



Product Features

- 2450MHz (ISM band)
- 6kW CW Peak Power @ 50V
- 54% Efficiency @ 6kW
- Low Cost, Light Weight, Compact Size
- Using GaN-on-SiC HEMT Transistor
- Excellent Thermal Stability and Ruggedness
- High Stability with PLL Technology
- WR284 Waveguide Output
- Perfect Replacement for Magnetron Head

Applications

- High Power Industry
- Microwave CVD Reactor
- Plasma Generator
- Food Science
- MW Heating and Drying
- Semiconductor Equipment



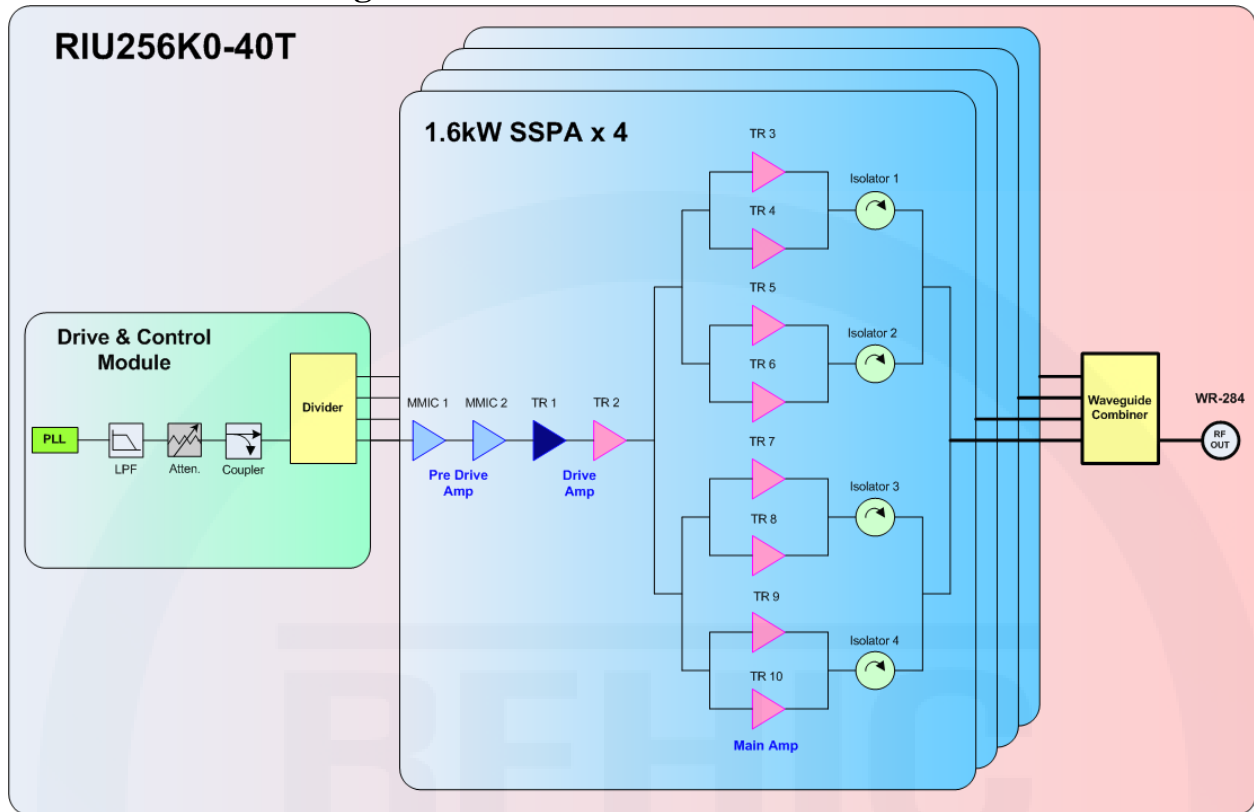
Description

RIU256K0-40T using GaN-on-SiC transistors is designed for industrial, scientific, medical (ISM) and plasma applications at 2450MHz. RIU256K0-40T is the world’s highest power and efficiency microwave generator with affordable price. This microwave generator is suitable for use in CW, ISM applications. This high efficiency rugged device is targeted to replace industrial magnetrons and other vacuum tubes which are currently applying into high power industrial applications, artificial diamond manufacturing, semiconductor equipments, and plasma systems.

Electrical Specifications @ $V_{DS}=50V, T=25^{\circ}C, 50\Omega$ System

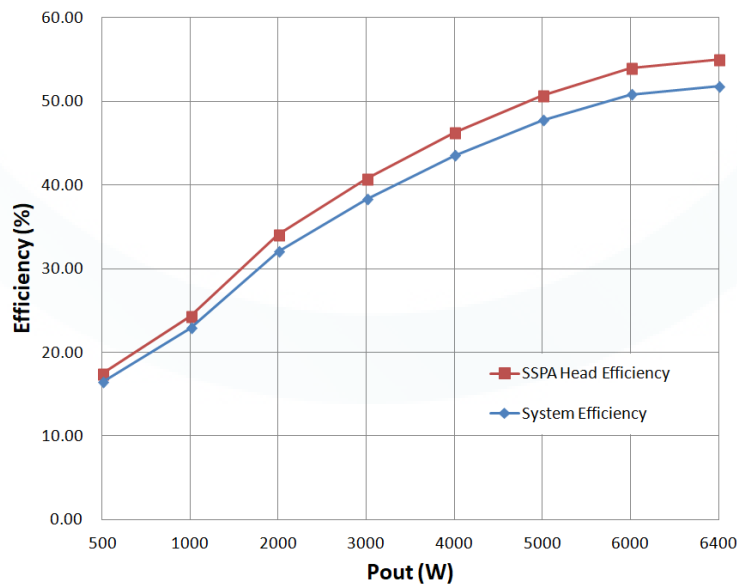
PARAMETER		UNIT	MIN	TYP	MAX	SYMBOL
Operating Frequency		MHz	-	2450	-	F _o
Variable Output Power		kW	0.3	-	6	P _o
Power Spectrum bandwidth		KHz	-	-	500	S _b
Center Frequency Drift		KHz	-250	-	250	F _d
Efficiency (SSPA Head)		%	-	54	-	Eff
Operating Voltage	PSU	V	-	400	-	V _{ac}
	SSPA Head		48	50	52	V _{dc}
Operating Case Temperature		-	20	-	60	T _c
Power Control & Alarms		-	GUI, Remote controller			-
Conrtols	Output power control	1	5 to 100 % (analog input & GUI)			-
	Output power on/off	2	RF output On / Off (input)			PLL on
	Conrtol Interface	3	RS232, RS485			GUI control
	Generator alarm & shutdown	4	Over Temperature Shutdown	@PA Temperature > 60°C		
			Over VSWR Shutdown	@PA Reverse Power > 1kW		
DC Fail Shutdown			@DC <47V or DC > 53V			
Low Gain Alarm			@PA Gain < 52dB			
Over Power Alarm	@Output Power > 6.3kW					

SSPA Head Block diagram



Typical CW Performance Chart

PA & System Efficiency vs. Output Power



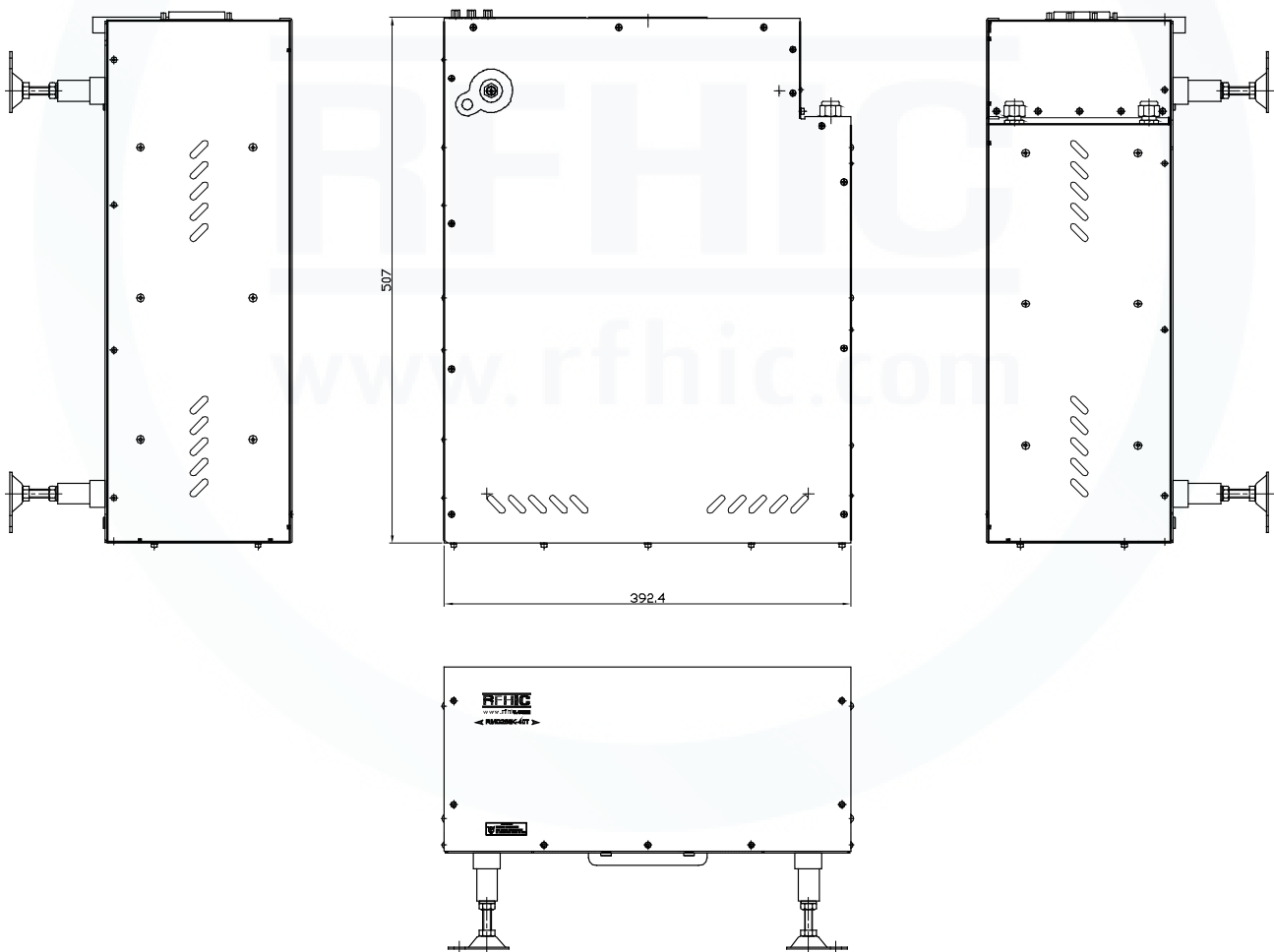
Note

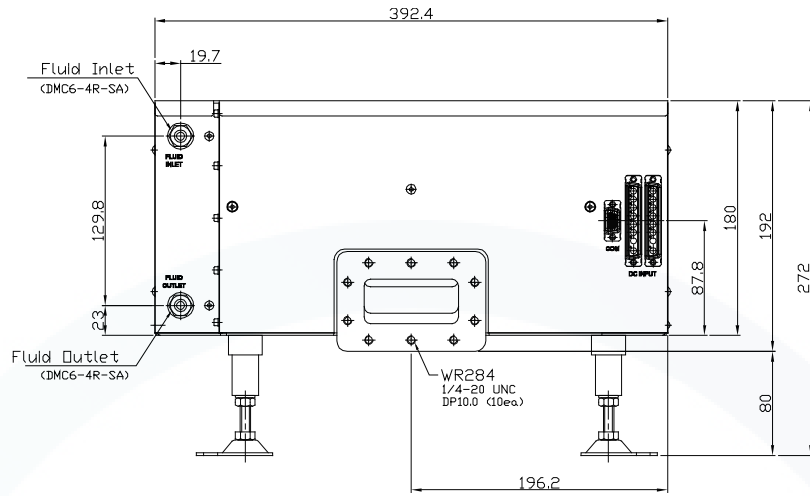
System efficiency refers to the value that includes the efficiency of the power supply unit.

SSPA Head Mechanical Specifications

PARAMETER	UNIT	VALUE
Dimensions (L x W x H)	mm	507 x 392.4 x 192
Weight	Kg	31.5
Microwave Output Port	-	WR284, CPR type flanges (CPR284F)
DC & GND	-	D-sub 8W8 (Male)
I/O Connector	-	D-sub 9pin (Female)
Cooling	-	Water cooling (Water pressure: 8Bar)
Fluid Inlet/Outlet Adapter	-	DMC6-4R-SA

SSPA Head Mechanical Drawing





Note
 Dimensions and Connectors may be subject to change.

SSPA Head Appearance



< Front and Rear views >

RCM Appearance



< Remote Control Module >

PSU Specifications (DMPS-18KW)

PARAMETER	UNIT	VALUE
Input Voltage	VAC	3Ø4W400 ±10%
Frequency	Hz	50/60
Power Factor	%	98 ≥ Typ.
Efficiency	%	96
Output Voltage	VDC	50
Output Current	A	330 max.
Weight	Kg	29.5
Dimensions (L x W x H)	mm	482.6 x 443.7 x 133.3
Cooling	-	Air cooling

PSU Appearance

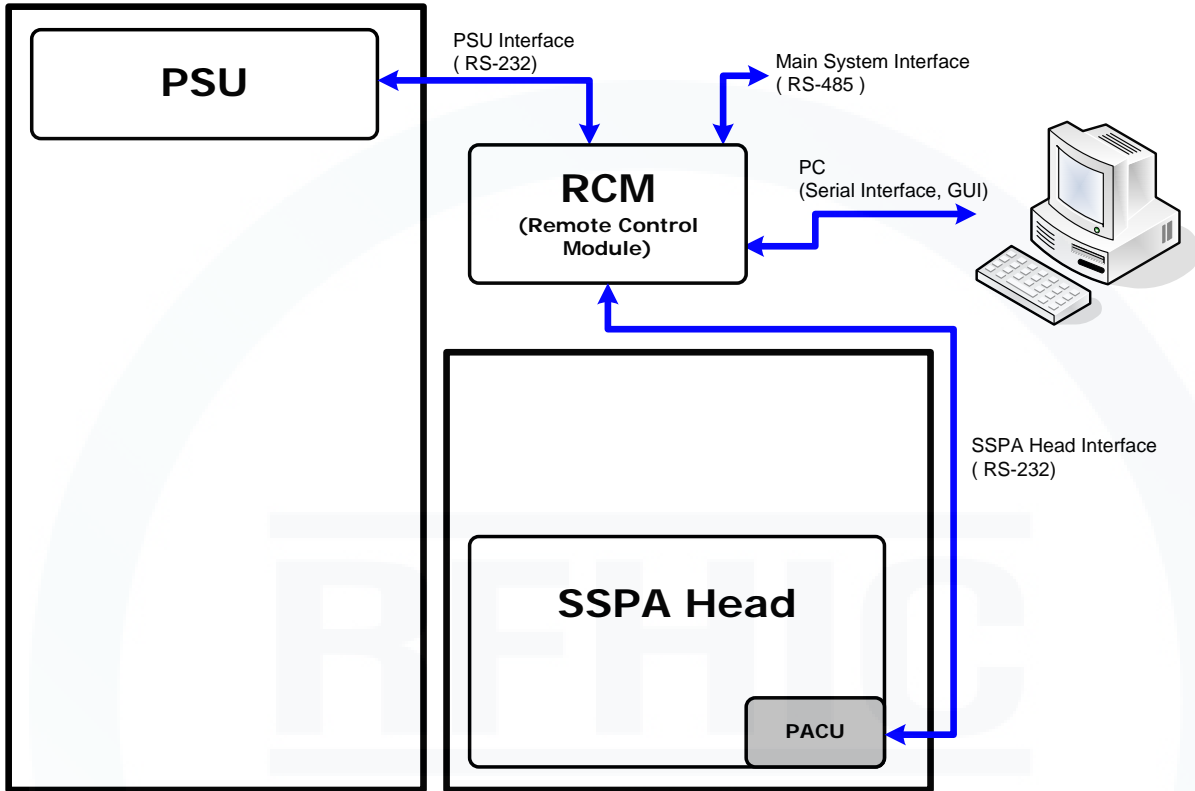


< Front view >



< Rear view >

Microwave Generator Setup and Interface Concept



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Revision History

Part Number	Release Date	Version	Description	Data Sheet Status
RIU256K0-40T	August, 2018	0.1	Initial release of datasheet	Preliminary



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