

TTA-CBG020J

Single Band 700 MHz TMA with 850 MHz Bypass | Twin Unit | AISG v2.0

- Designed to be used at co-located 700 and 850 MHz sites. Provides internal duplexing of the two bands
- Provides gain in the 700 MHz uplink plus a low loss 850 MHz bypass
- Excellent noise figure performance and linearity
- Suitable for 10 MHz LTE signal centered on 751/782 MHz
- AISG v2.0 compatible, fully software upgradable using AISG “personality” upload
- Rejection of the North American public safety band rejection allows co-location



Ordering Options		
Part Number	Description	
TTA-CBG020J	Twin 700 MHz TMA with 850 MHz Bypass, DC/AISG Pass and DC Autosensing on ANT Main, Configured with Generic Personality	
TTA-CBG020J-1	Twin 700 MHz TMA with 850 MHz Bypass, Configured with Generic Personality	
TTA-CBG020J-2	Twin 700 MHz TMA with 850 MHz Bypass, with AISG “-2” denotes different AISG Personality	
RF Characteristics		
Downlink (TX) Path		
Pass-Band	746.5 - 755.5 MHz (10 MHz LTE Signal Centered on 751 MHz)	
Insertion Loss	0.25 dB Typical	
Return Loss, All Ports	24 dB Typical	
Maximum Input Power	200 W (average) / 2kW (PEP)	
Intermodulation at Antenna Port	< -155 dBc with 2x20W carriers (in RX Band) <-153 dBc 3rd Order	
Group Delay MAX in C Block	25 ns	
Group Delay MIN in C Block	5 ns	
Group Delay Variation in C Block	10 ns Typical	
Uplink (RX) Path		
Pass-Band	777.5 - 786.5 MHz (10 MHz LTE Signal Centered on 782 MHz)	
Gain	13 dB Nominal	
Gain Variation over Frequency, Temperature	±1 dB Max	
Gain Adjustment	3 dB to 13 dB in 1 dB Steps (Controlled by AISG Commands)	
Noise Figure	1.4 dB Typical at 13 dB Gain	
Return Loss	at 13 dB	24 dB Typical
	at 8 dB	22 dB Typical
	at 6 dB	20 dB Typical
	at 4 dB	20 dB Typical
Return Loss in Bypass	14 dB Typical	
Bypass Loss	3.0 dB Typical	
Output IP3	+30 dBm Typical	
Maximum Input Power with no Damage	+12 dBm Max	
RX in Filter Rejection 763-755 MHz	50 dB Min	
Group Delay MAX in C Block	500 ns	
Group Delay MIN in C Block	100 ns	
Group Delay Variation in C Block	300 ns Typical	

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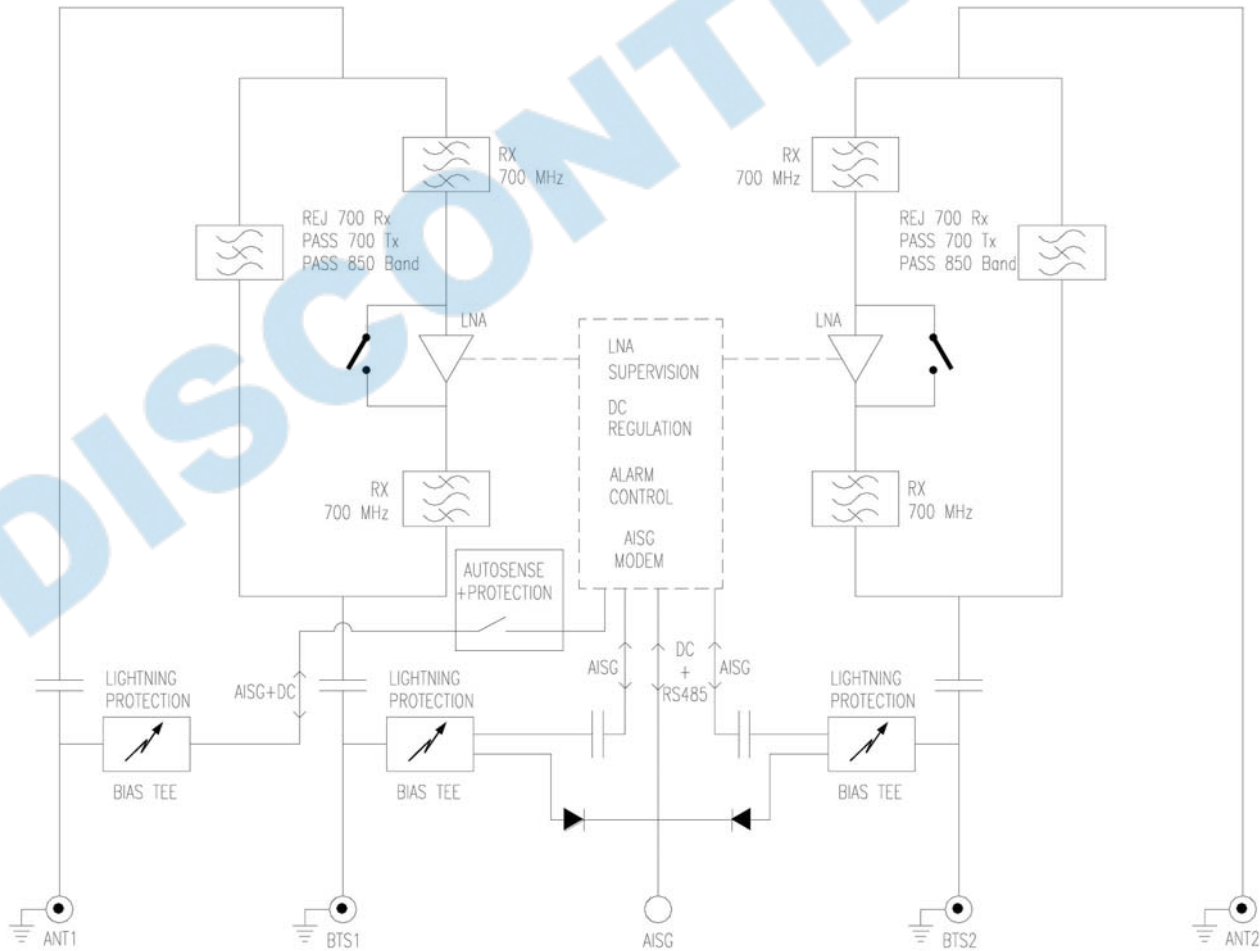
RF Characteristics				
850 MHz Bypass Path				
Pass-Band	824-894 MHz			
Insertion Loss	0.2 dB Typical			
Return Loss	24 dB Typical			
Maximum Input Power	300 W (average) / 3kW (PEP)			
Intermodulation	< -153 dBc with 2x20W Carriers, 3rd Order			
Group Delay MAX in U/L and D/L	10 ns			
Group Delay MIN in U/L and D/L	2 ns			
Group Delay Variation in U/L and D/L	1 ns Typical			
General Specifications				
Impedance	50Ω			
Current Alarm Mode (DEFAULT MODE SELECTED ON THE ABSENCE OF AISG PACKETS)				
<p>Current window alarm mode (CWA) is the default operating mode and can be configured to specific customer requirements. The generic personality (CBG020J-1) is configured so that both channels are independently powered and monitored via their respective BTS port. The BTS port sinks additional current to indicate an alarm state in its uplink path. The autosensing switch is open in CWA mode and no DC is passed to ANT1. Normal operating and alarm current values are configured independently via a field-loadable personality file.</p>				
DC Supply Voltage	8.5 to 30V DC, Case is DC Ground			
DC Supply	Each BTS Port Powered Individually (Programmable)			
Supply Current, Normal Operation	185mA Max. Typ. 150mA Per Port			
Supply Current, Alarm Mode	220 ±20 mA Per Port (Programmable)			
AISG Mode of Operation (AUTO SELECTED ON VALID AISG V2.0 FRAMES)				
<p>AISG signals can be applied to either BTS1 or BTS2 ports. 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 the AISG frames or, if DC is present on both ports power will be supplied equally between the ports.</p>				
DC Supply Voltage	+8.5V to +30V DC			
Version	2.0 (1.1 Optional)			
Supply Current, AISG Mode	300mA at 8.5V, 100mA at 30V Typical			
AISG Connector, Current Rating	IEC60130-9, 8-Pin Female, <4A Peak, 2A Continuous, Pin6			
Field Firmware Upgradable	Yes			
AISG Pass Through to Antenna Port	Yes			
Autosensing Function on ANT1 Port (TTA-CBG020J, AISG MODE ONLY)				
<p>When a valid AISG signal is applied to either of its BTS ports, the TTA-CBG020J enters AISG mode and applies DC/AISG to the ANT1 port. If a low resistance is detected, DC is disconnected from the ANT1 port. The autosensing switch is open in CWA mode and no DC is passed to the ANT1 port.</p>				
Mode of Operation	Current Draw on ANT1 Port	Assumption	"Autosense & Protection" Switch Status	Comment
CWA Mode	Any	Unit in CWA mode	Open	No DC will be passed on to ANT1
AISG Mode	Current <4A	Device present of open circuit on ANT1 Unit in AISG mode	Close	AISG signal (sub-carrier) will be supplied thru to ANT1
AISG Mode	Current >4A	DC short circuit or low DC resistance on ANT1 port	Open	Attempts made periodically to reconnect. TTA-CBG020J will operate in AISG mode

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Environmental Characteristics	
Temperature	40° C to +65° C (-40° F to +149° F)
Environmental Sealing	IP67
Altitude	3000m (10,000 ft)
Lightning Protection	IEC613121-1, RF: ±5kA max (8/20us), AISG: ±2kA max (8/20us)
MTBF	> 1,000,000 hours
Compliance	EMC: EN301 489, ETSI EN 300 019 class 4.1, RoHS
Mechanical Characteristics	
Dimensions (Height x Width x Depth)	Refer to Mechanical Block Diagram
Weight	12 kg (26.4 lbs) Estimated
Finish	Powder coated, light grey (RAL7035)
Connectors	4x Long Shank 7/16-DIN Female, 1x AISG Female
Mounting	Pole / Wall Bracket Supplied with Two (2) Metal Clamps for 45-178 mm (1.8-7.0) Diameter Poles
Electrical Block Diagram	

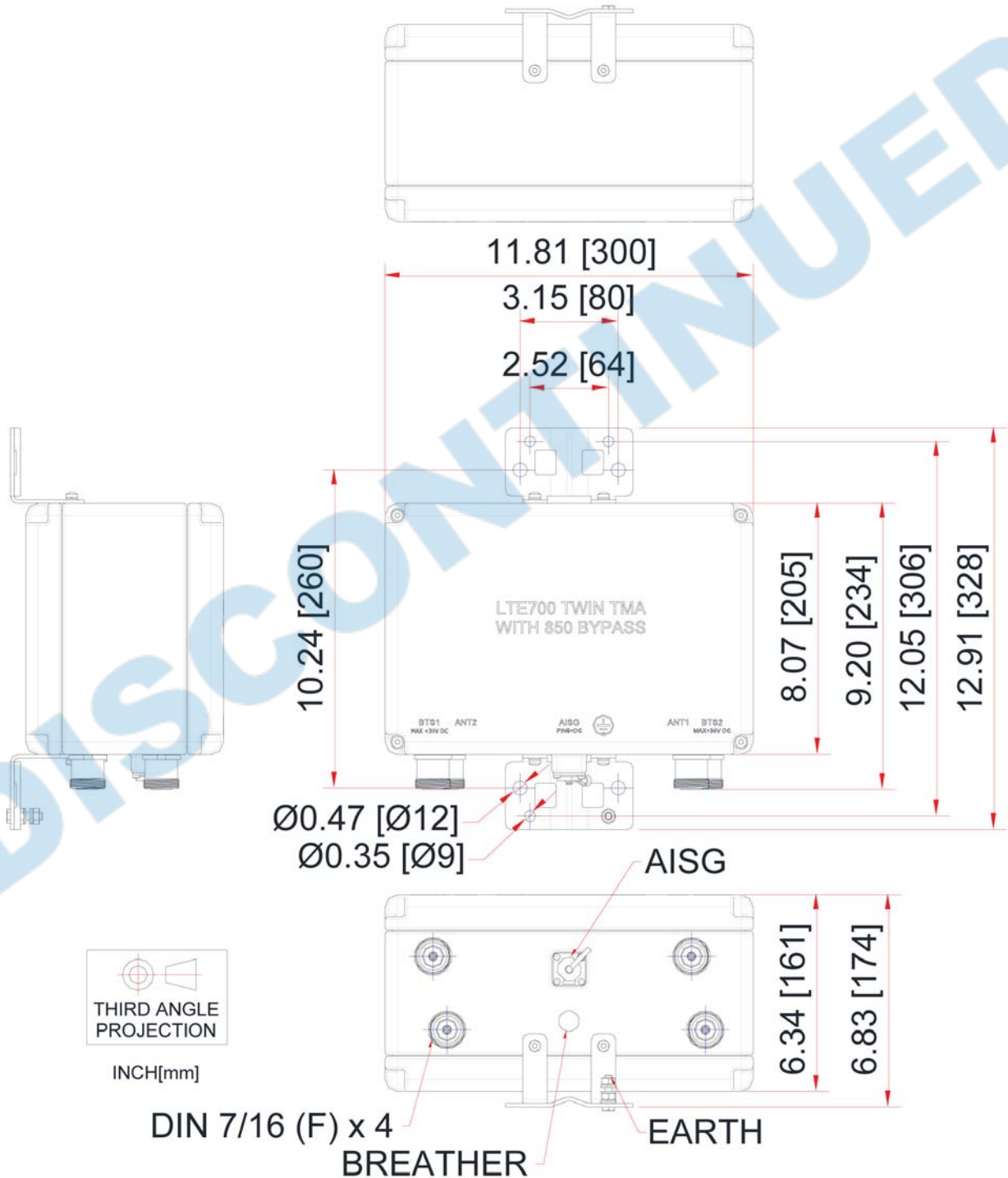


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Mechanical Block Diagram



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