



## *Installation and Operation Manual*



### **DMS-III** *Digital Monitor/Switcher*

Firmware Version 1.7 / PCB Ver B

Manual Revised 09/19/2011

Due to the dynamic nature of product design, the information contained in this document is subject to change without notice. Broadcast Tools, Inc., assumes no responsibility for errors and/or omissions contained in this document. Revisions of this information or new editions may be issued to incorporate such changes.

*Broadcast Tools® is a registered trademark of Broadcast Tools, Inc.  
Copyright, 1989 - 2011 by Broadcast Tools, Inc. All rights reserved.  
No part of this document may be reproduced or distributed without permission.*

Visit [www.broadcasttools.com](http://www.broadcasttools.com) for important product update information.

## Table of Contents

Section Title	Page #
Introduction . . . . .	3
Safety Information . . . . .	3
Who to Contact for Help . . . . .	3
Product Description . . . . .	4
Product Features . . . . .	4
Installation Guidelines . . . . .	5
Inspection . . . . .	5
Mounting . . . . .	5
Connecting user equipment . . . . .	5
Configuring for backup switching . . . . .	5
Automatic operation . . . . .	5
Manual operation . . . . .	5
Remote control . . . . .	6
Programming Guidelines . . . . .	8
Switch and jumper setup . . . . .	8
Delay timing . . . . .	9
Restore delay timing . . . . .	10
Operation Guidelines . . . . .	10
Front panel switch operation . . . . .	10
Front panel LED indicators . . . . .	11
Front panel Jack and level control . . . . .	11
Specifications . . . . .	12
Warranty . . . . .	13
Application . . . . .	Appendix
Fractional Diagrams . . . . .	Appendix
Circuit Board Layout . . . . .	Appendix

### WEBSITE:

*Visit our web site for  
product updates and  
additional information*



### CONTENTS

## INTRODUCTION

Thank you for your purchase of a Broadcast Tools® Digital Monitor/Switcher III (referred to as the DMS III throughout this manual). We're confident that this product will give you many years of dependable service. This manual is intended to give you all the information needed to install and operate the Broadcast Tools® DMS III.

## 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:

### **Broadcast Tools, Inc.**

131 State Street  
Sedro-Woolley, WA 98284 USA  
Voice: 360 . 854 . 9559  
Fax: 866 . 783 . 1742

Internet Home Page: [www.broadcasttools.com](http://www.broadcasttools.com)  
E-mail: [support@broadcasttools.com](mailto:support@broadcasttools.com)

**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.

## WEBSITE:

*Visit our web site for  
product updates and  
additional information*



### PRODUCT DESCRIPTION

The Broadcast Tools® Digital Monitor & Switcher III is designed to accept and automatically or manually switch two AES signal sources when a digital error and/or analog silence are detected. Features include: Automatic control function that switches to a back up source upon failure of the main source; Switch functions can be triggered by loss of clock, digital error flags, front panel transfer switch, external switch contact and/or the internal analog stereo silence sensor. Additional features: Front panel error status and sample rate LED indicators; front panel headphone jack and level control; balanced stereo monitor output; remote control; removable screw terminals; Plug & Play installation; dipswitch selection of precise time delay from 2 seconds to 85 minutes and restore timing delay from off to 10.2 minutes; defeatable sonalert aural alarm; SPDT status relays; SPDT one-second pulse relay. The DMS III may be set on a desktop, mounted on a wall or as part of the new RA-1, Rack-Able mounting shelf.

### PRODUCT FEATURES

- Transparent two-input digital switcher with automatic and manual control
- Front panel active channel indicator
- Front panel sample rate and digital error indicators
- Analog audio activity LED with silence sensor alarm indicator
- 96kHz, 24 bit SRC with balanced analog stereo audio output
- Front panel headphone jack and level control
- Precise time delay from 2 seconds to 85 minutes
- Precise restore timing delay from off to 10.2 minutes
- Front panel “XFER” switch with front panel indicator, remote input and DPDT status relay
- Front panel “Mute” switch with built-in sonalert and remote mute input
- Front panel “Arm/Disarm” switch with front panel LED, remote input and SPDT status relay
- Front Panel Alarm “Reset” switch, Tripped LED and SPDT status relay
- External (“Ext”) alarm input with front panel indicator and SPDT status relay
- One SPDT 1 second pulse relay. Great for automatically rebooting external equipment
- Front Panel Power LED
- Removable screw (Euroblock) connectors
- The DMS III may be set on a desktop, mounted on a wall or as part of the new RA-1, “Rack-Able” mounting shelf.
- Optional RA-1 rack shelf for mounting up to three units in 1-RU

## INSTALLATION GUIDELINES

### Inspection:

Please examine your DMS III for any damage that may have been sustained during shipping. If any is noted, please notify the shipper immediately and retain the packaging for inspection by the shipper. The package should contain the DMS III, 16 vac@600 ma wall power transformer and this manual.

### Mounting:

Mount the DMS III where it will be visible and rear panel accessible. Four (4) screw holes are provided for mounting. The DMS III may be set on a desktop, mounted on a wall or as part of the new RA-1, "Rack-Able" mounting shelf.

### Connecting user equipment:

Follow the designators on the rear of the DMS III. Page six lists the function of all relays and remote control inputs. The analog audio output and digital I/O are also listed on the rear chassis.

### Configuring For Backup Switching:

- Connect the (MAIN) source equipment to Input 1.
- Connect the (BACK UP) source equipment to Input 2.
- Connect the destination equipment to the OUTPUT terminal.
- Shields may be connected to the terminals labeled "EG"

### Automatic Operation:

When the main signal is lost, the DMS III will sense the loss and start timing. When the time-out is reached, the DMS III will switch to the back-up source. When the signal returns and after the restore time has been reached (if enabled), the DMS III will automatically switch back to the main source. Please refer to page 7 for optional detection modes (SW2-7).

### Manual Operation:

Pressing the "XFER" switch once will switch to input 2 and light the IN-2 indicator. Press the switch again to switch back to input one and extinguish the IN-2 LED. Pressing the RESET switch will always return the unit to input one.



### NOTE:

*The DMS III is designed to route Input 1 to the output in the event of a power or unit failure.*

### WEBSITE:

*Visit our web site for product updates and additional information*



## INSTALLATION GUIDELINES

### Remote Control

- Mute

### Description

This input is used to mute the sonalert alarm. The sonalert may be disabled by removing JP3 on the rear panel.

- Reset

This input clears all alarms.

- Ext

The “EXT” (external) input will trigger immediately and switch to the backup source. This may be used to monitor STL or satellite squelch relay, etc.

- Arm/Disarm

This input allows the disarming or arming of the system. This is a toggle action function.

- Xfer (Hidden on some units) Allows the switching back and forth (toggle) between the two inputs. The In-2 LED indicates that input 2 is selected.

**NOTE:** All of the above inputs (pulled up to 5 volts) require momentary ground closures. Inputs are 5-volt TTL/CMOS compatible,

- Transfer (Xfer) Alarm Relay (K1-A/B) The 2PDT relay is activated after the timed loss of signal and relaxed when the signal returns (this is determined by the setting of the RESTORE timing switches).

- Pulse Relay (K2) This SPDT relay is activated for one second after the timed loss of signal. Great for rebooting external equipment.

- Tripped Relay (K3) This SPDT relay will close when any alarm is triggered and stay latched until manually reset.

- Armed/Disarmed Relay (K4) This relay closes when the system is armed. The relay may be configured as normally open or closed.

- Ext Relay (K5) This SPDT relay is activated when an external trigger is activated.

**Note:** On some chassis, the normally closed relay K5 contact reads in error, “KGNC”. The correct label should read K5NC.

**NOTE:** The relay designation of NO, refers to the Normally Open contact in the OFF condition. The relay designation of NC, refers to the Normally Closed contact in the OFF condition. C refers to the common or wiper of the associated relay.



## DMS-III Installation and Operation Manual

It is recommended that all cables connected to the DMS III be looped through ferrite cores to suppress RF. Surge protection with RF filtering such as the Tripp Lite "ISOBAR 4" is also suggested for the power transformer. The purchase of an inexpensive uninterruptible power supply (UPS) will provide back up in case of power outages.

### TB1, STEREO ANALOG OUTPUT

LOW, LEFT ANALOG AUDIO	HIGH, LEFT ANALOG AUDIO	CHASSIS GROUND (SHIELD)	LOW, RIGHT ANALOG AUDIO	HIGH, RIGHT ANALOG AUDIO
------------------------------	----------------------------	-------------------------------	----------------------------	--------------------------------

### TB2, REMOTE CONTROL

K2 N.O.	K2 COM	K2 N.C.	K3 N.O.	K3 COM	K3 N.C.
K1A N.O.	K1A COM	K1A N.C.	K1B N.O.	K1B COM	K1B N.C.

### TB-3, REMOTE CONTROL

MUTE	ARM/DISARM	RESET	EXTERNAL	TRANSFER (XFER) <b>NOTE: LABELED DGND ON SOME UNITS</b>	GROUND
K4 N.O.	K4 COM	K4 N.C.	K5 N.O.	K5 COM	K5 N.C.

### TB4, AES INPUT 1

AES INPUT 1, HIGH	AES INPUT 1, LOW	CHASSIS GROUND
-------------------	------------------	----------------

### TB5, AES INPUT 2

AES INPUT 2, HIGH	AES INPUT 2, LOW	CHASSIS GROUND
-------------------	------------------	----------------

### TB6, AES OUTPUT

AES OUTPUT, HIGH	AES OUTPUT, LOW	CHASSIS GROUND
------------------	-----------------	----------------



### CAUTION!

*Installation of the DMS-III in high RF environments should be performed with care. Shielded cable is suggested for all control, audio inputs and outputs. All shields should be tied to the "CHASSIS GROUND" terminal. The station ground should be connected to the chassis ground screw (CH1) located behind J1 as viewed from the rear. For lightning protection devices, check out [www.polyphaser.com](http://www.polyphaser.com) and [www.itwlinx.com](http://www.itwlinx.com).*

### WEBSITE:

*Visit our web site for product updates and additional information*



## PROGRAMMING GUIDELINES

### Switch and jumper Setup:

Jp-3	Enables the sonalert (buzzer)
Jp-6	Selects either 75, 110-ohm or no termination for input one
Jp-7	Selects either 75, 110-ohm or no termination for input two
SW2-7,	OFF, monitors for both a digital error and/or analog silence alarm. <b>NOTE: Both digital error and silence must be restored before the alarm is cleared.</b>
SW2-7	ON, monitors for a digital error only.
SW2-8	Not used (feature creep).

### Delay timing setup:

The DMS III time delay is set via SW 1, the 8-position dipswitch and SW2 switch 6. The default for SW-2-6 is OFF. This provides TWO second resolution. To provide longer delay time resolution, turn ON SW2-6, which will provide 20 second resolution. The switches are set at the factory for a 6 second delay (SW 1-1 & 2 ON and SW 2-6 OFF). Each switch has a digit value as shown in the two tables below. For the factory default setting, as shown in the two-second-resolution table below, we have turned ON switches one and two. Switch one represents a one-digit value, while switch two represents a two-digit value. We add these two digit values together to obtain a total digit value of three. Each value is given a time delay of two or twenty seconds, so we therefore multiply the total digit value of three by two (or 20) to obtain six (or 60) seconds.

**NOTE:** The table on the page refers to the time delay in seconds.

### WEBSITE:

Visit our web site for product updates and additional information





## Time Delay

## Two (2) Second Resolution Table

SW1 Switch Position and SW2-6 OFF.	1	2	3	4	5	6	7	8
Digit Value	1	2	4	8	16	32	64	128
EXAMPLES:								
1 = 2 seconds	ON ↑	OFF ↓	OFF ↓	OFF ↓	OFF ↓	OFF ↓	OFF ↓	OFF ↓
1 + 2 = 3 x 2 = 6 seconds	ON ↑	ON ↑	OFF ↓	OFF ↓	OFF ↓	OFF ↓	OFF ↓	OFF ↓
1 + 2 + 4 = 7 x 2 = 14 seconds	ON ↑	ON ↑	ON ↑	OFF ↓	OFF ↓	OFF ↓	OFF ↓	OFF ↓
32 x 2 = 64 seconds or 1 minute and 4 seconds	OFF ↓	OFF ↓	OFF ↓	OFF ↓	OFF ↓	ON ↑	OFF ↓	OFF ↓
255 x 2 = 510 seconds or 8 minutes and 30 seconds	ON ↑	ON ↑	ON ↑	ON ↑	ON ↑	ON ↑	ON ↑	ON ↑

## Time Delay

## Twenty (20) Second Resolution Table

SW1 Switch Position and SW2-6 ON.	1	2	3	4	5	6	7	8
Digit Value	1	2	4	8	16	32	64	128
EXAMPLES:								
1 = 20 seconds	ON ↑	OFF ↓	OFF ↓	OFF ↓	OFF ↓	OFF ↓	OFF ↓	OFF ↓
1 + 2 = 3 x 20 = 60 seconds or 1 minute	ON ↑	ON ↑	OFF ↓	OFF ↓	OFF ↓	OFF ↓	OFF ↓	OFF ↓
1 + 2 + 4 = 7 x 20 = 140 seconds or 2 minutes and 20 seconds	ON ↑	ON ↑	ON ↑	OFF ↓	OFF ↓	OFF ↓	OFF ↓	OFF ↓
32 x 20 = 640 seconds or 10 minutes and 40 seconds.	OFF ↓	OFF ↓	OFF ↓	OFF ↓	OFF ↓	ON ↑	OFF ↓	OFF ↓
255 x 20 = 5,100 seconds or 85 minutes.	ON ↑	ON ↑	ON ↑	ON ↑	ON ↑	ON ↑	ON ↑	ON ↑

## Restore timing setup:

The DMS III restore time delay is factory configured for 20-second resolution only. Restore delay is set by the first five positions of dipswitch SW2. The default for these switches is OFF. Each switch has a digit value as shown in the table below and refers to the restore time delay in seconds.

**Restore Delay                      Twenty (20) Second Resolution Table**

SW-2 Switch Position.	1	2	3	4	5
Digit Value	1	2	4	8	16
EXAMPLES:					
1 = 20 seconds	ON ↑	OFF ↓	OFF ↓	OFF ↓	OFF ↓
1 + 2 = 3 x 20 = 60 seconds or 1 minute	ON ↑	ON ↑	OFF ↓	OFF ↓	OFF ↓
1 + 2 + 4 = 7 x 20 = 140 seconds or 2 minutes and 20 seconds	ON ↑	ON ↑	ON ↑	OFF ↓	OFF ↓
16 x 20 = 320 seconds or 5 minutes and 20 seconds.	OFF ↓	OFF ↓	OFF ↓	OFF ↓	ON ↑
Restore is turned OFF.	OFF ↓	OFF ↓	OFF ↓	OFF ↓	OFF ↓

## OPERATION GUIDELINES

### Front panel switches:

#### “XFER” switch

Allows the switching back and forth (toggle) of inputs one and two. The In-2 LED indicates that input 2 is selected. Use a non-metallic object to operate the recessed test switch (Early versions only).

#### Mute switch

Used to silence the sonalert. To disable the sonalert, **simply remove JP3.**

#### Arm/Disarm Switch

Arms and disarms the DMS III. When armed, the front panel “ARMED” LED will be illuminated and the armed relay will be closed.

## WEBSITE:

*Visit our web site for  
product updates and  
additional information*



### **Reset switch**

This switch clears all alarms, sonalert and resets the program switcher. If the alarm still exists, the DMS III will alarm again after the time out delay period. If the DMS III has automatically reset, pressing the reset switch will clear all alarmed indicators and relays.

### **Front Panel LED indicators**

In-2:	On later versions of this unit. Indicates input two is active.
Valid Data:	On steady with good data, flashes when in error condition.
Armed:	Indicates that the unit is armed and will automatically switch to the back-up source input two. NOTE: The “XFER” function is not effected.
Ext:	Indicates the alarm was caused by an external source.
Tripped:	Indicates that an alarm has occurred. This must be manually reset.
SS:	Indicator will light after the time delay period when SW2-7 is OFF. The indicator will clear when either the analog audio returns or the unit is reset.
Pwr:	Indicates power is applied to the unit.
ACT:	Analog Audio ACTivity indicator. On when analog audio is above minus 33db program reference.
Sample rates:	32K, 44.1K, 48K and 96K.

### **Front Panel Jack and level control**

Hdph Jack:	Stereo headphone amplifier, T/R/S 1/4” jack.
Hdph Level:	Control adjusts the level of the headphone amplifier.

## SPECIFICATIONS

Inputs:	Level - .1Vp-p minimum Two – Switchable, transformer isolated, AES/EBU, 75 or 110-ohm termination. May be disabled for loop-thru installation.
Outputs:	1 - Digital – Follows the AES input signal. 1 - Analog Headphone - 32 to 600 ohm. 75 mW peaks. Front panel 1/4" phone jack with level control. 1 - Analog - Balanced Stereo, +24dBm peak, +4dBm nom. 100 ohm. 20 to 20kHz +/- .25dB. .01%.
Sample Rates:	27 to 96 kHz SRC / 16 - 24 bit A/D.
Operation Control:	Front Panel - Momentary switches. Remote inputs -Momentary closure to ground, 5- Volt logic levels. Relays - Sealed relays utilizing bifurcated-crossbar silver alloy with gold overlay contacts, 1 amp @ 30 vdc. <b>NOTE: For safety, do NOT connect 120 Vac circuits to these Relays!</b>
Time delay:	2 seconds to 85 minutes, in 2 or 20 second increments, via an 8-position dipswitch. This feature may be defeated.
Restore delay:	Off to 10.2 minutes in 20 second increments, via a 5-position dipswitch. This feature may be defeated.
Logic:	Microprocessor
Interfacing:	Digital, Analog Audio & Remote Control - Pluggable screw terminals (Euro). Supplied. Power - 2.1 mm barrel.
Power Requirements:	16 Vac, 600 ma. 120 Vac 50-60 hz transformer. Supplied. (CE 240 Vac 50-60 Hz optional)
Physical Dimensions:	5.65" x 6.50" x 1.55" (WDH)
Weight:	2 pounds.
Options:	RA-1 rack shelf accommodates up to <b>three</b> units. (1-RU) / Filler panels supplied.

## WEBSITE:

Visit our web site for product updates and additional information



## SPECIFICATIONS

### **LIMITED WARRANTY**

The term "Buyer" as used in this document refers to and includes both (but only) (a) any person or entity who acquires such an item for the purpose of resale to others (i.e., a dealer or distributor of an item), and (b) the first person or entity who acquires such an item for such person's or entity's own use.

Broadcast Tools warrants to each Buyer of any item manufactured by Broadcast Tools that the item will be free from defects in materials and workmanship at the time it is shipped by Broadcast Tools if the item is properly installed, used and maintained.

### **EXCLUSIVE REMEDIES**

If Broadcast Tools is notified, in writing, of a failure of any item manufactured by Broadcast Tools to conform to the foregoing Limited Warranty within one (1) year following the date of the Buyer's acquisition of the item, and if the item is returned to Broadcast Tools in accordance with Broadcast Tools' instructions for confirmation by inspection of the defect (which at Broadcast Tools' election may include, without limitation, a requirement that the Buyer first obtain a Return Authorization number from Broadcast Tools, that the Buyer furnish proof of purchase in the form of an invoice and/or receipt, and that the Buyer prepay all freight charges associated with any return of the item to Broadcast Tools using such freight service as Broadcast Tools reasonably may specify, Broadcast Tools will repair or replace the defective item, or will refund the purchase price paid by the Buyer for the item. Broadcast Tools shall have the exclusive right to choose between these alternative remedies.

### **NO OTHER WARRANTIES OR REMEDIES**

TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, BROADCAST TOOLS AND ITS SUPPLIERS DISCLAIM ALL OTHER WARRANTIES, EITHER EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE; AND THE FOREGOING ALTERNATIVE REMEDIES SHALL BE EXCLUSIVE OF ALL OTHER REMEDIES. THIS LIMITED WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS. YOU MAY HAVE OTHER RIGHTS, WHICH VARY FROM STATE/JURISDICTION TO STATE/JURISDICTION.

### **NO LIABILITY FOR CONSEQUENTIAL DAMAGES**

TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, NEITHER BROADCAST TOOLS NOR ANY OF ITS SUPPLIERS SHALL HAVE ANY LIABILITY FOR ANY SPECIAL, INCIDENTAL, INDIRECT, CONSEQUENTIAL OR PUNITIVE DAMAGES WHATSOEVER (INCLUDING, WITHOUT LIMITATION, ANY DAMAGES FOR LOST PROFITS, BUSINESS INTERRUPTION, LOSS OF DATA OR INFORMATION, COST OF CAPITAL, CLAIMS OF CUSTOMERS, OR ANY OTHER PECUNIARY LOSS) ARISING OUT OF THE USE OF OR THE INABILITY TO USE ANY ITEM SUPPLIED BY BROADCAST TOOLS), EVEN IF BROADCAST TOOLS HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES HAVE ANY LIABILITY FOR ANY SPECIAL, INCIDENTAL, CONSEQUENTIAL, EXEMPLARY OR PUNITIVE DAMAGES. THIS LIMITATION OF LIABILITY APPLIES WHETHER A CLAIM IS ONE ALLEGING BREACH OF A CONTRACT OR WARRANTY, NEGLIGENCE OR OTHER TORT, FOR THE VIOLATION OF ANY STATUTORY DUTY, THE FAILURE OF ANY LIMITED OR EXCLUSIVE REMEDY TO ACHIEVE ITS ESSENTIAL PURPOSE, OR ANY OTHER CLAIM OF ANY NATURE. BECAUSE SOME STATES AND JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF LIABILITY FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES, THIS LIMITATION MAY NOT APPLY TO YOU.

#### **Broadcast Tools, Inc.**

131 State Street  
Sedro-Woolley, WA 98284 • USA

360.854.9559 **voice** • 866.783.1742 **fax**  
support@broadcasttools.com **e-mail**  
www.broadcasttools.com **website**

November 19, 2009

**Changes to the Broadcast Tools® DMS-III with version 1.13 firmware and PCB assembly p/n: 121201 Rev B. Please check the label on U4 for the correct firmware version, if attached.**

## Restore timing setup:

The DMS-III restore time delay is set via SW 2 (OPTIONS), the first FIVE positions of the dipswitch. This provides TWO second resolution when SW2-6 is OFF. The switches are set at the factory for ALL OFF. Each switch has a digit value as shown in the two tables below. Please note the table below refers to the restore time delay in seconds.

Restore Delay	Two (2) Second Resolution Table							
SW-2 "OPTIONS"	1	2	3	4	5	6	7	8
Switch Position								
Digit Value:	1	2	4	8	16	Note 1	Note 2	Note 3
<b>EXAMPLES:</b>								
1 = 2 seconds	ON ↑	OFF ↓	OFF ↓	OFF ↓	OFF ↓			
1 + 2 = 3 x 2 = 6 secs	ON ↑	ON ↑	OFF ↓	OFF ↓	OFF ↓			
1 + 2 + 4 = 7 x 2 = 14 secs	ON ↑	ON ↑	ON ↑	OFF ↓	OFF ↓			
32 x 2 = 64 seconds, or								
1 minute and 4 seconds	OFF ↓	OFF ↓	OFF ↓	OFF ↓	OFF ↓			
Restore is turned OFF.	OFF ↓	OFF ↓	OFF ↓	OFF ↓	OFF ↓			

The DMS-III restore time delay is set via SW 2 (OPTIONS), the first FIVE positions of the dipswitch. This provides TWENTY second resolution when SW2-6 is ON. The switches are set at the factory for ALL OFF. Each switch has a digit value as shown in the two tables below. Please note the table below refers to the restore time delay in seconds.

Restore Delay	Two (2) Second Resolution Table							
SW-2 "OPTIONS"	1	2	3	4	5	6	7	8
Switch Position								
Digit Value:	1	2	4	8	16	Note 1	Note 2	Note 3
<b>EXAMPLES:</b>								
1 = 2 seconds	ON ↑	OFF ↓	OFF ↓	OFF ↓	OFF ↓			
1 + 2 = 3 x 20 = 60 sec.	ON ↑	ON ↑	OFF ↓	OFF ↓	OFF ↓			
or 1 minute								
1 + 2 + 4 = 7 x 20 = 140	ON ↑	ON ↑	ON ↑	OFF ↓	OFF ↓			
seconds or 2 min and 20 sec.								
16 x 20 = 320 seconds, or								
5 minutes and 20 seconds	OFF ↓	OFF ↓	OFF ↓	OFF ↓	OFF ↓			
Restore is turned OFF.	OFF ↓	OFF ↓	OFF ↓	OFF ↓	OFF ↓			

## WEBSITE:

*Visit our web site for product updates and additional information*



## ADDENDUM



**December 1, 2007**

**Updated: November 19, 2009**

Changes to the Broadcast Tools® DMS-III with version 1.13 firmware and PCB assembly p/n: 121201 Rev B. Please check the label on U4 for the correct firmware version, if attached.

**NOTE 1, SW2-6 “OPTIONS”**, sets the restore resolution for two or twenty seconds.

When OFF, the restore resolution is TWO seconds.

When ON, the restore resolution is TWENTY seconds.

**NOTE 2, SW2-7 “OPTIONS”** now has two independent functions.

When OFF, the DMS-III switches back to input one from input two when the alarm is cleared or the audio returns.

When ON, it allows the DMS-III to stay at input two after the alarm is cleared or the audio returns.

**NOTE 3, SW2-8 “OPTIONS”** now has two independent functions.

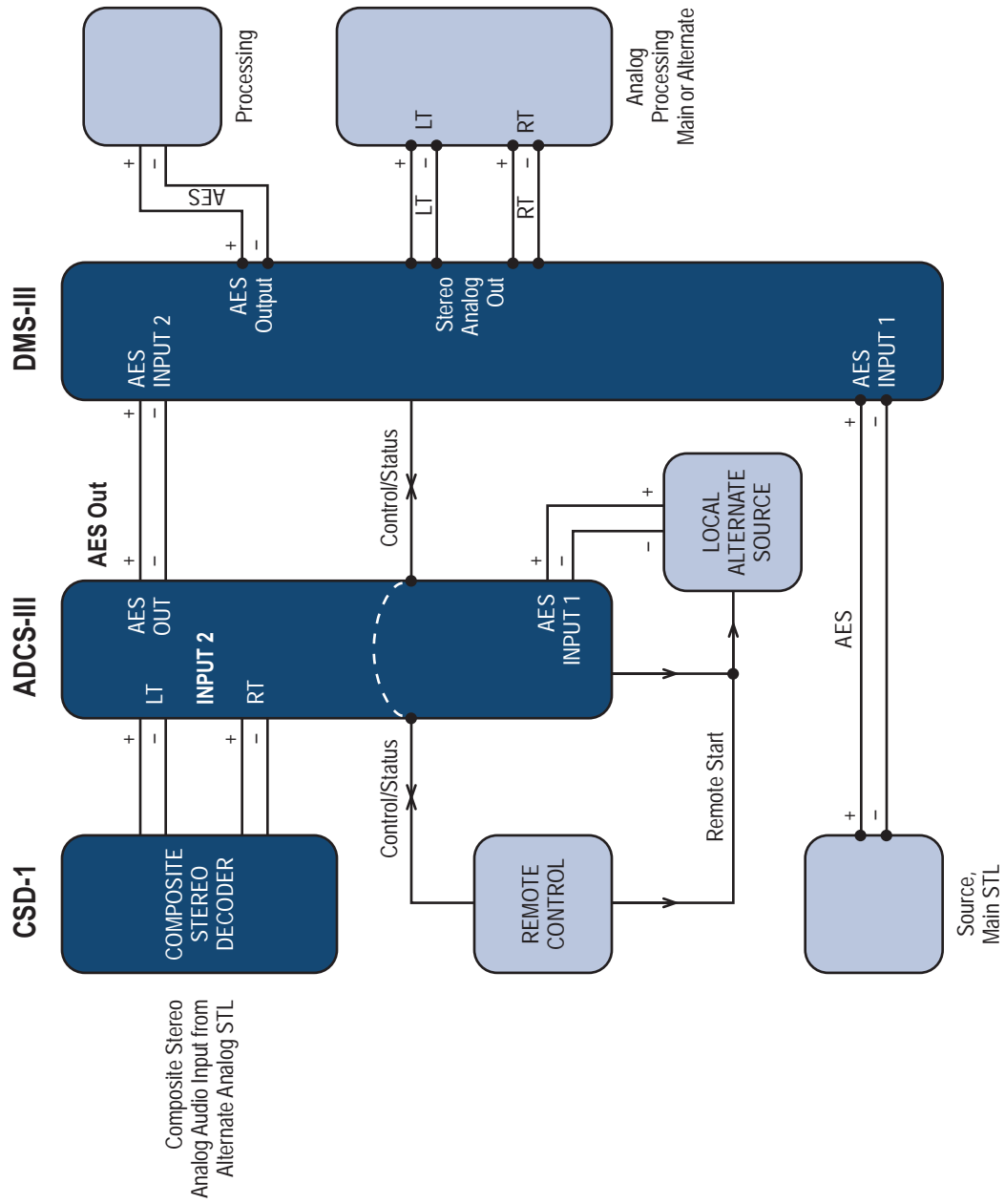
When OFF, the DMS-III is armed at start-up.

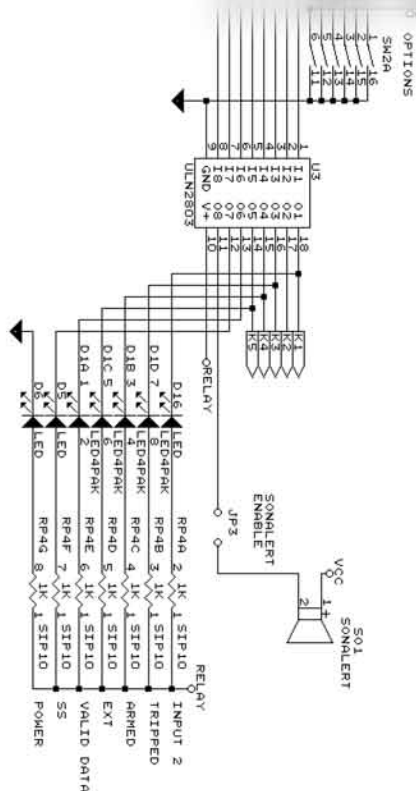
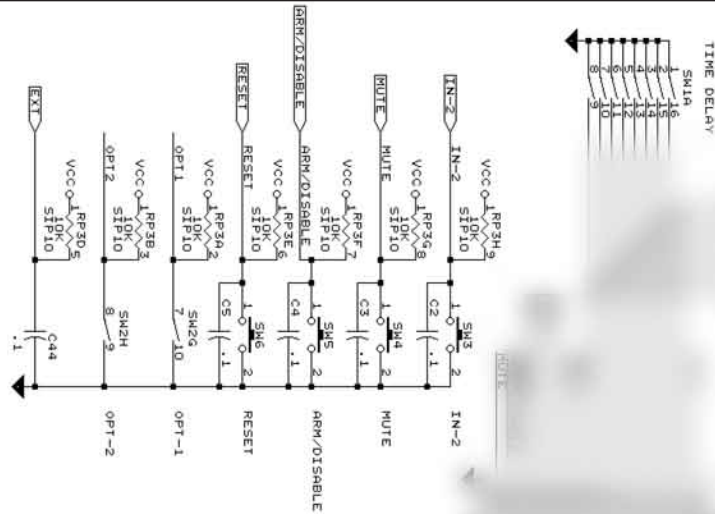
When ON, the DMS-III is NOT armed at start-up.

## APPENDIX – APPLICATION

### Broadcast Tools®

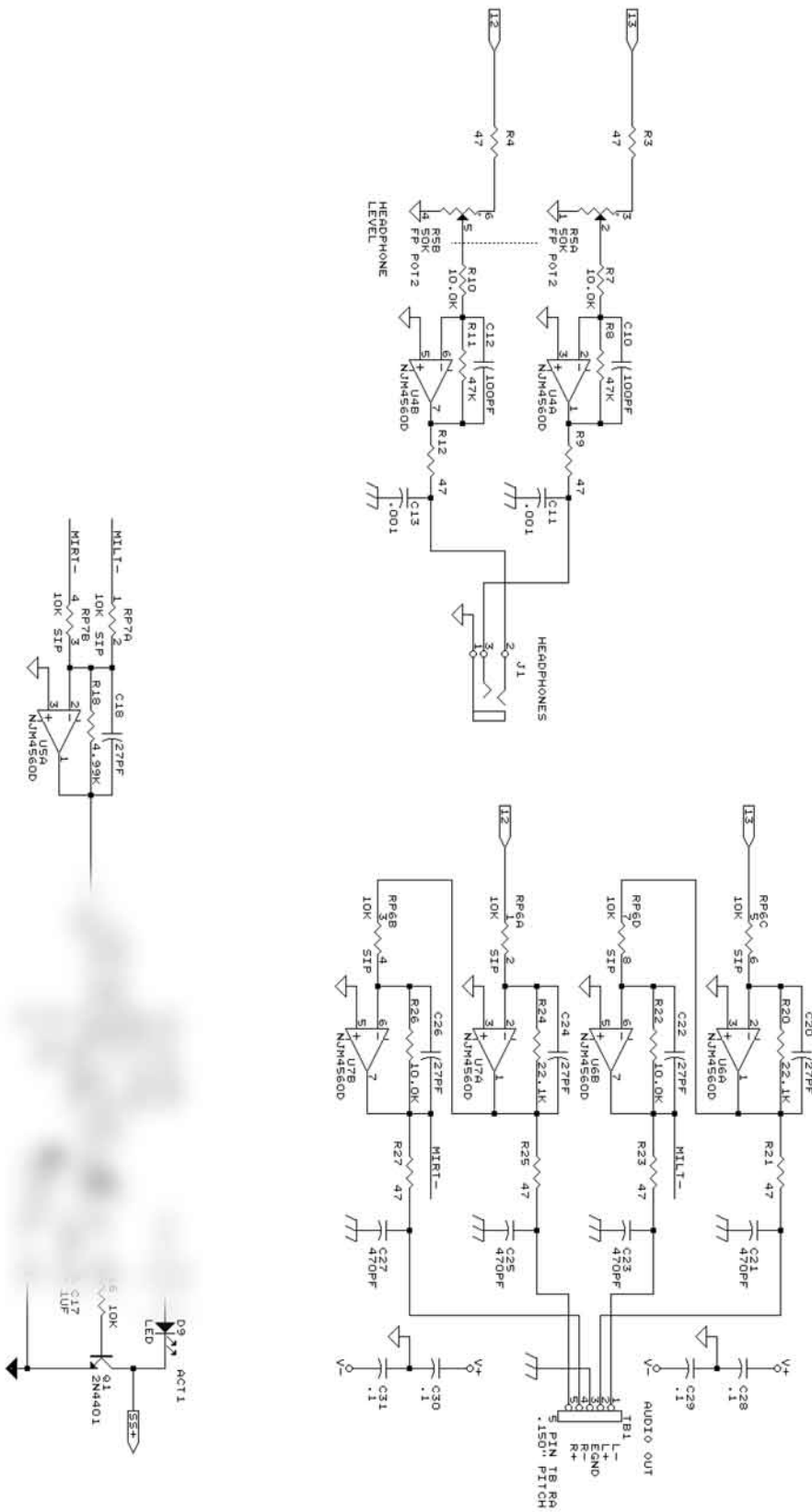
Typical Main/Alternate Analog/AES Switching Setup using off the shelf Broadcast Tools products.





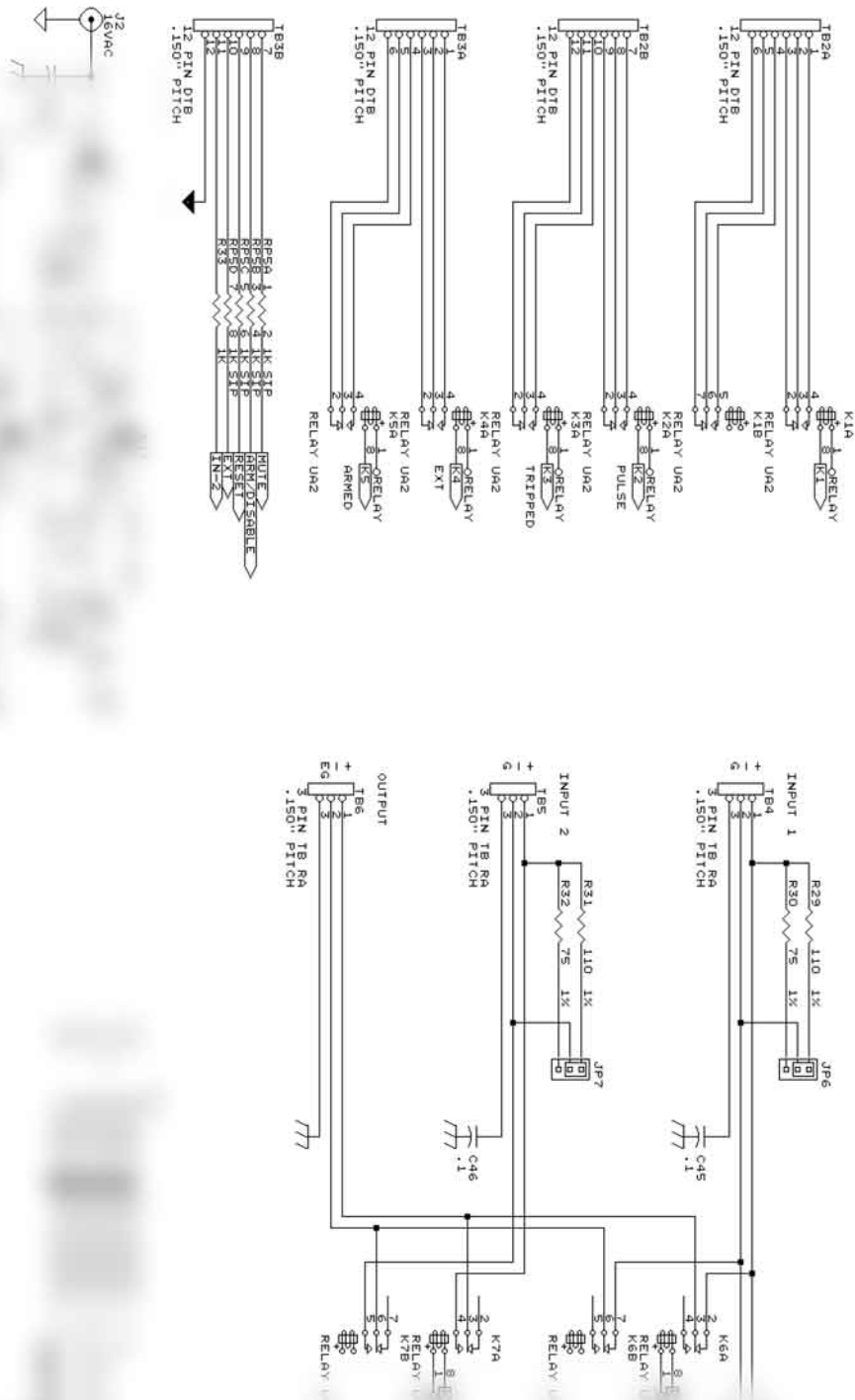
This information is the property of Broadcast Tools, Inc. and shall not be used without the written permission of Broadcast Tools, Inc. It and all proprietary rights in the material contained in this information are the property of Broadcast Tools, Inc.

BROADCAST TOOLS, INC.	
Title	DIGITAL MONITOR AND SWITCHER III
Size/Document Number	DMS3B1.SCH
REV	B
Date:	March 8, 2004 Sheet 1 of 3



This information is the property of Broadcast Tools, Inc. and shall not be used without the written permission of Broadcast Tools, Inc. It shall be made of it and all proprietary rights in the matter contained in this information are the property of Broadcast Tools, Inc.

BROADCAST TOOLS, INC.	
Title	DIGITAL MONITOR AND SWITCHER III
Size/Document Number	DMS3B2.SCH
REV	B
Date:	March 8, 2004 Sheet 2 of 3



This information is the property of Broadcast Tools, Inc. and shall not be used without the written permission of Broadcast Tools, Inc. It and all proprietary rights in the material contained in this information are the property of Broadcast Tools, Inc.

BROADCAST TOOLS, INC.	
Title	DIGITAL MONITOR AND SWITCHER III
Size/Document Number	DMS3B3.SCH
REV	B
Date:	March 8, 2004 Sheet 3 of 3

