

# TMAT192123B68-21 | E14R00P31



## Tower Mounted Amplifier, Twin Diplexed PCS/AWS/WCS, 617–894 MHz bypass 4.3-10

- New Triple-band TMA for PCS, AWS 1-4 and WCS in a compact twin form factor
- Low frequency bypass of 617-894 MHz covers Band 14 public safety operating frequencies
- Significantly reduces complexity of tower top architectures
- Also available in a quad configuration to support 4 x 4 requirements
- New 4.3-10 connectors for improved PIM performance and size reduction
- Support DC/AISG antenna Auto-forward

## Product Classification

**Product Type** 1-BTS:2-ANT (Diplex) | Tower mounted amplifier

## General Specifications

**Color** Gray

**Modularity** 2-Twin

**Mounting** Pole | Wall

**Mounting Pipe Hardware** Band clamps (2)

**RF Connector Interface** 4.3-10 Female

## Dimensions

**Height** 283 mm | 11.142 in

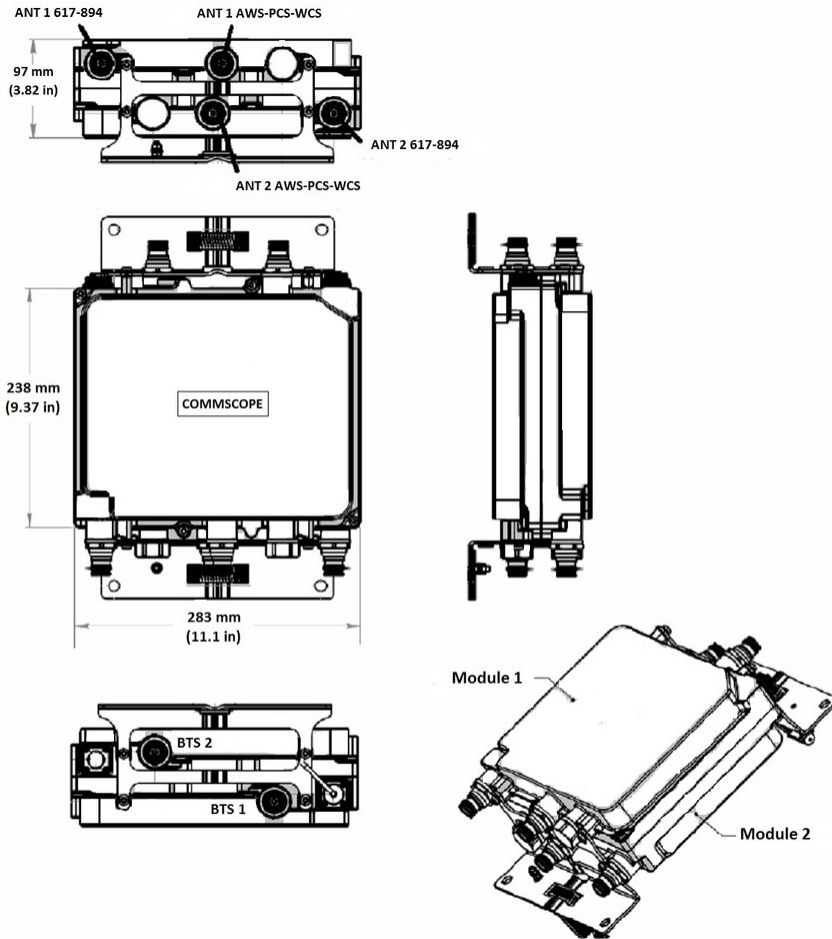
**Width** 238 mm | 9.37 in

**Depth** 97 mm | 3.819 in

**Ground Screw Diameter** 6 mm | 0.236 in

**Mounting Pipe Diameter Range** 40–160 mm

## Outline Drawing



## Electrical Specifications

<b>License Band, Band Pass</b>	APT 700   CEL 850   EDD 800   LMR 750   LMR 800   USA 700   USA 750
<b>License Band, LNA</b>	AWS 1700   PCS 1900   WCS 2300

## Electrical Specifications, dc Power/Alarm

<b>dc Switching/Redundancy</b>	Yes
<b>Lightning Surge Current</b>	10 kA
<b>Lightning Surge Current Waveform</b>	8/20 waveform
<b>Operating Current at Voltage</b>	160mA @ 24V
<b>Voltage</b>	7-30 Vdc

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## Electrical Specifications, AISG

<b>AISG Carrier</b>	2.176 MHz ± 100 ppm
<b>AISG Connector</b>	8-pin DIN Female
<b>AISG Connector Standard</b>	IEC 60130-9
<b>Protocol</b>	AISG 2.0
<b>Voltage, AISG Mode</b>	10–30 Vdc

## Electrical Specifications

Sub-module	1   2	1   2	1   2	1   2
<b>Branch</b>	1	2	2	2
<b>Port Designation</b>	617–894	AWS–PCS	AWS-PCS	WCS
<b>AISG 2.0 Device Subunit</b>		E14R00P31 2/5	E14R00P31 3/6	E14R00P31 1/4
<b>License Band</b>	CEL 850, Band Pass USA 750, Band Pass	AWS 1700, LNA	PCS 1900, LNA	WCS 2300, LNA
<b>Return Loss, typical, dB</b>		20	22	22
<b>Return Loss - Bypass Mode, typical, dB</b>		18	18	18

## Electrical Specifications Rx (Uplink)

Frequency Range, MHz	1695–1780	1850–1910	2305–2315
<b>Bandwidth, MHz</b>	85	60	10
<b>Gain, nominal, dB</b>	12.5	12.5	13
<b>Gain Tolerance, dB</b>	±1.5	±1.5	±1.0
<b>Noise Figure, typical, dB</b>	1.1	1.3	1.8
<b>Total Group Delay, maximum, ns</b>	50	150	130
<b>Insertion Loss - Bypass Mode, typical, dB</b>	1.4	2.3	2.8

## Electrical Specifications Tx (Downlink)

Frequency Range, MHz	2110–2200	1930–1990	2350–2360
<b>Bandwidth, MHz</b>	90	60	10
<b>Insertion Loss, typical, dB</b>	0.3	0.5	0.6
<b>Total Group Delay, maximum, ns</b>	20	50	50
<b>Return Loss, typical, dB</b>	20	22	22
<b>Input Power, RMS, maximum, W</b>	200	200	150
<b>Input Power, PEP, maximum, W</b>	2000	2000	1500

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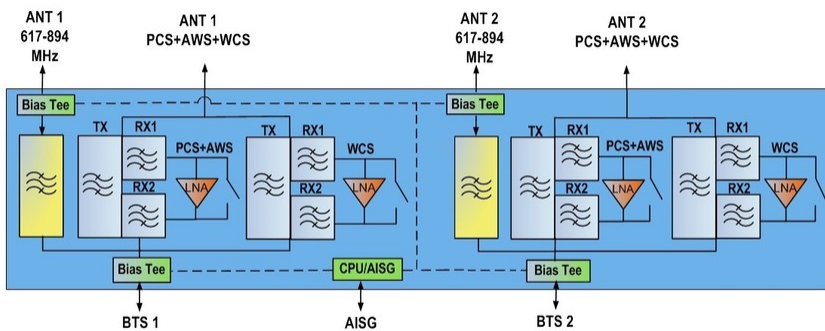
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<b>3rd Order PIM, typical, dBc</b>	-155	-155
<b>3rd Order PIM Test Method</b>	1 x 20 W AWS CW tone 1 x 20 W PCS CW tone	2 x 20 W CW tones
<b>Higher Order PIM, typical, dBc</b>		-155
<b>Higher Order PIM Test Method</b>		2 x 20 W CW tones

## Electrical Specifications, Band Pass

<b>Frequency Range, MHz</b>	<b>617–894</b>
<b>Insertion Loss, typical, dB</b>	0.1
<b>Total Group Delay, typical, ns</b>	4
<b>Return Loss, typical, dB</b>	22
<b>Input Power, RMS, maximum, W</b>	200
<b>Input Power, PEP, maximum, W</b>	2000
<b>3rd Order PIM, typical, dBc</b>	-155
<b>3rd Order PIM Test Method</b>	2 x 20 W CW tones

## Block Diagram



## Material Specifications

**Finish** Painted

## Environmental Specifications

**Operating Temperature** -40 °C to +65 °C (-40 °F to +149 °F)

**Relative Humidity** Up to 100%

**Corrosion Test Method** IEC 60068-2-11, 30 days

**Ingress Protection Test Method** IEC 60529:2001, IP67

## Packaging and Weights

**Included** Mounting hardware

**Mounting Hardware Weight** 1 kg | 2.205 lb

**Weight, without mounting hardware** 9.4 kg | 20.723 lb

## \* Footnotes

**License Band, Band Pass** License Bands that are to be passed through with no amplification

**License Band, LNA** License Bands that have RxUplink amplification