



# Intuitive Circuits, LLC

“in-tu-i-tive - adj: possessing a keen and quick insight”

## Product Catalog 2011

- **Internet Appliances:** SNTP time server, designed to deliver precise time to every computer attached to your Ethernet based network.
- **On-Screen Display (OSD) Products:** Video on-screen text insertion technology for point-of-sale, GPS, and more.
- **DTMF Products:** DTMF (dual tone multiple frequency) encoders and decoders.
- **GPS Products:** Non on-screen display GPS logging devices.
- **Amateur Television (ATV) Products:** ATV products for the amateur radio hobbyist.
- **Miscellaneous Products:** Novel utility circuits.

## welcome to Intuitive Circuits...

Founded in 1998, Intuitive Circuits, LLC develops, manufactures, and sells video on-screen display, DTMF, GPS logging, and miscellaneous OEM and standalone products. The company sells to hundreds of government agencies, businesses, and hobbyists each year. Our business philosophy is simple: offer consistently high quality products with excellent documentation and support. Because we design all aspects of our products we have the ability to customize software, hardware, and packaging. If we can be of service, we invite you to contact us at any time.

- **Chris Oesterling, Owner**

## ordering from Intuitive Circuits...

Ordering is simple - just use our secure web site, phone, or fax your Order

**Phone: (248) 588-4400** (8:00 AM to 10:00 PM EST, 7 days a week)

**Fax: (248) 588-4455** (24 hours a day)

**Email: [sales@icircuits.com](mailto:sales@icircuits.com)**

**All items are in stock.** Orders are shipped the same business day if ordered before 1 PM EST.



**Payment Terms:** We accept Visa, MasterCard, American Express, Discover, prepaid check, and wire transfer. Sorry no COD's. Credit card customers should have the same bill-to and ship-to address. U.S. Postal Money Orders and U.S. Cashiers Checks are treated same as cash and will not delay shipment. All other checks may take up to 2 weeks to clear the bank before shipment. **All checks must be in U.S. dollars drawn on a U.S. bank.** Wire transfers require a \$15 fee.

**Shipping:** We only ship via **UPS**. The shipping costs are calculated at the time of shipment. **No PO boxes please.**

**Return Policy:** No returns of used equipment will be accepted. Returns of unused equipment are subject to shipping + 15% handling, retesting, and restocking charge. The purchaser must call us for authorization within 15 days of the original shipment date. Unused equipment means never connected or handled in any way that caused electrical or physical damage, or in our opinion, cannot be resold as new. All custom orders are final once shipped.

## products and prices...

(Price list effective September 15, 2010)	
Product	Price
ATVC-4 Plus <i>p.26</i>	\$349.00
Cuckoo (three antenna options) <i>p.3</i>	\$899.00- \$968.00
DTMF-4HC <i>p.20</i>	\$129.00
DTMF-8 <i>p.21</i>	\$119.00
DTMF-8 Plus (includes power supply) <i>p.22</i>	\$249.00
DTMF-ENC16 <i>p.13</i>	\$129.00
DTMF-ENC232 <i>p.24</i>	\$129.00
GeoStamp Audio (includes power supply and accessories) <i>p.25</i>	\$279.00
GeoStamp+ (choice of accessories) <i>p.11</i>	\$279.00- \$299.00
GeoStamp+ with GPS (choice of accessories) <i>p.12</i>	\$379.00- \$399.00
KeyVerter <i>p.27</i>	\$49.00
OSD-232+ <i>p.4</i>	\$99.00
OSD-232+ with Carrier Board <i>p.6</i>	\$119.00
OSD-232+ Evaluation Board (includes power supply and accessories) <i>p.5</i>	\$99.00
OSD-GPS+ <i>p.9</i>	\$119.00
OSD-GPS+ with Carrier Board <i>p.10</i>	\$129.00
OSD-ID+ with Carrier Board <i>p.13</i>	\$129.00
OSD-ID+ with Enclosure <i>p.14</i>	\$249.00
OSD-KB (specify NTSC or PAL) <i>p.15</i>	\$119.00
OSD-SSM (specify NTSC or PAL) <i>p.17</i>	\$139.00
PostMark (specify NTSC or PAL) (includes power supply) <i>p.18</i>	\$499.00
Timeframe (specify NTSC or PAL) <i>p.16</i>	\$279.00
VideoStamp+ (includes power supply and accessories) <i>p.7</i>	\$249.00
VideoStamp 8 (includes power supply and accessories) <i>p.8</i>	\$1,399.00
VIVID <i>p.19</i>	\$379.00
Cigarette plug Y Splitter	\$5.00
Replacement wall power adapter	\$9.00
Replacement cigarette plug adapter	\$7.00
S Video adapter (pair)	\$9.00

# internet appliances...




## Cuckoo™: SNTP Time Server

\$899.00/\$968.00

### Description:

Cuckoo™ is an inexpensive yet robust SNTP time server, designed to deliver precise time to every computer attached to your Ethernet based network. Cuckoo's primary time source is derived from GPS. Configuring Cuckoo is very simple and straightforward.



Option	Description	Price
	A magnetic-mount antenna with 15 foot (5 meter) cable	\$899.00
	A marine-grade pole-mount antenna with 50 foot (15 meter) cable	\$899.00
	A marine-grade pole-mount antenna with 100 foot (30 meter) cable	\$968.00

### Specifications:

- Large and legible LCD display with backlight
- Fully user-customizable time display
- Provides SNTP, TIME, and DAYTIME network time protocols
- Compatible with NTP clients
- GPS time source; includes GPS antenna
- Time accurate to +/- 1 millisecond
- Time-zone and Daylight Savings auto-set (U.S. only)
- Simple, intuitive 4 button menu system
- Status LEDs for power, network, and GPS
- Browser and faceplate based configuration
- Configuration can be password protected
- Rugged aluminum construction
- SMA GPS connector
- Email notification of system events
- NTP Authentication
- Dimensions: 193mm x 167mm x 49mm (7.60" x 6.57" x 1.93")

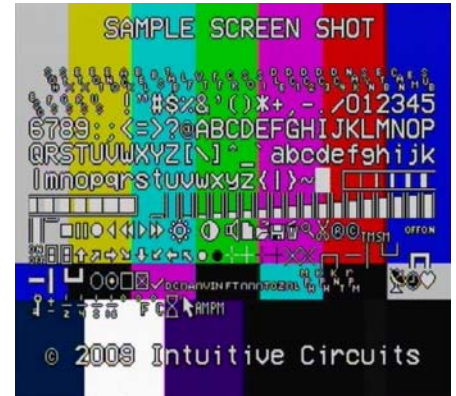
## on-screen display (OSD) products...

### OSD-232+: On-screen composite video character and graphic overlay

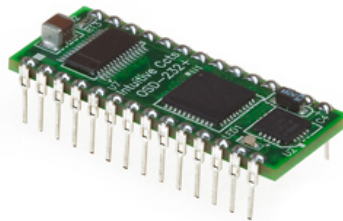
\$99.00

#### Description:

OSD-232+™ is a single channel on-screen composite video character and graphic overlay device in the form factor of a 28 pin .6" dip socket. From any RS-232 or TTL source, such as a PC or microcontroller, control the display of 30 columns by 12 rows (NTSC) or 15 rows (PAL) of information directly onto an incoming composite video source. OSD-232+™ can overlay characters and graphics onto either an incoming video source or self-generated background screen. OSD-232+™ has 256 definable 12 x 18 pixel characters. Graphic images (such as logos) can be imported to create on-screen sprites. OSD-232+™ firmware upgrades are supported via a PC connection.



Included with OSD-232+™ is a demonstration utility, firmware update utility, and font editing software. An optional evaluation board EB-OSD-232+™ with connectors and wall power supply is also available.



#### Specifications:

- Dimensions: 1.54" L x .6" W x .3" H
- Weight: < .1 oz.
- Input voltage: 5.0 volts DC +/- 5% (150 ma max)
- Operating temperature: -40C to +85C (extended temperature range standard)
- Text area: 30 columns by 12 rows (NTSC) or 15 rows (PAL)  
Due to monitor over-scan a minimum of 26 of the 30 columns and 11 of 12 rows (NTSC) are visible on-screen
- Character set: 256 definable characters. 12 x18 pixels per character.
- Sprites: 16 definable graphic sprites
- Video format: Composite video
- Video level: 1 volt peak to peak
- Video impedance: Input 75 ohm, output 75 ohm resistively terminated
- RS-232 serial or TTL input: 9600 or 19200 baud, 8 data bits, 1 stop bit, inverted data
- Power up defaults: Overlay mode, cleared screen, cursor position top left (0,0), visible text, character blink off, character invert off, character background off

## on-screen display (OSD) products...

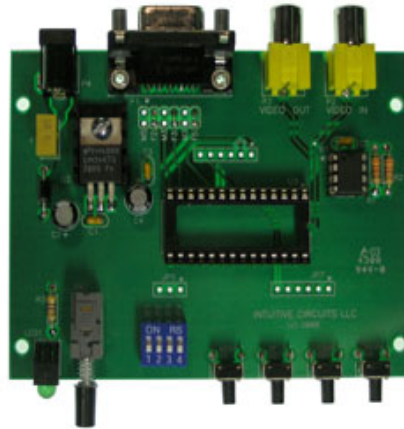
**EB-OSD-232+:** Evaluation board for the OSD-232+ on-screen composite video character and graphic overlay

\$99.00

### Description:

The EB-OSD-232+™ evaluation board accelerates the evaluation of the OSD-232+ on-screen composite video character and graphic overlay module. The EB-OSD-232+™ includes an on-board 28 pin DIP socket, 5 volt regulator, DC power jack, power switch, power status LED, dip switches, female DB-9 RS-232 serial jack, and for future enhancements momentary push buttons and I2C eeprom socket.

The EB-OSD-232+™ evaluation board also includes a Windows PC based demonstration utility for the OSD-232+™, 6' PC RS-232 serial cable, and wall power supply.



### Specifications:

- **Dimensions:** 3.00" L x 3.94" W x .7" H
- **Weight:** 2.1 oz. (with OSD-232+™ module installed)
- **Input voltage:** 7.0 to 14.0 volts DC (200 ma max)
- **DC connector:** 2.1 mm x 5.5 mm, center tip positive
- **Video connectors:** RCA
- **RS-232 connector:** Female DB-9
  - Pin 2 - OSD-232+™ serial out
  - Pin 3 - OSD-232+™ serial in
  - Pin 5 - Ground
- **RS-232 serial or TTL input:** 9,600 or 19,200 baud, 8 data bits, 1 stop bit, inverted data
- **Operating temperature:** -40C to +85C (extended temperature range standard)

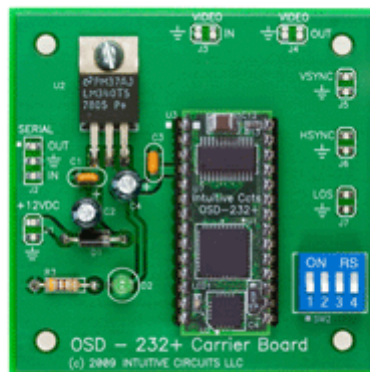
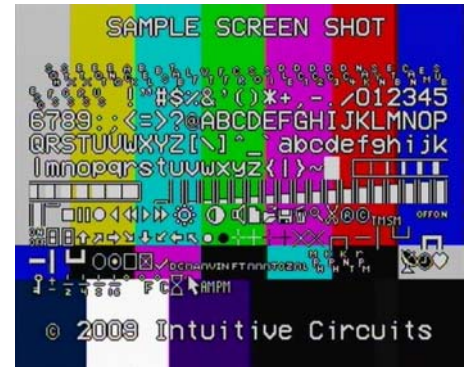
## on-screen display (OSD) products...

### OSD-232+ with Carrier Board: On-screen composite video character and graphic overlay

\$119.00

#### Description:

The OSD-232+™ Carrier Board simplifies connecting to the OSD-232+™ on-screen composite video character and graphic overlay 28 pin DIP (dual in-line pin) module. The OSD-232+™ Carrier Board includes an on-board 28 pin DIP socket, 5 volt regulator, power status LED, configuration dip switches, and solder pads.



#### Specifications:

- Dimensions: 2.5" L x 2.5" W x .7" H
- Weight: 0.9 oz. (with OSD-232+™ module installed)
- Input voltage: 7.0 to 14.0 volts DC (200 ma max)
- Operating temperature: -40C to +85C (extended temperature range standard)
- Text area: 30 columns by 12 rows (NTSC) or 15 rows (PAL).  
Due to monitor over-scan a minimum of 26 of the 30 columns and 11 of 12 rows (NTSC) are visible on-screen
- Character set: 256 definable characters. 12 x18 pixels per character.
- Sprites: 16 definable graphic sprites
- Video format: Composite video
- Video level: 1 volt peak to peak
- Video impedance: Input 75 ohm, output 75 ohm resistively terminated
- RS-232 serial or TTL input: 9600 or 19200 baud, 8 data bits, 1 stop bit, inverted data
- Power up defaults: Overlay mode, cleared screen, cursor position top left (0,0), visible text, character blink off, character invert off, character background off

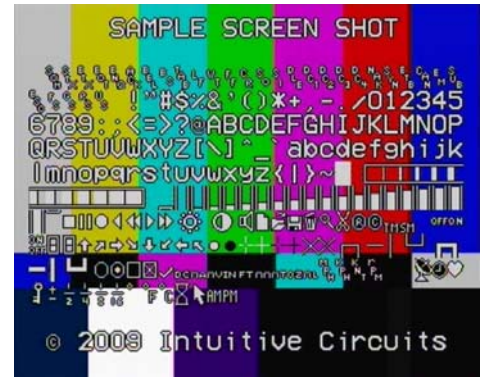
## on-screen display (OSD) products...

**VideoStamp+™:** Single channel on-screen composite video character and graphic overlay with real-time clock Version 1.01

\$249.00

### Description:

VideoStamp+™ is a single channel on-screen composite video character and graphic overlay device with real-time clock. From any RS-232 or TTL source, such as a PC, control the display of 30 columns by 12 rows (NTSC) or 15 rows (PAL) of information directly onto an incoming composite video source. VideoStamp+™ can overlay characters and graphics onto either an incoming video source or self-generated background screen. VideoStamp+™ has 256 definable 12 x 18 pixel characters. Graphic images (such as logos) can be imported to create on-screen sprites. VideoStamp+™ firmware upgrades are supported via a PC connection.



Included with VideoStamp+™ is a 110 VAC wall power supply, 6' DB-9 serial cable, demonstration utility, firmware update utility, and font editing software.

### Specifications:

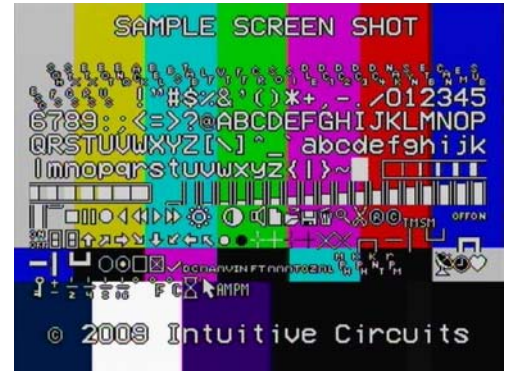
- Dimensions: 4 1/4" x 3 1/2" x 1 1/4"
- Weight: 8.0 oz.
- Input voltage: 8.0 to 14.0 volts DC (150 ma max.)
- DC plug: 2.1 mm x 5.5 mm, center tip positive
- Operating temperature: -40C to +85C (extended temperature range standard)
- Text area: 30 columns by 12 rows (NTSC) or 15 rows (PAL)  
Due to monitor over-scan a minimum of 26 of the 30 columns and 11 of 12 rows (NTSC) are visible on-screen
- Character set: 256 definable characters. 12 x18 pixels per character.
- Sprites: 16 definable graphic sprites
- Video format: Composite video
- Video level: 1 volt peak to peak
- Video impedance: Input 75 ohm, output 75 ohm resistively terminated
- RS-232 serial or TTL input: 9600 or 19200 baud, 8 data bits, 1 stop bit, inverted data
- Power up defaults: Overlay mode, cleared screen, cursor position top left (0,0), visible text, character blink off, character invert off, character background off



## on-screen display (OSD) products...

**VideoStamp 8™:** Eight channel on-screen composite video character and graphic overlay with real-time clock

\$1,399.00



### Description:

VideoStamp 8™ is an eight channel on-screen composite video character and graphic overlay device with real-time clock. From any RS-232 source, such as a PC, control the display of 30 columns by 12 rows (NTSC) or 15 rows (PAL) of information directly onto an incoming composite video source. VideoStamp 8™ can overlay characters and graphics onto either an incoming video source or self-generated background screen. Each VideoStamp 8™ channel has 256 definable 12 x 18 pixel characters. Graphic images (such as logos) can be imported to create on-screen sprites. VideoStamp 8™ video channels are individually addressable. Up to 32 VideoStamp 8™ devices can be daisy-chained together to allow the addressing of 255 individual video channels from a single RS-232 source.

Included with the VideoStamp 8™ is a 110 VAC wall power supply, 6' DB-9 serial cable, 4 rack mounting screws, demonstration utility, and font editing software.

### Specifications:

- Dimensions: 19" x 5" x 1.7" (1U rack unit high)
- Weight: 58 oz.
- Input voltage: 7.5 volts DC (820 ma max.)
- DC plug: 2.1 mm x 5.5 mm, center tip positive
- Operating temperature: -10 C to +70 C
- Text area: 30 columns by 12 rows (NTSC) or 15 rows (PAL)  
Due to monitor over-scan a minimum of 26 of the 30 columns and 11 of 12 rows (NTSC) are visible on-screen
- Character set: 256 definable characters per channel. 12 x 18 pixels per character.
- Sprites: 16 definable graphic sprites per channel
- Video level: 1 volt peak to peak
- Video impedance: Input 75 ohm, output 75 ohm resistively terminated
- RS-232 serial or TTL input: 9600 or 19200 baud, 8 data bits, 1 stop bit, inverted data
- Status LED's: Individual loss of signal status LED's for each video channel. LED illuminated when video present on input.
- Power up defaults: No video channels selected. Each channel is overlay mode, cleared screen, cursor position top left (0,0), visible text, character blink off, character invert off, character background off
- Video format: Composite video. Any combination of NTSC and PAL video channels can be configured on the same VideoStamp 8™ unit.

## on-screen display (OSD) products...

### OSD-GPS+™: On-screen composite video character and graphic overlay

\$119.00

#### Description:

OSD-GPS+™ is an on-screen composite video overlay device in the form factor of a 28 pin .6" dip socket that overlays GPS (Global Positioning System) latitude, longitude, heading (track), speed, altitude, date, and time onto any incoming NTSC or PAL composite video source such as a color video camera. In addition to displaying GPS information, OSD-GPS+™ can also display a user defined message as well as real-time distance and bearing to a user defined waypoint.

OSD-GPS+™ produces a self-generated screen if no video input source is available. All NMEA 0183 compatible GPS receivers are supported.



#### Specifications:

- Dimensions: 1.54" L x .6" W x .3" H
- Weight: < .1 oz.
- RoHS compliant: Yes
- Input voltage: 5.0 volts DC +/- 5% (150 ma max)
- Operating temperature: -40C to +85C (extended temperature range standard)
- Video format: Composite video Video level: 1 volt peak to peak
- Video impedance: Input 75 ohm, output 75 ohm resistively terminated
- GPS input: NMEA 0183. 4,800 - 38,400 baud. GPRMC and GPGGA sentences.
- Speed format: MPH, KPH, and knots
- Altitude format: Feet and meters
- Heading (track) format: Compass cardinal points (e.g. NW) and degrees
- Time format: UTC with user time zone adjustment
- Date format: mm/dd/yy and dd/mm/yy
- User custom message length: 10 characters

## on-screen display (OSD) products...

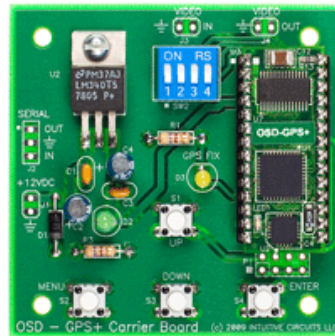
### OSD-GPS+ with Carrier Board: On-screen GPS video character overlay

\$129.00

#### Description:

OSD-GPS+ is an on-screen composite video overlay device that overlays GPS (Global Positioning System) latitude, longitude, heading (track), speed, altitude, date, and time onto any incoming NTSC or PAL composite video source such as a color video camera. In addition to displaying GPS information, OSD-GPS+ can also display a user defined message as well as real-time distance and bearing to a user defined waypoint.

OSD-GPS+ produces a self-generated screen if no video input source is available. All NMEA 0183 compatible GPS receivers are supported.



#### Specifications:

- Dimensions: 2.5" L x 2.5" W x .7" H
- Weight: 0.9 oz. (with OSD-GPS+ module installed)
- RoHS compliant: Yes
- Input voltage: 7.0 to 14.0 volts DC (150 ma max.)
- Operating temperature: -40C to +85C (extended temperature range standard)
- Video format: Composite video
- Video level: 1 volt peak to peak
- Video impedance: Input 75 ohm, output 75 ohm resistively terminated
- GPS input: NMEA 0183. 4,800 - 38,400 baud. GPRMC and GPGGA sentences.
- Speed format: MPH, KPH, and knots
- Altitude format: Feet and meters
- Heading (track) format: Compass cardinal points (e.g. NW) and degrees
- Time format: UTC with user time zone adjustment
- Date format: mm/dd/yy and dd/mm/yy
- User custom message length: 10 characters

## on-screen display (OSD) products...

### GeoStamp+®: On-screen composite video character and graphic GPS overlay

\$279.00/\$299.00

#### Description:

GeoStamp+® is an on-screen composite video overlay device that overlays GPS (Global Positioning System) latitude, longitude, heading (track), speed, altitude, date, and time onto any incoming NTSC or PAL composite video source such as a color video camera. In addition to displaying GPS information, GeoStamp+® can also display a user defined message as well as real-time distance and bearing to a user defined waypoint.

GeoStamp+® produces a self-generated screen if no video input source is available. All NMEA 0183 compatible GPS receivers are supported.



**\$279.00** - Includes cigarette plug

**\$299.00** - Includes cigarette plug, wall power supply, PC null modem cable, and gsLayout+ disc

#### Specifications:

- Dimensions: 4 1/4" x 3 1/2" x 1 1/4"
- Weight: 8.0 oz.
- RoHS compliant: Yes
- Input voltage: 7.0 to 14.0 volts DC (150 ma max.)
- DC plug: 2.1 mm x 5.5 mm, center tip positive
- Operating temperature: -40C to +85C (extended temperature range standard)
- Video format: Composite video
- Video level: 1 volt peak to peak
- Video impedance: Input 75 ohm, output 75 ohm resistively terminated
- GPS input: NMEA 0183. 4,800 - 38,400 baud. GPRMC and GPGLA sentences.
- Speed format: MPH, KPH, and knots
- Altitude format: Feet and meters
- Heading (track) format: Compass cardinal points (e.g. NW) and degrees
- Time format: UTC with user time zone adjustment
- Date format: mm/dd/yy and dd/mm/yy
- User custom message length: 10 characters



## on-screen display (OSD) products...

### GeoStamp+® with GPS: On-screen composite video character and graphic GPS overlay

\$379.00/\$399.00

#### Description:

GeoStamp+® with GPS is an on-screen composite video overlay device that overlays GPS (Global Positioning System) latitude, longitude, heading (track), speed, altitude, date, and time onto any incoming NTSC or PAL composite video source such as a color video camera. In addition to displaying GPS information, GeoStamp+® with GPS can also display a user defined message as well as real-time distance and bearing to a user defined waypoint. GeoStamp+® with GPS produces a self-generated screen if no video input source is available. GeoStamp+® with GPS includes a high precision internal GPS receiver and an external antenna.

**\$379.00** - Includes cigarette plug and external GPS antenna

**\$399.00** - Includes cigarette plug, wall power supply, external GPS antenna, PC serial cable, and gsLayout+ disc



#### Specifications:

- Dimensions: 5 1/2" x 3 1/2" x 1 1/4"
- Weight: 9.3 oz.
- RoHS compliant: Yes
- Input voltage: 7.0 to 14.0 volts DC (210 ma max.)
- DC plug: 2.1 mm x 5.5 mm, center tip positive
- Operating temperature: -40C to +85C (extended temperature range standard)
- Video format: Composite video
- Video level: 1 volt peak to peak
- Video impedance: Input 75 ohm, output 75 ohm resistively terminated
- Speed format: MPH, KPH, and knots
- Altitude format: Feet and meters
- Heading (track) format: Compass cardinal points (e.g. NW) and degrees
- Time format: UTC with user time zone adjustment
- Date format: mm/dd/yy and dd/mm/yy
- User custom message length: 10 characters

#### Internal GPS Receiver Specifications:

- Receiver: L1 C/A code, 65-channel
- Position Accuracy: 2.5 meters CEP
- Velocity Accuracy: 0.1 meters/sec
- Time Accuracy: 300ns
- Startup Time: 29 second warm/cold start under open sky (average)
- Sensitivity: -161dBm tracking
- Update Rate: 1, 2, 4, 5 Hz (1 Hz default)
- Dynamics: 4G (39.2m/sec<sup>2</sup>)
- Operational Limits: Altitude < 18,000 meters and velocity < 515 meters/sec (simultaneously)
- External Antenna: Active, 3.3 or 5.0 Volts DC with gain up to 30dB and noise figure less than 2db



## on-screen display (OSD) products...

### OSD-ID+ with Carrier Board: Standalone static character and graphic composite video overlay

\$129.00

#### Description:

OSD-ID+™ is a single channel, standalone static character and graphic composite video overlay circuit. This user programmable device can display up to 30 columns by 12 rows (NTSC) or 15 rows (PAL) of text and imported graphics such as logos directly onto an incoming composite video source. If no video input source is available then OSD-ID+™ overlays text and graphics onto a self-generated background screen. The overlay can be configured to always display, appear on a configurable timer (e.g. every 10 minutes for 30 seconds), or appear on an external button press.

Included with OSD-ID+™ is font editing software. OSD-ID+™ firmware upgrades are supported via a PC connection.



#### Specifications:

- Dimensions: 2.5" L x 2.5" W x .7" H
- Weight: 0.9 oz.
- RoHS compliant: Yes
- Input voltage: 7.0 to 14.0 volts DC (150 ma max.)
- Operating temperature: -40C to +85C (extended temperature range standard)
- Text area: 30 columns by 13 rows (NTSC) or 16 rows (PAL)  
Due to monitor over-scan a minimum of 26 columns and 12 rows (NTSC) or 15 rows (PAL) are visible
- Character set: 256 definable characters. 12 x 18 pixels per character. Black, white, and transparent color.
- Character attributes: Blinking, inverted, and background frame
- Graphic sprite max size: 27,648 pixels (e.g. 162 x 162 pixels)
- Video format: Composite video
- Video level: 1 volt peak to peak
- Video impedance: Input 75 ohm, output 75 ohm resistively terminated

## on-screen display (OSD) products...

### OSD-ID+ with Enclosure: Standalone static character and graphic composite video overlay

\$249.00

#### Description:

OSD-ID+™ is a single channel, standalone static character and graphic composite video overlay device. This user programmable device can display up to 30 columns by 12 rows (NTSC) or 15 rows (PAL) of text and imported graphics such as logos directly onto an incoming composite video source. If no video input source is available then OSD-ID+™ overlays text and graphics onto a self-generated background screen. The overlay can be configured to always display, appear on a configurable timer (e.g. every 10 minutes for 30 seconds), or appear on an external button press.

Included with OSD-ID+™ is a 110 VAC wall power supply, 6' DB-9 serial cable, and font editing software. OSD-ID+™ firmware upgrades are supported via a PC connection.



#### Specifications:

- Dimensions: 4 1/4" x 3 1/2" x 1 1/4"
- Weight: 8.0 oz.
- Input voltage: 8.0 to 14.0 volts DC (150 ma max.)
- DC plug: 2.1 mm x 5.5 mm, center tip positive
- Operating temperature: -40C to +85C (extended temperature range standard)
- Text area: 30 columns by 13 rows (NTSC) or 16 rows (PAL).  
Due to monitor over-scan a minimum of 26 columns and 12 rows (NTSC) or 15 rows (PAL) are visible
- Character set: 256 definable characters. 12 x 18 pixels per character. Black, white, and transparent color.
- Character attributes: Blinking, inverted, and background frame
- Graphic sprite max size: 27,648 pixels (e.g. 162 x 162 pixels)
- Video format: Composite video
- Video level: 1 volt peak to peak
- Video impedance: Input 75 ohm, output 75 ohm resistively terminated

## on-screen display (OSD) products...

### OSD-KB: On-screen display id overlay board with PS/2 keyboard interface

\$119.00

#### Description:

OSD-KB is a standalone on-screen display board that overlays user defined text, entered through a standard PS/2 keyboard, onto an incoming NTSC or optional PAL video source. Every position on the 28 column by 11 row screen (308 characters total) can contain a user typed character. All information is stored in non-volatile eeprom memory so even with loss of power OSD-KB retains all screen information.

Special keyboard functions include an overlay or self generated screen mode selection, character blink toggle, character background frame toggle, character color selection (self-gen mode only), background screen color selection (self-gen mode only), full screen clearing, and a translucent mode toggle. Translucent mode is a unique feature that allows live video to pass through the text like the major networks do with their logos.

The on-board jumpers select the text triggering method. The text triggering method defines when the text screen is displayed. The text triggering methods include an always on, only display when jumper pulled to ground, and display based on a timer (every 10 minutes on for 15 seconds).

Available in NTSC or PAL version.



#### Specifications:

- Dimensions: 3 1/2" x 2 1/2" x 3/4"
- Weight: 1.2 oz.
- Input voltage: 8.0 to 14.0 volts DC (60 ma max. without keyboard attached)
- Operating temperature: -10 C to +70 C
- Keyboard input: PS/2 keyboard (6-pin mini din connector)
- Text area: 28 columns by 11 rows (308 characters)
- Text trigger methods: 3
- Video levels: 1 volt peak to peak
- Video impedance: Input 75 ohm, output 75 ohm resistively terminated

## on-screen display (OSD) products...

### TimeFrame®: GPS Date And Time Stamp With Annotation

\$279.00

#### Description:

TimeFrame® overlays GPS (Global Positioning System) date and time with user defined messages onto a self-generated blue screen or any incoming video source such as a black-and-white or color camera. The video output can be transmitted or recorded for an exact, permanent record of when events occur. TimeFrame® requires a NMEA 0183 compatible GPS receiver like the Garmin GPS35-PC.

Available in NTSC or PAL version.



#### Specifications:

- Dimensions: 5 1/2" x 3 1/2" x 1 1/4"
- Weight: 7.8 oz.
- Input voltage: 8.0 to 14.0 volts DC (65 ma max.)
- DC jack: 2.1 mm x 5.5 mm, center tip positive
- Operating temperature: -10 C to +70 C
- Video level: 1 volt peak to peak
- Video impedance: Input 75 ohm, output 75 ohm resistively terminated
- GPS input: NMEA 0183 4800 baud GPRMC sentence
- User custom messages: 2 messages, 15 characters each

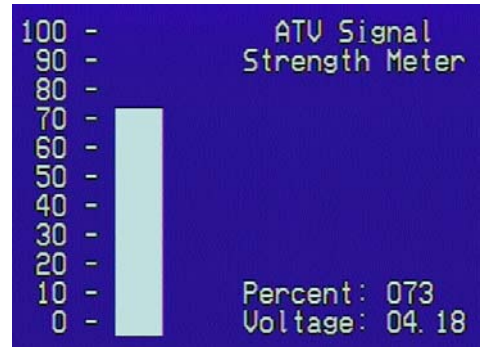
## on-screen display (OSD) products...

### OSD-SSM: On-screen display signal strength meter

\$139.00

#### Description:

OSD-SSM is an on-screen display overlay board with analog to digital circuitry which continuously converts incoming ATV receiver AGC circuit voltage to a 0% to 100% signal strength bar graph. OSD-SSM installed at an ATV repeater site is a valuable resource because users get instant and accurate feedback of what their incoming signal strength is. While watching OSD-SSM's self-generated bar graph screen users of cross-band ATV repeaters can rotate their transmit antenna for maximum signal strength. Users of in-band ATV repeaters can also benefit because of OSD-SSM's ability to hold the incoming reading. By keying their ATV transmitter, sending a command to have OSD-SSM hold the reading, dropping their transmitter, and switching to the OSD-SSM video source, users can see their signal strength. Another option is to have other hams monitoring the repeater give signal strength readings over the FM calling frequency. OSD-SSM can also be used to help identify interference as well as physical obstructions between the user and repeater.



Available in NTSC or PAL version.



#### Specifications:

- Dimensions: 3 1/4" x 2 1/2" x 1/2"
- Weight: 1.0 oz.
- Input voltage: 8.0 to 14.0 volts DC (70 ma max.)
- Operating temperature: -10 C to +70 C
- Video levels: 1 volt peak to peak
- Video impedance: input 75 ohm, output 75 ohm resistively terminated
- CH1 input: 0 to 10.0 volts DC (2.44 mv resolution)
- CH2 input: unused

# on-screen display (OSD) products...

## PostMark®: Point Of Sale Terminal Camera Video Overlay System / Cash Register Surveillance

\$499.00



### Description:

PostMark® interfaces point of sale terminals (POS) with security cameras to produce a continuous overlay of transactions superimposed on the camera video output. PostMark® can either interface between a point of sale terminal and pole display or work standalone connected to a point of sale terminal. The PostMark® is the ideal product for your cash register security and surveillance needs.

Intuitive Circuit's PostMark® uses video text inserter technology that allows it to easily integrate into an existing cash register surveillance system. A cash register surveillance or a video based cash register security system integrated with the PostMark® POS text inserter product allows security personnel to review and find specific recordings of a cash register transaction.

Our cash register surveillance product is compatible with many different types of cash registers, pole displays, and POS systems. Intuitive Circuit is the original designer, producer, and seller of this POS security product. We have over 10 years of engineering design experience in the video text inserter products business. You can view our other video text inserter products from our products page. If there is a cash register or POS system that you want supported please let us know.

Includes power supply and 6' serial cable.

Available in NTSC or PAL version.

### Specifications:

- Dimensions: 5 1/2" x 3 1/2" x 1 1/4"
- Weight: 7.8 oz.
- Input voltage: 8.0 to 14.0 volts DC (60 ma max.)
- DC plug 2.1 mm x 5.5 mm, center tip positive
- Operating temperature: -10 C to +70 C
- Text area: 28 columns by 11 rows (308 characters)
- Text / background: Adjustable brightness and translucent (see-through) levels
- Video level: 1 volt peak to peak
- Video impedance: Input 75 ohm, output 75 ohm resistively terminated
- RS-232 serial or TTL input: 9,600 baud, 8 data bits, 1 stop bit, inverted data

PostMark® supports the following cash registers and Point of Sale (POS) Systems:

Cash Registers	POS Systems	Pole Displays
<ul style="list-style-type: none"> <li>• Micros (Eclipse, Workstation 4)</li> <li>• Ruby (Epson TM-U950 printer)</li> <li>• Samsung</li> <li>• Uniwell</li> </ul>	<ul style="list-style-type: none"> <li>• Aldelo for Restaurants 3.0</li> <li>• Cash Register Express 2000 (CRE2000)</li> <li>• ComCash</li> <li>• Digital Dining</li> <li>• Focus</li> <li>• MicroPos</li> <li>• PetroCan</li> <li>• Pinnacle Palm POS</li> <li>• VeriTouch</li> <li>• Point of Success</li> </ul>	<ul style="list-style-type: none"> <li>• EMAX</li> <li>• Epson</li> <li>• IEE</li> <li>• TAPS</li> <li>• Ultimate PD2000</li> <li>• Ultimate PD2000XL</li> </ul>

## on-screen display (OSD) products...

### VIVID® Virtual In-Vehicle Information Display - Tire Pressure Video Overlay

\$379.00

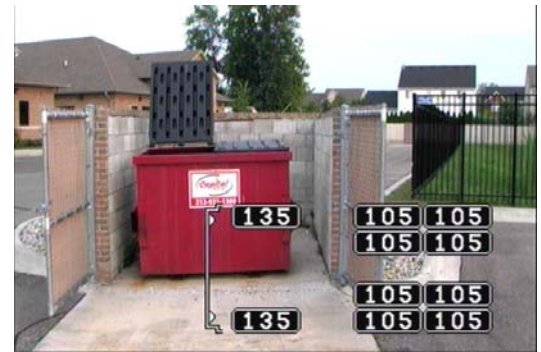
#### Description:

VIVID® is an electronic vehicle tire pressure monitoring system (TPMS) designed to monitor and overlay tire pressures and tire temperatures onto an incoming camera video source or self-generated background screen. VIVID® monitors pressure in tires via wireless electronic sensors that read pressures and transmit a radio frequency (RF) signal to VIVID® which displays those pressure readings.

VIVID® is capable of displaying all current tire pressures and temperatures on demand, whether the vehicle is moving or stationary. VIVID® is a monitoring system and will not prevent tires from losing pressure or failing. However, low pressure is the leading cause of premature tire failure and VIVID® can provide early notice of potential problems and assist in maintaining proper pressurization in vehicle tires. VIVID® can be used on all pneumatic tires. Up to 40 tires can be monitored and displayed simultaneously. Notifications include low tire pressure, high tire pressure, high tire temperature, sensor low battery, and missing sensor. VIVID® is capable of reading pressures from 10 PSI to 199 PSI with two low pressure alert levels, the first at 12.5% and the second at 25% drop in pressure. A high pressure alert occurs if a 24 PSI increase is detected. VIVID® has numerous diagnostic features such as tire sensor signal strengths and packet counts for troubleshooting.

VIVID® is easy to setup and configure via video on-screen menus.

An optional external malfunction indication lamp (MIL) with remote control pushbutton can be installed for additional driver and/or maintenance manager notifications of tire issues.



#### Specifications:

- Video impedance: Input 75 ohm, output 75 ohm resistively terminated
- Maximum number of sensors: 40
- Sensor dimensions: 1.01" H x 1.11" Dia.
- Sensor weight: 2/3 oz. (18.9 grams)
- Sensor operating temperature: -30°C to +85°C
- Sensor pressure range: 10 to 199 psi
- Sensor operating frequency: 433.92 MHz FM
- Sensor transmit range: Approx. 150 feet (line-of-sight)
- Sensor batteries: Internal, non-rechargeable.
- Sensor battery life: 5 years.
- Sensor low voltage shutdown: 1.8 volts
- Sensor reading rate: Every 7 seconds
- Sensor transmit rate: Every 5 minutes (or instantaneous if warning event occurs)

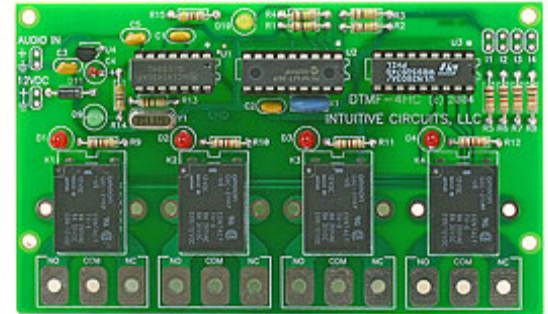
## DTMF decoder products...

### DTMF-4HC: DTMF Decoder with four high current relays

\$129.00

#### Description:

DTMF-4HC is an inexpensive, self contained, DTMF decoder or touch tone decoder board which permits users to control remotely, via radio or other audio producing source, the on or off state of four high current devices. For larger applications several DTMF-4HC DTMF decoder boards can be attached to the same control audio source to control dozens of devices. DTMF-4HC supports four modes of operation. These mode settings control how the DTMF-4HC behaves. Password support is also available for increased protection from unauthorized entry. All information is stored in non-volatile eeprom memory.



#### Specifications:

- Dimensions: 4 3/4" x 2 5/8" x 9/16"
- Weight: 2.2 oz.
- Input voltage: 12.0 to 14.0 volts DC (15ma idle, +25ma per energized relay)
- Operating temperature: -10 C to +70 C
- Microprocessor: Microchip PIC16F627-20/P (4 MHz)
- DTMF / Touch Tone receiver: Motorola MC145436AP
- Audio input impedance: 100K Ohms
- Audio input level: .1v to 5.0v peak to peak
- Relay driver: ULN2803 (open collector outputs 500ma max. each)
- Relays: Omron G6C-2114P (sealed)
- Relay contact rating: 8 amps @ 12 volts DC / 250 volts AC
- Relay contact life: 5,000,000 operations
- Modes: 4
- Factory default mode: Mode 1, no password
- Password length: 0 to 9 digits
- Valid password digits: 0123456789ABC\*#

#### Multiple DTMF-4HC's:

The DTMF-4HC DTMF decoder is designed to control four devices (via relays) but it is possible to control more devices by attaching multiple boards to the same incoming audio source and setting a password (more of a board ID in this case) for each board.

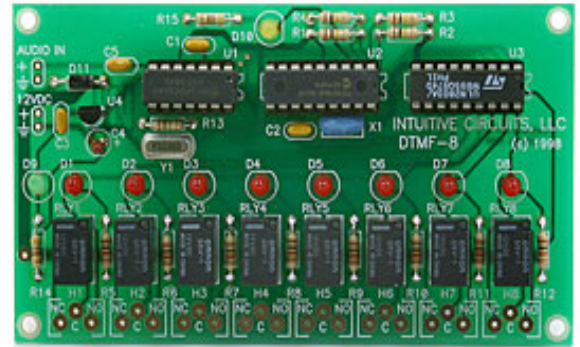
# DTMF decoder products...

## DTMF-8: DTMF decoder with eight relays

\$119.00

### Description:

The DTMF-8 DTMF Decoder is an inexpensive, self contained, DTMF (dual tone multiple frequency) or touch tone decoder board which permits users to remotely control, via radio or other audio producing source, the on or off state of eight devices or relays. For larger applications several DTMF-8 boards can be attached to the same control audio source to control dozens of devices. DTMF-8 supports four modes of operation. These mode settings control how the DTMF-8 DTMF Decoder behaves. Password support is also available for increased protection from unauthorized entry. All information is stored in non-volatile eeprom memory.



### Specifications:

- Dimensions: 4 1/2" x 2 1/2" x 9/16"
- Weight: 1.8 oz.
- Input voltage: 12.0 to 14.0 volts DC (250ma max.)
- Operating temperature: -10 C to +70 C
- Microprocessor: Microchip PIC16F84-04I/P (4 MHz)
- DTMF/Touch Tone receiver: Motorola MC145436AP
- Audio input impedance: 100K Ohms
- Audio input level: .1v to 5.0v peek to peek
- Relay driver: ULN2803 (eight open collector outputs 500ma max. each)
- Relays: Omron G5V-1-DC12 (sealed)
- Relay contact rating: 1 amp @ 12 volts DC, 1/2 amp @ 120 volts AC
- Relay contact life: 5,000,000 operations
- Modes: 4
- Factory default mode: Mode 1, no password
- Password length: 0 to 9 digits
- Valid password digits: 0123456789ABC\*#

### Multiple DTMF-8's:

The DTMF-8 DTMF Decoder is designed to control eight devices (via relays) but it is possible to control more devices by attaching multiple boards to the same incoming audio source and setting a password (more of a board ID in this case) for each board.

## DTMF decoder products...

### DTMF-8 Plus: Configurable DTMF decoder with eight high-current relays

\$249.00

#### Description:

DTMF-8 Plus is a self contained, configurable, DTMF decoder device which permits users to control remotely, via radio or other audio producing source, the on or off state of eight switches. A common application is the remote control of a camera pan/tilt rotor. For larger applications multiple DTMF-8 Plus's can be attached to the same control audio source to control dozens of switches. DTMF-8 Plus supports four modes of operation: latched, momentary, a mixture of latched/momentary, and a mutually exclusive mode. Password security is available to protect from unauthorized access. All configuration information is stored in non-volatile eeprom memory.

Includes power supply and connectors.

#### Specifications:

- Dimensions: 7 1/4" x 5" x 1 5/8"
- Weight: 20 oz.
- Input voltage: 12.0 to 14.0 volts DC (360ma max.)
- DC jack: 2.1 mm x 5.5 mm, center tip positive
- Terminal plugs: screw type, wire size 12 to 26 AWG
- Operating temperature: -10 C to +70 C
- DTMF receiver: Motorola MC145436AP
- Audio input impedance: 100K Ohms
- Audio input level: .1v to 5.0v
- Relays: SPDT Omron G5V-2-DC12 (sealed)
- Relay contact rating: 4 amps @ 12 volts DC, 1 amp @ 120 volts AC
- Relay contact life: 15,000,000 operations
- Operation modes: 4
- Factory default mode: Mode 1 (latched), no password
- Password length: 0 to 9 digits
- Valid password digits: 0123456789ABCD\*#



(DTMF 8-Plus Relay Connectors)

## DTMF Encoder Products...

### DTMF-ENC16: 16 Button Keypad DTMF Encoder

\$129.00

#### Description:

DTMF-ENC16 is an inexpensive, self contained, DTMF (dual tone multiple frequency) encoder board with a full size 16 button keypad. The board has a standard RCA audio out jack and can either be powered with a 9 volt battery or through the 2.1 mm DC IN jack.

#### Specifications:

- Dimensions: 2.8" x 3.0" x 1.5"
- Weight: 4.2 oz. (without 9 volt battery installed)
- Input voltage: 8.0 to 14.0 volts DC (17ma max, 10ma idle)
- Operating temperature: -20 C to +60 C
- Button contact life: 1,000,000 cycles per key
- Keys: 0123456789ABCD\*#





## GPS products...

### GeoStamp® Audio: GPS to Audio Encoder

\$279.00

#### Description:

GeoStamp® Audio converts GPS receiver latitude, longitude, heading, speed, altitude, date, and time into a continuous audio stream that can be recorded by devices such as video camcorders. The audio output track, matched with the video recording, translates into an exact, permanent record of where and when events occur. The GeoStamp® Audio RS-232 serial output is a reconstruction of the original NMEA 0183 GPRMC and GPGGA sentences from the GPS receiver. This serial output can be used by numerous applications such as computer based GPS mapping software. GeoStamp® Audio supports all NMEA 0183 compatible GPS receivers such as the Garmin GPS35-PC.

GeoStamp® Audio includes a cigarette plug, wall transformer, and null-modem serial cable.

#### Specifications:

- Dimensions: 4.25" x 3.50" x 1.25"
- Weight: 6.5 oz.
- Input voltage: 8.0 to 14.0 volts DC (20 ma max.)
- DC jack: 2.1 mm x 5.5 mm, center tip positive
- Operating temperature: -10 C to +70 C
- GPS input: NMEA 0183 4800 baud GPRMC and/or GPGGA sentences
- Serial output: 4800 baud, 8 data bits, no parity, one stop bit
- Audio modulation: FSK
- Audio output level: -10dB +/- 1dB
- Audio input level range: -40.0 to -8.0 dBV
- Acceptable audio signal to noise ratio: 20.0 dB



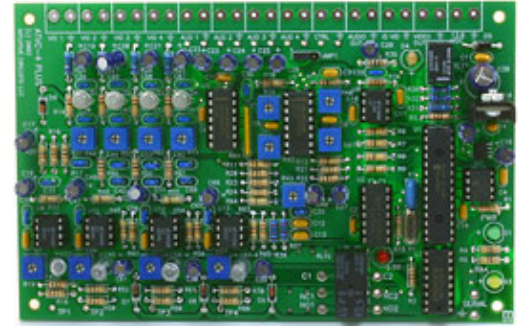
## amateur television (ATV) products...

### ATVC-4 Plus: Amateur Television Repeater Controller

\$349.00

#### Description:

Installing an amateur television repeater takes some real planning and quality equipment. "Thinking about putting up an ATV repeater" by Tom O'Hara of P.C. Electronics is a valuable document which discusses frequencies, propagation, site coordination, antennas, transmitters, receivers, and filtering. An important device that ties all this equipment together is the ATV repeater controller. ATVC-4 Plus is Intuitive Circuit's second generation Amateur Television repeater controller. We've spent years producing quality ATV products and really listened to what ATVer's wanted in an inexpensive ATV repeater controller.



#### Features:

##### Five video input sources:

- Four of the five video inputs have individual sync detection circuitry allowing for true priority based ATV receiver switching
- The fifth video input accepts video from any video id generator like the OSD-ID (PC)
- All five sources can be switched remotely via DTMF command

##### Four audio input sources:

- All four sources can be mixed
- All four sources can be switched on and off remotely via DTMF command
- Line level and speaker level inputs are supported
- A jumper configuration allows for control radio monitoring over the ATV audio output

##### Non-volatile storage including:

- ATV Transmitter hang-time
- Morse Code (CW) speed
- Morse Code (CW) repeater call sign
- Nine digit DTMF password
- Beacon mode status
- ATV receiver inputs allowed to key the ATV transmitter

##### Additional features:

- Robust Morse Code (CW) telemetry feedback
- A beacon mode
- The ability to add dozens of video and audio sources

## miscellaneous products...

### KeyVerter®: PS/2 Keyboard To RS-232/TTL Converter

\$49.00

#### Description:

KeyVerter® converts key stroke events from any PS/2 keyboard (small DIN connector) into an RS-232 and TTL serial output stream. Keyboard enable your favorite microcontroller like Parallax's BASIC Stamp 2 using only one 9600 baud serial input pin.

#### Specifications:

- Dimensions: 2.7" x 1.825" x .6"
- Weight: 0.9 oz.
- Input voltage: 7.5 to 12.0 volts DC (17 ma @ 9 volts without keyboard attached)
- Operating temperature: -10 C to +70 C
- RS-232 output: 9600 baud, 8 data bits, 1 stop bit, no parity, inverted
- TTL output: 9600 baud, 8 data bits, 1 stop bit, no parity, inverted

