

## C-Band GaN 4.0 kW Pulsed Solid State RF Power Amplifier Module

### VSC3645

#### Features:

- Building block for C-band radar systems
- Four combined 1.1 kW pulsed modules
- High efficiency GaN transistors
- BIT & controls via EIA-422 remote connection
- Blind mate DC and control connectors
- Controllable output power reduction

#### Benefits:

- Easy to maintain
- High gain
- Excellent pulse fidelity
- Outstanding spectral performance

### C-Band RF Power Modules

High efficiency, high power and compact with proven GaN technology, the VSC3645 can be easily combined to create high power C-band radar transmitters.

CPI BMD's solid state power amplifiers are reliable, highly-efficient and easy to maintain. The VSC3645 solid state power amplifiers are designed for use in maritime surveillance and weather radar transmitters and cover the 5.2 – 5.9 GHz frequency band. GaN transistors are combined into a 4.0 kW output and are air cooled. These modules can be power-combined using waveguide combiners to achieve the higher power levels required for various radars.



**Note:**  
Several form, fit configurations available.

#### Applications:

- Maritime and defense radars
- High performance weather radars



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### Specifications

Frequency range	5.2 to 5.9 GHz
Typical maximum saturated peak RF output input 12 dBm	4.0 kW
Typical pulse width	1 to 100 $\mu$ sec
Maximum pulse droop	0.5 dB
Maximum duty cycle	10%
Output power flatness across frequency range	$\pm 1$ dB
Nominal small signal gain	50 dB
Pulse to pulse stability	65 dB
Maximum output VSWR	1.5:1
Maximum harmonic output	-35 dBc
Maximum Interpulse Thermal Noise	-165 dBm/Hz
Pulse repetition rate	To 1.2 KHz
NTIA Compliance	Compliant for a radar of this frequency – with customer pulse shaping as required.

### Mechanical and Environmental Specifications

Prime power Logic & fans, optional	52 VDC @ 45 Amps 24 V @ 10A
Operating ambient Temperature	+5° to +50° C
Non-condensing relative humidity	95%
Operating altitude	15,000 ft. (4.57 km)
Shock and vibration	Rack mounted – shipboard/ground
Cooling	Forced convection to RT 300 cfm
RF Input connection	SMA Jack
Operational with reduced performance	50°C
RF Output connection	WR187
RF Output and VSWR monitor	Control connector
Dimensions (width)	Nominally 9 in.(228.6 mm)
Dimensions (height)	Nominally 15.5 in.(393.7 mm)
Dimensions (depth)	Nominally 21 in.(533.4 mm)
Maximum weight	90 lbs.(41 kg)

The values listed above represent specified limits for the product and are subject to change. The data should be used for basic information only. Formal, controlled specifications may be obtained from CPI for use in equipment design.