VIDEO ENCODER/DECODER MODEL VED-X OPERATION

INTRODUCTION

The Video Encoder/Decoder, Model VED-X will annotate up to ten video channels with precision time and date from either GPS receiver or IRIG-B timecode inputs. Although primarily designed as a "video time stamp" the VED-X can be configured to display supplemental features such as GPS position or other RS-232 input, event times and counts, and a boresight crosshair. Select data can be edge-encoded at the left of the video picture, visible in underscan. Edge-code can be decoded by the VED under computer control from video playback. The position of a moveable crosshair is output along with the decoded data making the VED useful for video motion analysis. The VED-X is a multi-channel version of the single channel Model VED-I. The operation manual for the VED-I is included as it also describes the operation of the VED-X except for differences covered in this preface.

POWER

The VED-X is powered by a nominal 12VDC (7.5VDC to 16VDC) applied to the standard 2.1 mm jack with center pin positive. The jack has extended threads for use with locking connectors as well as standard plugs. Self-resetting polycrystalline fuses and reverse polarity protection are built-in. A wall transformer which supplies up to 1.5 amps at 9VDC is the recommended power source. The actual current draw is 0.1 amp per channel plus about 0.2 amp additional if the GPS-35V receiver is used. It is imperative that power sources capable of high current, such as batteries, be connected to the VED-X through an in-line 5 amp fuse. **Note:** Some 2.1 mm plugs do not have recessed center sockets and may short circuit the power source if touched to the threaded portion of the jack during plug-in.

INTERNAL SWITCHES

The four internal DIP switches described in the VED-I manual are located only on the Channel 1 circuit board and affect all channels. The switches can be accessed before installation by removing the vent plug on that side of the chassis. Alternatively, the four screws holding the rear connector panel can be removed and the panel slid out a few inches to access the switches. Default positions are switches 1 and 4 on, and switches 2 and 3 off. The off position is toward the connector panel.

SUPPLEMENTAL FEATURES

The supplemental features described in the VED-I manual are enabled on power-up for video Channel 1 and disabled for all other channels. Enabling and disabling the channels is done via RS-232 so if GPS timing is being used, the receiver must be temporarily unplugged to allow connection to the serial port. If frequent RS-232 control of channel features is needed, it is recommended that IRIG-B be used for timing input, leaving the serial port free. An alternative would be installing an external switch on the data line into the VED to allow switching between GPS and control data without powering down the GPS receiver. An external break-out box would also be useful if access is needed to the event capture and crosshair control pins on the DB9 connector while using the GPS receiver. Channels are enabled or disabled by a received string of three RS-232 ASCII characters where the first character is the channel number (use 0 for channel 10), the second character is a "+" to enable or a "-" to disable, and the third character is the "escape" character. Substituting a space for the channel number results in all channels being enabled or disabled. A computer running a terminal program can be used for controlling the VED. Serial data output such as event time or decoded edge-code is available only from Channel 1.