

TTA-TWG020H, TTA-TWG021H

Dual Band AWS and 1900 Twin TMA with Optional Low Band Bypass, AISG 2.0

Designed to be deployed in co-located AWS, 1900 and low band 698-960 MHz systems with wideband antennas. Provides internal diplexing in all three bands with gain in the high bands.

- Improved base station sensitivity through gain in the AWS and 1900 uplink bands
- Internal duplexing of 698-960 MHz signals to be passed to additional ANT ports
- Excellent noise figure performance
- AISG 2.0 compatible, hardware & software configuration using AISG "personality" upload
- Internal diplexing of AWS and 1900 MHz bands
- Optional DC/AISG bypass onto ANT low band main



Ordering Options	
TTA-TWG020H	AWS/1900MHz dual band twin TMA, 60MHz BW, with low band bypass, AISG 2.0, configured with generic personality
TTA-TWG021H	AWS/1900MHz dual band twin TMA, 60MHz BW, with low band bypass, AISG 2.0, DC/AISG bypass onto ANT low band Main
RF Characteristics	
Downlink 1900 (TX) Path	
Pass-band	1930-1990 MHz
Insertion loss	0.5 dB typical
Return loss, all ports	18 dB min
Maximum input power	160 W (average) / 2kW (PEP)
Intermodulation at antenna port	< -153 dBc (3rd order) in RX band with 2x20W carriers
Uplink 1900 (RX) Path	
Pass-band	1850-1910 MHz
Gain	12 dB nominal
Gain variation over frequency, temperature	±1 dB maximum
Return loss	18 dB minimum operating, 12 dB in bypass
Noise Figure	1.4 dB typical
Bypass loss	2.5 dB typical
Output IP3	+28 dBm typical
Maximum input power with no damage	+12 dBm
Downlink AWS (TX) Path	
Pass-band	2110-2170 MHz
Insertion loss	0.4 dB typical
Return loss	18 dB minimum
Maximum input power	160 W (average) / 2kW (PEP)
Intermodulation at antenna port	< -163 dBc max, (7th order) in RX band with 2x20W carriers
Uplink AWS (RX) Path	
Pass-band	1710-1770 MHz
Gain	12 dB nominal
Gain variation over frequency, temperature	±1 dB maximum
Return loss	18 dB minimum operating, 12 dB in bypass
Noise figure	1.3 dB typical
Bypass loss	2.5 dB typical
Output IP3	+28 dBm typical
Maximum input power with no damage	+12 dBm

Quoted performance parameters are provided to offer typical or range values only and may vary as a result of normal manufacturing and operational conditions. Extreme operational conditions and/or stress on structural supports is beyond our control. Such conditions may result in damage to this product. Improvements to product may be made without notice.

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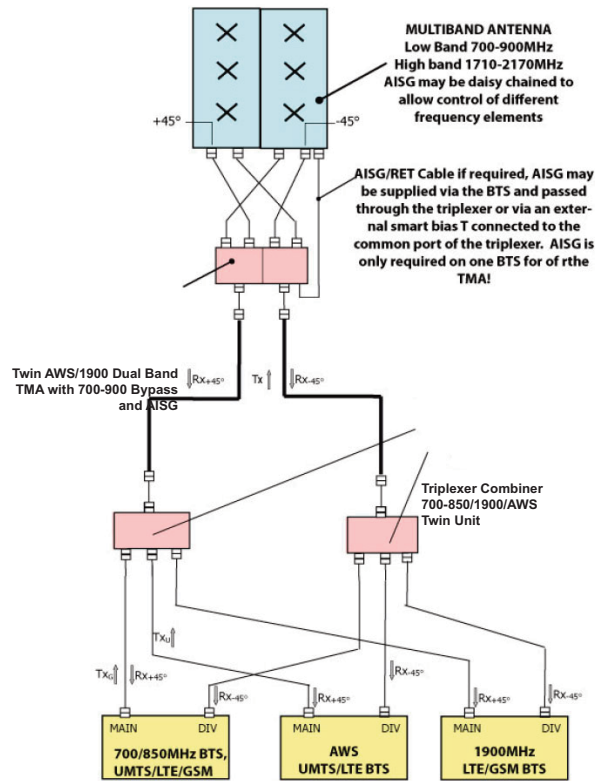
RF Characteristics	
Low Band Bypass Path	
Pass-band	698-960 MHz
Insertion loss	0.2 dB typical
Return loss	18 dB minimum
Maximum input power	120 W (average) / 2kW (PEP)
Intermodulation at antenna port	-153 dBc, (3rd order) with 2x20W carriers
General Characteristics	
Impedance	50 Ohms
Current Alarm Mode (Default Mode Selected on the Absence of AISG Packets)	
Current window alarm mode (CWA) is the default TMA operating mode and can be configured to specific customer requirements. The generic personality is configured so that both channels are independently powered and monitored via the respective BTS port. The BTS port sinks additional current to indicate an alarm state in its uplink path. Normal operating and alarm current values are configured independently and can be altered via a field-loadable personality file.	
DC supply voltage	7.5 to 30 V DC, case is DC ground
Supply current, normal operation (TTA-TWG020H)	150 ± 15 mA per port
Supply current, alarm mode (TTA-TWG020H)	200 ± 20 mA per port for (programmable)
DC supply current, alarm mode programmable range	150-250 mA, programmable with 100mA normal operating current
AISG Mode of Operation (Auto Selected on Valid AISG 2.0 Frames)	
AISG signals can be applied to either BTS1 or BTS2 port. The TMA unit switches to AISG mode when valid frames are detected on one of the BTS ports. Both LNAs take DC power from the port with AISG frames or, if DC is present on both ports, both channels supply equal power to the TMA.	
DC supply voltage	+7.5V to +30V DC
AISG version	2.0
Supply current, AISG mode	265 mA at 7.5V, 75 mA at 30V typical
AISG connector, current rating	IEC60130-9, 8-pin female, < 4A peak, 2A continuous, pin 6
Field firmware, upgradable	Yes
Environmental Characteristics	
Operating temperature range	-40°C to +65°C / -40°F to +149°F
Ingress protection	IP67
Lightning protection RF port	±5kA max (8/20us)
Lightning protection AISG port	±2kA max (8/20us) IEC61312-1
MTBF	> 1,000,000 hours
Compliance	EMC: EN301 489, ETSI EN 300 019 class 4.1, RoHS
Mechanical Characteristics	
Dimensions	See Mechanical Diagram (following page)
Weight	10.5 kg / 23.1 lbs
Connectors	6 x 7/16, EDIN Female, 1 x AISG Female
Finish	Painted, light grey (RAL7035)
Mounting & Installation	Pole / wall bracket supplied with two metal clamps for 45-178 mm (1.8-7.0 in) diameter poles.

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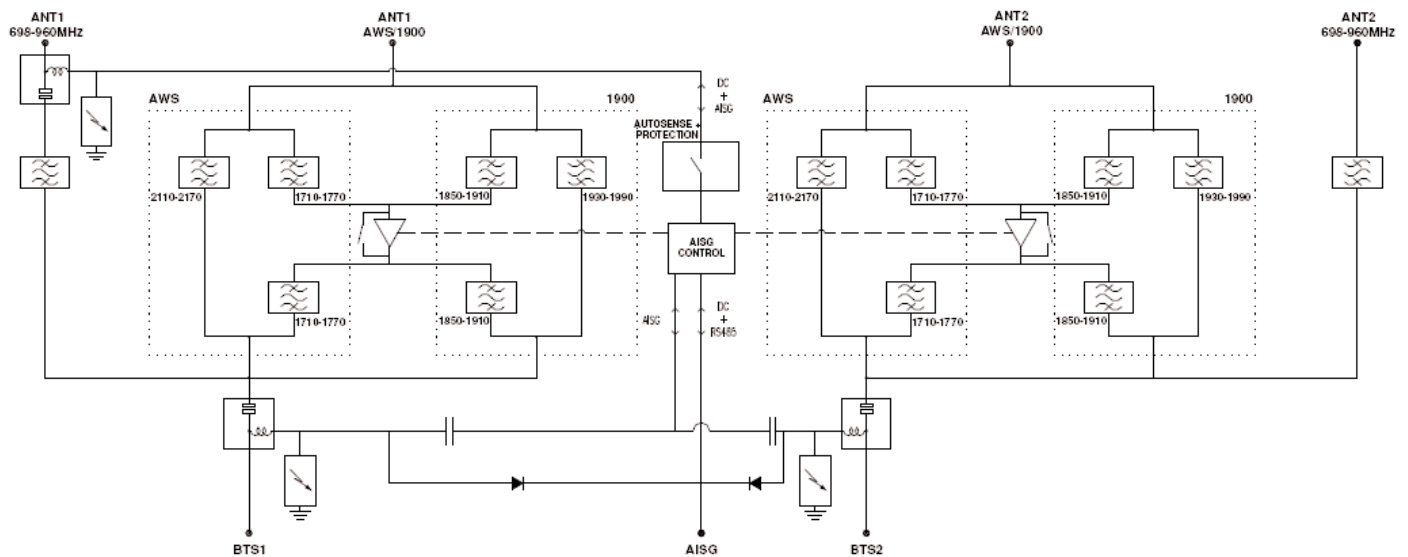
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System Block Diagram



Electrical Block Diagram (TTA-TWG021H)

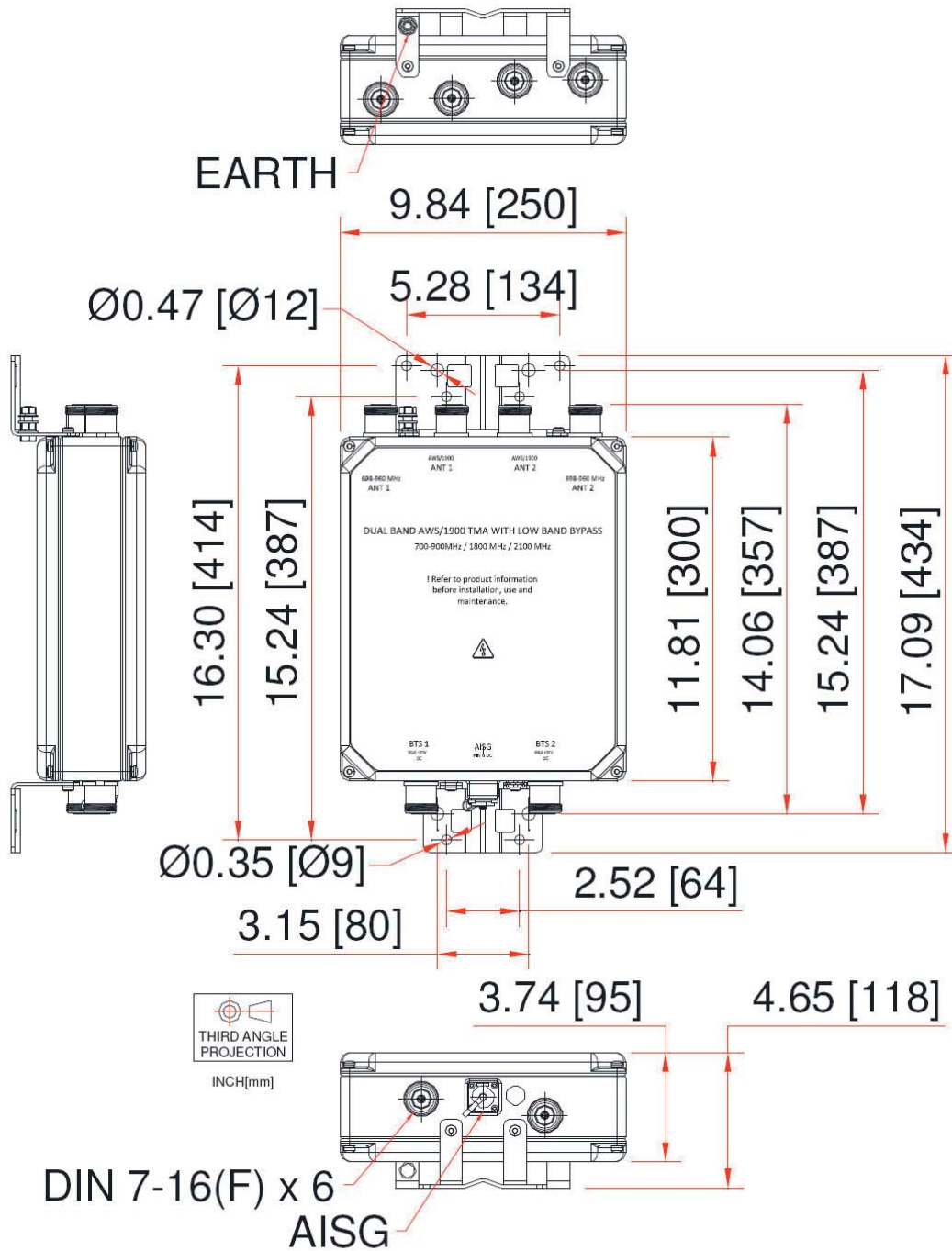


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Mechanical Block Diagram



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