Easy-Link RFIP

Version 3.00

Printings

Version 1.00: 01/31/2005
Version 2.00: 09/10/2005
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SPECIFICATIONS

Input Voltage	15 Vdc 24W Wall Transformer
	2.1mm * 5.5 mm barrel conn. Center +
Current consumption @ 15 Vdc	450 mA (TX)
	800 mA (RX)
	400 mA (Standby)
Temperature range	0 to +60 deg C
Relative humidity	90% at 50 deg C
DSP firmware CODEC algorithm	G.723.1 6.3kbps
Frequency response	+1, -3 dB (300 to 3000 Hz)
Weight	1.5 lb.
Dimensions	7.5" x 5.5" x 1.5"

1.0 GENERAL DESCRIPTION

1.1 Description

The Easy-Link RFIP is a small controller that can be used to provide single-user linking between two or more LTR trunking systems or cross-band linking between VHF/UHF/800 conventional and/or LTR trunking systems.

An Easy-Link RFIP eliminates the need for phone lines or microwave. For linking between LTR systems, the Easy-Link RFIP uses the control station frequencies for the SMR sites being linked. Cross-band linking between other systems uses the frequencies already in use by the other systems, so additional linking frequencies are not needed.

The Easy-Link RFIP is ideal for systems where a UHF link is used to access a VHF Hi/Lo base station, rather than using phone lines or microwave. Operation is also almost completely transparent to the end user, since DTMF mikes or other complicated signalling methods or procedures are not needed in order to establish a path through an Easy-Link RFIP system.

1.2 Capabilities and Features

Provides low-cost, easy-to-install, and easy-to-operate single-user linking between two or more LTR systems.

Provides crossband linking between conventional VHF/UHF/800 MHz. systems and LTR systems.

Automatic Path Turnaround reverses path to provide faster system access on trunking systems.

Amplified, muted receive-to-transmit audio paths allow an Easy-Link to be interfaced into a wide variety of radio equipment.

Audio levels are adjustable externally - no need to open the box to set levels.

Makes use of existing frequencies - no microwave, phone lines, or other radio frequencies are needed.

No need for DTMF mikes on mobiles or any special procedures to access a link.

PC programmable using WEB Browser

Non-volatile memory

Interfaces to various different radios

1.3 Operation

Once the installation is complete, the Easy-Link RFIP will communicate with another Easy-Link RFIP via Ethernet TCP/IP protocol. The Easy-Link RFIP units will allow two or more radios to be remotely connected providing bi-directional operation.

2.0 INSTALLATION AND SETUP

2.1 Inspection

Please refer to the checklist packed with the Easy-Link RFIP in order to become familiar with the unit and to ensure that everything ordered has been received. In the event a part is missing from the checklist, please call the Customer Services Department at 1-701-280-1122.

This unit was thoroughly inspected before leaving the factory. If the outer package appears damaged, please inspect the unit for possible damage immediately. Any dents, scratches, or marks suggest rough handling in shipping. Please notify the shipper if you find any indications of mishandling. If there are any concerns about the condition of the Easy-Link RFIP when it is received, please don't hesitate to call the Customer Services Department.

2.2 Disassembly and Reassembly

When making changes to the jumpers on the Easy-Link RFIP, it is necessary to remove the printed circuit board from the case. This is accomplished by removing the two black screws from the front of the Easy-Link RFIP and removing the front panel. Remove the top cover by sliding it off the Easy-Link RFIP. Since the printed circuit board contains sensitive circuitry, be sure to take the necessary precautions against static discharge.

To reassemble the Easy-Link RFIP, replace the top cover and the front panel making sure the front and back panels are seated properly with the case. Replace the two black screws but do not over tighten them.

2.3 Setup Procedure

The first step to install an Easy-Link RFIP is to perform a bench test. The purpose of the bench test is to set up the Easy-Link RFIP to operate with the radio to which it will be connected. Connect the Easy-Link RFIP to a computer with an Ethernet cable. Connect the radio or power supply to provide power to the Easy-Link RFIP. Change network settings to interface with the Easy-Link RFIP. Then access the Easy-Link RFIP with an internet browser to change it's settings. Refer to section **3.0 PROGRAMMING PROCEDURES** for information on programming the Easy-Link RFIP.

Once the Easy-Link is setup it can be installed. Refer to the radio's manual for instructions on installing the radio. The Easy-Link RFIP should be installed in close proximity to the radio.

NOTE: The Easy-Link RFIP can key the radio at any time. Because of this the radio should be connected to an antenna or a dummy load at all times. This will prevent damage to the radio caused by transmitting without a load.

2.4 Radio Connection

The DB-25 connector labeled "RADIO" on the back of the Easy-Link RFIP is used to interface the Easy-Link RFIP to a base station radio. For the pin functions on the DB-25 connector, refer to the Easy-Link RFIP installation diagram in the back of this manual.

Connector J1	Description
1	RX Audio
7	Ground
9	TX Indicator / Busy Line Input
17	PTT Relay Common
18	PTT Relay N/C
19	PTT Relay N/O or PTT Open Collector
20	13.8 VDC
21	TX Audio
22	Alarm - Output 10 COM
23	Alarm - Output 10 NC
24	Alarm - Output 10 NO or Open Collector
25	COR – RX Indicator

2.5 Ethernet Connections

The Easy-Link RFIP allows Remote Control of the unit via an Ethernet LAN. The Ethernet connectors are found on the back of the Easy-Link RFIP. The Ethernet cable should be a standard cable that is available anywhere that computer accessories are sold. Refer also to the Easy-Link RFIP installation diagram in the back of this manual.

2.6 Jumper and Test Point Settings

The Easy-Link RFIP has a number of jumpers and switches located on the **INTERFACE BOARD** that control the operation of the Easy-Link RFIP. The jumpers and their settings are described below.

JP 5 IN for LOW TX Audio impedance.

OUT for HIGH TX Audio impedance.

JP 6 * AB for POWER from radio

BC for Power from External Wall Transformer

JP 7 AB for open collector PTT.

BC for relay output PTT.

JP 8 AB for open collector - Loss of Connect Alarm – Output 10.

BC for relay output - Loss of Connect Alarm - Output 10.

 * If using POWER from the radio and not the EXTERNAL WALL TRANSFORMER, make sure the radio can provide the current needed by the Easy-Link RFIP. The default is AB for POWER from the radio.

Jumper and Test Point Settings (Continued)

TP 4   (Test Point 4) allows the panel's network address (including subnet and gateway) to be reset to factory defaults.

To begin, disconnect (or verify disconnection of) power. With power removed, connect a jumper wire between (ground) the housing of the RJ45 jack (J1 or J6) and TP4. Once this connection is made, apply power. With power applied, the LED on the main board D6 should turn on, turn off, and then turn on again. At this point, the network address has been reset and the panel is rebooting, so remove the jumper wire between the RJ45 jack and JP4. The panel should finish rebooting.

The network address of the panel is now:
IP Addresss: 10.0.0.200
Subnet Mask: 255.255.255.0
Gateway: 10.0.0.40

2.8 Easy-Link RFIP Web Interface

The Easy-Link RFIP web interface provides a convenient method of changing settings for the link. With the web interface the link can be monitored and settings changed from a remote location or by plugging directly into the Easy-Link RFIP with a standard Ethernet cable.

3.0 PROGRAMMING PROCEDURES

3.1 General

All audio and configuration adjustments are done using a web browser directed at the IP Address that is assigned to the Easy-Link RFIP.

The following will explain the adjustment procedure for the Easy-Link RFIP. Most audio levels are factory preset and will, in most cases, not need adjustment. All of the audio adjustment are accessible from a computer using a web browser. The default address is 10.0.0.200 with the subnet of 255.255.255.0. The IP address and the subnet address will need to be changed to connect to your network. The user name is "admin" and the default password is "idacorp". Once you logon you should change the password to protect your system. If you are configuring multiple Easy-Link RFIPs, you may need to reset the computer NIC card or restart the computer if the next Easy-Link RFIP your computer is connected to does not respond.   The section **3.2 Programming Parameters** explains the adjustment procedure for the Easy-Link RFIP.

3.2 Programming Parameters

All of the programming and audio parameters are accessible through a WEB browser on a PC that is on the network accessing the IP Address that is assigned to the Easy-Link RFIP. The default IP Address is **10.0.0.200**. The default account name is **admin**. The default password is **idacorp**. It is suggested that the password be changed to protect the system. Remember to record and save this password as losing it will require reprogramming the unit at the factory. Also note settings will not go into effect unless they are saved and the unit is reset. If you need a description of a specific setting select Help in the menu where that setting is located. If you need more assistance configuring the Easy-Link RFIP to operate on your network contact your network administrator.

Network

The screen below shows the Network Configuration Parameters that need to be set.

Enter a Unit Name for your Easy-Link RFIP. Then enter it's network settings. Select Save Changes and change the password.

Radio

The screen below shows the Radio Parameters.

Enter the appropriate radio settings for the radio this Easy-Link RFIP will be connected to. Select Save Changes.

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Link

The screens below show the Link Parameters.
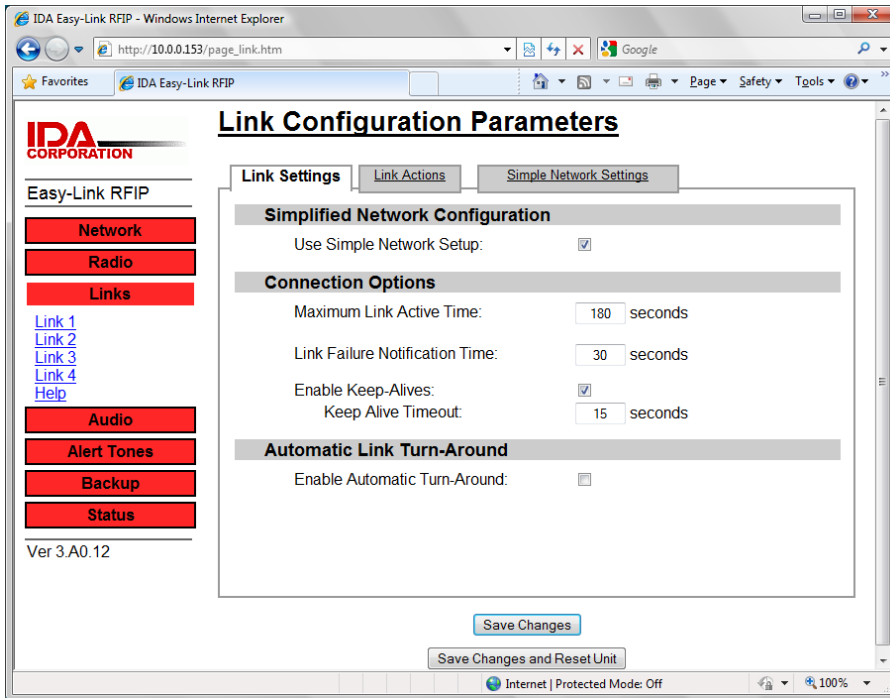
For additional information use the Help selection on each screen.
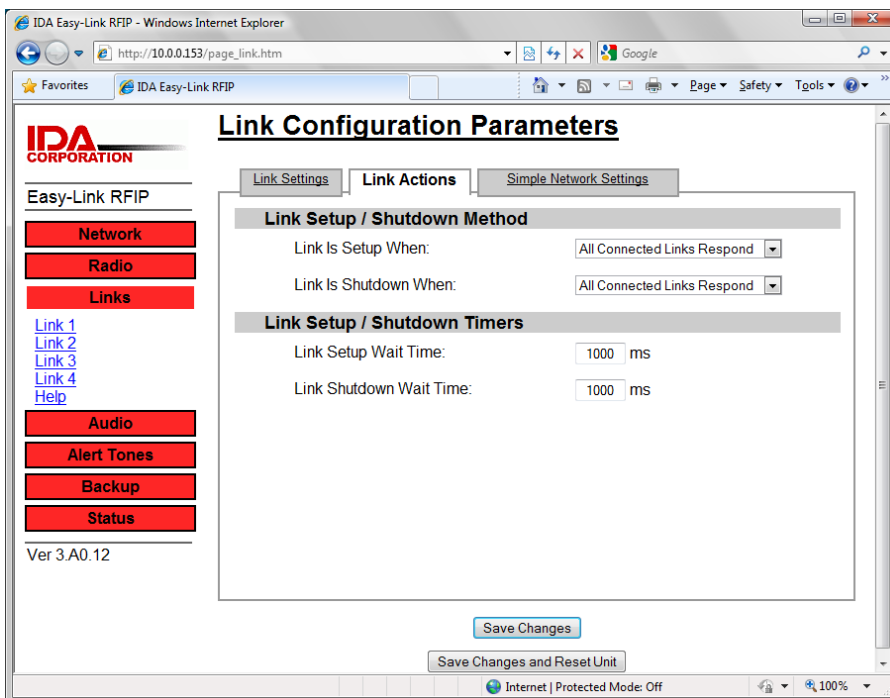
Link (Continued)
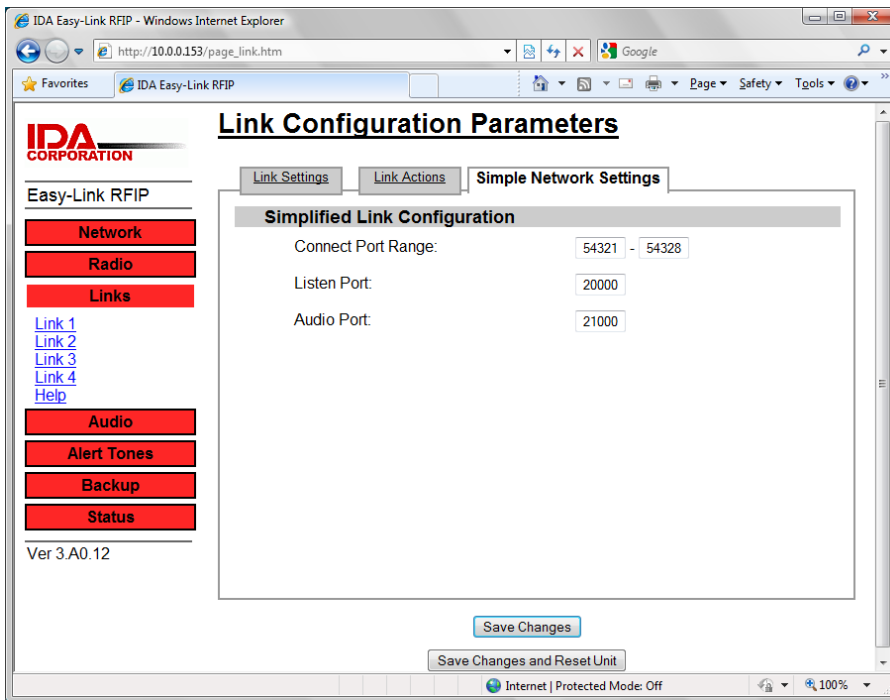
For additional information use the Help selection on each screen.
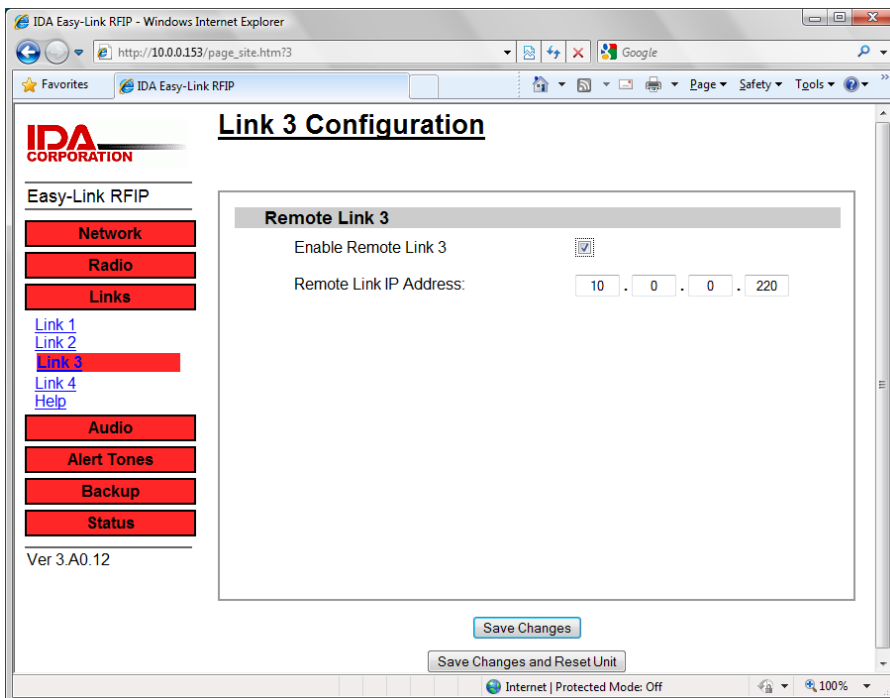
Enter the IP address of the Easy-Link RFIP this one will attach to and set other parameters as desired. Select Save Changes.

Audio

The screen below shows the Audio Parameters.
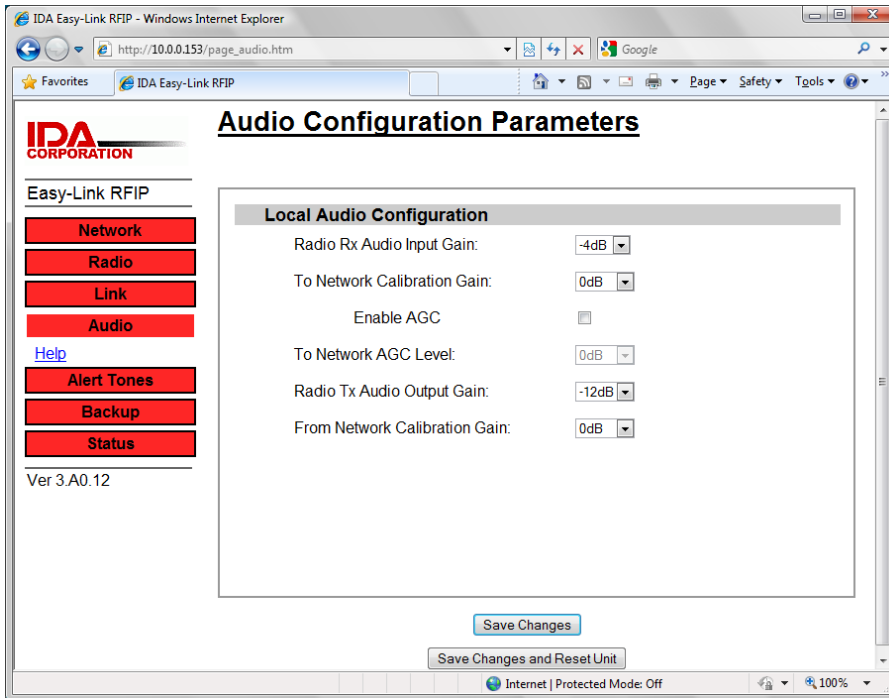
The default audio levels should be operational. Adjustments can be made after two or more Easy-Link RFIP units are setup. If you made any changes select Save Changes.

Alert Tone

The screen below shows the Alert Tone Parameters.
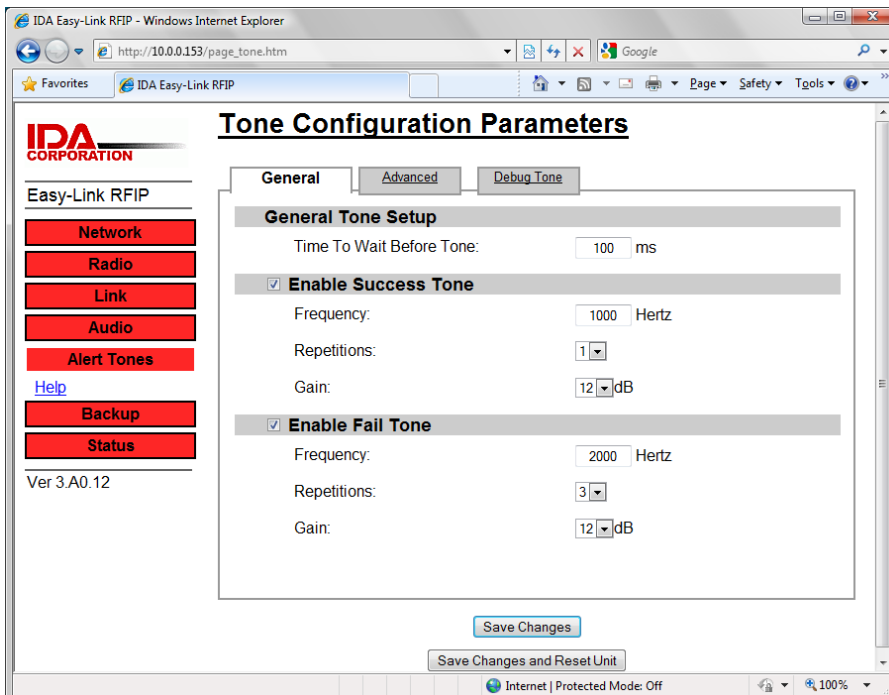
Alert Tone (continued)
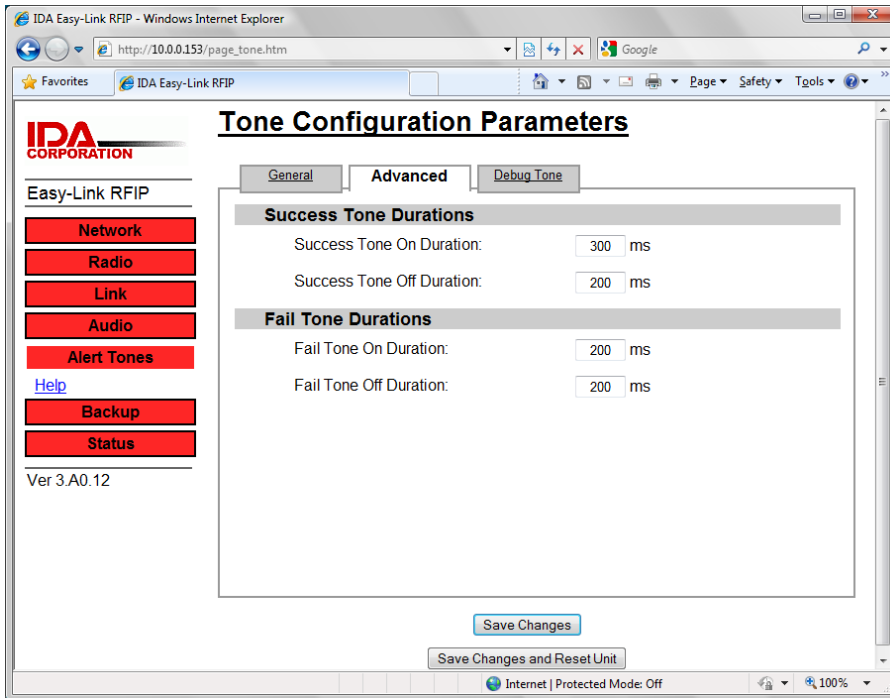
For additional information use the Help selection on each screen.
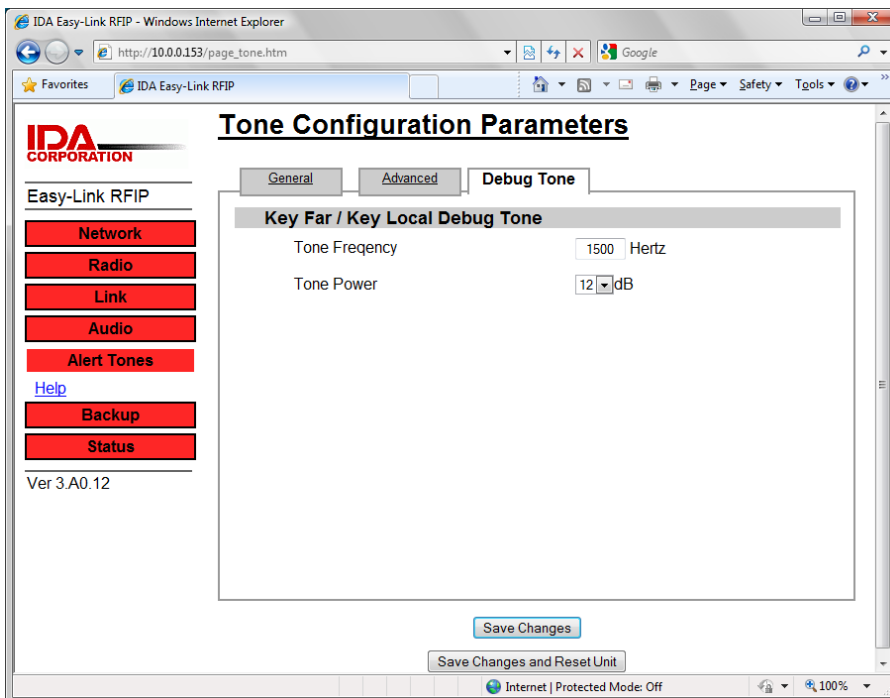
Enter the desired tone configuration parameters and select Save Changes and Reset Unit.

Backup
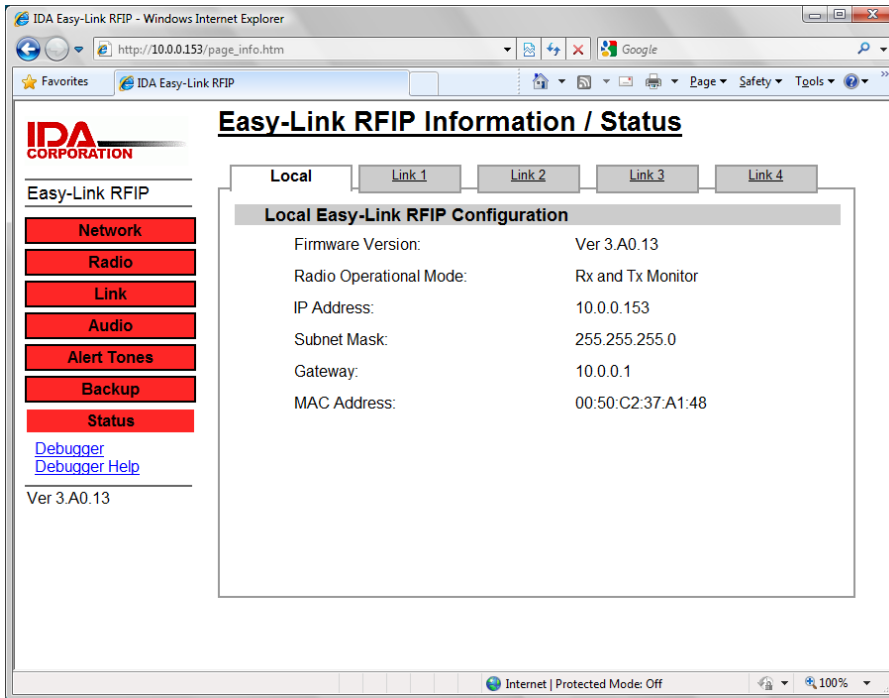
The screen below shows the Backup Parameters.
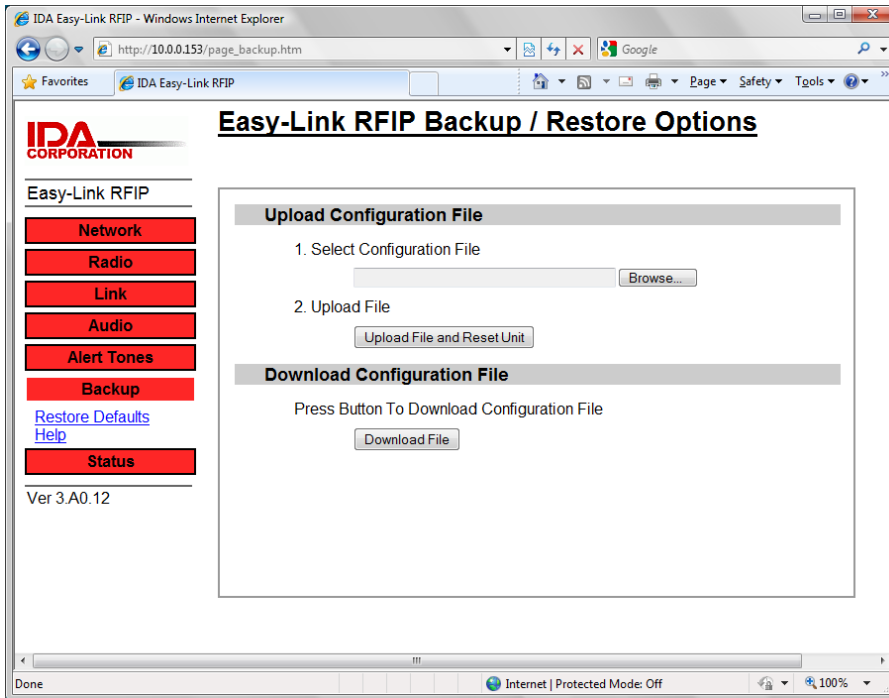
It is a good idea to backup your settings. This will help you return to working settings if settings are changed or lost.
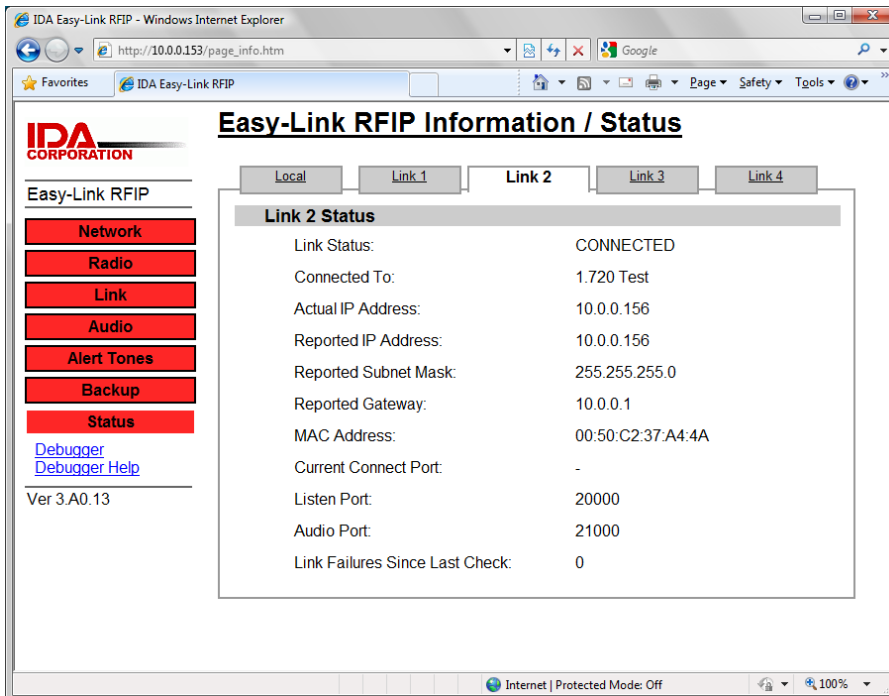
Status

The screen below shows Information about your Easy-Link RFIP.

The Easy-Link RFIP status page contains important information about your link including network information and link status.

NOTE: If the Link Status becomes NOT CONNECTED for 1 minute, Output 10 will go active until Link Status becomes CONNECTED. For more information refer to section **2.4** and **2.6**.

Debugger

The screen below shows the Debugger screen for your Easy-Link RFIP.
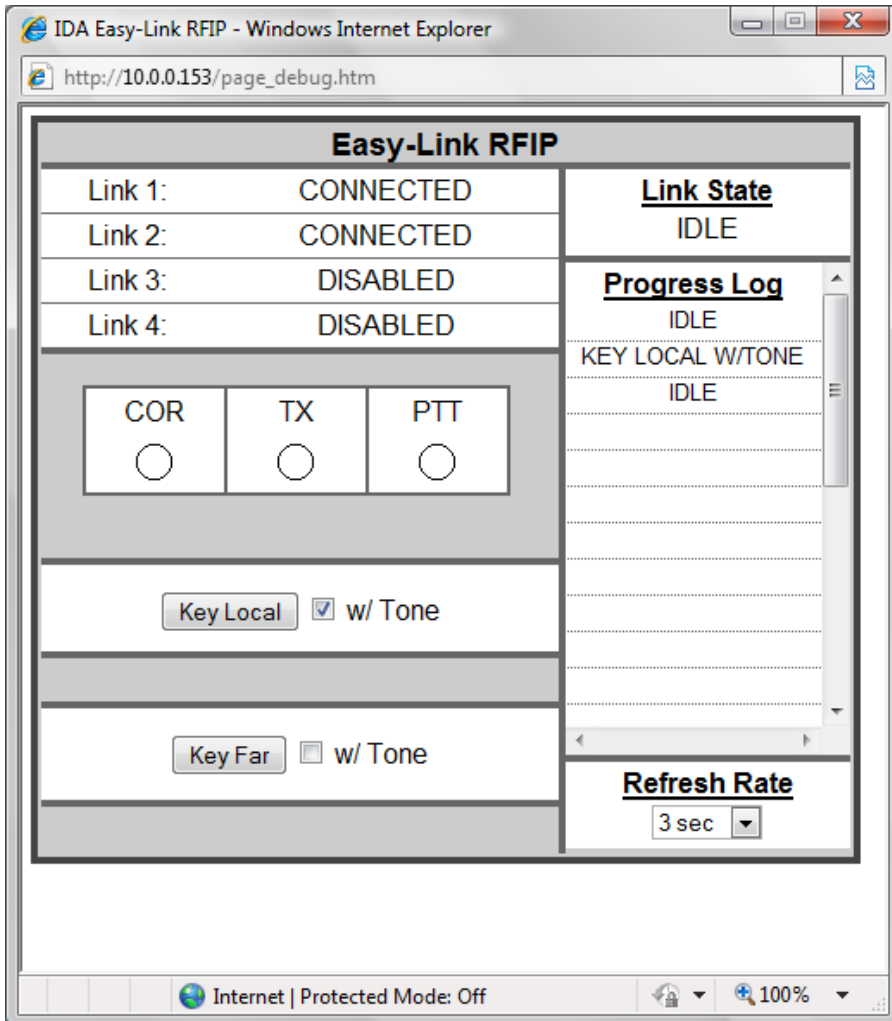
The Easy-Link RFIP Debugger page contains important information about the local Easy-Link RFIP and the ability to Key/PTT the local or remote Easy-Link RFIP. For additional information use the Debugger Help selection found on the pervious screen/page.

4.0 CIRCUIT DESCRIPTION

The Easy-Link RFIP consists of two circuit boards. One circuit board is the Easy-Link RFIP Ethernet/Audio platform. The other circuit board is the Easy-Link RFIP Interface board used to make all of the radio and power connections.

4.1 Power Supply

Power is supplied to the Easy-Link RFIP via either the optional 15VDC wall transformer or the switched B+ output from the radio. The polarity of the connector must be correct. It is connected at J18 on the Easy-Link RFIP Interface board. It is sent to J10 on the Easy-Link RFIP Interface board, then to J10 on the Easy-Link RFIP board. From J10 the power is routed through a diode D7 and a 1 amp fuse F1. Diode D7 prevents a reverse polarity from harming the Easy-Link RFIP. Power is fed into voltage regulator U18. The output voltage of U18 is set to 10 Vdc. This 10 Vdc through a diode D4 drives the audio section of the Easy-Link RFIP. It is also fed into voltage regulator U19 and U20. The output voltage of U19 is set to 3.3 Vdc and this 3.3 Vdc is also fed into voltage regulator U16. The output voltage of U16 is set to 1.5 Vdc. The output voltage of U20 is set to 2.5 Vdc. The 3.3 Vdc, 2.5 vdc, and the 1.5 Vdc powers the digital section of the Easy-Link RFIP.

4.2 Transmit Audio

Transmit audio UDP packets from the Ethernet interface section are passed to the microprocessor U8 for decoding. The decoded digital audio is then sent to the DSP U10. The DSP then converts the digital audio to analog and adjusts the level out. The audio is passed to pin 4 of J3 to the Easy-Link RFIP Interface board where it is sent to pin 21 of the radio interface connector P1.

4.3 Receive Audio

Receive audio from the radio comes from pin 1 of the radio interface connector P1. It is then passed to pin 4 of J5 on the Easy-Link RFIP. The audio is biased by resistors R126 and R136. The audio then passed through the DSP U10 where it is converted to digital. The digital audio is then sent to the microprocessor to be assembled in to UDP packets. The UDP Packets are then passed to the Ethernet section.

4.4 PTT

The PTT state is controlled by U17 on the Easy-Link RFIP board. The PTT is then sent to the open collector output driver U3 on the Easy-Link RFIP Interface Board via J13. PTT is optionally connected to a relay by JP7.

4.5 Microprocessor

The Net+ARM 7520B MCU U8 provides the network interface functions and provides the platform for the application code. Integrated peripherals include a 10/100 Ethernet MAC, two serial ports, and numerous general-purpose I/O pins. An RTOS and a TCP/IP stack are included along with drivers for the internal peripherals.

4.6 Digital Signal Processor

The DSP U10 provides the audio processing functions. This DSP has six audio inputs, four audio outputs, a single Sigma-Delta CODEC, and an audio multiplexor to connect the CODEC to one audio input and one audio output. It also has numerous general-purpose I/O pins and a host interface. The DSP firmware comes pre-programmed in ROM and the functions provided can be controlled by the host CPU U8 through the host interface. The DSP firmware provides the following standard CODEC algorithm G.723.1.

4.7 Ethernet Interface

The Ethernet interface consists of a three port 10/100 Base-TX Switch U4. One port is connected externally to the LAN and the second port is connected externally to a computer to allow the computer access to the LAN. The third port is connected internally to the Ethernet port of the NET+ARM MCU U8. LEDs integrated into the Ethernet connectors will provide Connect and Activity status. The Ethernet port for connecting to the PC will be cross-wired to allow straight-through cables to be used on both ports.

4.8 Easy-Link RFIP Interface Board

The Easy-Link RFIP Interface board provides the connections between the Easy-Link RFIP board and the radio, power, and local control components. Items not covered thus far are described here. P1 pin 1 is the RX audio input. It is connected to J4 pin 5 on the Easy-Link RFIP board where it goes to the DSP. Transmit audio comes from the DSP and goes to J3 pin 4 on the Easy-Link RFIP Interface board and goes through impedance resistors to P1 pin 21. P1 pin 25 is the COR input. It goes through Q3 to J2 pin 2 on the Easy-Link RFIP board then to the DSP. P1 pin 9 is the transmit indicator input. It goes through Q4 then to J11 pin 2 on the Easy-Link RFIP board then to the DSP.

Easy-Link RFIP Main Board

Item	Reference	Description	Part No.	Qty
1	C1,2,12,25,28,44,46	CAP, A ELEC 47UF 6.3	381-0470R	7
2	C3,8	CAP, A ELEC 1UF 50V	381-5105R	2
3	C4,45	CAP, A ELEC 47UF 16V	381-2470R	2
4	C5,6,13,15,50,51,52,53,54,55, 56,57.58,59,60,61,63,64,65,66, 68,69,70,71,72,73,74,75,76,77, 78.79,80,81,82,83,84,85,86,87, 88,89,90,91,92,93,94,95,96,97, 98,99,100,101,102,104,105,106, 107,108,109,110,111,112,113, 114,115,116,117,118,119,121	CAP, .1UF X7R 16V	375-2104R	72
5	C7,11,17,18,20,21	CAP, A ELEC 10UF 16V	381-2106R	6
6	C9	CAP, A ELEC 2.2UF 35	381-4225R	1
7	C10,120	CAP, .47UF Y5V 16V	375-2474R	2
8	C14,26	CAP, A ELEC 4.7UF 25	381-3475R	2
9	C16,37,38,42,48	CAP, A ELEC 470UF 25	381-3471R	5
10	C19,47	CAP, A ELEC 150UF 10	381-1151R	2
11	C22,31,32,33,34	CAP, .1UF X7R 16V	375-2104R	5
12	C23,24	CAP, 22PF NPO 50V	375-5220R	2
13	C29,30,67,103	CAP, 10PF NPO 50V	375-5100R	4
14	C35,39,40	CAP, .01UF X7R 10%50	375-5103R	3
15	C36	CAP, 2700PF X7R 50V	375-5272R	1
16	C41,43	CAP TANT, 1UF 35V	392-4105R	2
17	C49	CAP .22UF Y5V 16V	375-2224R	1
18	C62	CAP, .1UF X7R 16V	375-2104R	1
19	D1,2,9,10	DIODE, SWITCH BAS16	110-2201R	4
20	D3,5	DIODE, SCHKY B140	110-2302R	2
21	D4,7,8	DIODE, SCHKY B330A	110-2301R	3
22	D6	LED, SUPER RED 0603	112-0201R	1
23	F1	FUSE PC MOUNT 1 AMP	290-0008	1
24	J1	JACK MOD, RJ45 LED	234-0121	1
25	J2	RECEPT 36 SIP .1	234-0032	.03
26	J3	RECEPT 36 SIP .1	234-0032	.03
27	J4	RECEPT 36 SIP .1	234-0032	.19
28	J5	RECEPT 36 SIP .1	234-0032	.11
29	J6	JACK MOD, RJ45 LED	234-0120	1
30	J7	CONN 36 POS R/A HDR	231-1236	0.14
31	J8	RECEPT 36 SIP .1	234-0032	.14
32	J9	CONN. 6 POS POST	231-1006	1
33	J10	RECEPT 2 POS .1	234-0033	1
34	J11	RECEPT 36 SIP .1	234-0032	.11
35	J13	SCKT, DIP, 16 PIN IC	220-0001	1
36	L1,5,6,7,8,9	FERRITE, 150 OHM 800	306-2001R	6

37	L3	POWER IND, 47.00uH	306-3001R	1
38	L4	POWER IND, 33.00uH	306-3002R	1
39	P1	HDR 14 POS .1 X .1	231-1076	1
40	R1	RECEPT 36 SIP .1 X2	234-0032	.06
41	R2,3,18,19,21,22,23,25,26,35, 49,113,116,118,119,130,131, 133	RES, 49.9 1% 1/16W	322-49R9R	18
42	R4,5	RES, 2K 5% 1/10W	323-1202R	2
43	R7,10,13,30,48,51,52,53,54,56, 58, 71,76,80,83,86,107,108,111, 112 120,125,132,134	RES, 10K 5% 1/10W	323-1103R	23
44	R9,12,14,15,55,78,79,81,82,98, 105,106,115,123,124,128	RES, 0 5% 1/10W	323-0000R	13
45	R11,47,122	RES, 10 5% 1/10W	323-1100R	3
46	R17,20	RES, 100 1% 1/16W	322-1000R	2
47	R32,33,37,39,40,41,42,44,45,46	RES, 33 5% 1/10W	323-1330R	10
48	R34,38,43	RES, 820 5% 1/10W	323-1821R	3
49	R36,61,62,63,64,65,66,89,95,96 97,99,101,102,103,104,109,127 129,136	RES, 1K 5% 1/10W	323-1102R	20
50	R50	RES, 499K 1% 1/16W	322-4993R	1
51	R60	RES, 56 5% 1/10W	323-1560R	1
52	R67	RES, 10M 5% 1/10W	323-1106R	1
53	R68	RES, 9.31k 1% 1/4W	326-9311R	1
54	R69	RES, 7.87k 1% ¼ W	326-7871	1
55	R70	RES, 7.15K 1% 1/4W	326-7151R	1
56	R72	RES, 300 5% 1/10W	323-1301R	1
57	R73	RES, 1k 1% 1/4W	326-1001R	1
58	R74,75	RES, 75K 5% 1/10W	323-1753R	2
59	R77	RES, 0 5% 1/10W	323-0000R	1
60	R90	RES, 2.7K 5% 1/10W	323-1272R	1
61	R94	RES, 1M 1% 1/16W	322-1004R	1
62	R110	RES, 3.01K 1% 1/16W	322-3011R	1
63	R121	RES, 1 5% 1/10W	323-11R0R	1
64	R126	RES, 620 5% 1/10W	323-1621R	1
65	U1	IC, 24LC256	131-1060	1
66	U2	IC, MCP3221A5T-I/OT	131-5001	1
67	U3	IC, TPA1517DWPR	131-1061	1
68	U4	IC, KS8993	131-2009	1
69	U5,15	IC, SN74AHC1GO8DBVR	131-5002	2
70	U6	IC, TC1270TERCT-ND	131-5003	1
71	U7	IC, SN74AHC1GO8DBVR	131-5002	1
72	U8	IC, NS7520B-1-C55	131-6000	1
73	U9,14	IC, HY57V161610DTC-7	131-1064	2
74	U10	IC, VP101X12BQC-1	131-2010	1
75	U11	IC, MAX3232ESE	131-1062	1
76	U12	IC, SN74LVC1GU04DBVR	131-5005	1
77	U13	IC, AM29LV800BT120	131-1063	1
78	U16	IC, LP3984IMF-1.5	131-5004	1
79	U17	IC, XC9572XL-10PC44C	131-3010	1

80	U18	IC, LM2673S-ADJ	131-4001	1
81	U19	IC, LM2673S-3.3	131-4002	1
82	U20	IC, LM1086CS-5.0	131-4003	1
83	U21	IC, LM1086CS-2.5	131-4004	1
84	Y2	CRY, 18.432 MHZ 20PF	305-0101R	1
85	Y3	CRY, 25.000MHZ 18PF	305-0103R	1
86	Y4	CRY, 4.096MHA 20PF	305-0102R	1
87	00	PC BD, VoIP RMT MAIN	900-0291	1

Easy-Link RFIP Interface Board

Item	Reference	Description	Part No.	Qty
1	0	PEM 4-40 X 5/8 THRD	200-119	4
2	0	PC BOARD VIOP PANEL	900-0300	1
3	C1,2	CAP, .1UF X7R A6V	375-2104R	2
4	J13	POST, MACHINED 9 PIN	231-1088	2
5	J3,4,8,11	HDR 16 POS .100 POST	231-3116	1.06
6	J10	CONN, 2 POS .1 LOCK HDR	234-0019	1
7	J18	CONN, R/A POWER	234-0014	1
8	JP5,6,7,8	CONN 36 POS BKWY HDR	231-1040	.30
9	K1,2	RELAY, PC MOUNT MINI	700-0010	2
10	P1	NUT, HEX 4-40	199-0010	2
11	P1	SCW, 4-40 X ¼ PHLP	199-3055	2
12	P1	CONN DB25 R/A PC MNT	231-0004	1
13	Q1,2,3,4	TRANS, 2N7002	180-1003R	4
14	R2,3	RES, 100 OHM 5% 1/8 W	321-1101R	2
15	R20	RES, 510 OHM 5% 1/8 W	321-1511R	1
16	R1,17,18,19	RES, 10K OHM 5% 1/10 W	323-1103R	4
17	R5	RES, 300 OHM 5% 1/10 W	323-1301R	1
18	R4,6,7,8,9,10,11,12,13,14,15	RES, 4.7K OHM 5% 1/10 W	323-1472R	11
19	SW1	SWITCH, DPDT DIP 6PS	611-0048	1
20	U2,3	IC, ULN2003A	131-1075	2
21	U1	IC, DS1487M	131-1076	1

Easy-Link RFIP Panel Cabinet

Item	Description	Part No.	Qty
1	S/N LBL IDA PRODUCT	199-6009	1
2	HOLE PLUG .250 BLK	203-1150	1
3	CABLE ETHERNET 10FT	800-2080	1
4	REARPLT GEO ANODIZED	900-6062A	1
5	CAB, VOIP PANEL	900-6086	1
6	FACEPLATE, V PAN AND	900-6087A	1
7	FACEPLATE, VOIP PANEL	900-0687B	1
8	FACEPLATE, V PAN SCRN	900-0687S	1

VOIP Panel schematic diagram (PART NO: 900-0300)

Components shown include: J8, Q1 2N7002, Q2 2N7002, R1 10k, R2 100, R3 100, R4 4.7k, R5 300, C1 .1uF, SW1A, SW1B, SWPUSH, U1 DS1487M (RO, RE, DE, DI, VCC, B, A, GND), J5, J15 DESK MIC, J17A, J17B, C2 .1uF, R16 448UD4503BDN, TP4 TP, J13, U2 ULN2003, U3 ULN2003, R6–R15 4.7K, K1 RELAY SPDT, K2 RELAY SPDT, JP7, JP8, JP6, JP5, J18 POWER, J10A, J10B, J3, J2, J11, Q3 2N7002, Q4 2N7002, R17 10K, R18 10K, R19 10K, R20 510, P1 DB25, J4, J16 SPEAKER, SW2A, SW2B, SWPUSH.

REV	BY	DATE	DESCRIPTION
B	MA	2/24/05	Added Test Point 4
A	CA	12/12/04	Initial Release

BY: CA DATE:12/12/04 SCALE:
TITLE: VOIP Panel
PART NO: 900-0300
SHEET SIZE:
UNITS: INCHES

EASY-LINK RF/IP INSTALLATION DIAGRAM

110 VAC Outlet
(Front View)

← Optional Wall Transformer

EASY-LINK RF/IP
(Rear View)

DB25 Connector (P2)

SPKR JACK | ETHERNET | ETHERNET HUB | RADIO | PWR

Power Cord

Ethernet ⟩⟨
Local computer connection

Interface Cable

LAN Connection
Ethernet Hub

Radio Accessory
Connector

Radio

P2 Radio Connector

Ground → ← Not Used
Not used → ← Not used
TX Indicator / Busy Line Input → ← Not used
Not Used → ← Not Used
Not Used → ← Not Used
Not Used → ← RX Audio
Not Used →

13 12 11 10 9 8 7 6 5 4 3 2 1

25 24 23 22 21 20 19 18 17 16 15 14

COR - RX Indicator → ← Not Used
Alarm - Output 10 NO or Open Collector → ← Not Used
Alarm - Output 10 NC → ← Not Used
Alarm - Output 10 COM → ← PTT Relay Common
TX Audio → ← PTT Relay N/C
+13.8 Vdc → ← PTT Relay N/O or PTT Open Collector