

BROADCAST[®] *t o o l s* INC

Installation and Operation Manual



STA-III *Smart Telephone Autocoupler III*

Firmware Version 1.13 or greater / PCB Ver B

Manual Revised 07/12/2011

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INTRODUCTION

Thank you for your purchase of a Broadcast Tools® Smart Telephone Autocoupler-III (referred to as the STA-III throughout this manual). We're confident that this product will give you many years of dependable service.

SAFETY INFORMATION

Only qualified personnel should install Broadcast Tools® products. Incorrect or inappropriate use and/or installation could result in a hazardous condition.

WHO TO CONTACT FOR HELP

If you have any questions regarding your product or you need assistance, please contact your distributor from whom you purchased this equipment.

If you would like more information about Broadcast Tools® products, you may reach us at:

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***THANK YOU FOR CHOOSING
BROADCAST TOOLS® BRAND PRODUCTS!***



CAUTION!

Broadcast Tools® Products, as with any electronic device, can fail without warning. Do not use this product in applications where a life threatening condition could result due to failure.



NOTE:

This manual should be read thoroughly before installation and operation.

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Description

The STA-III provides a convenient interface between a telephone line and the users equipment. A short list of the features is presented below.

- Auto-answer and auto-disconnect via CPC (calling party control) and/or long dial tone hang up signals, allowing use behind PBX switches and POTS lines.
- Front panel, plus remote line seize and drop control for manual operation.
- Remote line busy input.
- Electronic telephone hybrid.
- Remote controllable send and receive audio switcher.
- Balanced bridging audio input with automatic signal limiter with front panel level control.
- Balanced low Z audio output with front panel level control.
- Front panel LED's display power, ring and valid DTMF tone.
- Two remote controllable SPST relays
- SPST End Of Call relay.
- External hook relay activates when a valid access code is accepted
- User programmable number of rings before auto-answer.
- User programmable up to ten-digit access code, if required.
- User defeatable beep tones on line seize.
- All connections via screw terminals.
- Loop-thru jack. (This is where you would connect your business telephone system if you were sharing the line.)
- The STA-III's attractive painted metal chassis may be set on a desktop, mounted on a wall or as part of the new optional RA-1 rack shelf for mounting up to three units in 1-RU.

Programming

To program, plug a standard touch-tone® telephone into the program jack on the front panel and press the recessed front panel "PGM" button with a non-metallic device. The PGM LED will illuminate.

Follow the steps below to set up the STA III.

- 1 - Enter the number of rings you want the STA-III to answer on. The number of rings may set from 1 to 10 rings. DTMF "0" equals ten rings.
- 2 - Enter a "0" if you want to turn OFF the long dial tone hang-up or a 1 if you want to turn it ON.
- 3 - Then enter the access code. The access code can be 0 - 12 digits. If no access code is desired, enter only the number of rings and the long dial tone code and press the PGM button again to return to normal operation.

Example One: If you want to program the STA-III to answer on the 3rd ring, with long dial-tone hang up turned OFF and an access code of 567, press the PGM button, enter 30567 and press the PGM button again. You will hear a beep.

Example Two: If you want to program the STA-III to answer the phone on the first ring, with long dial-tone hang up turned ON and NO access code, press the PGM button, enter 11 and press the PGM button again. You will hear a beep.

Factory Defaults:

Number of rings	= 1
Access code	= NONE
CPC	= Always ON
Long dial tone	= OFF

Rear panel connector descriptions

Line RJ-11	Used to connect to a loop start POTS telephone line.
Loop RJ-11	Used to loop-thru other telephone equipment. This jack is disconnected from the telephone line when the STA-III is off-hook.
A-INA / A-INB	Balanced input to the (Send) telephone line.
A-GND	Analog ground. Tied to PCB circuit ground.
A-OUT/A-OUT	Balanced output (Caller) from the telephone line.
DROP input	TTL compatible input pulled up to 5vdc. Momentary contact closure to D-GND will drop an off hook connection.
SEIZE input	TTL compatible input pulled up to 5vdc. Momentary contact closure to D-GND will seize the telephone line.
D-GND	Digital ground. Tied to PCB circuit ground.
RING	Open Collector output. Must be pulled up in some applications. Goes to ground on each ring occurrence. Limit load to 12 vdc @ 100ma.
CE-A/CE-B	Call End relay (K2). Dry normally open relay contacts close for 1 second at the end of a call.
AUX-A/AUX-B	AUXiliary relay (K3). Dry normally open relay contacts.
HK-A/HK-B	Hook Relay (K4). Dry normally open relay contacts close when a valid access code is accepted or the SEIZE function is initiated.
PGM-A/PGM-B	PGM Relay (K5). Dry normally open relay contacts
BUSY input	TTL compatible input pulled up to 5vdc. Sustained contact closure to D-GND will BUSY out the phone line.
PWR /12 VAC	2.1mm Coax type power connector. Only use a 12 VAC power transformer rated at 500 ma to 1 amp.



NOTE:

To verify firmware version numbers enter 98. This command may not work on older versions of firmware.*

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BROADCAST TOOLS
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Product Listings ▾

Hot New Products:

- AVR-8 Alarm Voice Response
- CDR Connected O' Pad
- CDA-10 Connected O' Adapter
- CDA-27 Connected O' Adapter

Important Updates:

- Staticcode, Will Network, Program, Provider, and Service Codes

Updated Manual for AVR-8

News & Reviews:

- Download our Short Form Catalog

Welcome to Broadcast Tools
Broadcast Tools, Inc. (BTI) specializes in the design, development, and manufacture of affordable and unique problem solving tools for the radio and broadcast industries. Our products include quality audio switches and routers, relay coupled remote controls, satellite receive controller and intercom systems.

Founded in 1987 and located in Sedro-Walugton, our products have a strong reputation for durability and reliability and can be found by top distributors across the United States worldwide.

DESCRIPTION

Front Panel description

DROP Switch	Used to drop an active call/connection
SEIZE Switch	Used to force the STA-III Off-Hook.
LED Indicators	Hook, Illuminates when connected to a telephone line (Off-Hook). Tone, Lights when a valid DTMF is detected. Ring, Illuminates on each ring occurrence. Pgm, Lights when in program mode.
Pgm Switch	Program switch, recessed switch used to put the STA III in program mode. Note: Use a non-metallic device to insert into the front panel switch hole
Receive Lvl	This control adjusts the audio level from the caller.
Send Lvl	This control adjusts the send level to the telephone line.
Pgm RJ-11 Jack	Attach a touch-tone (DTMF) telephone for programming purposes. Talk-battery is provided.
Pwr Led	Illuminates when power is applied.

Installation

Follow the steps below:

- Step 1 Connect your air monitor to the balanced (SEND) input labeled “A-INA / A-INB”. Adjust the front panel SEND LVL trimmer for a good level and check for proper DTMF detection operation. Note: If the send level is too high, the unit may have trouble detecting the DTMF tones. Moving the guard time jumper JP3 to the “SLOW” position will also enhance tone detection.
- Step 2 Connect your input equipment to the balanced (CALLER) output of the STA-III to your equipment. The output terminals are labeled “A-OUT / A-OUT”. The level may be adjusted on the front panel. This control is labeled RECEIVE LVL.
- Step 3 Connect the required relays and/or function inputs to the rear panel screw terminals.
- Step 4 Connect any shared telephone equipment to the rear panel LOOP RJ-11 jack.
- Step 5 Connect the supplied 12 vac wall transformer to power jack on the rear panel of the STA III.

Operation

Auto-Answering a call:

Step 1 Answers after ring count set by user

Step 2 Goes off hook and beeps

Step 3 The users enters a valid access code, (if applicable) and relay K4 (external hook) closes.

Step 4 The send and receive audio is enabled. NOTE: Be sure you have enabled the send/caller audio with the commands below.

Dropping a call:

Hang up occurs with a 12 second dial tone (if enabled), CPC, *99, front or rear panel drop function.

NOTE: CPC and loss of loop current ignored if, an off-hook condition is initiated by a remote or front panel SIEZE function.

Controlling the send and caller audio:

- * 9 # turns OFF send (to phone line) audio
- * 9 * turns ON send audio
- * 8 # turns OFF caller (from telephone line) audio
- * 8 * turns ON caller audio

Relay Operation:

The CE Relay (CE-A/CE-B) K2 closes for 1 second when hang up occurs.

External Hook (HK-A/HK-B) Relay K4 turns ON when a valid access code is accepted or the SEIZE function is initiated.

- 3 * turns ON "AUX" Relay K3
- 3 # turns OFF "AUX" Relay K3
- 3 0 turns ON "AUX" Relay K3 for one second
- 5 * turns ON "PGM" Relay K5
- 5 # turns OFF "PGM" Relay K5
- 5 0 turns ON "PGM" Relay K5 for one second

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SPECIFICATIONS

Send input level:	Adjustable, MIL +24dbu, balanced 20 K Ω bridging (Input to Phone line).
Caller output level:	Adjustable, Off to +4 dbu, @ 100 Ω , balanced output (Receive from phone line).
Logic:	Flash microprocessor, non-volatile memory, DTMF transceiver.
Relays/OC:	Relays, four SPST. 30 vdc @ 1 amp. Open collector (Ground Sink), 12 vdc @ 100 ma.
Drop, Seize and Busy inputs:	Compatible with CMOS/TTL, open collector or contact closures. Active low. Max logic voltage 5 vdc.
Connectors:	Screw style wire captive terminals. 3 - Modular, RJ-11C/W programming telephone, phone line and loop-thru. 1- Modular cable supplied.
FCC registration:	Complies with FCC parts 15 & 68. Reg BRDUSA-36042-OT-T
Ringer equivalence:	0.4B
Power Requirements:	12 Vac, @ 500 ma or 1 amp. 120 Vac wall transformer. Supplied.
Size:	5.65" x 6.50" x 1.55" (WDH)
Weight:	2.0 lbs.
Options:	RA-1 rack shelf for mounting up to three units in 1-RU, CE 240 Vac 50-60 hz wall transformer.



CAUTION!

For safety, do NOT connect 120 Volt circuits to the relays.

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The screenshot shows a web browser window with the address <http://www.broadcasttools.com/>. The page features a circuit diagram at the top with components labeled SW9 through SW14, C18, C17, C16, C15, C14, C13, C12, C11, C10, C9, C8, C7, C6, C5, C4, C3, C2, C1, R9, R10, R11, R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, R23, R24, R25, R26, R27, R28, R29, R30, R31, R32, R33, R34, R35, R36, R37, R38, R39, R40, R41, R42, R43, R44, R45, R46, R47, R48, R49, R50, R51, R52, R53, R54, R55, R56, R57, R58, R59, R60, R61, R62, R63, R64, R65, R66, R67, R68, R69, R70, R71, R72, R73, R74, R75, R76, R77, R78, R79, R80, R81, R82, R83, R84, R85, R86, R87, R88, R89, R90, R91, R92, R93, R94, R95, R96, R97, R98, R99, R100. Below the diagram is a navigation menu with links for Home, Products, and About B. The main content area is titled "BROADCAST TOOLS Innovative Problem" and includes sections for "Hot New Products" (AVR-8 Alarm Voice Response, CDR Connected Of Pad, CDA-10 Connected Of Adapter, CDA-27 Connected Of Adapter), "Important Updates" (Staticide Will Revoke, Program, Provider, and Service Codes), and "Updated Manual for AVR-8". A "News & Reviews" section offers to download a Short Form Catalog. A "Welcome to Broadcast Tools" message states that Broadcast Tools, Inc. (BTI) specializes in and manufactures affordable and custom problem solving tools for the radio and broadcast industries. One product is a multi quality audio switches and routes, fully coupled remote controls, satellite receive controller and intercom systems. The footer mentions the company was founded in 1987 and located in Sedro-Waluggon, WA, and has a strong reputation for durability and reliability, with top distributors across the United States worldwide.

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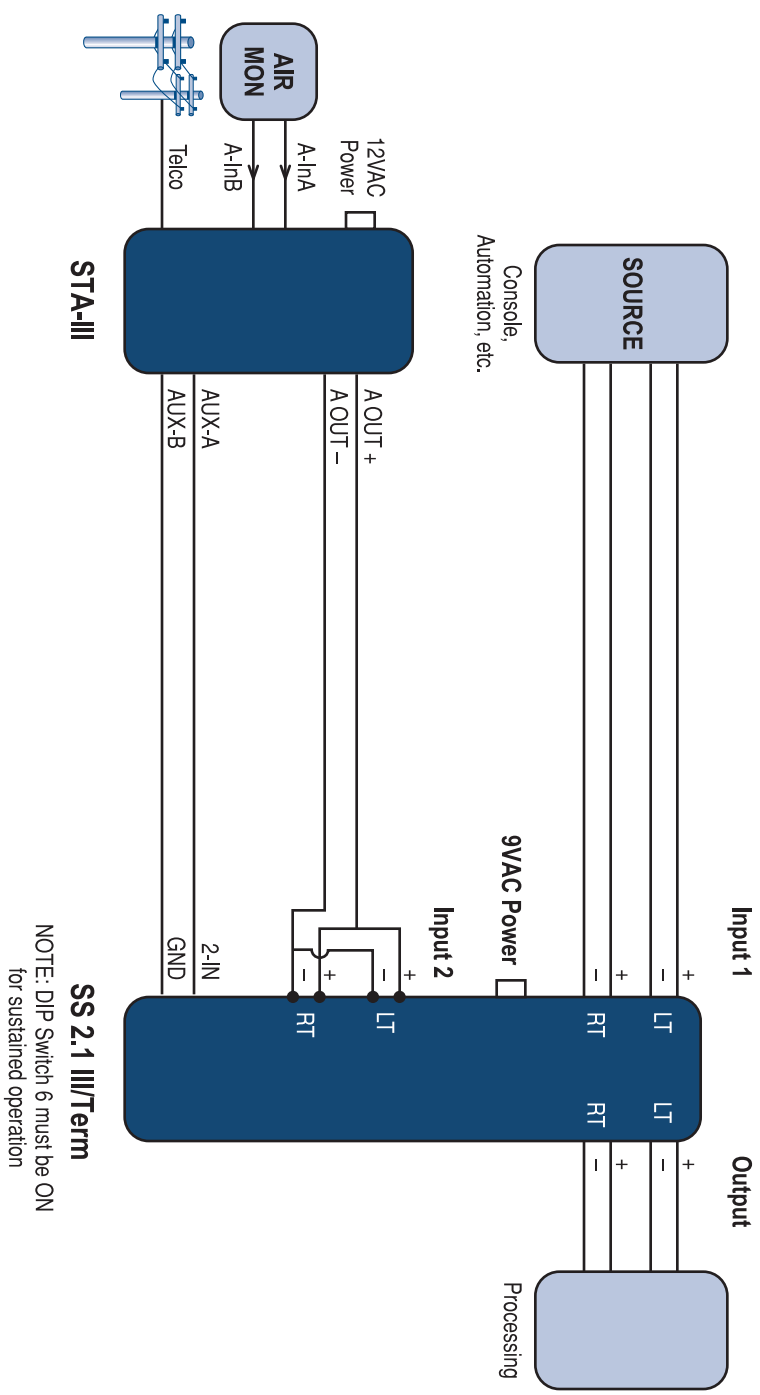
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Broadcast Tools® STA-III & SS2.1 III/Term

Installation Application



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Connection suggestion when using listed* equipment with DSL/Telco Phone Lines.

