

CST88



The CST88 is a compact satellite transceiver that provides 88 Kbps bi-directional data transfer for Comms-on-the-move. The CST88 module works with the Iridium® satellite constellation and provides real-time data service to any location on the globe. Because Iridium is a Low-Earth Orbit constellation, the link margins to maintain a full speed connection can be done with small omni-directional antennas, eliminating the need for satellite tracking or high-power transmitters. Jacobs has produced this transceiver under a license agreement with Iridium and is offering a device that uniquely sits at a midpoint between Iridium's narrowband and high bandwidth products. Speeds of up to 88 Kbps provide enough bandwidth to support full motion video, multiple voice channels, or just a data stream in a size, weight, and power (SWaP) that can support man-portable, unattended sensors, UAV, and other SWaP sensitive applications. The CST88 module will work with both the Iridium commercial network and the dedicated Enhanced Mobile Satellite System (EMSS) for use by the U.S. Government and FVEY partners.

Detailed Capabilities

- Transceiver module for "medium speed" secure IP applications
- Background IP connectivity
- SWaP, packaging flexibility, QRC focused leveraging Iridium Certus® 9770 module
- Regulatory and Iridium certified
- Small passive omni-directional antenna
- Jacobs can support modem sales to approved Government customers and/or application integration (e.g. application processor interface)
- Physical or soft-SIM supported on application board level
- Future data messaging service called Iridium Messaging TransportSM
- Future telephony interface
- Multiple IP data streams and high-quality voice via 88Kbps bi-directional link available anywhere around the globe

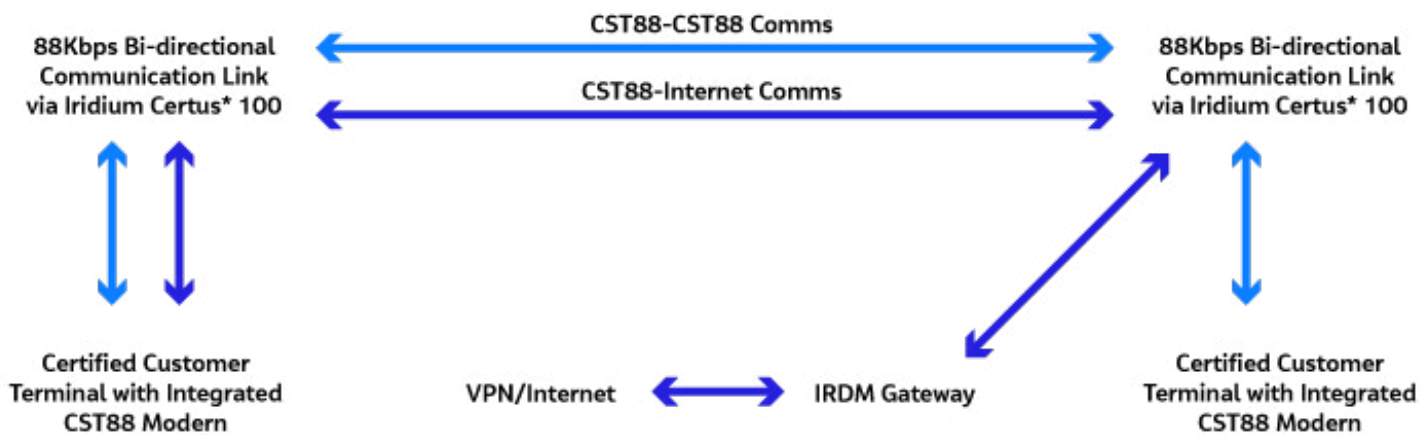


Availability

CST88 is currently under development and not yet approved by the FCC and is therefore not available for sale. This datasheet is intended to provide preliminary information and is subject to change without notice. Jacobs anticipates completing regulatory testing in Spring 2023, with units tentatively becoming available for purchase in Summer 2023.

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Target Specifications

Type	Parameter	Units	Module	Notes
SWaPw	Size	Millimeters	165 L x 114 W x 19 H (nominal)	CST88 module only (requires hockey puck passive antenna)
	Weight	Grams	450 (nominal)	
	Power	VDC/W	10-30 VDC/10 Watts (avg)	During continuous RX/TX
Environmental	Operating Temperature	Celsius	-40 to +65	
	Shock	G	10 G Peak Shock/ axis 11 ms	
	Vibration	G	10Hz to 40Hz	6 dB per octave roll-off
RF Characteristics	Frequency	MHz	1616 to 1626.5	Iridium Band
	Modulation	N/A	QPSK	
	RX/TX Duplexing	N/A	TDMA/FDMA	
	EIRP	dBW	9 dBW Avg; 15 dBW Peak	
	t(TX Burst)	ms	33.32 (4 x 8.33)	37% duty cycle
	t(RX Window)	ms	33.32 (4 x 8.33)	37% duty cycle
CST88 Transceiver Characteristics	t(Frame)	ms	90	Repeating L-band frame
	Mounting	each	9 x M4 screws	Positive mounting
	Input connector	N/A	50 - pin	Power & digital I/O
	Output Connector	N/A	SMB	RF connector
	PWB	N/A	Single multi-layer board	
	Case works	N/A	Machined Aluminum	RF shielding and heat conduction
Regulatory Certs	CE; IC; FCC Part 15 & 25; Iridium			

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