

Word Clock Select

1. Use the (DIGITAL I/O) button to locate the DIGITAL I/O 1/5 page.



Note: *The 02R always recalls the last page visited even after you turn the power off and back on again.*

2. Use the CURSOR buttons to select a wordclock source and press the (ENTER) button.

The 02R processes audio data at 44.1 kHz or 48 kHz using its internal clock, and can run at any frequency from 32 kHz -6% to 48 kHz $+6\%$ when an external wordclock is applied.

Wordclock

When you connect a number of digital audio devices together, all the devices should synchronize to one device—the wordclock master. The wordclock master generates a sync pulse which allows the other devices connected to it to determine where the start of each digital word is. Although most digital interconnect protocols are self-clocking, it is more reliable to use a dedicated line for your wordclock signal. This is especially important in a multitrack environment where up to eight channels of digital data may be multiplexed on one cable.

When you are using a digital device—such as a DAT mastering recorder or a modular digital multitrack recorder—connected to the 02R, all the digital devices in the system, including the 02R, should synchronize the wordclock being supplied by one master device. If any device does not synchronize to the system wordclock, dropout and/or other noise may occur.

In Section 14, “Installing Options” on page 217 of the *User’s Guide*, there are examples of connecting external digital devices to the 02R and setting the appropriate wordclock selection. Refer to this section for details for each of the optional digital I/O cards.

Note: *Wordclock is not required if you use the analog I/O card (CD8-AD) to connect to an analog multitrack recorder.*

Shown below is the DIGITAL I/O 1/5 page—Word Clock Select.

0	Initial Data	DIGITAL I/O 1/5				TAPE 16
Word Clock Select						
SLOT 1	NoConnection	TAPE 1/2	TAPE 3/4	TAPE 5/6	TAPE 7/8	
SLOT 2	NoConnection	TAPE 9/10	TAPE 11/12	TAPE 13/14	TAPE 15/16	
SLOT 3	NoConnection	MIC 1/2	MIC 3/4	MIC 5/6	MIC 7/8	
SLOT 4	NoConnection	MIC 9/10	MIC 11/12	MIC 13/14	MIC 15/16	
Fs	48.0kHz	W-CLK IN	STR 01	STR 02	INT 48k	INT 44.1k

The left side of the display is a list of the cards in the four option slots of the 02R. The indication varies depending on the type of optional card being used:

- Cascade (CD8-CS)
- ADAT (CD8-AT)
- TDIF-1 (CD8-TDII)
- AES/EBU (CD8-AE/CD8-AE-S)
- YAMAHA (CD8-Y)
- Analog AD/DA (CD8-AD)
- Analog A/D (CD8-AD-S)
- No Connection

Beside each optional slot indicator is a row of four boxes defining the connections to the card inserted in the corresponding slot.

Note: *When a cascade card is inserted in any slot, the boxes defining the connections are still displayed. However, you cannot select any of these items.*

Across the bottom of the display are boxes for the external wordclock (W.CLK IN), the digital inputs (2TR D1 and 2TR D2), and the internal wordclock (INT 48k and INT 44.1k). To the left of the boxes are the wordclock indicators.

There is also an indicator—inside the “Fs” box—that shows the current wordclock frequency or status.

Wordclock indicators



No wordclock input.



Wordclock input. However, the input wordclock frequency is different from that of the selected wordclock.



Wordclock input. No discrepancy between the input and selected wordclock frequencies.



Wordclock input is selected. The 02R is synchronized to the input wordclock frequency.



The wordclock input is selected, but the wordclock signal is inappropriate.



Input Signal Select

1. Use the (DIGITAL I/O) button to locate the DIGITAL I/O 2/5 page.

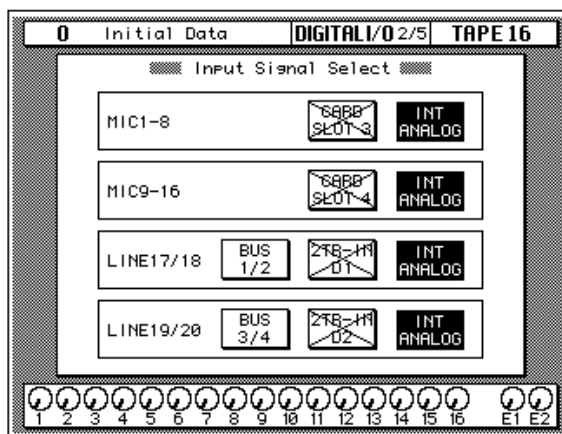


2. Use the CURSOR buttons to select the desired icons. Change the setting by pressing the (ENTER) button.

Note: *If there is no digital I/O card or signal present when you select a digital input, the default analog selection will not be changed.*

The 02R has 24 built-in analog input connectors; the individual input channels (MIC/LINE 1 through 16) and the stereo input channels (LINE 17/18 through 23/24). You can route two of the 2-track digital inputs to the stereo input channels (2TR IN D1 to LINE 17/18 and 2TR IN D2 to LINE 19/20). You can also convert the individual input channels (MIC/LINE 1 through 16) to tape return channels, allowing you to perform 32-track mixdowns with the 02R.

Shown below is the DIGITAL I/O 2/5 page—Input Signal Select.



There are four boxes on this page.

The first box is for MIC 1-8 (MIC/LINE 1 through 8). You can select “CARD SLOT 3” or “INT ANALOG” (the default). If there is no digital I/O card in slot 3, the selection will fail.

The second box is for MIC 9-16 (MIC/LINE 9 through 16). You can select “CARD SLOT 4” or “INT ANALOG” (the default). If there is no digital I/O card in slot 4, the selection will fail.

The third box is for LINE 17/18. You can select “BUS 1/2”, “2TR-IN D1”, or “INT ANALOG” (the default). If there is no digital signal (no wordclock present) at the 2TR IN DIGITAL connector #1, the selection will fail.

The fourth box is for LINE 19/20. You can select “BUS 3/4”, “2TR-IN D2”, or “INT ANALOG” (the default). If there is no digital signal (no wordclock present) at the 2TR IN DIGITAL connector #2, the selection will fail.

Note: *You cannot select 2TR-IN D1 or 2TR-IN D2 for digital input/output if the corresponding switch (2TR-D1 or 2TR-D2) for either connector has been selected with the CONTROL ROOM monitor switches.*

Cascade Configuration

1. Use the (DIGITAL I/O) button to locate the DIGITAL I/O 5/5 page.



2. Use the CURSOR buttons to specify which of the internal auxiliary buses the cascade AUX A and AUX B buses will be assigned to.

Press the (ENTER) button to make the selection.

3. Select the "ID" option with the CURSOR buttons and rotate the encoder wheel to specify the cascade ID number.

4. Use the CURSOR buttons to select the cascade input attenuator icons.

Rotate the encoder wheel to change the attenuation level.

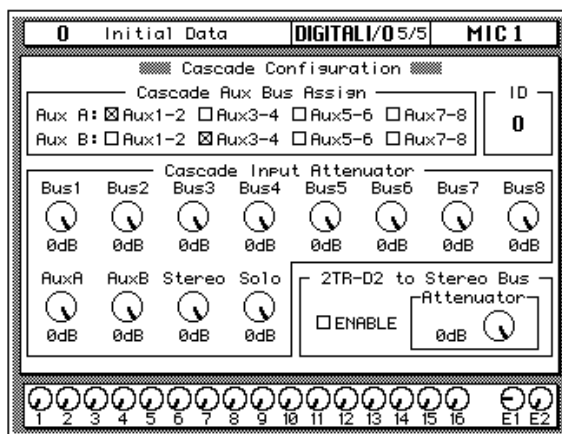
5. Select the "2TR-D2 to Stereo Bus" option with the CURSOR buttons and press the (ENTER) button to ENABLE.

Rotate the encoder wheel to change the attenuation level.

Just like the modular digital multitrack recorders it is intended to work with, the 02R was designed to be easily expandable from a basic 16-track (40 input) system up to a 64-track (160 input) system. It uses Cascade Digital I/O card kits (CD8-CS) to accomplish this.

For installation details, see Section 14, "Installing Options" on page 217 of the *User's Guide*, specifically "Digital Cascade Kit (CD8-CS)" on page 229.

Shown below is the DIGITAL I/O 5/5 page—Cascade Configuration.



Cascade Aux Bus Assign

The Cascade Digital I/O card kit (CD8-CS) has two paired auxiliary buses: AUX A and AUX B. You can assign these buses to any pair of the 02R's internal auxiliary buses—but not to the same pairs.

If a cascade card is not inserted in the 02R, this display is grayed-out.

ID

The ID value specifies the order in the cascade of this 02R. The first slave unit is assigned 0 (zero). The cascade master is assigned the highest ID value (maximum 3). You can select from 0 to 3 as the unit ID.

You can only set this item when a cascade card is inserted in the 02R and set to IN. When the page is grayed-out, the ID is automatically set to 0.

Cascade Input Attenuator

These icons allow you to set the input level of each bus line that is being input into the 02R. You can set the levels for the internal buses 1 through 8, the cascade auxiliary buses (AUX A and AUX B), the stereo bus, and the solo bus.

You can only set this item when a cascade card is inserted in the 02R and set to IN.

2TR-D2 to Stereo Bus

This option allows you to route the 2TR-D2 digital input connector to the stereo bus. You also can set the attenuation level.

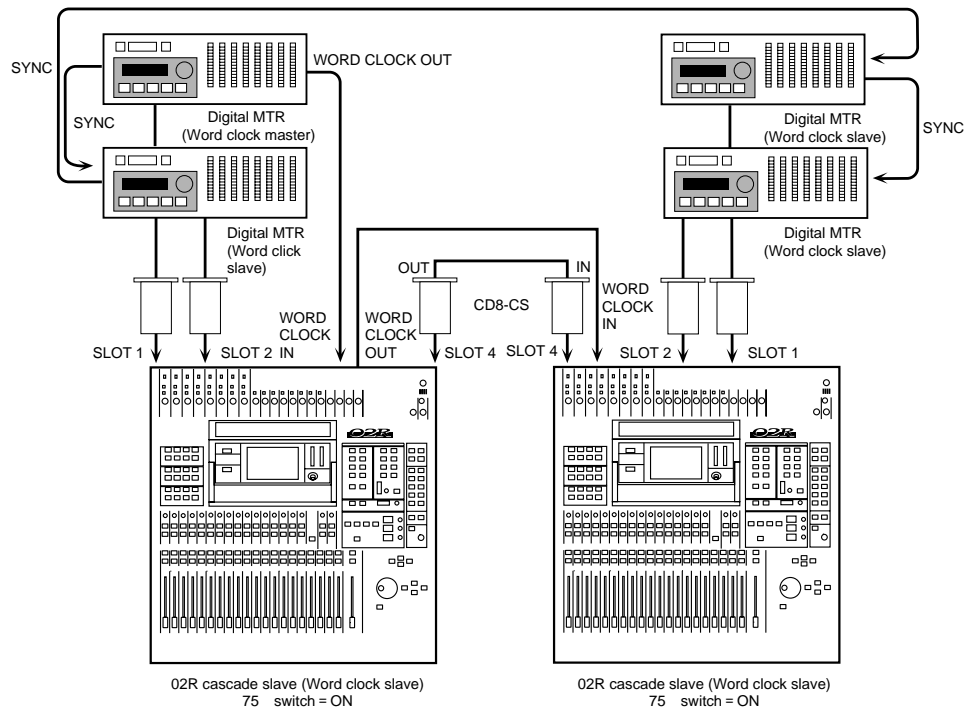
Note: *The device plugged into the 2TR-D2 digital input connector must be synchronized to the system wordclock to prevent dropout and/or other noise. You cannot assign the 2TR-D2 to the stereo bus if the corresponding switch (2TR-D2) has been selected with the CONTROL ROOM monitor switches. Select another monitor source before you try to assign this signal to the stereo bus.*

Custom Cascade

The cascade system was designed to be able to connect four 02R's together, but in fact you can actually add even more units if you want. The cascade digital I/O cards were designed to compensate for the signal delay of connecting up to four units together. If you add more units, you will have to compensate for the signal delay with the DELAY display function. See "Delay and Cascade" on page 34 of the *User's Guide* for more details.

Digital Cascade Kit (CD8-CS)

The digital cascade kit (CD8-CS) is used to connect two or more 02Rs together. The kit consists of two cascade I/O cards and a special cable. When two or more 02Rs 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 02Rs, 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 221 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 02R 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 02R 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.

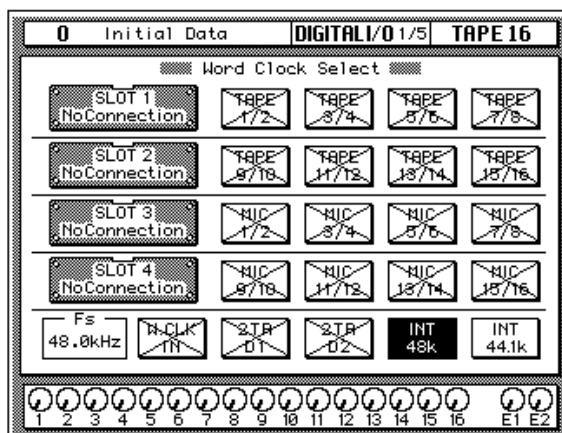
The 02R that is the cascade master should be receiving a wordclock signal from a wordclock master device, such as a modular digital multitrack recorder or other appropriate device.

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. Use the (DIGITAL I/O) button to locate the DIGITAL I/O 1/5 page.



If the cascade I/O card was installed properly, the 02R will 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, use the (DIGITAL I/O) button to locate the DIGITAL I/O 1/5 page.

If the cascade I/O card was installed properly, the 02R will 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.

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.

The current wordclock source is indicated by a highlighted icon. See “Word Clock Select” on page 188 of the *User’s Guide* for further details.

Cascade Settings

1. **On the 02R cascade master, use the (DIGITAL I/O) button to locate the DIGITAL I/O 3/5 page.**
2. **Select the “ID” parameter 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 02Rs cascaded together, the cascade master should be set to ID=3.

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.*

3. **On the 02R cascade slave, use the (DIGITAL I/O) button to locate the DIGITAL I/O 3/5 page.**

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” parameter.**

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.

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.*

See “Cascade Configuration” on page 191 of the *User’s Guide* for further details.