FOSTEX

Model UR-2 Supplementary manual
<for version 1.10>

With the software upgrade of the UR-2 to version 1.10, the following changes are made. See also the UR-2 owner's manual together with this supplement.

You can now record and play back an MP3 file.

Two recording modes -- Relay mode and Loop mode -- are newly added.

You can now perform seamless continuous recording between SD cards.

The procedure of file copy is changed.

You can now create a folder for storing audio files on a storage device using the unit.

You can now save and load a chain play list.

The digital scrub function while setting the chain play list is improved.

The name editing function using the keys on the panel of the unit is enhanced.
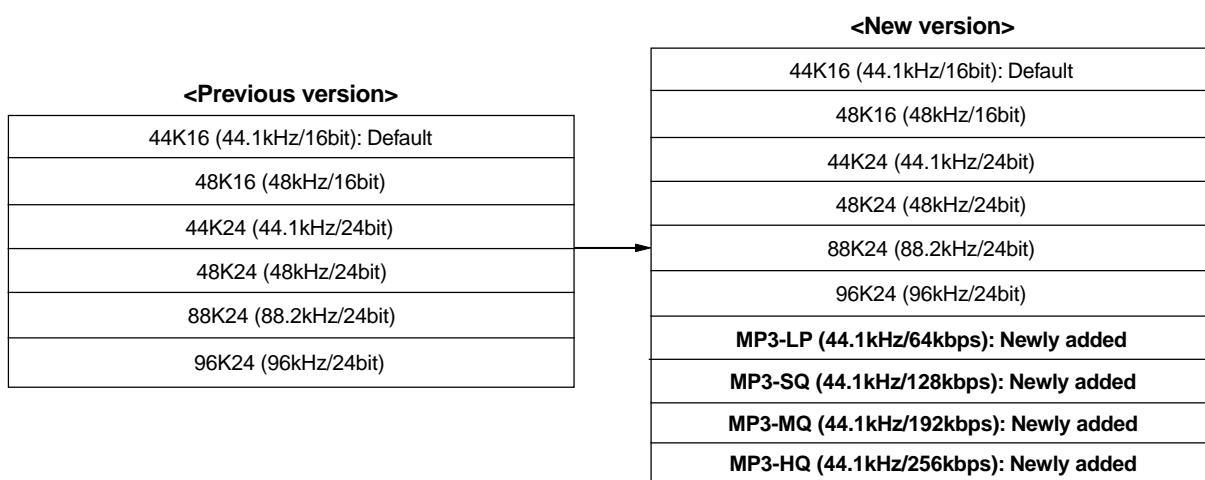
The RS232C commands are enhanced.

Contents

Recording/playback of MP3 files

With the new version, you can record and play back MP3 (compressed) files.
You can choose from following four types of MP3 modes using the "Record FS/bit" item in the SYSTEM SETUP menu of the MENU mode.

About MP3 (MPEG Layer-3)

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<Previous version>

44K16 (44.1kHz/16bit): Default
48K16 (48kHz/16bit)
44K24 (44.1kHz/24bit)
48K24 (48kHz/24bit)
88K24 (88.2kHz/24bit)
96K24 (96kHz/24bit)

<New version>

44K16 (44.1kHz/16bit): Default
48K16 (48kHz/16bit)
44K24 (44.1kHz/24bit)
48K24 (48kHz/24bit)
88K24 (88.2kHz/24bit)
96K24 (96kHz/24bit)
MP3-LP (44.1kHz/64kbps): Newly added
MP3-SQ (44.1kHz/128kbps): Newly added
MP3-MQ (44.1kHz/192kbps): Newly added
MP3-HQ (44.1kHz/256kbps): Newly added

* For details about the "Record FS/bit" menu item in the "SYSTEM SETUP" menu of the MENU mode, see page 74 of the owner's manual.

<Memo>: A name of an mp3 file has the "mp3" file extension.

<Note>: You cannot add an mp3 file to the play list for memory play. In other words, you cannot play back an mp3 file in memory play mode. For details about playback in memory play mode, see page 45 of the owner's manual.

Expanded recording modes

Two new recording modes -- Relay mode and Loop mode -- are now available in addition to the Normal mode.

Normal mode (default)	Recording stops when no available recording space is left on the current storage device.
Relay mode (newly added)	When no available recording space is left on the current storage device, the unit continues recording to the next storage device. This mode is available only when there is available recording space on the next storage device. If no recording space is available on every storage device, recording stops. **<Note>: This mode is available only when two SD cards are set to the SD-1 and SD-2 slots. It is not applicable to a USB memory. On the second SD card, only the BWFF folder is created.**
Loop mode (newly added)	As with the Relay mode above, when no available recording space is left on the current storage device, the unit continues recording to the next storage device. The difference from the Relay mode is that the unit performs overwrite recording while erasing old data in the Loop mode. Therefore, when two storage devices are set, recording semi-permanently continues until you manually stop recording. **<Note>: This mode is available only when two SD cards are set to the SD-1 and SD-2 slots. It is not applicable to a USB memory. On the second SD card, only the BWFF folder is created.**

<Note>: With version 1.10, when the current file size reaches the maximum file size (2G or 4G) during recording, the unit automatically creates a new file and performs recording to the new file continuously. (With the previous version, the unit stops when the current file size reaches the maximum file size.) This function is available only when you use a storage device that has the recordable space more than the maximum file size. When you use a storage device that has the recordable space less than the maximum file size, the unit stops when no available recording space is left (except in Relay and Loop modes).

When recording in MP3 mode, the unit automatically creates a new file when the time indication reaches 100 hours.

<Note>: When recording "high FS and high bit rate" audio in either Relay or Loop mode, the beginning of the audio of the next storage device may be slightly muted. In other words, you may hear a small gap when playing back audio files on two SD cards continuously.

(1) **While the unit is stopped, press the [ENTER] key to enter the MENU mode.**
When you first enter the MENU mode, the following screen is shown.

(2) **While "SYSTEM SETUP" is highlighted, press the [ENTER] key.**
The display now shows the menu items of the SYSTEM SETUP menu.

(3) **Use the [MENU] dial to highlight "Record mode" and press the [ENTER] key.**
The currently selected "Recording mode" flashes. By default, "Normal" is flashing.

Flashing

(4) **Use the [MENU] dial to highlight the desired recording mode and press the [ENTER] key.**
You can select from "Normal" (default), "Relay" and "Loop".

(5) **Press the [EXIT] key repeatedly or press the [STOP] key to exit the MENU mode.**

<Memo>: The following screens show how the record icon is shown on the display during recording in Relay mode and Loop mode.

<During recording in Normal mode>

<During recording in Relay mode>

<During recording in Loop mode>

Creating a folder for recorded audio files

When you first perform recording to a blank storage device, the unit automatically create the "BWFF" folder and recorded audio files are stored to this folder. With version 1.10, you can also additionally create a folder for storing audio files using the UR-2. You can give a desired name to the folder you created, which also can be edited later.

To create a folder or edit a folder name, use the "Make folder" or "Edit folder name" menu item in the "STORAGE UTILITY" menu of the MENU mode (see the following description).

Creating a new folder

In the following description, it is assumed that the "BWFF" folder is created on the current storage device (SD-1) and an audio file in this folder is loaded.
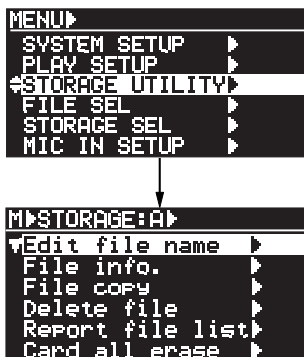
(1) **While the unit is stopped, press the [ENTER] key to enter the MENU mode.**
When you first enter the MENU mode, the following screen is shown.

```
MENU▶
▼SYSTEM SETUP     ▶
 PLAY SETUP       ▶
 STORAGE UTILITY▶
 FILE SEL         ▶
 STORAGE SEL      ▶
 MIC IN SETUP     ▶
```

(2) **Use the [MENU] dial to highlight "STORAGE UTILITY" and press the [ENTER] key.**
The display now shows the menu items of the STORAGE UTILITY menu.

```
MENU▶
 SYSTEM SETUP     ▶
 PLAY SETUP       ▶
⬦STORAGE UTILITY▶
 FILE SEL         ▶
 STORAGE SEL      ▶
 MIC IN SETUP     ▶
```

```
M▶STORAGE:A▶
▼Edit file name   ▶
 File info.       ▶
 File copy        ▶
 Delete file      ▶
 Report file list▶
 Card all erase   ▶
```

(3) **Use the [MENU] dial to highlight "Make folder" (newly added) and press the [ENTER] key.**
The display shows the screen for editing the name of the newly created folder.

```
M▶STORAGE:A▶
 Delete file      ▶
 Report file list▶
 Card all erase   ▶
 Vol.Label:[30012009]
⬦Make folder      ▶
 Edit folder name▶
```

```
M▶ST▶Make folder
    --MAKE FOLDER--
 Folder name=
 [30-01-2009SD█   ]
```

Flashing

(4) **Enter the desired folder name according to the following manners.**
You can give a folder name with up to 14 characters.

To move the cursor position left or right
Press the [I◀◀] or [▶▶I] key.

To select a desired alphanumeric character at the cursor position
Rotate the [MENU] dial.

To erase a character on the left of the cursor position
Press the [I◀◀] key while holding down the [SHIFT] key.

To insert a space at the cursor position
Press the [▶▶I] key while holding down the [SHIFT] key.

<Memo>: The unit gives a default folder name, which you can edit later, therefore, you do not have to edit it in this step. . See "Editing a folder name" on the next page.

(5) **After editing the folder name, press the [ENTER] key to confirm the name.**
The display returns to the Home screen that was shown before the unit entered the MENU mode.

Selecting a folder

When more than one folder (including a folder created from a personal computer) is available on the current storage device, you can select a folder for recording/playback.

In the following description, it is assumed that there are the "UR2_1" and "UR2_2" folders in addition to the "BWFF" folder on the current storage device.
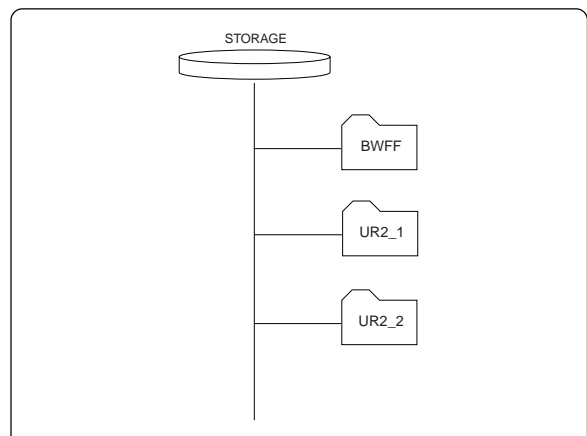
(1) Press the [SHIFT] key to turn on the SHIFT mode followed by the [FILE SEL/STRG SEL] key.
The display shows the screen for selecting a storage device.
In the screen example below, only an SD card is set to the "SD-1" slot.

```
      STORAGE SEL
   ---     ACT     ---
   ┌──┐   ┌──┐   ┌──┐
   │USB│  │SD1│  │SD2│
   │ C │  │ B │  │ B │
   └──┘   └──┘   └──┘
      Select card
```

(2) Press the [ENTER] key again.
The display now shows the screen for selecting a folder.

```
FOLDER SEL
[FOLDER NAME]
▼001 BWFF
  002 UR2_1
  003 UR2_2
```
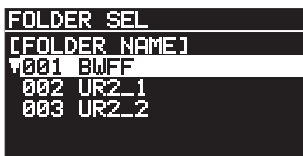
<Memo>: In the screen example above, "001 BWFF" is the BWFF folder created automatically when you perform recording with the storage device, while "002 UR2_1" and "003 UR2_2" are folders manually created.
Folders created from a personal computer are also shown ("004 PC-1" and "005 PC-2" in the example below).

```
FOLDER SEL
[FOLDER NAME]
▼001 BWFF
  002 UR2_1
  003 UR2_2
  004 PC-1
  005 PC-2
```
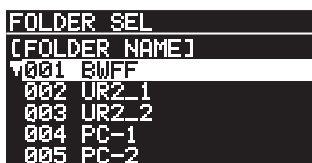
(3) Use the [MENU] dial to select a desired folder and press the [ENTER] key.
The display shows the Home screen for the first created audio file in the selected folder.

<Note>: *If no audio file exists in the selected folder, the display shows as below.*

```
 __ __ __ __ FILE
    h    m   s--f
A---
BWF 44/16 SINGLE
-60 40 30 20 12 8 6 4 2 0P
L
R
```
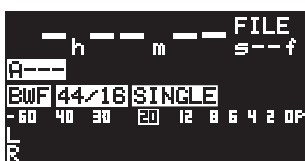
<Memo>: When more than one storage device is set to the unit and you want to select a desired folder that is not on the current storage device, execute the similar procedure as above.
You also need to select a folder when you edit a file name or delete an audio file.

<Memo>: To check the current folder, press the [FILE SEL] key while the Home screen is shown.

```
FILE SEL▶BWFF◀───     The current folder
[FO] [NAME]           is shown here.
◆001 Original_001.wav
 002 Original_002.wav
 003 Original_003.wav
 004 Original_004.wav
 005 Original_005.wav
```

Editing a folder name

You can edit a name of a folder in the current storage device.

<Note>: *To edit a name of a folder, the folder must be in the current storage device.*
Select a storage device and then select a folder before executing the following procedure.
Note that you can also edit a folder name from your personal computer.

(1) While the unit is stopped, press the [ENTER] key to enter the MENU mode.
When you first enter the MENU mode, the following screen is shown.

```
MENU▶
▼SYSTEM SETUP    ▶
 PLAY SETUP      ▶
 STORAGE UTILITY▶
 FILE SEL        ▶
 STORAGE SEL     ▶
 MIC IN SETUP    ▶
```

(2) Use the [MENU] dial to highlight "STORAGE UTILITY" and press the [ENTER] key.
The display now shows the menu items of the STORAGE UTILITY menu.

```
MENU▶
 SYSTEM SETUP    ▶
 PLAY SETUP      ▶
◆STORAGE UTILITY▶
 FILE SEL        ▶
 STORAGE SEL     ▶
 MIC IN SETUP    ▶
```

```
M▶STORAGE:A▶
▼Edit file name  ▶
 File info.      ▶
 File copy       ▶
 Delete file     ▶
 Report file list▶
 Card all erase  ▶
```
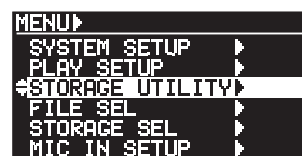
(3) Use the [MENU] dial to highlight "Edit folder name" (newly added) and press the [ENTER] key.
The display shows the screen for editing the folder name of the current folder.

```
M▶STORAGE:A▶
 Delete file     ▶
 Report file list▶
 Card all erase  ▶
 Vol.Label:[     ]
 Make folder     ▶
▲Edit folder name▶
```

```
M▶ST▶Edit folder
-EDIT FOLDER NAME-
Folder name=
[25-01-2009SD-1█ ]
```
                              Flashing

(4) Edit the folder name.
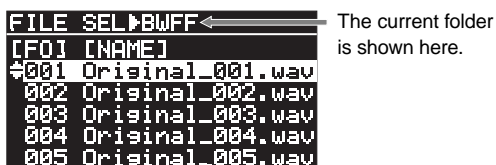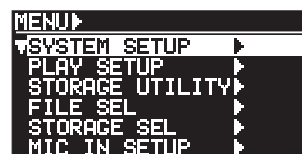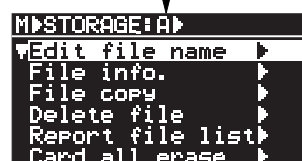See page 4 for details about how to edit a folder name.

(5) After editing the folder name, press the [ENTER] key to confirm the name.
The display returns to the Home screen that was shown before the unit entered the MENU mode.

New procedure for file copy

With the newly added folder creation capability described earlier, the procedure for file copy is partly changed. Follow the procedure described below for file copy with the new version. (The procedure for file copy with the previous version is described on page 84 of the owner's manual.)

The following shows the procedure for copying files from an SD card in the SD-1 slot to a USB memory.

> *<Note>: If more than one folder exists on the current storage device, select an appropriate folder that stores a file you want to copy before performing the following procedure. See "Selecting a folder" for details about how to select a folder.*

1) **While the unit is stopped, press the [ENTER] key to enter the MENU mode.**
When you first enter the MENU mode, the following screen is shown.

```
MENU▶
▼SYSTEM SETUP    ▶
 PLAY SETUP      ▶
 STORAGE UTILITY▶
 FILE SEL        ▶
 STORAGE SEL     ▶
 MIC IN SETUP    ▶
```

(2) **Use the [MENU] dial to highlight "STORAGE UTILITY" and press the [ENTER] key.**
The display now shows the menu items of the STORAGE UTILITY menu.

```
MENU▶
 SYSTEM SETUP    ▶
 PLAY SETUP      ▶
⬍STORAGE UTILITY▶
 FILE SEL        ▶
 STORAGE SEL     ▶
 MIC IN SETUP    ▶
```

```
M▶STORAGE:A▶
▼Edit file name   ▶
 File info.       ▶
 File copy        ▶
 Delete file      ▶
 Report file list▶
 Card all erase   ▶
```

(3) **Use the [MENU] dial to highlight "File copy" and press the [ENTER] key.**
The display shows the file list in the selected folder on the current storage device.

```
M▶STORAGE:A▶
 Edit file name   ▶
 File info.       ▶
⬍File copy        ▶
 Delete file      ▶
 Report file list▶
 Card all erase   ▶
```

```
M▶ST▶F COPY▶SD1>>>SD2
 [FN] [NAME]
▼<All Select>
  001 SCENE_001.wav
  002 SCENE_002.wav
  003 SCENE_003.wav
  004 SCENE_004.wav
```

(4) **Use the [MENU] dial to highlight a copy source file and press the [ENTER] key.**
A checkmark is added to the left of the selected file. By repeating this step, you can add checkmarks to multiple files.

> *<Memo>: Pressing the [I◀◀] key highlights the first entry in the list, while pressing the [▶▶I] key highlights the last entry in the list.*

> *<Memo>: By highlighting "<All Select>" at the top of the file list and pressing the [ENTER] key, you can add checkmarks to all the files. The screen changes as below.*
>
> ```
> M▶ST▶F COPY▶SD1>>>SD2
>  [FN] [NAME]
> ▼<All Select>
>   001 SCENE_001.wav
>   002 SCENE_002.wav
>   003 SCENE_003.wav
>   004 SCENE_004.wav
> ```
>
> ```
> M▶ST▶F COPY▶SD1>>>SD2
>  [FN] [NAME]
> ✓006 SCENE_006.wav
> ✓007 SCENE_007.wav
> ✓008 SCENE_008.wav
> ⬍Destination :SD2
>  [EXECUTE]:
> ```

> *<Note>: If you want to copy all files in the chain play list (CHAINLIST.CSV) or in the timer play list (TIMERLIST.CSV) created on the copy source storage device, it is recommended to select "<All Select>".*

(5) **Use the [MENU] dial to highlight "Destination" and press the [ENTER] key.**
You can now select the copy destination.

```
M▶ST▶F COPY▶SD1>>>SD2
 [FN] [NAME]
✓006 SCENE_006.wav
✓007 SCENE_007.wav
✓008 SCENE_008.wav
⬍Destination :SD2
 [EXECUTE]:
```

```
M▶ST▶F COPY▶SD1>>>SD2
 [FN] [NAME]
✓006 SCENE_006.wav
✓007 SCENE_007.wav
✓008 SCENE_008.wav
 Destination :SD2
 [EXECUTE]:
```

(6) **Use the [MENU] dial to select "USB" and press the [ENTER] key.**

```
M▶ST▶F COPY▶SD1>>>SD2
 [FN] [NAME]
✓006 SCENE_006.wav
✓007 SCENE_007.wav
✓008 SCENE_008.wav
 Destination :USB
 [EXECUTE]:
```

```
M▶ST▶F COPY▶SD1>>>USB
 [FN] [NAME]
✓006 SCENE_006.wav
✓007 SCENE_007.wav
✓008 SCENE_008.wav
⬍Destination :USB
 [EXECUTE]:
```

```
Error!
Destinaton
Over copy size
```

(7) Use the [MENU] dial to highlight "[EXECUTE]" and press the [ENTER] key.
The display shows the folder list in the destination storage device. (This folder list screen is newly added with version 1.10 software.)

```
M▶ST▶F COPY▶SD1>>>USB
-- Folder select --
▼001 BWFF
 002 UR-1
 003 UR-2
 004 UR-3
```

(8) Use the [MENU] dial to select the destination folder and press the [ENTER] key.
The unit starts file copy from the SD card in the SD1 slot to the USB memory.
After finishing file copy, the popup window as below appears and the unit stops access.

```
M▶ST▶F COPY
   SD1 >>>> USB
Finish time :12M05S
Remain size :  345MB
0        50      100%
```

```
M▶ST▶F COPY
   SD1  >>>> USB

   Completed!       MB
   Pls hit any keys
```

(9) Press any key to exit the MENU mode.

Saving/loading a chain play list

With the new version, you can save and load a chain play list that is created using the "CHAIN PLAY SET" menu of the MENU mode. In result, you can have more than one chain play list in a folder.

Saving a chain play list

The following shows how to save a chain play list.
It is assumed that a chain play list (named "CHAINLIST.CSV") has been created using the "CHAIN PLAY SET" menu.

For details about how to create a chain play list, see page 46 of the owner's manual.

(1) While the unit is stopped, press the [ENTER] key to enter the MENU mode.
When you first enter the MENU mode, the following screen is shown.

```
MENU▶
▼SYSTEM SETUP     ▶
 PLAY SETUP       ▶
 STORAGE UTILITY▶
 FILE SEL         ▶
 STORAGE SEL      ▶
 MIC IN SETUP     ▶
```

(2) Use the [MENU] dial to highlight "CHAIN LIST SAVE" and press the [ENTER] key.
The display now shows the screen for editing a name of the current chain play list.

```
MENU▶
 STORAGE SEL      ▶
 MIC IN SETUP     ▶
 CHAIN PLAY SET   ▶
 CHAIN LIST LOAD▶
⇔CHAIN LIST SAVE▶
 TIMER PLAY SET   ▶
```

```
MENU▶LIST SAVE
 Please hit file name
CHAINLIST.CSV copy to
 CHAINLIST[■       ].   —— Flashing
 CSV
```

(3) Enter the desired chain play list name.
Use the [◄◄] and [►►|] keys to move the editing (flashing) point and use the [MENU] dial to enter the desired alphanumeric character.

To erase a character on the left of the cursor position, press the [◄◄] key while holding down the [SHIFT] key.

To insert a space at the cursor position, press the [►►|] key while holding down the [SHIFT] key.

In the following screen example, "Chime1" is entered.

```
MENU▶LIST SAVE
 Please hit file name
CHAINLIST.CSV copy to
 CHAINLIST[Chime1  ].   —— Flashing
 CSV
```

(4) After entering the name, press the [ENTER] key.
The display now shows the confirmation screen for saving the chain play list.

```
MENU▶LIST SAVE
Please hit file name
CHAINLIST.CSV copy to
CHAINLIST[Chime█ ].
CSV
```

↓

```
MENU▶LIST SAVE


CHAINLIST[Chime1 ].
CSV
Are you sure?
 EXECUTE   EXIT
```

> *<Note>: If you want to change the name, press the [ENTER] key while "EXIT" is highlighted. The display returns to the previous screen for name entry.*

(5) Use the [MENU] dial or [|◀◀] key to highlight "EXECUTE" and press the [ENTER] key.
"COMPLETED!" is briefly shown and saving is completed. The display returns to the Home screen that was shown before the unit entered the MENU mode.

```
MENU▶LIST SAVE


CHAINLIST[Chime1 ].
CSV
Are you sure?
 EXECUTE   EXIT
```

↓

```
0h00m00FILE
        s00f
A001 Original_001.wav
BWF 48/24 SINGLE
-60 40 30 20 12 8 6 4 2 0P
L
R
```

> *<Note>: If a chain play list with the same name exists in the same folder, the following screen appears after you press the [ENTER] key.*
> *To overwrite the existing chain play list, highlight "EXECUTE" and press the [ENTER] key.*
> *If you do not want to overwrite the existing chain play list, press the [ENTER] key while "EXIT" is highlighted and rename the list name and save the list.*
>
> ```
> MENU▶LIST SAVE
> Same name already
> exist.(Over write)
> CHAINLIST[Chime1 ].
> CSV
> Are you sure?
>  EXECUTE   EXIT
> ```

> **<Memo>:** You can check the chain play lists you saved by executing steps (1) and (2) of the "Loading a chain play list" described below.

Loading a chain play list

You can load a chain play list you have saved.

> *<Note>: You can load any chain play list in the current folder.*

(1) While the unit is stopped, press the [ENTER] key to enter the MENU mode.
When you first enter the MENU mode, the following screen is shown.

```
MENU▶
▼SYSTEM SETUP      ▶
 PLAY SETUP        ▶
 STORAGE UTILITY▶
 FILE SEL          ▶
 STORAGE SEL       ▶
 MIC IN SETUP      ▶
```

(2) Use the [MENU] dial to highlight "CHAIN LIST LOAD" and press the [ENTER] key.
The display now shows the screen for selecting a chain play list. On the example screen below, only one chain play list is available.

```
MENU▶
 STORAGE SEL     ▶
 MIC IN SETUP    ▶
 CHAIN PLAY SET ▶
◆CHAIN LIST LOAD▶
 CHAIN LIST SAVE▶
 TIMER PLAY SET ▶
```

↓

```
MENU▶LIST LOAD
-Select chain list-
001 CHAINLISTChime1.
```

> **<Memo>:** On the example screen below, three chain play lists are saved in the current folder.
>
> ```
> MENU▶LIST LOAD
> -Select chain list-
> ▼001 CHAINLISTChime1.
>  002 CHAINLISTChime2.
>  003 CHAINLISTChime3.
> ```

(3) Use the [MENU] dial to select a desired chain play list to be loaded and press the [ENTER] key.
The display shows the warning message as below. To cancel loading, press the [ENTER] key while "EXIT" is highlighted.

```
MENU▶LIST LOAD
   --CAUTION--
 If you load chain li
-st file,current list
 file is overwritten!
   Are you sure?
 EXECUTE    EXIT
```

(4) Use the [MENU] dial or [◀◀] key to highlight "EXECUTE" and press the [ENTER] key.
"COMPLETED!" is briefly shown and loading is completed.
The display returns to the Home screen that was shown before the unit entered the MENU mode.

Other enhanced functions

In addition to the changed/enhanced functions described earlier, the following functions are enhanced with the new version.

Enhanced digital scrub function while setting a chain play list

When you fine-adjust the start or end time of a file in the chain play list (see page 49 of the owner's manual for details), the digital scrub function is now enhanced with the new version, as described below.

(1) **By pressing the [PLAY] key while the display shows the scrub screen, you can preview audio of first 1.5 seconds from the start point (or last 1.5 seconds to the end point).**

(2) **Each time you press the [◀◀] key while the display shows the scrub screen, the waveform is zoomed in to x2, x4, x8 and x16. Each time you press the [▶▶|] key while the display shows the scrub screen, the waveform is zoomed out.**

<Note>: With the function enhancement (2) above, you now cannot use the [◀◀] and [▶▶|] keys for digital scrubbing forward or backward. Use the [MENU] dial to scrub forward or backward.

Backspace and insert in name entry

When you enter a name (file name, etc.) in the MENU mode, you can now delete or insert a character from the unit (with the previous version, you can delete or insert a character only from a USB keyboard).

Though the operation methods for deleting and inserting a character are described on page 4 in this supplement, see also below.

The following operation examples show how to edit a file name on the file name editing screen of the "Edit file name" menu item in the "SYSTEM SETUP" menu of the MENU mode.

Cursor position (flashing)

To move the cursor position left or right
Press the [◀◀] or [▶▶|] key.
To select a desired alphanumeric character at the cursor position
Rotate the [MENU] dial.
To erase a character on the left of the cursor position
Press the [◀◀] key while holding down the [SHIFT] key.
To insert a space at the cursor position
Press the [▶▶|] key while holding down the [SHIFT] key.

(Example 1)
Press the [◀◀] key while holding down the [SHIFT] key.
The character on the left of the cursor position is deleted.
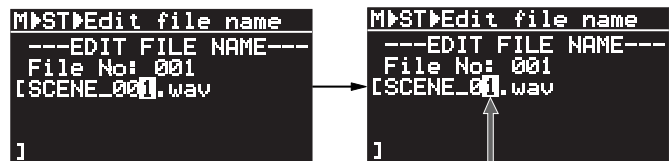
Cursor position (flashing)

(Example 2)
Press the [▶▶|] key while holding down the [SHIFT] key.
A space is inserted at the cursor position.

Cursor position (flashing)

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Several RS232C commands are newly added. With the new version, the UR-2 complies with the following RS232C commands. See page 63 of the owner's manual for details about controlling the unit from a personal computer via RS232C control commands.

<Transport controls>

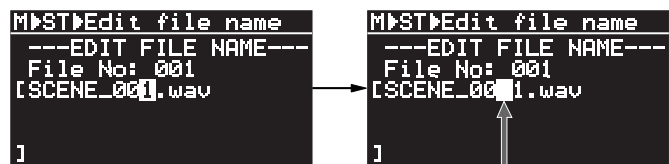|	STX	1	2	3	4	5	6	7	8	9	10	11	12	CHK	CHK	ETX	STX	1	2	3	4	5	6	7	8	9	10	11	12	CHK	CHK	ETX
				ASCII (a space is just a blank space)																	HEX											
REC		c	R	E	C									3	D		02	63	52	45	43	20	20	20	20	20	20	20	20	33	44	03
STOP		c	S	T	P									5	A		02	63	53	54	50	20	20	20	20	20	20	20	20	35	41	03
PLAY		c	P	L	Y									5	8		02	63	50	4C	59	20	20	20	20	20	20	20	20	35	38	03
REW		c	R	E	W									5	1		02	63	52	45	57	20	20	20	20	20	20	20	20	35	31	03
FFWD		c	F	W	D									4	4		02	63	46	57	44	20	20	20	20	20	20	20	20	35	34	03
SKIP<<		c	S	K	+									2	C		02	63	53	4B	2B	20	20	20	20	20	20	20	20	34	43	03
SKIP>>		c	S	K	-									2	E		02	63	53	4B	2D	20	20	20	20	20	20	20	20	32	45	03
ABS 0		c	A	B	O									1	6		02	63	41	42	30	20	20	20	20	20	20	20	20	31	36	03
REC END		c	R	E	D									3	E		02	63	52	45	44	20	20	20	20	20	20	20	20	33	45	03
LOAD FILE		c	L	D	F	X	X	X						X	X		02	63	4C	44	46	x	x	x	20	20	20	20	20	x	x	03
LOCATE		c	L	O	C	H	H	M	M	S	S	F	F	X	X		02	63	4C	4F	43	h	h	m	m	s	s	f	f	x	x	03

<Numeric keys>

	STX	1	2	3	4	5	6	7	8	9	10	11	12	CHK	CHK	ETX	STX	1	2	3	4	5	6	7	8	9	10	11	12	CHK	CHK	ETX
				ASCII (a space is just a blank space)																	HEX											
0		c	K	Y	0									3	7		02	63	4B	59	30	20	20	20	20	20	20	20	20	33	37	03
1		c	K	Y	1									3	8		02	63	4B	59	31	20	20	20	20	20	20	20	20	33	38	03
2		c	K	Y	2									3	9		02	63	4B	59	32	20	20	20	20	20	20	20	20	33	39	03
3		c	K	Y	3									3	A		02	63	4B	59	33	20	20	20	20	20	20	20	20	33	41	03
4		c	K	Y	4									3	B		02	63	4B	59	34	20	20	20	20	20	20	20	20	33	42	03
5		c	K	Y	5									3	C		02	63	4B	59	35	20	20	20	20	20	20	20	20	33	43	03
6		c	K	Y	6									3	D		02	63	4B	59	36	20	20	20	20	20	20	20	20	33	44	03
7		c	K	Y	7									3	E		02	63	4B	59	37	20	20	20	20	20	20	20	20	33	45	03
8		c	K	Y	8									3	F		02	63	4B	59	38	20	20	20	20	20	20	20	20	33	46	03
9		c	K	Y	9									4	0		02	63	4B	59	39	20	20	20	20	20	20	20	20	34	30	03
10+		c	K	0	+									0	9		02	63	4B	30	2B	20	20	20	20	20	20	20	20	30	39	03

<Receipt response>

	STX	1	2	3	4	5	6	7	8	9	10	11	12	CHK	CHK	ETX	STX	1	2	3	4	5	6	7	8	9	10	11	12	CHK	CHK	ETX
				ASCII (a space is just a blank space)																	HEX											
Correct receipt		r	S	T	P									6	9		02	72	53	54	50	20	20	20	20	20	20	20	20	35	39	03
Not remotable		s	R	N	G									5	A		02	73	52	4E	47	20	20	20	20	20	20	20	20	35	41	03
Error		r	E	R	R									5	B		02	72	45	52	52	20	20	20	20	20	20	20	20	35	42	03
Error (BUSY)		r	B	G	Y									5	4		02	72	42	47	59	20	20	20	20	20	20	20	20	35	34	03

<Mode setting>

	STX	1	2	3	4	5	6	7	8	9	10	11	12	CHK	CHK	ETX	STX	1	2	3	4	5	6	7	8	9	10	11	12	CHK	CHK	ETX
				ASCII (a space is just a blank space)																	HEX											
REC RDY ON		c	R	D	Y	O	N							A	F		02	63	52	44	59	4F	4E	20	20	20	20	20	20	41	46	03
REC RDY OFF		c	R	D	Y	O	F	F						C	D		02	63	52	44	59	4F	46	46	20	20	20	20	20	39	43	44

<Status request and response>

	STX	1	2	3	4	5	6	7	8	9	10	11	12	CHK	CHK	ETX	STX	1	2	3	4	5	6	7	8	9	10	11	12	CHK	CHK	ETX
				ASCII (a space is just a blank space)																	HEX											
FILE STATUS		s	F	I	L									4	E		02	73	46	49	4C	20	20	20	20	20	20	20	20	34	45	03
Response		r	N	N	N	(FILE NAME MAX 8CHAR)								X	X		02	72	n	n	n	(file name max 8char.)								x	x	
FILE TIME		s	F	T	M									5	A		02	73	46	54	4D	20	20	20	20	20	20	20	20	35	41	03
Response		r	F	T	M	H	H	M	M	S	S	F	F	X	X		02	72	46	54	4D	h	h	m	m	s	s	f	f	x	x	03
DISK REMAIN TIME		s	D	R	M									4	4		02	73	44	52	4D	20	20	20	20	20	20	20	20	35	36	03
Response		r	D	R	M	H	H	H	H	M	M	S	S	X	X		02	72	44	52	4D	h	h	h	h	m	m	s	s	x	x	03

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