

FEATURES

- Innovative CHPA (Combined HPA) Architecture
- Technology: GaN and LDMOS Solid State
- Frequency Range: 850-942MHz P-Band
- High Peak Power: 30kW
- Outstanding Power Density: 20kW/ft³
- Pulse Operation: 64μs and 5%
- Excellent Power Efficiency: 40% Typical
- Output Survivability: ∞ VSWR
- RF Interface: 7/16 DIN Output/TNC Input
- I/O Interface Protocol: RS-485
- Unprecedented Availability: 99.99%
- Outstanding Reliability: 80kHRs MTBCF
- Excellent Maintainability: Graceful Power Degradation and Hot-Swap Capability

DESCRIPTIONS

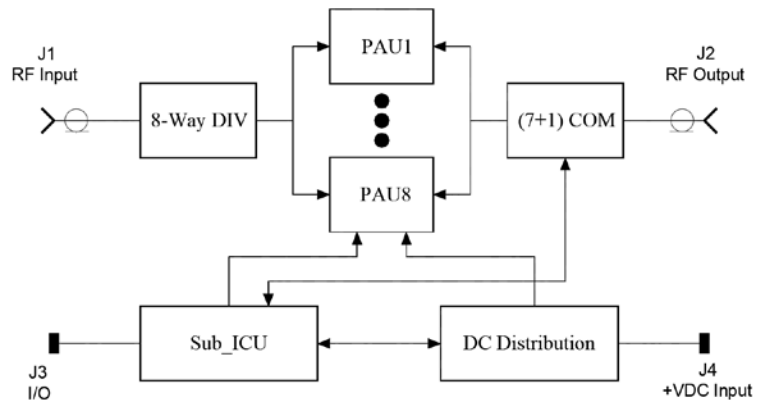
CTX09651 is a P-Band Solid State CHPA utilizing Daico's patented (m+n)ART™ High Power SSTx architecture, which enables both high power density and high reliability. CTX09651 CHPA is a custom designed high power building block that shall be capable of delivering 30kW peak power at 850-942MHz frequency range for a shipboard Radar transmitter application. This uniquely configured CHPA supports 24/7 mission critical operation and demonstrates unprecedented availability, reliability, and maintainability. (m+n)ART™ is a scalable and flexible solid state transmitter architecture achieving hundreds of kW power at frequency range up to C-Band. Daico's innovative solid state CHPA solution truly outperforms the legacy Klystron and TWT.

The RF chain of CTX09651 CHPA consists of 8 interchangeable 4.2kW Power Amplifier Units (PAU) as a local replaceable unit (LRU). The proprietary intelligent (7+1) Combiner (COM) supports automatic fail-over, graceful power degradation, and hot swap operations. During the nominal (7+1) operation, CTX09651 CHPA sub-system interface control unit (Sub_ICU) monitors 7 on-line PAUs and automatically fails-over to the standby PAU when a failure is detected. The CHPA shall continue to operate in degraded power when more than one PAUs fail. (m+n)ART™ achieves uninterrupted operation and demonstrates outstanding output VSWR in all operation modes.

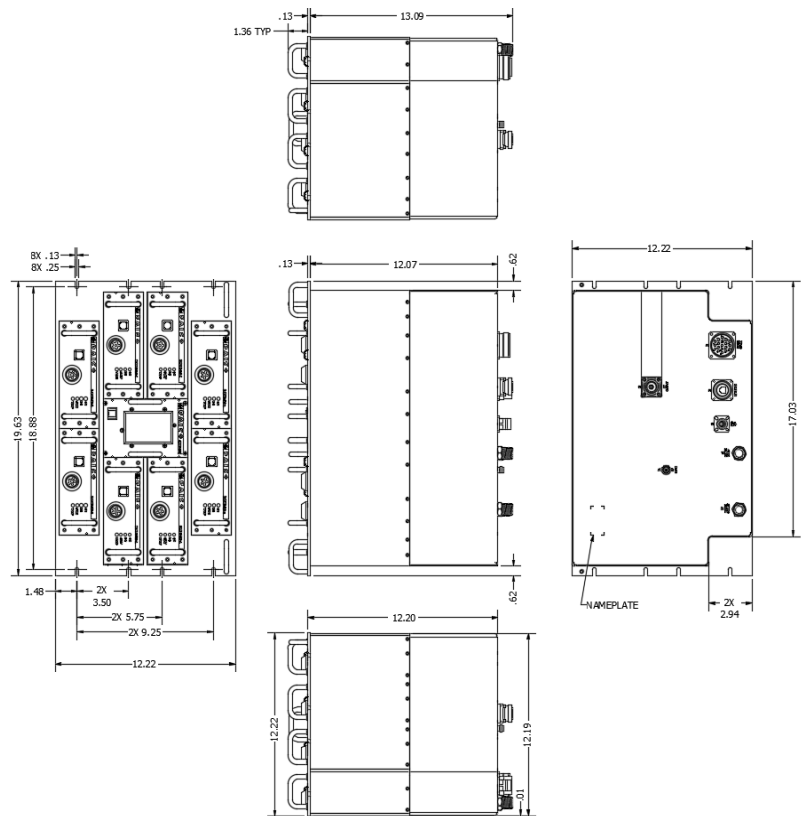


APPLICATIONS: P-Band Pulse High Power Building Block

FUNCTIONAL BLOCK DIAGRAM



OUTLINE DRAWINGS



CTX09651 850-942MHz/30kW Solid State Combined HPA

Product Specification

Parameter	Value			Unit	Comments
	Min	Typical	Max		
Electrical					
Operating Frequency	850		942	MHz	Upper and Lower -1dB Point
RF Input Power, peak		50.0 (100W)	51.0	dBm	Nominal Output Power
Linear Dynamic Range	10			dB	>25dB gain at 37dBm
RF Output Power, peak	74.47 (28kW)	74.77 (30kW)	75.5	dBm	2μS pulse width
			75.2		50μS pulse width
RF Output Power, avg.	1.26	1.35	1.49	kW	50μS 4.5% duty factor
Harmonic Output	2 nd	30		dBc	
	3 rd	40			
	Others	50			
Spurious Output	60			dBc	962-1212MHz
Input/Output VSWR			1.5:1		14dB return loss minimum
Output VSWR Survival		∞ :1			
Pulse Width	2	50	64	μS	Protection: >68±1μS
Pulse Duty Factor		4.5%	5.0%	%	Protection: >(5.4 ± 0.2)%
Rise/Fall Time	80		800	nS	10% to 90%/90% to 10% power points
Pulse Droop		0.1	0.25	dB	10% to 90% of 32μS pulse
Pulse Phase Variation		4	6	degree	10% to 90% of 50μS pulse
Pulse-Pulse Amp. Stability		0.01	0.015	dB	rms at 32μS
Pulse-Pulse Phase Stability		0.03	0.04	degree	rms at 32μS
Power Efficiency	38	40		%	
Primary Power (+50V) maximum Current		65.0	70.0	A	50μS 4.5%
Secondary Power (6.8V) maximum Current			2.0	A	
Physical and Thermal					
Outline Dimensions	12.20" x 18.38" x 12.20"			Inches	Nominal L x W x H
Weight			175	Lbs	
Connectors	RF Input, J1	TNC plug			
	RF Output, J2	7/16 DIN			
	I/O, J3	RJ-45			
	DC Input, J4	MIL CIRCULAR			

Typical Performance: Contact Daico Sales