

TMA2092

TWIN TMA 700H, LOWPASS

Designed to be deployed in co-located 700 and 850MHz networks the Kaelus TMA2092 provides gain in the 700MHz uplink plus a low loss 850MHz bypass. Internal duplexing of the two bands minimizes hardware costs and the number of components at the top of the tower.

FEATURES

- Improved base station sensitivity through excellent noise figure performance and linearity
- Suitable for 10MHz LTE signal centered on 751/782MHz
- AISG 2.0 compatible, fully software upgradable using AISG “personality” upload
- Rejection of the North American public safety band rejection allows co-location



TECHNICAL SPECIFICATIONS

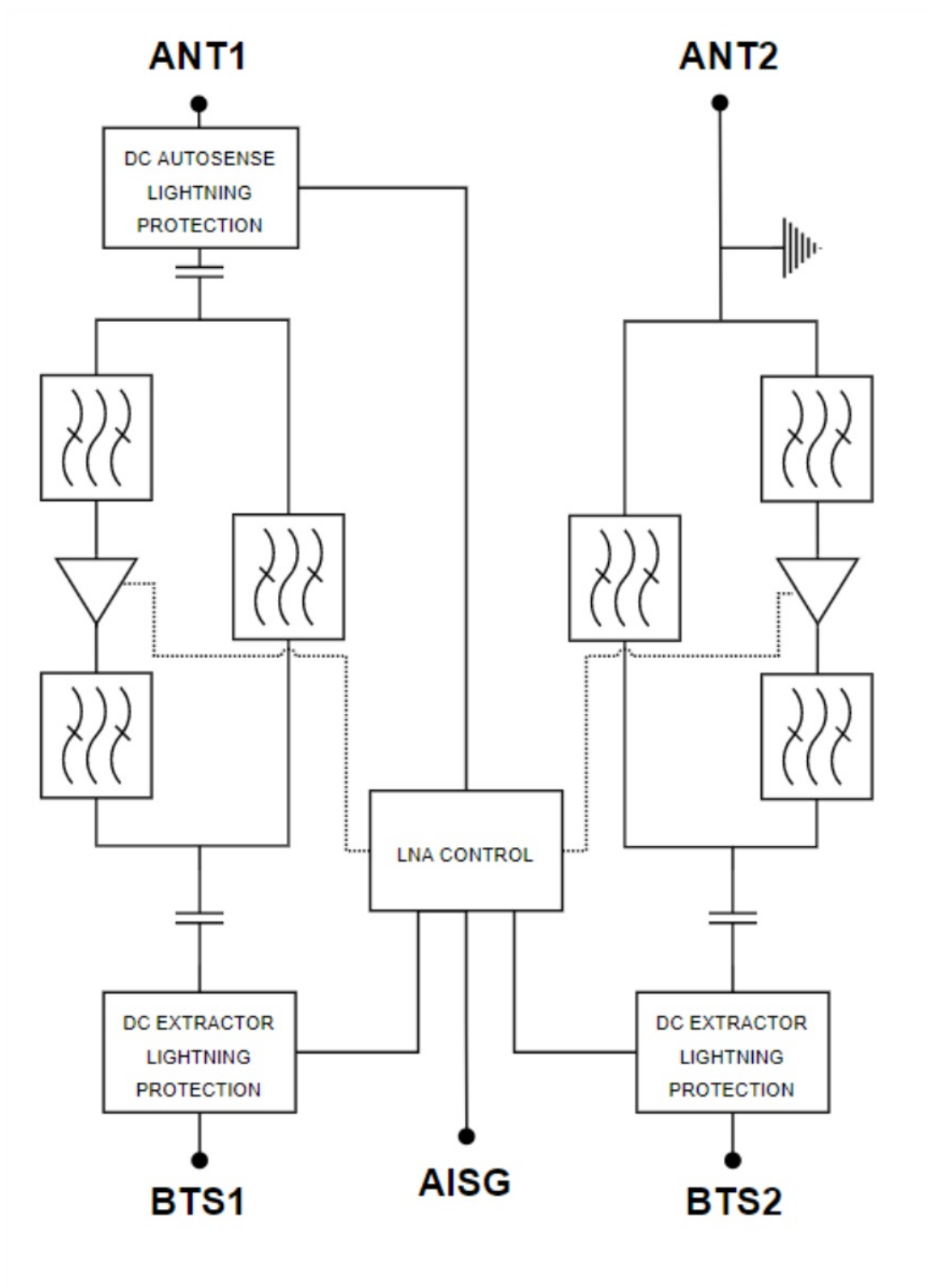
DOWNLINK (TX) PATH	
Passband	746.5 - 755.5MHz (10MHz LTE signal centered on 751MHz)
Return loss	24dB typical
Insertion loss	0.25dB typical
Group delay variation	10ns typical in C block
Absolute group delay	25ns maximum, 5ns minimum in C block
Maximum input power with no damage	200W (average) / 2kW (PEP)
Intermodulation @ antenna ports	-161dBc typical / <-155dBc maximum in RX band with 2 x 20W carriers -161dBc typical / <-153dBc 3rd order
UPLINK (RX) PATH	
Passband	777.5 - 786.5MHz (10MHz LTE signal centered on 782MHz)
Nominal gain	13dB, adjustment 3dB to 13dB in 1dB steps (controlled by AISG commands)
Gain variation over frequency, temperature	± 1dB maximum
Noise figure	1.4dB typical @ 13dB gain
Return loss	24dB typical @ 13dB gain 22dB typical @ 8dB gain 20dB typical @ 6dB gain 20dB typical @ 4dB gain 14dB typical in bypass
Bypass loss	3dB typical
Group delay variation	300ns typical in C block
Absolute group delay	500ns maximum, 100ns minimum in C block
Output IP3	+30dBm typical
Maximum input power with no damage	+12dBm maximum
RX in filter rejection 763 – 775MHz	50dB minimum
850MHZ BYPASS PATH	
Passband	824 - 894MHz
Return loss	24dB typical
Insertion loss	0.2dB typical
Group delay variation	1ns typical in U/L and D/L
Absolute group delay	10ns maximum, 2ns minimum in U/L and D/L
Maximum input power with no damage	300W (average) / 3kW (PEP)
Intermodulation @ antenna ports	-161dBc typical / <-153dBc with 2 x 20W Carriers, 3rd Order

ELECTRICAL				
Impedance	50ohms			
POWER SUPPLY AND ALARM (CURRENT WINDOW ALARM MODE, DEFAULT)				
Current window alarm mode (CWA) is the default operating mode and can be configured to specific customer requirements. The generic personality (F00Vx) 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. Please contact Kaelus for more information.				
DC supply voltage	8.5 to 30V DC, case is DC ground			
DC supply	Each BTS port powered individually (programmable)			
DC supply current, normal mode	185mA maximum. 150mA per port typical			
DC supply current, alarm mode programmable range	220 ± 20mA per port			
AISG MODE OF OPERATION (AUTO SELECTED ON VALID AISG 2.0 FRAMES)				
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 LNA's 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.				
DC supply voltage	+8.5V to +30V DC			
AISG version	2.0 (1.1 optional)			
Supply current, AISG mode	300mA @ 8.5V, 100mA @ 30V typical			
AISG connector, current rating	IEC60130-9, 8-pin female, < 4A peak, 2A continuous, pin 6			
Field firmware upgradable	Yes			
AISG pass through to antenna port	Yes			
AUTOSENSING FUNCTION ON ANT 1 PORT				
When a valid AISG signal is applied to either of its BTS ports, the TMA enters AISG mode and applies DC/AISG to the ANT1 AISGOUT port. If a low resistance is detected, DC/AISG is subsequently disconnected from the ANT1 AISGOUT port. In CWA mode, the autosensing switch is open and no DC is passed to the ANT1 AISGOUT port.				
Mode of operation	Current draw on ANT1 AISGOUT port	Assumption	"Autosense + Protection" switch status	Comment
CWA mode	Any	Unit in CWA mode	Open	No DC will be passed on to ANT1 AISGOUT
AISG mode	Current<4A	Device present or open circuit on ANT1 AISGOUT, Unit in AISG Mode	Close	AISG signal (sub-carrier) will be supplied thru to ANT1 AISGOUT
AISG mode	Current >4A	DC short circuit or low DC resistance present on ANT1 AISGOUT port	Open	Attempts are made periodically to re-connect. The TMA will operate in AISG mode.
ENVIRONMENTAL				
For further details of environmental compliance, please contact Kaelus.				
Temperature range	-40° to +65°C -40° to +149°F			
Ingress protection	IP67			
Altitude	3,000m 10,000ft			
Lightning protection	IEC61312-1, RF: ±5kA maximum (8/20us), AISG: ±2kA maximum (8/20us)			
MTBF	>1,000,000 (hours)			
Compliance	EMC:EN301 489, ETSI EN 300 019 class 4.1, RoHS			
MECHANICAL				
Feature	TWIN		QUAD	
Dimensions H x D x W	300 x 205 x 161mm 11.81 x 8.07 x 6.34in (excluding brackets and connectors)		300 x 205 x 335mm 11.81 x 8.07 x 13.19in (excluding brackets and connectors)	
Weight	12.5kg 26.7lbs		31.5Kg 69.45lbs	
Finish	Painted, light grey (RAL7035)			
Connectors	DIN 7-16 (F) long neck, AISG (F)			
Mounting	Pole/wall bracket supplied with two metal clamps 45-178mm diameter poles			

ORDERING INFORMATION

PART NUMBER	CONFIGURATION	OPTIONAL FEATURES	CONNECTORS
TMA2092F02V3-1	TWIN 2 in / 2 out	Configured with generic personality	DIN 7-16 (F)
TMA2092F02V3-2	QUAD 4 in / 4 out	Configured with generic personality	DIN 7-16 (F)
TMA2092FxxV1-1	TWIN 2 in / 2 out	xx denotes different AISG personality	DIN 7-16 (F)

ELECTRICAL BLOCK DIAGRAM



MECHANICAL BLOCK DIAGRAM

