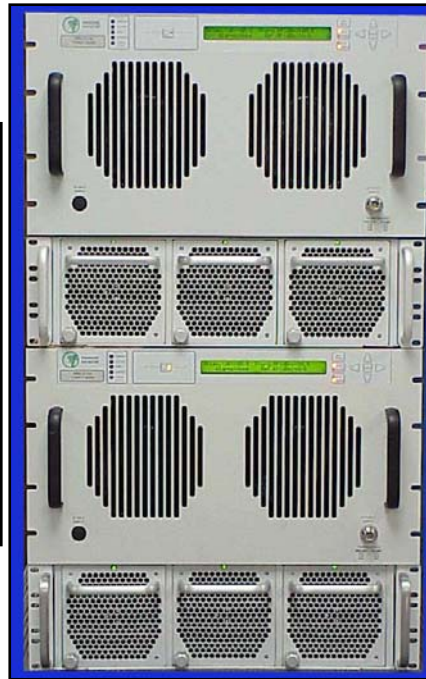


600W C-Band, 1:2 Redundant System
in the 4RU chassis



1.1 kW C-Band,
1:1 Redundant System
in the 6RU Chassis



200W Ku-Band 1:1 Redundant System
in the 3RU Chassis, with optional
N+1 redundant power supply

DESCRIPTION

Paradise Datacom's Indoor Rack Mount (-RM) series of redundant amplifier systems provide the highest degree of earth station redundancy and reliability.

These systems can be configured in either 1:1 or 1:2 redundant configurations using any of the Paradise Datacom family of Indoor Rack Mount SSPAs.

The RCP2-1100/1200 System Controller front panel mimic display shows the current switch positions and the on-line amplifiers. Dedicated fault lights provide easy indication of system status.

All RCP2-1100/1200 monitor and control is available locally, at the front panel LCD display, as well as remotely by the RS232 or RS485 interface ports.

FEATURES

- System Output Power to:
 - 1 kW S-Band
 - 1.1 kW C-Band
 - 1.0 kW X-Band
 - 500 W Ku Band
- Universal Input, Power Factor Corrected Power Supply
- Output Power Monitoring
- Separate 1 RU Redundant Controller for 1:2 systems
- Controller-less solutions for 1:1 systems

OPTIONS

- Controller-less 1:2 System
- Reflected Power Alarm
- L-Band Input operation
- Cold Standby Amplifier Operation
- External Exhaust Air Ducting Kit
- Custom Configurations



3 RU SSPA Chassis Output Power Levels

S-Band: 50W - 300W
 C-Band: 25W - 300W
 X-Band: 60W - 200W
 Ku-Band: 10W - 200W

3 RU Chassis includes integral AC-DC power supply



4 RU SSPA Chassis Output Power Levels

S-Band: 50W - 500W
 C-Band: 50W - 600W
 X-Band: 60W - 500W
 Ku-Band: 25W - 250W

4 RU Chassis includes integral AC-DC power supply

6 RU SSPA Chassis Output Power Levels

S-Band: 800W - 1.1 kW
 C-Band: 750W - 1.1 kW
 X-Band: 700W - 1.0 kW
 Ku-Band: 400W - 500W

6 RU Chassis uses separate, 3RU, power supply chassis.

Power Supply is a redundant, N+1, chassis.

Only 2 of 3 modules required to operate the SSPA with 1 hot standby.

Power Supply modules are front panel hot swappable.



Common System Specifications

Gain	minimum	70	dB
Gain Flatness	full band (except Extended C-Band)	±1.0	dB
	Extended C-Band units	±1.5	dB
Gain Slope	per 40 MHz (C-,X-,Ku-bands)	±0.3	dB/40 MHz
	per 10 MHz (S-band)	±0.1	dB/10 MHz
Gain Variation vs. Temperature	0°C to +50°C	±1.0	dB
Gain Adjustment	0.1 dB resolution	20	dB
Intermodulation Distortion	3dB back off relative to P _{1dB}	-25	dBc
AM/PM Conversion	(@ rated P _{1dB})	3.5	°/dB
	(@P _{1dB} -3dB)	0.5	°/dB
Spurious Harmonics	(@ rated P _{1dB})	-60	dBc
	(@ rated P _{1dB,3dB})(C-,X-,Ku-bands)	-50	dBc
	(@ rated P _{1dB,3dB}) (S-band)	-40	dBc
Input / Output VSWR	All units except Extended C-Band	1.30:1	
	Extended C-Band units	1.50:1	
Noise Figure	at maximum gain	12	dB
Group Delay (per 40 MHz segment)	Linear	0.01	ns/MHz
	Parabolic	0.003	ns/MHz ²
	Ripple	1.0	ns p-p
Noise Output	TX Band (S-,C-,X- or Ku-bands)	-70	dBW/4 KHz
	RX Band (C- or Ku-bands)	-155	dBW/4 KHz
	RX Band (X-band)	-100	dBW/4 KHz
	RX Band (S-band)	(see below)	
Residual AM Noise	0 - 10 KHz	-45	dBc
	10 KHz - 500 KHz	-20 (1.25 + log F)	dBc
	500 KHz - 1 MHz	-80	dBc
Residual Phase Noise	Offset frequency from carrier		
	10 Hz	-90	dBc/Hz
	100 Hz	-100	dBc/Hz
	1 kHz	-110	dBc/Hz
	10 kHz	-120	dBc/Hz
	100 kHz	-125	dBc/Hz
	1 MHz	-130	dBc/Hz

Mechanical

Size - 3 RU Chassis	width X height X depth	19.0 X 5.22 X 24.13	inches
		483 X 133 X 613	mm
Size - 4 RU Chassis	width X height X depth	19.0 X 7.0 X 28.0	inches
		483 X 178 X 711	mm
Size - 6 RU Chassis	width X height X depth	19.0 X 10.47 X 30.0	inches
		483 X 266 X 762	mm
Power Supply Chassis	width X height X depth	19.0 X 5.25 X 15.44	inches
		483 X 134 X 433	mm
Weight - 3 RU Chassis	≤ 200W Chassis	75 (34)	lbs. (kg)
Weight - 3 RU Chassis	> 200W Chassis	100 (45)	lbs. (kg)
Weight - 4 RU Chassis	≤ 250W Chassis	75 (34)	lbs. (kg)
Weight - 4 RU Chassis	> 250W Chassis	100 (45)	lbs. (kg)
Weight - 6 RU Chassis		180 (82)	lbs. (kg)
Weight - Power Supply Chassis		50 (23)	lbs. (kg)
Finish		powder coat	Gray

Environmental

Operating Temperature	Ambient	0 to +50	°C
Relative Humidity	Condensing	95	%
Cooling System	Integrated	Forced air	

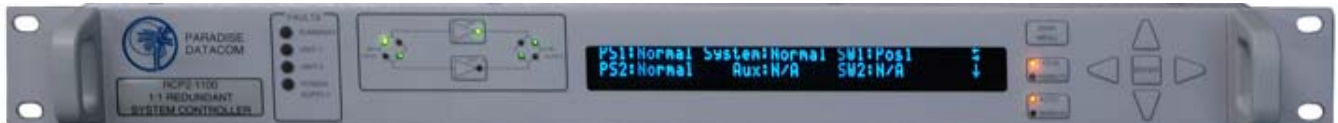
S-Band Receive Band Noise and Filter Option

Receive Band Reject Filter	Insertion Loss	-0.3	dB
<i>Filter integrated into SSPA chassis through 400W output; ≥500W SSPAs require external filter</i>	Rx Reject @ 2.200 - 2.300 GHz	-60	dBc
	Rx Reject @ 2.025 - 2.120 GHz	-60	dBc
Receive Band Noise Power Density	Without optional filter	-95	dBW/4 KHz
	With optional filter	-155	dBW/4 KHz

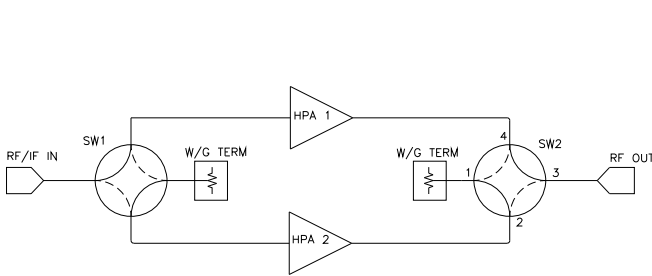
Indoor Redundant System Physical Configurations



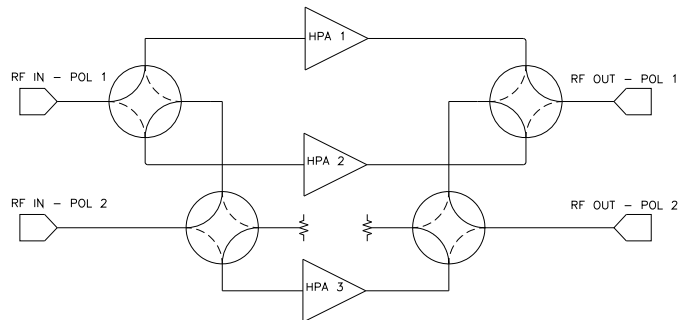
Optional 1RU Remote Control Panels



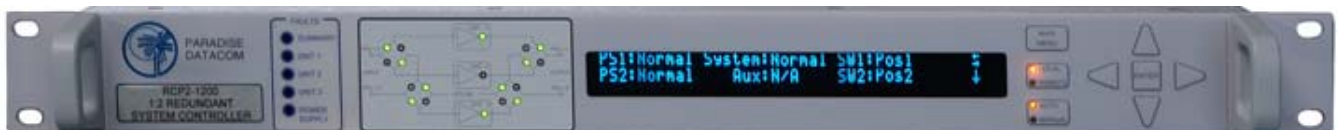
RCP2-1100 1:1 Redundant Controller



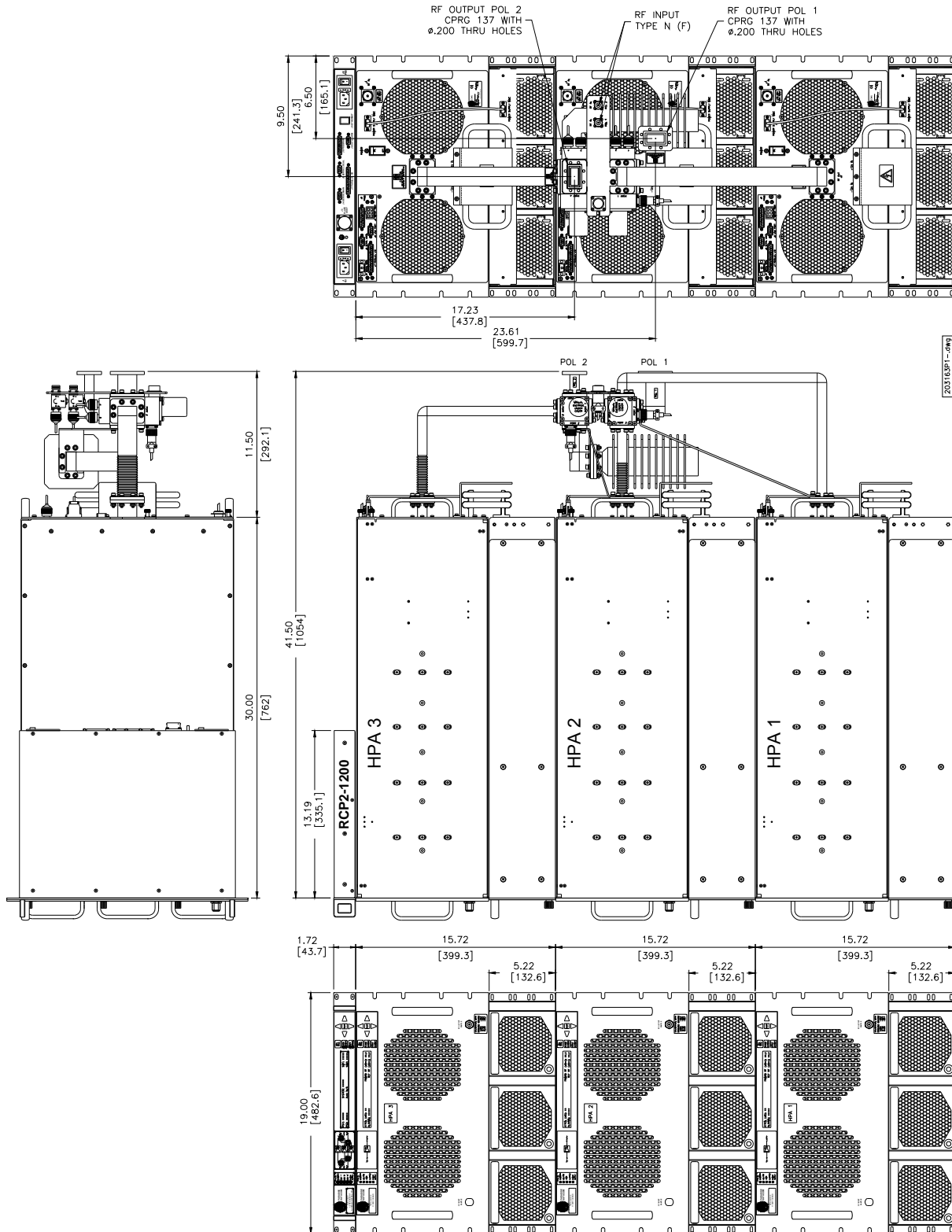
Block Diagram, 1:1 Redundant System



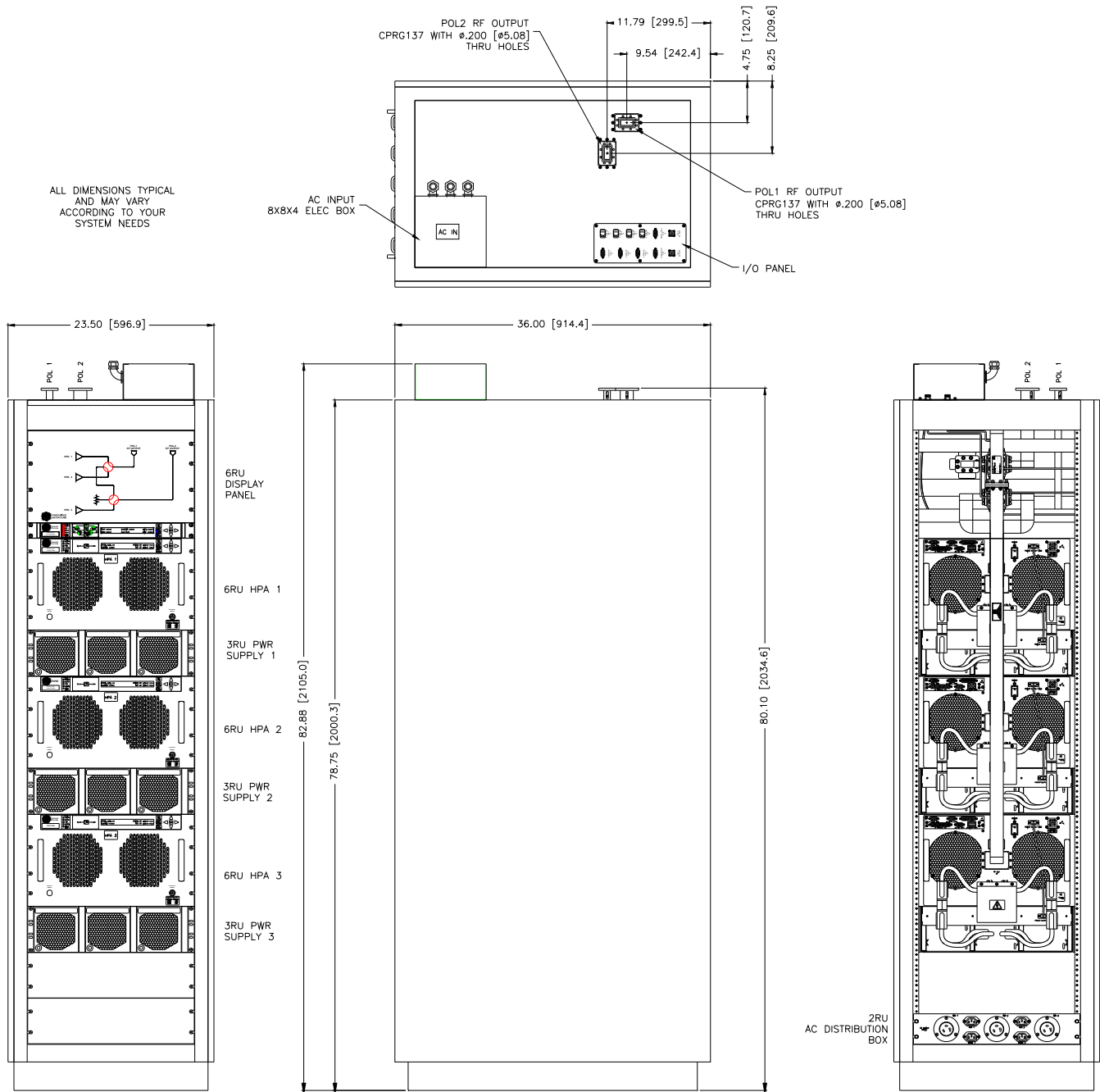
Block Diagram, 1:2 Redundant System



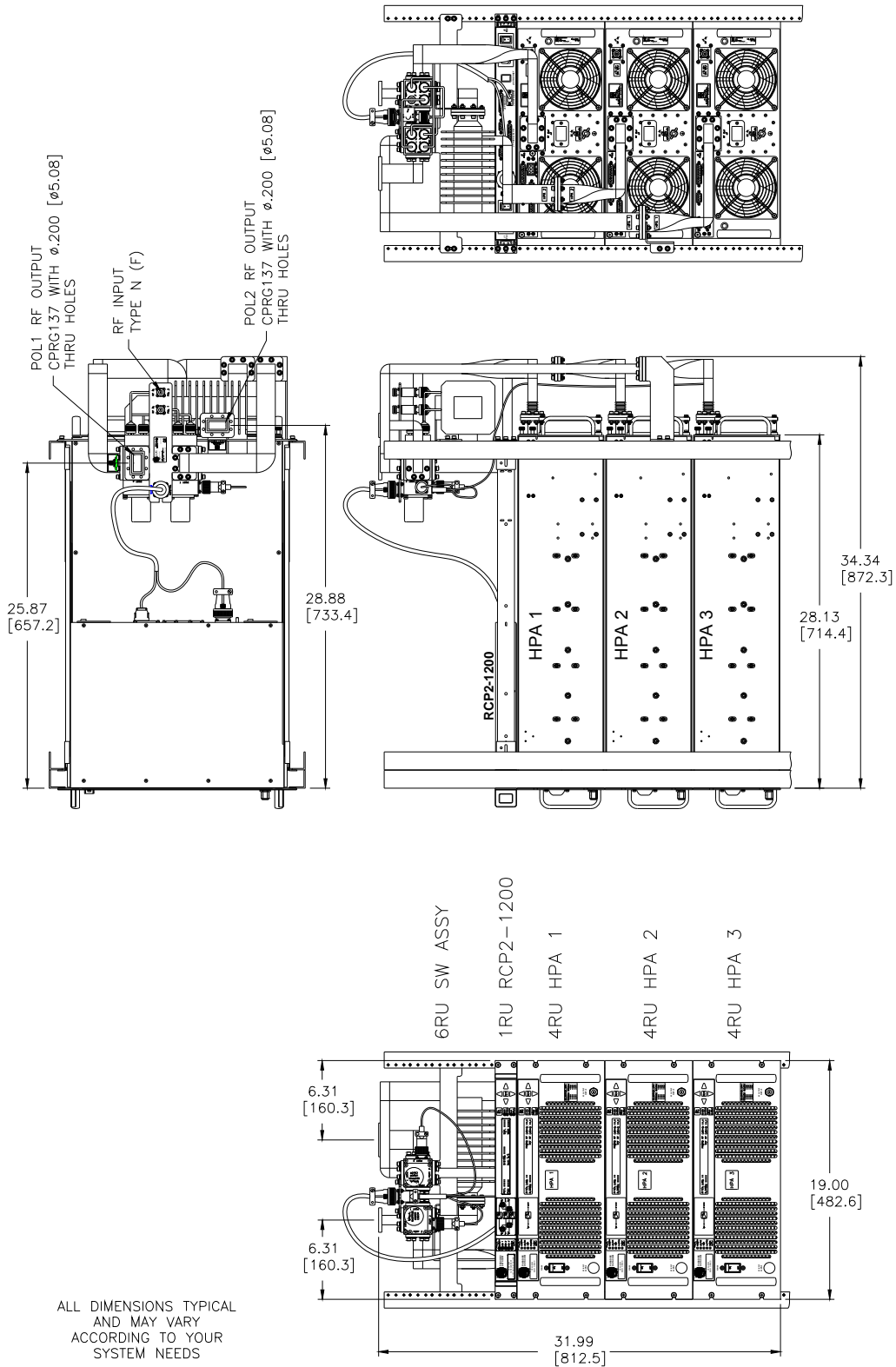
RCP2-1200 1:2 Redundant Controller



Outline Drawing, 1:2 Redundant System, C-Band, using 6RU SSPAs and 3RU Power Supplies, with RCP2-1200 and Rear Mounted Waveguide Switching, Cabinet not included

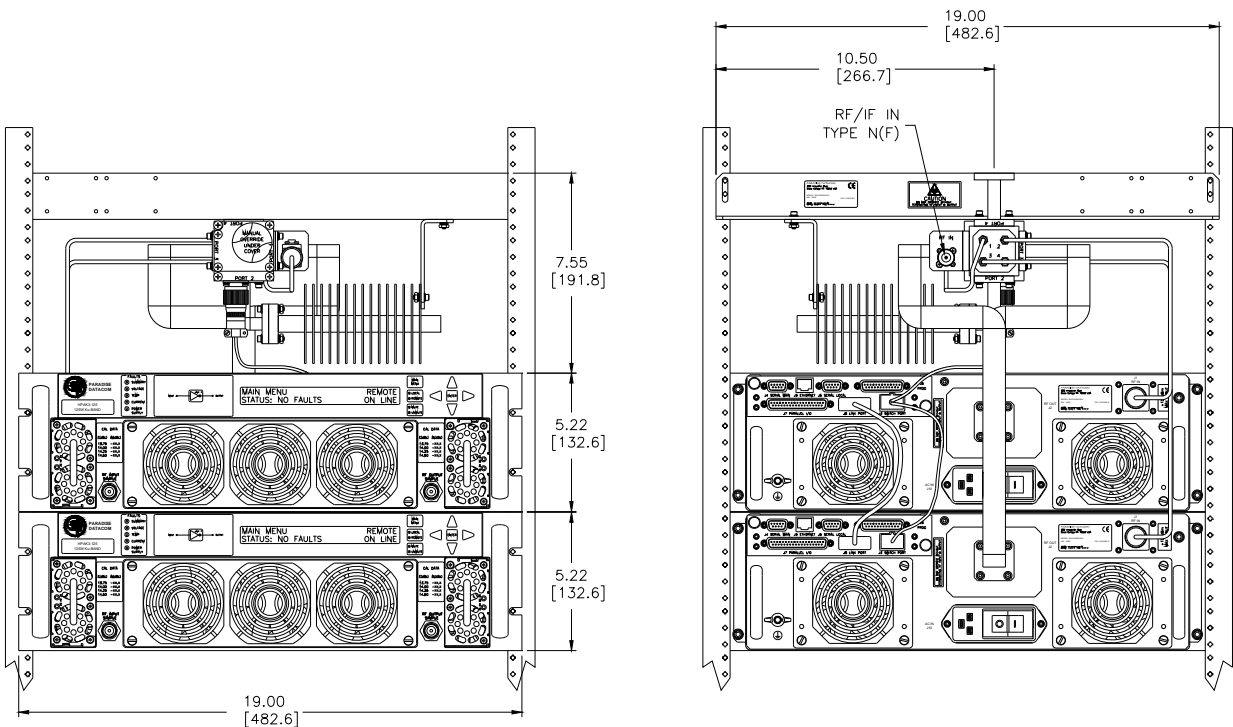
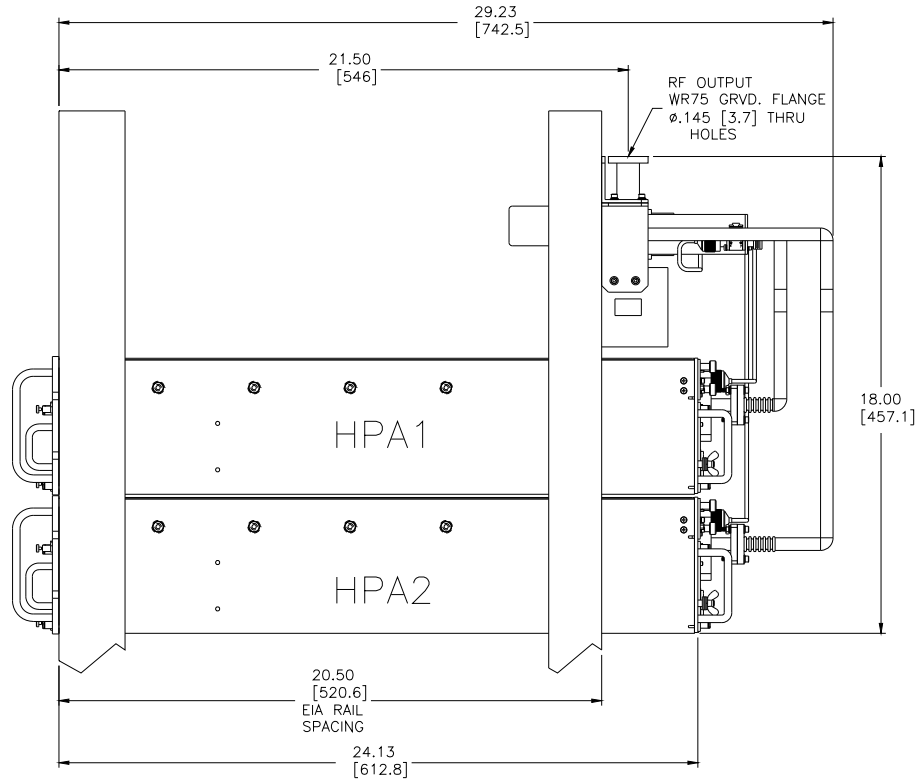


Outline Drawing, 1:2 Redundant System, C-Band, using 6RU SSPAs and 3RU Power Supplies, with RCP2-1200 and Top Mounted Waveguide Switching with Cabinet

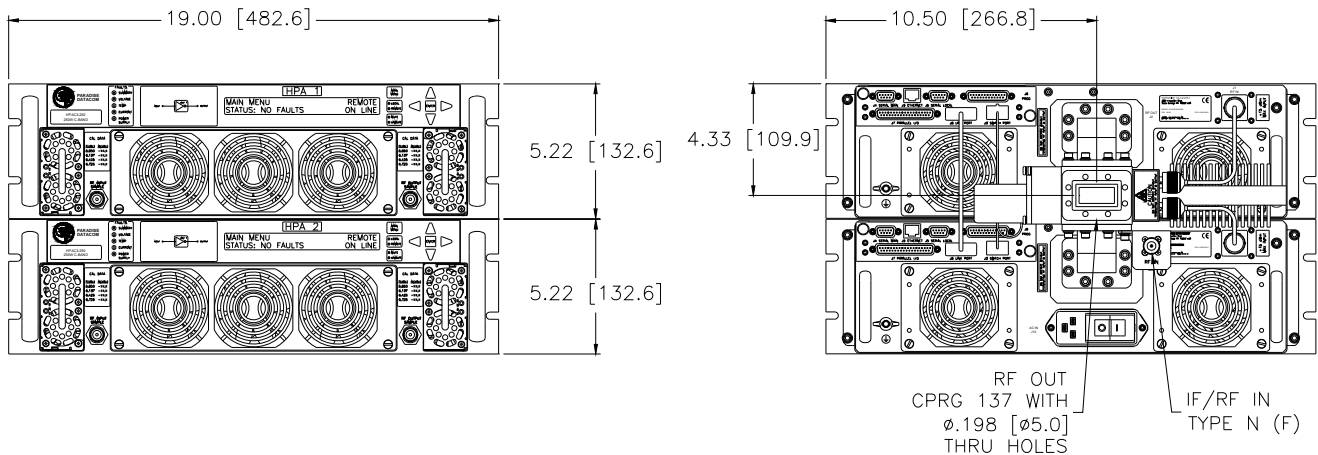
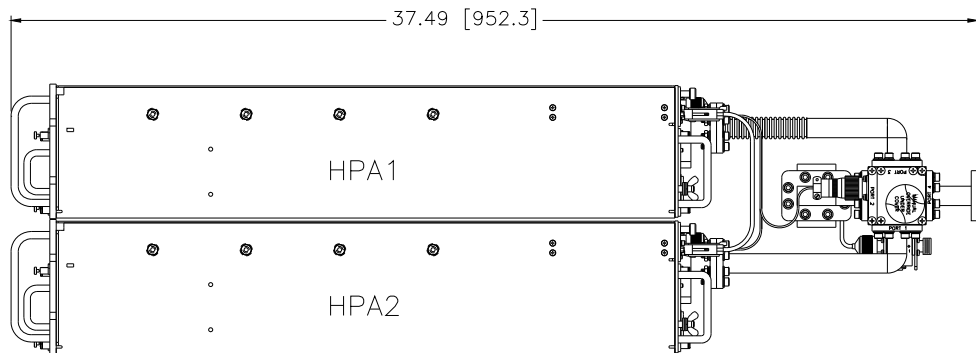
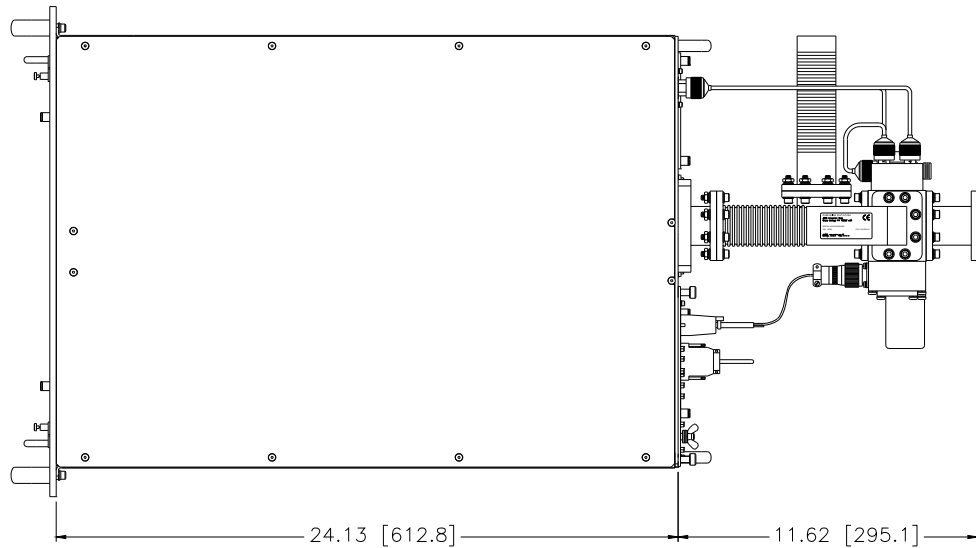


ALL DIMENSIONS TYPICAL
AND MAY VARY
ACCORDING TO YOUR
SYSTEM NEEDS

**Outline Drawing, 1:2 Redundant System, C-Band, using 4RU SSPAs,
with Top Mounted Waveguide Switching, Cabinet not included**



**Outline Drawing, 1:1 Redundant System, Ku-Band, using 3RU SSPAs,
with Top Mounted Waveguide Switching, Cabinet not included**



**Outline Drawing, 1:1 Redundant System, C-Band, using 3RU SSPAs,
with Rear Mounted Waveguide Switching, Cabinet not included**

Part Number Configuration, 4 RU Chassis

HPA 2

Band
S - S-Band
C - C-Band
X - X-Band
K - Ku-Band

Power Level (in Watts)
S-Band
050, 100, 200, 400 and 500
C-Band
025, 030, 040, 050, 075, 100, 140,
200, 250, 300, 400, 500 and 600
X-Band
060, 075, 100, 140, 200, 250, 350
and 500
Ku-Band
010, 020, 025, 035, 040, 050, 070,
100, 125, 200 and 250

Frequency Sub Band
S-Band
A - 2.02 to 2.12 GHz
B - 2.20 to 2.30 GHz
C-Band
A* - 5.850 to 6.425 GHz
B* - 5.850 to 6.725 GHz
C - 5.750 to 6.670 GHz
E* - 6.425 to 6.725 GHz (Palapa)
F* - 6.725 to 7.025 GHz (Insat)
G* - 5.750 to 6.475 GHz
X-Band
A* - 7.90 to 8.40 GHz
B - 7.50 to 8.50 GHz
C - 9.50 to 10.50 GHz
D - 7.70 to 8.40 GHz
Ku-Band
A* - 14.00 to 14.50 GHz
B* - 13.75 to 14.50 GHz

* Available with optional BUC

Package
S = Rack Mount, Top Mounted Waveguide
Switching, with Cabinet
T = Rack Mount, Top Mounted Waveguide
Switching, without Cabinet
Y = Rack Mount, Rear Mounted Waveguide
Switching, with Cabinet
Z = Rack Mount, Rear Mounted Waveguide
Switching, without Cabinet

Configuration Modifier
XXX = Standard
SXX = Input Sample
CXX¹ = Input Sample & 110/220 VAC
Operation
KXX¹ = 110/220 VAC Operation
XVX = Reflected Power Monitor
XXD = 48V Input
XXE² = Rear Panel Exhaust Adapters
XXR³ = Receive Band Reject Filter
XXJ² = 48V Input & Rear Panel Exhaust
Adapters
XXH³ = 48V Input & Receive Band Reject
Filter
XXK^{2,3} = Rear Panel Exhaust Adapters &
Receive Band Reject Filter
XXL² = External 1RU N+1 Power Supply &
Rear Panel Exhaust Adapters
XXM³ = External 1RU N+1 Power Supply
& Receive Band Reject Filter
XXP = External 1RU N+1 Power Supply
¹ 100-125W Ku- & 200-300W C-band only; Consult
factory regarding other bands and power levels.
² Not available with Package options Y and Z.
³ S-Band only.

System Configuration
A¹ = 1:1 w/ Input Switching, Internal Control
B = 1:1 w/ Input Splitter, Internal Control
C¹ = 1:2 w/ Input Switching & RCP2-1200²
D¹ = 1:2 w/ Input Switching, Internal Control
F = 1:1 w/ Input Splitter & RCP2-1100²
H¹ = 1:1 w/ Input Switching & RCP2-1100²
S = Custom

¹ Not available with BUC option P
² Standard location for RCP is directly above HPA1

Block Up Converter
B = BUC (Custom)
M = Internal Reference ZBUC
P = External Reference ZBUC
X = N/A

Specifications in this document are subject to change.

