Operating Manual
Service Manual

DAT CONTROL DC-2/DC-3

English Manual

RTW

RADIO-TECHNISCHE WERKSTÄTTEN

INSTRUMENTS FOR STUDIO APPLICATIONS

Serial Number:

Catalogue Number:

RTW

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Hinweis

WARNUNG!



Das Öffnen des Gerätes birgt eine potenziell gefährliche Situation, denn es kann eine gefährliche Spannung mit dem Risiko eines elektrischen Schlags anliegen!

WEEE-Reg.-Nr.: **DE 90666819**

Kategorie: 9

Geräteart: Diese Geräte erfüllen als
ÜBERWACHUNGS- UND KONTROLLINSTRUMENTE
in der Kategorie 9, Anhang 1B,
die Vorschriften des Elektro- und Elektronikgesetzes
vom 16. März 2005 und der RoHS-Directive 2002/95/EC.

Note

WARNING!



Opening the unit bears a potentially hazardous condition. A dangerous voltage that could pose a risk of electrical shock can be present!

WEEE-Reg.-No.: **DE 90666819**

Category: 9

Device type: These instruments comply with
and fall under category 9
MONITORING AND CONTROL EQUIPMENT
of Annex 1B of the RoHS-Directive 2002/95/EC.

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WERKSTÄTTEN GMBH

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1. Preface

The present "Operating and Service Manual, DAT Control DC-2 / DC-3" contains information on connecting, operating and service literature for the DAT Control DC-2 / DC-3 manufactured by RTW. Before putting the unit into service, please take a few minutes to read the sections which follow, noting the information which applies to your application in particular.

1.1. Purpose of the operating manual

The Operating and Service Manual contains all the information needed regarding the functions which the DAT Control DC-2 / DC-3 provides. It covers the controls, the pre-established settings in the default menu and the operating sequences. Also to be found in this manual are circuit diagrams, drawings showing the mechanical aspects and spare parts list.

This manual is based on information drawn from the manuals for each type of component to be controlled. Consequently, it is assumed that the reader is familiar with the commands used for the various units. If there is any uncertainty, please refer to the manual which was provided with your DAT recorder.

1.2. Organization of the Operating and Service Manual

The contents of the individual chapters are summarized below. Additional details on the topics dealt with in the various chapters will be found in the table of contents at the front or in the index at the end of the manual.

Chapter 1. Preface

This chapter describes the organization of the Manual.

Chapter 2. General

This chapter explains what is included as standard equipment and gives information on optional accessories.

Chapter 3. Models

In this chapter you will find a detailed description of the models supported by the software.

Chapter 4. Connections and configuration examples

This chapter describes how to connect the DAT Control DC-2 / DC-3 to the DAT recorder, the connection required for the "fader start" and "external keys" functions, and how to use the remote control unit with an editing system.

Chapter 5. Operation

This chapter deals with the basic operating steps for the DAT Control DC-2 / DC-3.

Chapter 6. Default setting

This chapter describes the parameters for the default menu and provides information on how to change these settings.

Chapter 7. Warning displays

Explained in this chapter are the warning indicators implemented in the software and their meanings.

Chapter 8. Technical data

Summarized in this chapter are all the technical data for the DAT Control DC-2 / DC-3.

Chapter 9. Circuitry information

This chapter contains all the circuit drawings required for service work.

Chapter 10. Part Lists

Chapter 11. Index

2. General

2.1. Standard equipment

Shipped together with the DAT CONTROL DAT DC-2 / DC-3 are:

The DAT CONTROL DC-2 / DC-3 remote control module with

- 2 adapter cable Sub-D-9pin - Sub-D-9pin (only RS-422 version) Order Nr. 1189
- 2 adapter cable Sub-D-9pin - Sub-D-25pin (only RS-232 version) Order Nr. 1178
- 1 mains adapter
- 1 Service- and Operating Manual german or english.

3. Models

3.1. DAT CONTROL RS-422

The DAT CONTROL DC-2 / DC-3 with the RS-422 serial interface is a remote control module designed especially to operate the SONY Series 7000 DAT recorders and the Otari DTR-90 with an RS-422 interface. All operating controls and electronics are housed in a desk-top unit measuring 151 x 195 x 48 mm.

Available at the remote control module are all functions required for recording and playback, including the time display. A numeric keypad facilitates entering time data or program numbers used to advance to specific points on the tape. Functions such as auto cue, single play or used time display offer enhanced operating convenience.

The DAT CONTROL DC-2 / DC-3-RS-422 is suitable for operation with the Sony series 7000 recorders and with the Otari DTR-90. The remote control module features one (DC-2) or two (DC-3) RS-422 input interfaces and one RS-422 output interface. This makes it possible to insert the DAT CONTROL between a DAT recorder and the Sony DAE- 3000 editor ("insert" operating mode). This "insert" possibility is only provided for the input interface of the first DAT recorder. ID points on the tape can thus be located directly during editing work, without having to know the corresponding time code.

In version DC-3 two DAT recorder can be controlled seperately or parallel.

To be able to operate the simplest recorder in the Sony 7000 series (PCM-7010) the optional RS-422 interface card (Sony designation DABK-7014) must be installed.

3.2. DAT CONTROL RS-232

The DAT CONTROL DC-2 / DC-3 with the RS-232 serial interface is a remote control module designed especially to operate the SONY Series 7000 DAT recorders fitted with an RS-232 interface. All operating controls and electronics are housed in a desk-top unit measuring 151 x 195 x 48 mm.

Available at the remote control module are all the functions required for recording and playback, including the time display. A numeric keypad facilitates entering time data or program numbers used to advance to specific points on the tape. Functions such as auto cue, single play or used time display offer enhanced operating convenience. In addition to these functions, the DAT CONTROL RS-232 provides a so called LEP display showing the last error point. This display is activated when specific errors on tape occured.

To be able to operate the simplest recorder in the Sony 7000 series (PCM-7010) the optional RS-232 interface card (Sony designation DABK-7013) must be installed. The Sony PCM-7030 and PCM-7050 recorders can also be fitted with an RS-232 interface, if desired. This option has the Sony designation DABK-7033.

Note:
Please remember that due to the command structure at the RS-232 interface, there will be no feedback messages for the PREV and NEXT functions.

Please note that the DAT CONTROL RS-232 cannot be connected to the RS-232 serial interface of the Otari DTR-90 DAT recorder for operation of this recorder.

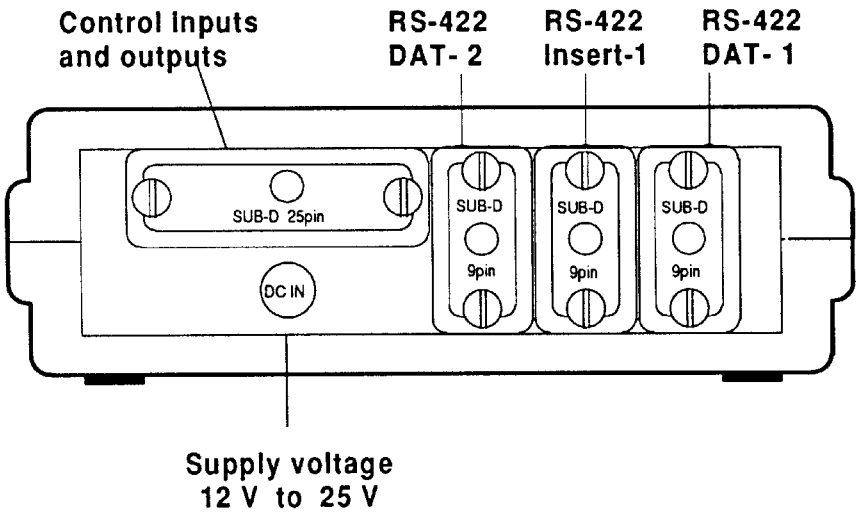
When the DAT CONTROL RS-232 is operated with equipment having a "positive" ground (e.g. Studer mixing consoles), a separate, isolated power supply is absolutely essential for the DAT CONTROL unit because of the asymmetrical architecture of the RS-232 interface in relation to 0 V. The power for the DAT CONTROL RS-232 ***cannot*** be supplied by the console power supply unit in such setups.

4. Connection and Configuration

4.1. Connections

4.1.1. Connections on the backside

The following picture shows the reverse connections of the DAT CONTROL DC-2 / DC-3.



4.1.2. Pin assignment of Sony-9pin Interface

The following table shows the pin assignment of DAT CONTROL DC-2 / DC-3 (RS-422) at the connections DAT-1 and DAT-2.

Note:
The connection DAT-2 works only with version DC-3.

Sony 9pin Interface DAT-1 / DAT-2
1 (FRAME GROUND)
2 (TRANSMIT A)
3 (RECEIVE B)
4 (TRANSMIT COMMON)
5 (nc)
6 (RECEIVE COMMON)
7 (TRANSMIT B)
8 (RECEIVE A)
9 (FRAME GROUND)

4.1.3. Adapter RS-422-9p at Sony PCM 7010-RS-422-15p Interface

The following table shows the pin assignment of DAT CONTROL DC-2 / DC-3 (RS-422) at the connections DAT-1 and DAT-2 of a Sony PCM 7010 with a RS-422-15p interface (DABK 7014).

Note:
The connection DAT-2 works only with version DC-3.

Sony 9p interface DAT-1 / DAT-2	Sony 15p interface PCM-7010
1 (FRAME GROUND)	1 (FRAME GROUND)
2 (TRANSMIT A)	2 (TRANSMIT A)
3 (RECEIVE B)	3 (RECEIVE B)
4 (TRANSMIT COMMON)	4 (TRANSMIT COMMON)
5 (nc)	5 (nc)
	6 (nc)
	7 (nc)
	8 (nc)
6 (RECEIVE COMMON)	9 (RECEIVE COMMON)
7 (TRANSMIT B)	10 (TRANSMIT B)
8 (RECEIVE A)	11 (RECEIVE A)
9 (FRAME GROUND)	12 (FRAME GROUND)
	13 (nc)
	14 (nc)
	15 (nc)

4.1.4. Pin assignment of RS-422-Insert Interface

The following table shows the pin assignment of the DAT CONTROL DC-2 / DC-3 (RS-422) at the connection INSERT-1.

Sony 9pin Interface Insert-1
1 (FRAME GROUND)
2 (RECEIVE A)
3 (TRANSMIT B)
4 (RECEIVE COMMON)
5 (nc)
6 (TRANSMIT COMMON)
7 (RECEIVE B)
8 (TRANSMIT A)
9 (FRAME GROUND)

4.1.5. Pin assignment of the RS-232 Interface

The following table shows the pin assignment of the DAT CONTROL DC-2 / DC-3 (RS-232) at the connections DAT-1 and DAT-2.

Note:
The connection DAT-2 works only with version DC-3.

RS-232 Interface DAT-1 / DAT-2
1 (-)
2 (TxD)
3 (RxD)
4 (DSR)
5 (GND)
6 (DTR)
7 (CTS)
8 (RTS)
9 (-)

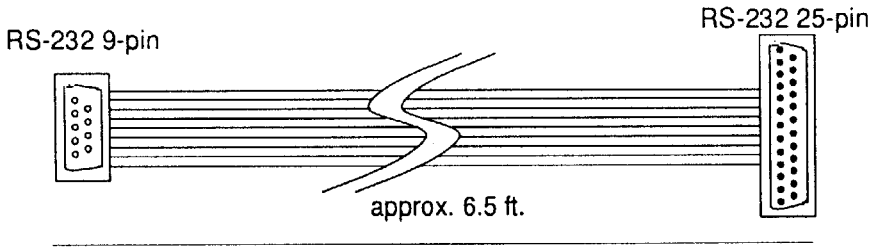
Abbreviations used are:

RxD - Receive Data
TxD - Transmit Data
RTS - Request to send
CTS - Clear to send
DSR - Data set ready
GND - Ground
DTR - Data Terminal ready
nc - not connected

4.2. RS-232-Adapter

The adapter shown in the following diagramm is used to interface between a 9-pin and a 25-pin sub-D connector. The table below displays the interconnection. Abbreviations used are:

RxD - Receive Data
TxD - Transmit Data
RTS - Request to send
CTS - Clear to send
DSR - Data set ready



RS-232-Adapter 9-pin-Sub-D-female con.	RS-232-Adapter 25-pin-Sub-D-male con.
1 (-)	1 (-)
2 (TxD)	3 (RxD)
3 (RxD)	2 (TxD)
4 (DSR)	20 (DTR)
5 (GND)	7 (GND)
6 (DTR)	6 (DSR)
7 (CTS)	4 (RTS)
8 (RTS)	5 (CTS)
9 (-)	nc

4.3. Pin assignment of the control inputs / -outputs

The following table shows the pin assignment of the control inputs /-outputs.

Pin	Signal	Pin	Signal
9	Ext. Output Player 1	21	Ground
11	Ext. Output Player 2	23	Ground
12	Ext. Input Player 1	24	Ground
13	Ext. Input Player 2	25	Ground

Note:
Ext. Input and Ext. Output refer to the faderstart features of the DAT CONTROL.

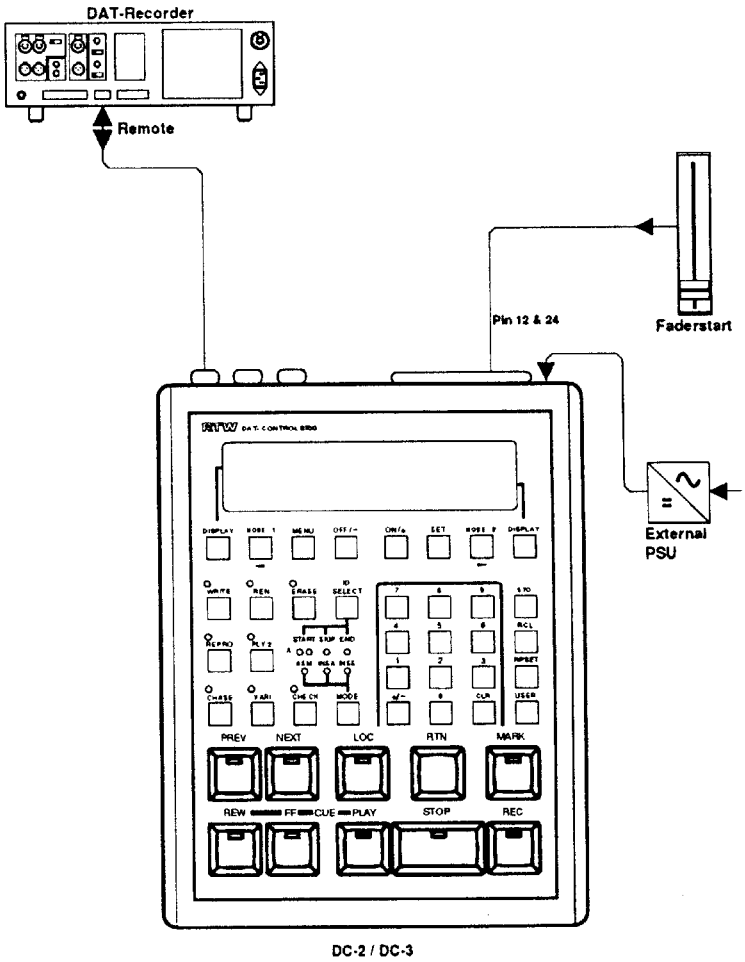
4.4. Connecting Examples

4.4.1. Operation with one DAT recorder

The following block diagram shows the connection of DAT CONTROL DC-2 / DC-3 RS-422-version with one DAT recorder.

Note:
Please take care that the used recorder interface and the hardware version of the DAT CONTROL DC-2 / DC-3 match.

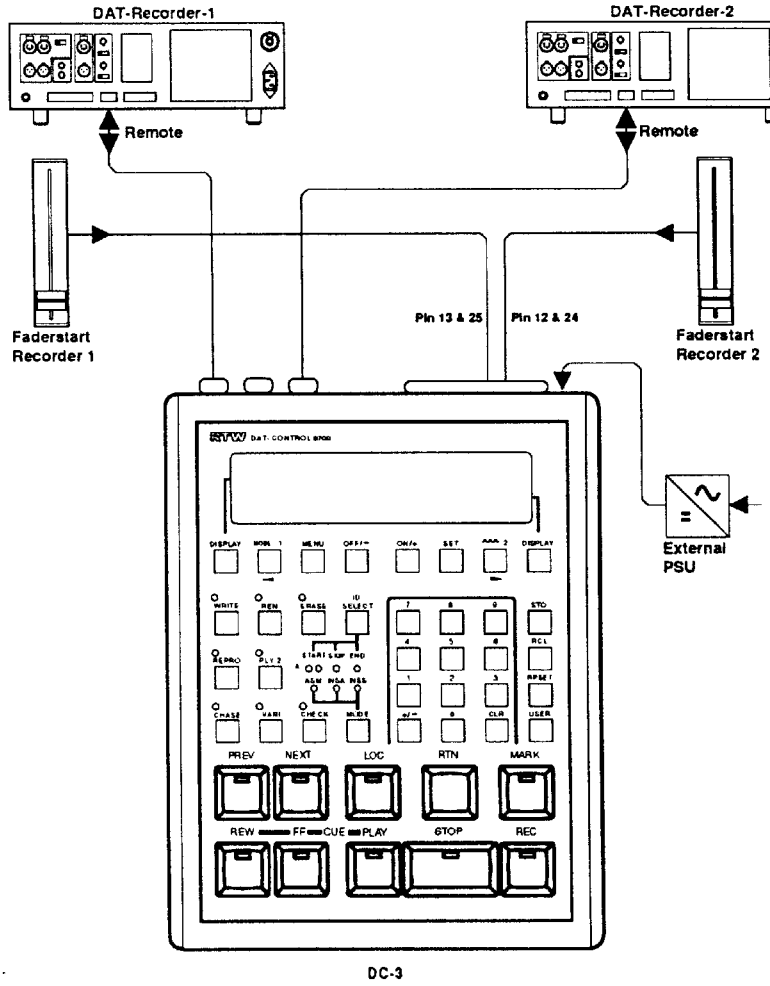
Make also sure that the DIP-switches of the Sony interface board are in the right position. A detailed information can be found on one of the next pages. If the settings do not match operation of DAT CONTROL DC-2 / DC-3 fails.



4.4.2. Operation with two DAT recorders

The following block diagram shows the connection of DAT CONTROL DC-3 with two DAT recorders.

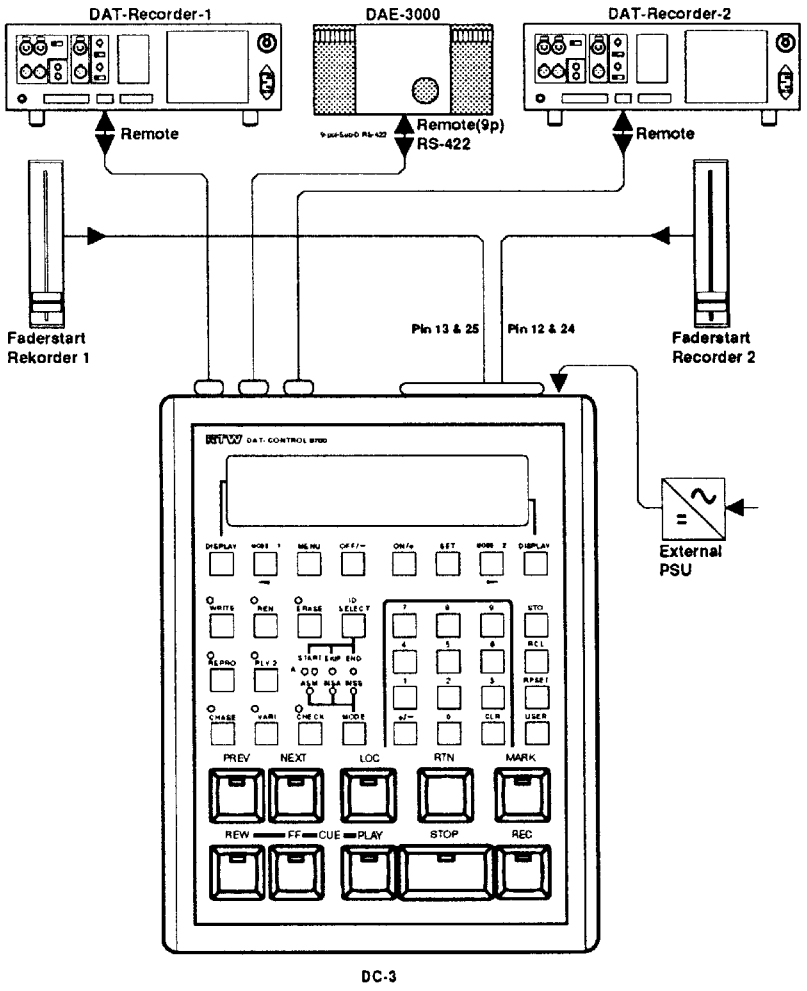
Note:
Please take care that the used recorder interface and the hardware version of the DAT CONTROL DC-3 match.
Make also sure that the DIP-switches of the Sony interface board are in the right position.
A detailed information can be found on one of the next pages. If the settings do not match operation of DAT CONTROL DC-3 fails.



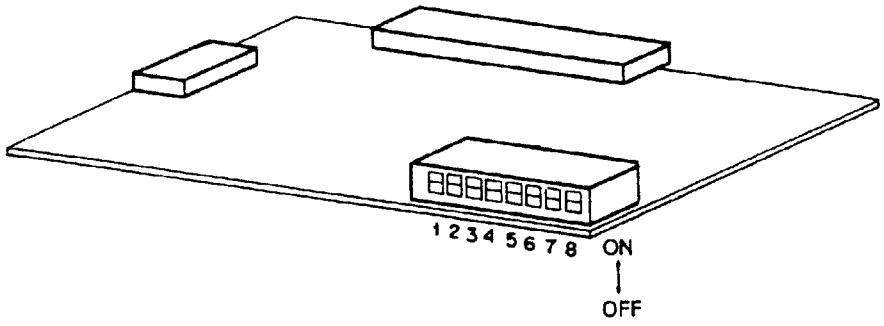
4.4.3. Operation with DAE-3000 (Insert-Mode)

The following block diagram shows the connection of the DAT CONTROL DC-3 (RS-422) in INSERT-Mode with one or two DAT recorders and Sony Editor DAE-3000.

Note:
Operation with DAE-3000 is only possible with the RS-422 version of the DAT CONTROL.



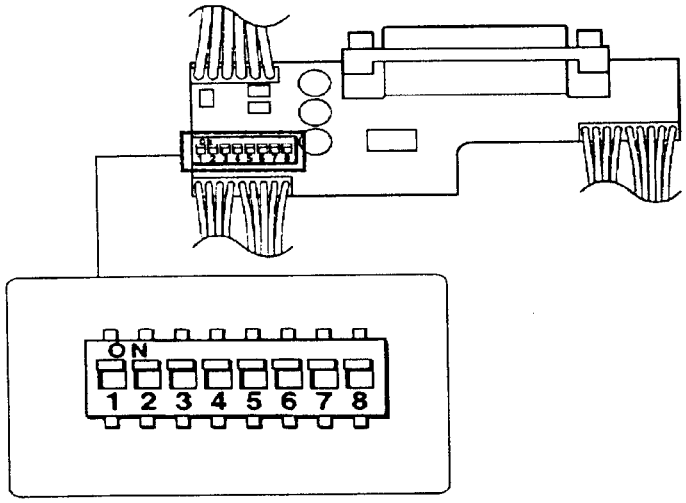
4.4.4. Location of the DIP switches of the Sony RS-232 interface board (7030/7050)



RS-232 interface card (Option DABK 7033)

4.4.5. Location of the RS-232 interface card (DABK 7013) in the Sony 7010

The DABK 7013 RS-232 option is installed behind the rear connection panel. To check the DIP switch settings, turn the unit over so that the rear connection panel is facing you. Remove the 10 screws marked with an arrow and then carefully pull out the rear connection panel to reveal the DABK 7013 circuit board. Set the S 891 DIP switches as shown in the following table.



RS-232 interface card DABK-7013

4.4.6. DIP-switch functions of the Sony RS-232-interface

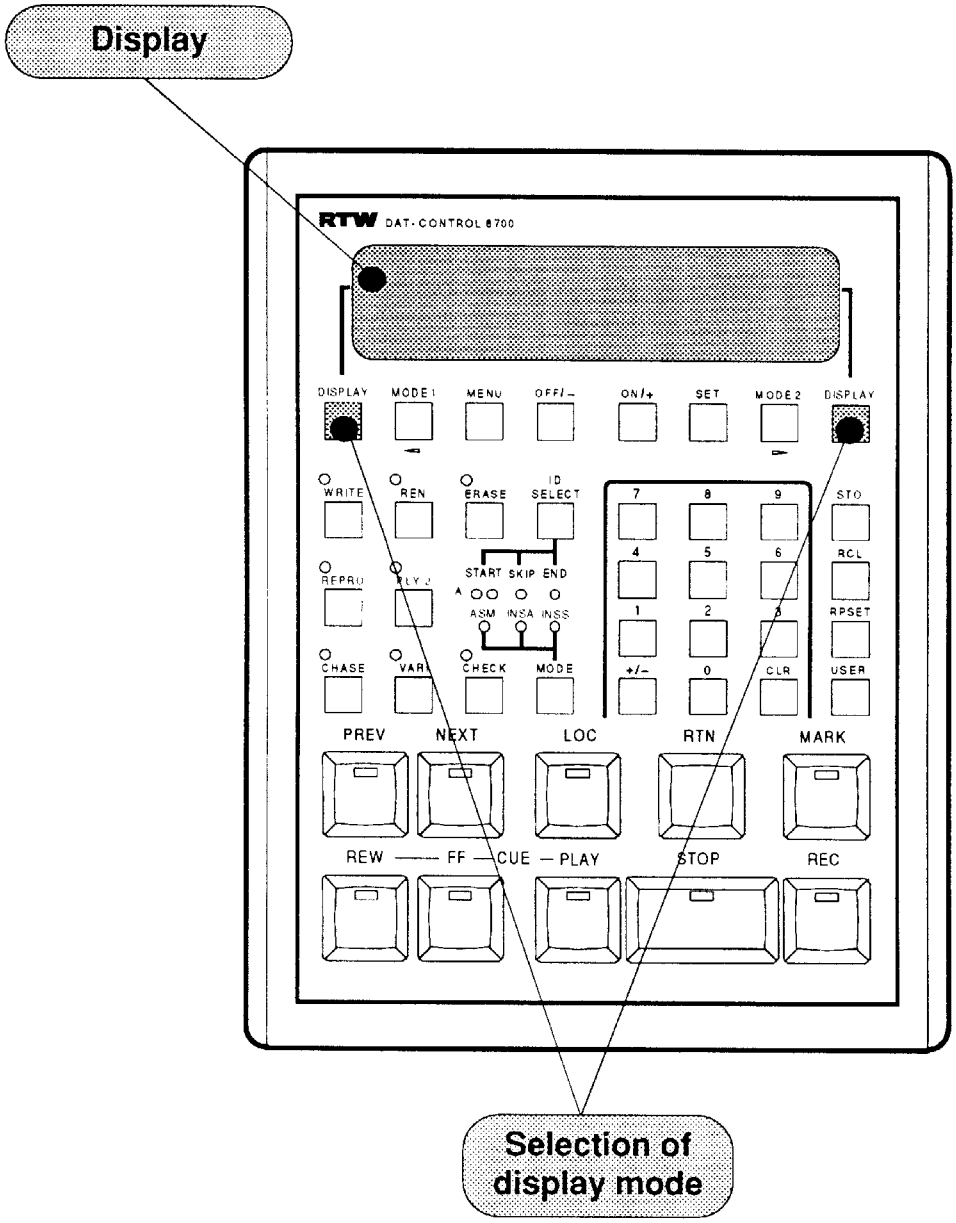
Switch	1 2 3 4	5	6	7	8
Function	Baud rate	Parity on/off	Parity odd/even	Character-length	n.u.

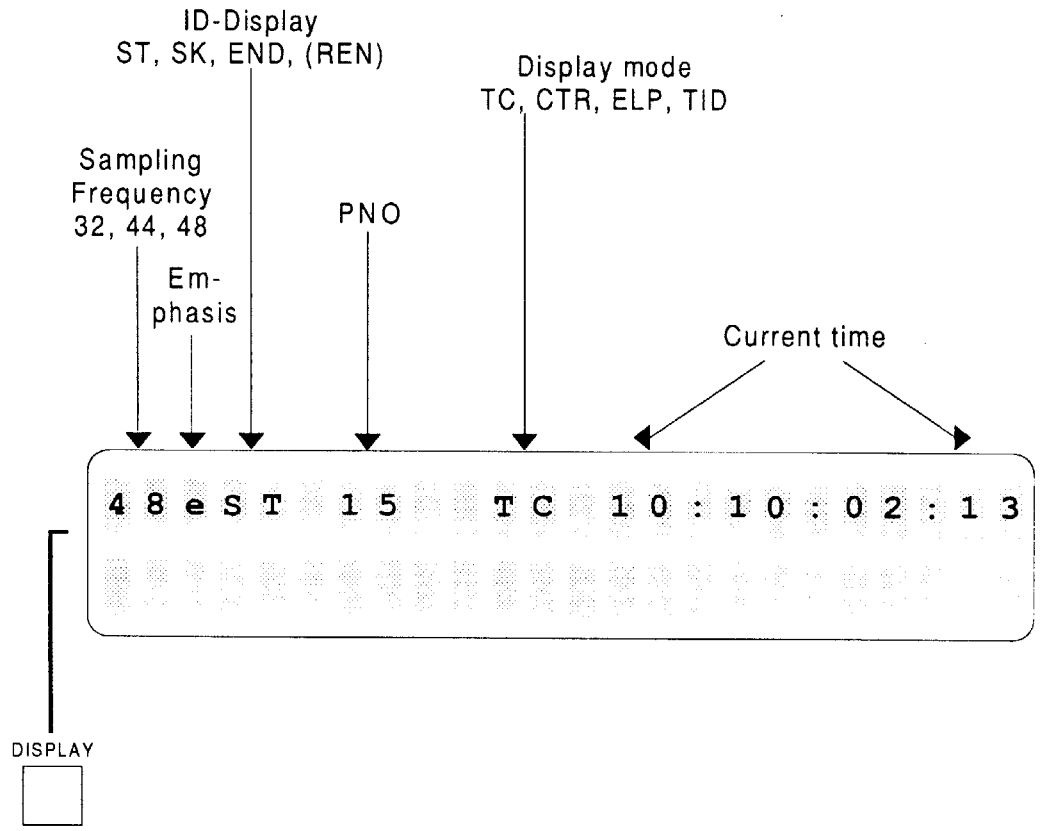
4.4.7. DIP-switch settings of Sony RS-232-interface

Switch	1	2	3	4	5	6	7	8
Position	OFF	OFF	OFF	ON	ON	ON	ON	OFF

5. Operation

5.1. Display





5.1.1. Sampling Frequency Display

The sampling frequency of the cassette in the deck is shown in the first two digits of the upper display line.

5.1.2. Emphasis Display

An "e" in the third digit of the upper display line indicates that the cassette inserted in the deck was recorded with emphasis on.

5.1.3. ID Display

The ID type found on the inserted tape is indicated in digits 4, 5 and 6 of the upper display line, as follows:

ST Start ID
SK Skip ID
END End ID

In RENUMBER mode "REN" is displayed in these digits.

5.1.4. PNO Display

The current program number (PNO) is shown in digits 7, 8 and 9 of the upper display line.

5.1.5. Display Mode Codes

The selected display mode is indicated by a two-character code shown in digits 10 and 11 of the upper display line, as follows:

TC Cassette time code display
CTR Counter display (tape counter)
ELP Elapsed timer display (play time)
TID Tape ID display (archive number)

(See also TAPE-ID parameter in Chapter 6)

5.1.6. Current Time / Tape ID Display

When a tape is loaded the following displays can appear in this field, depending on the selected time display mode:

TC	10:00:02:13	Time code display
CTR	00:15:10	Tape counter
ELP	00:00:04	Elapsed timer (play time)
TID	>00002478<	Tape ID (archive number)

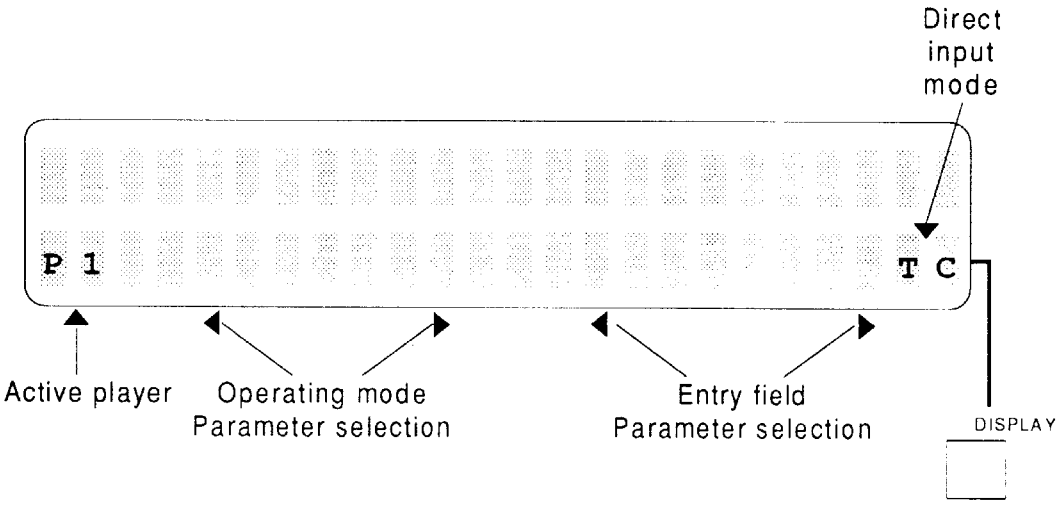
5.1.7. Display Mode Selection



DISPLAY Display Mode
Pressing the left DISPLAY key steps through the available display modes in the Time field in the following order: TC, ELP, CTR, TID. When you reach the activated display mode the selection begins again with TC.

Note:
In units with an RS-422 port the tape counter value is read from the recorder. If you are using an RS-232 port the tape counter values from the recorder are not available; instead, they are calculated from the TC values. The tape counter is reset when the tape is inserted. This means that the tape counter displays the elapsed play time of the tape.

5.1.8. Operating Mode Displays in the Input Field



5.1.9. Active Player Display

The active player (i.e. DAT recorder) is shown at the left end of the lower display line. In normal operation you can use all the functions of the drive shown in this field. You can switch back and forth between recorders 1 and 2 by pressing the PLY 2 key (toggle function).

5.1.10. Operating Mode / Parameter Selection Display

Note:
Details on these displays are provided in the descriptions of the individual functions.

5.1.11. Parameter Entry Field

Note:
Details on these displays are provided in the descriptions of the individual functions.

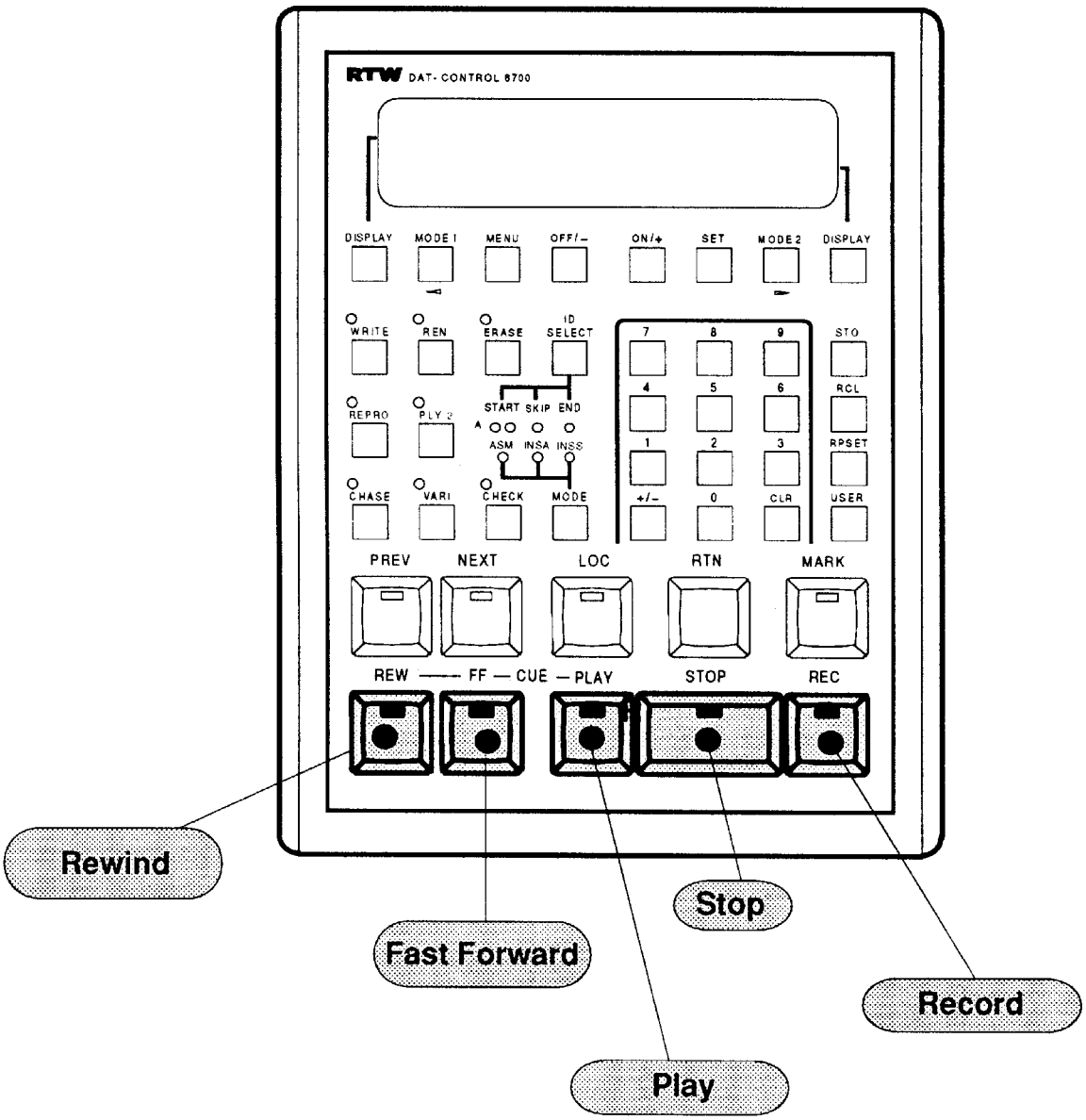
5.1.12. Direct Input Mode Display

This display indicates which direct input mode is currently selected.

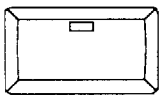
TC: Direct input of a TC locate value.
Enter TC values in the TC memory.

PN: Direct input of a PNO for positioning on a selected program number.
Direct input of ID offset values for the PREV and NEXT functions.

5.2. Drive Controls



STOP



STOP
Stops the tape. The key lights up when it is pressed. This key has priority over all other tape transport function keys. When the tape transport is not running the key lights up if a cassette is loaded.

Note:
When the recorder is stopped you can activate or deactivate STANDBY mode by pressing the STOP key again.

PLAY



PLAY
Starts the recorder in play mode. The key lights up when it is pressed. Holding down the PLAY key and pressing FF or REW plays the tape at 3 times normal speed. This function is not available via the recorder's own controls. In FDRSTRT (Fader Start) mode holding down the PLAY key switches the recorder to Auto-Cue Play mode. After releasing the key the tape is positioned at the original position again.

Note:
See also Fader Start Mode

REC



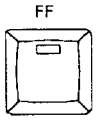
REC Record
Pressing this key together with PLAY starts recording. The REC and PLAY keys both light up during recording.

Note:
You must specify the recording mode before you start recording, otherwise the ASM, INSA and INSS LEDs will start blinking when you attempt to start recording.

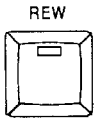
If REC INH (Record Inhibit = recording disabled) appears in the display this means that a record-protected cassette has been inserted in the DAT recorder.

A display of SF ERROR (Sampling Frequency Error) when you press the REC key indicates a conflict between the sampling frequency defined in the SET Menu or the sampling frequency on the pre-formatted tape. See also: Chapter 6, Default Settings.

A display of REC DISABLED indicates that the record function has been disabled completely in the SET Menu.
See also: Chapter 6, Default Settings.



FF Fast Forward
Winds the tape forwards. The key lights up when it is pressed.

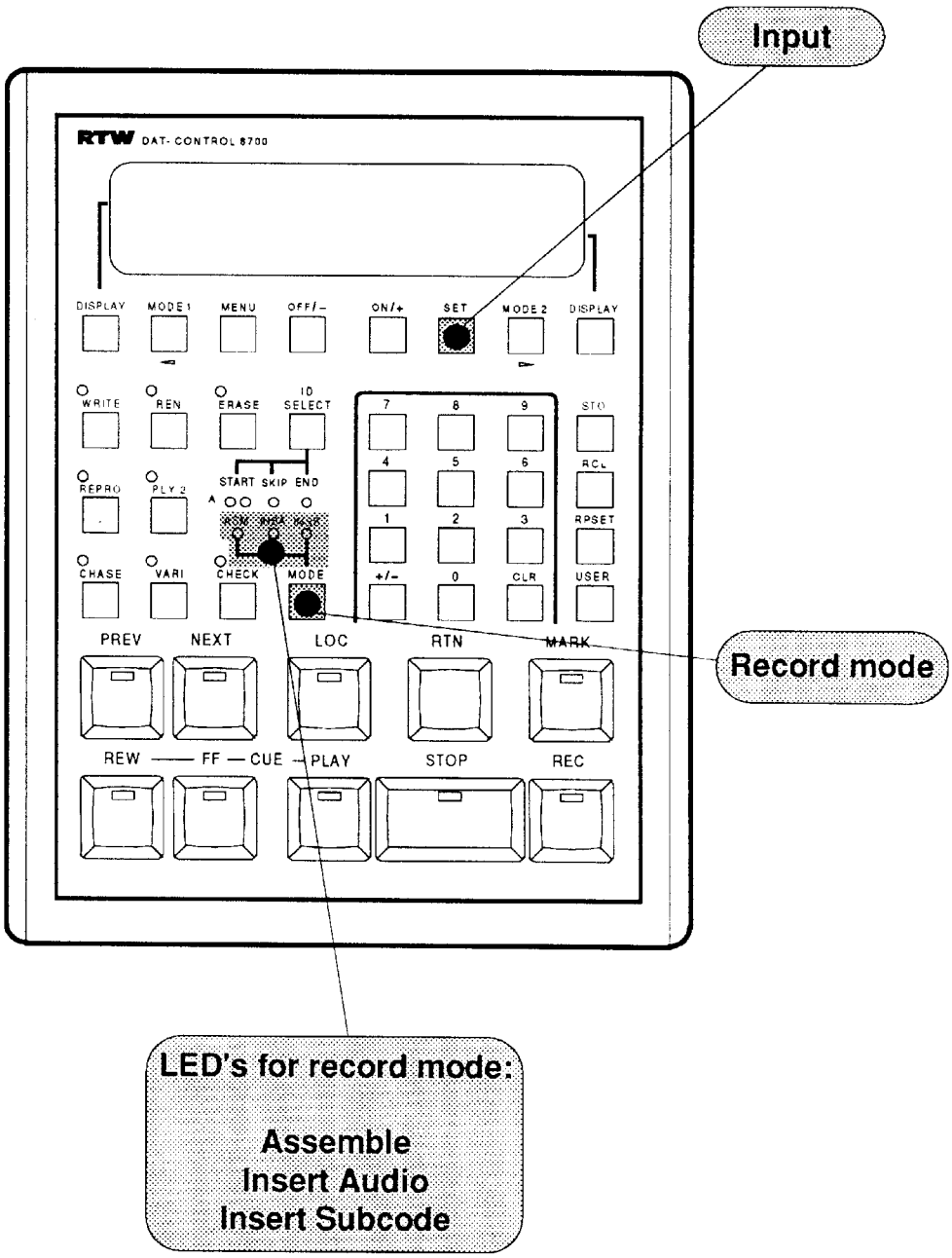


REW Rewind
Rewinds the tape. The key lights up when it is pressed.

Note:
Pressing FF or REW twice activates a slow wind mode (8x normal speed). The light in the corresponding key blinks to indicate slow wind mode.

The ID display appears briefly in the upper display line during winding and playing when the tape passes the points where ID codes have been set. See also: ID Codes.

5.3. Setting the REC Mode



SET

SET
Activates the Set (input) mode. SET appears in the display.

MODE

MODE
The currently selected record mode is shown in the display, e.g. "SET REC OFF". To activate the desired mode, press this key repeatedly until the appropriate mode is shown.

Note:
A blinking display of ILLEGAL when this key is pressed indicates that there is a copy-protected tape in the drive.

A display of REC DISABLED indicates that the record function has been disabled completely in the SET Menu.
See also: Chapter 6, Default Settings.

Modes:

ASM

ASM Assemble

INSA

INSA Insert Audio

If an Otari DTR-90 is connected, the message **INSA CH 12** will appear in the display. Since the DTR-90 is a two channel unit you can choose the recording channel you wish to use. In the **INSA CH 12** mode both input channels are activated for recording. You can select any other desired combination with keys 1 and 2, which are toggle switches (e.g. **INSA CH 1-** = recording activated for channel 1 only; **INSA CH -2** = recording activated for channel 2 only). If you deactivate both channels the software switches to the OFF status.

INSS

INSS Insert Subcode

OFF Switch off recording mode

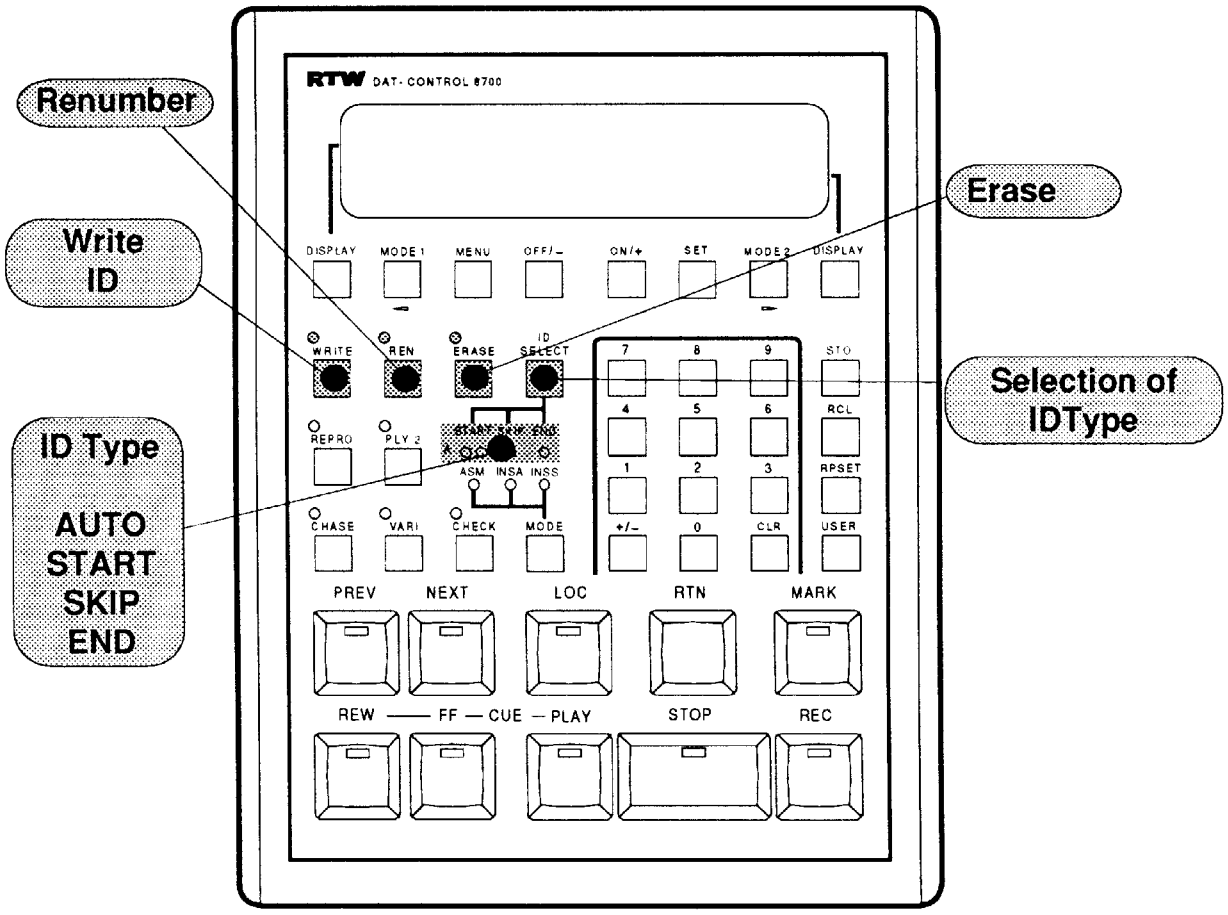
Pressing CLEAR in the SET mode always deactivates the recording mode.
The LED of the selected recording mode blinks.

SET

SET
Terminates the entry and stores the value.

Note:
If one of the three MODE LEDs is on this indicates that a record mode has already been selected. You can now start the recording by pressing REC and PLAY.

5.4. ID Codes


Renumber
Write ID
ID Type
AUTO
START
SKIP
END
Erase
Selection of IDType
RTW DAT-CONTROL 8700
DISPLAY
MODE 1
MENU
OFF/–
ON/+
SET
MODE 2
DISPLAY
WRITE
REN
ERASE
ID SELECT
REPRO
PLY 2
ASM
INSA
INSS
CHASE
VARI
CHECK
MODE
PREV
NEXT
LOC
RTN
MARK
REW
FF
CUE
PLAY
STOP
REC

5.4.1. Recording ID Codes

Before you can record or alter ID codes you must first select a REC mode that allows recording and editing of subcode ID data (ASM or INSS).



SET
Activates the SET (input) mode. SET appears in the display.



MODE Recording Mode
Press to select recording mode. E.g. INSS - Insert Subcode.

Note:
The procedure for recording ID codes in ASM (Assemble) mode is identical. Subcode ID data cannot be recorded in INSA (Insert Audio) mode.



INSS Insert Subcode
The LED blinks.



SET
Terminates the entry and stores the value.



INSS Insert Subcode
The LED remains on continuously.

5.4.2. Auto ID

When the AUTO ID mode is activated a start ID is written to the tape whenever you start recording (PLAY + REC) or press



WRITE Write ID
If you wish, you can also assign a program number (PNO) at the same time (see ID + PNO in Default Settings).

After selecting the recording mode you can select the AUTO mode by pressing:



ID SELECT Select ID type (AUTO-, START-, SKIP-, END-ID)

A Auto ID Mode
The LED of the selected option lights up.

Note:
In the case of Sony DAT recorders with software version 4.0 or higher operating in ASM mode a PNO is always recorded automatically, irrespective of the setting in the SET Menu of the DAT CONTROL. Subsequent assignment of PNOs in INSS (Insert Subcode) mode is not possible with this software version.

5.4.3. START - Start ID

In the START (Start ID) mode a Start ID is written to the tape whenever you press



WRITE Write ID
Note that pressing PLAY + REC does ***not*** write an ID to the tape.

After selecting the recording mode you can select the START mode by pressing



ID SELECT Select ID type (AUTO-, START-, SKIP-, END-ID)



START Start ID Mode
The LED of the selected option lights up.

5.4.4. SKIP - Skip ID

In the SKIP (Skip ID) mode a skip ID is written to the tape whenever you press



WRITE Write ID
Note that pressing PLAY + REC does ***not*** write an ID to the tape.

After selecting the recording mode you can select the desired SKIP mode by pressing



ID SELECT Select ID type (AUTO-, START-, SKIP-, END-ID)



SKIP Skip ID Mode
The LED of the selected option lights up.

5.4.5. END - End ID

In the END (End ID) mode an end ID is written to the tape whenever you press



WRITE Write ID
Note that pressing PLAY + REC does **not** write an ID to the tape.

After selecting the recording mode you can select the End mode by pressing



ID SELECT Select ID type (AUTO-, START-, SKIP-, END-ID)



END End ID Mode
The LED of the selected option lights up.

5.4.6. ERASE - Erase ID

The ERASE function enables you to erase IDs from your tapes. This function can only be used when the recorder is in INSS (Insert Subcode) mode.

First define the type of ID to be erased by pressing



ID SELECT Select ID type (AUTO-, START-, SKIP-, END-ID)
The LED of the selected ID type lights up.



ERASE Erase
Then press ERASE to erase the last ID of the selected type (Start, Skip or End) from the current tape position.

Note:
The winding speed when searching for Skip IDs is significantly slower than for Start or End IDs.

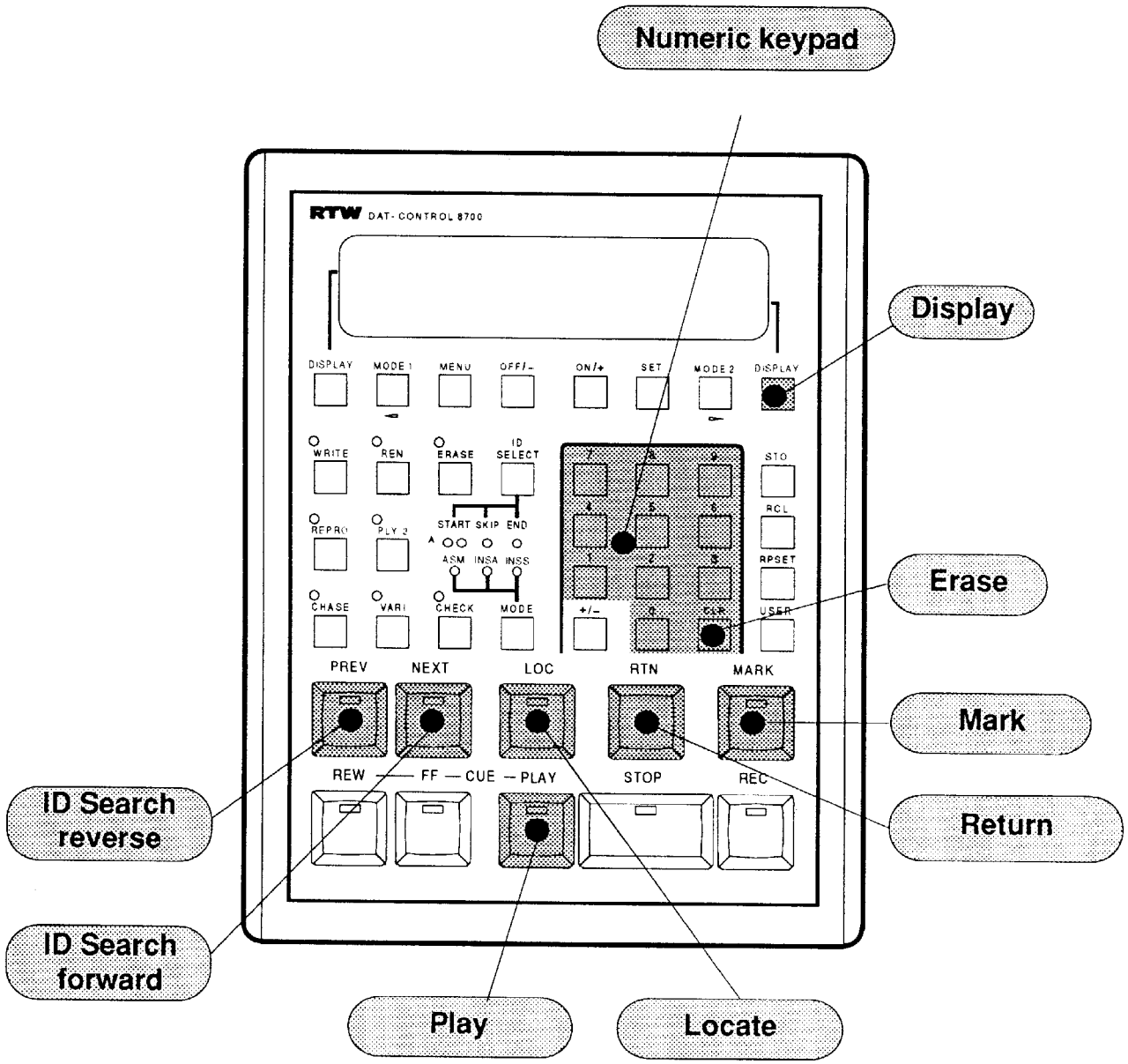
5.4.7. REN - Renumber

The REN (Renumber) function for Start IDs enables you to assign new numbers to the Start IDs on the tape. The function can only be executed when the unit is in INSS (insert subcode) mode.



REN Renumber
Pressing the REN key starts the renumber procedure. The drive positions the tape at the beginning (BOT) and then assigns a PNO to every Start ID in ascending sequence, starting with '1' at the beginning of the tape. If you wish, you can also begin the sequence with a different number by assigning the a different initial program number with the MENU-IPNO function (see MENU-IPNO).

5.5. Tape Positioning

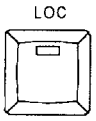


5.5.1. Direct Positioning by Entering a TC Value

The TC direct entry mode must be selected for this procedure to be possible. Select it by pressing the right DISPLAY key if necessary.



0 - 9 Numeric Entry
Using the 0 - 9 number keys automatically activates ENTER TC mode. The time code value you enter is shown in the lower line of the display. Leading zeroes do not have to be entered.



LOC Position Tape
When you have made your entry you can press the LOC key to position the tape to the entered location.

Note:
Any PREROLL setting (see Default Settings) is used when the tape is positioned. The entered TC value is written to the MARK Buffer.



PLAY
Pressing PLAY instead of LOC positions the tape to the entered location and then automatically executes the PLAY function.



CLR Clear
Deletes the entered value so that you can enter a different TC value. Pressing this key twice exits the entry mode.



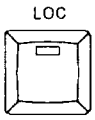
DISPLAY Display Mode
Pressing the right DISPLAY key aborts the entry.

5.5.2. Direct Positioning to a Program Number

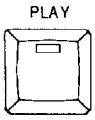
The PN direct entry mode must be selected for this procedure to be possible. Select it by pressing the right DISPLAY key if necessary.



0 - 9 Numeric Entry
Using the 0 - 9 number keys automatically activates ENTER PN mode. The program number value you enter is shown in the lower line of the display. Leading zeroes do not have to be entered.



LOC Position Tape
When you have made your entry you can press the LOC key to position the tape to the entered PNO.



PLAY
Pressing PLAY instead of LOC positions the tape to the entered location and then automatically executes the PLAY function.



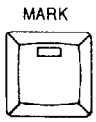
CLR Clear
Deletes the entered value so that you can enter a different PN value. Pressing this key twice exits the entry mode.



DISPLAY Display Mode
Pressing the right DISPLAY key aborts the entry.

5.5.3. MARK

Pressing



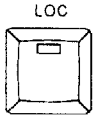
MARK

writes the current TC value shown to the LOC buffer, even if the Counter or Elapsed Time display mode is selected.

Note:
The Preroll value set in the SET Menu is used when the Locate command is executed to find the tape position defined with MARK. The MARK function overwrites any locate values set or executed by direct positioning or RECALL.

5.5.4. LOC

Pressing



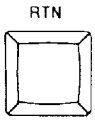
LOC Locate Position
positions the tape to the TC time stored in the Mark buffer. For directly entered values the system positions in accordance with the direct positioning mode (TC or PN) shown at the right of the lower display line.

PN Program Number
In this mode the tape is moved to the last PNO entered in PN direct entry mode. If no PNO has been entered LOC positions to the first PNO on the tape in the drive.

TC Time Code
The tape is positioned to the TC value in the Mark buffer, which always stores the last Locate value executed. This value can be taken from a direct positioning operation, selection of one of the 20 internal buffers or operation of the MARK key.

5.5.5. RTN

Pressing

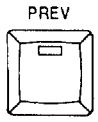


RTN Return
positions the tape at the beginning of the last recording. Pressing the key again moves the tape to the end of the last recording. If no recording has been made the error message "NO RECORD IN" is displayed.

Note:
The Preroll offset value entered in the SET menu is not used in this mode.

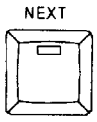
5.5.6. ID Search PREV / ID Search NEXT

Pressing



PREV Reverse ID Search

or



NEXT Forward ID Search
instructs the DAT recorder to position the tape to the previous or next ID code on the tape. Pressing the key more than once accumulates the number of ID positions to search. In the PN (program number) display mode you can also enter the number of IDs to be searched directly.

Display:

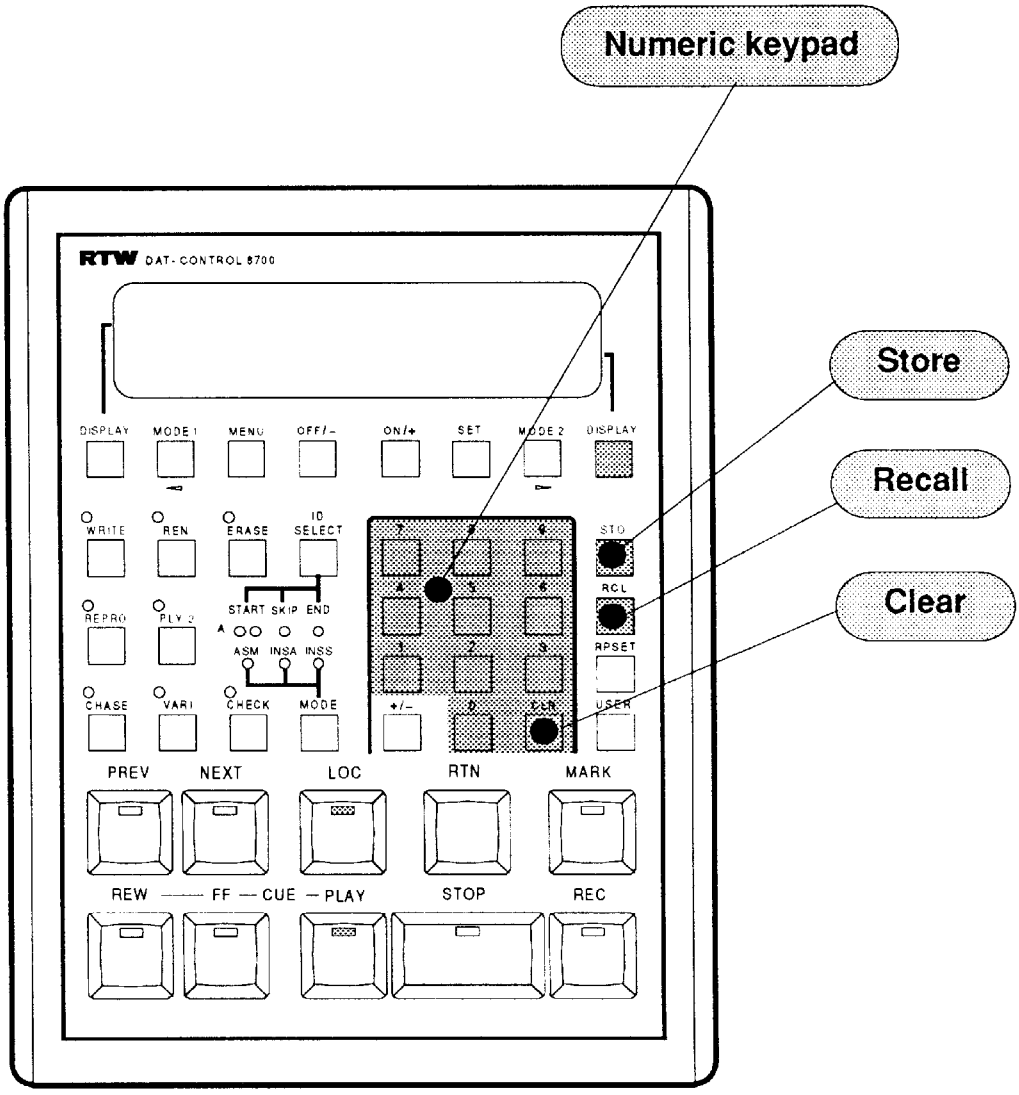
```
        XX

P1  LOCATE   PN  YY
```

xx = Program Number
yy = Number of IDs to be skipped

Note:
Pressing PLAY after PREV or NEXT makes the recorder switch to Play automatically as soon as it reaches the specified ID code.

5.6. Storing and Recalling TC Values



The DAT CONTROL DC-2 has 20 Locate memory buffers; the DAT CONTROL DC-3 has 20 Locate memory buffers for each recorder. You can only write values to these buffers when the unit is in TC direct entry mode. Select this mode first by pressing the right DISPLAY key if necessary. If you wish to enter TC values for recorder 2 you must first activate this recorder.

5.6.1. Storing the current TC value from the display

Press

STO

STORE
to activate the Store mode, followed by

1 . . . 9

0 - 9 Numeric Entry
the memory buffer number (00 - 19), using the numeric keypad keys.

Note:
You must always enter both digits of the memory buffer number (i.e. including the leading zero).

DISPLAY

DISPLAY Display Mode
Pressing the right DISPLAY key exits the Store mode.

Note:
The time stored is the time displayed at the moment you press the STORE key. The selection of the memory buffer number has no influence on the stored time value.

5.6.2. Storing a manually entered TC value

This is done using the direct TC value entry function (see 5.5.1. for details).

The TC direct entry mode must be activated. If necessary, activate the mode by pressing the right DISPLAY key.



0 - 9 Numeric Entry
Using the 0 - 9 numeric keys automatically activates the ENTER TC mode. The time code value you enter is shown in the lower line of the display.

To store the entered value press



STORE

followed by



0 - 9 Numeric Entry
the memory buffer number where you wish to store the value.

Note:
You must always enter both digits of the memory buffer number (i.e. including the leading zero).



DISPLAY Display Mode
Pressing the right DISPLAY key aborts the Store operation.

5.6.3. Recalling TC Values from the Locate Buffers

To recall a stored TC value from a selected Locate memory buffer, press



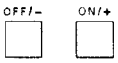
RCL Recall

followed by



0 - 9 Numeric Entry
the two-digit number of the memory buffer from which you wish to recall the TC value. The display is as follows:

P1	**RECALL**	**02**	**01:07:23:12**
Recorder [1 or 2]	Command	Buffer [00 - 19]	stored TC value

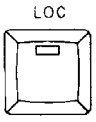


ON+/OFF- Increment/Decrement

You can select the next or previous memory buffer by pressing the Increment or Decrement key.



MARK
Pressing the Mark key recalls the time code value in the Mark buffer. This is indicated by a display of '**' in the buffer number field.



LOC Locate Position
Following completion of one of the above entries you can position the tape to the recalled value by pressing the LOC key.

Note:
The PREROLL value (see Default Settings) is used when the tape is positioned. The entered TC value is written to the MARK buffer, overwriting the previous value stored there.



PLAY
Pressing PLAY instead of LOC executes the Play function automatically as soon as the specified position is reached.



DISPLAY Display Mode
Pressing the right DISPLAY key aborts the entry.

5.6.4. Clearing the LOCATE Buffers

You can clear the 20 Locate buffers for each recorder either individually or all together. First select the desired DAT recorder by pressing



PLY 2 Switch Player

To clear all 20 buffers for the selected recorder, first press and hold down



STORE

Then, while holding down the STORE key, press



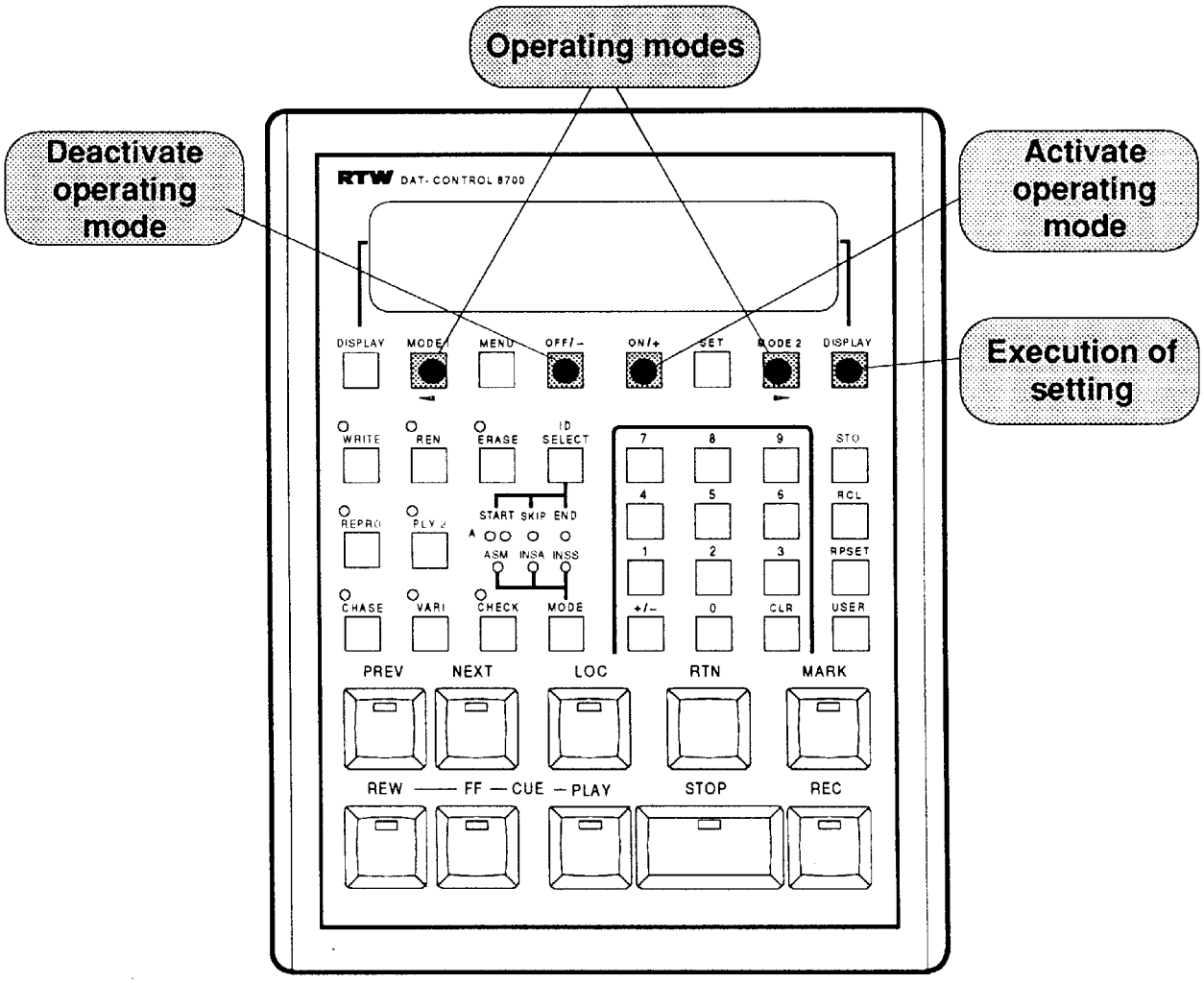
CLR Clear

To clear individual buffers, enter "0" in Direct Mode, followed by the buffer number.

Note:
The Locate buffers are non-volatile; their contents are not cleared when you switch off the DC-3 (DC-2).

You can set the unit to clear the buffers automatically when it is switched on or when the cassette is changed. For details, see the ERA-LCBUF parameter in Chapter 6, Default Settings.

5.7. Setting the operating mode



The DAT CONTROL DC-2/DC-3 has a number of operating modes that make operating and working with one or two DAT recorders much easier. For example, in a broadcasting studio the DAT CONTROL enables you to position the tape on recorder 2 while recorder 1 is playing a track up to a predefined ID code.

Operating modes can be set separately and individually for both recorders. The mode setting is stored in a non-volatile memory and is reactivated automatically when the system is switched on again. The operating mode setting for the second recorder also allows you to activate the BACKUP mode.

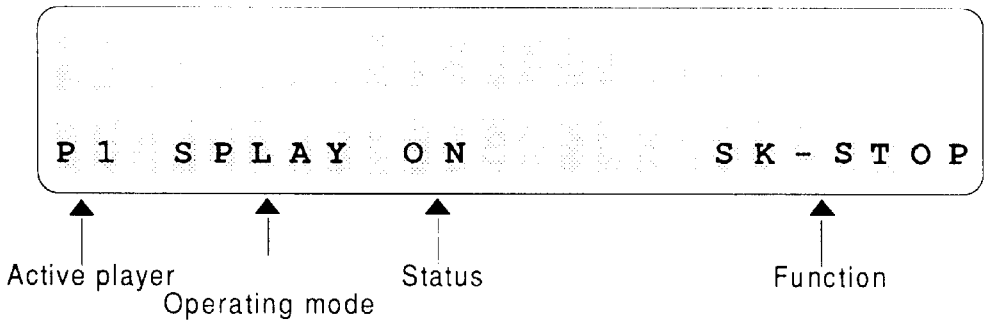
You can cycle through the available operating modes by repeatedly pressing

MODE1

MODE1 Operating mode
The modes appear in the following order:



The status and current function of the selected mode are shown in the display.



To select a function, press

MODE 2

MODE 2 Function Select

To activate or deactivate the selected function, press

ON/+

ON Activate

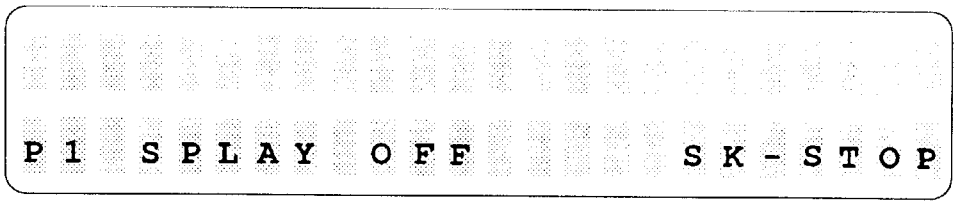
OFF/-

OFF Deactivate

DISPLAY

DISPLAY
The changes made are executed when you exit the selection menu by pressing the right DISPLAY key. No special confirmation of the entry/change is required.

5.7.1. SPLAY Mode (Single Play)



Pressing



MODE 1 Operating Mode
activates operating mode selection. Press the key repeatedly until 'SPLAY' appears in the display.

You can then select the desired Single Play mode by pressing



MODE 2 Function Select
repeatedly until the desired function is displayed. The following functions are available:

ST-STOP START ID STOP
When a Start ID is reached the recorder stops playing and switches to STOP mode.

ST-RETN START ID RETURN
When a Start ID is reached the recorder stops playing and rewinds the tape to the beginning of the previous Start ID.

ST-EJEC START ID EJECT
When a Start ID is reached the recorder stops playing and ejects the tape cassette.

SK-STOP SKIP ID STOP
When a Skip ID is reached the recorder stops playing and switches to STOP mode.

SK-RETN SKIP ID RETURN
When a Skip ID is reached the recorder stops playing and rewinds the tape to the beginning of the previous Start ID.

SK-EJEC SKIP ID EJECT
When a Skip ID is reached the recorder stops playing and ejects the tape cassette.

SK-NEXT SKIP ID NEXT
When a Skip ID is reached the recorder stops playing and winds the tape on to the beginning of the next Start ID.

ED-STOP END ID STOP
When an End ID is reached the recorder stops playing and switches to STOP mode.

ED-RETN END ID RETURN
When an End ID is reached the recorder stops playing and rewinds the type to the beginning of the previous Start ID.

ED-EJEC END ID EJECT
When an End ID is reached the recorder stops playing and ejects the tape cassette.

You can activate or deactivate the displayed mode by pressing



ON Activate



OFF Deactivate

During operation, the current Single Play status is indicated in the lower line of the display by

S1 Player 1 Single Play active
and/or
S2 Player 2 Single Play active

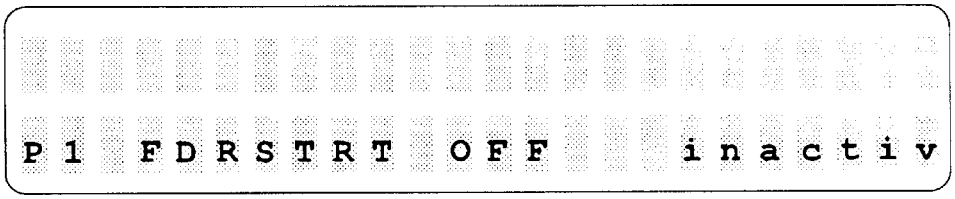
Pressing the right DISPLAY key



DISPLAY
terminates the entry and stores the selected setting.

Note:
The Single Play mode can only be changed when the recorder is in STOP mode.

5.7.2. FDRSTRT Mode (Fader Start)



Pressing

MODE 1

MODE 1 Operating Mode
activates operating mode selection. Press the key repeatedly until 'FDRSTRT' appears in the display.

You can switch between **active** and **inactive** by pressing

MODE 2

MODE 2 Function Select

Pressing

ON/+

ON
switches the Fader Start function on.

Pressing

OFF/-

OFF
switches the Fader Start function off.

Pressing the right DISPLAY key

DISPLAY

DISPLAY
terminates the entry and stores the selected setting.

During operation, the current Fader Start status is shown in the lower display line, as follows:

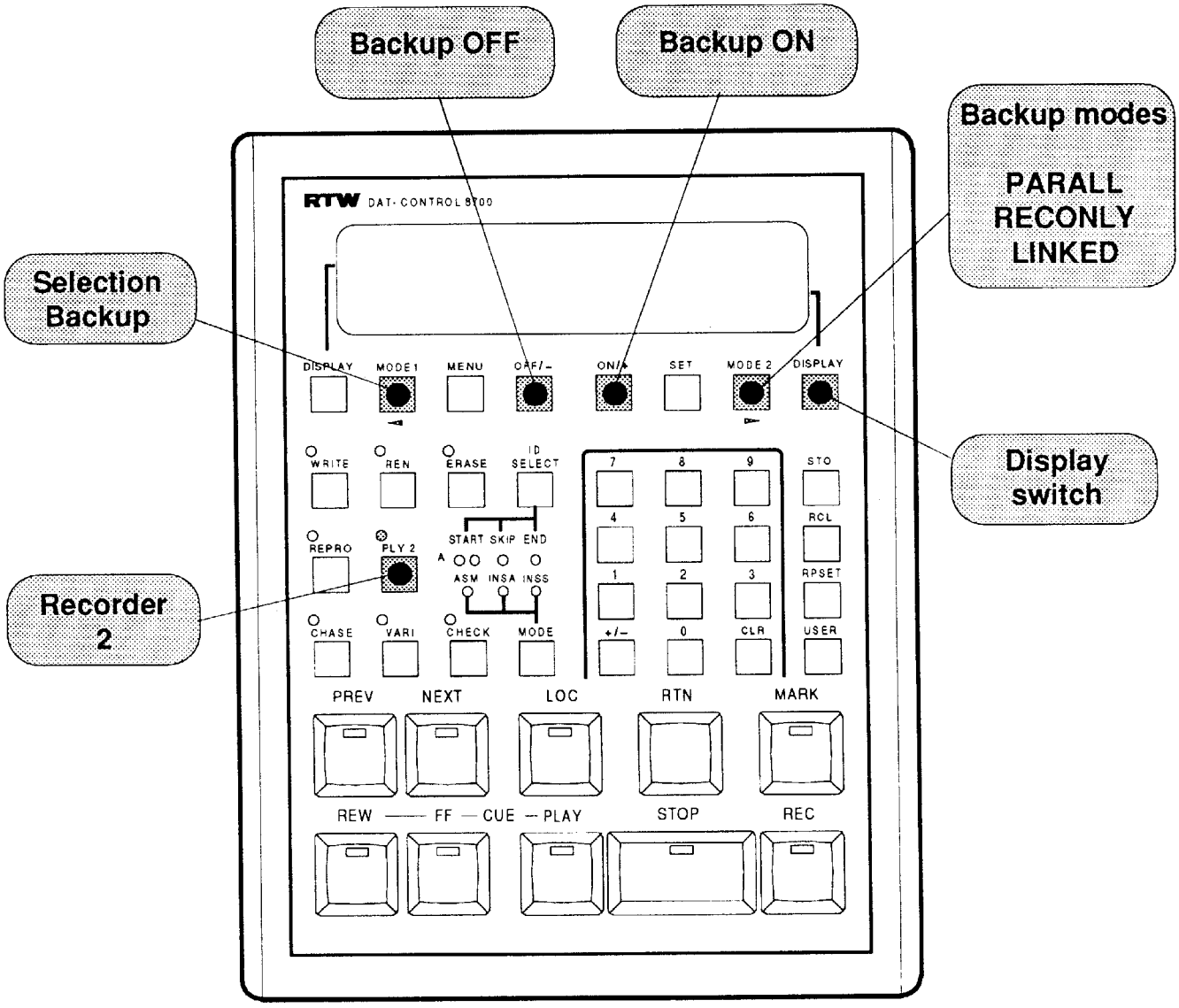
f1 Recorder 1 Fader Start Ready
and
f2 Recorder 2 Fader Start Ready

Note:
Only the following functions are enabled for the selected recorder when Fader Start mode is activated: DISPLAY, MODE, PLY 2, USER, STOP and PLAY.

When the DAT CONTROL is powered up Fader Start always automatically defaults to 'OFF' and 'inactive'.

The FDRSTRT mode is set to 'OFF' status when the external fader contact is closed (this depends on the FADER-LOG (Fader Logic) parameter setting). You can assign the 'Toggle Fader Start Ready' function to the USER key (see Default Settings), to allow rapid activation and deactivation of the Fader Start function.

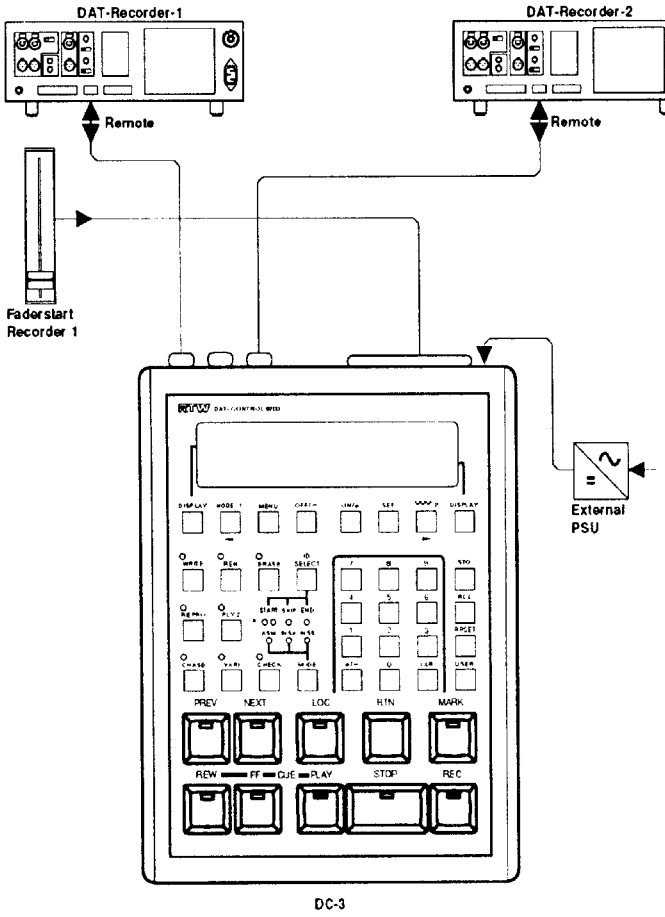
5.7.3. Backup modes



The DAT CONTROL DC-3 supports operation of two recorders.

Note:
In order to prevent malfunctions when operating two recorders we recommend disabling the recorders own controls (parallel operation option), so that all operations are performed from the DAT CONTROL DC-3 only.

5.7.3.1. Connections for the BACKUP PARALL Mode

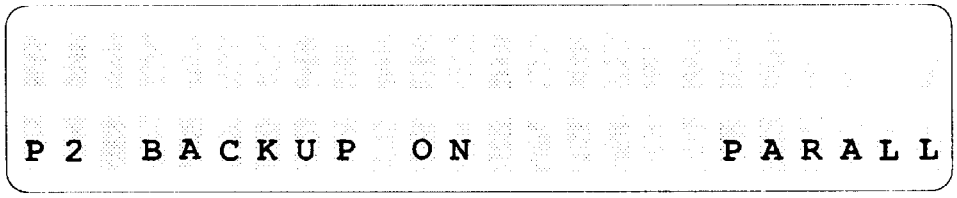


In the BACKUP PARALL mode, ***all*** operations performed for recorder 1 are automatically also performed on recorder 2. No external sync connections are necessary for this mode.

Note:
For all BACKUP modes, DAT recorder 1 (PLY 1) must be configured as the Master and DAT recorder 2 (PLY 2) as the Slave. This means that DAT CONTROL DC-3 must always be in PLY 1 mode for operation.

The Fader Start and Single Play functions are disabled for recorder 2 in the BACKUP PARALL mode.

5.7.3.2. BACKUP PARALL Mode



PLY 2

PLY 2 Switch Recorder
to switch to recorder 2, indicated by the corresponding LED.

Then press

MODE 1

MODE 1 Operating Mode 1
repeatedly to select the BACKUP mode, followed by

MODE 2

MODE 2 Operating Mode 2
to select the PARALL mode, from the three available Backup modes.

You can then switch the Backup mode off or on in the selected status by pressing

OFF/-

OFF
or

ON/+

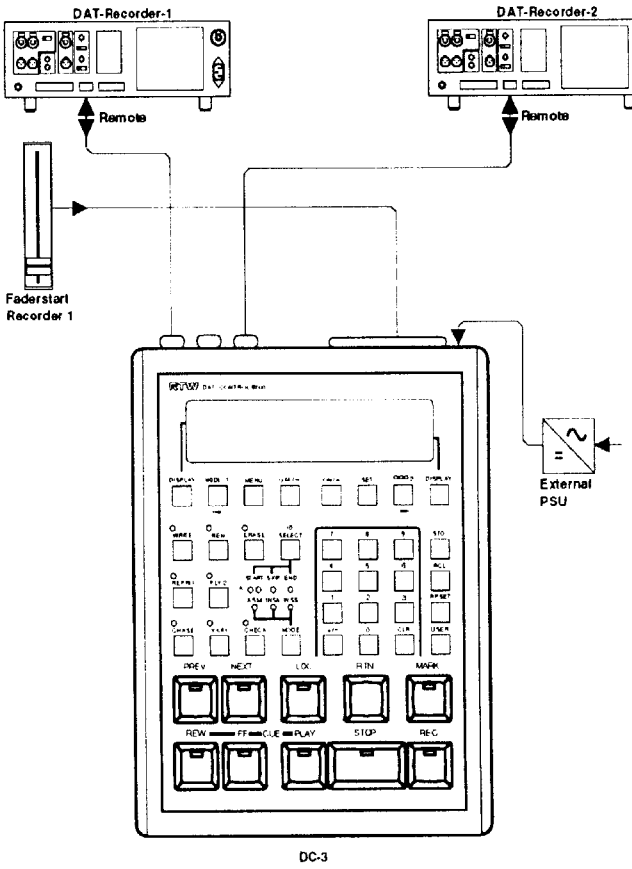
ON

Pressing the right DISPLAY key

DISPLAY

DISPLAY
terminates the entry and stores the selected setting.

5.7.3.3. Connections for the BACKUP RECONLY Mode

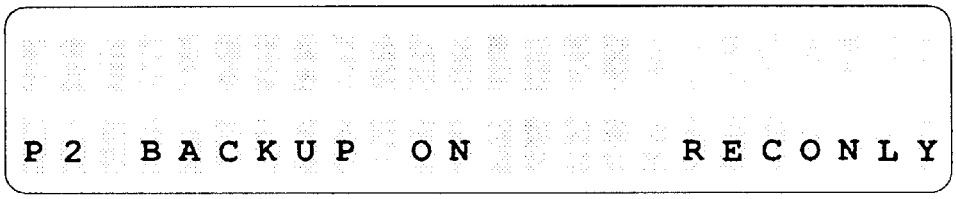


In the BACKUP RECONLY mode, only record-related operations performed for the Master recorder (PLY 1) are also performed on the Slave recorder (PLY 2). In this mode, the Slave recorder does not execute any commands other than RECORD and STOP. No external sync connections are necessary for this mode.

Note:
For all BACKUP modes, DAT recorder 1 (PLY 1) must be configured as the Master and DAT recorder 2 (PLY 2) as the Slave. This means that DAT CONTROL DC-3 must always be in PLY 1 mode for operation.

The Fader Start and Single Play functions are disabled for Player 2 in the BACKUP RECONLY mode.

5.7.3.4. BACKUP RECONLY Mode



To set the Backup mode, first press



PLY 2 Switch Recorder
to switch to recorder 2, indicated by the corresponding LED.

Then press



MODE 1 Operating Mode 1
repeatedly to select the BACKUP mode, followed by



MODE 2 Operating Mode 2
to select the RECONLY mode, from the three available Backup modes.

You can then switch the Backup mode off or on in the selected status by pressing



OFF
or



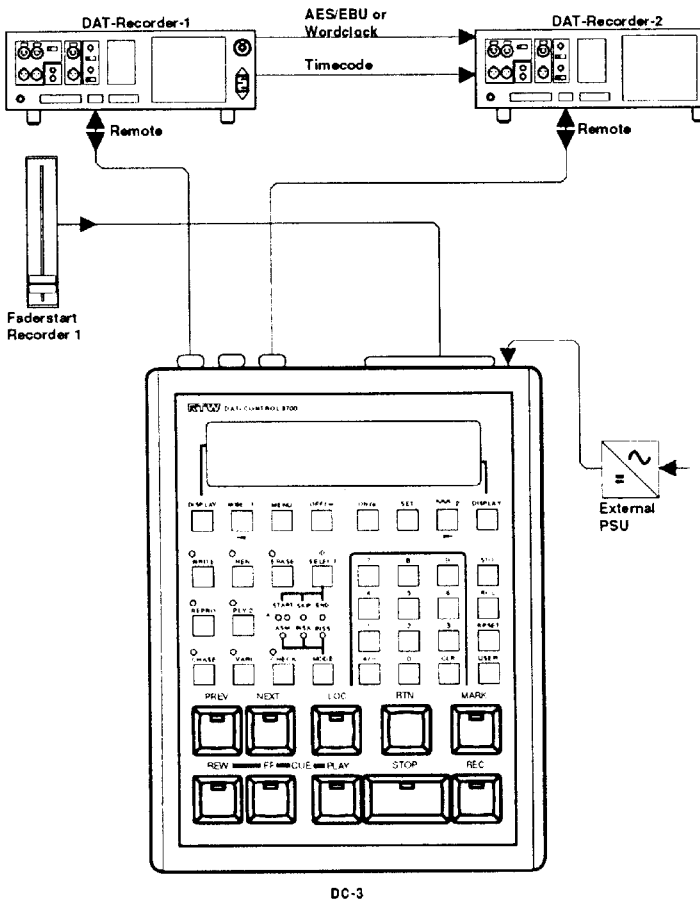
ON

Pressing the right DISPLAY key



DISPLAY
terminates the entry and stores the selected setting.

5.7.3.5. Connections for the BACKUP LINKED Mode

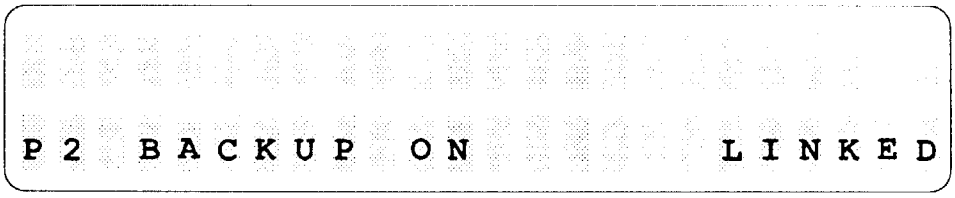


Important:
The Slave recorder must be set to external clock sync signal (Word or Digital In) and external time code. Please see your recorder's manual for further details.

In the BACKUP LINKED mode, all operations of the Master recorder (PLY 1) are automatically performed by the Slave recorder (PLY 2). The operations are synchronised to the pre-recorded time code in the Slave recorder's Chase mode.

Note:
The Chase LED blinks rapidly when the Slave recorder is in Chase mode. The record operation cannot be started before the chase operation has been completed, indicated when the Chase LED on the DAT CONTROL DC-3 goes out. If you attempt to activate the record function before this the chase operation will be aborted and the system will immediately switch to Record mode. This can result in unwanted time code offsets between the recordings of the Master and Slave recorders.

5.7.3.6. BACKUP LINKED Mode



To set the Backup mode, first press



PLY 2 Switch Recorder
to switch to recorder 2, indicated by the corresponding LED.

Then press



MODE 1 Operating Mode 1
repeatedly to select the BACKUP mode, followed by



MODE 2 Operating Mode 2
to select the LINKED mode, from the three available Backup modes.

You can then switch the Backup mode off or on in the selected status by pressing



OFF
or



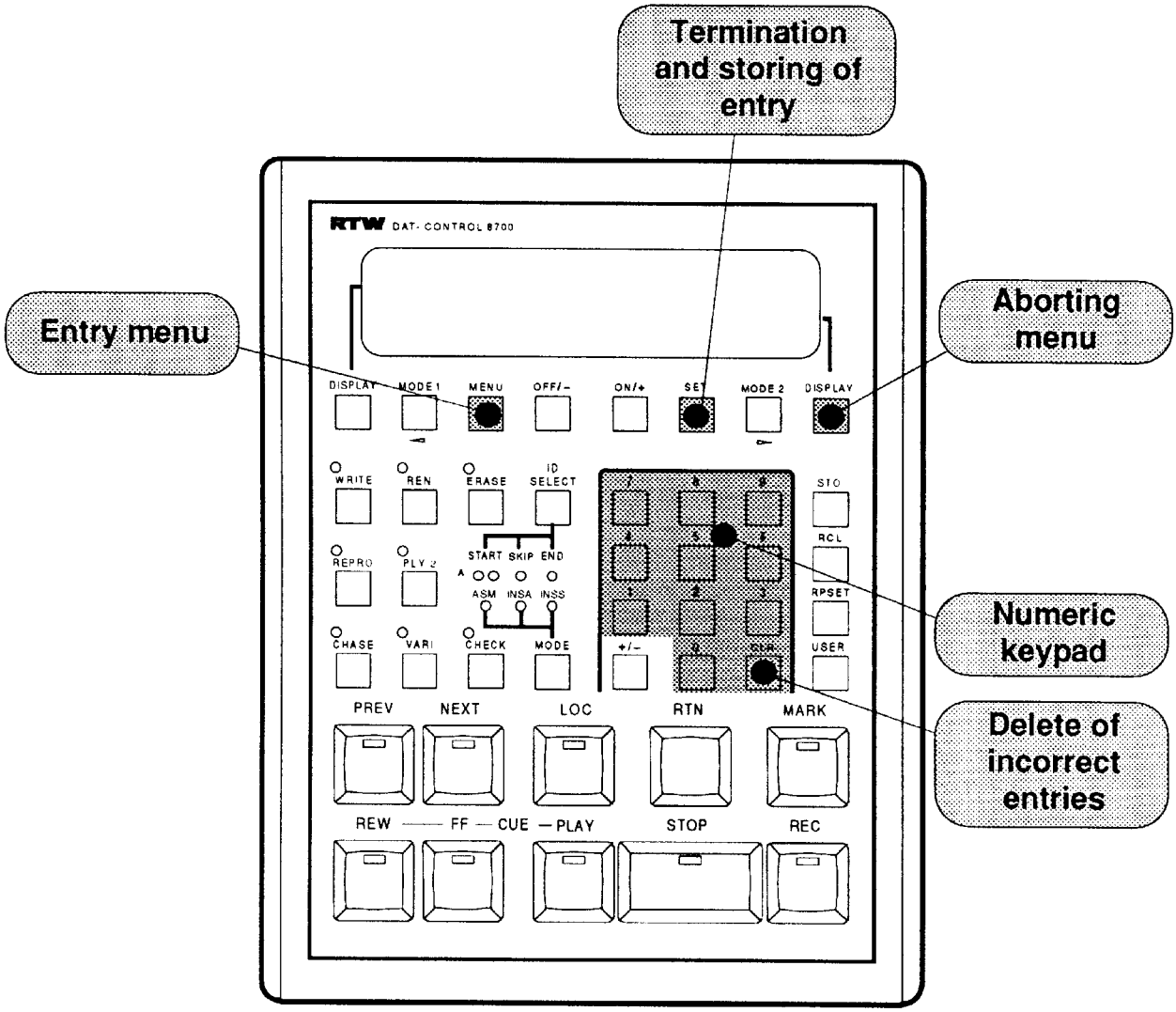
ON

Pressing the right DISPLAY key



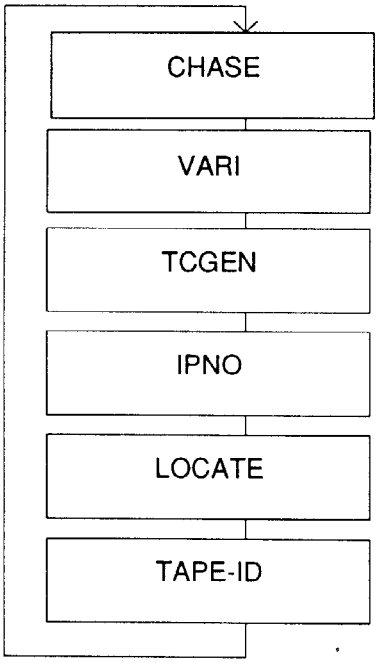
DISPLAY
terminates the entry and stores the selected setting.

5.8. MENU


Termination and storing of entry
Entry menu
Aborting menu
Numeric keypad
Delete of incorrect entries
RTW DAT-CONTROL 8700
DISPLAY
MODE 1
MENU
OFF/-
ON/+
SET
MODE 2
DISPLAY
WRITE
REN
ERASE
ID SELECT
STO
RCL
REPRO
PLY 2
START SKIP END
ASM INSA INSS
RPSET
CHASE
VARI
CHECK
MODE
+/-
CLR
USER
PREV
NEXT
LOC
RTN
MARK
REW
FF
CUE
PLAY
STOP
REC

5.8. MENU

The MENU option enables you to enter numeric parameters for the following DAT CONTROL functions:



The selected MENU function parameter is automatically stored in the non-volatile EEPROM when you exit the MENU option and is redisplayed when you select the MENU function again after switching the DAT CONTROL unit off and on again. Settings can be made individually for both recorders.

Note:
The TAPE-ID parameter is only displayed here if it has been selected in the SET Menu (see Default Settings).

5.8.1. MENU - CHASE

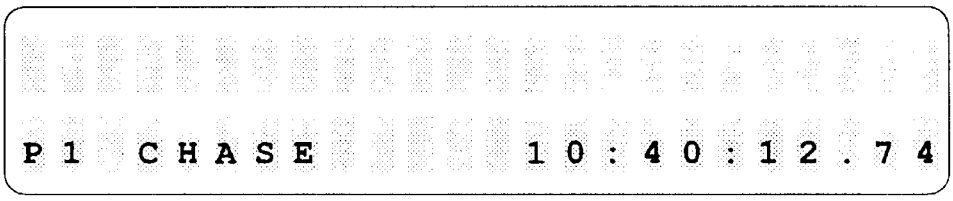
To enter or correct the CHASE OFFSET value for the selected recorder, press the following key sequence:

MENU

MENU Entry Menu

MENU

MENU Select Chase Offset function



BIT [.] / FRAME [:]-ID

The entry sequence depends on the BIT/FRAME setting in the CHASE parameter in the SET Menu. If BIT is selected the colon before the last entry field is replaced by a decimal point.

1 . . . 9

0 - 9 Numeric Entry

CLR

CLR Clear
You can delete incorrect entries by pressing the CLR key.

DISPLAY

DISPLAY
Pressing the right DISPLAY key aborts the entry and exits the Menu.

SET

SET
Terminates the entry and stores the value. The entered offset value is transferred to the recorder.

Note:
The recorder will only switch to CHASE mode following termination of the entry if you also press the CHASE key in normal mode. The CHASE LED indicates when the recorder is in CHASE mode and if the recorder has synchronised with the external time code.

5.8.2. MENU - VARI

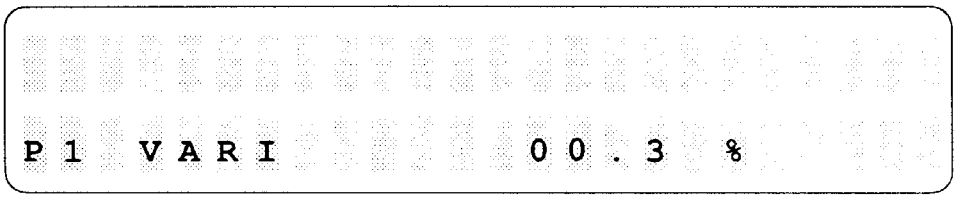
You can enter or correct the VARI-SPEED value for the selected recorder with the following key sequence:

MENU

MENU Entry Menu

MENU

MENU Select VARI-SPEED function



1 . . . 9 **0 - 9** Numeric Entry

CLR

CLR Clear
You can delete incorrect entries by pressing the CLR key.

DISPLAY

DISPLAY
Pressing the right DISPLAY key aborts the entry and exits the Menu.

SET

SET
Terminates the entry and stores the value. In the RS-232 DAT CONTROL version the entered value is transferred to the recorder immediately. In the RS-422 version it is not transferred until you press the PLAY key with VARI-SPEED activated.

Note:
The recorder will only operate with variable speed after termination of this input if you press the VARI key. The VARI LED will light up to indicate that the VARI-SPEED mode is activated.

5.8.3. MENU - TCGEN (Time Code Generator)

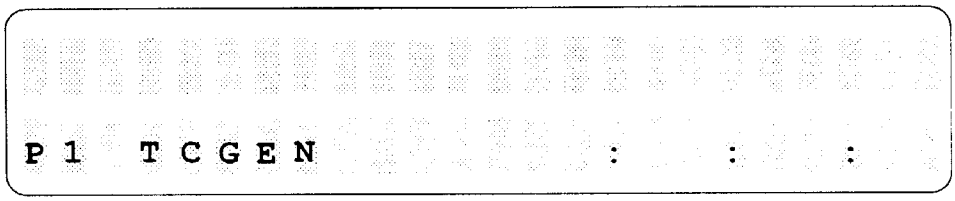
You can preset the DAT recorder's time code generator to a specific time with the following key sequence:

MENU

MENU Entry Menu

MENU

MENU Select TCGEN function



1 . . . 9 **0 - 9** Numeric Entry

CLR

CLR Clear
You can delete incorrect entries by pressing the CLR key.

DISPLAY

DISPLAY
Pressing the right DISPLAY key aborts the entry and exits the Menu.

SET

SET
Terminates the entry and stores the value.

Note:
The preset time is only used if you press the REC + PLAY key combination, in this order, immediately after making your entry. If you press PLAY + REC the preset value will not be used by the DAT recorder.

5.8.4. MENU - IPNO (Initial Program Number)

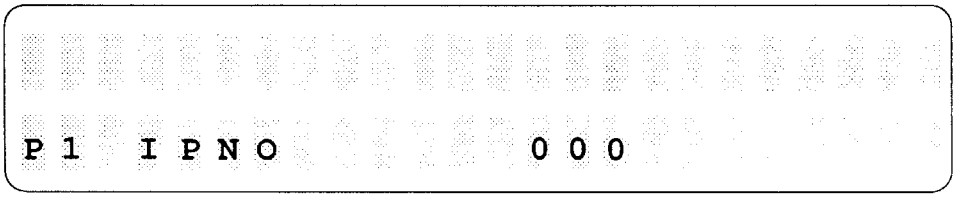
The following key sequence is used for defining the starting program number written with the ID code in AUTO-ID mode. The IPNO is also used as the starting PNO for the Renumber function.

MENU

MENU Entry Menu

MENU

MENU Select IPNO function



1 . . . 9

0 - 9 Numeric Entry

CLR

CLR Clear
You can delete incorrect entries by pressing the CLR key.

DISPLAY

DISPLAY
Pressing the right DISPLAY key aborts the entry and exits the Menu.

SET

SET
Terminates the entry and stores the value.

5.8.5. MENU - LOCATE

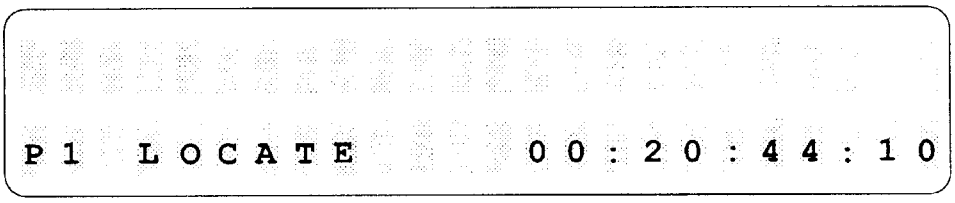
The following key sequence is used for entering or correcting a specific Locate point to which the tape can be positioned with the Locate command. The displayed TC value is read from the MARK buffer.

MENU

MENU Entry Menu

MENU

MENU Select IPNO function



1 . . . 9

0 - 9 Numeric Entry

CLR

CLR Clear
You can delete incorrect entries by pressing the CLR key.

DISPLAY

DISPLAY
Pressing the right DISPLAY key aborts the entry and exits the Menu.

SET

SET
Terminates the entry and stores the value, overwriting the previous contents of the MARK buffer.

Note:
When positioning the tape to the selected Locate time the DAT CONTROL also uses the PREROLL value set in the SET Menu (see PREROLL in Default Settings).
The MARK function overwrites any value written with MENU LOCATE.
The LOCATE function takes its information from the DAT's time code signal.
LOCATE cannot be used with recordings that do not have a time code (DAT cassettes from consumer recorders).
Entering a time followed by PLAY in the Time Code display mode executes the LOCATE command and then automatically switches to Play.

5.8.6. MENU - TAPE-ID (Archive Number)

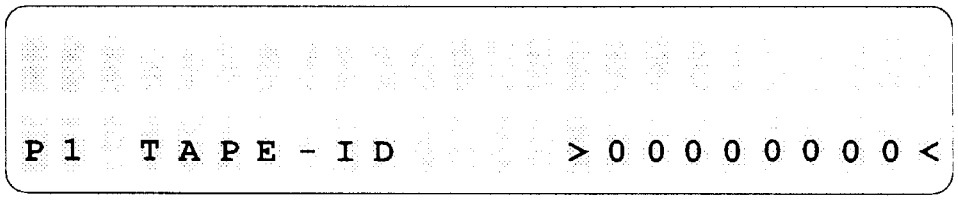
The following key sequence is used for entering a tape ID number. This number is recorded together with the recorder's subcode data in ASM recording mode, and it is used for archiving DAT tapes. The tape ID of DAT cassettes with an archive number can be displayed (in TID display mode) when the tapes are played.

MENU

MENU Entry Menu

MENU

MENU Select TAPE-ID function



1 . . . 9 **0 - 9** Numeric Entry

CLR

CLR Clear
You can delete incorrect entries by pressing the CLR key.

DISPLAY

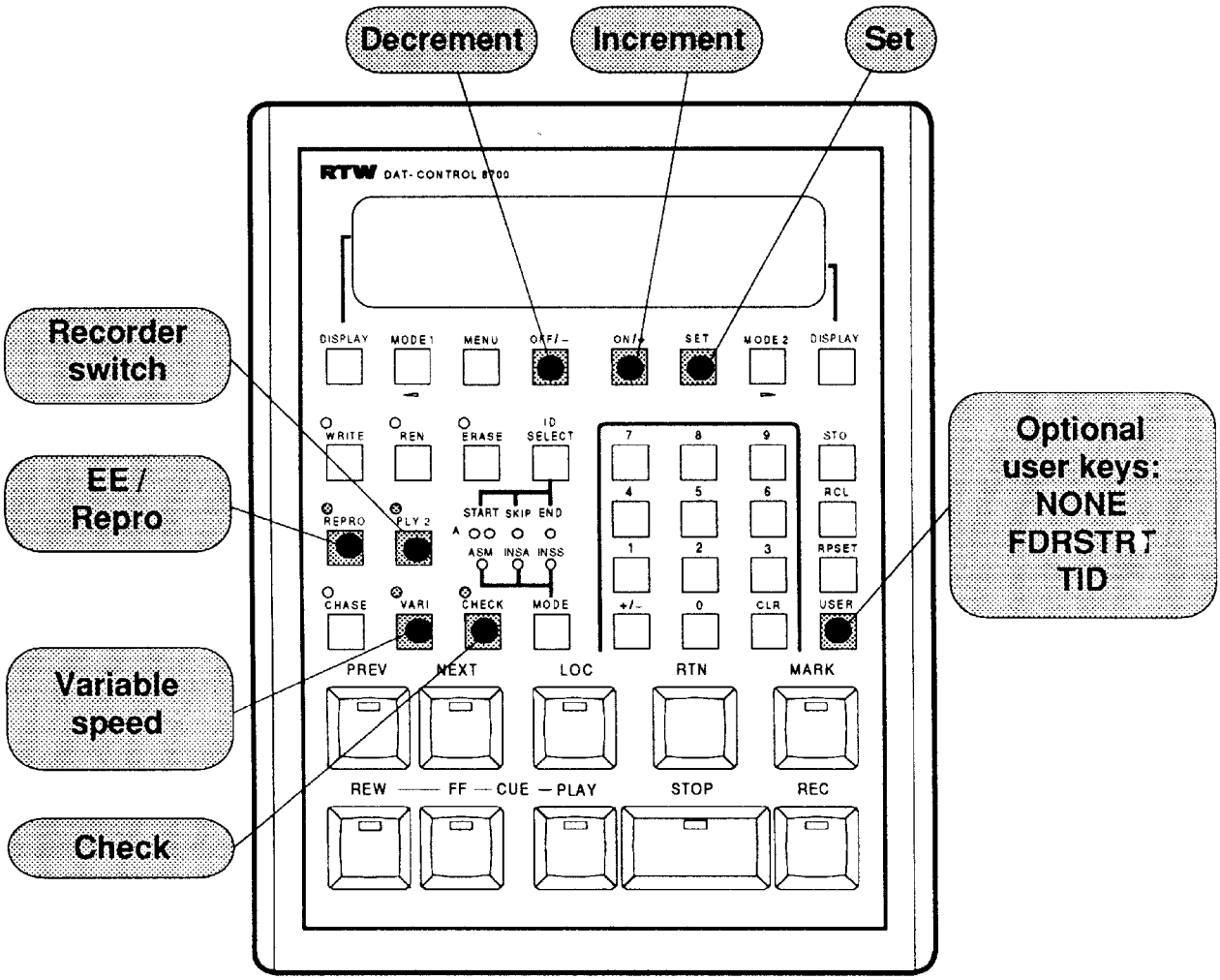
DISPLAY
Pressing the right DISPLAY key aborts the entry and exits the Menu.

SET

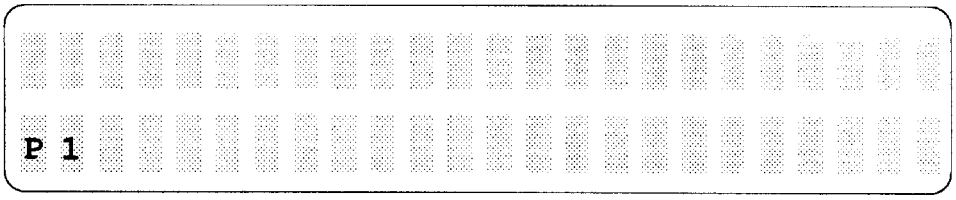
SET
Terminates the entry and stores the value.

Note:
You can also change an existing TAPE ID in INSS (Insert Subcode) mode. Please note that the new TAPE ID value will only be used if you start the recording with REC + PLAY; if you press PLAY + REC the new TAPE ID will not be used.

5.9. The PLY-2, REPRO, VARI, CHECK and USER keys



5.9.1. PLY 2



Pressing



PLY 2 Switch Recorder
defines which recorder is active. The LED lights up when the second recorder (P2) is selected.

Note:
All displays and entries are always for the selected recorder only, except in BACKUP mode (see BACKUP MODE).

This key has no function in the DC-2 version.

5.9.2. REPRO

Pressing

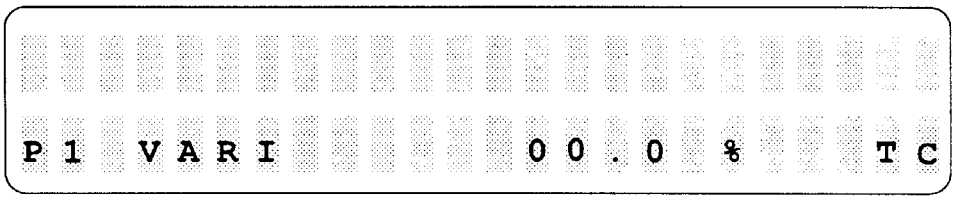


REPRO
manually switches the recorder to tape play (Repro) or input signal output (EE).
If you have activated automatic switching in the SET Menu the automatic function will overwrite the manually setting in the event of a mode change.

The status of the signal switcher is always indicated by the REPRO LED:

LED on REPRO
LED off EE

5.9.3. VARI



Pressing



VARI
switches the connected recorder to variable speed play. The VARI speed value used is defined by the setting in the MENU - VARI parameter. If you have not entered a setting the display shows 0.00%.

Once the VARI mode is activated you can increase or decrease the speed by pressing



+ Increment

and



- Decrement

Note:
Switching to CHASE mode deactivates VARI-SPEED mode.

5.9.4. USER



USER
You can assign a user-selected function to this key in the SET Menu (see USER Key in Default Settings).

If you select
NONE
the key has no function.

The setting
FDRSTRT
assigns the Fader Start Ready function to the key (see FADER START in Default Settings).

The setting
TID Tape ID Display
enables you to display the tape ID number by pressing the USER key. The display is cleared again as soon as you release the key.

5.9.5. CHECK



The CHECK LED lights up if the system registers an error when a tape is played (e.g. non-sequential time code). This function is only possible if the CHECK LEP parameter is activated for the active recorder in the SET Menu.

After the CHECK LED goes on the following key sequence positions the tape to the position where the DAT recorder set the last error flag.



SET

followed by

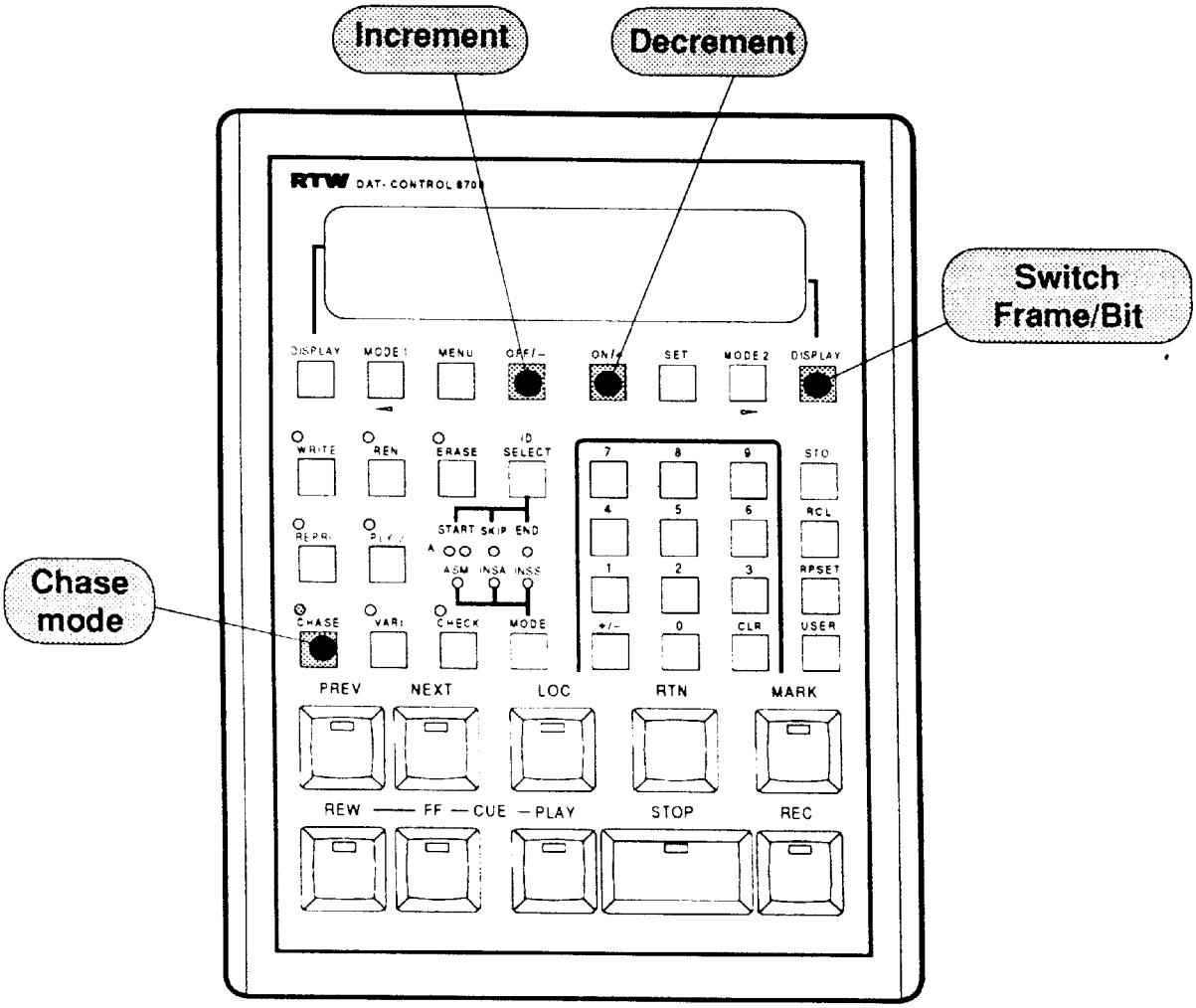


CHECK

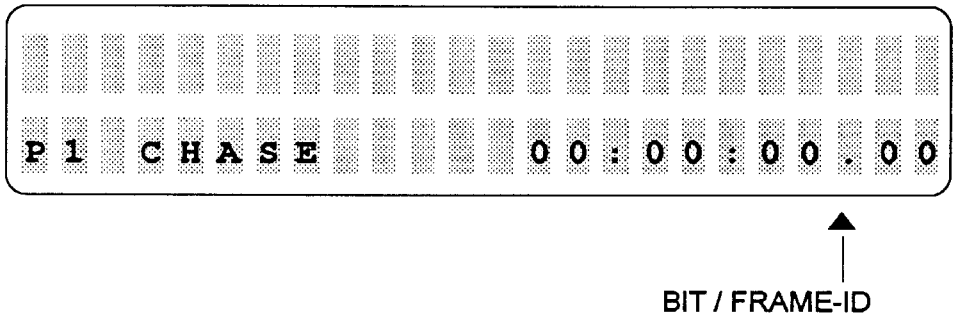
The TC value is written to the LOCATE buffer and can then be recalled again if required.

Note:
This function is only supported in the RS-232 version of the DAT CONTROL. The PREROLL parameter set in the SET Menu is used when the Locate command is executed.

5.10. Chase Operation



5.10.1. CHASE



Pressing



CHASE
switches the selected recorder to CHASE mode. The DAT CONTROL will use the CHASE mode defined in the recorder setup. The CHASE LED blinks until the recorder has finished chasing. When the recorder has locked in to the external time code source the LED switches off and the CHASE message is cleared from the display.

You can change the displayed CHASE offset in steps during the CHASE operation by pressing



\+ Increment

and



\- Decrement

The change is made in the BIT position in the BIT OFFSET mode ('.' in the display) and in the FRAME position in the FRAME OFFSET mode (':' in the display). You can switch between FRAME and BIT during CHASE operation by pressing the right DISPLAY key.

Note:
Select the MENU - CHASE option to make changes in the hours, minutes or seconds positions (see 5.8.1. MENU - CHASE).

Please note that the CHASE mode (CHASE, RECHASE 1, RECHASE 2 or OFF) is depending on the presets done in the menu of the DAT machine and the SET menu of the DAT-CONTROL. Refer to chapter 6.7 CHASE for more informations.

6. Default Settings

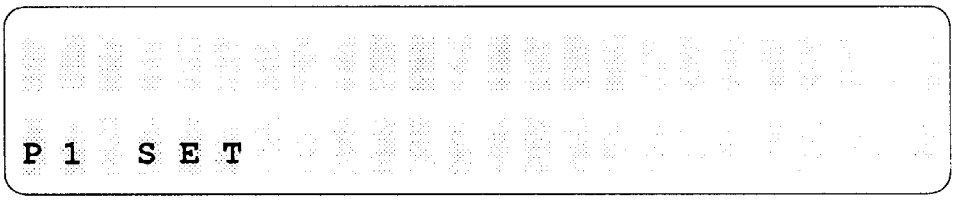
6.1. SET Menu

Each of the two recorders has a separate setup configuration stored in a non-volatile EEPROM. The SET Menu provides functions for changing the default settings. First select the appropriate recorder with the PLY 2 key, then activate the SET Menu by pressing

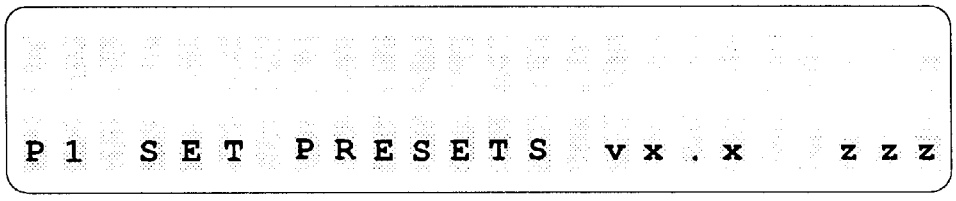
SET

SET

This results in a display of



followed by



where x.x is the version number of the software in your DAT CONTROL unit and zzz is the hardware version number. No entries can be made at this point in the menu.

Pressing

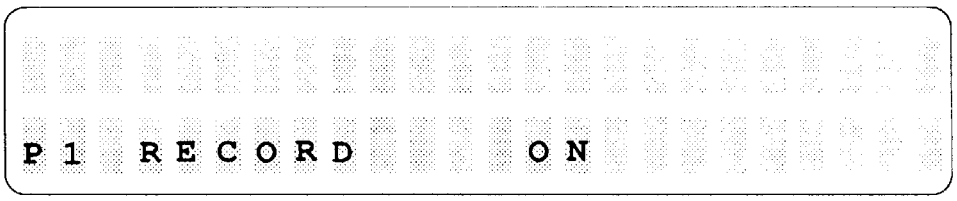
SET

SET
again activates the REC option.

Note:
All entries are terminated and stored by pressing the SET key and holding it down for a while or by stepping through all menu options so that termination is automatic and you are then returned to normal operating mode.
Pressing the right DISPLAY key aborts the entry without storing your changes.

6.2. Menu parameter RECORD

Display



Default = ON

The REC parameter enables or disables all the remote control unit's record functions for the selected recorder. This is particularly useful in broadcasting operation to prevent accidental erasure of cassettes that are not record-protected.

You can change the default setting with

OFF/ -
OFF

ON/+
ON

Two settings are possible:

ON = Record operation enabled, and

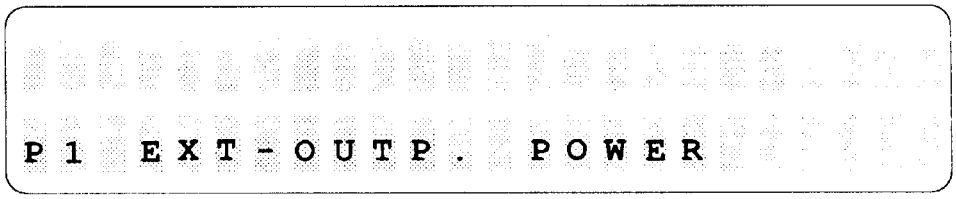
OFF = Record operation disabled

To terminate and store the entry, press

SET
SET

6.3. Menu parameter EXT-OUTP.

Display



Default = POWER

The EXT-OUTP. parameter activates a control signal on pin 9 (pin 21 Gnd) (PLY 1) and pin 11 (pin 23 Gnd) (PLY 2) of the DB-25 connector, in accordance with the following settings.

You can change the default setting with

OFF/-
OFF

ON/+
ON

Two settings are possible:

POWER = +5 V when the DAT CONTROL is powered up, and

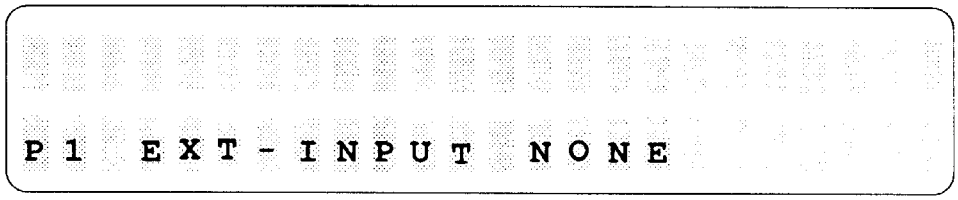
PLAY = +5 V in recorder Play function

To terminate and store the entry, press

SET
SET

6.4. Menu parameter EXT-INPUT

Display



Default = NONE

The EXT-INPUT parameter is used to enable the fader start input for the selected recorder. The input is on pin 12 (pin 24 Gnd) (PLY 1) and pin 13 (pin 25 Gnd) (PLY 2) of the DB-25 connector.

You can change the default setting with

OFF/-
OFF

ON/+
ON

Two settings are possible:

NONE = Function disabled, and

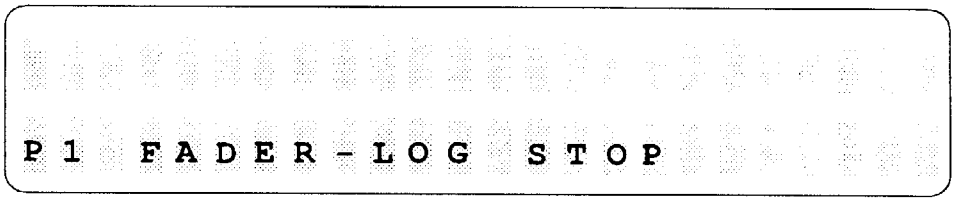
FADER = Fader start input enabled

To terminate and store the entry, press

SET
SET

6.5. Menu parameter FADER-LOG

Display



Default = STOP

When the FADER-LOG (Fader Logic) parameter is set to RUN, the Fader Start Ready function is cancelled on the remote control unit when the fader is operated. The DAT recorder is then ***not*** switched to STOP when the fader is operated.

You can change the default setting with

OFF/–
OFF

ON/+
ON

Two settings are possible:

RUN = Fader start, no stop on operation, and

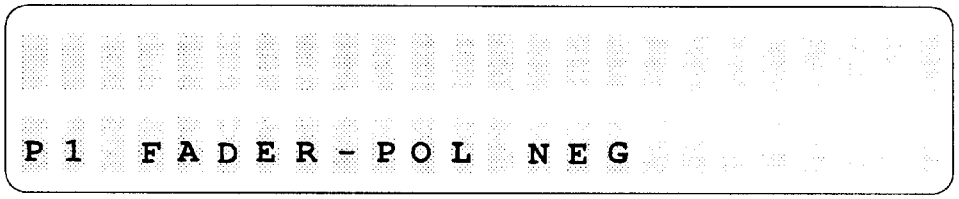
STOP = Fader start, stop on operation

To terminate and store the entry, press

SET
SET

6.6. Menu parameter FADER POL

Display



Default =NEG

When FADER POL (Fader Polarity) is set to POS play is started when the fader contact is opened; NEG starts play when the fader contact is closed.

You can change the default setting with

OFF/-
- **Decrement**

ON/+
+ **Increment**

Two settings are possible:

NEG = Negative polarity, and

POS = Positive polarity

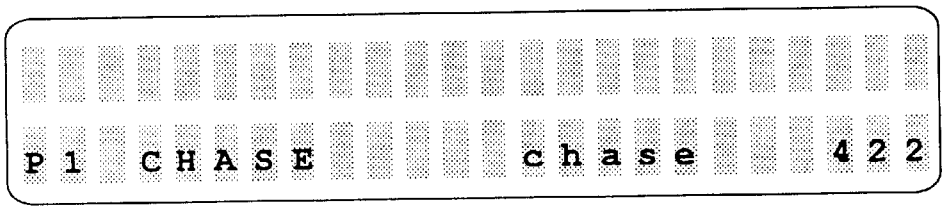
To terminate and store the entry, press

SET
SET

Note:
Please note that you must set the EXT-INPUT (enable external logic) menu parameter to FADER in order to be able to use the Fader Start mode.

6.7. Menu parameter CHASE

Display



Default = RECHASE

The CHASE parameter selects the Chase operation mode. RECHASE 1 or RECHASE 2 has to be defined in the 7030/7050 menu section 9P rEcHS (software version later 5.0c)

You can change the default setting with

OFF/- **-** **Decrement**

ON/+ **+** **Increment**

Three settings are possible:

CHASE =enables the CHASE mode for the connected machine, and

RECHASE =enables the RECHASE mode for the connected machine, and

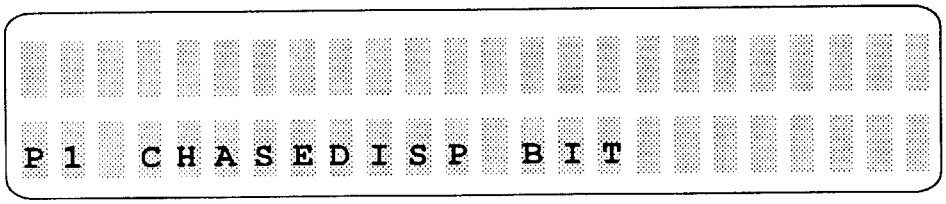
OFF =locks the CHASE key on the DAT CONTROL

To terminate and store the entry, press

SET **SET**

6.8. Menu parameter CHASEDISP

Display



Default = BIT

The CHASE parameter selects the entry/editing format for the Chase Offset value. BIT enables entries from minutes to bits, FRAME sets the range from hours to frames.

You can change the default setting with

OFF/-

- **Decrement**

ON/+

+ **Increment**

Two settings are possible:

BIT = Entries from minutes to bits, and

FRAME = Entries from hours to frames

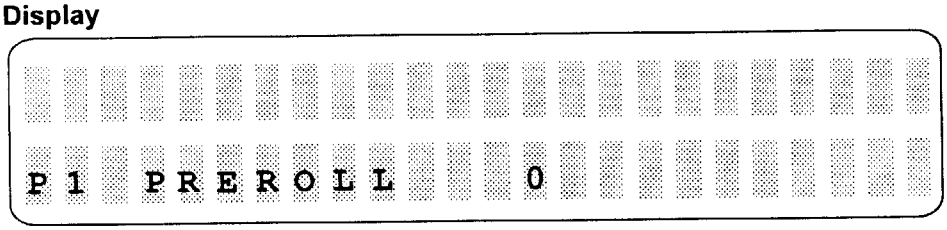
To terminate and store the entry, press

SET

SET

6.9. Menu parameter PREROLL

Display



Default = 0

In the LOC (Locate position) mode, the DAT tape is positioned ahead of the actual position entered by the offset entered in the PREROLL parameter (0-9 sec).

You can change the default setting with

OFF/-
- **Decrement**

ON/+
+ **Increment**

You can set the PREROLL offset from

0 = 0 seconds to

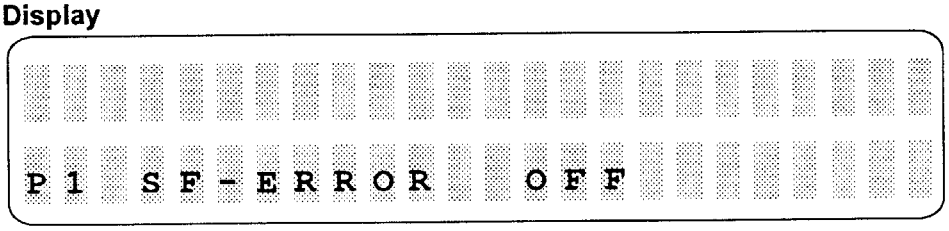
9 = 9 seconds, in 1 second steps.

To terminate and store the entry, press

SET
SET

6.10. Menu parameter SF-ERROR

Display



Default = OFF

If a frequency (48, 44 or 32) is set in the SF-ERROR (Sampling Frequency Error) parameter, the system checks that the sampling frequency set in the DAT CONTROL unit matches the frequency on the DAT tape (if present) before recording begins. If the frequencies do not match the recording is aborted with the error message "SF-ERROR".

You can change the default setting with

OFF/- - **DECREMENT**

ON/+ + **INCREMENT**

The following settings are possible

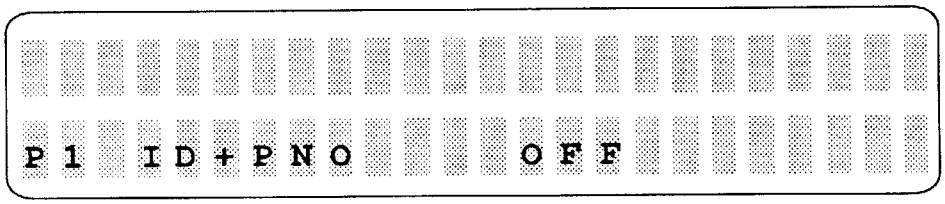
48 ks (48 kHz)
44 ks (44.1 kHz)
32 ks (32 kHz) and
OFF

To terminate and store the entry, press

SET **SET**

6.11. Menu parameter ID+PNO

Display



Default = OFF

When the ID+PNO (ID with Program No.) is set to ON, a program number is automatically written together with every ID code when recordings are made in ASM (Assemble) mode.
You can change the default setting with

OFF/-
- **DECREMENT**

ON/+
+ **INCREMENT**

Two settings are possible:

ON = Automatic PNO assignment on, and

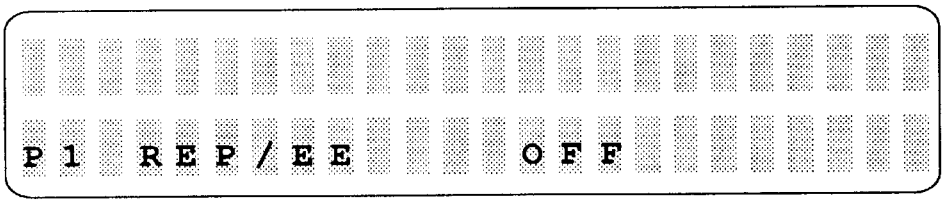
OFF = Automatic PNO assignment off

To terminate and store the entry, press

SET
SET

6.12. Menu parameter REP/EE

Display



Default = OFF

The REP/EE parameter (Reproduce/Input) enables you to define whether the recorder switches to EE in all operating modes except Play and Cue.

You can change the default setting with

OFF/-

- **Decrement**

ON/+

+ **Increment**

Two settings are possible:

ON = EE on Stop, and

OFF = Repro on Stop

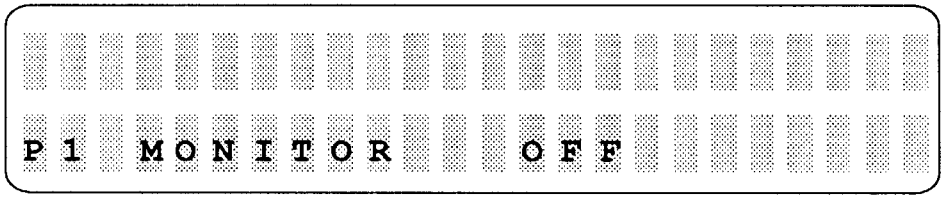
To terminate and store the entry, press

SET

SET

6.13. Menu parameter MONITOR

Display



Default = OFF

The MONITOR parameter setting specifies whether the headphones (Phones) output of the Otari DTR90 is activated or switched off in Fader Start Ready mode.

You can change the default setting with



- **Decrement**



+ **Increment**

Two settings are possible:

ON = Phones output enabled, and

OFF = Phones output disabled

To terminate and store the entry, press

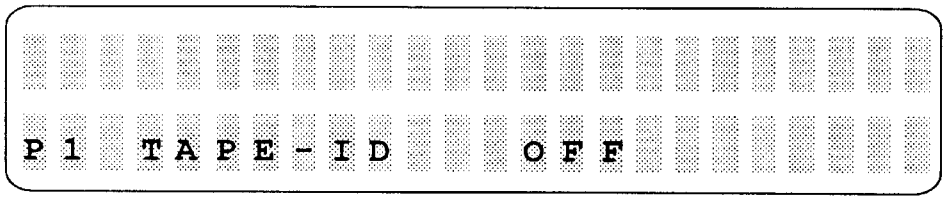


SET

Note:
This function is only supported by the software of the Otari DTR90.

6.14. Menu parameter TAPE-ID (Archiv reference data)

Display



Default = OFF

When the TAPE-ID parameter is set to ON, pressing the left DISPLAY key displays the Tape ID as well as the time code.

You can change the default setting with

OFF/-
- **Decrement**

ON/+
+ **Increment**

Two settings are possible:

ON = TAPE-ID display on, and

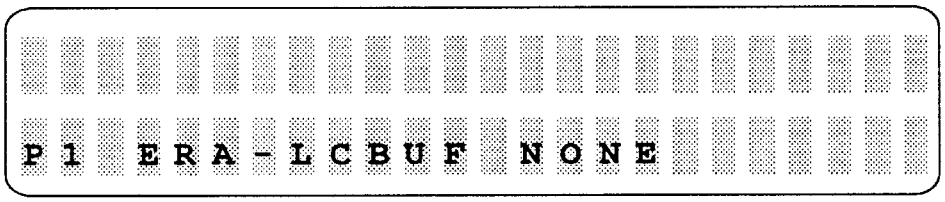
OFF = TAPE-ID display off

To terminate and store the entry, press

SET
SET

6.15. Menu parameter ERA-LCBUF

Display



Default = NONE

The setting for this parameter defines whether and, if so, when the 20 Locate buffers are automatically cleared.

You can change the default setting with

OFF/-
- **Decrement**

ON/+
+ **Increment**

The following settings are possible:

NONE = No automatic erasing

TapCh = Automatic erasing of the buffers when cassette is changed

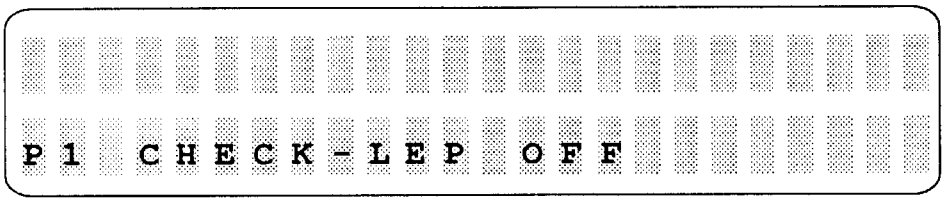
PowUp = Automatic erasing of the buffers when the DAT CONTROL is powered up

To terminate and store the entry, press

SET
SET

6.16. Menu parameter CHECK-LEP

Display



Default = OFF

The CHECK-LEP activates or deactivates the error displays and associated Locate functions of a DAT CONTROL unit with an RS-232 port.

You can change the default setting with

OFF/-
- **DECREMENT**

ON/+
+ **INCREMENT**

Two settings are possible:

OFF = Error display and Locate functions disabled, and

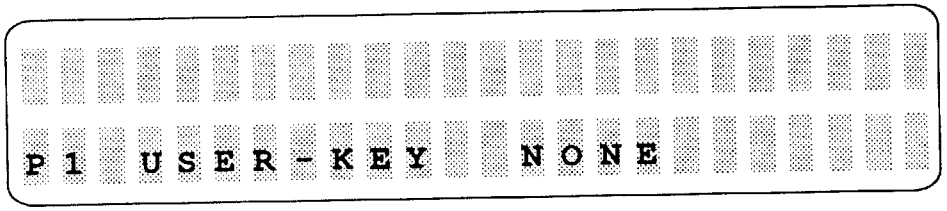
ON = Error display and Locate functions enabled

To terminate and store the entry, press

SET
SET

6.17. Menu parameter USER-KEY

Display



Default = NONE

The USER-KEY parameter defines the function assigned to the USER key on the DAT CONTROL.

You can change the default setting with

OFF/- **-** **DECREMENT**

ON/+ **+** **INCREMENT**

The following settings are possible:

NONE = No function assigned

FADER = Toggle Fader Start Ready mode

T-ID = Display Tape ID (archive number) when the USER key is pressed

To terminate and store the entry, press

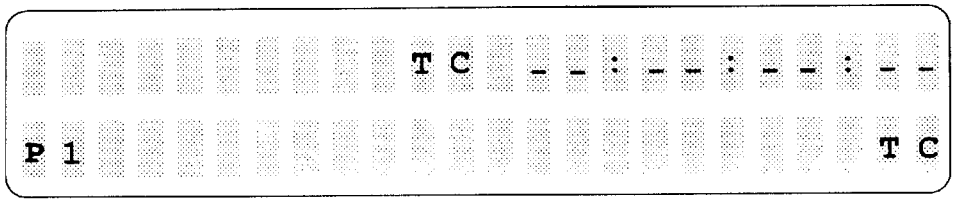
SET **SET**

USER-KEY is the last menu parameter presented. When you press the SET key the system automatically exits the parameter setting mode and stores all the changes you have made.

7. Warning Displays

7.1. -- -- --

Display:



-- -- -- No display

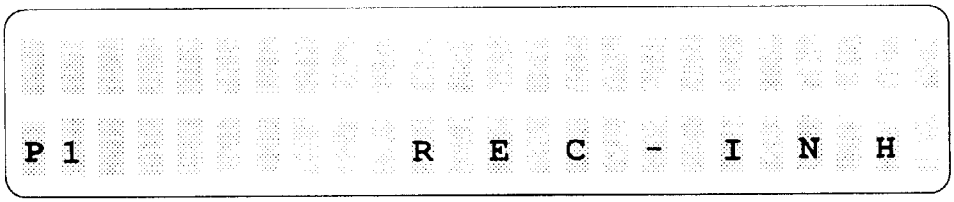
Explanation:

- The connected DAT recorder is either not switched on or not connected to the DAT CONTROL unit.

- There is no TC data on the DAT tape.

7.2. Record Inhibit

Display:



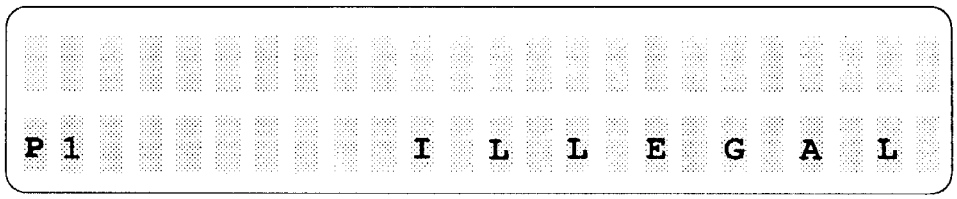
REC-INH - Record Inhibit

Explanation:

You have attempted to record on a record-protected cassette.

7.3. Illegal

Display:



ILLEGAL - Illegal

Explanation:

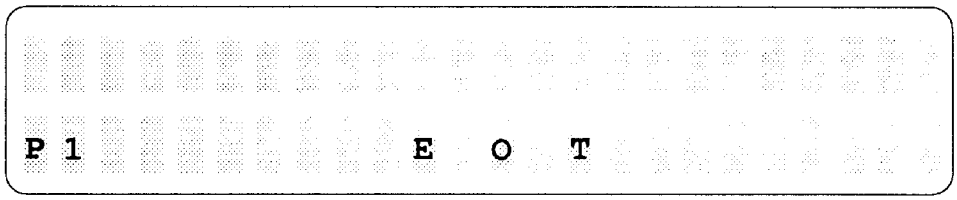
The selected function is not permitted in this situation.

Examples:
- Attempt to set the recording mode with a record-protected cassette in the recorder.

- Attempt to record with Vari-Speed switched on.

7.4. EOT

Display:



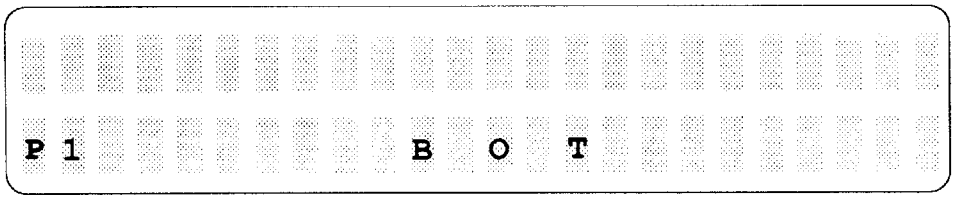
EOT - End of Tape

Explanation:

End of tape reached.

7.5. BOT

Displaydarstellung:



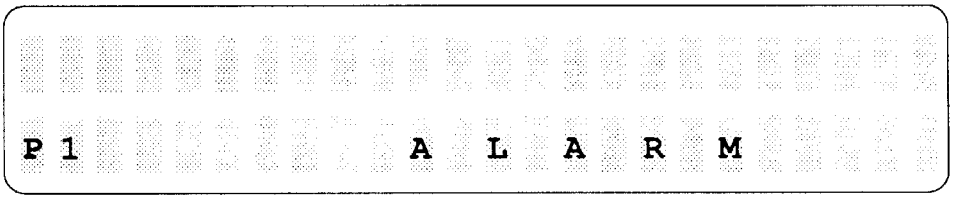
BOT - Begin of Tape

Explanation:

Beginning of tape reached.

7.6. ALARM

Display:



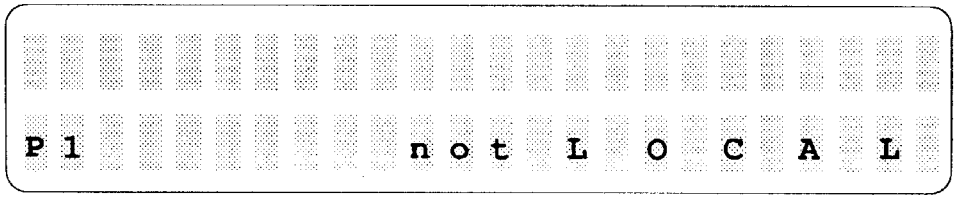
ALARM - Alarm

Explanation:

General error message from the connected DAT recorder.
See the recorder manual for details.

7.7. not LOCAL

Display:



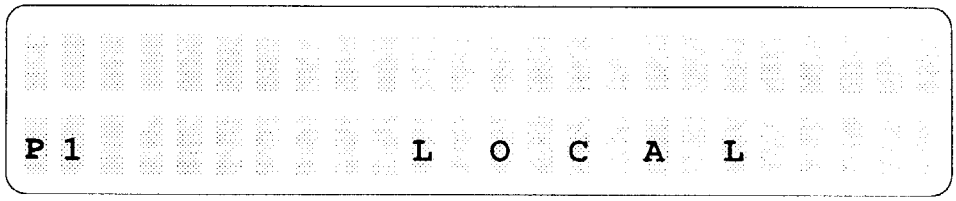
not LOCAL - not local

Explanation:

Error message specific to the RS-232 version of the DAT CONTROL DC-2 / DC-3. The connected DAT recorder is not in LOCAL mode. The 7030 and 7050 recorders can only be controlled via the RS-232 port when they are in LOCAL.

7.8. LOCAL

Display:



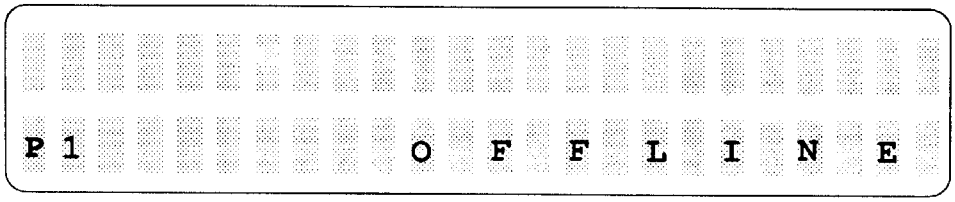
LOCAL - Local

Explanation:

Error message specific to the RS-422 version of the DAT CONTROL DC-2 / DC-3. The connected DAT recorder is not switched to REMOTE mode.

7.9. Offline

Display:



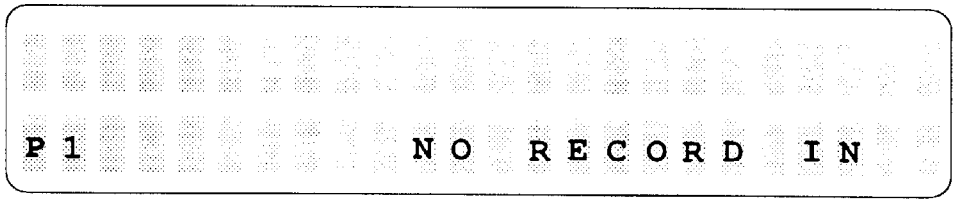
OFFLINE - Offline

Explanation:

Communications protocol error between the connected DAT recorder and the DAT CONTROL.

7.10. NO RECORD IN

Display:



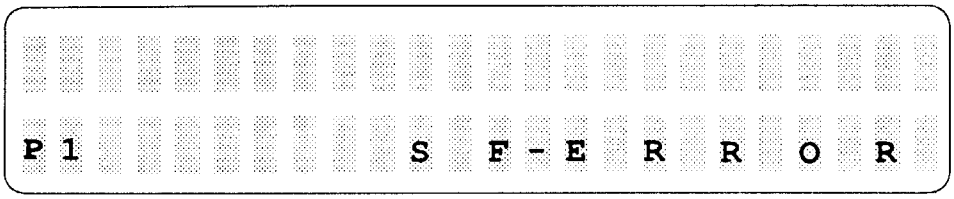
NO RECORD IN - No beginning of recording

Explanation:

You have attempted to position with the RTN-key on the beginning of a record even though no recording was made before.

7.11. SF-ERROR

Display:



SF-ERROR - Sampling Frequency Error

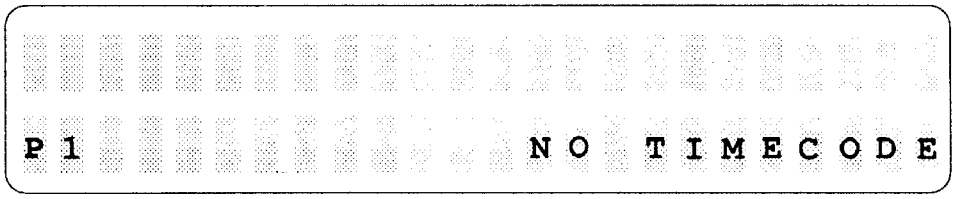
Explanation:

You have attempted to start recording with a sampling rate not matching to the SET menu. 'SF-ERROR' recognition must be activated in the SET Menu.

Note:
See also Chapter 6: Default settings: SF-ERROR.

7.12. NO TIMECODE

Display:



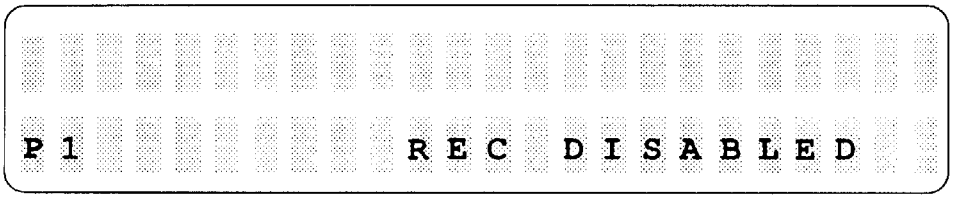
NO TIMECODE - No Timecode

Explanation:

You have attempted to execute the LOCATE-, CHASE-, STORE-, RECALL- , MARK- or RETURN-command on a tape without timecode.

7.13. REC DISABLED

Display:



REC DISABLED - Recording function disabled

Explanation:

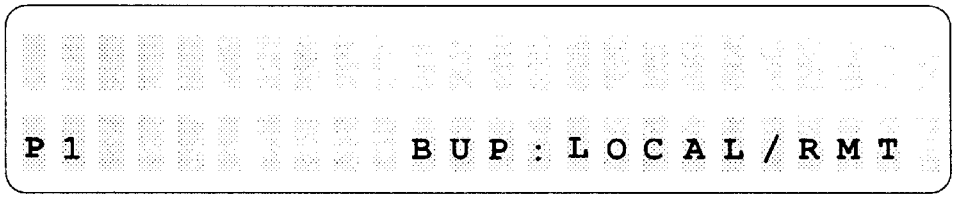
You have attempted to start recording or to define a record mode even though the recording function is generally disabled in default settings.

Note:
See also Chapter 6: Default settings: SF-ERROR.

7.14. Backup error messages

7.14.1. BUP:LOCAL/RMT

Display:



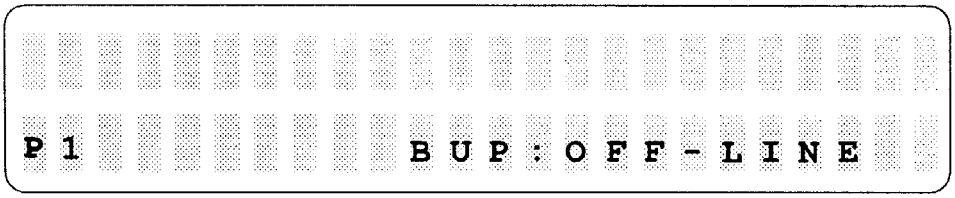
BUP: Backup error messages
LOCAL/RMT: Recorder 2 not in remote mode

Explanation:

Error message specific to DAT CONTROL DC-3 in backup mode. The connected recorder 2 is not switched to REMOTE mode. You have to choose 'LOCAL' (RS-232 version) or 'REMOTE' (RS-422 version).

7.14.2. BUP:OFF-LINE

Display:



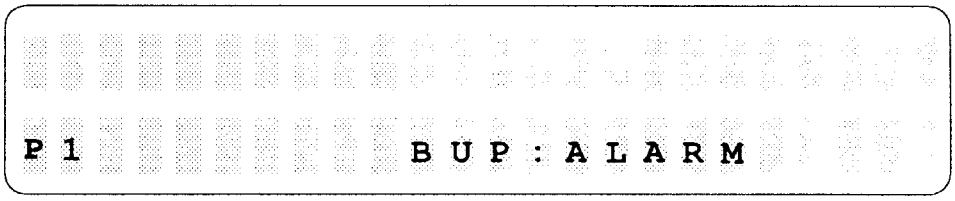
BUP: Backup error messages
OFF-LINE: Recorder 2 communication error

Explanation:

Error message specific to DAT CONTROL DC-3 in backup mode. Communications protocoll error between the connected DAT recorder and DAT CONTROL.
The reasons can be:
- remote control connection is faulty
- remote control connection is not available
- recorder is switched off

7.14.3. BUP:ALARM

Display:



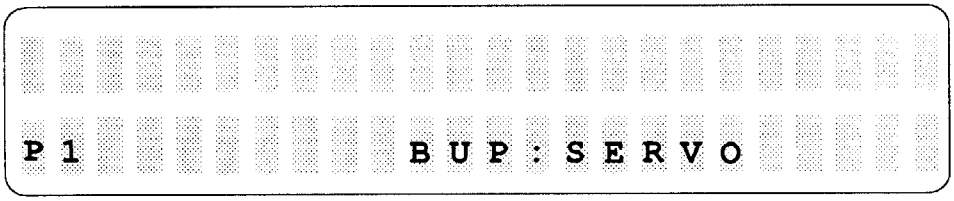
BUP: Backup error messages
ALARM: Recorder 2 Alarm

Explanation:

Error message specific to DAT CONTROL DC-3 in backup mode. General error message of the connected recorder 2.
See the recorder manual for details.

7.14.4. BUP:SERVO

Display:



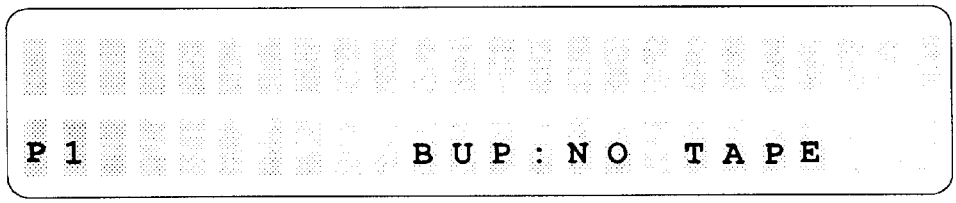
BUP: Backup error message
SERVO: Recorder 2 servo error

Explanation:

Error message specific to DAT CONTROL DC-3 in backup mode. Servo error in the connected DAT recorder. See the recorder manual for details.

7.14.5. BUP:NO TAPE

Display:



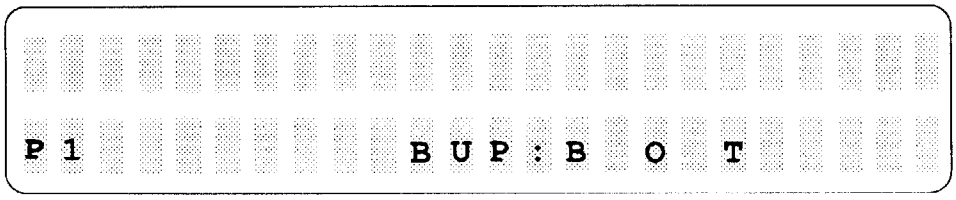
BUP: Backup error message
NO TAPE: No tape in recorder 2

Explanation:

Error message specific to DAT CONTROL DC-3 in backup mode. There is no tape in recorder 2 or the tape is not correctly loaded.

7.14.6. BUP:BOT

Display:



BUP: Backup error message
SERVO: Recorder 2 Begin of Tape

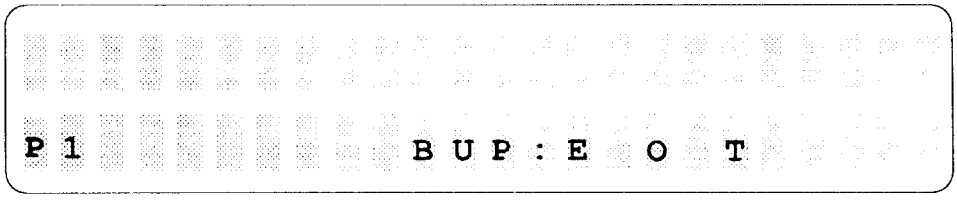
Explanation:

Error message specific to DAT CONTROL DC-3 in backup mode. Beginning of tape in recorder 2 is reached.

Comment:
This error message requests to position first recorder 1 and then recorder 2 in a valid timecode range. With active error message BOT the DAT recorder doesn't accept any CHASE-command from the DAT CONTROL.

7.14.7. BUP:EOT

Display:



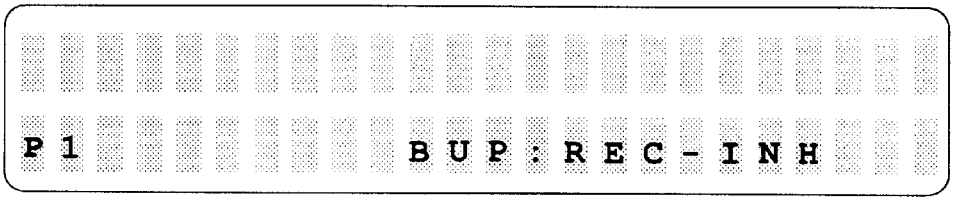
BUP: Backup error message
EOT: Recorder 2 End of Tape

Explanation:

Error message specific to DAT CONTROL DC-3 in backup mode. End of tape in recorder 2 is reached.

7.14.8. BUP:REC-INH

Display:



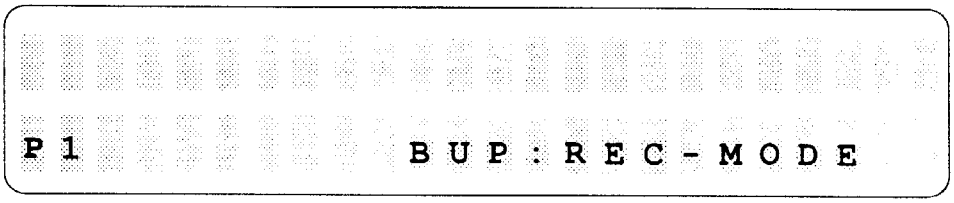
BUP: Backup error message
REC-INHIBIT: Recorder 2 record function inhibited

Explanation:

Error message specific to DAT CONTROL DC-3 in backup mode. You have attempted to record on a record-protected cassette.

7.14.9. BUP:REC-MODE

Display:



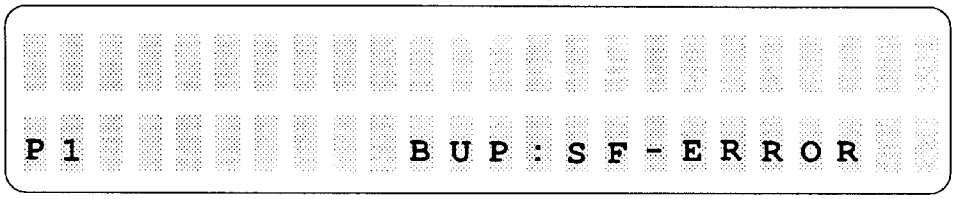
BUP: Backup error message
REC-MODE: Recorder 2 record mode

Ursache:

Error message specific to DAT CONTROL DC-3 in backup mode. Record mode of recorder 2 is not corresponding to record mode of recorder 1.

7.14.10. BUP:SF-ERROR

Display:



BUP: Backup error message
SF-ERROR: Recorder 2 Sampling Frequency Error

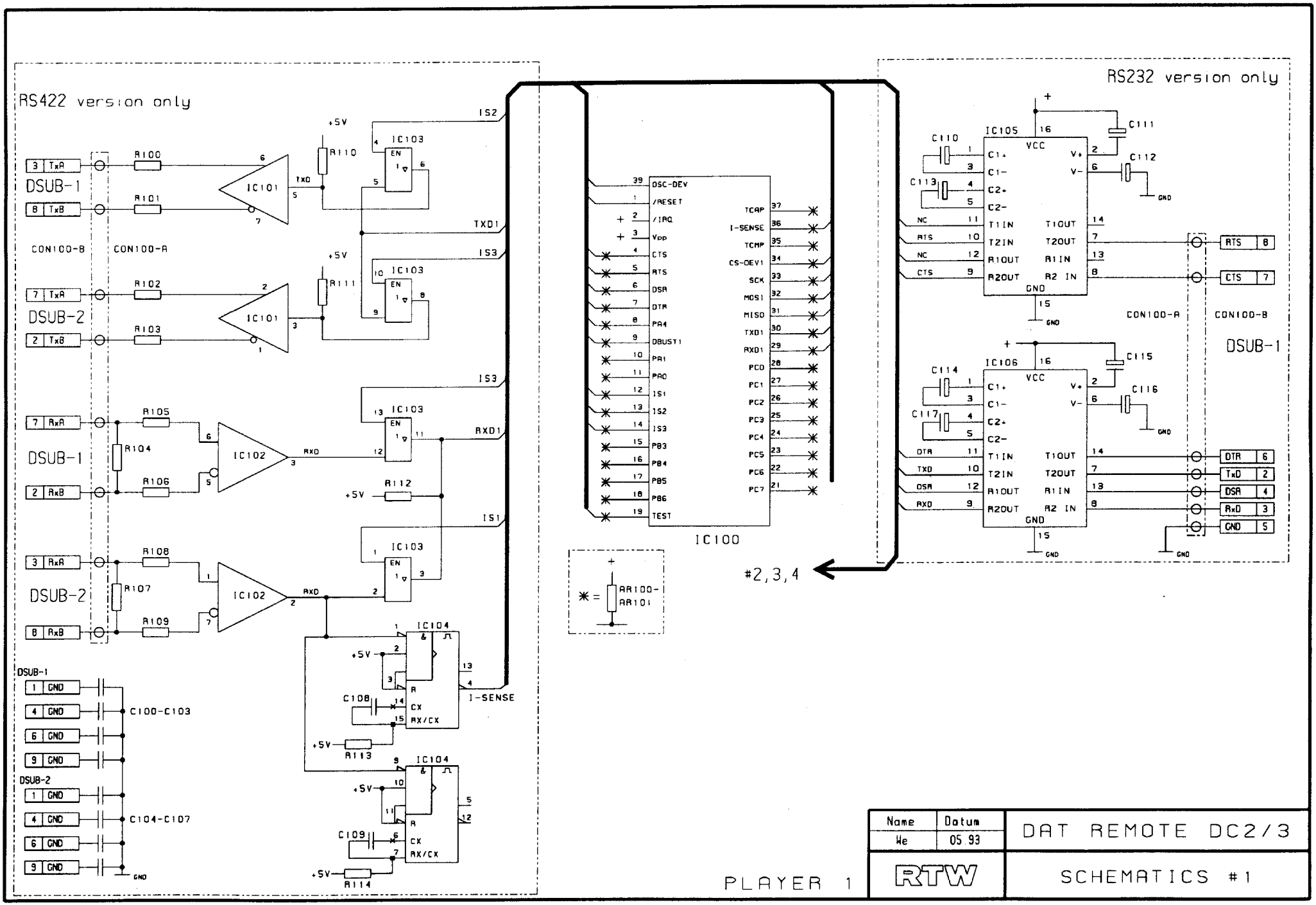
Explanation:

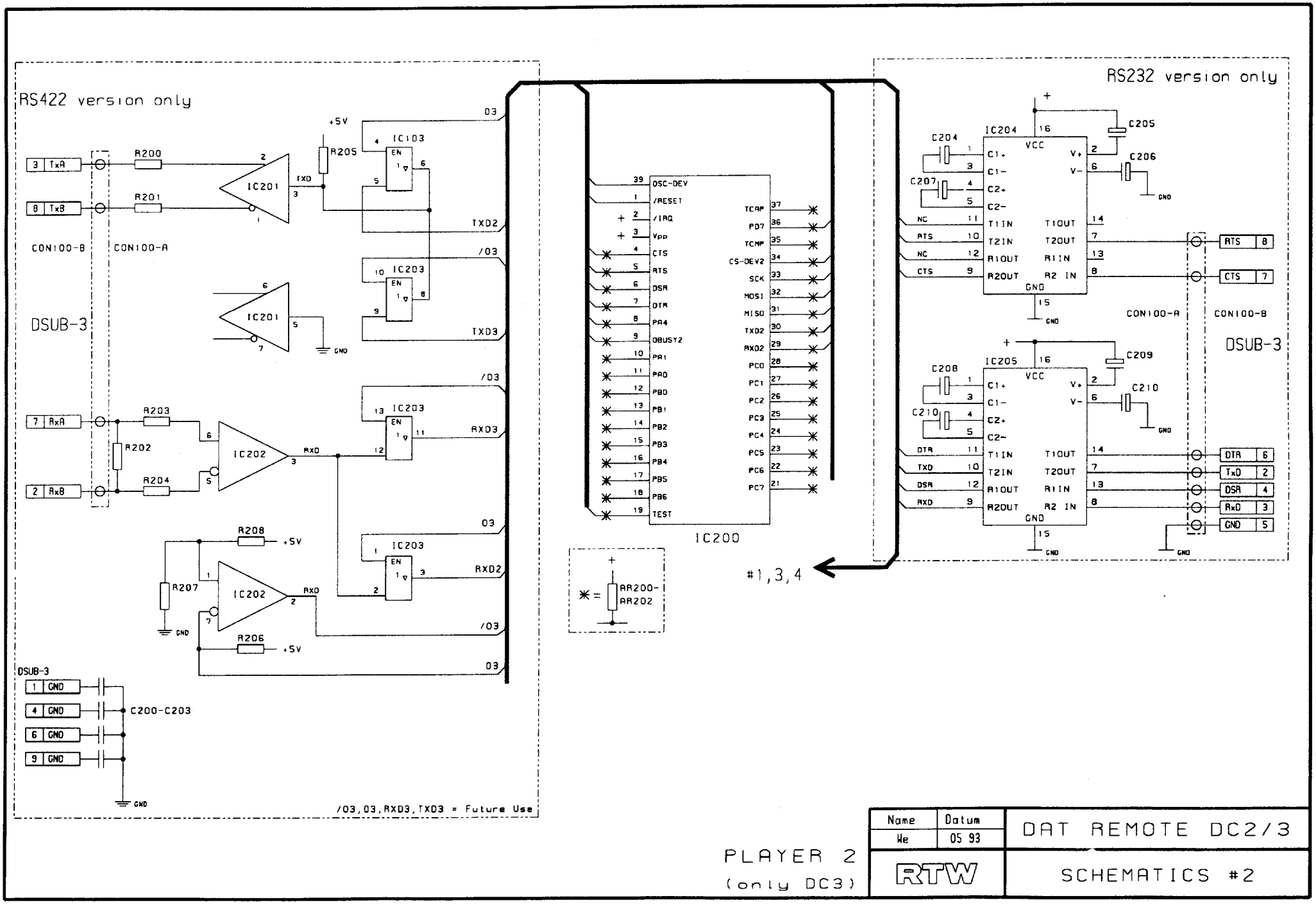
Error message specific to DAT CONTROL DC-3 in backup mode. You have attempted to record on recorder 2 with a sampling rate not matching to the sampling rate of recorder 1.

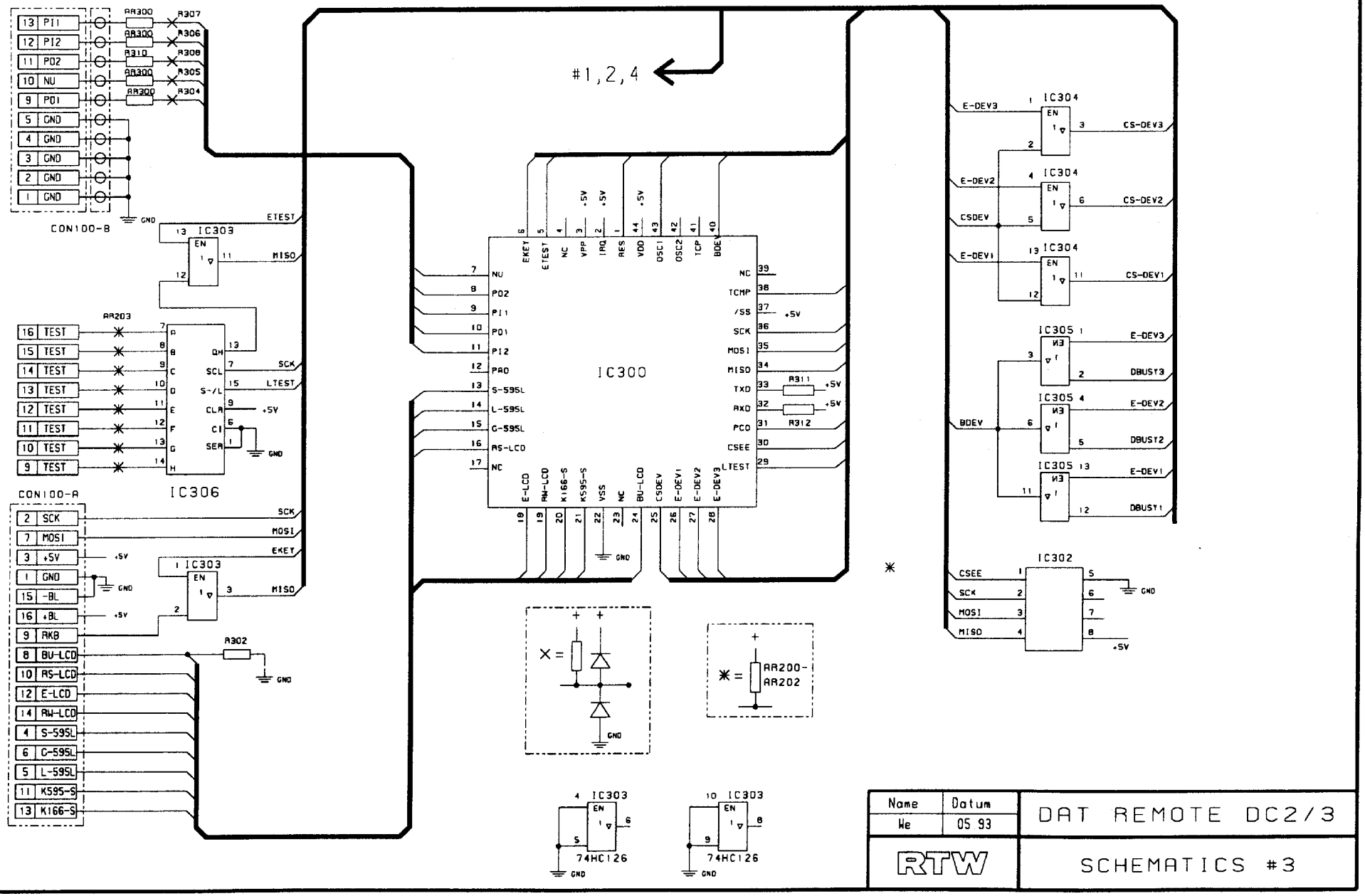
8. Specifications

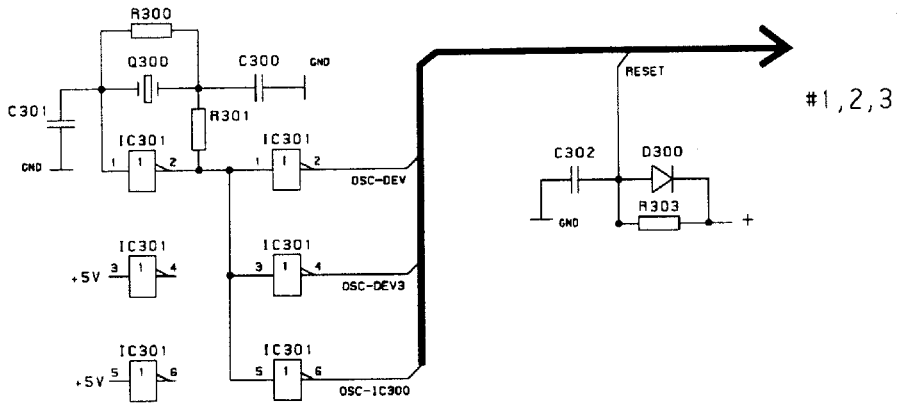
Remote control interface:	SONY-9pin (RS-422) or RS-232
Parallel control inputs:	TTL-compatible 5 Volt, Pullup internal Faderstart: active low
Parallel control outputs:	TTL-compatible 5 Volt Functions (selectable via software) Power On, Play
Default settings:	Stored in non-volatile memory
Power supply:	12 V - 28 V DC
Power consumption:	12 V - 220 mA 28 V - 100 mA
Ambient temperature:	0° - 40° Celsius
Connector:	2pin power supply socket 2 Sub-D-9pin-male connector 1 Sub-D-9pin-female connector 1 Sub-D-25pin
Dimensions:	195 x 151 x 48 mm
Weight:	700 gr (1.54 lb.)

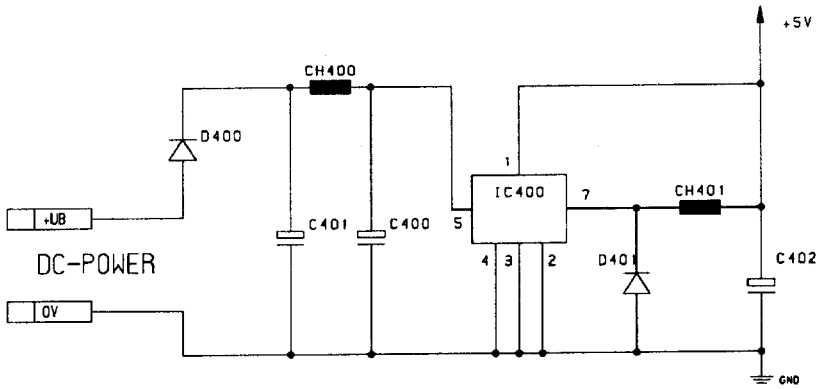
9. Circuitry Information


RS422 version only
RS232 version only
DSUB-1
DSUB-2
CON100-B
CON100-A
IC100
IC101
IC102
IC103
IC104
IC105
IC106
R100
R101
R102
R103
R104
R105
R106
R107
R108
R109
R110
R111
R112
R113
R114
C100-C103
C104-C107
C108
C109
C110
C111
C112
C113
C114
C115
C116
C117
IS1
IS2
IS3
TXD1
RXD1
I-SENSE
+5V
GND
#2,3,4
AR100-AR101
PLAYER 1
Name
Datum
We
05.93
DAT REMOTE DC2/3
SCHEMATICS #1

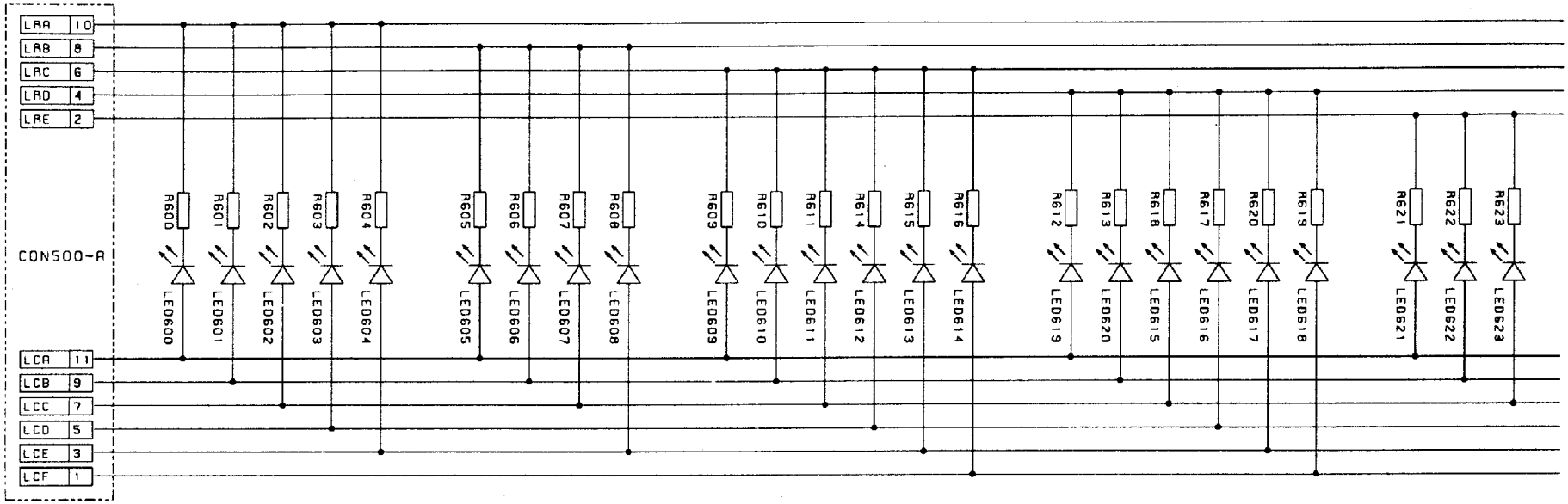

RS422 version only
RS232 version only
DSUB-3
CON100-B
CON100-A
IC200
IC201
IC202
IC203
IC204
IC205
R200
R201
R202
R203
R204
R205
R206
R207
R208
C200-C203
C204
C205
C206
C207
C208
C209
C210
+5V
GND
TxA
TxB
RxA
RxB
RTS
CTS
DTR
TxD
DSR
RxD
TXD2
TXD3
RXD2
RXD3
/03
03
#1,3,4
PLAYER 2
(only DC3)
/03,03,RXD3,TXD3 = Future Use
Name
Datum
We
05 93
DAT REMOTE DC2/3
SCHEMATICS #2
RTW

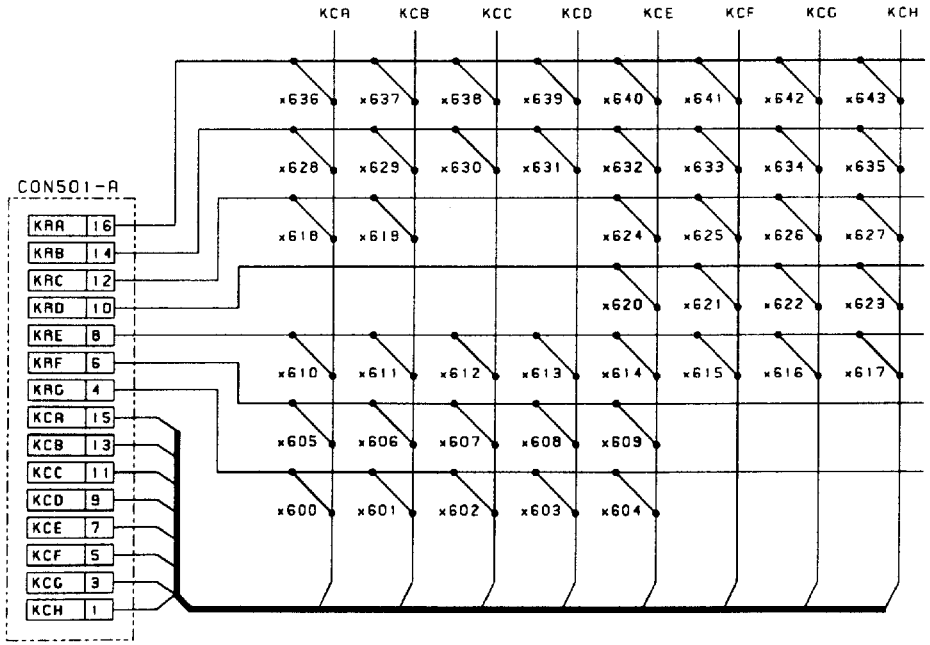

DSUB-4
CON100-A
CON100-B
#1,2,4
IC300
IC303
IC304
IC305
IC306
IC302
74HC126
AR200-AR202
Name
Datum
We
05 93
DAT REMOTE DC2/3
SCHEMATICS #3

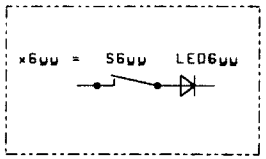




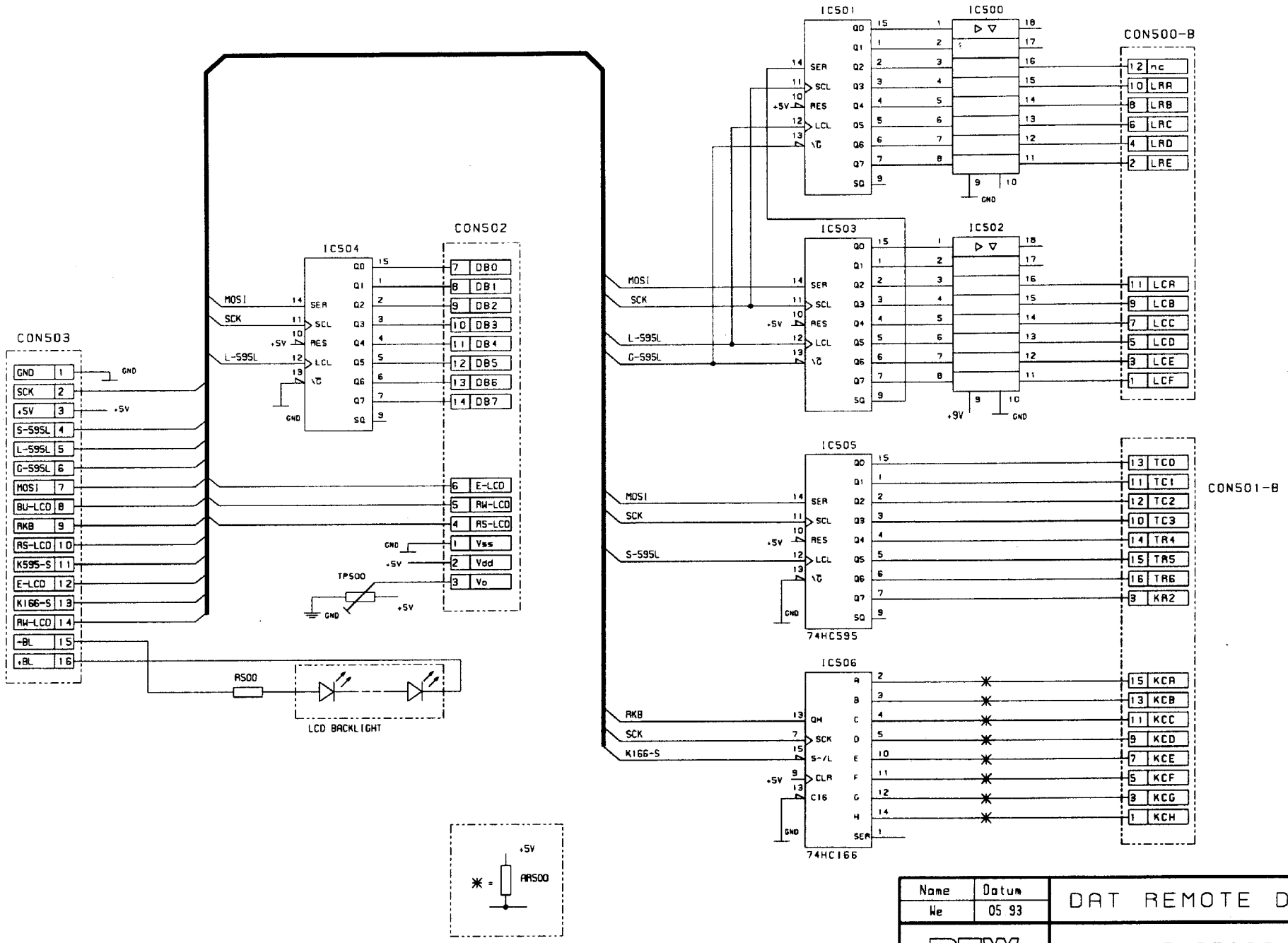
Name	Datum	DAT REMOTE DC2/3
We	11.93	
RTW		SCHEMATICS #4



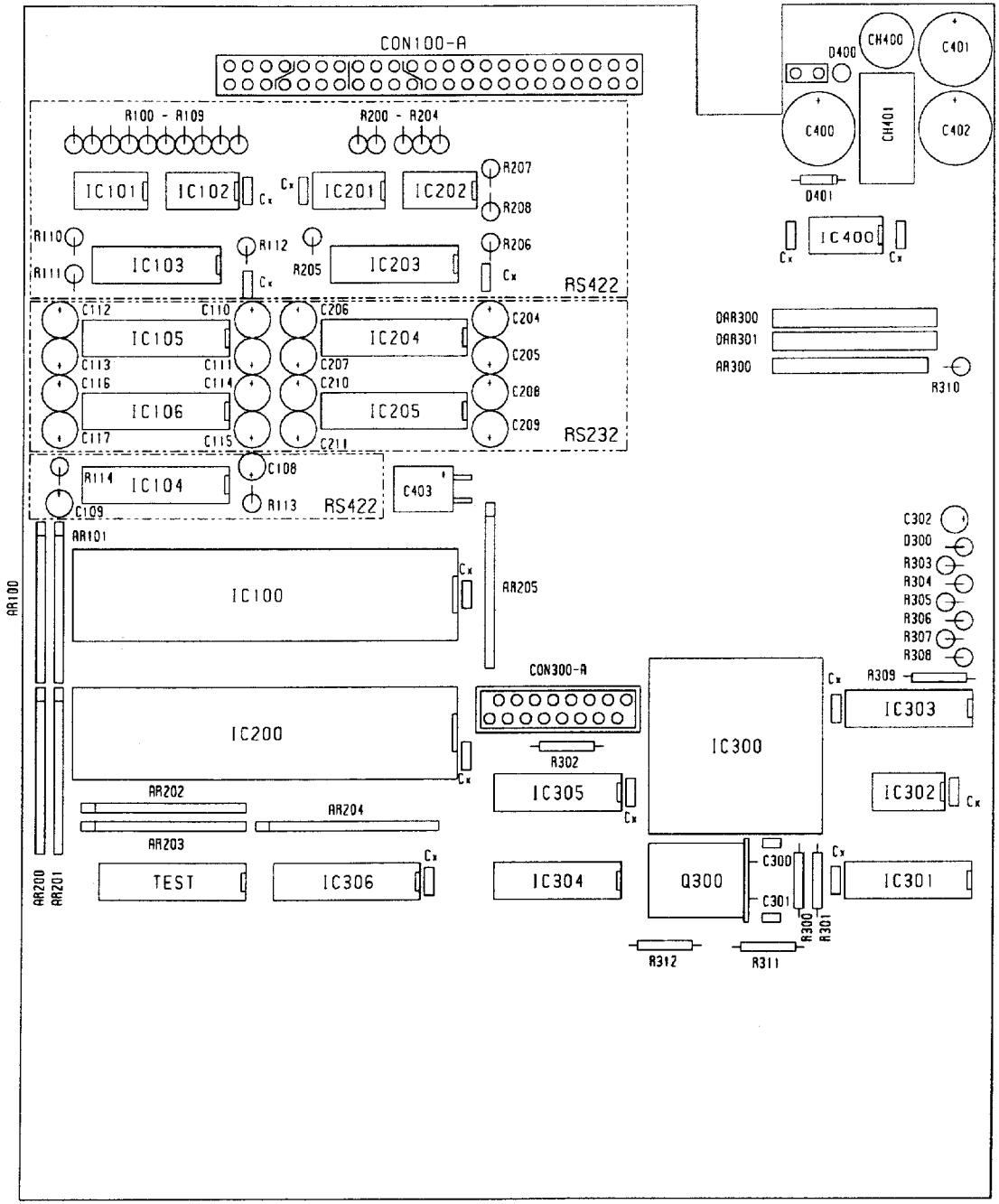


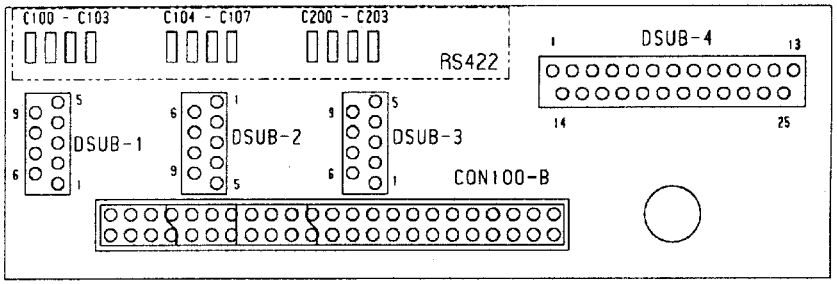


Name	Datum	DAT REMOTE DC2/3
We	05 93	
RTW		SCHEMATICS #5

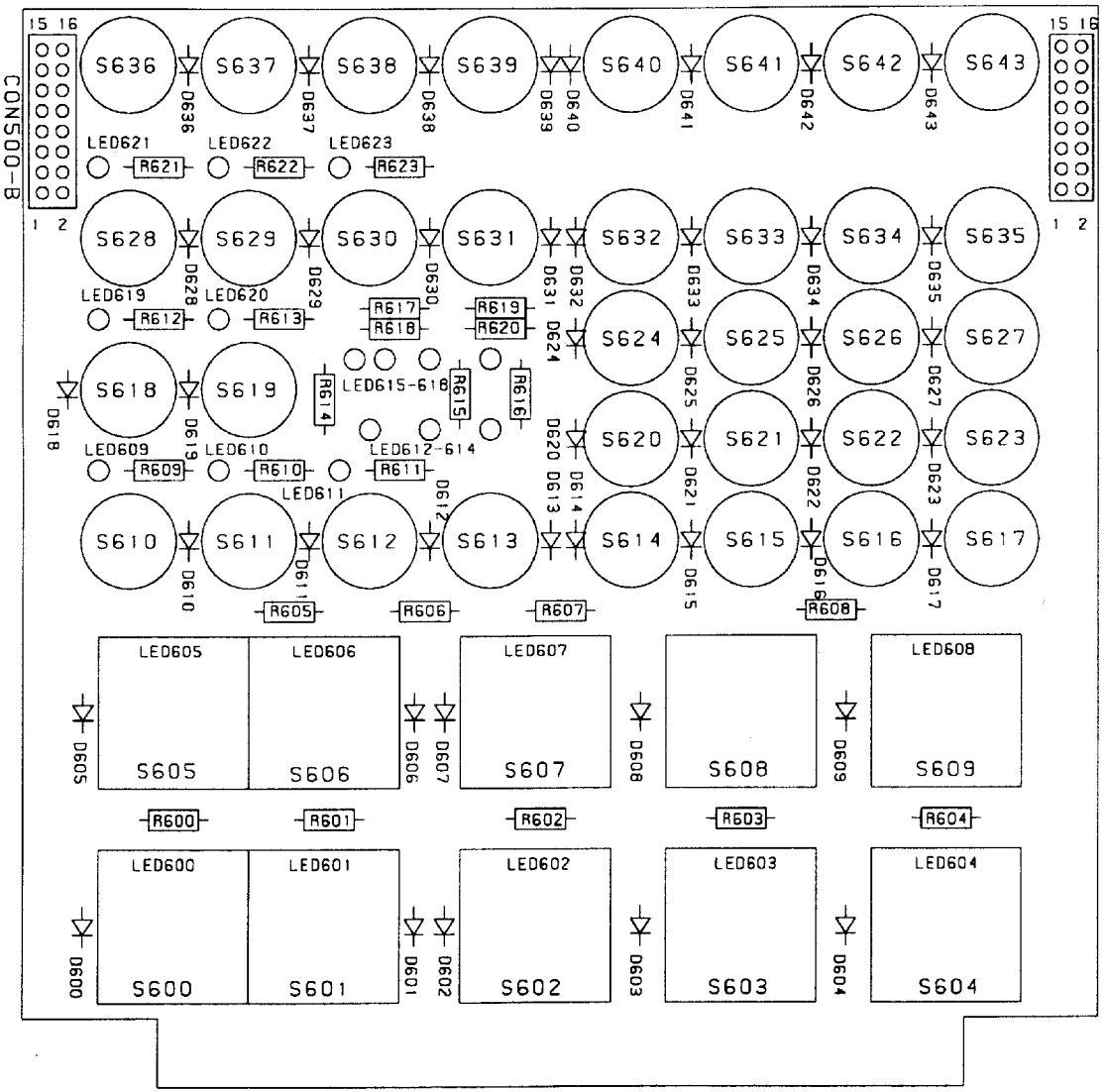


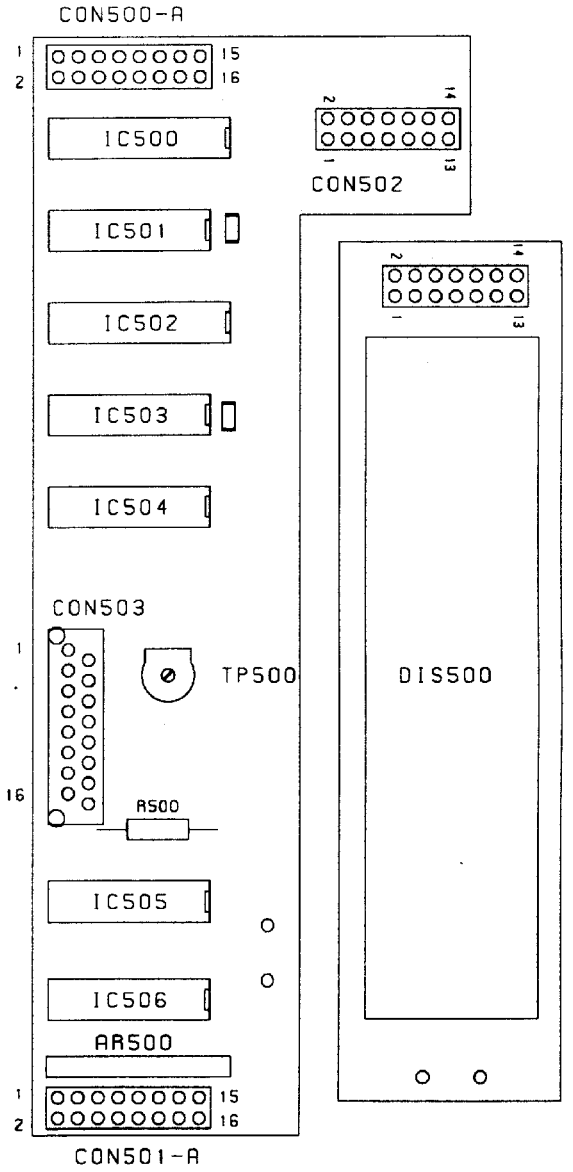
Name	Datum	DAT REMOTE DC2/3
We	05 93	
RTW		SCHEMATICS #6





Name	Datum	DAT REMOTE DC2/3
We	05.93	
RTW		COMPONENTS LAYOUT





Name	Datum	DAT REMOTE DC2/3
We	05.93	
RTW		COMPONENTS LAYOUT

RTW
RADIO-TECHNISCHE
WERKSTÄTTEN GMBH

10. Part Lists

Description	Part List	Page
PCB Assy Main DC-2 / DC-3 422	13739	2
PCB Assy Main DC-2 / DC-3 232	13736	4
PCB Assy Driver DC-2 / DC-3	13737	5
PCB Assy Front Panel DC-2 / DC-3	13738	6

RTW

RADIO-TECHNISCHE
WERKSTÄTTEN GMBH

REF.NO	DESCRIPTION	VALUE			TYPE	MANUFACTURER	PART-NO
IC100	Controller		IO422		68HC705C8P	RTW	18128.422D
IC101	IC-Receiver				SN75158P	Texas Intruments	18134
IC102	IC-Receiver				SN75157	Texas Intruments	18133
IC103	IC-CMOS				MC74HC126N	Motorola	18026
IC104	IC-HC				74HC123	Motorola	18038
IC200	Controller		IO422		68HC705C8P	RTW	18128.422D
IC201	IC-Receiver				SN75158P	Texas Intruments	18134
IC202	IC-Receiver				SN75157	Texas Intruments	18133
IC203	IC-CMOS				MC74HC126N	Motorola	18026
IC300	Controller		Master		68HC705C9P	RTW	18143.87M
IC301	IC-AC				74AC04	National	18126
IC302	EE-PROM				NM 93C56 N	National	18131
IC303-305	IC-CMOS				MC74HC126N	Motorola	18026
IC306	IC-HC				74HC166N	National	18120
IC400	Voltage Regulator				LM2574HVM-5.0	National	18141
							.
D300	Diode,Silicon				1N4148	ITT	17492
DAR300	Diode,Array				DAP801	RTW	18529
DAR301	Diode,Array				DAN801	RTW	18528
D400	Diode,Silicon				1N4005	ITT	17482
D401	Diode,Schottky				1N5819	Motorola	19401
							.
Q300	X-TAL				3.6864 MHz	RTW	17542
							.
CH400	Choke	470u			262LYF-0100K	RTW	14705
CH401	Choke	100uH				RTW	14706
							.
C100-C107	Capacitor,Ceramic	0,1u	63V		Z5U	Sprague	17422
C108	Capacitor,Tantal	1,5u	35V		ETP1,5/35	Ero	17319
C109	Capacitor,Tantal	0,47u	35V	5%	ETP0,68/35	Ero	17326
C200-C203	Capacitor,Ceramic	0,1u	63V		Z5U	Sprague	17422
C300-C301	Capacitor,Ceramic	47p			C320C470K2G5CA		17373
C302	Capacitor,Tantal	0,47u	35V	5%	ETP0,68/35	Ero	17326
Cx	Capacitor,Ceramic	0,1u	63V		Z5U	Sprague	17422
C400, C401	Capacitor,Elect	470u	35V				17334
C402	Capacitor,Elect	470u	25V		AL01-NV	SGS	17325
C403	Capacitor,Elect	100u	25V		SM-VB	Chemi-Con	17306
							.
R100-R103	Resistor,Carbon	10E		5%	0207	Resista	17001
R104	Resistor,Carbon	100E		5%	0204	Resista	170931
R105, R106	Resistor,Carbon	120E		5%	0204	Resista	170932
R107	Resistor,Carbon	100E		5%	0204	Resista	170931
R108, R109	Resistor,Carbon	120E		5%	0204	Resista	170932
R110-R112	Resistor,Carbon	47K		5%	0207	Resista	17026
R113, R114	Resistor,Carbon	220K		5%	0207	Resista	17033
R200, R201	Resistor,Carbon	10E		5%	0207	Resista	17001
R202	Resistor,Carbon	100E		5%	0204	Resista	170931
R203, R204	Resistor,Carbon	120E		5%	0204	Resista	170932
R205, R206	Resistor,Carbon	47K		5%	0207	Resista	17026
R207, R208	Resistor,Carbon	1K		5%	0207	Resista	17013
R300	Resistor,Carbon	6,8M		10%	0207	Resista	17080
R301	Resistor,Carbon	1K		5%	0207	Resista	17013

RTW
RADIO-TECHNISCHE
WERKSTÄTTEN GMBH

REF.NO	DESCRIPTION	VALUE		TYPE	MANUFACTURER	PART-NO
R302	Resistor,Carbon	4,7K	5%	0207	Resista	17019
R303	Resistor,Carbon	4,7K	5%	0207	Resista	17019
R304-R308	Resistor,Carbon	47K	5%	0207	Resista	17026
R309	Resistor,Carbon	100K	5%	0207	Resista	17030
R310	Resistor,Carbon	470E	5%	0207	Resista	17011
R311, R312	Resistor,Carbon	47K	5%	0207	Resista	17026
AR100, AR101	Resistor,Array	47K		4609X-101-473	Bourns	170921
AR200-AR205	Resistor,Array	47K		4609X-101-473	Bourns	170921
AR300	Resistor,Array	470R		4608x-102-471	Bourns	170924
DSUB-1	Sub-D Connector	9p			RTW	143156
DSUB-2	Sub-D Connector	9p			RTW	143157
DSUB-3	Sub-D Connector	9p			RTW	143156
DSUB-4	Sub-D Connector	25p			RTW	143158

RTW

RADIO-TECHNISCHE
WERKSTÄTTEN GMBH

REF.NO	DESCRIPTION	VALUE			TYPE	MANUFACTURER	PART-NO
IC100	Controller		IO232		68HC705C8P	RTW	18128.232D
IC105	RS232 Driver/Receiver				MAX232	Texas Intruments	18132
IC106	RS232 Driver/Receiver				MAX232	Texas Intruments	18132
IC200	Controller		IO232		68HC705C8P	RTW	18128.232D
IC204	RS232 Driver/Receiver				MAX232	Texas Intruments	18132
IC205	RS232 Driver/Receiver				MAX232	Texas Intruments	18132
IC300	Controller		Master		68HC705C9P	RTW	18143.87M
IC301	IC-AC				74AC04	National	18126
IC302	EE-PROM				NM 93C56 N	National	18131
IC303-305	IC-CMOS				MC74HC126N	Motorola	18026
IC306	IC-HC				74HC166N	National	18120
IC400	Voltage Regulator				LM2574HVM-5.0	National	18141
							.
D300	Diode,Silicon				1N4148	ITT	17492
DAR300	Diode,Array				DAP801	RTW	18529
DAR301	Diode,Array				DAN801	RTW	18528
D400	Diode,Silicon				1N4005	ITT	17482
D401	Diode,Schottky				1N5819	Motorola	19401
							.
Q300	X-TAL				3.6864 MHz	RTW	17542
							.
CH400	Choke	470u			262LYF-0100K	RTW	14705
CH401	Choke	100uH				RTW	14706
							.
C110-C117	Capacitor,Tantal	3,3u	35V		ETP3,3/35	Ero	17300
C204-C211	Capacitor,Tantal	3,3u	35V		ETP3,3/35	Ero	17300
C300-C301	Capacitor,Ceramic	47p			C320C470K2G5CA		17373
C302	Capacitor,Tantal	0,47u	35V	5%	ETP0,68/35	Ero	17326
Cx	Capacitor,Ceramic	0,1u	63V		Z5U	Sprague	17422
C400-401	Capacitor,Elect	470u	35V				17334
C402	Capacitor,Elect	470u	25V		AL01-NV	SGS	17325
C403	Capacitor,Elect	100u	25V		SM-VB	Chemi-Con	17306
							.
R300	Resistor,Carbon	6,8M		10%	0207	Resista	17080
R301	Resistor,Carbon	1K		5%	0207	Resista	17013
R302	Resistor,Carbon	4,7K		5%	0207	Resista	17019
R303	Resistor,Carbon	4,7K		5%	0207	Resista	17019
R304-R308	Resistor,Carbon	47K		5%	0207	Resista	17026
R309	Resistor,Carbon	100K		5%	0207	Resista	17030
R310	Resistor,Carbon	470E		5%	0207	Resista	17011
R311, R312	Resistor,Carbon	47K		5%	0207	Resista	17026
							.
AR100, AR101	Resistor,Array	47K			4609X-101-473	Bourns	170921
AR200-AR205	Resistor,Array	47K			4609X-101-473	Bourns	170921
AR300	Resistor,Array	470R			4608x-102-471	Bourns	170924
							.
DSUB-1	Sub-D Connector	9p				RTW	143156
DSUB-2	Sub-D Connector	9p				RTW	143157
DSUB-3	Sub-D Connector	9p				RTW	143156
DSUB-4	Sub-D Connector	25p				RTW	143158

RADIO-TECHNISCHE
WERKSTÄTTEN GMBH

REF.NO	DESCRIPTION	VALUE		TYPE	MANUFACTURER	PART-NO
IC500	IC-DRIVER			L603C	SGS	18122
IC501	IC-HC			74HC595	Motorola	18039
IC502	IC-DRIVER			UDN2981A	Sprague	18121
IC503-IC505	IC-HC			74HC595	Motorola	18039
IC506	IC-HC			74HC166N	National	18120
R500	Resista,Carbon	18E	5%	0207	Resista	17003
AR500	Resistor,Array	47K		4609X-101-473	Bourns	170921
TP500	Potentiometer,Trim	25K		PT 10 LV	Piher	17142
DIS500	LCD-Display			L2432B1J000	Seiko Instruments	17576

RTW
RADIO-TECHNISCHE
WERKSTÄTTEN GMBH

REF.NO	DESCRIPTION	VALUE		TYPE	MANUFACTURER	PART-NO
S600-S609	Push button			RS76M	RAFI	14061
S610-S643	Push-button			D6	ITT	143162
						.
D600-D643	Diode,Silicon			1N4148	ITT	17492
						.
R600-R608	Resista,Carbon	18E	5%	0207	Resista	17003
R608-R613	Resistor,Carbon	100E	5%	0207	Resista	17005
R614-R620	Resistor,Carbon	150E	5%	0207	Resista	17006
R621	Resistor,Carbon	150E	5%	0207	Resista	17006
R622	Resistor,Carbon	100E	5%	0207	Resista	17005
R623	Resistor,Carbon	150E	5%	0207	Resista	17006
						.
LED600, LED601	LED,yellow			HLMP 1719	Hewlett Packard	18533
LED602	LED,green			HLMP1790	Hewlett Packard	18530
LED603	LED,yellow			HLMP 1719	Hewlett Packard	18533
LED604	LED,red			HLMP 1700	Hewlett Packard	19402
LED605-LED608	LED,yellow			HLMP 1719	Hewlett Packard	18533
LED609-LED611	LED,yellow			HLMP 1719	Hewlett Packard	18533
LED610-LED618	LED,red			HLMP 1700	Hewlett Packard	19402
LED619-LED620	LED,yellow			HLMP 1719	Hewlett Packard	18533
LED621	LED,red			HLMP 1700	Hewlett Packard	19402
LED622	LED,yellow			HLMP 1719	Hewlett Packard	18533
LED623	LED,red			HLMP 1700	Hewlett Packard	19402

RADIO-TECHNISCHE WERKSTÄTTEN GMBH

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RTW
RADIO-TECHNISCHE
WERKSTÄTTEN GMBH

EC Declaration of Conformity Directive 89/336/EEC

We,

RTW GmbH
Elbeallee 19 · D-50765 Köln

declare under sole responsibility that the product:

DAT CONTROL DC-2/DC-3 above S/N: 1100

meet the intend of the Directive 89/336/EEC for Electromagnetic Compatibility. Compliance was demonstrated to the following specifications as listed in the official Journal of the European Communities:

EN 50081-1 Emissions (march 1993):	EN 55022 Radiated, Class B
	EN 55022 Conducted, Class B
EN 50082-1 Immunity (march 1993):	IEC 801-2
	IEC 801-3
	IEC 801-4

The declaration is based on test reports of following companies:

ELEKLUFT GmbH, Bonn, accredited EMC laboratory
RTW GmbH, Köln

Date and signature of the responsible person:

05.02.96 Hans F. Kühn