Sd-25 Configuration & Installation

Before the **Sd-25** can be used, you will need to load your SoundFiles onto a MMC/Sd flash card, attach a power supply, speakers, and (optionally) a switch to start the **Sd-25**. Selecting the operating mode will tell the **Sd-25** how you would like your SoundFiles to be played.

MMC/Sd Card:

Any 3.3 volt Multi Media Card (MMC) or Secure Digital (Sd) flash memory card can be used with the **Sd-25**. Starting with version 1.16 of the **Sd-25** firmware, Sd HC cards are also supported. These will be available with capacities up to 2048 GBytes. As of this writing, Sd cards are available in sizes up to eight GBytes. These hold about 2000 typical Mp3 songs for about four days of continuous audio playback. The **Sd-25** supports up to 255 SoundFiles in most operating modes. Some modes support up to 32,767 Sound-Files.

The flash card should be formatted 'FAT' or 'FAT32' (it will probably come that way). The order in which the SoundFiles are placed onto the card is the order in which the **Sd-25** will play them. You can load Mp3 and .wav files onto the card using a flash card writer attached to a PC or Mac.

For the **Sd-25s** to recognize a SoundFile, its FileName must start with an alphanumeric character, and it must have the extension of either '.wav' or '.Mp3'. If a SoundFile meets these criteria, the **Sd-25** will attempt to play it. If the **Sd-25** can't play a SoundFile for any reason, it will give up after about three seconds.

The **Sd-25** will play just about all Mp3 or .wav file formats. Mp3 bit rates up through 320 Kb/second are supported. .wav files of up to 48 Kbytes/second

and sixteen bit are supported. If a file does not play, it is most often caused by a large (more than 2 MBytes) 'id3' tag at its front. These typically hold the album cover artwork for files downloaded from iTunes and similar sources. Since a **Sd-25** can't use album artwork, it simply takes up additional storage space, delays the time it takes a SoundFile to start playing, and (in the worst case), will keep a SoundFile from playing at all. Most audio programs (including iTunes) have an option to delete 'id3' tags.

Speaker Outputs:

The **Sd-25's** amplifier is a 'Class-D' design. Its efficiency is near 90%. If you feed 50 Watts of 24 vdc into the **Sd-25's** amplifier, you will get almost 50 Watts into your speakers. 'Linear' amplifiers have only about 20% efficiency. Fully 80% of the power you put into them goes into the heatsink as waste heat. A 50 Watt linear amplifier would only feed 10 Watts of power into your speakers, and 40 Watts into the heatsink. This makes the **Sd-25's** amplifier roughly equivalent to what would be a 200 Watt linear amplifier!

If you are going to run your speakers at high SPLs, you will need to select speakers that can handle at least a **125 to 150 Watts or more of continuous power**. Speakers smaller than this may clip or be damaged if run at too high an output power level from the **Sd-25**.

The amplifier outputs from the **Sd-25** can be used with speakers of four to eight ohms impedance. As with any amplifier, you can series/parallel a number
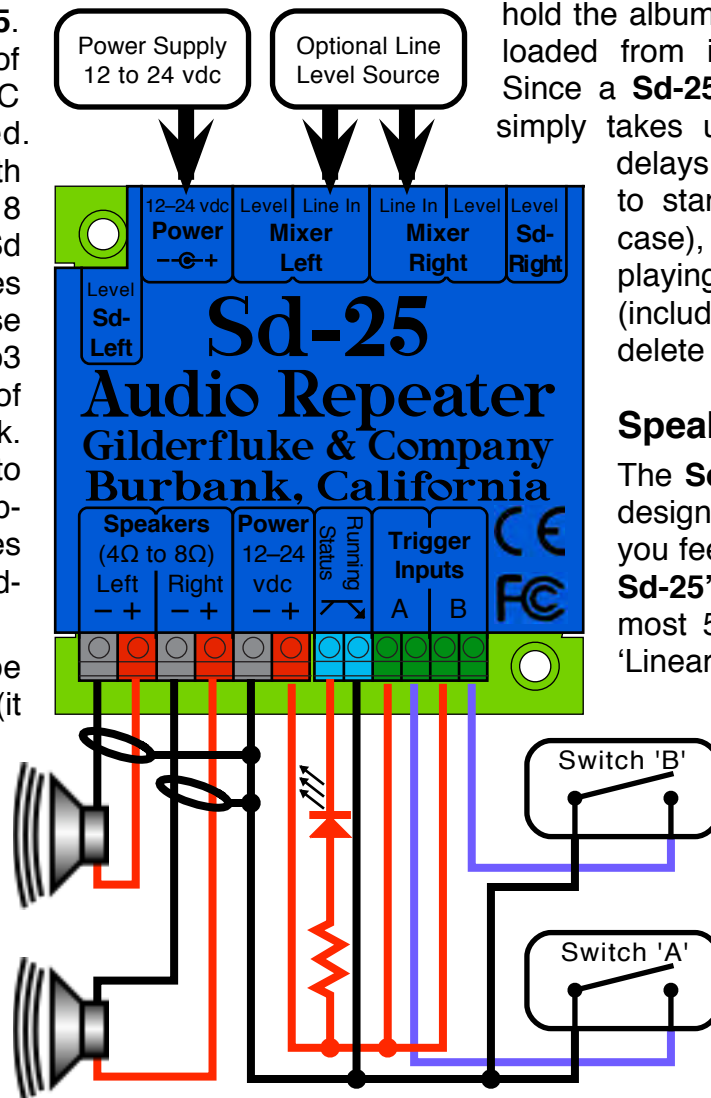
of speakers, so long as the impedance remains within limits.

If your speaker seems to clip out at an unusually low level, it may be that the speaker protection circuitry inside the crossover is confused by the digital output of the Sd-25's amplifier. If this is the case, we have a small filter module available that can smooth the signal the speaker receives.

The **Sd-25's** amplifier is well protected from short circuits and overheating. You can stick a screwdriver right across the speaker terminals, and the **Sd-25's** amplifier will go back to work an instant after a fault is removed. If the speaker impedance is too low and you are running at a high volume level, the amplifier may start to cut out. If you hear this, check the power supply voltage. If the input voltage is dropping, you might simply be drawing too much power for the power supply and a larger supply may fix your problem. If the power supply is OK, and you can't increase the speaker impedance, then you might simply be asking too much of the **Sd-25's** amplifier, and need to turn down the volume a tad.

If you wish to comply with FCC and CE standards for radio frequency emissions, you should use shielded speaker wires with the **Sd-25**. The shield should be attached to the power supply 'negative' terminal, which is immediately adjacent to the speaker terminals. This will not affect the sound quality from the **Sd-25**, but will make the FCC and CE folks happy. Shielded speaker lines were used during all CE/FCC certification testing.

Bridged Amplifier: If you need a mono output with more 'oomph', the amplifier in the **Sd-25** can be 'bridged'. Bridging will only have an effect with lower impedance speakers You won't hear a bit of difference if you are using an 8 ohm speaker. The only audio which is amplified comes from the 'left' sources (mixer and repeater). The wiring to 'bridge' the amplifier is a little different than on a linear amplifier. The speaker is wired in parallel to both speaker outputs, and the jumper inside the **Sd-25** is moved to the 'bridged' position. **Wiring the speakers for a 'bridged' output without moving this jumper can damage the Sd-25's amplifier**.

'Bridged' Speaker Connections
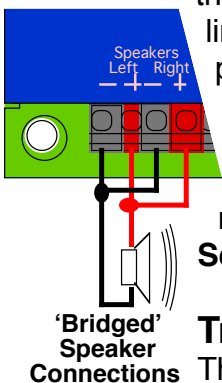
Trigger Inputs:

The trigger inputs can be used with any switch. This can be a pushbutton, motion detector, IR beam, step mat, a digital signal from a control system, or anything else that will give you a 'powered switch closure'. The trigger inputs are non-polarized (they don't care which terminal is positive or negative) and opto-isolated. You must feed a DC voltage into them. Just touching a pair of leads from a nine volt transistor radio battery is a good test of the inputs. As shown at the middle of the last page, you can 'borrow' some of the power that is running the **Sd-25** using the adjacent screw terminals, or use a separate isolated supply (as shown at left). The power supply is shown as a battery, but can be any power supply from 9 to 24 vdc.

Triggering from a Control System
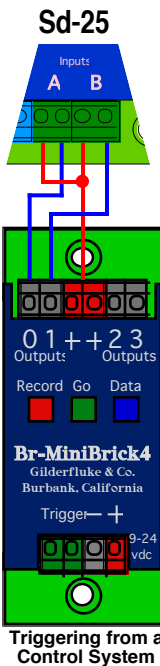
Not surprisingly, all Gilderfluke & Co. control systems are easy to attach to a **Sd-25**. A **Br-miniBrick4** is shown, but all of our systems are wired in exactly the same way. The common positive is run to one side of both **Sd-25** inputs, and the control system outputs are wired right to the **Sd-25** inputs.
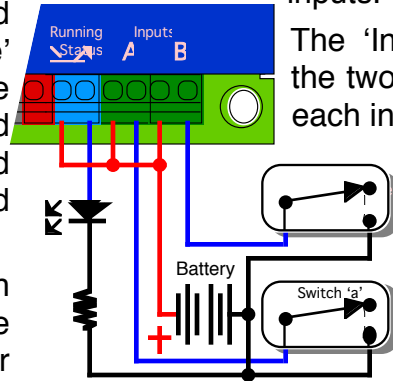
The 'Input' LEDs that are next to the two **Sd-25** inputs will light when each input is active.

External power for Switches & Status

Power Supply:

The **Sd-25** will run on any voltage from 12 through 24 vdc. Whatever voltage you use will also be used to run the amplifier. If you aren't using the amplifier, the **Sd-25** will run on less than 50 ma. Size your power supply so it will provide enough current for the volume you are planning to run at. The amplifier will put out more power at 24 volts than it can at a lower voltage. If using all 50 Watts of the amplifier power, you will need to use a 24 volt supply rated at least 60 Watts. If you hear clipping, the speakers or power supply may be undersized for your application.

The power supply can be attached through the 2.1 mm power jack, or the screw terminals. Power Supply voltages higher than 24 vdc can damage the amplifier on the **Sd-25**.

Volume Controls:

A pair of small trimpots on the **Sd-25** are used to set the maximum audio output level from the MMC/Sd card. The operating modes which ramp the audio up and down can never exceed the level set by these pots.

An additional pair of pots is used to set the levels for the 'mixer' inputs.

With the case top on or off, you can adjust these pots using a small 'trimmer' screwdriver.

These trimpots are smaller than you. Do <u>not</u> use a big screwdriver on them. Do <u>not</u> apply too much force. **They will break!**

Mixer Inputs:

Two line level 'mixer' inputs are available on version 1.6 and later **Sd-25s**. A line level audio signal from a **Sd-10** audio repeater, pre-amplified microphone or any other line-level audio source can be plugged into these two RCA jacks. Two trimpots can be used to adjust the levels of the mixer inputs.
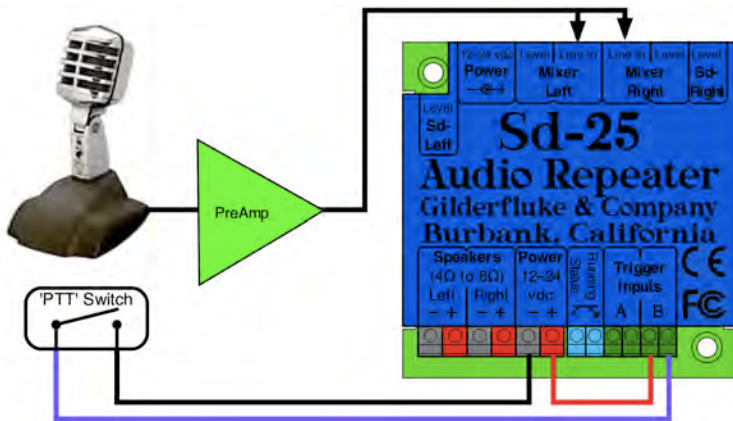
In this example, a preamplified microphone is fed into the mixer inputs of the **Sd-25**. The 'Push to Talk' button on the microphone is fed into the 'b' input of the **Sd-25**. The **Sd-25** is configured to 'duck' the audio from MMC/Sd card to a lower level when it sees a closure on the 'b' input. When the microphone button is pressed, the **Sd-25** ramps the pre-recorded audio down to a lower level, and the microphone is used to make an announcement. When the button is released, the prerecorded audio ramps back up to the normal playback level.

Sd-25s earlier than hardware version 1.5 features line level outputs instead of mixer inputs. If you need line level outputs, these are available as a no-cost factory option when you order a new **Sd-25**. To use the line level outputs, just run a pair of RCA cables to your amplifier (or amplified speakers), just as you would if you were connecting a CD player. The line level outputs are robust enough to drive headphones and small speakers directly.

Modulation LEDs:

The two 'modulation' LEDs, which are located in front of the speaker screw terminals, blink to show audio being reproduced. They pick up the audio signal coming from the repeater before the two volume control pots, so they are not affected by adjusting these pots or by the auxiliary 'mixer inputs. Reducing the audio level through one of the 'ramping' functions will reduce the intensity of these LEDs. Audio at too low a level will cause these LEDs to completely extinguish. Normalize your audio before loading it on the **Sd-25** so that it is near 100% modulation.

Sometimes additional safety system assurance above and beyond monitoring the 'Status' output is needed to confirm that the **Sd-25** is actually playing. An external solid state relay or optoisolator can be attached in place of these LEDs. The safety system can then monitor this to confirm that an audio signal is indeed being generated. Contact Gilderfluke & Company for more information on this sort of application.

Status Output:

A single uncommitted optoisolator output is available for remote monitoring of the **Sd-25**. It is 'on' only while the **Sd-25** is playing a triggered or 'foreground' SoundFile. It can be used to control ducking mixers, relays, or whatever you need.

To turn on a light, motor, or other electrical device while a triggered or foreground SoundFile is playing, just wire a solid state relay to the status output. Then wire the light, motor, or whatever you are controlling to this relay. This can be used in a museum, trade show, Point Of Sale (POS) and other applications.

In applications where a background audio SoundFile that doesn't stop when a foreground SoundFile is playing, the BGM SoundFile can be played from a **Sd-10** which feeds its audio into the 'mixer' inputs of the **Sd-25**.
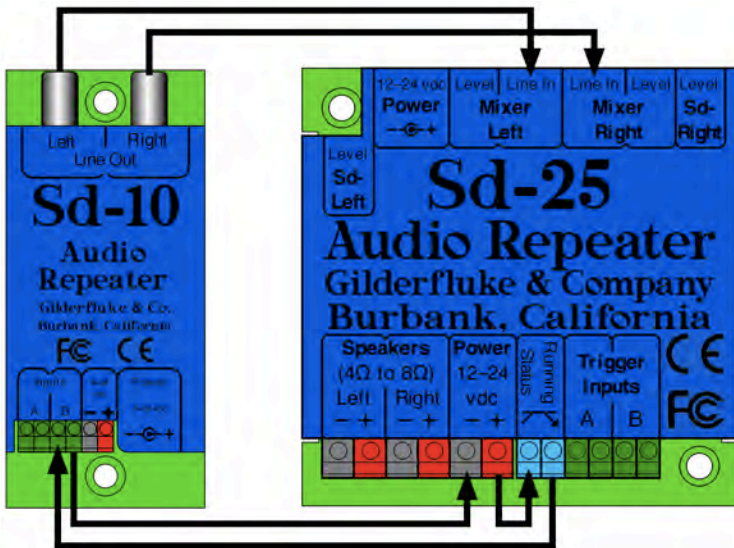
a high rate of speed. The faster the flicker, the higher your SoundFile's bit rate.

When the **Sd-25** plays a triggered SoundFile or a timed announcement (using modes 16, 17 or Store-Caster mode) the status output will go active. This is wired into an input on the **Sd-10** which has been configured to duck, or fully mute its audio output. In this way, the **Sd-10** will duck (or mute) the BGM SoundFile (without stopping it) while the foreground SoundFile plays.

'Background' looping SoundFiles, like those in modes 16 and 17 will not turn on the 'Status' output. When in these modes, the 'Status' output will only be turned on when a triggered SoundFile is playing. In StoreCaster mode, the 'Status' output will only be turned on when playing SoundFile #1.

In a safety related application, such as a fire or emergency annunciator system, the safety system can monitor this output to confirm the **Sd-25** is receiving commands and playing SoundFiles. For absolute surety, you can monitor that this output goes active when a SoundFile is triggered, and goes inactive at the end of the SoundFile.

Status Output LED:

The LED which is next to the 'Status' output does not reflect the current state of that output. Instead, it flashes to show accesses to the MMC/Sd flash card by the **Sd-25**.

This LED will flicker when a **Sd-25** boots, as it counts each SoundFile on the card[1]. When not playing, it will be very dim. While playing, it will flicker at

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[1] The speed at which the **Sd-25** counts the SoundFiles is perhaps the best indication of how 'fast' a SD flash card is. Fast cards will count up to ten SoundFiles each second. Slower cards may only count one SoundFile per second.

Sd-25 Configuration

The **Sd-25** is configured using a ten position DipSwitch. The cover of the **Sd-25** must be snapped off to reach this DipSwitch. A ball point pen or any other pointy object can be used to flip the switches once the cover has been removed. Do not use a knife or other sharp object, as it might damage the switch.

Mode Name	Mode #	Trig-gers	Input 'A'	Input 'B'	DipSwitches 1 thru 5	Options
	0			**Ramps to -3dB**	**off/off/off/off/off**	**1,8,10**
	1			Ramps to -6dB	on/off/off/off/off	1,8,10
	2			Ramps to -9dB	off/on/off/off/off	1,8,10
Looping SoundFiles with Mutes	3	0	Ramps to Muted	Ramps to -12dB	on/on/off/off/off	1,8,10
	4			Ramps to -18dB	off//off/on/off/off	1,8,10
	5			Ramps to -24dB	on/off/on/off/off	1,8,10
	6			Ramps to -33dB	off/on/on/off/off	1,8,10
	7			Ramps to -48dB	on/on/on/off/off	1,8,10
Fast access to 1st SoundFile	8	2	Play 1st SoundFile only	Play All SoundFiles	off/off/off/on/off	2,6,7,8,9,10
Exclusive access to 1st SoundFile	9	2		Play 2nd thru Last	on/off/off/on/off	2,6,7,8,9,10
Two Triggers and One Reshuffle	A	2	Reshuffle & Play 1st SoundFile	Play All SoundFiles	off/on/off/on/off	2,6,7,8,9,10
Two Triggers with Exclusive access to 1st SoundFile/Reshuffle	B	2		Play 2nd thru Last	on/on/off/on/off	2,6,7,8,9,10
Single trigger with Reshuffle	**C**	**1**	**Play All SoundFiles**	**Reshuffle**	**off/off/on/on/off**	**2,6,7,8,9,10**
	d			Ramps to -6dB	on/off/on/on/off	1, 8, 9, 10
Single trigger with Mute	E	1	Play All SoundFiles	Ramps to -12dB	off/on/on/on/off	1, 8, 9, 10
	F			Ramps to -24dB	on/on/on/on/off	1, 8, 9, 10
	10			Ramps to Muted	off/off/off/off/on	1, 8, 9, 10
	11			Short = Reshuffle Long = Ramps to -6dB	on/off/off/off/on	1, 8, 9, 10
Single trigger, Mute or Reshuffle	12			Short = Reshuffle Long = Ramps to -12dB	off/on/off/off/on	1, 8, 9, 10
Short Pulses on 'B' Reshuffle SoundFiles, Long pulses on 'B' ramp audio levels.	13	1	Play All SoundFiles	Short = Reshuffle Long = Ramps to -24dB	on/on/off/off/on	1, 8, 9, 10
	14			Short = Reshuffle Long = Ramps to Mute	off/off/on/off/on	1, 8, 9, 10
Two Playlists	15	2	Play 1st Half SoundFiles		on/off/on/off/on	2,6,7,8,9,10
Two Playlists, First SoundFile Loops between Triggered SoundFiles	16	2	1st Half SoundFiles (except First SoundFile)	Play 2nd Half SoundFiles	off/on/on/off/on	2,6,7,8,9,10
Two Playlists, Last SoundFile Loops between Triggered SoundFiles	17	2	Play 1st Half SoundFiles	2nd Half SoundFiles (except Last SoundFIle)	on/on/on/off/on	2,6,7,8,9,10
Two Triggers, SoundFiles 3 thru Last Loop between Triggered SoundsFiles	18	2	Plays 1st SoundFile	Plays 2nd SoundFile	off/off/off/on/on	2,6,7,8,9,10
Store Caster/Safety Messages/Music On Hold	19	0			on/off/off/on/on	1, 8, 10
IR Normal Mode	1A	0	Mutes All Audio	Ramps to -24dB	off/on/off/on/on	1, 8, 9, 10
IR Odd Mode	1B	0			on/on/off/on/on	1, 8, 9, 10
Doug's Doorbell Mode (v1.16+ only)	1C	1	Plays All SoundFiles	Reshuffle	off/off/on/on/on	2,6,7,8,10
Two Playlists, Last SoundFile Loops between Triggered SoundFiles	1d	2	Short = Reshuffle Long = Fade Out then Play 1st Half of all SoundFiles Both A & B = Fade Out to level set by Option #3	Short = Reshuffle Long = Fade Out then Play 2nd Half of all SoundFiles (except Last SoundFIle) Both A & B = Fade Out to level set by Option #3	on/off/on/on/on	3, 8, 9, 10
Two Triggers, SoundFiles 3 thru Last Loop between Triggered SoundsFiles	1E	2	Short = Reshuffle Long = Fade Out then Plays 1st SoundFile Both A & B = Fade Out to level set by Option #3	Short = Reshuffle Long = Fade Out then Plays 2nd SoundFile Both A & B = Fade Out to level set by Option #3	off/on/on/on/on	3, 8, 9, 10
Reserved	1F	tbd	tbd	tbd	on/on/on/on/on	tbd

Options:

Option Number	Option Name	What it Does	Switches Used to Select Options	
Option #1	Audio Ramping Speeds	Immediate Ramping Speed	DipSw. #6 = Off	DipSw. #7 = Off
		Fast Ramping Speed	DipSw. #6 = On	DipSw. #7 = Off
		Medium Ramping Speed	DipSw. #6 = Off	DipSw. #7 = On
		Slow Ramping Speed	DipSw. #6 = On	DipSw. #7 = On
Option #3 (Modes 1d and 1E only)	Audio Mute Levels (Fades background SoundFiles(s) to this level before starting foreground SoundFiles)	Ramps to Muted	DipSw. #6 = Off	DipSw. #7 = Off
		Ramps to -33dB	DipSw. #6 = On	DipSw. #7 = Off
		Ramps to -18dB	DipSw. #6 = Off	DipSw. #7 = On
		Ramps to -9dB	DipSw. #6 = On	DipSw. #7 = On
Option #2	Loop selected SoundFiles on sustained inputs		DipSw. #6 = Off	DipSw. #7 = Off
Option #6	SoundFiles do not Loop on sustained inputs (v1.16+ only)		DipSw. #6 = On	DipSw. #7 = Off or On
Option #7	Loop ALL selected SoundFiles on sustained inputs (v1.16+)		DipSw. #6 = Off	DipSw. #7 = On
Option #8	DipSw. #8 = Off: SoundFiles played sequentially		DipSw. #8 = On: Selected SoundFiles played randomly	
Option #9	DipSw. #9 = Off: Triggered SoundFiles steppable		DipSw. #9 = On: Triggered SoundFiles Unsteppable	
Option #10	DipSw. #10 = Off: Amplifier enabled only while playing		DipSw. #10 = On: Amplifier always Enabled	

Operating Modes:

The first five DipSwitches are used to set the mode of operation for the **Sd-25**. The remaining five DipSwitches set the 'options'. The 'on'/'off' after each 'mode' shows which of the first five DipSwitches need to be turned 'on' or 'off' to select that mode. As an example; to select 'mode B', you would turn 'on' switches one, two and four. Switches three and five would be turned 'off'.

Sometimes when the operating mode is switched, you may need to cycle power to the **Sd-25** to assure it operates as expected.

> **If you need your SoundFiles(s) to just loop: use mode 0.**
>
> **DipSwitches one though five = off/off/off/off/off**

> **If you need to trigger one or more Sound-Files(s): use mode C.**
>
> **DipSwitches one though five = off/off/on/on/off**

Mode 0 / off/off/off/off/off
Loops with Mutes. Fade to -3dB on 'b'

Mode 1 / on/off/off/off/off
Loops with Mutes. Fade to -6dB on 'b'

Mode 2 / off/on/off/off/off
Loops with Mutes. Fade to -9dB on 'b'

Mode 3 / on/on/off/off/off
Loops with Mutes. Fade to -12dB on 'b'

Mode 4 / off/off/on/off/off
Loops with Mutes. Fade to -18dB on 'b'

Mode 5 / on/off/on/off/off
Loops with Mutes. Fade to -24dB on 'b'

Mode 6 / off/on/on/off/off
Loops with Mutes. Fade to -33dB on 'b'

Mode 7 / on/on/on/off/off
Loops with Mutes. Fade to -48dB on 'b'

Loop all the SoundFiles on the **Sd-25**, starting at PowerUp. Input 'a' will ramp the audio to a fully muted level when activated. The 'b' input ramps the audio to a 'half muted' (lower) volume. The only difference among these eight modes is the 'muted' volume level the 'b' input selects. These modes will support up to 32,767 SoundFiles.

Options:

Option #1: DipSwitches #6 and #7 are used to se-

lect the speed at which the audio ramps in/out.

Option #8: DipSwitch #8: Randomizer. When on, SoundFiles are played in random order, rather than sequentially. If less than 255 SoundFiles are loaded on the **Sd-25**, then the randomizer checks off each SoundFile as it is played. It will not play the same SoundFile a second time until it has played all the other SoundFile files. If more than 255 SoundFiles are loaded on to the **Sd-25**, then the SoundFiles are played randomly. It does not check to see whether the same SoundFile has been played recently.

Mode 8 / off/off/off/on/off

Two triggers, with fast access to first SoundFile

Input 'a' plays the first SoundFile ONLY, Input 'b' plays ALL of the SoundFiles on the **Sd-25** (Sound-Files 1 through ??). This mode is used when you want to use the 'b' input to trigger all of the Sound-Files, but occasionally want to play the first Sound-File an extra time.

Options:

Option #2: The one SoundFile that is selected will loop as long as the input stays active (only on Firm-ware *version 1.16 or later*): unless **DipSwitch #6** or **DipSwitch #7** are on.

Option #6: DipSwitch #6: (*Firmware version 1.16 or later*) When on, the SoundFile will only play once (no looping).

Option #7: DipSwitch #7: (Firmware version 1.16 or later) When on, input 'a' will loop SoundFile #1 as long as the input stays active, and input 'b' will loop through ALL of the SoundFiles on the **Sd-25** (SoundFiles 1 through ??) as long as the input stays active.

Option #8: DipSwitch #8: Randomizer. When on, SoundFiles are played in random order, rather than sequentially.

Option #9: DipSwitch #9: Unsteppable. When on, additional start commands to the **Sd-25** will be ig-nored until the currently playing triggered SoundFile has completed.

Mode 9 / on/off/off/on/off

Two triggers, with fast and exclusive access to first

SoundFile

Like Mode 8, except the B input plays SoundFiles 2 through ?? instead of 'All' the SoundFiles. This mode is used when you need a method of triggering an emergency or other 'special' announcement.

Options:

Option #2: The one SoundFile that is selected will loop as long as the input stays active (only on Firm-ware *version 1.16 or later*): unless **DipSwitch #6** or **DipSwitch #7** are on.

Option #6: DipSwitch #6: (*Firmware version 1.16 or later*) When on, the SoundFile will only play once (no looping).

Option #7: DipSwitch #7: (Firmware version 1.16 or later) When on, input 'a' will loop SoundFile #1 as long as the input stays active, and input 'b' will loop through SoundFiles 2 through ?? as long as the in-put stays active.

Option #8: DipSwitch #8: Randomizer. When on, SoundFiles are played in random order, rather than sequentially.

Option #9: DipSwitch #9: Unsteppable. When on, additional start commands to the **Sd-25** will be ig-nored until the currently playing triggered SoundFile has completed.

Mode A / off/on/off/on/off

Trigger+reshuffle and a second trigger

Similar to Mode 8, except that input 'a' plays the first SoundFile ONLY and also 'reshuffles' the 'PlayList' triggered by the 'b' input. Input 'b' plays ALL of the SoundFiles on the **Sd-25** (SoundFiles 1 through ??).

Options:

Option #2: The one SoundFile that is selected will loop as long as the input stays active (only on Firm-ware *version 1.16 or later*): unless **DipSwitch #6** or **DipSwitch #7** are on.

Option #6: DipSwitch #6: (*Firmware version 1.16 or later*) When on, the SoundFile will only play once (no looping).

Option #7: DipSwitch #7: (Firmware version 1.16 or later) When on, input 'a' will loop SoundFile #1 as long as the input stays active, and input 'b' will loop through ALL of the SoundFiles on the **Sd-25**

(SoundFiles 1 through ??) as long as the input stays active.

Option #8: DipSwitch #8: Randomizer. When on, SoundFiles are played in random order, rather than sequentially.

Option #9: DipSwitch #9: Unsteppable. When on, additional start commands to the **Sd-25** will be ignored until the currently playing triggered SoundFile has completed.

Mode B / on/on/off/on/off
Like Mode A, except the 'b' input plays SoundFiles 2 through ?? instead of 'All' the SoundFiles.

Options:

Option #2: The one SoundFile that is selected will loop as long as the input stays active (only on Firmware *version 1.16 or later*): unless **DipSwitch #6** or **DipSwitch #7** are on.

Option #6: DipSwitch #6: (*Firmware version 1.16 or later*) When on, the SoundFile will only play once (no looping).

Option #7: DipSwitch #7: (Firmware version 1.16 or later) When on, input 'a' will loop SoundFile #1 as long as the input stays active, and input 'b' will loop through SoundFiles 2 through ?? as long as the input stays active.

Option #8: DipSwitch #8: Randomizer. When on, SoundFiles are played in random order, rather than sequentially.

Option #9: DipSwitch #9: Unsteppable. When on, additional start commands to the **Sd-25** will be ignored until the currently playing triggered SoundFile has completed.

Mode C / off/off/on/on/off
Single trigger with reshuffle

Input 'a' plays ALL of the SoundFiles on the **Sd-25** (SoundFiles 1 through ??). Input 'b' reshuffles the 'PlayList' triggered by the 'a' input.

Options:

Option #2: The one SoundFile that is selected will loop as long as the input stays active (only on Firmware *version 1.16 or later*): unless **DipSwitch #6** or **DipSwitch #7** are on.

Option #6: DipSwitch #6: (*Firmware version 1.16 or later*) When on, the SoundFile will only play once (no looping).

Option #7: DipSwitch #7: (Firmware version 1.16 or later) When on, input 'a' will loop through SoundFiles 1 through ?? as long as the input stays active.

Option #8: DipSwitch #8: Randomizer. When on, SoundFiles are played in random order, rather than sequentially.

Option #9: DipSwitch #9: Unsteppable. When on, additional start commands to the **Sd-25** will be ignored until the currently playing triggered SoundFile has completed.

Mode D / on/off/on/on/off
Single trigger with mute on 'a'
Fade to -6dB on 'b'

Mode E / off/on/on/on/off
Single trigger with mute on 'a'
Fade to -12dB on 'b'

Mode F / on/on/on/on/off
Single trigger with mute on 'a'
Fade to -24dB on 'b'

Mode 10 / off/off/off/off/on
Single trigger with mute on 'a'
Fade to muted on 'b'

Input 'a' plays ALL of the SoundFiles on the **Sd-25** (SoundFiles 1 through ??) on each successive button press. Firmware versions before v1.27 will loop a single SoundFile on sustained 'a' input closures. Firmware versions after v1.27 will loop through ALL the SoundFiles on the Sd card on sustained 'a' input closures.

Input 'b' ramps the audio down -6dB from full volume. The only difference among the next three modes is the 'muted' volume level the 'b' input selects.

Options:

Option #1: DipSwitches #6 and #7 are used to select the speed at which the audio ramps in/out.

Option #8: DipSwitch #8: Randomizer. When on, SoundFiles are played in random order, rather than sequentially.

Option #9: DipSwitch #9: Unsteppable. When on, additional start commands to the **Sd-25** will be ignored until the currently playing triggered SoundFile has completed.

Mode 11 / on/off/off/off/on

Single trigger with mute/reshuffle on 'a'
Fade to -6dB on 'b'

Mode 12 / off/on/off/off/on

Single trigger with mute/reshuffle on 'a'
Fade to -12dB on 'b'

Mode 13 / on/on/off/off/on

Single trigger with mute/reshuffle on 'a'
Fade to -24dB on 'b'

Mode 14 / off/off/on/off/on

Single trigger with mute/reshuffle on 'a'
Fade to muted on 'b'

Input 'a' plays ALL of the SoundFiles on the **Sd-25** (SoundFiles 1 through ??) on each successive button press. Firmware versions before v1.27 will loop a single SoundFile on sustained 'a' input closures. Firmware versions after v1.27 will loop through ALL the SoundFiles on the Sd card on sustained 'a' input closures.

A 'short' pulse (more than 1/8 second, but less than 1/4 second) on input 'b' 'reshuffles' the 'PlayList' triggered by the 'a' input. A longer closure on input 'b' ramps the audio down -6dB from full volume when activated. The only difference among the next three modes is the 'muted' volume level the 'b' input selects.

Options:

Option #1: DipSwitches #6 and #7 are used to select the speed at which the audio ramps in/out.

Option #8: DipSwitch #8: Randomizer. When on, SoundFiles are played in random order, rather than sequentially.

Option #9: DipSwitch #9: Unsteppable. When on, additional start commands to the **Sd-25** will be ignored until the currently playing triggered SoundFile has completed.

(*Firmware version 1.17 or later*) When set to any of these four modes, SoundFile requests made through the serial port will be stored up to ten deep,

if you try to start any SoundFile while an unsteppable SoundFile file is already playing.

Mode 15 / on/off/on/off/on

Two PlayLists

This mode divides all of the SoundFiles into two evenly sized 'PlayLists'.

Input 'a' triggers SoundFiles from the first half, and input 'b' triggers SoundFiles from the second half.

There must be at least two SoundFiles on the **Sd-25** for this mode. If there is an odd number of SoundFiles, then the second PlayList (triggered by the 'b' input) will have one more SoundFile than the first PlayList (triggered by 'a' input).

Options:

Option #2: The one SoundFile that is selected will loop as long as the input stays active (only on Firmware *version 1.16 or later*): unless **DipSwitch #6** or **DipSwitch #7** are on.

Option #6: DipSwitch #6: (*Firmware version 1.16 or later*) When on, the SoundFile will only play once (no looping).

Option #7: DipSwitch #7: (Firmware version 1.16 or later) When on, input 'a' will loop through the first half of the SoundFiles as long as the input stays active. Input 'b' loops through the second half of the SoundFiles as long as the input stays active.

Option #8: DipSwitch #8: Randomizer. When on, SoundFiles are played in random order, rather than sequentially.

Option #9: DipSwitch #9: Unsteppable. When on, additional start commands to the **Sd-25** will be ignored until the currently playing triggered SoundFile has completed.

Mode 16 / off/on/on/off/on

Two PlayLists, with looping background SoundFile

Like Mode 15, except that the **Sd-25** will loop the first SoundFile on the card whenever it isn't playing a triggered SoundFile.

This mode divides all of the SoundFiles into two

evenly sized 'PlayLists'. Input 'a' triggers SoundFiles from the first half, and input 'b' triggers SoundFiles from the second half. The first 'PlayList' starts at the second SoundFile.

The background looping SoundFile will start playing as soon as the **Sd-25** is powered up. Even if the 'no step' switch is 'on' (**DipSwitch #9**), the background SoundFile can be stepped upon by a trigger to play a SoundFile from the 'a' or 'b' inputs.

There must be at least three SoundFiles on the **Sd-25** for this mode. If there is an even number of SoundFiles on the **Sd-25**, then the second PlayList (triggered by the 'b' input) will have one more SoundFile than the first PlayList (triggered by 'a' input). When in this mode, the 'status' output only goes active when it is playing a triggered SoundFile.

Options:

Option #2: The one SoundFile that is selected will loop as long as the input stays active (only on Firmware *version 1.16 or later*): unless **DipSwitch #6** or **DipSwitch #7** are on.

Option #6: DipSwitch #6: (*Firmware version 1.16 or later*) When on, the SoundFile will only play once (no looping).

Option #7: DipSwitch #7: (Firmware version 1.16 or later) When on, input 'a' will loop through the first half of the SoundFiles as long as the input stays active. Input 'b' loops through the second half of the SoundFiles as long as the input stays active.

Option #8: DipSwitch #8: Randomizer. When on, SoundFiles are played in random order, rather than sequentially.

Option #9: DipSwitch #9: Unsteppable. When on, additional start commands to the **Sd-25** will be ignored until the currently playing triggered SoundFile has completed.

Mode 17 / on/on/on/off/on
Two PlayLists, with looping background SoundFile

Like Mode 16, except the LAST SoundFile is used as the background looping SoundFile. If there is an even number of SoundFiles on the **Sd-25**, then the first PlayList (triggered by the 'a' input) will have one more SoundFile than the second PlayList (triggered by 'b' input). There must be at least three Sound-

Files on the **Sd-25** for this mode.

Options:

Option #2: The one SoundFile that is selected will loop as long as the input stays active (only on Firmware *version 1.16 or later*): unless **DipSwitch #6** or **DipSwitch #7** are on.

Option #6: DipSwitch #6: (*Firmware version 1.16 or later*) When on, the SoundFile will only play once (no looping).

Option #7: DipSwitch #7: (Firmware version 1.16 or later) When on, input 'a' will loop through the first half of the SoundFiles as long as the input stays active. Input 'b' loops through the second half of the SoundFiles as long as the input stays active.

Option #8: DipSwitch #8: Randomizer. When on, SoundFiles are played in random order, rather than sequentially.

Option #9: DipSwitch #9: Unsteppable. When on, additional start commands to the **Sd-25** will be ignored until the currently playing triggered SoundFile has completed.

Mode 18 / off/off/off/on/on
Trigger SoundFiles one or two, with a background SoundFile PlayList

Input 'a' plays the first SoundFile on the Sd/MMC Flash card.

Input 'b' plays the second SoundFile on the Sd/MMC Flash card.

If not playing either of these SoundFiles, then SoundFiles 3 through ?? will be played. If the 'Random' switch (**DipSwitch #8**) is 'on', the background SoundFiles will be played in a Random order. Even if the 'no step' switch is 'on' (**DipSwitch #9**), the background SoundFile can be stepped on by a trigger to play a SoundFile from the 'a' or 'b' inputs. There must be at least three SoundFiles on the **Sd-25** for this mode.

Options:

Option #2: The one SoundFile that is selected will loop as long as the input stays active (only on Firmware *version 1.16 or later*): unless **DipSwitch #6** or **DipSwitch #7** are on.

Option #6: DipSwitch #6: (*Firmware version 1.16*

or later) When on, the SoundFile will only play once (no looping).

Option #7: DipSwitch #7: (Firmware version 1.16 or later) When on, input 'a' will loop SoundFile one as long as the input stays active. Input 'b' loops SoundFile two as long as the input stays active.

Option #8: DipSwitch #8: Randomizer. When on, SoundFiles are played in random order, rather than sequentially.

Option #9: DipSwitch #9: Unsteppable. When on, additional start commands to the **Sd-25** will be ignored until the currently playing triggered SoundFile has completed.

Mode 19 / on/off/off/on/on

'StoreCaster', 'Safety Message' and 'Music-On-Hold' mode

From PowerUp, all but the first SoundFile will play in a loop. Between each of these SoundFiles, it will play the first SoundFile. This allows the first Sound-File to be used as an advertisement or safety announcement. There must be at least two SoundFiles on the **Sd-25** for this mode. Input 'a' ramps the audio down to full mute when activated. Input 'b' ramps the audio down -24dB from full volume when activated.

Options:

Option #1: DipSwitches #6 and #7 are used to select the speed at which the audio ramps in/out.

Option #8: DipSwitch #8: Randomizer. When on, SoundFiles are played in random order, rather than sequentially.

Mode 1A / off/on/off/on/on

'IR Normal' mode

Mode 1B / on/on/off/on/on

'IR Odd' mode

*This mode requires the addition of the **Sd-IR/Rx** or **Sd-RS/422** serial adapter <u>and</u> **IR-Rx** to the **Sd-25**.*

Either IR mode sets the serial port to 1200 baud. Ten repeats of SoundFile number through serial port (in binary) starts the requested SoundFile playing.

In Even mode, **DipSwitch #8** on the IR Transmitter must be 'off' or the IR beam will be ignored. (This limits IR requests to numbers 01h through 7Fh, which will play SoundFiles 1 through 127.)

In Odd mode, **DipSwitch #8** on the IR Transmitter must be 'on' or the IR beam will be ignored. (This limits IR requests to numbers 80h through FFh, which will play SoundFiles 1 through 127.)

These modes are used with our IR transmitters and receivers to trigger specific SoundFiles to play at specific points along a path on trains, ride vehicles, rollercoasters, monorails, hay rides, tour busses and other similar vehicles.

If operating in either IR mode, **DipSwitch #8**, when 'on' tells the **Sd-25** to never play the same Sound-File twice in a row. Use this DipSwitch when there is a possibility that the IR receiver will park on a IR transmitter's beam, and you don't want it to repeat the same SoundFile over and over and over…...

If operating in either IR mode, **DipSwitch #9** is normally set to 'on'. If it is 'off', the SoundFile will be continuously retriggered as long as the IR receiver remains inside the IR transmitter's beam. The SoundFile will not be allowed to play through until the IR receiver leaves the transmitter's IR beam.

Input 'a' will ramp the audio to a fully muted level when activated. The 'b' input ramps the audio to a -24dB 'half muted' (lower) volume.

Options:

Option #1: DipSwitches #6 and #7 are used to select the speed at which the audio ramps in/out.

Mode 1C / off/off/on/on/on

'Doug's Doorbell' mode

*This mode requires **Sd-25** Firmware v1.16 or later.* Single Trigger with Reshuffle. This mode is very similar to mode C, but supports 32,767 possible SoundFiles on the **Sd-25**. All SoundFiles are 'Unsteppable' when operating in this mode. Input 'a' plays ALL of the SoundFiles on the **Sd-25** (Sound-Files 1 through ??). Input 'b' reshuffles the 'PlayList' triggered by the 'a' input.

Options:

Option #2: The one SoundFile that is selected will loop as long as the input stays active (only on Firm-

ware *version 1.16 or later*): unless **DipSwitch #6** or **DipSwitch #7** are on.

Option #6: DipSwitch #6: When on, the SoundFile will only play once (no looping).

Option #7: DipSwitch #7: When on, input 'a' will loop through SoundFiles 1 through ?? as long as the input stays active. Short pulses on the 'a' input tend to play sequentially, even if **DipSwitch #8** is on.

Option #8: DipSwitch #8: Randomizer. When on, SoundFiles are played in random order, rather than sequentially. Unlike most other modes where the SoundFiles are played randomly, this mode does not check to see whether the same SoundFile has been played recently. This means that it is possible for the same SoundFile to be played twice in a row.

Mode 1d / on/off/on/on/on

Fade out and Trigger Two PlayLists, with looping background SoundFile

*This mode requires **Sd-25** Firmware v1.17 or later.* Like Mode 17, except it fades out the SoundFile that is playing to the level set by **DipSwitches #6 and #7** BEFORE starting the newly triggered SoundFile at the 'normal' playback volume. At the end of the triggered sound, the background SoundFile will be restarted at the 'ramped down' volume level, then fade back up to the 'normal' audio playback level.

This mode divides all of the SoundFiles into two evenly sized 'PlayLists'. Input 'a' triggers SoundFiles from the first half, and input 'b' triggers SoundFiles from the second half.

There must be at least three SoundFiles on the **Sd-25** for this mode. If there is an even number of SoundFiles on the **Sd-25**, then the first PlayList (triggered by the 'a' input) will have one more SoundFile than the second PlayList (triggered by 'b' input).

The **Sd-25** will loop the last SoundFile on the card whenever it isn't playing a triggered SoundFile. The background looping SoundFile will start playing as soon as the **Sd-25** is powered up. Even if the 'no step' switch is 'on' (**DipSwitch #9**), the background SoundFile can be stepped upon by a trigger to play a SoundFile from the 'a' or 'b' inputs. The **Sd-25's** 'status' output only goes active when it is playing a triggered SoundFile.

If both the 'a' and 'b' inputs are held simultaneously, the audio will fade out to the level set by **DipSwitches #6** and **#7** and stay there until at least one of the inputs is released.

A 'short' pulse (more than 1/8 second, but less than 1/4 second) on the 'a' or 'b' (or both) inputs 'reshuffles' the 'PlayLists'.

The one triggered SoundFile that is selected will only play once (no looping).

The fade rate is fixed in this mode to the 'slowest' possible speed.

Options:

Option #3: The fade level (fully muted, -9 dB, -18 dB or -33 dB) is selected using **DipSwitches #6 and #7**.

Option #8: DipSwitch #8: Randomizer. When on, SoundFiles are played in random order, rather than sequentially.

Option #9: DipSwitch #9: Unsteppable. When this switch is 'off', if the 'a' or 'b' trigger input is pressed, then released before the triggered SoundFile has played, the audio will simply ramp back up to the normal level. When this switch is 'on', then even a short press of the 'a' or 'b' trigger input will ramp the background sound and play the triggered sound, restart the background sound and ramp the volume back up to the 'normal' audio playback level. A second trigger will not be accepted until after the triggered sound has played. Reshuffles are disabled when this switch is 'on'.

Mode 1E / off/on/on/on/on

Fade out and Trigger SoundFiles one or two, with a background SoundFile PlayList.

*This mode requires **Sd-25** Firmware v1.17 or later.* Like Mode 18, except it fades out the SoundFile that is playing to the level set by **DipSwitches #6 and #7** BEFORE starting the newly triggered SoundFile.

Input 'a' plays the first SoundFile on the Sd/MMC Flash card. Input 'b' plays the second SoundFile on the Sd/MMC Flash card. If not playing either of these SoundFiles, then SoundFiles 3 through ?? will be played. If the 'Random' switch (**DipSwitch #8**) is 'on', the background SoundFiles will be played in a Random order. Even if the 'no step' switch is 'on'

(**DipSwitch #9**), the background SoundFile can be stepped on by a trigger to play a SoundFile from the 'a' or 'b' inputs. The **Sd-25's** 'status' output only goes active when it is playing a triggered SoundFile.

There must be at least three SoundFiles on the **Sd-25** for this mode.

If both the 'a' and 'b' inputs are held simultaneously, the audio will fade out to the level set by **DipSwitches #6 and #7** and stay there until at least one of the inputs is released.

A 'short' pulse (more than 1/8 second, but less than 1/4 second) on the 'a' or 'b' (or both) inputs 'reshuffles' the 'PlayList'.

The one triggered SoundFile that is selected will only play once (no looping).

The fade rate is fixed in this mode to the 'slowest' possible speed.

Options:

Option #3: DipSwitches #6 and #7. The fade level (fully muted, -9 dB, -18 dB or -33 dB) is selected using **DipSwitches #6 and #7**.

Option #8: DipSwitch #8: Randomizer. When on, background looping SoundFiles are played in random order, rather than sequentially.

Option #9: Option #9: DipSwitch #9: Unsteppable. When this switch is 'off', if the 'a' or 'b' trigger input is pressed, then released before the triggered SoundFile has played, the audio will simply ramp back up to the normal level. When this switch is 'on', then even a short press of the 'a' or 'b' trigger input will ramp the background sound and play the triggered sound, restart the background sound and ramp the volume back up to the 'normal' audio playback level. A second trigger will not be accepted until after the triggered sound has played. Reshuffles are disabled when this switch is 'on'.

Mode 1F / on/on/on/on/on

This setting is reserved for 'custom' settings on the **Sd-25s**. If none of the standard modes of operation suit your needs, we can modify the firmware to do exactly what you need.

Audio Ramp Speed:

Several of the operating modes allow you to ramp the audio level up and down. **DipSwitches #6 and #7** are used to set the speed at which audio is ramped:

DipSwitch #6 'off', DipSwitch #7 'off' = immediate
DipSwitch #6 'on', DipSwitch #7 'off' = fast ramp
DipSwitch #6 'off', DipSwitch #7 'on' = medium
DipSwitch #6 'on', DipSwitch #7 'on' = slow ramp

Sequential/Random:

DipSwitch #8 is used to select whether the audio files are played in sequential order (order in which the files were loaded onto the flash card) when **DipSwitch #8** is 'off', or in random order (**DipSwitch #8** 'on'). When playing in random order, a flag is set for each SoundFile. It will randomly pick the SoundFile to play, and reset this flag until it runs out of SoundFiles which haven't yet been played. It will then reshuffle the SoundFiles. This means that the same SoundFile won't be played a second time until after the next reshuffle happens. The only time the same SoundFile will play two times in a row is if the reshuffle happens and the next file which is chosen at random happens to be the same SoundFile. It can happen, but it won't often. Any of the command modes which 'reshuffle' the SoundFiles will reset all the SoundFile flags. If playing 'randomly', then any SoundFile in the PlayList can be played. If playing sequentially, it will start playing with the first SoundFile in the PlayList.

If operating in either IR mode, **DipSwitch #8**, when 'on' tells the **Sd-25** to never play the same SoundFile twice in a row. Use this DipSwitch when there is a possibility that the IR receiver will park on the same IR beam, and you don't want it to repeat the same SoundFile over and over and over……

Steppable/Non-Steppable:

DipSwitch #9 is used to select whether the triggered SoundFiles are protected against another SoundFile being triggered while it is still playing. If this switch is 'off', then a triggered SoundFile can be started at any time. If this switch is 'on', then additional trigger inputs will be ignored if another triggered SoundFile is already playing.

This switch is normally used in application where the SoundFile is triggered by a motion detector or guest triggered button. Motion detectors and user oper-

ated buttons can give multiple triggers. If this switch was 'off', would cause the SoundFile to re-trigger. With it 'on' each triggered SoundFile will play to completion.

'Background' looping SoundFiles, like those in modes 16, 17 and 19 ignore this switch. Even if it is 'on' the 'background' SoundFile will be stepped upon if a trigger input comes in via 'a' or 'b' inputs.

If operating in either IR mode, **DipSwitch #9** is normally set to 'on'. If it is 'off', the SoundFile will be continuously retriggered as long as the IR receiver remains inside the IR transmitter's beam. The SoundFile will not be allowed to play through until the IR receiver leaves the transmitter's IR beam.

Amplifier Enable:

DipSwitch #10 is used to permanently enable the **Sd-25's** amplifier when 'on'. If you are not using the mixer, you will reduce power consumption by moving this switch to the 'off' position. The amplifier will then turn off if no audio is being played from the MMC/Sd card. If you are using the mixer inputs, then you will probably need to leave this switch 'on', unless the repeater is also running whenever the mixer is needed.

Sd-25 repeaters earlier than revision 1.5 used this switch to enable the amplifier when 'on' and disable it when 'off'.

Sd-25 Installation:

The **Sd-25** can be mounted using two screws on 2-1/4" centers; 2-3/4" Augat 'Snap-Track' (which itself can be DIN rail mounted); using DIN rail adapters; or just Velcro'd down. In many applications, the **Sd-25** can be attached on (or in) the speakers it is feeding. The **Sd-25** must not be mounted where it might get wet, or suffer from extremes of temperature.

Unless the amplifier is being run at extreme output levels, the **Sd-25** will generate very little heat. Attaching it to something metal will allow it to dissipate what little heat it does generate.

Advanced Users:

If an input which triggers a SoundFile to start playing is held 'active', then the SoundFile will loop on itself as long as the input remains active. When the input 'opens', the SoundFile will complete playing normally.

Seamless Looping:

For 'seamless' looping, use .wav encoding. Mp3 encoded SoundFiles need a fraction of a second to get the audio rolling, and so will not loop as seamlessly.

Using Two Inputs to Randomly Access SoundFiles:

With only two trigger inputs, random access to individual SoundFiles can't be done with the **Sd-25** alone. If being run from a control system (PLC, fire system, or any Gilderfluke Show Control system), SoundFiles can be randomly accessed by giving multiple pulses to the **Sd-25**. You would typically choose a mode that allows the SoundFiles to be 're-shuffled' and leave the 'Random' and 'Non-Steppable' switches 'off'. An example of this is mode 'C'. A pulse on the the 'b' trigger input reshuffles the PlayList. Additional pulses (typically at 15 Hz) to the 'a' input step the **Sd-25** forward to select and play the desired SoundFile.

Hardware options:

1. **Sd-RS/232** RS-232 serial port (user installable)
2. **Sd-RS/422**: RS-422 serial port (factory option)
3. **Sd-IR/Rx** Internal IR receiver for use with **IR-Tx**
4. **IR-Rx** (must be used with **Sd-RS422**)
5. Line Level Outputs (No-Charge factory option replaces the line level mixer inputs)

Optional RS-232 Serial Port:
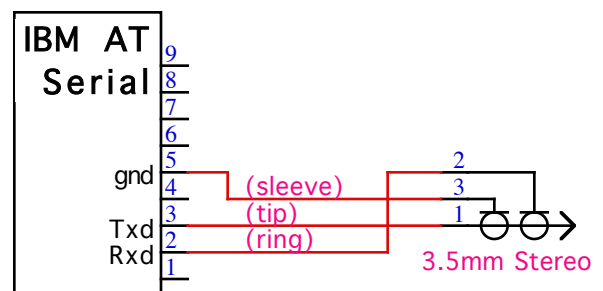
An optional RS-232 serial port is available on the **Sd-25** (revision 1.3 or later). The **Sd-RS/232** can be installed by simply plugging it in to the **Sd-25**. The double faced tape holds the **Sd-RS/232** to the top of the case.

A RS-422 serial port is also available, but is a factory-only option, as the case must be modified to accommodate the **Sd-RS/422's** RJ-12 connector.

The serial port on a **Sd-25** runs at a fixed rate of 9600 baud, n, 8, 1 (unless it is in one of the IR Modes).

Adapters to attach this port to a PC or Mac are available from Gilderfluke & Company. It can also be controlled from a Gilderfluke & Co. **Br-SDC/09** (a null modem cable must be used to flip pins #2 and #3 when used with a **Br-SDC/09**).

When the **Sd-25** boots or a new MMC/Sd card is inserted, the **Sd-25** will list all the SoundFiles that are found. When any SoundFile is played, the name and info about the file are displayed through the serial port (there is approximately one second delay after a SoundFile starts before this info is displayed). As a SoundFile plays, the **Sd-25** reports the number of seconds (in ASCII Hex) into the Sound-File it is.

Using the Optional Serial Port to Select and Play SoundFiles:

To select and play a SoundFile through the serial port, send the **Sd-25** an ASCII 'p' character, followed by a two digit ASCII Hex number of the SoundFile you want to be played. Example: to play SoundFile 1, send 'p01'. For SoundFile 25, send 'p19'.

Using the Optional Serial Port to Adjust Audio Playback Levels:

*This command requires **Sd-25** Firmware v1.21 or later.* To set the 'normal' audio playback level through the serial port, send the **Sd-25** an ASCII <Control>+'V' character (0x16), followed by a two digit ASCII Hex number of the level you want to use. Valid levels are '00' to 'FF'. Example: to set play-back level to 80h, send '<0x16>'80'.

The volume control through the serial port is highly logarithmic. Once set, the Sd-25 will scale all the 'mute' and 'duck' functions to the value you have set as the 'normal' playback level.

Special Orders:

If none of the standard operating modes available on the **Sd-25** meet your needs, we can modify the existing modes, or put in a new mode to suit your special needs.

FCC and CE Compliance:

Sd-25s which are revision 1.6 or later have been tested to comply with FCC and CE requirements. Revisions earlier than this may have passed testing, but were not certified at the time of manufacture.

Because **Sd-25s** are low voltage DC devices, neither UL or CE require safety testing.

For fireproofing or additional radio frequency interference shielding, **Sd-25s** can be mounted in a fire rated metallic case. Typically, this would be a NEMA-rated electrical enclosure or 19" electrical rack.

FCC Instruction to User:

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

• Reorient or relocate the receiving antenna.
• Increase the separation between the equipment and receiver.
• Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

• Consult the dealer or an experienced radio/TV technician for help.
This equipment has been verified to comply with the limits for a class B computing device, pursuant to FCC Rules. In order to maintain compliance with FCC regulations, shielded cables must be used with this equipment. Operation with non-approved equipment or unshielded cables is likely to result in interference to radio and TV reception. The user is cautioned that changes and modifications made to the equipment without the approval of manufacturer could void the user's authority to operate this equipment.

> This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference and (2) this device must accept any interference received, including interference that may cause undesired operation.

> This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

> Cet appareil numerique de la classe B respecte toutes les exigences du Reglement sur le materiel brouilleur du Canada.

EC DECLARATION OF CONFORMITY

Tuesday, February 11, 2014

Application of Council Directives: EMC Directive, 89/336/EEC

Manufacturer's Name: Gilderfluke & Co., Inc.

Manufacturer's Address: 205 South Flower St., Burbank, California 91502 USA

Importer's Name:

Importer's Address:

Type of Equipment: Professional Audio

Equipment Class: Commercial and Light Industrial

Model: **Sd-25**

Conforms to the following Standards: EN 55103-1: 1996 and EN 55103-2: 1996

Year of Manufacture: 2006

I the undersigned, hereby declare that the equipment specified above conforms to the above directive(s) and standard(s).

Place: Burbank, California   Signature: (signed)

Date: August 1, 2006   Full Name: Doug Mobley

        Position: CEO