

# 1 T828 General Information

This section provides a brief description of the T828 power amplifier, along with detailed specifications and a list of types available.

The following topics are covered in this section.

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## 1.1 Introduction

The T828 is an FM base station power amplifier designed for single or multichannel operation within the frequency range 66 to 88MHz. The output power capability is 10 to 60W.

The PA comprises a broad band, two stage drive amplifier whose output is split to drive two separate output stages. The outputs from these final stages are then recombined and filtered before being fed to the output socket. This type of balanced output stage offers two advantages over single ended types:

- improved intermodulation performance in the presence of high signal levels from adjacent transmitters;
- enhanced reliability: if one of the two output stages fails, the transmitter can still produce one quarter of its rated power.

VSWR and thermal protection are incorporated into the basic design, while monitoring and alarm signals are available for both forward and reverse power. The output power is adjustable from the front panel.

The circuitry is built on a single PCB which is mounted directly on a die-cast chassis/ heatsink. Extensive use is made of surface mount technology.

The T828 has a width of 60mm, occupying a single module in a Tait rack shelf (T99-770) which will accommodate up to seven standard modules to give an attractive and convenient installation.

## 1.2 Specifications

### 1.2.1 Introduction

The performance figures given are minimum figures, unless otherwise indicated, for equipment tuned with the maximum switching band and operating at standard room temperature (+22°C to +28°C).

Where applicable, the test methods used to obtain the following performance figures are those described in the EIA specification. However, there are several parameters for which performance according to the CEPT specification is given.

Details of test methods and the conditions which apply for Type Approval testing in all countries can be obtained from Tait Electronics Ltd.

### 1.2.2 General

#### Power Output:

Rated Power	.. 50W
Maximum Power	.. 60W
Range Of Adjustment	.. 10 to 60W (typical)

**Note:** Actual power used will depend on regulatory requirements.

Duty Cycle Rating (@ 13.8V supply)	.. 50W continuous to +60°C without fan <sup>1</sup>
	.. 60W continuous to +40°C without fan <sup>1</sup>

Intermodulation (PA with output isolator)	.. -70dBc or -40dBi <sup>2</sup> with 25dB isolation & interfering signal of -30dBc
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#### Mismatch Capability:

Ruggedness	.. infinite VSWR (in power control)
Stability	.. 5:1 VSWR (all phase angles)

#### Supply Voltage:

Operating Voltage	.. 10.8 to 16V DC
Standard Test Voltage	.. 13.8V DC
Polarity	.. negative earth only
Polarity Protection	.. crowbar diode

#### Maximum Supply Current (@ 50W):

Standby	.. 50mA
Transmit	.. 11A

1. The use of a fan is to be preferred at high temperatures. Adequate ventilation must always be provided through base station equipment cabinets.
2. dBi denotes the level of intermodulation product relative to the interfering signal.

## Spurious Emissions:

Conducted	- Transmit	.. -36dBm to 1GHz
		-30dBm to 4GHz
	- Standby	.. -57dBm to 1GHz
		-47dBm to 4GHz
Radiated	- Transmit	.. -36dBm to 1GHz
		-30dBm to 4GHz
	- Standby	.. -57dBm to 1GHz
		-47dBm to 4GHz

Operating Temperature Range .. -30°C to +60°C

## Dimensions:

Height	.. 191mm
Width	.. 60mm
Length	.. 340mm

Weight .. 3.1kg

## 1.3 Product Codes

Frequency Range (MHz)	66-88
PA Type: T828-	10