

# THORIUM

S P A C E T E C H N O L O G Y



## Full Ka-band operation

Dedicated operating frequency range of BFICs for ground and satellite versions in Ka-band,

17.7 GHz - 21.2 GHz Receive Frequency (Ground Version),  
Transmit Frequency (Satellite Version)

27 GHz - 31 GHz Transmit Frequency (Satellite Version),  
Receive Frequency (Ground Version)

Highest output power at 1 dB compression point,

Low noise figure,

High resolution of gain and phase control,

Simultaneous dual-beam operation

Highly integrated featuring built-in frequency conversion

Designed to be easily integrated with existing  
L band modem RF interfaces

On-board Beam Book for fast beam switching

Parallel or daisy-chain control for PCB design flexibility



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SPACE TECHNOLOGY

RX performance				
	Metric	Unit	Space side	Ground side
Architecture	Frequency Range	GHz	27-31,5	17.7-21.2
	Number of Beams	#	2	2
	Number of Channels	#	8	8
RX Channel Metrics	Single-Channel RX Gain	dB	> 30	>30
	Single-Channel RX NF	dB	2,44	1,82
	Single-Channel OP1dB	dBm	-2	-3
	Channel Phase Shift Resolution	bits	6	6
	Channel Attenuator Resolution	bits	6	6
	Channel Attenuator Range	dB	16	16
	Common Attenuator Resolution	bits	6	6
	Common Attenuator Range	dB	16	16
UDC	UDC Integrated		Yes	Yes
	IF Frequency	GHz	5	5
	IF Bandwidth	GHz	>2	>2
	Image Rejection	dB	>30	>30
Power Consumption	total in Full-Array mode (8CH and 2 Beams)	mW	1200,0	1200,0
LO Path	Multiplication factor	#	x2 and x4	x2 and x4
Area	BFIC dimensions	mm x mm	5,7 x 6	5,7 x 6

TX performance				
	Metric	Unit	Space side	Ground side
Architecture	Frequency Range	GHz	17.7-21.2	27-31,5
	Number of Beams	#	2	2
	Number of Channels	#	8	8
TX Channel Metrics	TX Gain	dB	>30	> 30
	OP1dB per Channel	dBm	22	22
	TX Efficiency at OP1dB	%	> 20%	>20
	Channel Phase Shift Resolution	bits	6	6
	Channel Attenuator Resolution	bits	6	6
	Channel Attenuator Range	dB	16	16
	Common Attenuator Resolution	bits	6	6
	Common Attenuator Range	dB	16	16
UDC	UDC Integrated		Yes	Yes
	IF Frequency	GHz	5	5
	IF Bandwidth	GHz	>2	>2
	Image Rejection	dBc	>30	>30
Power Consumption	total in Full-Array mode (8CH and 2 Beams)	W	4,0	4,3
LO Path	Multiplication factor	#	x2 and x4	x2 and x4
Area	BFIC dimensions	mm x mm	5,7 x 6	5,7 x 6

