

LPA1900-120-SC01 SPECIFICATION

1. System advantages

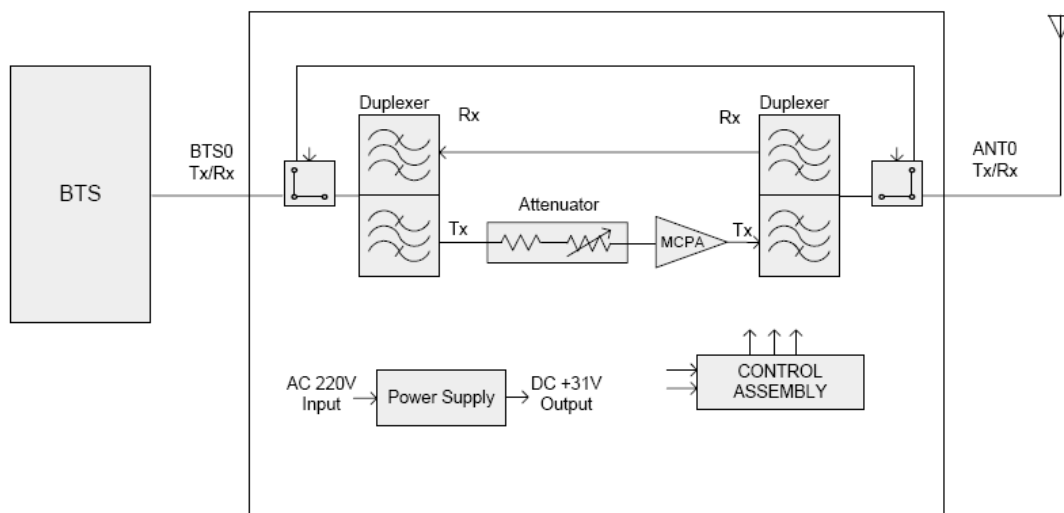
Bravo Tech Inc's newly introduced 1930~1990MHz only for CDMA Carrier High Power Outdoor Amplifier platform provides higher downlinks EIRP to extend the coverage of existing cellular networks. The antenna used for this transmitter must be fixed-mounted on outdoor permanent structures. This multi-carrier based product

platform can also work with customized BTS to extend capacity of original BTS with a low system total cost.

This product platform features:

- Support multi-carrier CDMA signals.
- Output maximum power 120W, support carriers number up to 4.
- Very High System Efficiency
- Extensive product monitoring and control (local and remote)
- Centralized system control/display/alarms
- Great system reliability supported by architecture built-in redundancy
- Powered by 30VDC available
- Extensive protection for lightning, voltage surge, and any high failure rate assemblies
- Compact system size and light weight

2. System Block Diagram



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Revision: SP-LPA1900-120-SC01-REV.A

3. Electrical Specifications

Parameter specification

Frequency 1930 ~ 1990 MHz

Output Power 120Watts max. (CDMA2000)

Spurious Emission

-45dBc@ $\Delta f=885-1.25$ MHz, 30kHz RBW

-55dBc@ $\Delta f=1.25-1.98$ MHz, 30kHz RBW

-55dBc@ $\Delta f=1.25-2.25$ MHz, 30kHz RBW

-13dBm@ $\Delta f=2.25-4$ MHz, 30kHz RBW

RF Gain 57.0 ± 1.0 dB @ frequency range, +30Vdc, room temp.

Normal Operating Voltage +30Vdc ± 1.0 Vdc

Operating Voltage +29Vdc ~ +31Vdc

RF Gain Variation over

Voltage & Temperature ± 1.0 dB @ +29 $\leq V_{sup} \leq$ +31V, -30 $^{\circ}$ C to +55 $^{\circ}$ C

Gain Flatness Peak to Peak 0.2dB over any 5MHz

Input/Output Return Loss -18dB min.

Output Protection Mismatch protected with isolator

Efficiency $\geq 15\%$ @+30Volts, Po=+50.8dBm

Operating Temperature -30 $^{\circ}$ C to +55 $^{\circ}$ C (Air Temperature inside System),

Operating point Output power:52.0dBm ± 0.5 dB

Operating range 6dB Input Power ALC B min

Over Pwr Output Pwr:52dBm ± 0.5 dB

4. Alarm and Functions Specifications

TTL output for the alarm pins. Normal is High, Alarm is Low.

4.1 Over temperature alarm

Alarm and shutdown at 95 $^{\circ}$ C base temperature, auto-recover at 90 $^{\circ}$ C base temperature.

4.2 Over power alarm

Alarm and shutdown when output power is over 52.3dBm, no auto-recover.

4.3 ALC

4.3.1 ALC level: 52.0 ± 0.5 dBm

4.3.2 ALC range: ≥ 6 dB

4.4 VSWR alarm

Alarm and shutdown when reject is over 5, auto-recover at 3.

5. Description of the connectors

5.1 RF Part

Port Name	Type	Warning
Input	SMA Female (50 Ω)	Normal :-6.2dBm maxium input power +1dBm.
Output	N Female (50 Ω)	Normal :50.8dBm maxium output power 52.0dBm.

5.2 DC power

Port Name	Type	NO	Warning
DC IN	D-Sub type DSCD175PS1M (Male)	A1、 A2	VDC type +30V, range 24~32V
		A3、 A4	GND to VDC

5.3 Communication

Connector type: USB

Note: Manufacturer use to debug.

5.4 LED Indication



Figure 1 Power Amplifier Indicators

Table 1 Specification of Power Amplifier Indicator Light

Item	Label	Color	State	Specification
1	MAJOR ALM	Red	On	Power amplifier alarms and shuts down
	MINOR ALM	Yellow	Off	
	RF ON	Green	Off	
2	MAJOR ALM	Red	Off	Power amplifier alarms but still works
	MINOR ALM	Yellow	On	
	RF ON	Green	Off	
3	MAJOR ALM	Red	Off	Power amplifier works normally
	MINOR ALM	Yellow	Off	

RF ON	Green	On	
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5.5 Warning

1. Check the power supply voltage is between 24V and 32V or not before electrify, better to setup in 30V. Power of power supply shall bigger than 1400W.
2. Ensure the power supply polarity is right, port A1、 A2 are anode, and port A3、 A4 are cathode.
3. Ensure the output line is connected and input power is not over load before connect the RF input line.
4. Use the type N connector as output connector, for the high output power, suggest to using the $\phi 3$ upwards RF cable to connect. At the same time, output matching demand all right, SWR more than 1.5 is better, but less than 3.0.
5. Product operating should be cooled by air flow, air flow more than 150cfm.
6. Product operating room temperature can't above 50° ,also can't below -20°.

6. Dimension

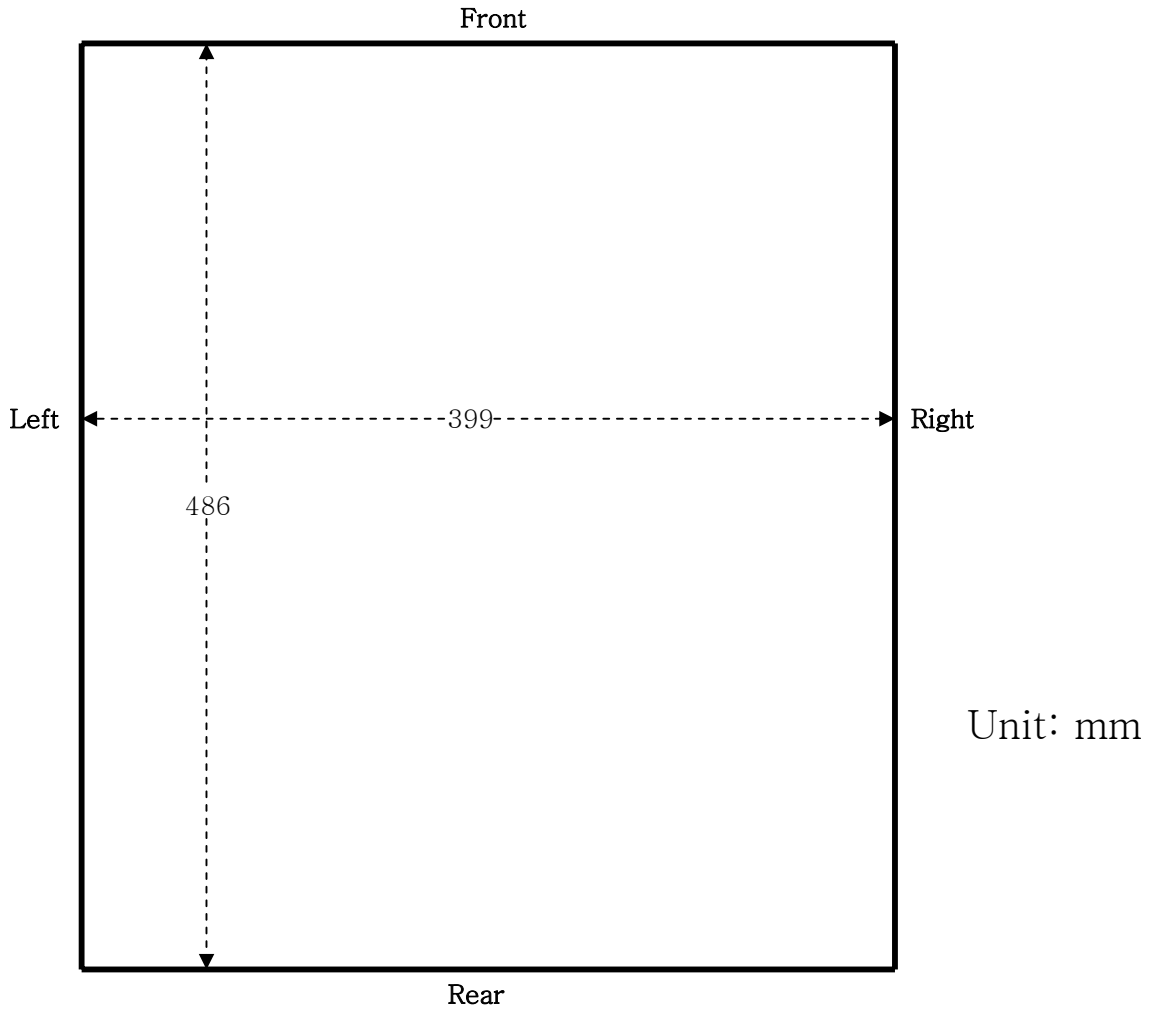


Figure 2 Dimension

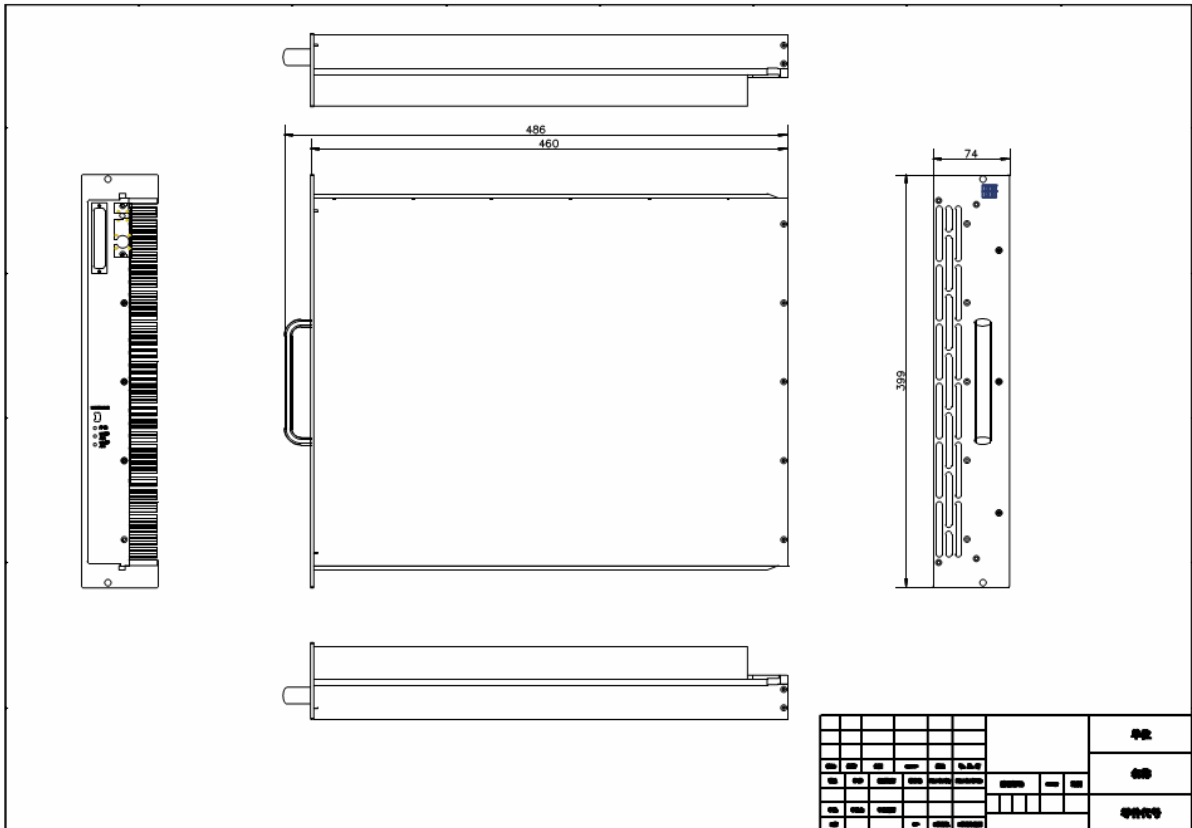


Figure 3 Mechanical drawing

7 Assembly

The LPA1900 is assembled to an outdoor Booster. It can be push into the Booster along the guide rail.



Figure 4 the guide rail for LPA1900 assembly

Below pictures show the location of an assembled LPA1900.



Figure 5 the front side of an assembled LPA1900



Figure 6 the rear side of an assembled LPA1900

There are three ports on the back of LPA1900. The SMA port is input signal port, the N-type port is output port and the D-Sub port is power supply.

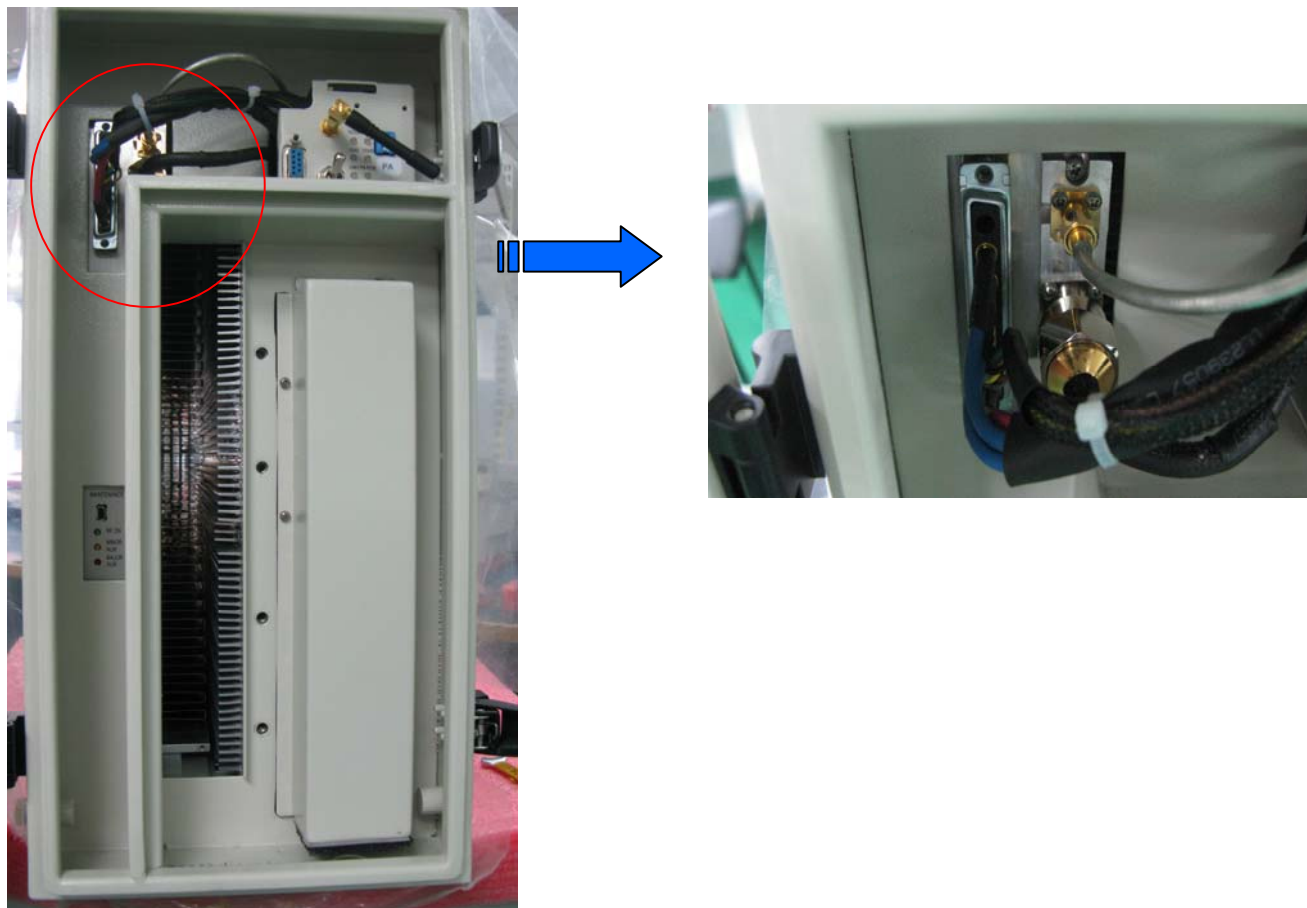


Figure 7 the location of connectors

Information to the user

This device complies with Part 15 of the FCC Rules.

Operation is subject to the following two conditions:

- (1) this device may not cause harmful interference, and
- (2) this device must accept any interference received,
including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

This device must be installed by a professional installer.

The antenna(s) used for this transmitter must be fixed-mounted on outdoor permanent structures.

RF exposure compliance is addressed at the time of licensing, as required by the responsible FCC Bureau(s) including antenna co-location requirements acc to §1.1307(b)(3).