



LOW-POWER  
SINGLE-BOARD  
COMPUTER



# DIGI RABBIT SBC LP3500 SERIES

Low-power single-board computer ideal for remote telemetry applications requiring I/O control and data logging capabilities

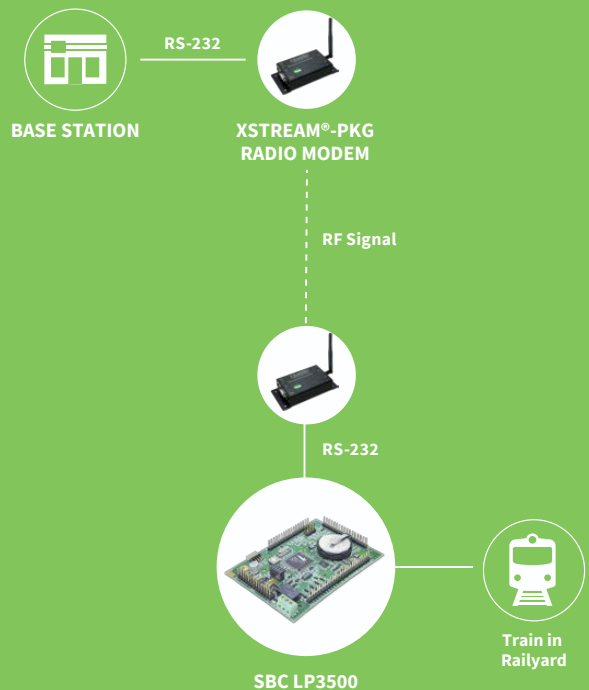
The LP3500 series features built-in analog and digital I/O which also includes 1 high current relay output capable of driving up to 1A. The board consumes less than 20 mA when fully operational and less than 100 uA when powered down. When powered by an external battery or power supply, the LP3500 series can be awakened from power save mode by an internal timer, an RS-232 signal or via polling on an external input. The LP3500 can be switched from power save mode to full operation via software control. In addition to the low-power features, the board can also function as a data logger since the battery backup feature provides worry free data storage.

Its six serial ports enable the LP3500 series to easily connect multiple devices such as Digi's XStream® 2.4 GHz RF modem, which can send and receive data up to 20 miles. Dynamic C®, an easy-to-use C environment, includes a host of sample programs and libraries that help to lower development costs and reduce time to market from months to weeks.

## BENEFITS

- Low power consumption less than 100 uA in power save mode
- 8 A/D inputs with 12 bit resolution
- Digital outputs can sink up to 200 mA
- 6 serial ports for multiple device connectivity
- 16 protected digital inputs
- 1 relay output up to 1A
- Backup battery for data protection
- Data logger

## APPLICATION EXAMPLE



## RELATED PRODUCTS



Keypad



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RF Modems



Digi Connect®  
WAN



Dynamic C®

SPECIFICATIONS		LP3500	LP3510
<b>FEATURE</b>			
<b>MICROPROCESSOR</b>		Rabbit® 3000 up to 7.4 MHz	
<b>EMI REDUCTION</b>		Spectrum spreader for ultra-low EMI (radiated emissions)	
<b>FLASH MEMORY</b>		512K (2 × 256K)	256K
<b>SRAM</b>		512K	128K
<b>BACKUP BATTERY</b>		Socketed 3V lithium coin Panasonic® CR2330, 265 mA-h, supports RTC and SRAM, connection for user-supplied external battery	
<b>KEYPAD/DISPLAY</b>		Supports optional LCD/keypad module with 7 keys and 122 × 32 graphic display	
<b>DIGITAL INPUTS</b>		16: fully protected 0–36VDC, can handle short spikes ±40V	
<b>DIGITAL OUTPUTS</b>		10: 8 sink up to 200 mA each, 36VDC max.; 2 source up to 200 mA each, 36 VDC max.	
<b>RELAY OUTPUT</b>		1 C-form, 1A, 30VDC	None
<b>ANALOG INPUTS</b>	<b>GENERAL</b>	<ul style="list-style-type: none"> <li>8 single-ended or 4 differential inputs</li> <li>1MΩ input impedance</li> <li>Sampling rate up to 200 samples/s</li> <li>8 software-controlled ranges from 0–1V to 0–20VDC</li> </ul>	None
	<b>SINGLE-ENDED</b>	<ul style="list-style-type: none"> <li>Resolution: 11 bits (8-bit accuracy)</li> <li>4 channels can be set individually for 4–20 mA</li> <li>1 channel has software-selectable voltage-monitoring option</li> </ul>	None
	<b>DIFFERENTIAL</b>	Resolution: 12 bits (9-bit accuracy)	None
<b>ANALOG OUTPUTS</b>		3 unfiltered pulse-width modulated, 1 kΩ output impedance	None
<b>SERIAL PORTS</b>		6 shared high-speed, CMOS-compatible ports: <ul style="list-style-type: none"> <li>1 RS-485</li> <li>3 RS-232 (one 5-wire plus one 3-wire or three 3-wire)</li> <li>1 logic-level serial interface for optional add-ons</li> <li>1 asynchronous clocked serial port dedicated for programming</li> </ul>	
<b>SERIAL RATE</b>		Max. asynchronous baud rate = CLK/8	
<b>REAL-TIME CLOCK</b>		Yes	
<b>TIMERS</b>		Ten 8-bit timers (6 cascadable from the first), one 10-bit timer with 2 match registers	
<b>WATCHDOG/SUPERVISOR</b>		Yes	
<b>PULSE-WIDTH MODULATORS</b>		10-bit free-running counter and 4 pulse-width registers	
<b>POWER</b>		3V to 30VDC 20 mA (max.) @ 7.4 MHz, 100 μA max. @ 2 kHz (with linear regulator turned off)	
<b>OPERATING TEMPERATURE</b>		–40° C to +70° C	
<b>HUMIDITY</b>		5% to 95%, non-condensing	
<b>CONNECTORS</b>		0.1" headers <ul style="list-style-type: none"> <li>I/O and misc. signals: one 1 × 25, two 1 × 17 headers</li> <li>Display: one 2 × 13 header</li> </ul> 2 mm headers <ul style="list-style-type: none"> <li>Programming port: one 2 × 5 header</li> <li>Serial interface: one 2 × 4 socket</li> </ul> Screw-terminal headers <ul style="list-style-type: none"> <li>Relay: one 3-position screw-terminal header</li> </ul>	
<b>BOARD SIZE</b>		2.60" × 3.65" × 0.45" (66 mm × 93 mm × 11 mm)	
<b>PRODUCT WARRANTY</b>		1 year	

PART NUMBERS	DESCRIPTION
20-101-0525	LP3500. 512K Flash/512K SRAM, analog inputs, relay
20-101-0526	LP3510. 256K Flash/128K SRAM, no analog inputs, no relay

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