Lynx® Mobile Dispatch System

LYNX® MOBILE DISPATCH SYSTEM OVERVIEW

Lynx systems provide Radio over IP (RoIP) communications interoperability between radio base stations, SATCOM, wireless and wire line telephone, PBX and VoIP networked phones and PC's. The 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 network connections. An embedded TDM switch provides dial access to radio and conference nets from IP phones, PC's and legacy telephones.

The Lynx system provides next generation radio and intercom communications capabilities while dramatically reducing size, weight and power requirements over previous generation technology.

Lynx integrates up to 8 radio ports, a SIP and H.323 VoIP Gateway, client server, communications switch and call manager into a single compact, lightweight and low power vehicle based system.

A plug in option card for the Lynx supports quad FXO telephone lines and a single Primary Rate ISDN T1/E1 span for connecting to legacy PBX systems or the PSTN.

Microvoice 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.

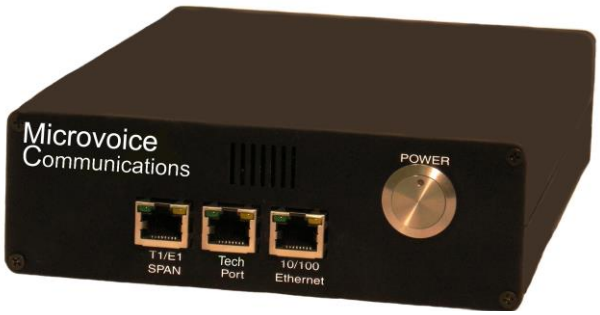
RADIO PORTS

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.

VOIP GATEWAY

The Lynx embedded H.323 or SIP Gateway supports multiple VoIP terminal devices, such as IP telephones, IP PBX, PC laptops and operator workstations.

Dual 10/100bT Ethernet LAN connections are provided for VoIP communications.



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 programmable for compatibility to 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.

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LYNX RADIO OVER IP COMMUNICATIONS NETWORK

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 or H.323 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 and H.323 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.

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

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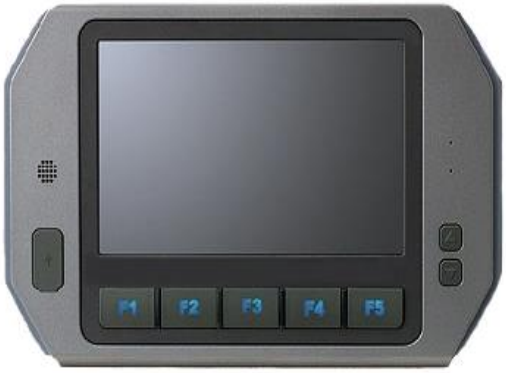
LYNX MOBILE VOIP COMMUNICATIONS CONSOLE



LMCC CONSOLE

The Lynx Mobile Communications Console (LMCC) is a rugged VoIP networked radio, telephone and intercom communications console designed for operation in mobile vehicle environments.

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

The cursor driven mode uses the 5 LMCC programmable function keys to allow the operator to select a desired radio or intercom channel. Both touch screen and key driven cursor mode interface options are designed for managing operator communications with multiple networked radio, telephone and intercom users.

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

LMCC consoles include a "softphone" that interoperates with industry standard SIP or H.323 computers, IP phones and IP network equipment.

The LMCC 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 LMCC upon operator log-in.

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

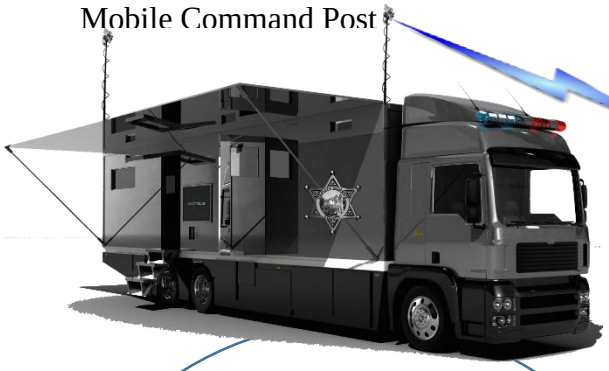
LMCC FEATURES LISTING

- Programmable GUI screens button and keys
- Selectable left-right binaural/monaural audio
- Multiple operator intercom channels
- SIP/H.323 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 or condenser microphones
- Remote configuration and administration
- Personalized operator GUI screen
- 9-32 VDC @ 12W vehicle power or AC brick
- 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.

Mobile Command Post



Portable & Team Communication

Portable Communication

Remote Site

Vehicle Communications

IP

APEX® 2000

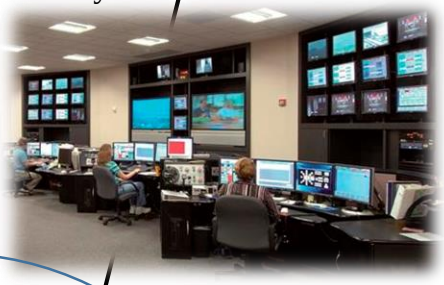
Routers

Radios

Dispatch Consoles

Radiodata

Primary Communications Center



CONSTELLATION®

Dispatch Consoles

Routers

Radios

APEX® 1000

Portable & Team Communication

Vehicle Communications

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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

LYNX SYSTEM COMPONENTS	MODEL
8 Port Mobile Lynx	Lynx C4-408
4 Port Mobile Lynx	Lynx C4-404
Lynx Mobile Operator Communications Console	LMCC
LYNX FEATURE OPTIONS	**MODEL**
Lynx Client GUI license, xxx = seat capacity	LCG-xxx
SIP/H.323 Gateway	VoIPGW
Quad FXO and PRI ISDN T1/E1 option card	QFXT1

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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.
Channel-Channel Isolation		> 80db
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 RS232 Ports	RS232 #1-8	9,600bps – 115.2Kbps RS232 serial ports. Rx,Tx, signal ground. DB-15 connector.
Radio Control RS485 Ports	RS485 #1-8	9,600bps – 115.2Kbps RS485 or RS422 2/4 wire serial port. DB-15 connector.
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.
REMOTE RADIO CONTROL	**RADIO CONTROL**	**RADIO CONTROL**
Serial Digital	RRC	- Manual frequency entry - Squelch - Scan/select channel presets - Caller ID
POWER	**DESIGNATION**	**SPECIFICATION**
Power	12/28 VDC	9-32 VDC at 8 WATTS. Industry standard Mobile Radio Connector

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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

RADIO BASE STATION CONTROL SIGNALING	
Conventional Control	Universal interface for conventional E&M and tone remote controlled radios. Universal software programmable interface.
Digital Radios Control	RS-232, RS-422 and RS-485 serial port control interfaces. Off the shelf protocols to match the messaging format of most popular digitally controlled base station radios; contact Microvoice for specific details.
IP Radios	10/100baseT Ethernet interface for VoIP and Control Interfaces. Off the shelf protocols to match the messaging format of most popular IP controlled base station radios; contact Microvoice for specific details.

Specifications Subject to Change without Notice

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