

## Digital Recording Console 02R Options

There are a number of options you can add to your Digital Recording Console 02R. Some of these options add to the convenience and appearance of the 02R, such as the peak meter bridge (MB02) or the wooden side panels (W02SP). There is also a memory expansion kit (ME4M) which allows you to add up to 2 MB of additional memory for the automation system.

The most important options are the I/O cards.

These cards support direct digital interconnection to the latest generation of modular digital multitrack recorders. Alesis ADAT, TASCAM TDIF-1, YAMAHA, and AES/EBU cards are available.

In addition, you can insert a Digital Cascade card into one of the I/O slots, allowing you to cascade multiple 02Rs together to create a larger digital mixing system.

An analog card is also available to allow you to connect to an analog multitrack recorder.

### 02R Options

Type	Product	Format
Analog I/O Card	CD8-AD	AD/DA
	CD8-AE	AES/EBU
Digital I/O Card	CD8-AE-S	AES/EBU
	CD8-AT	ADAT
	CD8-TDII	TDIF-1
	CD8-Y	YAMAHA
	CD8-CS	
Digital Cascade Kit	CD8-CS	
Peak Meter Bridge	MB02	
Memory Expansion Kit	ME4M	
Wooden Side Panels	W02SP	

### I/O Cards

The I/O cards transmit and receive signals between your 02R and external devices, such as modular digital multitrack recorders, hard disk recorders, analog multitrack recorders, or other 02R's. The cards come in two sizes (form factors), single slot and double slot:

- Single slot I/O cards can be installed in any slot from 1 through 4.
- Double slot I/O cards can only be installed in slots 1 or 2.

The I/O cards fall into three groups:

- **Digital I/O Cards** – These cards provide 8 tracks of digital input and output. They are used to connect the 02R to a digital multitrack recorder – either tape or disk based. Cards supporting ADAT, TDIF-1, YAMAHA, and AES/EBU formats are available. Except for the CD8-AE card, these cards are single slot, allowing you to insert up to four cards giving you a maximum 32 tracks of digital mixdown.
- **Analog I/O Card** – This card provides 8 tracks of analog input and output. It can be used to connect the 02R to an analog multitrack recorder or to expand the analog inputs and outputs of the mixer. Conversion is performed in 20-bit linear. The sampling frequency is the same as the current wordclock master on the 02R.
- **Cascade I/O Card** – This card allows you to connect the bus lines 1 through 8, two pairs of the auxiliary buses 1 through 8 to the cascade card's AUX A and AUX B buses, the STEREO bus, and the SOLO bus of two or more 02R's. One 02R is the cascade master, the others are slaves.

The following table lists the I/O cards available:

Card	Format	Product	Size & Location
<b>Digital I/O</b>	AES/EBU	CD8-AE	double – slots 1 or 2 (max 2 cards – 16 ch)
		CD8-AE-S	single – all slots 1 through 4 (max 4 cards – 32 ch)
	ADAT	CD8-AT	single – all slots 1 through 4 (max 4 cards – 32 ch)
	TDIF-1	CD8-TDII	single – all slots 1 through 4 (max 4 cards – 32 ch)
	YAMAHA	CD8-Y	single – all slots 1 through 4 (max 4 cards – 32 ch)
<b>Analog I/O</b>	AD/DA	CD8-AD	double – slots 1 or 2 (max 2 cards – 16 ch)
<b>Cascade Kit</b>		CD8-CS	single – kit incl. 2 cards & connecting cable. slots 1 through 4 (normally 3 or 4)

## Peak Meter Bridge

The Peak Meter Bridge (MB02) displays the levels for all the input, output, and bus channels of the 02R, plus it duplicates the stereo output signal levels. The meter bridge duplicates the information shown in the METER display function in a much more convenient form.

### Memory Expansion Kit

The memory expansion kit (ME4M) expands the 02R automation system memory from the standard 512 Kbytes to either 1.5 Mbytes or 2.5 Mbytes.

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**Note:** *You cannot install the Memory Expansion Kit ME4M without invalidating the warranty. Take your 02R to your YAMAHA dealer or authorized service centre for installation of the ME4M kit.*

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### Wooden Side Panels

These Wooden Side Panels (W02SP) attach to either side of the 02R to give it an attractive appearance.

## Installing 02R Options

### Single Slot Cards

1. Turn OFF the power to the 02R by pressing the POWER switch on the back panel.

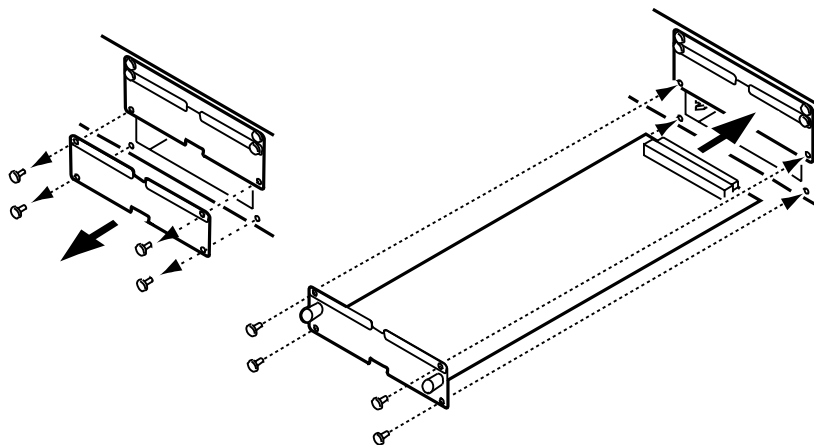
**TO PREVENT ELECTRICAL SHOCK, ENSURE THE 02R IS POWERED OFF BEFORE YOU OPEN ANY OF THE OPTIONAL SLOT COVERS!**

**Note:** Before you install a card in the 02R, be certain to turn the power off. Not only do you risk electrical shock, you can also damage either the 02R or the optional card. You will also invalidate any warranties for the Digital Recording Console 02R or the optional cards.

2. Remove the cover plate from the slot in which you intend to insert the optional card.

**Note:** You should save the cover plates for possible later use. You should also never operate the 02R with one of the slots uncovered. This disrupts the flow of air through the power supply and other components and can cause premature failure of internal components.

3. Insert the optional card as shown in the diagram:



When you insert the card, press it firmly into the slot to make certain the connector on the card edge seats firmly on the bus slot inside the 02R. Make sure the card is properly secured with the screws that held the cover plate in place.

4. Turn ON the power to the 02R.

Verify that the card has been recognized by the system software by pressing the [DIGITAL I/O] button until the "Word Clock Select" screen appears (see "Word Clock Select" on page 154 of the *User's Guide*). If the card was installed properly, the system software should correctly identify it in the appropriate slot.

## Double Slot Cards

1. Turn OFF the power to the 02R by pressing the POWER switch on the back panel.

**TO PREVENT ELECTRICAL SHOCK, ENSURE THE 02R IS POWERED OFF BEFORE YOU OPEN ANY OF THE OPTIONAL SLOT COVERS!**

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**Note:** Before you install a card in the 02R, be certain to turn the power off. Not only do you risk electrical shock, you can also damage either the 02R or the optional card. You will also invalidate any warranties for the Digital Recording Console 02R or the optional cards.

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2. Remove the cover plate from the slot in which you intend to insert the optional card as well as the slot over top

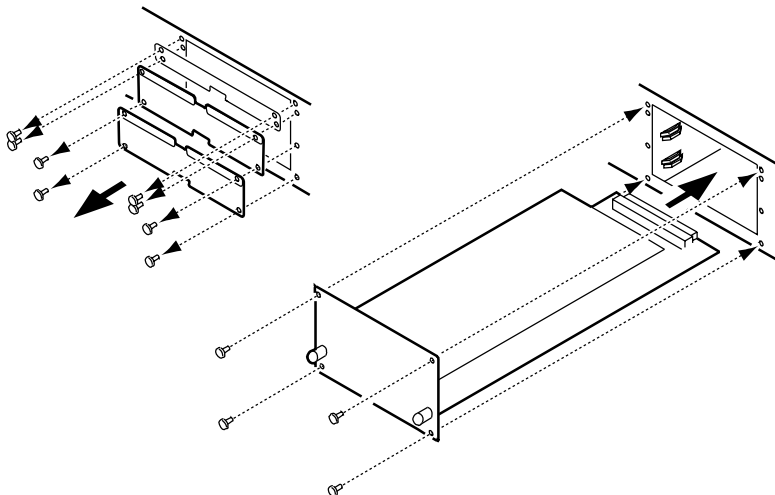
The double slot cards can only be installed in SLOT1 and/or SLOT2.

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**Note:** You should save the cover plates for possible later use. You should also never operate the 02R with one of the slots uncovered. This disrupts the flow of air through the power supply and other components and can cause premature failure of internal components.

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3. Insert the optional card as shown in the diagram:



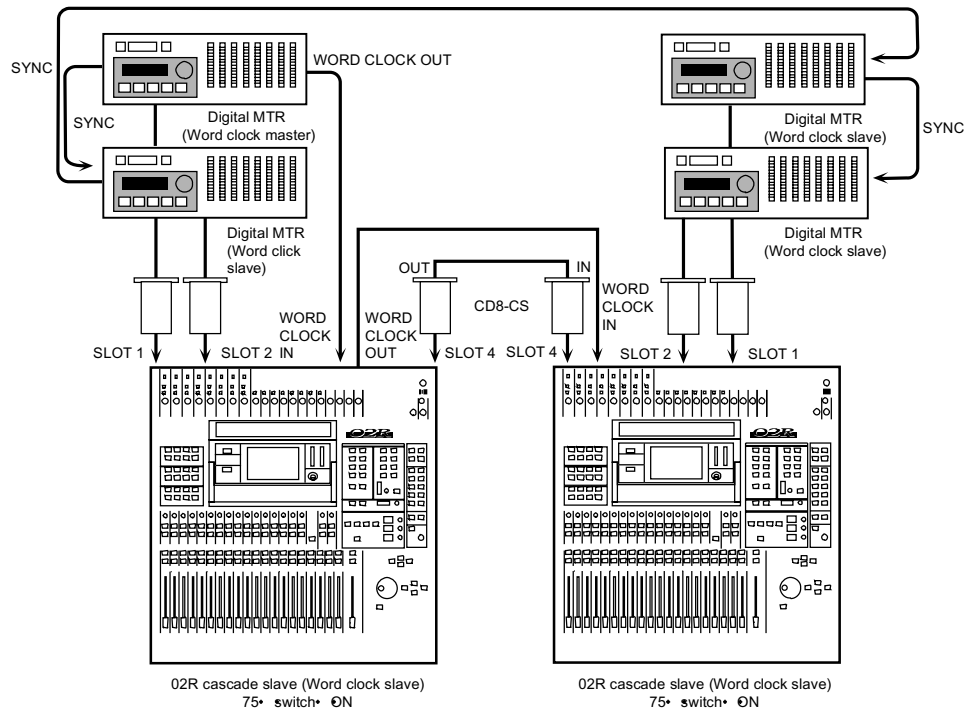
When you insert the card, press it firmly into the slot to make certain the connector on the card edge seats firmly on the bus slot inside the 02R. Make sure the card is properly secured with the screws that held the cover plate in place.

4. Turn ON the power to the 02R.

Verify that the card has been recognized by the system software by pressing the [DIGITAL I/O] button until the "Word Clock Select" screen appears. If the card was installed properly, the system software should correctly identify it in the appropriate slot.

## Digital Cascade Kit (CD8-CS)

The digital cascade kit (CD8-CS) is used to connect two or more Digital Recording Console 02R units together. The kit consists of two cascade I/O cards and a special cable. When two or more 02R units are connected together, they share the output buses 1 through 8, four auxiliary buses (two paired buses, AUX A and AUX B), the stereo bus, and the solo bus.



### Installing the CD8-CS

The cascade I/O card (CD8-CS) is a single slot card. At least one cascade I/O card should be installed in each 02R. If you are connecting more than two units, the middle units should have two cards. The cascade I/O cards should be installed in SLOT3 or SLOT4. You should reserve SLOT1 and SLOT2 for digital I/O cards.

For installation instructions, see “Single Slot Cards” on page 175 of the *User’s Guide*.

1. Set the IN/OUT switch of the cascade I/O card installed in the first 02R to the IN position.

This unit will be the cascade master.

2. Set the IN/OUT switch of the cascade I/O card installed in the second 02R to the OUT position.

This unit will be the cascade slave.

3. Use a BNC cable to plug the WORD CLOCK – OUT connector on the back of the first 02R into the WORD CLOCK – IN connector on the second 02R.

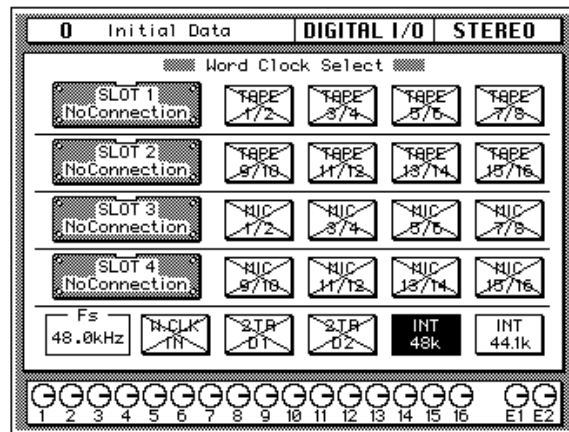
The 02R that is the cascade master should be receiving a wordclock signal from a wordclock master device, such as a modular digital multitrack recorder or other appropriate device.

## Wordclock Selection

1. Power on your modular digital multitrack recorder and then the 02R units in order, starting with the cascade master.

It is always important to observe the correct order for powering up equipment in a studio. Start with the multitrack and mastering recorders and the signal processors, then the 02R, and finally the monitoring amplifiers and other downstream gear.

2. On the 02R cascade slave, press the (DIGITAL I/O) button until the “Word Clock Select” screen appears.



If the cascade I/O card was installed properly, the system software should correctly identify it in the appropriate slot.

3. Use the CURSOR buttons to select the wordclock source.

Select the W.CLK IN box and press the [ENTER] button.

**Note:** If the W.CLK IN box is not showing a proper wordclock input (no discrepancy between the input and selected wordclock frequencies), check the connections between the 02R units.

4. On the 02R cascade master, press the (DIGITAL I/O) button until the “Word Clock Select” screen appears.

If the cascade I/O card was installed properly, the system software should correctly identify it in the appropriate slot. A digital I/O card should be installed in SLOT1 or SLOT2 in order to access the direct out lines.

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**5. Use the CURSOR buttons to select the wordclock source.**

If your multitrack digital recorder has a dedicated wordclock output connector, use the CURSOR buttons to select the W.CLK IN box and press the [ENTER] button. Otherwise, select a box from the appropriate I/O slot row and press the [ENTER] button.

**6. When you select the wordclock source, the corresponding icon should be inverted in reverse video.**

See “Word Clock Select” on page 154 of the *User’s Guide* for further details.

## Cascade Settings

**1. On the 02R cascade master, press the (DIGITAL I/O) button until the “Cascade Configuration” screen appears.****2. Select the “ID” field with the CURSOR buttons and rotate the encoder wheel until the appropriate value is set.**

The cascade master should have the highest ID number in the system. If you have four 02R units cascaded together, the cascade master should be set to ID=3.

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**Note:** *If you connect more than four 02R units together, you will have to adjust the delay to compensate for signal processing time. See “Delay and Cascade” on page 34 of the User’s Guide.*

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**3. On the 02R cascade slave, press the (DIGITAL I/O) button until the “Cascade Configuration” screen appears.**

If the cascade slave and cascade master units are powered on and connected correctly, the ID number for the cascade slave is set to the appropriate value automatically.

**4. Use the CURSOR buttons to select the “Cascade Aux Bus Assign” field.**

Use the CURSOR buttons to select two pairs of auxiliary buses from the cascade slave to send to the cascade master AUX A and AUX B buses.

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**Note:** *It is not possible to send the same pair of auxiliary buses from the cascade slave to both AUX A and AUX B on the cascade master.*

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See “Cascade Configuration” on page 157 of the *User’s Guide* for further details.

## Solo function

When two or more 02R units are cascaded together, only the [SOLO] button on the cascade master continues to function. When you press the [SOLO] button on the cascade master, however, you can solo individual channels on the cascade slave units.

1. **On the 02R cascade master, press the (SETUP) button until the “Solo” screen appears.**
2. **Select the “Mode” field with the CURSOR buttons to set the solo function status.**

You can only set this status on the cascade master.

See “Solo” on page 160 of the *User’s Guide* for further details.

3. **On the 02R cascade master, press the (SOLO) button.**

The LEDs inset in the [ON] buttons of all the cascaded 02R units will flash.

4. **Press the (ON) button of the channel (or channels) that you want to solo.**

During recording, the channel signal will be sent to the SOLO bus on the cascade master. You can monitor the signal using the monitor system connected to the cascade master 02R.

At mixdown, the signal will be sent to the STEREO bus.