Preliminary
GaN RF Generator
RIU00278K0-20TG

Product Features

- Four individual channels, full digital control.
- Pulse synchronization
- Real-time power and impedance measurement
- Frequency tuning
- Wide power output range (2 to 8 kW)
- High VSWR capability
- Incorporated with a SMPS mode DC power supply
- Phase synchronization (CEX)
- Superior line sag immunity

Applications

- MW Heating and Drying
- Medical Equipment
- Semiconductor Equipment
  PVD, PECVD, Etch

Description

The RIU00278K0-20TG is a combined-type RF generator system configured with four 2.5kW RF generator channels, delivering a total output power of up to 8kW. It supports both continuous wave (CW) and pulse output modes, with power adjustable from 2000W to 8000W at 27.12 MHz. Featuring an integrated SSPA head and power supply unit, the RIU00278K0-20TG offers a highly cost-effective and flexible solution for RF heating and plasma generation applications. It ensures excellent performance repeatability and reliability you can depend on.

Electrical Specifications

PARAMETER		UNIT	MIN	TYP	MAX	SYMBOL
Operating Frequency	Adjustable Range	MHz	25.8	27.12	28.5	F_O
	Stability	%		0.005		
RF Output Power	Range	kW	2	-	8	P_O
	Accuracy(50Ω)	W	± 1 W or ± 1% of set point, whichever is greater			
Pulsing			Optional : Pulse (5Hz to 10kHz)			
Efficiency (DC to RF)		%	-	-	70	Eff
Operating Voltage	PSU (3 phase)	V	-	208	-	VAC
Dynamic Response		ms	-	-	10	
Dimension		mm	540 x 394 x 680 (W x H x D) 8U			-
Weight		kg	-	-	100	
Analog Interface		-	Optional –USB, D-net, RS-232/485 Optional :EtherCat : 1 x CAT5 RJ-45			-
Power Sag Compliance		-	Optional: SEMI F47			-
Arc Management			Optional: Detection & Suppression			

Generator Alarm & Protection Features

PARAMETER	State	CONDITION
Output Power	GUI Alarm Shut Down	Output Power > 10kW
Drain Voltage	GUI Alarm	Verify Drain Voltage 65V
Over-Temperature	GUI Alarm	System Temperature > 55° C
FWD Power	GUI Alarm, LCD Alarm	Reached Output Power Time < 1s (Output Power =Target Power ± 1%)
RVS Power	GUI Alarm, LCD Alarm	RVS Power > Output Power 10%

***Remarks**
Permanent damage may occur if any of these limits are exceeded. Electrical maximum ratings are not intended for continuous normal operation.

Generator Mechanical Specifications

PARAMETER	UNIT	VALUE	
Dimensions (W x D x H)	mm	540 x 394 x 680 (W x H x D) 8U	
Weight	kg	100kg MAX.	
RF Output Port	-	1-5/8” EIA	
INPUT Connector	-	HAN B (Harting)	
Cooling Requirements	-	**Water Cooling Rate**	25L/Min, 5Bar
		Cooling Water Inlet Temperature	20 °C~25°C (typ.)
		Relative humidity below dew point (non-condensing)	
		* De-ionized water shall be used to prevent system damage	
Fluid Inlet/Outlet Size	Inch	3/8” Tapered Pipe Thread	

Remarks: Dimensions and Connectors may be subject to change.

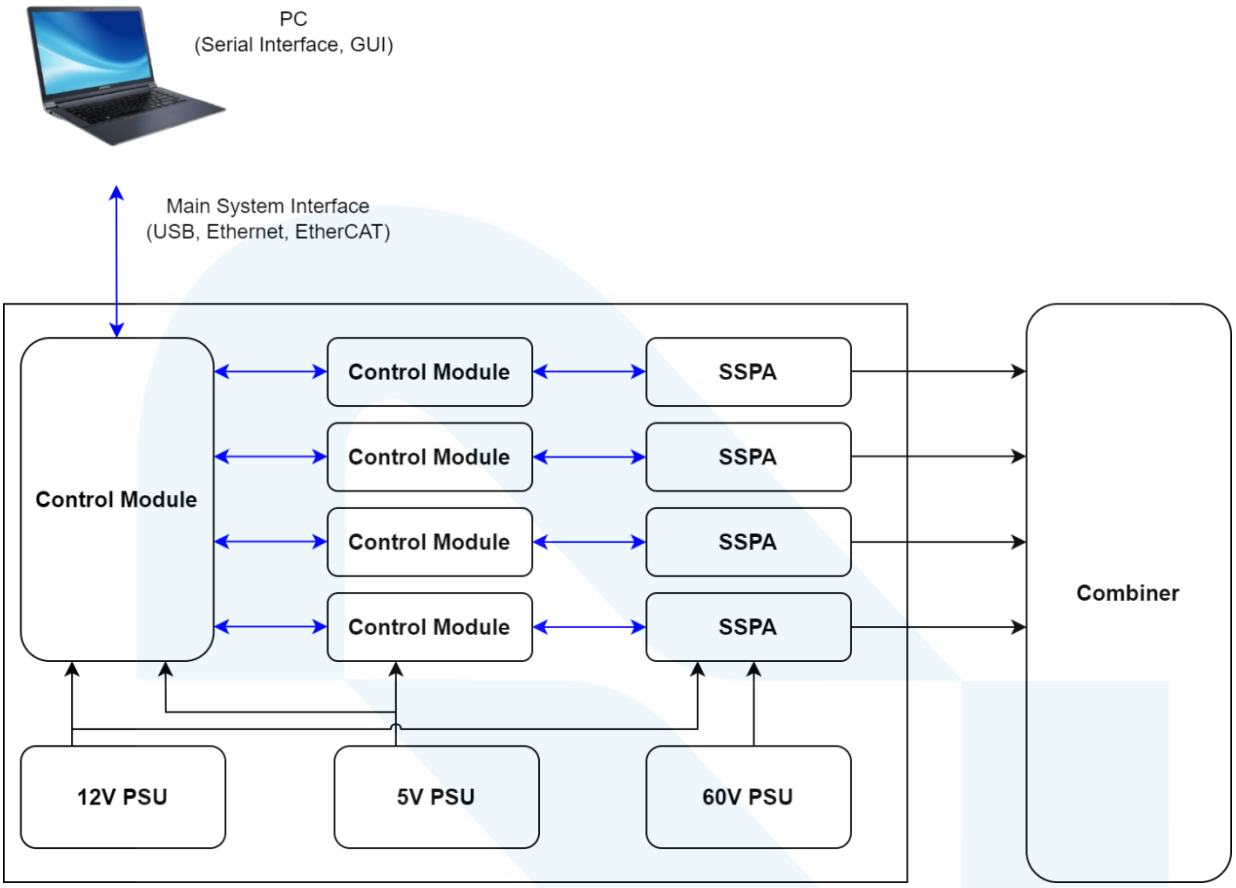
Environmental Specifications

PARAMETER	UNIT	VALUE
Operating Case Temperature(1)	°C	15 ~ 50
Environmental/Storage Temperature	°C	10 ~ 40

Remarks: (1) Operating case temperature is the temperature detected at the PA temp sensor.

Generator Dimensions

RF Generator Setup and Interface Concept



Revision History

Part Number	Release Date	Version	Description	Data Sheet Status
RIU002710K0-20TG	August, 2018	0.1	Initial release of datasheet	Preliminary
RIU002710K0-20TG	April, 2020	0.2	Dimensions Revised, Exterior Features Revised	Preliminary
RIU002710K0-20TG	October, 2021	0.3	Dimensions Revised, Exterior Features Revised	Preliminary
RIU002710K0-20TG	August, 2022	0.4	Revision of Protection specifications, Addition of Cooling requirements, Environmental specifications	Preliminary
RIU002710K0-20TG	November,2023	0.5	GUI Revised	Preliminary
RIU00278K0-20TG	July, 2024	0.6	Electrical characteristics update Part number revised	Preliminary

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