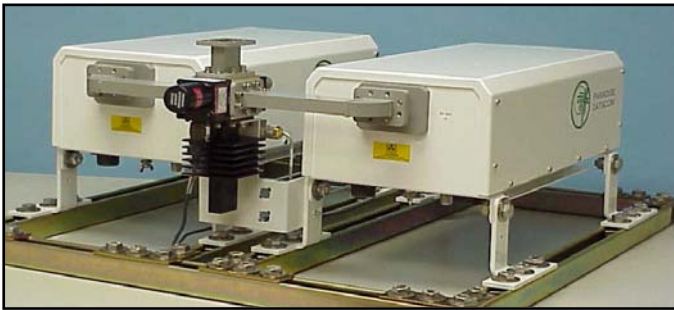
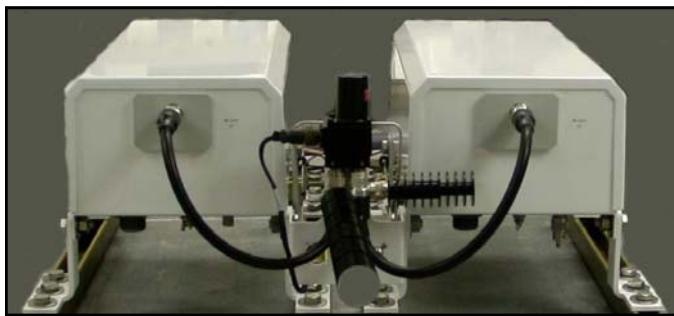




Hub mountable, 200W C-Band 1:1 Redundant System



Hub mountable, 100W S-Band 1:1 Redundant System



King post mount, 600W C-Band 1:1 Redundant System

DESCRIPTION

Paradise Datacom's Outdoor series of redundant amplifier systems provide the highest degree of earth station redundancy and reliability. Based on Paradise Datacom's family of rugged and robust outdoor SSPAs, these systems provide the highest MTBF's possible in outdoor mounted SSPAs.

These systems can be configured in either 1:1 or 1:2 redundant configurations using any of the Paradise Datacom family of Outdoor SSPAs. The RCP2-1100/1200 Redundant Controller provides an extremely user friendly interface for complete monitor and control of the high power amplifiers in either 1:1 or 1:2 configurations.

The RCP front panel mimic display shows the on-line amplifiers and the current switch positions. Dedicated fault lights provide easy indication of system status. All RCP2-1X00 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:
400W S-Band;
600W C-Band;
500W X-Band;
250W Ku-Band
- Universal Input, Power Factor Corrected Power Supply
- Output Power Monitoring
- Separate 1RU Redundant Controller or Controller-less configurations

OPTIONS

- System Output Power Monitor
- Reflected Power Alarm
- L-Band Input operation
- Cold Standby Amplifier Operation
- Custom Configurations



Compact Outdoor SSPA

Compact Outdoor Output Power Levels

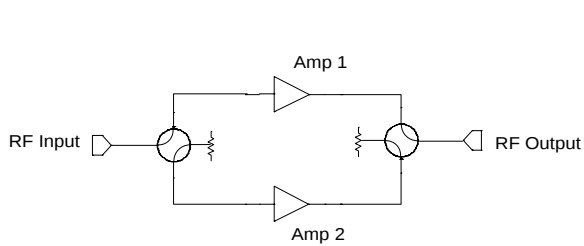
S-Band: 50W - 200W
C-Band: 50W - 300W
X-Band: 50W - 200W
Ku-Band: 25W - 125W



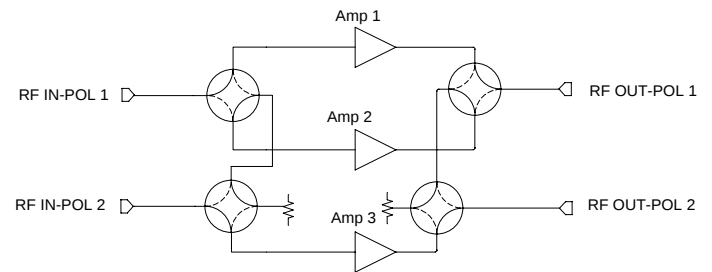
High Power Outdoor SSPA

High Power Outdoor Output Power Levels

S-Band: 50W - 500W
C-Band: 50W - 600W
X-Band: 50W - 350W
Ku-Band: 35W - 250W



1:1 Redundant HPA System



1:2 Redundant HPA System

Typical C-Band System Output Power

Single Thread Amplifier Model	1:1 Redundant Output Power	
	P_{sat} dBm (W)	$P_{1\text{dB}}$ dBm (W)
HPAC-2100A	49.9 (98)	49.4 (87)
HPAC-2140A	51.4 (138)	51.1 (129)
HPAC-2200A	52.9 (195)	52.3 (170)
HPAC-2250A	53.8 (240)	52.9 (195)
HPAC-2300A	54.6 (288)	53.9 (245)
HPAC-2400A	55.9 (389)	54.9 (309)
HPAC-2500A	56.9 (490)	55.9 (389)
HPAC-2600A	57.7 (590)	56.9 (490)

Typical Ku-Band System Output Power

Single Thread Amplifier Model	1:1 Redundant Output Power	
	P_{sat} dBm (W)	$P_{1\text{dB}}$ dBm (W)
HPAK-2040A	45.9 (39)	44.9 (31)
HPAK-2050A	46.9 (49)	45.9 (39)
HPAK-2070A	48.4 (69)	47.4 (55)
HPAK-2100A	49.9 (98)	48.9 (78)
HPAK-2125A	50.9 (123)	49.9 (98)
HPAK-2200A	52.9 (195)	51.9 (155)
HPAK-2250A	53.9 (246)	52.9 (195)

General Specifications

PARAMETER	NOTES	LIMITS	UNITS
Gain	minimum	75	dB
Gain Flatness	full band	± 1.0	dB
Gain Slope	per 40 MHz	± 0.3	dB/40 MHz
Gain Variation vs. Temperature	0°C TO +50°C	± 1.0	dB
Gain Adjustment	0.1 dB resolution adjustable by either serial or analog voltage input: 0.5 to 2.5 VDC	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)	1.0	°/dB
Spurious	(@ rated P _{1dB})	-60	dBc
Harmonics	(@ rated P _{1dB} -3dB)	-50	dBc
Input/Output VSWR		1.3:1	
Noise Figure	at maximum gain	12	dB
Group Delay	Linear	0.01	ns/MHz
	Parabolic	0.003	ns/MHz ²
	Ripple	1.0	ns p-p
Noise Output	TX Band (C-, X- or Ku-Band)	-75	dBW/4 KHz
	RX Band (C- or Ku-Band)	-150	dBW/4 KHz
	RX Band (X-Band)	-100	dBW/4 KHz
Residual AM Noise	0 - 10 KHz	-45	dBc
	10 KHz - 500 KHz	-20 (1.25 + log F)	dBc
	500 KHz - 1 MHz	-80	dBc
Phase Noise		IESS -308/309 - 10 dB	

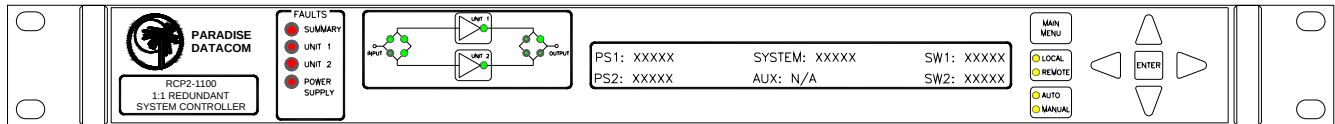
Environmental

Operating Temperature	Ambient	-40 to +60	°C
Relative Humidity	condensing	100	%
Cooling System	Integrated	Forced air	

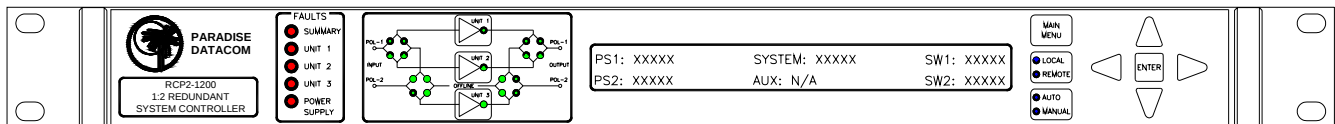
Mechanical

Size, Compact Outdoor	width X length X height	10.0 X 19.5 X 6.50 254 X 495 X 165	inches mm
Size, High Power Outdoor	width X length X height	21.0 X 27.95 X 13.5 533 X 710 X 343	inches mm
Weight, Compact Outdoor	C-Band to 200W / Ku-Band to 70W >200W C-Band / >70W Ku-Band	36 (16.4) 44 (20)	lbs.(kg) lbs.(kg)
Weight, High Power Outdoor		125 (57)	lbs.(kg)
Finish		Paint	White; powder coat

Specifications are subject to change.



RCP2-1100 1:1 Redundant Controller



RCP2-1200 1:2 Redundant Controller

The RCP2-1X00 is the heart of the Redundant System. It provides an extremely user friendly interface for complete monitor and control of the high power amplifiers.

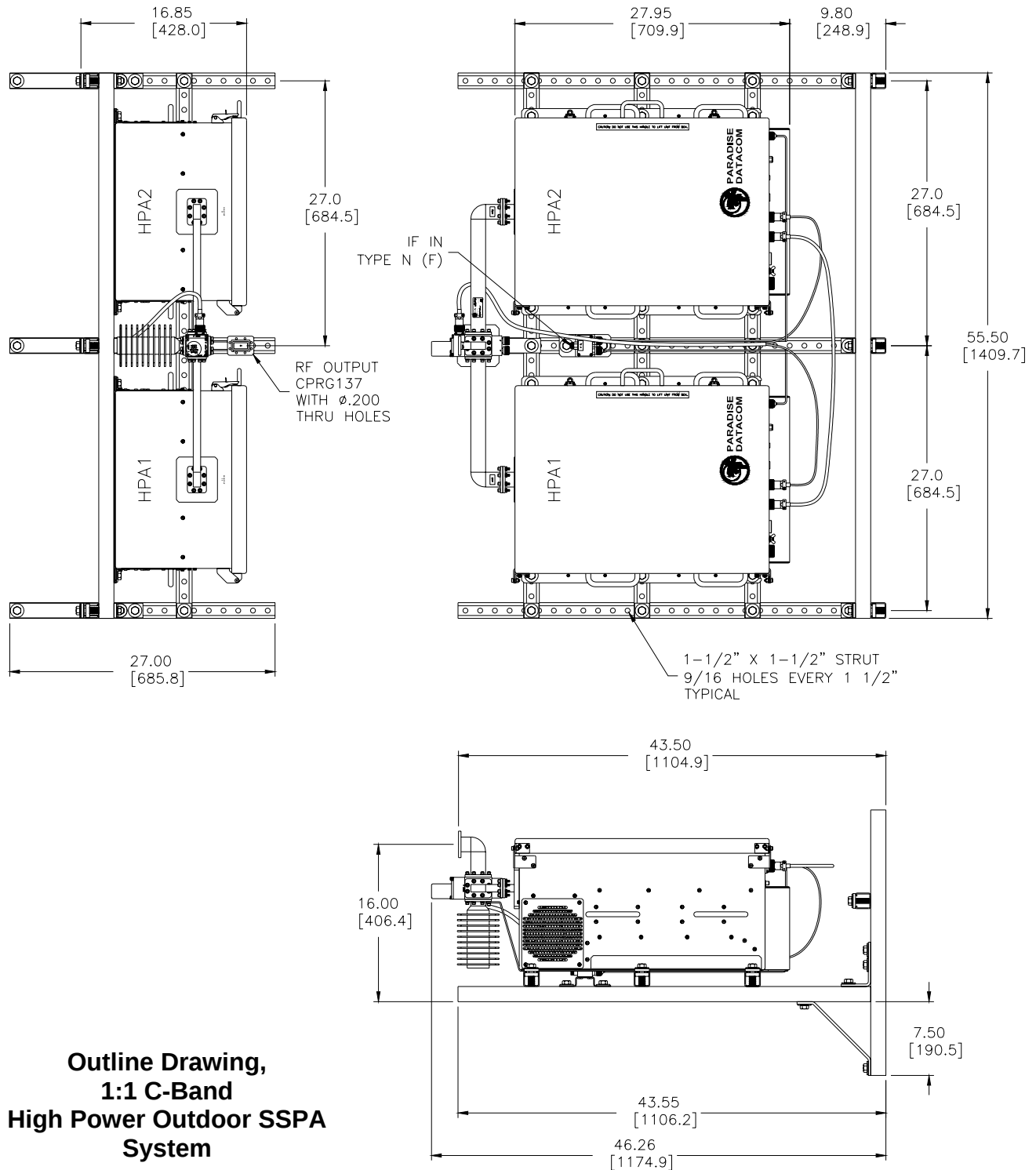
The front panel mimic display shows the on-line amplifiers and the current switch positions. Dedicated fault lights are provided for easy indication of system status.

All RCP2-1X00 monitor and control is available locally, at the front panel LCD display, as well as remotely by the RS232 or RS485 interface ports.

Audible alarms and a full compliment of parallel I/O signal are available at the rear panel of the RCP2-1X00.

RCP2-1X00 Specification Summary

Characteristic	Specification
Switch Time	Fault Detection, 20 - 50 msec
	Total Switchover (including mechanical switch) - 100 msec maximum
Switch Drive	26 VDC @ 5 Amps
Alarm Input	Closure to Ground, (Ground=OK / Open=Fault)
Serial Communication	RS232 / RS485 4 wire
Parallel I/O	
Status Outputs	Form C Relay Contacts (10 sets)
Control Inputs	Contact Closure to Ground
AC Input Power	85-265 VAC, 47-63 Hz, 1 A max, > 0.93 power factor
Mechanical	
Dimensions	1.75 in. H x 19.0 in. W x 13.3 in D [1RU]
	44.5 mm H x 483 mm W x 338 mm D
Weight	5 lbs. (2.3 kg)
Temperature	0 to 50 °C operating (non-condensing)

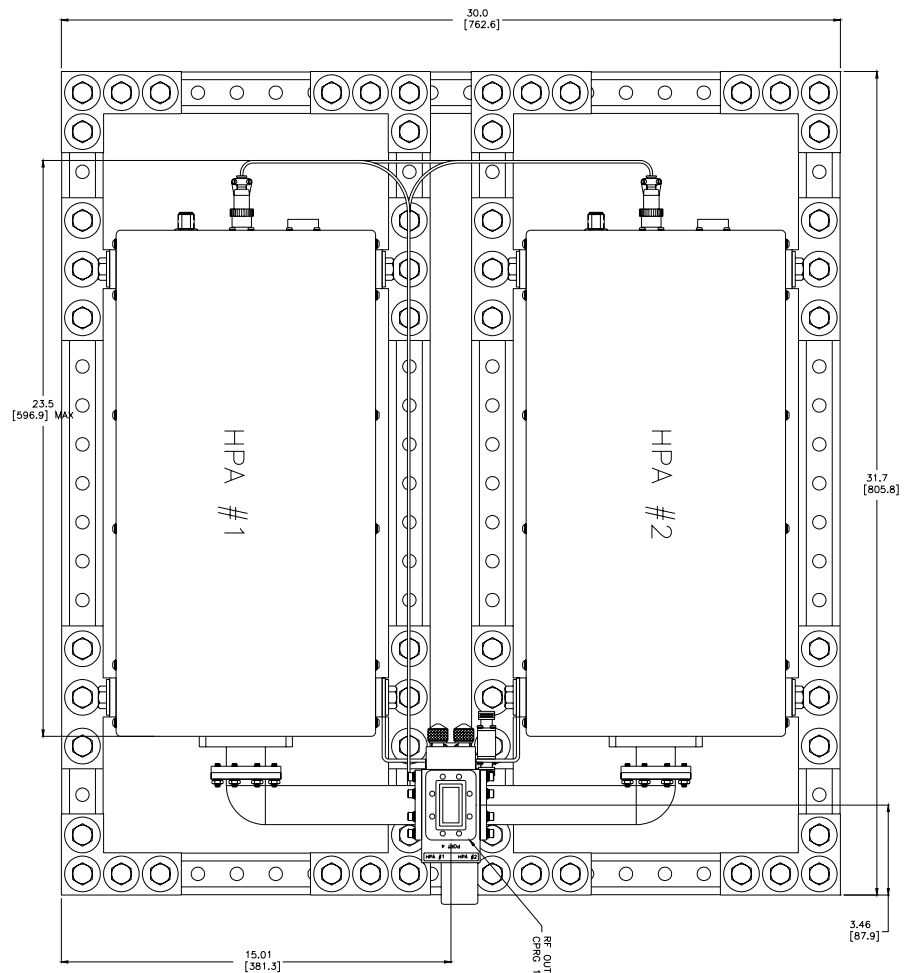
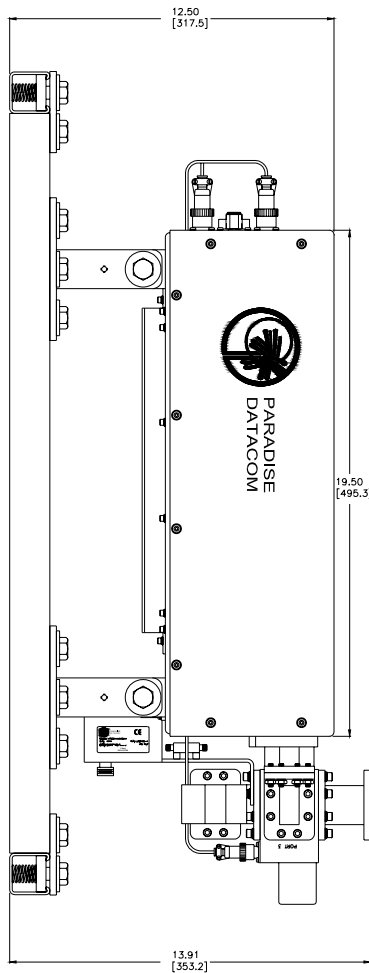


**Outline Drawing,
1:1 C-Band
High Power Outdoor SSPA
System**



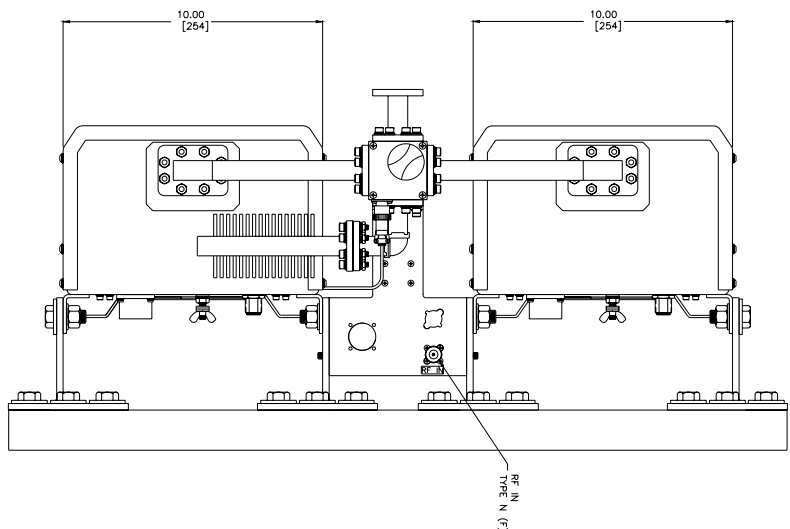
**PARADISE
DATACOM**

Redundant Systems Outdoor Packaged SSPAs



202497P18.DWG

**Outline Drawing,
1:1 C-Band
Compact Outdoor SSPA
System**





Part Number Configuration, High Power Outdoor System

HPA 2 **W**

Band

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

Power Level (in Watts)

S-Band

400 or 500

C-Band

250, 300, 400, 500 or 600

X-Band

350 or 500

Ku-Band

100, 125, 200 or 250

Frequency Sub Band

S-Band

A - 2.020 - 2.120 GHz

B - 2.200 - 2.300 GHz

C-Band

A* - 5.85 - 6.425 GHz

B* - 5.85 - 6.725 GHz

C - 5.75 - 6.670 GHz

D* - 6.425 to 7.025 GHz

X-Band

A* - 7.90 to 8.40 GHz

B - 7.50 to 8.50 GHz

D - 7.70 to 8.40 GHz

E - 7.75 to 8.50 GHz

Ku-Band

A* - 14.00 - 14.50 GHz

B* - 13.75 - 14.50 GHz

* Available with optional BUC

Configuration Modifier

XXX = Standard

SXX = Input Sample

XCX = Reflected Power Monitor &
Ethernet Port

XXN = Ethernet Port

XVX = Reflected Power Monitor

XXR* = Receive Band Reject Filter

* S-Band Sub Band 'A' only, 400W max.

System Configuration

A* = 1:1 w/ Input Switching, Internal control

B = 1:1 w/ Input Splitter, Internal control

C* = 1:2 w/ Input Switching & RCP2-1200**

D = 1:2 w/ Input Switching, Internal control

F = 1:1 w/ Input Splitter & RCP2-1100**

H* = 1:1 w/ Input Switching & RCP2-1100**

S = System (Custom)

* Not available with BUC options C, D or P (SSPA
containing external reference BUC)

** Standard Cable Length of 100 ft. (30m) with RCP2

Block Up Converter

B = BUC (Custom)

C = 10 MHz Ext. Ref. Std. LO

D = 50 MHz Ext. Ref. Std. LO

E = 10 MHz Int. Ref. Std. LO

F = 50 MHz Int. Ref. Std. LO

M = Internal Reference ZBUC (FSK)

P = External Reference ZBUC (FSK)

X = None

Package

W = Weather proof (NEMA)

Example - A 400W S-Band 1:1 Redundant High Power Outdoor SSPA System with input splitter is part number: **HPAS2400AWXBXXX**.



Part Number Configuration, Compact Outdoor System

HPA 2 **C**

Band

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

Power Level (in Watts)

S-Band
050, 100, 200 or 300
C-Band
030, 040, 050, 075, 100, 140,
200, 250 or 300
X-Band
060, 075, 100, 140, 200, or 250
Ku-Band
010, 020, 025, 035, 040, 050,
070, 100, or 125

Frequency Sub Band

S-Band
A - 2.020 - 2.120 GHz
B - 2.200 - 2.300 GHz
C-Band
A* - 5.85 - 6.425 GHz
B* - 5.85 - 6.725 GHz
C - 5.75 - 6.670 GHz
D* - 6.425 to 7.025 GHz
X-Band
A* - 7.90 to 8.40 GHz
B - 7.50 to 8.50 GHz
D - 7.70 to 8.40 GHz
E - 7.75 to 8.50 GHz
Ku-Band
A* - 14.00 - 14.50 GHz
B* - 13.75 - 14.50 GHz

* Available with optional BUC

Package

C = Standard Compact Outdoor (CO)

Refer to specification sheet 204020 for Fiber options.

Configuration Modifier

XXX = Standard
BXX* = 110 VAC Option and
Summary Alarm Indicator
KXX* = 110 VAC Option
LXX = Summary Alarm Indicator
XXM = MS-connector Covers
XXA = Side-mount AC Input,
Location 'A'
XXD = 48V Input
XXF = Side-mount 48V Input,
Location 'A'

* Available in C-Band models >140W,
X-Band models of 140W-200W and Ku-Band
models >100W.

System Configuration

A* = 1:1 w/ Input Switching, Internal control
B = 1:1 w/ Input Splitter, Internal control
C* = 1:2 w/ Input Switching & RCP2-1200**
D* = 1:2 w/ Input Switching, Internal control
F = 1:1 w/ Input Splitter & RCP2-1100**
H* = 1:1 w/ Input Switching & RCP2-1100**
S = System (Custom)

* Not available with BUC options C, D or P (SSPA
containing external reference BUC)

** Standard Cable Length of 100 ft. (30m) with RCP2

Block Up Converter

B = BUC (Custom)
C = 10 MHz Ext. Ref. Std. LO
D = 50 MHz Ext. Ref. Std. LO
E = 10 MHz Int. Ref. Std. LO
F = 50 MHz Int. Ref. Std. LO
M = Internal Reference ZBUC (FSK)
P = External Reference ZBUC (FSK)
X = None

Example - A standard frequency 100W C-Band 1:1 Redundant Compact Outdoor SSPA System with input switching and no block up converter is part number: **HPAC2100ACXAXXX**.