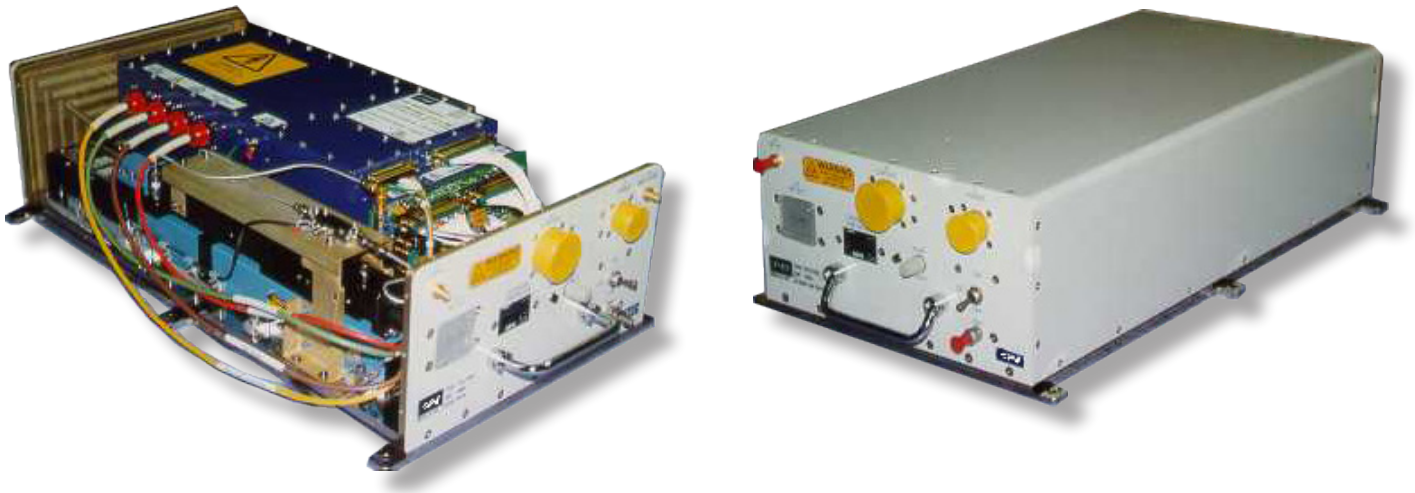
Pulse/CW I/J Band TWT Transmitters

PTX7485/ PTX7486

CPI Electron Device Business - TWT Transmitters, Helix-Based



The PTX7485 and PTX7486 transmitters - Compact units

The PTX7485 and PTX7486 transmitters are compact units used by the UK government and various international customers for a range of applications. They are also utilized as a "replacement package" for specific customers who requiring a form-fit-function solution for land, sea, and airborne systems.

These transmitters incorporate switched-mode power supplies and broadband helix TWTs, utilizing well-established components to ensure reliability and maintainability.

Their high electrical efficiency minimizes cooling requirements and provides reliable operation over a wide temperature range.

The unit's control interface allows for remote operation and status monitoring, offering multiple diagnostic outputs for testing purposes.

The interface can be customized to meet customers' exact requirements.

Additionally, the units feature reverse power protection to prevent damage to the TWT from poor output matching.

To learn more about CPI EDB's transmitter capabilities, contact CPI EDB at ElectronDevices@cpi-edb.com or call +44 (0)20 8573 5555

FEATURES:

- Frequency: 6.5 - 18.0 GHz
- Output power: 1 kW
- Duty cycle: 4% max
- Weight: 52.9/55.1 lbs (24/25 kgs) max
- Pulse length: 0.2 - 45 µs

BENEFITS:

- Compact & lightweight
- Excellent thermal management

APPLICATIONS:

- Radar Systems
- Electronic Warfare (EW)

PTX7485 PULSED TWTA

Prime Power

3 phase 4 wire, 115 V line to neutral, 400 Hz

Power Consumption

1 kVA (max)

RF Output Characteristics

Frequency range	6.5 - 18.0 GHz [Note 1]
Peak output power	1 kW min [Note 1]
RF duty	4 % max [Note 1]
Burst mode	50 % for 100 µs
PRF	14 kHz max
Pulse length	0.2 - 45 µs [Note 1]
Small signal	53 dB gain (min)
Harmonics	
8-10 GHz	-3 dBc max
10-16 GHz	-5 dBc max
Spurious	-40 dBc 10 kHz from carrier
Noise power	
Beam On	5 dBm/ MHz
Bean Off	-60 dBm/ MHz

Basic Signal Inputs

Prime power	28 V
Standby/Operate	RS422
Grid window	RS422
RF drive	+5 dBm (nominal)

Front Panel Indicators

28 V indication
Elapsed time (hours)

Internal TWT & HVPSU Protection

Cathode overvoltage
Helix overcurrent
Beam overcurrent
Low logic voltage
Inverter overcurrent
Helix arc
Line voltage fault
VSWR fault
Over temperature

Remote Status/Fault Indicators (All RS422)

Power on
Ready
HV on
Battle override active
TWT/ HVPSU over temperature
VSWR fault
Beam / Helix overcurrent
Beam / Helix / Inverter overcurrent
Low Logic / Line voltage fault

Connectors

Prime power	MS3470W14-12PN
Status & control	MS3470W20-39PN
Grid window	SMA-F
RF input	SMA-F
RF output	WRD650

Mechanical

Dimensions:	
Length	520 mm
Width	270 mm
Height	150 mm
Weight	52.9 lbs (24 kgs) max

Environmental (Operational)

Temperature	-30 ^{O}C to + 60 ^{O}C
Humidity (condensing)	100%
Shock	20 G 11 ms
Vibration	5 Grms 5 - 2000 Hz
Altitude	1500 m

Cooling System

	Integral liquid cooling
	(optional - integral forced air)

Notes:
1 - Other values may be possible with alternative TWTs

PTX7486 CW TWTA

Prime Power

3 phase 4 wire, 115 V line to neutral, 400 Hz

Power Consumption

2 kVA (max)

RF Output Characteristics

Frequency range	6.5 - 18.0 GHz [Note 1]
Peak output power	200 W min [Note 1]
RF duty	0 - 100 % max [Note 1]
Beam blanking	14 kHz max
Small signal gain	35 dB gain (nom)
Harmonics	
8-10 GHz	-5 dBc max
10-16 GHz	-5 dBc max
Spurious	-40 dBc 10 kHz from carrier
Noise power	
Beam On	-10 dBm/MHz
Bean Off	-60 dBm/MHz

Basic Signal Inputs

Prime power	28 V
Standby/Operate	RS422
Blanking	RS422
RF drive	+5 dBm (nominal)

Front Panel Indicators

28 V indication
Elapsed time (hours)

Internal TWT & HVPSU Protection

Cathode overvoltage
Helix overcurrent
Beam overcurrent
Low logic voltage
Inverter overcurrent
Helix arc
Line voltage fault
VSWR fault
Over temperature

Remote Status/Fault Indicators (All RS422)

Power on
Ready
HV on
Battle override active
TWT/ HVPSU over temperature
VSWR fault
Beam / Helix overcurrent
Beam / Helix / Inverter overcurrent
Low Logic / Line voltage fault

Connectors

Prime power	MS3470W14-12PN
Status & control	MS3470W20-39PN
RF input	SMA-F
RF output	WRD650

Mechanical

Dimensions:	
Length	520 mm
Width	270 mm
Height	150 mm
Weight	55.1 lbs (25 kgs) max

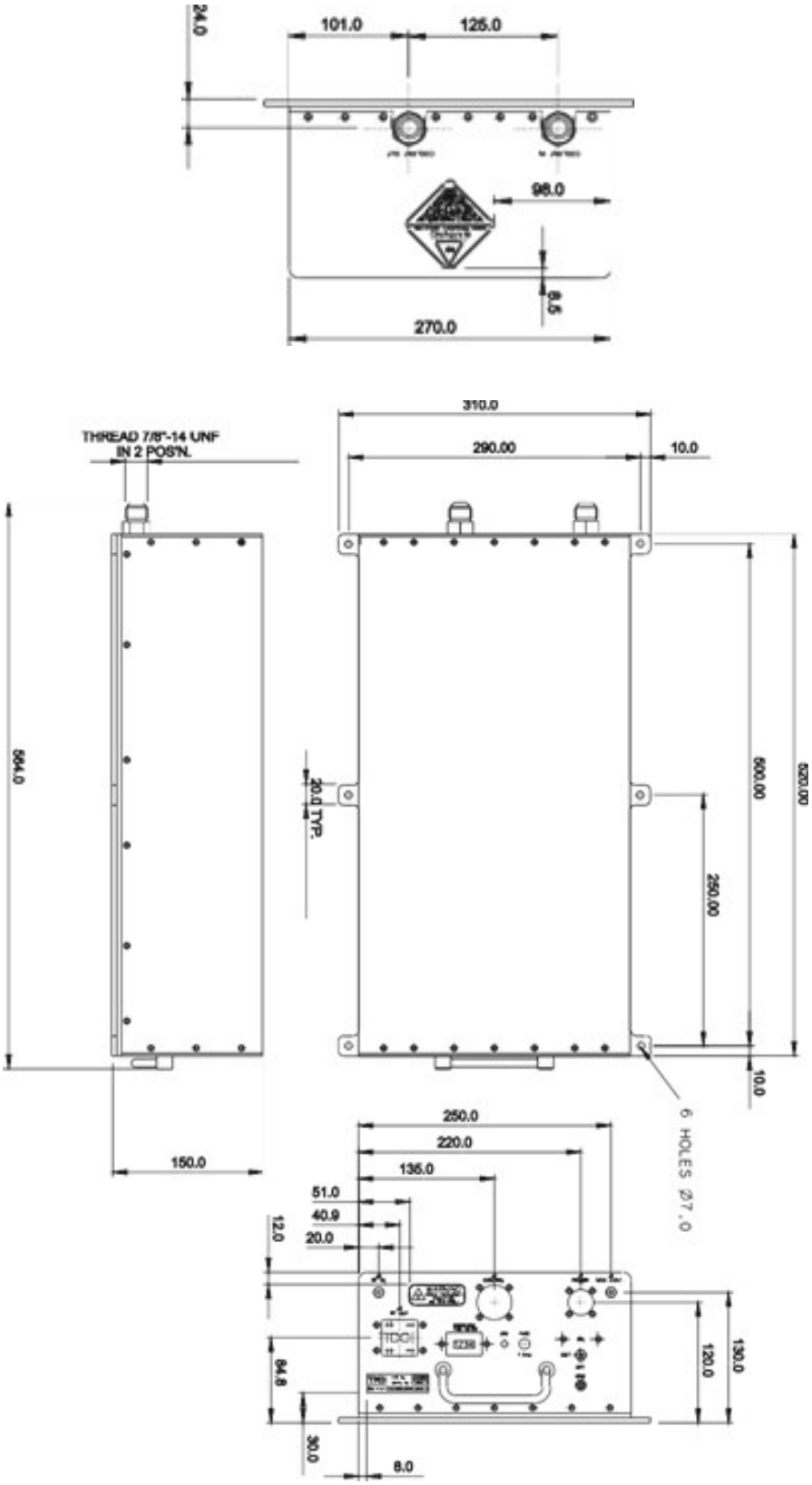
Environmental (Operational)

Temperature	-30 ^{O}C to + 60 ^{O}C
Humidity	100% (condensing)
Shock	20 G 11 ms
Vibration	5 Grms 5 - 2000 Hz
Altitude	1500 m

Cooling System

	Integral liquid cooling
	(optional - integral forced air)

Notes:
1 - Other values may be possible with alternative TWTs



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For more detailed information, please refer to the corresponding technical description if one has been published, or contact CPI TMD. Specifications may change without notice as a result of additional data or product refinement. Please contact CPI TMD before using this information for system design.

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