

GEMINI 2000

Owner's Manual

Gemini Electronics Inc.

TABLE OF CONTENTS

WHY MULTI-IMAGE?: The Micro-Processor Programmer	1
GEMINI KEYBOARD: Status LEDs, LED Display, Function Display, Time Keys, Tray Key, Function Keys	2-7
GEMINI BACK PANEL	8
GEMINI BOTTOM PANEL	8
REMOTE CONTROL	9
BASIC SET-UP AND MANUAL OPERATION	10
EFFECTS/FUNCTIONS SUMMARY	11
ALTERNATE	12
DISSOLVE	13-14
FADE	15
SUPERIMPOSE	16
TITLES	17
HOLD	17
REVERSE DISSOLVE	18
FORWARD CYCLE	18
REVERSE CYCLE	18
TIMER	19
HOME	19
SECOND HOME	20
TOGGLE	20
HALF BRIGHT	21
FLASH	21
FLASH RIGHT	21
TAPE RECORDING AND PLAYBACK: Sync-Lock, Recording Gemini Commands, Playing Back Gemini Commands, Pre-Recorded 1000 Hz Playback	22-24
TAPE RECORDING/PLAYBACK TECHNIQUES	24
BEYOND TWO PROJECTORS: Real Time Programming, Basic Set-up, Four/Six Projector Recording and Playback, Screen Select Switch, Keyboard Disable, Tape Duplication	26-29
SERVICE	30
SPECIFICATIONS	31

WHY MULTI-IMAGE?

For over two decades now, multiple images have been synchronized to a soundtrack and to each other. The result is called the dissolve slide show and it gives an exciting new sense of depth and dimension to a simple slide presentation. With dissolve, images can blend together without the distracting "blank" space between slide changes found in single projector shows. And, special visual effects can be used to impart a sense of motion to animated sequences by taking advantage of the capacity of two slide trays as opposed to one.

THE MICRO PROCESSOR PROGRAMMER

Among the very first dissolve equipment made was the variable tone programmer/dissolver. This device gave the producer new freedom and creative flexibility to switch back and forth between images (alternate) or keep them overlapped (superimposed) as desired. However, since the tone programmer was manually controlled, it was not always precise in how a show was played back after programming – being susceptible to sudden slide changes due to electrical interference from other equipment. To counter these problems, the micro-processor based programmer/dissolver was developed. In place of a variable tone, this device uses a precise digital code to record cues during programming. During playback, this digital information accurately controls all dissolve commands to within 1/20th of a second.

Gemini Electronics, Inc. was one of the very first manufacturers to introduce a micro-processor based programmer/dissolver to the multi-image profession with the PMS 1201. Its successor, Gemini, is an entirely new concept in multi-image production. It is the first programmer/dissolver that expands from just two projectors. With Gemini, you can control up to six slide projectors by simply adding to your basic Gemini programmer. And, you have the option of programming your shows manually in real-time or in leisure-time with the aid of a small business computer. Our latest innovation, the Gemini LTE micro-computer interface package, works with your computer's memory to store individual program commands for closely spaced, and often complicated special effects sequences involving up to six projectors at a time.

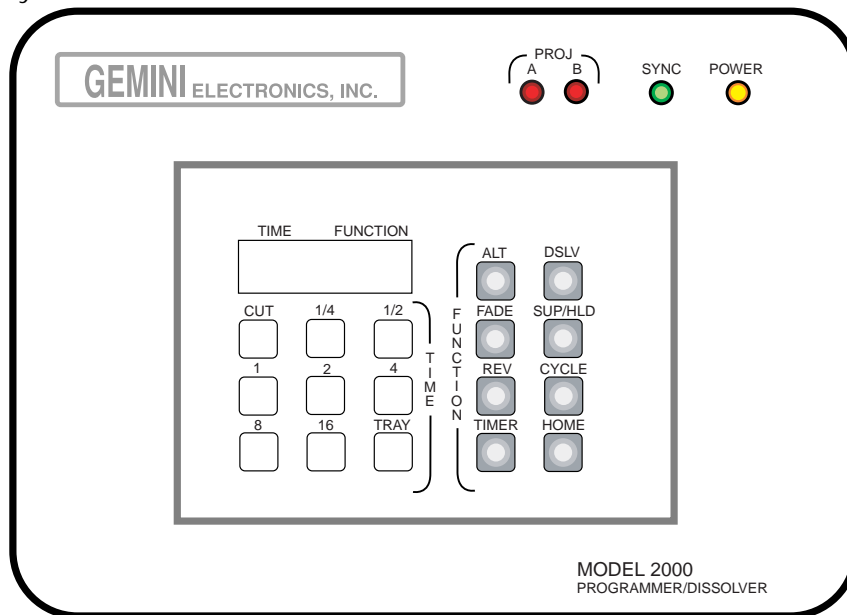
So, if you've never created multi-image dissolve shows before, you're in for a pleasant surprise. If you have, we think you'll be amazed and delighted at what the Gemini programmer/dissolver can do.

GEMINI KEYBOARD

The Gemini keyboard contains all of the programming keys and visual displays that you will need to create dissolve slide shows. Take a moment now to familiarize yourself with their locations and functions.

STATUS LEDS

Located in the upper right-hand corner are four LEDS that will indicate the status of your equipment during programming and playback.



The two red LEDS (marked PROJ A and B) indicate the status of the left and right projectors, respectively. As the projectors dim and brighten, these LEDS will also dim and brighten. In this way you can visually check projector status at all times during programming and playback.

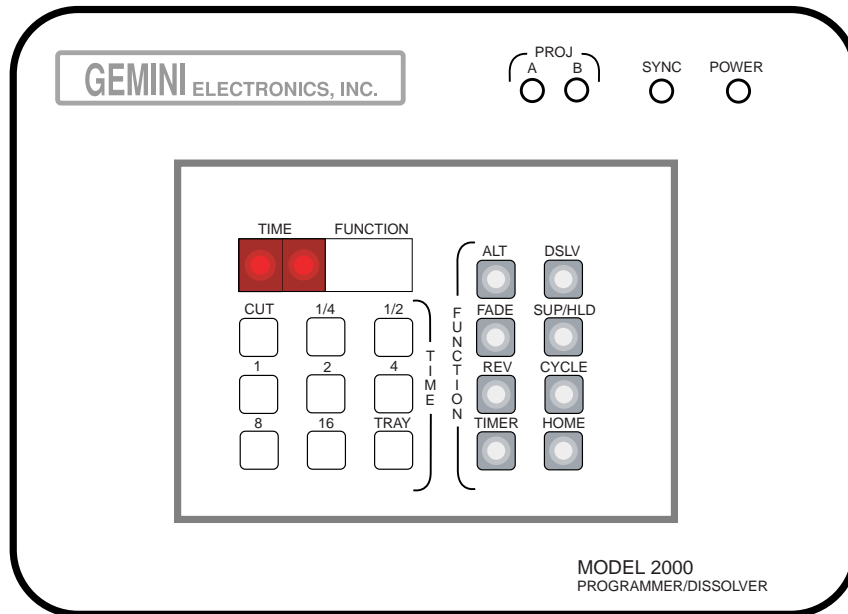
When both projectors are either ON or OFF, one LED will blink to indicate the STANDBY projector. This is the projector that will come ON (if OFF) or go OFF (if ON) after the next DISSOLVE, FADE or SUPERIMPOSE effect.

The green LED (marked SYNC) will light up to indicate that the Gemini is receiving SYNC-LOCK™ code from tape during playback and all audio cords are properly connected.

The yellow LED (marked POWER) lights up to indicate the Gemini power is properly connected and turned on.

LED DISPLAY

Located on the top, left-hand side of the Gemini keyboard is the LED display. This display is divided into two sections: TIME and FUNCTION.



The TIME section shows the length of time that you have selected for an effect to last. For example, as you press the 8 key, the display will show 8.0 (eight seconds) as your selection. Then, when you press an effect key the display will count-down the time remaining to zero, in half second increments, until the effect has ended.

If a new time is selected during an effect, the TIME display will automatically change to show the new time remaining. For example, pressing the three key halfway through a six second dissolve will change the display from 3.0 to 1.5 since the dissolve is half over. The dissolve would then "speed-up" to the new time selection and the display would count-down to zero as usual.

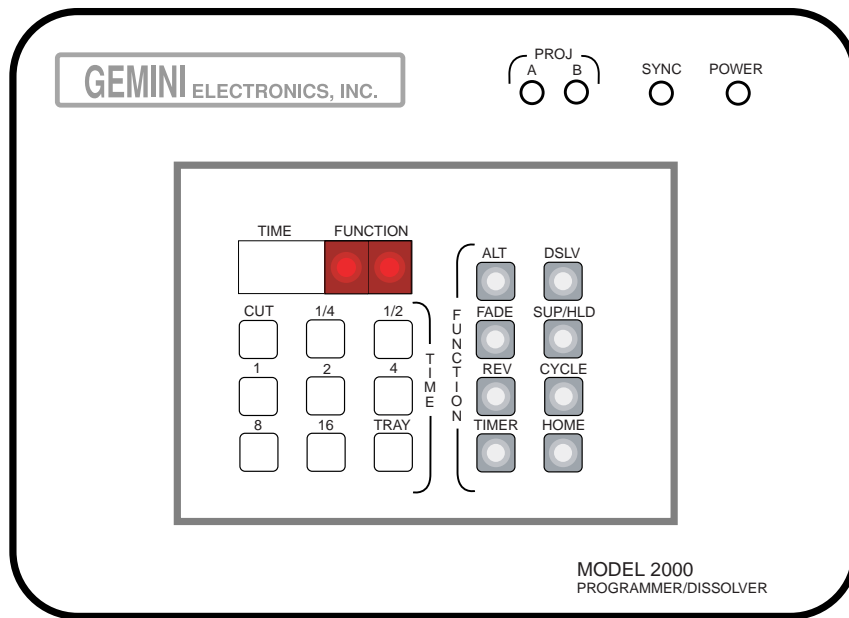
NOTE:

A HOLD command freezes the effect in progress and also freezes the TIME display until it is cleared.

When the TRAY is pressed, the TIME display momentarily indicates the position of the left (A) projector tray.

The FUNCTION section of the LED display shows the function or effect that you have selected the Gemini to perform. Your selection is shown as a two-letter code and will correspond to one of the following selections.

- dS* = DISSOLVE
- AL* = ALTERNATE
- FA* = FADE
- SU* = SUPERIMPOSE
- rE* = REVERSE
- CL* = CYCLE left (A) projector
- Cr* = CYCLE right (B) projector
- F* = FLASH left (A) projector
- F* = FLASH right (B) projector
- FF* = FLASH both projectors

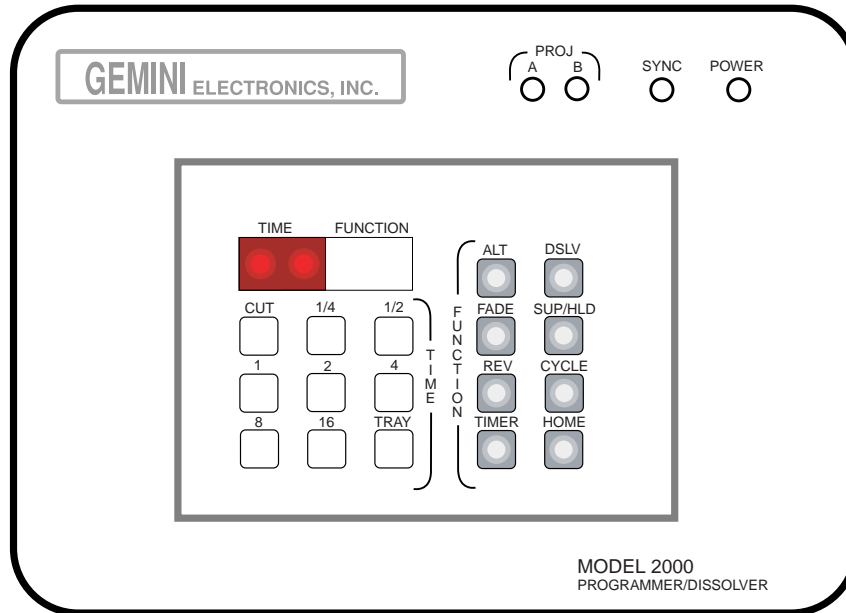


NOTE:

After a dissolve effect, the CYCLE code is displayed automatically.
 During TIMER, the interval time between effects will be shown here.

TIME KEYS

Located on the left-hand side of the Gemini keyboard are eight TIME keys. These keys are used to select any one of 28 different effect times (in seconds). To select the following times, press the TIME key(s) and verify your selection in the LED DISPLAY.



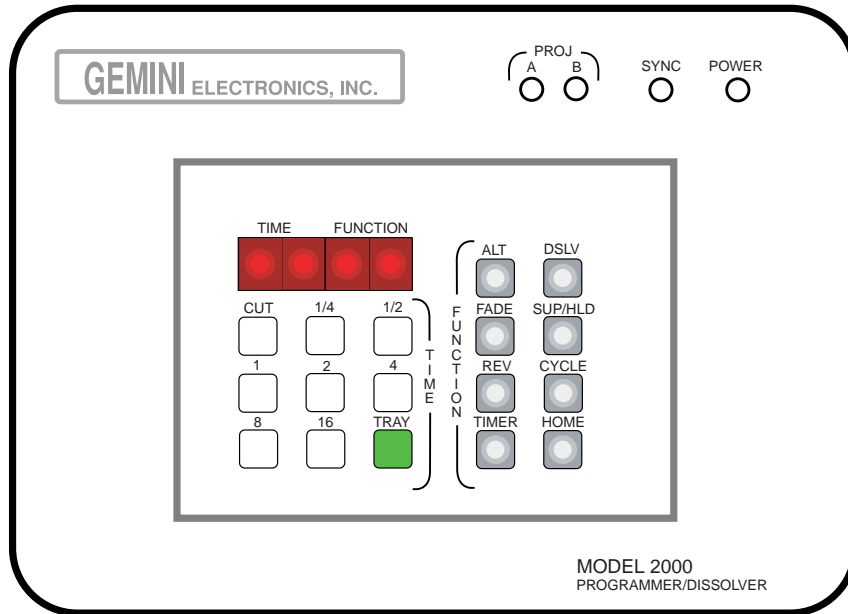
TO SET THIS TIME (IN SECONDS)	PRESS THESE KEYS	TO SET THIS TIME (IN SECONDS)	PRESS THESE KEYS
0.0	CUT	4.0	4
0.1	CUT + TRAY	5.0	1 + 4
0.2	1/4	6.0	2 + 4
0.3	CUT + 1/4	7.0	1 + 2 + 4
0.4	1/2 + TRAY (or 1/2 + 4)	8.0	8
0.5	1/2	9.0	1 + 8
0.6	CUT + 1/2	10.0	2 + 8
0.7	1/4 + 1/2	12.0	4 + 8
0.8	CUT + 1/4 + 1/2	16.0	16
1.0	1	17.0	1 + 16
1.5	1 + 1/2	18.0	2 + 16
2.0	2	20.0	4 + 16
2.5	2 + 1/2	24.0	8 + 16
3.0	1 + 2	30.0	8 + TRAY

NOTE:

When Gemini AC power is first turned on, a 0.5 (1/2 second) TIME is automatically entered into the display. This allows you to immediately select an effect without previously having to select a TIME. The red, PROJ A LED will blink to indicate that this is the projector to come ON first.

TRAY KEY

Located with the eight TIME keys on the left-hand side of the Gemini keyboard is the TRAY key. By pressing the TRAY key, you can note the positions of the left (A) and right (B) projector trays in the LED



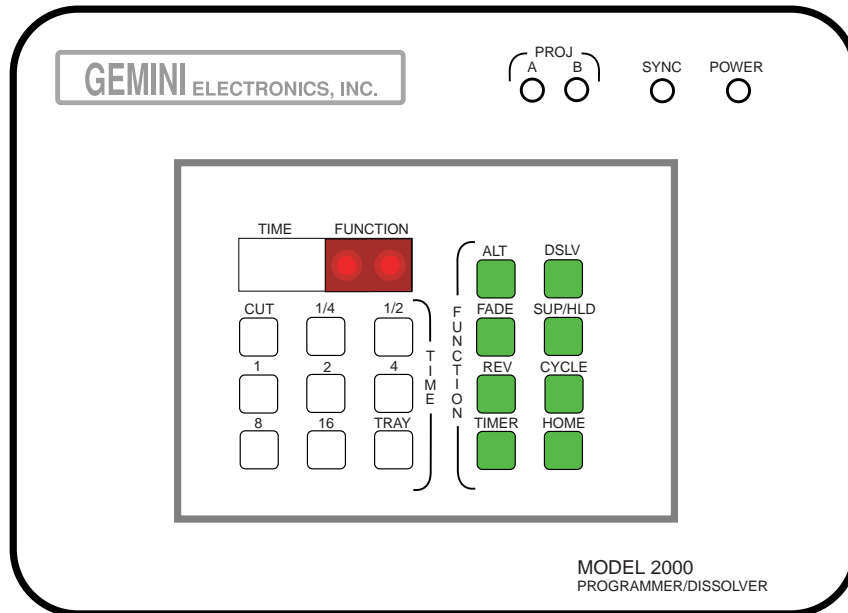
display, respectively. The tray positions will display for as long as the TRAY key is held down and will not effect your slide presentation in any way.

NOTE:

When Gemini power is first turned on, the TRAY key will indicate 0101 in the LED display. If the projector trays are not in the #1 position at this time, manually rotate the trays to this position. The TRAY display will now follow the position of both projector trays (0-80) at all times during your presentation.

FUNCTION KEYS

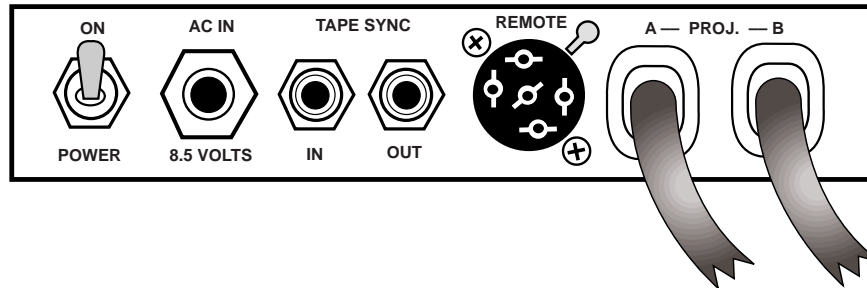
Located on the right-hand side of the Gemini keyboard are eight FUNCTION KEYS. The top four keys (ALT, DSLV, FADE and SUP/HOLD) are used to perform the various visual effects. The bottom four keys (REV, CYCLE, TIMER and HOME) are used to cycle (forward and reverse), reset and run the projectors automatically.



When you select an effect, you will be able to verify your selection in the LED display as well as see it on-screen.

GEMINI BACK PANEL

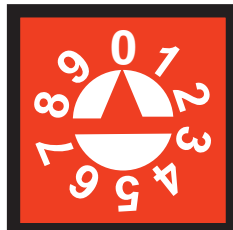
Looking at the Gemini back panel from left to right, the following are visible.



1. ON/OFF: This switch turns the Gemini AC power on and off.
2. TAPE IN: This RCA-type jack is used during playback from tape to receive Gemini code.
3. TAPE OUT: This RCA-type jack is used during programming to record Gemini code onto tape.
4. POWER: This mini-jack is used to plug in the Gemini AC adapter.
5. REMOTE: This five-pin connector will accept a standard Kodak (or similar) remote/focus hand control to DISSOLVE, REVERSE DISSOLVE and HOME the projectors.
6. B CABLE: This cable plugs into the seven-pin remote connector of the right (B) projector.
7. A CABLE: This cable plugs into the seven-pin remote connector of the left (A) projector.

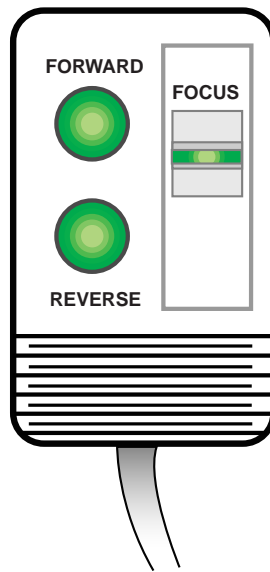
GEMINI BOTTOM PANEL

Located on the bottom panel is the Gemini SCREEN SELECT switch. By inserting a screwdriver blade, this switch may be turned to various positions relating to REAL TIME programming, LEISURE TIME programming, and KEYBOARD DISABLE. Refer to the appropriate sections of this handbook for more information.



REMOTE CONTROL

The Gemini REMOTE connector, located on the back panel, lets you use a standard Kodak (or similar) remote/focus hand control to DISSOLVE, REVERSE DISSOLVE and HOME the projectors.



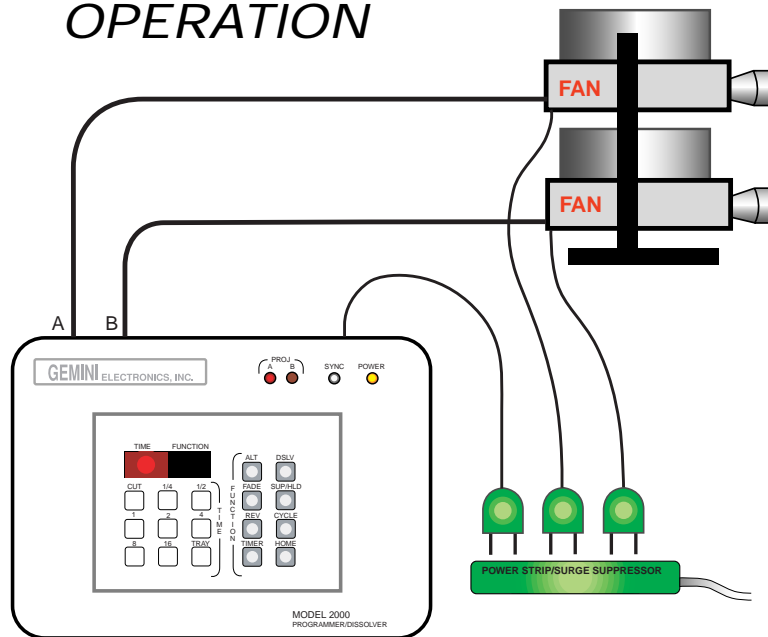
1. Plug the hand control into the five-pin REMOTE connector on the back panel.
2. To DISSOLVE, press the FWD (forward) button on the hand control. Gemini will now perform a dissolve at the time shown on the LED display.
3. To REVERSE DISSOLVE, press the REV (reverse) button on the hand control. Gemini will now perform a reverse dissolve to the previous slide at the time shown in the LED display.
4. To HOME both projectors, hold the FOCUS switch on the hand control down for about two seconds until the projectors start cycling HOME.

NOTE:

To change the DISSOLVE or REVERSE DISSOLVE rate, simply select a new time from the keyboard before using the hand control again.

When using TIMER, holding down the FWD (forward) button "holds" the image on-screen until the button is released. Pressing the FWD button will momentarily cut short the time that image is on screen.

BASIC SET UP AND MANUAL OPERATION



To set up for a dissolve presentation, do the following:

1. Plug both projectors and Gemini into the same power source; 115 volts AC.
2. With the projectors OFF, plug the projector cables from the Gemini into the remote socket of each projector.
3. Place both projectors' power switches in the FAN position.
4. Turn the power switch on the back of the Gemini to the ON position. The yellow LED will light and the Gemini display will indicate 0.5 seconds.
5. Make sure that both projector slide trays are in the #1 position. You are now ready to give a slide presentation.
6. To present your slides, first select the effect time with the keys on the left. Then press the DSLV key or FADE key to fade-up (i.e., bring ON) the left projector. If you wish to fade-up (i.e. bring ON) both projectors, press the SUP/HLD key.

If you wish to record and playback your presentation with a tape recorder, refer to the appropriate section in the handbook.

NOTE:

When you turn off the power to the Gemini, wait at least 5 seconds before turning the power back on again.

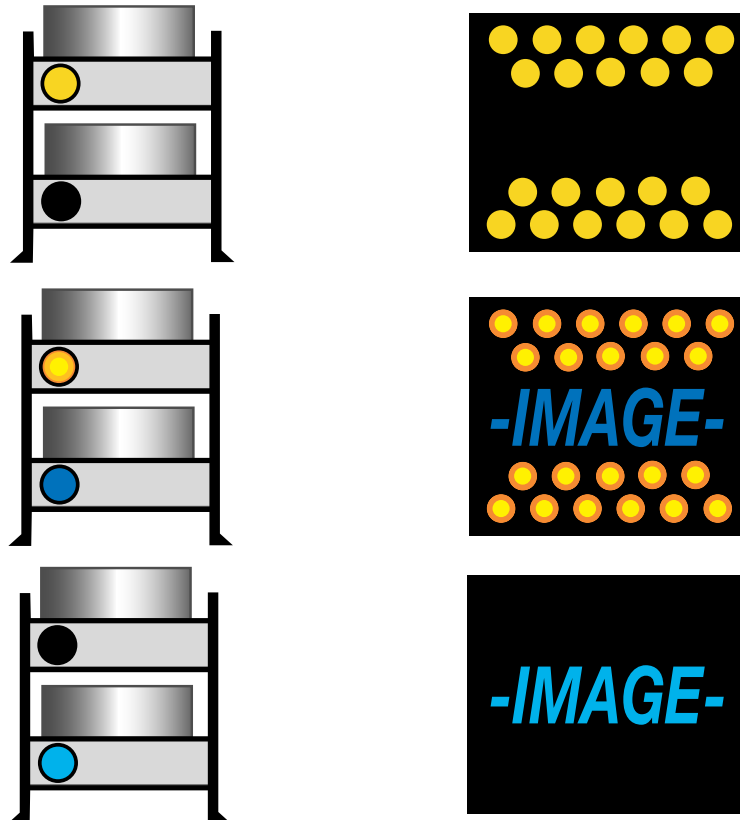
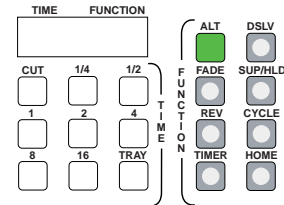
EFFECTS/FUNCTIONS SUMMARY

For any of the following effects/functions, select the desired time and press the key(s) indicated below.

ALTERNATE	ALT. Cross-fades between both projectors. There is no projector cycling after the effect.
DISSOLVE	DSLVL. Cross-fades between both projectors with the OFF projector cycling after the effect.
FADE	FADE. Fades-out the ON projector. There is no projector cycling after this effect.
SUPERIMPOSE	SUP/HLD. Superimposes both projectors at full brightness. There is no projector cycling after the effect.
HOLD	HOLD. Holds (freezes) any other effect on-screen while in progress.
REVERSE*	REV. Reverse-dissolves from the ON (or STANDBY) projector to the previous slide.
CYCLE*	CYCLE. Advances (cycles) the OFF projector forward.
REVERSE-CYCLE*	REV + CYCLE. Reverses (cycles) the OFF projector backward.
TIMER	TIMER. Used to run projectors automatically. Works with ALTERNATE, DISSOLVE, FADE or SUPERIMPOSE and time as follows. For example: 4, TIMER, 2, DSLVL gives a 2 second dissolve with a 4 second wait between dissolves.
HOME*	HOME. Homes (resets) both projector to the #1 position
TRAY	TRAY. Displays the positions of the left (A) and right (B) projectors trays, respectively.
FLASH	TRAY + 16. Flashes the left (A) projector.
FLASH RIGHT	TRAY + 2. Flashes the right (B) projector.
HALF BRIGHT	TRAY + 1. Dims both projectors to 50% lamp levels.
SECOND HOME	TRAY + 4. Sets Second Home at the position of the left (A) projector tray. TRAY + HOME. Resets both projectors to the Second Home position.

ALTERNATE

An alternate is a cross-fade between two projectors; one brightens while the other dims. There is no projector cycling after the Alternate effect.



1. With one projector ON, Press the desired TIME key and verify your selection in the LED display.
2. Press the ALT key to start the Alternate effect.
3. To repeat the effect with the same TIME, simply press the ALT key again. Or select a new TIME before pressing the ALT key.
4. To continuously Alternate, press and hold the ALT key until you wish the effect to end. A new TIME may also be selected to "speed-up" or "slow down" the effect while it is in progress.

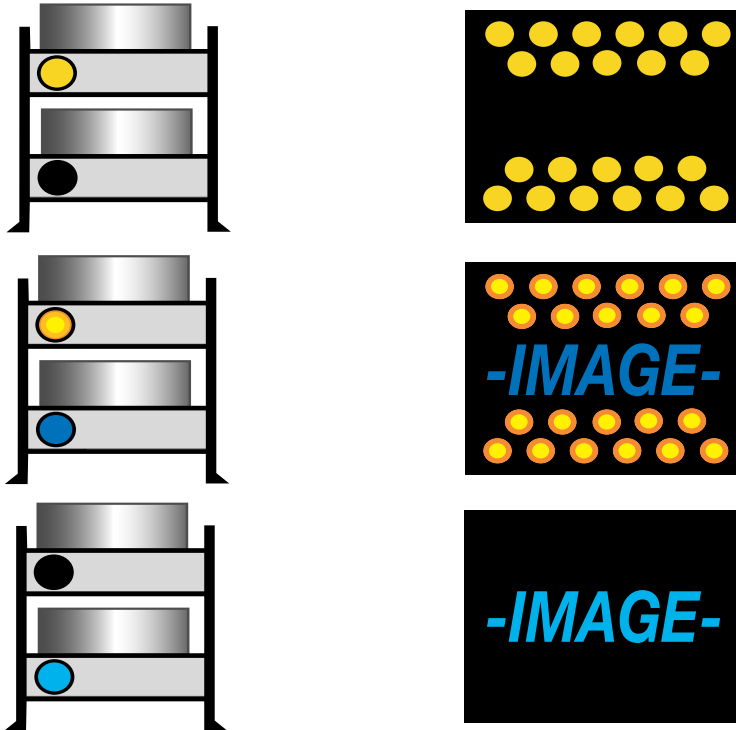
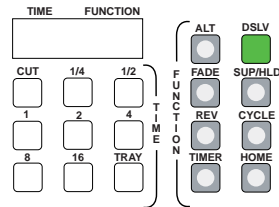
NOTE:

If both projectors are ON or both projectors are OFF, pressing the ALT key will switch the STANDBY* projector.

* The STANDBY projector is indicated by the blinking red STATUS LED.

DISSOLVE

A Dissolve is a cross-fade between two projectors (one brightens while the other dims) with the OFF projector cycling forward after the Dissolve effect.



1. With one projector ON, press the desired TIME key and verify your selection in the LED display.
2. Press the DSLV key to start the Dissolve effect.
3. To repeat the effect with the same TIME, simply press the DSLV key again. Or select a new time before pressing the DSLV key.
4. To continuously Dissolve, press and hold the DSLV key until you wish the effect to end. A new TIME may also be selected to "speed-up" or "slow-down" the effect while it is in progress.

NOTE:

If both projectors are OFF, pressing the DSLV key will fade-up the STANDBY* projector and neither projector will advance.

If both projectors are ON, pressing the DSLV key will fade-out the STANDBY* projector and advance it one slide.

A CUT (or HARD CUT) dissolves the projector in about 1/20 of a second (0.05 seconds) and immediately cycles the OFF projector, allowing Gemini CUT-DISSOLVES to be faster and more "chopped" than normal.

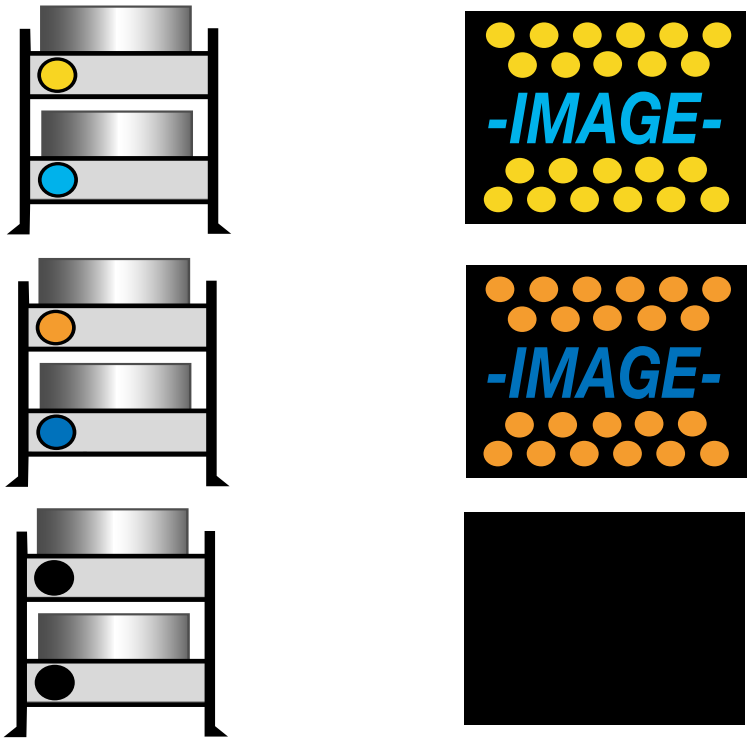
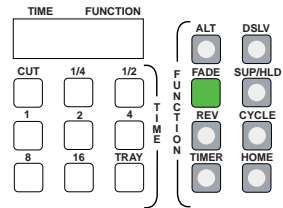
A fast, SOFT CUT (0.1 seconds) is nearly as fast as a CUT but contains a half-second delay after the dissolve to allow the projector's lamp to dim fully before cycling to the next slide.

When you press a dissolve time key, it does not record that time on tape unless it is different than the time currently displayed in the Gemini LED display. If you are editing a show and want to record the 4 second dissolve time, for example, you must be sure that the Gemini is set for any time other than 4 seconds. Then restart the tape recorder and press the 4 second key. All future dissolves, alternates, superimposes and fades to black will then record at the 4 second rate, until you press a different time key.

* The STANDBY projector is indicated by the blinking red STATUS LED.

FADE

A Fade fades-out (dims to black) the ON projector(s). There is no projector advance at the end of the Fade effect.



1. With one or both projectors ON, press the desired TIME key and verify your selection in the LED display.
2. Press the FADE key to start the FADE effect.
3. To repeat the effect with the same TIME, simply press the FADE key again. Or select a new TIME before pressing the FADE key.
4. To continuously Fade (ON and OFF), press and hold the FADE key until you wish the effect to end. A new TIME may also be selected to "speed-up" or "slow-down" the effect while it is in progress.

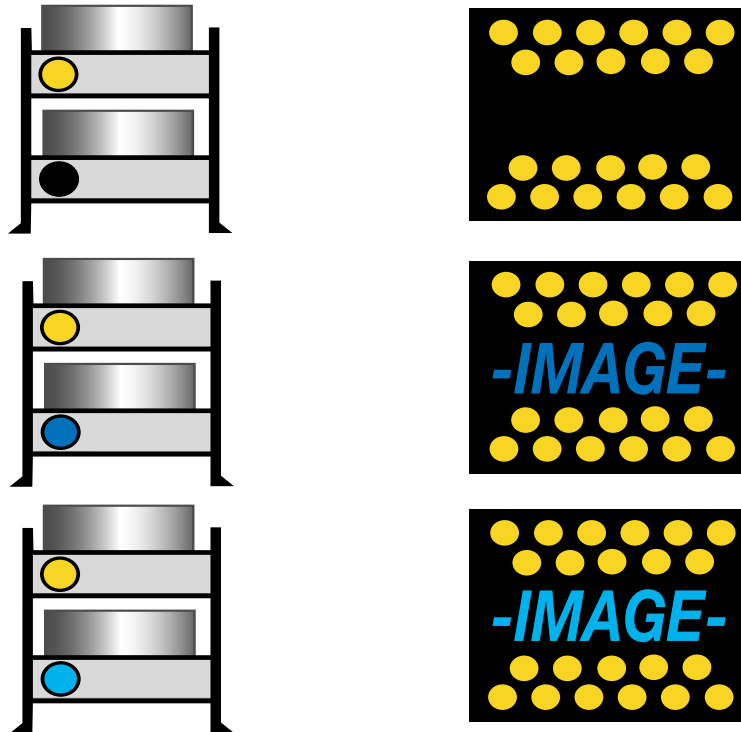
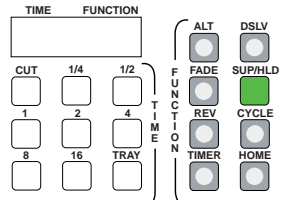
NOTE: If both projectors are OFF, pressing the FADE key will fade-up the STANDBY* projector.

If both projectors are ON, pressing the FADE key will fade-out both projectors.

*The STANDBY projector is indicated by the blinking red STATUS LED.

SUPER

A Super superimposes both projectors at full brightness. There is no projector cycling after the Super effect.



1. Press the desired TIME key and verify your selection in the LED display.
2. Press the SUP/HLD key to start the Super effect.
3. To repeat the effect with the same time, simply press the SUP/HLD key again. Or select a new TIME before pressing the SUP/HLD key.
4. To continuously Super, press and hold the SUP/HLD key until you wish the effect to end. A new TIME may also be selected to "speed-up" or "slow-down" the effect while it is in progress.

NOTE: If both projectors are OFF, pressing the SUP/HLD key will fade-up both projectors at the selected TIME.

If both projectors are ON, pressing the SUP/HLD key will fade-out the STANDBY* projector.

* The STANDBY projector is indicated by the blinking red STATUS LED.

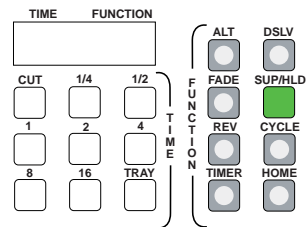
TITLES

There are times when you will want to keep one slide on the screen as a background and superimpose titles over it. After the first title has been shown, you can fade it out, advance the projector, and superimpose a new title.

1. With your background slide on the screen (either projector A or B), press the desired TIME key to set the effect time of the Super and verify your selection in the LED display.
2. Press the SUP/HLD key to superimpose your first title. You may keep the title on the screen for as long as you wish.
3. Now, press the DSLV key to fade-out this title and advance the projector to the next slide.
4. To superimpose the remaining titles, simply repeat steps 2 and 3.
5. To fade-out the last title and background together, press the FADE key.

HOLD

A Hold command freezes a selected effect on-screen while it is in progress. A Hold command may be given during an Alternate, Dissolve, Fade, Super or Reverse Dissolve effect.

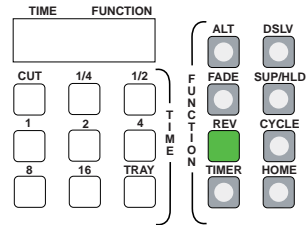


1. Select a TIME and press the desired ALT, DSLV, FADE, SUP/HLD or REV key.
2. Press the SUP/HLD key while the desired effect is in progress.
3. Pressing the SUP/HLD key again will release (unfreeze) the effect and allow it to end.
4. You may use the Hold command as many times as you wish during an effect until the effect has ended.

NOTE: The TIME display freezes during a Hold command to show the remaining effect time.

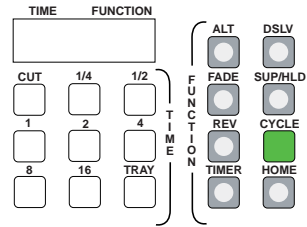
REVERSE DISSOLVE

To REVERSE DISSOLVE, press the REV key. This will cause the OFF projector to reverse to the previous slide and dissolve to that slide.



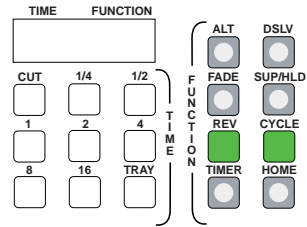
FORWARD CYCLE

To ADVANCE the OFF projector, press the CYCLE key. This will cause the OFF projector to advance forward to the next slide and remain OFF.



REVERSE CYCLE

To REVERSE the OFF projector without a dissolve, press the REV and CYCLE keys together. This will cause the OFF projector to reverse to the previous slide and remain OFF.



NOTE: To continuously Reverse Dissolve, Forward Cycle or Reverse Cycle, hold the desired key(s) until you wish the commands to end.

You can Forward Cycle and Reverse Cycle as long as there is at least one OFF projector and there is no effect in progress.

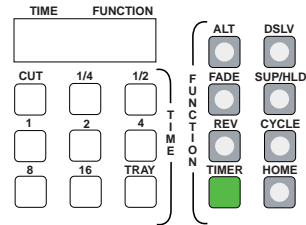
You can only Reverse Dissolve with one ON projector. Reverse Dissolve will not function when both projectors are either ON or OFF.

If both projectors are OFF, you can Forward Cycle or Reverse Cycle the STANDBY* projector as desired. You may also use the ALT key to switch the STANDBY* projector.

* The STANDBY projector is indicated by the blinking red STATUS LED.

TIMER

The Timer command can be used to present your slides automatically without the use of a tape recorder. Timer works with any Alternate, Dissolve, Fade or Super effect.



1. Press the desired TIME key(s) and verify your selection in the LED display. This is the EFFECT TIME – the length of time the effect will last.
2. Press the TIMER key. The LED display will now show this time in both halves of the display. If you wish the effect to have the same EFFECT TIME and INTERVAL (time between effects), simply press the desired ALT, DSLV, FADE or SUP/HLD key.

For example: Pressing 4-TIMER-DSLV will give four-second dissolves with four seconds between dissolves.

3. If you wish to have a different EFFECT TIME, press a new TIME key(s). A new EFFECT TIME will now appear in the left half of the LED display. Now press the desired ALT, DSLV, FADE or SUP/HLD key to begin the effect.

For example: Pressing 1-TIMER-1/4-ALT will give 1/4 second alternates with one second between alternates.

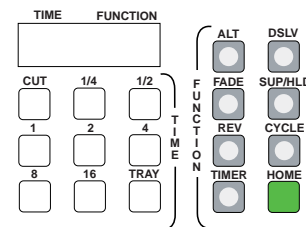
4. To cancel TIMER, simply press the TIMER key again.

NOTE: As Timer automatically repeats the selected effect, the LED display counts-down to zero both the EFFECT TIME (on the left) and the INTERVAL (on the right) until TIMER is cancelled.

When using the REMOTE CONTROL with TIMER, holding down the FWD (forward) button “holds” the image on-screen until the button is released. Pressing the FWD button momentarily will cut short the time that the image is on-screen.

HOME

The HOME command automatically returns (resets) both projectors to the #1 tray position, turns both projectors OFF, sets the left (A) projector to STANDBY* and enters a TIME of 0.5 seconds in the LED display in preparation for repeating the show.



1. To Home the projectors, press the HOME key.

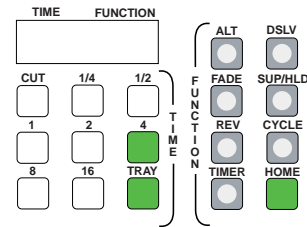
NOTE: HOME cycles the projectors to the #1 tray position by the shortest possible route – forward or backward. It is assumed that 80-slide carousel trays are being used.

The Home position is whatever slide position the projectors are at when power is turned on to the Gemini. The Gemini TRAY key will always show this as location “01”. The projector trays should be manually positioned so that they are both at the #1 tray position before you begin programming.

* The STANDBY projector is indicated by the blinking red STATUS LED.

SECOND HOME

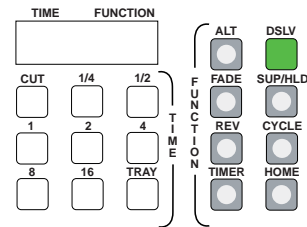
Second Home is an exclusive Gemini feature that lets you place two different dissolve shows in the same set of slide trays. In addition to the usual (#1) Home position, you can select a Second Home position (0-80) for both slide trays.



1. Advance (or reverse) cycle your projectors until the left (A) projector reaches the position that you have selected for the Second Home.
2. Enter this position into Gemini's memory by pressing the TRAY and 4 keys together. Continue programming as usual.
3. To home both projectors to the Second Home position that you have just selected, press the TRAY and HOME keys together. The projectors will now move to the Second Home position automatically.
4. To select a new Second Home, repeat steps 1 and 2.

TOGGLE

A Toggle command is used to "reverse" the direction of a selected effect while it is in progress. A Toggle command may be given during an Alternate, Dissolve, Fade, Super or Reverse Dissolve effect.

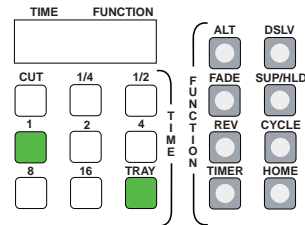


1. Select a TIME and press the desired ALT, DSLV, FADE, SUP/HLD or REV key.
2. While the effect is in progress, press the DSLV key. The effect will now Toggle and "reverse" its direction.
3. You may use the Toggle command as many times as you wish during an effect until the effect has ended.

NOTE: Rapidly pressing the DSLV during a one second TIME gives a rippling effect similar to Alternate.

HALF BRIGHT

Half Bright is an exclusive Gemini feature that will help prolong the life of your slide projector lamps during programming by reducing their brightness by 50%.

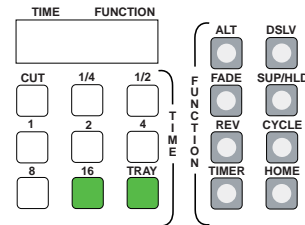


1. With one or both projectors ON, press the TRAY and 1 keys together. Both projector lamps will now dim to half their normal brightness. Begin (or continue) programming as usual.
2. To cancel HALF BRIGHT, press TRAY and 1 keys again. Both projector lamps will now return to their normal brightness.

NOTE: HALF BRIGHT will not record onto tape.

FLASH

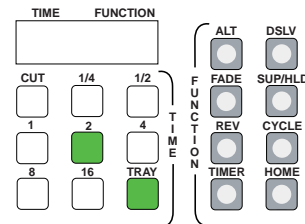
Flash is a special effect command that "flashes" the left (A) projector ON and OFF. Flash may be used during any other effect (Alternate, Dissolve, Fade, Super or Reverse) to add excitement and command attention to selected slides.



1. Press the TRAY and 16 keys together. The left projector will now begin flashing at the rate of about 5 times per second and an "F" will appear as the left digit of the FUNCTION display.
2. To cancel FLASH, press the TRAY and 16 keys again.

FLASH RIGHT

In addition to flashing the left (A) projector, you may also flash the right (B) projector. Used independently or together, these effects can add versatility to your dissolve show presentation.



1. Press the TRAY and 2 keys together. The right projector will now begin flashing at the rate of about 5 times per second and an "F" will appear as the right digit of the FUNCTION display.
2. To cancel FLASH RIGHT, press the TRAY and 2 keys again.

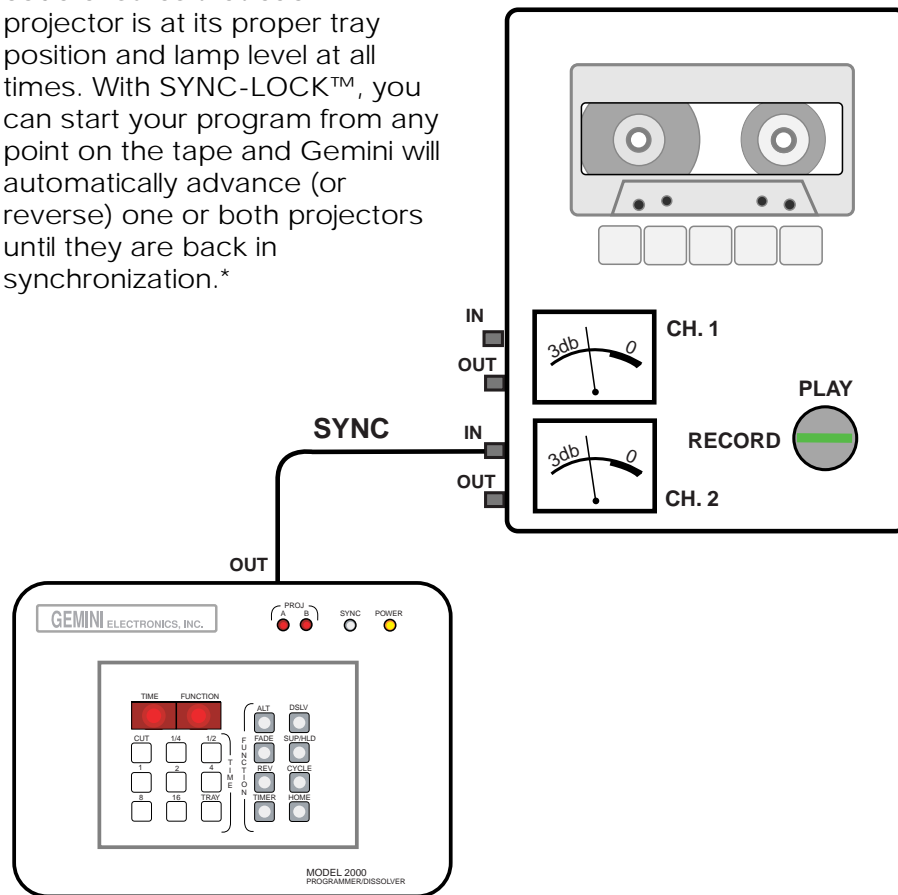
NOTE: If the projector is OFF when the Flash command is given, the Flash effect will not be visible. To make Flash visible, press the desired ALT, DSLV, FADE, SUP/HLD or REV key.

TAPE RECORDING AND PLAYBACK

Although Gemini can be used to control two projectors directly from the keyboard, the professional method is from a recorded soundtrack. Gemini is designed to work with any two-channel cassette or open reel tape recorder to record and playback your slides and soundtrack in perfect synchronization.

SYNC-LOCK™

Every time a Gemini Dissolve command is recorded onto tape, a special SYNC-LOCK™ code is also recorded. During playback, this code ensures that each projector is at its proper tray position and lamp level at all times. With SYNC-LOCK™, you can start your program from any point on the tape and Gemini will automatically advance (or reverse) one or both projectors until they are back in synchronization.*



TO RECORD GEMINI COMMANDS

1. Set up your Gemini and projectors as outlined in "SET UP AND BASIC OPERATION".

2. Connect the proper audio cable (available at most radio supply stores) from the TAPE OUT jack on the Gemini back panel to the SYNC IN/LINE IN jack (depending on model) of your tape recorder.
3. If your recorder has an Input Level control, adjust it for -3 to 0 db on the VU meter. The Gemini signal is constant so there is no need to press any key to set the VU level.
4. Start the recorder in the RECORD mode and begin programming your show. Remember to select an effect TIME first and then the desired effect.
5. When you have finished programming, you may wish to record a HOME command so that the projectors will reset automatically from tape during playback.
6. If you make a mistake while programming, or wish to change a portion of your show, simply rewind your tape to the last correct command and begin re-programming from there.
7. During every change cycle, Gemini is recording sync-lock information on tape. While editing a tape, be sure that the change cycle is complete (as indicated by the disappearance of the CL or CR from the display) before pausing the tape recorder. This avoids the possibility that your next cue will land on top of the previous sync-lock information.

Note: Every command (except Half Bright) records a cue onto tape.

There are no restrictions on what can be recorded: fast Alternates, Toggles, Flash-fades, etc. – all commands will record and playback flawlessly.

* If Gemini AC power is interrupted during your show, you must: 1. Stop the tape recorder. 2. Reset both projectors to the #1 position. 3. Restart the tape recorder. You will now be back in synchronization.

TO PLAYBACK GEMINI COMMANDS

1. After your show has been recorded, rewind the tape and check to see that both slide trays are back to the #1 position.
2. Connect the audio cable from the TAPE IN jack in the Gemini back panel to the SYNC OUT/LINE OUT jack of your tape recorder.
3. Play the tape and observe that the green SYNC LED is lit to indicate that Gemini code is being received, if not, re-check your audio connections.
4. After your show has played and the projectors have begun to HOME, you may rewind the tape.

Note: The green SYNC LED will blink as each Gemini command is received from the tape and during projector advance. This is normal and a positive indication that your commands have been properly recorded.

PRE-RECORDED 1000 Hz PLAYBACK

Slide shows that have been previously recorded with a 1000Hz tone on the command (cue) track can also be played back through a Gemini as dissolve shows by using an AV SYNC Cassette tape recorder as follows.

1. If it is a single tray show, place the slides into two trays in alternating order. For example, load slides #1,3,5,7, etc. into the top (A) tray and slides #2,4,6,8, etc. into the bottom (B) tray.
2. Connect the cable supplied with the tape recorder (that normally plugs into the projector remote socket) into the Gemini REMOTE socket on the back panel.
3. Set both projector trays to the #1 position and press either the 1/4 or 1/2 key on the Gemini.
4. You may now play the show. Each time Gemini receives a 1000Hz signal, it will perform a quick dissolve to the next slide. After the show has played, simply rewind the tape and press the HOME key to reset the projectors.

TAPE RECORDING/PLAYBACK TECHNIQUES

While Gemini requires only a mono (one channel) tape recorder to store projector commands, a two (or more) channel recorder is required if an accompanying soundtrack is needed. With a two channel recorder, you can record your Gemini command (cue) track in one of two ways.

1. You can record your soundtrack (narration, music, etc.) and your Gemini commands simultaneously into the left and right channel inputs, respectively.
2. Or, you can record your soundtrack first on the left channel, rewind the tape, and then record Gemini commands on the right channel as you monitor the left. This technique is used by many AV professionals and requires a tape recorder that can play back and record simultaneously.
3. If there is a phono cable plugged into the Gemini input, do not plug a cable into the Gemini output, if both cables are connected to the same tape recorder (unless your tape recorder is specifically designed to dupe sync-lock tapes in this manner).

BEYOND TWO PROJECTORS

After you have programmed several dissolve shows, you may decide to use more than two projectors. With Gemini this is easily done in one of two modes: REAL TIME or LEISURE TIME programming.

REAL TIME PROGRAMMING

Programming in REAL TIME means that you are recording and playing back your dissolve show in the actual (real) time that it takes you to do so. By connecting two to three Geminis together, you can program dissolve shows for four or six projectors.

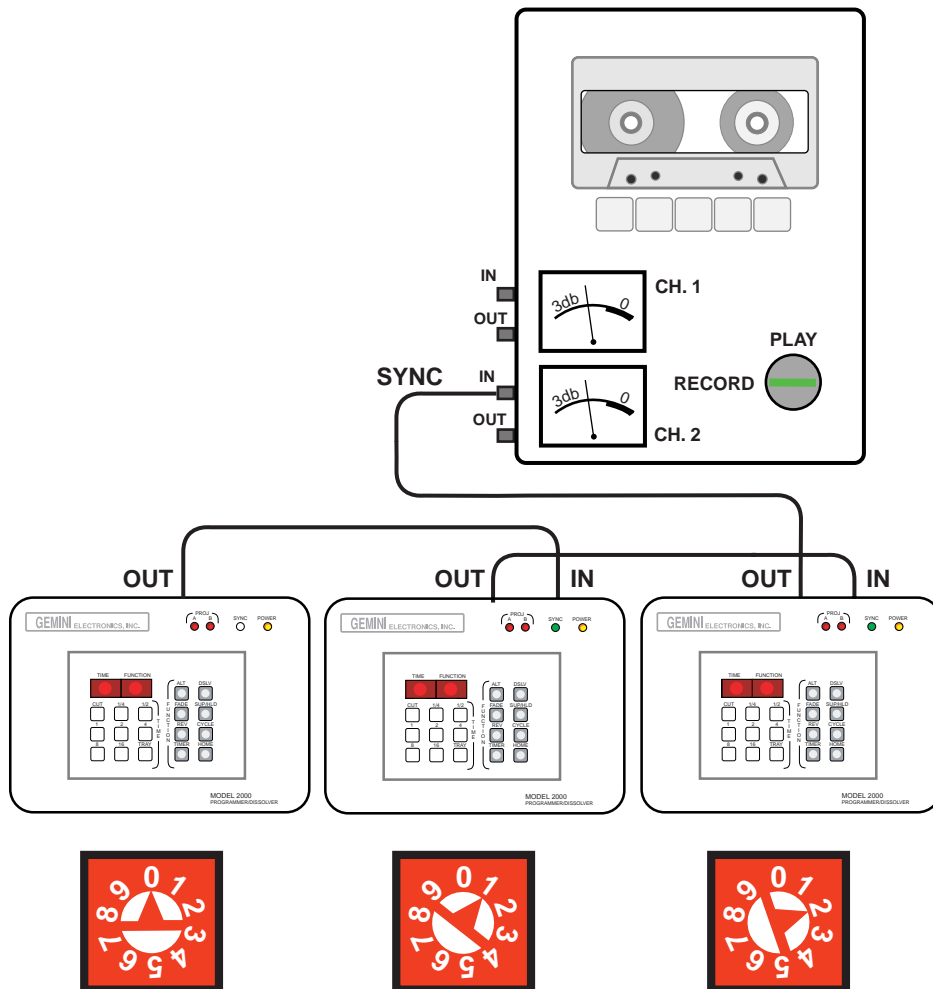
BASIC SET UP

To program a four or six projector show, you must first set up a two-projector system for each Gemini you are using (see BASIC SET UP AND MANUAL OPERATION). That is, a projector show requires two Geminis and a six projector show requires three Geminis.

1. After you have set up, make sure that the SCREEN SELECT switch on Gemini #1 is set to the #0 position. Then set the SCREEN SELECT switch on Gemini #2 to the #1 position and (if programming for six projectors), Gemini #3 to the #2 position. This is easily done with the blade of a small screwdriver.
2. Connect the TAPE OUT jack on Gemini #1 to the TAPE IN jack on Gemini #2 with the proper audio cable.
3. If you are programming for FOUR projectors, connect the TAPE OUT jack on Gemini #2 to the SYNC IN/LINE IN jack of the tape recorder. You are now ready to record.
4. If you are programming for SIX projectors, connect the TAPE OUT jack on Gemini #2 to the TAPE IN jack on Gemini #3. Then connect the TAPE OUT jack on Gemini #3 to the SYNC IN/LINE IN jack of the tape recorder. You are now ready to record.

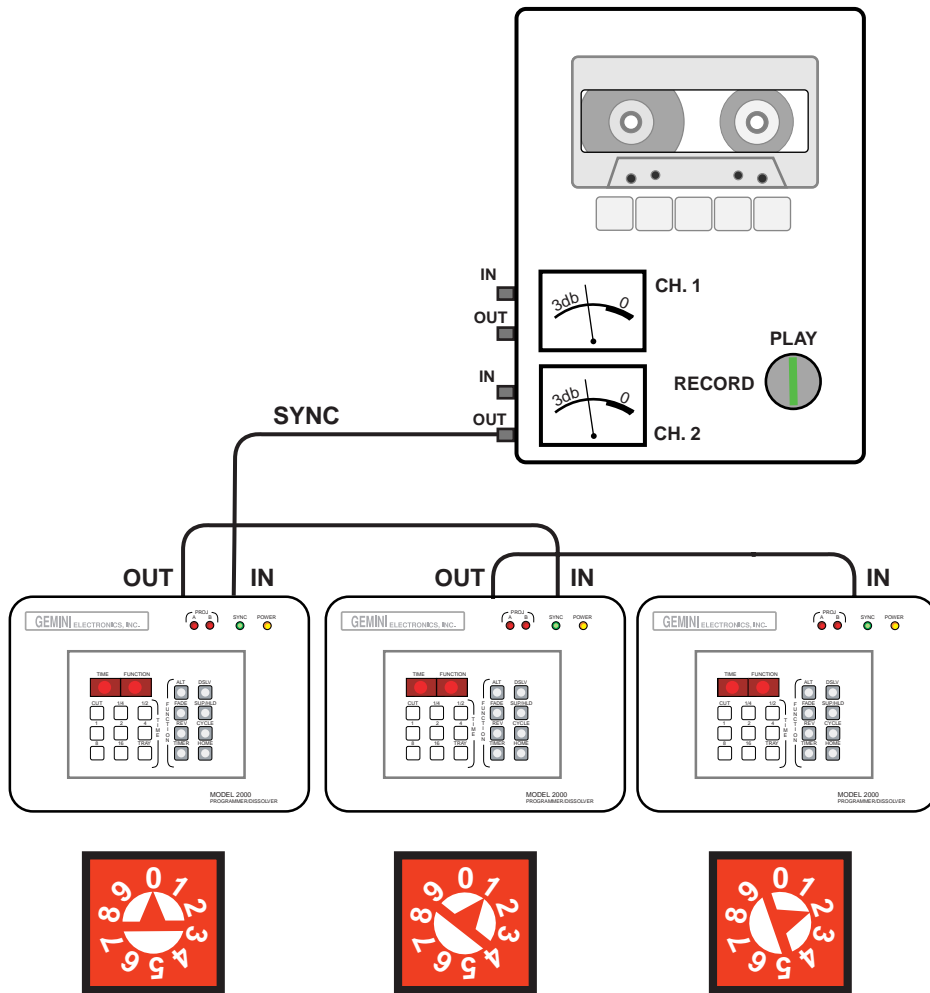
FOUR/SIX PROJECTOR RECORDING AND PLAYBACK

1. Start the recorder in RECORD and begin programming your show by pressing the desired keys on the appropriate Gemini. The SCREEN SELECT switch ensures that each Gemini records and plays back only its own commands.



RECORD SET UP

2. After you have finished programming, rewind the tape.
Connect the SYNC OUT/LINE OUT jack from the tape recorder to the TAPE IN jack on Gemini #1 and disconnect the audio cable between the tape recorder SYNC IN/LINE IN jack and the last Gemini.
3. Now playback your show. Each Gemini will playback its own commands exactly as you programmed them. Since this REAL TIME programming technique relies solely on your ability to press the right key at the right time, it is recommended for dissolve shows of a slow to moderate pace. For more sophisticated shows requiring independent projector control, refer to the LEISURE TIME programming section.

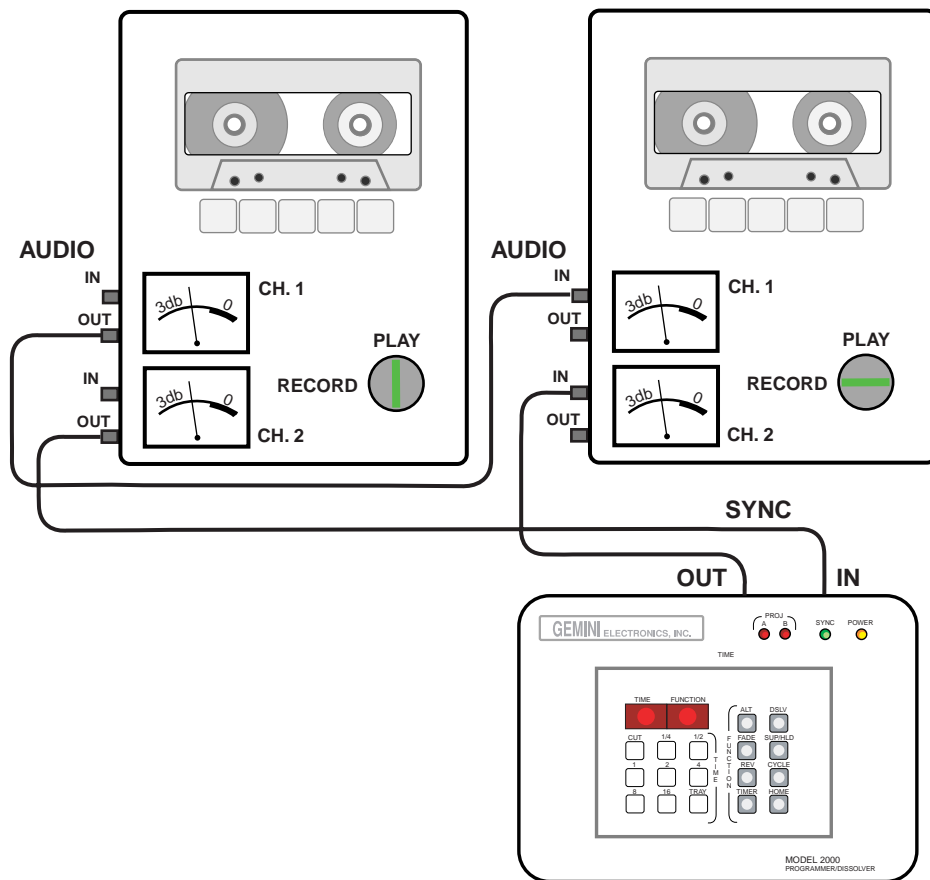


PLAYBACK SET UP



SCREEN SELECT SWITCH

The SCREEN SELECT switch (located on the bottom panel) can be turned to one of 10 positions numbered 0 through 9. Positions 0 through 7 are used to record and playback multi-projector shows. As each Gemini command is recorded onto tape, the SCREEN SELECT position (0-7) is also recorded. Then, during playback, each Gemini accepts only those commands with a SCREEN SELECT number that matches its own SCREEN SELECT switch setting. Thus, you could actually program up to 8 different Geminis (0-7) to control up to 16 slide projectors from one channel of a tape recorder.



KEYBOARD DISABLE

To guard against someone accidentally pressing a key during playback and disrupting your show, Gemini has an exclusive KEYBOARD DISABLE feature. SCREEN SELECT switch positions 8 and 9 are the KEYBOARD DISABLE equivalent of positions 0 and 1, respectively. That is, you can create a show with the SCREEN SELECT switch in positions 0 or 1, and then play it back in positions 8 or 9 respectively to "Lock-Out" the keyboard from accidental key presses.

TAPE DUPLICATION

After you have programmed your show, you can use your Gemini and two tape recorders to make duplicate tapes of "first-generation" quality, as follows:

1. Connect the SYNC OUT/LINE OUT jack from the tape recorder #1 to the TAPE IN jack on your Gemini.
2. Connect the TAPE OUT jack on your Gemini to the SYNC IN/LINE IN jack on tape recorder #2.
3. Connect the audio OUTPUT of the tape recorder #1 directly to the audio INPUT of tape recorder #2.
4. Place your show tape on tape recorder #1 and your blank copy tape on tape recorder #2. Check to see that both tape recorders and Gemini are properly connected and turned ON.
5. Now set tape recorder #1 to PLAY and tape recorder #2 to RECORD. As the tape is duplicated, Gemini will receive commands from tape recorder #1 and RE-GENERATE them onto the command channel of tape recorder #2 - giving you duplicate tapes of the "first-generation" quality.

SERVICE

Should you experience any difficulty with your Gemini programmer, first re-read the appropriate sections of this handbook to see if you can determine exactly what the problem is. If, after re-reading the handbook, you still believe your Gemini may be at fault, you may return it to either the dealer from whom it was purchased, or to Gemini Electronics Inc. directly for repair.

In most cases, we can repair your Gemini within 48 hours of receipt. If you decide to send us your Gemini directly, pack it carefully. Be sure to enclose a statement concerning the nature of the problem along with your mailing address and telephone number. Ship via United Parcel Service (UPS) or the U.S. Postal Service by first class mail. Insure your package with the carrier. Upon receipt, your Gemini will be repaired and returned postage paid.

THERE ARE NO USER SERVICEABLE PARTS IN GEMINI. Attempting to repair your Gemini will void the warranty and may cause harm to yourself or your equipment due to dangerous high voltage.

There is no charge for repairs performed under warranty. If your warranty has expired, please contact your dealer or Gemini Electronics Inc. for an estimate before returning the product for repair.

SPECIFICATIONS

1. Power requirements: 115V AC +/- 10%, 50/60Hz; 230 VAC option available
2. Projectors controlled: Kodak Carousel and Ektagraphic, Singer Caramate, Leitz RT 300
3. Projector bulbs: 300 watts maximum
4. Tape input impedance: 47k
5. Tape output level: 1.1 p-p
6. Tape input level: .12 - 10 p-p
7. Required tape frequency response: 500 - 3000Hz
8. Number of effect times: 28; Hard CUT to 30 seconds
9. Techniques of operation:
 - Manual from keyboard
 - Manual from remote
 - From tape recorder
 - From personal computer
10. Daisy chainable: For record and playback up to 6 projectors
11. Expandable: Leisure time programming using a personal computer
12. Keyboard disable switch for "Playback-Only" operation
13. Glow circuit extends projector life
14. Display: 4 LED digits and 4 LED status lights
15. SYNC-LOCK™ automatically keeps slides and tape synchronized during playback
16. Digital encoding and decoding of program cues with error correction
17. Standard effects include Dissolve, Alternate, Fade, Superimpose, Hold and Flash
18. Homes projectors to #1 tray position automatically
19. Physical: 1.75" (rear), 1.25" (front) x 5"x 7"
20. Weight: 1.5 lbs

