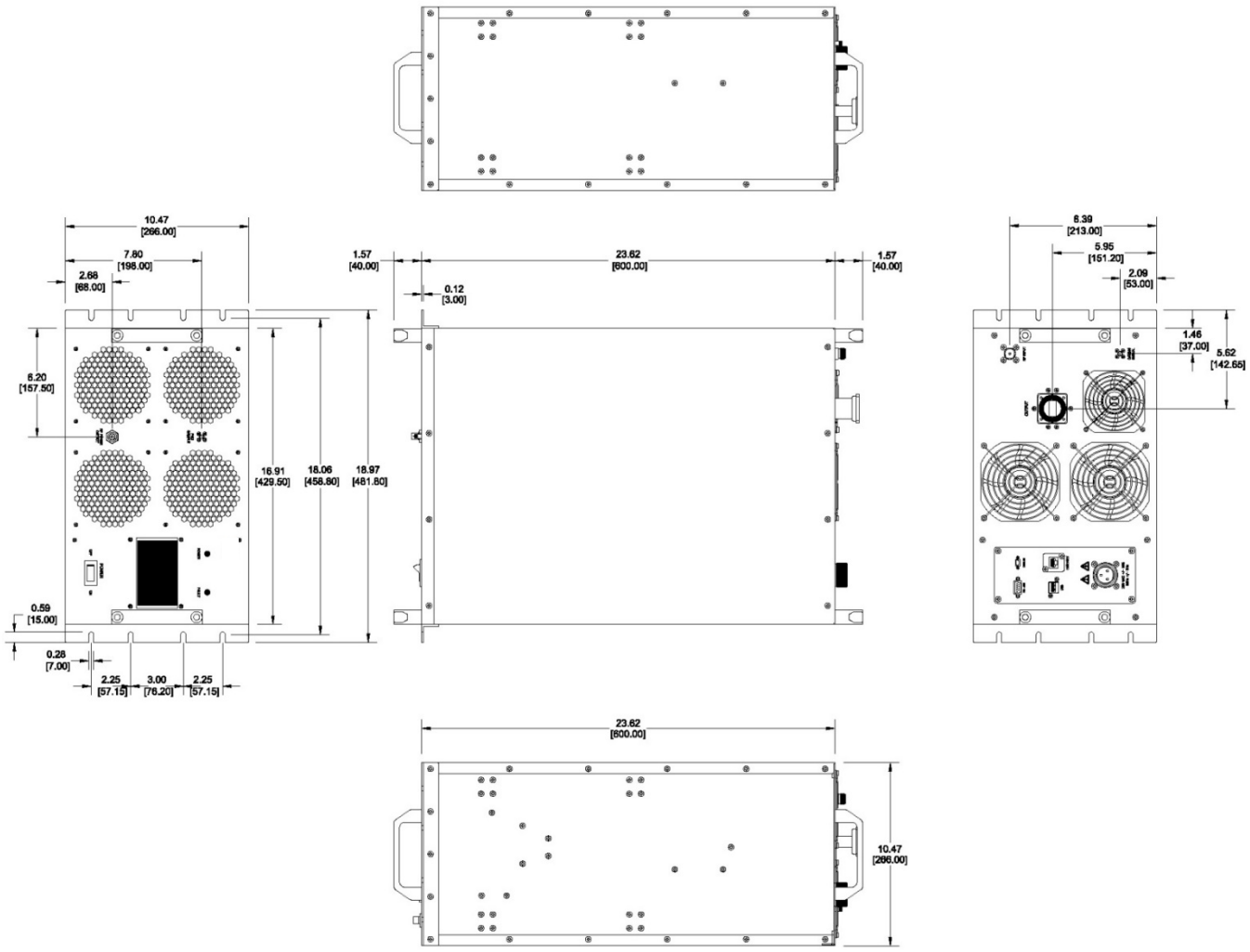
1. IN/OUTPUT Connector
   - INPUT : N type Female
   - OUTPUT : WR90 (UG-136B/U)
2. RF SAMPLE Port : SMA Female
3. Detected RF POWER : BNC Female
4. Transmit Gaing Signal : SMA Female
5. AC POWER : 3102A-2209P

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OUTLINE DRAWING - R6U



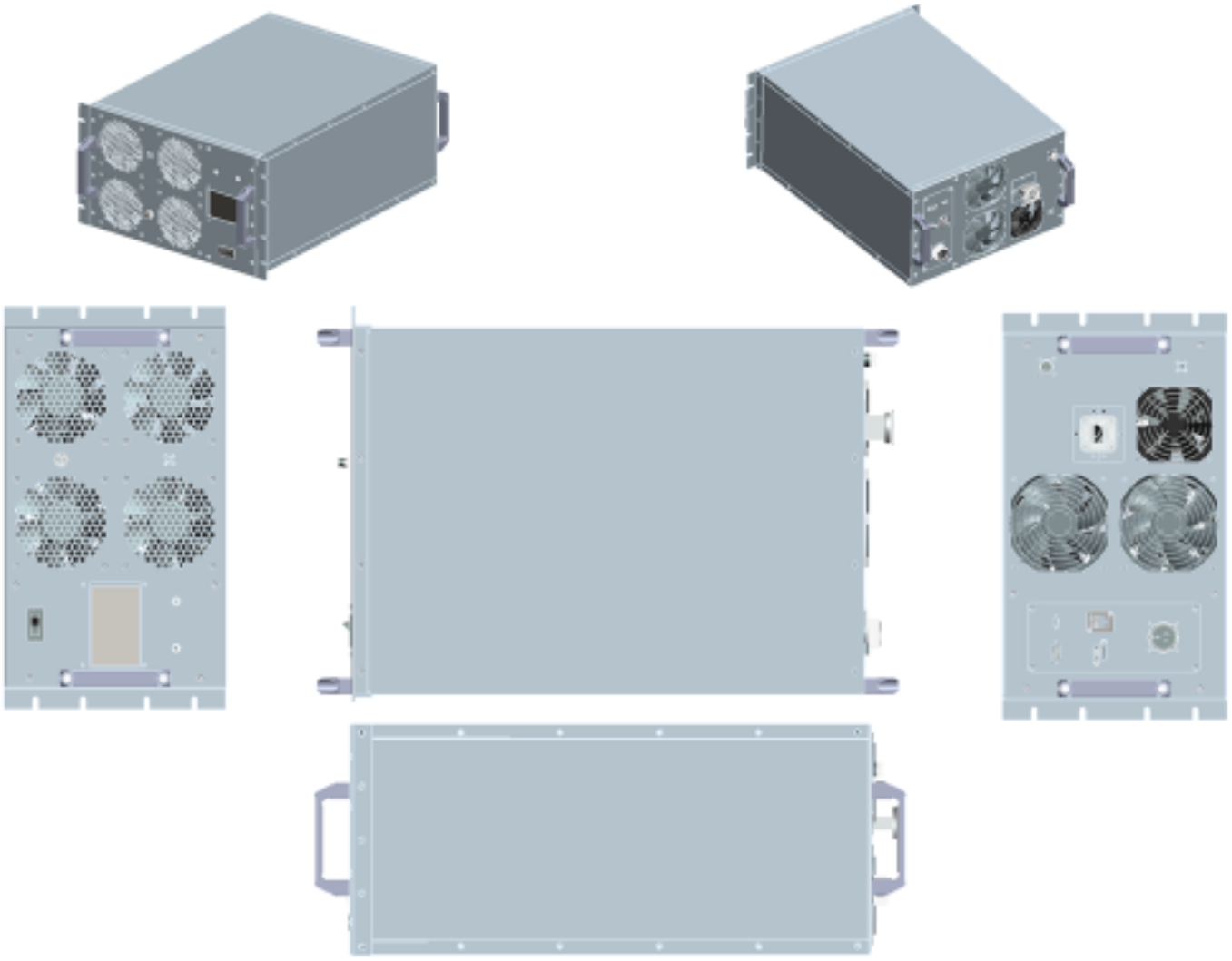
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3D OUTLINE DRAWING

AMP6020P-500



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