

# Preliminary

## S-BAND 100W 16ch. SSPA Shelf

### RRF3135100-500



GaN

#### Product Features

- 100W 16ch. Pulsed SSPA Shelf
- Frequency from 3.1 GHz to 3.5 GHz
- Using High-Efficiency GaN Transistor
- Maximum 50% Duty Cycle
- Control Communication RS422
- Real time status of Amplifier over Ethernet
- Blind-Mate Type HPA. Install & Remove
- N-Type Connector Output
- Internal Power supply unit
- Individual Amplifier Control
- Forced Air Cooling

#### Applications

- Radar
- EM Simulator
- High Power RF Applications



#### Description

The RRF3135100-500 is industrial standard 19" wide and 8U high rack mount GaN-on-SiC based technology SSPA transmitter which is designed for the high Power RF Application with operating frequency form 3.1 to 3.5 GHz. This shelf has a built-in power supply, and control module is the real-time status of the amplifier can be checked via Ethernet. The amplifier for each channel is individually controlled and operates up to a 50% duty cycle based on a pulse width of 1 to 100us.

#### Electrical Specifications @ $V_{ac} = 208V$ , 60 Hz, $T_o = 25\text{ }^\circ\text{C}$ , 50 $\Omega$ Input System

PARAMETER	UNIT	MIN	TYP	MAX	SYMBOL
Operating Frequency	GHz	3.1	-	3.5	$f_o$
Operating Bandwidth	MHz	-	-	400	BW
Output Pulse Power(each)	W	-	100	-	$P_o$
Input Pulse Power	dBm	-	0	-	$P_i$
Power Gain	dB	-	50	-	$G_p$
Power Gain Variation	dB	-	-	2	$\Delta G_p$
Duty Cycle	%	-	-	50	DC
Pulse Width	us	1	-	100	PW
Pulse Droop	dB	-	-	1	$P_d$
Pulse Rise Time / Pulse Fall Time	ns	-	-	200	$T_r / T_f$
Spurious	dBc	-55	-	-	Spur
Harmonics 1 to N	dBc	-30	-	-	$H_N$
VSWR	-	-	-	2.0 : 1	VSWR
Output Power Monitoring	dBc	-53	-50	-47	$P_M$
Operating Voltage	VAC	+120	-	+208	AC
	Hz	-	60	-	$V_F$
Power Consumption	kW	-	-	4.5	$P_C$
Gate Pulse Interface	-	RS422 Differential (Guard time : 1us)			$C_i$
Protection & Warning Alarm	-	FWD Power Alarm		Low Output Power	

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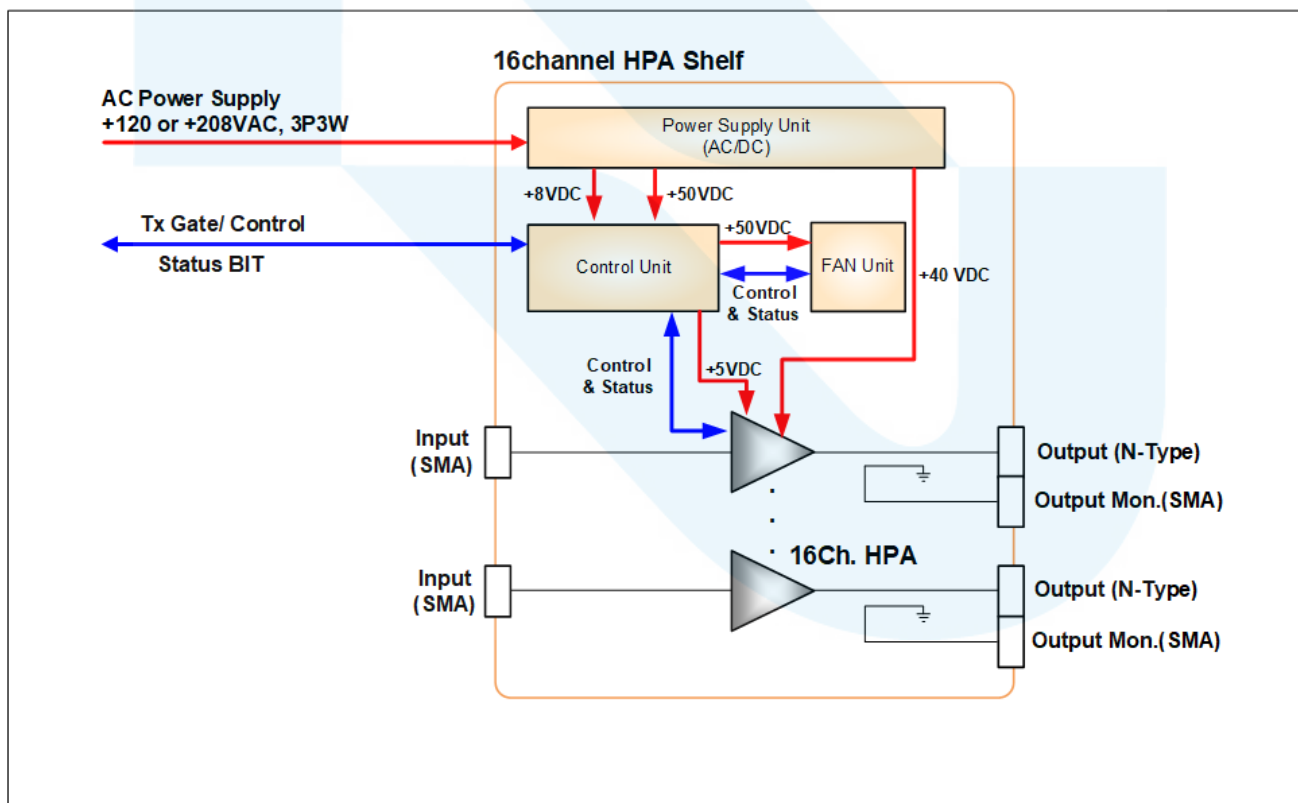


(Ethernet Real time status)	-	Over Pulse Width Alarm & Shutdown	> 100us
	-	Over Duty Cycle Alarm & Shutdown	> 50 %
	-	HPA Over Temp. Alarm & Shutdown	> 80 °C
	-	Communication Alarm	Unit Communication Fail
	-	PSU Alarm & Shutdown	Over Voltage & Current

**Absolute Maximum Ratings**

PARAMETER	UNIT	VALUE
Operating Temperature Range	°C	-20 ~ + 40 °C
Storage Temperature Range	°C	- 40 ~ + 70 °C

**Block Diagram**



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**Photographs**

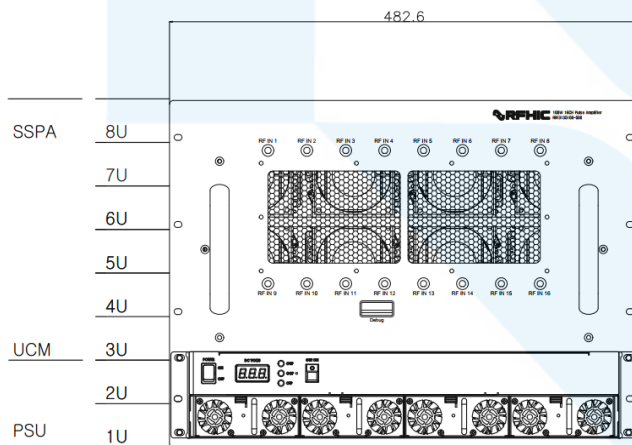


Front

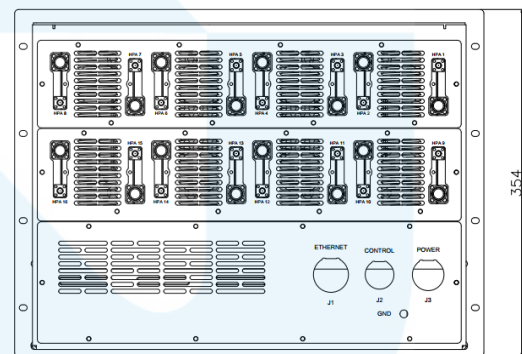


Rear

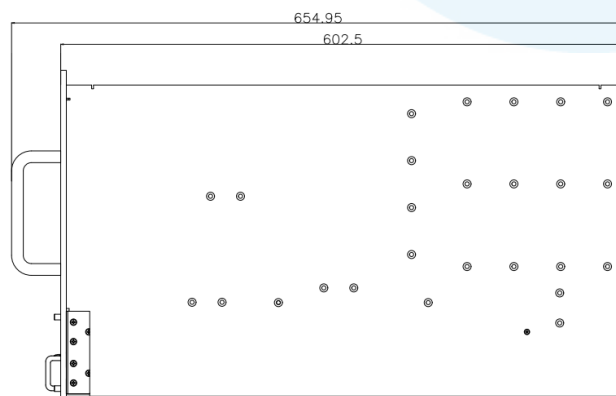
**Mechanical Drawing(TBC)**



Front



Rear



Side

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### Mechanical Specifications

PARAMETER	UNIT	VALUE
Dimensions	-	19inch Rack Mount, 8 U 482.6 × 354.0 × 602.5 (W × H × D, mm)
Weight	kg	Maximum 65 kg
RF Input Type	-	SMA Female(each)
RF Output Type	-	N-Type Female(each)
RF Output Monitor Type	-	SMA Female(each)
I/O Connector	-	RJ-45
Gate Connector	-	D38999 Type
Power Connector	-	D38999 Type
Cooling	-	Forced Air Cooling

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**Revision History**

Part Number	Release Date	Version	Description	Data Sheet Status
RRF3135100-500	Dec. 14 <sup>th</sup> . 2023	0.1	Initial release	Preliminary

\* All the data in this document may be subject to change without prior notice.



**Certification**

This product is manufactured by a company that is certified for the AS9100D quality management system.

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