



BOARD PERFORMANCE SPECIFICATION

UC-FR5000

Building IDAS™ Solutions



UC-FR5000 Board

The UC-FR5000 Board is an essential component in building many IDAS solutions. The UC is built on a Linux core that has the power and flexibility to provide several key capabilities. From a networking perspective, the UC is more like a computer on the network than a switch or router. Installation of the UC allows Ethernet connectivity to the UR repeater module for remote configuration and firmware updates and for connection to the RC-FS10 Remote Communicator. Other functions of the UC are:

• Single Site Trunking

The basic function of the UC is to enable single site IDAS digital trunking. Installing a UC into a UR-FR5000 repeater module, along with proper programming, transforms the repeater module from a conventional repeater to a trunking repeater module. This simple upgrade in hardware allows an easy transition from a conventional repeater system to a trunked repeated system at a single site. To further aid in the transition, all subscriber IDAS digital radios come ready to operate as conventional or trunked digital radios – not an option, just a configuration choice.

• Multisite Conventional

By inserting the CF-FR5000 card into the slot on the UC board, the UC and UR modules increase their capabilities to include multisite conventional operation. Installing the CF card does not prohibit single site trunking, it merely enables additional configuration choices to include multisite conventional operation. A multisite conventional system allows the interconnection of conventional repeaters using an IP network to create a series of geographically distributed repeaters that operate as one, or to allow UHF and VHF repeaters to share traffic in a crossover configuration.

• Multisite Conventional Voting

The UC with CF-FR5000 card in a UR repeater module can also be configured to allow the repeater to be a voting receiver, typically located in an area of poor RF coverage where the subscriber radio can not reach back to the transmitter. The signal is received at the voter, transported over IP to the transmitter which compares the incoming RSSI levels and transmits the strongest signal.

• MultiTrunk

The UC board is the platform from which IDAS MultiTrunk multisite trunking systems can be created. This capability is unleashed with the installation of a variant CF-FR5000MT card installed in the UC slot. With this hardware configuration and the latest firmware, the UR repeater module can be built out to a 48 site, 30 channels per site trunked system linked via IP networks. This system has many advanced capabilities, among them the ability to seamlessly roam between sites and the administration of users into fleets of users.

SPECIFICATIONS

Communication ports:

- 1 x Ethernet port: 10/100Mbps, Autosense
- 2 x Trunking bus ports: Category 5, serial comm. between modules for trunking management

IP Interface:

IPv4 Static addresses
 IP Multicast not supported

PORT	PROTOCOL	APPLICATION
80	TCP	UC-FR5000: Web Configuration
161	UDP	SNMP receive
41000	TCP	IP PC Command / IP Programming
41020	TCP	Repeater Firmup
41040	TCP	SCU Firmup
41100	TCP	RC-FS10 Remote Base : Connection
41120	UDP	RC-FS10 Remote Base : Data
41200	TCP	RC-FS10 Remote Dispatch : Connection
41220	UDP	RC-FS10 Remote Dispatch : Data
41300	UDP	Multi-conventional : Data
41310	UDP	Multi-conventional : Manager
41400	TCP	Multi-trunk : Init Sync, Synchronization
41410	UDP	Multi-trunk : Voice Data

Data rate over IP:

- 40kbps* per voice path
*GPS, text data, within the existing IDAS data stream, is included in these rates.
- Network latency: less than 80mS (for data communication/firmware update over IP, etc)
 less than 300mS (for voice communications, generally tolerable overall quality)
- Network jitter: less than 80mS (recommended)
- Packet loss: less than 0.1%

Security:

- User name and password access
- Authorized Computer Enabling, optional

VPN:

- Required for public Internet, recommended for routed networks, not required for LANs

SNMP:

- The following SNMP MIBs are available with MultiTrunk only:
 - Standard MIBs
 - Network System Status
 - Network Interface Status
 - IP Status
 - TCP Status
 - UDP Status
 - SNMP Status
 - Extended MIBs
 - Repeater Temperature
 - Repeater Power Supply Voltage
 - Firmware Revision
 - VCO Unlock
 - Squelch Status

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Pictured above: the optional CF card.



Pictured above: the FR5000 repeater. The board is installed in this repeater for trunking. Also shown the IC-F3161 and the IC-F5061.

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