



**5500 Series Operator's Guide  
Includes Live**

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# Table of Contents

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<b>WELCOME TO THE 5500 SERIES PROFESSIONAL DUPLICATION SYSTEM .....</b>	<b>3</b>
COPYRIGHT NOTICE .....	3
CD-R/RW AND DVD-R/RW RECORDER WARRANTY POLICY.....	3
PIRACY .....	3
END USER LICENSE AGREEMENT .....	4
ABOUT MF DIGITAL .....	5
WHAT TO EXPECT FROM YOUR MF DIGITAL DUPLICATOR .....	5
ABOUT THIS MANUAL.....	5
<b>GETTING STARTED.....</b>	<b>6</b>
WHAT'S IN THE BOX.....	6
PACKING MATERIALS .....	6
THE BEST PLACE TO PUT THE 5500 .....	6
SAFETY PRECAUTIONS.....	6
<b>LOCATION OF 5500 SERIES COMPONENTS .....</b>	<b>8</b>
LOCATION OF 5500 SERIES COMPONENTS.....	8
<i>Front View</i> .....	8
<i>Rear View</i> .....	8
LOCATION OF 5500 SERIES RECORDER PARTS AND CONTROLS.....	9
MF DIGITAL DRIVES .....	<b>ERROR! BOOKMARK NOT DEFINED.</b>
PIONEER DVD±R/±RW .....	9
<b>SYSTEM STARTUP .....</b>	<b>10</b>
LOADING A DISC.....	11
REMOVING A DISC .....	11
<b>GENERAL OPERATION .....</b>	<b>12</b>
FUNCTION KEYS.....	12
<b>CREATING A HARD DISK IMAGE .....</b>	<b>17</b>
CREATING A HARD DISK IMAGE .....	17
CREATING A SINGLE HARD DISK IMAGE.....	17
CREATING MULTIPLE HARD DISK IMAGES .....	19
ENABLING VERIFY AFTER .....	21
<b>COPYING FROM A HARD DISK IMAGE.....</b>	<b>22</b>
MULTIPLE IMAGES DISABLED .....	22
MULTIPLE IMAGES ENABLED .....	23
<b>COMPARING FROM A HARD DISK IMAGE.....</b>	<b>25</b>
MULTIPLE IMAGES DISABLED .....	25
MULTIPLE IMAGES ENABLED .....	26
<b>ATIP CODES (CD-R/RW SERIES ONLY) .....</b>	<b>28</b>
READING ATIP CODES.....	28

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**VIEWING DEVICE INFORMATION .....29**

    CREATING AUDIO COMPILATION DISCS ..... 30

    WORKING WITH CD-REWRITABLE (CD-RW) DISCS..... 32

*CD-RW Supported Formats*..... 32

**UTILIZING THE 5500 SERIES CLIENT.....33**

    CONFIGURING THE 5500 SERIES ..... 33

    CONFIGURING THE CLIENT ..... 34

    USING THE LIVE EVENT RECORDER FEATURE ..... 40

## Welcome to the 5500 Series Professional Duplication Copier Module

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### ***About MF DIGITAL***

Thank you for purchasing MF DIGITAL's 5500 Series Copier Module duplicator. MF DIGITAL manufactures a wide variety of CD / DVD duplication equipment, including manual and fully automated CD / DVD duplicators and printers. We hope you will consider us for all of your duplication needs.

### ***What To Expect From Your MF DIGITAL Copier Module Duplicator***

Your MF DIGITAL 5500 Series copier module duplicator is professionally designed and manufactured to give you years of trouble free operation. To avoid accidental damage to your new duplicator, please read and understand this manual thoroughly before operating the unit.

### ***About This Manual***

This manual is written for both novice and experienced users. Please read through this Operator's Guide from beginning to end before using the unit. Once having read the manual, follow along chapter by chapter. This will provide the necessary understanding of your new 5500 Series duplicator.

## Getting Started

Carefully remove the 5500 Series duplicator from the shipping container. Inspect the contents, and verify them against the packing slip. Report any errors in shipping as soon as possible.

### What's In The Box

Your new 5500 Series duplicator includes:

- 5500 Series duplicator
- Power cord
- Firmware CD
- Manual CD
- LAN cable for network hook-up
- Windows XP CD

### Packing Materials

Please retain the original box and packaging in the event that the unit requires future servicing. This will help to reduce the possibility of damage occurring in transit.

### The Best Place To Put The 5500

The best operating location for the 5500 Series duplicator is in a climate-controlled area, free of dirt, dust, humidity, excessive heat, and electronic or electromagnetic interference. Room temperature should be between 65 and 75 degrees Fahrenheit, or between 18 and 23 degrees Celsius. Place the 5500 on a solid, steady work surface, and allow sufficient room for all incidental work materials. Provide at least six inches of clearance on all sides of the unit for ventilation.

### Safety Precautions

The system is shipped with a three-prong power connector, and must be used with a properly grounded AC receptacle. **DO NOT** try to defeat the third "ground" prong. All computer peripherals must be properly grounded, and the 5500 is no exception. The use of a power conditioner, such as an Uninterruptible Power Supply (UPS) or a surge protector, is highly recommended. The minimum required size is 500VA.

Repairs or alterations should only be attempted by an authorized, factory-trained technician. MF DIGITAL reserves the right to void the warranty if unauthorized service is performed.



## Location Of 5500 Series Components

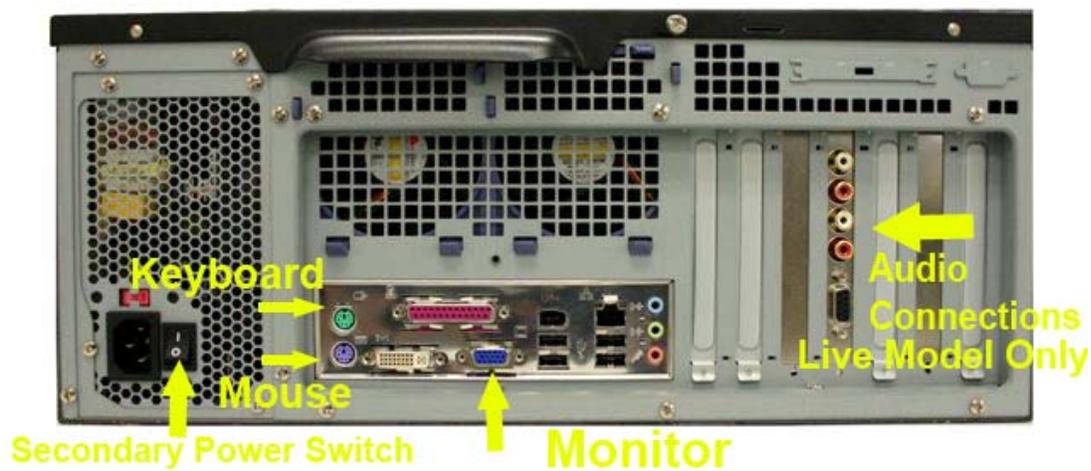
### *Location Of 5500 Series (6 drives) Components*

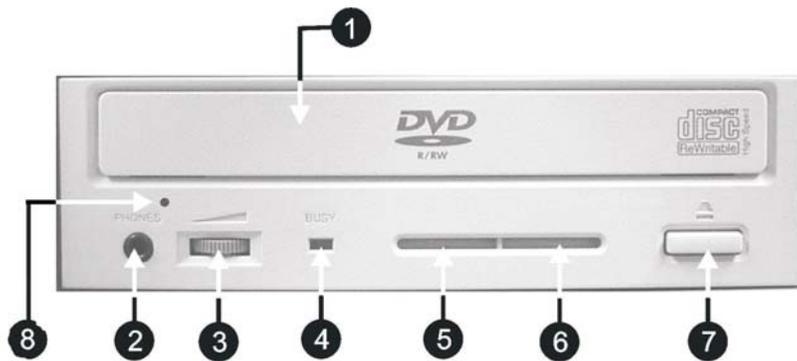
#### Front View



**Connect a Keyboard, Monitor and Mouse (not supplied) To the corresponding connections below.**

#### Rear View



**Location Of 5500 Series Recorder Parts And Controls****Pioneer DVD±R/±RW****Legend**

- 1) **Disc Tray** - Discs are loaded and removed from this tray. Clicking the eject button will open the tray when the power to the 5500 Series is switched on.
- 2) **Headphone Jack** - Connect headphones here.
- 3) **Volume Control Knob** - This controls the volume level of the headphones.
- 4) **Disc Indicator** - Light indicates presence of disc in drive.
- 5) **Ventilation Hole** - Do not block.
- 6) **Ventilation Hole** - Do not block.
- 7) **Eject Button** - This button is used to manually open the disc tray.
- 8) **Emergency Eject Pinhole** - In the event that the disc tray will not open by clicking the eject button, insert the tip of a large paper clip into this hole.

## System Startup

Before duplicating can begin it is necessary to review a few details.

- Plug one end of the supplied power cord into the upper receptacle at the rear of the unit.
- Next, verify that the voltage selector switch is set correctly. It is located between the two power receptacles. The 5500 Series supports both 115 VAC and 230 VAC at 50 ~ 60 Hz. Please confirm that the appropriate voltage (115 VAC for North America) has been selected.



---

### CAUTION

*Always use properly grounded receptacles or severe damage to your system may result. The use of a surge protector or Uninterruptible Power Supply (UPS) is highly recommended.*

---

- Make sure you power on the unit using the primary power switch (located on the rear of the unit) and secondary power switch (located on the power supply).
- Once the proper voltage setting has been confirmed, it is time to turn on the unit. Wait a minute or two while the system starts up. The window on your monitor will now read:

**MF INC. USA  
DUPLICATION MADE EASY**

After the startup routine is complete, a series of self-diagnostics will be performed. The window on your monitor will now read in sequence:

**INITIALIZING**

Once complete, the monitor will display the main operating screen:

**SELECT COPY OR COMPARE**

***Loading A Disc***

- After the 5500 Series' power has been switched on, click the eject button on the front of the recorder to open its disc tray.
- Load by carefully placing the disc (label side up) into the recessed area of the disc tray, so that the disc lays flat.
- Click the eject button on the front of the recorder to close the disc tray.

***Removing A Disc***

- While the 5500 Series' power is still switched on, click the eject button on the front of the recorder to open the disc tray.
- After the disc tray has completely opened, lift the disc by its edges and carefully remove it.
- Click the eject button on the front of the recorder to close the disc tray.

## General Operation

The 5500 Series is extremely versatile and offers many useful and powerful features.

### Function Keys

Various uses for the 5500 will be explained throughout this Operator's Guide. The following section explains the purpose of the function keys.

The numeric keys with your mouse have special functions. When the main operating screen is displayed:

```
SELECT COPY OR COMPARE
```

0

- Click the "0" key with your mouse. The screen will now read:

```
1 = COPY 2 = SIMULATE
```

The factory setting for this function is "Copy". The "Simulate" mode is a diagnostic tool, which is useful for testing the readability of a master disc, without actually writing to blank discs loaded into the recorders. It is also helpful for training purposes, and for experimenting with various system functions.

- Click the "1" key to select "Copy" or the "2" key to select "Simulate". After clicking either key, you will be returned to the main operating screen.

1

- Click the "1" key with your mouse. Something similar to the following will be displayed on the screen in sequence:

```
NTSA 1.000 02 / 19 / 02  
SOFTWARE REV
```

- This is the version information of the firmware currently installed on the 5500.

```
IMAGE SIZE XXMB  
TIME 16:23 DATE 10 / 02 / 01
```

- This displays the image size on the internal hard disk, time and date.

VERIFY AFTER COPY=OFF  
SYSTEMS OPTIONS

- This displays the *Verify After* status of the 5500. The *Verify After* function will verify a copied disc against the master disc immediately after it has been copied.

MULTIPLE IMAGES=OFF  
SYSTEM OPTIONS

- This displays the *Multiple Images* status of the 5500. Multiple images allows the user to store up to 6 separate master images on the internal Hard Drive.

INSTALLED MEMORY: 1022 MB  
SYSTEM OPTIONS

- This displays the *Installed Memory* of the 5500.

TOTAL GOOD:           BAD:  
SYSTEM OPTIONS

- This displays the number of good and bad copies that were produced to date on the system

2

- Click the “2” key with your mouse. You will see several functions scroll across the screen. Select a function by clicking the corresponding number with your mouse. Enable or disable the function by clicking the “Start/Yes” or “Stop/No” key.

0=VERIFY AFTER COPY  
SELECT OPTION

- 0- The factory setting for this function is disabled. When enabled, the *Verify After* feature automatically compares discs to the master disc or hard disk image after copying is completed. Due to the nature of the various compact disc formats, only CD-ROM Mode 1, CD-ROM Mode 2, CD-ROM XA Mode 2 Form 1, and audio (CD-DA) discs can be compared.

1= MULTIPLE IMAGES  
SELECT OPTION

- 1- The factory setting for this function is disabled. When enabled, the *Multiple Images* feature allows up to six images to be stored on the hard disk drive at one time. This setting will remain in effect until disabled, even after restarting the 5500.

2 = CLICK DETECTION  
SELECT OPTION

- 2- The factory setting for this function is “enabled”. When “disabled”, the *Click Detection* feature allows masters with small random errors to be read to the hard drive. Caution should be taken when disabled, as masters that would normally be rejected will be allowed to be read-in. Undesirable results may occur.

3

- Not used.

4

- **Print function. See page “40”.**

5

- Click the “5” key with your mouse. The screen will now read:

START IMPORTING AUDIO?  
[ STOP ] = NO [ START ] = YES

- By using the *Audio Track Import* feature, audio compilation discs can be created one track at a time from one or more masters.
- Manually place an audio master disc into drive number 1.
- Click the “Start/Yes” key
- Click the number of the track you wish to import and click the “Start/Yes” key. Only one track may be imported at a time. All of the tracks will create one master image on the hard drive.
- Once you have imported all of the tracks, copy the image you just created from the hard drive as you normally would.

6

- Click the “6” key with your mouse. Something similar to the following will be displayed in sequence:

```
1 (1,1) GENERIC CRD-BP17
V: 1.55
```

This display is the device information for each of the recorders installed in the 5500. This includes their host number, model name, and firmware version.

7

- Click the “7” key with your mouse. The screen will now read:

```
CLEAR HD?
```

- Click the “Start/Yes” key to clear the hard drive. If the “Stop/No” key is clicked you will be prompted to set the “System Time.”

```
SET SYSTEM TIME?
```

- Click the “Start/Yes” key to set the system time.
- If the “Stop/No” key is clicked you will be prompted to “Read ATIP?”

```
READ ATIP?
```

When selected, the *ATIP* function allows you to determine the manufacturer of the CD-R placed in drive 1 of the 5500. (Not available on DVD)

- If you clicked the “Stop/No” key at you will be prompted to “Set the Drive Order”:

```
SET DRIVE ORDER?
```

- Click the “Stop/No” key if you do not want to reset the drive order. Click the “Start/Yes” key and you will then see the following screen:

```
OPENING DRIVES...
```

- All of the drives will open at this time:

```
TESTING DRIVE STATUS
CLOSE DRIVE TRAY 1
```

- Close the drive tray of the drive you would like to be drive number “1”. It can be any one of the drives. You will then see the following screen:

```
TESTING DRIVE STATUS
DRIVE 1 DETECTED
```

- Close the remaining drives in order from top to bottom.
- If you clicked “Stop/No” to “Set Drive Order”, you will be prompted to “Change Network Settings”. Clicking “Start/Yes” will allow you to set-up the network client feature. **Please see *Setting Up Network Client* section (p. 36) for further details.** Clicking “Stop/No” will bring you back to the “Select Copy or Compare” screen.

**8**

- Click the “8” key with your mouse. The screen will now read (CD version shown):

```
SELECT RECORDING SPEED
[ 0 ] = 24x [ 1 ] = 32x [ 2 ] = 40x
```

The factory setting for this function is “40x” for CD and “8x” for DVD. When selected, the *Select Recording Speed* feature allows you to set the copying speed as determined by the capabilities of the recorders installed in the 5500.

- After clicking any of those keys, the screen will now read:

```
??x RECORDING SPEED
```

```
SELECT COPY OR COMPARE
```

**9**

- Click the “9” key with your mouse. Something similar to the following will be displayed in sequence:

```
      IDLE
DEVICE ( 0 , 1 )
```

This displays the status of the last disc copied or compared in each of the 5500’s recorders. If the last operation performed was successful, the screen will report “OK”. If problems were encountered, an error message will be displayed.

## Creating A Hard Disk Image

### ***Creating A Hard Disk Image***

The 5500 Series comes equipped with an internal hard disk drive, which can be used to store copies of master discs for later recording or comparing. Each master is saved as a single image file. Up to six images can be stored on the hard disk at one time.

A hard disk image is useful as a convenient way of copying standard master discs. For example, create hard disk images for three or four master discs which are needed on a regular basis, and access them to make copies as required.

### ***Creating A Single Hard Disk Image***

Although the 5500 Series' internal hard disk can store up to six images of master discs, it is sometimes prudent not to use this ***Multiple Image*** feature and only allow one image to be created and stored. For example, using a single image simplifies the copying process. This reduces the chance that an operator might make copies of the wrong discs by selecting the incorrect hard disk image.

To create a single hard disk image, the steps are as follows:

- From the main operating screen depicted below:

SELECT COPY OR COMPARE

- Click the COPY key. The screen will now read:

FROM HD?

- Click the STOP/NO key. The screen will now read:

TO HD?

**Note:**

**If the master does not load, you may have to reset the drive order to distinguish drive 1 (see page 17).**

- Click the START/YES key. The screen will now read in sequence:

WAITING FOR DRIVE READY

ANALYZING MASTER

READ - - - - - 62 %

MASTER ARCHIVED OK

ARCHIVE OK, PRESS START

The master disc is now stored as an image on the hard disk. If you are creating an audio image, Pregaps and SubIndexes will be shown.

***Note:** If discs failed to **Archive** properly, the recorder tray drawer will stay closed, and the screen will read "Archive Failed, Click Start". This points to a problem with the master CD. Try a different master CD.*

- Click the "Start/Yes" key, and you will be returned to the main operating screen:

SELECT COPY OR COMPARE

***Note:** When the **Multiple Images** feature is disabled, only one image can be saved on the hard disk. If a new image is created, the old one is overwritten.*

### Creating Multiple Hard Disk Images

The *Multiple Images* feature allows the 5500 Series' internal hard disk to store up to six master disc images. The factory setting for this function is "disabled". To enable multiple images proceed as follows:

- From the main operating screen depicted below:

SELECT COPY OR COMPARE

- Click the "2" key. The screen will now display the following:

0=VERIFY AFTER COPY  
SELECT OPTIONS

1=MULTIPLE IMAGES  
SELECT OPTIONS

2=CLICK DETECTION  
SELECT OPTIONS

3=COPY PROTECTION  
SELECT OPTIONS

- Click the "1" key to select multiple images. The screen will now read:

MULTIPLE IMAGES?(YES/NO)  
SELECT OPTION

- Click the "START/YES" key to enable "Multiple Images".

MULTIPLE IMAGES SELECTED  
SELECT OPTION

- You will then be returned to the main operating screen:

SELECT COPY OR COMPARE

- Click the "COPY" key. The screen will now read:

FROM HD?

- Click the "STOP/NO" key. The screen will now read:

COPY TO HD?

- Click the "START/YES" key. The screen will now read:

SELECT IMAGE  
VALID IMAGE: 1 TO 6

- Select the number that will designate the location of your master. The screen will then read in sequence:

```
WAITING FOR DRIVE READY
ANALYZING MASTER
READ ----- 62 %
MASTER ARCHIVED OK
ARCHIVE OK, PRESS START
```

The master disc is now stored as an image on the hard disk. If you are creating audio images, Pre gaps and Sub Indexes will be shown.

***Note:** If discs failed to **Archive** properly, the recorder tray drawer will stay closed, and the screen will read "Archive Failed, Click Start". Try a different master disc.*

### **Enabling Verify After**

The **Enabling Verify After** option, allows the user to verify the copy against the image on the hard drive. This ensures the user that the copies are exactly like the master image. To enable this option, do the following:

- From the main operating screen depicted below:

SELECT COPY OR COMPARE

- Click the “2” key and the screen will now display in sequence:

0=VERIFY AFTER COPY  
SELECT OPTIONS

1=MULTIPLE IMAGES  
SELECT OPTIONS

2=CLICK DETECTION  
SELECT OPTIONS

3=COPY PROTECTION  
SELECT OPTIONS

- Click the “0” key, and the screen will now read:

VERIFY AFTER COPY YES/NO

- Click the “START/YES” key to enable, or the “STOP/NO” key to disable the “Verify After” option. If you click the “START/YES” key the screen will read:

VERIFY AFTER COPY IS ON

- You will then be returned to the main operating screen.

SELECT COPY OR COMPARE



- Upon successful completion, the copied disc(s) will be ejected. The screen will now read:

COPY OK , PRESS START

- Click the “START/YES” key, and you will be returned to the main operating screen:

SELECT COPY OR COMPARE

*Note: If discs failed to COPY properly, the recorder tray drawer will stay closed, and the screen will read “Copy Failed, Click Start”. This copy should not be used.*

### Multiple Images Enabled

To make copies from hard disk images that were previously created with the *Multiple Images* feature “enabled”, the steps are as follows:

- From the main operating screen depicted below:

SELECT COPY OR COMPARE

- Load as many blank discs as are required into the recorders. Click the “COPY” key with your mouse. The screen will now read:

FROM HD?

- Click the “START/YES” key. The screen will now read:

SELECT IMAGE  
VALID IMAGE: 1 TO 6

The 5500 Series defaults to the first image (1). For the purposes of this example, click the “1” key to select this image, followed by the “START/YES” key. The screen will now read:

WAITING FOR DRIVES...

CALIBRATING LASER...

WRITING LEAD IN...

Progress will be displayed on the screen during the operation:







Upon successful completion, the compared disc(s) will be ejected.  
The screen will now read:

COMPARE OK, PRESS START

- Click the “START/YES” key, and you will be returned to the main operating screen:

SELECT COPY OR COMPARE

***Note:** If discs failed to **Compare** properly, the recorder tray drawers stay closed upon completion. These discs should not be used. To help you determine the nature of the problem, error messages can be displayed by clicking the “9” key with your mouse.*

## **ATIP Codes (CD-R/RW series only)**

ATIP stands for "Absolute Time In Pre-Groove". In firmware 1.0XX and higher, the ATIP option allows you to determine the manufacturer of the disc placed in the top drive of the 5500. It will also determine the minutes, seconds, and frames present on the disc. Many generic brand CDs will not be recognized.

### ***Reading ATIP Codes***

To read an ATIP Code from a disc, the steps are as follows:

- From the main operating screen depicted below:

```
SELECT COPY OR COMPARE
```

- Place the disc that you wish to read the ATIP information from, into the top drive of the 5500.
- Click the "7" key. The screen will now read:

```
CLEAR HD?
```

- Click the "STOP/NO" key. The screen will now read:

```
SET SYSTEM TIME?
```

- Click the "STOP/NO" key. The screen will now read:

```
READ WATERMARK?
```

- Click the "STOP/NO" key. The screen will now read:

```
READ ATIP?
```

- Click the "START/YES" KEY. The screen will now read something similar to this.

```
READING ATIP
```

- The screen will now read something similar to the following:

```
ATIP CODE 97m 24s 1F
```

```
SELECT COPY OR COMPARE
```



### Creating Audio Compilation Discs

In addition to copying entire CDs, audio compilation discs can be created one track at a time, from one or more master discs containing audio CD-DA, Mixed Mode, or CD-Extra. This is accomplished by using the 5500 Series' audio track import feature. The audio will be imported to the 1<sup>st</sup> partition of the hard drive.

To create an audio compilation disc, the steps are as follows:

- From the main operating screen depicted below:

SELECT COPY OR COMPARE

- Load the master disc that contains the audio track(s) you wish to copy into the top recorder. Wait for the LED lights on the front of all the recorders to stop flickering (this may take up to 30 seconds).

***Note:** Only one audio compilation disc can be created at one time. If several copies are required, first create the original compilation disc, and then copy it in the usual way.*

- Click the “5” key. The screen will now read:

START IMPORTING AUDIO?  
[STOP]=NO [START]=YES

- Click the “START/YES” key. The screen will now read:

SELECT TRACK:

- Click the number of the track you would like to select. Track number 1 is used as an example.

SELECT TRACK: 1  
IMPORTING TRACK: 1

- If you wish to make changes, click the “STOP/NO” key. If the selection is correct, click the “START/YES” key. The screen will now read:

```

I M P R      6 2 %
I M P O R T I N G   T R A C K   1
    
```

- This screen shows the progress of the importation, the tracks are placed in the “1” partition of the hard drive. Once complete the screen will read:

```

I M P O R T   M O R E   T R A C K S ?
[ S T O P ] = N O   [ S T A R T ] = Y E S
    
```

- If you would like to import more tracks, click the “START/YES” key. If you are finished click the “STOP/NO” key and the screen will now read:

```

A U D I O   I M P O R T   I M A G E   R E A D Y
U S E   C O P Y   K E Y   M A K E   C O P I E S
    
```

- Click the “COPY” key and place blank CD-Rs into the drives of the 5500 Series. The screen will now read:

```

F R O M   H D ?
    
```

Click the “START/YES” key to begin copying. The screen will now read:

```

C O P Y I N G . . . 4 0 %
D R I V E : 1
    
```

- If you wish to copy additional tracks from another master CD, eject the former master disc. You will then load the new master disc. Click the “1” key and proceed as before. If you have finished, click the “9” key to complete the disc. The screen will now read:

```

I D L E
D R I V E : 1
    
```

```

W A I T I N G
D R I V E : 1
    
```

Upon successful completion, the compiled disc will be ejected. Click the “STOP/ NO” key and the screen will read:

```

J O B   S T O P P E D , P R E S S   S T A R T
    
```

Click the “START/YES” key and you will be returned to the main operating screen:

```

S E L E C T   C O P Y   O R   C O M P A R E
    
```

### ***Working With CD-Re-Writable (CD-RW) Discs***

In addition to working with DVD+/-R and CD+/-R discs, the 5500 can also copy both to and from DVD and CD RE-Writable (DVD/RW CD/RW) discs.

### ***CD-RW Supported Formats***

The 5500 can copy CD-RW discs written in most logical formats (ISO 9660, audio, etc.) but not those created using the Universal Disk Format (UDF). CD-RW discs using UDF are produced by packet writing software (such as Adaptec DirectCD, CeQuadrat PacketCD, Prassi abCD, etc.). Because UDF discs cannot be read by all CD-ROM drives, they are not a good choice for distributing data.

## Utilizing the 5500 Series Client

The 5500 series has a client feature which enables a remote user.

### Configuring the 5500 Series

- Connect the 5500 Series to your network using the RJ-45 connector on the back of the system.
- Turn on the 5500 Series
- Wait for the 5500 Series to boot up, you will see:

```
SELECT COPY OR COMPARE
```

- Click the “7” key, you will see:

```
CHANGE NETWORK SETTINGS
```

- Click the “START/YES” key, you will see:

```
ENTER NAME: MF  
CURRENT NAME:
```

- You must leave “MF” at the front of the name. You should name it “MF001” for example.

```
ENTER NAME: MF123  
CURRENT NAME:
```

- Click the “START/YES” key, you will see:

```
DHCP ENABLED?  
[ STOP ] = NO [ START ] = YES
```

- Click the “Stop No” key if the network does not use DHCP or click the “START/YES” key if the network does use DHCP. If you click the “START/YES” key you will be prompted to Restart the system, if you click the “Stop No” key you will see:

```
ENTER:  
FIRST NUMBER OF IP
```

- Enter the 4 sets of numbers of the IP address, one set at a time. After each octet click the “START/YES” key. Do not enter an IP address of a machine that is already on the network. When you have entered in the entire IP address, you will see:

**ENTER:  
FIRST NUMBER OF SUBNET**

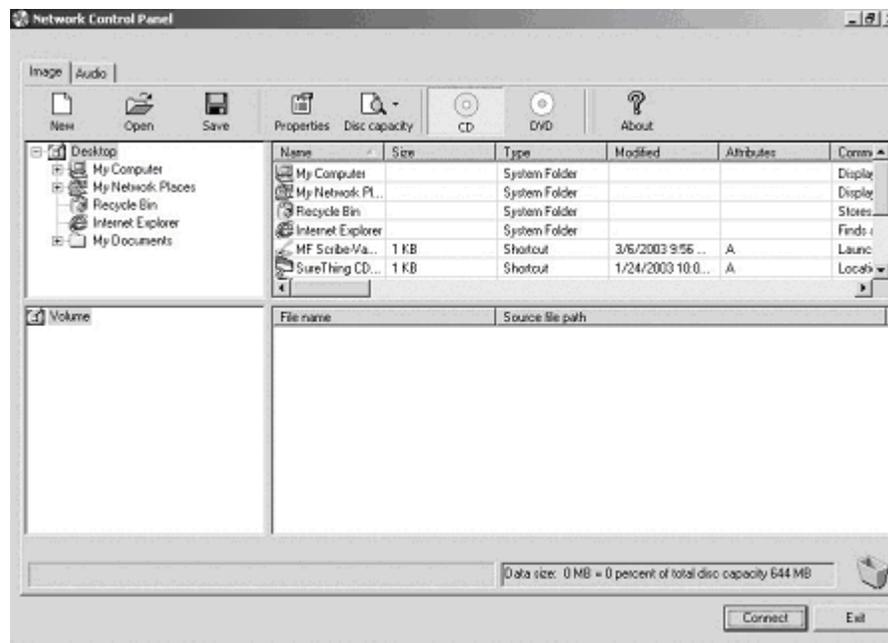
- Enter the 4 sets of numbers of the subnet. Clicking “START/YES” after each set. You will then see:

**PLEASE RESTART THE SYSTEM  
PRESS [ START ]**

- Click the “START/YES” key and then Restart the system by turning it Off and back On again.

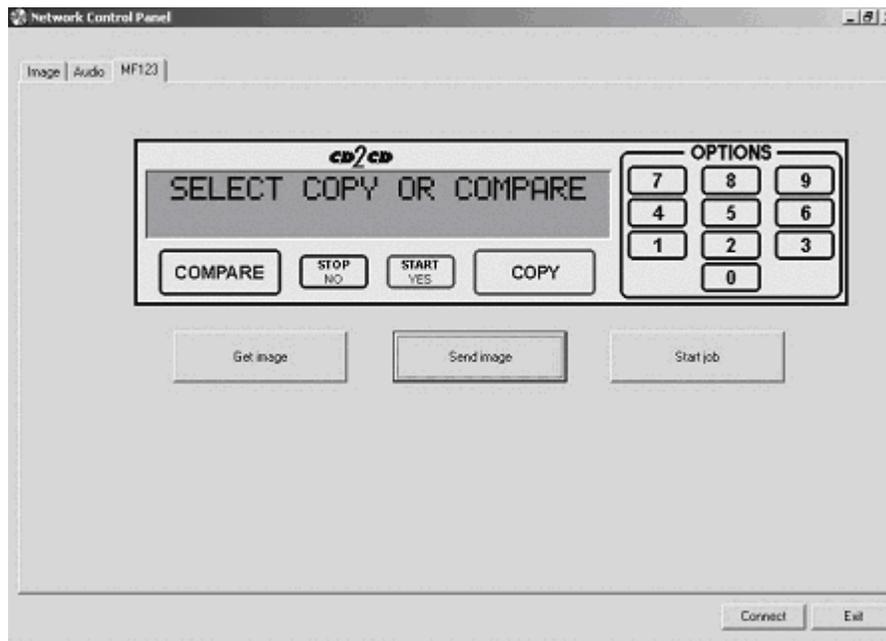
### Configuring the Client

- Place the firmware CD into the CD-ROM drive of your PC
- Double click on “Embedded” folder
- Double click on SaClient.exe
- Click “Connect” in the lower right hand corner





- Enter the name of the 5500 Series on the network.
- Click "OK"
- A new tab will appear at the top of the screen called "MF123"
- Click the "MF123" tab and you will see:



- Click "Get image" to pull an image from the 5500. Give the image a name and location. The image will be saved with a .img file extension.
- Click "Send image" to send an image to the 5500. The image may be an .img, .iso, .udf, or .isc.

- To burn from the client, click “Start job”. Click “Browse” to select an image to burn to the 5500. Select “Copy”, “Verify”, or “Test”. Enter a quantity and click “OK”.

**Start job** [X]

Image file

Label file

Copy     Verify     Print     Test

Quantity

## Setting The Internal Clock

The 5500's internal clock is set at the factory for Eastern Standard Time (observing daylight savings when applicable).

To set the internal clock, the steps are as follows:

- Click the "7" key with your mouse. The screen will now read:

CLEAR HD?

Click the "Stop/No" and you will be prompted to set the "System Time."

SET SYSTEM TIME?

- Click the "Start/Yes" key if you would like to set the system time. The screen will then read:

ENTER YEAR:  
SETTING SYSTEM DATE

- Click the "Start/Yes" key after each entry.

ENTER MONTH:  
SETTING SYSTEM DATE

ENTER DAY:  
SETTING SYSTEM DATE

ENTER HOUR:  
SETTING SYSTEM DATE

ENTER MINUTE:  
SETTING SYSTEM DATE

- You will then be returned to the main operating screen:

SELECT COPY OR COMPARE

## Firmware Updates

From time to time the 5500 internal “firmware” may need updating to add new features or improve existing functions. Firmware is easily updated by loading a “Firmware Update CD” into the system. The latest version of firmware will be available for downloading to your computer from the MF DIGITAL web site: [www.MFDIGITAL.com](http://www.MFDIGITAL.com)

Once a firmware image file is downloaded, a “Firmware Update CD” can then be written using a computer, a CD-R/RW recorder, and most popular premastering programs (such as: Adaptec Easy CD Creator and Toast, CeQuadrat WinOnCD, Ahead Nero, NTI CD-Maker, and others). Refer to your premastering software documentation for details on how to record a disc from an image file.

After having created a “Firmware Update CD”, perform the following steps to update the 5500 Copier Module firmware:

- With the system turned ON, load the “Firmware Update CD” into the top CD-R/RW or DVD±R/±RW recorder.
- Turn off the power to the Scribe EC Standalone.
- Turn on the power to the Scribe EC Standalone.
- The system will startup:



MF INC.  
DUPLICATION MADE EASY

- You will see the “Initializing System” screen:



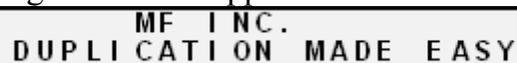
INITIALIZING SYSTEM

- You will see the upgrade firmware screen:



UPGRADE FIRMWARE  
[ STOP ] = NO [ START ] = YES

- Select “Yes” to upgrade the firmware.
- Upon completion, the system will automatically reboot and the following screen will appear:



MF INC.  
DUPLICATION MADE EASY

- Remove the CD at this time.
- It is possible that the firmware on the CD-R/RW drives may be updated during this process. If so, you will notice all the drive lights come on and the screen will read “Firmware Upgrade”. DO NOT TURN SYSTEM OFF. Turning system off during the process will damage the drives.

- You will then be returned to the main operating screen:

SELECT COPY OR COMPARE

---

## Digital recording with the 5500 Live enabled systems

---

### ***Introduction***

The 5500 “Live” is a special edition of the 5500 which allows for audio recording directly to the system’s HD. This proves to be an ideal solution for live event recording, enabling the user to go from recorded event to making multiple CDs with in only a few minutes of the event.

### **Features:**

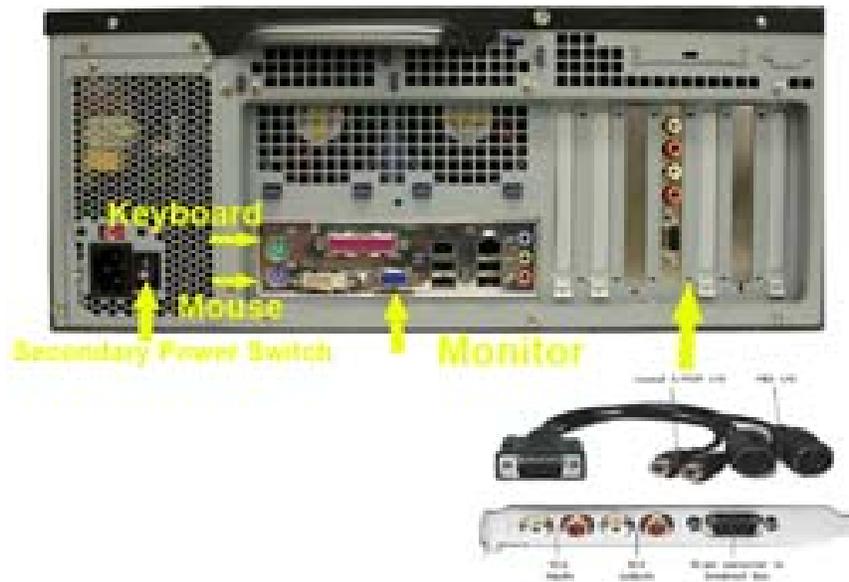
- 2 x 2 analog I/O
- 24-bit/96kHz fidelity
- S/PDIF digital I/O with 2-channel PCM
- 1 x 1 MIDI I/O
- Analog I/O with gold-plated RCA jacks
- Non destructive Start ID editing.

### **Specifications:**

Frequency response:	22Hz-22kHz, -0.4, -0.4dB
Dynamic range:	104dB (A-weighted) (D/A) 100.4dB (A-weighted) (A/D)
THD:	< 0.002%

**Input / Output**





### CAUTION

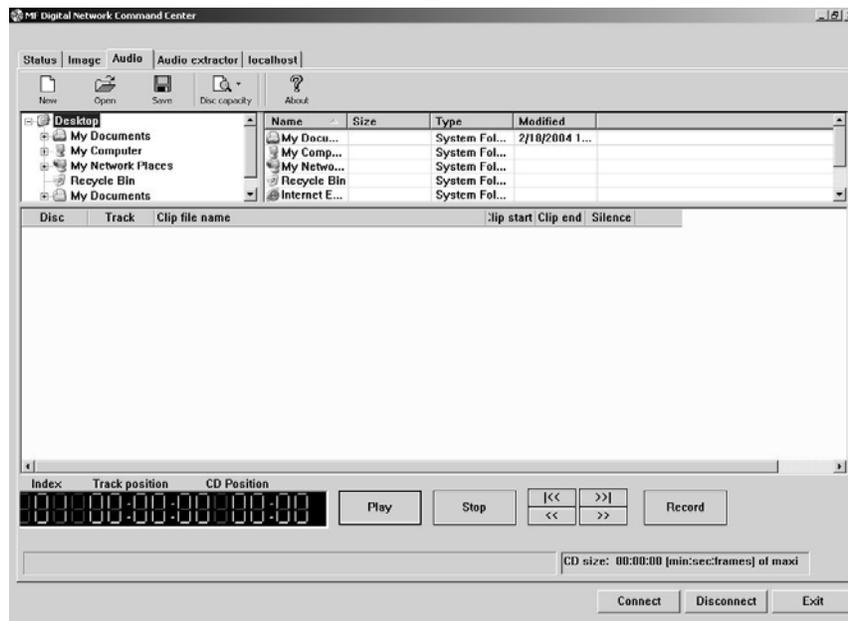


*Your 5500 uses Microsoft Windows XP Operating System. While this may appear to be a conventional PC, XP Embedded is specially designed for embedded applications. Do not install any non MF Digital supported software. Any damage as a result of this will not be covered under warranty.*

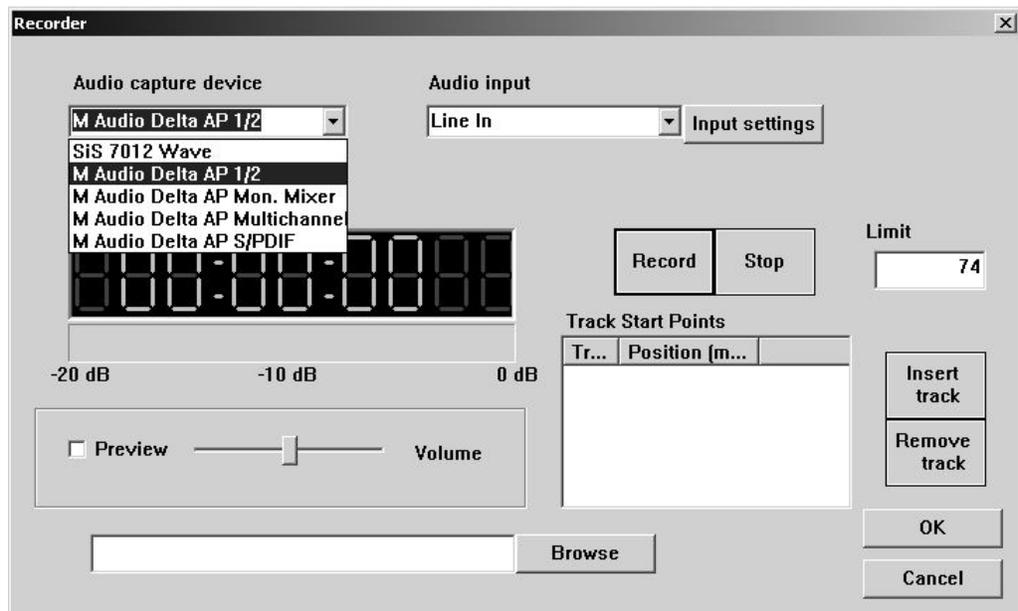
## Using the 5500 Live

### Recording

- Connect the desired input to either the S/PDIF Digital IN, the analog IN, or Midi In. Note that the S/PDIF and Midi inputs are made via the included breakout cable and each connector is labeled INPUT or OUTPUT.
- Using your mouse, click on the AUDIO TAB and the following screen should be displayed:

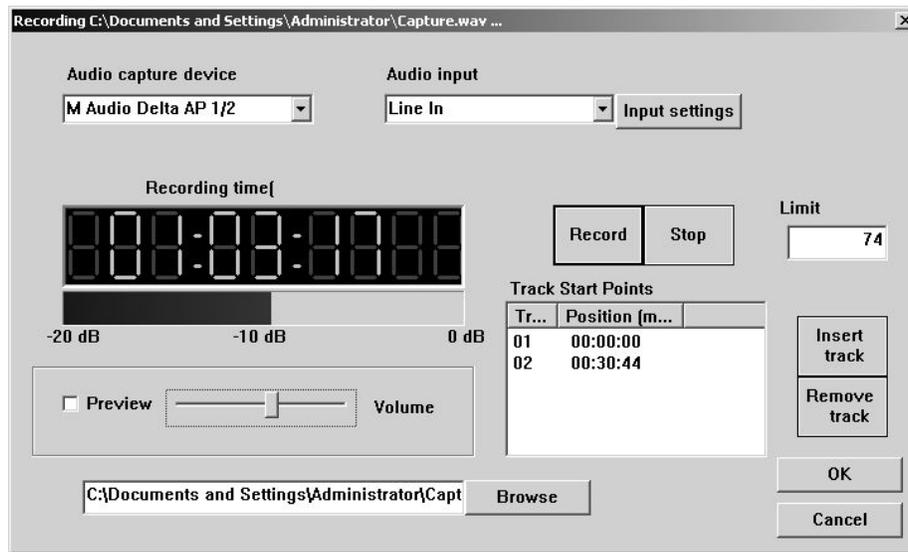


- Click on RECORD to bring up the RECORDER dialog



Using your mouse, select the desired input from the Audio Capture Device pull-down.

- Click on browse to select location and a filename to save the recording to. Keep in mind that CD-DA quality recording consumes about 10 MB/min
- Click on the RECORD button to start recording. During recording, the following screen is displayed:



**Browse:** Selects the desired folder and filename. You will be prompted to overwrite existing files.

**Preview:** Check this box to preview the audio as it is being recorded. Attach speakers to the green jack on the back on the 5500. The output may be adjusted using the slider.

**Stop:** allows you to end recording.

**Limit:** Allows you to set a maximum record time. Entering 74 here will stop recording from the select input in 74 minutes.

**Insert Track:** Inserts a START ID at the point the button is clicked. A START ID serves as a track point in your live recording. These may also be added and removed manually once recording has been completed. START IDs have no effect on the audio being recorded but merely serves as the “track” points.

**Remove Track:** Removes the selected START ID. All Audio CDs must have an INDEX 1 so START ID 1 cannot be removed.

**OK:** Closes the dialog box.

- Click “STOP” to end recording and then “OK” to close the dialog.

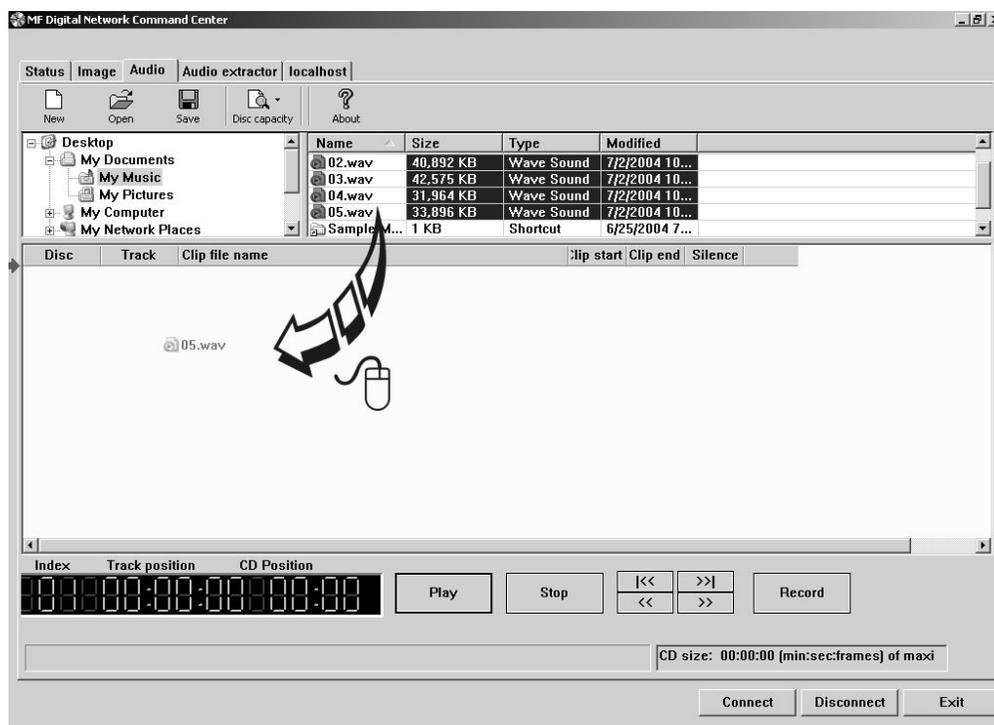
### ***Editing your recording and Adding tracks***

The AUDIO TAB is where you create your CD projects. WAV files and MP3 files may be dragged and dropped into your project and represent a single track. WAV files must be 44.1 kHz, 16-Bit, and stereo. The CD-DA standard does not allow for mono CDs. A mono CD is simply one where the left and right channels are the same.

## Adding Tracks

By default, each WAV, or MP3 file represents a single track. Certainly there are times, especially in live recording, where a single large WAV file, which might represent 60 minutes or more, may slit into multiple tracks, edited for in point, out point, and start IDs. We'll touch on this in just a minute. First let's add a track or two. Here's how:

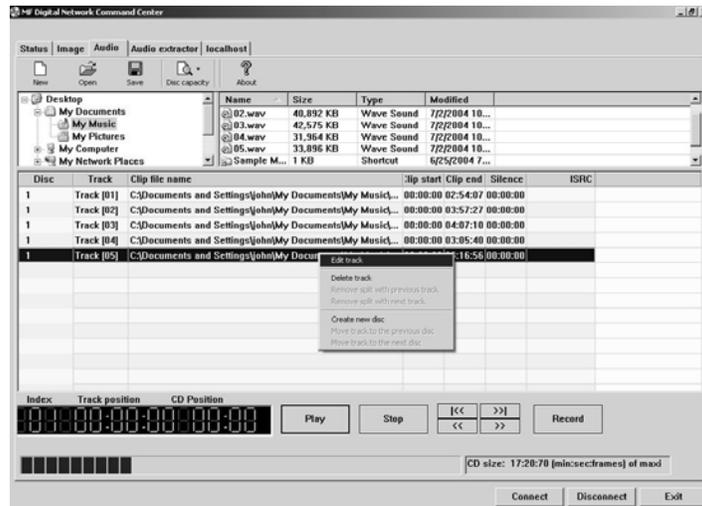
- From the AUDIO TAB, use the top two panes of the window to navigate your PC to find the desired WAV file. Left click to select a file then drag the WAV file into the project to the bottom pane of the screen. You can click CTRL or SHIFT when clicking on files to select multiple files or a range of files.



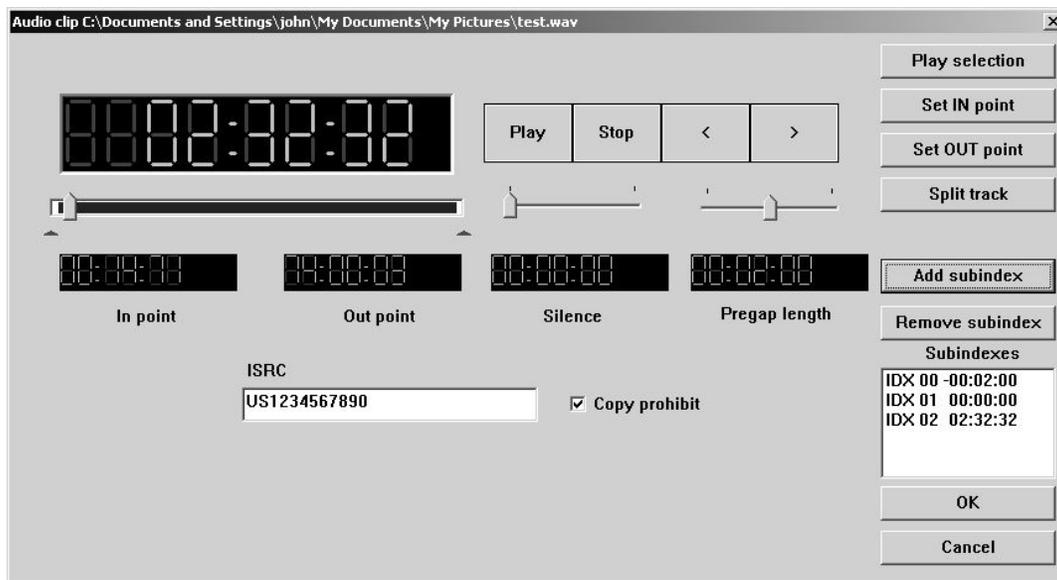
You may rearrange the order of tracks simply by dragging them to their desired position on the play list.

## Editing tracks

Tracks (WAV and MP3 Files) may be edited for In Point, Out Point, Track Silence, Track Pre-gap length, ISRC Code, sub-indexes, setting the copy prohibit flag (this is not copy protection), and the ability to split a track into multiple tracks. This is extremely handy on long recordings where several tracks are desired. Note this is non destructive and does not effect the source file in anyway but merely sets the a START ID, or track mark, at the location inserted.

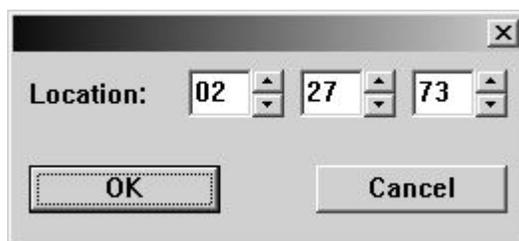


- To edit a track, right click on the desired track and select EDIT. A screen similar to the following will be displayed:



The operations available are as follows:

**Set In Point:** In Point is the point where you wish to begin the track. Adjust using the slider above IN POINT digital display. Use the up and down arrow keys for fine adjustments, or click on IN POINT time display for direct entry. You will see the following:



Once you are satisfied, click on the SET IN POINT button

**Set Out Point:** Out Point sets the end of the track. If you are making a disc from a single WAV file, you may want to use SPLIT TRACK (See below) to set all track START IDs and use SET OUT POINT only to trim the end of the last track if desired. Adjust using the slider above OUT POINT digital display. Use the up and down arrow keys for fine adjustments, or click on the green LCD digital OUT POINT time display for direct entry as above. Once you are satisfied, click on the SET IN POINT button

**Silence:** Allows you to set the amount of silence between tracks. Set using the slider and arrow keys as you did with the IN and OUT points, or click on the green LCD digital SILENCE time display for direct entry.

**Pregap Length:** Set the “countdown” time between tracks. Set using the slider and arrow keys as you did with the IN and OUT points or click on the green LCD digital PREGAP LENGTH time display for direct entry.

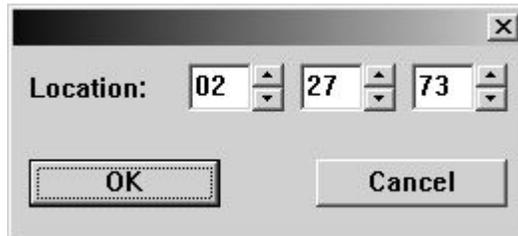
**ISRC Code:** Allows you to enter an ISRC code for the track. ISRC, or International Standard Recording Code, is the international identification system for sound recordings. For more information, please visit <http://www.ifpi.org/isrc/> or [http://www.riaa.com/issues/audio/isrc\\_faq.asp](http://www.riaa.com/issues/audio/isrc_faq.asp).

**Copy Prohibit:** This allows you set the copy prohibit bit. This is not copy protection but merely serves to indicate that digital copying is not allowed and that this is copyrighted material. Most recorders ignore this bit, except those that are SCMS capable. Checking this 'flag' on any CD tracks identifies these tracks as the first copies, so you won't be able to record them digitally from the CD onto an SCMS-equipped digital recorder.

**Sub-indexes:** or indexes provide additional starting points within a single audio track. Indexes are stored in the Q sub-channel and are most often found on classical music and sound effects CDs. Please note that many CD players cannot make use of sub-indexes. To add a sub-index, adjust the slider above IN POINT digital display to the desired insertion point. Use the up and down arrow key for fine adjustments. Once you are satisfied, click on the ADD SUBINDEX button.

**Split Track:** Perhaps the most used button on this screen. This allows you to divide the current track into multiple tracks. This is common on live recordings where you desire to track points in the recording. For example, let say you just recorded a speaker for over 60 minutes. A CD with a single track may not be desirable. To split a track, adjust using the slider above IN POINT digital display

to the desired point you would like the new START ID to appear. Use the up and down arrow keys for fine adjustments, or click on the large main green LCD digital time display in the top left corner for direct entry. You will see the following:



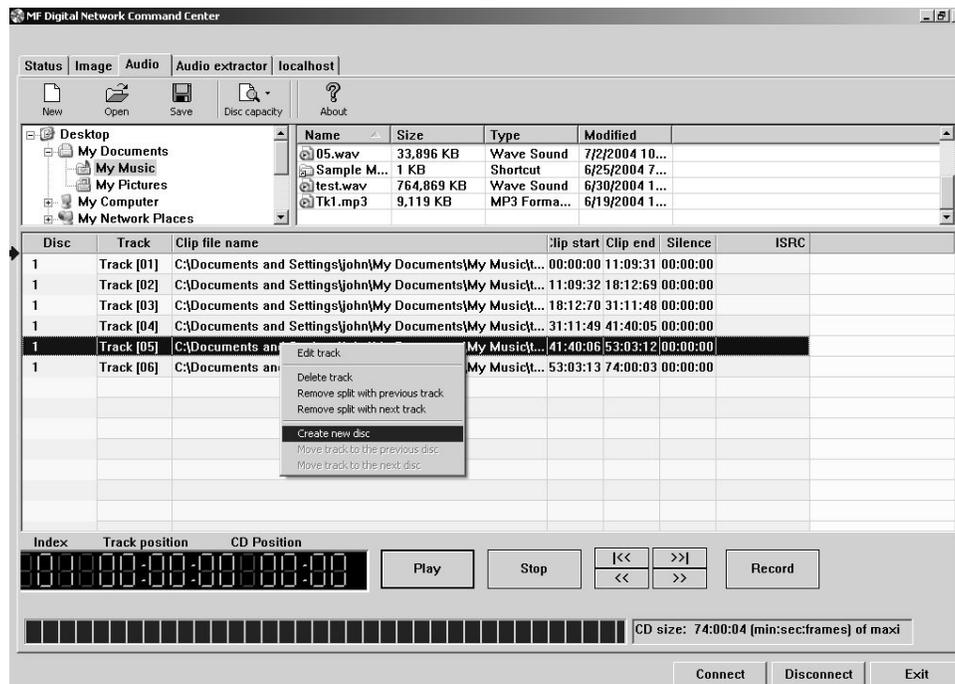
Once you are satisfied, click on the SPLIT TRACK button.

A handy trick to delete undesired content is to create a track out of the content you do not wish to include then delete the track. The source .WAV will remain unaffected but the resulting CD will not contain the content removed.

### **Disc Spanning**

There are times when your recording will not fit on a single disc. The 5500 Live gives you the ability to choose the point at which you wish span to the next disc. To do so, here's how:

- Right click on the track you desire to be the first track on the next disc. You may repeat this for each subsequent disc desired.



- Select “Create New Disc”. You will notice the disc number in the left most column increment along with all tracks below. If a third disc is desired, left click on the track you wish to be the first track of the next disc, right click and select “Create New Disc” once again.
- Once you are happy with the disc set, click on SAVE and you will be prompted to save one .ISC file for each disc created. .ISC files, or image scripts, are images from which you can create discs. These files are relatively small as they contain simply the location of IDs and disc splits. You will need the source WAV for future use.
- To undo a span, simply click on the track you wish to move back to the previous disc, right click on it, and select “Move track to the previous disc...” by left clicking on it.

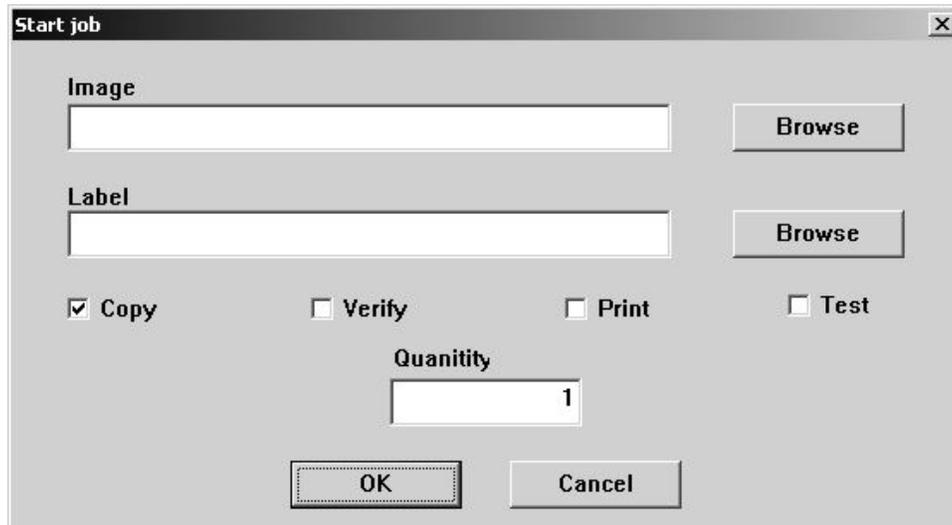
### ***Making the disc(s)***

Making discs is easy. If you have already read through the section on the network client, you are likely ready to go. If you have not, you may wish to do so now. Jobs can be started from either the STATUS tab or the LOCALHOST tab. STATUS TAB is best if you wish to start the job on multiple MF Digital CD copiers. Optionally you may use the network client remotely.

### **Method 1**

Starting a job from LOCALHOST:

- Click on the START JOB button



- Click on the BROWSE button and select an image file to use (.ISC, .ISO, or .IMG). Likely this will be the .ISC file made in the previous step.
- Leave LABEL blank as the 5500 does not support in-line direct to disc printing so you need not enter anything here. Consider the MF Digital 3000 Series for automating duplication and printing if desired.
- Select the desired job options:

**COPY:** If you would like to write the disc, check this option. Typically this will always be checked

**VERIFY:** If you would like to verify the disc, select this option. This will perform a bit-for-bit verify of the disc. Selecting COPY and TEST at the same time will perform a **VERIFY** on the disc once written

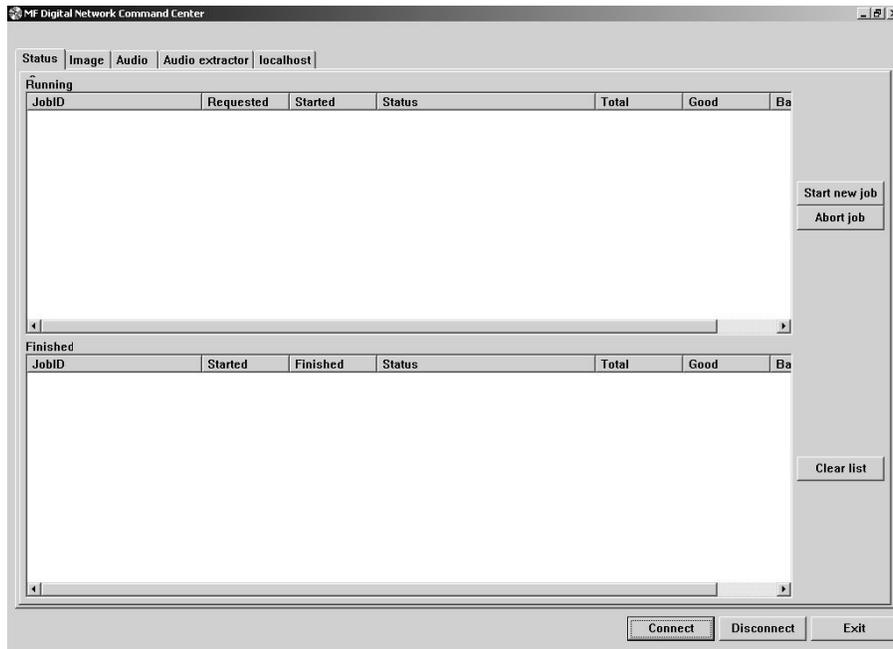
**PRINT:** Not applicable here, but on systems supporting direct-to-disc in-line print, this option could be selected to enable printing

**TEST:** Select this option, to perform a SIMULATED write of the disc. The disc will not actually be written. This is great for learning how to use your system, or for troubleshooting purposes. Selecting TEST and VERIFY at the same time will result in ALL discs being rejected as they contain no data.

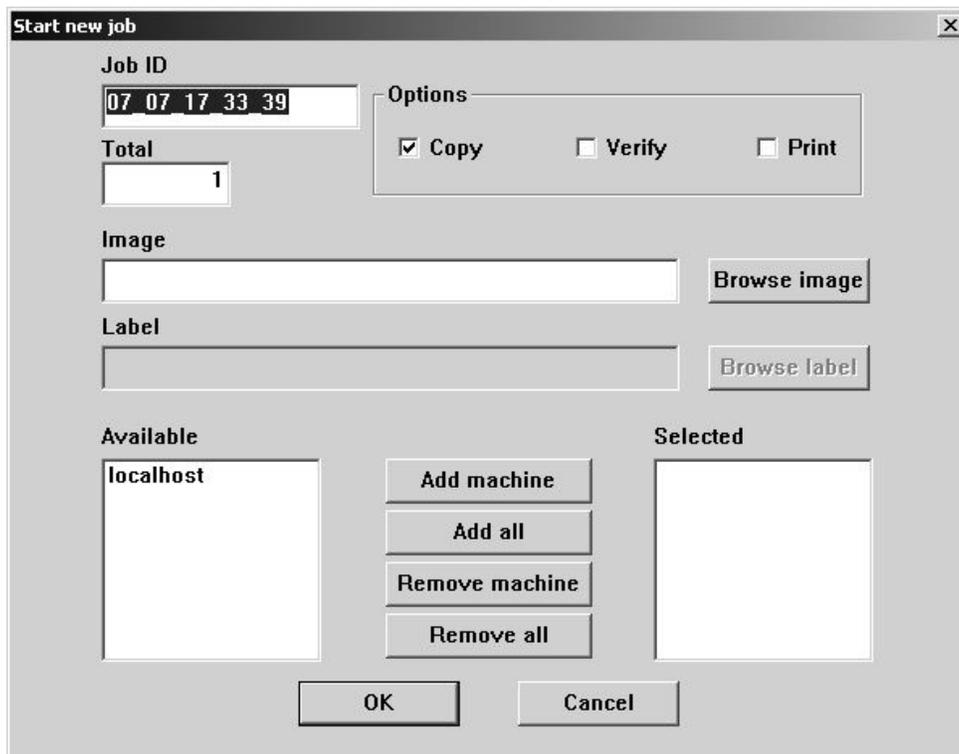
- Enter the desired quantity of discs and then click on OK and your job will start: If it does not, be sure you have 1 GB of free space on the hard disc

## Method 2

Starting a job from the STATUS tab:



- Click on the START NEWJOB button



- Use the default JOB ID or enter your own. This is a handy way to identify your job making it easy to recognize what job is running.
- In the box under TOTAL, enter the desired quantity of discs

- Click on the BROWSE IMAGE button and select an image file to use (.ISC, .ISO, or .IMG). Likely this will be the .ISC file made in the previous step.
- Leave LABEL blank as the 5500 does not support in-line direct to disc printing so you need not enter anything here. Consider the MF Digital 3000 Series for automating duplication and printing if desired.
- Select the desired job options:

**COPY:** If you would like to write the disc, check this option. Typically this will always be checked

**VERIFY:** If you would like to verify the disc, select this option. This will perform a bit-for-bit verify of the disc. Selecting COPY and TEST at the same time will perform a **VERIFY** on the disc once written

**PRINT:** Not applicable here, but on systems supporting direct-to-disc in-line print, this option could be selected to enable printing

- Next choose which systems you wish to allocate to the job. If not networked, or if this is the only MF Digital stand-alone system on your network, only LOCALHOST will appear. If you have other unit but they do not appear, go to the LOCALHOST TAB, click on connect to add other stand-alones. Once connected, you may start up jobs on multiple systems simultaneously. To add systems, simply left click on the desired system to use and then click on the ADD MACHINE. Optionally you may add all available systems by clicking on ADD ALL. The REMOVE buttons can be used to unallocated that system from the job you are about to launch.
- Once you have filled in the appropriate fields and you are happy with your selections, click on the OK button and your job will start: If it does not, be sure you have 1 GB of free space on the hard disc

## Appendix A: Supported Formats

Originally designed for audio use, the Compact Disc (CD) evolved quickly and now employs a wide variety of formats for audio, data, and multimedia applications. The following is a list of the most popular formats currently supported by the 5500 Series. Periodic firmware updates will be made available to deal with new formats as they appear. To obtain the latest version of firmware, contact your MF DIGITAL reseller or download the update from the MF DIGITAL web site: [www.MFDIGITAL.com](http://www.MFDIGITAL.com)

Many CD formats are international or industry standards, but variations on them may emerge from time to time. Should you encounter a disc (which does not employ a copy protection scheme) that you cannot copy on your 5500 Series, MF DIGITAL will do its best to promptly add support for this format. Dealing with custom formats, however, may be subject to a development charge.

Keeping track of how the various formats relate to each other can be confusing. For example, the 5500 Series can copy all CD-ROM Mode 1 discs - this includes ISO 9660, HFS, Hybrid, Rock Ridge and many other types of file systems. As a result, the 5500 Series will most likely copy CD formats not listed in the table below. If you require further assistance, please contact MF DIGITAL's technical support department at (631) 249 9393 ext. 310 or email: [support@MFDIGITAL.com](mailto:support@MFDIGITAL.com)

<b>5500 Series Supported Formats CD-R/RW</b>	
ISO 9660	CD-ROM Mode 1 & Mode 2
CD-DA (Compact Disc-Digital Audio)	CD-ROM XA Mode 2 Form 1 & Form 2
Hybrid (ISO 9660/HFS)	Single session
Hybrid (ISO 9660/HFS/Rock Ridge)	Multisession
Mixed Mode	Disc-at-Once and Track-at-Once
CD-I Form 1 & Form 2**	Rock Ridge
Native O/S's (NT, DOS, OS/2, UFS, HFS (Mac O/S), SUN, AS/400, AIX, etc.)	CD-Extra
Video CD	Romeo
Photo CD	Joliet
Picture CD	Bootable CD

**5500 Series Supported Formats**

DVD single layer
DVD-R (In case of write, 650nm disc only)
DVD-RW
DVD+R
DVD+RW
CD-ROM Mode 1
CD-ROM XA Mode 2 (form 1, form 2)
Photo CD (single and multi session)
CD-DA
CD-Extra (CD PLUS)
CD-R
CD-RW

\*High-Speed CD-RW is not supported to write