



SMCL Solid State Amplifiers

100 – 1000 MHz • 10 Watts to 3000 Watts, Minimum Rated Power

Instruments for Industry is a supplier of state-of-the-art solid-state RF power amplifiers. Our SMCL-Series products are specifically designed for EW Jamming applications. These products are available in a wide range of power levels from 10 watts to kilowatts in multiple frequency ranges from 1.0MHz – 6.0GHz. (See other model data sheets for other frequency ranges.)

IFI RF amplifiers are very conservatively designed to operate below maximum ratings for ruggedness and long term reliability. Sixth generation high voltage LDMOS Transistors provide reliable brute-power performance at frequencies up to 1000MHz. Gallium Nitride technology is utilized in our broadband products for applications up to 6.0GHz.

Our RF power amplifiers feature heavy-duty individually shielded aluminum housings at the module level. This concept of shielded modular design minimizes internally produced EMI signal leakage and provides easy access for field service and rapid turnaround at depot level repair facilities.

Our extremely fast gate bias controls at all of the amplifier modules permit a fast access noise quieting function in less than 1 microsecond. Optional PIN diode T/R switches provide complete EW solutions with very low receiver path losses typically in the range of 1.5dB.

IFI system level products include an easy to read backlit LCD screen display for immediate indication of forward/reverse RF power, system status and self-diagnostic information. The systems also provide interface capabilities for control and status by, Ethernet, RS-232 (or RS-422 or RS-485) and IEEE interface formats.

From the ground up the SMCL-Series are structurally engineered to withstand operation in mechanically hostile environments withstanding the shock and vibration of military vehicles and portable shelters. Ruggedized versions are available for airborne and shipboard applications.

IFI RF Power Amplifier Features:

- Solid State LDMOS & GAN Designs
- Instantaneous Broadband Frequency range
- Modular Design Construction
- Rugged construction & High Reliability
- High Speed T/R switching (Optional)
- Backlit LCD Display
- Integrated Force Air Cooling
- Self-diagnostic circuitry
- IEEE-488 interface, RS232 & Ethernet Remote



Models & General Specifications

Model Number	Frequency Range (MHz)	Rated Power (Watts) Minimum	P1dB Power Watts Minimum	Gain (dB) Minimum	KVA	Weight In Pounds	Size In Inches
SMCL10	100-1000	10	10	40	.1KVA	25 Lbs	5.25" H x 19" W x 24" D
SMCL25	100-1000	25	25	44	.2KVA	30 Lbs	5.25" H x 19" W x 24" D
SMCL50	100-1000	50	50	47	.4KVA	45 Lbs	7.0" H x 19" W x 25" D
SMCL100	100-1000	100	80	50	.5KVA	60 Lbs	7.0" H x 19" W x 25" D
SMCL150	100-1000	150	120	52	.8KVA	75 Lbs	8.75" H x 19" W x 24" D
SMCL200	100-1000	200	160	53	1.4KVA	120 Lbs	8.75" H x 19" W x 24" D
SMCL250	100-1000	250	200	54	1.6KVA	140 Lbs	10.5" H x 19" W x 25.25" D
SMCL350	100-1000	350	250	56	3.0KVA	160 Lbs	10.5" H x 19" W x 25.25" D
SMCL500	100-1000	500	350	57	4.0KVA	200 Lbs	2x 10.5" H x 19" W x 25.25" D
SMCL750	100-1000	750	600	59	6.0KVA	250 Lbs	2x 10.5" H x 19" W x 25.25" D
SMCL1000	100-1000	1000	800	60	8.0KVA	500 Lbs	Rack Integrated
SMCL2000	100-1000	2000	1500	63	15.0KVA	1000 Lbs	Rack Integrated
SMCL2500	100-1000	2500	1800	64	20.0KVA	1500 Lbs	Rack Integrated
SMCL3000	100-1000	3000	2500	65	25.0KVA	2000 Lbs	Rack Integrated



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Standard Features for IFI SMCL Solid State Series Amplifiers

Standard Features:	VSWR Reflected Power Protection, the unit operates without damage or oscillation into any magnitude of phase or load impedance, Open & Short Circuit Protection.
	* Alternate Prime Power (specify at time of order)
	GPIB IEEE 488 & RS232 Remote Control
	RF Sample Port on the Front Panel, 112R for rear panel
	Internal Pre-amplification to obtain rated output power with an input level of 0 dBm or less.
	Gain Control Local & Remote, 30dB range
	RF Input/Output Connectors on the Front Panel, 118R for rear panel
	Internal Systems Diagnostics & Status Indicators
	Total/Operate Elapsed Time Metering in hours
	RF Safety Interlock
Forward/Reflected Power Indication simultaneously on Front Panel display	

IFI SMCL Solid State Series Amplifier Specifications

Frequency Range:	As Specified in Model Table
Rated Output Power:	As Specified in Model Table
Gain @ Rated Power:	As Specified in Model Table
Prime Power:	As Required (Some are listed below)
Input/output Impedance:	50 ohms
RF Input/ Sample Connectors:	Type N Female, unless specified otherwise
RF Output Connector:	Type N Female up to 1KW amps, SC or 7/16 available, 7/16 2KW-3KW amps Other connectors available by request or specification
Input VSWR:	2.0:1
Output VSWR:	2.5:1
Operating Temp:	0° to 50° C
Non-operating Temp:	-40° to 70° C (50,000 feet max)
Humidity:	95% without condensation
Altitude:	10,000 feet
Cooling System:	Air cooled, self contained
Modulation:	AM,FM, Pulse
Configuration:	Rack Mount as specified in Model Table, or Rack/Cabinet Integrated
Spurious Outputs:	<-60 dBc nominal
Harmonics:	-20dBc minimum @ Linear Power

Standard Prime Powers:

100, 115, 120 VAC ±10% 50/60 Hz, single phase
220, 230, 240VAC ±10% 50/60 Hz, single phase
120/208 or 200/220/230/240VAC ±10% 50/60 Hz, three phase Wye or Delta power is available
200/220/230/240VAC ±10% 50/60 Hz, three phase Wye or Delta power is available
Special Prime Powers other then listed are subject to availability

Some Available Options for IFI SMCL Solid State Series Amplifiers

Option 110-1E:	GPIB IEEE-488 RS232 and Ethernet Remote Control
Option 110-2:	GPIB IEEE-488 and RS 422 Remote Control
Option 110-3	GPIB IEEE-488 and RS 485 Remote Control
Option 113:	Chassis slides for a 19" rack mounting
Option 118A:	RF Input On Front Output On Rear
Option 118B:	RF Input On Rear Output On Front

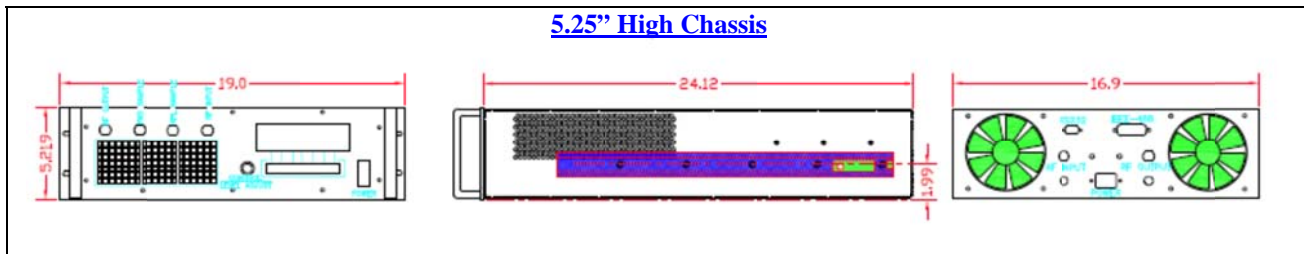


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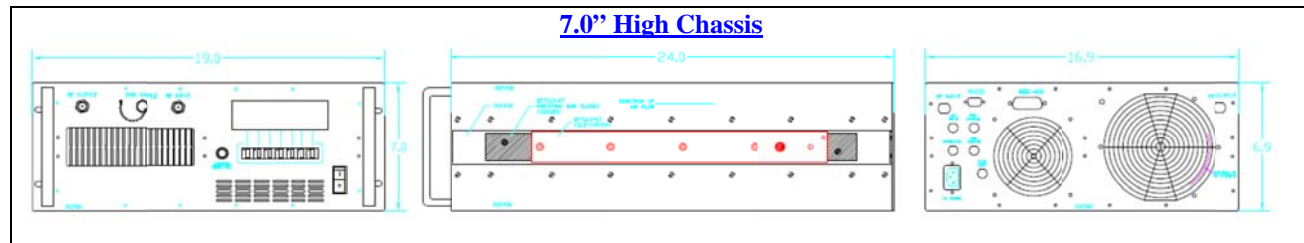
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Outline Configurations:

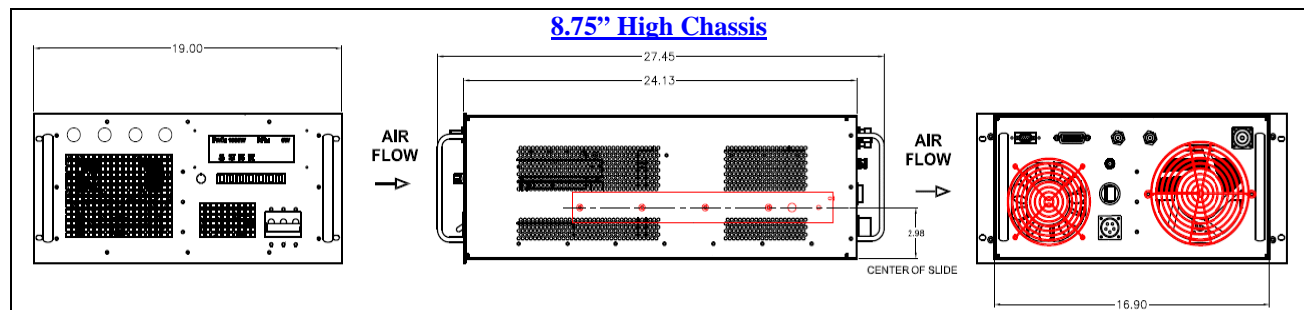
5.25" High Chassis



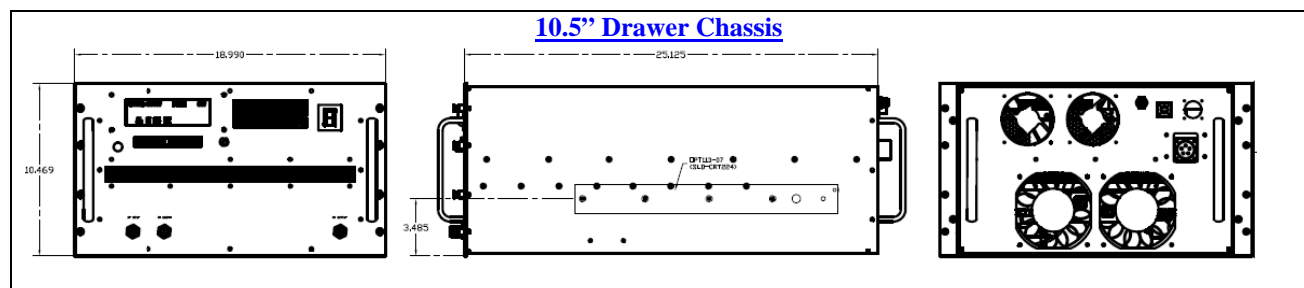
7.0" High Chassis



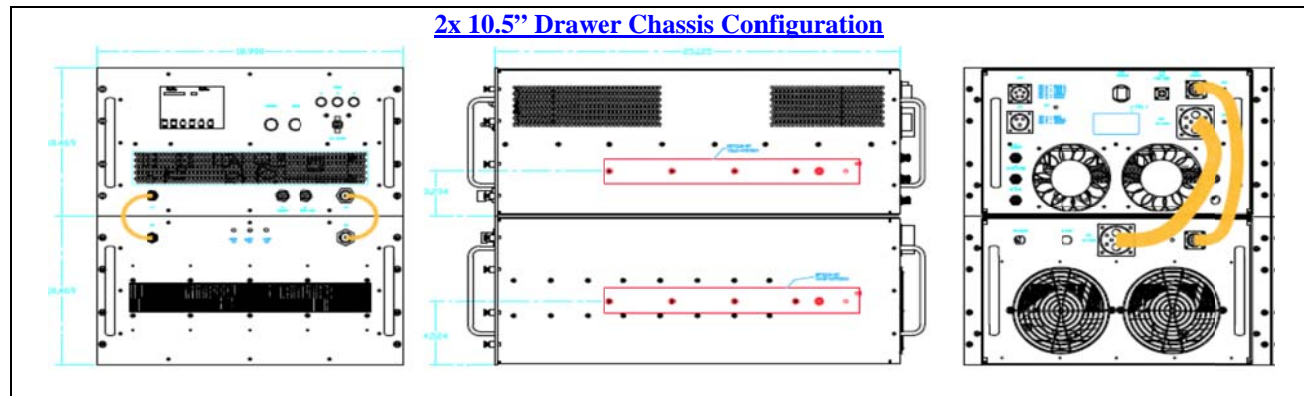
8.75" High Chassis



10.5" Drawer Chassis



2x 10.5" Drawer Chassis Configuration





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Rack Outline Configurations:

