DIGITAL AUDIO RECORDER
DAR-050

OPERATING INSTRUCTIONS

This unit has been pre-recorded with a great test audio track as part of the manufacturing and quality assurance process: try listening to it before recording a new track. You should also read through these instructions from beginning to end to familiarize yourself with the installation and operation of this device.

OVERVIEW

Front Panel View - Digital Audio Recorder Model DAR-050

The Digital Audio Recorder Model DAR-050 represents the state of the art in solid-state audio recording and playback devices. It is capable of recording and storing one mono audio track with a duration of up to 1 minute and 50 seconds total.

Audio is loaded into the DAR-050 from virtually any analog audio source (tape deck, CD player, microphone, PC sound card, etc.). In the recording process, audio material is converted internally into digital format and stored on digital FLASH PROM memory chips. There are absolutely no moving parts and memory is completely non-volatile: audio tracks are safe even during extended power failures.

On playback, the stored digital data is retrieved from memory and re-converted back into the original (analog) format. Audio tracks can be played back directly into conventional audio speakers, headphones, handsets or other audio equipment. Playback is initiated from the front control panel or by visitors from a wide variety of external switches (push-buttons, motion sensors, etc.). Audio tracks can also be looped for continuous and background sound applications.

When the built-in PowerSaver circuit is enabled, power is automatically shut off to the unit between play cycles, allowing the system to be used effectively in solar and battery-powered applications where power consumption is critical.

At Stop and Listen we have gone to great lengths to ensure that your new DAR-050 represents the ultimate in durability and ease of use. As you become more familiar with the DAR-050 you will find that the on-board recording features can add a whole new dimension to your application.
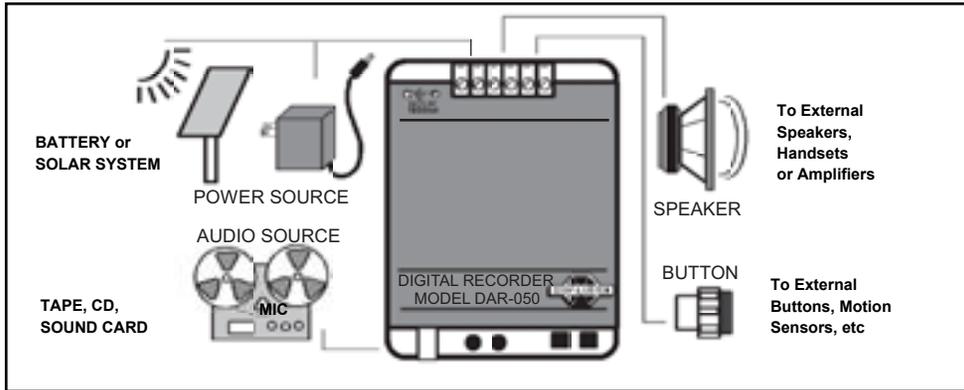
WIRING CONNECTIONS

POWER INPUT - Plug the supplied wall-plug adapter in here. Requires 12 volt DC nominal, 800mA, center positive. Internally fused 1 amp type 2AG.

POWER +/- Identical to POWER INPUT jack above, can be used for power input in the case of solar- or battery-powered applications, or for power out for motion sensors, etc.

SPKR - amplified audio output: connect to loudspeakers or other output devices.
Caution: the SPKR output is 'bridged'. Serious damage can occur if either output is shorted to ground. The SPKR output can be converted to a line level output - remove case lid, re-set BOTH internal jumpers on the circuit board to LINE position.

BUT 1 - External start buttons, motion sensors, etc. should be connected between this terminal and GND. Switches should be dry contact. If continuous play (auto-looping) is desired connect a jumper wire between BUT 1 and GND, ensuring DIP#2 is DOWN and DIP#4 is UP.
BUT 1 input can also be set for for N.C. (normally closed) operation, by setting configuration switch DIP#4 to the DOWN position. This is useful for telephone hookswitch operation to start playback when the handset is lifted. The unit will stop and re-set if the handset is replaced during playback. If left 'off-hook' playback will stop at the end of the message.

LINE IN - Audio input for recording. Use the included audio patch-cords to connect from a line level output or headphone output of the audio source to LINE IN on the DAR front panel. Typically a discman, cassette player, or computer soundcard is used with pre-recorded audio material.

All external wiring should use soldered connections or premium connectors wherever possible. 'Twisting' wires together is a serious NO-NO.

RECORDING MADE EASY

1) Disable any external start inputs from external buttons, motion sensors, jumpers, etc.This can also be done by disconnecting any wires at the Start + terminal on the orange button/LED connector at the back of the unit. A speaker should be connected to monitor recording.

2) Connect the LINE-OUT or headphone output of the audio source (tapedeck, Discman, PC soundcard, etc) to the LINE IN jack on the front panel of the DAR-050 using the supplied RCA patchcord. If a headphone output is used set the source output volume to about 60-70% of full scale. A bright silver adapter is supplied if you need to convert from a headphone jack to the RCA patchcord.

3) Make sure that DIP#3 on the back of the unit is in the DOWN (Record Enabled) position and DIP#4 is in the UP position. (Refer to CONFIGURATION SWITCHES)

4) Press and release the REC (record) button on the front panel. The red status LED above the button will flash red momentarily while the memory is erased, then turn solid red(dim - ready). The internal monitor circuit is now enabled to allow you to hear what is being recorded via the external speaker.

5) SET LEVELS - start the audio source: you should be able to hear it on the external speaker. Adjust the INPUT level on the DAR-050 up or down using a small screwdriver. The level is set correctly when the green LED is lit almost continuously but the red LED flashes only occasionally. Set the OUTPUT to a comfortable listening level.

6) Cue the Audio source to the start of the audio track to be recorded. Press the REC button again and start the audio source: the status LED above the REC switch will turn bright red and will stay lit continuously until recording is terminated or the available memory is filled.

7) Press the REC button a third time to terminate recording: the red status LED will go out indicating recording is complete.

THAT'S IT!

The recording is now locked in memory until you want to record something else. Tracks can be protected from accidental erasure using the record enable/disable feature: set dipswitch #3 to the UP position to protect your recording.

PLAYBACK !

Press the PLAY playback button on the front panel to begin playback of the audio track and set the OUTPUT control to the desired volume level. If volume is still low, try increasing the INPUT level during recording. Remember to set the OUTPUT level so that listeners can hear the message clearly even when the listening area gets crowded.

For continuous play or looping applications, connect a wire jumper between the external BUT button and GND ground terminals. The audio track will play to the end, then automatically reset to the beginning and start over. Remember that DIP#2 should be in the DOWN position and DIP#4 should be UP. (TIP - for a delay before the audio track repeats itself, simply leave a bit of blank space at the beginning or end of the audio track when making the recording.)

Where a normally closed (N.C.) switch is to be used, such as with a handset, turn DIP#4 to the down position. In this mode the message will play only while the start contact remains open or until the message is finished. The unit will stop and re-set to the beginning when the start contact is closed.

If the green POWER STATUS indicator light on the front panel flashes intermittently, don't worry: the unit is in PowerSaver mode. See Configuration Switches for more info.

DIFFICULTIES?? - if you experience any problems at all,
or if you just want to let someone know what a great job you've done

CALL OUR TECHNICAL SUPPORT LINE
TOLL FREE   1-800-387-2365

NOTE The DAR-050 has 2 separate safety features to prevent accidental recording or erasure of messages. To record a new message there **must** be a connection made at the INPUT jack and Configuration Switch DIP#3 **must** be DOWN (record enabled).

OTHER FEATURES

INTERNAL FUSING The DAR-050 is internally fused using a 1Amp Type 2AG fuse. The most common reason why the fuse trips is because either the power polarity is incorrect or the there is a short-circuit in the external wiring. Replace only with same type fuse.

POWER SAVER CIRCUITRY When enabled, the built-in PowerSaver circuit forces the unit into a 'sleep' mode when nothing is playing. It 'wakes' up only when it receives either a Start or a Record input. Ideal when using solar or battery power sources. In PowerSaver mode the POWER STATUS LED comes on when the unit is 'active'. Otherwise it will flash intermittently to indicate the circuit is enabled. In most applications the PowerSaver should be disabled (Configuration Switch #1 is DOWN).
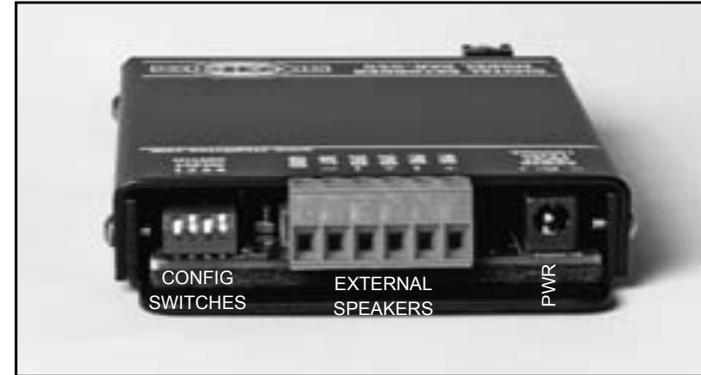
RECORD LOCK-OUT FEATURE The DAR-050 incorporates RECORD LOCKOUT features to prevent accidental erasure of the recorded message. In order to record a new audio track, an audio cord MUST be plugged in to the LINE IN jack, and Configuration Switch #3 (Record Enable) on the back of the unit must be in the DOWN position

EJECTABLE CONNECTOR BLOCKS The orange connector block on the back of DAR-050 is EJECTABLE for easy changing of the unit or for pre-wiring. Use a small screwdriver to gently pry the connector away towards the back of the unit. Push on to reconnect.

MOUNTING This unit can be mounted in any orientation. 4 mounting holes are provided, 2 on each end of the chassis .

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CONFIGURATION SWITCHES

Several operating parameters can be set using the Configuration Switches located on the back of the unit.

Switch	DESCRIPTION	DEFAULT
DIP#1	UP to enable PowerSaver Circuit, DOWN for Continuous power	default=DOWN
DIP#2	UP allows play cycles to be interruptible, DOWN for un-interruptible	default=DOWN
DIP#3	UP disables recording feature(protects), DOWN enables recording	default=DOWN
DIP#4	UP is for N.O. (normally open) switch type	default=UP
	DOWN is for N.C. (normally closed) switch type	

DIP#1 - Engages and disengages PowerSaver circuitry. Should be DOWN when wall plug power supply is used and UP when battery or solar power is used.

DIP#2 - Determines what happens when a start input occurs while the audio track is playing. In un-interruptible mode(down), all start inputs are ignored while the track is playing (recommended for most applications). In interruptible mode, if the PLAY or external start button is pressed while the track is playing, then playback will be terminated. A subsequent start input will cause the unit to re-start the track from the beginning.

DIP#3 - A safety lockout to prevent accidental erasure. Set this switch UP after recording to protect the audio track if you are concerned that it might be accidentally erased.

DIP#4 - Configures the unit for use with a N.O. (Normally Open) or a N.C. (Normally Closed) switch type. Most switches are N.O. - i.e.: the contact must be closed (made) to start the audio track.

For continuous play or looping applications, connect a wire jumper between the external BUT 1 button terminal and the GND ground terminal once the audio track has been recorded. In this mode, the track will play to the end, then automatically reset to the beginning and start over again. DIP#2 must be in the DOWN (un-interruptible) position and DIP#4 must be in the UP(Normally Open) position

HARD RESET - The unit may act erratically or be difficult to record if the internal Flash memory is corrupted due to electrostatic discharge (ESD) or lightning. If this happens, the memory should be re-formatted using a **'hard reset'**. Caution - all audio data previously recorded will be ERASED. To initiate a hard reset, make sure Configuration Switch #3 (record enable) is DOWN on the back of the unit and connect an input cord to the LINE IN or MIC jack to enable the recording feature. Press the REC and PLAY buttons at the same time - the REC and PLAY LEDs will start to flash rapidly. Press the REC button again and the flashing will change to a slower pace while formatting. The LEDs will stop flashing after a few seconds once formatting is completed. Proceed with re-recording per the instructions.

Specifications: Digital Audio Recorder DAR-050
(Single Message Recordable Audio Playback device, single or continuous play)

Max Recording Time	1 minute 50 seconds (110 seconds)
Digital Sampling Rate	39.06 kHz (Kilohertz), fixed
Digital Compression	None, not required
Frequency Response	50-14.5kHz (@nom input, +/-3dB) fixed
Message Capability	single message, single play or looping
Audio Inputs -Line Level	230mV p-p (-20dBm) sensitivity, 10k impedance, adjustable
Audio Processing	On-board variable slope analog compression/expansion
Audio/ Anti-Alias Filters	8th order Butterworth-type, Burton Implementation
Dynamic Range	>70+ dB
Audio Output -SPKR	6 watt nom / 2.2 watt true RMS speaker level, bridged, adjustable and user-configurable to 200mV Line Level
Controls	Input Volume, Speaker Volume, local start, local record
LED Output	5 volt 5mA sourcing, active on playback
Memory Type	32mbit / 4MB non-volatile NAND Flash EEPROM
Memory Backup	NOT REQUIRED, non-volatile
A/D Conversion	Companded 8 Bit Linear, real time streaming
Indicators	VU Level on Rec/PB, PowerSaver Status, Play Status, Record Status
Start Input	N.O. Momentary contact closure for single play, sustained for continuous play Input is configurable for interruptible/non-interruptible mode, or N.C. contacts
PowerSaver Capability	selectable on/off, proprietary auto-standby mode for remote power systems
Power Consumption	60mA @ 12 VDC (typical, avg), 290 uA standby in PowerSaver mode
Power Supply (supplied)	12 VDC output nominal @ 800 mA, 120 VAC source
Approvals	Class II Device, CSA, UL, FCC CLASS A Compliant
Construction Standard	Industrial/Commercial, carbon steel enclosure, polyester finish
Operating Temp/Humid.	-20°F to +130°F (-30°C to +55°C), non-condensing
Dimensions, Weight	3.5"w x6.0"d x 0.75"h, 1.8 lbs (89mm x 152mm x 19mm, 0.7 kg)
Warranty	5 year 'Gold Seal' manufacturer direct

Includes 12VDC Power Supply, Set of Audio Patch Cords, Detailed Operating Instructions

WARRANTY

This Stop and Listen Inc. product is warranted against defects in workmanship and materials under normal use for 5 years from the original date of purchase. This warranty does not cover equipment which has been tampered with in any way, or damage caused by accident, negligence, alteration, or misapplication. This product must be returned transportation prepaid, properly packed and insured. This warranty applies only to the original purchaser. No other warranties are expressed or implied. Stop and Listen Inc is not responsible for consequential damages.

CARE AND CLEANING

The Digital Audio Recorder Model DAR-050 is designed and constructed for the utmost in quality and durability. Because of it's 100% solid-state design, the only thing you should ever have to do is dust it with a dry cloth.

www.stoplisten.com

Configuration Switches

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