ii3-ED ethernet intercom

Users' Guide

EDB EDW
LAN 10/100
Ethernet
Intercoms

ii3 Series models
ii3-EDW-110
ii3-EDW-220
ii3-EDB-110
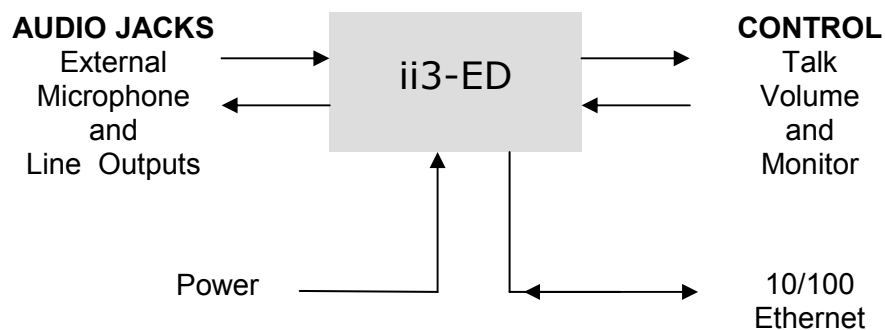ii3-EDB-220

DIGITAL
ACOUSTICS
CORPORATION

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OVERVIEW

Digital Acoustics IP (Internet Protocol) Intercom modules provide a functional audio equivalent to the basic "push to talk" (PTT) intercom. Simply connect the ii3-ED Desktop intercoms to a 10/100 Ethernet connection and communicate to a host server PC by voice.
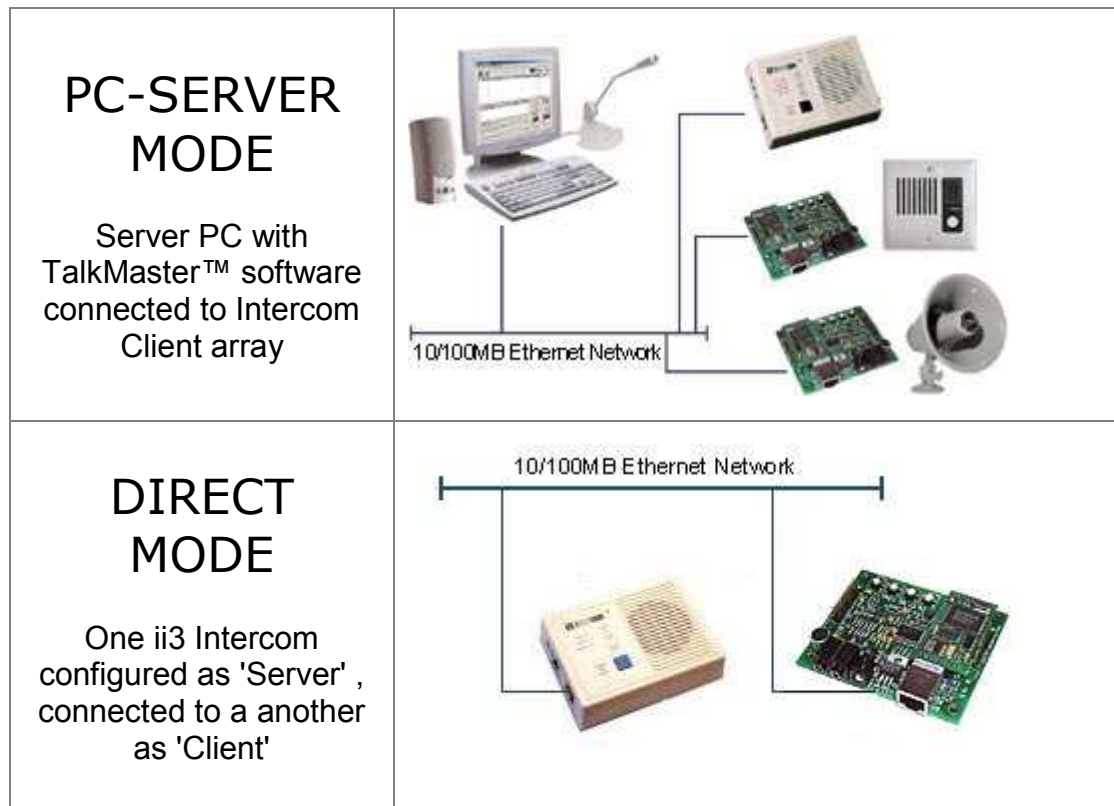
- Talk to/from any station to host PC server
- High quality, clear transmit and playback audio
- Simple operation utilizes push buttons for commands
- Fixed and automatic and DHCP compliant IP assignment
- Hands-free listen mode at stations
- Directly connects through 10/100 ethernet system
- Highly scaleable and seamless expansion
- Field upgradeable OS using internal *Flash* memory
- TalkMaster™ host software access and controls ii3 clients
- Application SDK for Windows® available for developers
- Perfect for business, industrial and consumer applications

AUDIO JACKS
External Microphone and Line Outputs

ii3-ED

CONTROL
Talk Volume and Monitor

Power

10/100 Ethernet

Audio features include:

- Audio modes compatible with PC multimedia PCM, WAV and uLAW codecs
- High quality, internal low noise microphone amplifier with dynamic gain, AGC and compression
- Buffered audio line out and internal 2 watt speaker amplifier
- Digital volume control, adjustable locally and remotely.
- Low latency, with optimized and adjustable buffering

TYPICAL SYSTEM CONFIGURATIONS

PC-SERVER MODE Server PC with TalkMaster™ software connected to Intercom Client array	 10/100MB Ethernet Network
DIRECT MODE One ii3 Intercom configured as 'Server' , connected to a another as 'Client'	10/100MB Ethernet Network

CONFIGURATION AND IP ADDRESSES

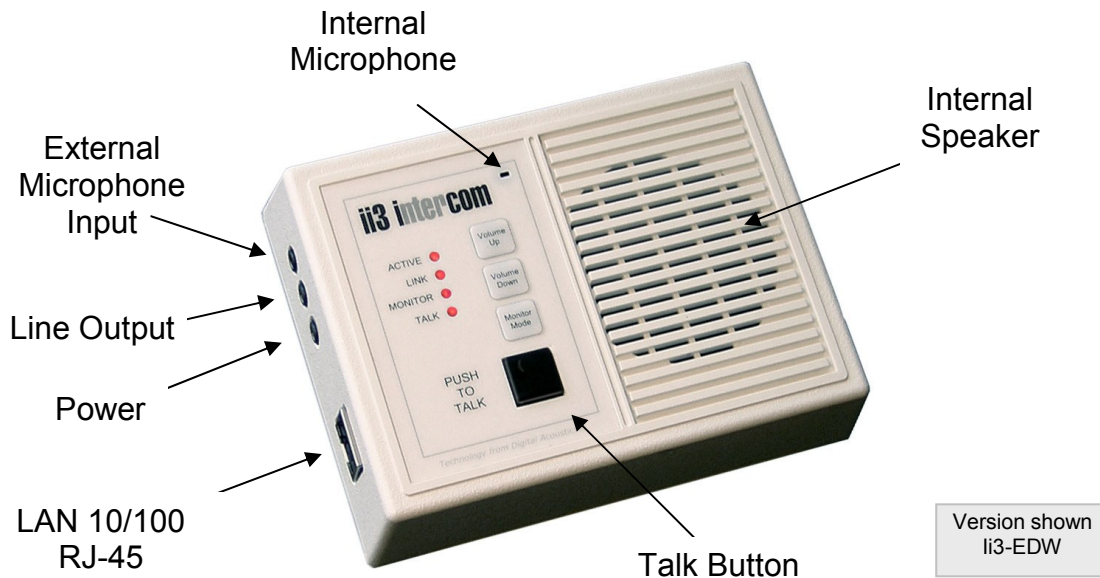TalkMaster™ LE software downloads are available online Access www.digitalacoustics.com/ii3 for downloads and mode information.

1. Install and start TalkMaster™ software
2. To configure your intercoms, select menu option Tools → Configure Intercoms
3. Select and assign intercoms IP addresses
4. Press **Exit**

Refer to the <u>TalkMaster User Guide</u> *for more information on setup and configuration options!*

INTERFACE CONNECTIONS

Internal
Microphone

Internal
Speaker

External
Microphone
Input

Line Output

Power

LAN 10/100
RJ-45

Talk Button

Version shown
li3-EDW

INTERFACE CONNECTION DETAIL

EXTERNAL CONNECTIONS

LAN 10/100	RJ-45	TCP, UDP, IP, ARP, ICMP, 10/100 Base-T Ethernet (Auto detection) MAC
MIC INPUT JACK	3.5MM	External Microphone Input. Use of this jack automatically disconnects the onboard electret microphone. See following section for recommended microphone specifications
AUDIO OUT JACK	3.5MM	External audio out jack. Capable of driving headphones or external amplifier. Use of this jack interrupts connection to onboard speaker.
POWER JACK	2.1 MM	Unregulated DC input 7.5VDC to 9VC 300ma. Use 500ma supply when utilizing onboard speaker amplifier and 4 ohm speakers. POSITIVE TIP polarity *REQUIRES JMP1*

INTEGRATED SWITCHES

Talk	Push to Talk. Enables local microphone.
Monitor/Open	In 'Client' mode (default) Monitor sets 'Talk' ON, as if the Talk button is being held down for hands free speaking. In 'Server' mode Monitor sets *listen mode*, turning the remote (client) microphone on (to listen-in at the remote station). In 'Server' mode / Direct Mode, pressing and holding this button activates the door relay on an EW2W Intercom.
Volume Up Volume Down	Sets volume locally (also set via TalkMaster)

LED INDICATORS

Operational Mode	Active	Link	Monitor	Talk
Normal operational mode. TalkMaster is active. Intercom can communicate.	ON	ON	-	-
LAN connection is inactive. The RJ45 may be unplugged, or LAN lost power.	FLASH	OFF	-	-
Cannot connect, or if DHCP IP is enabled, address is not being assigned (Beeps will occur at 60 second intervals)	FLASH	ON	ON	ON
TalkMaster™ Server software is not running or not set to communicate.	FLASH	ON	ON	-
TalkMaster software at the server has "Scanned" for intercoms in the Configuration Mode utility setup	FAST FLASH	ON	ON	-
Connection lost while TalkMaster was active on	FLASH	OFF	ON	-
Receiving audio. The server software (TalkMaster™) / PC microphone is on.	ON	ON	-	FLASH
Sending audio. Talk button is pressed or server has engaged "listen" mode.	ON	ON	-	ON
Intercom is in "Server" mode, waiting for a client to request connection (Active LED flash alternates 1sec fast - 1sec slow)	DUAL FLASH	-	-	-
Local "Monitor" button has been depressed. Microphone is set to constant "Talk" mode for monitoring	ON	ON	ON	ON

FIRMWARE OS UPGRADES

All ii3™ intercoms use internal *Flash* memory. Operating system (OS) and firmware may be upgraded to include new revisions or custom options. TalkMaster™ software is required to enable and program access the Flash memory upgrade feature.

SOFTWARE SUPPORT

TalkMaster™

ii3-TalkMaster™ software is required for IP address configuration and setup

Features:

- Control and detection for intercom stations
- Audio access for all ii3 intercoms with Master call to page all stations
- Program ii3 intercom internal OS/Flash memory
- Pop-up screens for identifying incoming station ID and audio
- Utilizes PC Multimedia microphone/speaker for access to intercoms
- Integrated UDP polling on to automatically detects all stations
- API available for easy custom GUIs with sample program (VB6)
- Windows® 98, Me, 2000, XP, Server 2003

TalkMaster™ software manuals and downloads are available at www.digitalacoustics.com/ii3

CUSTOM SOFTWARE AND iTALK/X SDK

iTalk/X API development package is available to create custom TalkMaster™ applications and is available under Non-Disclosure and/or license for selected OEM applications. Contact your sales agent or oemsales@digitalacoustics.com for additional information

EXTERNAL MICROPHONE SELECTION

ii3 supports high quality *voiceband* audio. Integrated AGC amplifiers support a wide range of microphone inputs and low cost electret microphones ($3usd) will have similar intelligibility as expensive "professional" microphones ($10-$50usd). Microphones mounted externally should be in a vibration and moisture free environment.
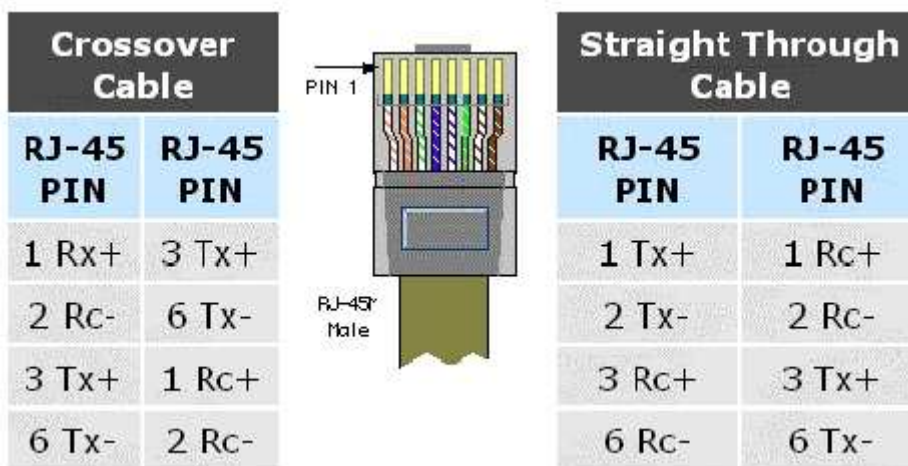
EXTERNAL SPEAKER CONNECTIONS

A *line out* connection is provided for headphone or external speakers. Weather resistant and vandal-proof speaker enclosures are available from a wide variety on sources. External amplifiers or powered speaker are *required* when using the external speaker jack.

NETWORK WIRING USING CAT5

Ii3 series products connect to network hubs and switches using standard *Straight Through* wiring, similar to PC connections and do not support auto-detection. No special connections or cabling changes are needed under normal operating environments.

Crossover Cable Connections
Use a Crossover cable ONLY when using 2 ii3 intercoms in DIRECT CONNECTION (Server/Client) or when using a PC to single ii3 intercom WITHOUT a hub/switch interconnect.

Crossover Cable			Straight Through Cable	
RJ-45 PIN	RJ-45 PIN		RJ-45 PIN	RJ-45 PIN
1 Rx+	3 Tx+		1 Tx+	1 Rc+
2 Rc-	6 Tx-		2 Tx-	2 Rc-
3 Tx+	1 Rc+		3 Rc+	3 Tx+
6 Tx-	2 Rc-		6 Rc-	6 Tx-

PIN 1

RJ-45 Male

Cat-5 Wiring reference

SPECIFICATIONS

Items	Specification
Hardware Protocols	TCP, UDP, IP, ARP, ICMP, Ethernet MAC
Network Interface	10/100 Base-T Ethernet (Auto detection)
Command protocols	Proprietary, available under NDA
Switch capabilities	User defined, programmable, bi-directional
Audio Rate	80khz with adjustable 500 ms buffers
Audio Resolution	PCM-8bit and uLAW-16 bit 8bit
Audio Sample Rate	8 kHz (Voice band)
Audio Buffers	4KB TX and RX
Internal Amplifier	2w Max @ 4 ohms
Microphone sensitivity	-42db integrated electret
Microphone AGC	37db with limiting and automatic leveling
PHY Interface	RealTek RTL8201BL single-port PHYceiver
Temperature	0'C ~ 70'C (Operating) -40~85'C (Storage)
Humidity	10~90%
Power	7.5-9 VDC ext. (400MA min)
Connector types	Power 2.1 mm (positive center) Audio 3.5 mm
Size	135mm x 102mm x 37mm
Weight	7.5oz (213 grams)

TROUBLESHOOTING

- ❏ Verify power connections. The "Active" LED on should be on or flashing.

- ❏ Refer to LED Indicator section earlier in this manual for valuable diagnostic information.

- ❏ If you cannot detect ii3 units when you SCAN then be sure to verify that the LINK LED is on and TalkMaster is running on the SAME network.

- ❏ If you have multiple network cards on this PC verify that intercoms are connected to the system that is using this computer's IP #. Verify that your connection is on the SAME network that is running TalkMaster.

- ❏ ii3 Intercoms may operate across some firewalls or specific VPN's. They will need to be configured locally (for setup) and will need to be assigned correct STATIC IP addresses for correct detection.

- ❏ If using DHCP addressing try assignments using static IP addresses.

- ❏ If you hear beeps try re-scanning a few seconds after the beep to override DHCP addressing if you think that the intercoms are set for DHCP and are running on a non DHCP network.

- ❏ If you cannot detect any intercoms using the TalkMaster SCAN ALL utility screen try directly connecting the PC (running TalkMaster) to the ii3 intercom *using a crossover cable* (disconnected from the network).

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┌──────────────┐                                      ┌──────────┐
│ PC running   │   ⟵──  Crossover Cable  ──⟶          │   ii3    │
│ TalkMaster   │                                      │ intercom │
└──────────────┘                                      └──────────┘
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- ❏ Refer to the TalkMaster Software Manual for additional diagnostic techniques and troubleshooting tools.

TECHNICAL SUPPORT

Information online   www.digitalacoustics.com
Email   techsupport@digitalacoustics.com
Telephone   +1 (203)-227-9700   M-F 9-5

ORDERING INFORMATION

ii3 Series models

- ii3-EDW-110
- ii3-EDW-220
- ii3-EDB-110
- ii3-EDB-220

ii3-m-1216D
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