Lassen iQ and Lassen SQ Comparison

	Lassen iQ	**Lassen SQ**
Performance Specifications		
Number of Channels	12-Channel Simultaneous Operation	8-Channel Simultaneous Operation
Accuracy	Horizontal: < 5 meters (50%), < 8 meters (90%) Altitude: < 10 meters (50%), < 16 meters (90%) Velocity: 0.06 m/sec PPS (static): ± 50 nanoseconds	Horizontal: < 6 meters (50%), < 9 meters (90%) Altitude: < 11 meters (50%), < 18 meters (90%) Velocity: 0.06 m/sec PPS (static): ± 95 nanoseconds
Acquisition **(Autonomous Operation in Standard Sensitivity Mode)**	Reacquisition: < 2 sec. (90%) Hot Start: < 10 sec (50%), < 13 sec (90%) Warm Start: < 38 sec (50%), < 42 sec (90%) Cold Start: < 50 sec (50%), < 84 sec (90%)	Reacquisition: < 2 sec. (90%) Hot Start: < 14 sec (50%), < 18 sec (90%) Warm Start: < 38 sec (50%), < 45 sec (90%) Cold Start: < 90 sec (50%), < 170 sec (90%)

Sensitivity Modes	Two Sensitivity Modes:
	    1) Standard
	    2) Enhanced
	Default mode is Standard Sensitivity. A user command enables the Enhanced Sensitivity mode. With Enhanced mode enabled, the module automatically switches to higher sensitivity when satellite signals are weak. In the enhanced sensitivity mode extended TTFF times are expected.
		One Sensitivity Mode: Standard

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Aided GPS	Lassen iQ supports aided-GPS through TSIP Protocol for faster acquisition times. The TSIP Packet 38 permits uploading initialization data (Almanac, Health page, Ionosphere, UTC, last position and ephemeris) from an external source. This aided GPS (A-GPS) startup provides hot start performance for each power-up.	Lassen SQ supports also TSIP packet 38. However, the Ephemeris uploading process is not available on Lassen SQ.
Electrical Characteristics		
Power Consumption	86 mW, 26 mA @ 3.3 V	110 mW, 33 mA @ 3.3 V
Prime Power	Same	Same
Backup Power	Same	Same
Antenna Fault Protection	Antenna Short-circuit detection and protection & Antenna Open detection.	Antenna Short-circuit detection and protection No Antenna Open detection.
Interface Characteristics		
RF and IO Connectors	Same	Same
Serial Port	Two (2)	one (1)
Pinout	Pins 1, 2, 3, 4, 7 and 8 are the same. The pins 5 and 6 have been used for the second serial port.	Pins 1, 2, 3, 4, 7 and 8 are the same. The pins 5 and 6 are reserved.
Supported Protocols	TSIP, TAIP, NMEA 0183 v3.0, RTCM SC-104	TSIP, TAIP, NMEA 0183 v3.0
DGPS Support	Available	Not Available

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Physical and Environmental Specifications		
Dimensions	Same	Same
Operating Temperature	Same	Same
Storage Temperature	Same	Same
Vibration	Same	Same
Operating Humidity	Same	Same
Part Numbers		
Module Part number	46240-10	46240-00
Starter Kit Part Number	51099-00	47225-00
Antenna Transition Cable, MCX	47274	47274
Antenna Transition Cable, SMA	49894-05	49894-05
Ultra-Compact Embedded Antenna	45336-00	45336-00
Compact Unpackaged Antenna	39265-51	39265-51
Compact Magnetic-Mount Antenna, MCX or SMA	39265-50	39265-50