

GaN Microwave Generator RIU243K0-40TG



Product Features

- 2400 ~ 2500MHz
- High Output power: 3kW (CW) Peak Power
- Using GaN on SiC HEMT
- 58% System Efficiency
- Excellent Reliability
- Output Power Adjustable from 0.03 to 3kW
- Excellent Frequency Spectrum at Low Power

Applications

- Building Block for High-Power Systems
- Plasma Generation
- Industrial Heating and Drying
- CVD Equipment Sterilization



Description

The RIU243K0-40TG is a 3kW GaN solid-state microwave generator ideally designed for microwave heating and plasma generation applications. The RIU243K0-40TG provides continuous wave (CW) and or pulse output power adjustable from 30W to 3000W at frequencies ranging between 2400MHz and 2500MHz. The RIU243K0-40TG is a remote-type microwave generator system with a separate SSPA head and power supply unit, providing greater system flexibility. The RIU243K0-40TG comes equipped with a 3kW SSPA head, a Windows-based GUI, and a PLL Synthesizer/Control Module.

Electrical Specifications

PARAMETER		UNIT	MIN	TYP	MAX	SYMBOL
Operating Frequency	Adjustable Range	MHz	2400	-	2500	F _O
	Step Size	kHz	500	-	-	
Output Power	Adjustable Range	kW	0.03	-	3	P _O
	Step Size	kW	0.01	-	-	
Operating Mode		CW				
Power Spectrum Bandwidth**		kHz	-	-	500	S _b
Frequency Accuracy & Stability		ppm	-2.5	-	2.5	F _s
Efficiency (DC to RF)		%	-		58	Eff
Phase Shift	Operating Range	Deg	0		180	
	Step Size	Deg	-	1.0	-	
Operating Voltage	PSU	V	304		456	VAC
	SSPA Head			50		VDC
Control Interface		RS-422				

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Generator Alarm & Protection Features

PARAMETER	State	CONDITION
Forward Power	Alarm	Output Power > 3kW
Over-Temperature	Alarm	System Temperature > 50 °C
Reflected Power	Alarm	750W ~ 1.5 kW
PLL Unlock ⁽¹⁾	Disabled	System
Forward Power	Disabled	Output Power > 3.3kW
Over-Temperature	Disabled	System Temperature > 55 °C
Reflected Power	Disabled	Reflected Power > 1.5kW

*Remarks

(1) PLL Unlock definition

SSPA Head Mechanical Specifications

PARAMETER	UNIT	VALUE
Dimensions (W x D x H)	mm	305 x 205 x 515.5
SSPA Head Weight	kg	31
Microwave Output Port	-	WR340
DC & GND	-	Circular Connector 4pin (Female)
I/O Connector		D-Sub 9-Pin
Cooling Requirements	-	Water Cooling Rate
		10L/Min, 5Bar
		Cooling Water Inlet Temperature
		20 °C (typ.)
		Relative humidity below dew point (non-condensing)
		* De-ionized water shall be used to prevent system damage Antifreeze water is recommended below 0°C environmental conditions
Fluid Inlet/Outlet Size	Inch	Rc 3/8

Remarks: Dimensions and Connectors may be subject to change.

*Product warranty applies ONLY to products operated within the normal and specified operations

Environmental Specifications

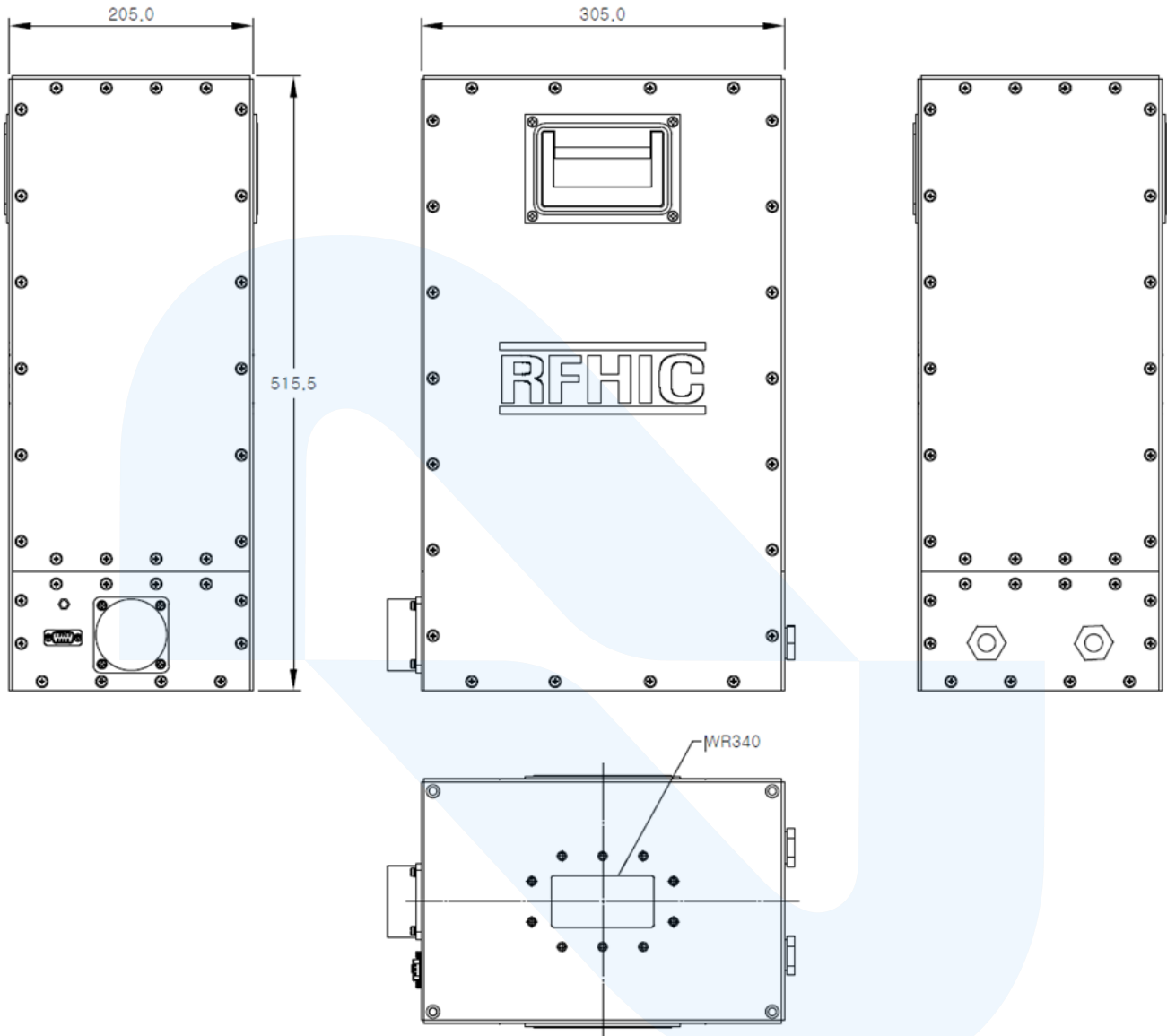
PARAMETER	UNIT	VALUE
Operating Case Temperature ⁽¹⁾	°C	15 ~ 50
Environmental/Storage Temperature	°C	10 ~ 40

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

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SSPA Head Appearance



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Power Supply Unit Specifications (DMPS-9KW)

PARAMETER	UNIT	VALUE
Input Voltage	VAC	208 ~ 480
Frequency	Hz	45 ~ 66
Power Factor	%	98 ≥ Typ.
PSU Efficiency	%	96
Output Voltage	VDC	45~55
Output Current	ADC	180 max.
Weight	kg	17
Dimensions (W x D x H)	mm	482 x 444.7 x 88.9
Cooling	-	Air Cooling

PSU Image



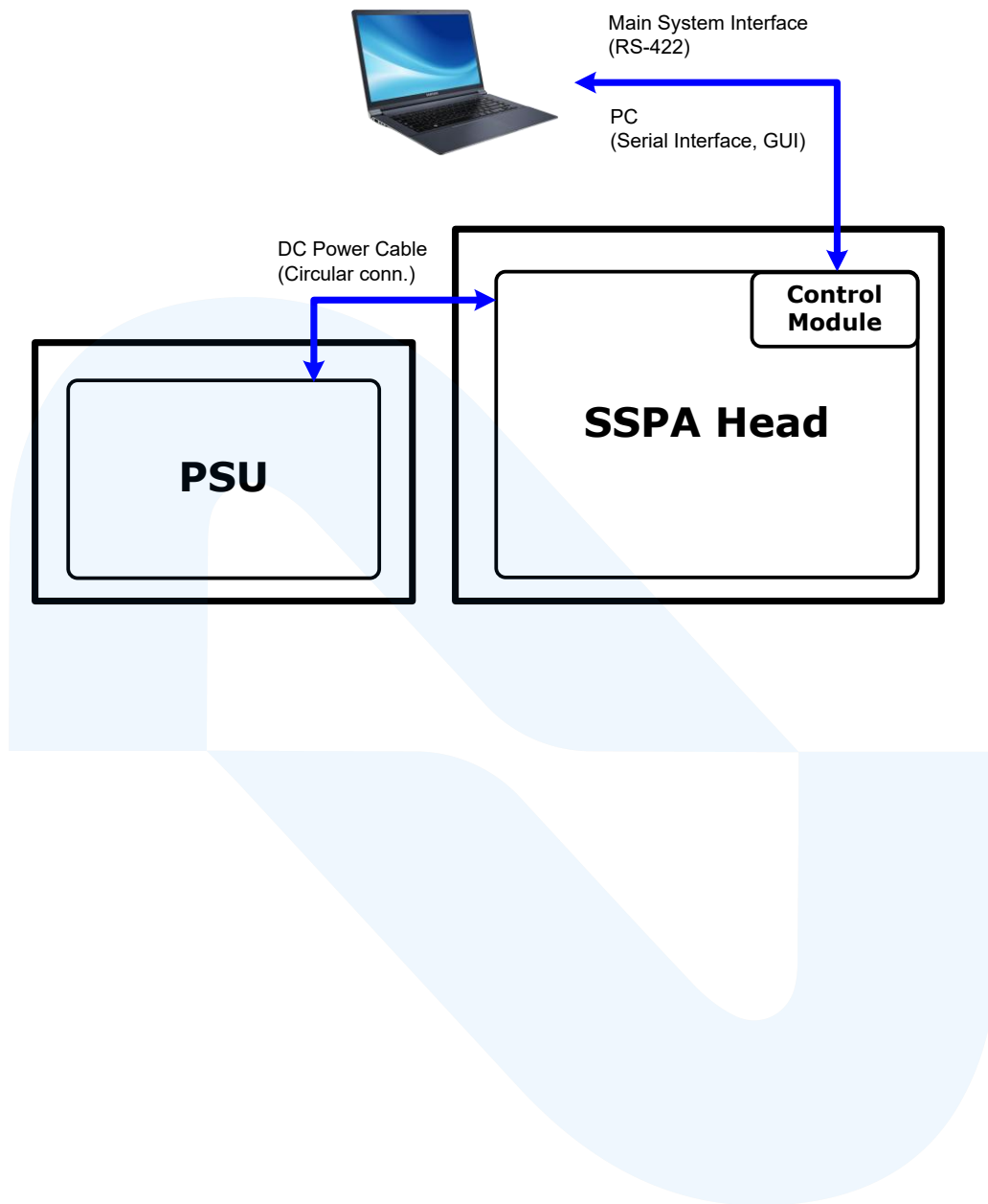
Ordering Information

Model	Voltage	Phase & Wiring	Remarks
RIU243K0-20G	50 VDC	-	SSPA Head Only
RIU243K0-20SG	220 VAC	1-Phase 2-Wire	Single Phase
RIU243K0-20DG	208 VAC	3-Phase 3-Wire (Delta)	-
RIU243K0-40TG	380 VAC	3-Phase 4-Wire (Star / Wye)	-
RIU243K0-50TG	480 VAC	3-Phase 4-Wire (Star / Wye)	-

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Microwave Generator Setup and Interface Concept



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Revision History

Part Number	Release Date	Version	Description	Data Sheet Status
RIU243K0-40TG	December, 2022	0.1	Initial release of datasheet	
RIU243K0-40TG	May, 2023	0.2	Modification of Inlet/Outlet size	
RIU243K0-40TG	June, 2023	0.3	PSU Voltage Modified	
RIU243K0-40TG	May, 2023	0.4	Modification of Inlet/Outlet size	
RIU243K0-20TG	January, 2025	1.0	Modification and Addition of Drawings	
RIU243K0-20TG	September, 2026	1.1	Added Ordering Information table	



Certification

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

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