D.R.P.8000 V3.

DIGITAL RECORD PLAY-BACK

SYSTEM.

OPERATING MANUAL

AND

USER GUIDE

Contents of this Manual.

Operating the D.R.P.8000:

More information.

D.R.P.8000 INTRODUCTION.

GENERAL DESCRIPTION

The D.R.P.8000 is a solid-state record play-back system developed using the latest ADPCM (Adaptive Differential Pulse Code Modulation) technology. The versatile D.R.P.8000 has countless applications either as a stand alone unit or as part of an existing P.A. System. With the capability of recording up to 16 different messages or tunes etc, and being able to play-back any one instantly via the front panel controls, or by triggering from an external source,or by the D.R.P.8000's built-in timer and play-back sequence systems make auto or manual message selection and play-back simple. With a total recording time from 8 to 20 minutes depending on the reproduction quality required, give this self contained unit countless advantages in both versatility and reliability over it's mechanical counterparts.

FEATURES.

ADPCM 12 bit reproduction.

Total Record Play-back times from 8 to 20 minutes.

Multiple message storage up to 16 locations.

Manual message trigger from unit or external source.

Built-in auto play-back timer.

User programmable play-back Sequencer.

Full battery back-up system.

Line or Mic in and outputs.

Mic override or unit override when used with P.A.systems.

Headphone monitor facility.

Bass and Treble controls.

D.R.P.8000 Front Panel Controls.

1. Power button.
Operation of this button will switch the unit from standby mode to it's
normal operating mode or from operating mode to standby mode,
(provided mains power is present).

2. Standby indicator.
When illuminated this LED shows the unit is not operational but is charging
the internal battery back-up and retaining any stored
messages.When off the indicator shows the unit is operational.

3. Start button.
Operation of this button will start the unit running in either Record or
Play mode, depending on mode selected.

4. Stop button.
Operation of this button will stop the unit running in either Record or
Play mode, depending on mode selected. Pressing this button will also take
the unit out of record pause mode.

5. Running indicator.
This will flash when the unit is running in either Record or Play mode,
depending on mode selected.

6. Erase button
Operation of this button will Erase the selected message location 1 - 16 in
Record mode only. Holding this button and the STORE button simultaneously
will erase the Play-back sequencer memory,(see programming and erasing
play-back sequencer).

7.Record button.
Operation of this button will switch the unit from PLAY PAUSE mode to
RECORD PAUSE mode, you may exit record pause mode by pressing the STOP
button.

8. Play - Record indicators.
The PLAY light will flash when the unit is in Play Pause mode, and will stay
on once the unit is running. When in record pause mode the RECORD light will
flash, once running in record mode this light will stay on until recording
stops.

9. Memory full light.
When recording this light will flash 5 seconds before the end of each of
the 16 available message locations is reached, indicating how much memory
is being used to record your message.

Whilst programming the PLAY-BACK SEQUENCER this light will flash and sound
the control beep, if the PLAY-BACK SEQUENCER memory is full i.e. 16
locations have been programmed

10. Select button.
Operation of this button will advance the message selector to the next

pre-recorded message in play-pause mode, or to the next empty message location when in record pause mode.

11. Message location indicators 1-16.
These 16 indicators have four functions listed below:
a: **OFF** = message location is not selected and has no message in it.
b: **ON** = message location is not selected but contains a message.
c: **SLOW FLASH** = this is the currently selected message location and it has
       no message recorded in it.
d: **FAST FLASH** = this is the currently selected message location and it
       has a message recorded in it.

12. Store button.
Operation of this button will store the currently selected message number 1
- 16 into the auto play-back sequencer, only if a message is recorded in
that location. ie: the message selection light 1 - 16 is flashing fast.
Holding this button in as well as the ERASE button will erase the Play-back.
sequencer memory,(see programming and erasing play-back sequencer).

13. Timer button.
Operation of this button will set the unit to one of three play-back
modes.

a: **MANUAL** = The currently selected message will play-back when the START
button is pressed.

b: **MANUAL/AUTO** = Messages will play-back in the order they were programmed
into the play-back sequencer each time the START button is pressed. If no
sequence has been programmed message will play-back in order ie:
1,2,3,4,5,6 etc.

c: **AUTO** = Messages will play-back in the order they were programmed into
the play-back sequencer, with the timer operating between each message. If
no sequence has been programmed messages will play-back in order ie:
1,2,3,4,5,6 etc.

14. Manual - Auto indicators.
These indicate the three play-back modes listed above.

Manual on = **MANUAL** mode.
Auto on   = **AUTO** mode.
Both on   = **MANUAL / AUTO** mode
In auto mode with the timer running the auto light will flash indicating
the timer is running.

15. Delay control.
 (1 Second to 6 Hours in 4 ranges set by dip switch A)
Used in AUTO mode this control varies the time delay between messages being
played back in a sequence of messages, in AUTO loop mode it sets the
playing time of messages in a sequence of messages.

16. Record control.
This control sets the level of the incoming signal to be recorded.

17. Peak indicator.
The peak indicator is to visually assist in setting the level of incoming
signal to be recorded.

18. Volume and Tone controls.
The Volume and Tone controls set the level and tone of the messages being
played back into external amplification.

D.R.P.8000 Rear Panel.

1. Mains Input socket.
The D.R.P.8000 should be plugged in to the mains at all times under normal
conditions to maintain the battery back-up charger supply.

2. Mic In Socket.
External microphones with or without priority switch are connected to the
unit here for recording, or normal P.A. announcements when the unit is used
as part of a P.A. system.

3. Mic Level Out Socket.
This output is used to connect the unit to a MIC input of external
amplification.

4. Line In socket.
Line Level signals can be recorded via this socket, such as a cassette deck
, C.D. player or line out of an amplifier.

5. Line Out socket.
This output is used to connect the unit to an AUX input of external
amplification.

6. Headphone Monitor.
Headphones can be connected at this point. The volume of these can be
adjusted by the volume control to the right of the headphone socket. Both
Mic and Line out sockets are disabled whilst headphones are plugged in, this
is to stop any recording mistakes being broadcast over P.A. Systems.
(headphones will have to be removed to return to normal operation)

7. Dip Switch A and B.
These switches are used to set various user functions,
(see formatting D.R.P.8000).

8. Message Trip Inputs.
This 25 way D - Type socket allows connection to the unit for external
message selection and play-back from external equipment and also for
external monitoring of which message number is selected.

Formatting the D.R.P.8000 to your requirements.

Formatting the D.R.P.8000 need only be carried out once in most cases, the
only reason for changing the format is if your requirements of the

D.R.P.8000 change.

The settings required to format the D.R.P.8000 are on DIP switches
A and B at the rear of the unit. The function of these switches is listed
and set out in the form of a reference chart below.

DIP SWITCH A.

SWITCH 1 - Trip Input Priority ON or OFF
Priority ON = If any external trip of a higher number is
received from the D-TYPE socket any currently playing message
will be stopped and the externally tripped one played
instantly.
Priority OFF = If any external trip is received from the
D-TYPE socket whilst a message is playing it will be ignored

SWITCH 2 - Continuous Loop ON or OFF
LOOP ON = If set to ON during recording, the selected message
will play continuously when played back.(This switch is only active during
record mode).
LOOP OFF = Message will play from start to end then stop.

SWITCH 3 - External Trip inputs.
ON = This will allow direct access to all 16 messages via
the external trip input socket at the rear of the unit,
regardless of play back mode selected MANUAL,AUTO or
MANUAL / AUTO.
OFF = This will disable all trip inputs apart from trip 1,
this trip input can then be used to start the currently selected message.

SWITCH 4 - Output Delay
ON = This will delay a message being played for a short time
once started. This is useful when the unit is used as
part of a P.A. System to splice between a normal P.A.
announcement and the D.R.P. playing a message.
OFF = Normal operation (no delay)

SWITCH 5 - Control Beep Disable.
ON = The control beep will not sound.
OFF= The control beep will sound.
SWITCH 6 - Single Shot for external Trip Inputs Socket.
OFF = When an external trip input is called the relevant
message will be played back, once the message has finished,
if the trip input is still called the message will play again.
ON = This will allow an externally tripped message to be played
back once, if the trip is still called once the message has
finished it will not play again, unless the trip is removed and
called again.

SWITCH 7 -Switches 7 and 8 are used to set the Timer range as follows.
SWITCH 8 -

SWITCH NUMBER.
A7   A8

UPTO 60 SECONDS	OFF	OFF
UPTO 6 MINUTES	ON	OFF
UPTO 60 MINUTES	OFF	ON
UPTO 6 HOURS	ON	ON

DIP SWITCH B.

SWITCH 1 - Switches 1,2, and 3 of DIP SWITCH B are used to set the
SWITCH 2 - sample rate at which messages are recorded and played back.
SWITCH 3 -

SWITCH 4 - NOT USED

DIP SWITCH B SAMPLE RATES.

The sample rates are numbered from 1 to 6, sample rate 6 giving the highest
quality reproduction and 1 the lowest.

Sample Rates are set as shown below.

SWITCH NUMBER.

		B1		B2		B3
Sample Rate 1	=	OFF	-	OFF	-	OFF
Sample Rate 2	=	ON	-	OFF	-	OFF
Sample Rate 3	=	ON	-	ON	-	OFF
Sample Rate 4	=	OFF	-	OFF	-	ON
Sample Rate 5	=	ON	-	OFF	-	ON
Sample Rate 6	=	ON	-	ON	-	ON

The chart below shows the total running time of the unit , also the running
time of each of the 16 message locations at any of the 6 sample rates
listed above.

	TOTAL RUNNING TIME OF UNIT		RUNNING TIME OF EACH MESSAGE LOCATION (16 IN ALL)
Sample Rate 1 =	19 min 53 seconds	-------------	1 min 15 seconds
Sample Rate 2 =	17 min 52 seconds	-------------	1 min 7 seconds
Sample Rate 3 =	15 min 37 seconds	-------------	58 seconds
Sample Rate 4 =	10 min 4 seconds	-------------	38 seconds
Sample Rate 5 =	8 min 54 seconds	-------------	33 seconds
Sample Rate 6 =	7 min 49 seconds	-------------	29 seconds

Once you have chosen the format best suited to you, and have set the
appropriate switches the D.R.P.8000 is then ready for use.

Operating the D.R.P.8000.

Switching On.

With mains power applied to the unit, operate the STANDBY button. Having

done this the STANDBY light will go out, the unit will then execute it's internal system check and set-up sequence. If the unit has any previously recorded messages , it will automatically place these back in the correct message locations and display them on the message location indicators 1 to 16.

The following operations assume that mains power is present with the STANDBY light off.

Note:
If the unit is being switched on for the first time and the battery back-up supply is fully discharged, the unit will execute it's internal initialisation program, this will take a few seconds after which the unit will go in to standby mode.

RECORDING A MESSAGE.

Firstly connect your input device at the rear of the unit to the MIC IN or LINE IN sockets. Also connect an external amplifier to the MIC or LINE-OUT socket, or plug in a set of headphones at the PHONES jack at the rear of the unit to monitor your message.

Setting record mode.
Press record, this will put the unit into RECORD PAUSE mode and flash the RECORD light.

Locating message to be recorded.
Decide in which message location you wish to record , by pressing the SELECT button until the relevant location number light flashes slowly. In RECORD PAUSE mode the SELECT button will only allow you to select empty locations that have not been recorded in. If you wish to record in a location that contains a message it will have to be erased first.(see erasing a message)

Setting the record level.
To set the record level play your message (speech, music etc.) and adjust the RECORD control to a point where the PEAK LED flashes at high peaks of sound ONLY. When you are satisfied with this setting you can start recording.

Recording your message.
Press the START button: and then play the message to be recorded , the unit will now be recording, the RECORD light will stay on and the RUNNING light will start flashing. Recording can be stopped at any time by pressing the STOP button. Recording will automatically stop if the unit gets to the start point of another pre-recorded message.   (continued)

NOTE: We would advise you to experiment with the RECORD level control, record and play-back test pieces to obtain the best result. Setting this control correctly will optimise the play-back quality of the unit.

Erasing a Message.

1. Ensure the unit is in PLAY PAUSE mode i.e. the PLAY light is flashing.

2. Press the SELECT button until the message location light or lights flash which contain the message you wish to erase.

3. Press the RECORD button to enter RECORD PAUSE mode, the RECORD light will flash.

4. Press the ERASE button once, the selected message location light or lights should now flash slowly, and the control beep will sound 4 times to indicate the message has been erased. The unit will now return to PLAY PAUSE mode.

Manual Message Play-Back.

1. Ensure the unit is in MANUAL mode, i.e. only the MANUAL light is on. If it is not press the TIMER button once or twice until it is.

2. Press the SELECT button (if required) to select the message you wish to play,

3. Now press the START button, the PLAY light will stay on and the RUNNING light will flash.

Programming the Play - back Sequence.

The play-back sequencer allows up to 16 messages to be played-back in any order automatically. (used in AUTO and MANUAL / AUTO modes)

1. Whilst in MANUAL mode press the SELECT button to display the first message that you wish to store in the sequence.

2. Now press the STORE button ONCE, this will store that message in the first position of the play-back sequence, the control beep will sound to indicate this has been done.

3. Repeat steps 1 and 2 to program your full sequence, to a maximum of 16 locations. If all 16 locations are used and you try to store any more the control beep will sound ,and flash the MEMORY FULL indicator.

Notes:
 When AUTO or AUTO / MANUAL modes are selected only the messages contained in the play-back sequence will be displayed on the message location lights, by pressing the SELECT button you can run through your programmed sequence.

Erasing a Programmed Sequence.

1. Press BOTH STORE and ERASE buttons at the same time, this will cause all 16 message location LED's to flash once, and the control beep to sound 4 times. The play-back sequencer is now erased.

Notes:
To erase a single message from the play-back sequence first enter AUTO or AUTO / MANUAL mode, press the SELECT button until the message location you

wish to erase from the sequence is displayed ,then press the ERASE button a
single beep will be heard, the message will now be erased from the
sequence. THIS OPERATION WILL NOT ERASE THE MESSAGE, ONLY IT'S INCLUSION
IN THE PLAY-BACK SEQUENCE.

Play-back in AUTO mode.

1. The unit must first be put into AUTO mode, press the TIMER button until
only the AUTO LED is on.

2. The START button can now be pressed, and the currently selected message
will be played. At the end of the first message the timer will start, once
the timer has timed out the next message in the play-back sequencer will
play and so on until the STOP button is pressed.

Note: If the play-back sequence has been erased or not programmed, messages
will be played-back in numeric order.

Play-Back in Manual / Auto mode.

1.The unit must first be put into MANUAL / AUTO mode, press the TIMER
button until BOTH the AUTO and MANUAL LED's are on.

The unit works in much the same way as AUTO mode, the only difference being
when each message ends the timer does not operate, instead the START button
must be pressed to advance and play the next message in the sequence.

Notes :
Instead of using the START button to advance and play messages in the
sequence in MANUAL / AUTO mode, the external trip input can be used when
the relevant DIP SWITCH has been set. (DIP SWITCH A, SWITCH 3 OFF) If
this switch is in the on position the message number that is tripped will
be played and the sequencer ignored.

Notes on Message Locations and Sample Rate.

Messages being recorded will vary in length and in some cases will require
more than one message location, it is good practice to time your message
before recording to establish how many message locations are required.

The timings of message locations at any given sample rate are listed in
Formatting the D.R.P.8000 section of this book. Having established how many
message locations are needed by looking at the 16 message location lights

you will be able to see where the message will fit in.

Example:
Assume the unit is set to sample rate 1, each message location will run for
1 min 30 seconds.

If your message is 1 min 10 seconds, only one message location would be
required.

If it were say 2 min 30 seconds, then two would be required,

If it were say 4 min 18 seconds it would require 3 locations.

Changing the sample rate.

Under normal conditions once set, the sample rate should not have to be
changed, however the sample rate can be changed each time a new message is
recorded if required, this will enable you to make maximum use of the
available memory.

Music or any sounds with high frequencies are best recorded at a high
sample rate for the best reproduction. Speech however can usually be
recorded at a lower sample rate without any loss in quality.

Once recorded a message will automatically play back at the sample rate it
was recorded at, changing the sample rate in play-back mode will have no
effect.

Using the D.R.P.8000 as part of a P.A. System.

When using the D.R.P.8000 as part of a P.A. System, any microphone used with
a priority switch must have a set of normally open push to talk contacts,
wired as illustrated on the rear of the unit. The microphone is plugged
into the MIC IN socket at the rear of the unit, and a lead run from the MIC
OUT socket to the MIC INPUT of your amplifier. If the unit has to override
any other part of the P.A. system (B.G.M. etc) the priority out switch
will have to be used. The LINE OUT socket may be used if connecting the unit
to an AUX INPUT of your amplifier, if you use the LINE OUT socket and
require the override switch output, the switch wires will have to be run
from the MIC OUT socket.

Notes on priority operation.

When using microphones with priority switch connected to MIC IN socket.
The unit will operate normally until the microphone push to talk button is
operated, when this happens the D.R.P.8000 will be overridden in any mode,
the P.A. announcement being made will be routed straight to the P.A.
amplifier. Once the push to talk button is released the D.R.P.8000 will
return to normal operation.(If the D.R.P.8000 is in Record mode, activating
the over ride input on the Mic input socket will have no effect.)

The priority switch output from the MIC OUT socket has only to be connected

to the amplifier override input if the D.R.P.8000 and microphone has to override any other part of the P.A. System such as B.G.M. or other microphone inputs etc.

Notes on Battery Back-up System.

The battery back-up system in the D.R.P.8000 makes it very portable, and safeguards against loosing any messages upon a mains failure, however the battery back-up must remain charged.

To maintain the battery back-up system, mains power should be left on the unit at all times. Operation of the STANDBY button has no effect on the back-up system.

Should the unit be disconnected from the mains at any time, the internal battery back-up supply will maintain the contents of the memory for 10 to 14 days on a full charge.

Notes on external trip input socket.

This is a standard 25 way D-TYPE socket with connection information printed on the rear of the unit. Push buttons or switches can be connected directly at this point to trip messages from other locations, if any other electronic equipment such as timers or PLC's are being used to trip messages we would advise that the external controller calls a relay with a set of uncommitted contacts to trip the unit.

Pin 17 of this socket is used to override the unit, when shorted to the common connection, will have the same effect as the MIC OVERRIDE IN switch being made. (useful for external override control)

Pins 18 to 23 are used for interfacing to external equipment and are at TTL levels.

```
PIN 18 = CONTROL 1 = DATA OUT - A  (Binary code of selected message)
PIN 19 = CONTROL 2 = DATA OUT - B    "              "
PIN 20 = CONTROL 3 = DATA OUT - C    "              "
PIN 21 = CONTROL 4 = DATA OUT - D    "              "
PIN 22 = CONTROL 5 = DATA OUT - RUN/SYNC (High when running)
PIN 23 = CONTROL 6 = DISABLE FRONT PANEL CONTROLS (Active low)
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Notes on Direct Access operation.

With Direct access on DIP SWITCH A - SWITCH 1 in the ON position and DIP

SWITCH A - SWITCH 3 in the on position. If a message is already playing and another message of a higher number is selected via the external socket, the new message will play immediately and cancel the previous one. Alternatively if the externally selected message is of a lower number than the one playing, it will be played after the current message has finished, but if the stop button or the Mic over ride is activated both messages will be cancelled.

Notes on continuous loop play-back.

With continuous loop set on DIP SWITCH A - SWITCH 2 in the ON position during record the unit will operate as follows.

MANUAL mode.
When START is pressed the currently selected message will play continuously until the STOP button is pressed.

MANUAL / AUTO mode.
When START is pressed the currently selected message will play continuously until the STOP button is pressed, the unit will then select the next message in the play-back sequencer (if the play-back sequencer has not been programmed the unit will select the next message in numeric order) When the START button is pressed the newly selected message will be played and so on.

AUTO mode.
When START is pressed the currently selected message will play continuously until the timer has timed out, the unit will then select the next message in the play-back sequence, and play it until the timer has timed out again and so on. (if the play-back sequencer has not been programmed the unit will select the next message in numeric order) To exit this mode select MANUAL mode.

TECHNICAL SPECIFICATION.

Enclosure Size:	W = 375mm D = 232mm H = 65mm
Weight:	2.25 kg
Supply Voltage:	220 - 240v A.C. 50/60Hz
Power Consumption:	15 W
A.C. Fuse Rating:	250mA-T (Type - 20mm)
D.C. Fuse Rating:	1amp-T (Type - 20mm)
Tone Controls:	12 dB Cut and Boost

Line In Socket:	0dB 22K (Ref 0.775mV) 5 pin Din 180 deg
Line Out Socket:	0dB 1K 5 pin Din 180 deg
Mic in Socket:	-56dB 600R Unbalanced 5 pin Din 180 deg
Mic out Socket:	-56dB 600R Unbalanced 5 pin Din 180 deg

Override Switch In: Pins 4 and 5 of MIC IN socket.
Normally Open Contacts Required or TTL level

Override Switch Out: Pins 4 and 5 of MIC OUT socket.
Uncommitted Normally Open Contacts.
Max 24V @100mA

Sample Rate 1:	6.9KHz
Sample Rate 2:	7.8KHz
Sample Rate 3:	8.9KHz
Sample Rate 4:	13.8KHz
Sample Rate 5:	15.6KHz
Sample Rate 6:	17.8KHz

Battery Back-up: 4 off AA size nickel-cadmium batteries.

Headphone socket: Standard 3.5mm Jack Socket. (stereo) 8 Ohms

External trip input: Standard 25 way D-Type socket,
5V TTL levels Active Low.

Designed and Manufactured By: