

afinety™

intelligent remote monitoring for
fiber optic transmission systems
and networks

afi

afi delivers the most advanced fiber optic connectivity solutions

A uniquely qualified communications technology engineering and manufacturing company, afi pioneers new technologies and creates innovative products for the most demanding applications.

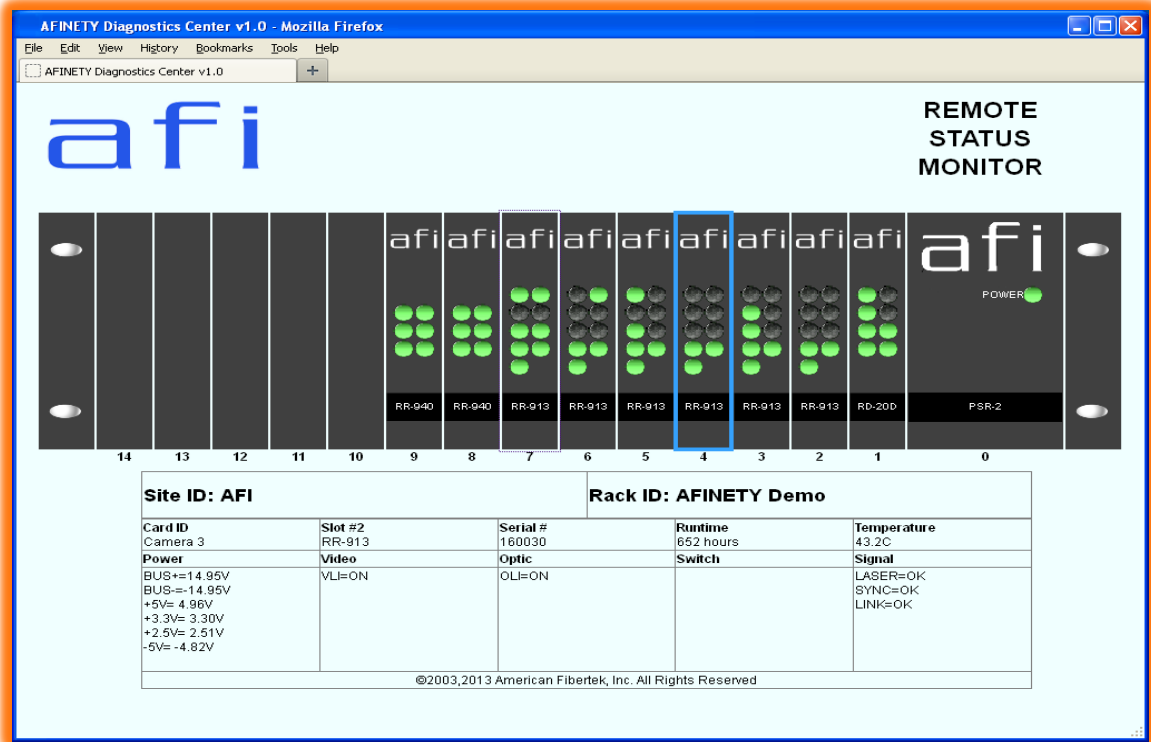
How we do it?

- By applying more than 30 years of fiber optic technology knowledge and experience
- By conceiving and developing numerous customized solutions for global customers and a wide range of applications
- By diligently watching and carefully evaluating emerging communication technologies
- By incorporating new technologies into innovative products that offer both technical advantages and cost effective value

That's how we create the afi fiber connectivity advantage!

afi

introduction



afinety™ is a revolutionary approach to video and network monitoring for systems that utilize afi's advanced digital fiber optic transmission products.

Providing real-time reporting of fiber optic transmission system performance, together with status of connected devices such as fixed position and pan/tilt cameras. These together with other fiber optically connected devices can be monitored via standard web-browser from anywhere in the world.

afinety™ offers two levels of alarm reporting and will even e-mail alarm condition and status changes to the appropriate individuals.

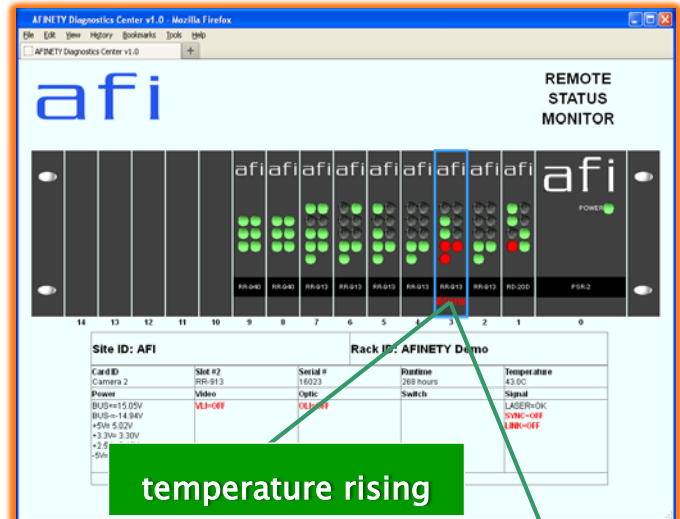
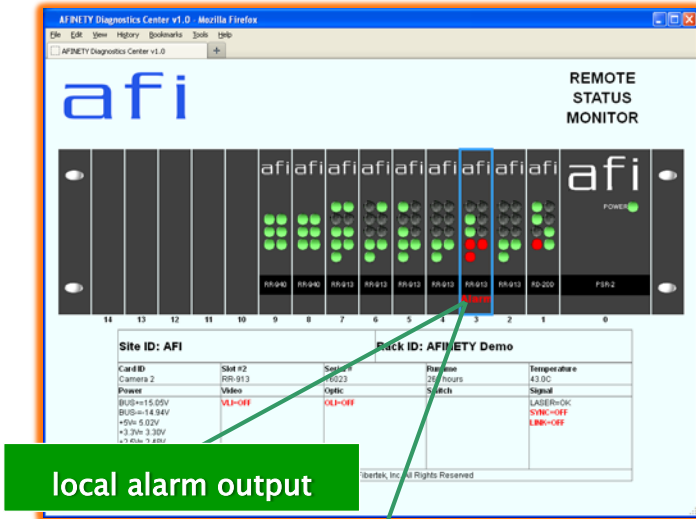
afi sub-racks, together with individual fiber optic cards can be titled to assist in identifying specific locations, making remote reporting extremely user friendly.

The RD-20D rack module is the heart of **afinety™**. When mounted in the SR-20D sub-rack, the RD-20D monitors the status of afinety enabled units and their associated field devices.

overview

primary alarms at headend

secondary alarms at headend



local alarm output
e-mail notifications

temperature rising
e-mail notifications

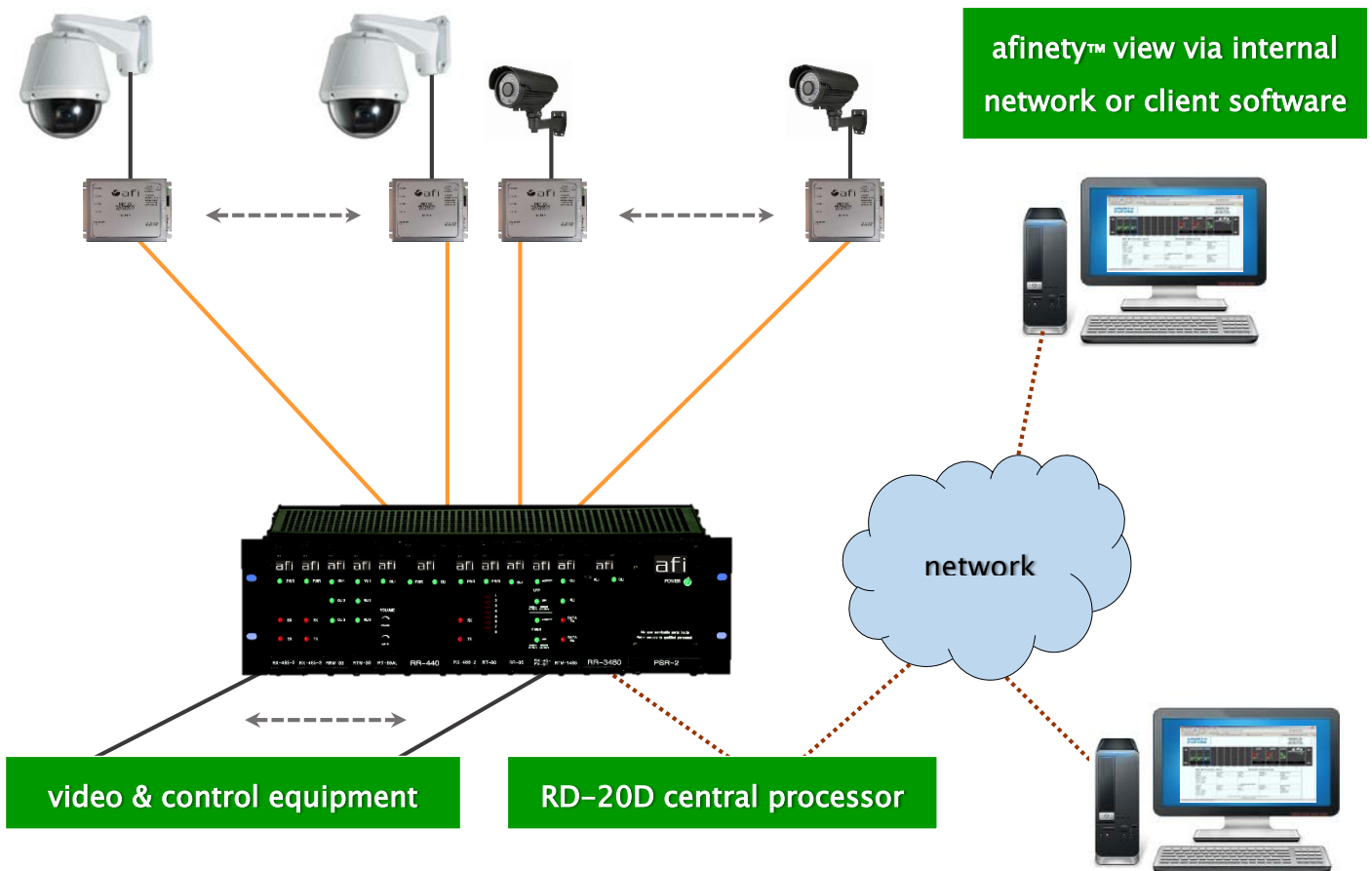
Remote system monitoring is a method for system administrators and users to view critical fiber optic system operations from a network computer. Connection from the network computer to the central processor is made via ethernet connection. An RJ45 is furnished on the central processor unit to facilitate connection to the user's network via internet browsers.

It is also possible to bypass ethernet applications and utilize the **afinety™** RS232 connectivity client program. Major system parameters are gathered from each monitored device. The central processor polls in succession and stores quantitative data. A high level GUI interface is provided to allow device/system status to be displayed as a graphical representation of the unit, or system, indicating currently installed units and status.

Any individual rack card may be selected to bring up the graphical display showing all monitored signals and data for the specific unit. Graphical displays are accessed via the network using any standard web-browser. Alarm conditions are also graphically displayed, and the **afinety™** system can automatically e-mail alarm conditions to responsible personnel.

Communication between the central processor and enabled afi devices is accomplished via afinety system protocol. Rack card addresses are provided by their positions within the rack card cage.

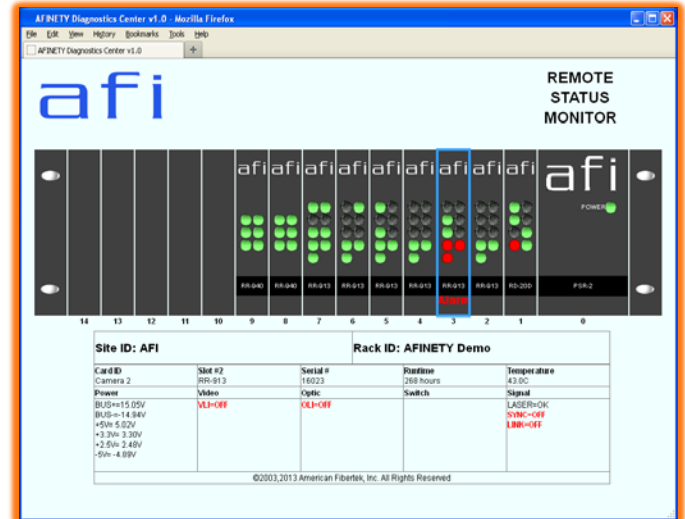
features & topology



- Ability to check status of your fiber optic system from anywhere in the world
- Uses standard internet web-browsers
- Compatible with afinity digital products
- Sub-racks and rack cards can be titled for easy identification
- Status monitoring of compatible rack cards at headend location
- Ethernet port for network connectivity via web-browser or afinity client programs
- Graphical rack display
- 500 millisecond updates
- User programmable multi-level alarm parameters

technical

Administrative Port Setup: Each controller CPU has an RS232 serial port by which management functions can be accessed. The management port can be used to set network configuration parameters and password-protection on the browser interface. The port can also be used to set user data and user programmable alarm conditions. All of the system telemetry and status data can also be viewed through the management port. The management port functionality can also be accessed through telnet over the ethernet connection.



System Components and Status Monitoring: the central processor RD-20D resides in the SR-20D sub-rack. It interfaces with the user's network and provides communication to the individual afinity rack cards to be monitored. Central processors elements include:

- afinity™ system processor (rack card module)
- Ethernet port for network connection
- Relay outputs for user programmable alarm conditions
- Status LED's
- RS232 serial administration port
- Software/firmware to gather data and display upon a TCP/IP request

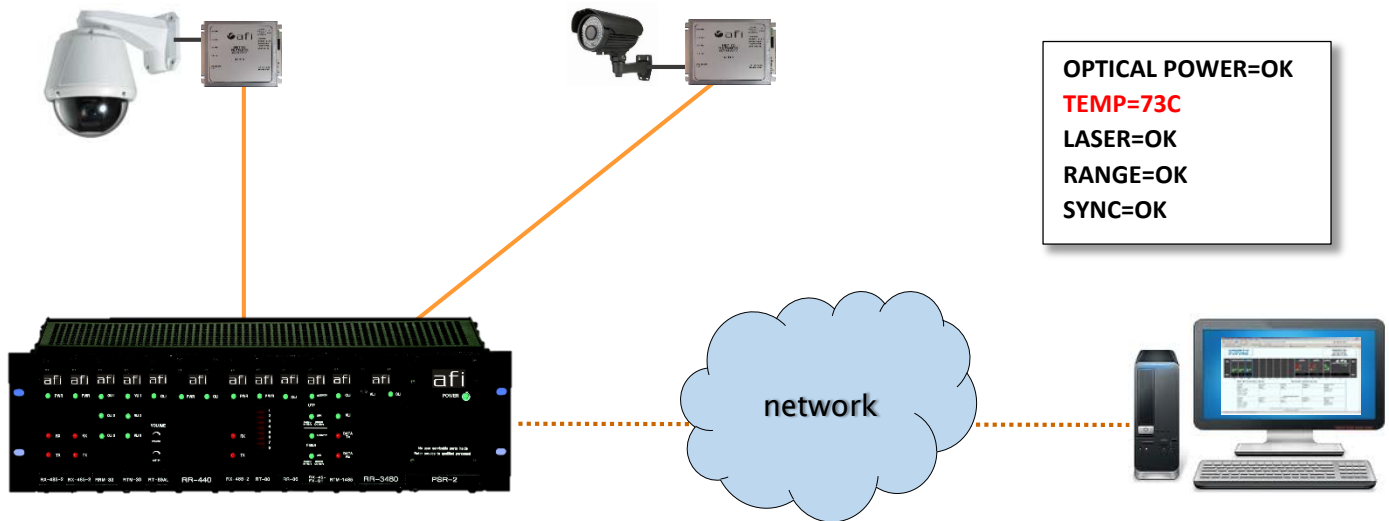
Communications Protocol: network data protocol is RS485 half-duplex, addressed multi-drop communication 57.6k baud data rate. Communications on the RS485 network is a packet-based system in which the CPU and the status monitor circuits are addressed command and data packets. All data transfer is initiated by the cpu unit. On board "status monitor circuits" continually update a data buffer with the latest telemetry. Data requests will be prioritized, with high-level queries being performed only as needed to supply the GUI data. Slots not known to have cards in them will be periodically polled with a presence check query. Telemetry data will be downloaded from all units periodically.

status monitoring

For more information, go to:
<http://americanfibertek.com/products/fiber-optics/afinety-system-monitor>

secondary alarm

* rising and out-of-range temperature condition *



Reporting software/firmware gathers data from the rack card. Status of various signals is monitored. The type of device determines the type of signals that are monitored. **Conditions monitored are:**

- Power supply voltages
- Unit local temperature
- Hours of operation time count
- Detected optical power
- Model number
- Serial number
- User GUI data
- Acceptable parameter ranges
- Remote display of all front panel LED indicators
- Video presence by sync
- Data transmit/receive activity indication
- Contact closure status (open/closed)
- Received RF carrier (RSSI level)
- Front panel LED status
- Custom alarm levels

Information Exchange: data packets transmitted between field devices and the central processor include the following: latest telemetry data, including all analog voltages, digital inputs, PCB temperature and cumulative run time. Also included, are product description (personality) fields, including name and size of product and ASCII string describing each returned value of data.

afi has it all



Proudly Engineered and Manufactured in the USA



afi

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