Lynx™ RoIP Gateway

LYNX™ RoIP GATEWAY OVERVIEW

The Lynx system provides Radio over IP (RoIP) communications interoperability between radio base stations and VoIP networked SIP phones, dispatch consoles and PC's. Lynx will network via industry standard IP, cellular and SATCOM linked networks. Lynx is designed for operations in a mobile vehicle or remote radio site environment.

Lynx supports multiple simultaneous radio repeater, cross-patch, conference and intercom provides dial access to radio and conference nets from IP phones, PC's and legacy telephones.

The Lynx system may be connected to a VoIP dispatch console running RadioNet software to create a mobile dispatch system with superior size, weight and power requirements over previous generation technology.

Standard Lynx equipment includes a multi-port radio controller, SIP VoIP Gateway, client server, call manager, conference bridge and DC power for vehicle or fixed base operation.

Lynx systems are available with 2 to 8 radio port capacity. A Lynx plug in option card adds dual FXO telephone lines for connecting to the PSTN.

RadioNet offers a Lynx compatible line of rugged mobile PC operator terminals and headset boxes. Lynx systems are configurable via a network connected administration and maintenance PC. Lynx systems may be networked and console operators may log into any networked terminal.

RADIO PORTS

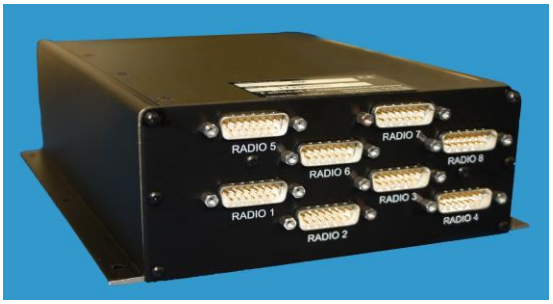
Lynx analog radio ports feature transformer isolated 4-wire audio, Carrier Operated relay (COR) inputs and relay operated PTT transmit control. EIA Standard Tone and E&M base control formats offers universal radio compatibility.

Optional serial ports provide remote control of radio configuration over the VoIP network.

RoIP/VoIP GATEWAY

The Lynx embedded SIP VoIP Gateway supports multiple VoIP terminal devices, such as SIP telephones, IP PBX, PC laptops and operator workstations and consoles.

Dual 10/100bT Ethernet LAN connections are provided for configuring redundant VoIP communication networks without single points of failure.



LYNX GATEWAY

REMOTE RADIO CONFIGURATION

Lynx may also be equipped to support the remote configuration of radio base stations from a PC operator console GUI, including frequency, squelch disable, vehicle ID capture and more.

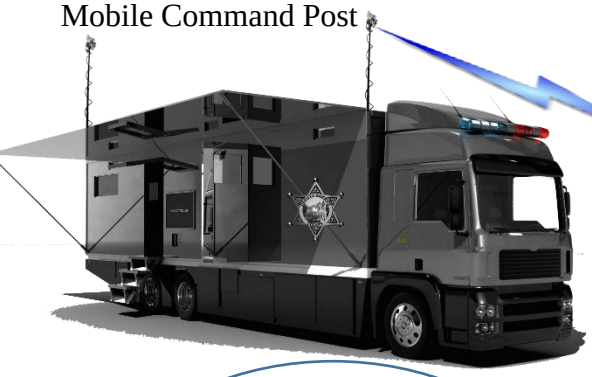
Lynx's radio configuration messaging protocols are compatible with all radios with EIA Standard Tone, RS-232, RS-422/RS-485 serial or Ethernet radio data interface ports.

LYNX POWER AND MOUNTING

Lynx systems operate from 9-32 VDC vehicle power, or from 110/220 VAC power with an auto-switching external power pack. Lynx systems are available in vehicle chassis mount or 1u rack mounting configurations.

8661 Country Crossings St.,
Las Vegas, NV. 89123
Phone: 805-389-2922 · Fax: 805-389-1513
www.Roipnet.com · www.rnmarketing@RoipNet .com

Mobile Command Post



Portable & Team Communication

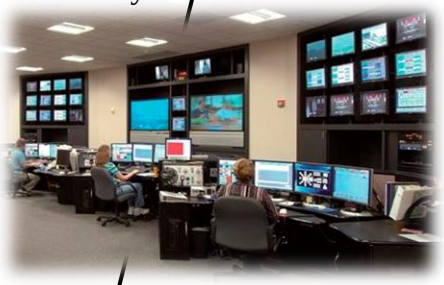
Portable Communications

Remote Site

Vehicle Communications

RoIP

Primary Communications Center



APEX® 2000

Routers

Radios

Dispatch Consoles

Radiodata

CONSTELLATION®

Dispatch Consoles

Routers

Radios

APEX®1000

Vehicle Communications

Portable & Team Communications

8661 Country Crossings St.,
Las Vegas, NV. 89123
Phone: 805-389-2922 · Fax: 805-389-1513
www.Roipnet.com · www.rnmarketing@RoipNet .com

FEATURES AND BENEFITS LISTING

- 2/4 wire transformer isolated audio interfaces with software programmable I/O gain adapt to all radio types.
- Programmable PTT + COR signal lines provide universal compatibility with radio base station and repeater equipment.
- Software programmable remote radio configuration option adapts to all types of radios equipped with EIA Standard Tone, RS232/RS485 serial digital, or IP ports.
- Programmable remote radio configuration features include: PTT, frequency selection, squelch bypass, caller ID capture and more.
- VoIP Gateway interoperates radio and telephone systems with industry standard SIP PC's, communication terminals, IP phones and call manager systems
- Automated call routing feature allows networked user dial access to multiple radio nets, intercom nets and meet me conferences
- Configurable Voice detect and IP packet detect VOX transmit control modes
- Lynx operator terminal GUI features simultaneous monitoring/mixing of multiple channels with individual gain control, multi-channel intercom, soft phone, simulcast, personalized operator screen configurations, remote radio control and more.
- Optional T1/E1 ISDN and quad FXO ports network Lynx with PBX, PSTN, cellular, legacy POTS or SATCOM equipment
- Operator may simulcast transmissions to all users, or a selected group of users, efficiently handling group and emergency communications.
- SIP Gateway includes standard G.7xx vocoders, jitter buffering, AGC and echo cancellation for universal VoIP terminal compatibility.
- Remote software and configuration updates to on board flash
- Dual 10/100bT LAN ports allow operation with redundant LAN networks
- Built in test (BIT) and remotely activated self-test facilitates high availability operation.
- Optional client software GUI supports multiple operator radio dispatch operations. The GUI software runs on a separate networked computer, laptop or tablet.
- Standard EIA control tones allow for remote control of radio base stations, including function control tones.
- Programmable paging tones

LYNX CALL MANAGER

Lynx includes an embedded call manager application supporting compatible Lynx client GUI or third party GUI software products.

Lynx call manager software networks multiple Lynx system nodes, allowing operators to access all Lynx connected radios or to log in via any LAN-connected VoIP terminal.

The embedded Lynx call manager and web server eliminates the external server and call manager equipment typically required by WAN networked dispatch systems, or when Lynx is connected to external IP PBX telephone systems.

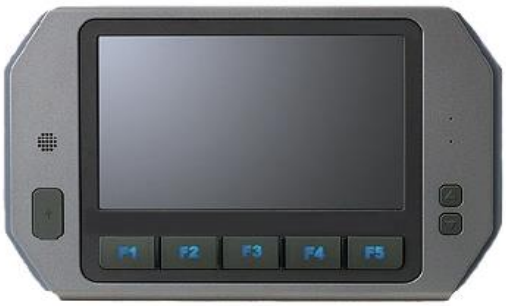
LYNX CLIENT GUI

The Lynx Client GUI allows operators to communicate via VoIP with multiple radios and telephones and to set up radio-radio patches and intercom nets. The Client GUI will run on any laptop, computer or workstation supporting standard JAVA scripts.

RadioNet offers Lynx client GUI software customized to specific project requirements.

8661 Country Crossings St.,
Las Vegas, NV. 89123
Phone: 805-389-2922 · Fax: 805-389-1513
www.Roipnet.com · www.rnmarketing@RoipNet .com

LYNX MOBILE VOIP COMMUNICATIONS CONSOLE



LYNX MCC CONSOLE

The Lynx Mobile Communications Console (MCC) manages operator communications with multiple networked radio, telephone and intercom users in mobile vehicle environments.

The MCC LCD/keyboard user interface is software programmable, including 5 function keys, radio and softphone control GUI's. The MCC console may be operated in LCD touch screen, mouse/keyboard or in key driven cursor interface modes.

The cursor driven function keys allow operators to select a desired radio or intercom channel.

The MCC operator may conference and patch radio and telephone users, make Public Address announcements and simultaneously broadcast to multiple radios and user terminals.

MCC consoles include a "softphone" that interoperates with industry standard SIP phones and VoIP network equipment.

The MCC console supports a variety of headset, microphone and speaker interfaces with "hot mic" or PTT operation.

The LMCC console GUI configuration and user access privileges may be programmed remotely over the IP network by the System Administrator.

Personalized GUI screens and access rights to specific conference nets, intercoms or radios are loaded to each MCC upon operator log-in.

Incident-specific GUI Screens, function keys and user access privileges are downloadable into each MCC.

MCC FEATURES LISTING

- Programmable GUI screens button and keys
- Selectable left-right binaural/monaural audio
- Multiple operator intercom channels
- SIP interoperable "softphone"
- Push to talk (PTT) or "hot mic" operation
- Multi party "meet me" conferencing
- Radio and telephone call "patching"
- Simulcast "one-to-many" broadcast capability
- Power for ANR headsets and electret microphones
- Remote configuration and administration
- Personalized operator GUI screen
- 9-32 VDC @ 12W vehicle power or AC brick
- Optional PoE (Power over Ethernet)
- LCD display brightness control
- Internal microphone and speaker
- Water resistant IP65 (water stream) protection

LYNX- LED DISPLAYS

The Lynx front panel includes individual channel transmit and receive active displays, power lamp, LAN carrier and LAN active LED's.

LYNX I/O INTERFACE SPECIFICATIONS		
AUDIO SIGNAL	**AUDIO SIGNAL**	**AUDIO SIGNAL**
Line Inputs	Line In	Up to 12V pk-pk, 1V typical, balanced 600/10K ohm transformer isolated and transient protected inputs. DB-15 connector.
Line Outputs	Line Out	0-10V pk-pk, 600/150 ohm balanced transformer isolated and transient protected outputs. DB-15 connector.
Audio Bandwidth	BW	Bandwidth 150Hz-3.4Khz, +/- 1db.
RADIO CONTROL	**RADIO CONTROL**	**RADIO CONTROL**
COR Inputs	COR	Contact closure or signal logic input levels. Inputs pulled up to +5VDC through a 51k resistor. DB-15 connector.
XMIT Control Outputs	XMIT	Normally Open relay contact closure. DB-15 connector.
TRC tones	TRC	EIA standard control tones
Radio Control Serial Ports	RS232/RS485	9,600bps – 115.2Kbps. RS232 serial ports. Rx, Tx, signal ground. RS-485 or RS-422 2/4 wire serial port. DB-15 connector.
Serial Digital	RRC	- Manual frequency entry - Squelch - Scan/select channel presets - Caller ID
COM NETWORKS	**COM NETWORKS**	**COM NETWORKS**
Dual 10/100bT Ethernet	10/100bT	IEEE STD 802.3 10/100bT Ethernet LAN. RJ45 connectors.
FXO ports	FXO	Meets global standards for FXO operation. RJ11 connectors
PRI ISDN T1/E1	T1/E1	Primary Rate ISDN T1/E1 option meets global standards for ISDN T1 and E1 operation. RJ48 connector
RS-232 Maintenance Port	RS-232	9,600bps – 115.2Kbps RS-232 serial port. Rx, Tx, signal ground. DB-15 connector.
POWER	**DESIGNATION**	**SPECIFICATION**
Power	12/28 VDC	9-32 VDC at 8 WATTS. Industry standard Mobile Radio Connector

MODEL	DIMENSIONS AND WEIGHT	POWER
Lynx 4/8	10.1" (257mm) L x 6.1" (155 mm) W x 1.7" (43.2 mm) H, 2.25lb (1Kg.)	9-32VDC @ 8 Watts
LMCC Operator Console	10.0" (255 mm) W x 6.3" (160 mm) H x 2.0" (50 mm) D, 3.25lb (1.7Kg.)	9-32VDC @ 12 Watts

8661 Country Crossings St.,
Las Vegas, NV. 89123
Phone: 805-389-2922 · Fax: 805-389-1513
www.Roipnet.com · www.rnmarketing@RoipNet .com

SPECIFICATION	PARAMETERS
Storage Temperature	-55^0 C to 85^0 C
Operating Temperature	-30^0 C to 60^0 C
Vibration	5 ~ 500 Hz 4.5G RMS random vibration
Shock	30 G peak acceleration, 11 msec. duration
Operating and non-operating (storage) humidity	0 to 95% non-condensing
EMI	FCC part 15 class A, CSA, CIC, EN55022: 1994 Class A, EN55024: 1998 + A1:2001 + A2:2003,
Reliability	125,000 Hours

LYNX SYSTEM COMPONENTS	MODEL
8 Port Lynx	Lynx 1800
4 Port Lynx	Lynx 1400
Lynx Mobile Communications Console	Lynx MCC
LYNX FEATURE OPTIONS	**MODEL**
Lynx Client GUI license, xxx = seat capacity	LCG-xxx
Quad FXO and PRI ISDN T1/E1 option card	QFXT1

Specifications Subject to Change without Notice

US patents 8,442,506 and 9,154,630

Constellation® and Apex® are registered trademarks of RadioNet Corporation

8661 Country Crossings St.,
Las Vegas, NV. 89123
Phone: 805-389-2922 · Fax: 805-389-1513
www.Roipnet.com · www.rnmarketing@RoipNet .com