



Network Interface Device Model NID-1002-00 “Silver Box”



Applications:

The “Silver Box”, the Larry McGee Co’s. Network Interface Device (NID-1002-00) replaces hard-wired voice communication lines with a network connection. The recurring cost of leased lines is eliminated, resulting in significant cost savings.

The “Silver Box” converts analog voice lines to digital VOIP “lines” without complex interfacing hassles. A pair of “Silver Boxes”, one at each end of the communication circuit, provide the gateway to your own private network or the public internet. Control tones such as DTMF and radio control tones are reliably transmitted.

The “Silver Box” can be used in many situations, including connecting two intercoms, an intercom to a radio, two geographically separated radios in a repeater set up, and an intercom to a dispatch console system. The “Hoot & Holler” feature allows several intercoms to share a “circuit”.

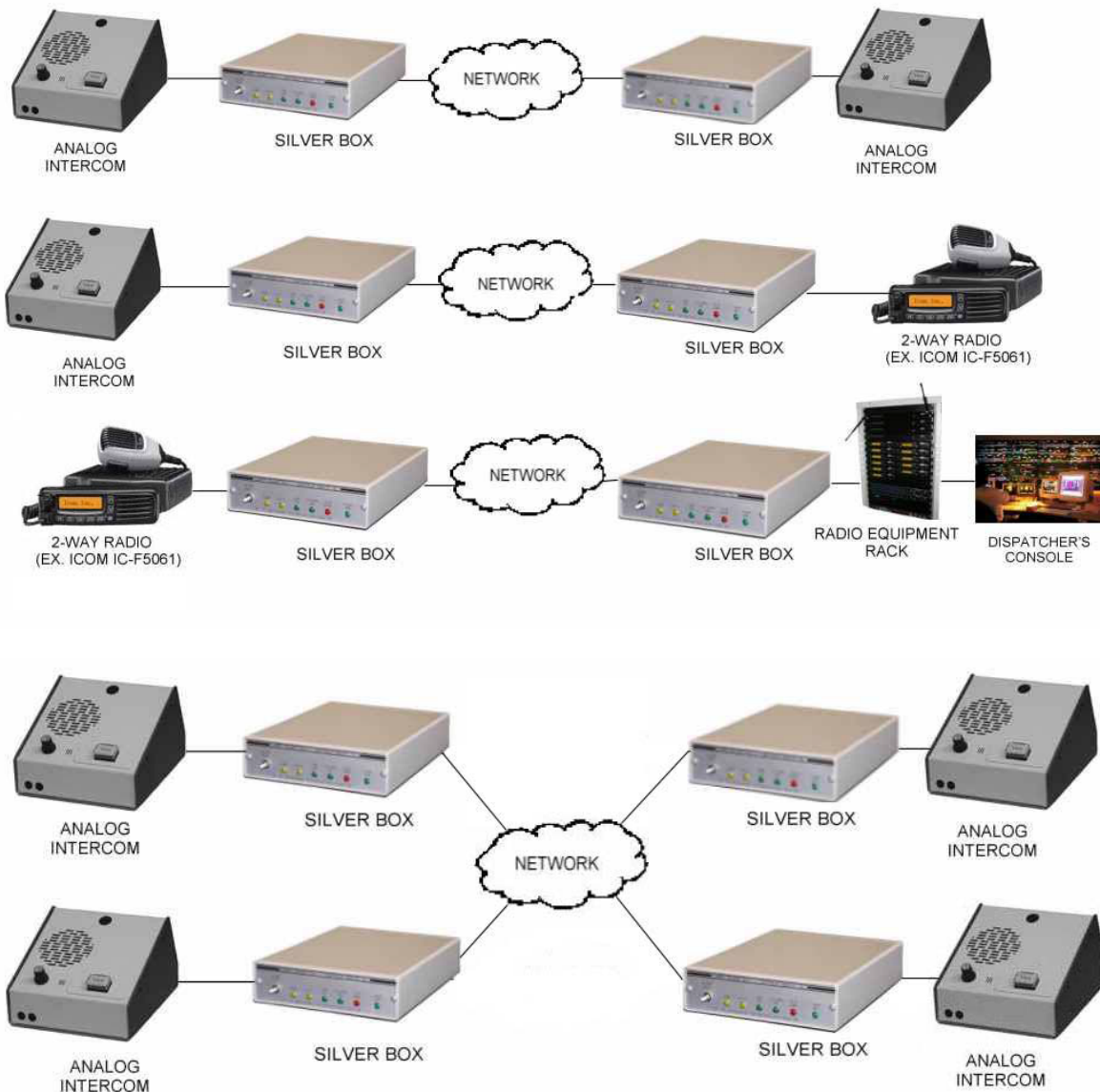
Features:

- Built in a rugged aluminum enclosure measuring 5 1/2” x 1 1/2” x 6”
- LED Indicators denote power and system errors as well as PTT and COR signals
- Internal buzzer indicates critical errors; pressing button on front disables alarm
- System health checks include LED Indicator for “LNK OK” as a check to ensure device sees other NID interfaces and LED Indicator for “NTWRK OK” as a check to ensure network is available
- Simple configuration via device’s own web site and circuit board jumpers
- You may choose to require a password to access the unit’s web site
- Passes control and DTMF tones
- Codecs available: G.711a, G.711µ and G.729a
- Includes MAC number
- PTT Output for control of remote radio
- “Full Duplex” mode available
- Firmware is easily upgraded via the network

Implementation

The Silver box is readily configured using on-board jumpers and the built-in website. Choose your basic parameters, such as 2-wire or 4-wire line, Hi-Z or 600 Ohm termination and audio codec. Choose (on the web site) either point-to-point or "Hoot & Holler" operation and provide appropriate IP information. Connect your 2-wire or 4-wire analog audio line, your "COR" input (or jumper the "COR" terminals for constant transmit) and, if you are controlling an external device, such as a radio, connect the PTT leads, then plug in your power supply and network connections and, after a short boot-up sequence, your Silver Box is ready, and the cost of continued communication is substantially reduced with no loss in communication quality.

The figures below illustrate several implementations of the Silver Box. In the first illustrations, the Silver Box is being used "point-to-point". In the last illustration, several intercom/Silver Box combinations are set up in a "Hoot & Holler" configuration. In this mode, several intercoms (up to 254) are effectively placed on the same "circuit", so that when the operator at one intercom talks, the other units will hear him/her.



Physical Description:

The Silver Box is packaged in an extruded aluminum enclosure, with aluminum front and rear panels and a removable top panel for access to adjustments. All line, power and network connections are made at the rear of the unit. Indicator LEDs and the reset pushbutton are at the front of the unit. See specifications for connection and LED particulars.

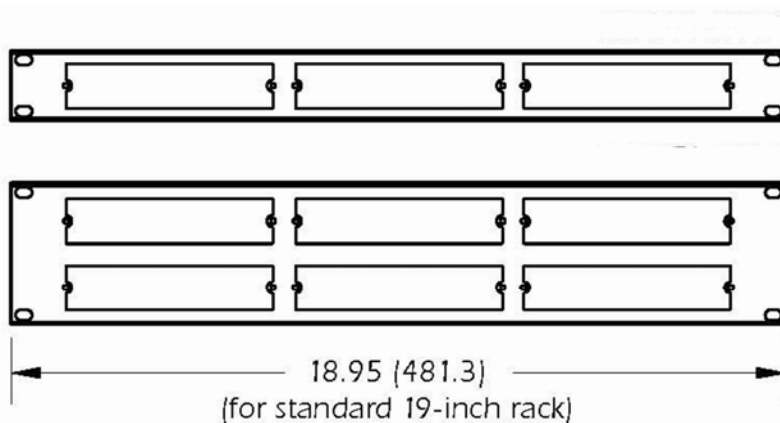


Front of Silver Box



Rear of Silver Box

The Silver Box can be rack-mounted, using either of the optional Rack Mounting Kits. The kits facilitate mounting up to 3 or 6 Silver Boxes in 1 or 2 rack spaces. See illustration below.



Specifications:

Input Power	12 Volts DC (15 VDC Max) Protected by fuse and TVS
Power Connector	2.1mm, Center (tip) positive
Current Requirement:	Nominal 250 mA @ 12 VDC
Ethernet Connection:	10/100 Ethernet Connectivity, RJ45 Connector
Protocol Used:	UDP
Audio Codecs:	g.711 A-law, g.711 U-Law and G.729A
Audio Dynamic Range:	42dB s+n/n or better (at factory presets)
Low End Roll Off:	-1dB @ 250 Hz / -3dB @ 220 Hz
High End Roll Off:	-1 dB @ 3.2 kHz / -3 dB @ 3.4 kHz
Audio Input Range:	-36 to +10 dB
Audio Output Range:	-36dB to +5 dB (with 0 dB EADS)
PTT Relay Contact Rating:	30 VDC @ 1A
Opto Input (COR):	12 VDC +/- 4 VDC @ 15 mA
Terminal Block Connections:	
Terminals 1 & 2:	PTT Relay, N.O. Contact
Terminals 3 & 4:	In 2-Wire Mode, Audio Input & Output In 4-Wire Mode, Audio Input
Terminals 5 & 6	Audio Output (in 4-Wire Mode only)
Terminals 7 & 8:	COR Input, Opto-isolated, configured with JU1 & JU2
Temperature Range:	-20C to +60C
Dimensions:	5 1/2" Wide x 6 3/4" Deep x 1 3/4" Tall
Analog Line Connection:	2-Wire or 4-Wire, 600 Ohm or Hi-Z Termination Protected by blocking capacitors and TVS
Indication LEDs & "Alarm Ack" pushbutton:	
COR	This LED is lit when the COR input is active
PTT	This LED is lit when the PTT relay is energized
Link OK	This LED will flash if the "health check" between this unit & the unit it is connected to fails. (Note: In Hoot & Holler mode, this LED blinks slowly.)
Network OK	Flashes when the network connection fails.
Sys Error	Lights whenever a system error is detected, including Network & Link OK
Power On	This LED is lit whenever the power supply is plugged in.
"Alarm Ack" Pushbutton:	Used for silencing audible alarms (if enabled) and resetting the unit

Ordering Information:

NID-1002-00: "Silver Box" Analog to VOIP Interface Device
17-55064-3S: Rack Mounting Kit (Mount up to 3 "Silver Boxes" in a single rack space)
17-55064-6S: Rack Mounting Kit (Mount up to 6 "Silver Boxes" in 2 rack spaces)