COMTECH
XICOM TECHNOLOGY™
Amplifier Quality & Reliability Since 1991

Rack-Mount
Touch Screen Controller

Comtech Xicom Technology's new generation of XTCT rack-mount controllers provide an easy to use, intuitive touch screen interface for monitoring and controlling outdoor amplifiers (ODUs). The new touch screen front panel displays the HPA's operational status, including power output and temperature, graphical displays of parameter trend analysis, and event logs. Local and remote diagnostics can also be easily performed via an Ethernet interface.

This new display eliminates the need for a separate external controller to control multiple HPAs for common architectures (TWTAs or SSPAs). All operational data is saved within the amplifier's non-volatile memory, providing a complete history of the HPA in the event that the unit needs service or repair.

The XTCT controller is housed in a 3RU, 19-inch rack unit and can be configured for controlling a single amplifier or multiple amplifiers in a 1:N redundancy system.

The use of Ethernet technology means that additional HPAs and switches can be controlled to meet individual customer's requirements.

Touch Screen Features
❖ Intuitive Set-Up, Control and Monitoring
❖ System Configuration and Control
❖ TWTA Performance Data and Event Logging
❖ Remote Diagnostics
❖ Web Page Interface

Rear Panel Connectors
❖ Redundant AC Power Entries
❖ Ethernet Connector (RJ-45)
❖ UPC Connector (CONXALL Connector)
❖ COM 1 DE-9 (RS232) – Re-programming Connector
❖ Ground Stud

System Configuration Options
❖ Single/Multiple Amplifier Remote Operation
❖ 1:N Redundancy
❖ Load Switching
❖ Phased/Frequency Combined Systems
❖ Uplink Power Control

Xicom Support
❖ 24/7 Technical Support
❖ Service Centers Worldwide

Rack-Mount Touch Screen Controller

Touch Screen Control Overview

Five easily accessible screens provide monitor and control of a multiple TWTA system, the TWTA operation, display of TWTA event logging data, TWTA performance data, and setup of the TWTA configuration including system mode.

Each screen features a common summary display at the top which provides the critical TWTA status information and TWTA output power level at a glance.

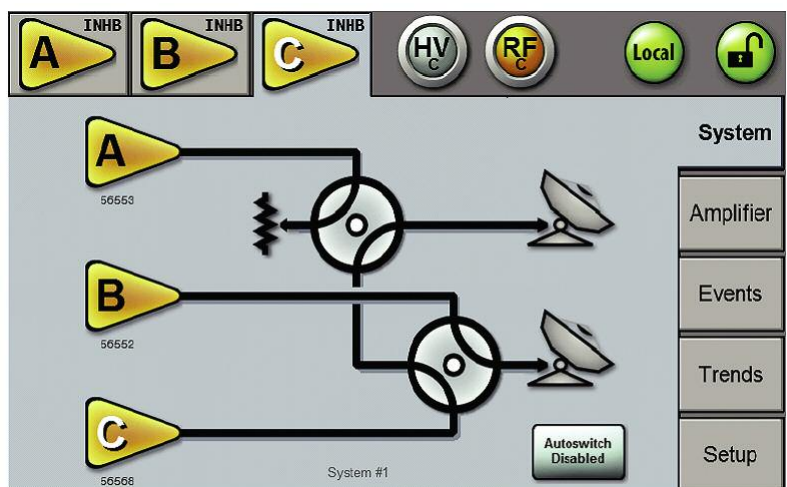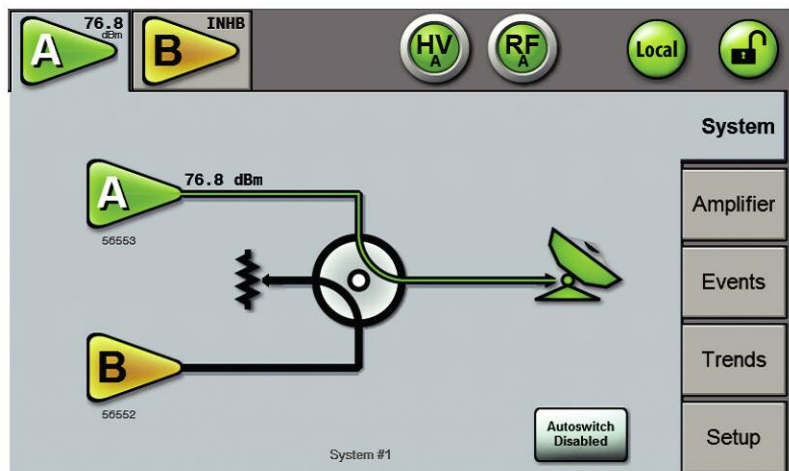Setting of TWTA parameters such as output power and attenuation is a two-handed operation to prevent accidental changes. To make adjustments, select the parameter to adjust with one hand while turning the adjust control with the other. Unwanted screen operation can also be prevented with a screen lock feature.

The Events and Trends screens provide access to logged status and performance data over the life of a TWTA without the need to download the data to a PC or laptop. The logging feature can accommodate 14 years of data.

The controller can be reconfigured for different system requirements without hardware changes. New system configurations can be uploaded to meet new applications not previously accommodated.

System Screen

❖ Multiple TWTA system control built-in
❖ Display and control of redundancy, load and polarization switches
❖ Configurable for stand-alone, 1:1, 1+1 and 1:2 systems
❖ System control from any system amplifier
❖ Compatible with existing separate system controllers

Rack-Mount Touch Screen Controller

Amplifier Screen
❖ Display and control TWTA parameters
  • Attenuator
  • Helix voltage
  • Helix current
  • Temperature
  • Heater voltage
  • Reflected RF power
  • Status of control inputs
  • Alarm and fault status
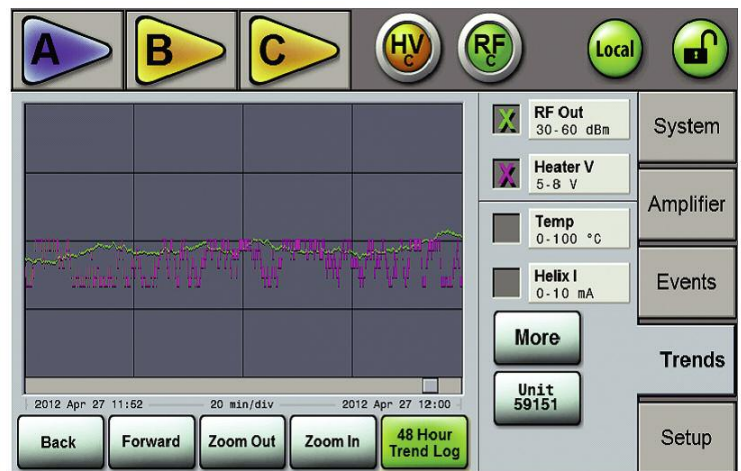❖ Optional uplink power control
❖ Constant power features
❖ Fault reset

Events Screen
❖ Displays Event Log in tabulated form with date and time, color-coded to distinguish system and TWTA status changes, alarms and faults
❖ Ability to add user notes and associate them with events
❖ Displays serial number, firmware version, heater and beam hours

Trends Screen
❖ Displays two user-selected TWTA parameters over time including alarm and fault tags
  • TWT temperature • RF output
  • Helix current   • Helix voltage
  • Reverse power   • Cathode current
  • Beacon Strength • Attenuator value
❖ User adjustable time scale (10 second resolution in 48 hour mode; 4 hour resolution in 14 year mode)
❖ Max and min data over 4 hour period recorded and maintained for 14 years
❖ Critical data before and after alarms and faults recorded and maintained for 14 years

Rack-Mount Touch Screen Controller
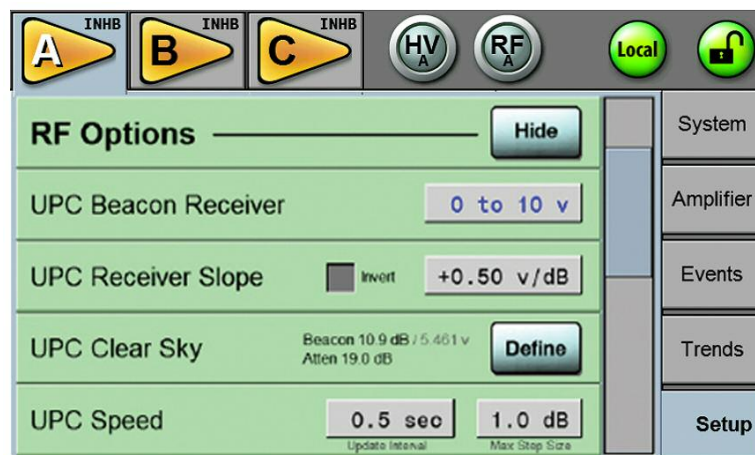
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Setup Screen

❖ Configure TWTA operation
  - Start-up configuration
  - Alarm and fault configurations
  - Power levels for power alarms
  - RF Inhibit sense
  - Clock
  - Serial interface configuration
  - Ethernet interface (std) configuration
  - UPC (option) configuration
  - Screen brightness, key and alarm volume
❖ Display monitor port calibration data
❖ Configure system configuration – 1:0, 1:1, 1+1, 1:2, load/polarization switching, VPC

Uplink Power Control (UPC) Option

UPC systems compensate for atmospheric losses by proportionally adjusting the gain of the amplifier. An external beacon receiver is necessary to provide an input based on current receive level.

❖ Advantages of CXTI UPC
  - UPC does not require dedicated rack space
  - Is not dependent upon external PC based system
  - Touch Screen interface provides graphical history of Attenuator Adjustments vs Beacon Signal strength
  - Lower cost compared to other systems
❖ How it works
  - The output of the beacon receiver is converted to a dB value representing relative signal strength

- Beacon "Signal strength" is compared to a baseline "Clear Sky" condition and the difference is used to adjust the attenuator level
- Any rapid changes in signal level, which may indicate an equipment malfunction, gives rise to an alarm condition and disables the UPC until the signal level is restored to a minimum level

08/13

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