Tucker-Davis Technologies

The RV2 Video Capture and Tracking System

System 3

Overview. The RV2 Video Processor system provides digital video recording and real-time tracking. Video is streamed from the Gigabit machine vision color camera (VGAC) to the RV2 dedicated video processor where it is processed and stored. A number of methods support robust target tracking including red/green LEDs mounted on the ZIF-Clip® headstage or limb tracking. Positional information is available in real-time on the RZ device and can be processed and/or stored. Camera triggering is precisely synchronized to the RV2, allowing frame by frame correlation between video data and other recorded data, such as neural signals. Image data is stored on dedicated hard drives within the RV2 in DIVX encoded AVI files. Access to the RV2 storage array can be provided through a LAN connection or direct connection to a PC.

The RV2 is recommended for use with TDT systems only.

Power and Communication. A fiber optic port on the back panel of the RV2 is used to communicate with an RZ device. The RV2 receives timing pulses from a special DSP (RZDSP-V) in the RZ and returns real-time frame and tracking information for further processing and storage. Communication to the RV2 is also provided through a touch screen user interface. A network connection is used to send snapshots from the RV2 to the PC for laying out regions using RVMap software. Configuration files are also sent from RVMap software to the RV2 over the network.

The RV2 contains an integrated switched-mode power supply. The power supply auto-detects your region's voltage setting and no further configuration is needed. A switch located on the back panel of the RV2 is used to enable/disable the power supply.

Software Control. Software control is implemented with circuit files developed using TDT's RP Visual Design Studio (RPvdsEx). A single RPvdsEx macro is provided to configure the RZ to send trigger information to the RV2 and receive frame and positional information.

Included RVMap software supports quick set-up and complex tracking. It is used to define regions and tracks for the RV2 search algorithm and to determine what data is returned to the RZ for real-time analysis and/or storage.

Features:

- Define up to 8 tracked regions and a void region
- Define the origin and custom scale (in cm, feet, etc.)
- Define any number of LEDs (RGB or IR) and reference points
- LED points contain region, x, and y information
- Reference points contain region, x, y, and heading information
- Return up to 8 tracked points to RZ for storage with neural data

Have a question? contact us at sales@tdt.com
+1.386.462.9622

Video Tracking System Part Numbers:
RV2, Video Processor
VGAC, Color Video Camera for RV2
RZDSP-V, Special DSP required in the RZ2 for connection to the RV2

Technical Specifications for the RV2 Video Processor

The RV2 is rack mountable in a standard 19" rack and is 3 U (5 1/4") tall.

Typical Frame Rates:	640x480 color -- 40 FPS 320x240 color -- 100 FPS
Video File:	DIVX encoded AVI

Technical Specifications for the VGAC Camera

Camera Type:	CCD
CCD Sensor Size:	1/3"
Aperture (f/#):	F1.4
Focal Length:	4.0 - 8.0 mm
Interface:	Gigabit Ethernet (GigE) interface
Resolution:	8-bit per channel (24-bit total)
Features:	Auto Exposure Auto Gain Auto White balance
Field of View (degrees):	vertical = 57.2, horizontal = 70.6
Spatial Resolution (minutes):	vertical = 16.3', horizontal = 15.7'