

# AMPLIFIER

## 3160 POWER AMPLIFIER



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The 3160 auxiliary Power Amplifier boosts the RF output power of the Codan 2110M transceiver from 25 to 125 W. The amplifier is suitable for both vehicular and base station configurations, and provides reliable and efficient full duty cycle operation for all modes, including voice, data and frequency hopping.

### HIGH PERFORMANCE

The 3160 PA operates over the full 1.6 to 30 MHz HF band with a maximum power output of 125 W PEP. The amplifier is rated for 100% duty cycle for voice and data transmissions while providing excellent power efficiency, which can be especially important in battery operated configurations.

A comprehensive range of fault protection capability has been built in to the design of the amplifier, including over temperature, over voltage, reverse polarity, and antenna load fault conditions.



### SYSTEM INTEGRATION

The 3160 PA is effectively “plug and play” when used with the 2110M transceiver. Control parameters of the amplifier have been kept to a minimum and these are readily available to an operator from the front panel of the 2110M transceiver.

In the event of a “jerk and run” scenario, the 2110M transceiver may be removed from the 3160 based system without any need for adjustment of settings.

In addition, if there is an amplifier RF fault, the system will automatically switch to bypass mode to ensure communications continue.

### MIL-STD-810G ENVIRONMENTAL

With compliance to MIL-STD-810G environmental standards the 3160 PA is capable of providing reliable performance in the harshest of field conditions.

The 3160 enclosure and connectors are fully waterproof and an optional shock mount plate is offered for installations where extremely high levels of vibrations may be encountered.



### SYSTEM OPTIONS

- **Fan Kit:** cooling fan for 3160 PA for use with data operation
- **Cradle Mounting Bracket:** used to mount 3160 PA to 2110M transceiver vehicle cradle
- **Shock Mount:** provides vibration damping for 3160 PA in mobile environments
- **Coaxial BNC-BNC Cable, 2.5 m:** connects 2110M transceiver RF output to 3160 PA input; this length is used when units are installed separately
- **Coaxial BNC-BNC Cable, 0.7 m:** connects 2110M transceiver RF output to 3160 PA input; this length is used when units are co-sited
- **Control & DC Cable, 2 m:** connects 3520 transceiver supply or 3524 24 V to 12 V DC converter to 3160 PA and 2110M transceiver. This length is used when 3160 PA is installed separate to the transceiver and 3520 or 3524 DC power source
- **Control & DC Cable, 0.5 m:** connects 3520 transceiver supply or 3524 24 V to 12 V DC converter to 3160 PA and 2110M transceiver. This length is used when 3160 PA is co-sited in a stack configuration with the transceiver and 3520 or 3524 DC power source

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### SPECIFICATIONS

#### GENERAL

<b>Supply voltage</b>	13.6 V DC nominal, negative earth Normal operating range: 10.8 to 15 V DC, reverse polarity protected
<b>Overvoltage protection</b>	Shuts down at 16 V DC nominal for duration of over voltage
<b>Supply current</b>	<b>Output power:</b> 125 W or 100 W <b>Two-tone or CW:</b> 9 to 17 A <b>Receive:</b> 65 mA
<b>Load protection</b>	Safe under all load conditions
<b>Temperature</b>	-40 to +70°C, full spec -30 to +60°C
<b>Environment</b>	MIL-STD-810G: Immersion, Low Pressure, Rain, Humidity, Fungus, Salt, Fog, Sand & Dust, Vibration, Shock
<b>Cooling</b>	Convection or fan (Option F)
<b>Compliance</b>	AS/NZS 4770:2000, FCC Part 90, CE
<b>Size</b>	<b>Power Amplifier (PA):</b> 285 mm W x 172 mm D x 77 mm H <b>PA with fan:</b> 285 mm W x 172 mm D x 102 mm H
<b>Weight</b>	<b>PA:</b> 2.4 kg <b>Fan:</b> 0.24 kg <b>PA mounting bracket:</b> 0.4 kg

#### RF

<b>Frequency range</b>	Transmit: 1.6 to 30 MHz
<b>Power output</b>	125 W (100 W option) PEP reducing with frequency to 95 W PEP at 30 MHz $\pm 1$ dB CW or single tone: approximately 60% of PEP with average PEP control (average control disabled on handset PTT)
<b>Spurious &amp; harmonic emissions</b>	Better than 60 dB below PEP
<b>Intermodulation</b>	125/100 W: 26 dB below each tone 32 dB below PEP
<b>RF input / output impedance</b>	50 $\Omega$ nominal (N-type)
<b>Duty cycle (100%)</b>	Normal speech over full temperature range All data modes up to maximum ambient temperature of 45°C (113°F) with optional fan

Values noted are typical. Equipment descriptions and specifications subject to change without notice or obligation.