MagicDVD Series

CD/DVD Duplication Controller Card

DVD-898, DVD-899

Operation Manual

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CONTENT

1. Introduction

Thank you for choosing *MagicDVD* series CD/DVD duplication controller card. Hopefully this equipment will bring you satisfactory and great pleasure in CD/DVD duplication.

Features:

1. Stand-alone design, no PC or software required.

2. Easy operation, no training required.

3. Load, Copy, Compare, Verify, Emulate, Editing, etc.

4. Compatible formats depend on the writers installed.

5. On-the-fly direct copy or through hard drive loading.

6. Track selection available for copying music tracks.

7. Compatible with many brands of CD/DVD writers.

IMPORTANT NOTE:

1. Make sure voltage setting (AC115/230V) is correct.

2. Stable input of power is required for normal operation.

3. Duplicator should be placed in a clean & cool working environment.

4. Check, clean the master and CD/DVD discs before duplication starts.

5. Do not touch recording surface of the discs.

6. Do not move the duplicator during operation.

7. **DO NOT remove the serial number labels attached on controller card. Warranty will be VOID if any label is torn off or damaged. Wytron reserves the right to fix those cards without labels.**

8. **Warranty will be VOID if the controller card has been tampered with. Wytron will not accept to repair these controller cards even within warranty. The controller card must be maintained in the original shipped status to comply the warranty condition, no artificial modification allowed.**

2. Caution

In no circumstance will Wytron be liable for direct, indirect, special, incidental, or consequential damages arising out of the use or inability to use of this product or documentation even if is advised of the possibility of such damages. Wytron shall not be liable for any hardware used with the product, including the costs of repairing, replacing, or recovering such hardware.

Wytron reserves the right to offer RMA service for non-warranty items due to availability of service parts and production changes.

3. Installation

1. Prepare necessary devices which include:

   a. SATA bus CD/DVD-ROM/BR-ROM drive
   b. SATA bus CD/DVD/BR writer.
   c. Suitable tower case.
   d. SATA bus hard drive.
   e. Switching power supply (Appropriate capacity is suggested. Bad quality of power supply might damage the controller board and cause unstable operation.

2. Assemble all required devices mentioned above. If hard drive is installed, please use the SATA1 port to connect it and then SATA2 for DVD-ROM reader or writers from SATA3. If no hard drive, please use SATA1 to connect the DVD-ROM reader and other writers from SATA2.

   For DVD-899, installation profiles are suggested below for right side cross-section view. The number of writers installed may vary due to different 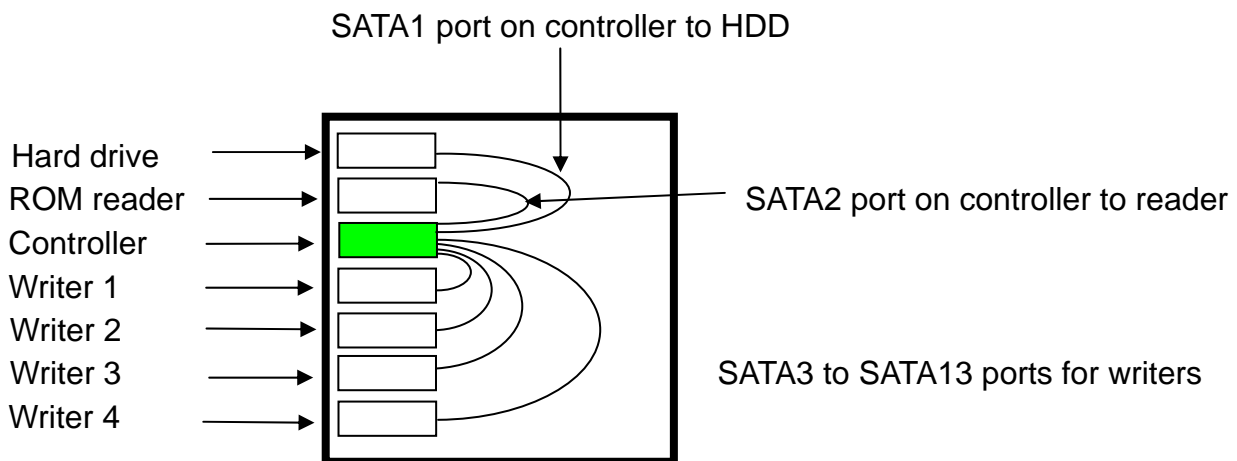controller and different requirements. Be noted on DVD-899, there are total 13 SATA ports. <u>With maximum connection, SATA1 port can be connected either for hard drive or for ROM reader and the rest 12 SATA ports can be connected up to 12 pcs of SATA writer. But if the hard drive and ROM reader both are required as shown in below drawing, only 11 pcs of SATA writer can be connected.</u> Unlike the limited length of UltraATA cable on IDE controller, the length of SATA cable is long enough so as the users can put the controller at almost any slot they wish to install in the tower case, no need to put in the middle slot of case which is usually seen on large capacity IDE controller.

SATA1 port on controller to HDD

| Hard drive |
| ROM reader |
| Controller |
| Writer 1 |
| Writer 2 |
| Writer 3 |
| Writer 4 |
| Writer 5 |
| Writer 6 |
| Writer 7 |
| Writer 8 |
| Writer 9 |
| Writer10 |
| Writer11 |

SATA2 port on controller to reader

SATA3 to SATA13 ports for writers
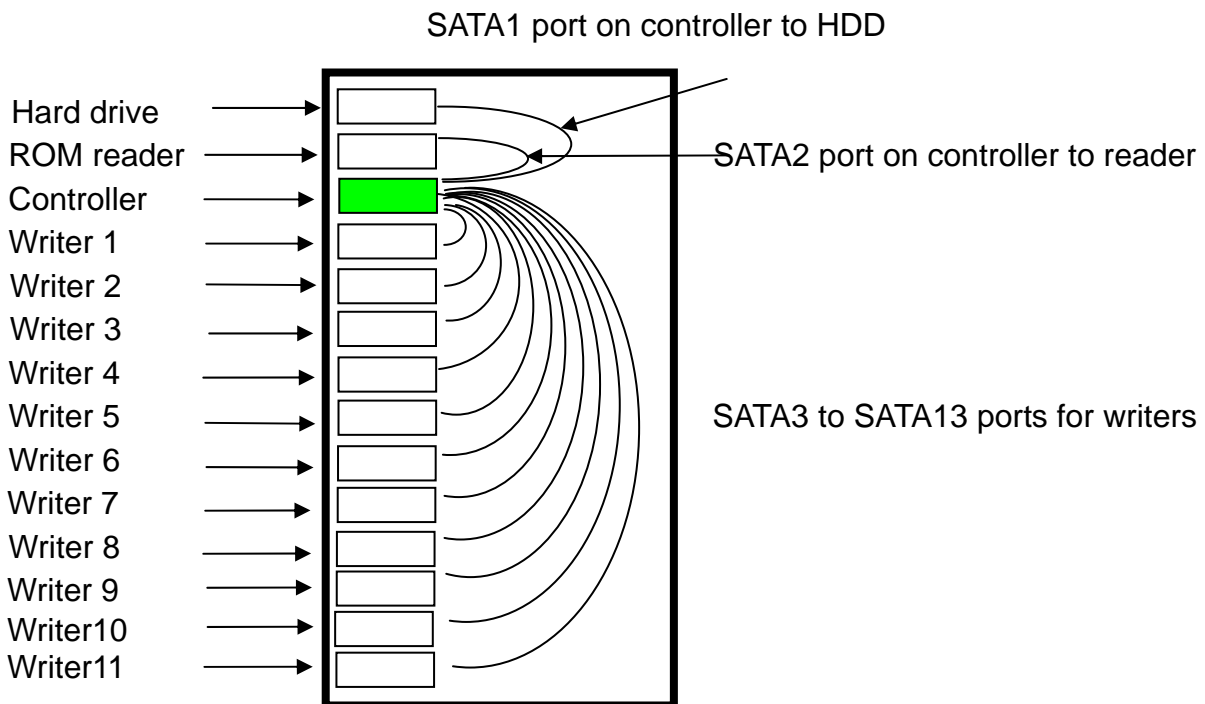
(Drawing of right side view for devices' connection on DVD-899)

For DVD-898, installation profiles are suggested below for right side cross-section view. The number of writers installed may vary due to different controller and different requirements. Be noted on DVD-898, there are total 6 SATA ports. With maximum connection, SATA1 port can be connected either for hard drive or for ROM reader and the rest 5 SATA ports can be connected up to 5 pcs of SATA writer. But if the hard drive and ROM reader both are required as shown in below drawing, only 4 pcs of SATA writer can be connected and users must use SATA1 port to connect hard drive and SATA2 port for ROM reader.

SATA1 port on controller to HDD

Hard drive
ROM reader   SATA2 port on controller to reader
Controller
Writer 1
Writer 2
Writer 3   SATA3 to SATA13 ports for writers
Writer 4

(Drawing of right side view for devices' connection on DVD-898)

SATA1 port on DVD-898 controller either for HDD or for ROM reader

HDD (or reader)

Controller
Writer 1
Writer 2
Writer 3   SATA2 to SATA6 ports for writers
Writer 4
Writer 5
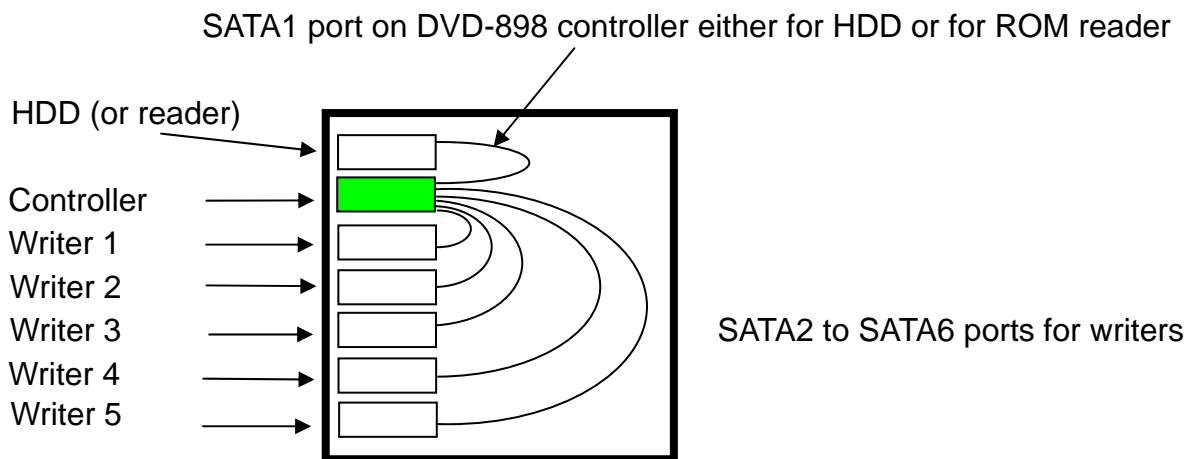
(Drawing of right side view for devices' connection on DVD-898)

Note:

1. Since DVD-899 is a 13-port controller which can connect maximum up to 13 devices, the power consumption might need up to 430W and so Wytron strongly recommends to use 500W power supply unit to avoid lack of power, if full connection is required. Lack of power supplying will cause unstable of operation and produce un-usable products. An edge-margin power supply unit might be workable in the very beginning but might be poor to supply sufficient power supply after a period of usage and then cause trouble.

2. The DVD-898 is a 6-port controller which can connect maximum up to 6 devices, the power consumption might need up to 210W and so Wytron strongly recommends to use 300W power supply unit to avoid lack of power, if full connection is required. Lack of power supplying will cause unstable of operation and produce un-usable products. An edge-margin power supply unit might be workable in the very beginning but might be poor to supply sufficient power supply after a period of usage and then cause trouble.

3. The tower case should have enough bays built-in to install those devices that users wish to build in mind. If hard drive and ROM reader are both required, the bays of tower case should plus 3 bays according to specific-target of duplicator. For example, if 10-target of DVD duplicator is required, users have to prepare 13-bay of tower case to hold hard drive, ROM reader, controller and 10 pcs of SATA writer. If either hard drive or ROM reader is required, 10-target DVD duplicator will only need 12-bay tower case.

4. To protect the DVD-898 and DVD-899, it is suggested not to boot the controller when there is no device connected on the controller.

5. Either on DVD-898 or on DVD-899, the SATA1 port is always reserved for hard drive or for ROM reader. If both hard drive and ROM reader are required, please use SATA1 for hard drive and SATA2 for ROM reader.

6. BIOS chipset on board is fixed/welded on the controller board and cannot be replaced directly. Upgrade of BIOS can be done directly by the "Update" function provided on the controller. Either DVD-898 or DVD-899 equips with dual BIOS and when the first BIOS collapses, users can boot the controller with second BIOS (Press and holding down the GO button and turn on the power simultaneously, don't release the GO button till the booting message is shown on the LCD display) and run the duplicator as usual. Run the Update function of second BIOS will reflash the first BIOS but the second BIOS will not be overwritten due to read-only.

4. Operation

1. Power on the system and you will see a self-testing procedure running. The following display will appear:

    ```
    DVD-899    V3.47        2008
    WYTRON TECHNOLOGY
    ```

    ```
    detect drives ……
    ```

    ```
    Copy              AG234M14:23
    <mode
    ```

    AG234M14:23 ➔ Length of Master contained in hard drive. It varies from masters or may not exist if there is no data stored. No messages will be displayed on top-right corner if hard drive is not installed.

    AG ➔ Partition G in A group of hard drive

    234M ➔ Capacity at AG partition in MB

    14:23 ➔ Capacity at AG partition in minute

2. Different devices installed in duplicator will require different operation procedures including two main categories:

    AA. With hard drive installed

    a. Duplicator will automatically detect the hard drive and create partitions for it (each partition will have 4.8GB or 9.6GB capacity for DVD format)
    b. You can select partition in the "hdd partition group" function in Setup Menu.
    c. If there is no data stored in present / selected partition of hard drive, press the MODE switch to select "Load" function and place the master disc into the CD/DVD-ROM drive which will automatically detect the master, analyze and load data into the present / selected partition. The master disc will be ejected when loading is completed. In case of error, the LCD will show "error" and the master disc will also be ejected automatically. Change another master disc for loading. Master data can be stored in different partition, switch to that particular partition (Please refer to hdd partition group) for loading.
    d. Switch to Copy by pressing MODE switch. Place blank CD/DVD discs into all the writers. Duplicator will start copying when all writers detect the discs. If you do not need to use all writers for copying, the LCD display will display the number of blank disc detected as " Xstart" (X represents the number of writers with detected discs that are ready to copy). Press the GO switch and operation will start instantly. There is no limitation on number of discs to be copied in one round (Vary on different model, DVD-899 will be 12 pcs in maximum targets and for DVD-898, it is 5 pcs.) or there is any limitation on sequence of writer to start with. In other words,

you may copy one disc only using any one of the writers randomly.

e. When Copy is completed on all writers, those discs passed will be ejected automatically (default setting: Passed discs will be ejected but this can be changed according to your need). For continuous duplication, place additional blank discs into the writers and repeat the above procedures.

f. Failed disc(s) will remain in respective writer(s) (Default setting: Failed discs will NOT be ejected but this can be changed according to your need). Press MODE switch will eject those failed discs from writers or press each eject button on the writer to eject disc manually.

g. The duplicator will prompt you an error message when you try to copy a partition that contains no data. In this case, switch to "Load" function to load data first.

h. Do not press any switch during operation as interruption / termination of operation will cause error and might cause the duplicator to hang up (depend on writers installed). The write-once disc during operation will be ruined and might not be used again.

BB. Without hard drive

a. Switch to Copy by pressing MODE switch. Put blank discs into all writers and duplicator will start copying when all writers detect the discs. If you do not need to use all writers for copying, the LCD display will display the number of disc detected as " Xstart" (X represents the number of writer with detected discs that are ready to copy). Press the GO switch and operation will start instantly. There is no imitation on number of disc to be copied in one round (Vary on different model, DVD-899 will be 12 pcs in maximum targets and for DVD-898, it is 5 pcs) or neither there is any limitation on sequence of writer to start with. In other words, you may copy one disc only by using any one of the writers randomly.

b. When Copy is completed, the passed discs will be ejected automatically (Default setting: discs passed will be ejected. This can be changed according to your need). For continuous duplication, place additional blank discs into the writers and repeat the above procedures.

c. Failed disc(s) will remain in respective writer(s) (Default setting: Failed discs will NOT be ejected. This can be changed according to your need). Press MODE switch will eject those failed discs from writers or press each eject button on the writer to eject disc manually.

3. Explanation of messages shown during operation:

```
Copy              AB234M14:23   If CD writer installed
C0036+25   32x24      00:38
```

Copy: Current function

AB234M24:32: AB partition with 234MB data, 24:32 in total

C0036+25: Copy to 36MB and 25MB data in memory buffer

32X24:   Set 32X write speed and 24X current write speed

00:38:   Total elapse time

```
┌─────────────────────────────────┐
│ Copy          AA4234M DVD       │   If DVD writer installed
│ C1248+31     8x 4 01:06         │
└─────────────────────────────────┘
```

Copy: Current function
AA4234M DVD: AA partition with 4234MB data for DVD
C1248+31: Copy to 1248MB, 31MB data in memory buffer
8X 4: Set 8X write speed and 4X current write speed
01:06:   Total elapse time

4. The message shown after function is finished:

```
┌─────────────────────────────────┐
│ OK x   NG x   TOK xxxxx         │   (Copy for example)
│ C3852+00     16x12    05:38     │
└─────────────────────────────────┘
```

OK x: The passed target number for current operation
NG x: The failed target number for current operation
TOK xxxxx: The counter for total passed target number
            for operation in current function

Note: The TOK (Total in OK) counter will be reset when
        the master is reloaded (from CD/DVD-ROM) or
        partition changed (from hard drive) or operation of
        function changed.

5. For function selecting during Main menu, Sub menu or those setting within Setup,
    press the MODE button will switch the function forwardly and press the BACK button,
    the function will be switched reversely.

5. Main Function

Main functions explained in main menu below (Copy, Copy+Comp, Compare, etc.) are based on factory's default setting. Different settings will cause duplicator to react differently. To restore the factory default setting, please press and keep holding down the MODE button while turning on the power till the "clear setup" message is shown on the LCD; the duplicator will return to factory's default setting as a "Reset".

Above version 3.40, functions in main menu can be switched forwardly by pressing the MODE button once at a time. Either, it can be switched backwardly by pressing BACK button.

5.1 Copy

Make sure the present partition in hard drive is correct and contains data (with hard drive installed) or the master disc is loaded in the CD/DVD-ROM drive (without hard drive installed) before copying. Place blank CD/DVD discs into the writers, when all writers detect the CDs/DVDs, duplicator will start copying automatically. When fewer copies are required, place the required number of blank CD/DVD discs into writers. Till you see a number "X" of "X"start which matches the number of disc placed in the writer(s), press the GO switch manually to start the duplication.

When Copy is finished, those discs passed will be ejected automatically and failed ones will be remained in writers. Press MODE switch to eject failed discs. Put new CDs/DVDs in the writers for additional copy. Duplicator can also copy rewritable discs containing data if the writers are capable of writing the rewritable discs. Data stored in rewritable discs will be quickly erased automatically before copying new data, no special setting or procedure required to erase the old data.

5.2 Copy + Comp

This function will do copying and also comparing the passed discs with the master. Under this function, the discs that passed in copying will be ejected and re-inserted again automatically for compare purpose. The passed discs will be ejected automatically after comparison. The failed discs will remain in the writers. Press MODE switch will eject those failed discs.

Only data CD/DVD will be compared with the master, VCD, Vedio DVD or music CD/DVD will not be compared.

5.3 Emulate

This function performs emulation similar to Copy function except that data is not really written onto the disc. The CD/DVD discs will be remained blank when emulation is completed. For rewritable discs that contain data, emulate will do quick erase of all old data before emulation. Thus, never do Emulate function on rewritable discs that contain important data. (Be aware that DVD+R disc cannot be emulated since the real copy will be used instead of emulation.)

Termination halfway of Emulate will not affect the write-once discs and they will be remained as blank. But please note that rewritable disc containing data will be destroyed and cannot be retrieved again.

Some writers may not support sudden termination during operation. Duplicator may hang up and you can only reset those writers by rebooting the duplicator.

5.4 Emu + Copy

This function combines the emulation and copy function within one selection. First the machine will do the emulation and then continually copy the disc if there is no error during emulation. The passed discs will be ejected and the failed ones will be remained in the writers. Those failed discs must be removed manually. (Be noted the DVD+R disc will not be suitable for Emulate function)

5.5 Compare

This function does data comparison between master and target discs. But only data CD/DVD disc will be compared fully. VCD, movie DVD and music CD/DVD will not be compared.

5.6 Quick Erase

This function is only used for a rewritable disc with data existed. It would quickly erase the rewritable disc and then the data on it will be disappeared after running this function.

5.7 Verify

This function does verification of target discs. Different discs in the writer and CD-ROM/DVD-ROM drive can be verified together simultaneously.

5.8 Load (if HDD installed)

Function only exists when there is a hard drive installed. Please use "Load" function to load master data before doing duplication or other function. If the master is preloaded, please switch to correct partition to copy or do others.

Place the master disc into the CD/DVD-ROM drive, the duplicator will automatically detect and analyze the master and load it into the current partition of hard drive.

Hard drive installed on duplicator will be automatically partitioned by 850MB (CD writer installed) or 4.8GB (SL DVD writer installed) or 9.6GB (DL DVD writer installed) in each partition (Please refer to HDD Partition Size for more detail). Number of partitions available depends on the hard drive's capacity. No pre-formatting or software setup is required to install the hard drive with Wytron's controller card. Each partition in hard drive will be labeled in alphabetical order starting from AA, AB, AC…etc. Current partition number can be selected under "hdd partition group" in the Setup menu.

Duplicator will prompt you an error message when you try to copy from a partition that contains no data. Switch to proper partition to copy or use "Load" function to load the master data to current partition.

5.9 External

When choosing External function and press GO button to activate, the duplicator will release the control of devices installed on duplicator and then the drive internally connected to Wytron's USB 2.0 interface card will be available for external usage. At this moment, users can link an external USB cable from remote PC to duplicator, thus the PC will auto-detect the USB device in duplicator for remote usage. (PC with Microsoft Windows 98$^{®}$ OS system will need the software driver to recognize the external USB device in duplicator. Contact or download the software driver from Wytron if needed.)

Duplicator will not be usable again after External function activated except for rebooting. Please remove the external USB cable from duplicator first and then reboot duplicator when the standalone operation on duplicator is required.

6. Sub-function

In Main menu, press and keep holding down the MODE button for more than five seconds till the da-da-da sound heard from the controller, the menu will be switched to sub menu and vice versa.

The function in sub menu can be switched by either pressing the MODE or BACK button once at a time. By pressing the MODE button, the function will be switched forwardly and by BACK button, the function will be switched backwardly.

6.1 Setup

As there are many different settings in the Setup function to control the duplicator's operation, we suggest using the original factory default settings for optimal operation. Changes should be made only when you are fully familiar with those functions. Also please be noted that the function settings listed below are summary for all possibility of devices installed and might not exist in your duplicator.

The way of changing value for specific setting in Setup: When the Setup function is shown on the LCD display, please press GO button to enter and thus you are at setting menu (At setting menu, there is a greater (>) sign at lower right corner on the LCD display).

Setting in setting menu can be switched by either pressing the MODE or BACK button once. By MODE button, the setting will be switched forwardly and by BACK button, it will be switched backwardly. When value of specific setting needs to be altered, please press MODE or BACK button to bring the specific setting shown on the LCD display and then press GO button to enter. You will see at lower right corner the asterisk (*) sign which mean you are at value-changing mode for this specific setting. Press either the MODE or BACK button to change the value and after changing, press the GO button to exit. When the lower right corner is showing you the greater (>) sign, it means you are back to the setting menu.

When all changing are done, please switch the setting to "Save setup" in setting menu and press GO button to save the changing and leave the Setup function. Be noted, exit without saving the change via "Save setup" (such as power off), the value changing will not be saved.

6.1.1 Start Writers

This setting controls the number of writer that will work in duplicator and normally it should be equal to the number of writers installed in duplicator. Number of writers set is less than that actually installed will limit the working writers. If 5 sets of writer are installed, for example, number setting of 2 will allow using only two writers at one time. Duplicator will start the operation instantly when any 2 of the 5 installed writers are ready (disc detected). The rest 3 writers will be idle.

6.1.2 Write Method

This setting controls the writing methods of CD/DVD disc including "Disc at once" or "Track at once". "Disc at once" will be the default setting. Some writers may support different writing methods. If the method selected is not supported, duplicator will automatically switch to the other one.

6.1.3 CD Write Speed

This setting controls the maximum CD writing speed of writers. Default setting is "32" which will use 32X write speed to write the CD disc. The reason why it isn't set to max is that the CD-ROM readers in the market cannot access the master disc as fast as the write speed if the write speed reaches 40X or above. Sometimes maximum write speed will cause high failure rate that may be due to poor CD quality or unstable CD writing in high speed. If installed CD-ROM's reading speed can reach higher or even lower, please increase or lower the CD writing speed manually to get higher successful rate in writing.

6.1.4 DVD Write Speed

This setting controls the maximum writing speed of DVD writers. Default setting is "MAX" which will use the fastest writing speed of writers. Sometimes maximum writing speed may have higher failure rate that may be attributable to poor quality of DVD disc or unstable writing under high speed. Under this circumstance, please lower the write speed under this setting. Please note that this is not the problem of the controller itself.

There is also situation that un-authorized blank DVD disc will be locked and restricted in some DVD writers to write at higher speed. This situation is not under Wytron's control.

6.1.5 CD-ROM Drive

CD-ROM drive can be selected manually. Default setting is "auto" and the duplicator will select the CD/DVD-ROM drive automatically. The option will be in series like ATA1.0, ATA2.0, ATA3.0, ATA4.1, etc., Number shown depends on the devices being detected by duplicator itself when booting. The ATA1.0 means SATA device connected at SATA#1. The ATA4.0 means ATA device connected at IDE#4.

6.1.6 Autoloader (if autoloader installed)

This duplicator can be used as an independent controller for external auto-loading mechanism. If autoloader is installed, this setting must be set to correspondent type such as "CDF4800", "classic", "class2", "extended", "extend2", etc. Default setting is "No". The external auto-loading mechanism must be qualified and approved by Wytron. Any non-approved equipment may damage the controller card and affect operations. To connect the autoloader, you will also need an extra COM port module from Wytron to communicate between controller card and autoloader. If no autoloader is connected actually but set this option by mistake to one of the types for autoloader, during new power booting, the controller card will hang in "check loader…" message which is intending to search and communicate with the autoloader. Please change back the setting of this function to "No" option when the hang is finished (might take quite a long time) or simply "reset" the machine once to bring back the factory's default setting on controller itself.

6.1.7 Eject Disc

This setting controls the ejection of discs by writer. Three options are available: "Always" means the writers will always eject the discs no matter whether operation is successful or failed. "No" means all discs will remain in writers when job is done and you will have to eject discs from the writers manually. "Pass" setting will only eject the passed discs automatically and leave the failed ones in the writers. Press MODE button will eject those failed discs.

6.1.8 Buzzer

This setting controls ON and OFF of buzzer. Default setting is "On".

6.1.9 CD+G

This setting activates the copy capability of CD+G format. It cannot be copied if the writers don't support this format. Default setting is "No".

6.1.10 CopyComp Eject

This setting controls the ejection of writers' trays under "copy + compare" function. If the setting is "Yes", the trays will eject the passed discs after copying and it will re-insert the same discs again for subsequent comparison. If setting is "No", the trays will not be ejected between copy and compare. The default setting is "Auto" which means ejection of trays will depend on the writers. If it supports auto-ejection, the tray will be ejected after copying. If not, the tray will not be ejected even when setting is "Yes".

6.1.11 Read CDDA index0

The setting controls the copying of data existed in index0. Set to "Yes" will copy the data and set to "No" will make it empty.

6.1.12 Skip Read Error

This setting controls error skipping during source reading. The default setting is "No". When an error is detected during loading, the duplicator will stop to load and display read error message. If the setting is "Yes", there will be no message shown even there is an error in reading. You can use this function to copy some discs with errors.

6.1.13 MODE 2 Compare

This setting can be activated to compare some data format stored in "MODE 2" disc. Default setting is "No".

6.1.14 Power On Wait

The setting controls the detecting time (in second) for devices that connected to the duplicating controller card. Default is 15.

6.1.15 Show version

The model number and BIOS version, built date of BIOS will be shown on the display directly when switching to this position.

6.1.16 Go load trays

Normally when loading the disc onto each drive, customer has to push the "eject" button to insert the tray or push slightly the tray into the drive. To save labor, with "Yes" setting of this function, customer can load first the discs onto all trays on drives and force those trays to insert with pressing the "Go" button once on controller card. Default setting is "No".

6.1.17 Transfer mode

This function controls the data transfer mode between connected devices with controller and there are several options built-in, PIO3.3, PIO16, DMA 16, UDMA33, UDMA66, UDMA100, UDMA133 and auto.

Some advanced writers in the market are featured with UDMA66 transfer mode. With such writers installed, set to UDMA66 option will improve the performance, also the stability. But be noted that if set to UDMA66 option, all devices connected on controller card must feature with same UDMA66 spec., including ROM reader and hard drive. If one of the connected devices does not support that UDMA66 feature, the system might become unstable or even hang.

Most of the writers in the market support only UDMA33 and the default setting on controller card will be UDMA33.

If option is changed, after quitting the setting, make sure to reboot the system to make the changing activate. Without rebooting the system, the transfer mode will not be switched correctly.

6.1.18 Turbo Copycomp

This function is built for ultimate burning speed through removing unnecessary interrupting detection in BIOS programming, compared to traditional programming on Wytron's products. Several conditions must be complied to make this option work: (a) For DVD only (b) Master hard drive or master DVD-ROM to be connected at IDE#1 or both connected at IDE#1 by setting hard drive in master and DVD-ROM in slave (c) Abort during operation is canceled.

Default setting is "No". Please be noted reboot is required if this option is changed.

6.1.19 Change Password

This setting restricts the usage for those unauthorized people to use this machine. Once set, there will be password required when booting and only those users knowing the password can use this machine for operation.

Press the MODE button to Yes to activate the Change Password function and quit by pressing the GO button. The LCD display will prompt you the "New Password?" and then ask you to input the digit for "Password 1". You may press the MODE button to select the number (the number is a cycle loop) as "Password 1" and after selection, press GO button to quit. The "Password 2" will be shown on the LCD display and again you can select the second digit the way you have done for "Password 1". In the following steps, input two more digits for Password 3 and 4 in similar operation. Total there will be 4 single digits for Password 1 to 4 respectively.

After completing the password changing, system will record the 4 digits password and when you reboot the machine or need to change the password again, system will ask you to input the current password for identification.

Password can be changed again by setting Yes to the Change Password function but the current password must be input correctly first. If user wants to disable the password function, simply set the password to 0000 and then the password function will be deactivated (0000 cannot be set as password).

Wrong password input during the booting stage will cause the hang of duplicator and freeze all operation. User must restart the machine to input the correct password again.

6.1.20 Startup Command

This setting specifies the first function appeared when duplicator is turned on so as to avoid repeated selection all the time.

6.1.21 CD to CD (if HDD installed)

This setting controls the source location of master data. Select "Yes" to bypass the existing hard drive and you can copy directly from CD/DVD to CD/DVD or select "No" to copy CD/DVD from data stored in current partition of hard drive. Setting of "CD to CD" will be saved and if you cannot use the "LOAD" function when the hard drive is actually installed; please change the option of "CD to CD" to "No" manually.

6.1.22 HDD Partition Size (if HDD installed)

This setting defines the partition size that created on connected hard drive by controller card itself. Any hard drive connected on Wytron's controller card will be partitioned by controller card itself and end-user needs not to pre-arrange any additional process on the hard drive. User just needs to connect the hard drive on the Wytron's controller card and then the controller card will handle the partition job automatically. All the data stored in hard drive before connecting on controller card will be erased and overwritten after connection on the controller card and end-user must avoid of using such hard drive with valuable data in it.

There are total four option settings under this function which are Auto (default setting), 850M, 4.8G and 9.6G. The default setting of this function is Auto which will handle the partition size by controller card itself during drive detection when booting. If controller card finds no DVD writers in the connected drives, the 850M of partition size would be chose. If there are DVD writers detected by controller card and the first of them

supports the DL (Double Layer), the 9.6G of partition size would be auto-selected. But if this first detected DVD writer only supports the single layer DVD, the 4.8G partition size would be used, instead of 9.6G.

When the Auto is set in this function, there is a potential danger for end-user which needs to be taken care of. When the CD writers are originally connected on Wytron's DVD controller cards, with hard drive installed, the 850M partition size would be used. If user installs a DVD writer suddenly for testing purpose, the hard drive would be re-partitioned automatically by 4.8G or 9.6G, depending on the DL or SL supported on this DVD writer. Under this situation, the original data stored in the hard drive (by default 850M partition size) would be vanished due to re-partitioning. If there are important data stored in the original partitioned hard drive, end-user must switch the setting of this function manually to 850M or other setting to fix the partition size in order to avoid of changing for the partition size by controller card due to different writers installed in system.

After selection, if partition size is changed physically, the changing will be effective immediately when quitting of this function and the end user needs not to reboot the system. When leaving this function, the controller card will show you the message of "Partition Size is xxxxx, Total yyyy parts." The xxxxx is the current selected partition size of this system and there will be total yyyy partition number in the hard drive.

6.1.23 Hdd Partition Group (if HDD installed)

This setting assigns the current working partition group on hard drive, if HDD installed. Press MODE switch to change the setting and press GO to exit. After selecting the partition group, press exit button will bring you to the next sub function as "Hdd Partition of X" for more selection of the partition number in that group (X represents the partition group you selected previously). After choosing the partition number, press the exit button will bring you back to Copy function located in the main menu.

The modern hard drives normally contain large capacity. In order to organize and utilize the capacity well, controller card will manage the capacity in an idea for two-level management: partition group and partition number. The partition group is somewhat like the category and the partition number is the sub-item in that category. By using this idea, controller can have up to 26 categories; each category has up to 26 partition numbers, total 676 (26x26) partition numbers. To be a CD duplicator, each partition normally holds 850MB and for DVD duplicator, it holds 4.8GB or 9.6GB. Under this management, the capacity on hard drive would not be wasted and under the control of our duplicating controller card.

After selection, each partition will have two letters to represent such as AC, BD, etc. The AC means A group C partition and BD means B group D partition. If you get a 40GB hard drive installed with the controller card, you might have 42 partitions from AA to AZ and BA to BP. There will be two groups in your hard drive: A group contains 26 partitions and B group contains 16. The entire configuration will be done automatically and you don't have to run special software utility to make these partitioning. Be noted that this setting will disappear if there is no hard drive installed.

6.1.24 HD to CD Write Speed (if HDD installed)

This setting controls the maximum CD writing speed of writers when the hard drive is

installed in the system. Default setting is "MAX" which will use the highest CD writing speed. Sometimes maximum writing speed will cause higher failure rate that may be due to poor CD quality or unstable CD writing in high speed. Under this circumstance, please lower the writing speed under this setting to get higher successful rate. On the contrary, lower value setting will make the writing speed slower and confuse you as a problematic duplicator.

6.1.25 HD to DVD Write Speed (if HDD installed)

This setting controls the maximum DVD writing speed of writers when the hard drive is installed in the system. Default setting is "MAX" which will use the highest DVD writing speed. Sometimes maximum writing speed will cause higher failure rate that may be due to poor DVD quality or unstable DVD writing in high speed. Under this circumstance, please lower the writing speed under this setting to get higher successful rate. On the contrary, lower value setting will make the writing speed slower and confuse you as a problematic duplicator.

6.1.26 Grip before accept

When the option of "Autoloader" function is set to "extended" or "extend2", the setting of "Grip before accept" must set to "Yes" correspondently which will ask the autoloader do the index repositioning during power booting stage. If with other setting in "Autoloader", please choose "No" in this function.

6.1.27 Load Nonblank Disc (if HDD installed)

This setting is mainly for Autoloader and controls the loading of non-blank disc in any writer. If setting is "Yes", whenever there is a non-blank disc detected by the writer, the duplicator will go to "Load" function automatically and start loading the data from that non-blank disc into current partition of hard drive. Through this function, you can control the Autoloader to copy multi-master discs fully automated.

6.1.28 CDDA load speed (if HDD installed)

Normally, when reading music track, the CD/DVD-ROM drive will automatically lower the reading speed significantly. Unstable reading situation may happen if we use the maximum speed of CD/DVD-ROM drive to read music track. This will affect the quality of music CD/DVD duplicated. This setting change the speed of music track loading to enhance stability of music track reading. Default setting is "AUTO".

6.1.29 Language

There are several languages built-in for menu displaying and you can switch it by this function to match your requirement accordingly. The default setting is "English".

6.2 Edit

Edit function, in sub-function, is a track-selecting function that can combine tracks on different master discs into one single disc. For example, you can make a collection of favorite songs from different master music discs and store them into one disc.

Switch to "Clear" function to erase the existed data, if any, in the hard drive's current partition to store the new music tracks. Switch to EDIT by pressing the MODE switch in sub-function, load your master disc into CD/DVD-ROM (if there is no hard drive installed, the blank CD/DVD discs must be inserted to writers for "track at once" on-the-fly instant copy). Duplicator will analyze the master disc and show total xx tracks on LCD display and finally stop at:

```
Begin track
[+]     0        [Quit]
```

Press MODE switch to change the number of track (song) that you wish to start with and then press GO switch to quit. After quitting, the LCD display will stop at:

```
End track
[+]     0        [Quit]
```

The number selected must be same or larger than that selected in "Begin track". Same number means you want to select a single track and larger number means you want to select a sequence of tracks in that particular master disc. After selecting the "End track", duplicator will bring you back to "Begin track" selection. Repeat the same procedures to collect other tracks in different sequence that you want to copy. If no more track is selected, press GO switch directly at "Begin track" and press once again GO at "End track" to exit. Duplicator will start loading those music tracks selected into the current partition of hard drive. After finishing loading, the master disc will be ejected automatically and LCD will display the message of "Pass". You may change the master disc and run the Edit function again to gather more music tracks from different master discs. When finishing the collection, switch the function to Copy and place blank CD/DVD discs into writers for copying.

If there is no hard drive installed and when selection of music tracks from the master disc in CD/DVD-ROM drive is completed, the duplicator will prompt you the message:

```
Finalize
[+]No            [Quit]
```

If there are still other tracks need to be collected, the setting of Finalize must be "No". Press GO switch to quit and the duplicator will start to copy directly the selected tracks onto blank discs. After finishing the copy, the master disc will be ejected automatically and prompt you "Pass" in the LCD display. You will note that the target discs in writers will not be ejected at this moment. You can change another master disc in the CD/DVD-ROM drive. Duplicator will analyze the master disc and bring you to the "Begin track" message on LCD again. You can repeat the procedures described above to collect more tracks from another master disc. If this master disc is the last one that you collect, change the setting of Finalize to "Yes" and press GO switch, duplicator will start to copy and close the target discs in the writers. If all of discs pass copying, they will be ejected from the writers automatically.

Please study the following examples carefully and follow the instructions step by step. You will find it is very easy to collect tracks by the duplicator.

Example 1: To make collection from two masters with hard drive installed.

No.1 master disc: 2, 4, 6-8 songs.
No.2 master disc: 3-6, 9, 13-16 songs.

a. Switch to Clear Master function and press GO switch to clear data in the existing partition of hard drive.
b. Switch to Edit function.
c. Place No.1 master disc into CD/DVD-ROM drive under the EDIT function and wait for duplicator to analyze it.
d. Press MODE switch to number 2 at "Begin track" and press GO switch to quit.
e. When "End track" is displayed on the LCD, press GO switch to quit directly since first song number is 2.
f. Press MODE switch to number 4 at "Begin track" and press GO to quit.
g. When "End track" is displayed on the LCD, press GO switch to quit directly since the first song number is already 4.
h. Press MODE to number 6 at "Begin track" and quit.
i. Press MODE to number 8 at "End track" and quit.
j. Press GO switch directly to following "Begin track" and End track" selection to finish the track selection on No. 1 master disc.
k. Duplicator will start to collect the tracks that you selected just now into current partition of hard drive.
l. After loading is finished, duplicator will eject your master disc and show "Pass" on LCD.
m. Place No.2 master disc into CD/DVD-ROM drive and continue the selection from second master disc.
n. Repeat procedures (d) to (j) above.
o. Once the accumulated length of tracks selected has exceeded the maximum capacity in partition. The duplicator will stop to accept additional tracks.
p. Switch to "Delete" function to delete the last track stored in current partition in hard drive if necessary.
q. Switch to Copy to start copying the new collection.

Example 2: To make collection from two master with HDD.

No.1 master disc: All tracks
No.2 master disc: 4-6 tracks

a. Load the No.1 master disc normally by using Load function. Data, if any, in the current partition will be erased and replaced automatically tracks of this master disc.
b. Load No.2 master disc by using EDIT function but keep the data stored in hard drive. The is no need to do Clear function as described in Example 1 or you will loss the data of No.1 master disc.
c. Repeat the other steps described in Example 1.

Example 3: To make collection from two masters without hard drive installed.

No.1 master disc: 2, 5, 7-13 songs.
No.2 master disc: 5-7, 9, 12-15 songs.

a. Switch to Edit function.
b. Place No.1 master disc into CD/DVD-ROM drive and certain blank discs into the writers under the EDIT function and wait for duplicator to analyze it.
c. Press GO button to start the operation if number X in "Xstart" shown on LCD display meets your required copy number.
d. Press MODE switch to number 2 at "Begin track" and press GO switch to quit.
e. When "End track" is displayed on the LCD, press GO switch to quit directly since the number shown is already 2.
f. Press MODE switch to number 5 at "Begin track" and press GO to quit.
g. When "End track" is displayed on the LCD, press GO switch to quit directly since the track number shown is already 5.
h. Press MODE to number 7 at "Begin track" and quit.
i. Press MODE switch to number 13 at "End track" and quit.
j. Press GO switch directly to following "Begin track" and End track" selection to finish the track selection on No. 1 master disc.
k. The next function will be Finalize setting. Since there is still another master to be selected from, leave the option as No and press Go to quit.
l. Duplicator will start to copy those tracks you selected just now onto blank target discs in writers.
m. After copy is finished, duplicator will eject master and show "Pass" on LCD but those un-finalized discs will still be remained in writers for further operation.
n. Load No.2 master in ROM drive and continue to select from second master.
o. Repeat steps (d) to (k) above but change the Finalize setting to Yes in (k) and the duplication for tracks selected will then begin.
p. When copy is finished, the passed discs will be ejected from writers directly.
q. If total capacity of selected tracks exceed the max. capacity on the detected blank discs, the duplicator will refuse to accept additional track selection.

6.3 Delete

When the last music track stored in hard drive is not the one you wish to keep, switch to "delete" function and press GO switch to delete it. You may always use this function to delete the last track stored in the current partition of hard drive.

6.4 Clear

This function clears the master data stored in the current partition of hard drive. When you want to EDIT a new collection of songs, you must run this function first to clear the current partition of hard drive. Perform this function by pressing GO switch at "Clear" function and LCD will show: "Master cleared".

6.5 Disc Info

By using this function, users can get information from the media discs that loaded in the writers, such as max. write speed, capacity, etc.

6.6 Show Drive

This setting shows the devices connected to the duplicator such as CD/ DVD-ROM, CD/DVD writers and hard drive, etc. It also displays the devices' firmware version that sometimes provides a useful hint for trouble shooting or for future upgrade. It is suggested to use writers with SAME firmware version to avoid inconsistency. The display is as below:

```
DVD-ROM
   ATA1.0    1.22      [Q]
```

It means the first slot on controller board is connected with DVD-ROMand its firmware version is 1.22.

```
ATAPI      DVD+RW 4X4X
   ATA7.0    B1HY    [Q]
```

It means the 7th slot on the controller is connected with DVD+RW writer and its firmware version is B1HY. The first digit after ATA is slot number.

6.7 Burn in

This function is a burn-in test function. It will run the emulate write function continuously. Between each cycle of emulate write, the blank discs in writers will be ejected automatically and re-insert again for continuous testing. There is no real writing on the blank discs and the discs will remain blank as original after test. (DVD+R disc is not available under this function)

6.8 Update

Functions on duplicator will be improved for better performance or for other reasons. This function will update your firmware to the latest one or desired version. Switch to "Update" function first and then load the master disc containing the latest firmware xxxxxxx.bin into CD/DVD-ROM drive and the duplicator will find the data and update its firmware automatically. During updating, don't turn off the power of machine since the update will not be finished till machine tells you to restart the machine such as "Please restart". (Turning off machine during updating might cause severe result such as no booting, etc. Also, it is suggested to wait for 10 seconds even the LCD display is showing you to restart the power.)

Procedures to make the BIOS disc by yourself:

1. Get the BIOS firmware from Wytron through e-mail (wytron@wytron.com.tw). Be careful not to use the wrong firmware as it will cause hang up and not to function correctly.
2. Unzip the BIOS firmware and write the file "**dvdxxxx.bin**" into the root directory on a blank CD/DVD disc. Session of the CD/DVD has to be closed. If the same disc still has capacity to add data, it can be used to store newer version of BIOS program. When updating BIOS program from the data disc, only the one in last session will be used. Other versions in previous sessions will be ignored.
3. Be noted that different writers might need different version on controller card to work properly. Users should be aware that using the proper version according to the writers installed on duplicator is more important than using the latest version.

6.9 Reset

The reset procedure is required for several reasons such as: First assembling of duplicator, changing new brand of writers in old duplicator, wrong setting for certain function or bring back the factory's default setting according to different usages. Our design provides an easy way for customer to reset their controller cards as below:

1. Turn off the power of duplicator and wait for 10 seconds. If the duplicator is not used at this moment, ignore this step and go to procedure 2 directly.
2. Press and hold down the MODE switch and turn on the power of duplicator simultaneously (the MODE switch must be held down at least 5 seconds while turning on the power of duplicator).
3. Release the MODE switch after the message of "clear setup" is shown on LCD.
4. If the "clear setup" message is not shown, please repeat the whole procedure above but remain the finger on MODE switch all the time during power on till you see the message of "clear setup" on LCD display.
5. All setting on duplicator will be restored to its factory default setting after the "clear setup" message shown on the LCD display, which is a correct reset procedure. (Unlike the Update procedure which will keep the settings the same before.)
6. Either DVD-898 or DVD-899 equips with dual BIOS and when the first BIOS collapses, users can boot the controller with second BIOS (Press and holding down the GO button and turn on the power simultaneously, don't release the GO button till the booting message is shown on the LCD display) and run the duplicator as usual. Run the Update function that booted from second BIOS will reflash the first BIOS but the second BIOS will not be overwritten due to read-only.

7. Circuit drawing

Diagram of DVD-898 controller board
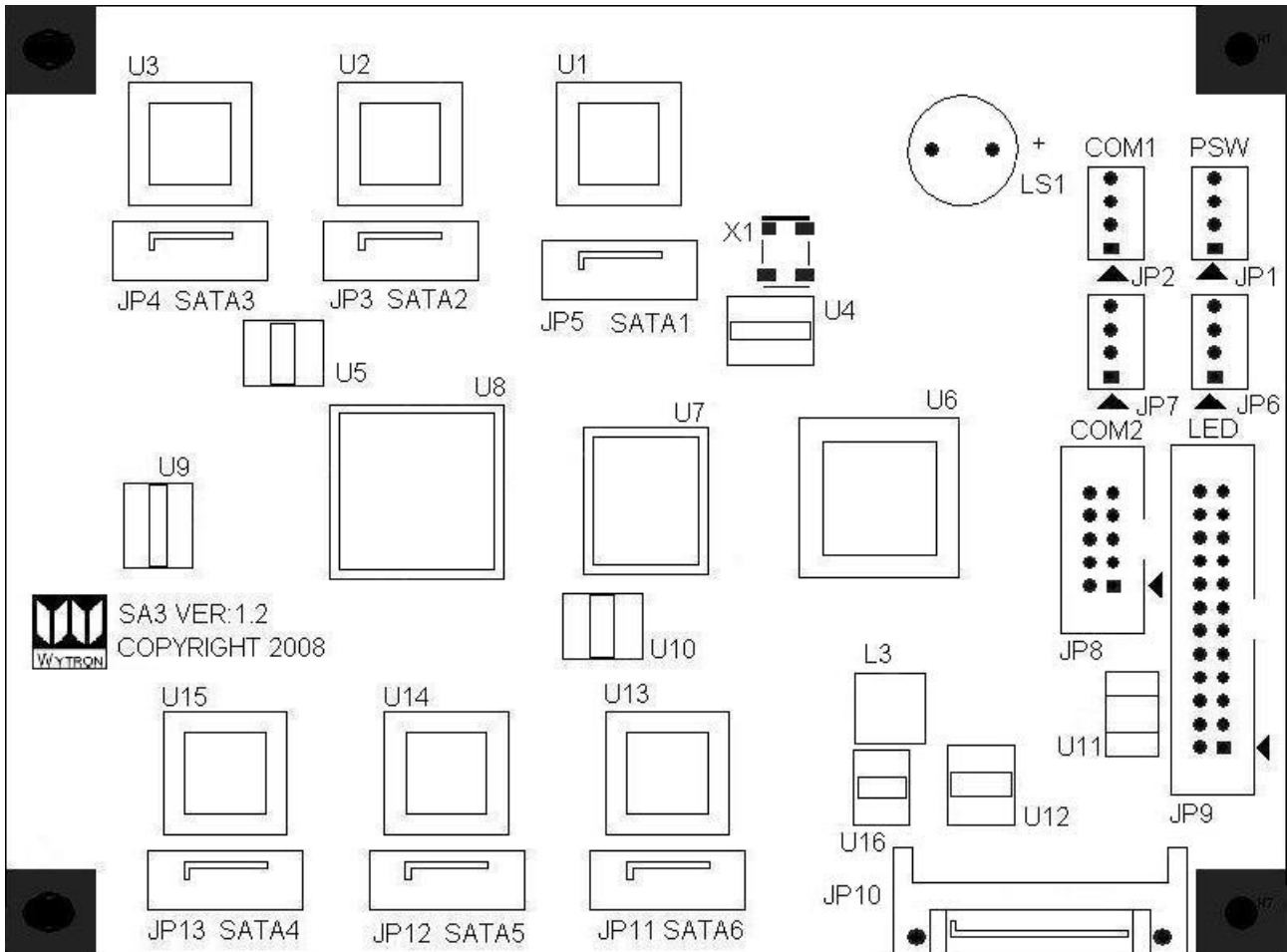
1. SATA1 (JP5): HDD or DVD-ROM, SATA2 ~ SATA6: DVD writer x 5 sets

2. SATA1 (JP5): HDD, SATA2 (JP3): DVD-ROM, if both HDD and ROM are required.
   SATA3 ~ SATA6: DVD writers x 4 sets.

3. Please do not boot the controller card alone with PSU. You must add at least one or two
   drives together to increase the power loading so as to avoid damaging the board.

Diagram of DVD-899 controller board
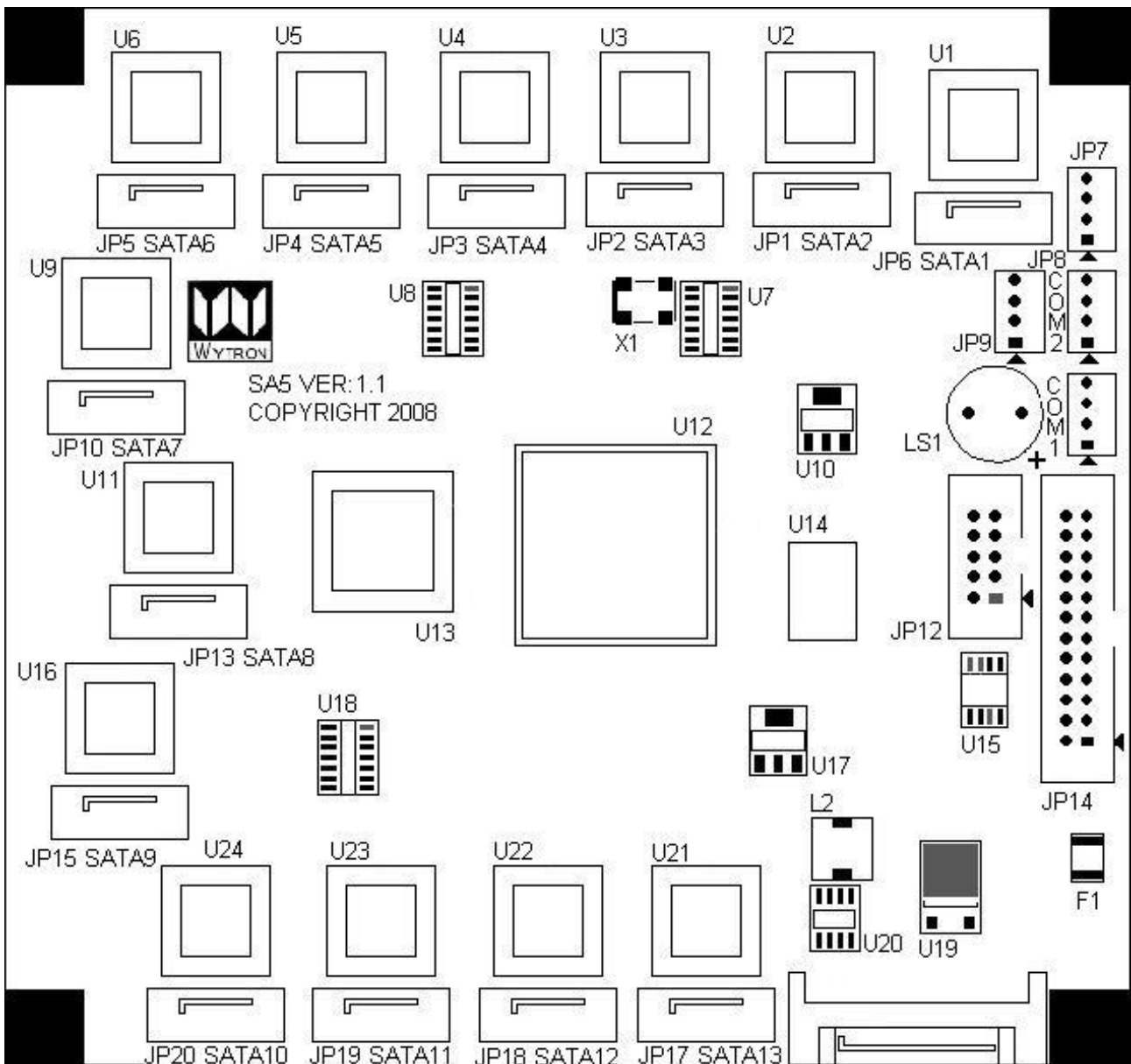
1. SATA1 (JP6): HDD or DVD-ROM, SATA2 ~ SATA13: DVD writer x 12 sets

2. SATA1 (JP6): HDD, SATA2 (JP1): DVD-ROM, if both HDD and ROM are required.
   SATA3 ~ SATA13: DVD writers x 11 sets

3. Please do not boot the controller card alone with PSU. You must add at least one or two drives together to increase the power loading so as to avoid damaging the board.

8. Trouble shooting

1Q: No display or only black squares on LCD display and the unit does not boot when power on.

A: Please check the connection of power cable and the power environment is normal.
B: Please check the fan of power supply. It should rotate if power-on. If not, the power supply might have problem.
C: Turn off the power of duplicator, open the case to check whether the power cable is fixed.

2Q: Error message shown on LED:

A: During operation like Copy, Emulate Write, compare and verify, you may press MODE switch to abort the operation. An Error message will be shown on the LCD. Some writers, abort will cause the duplicator to hang up and you have to re-start the power to return to normal operation.
B: Failed reading may cause the error message shown on the LCD display. Change the master disc to try again.
C: During operation, if read error, buffer under run or writing error occurs, the LCD will show error message like: Pass xx, failed xx.
D: If there is no device connected and detected by duplicator during power-on, the duplicator will show error message on LCD before entering the main menu.

3Q: CD/DVD-ROM doesn't read disc and shows Error message.

A: Check the master disc for damage.
B: Try to use writer to read the master to see if the master is defective or simply not compatible with CD/DVD-ROM.
C: Change the option of "CD-ROM drive" to switch the present CD/DVD-ROM into another one for testing.

4Q: Switches do not function.

A: Maybe still busy on task.
B: Switch blocked.
C: Button malfunction.
D: Faulty board.
E: Screws too tight for the button board.

5Q: COPY completed but CD/DVD disc is not readable / executable?

A: Use Compare function to check.
B: Change another CD/DVD-ROM drive to test.

6Q: The failed rate is high.

A: Lower the speed of writers and try again.
B: Quality of blank disc is poor.
C: Check for latest BIOS version, if on new installed machine.

7Q: Can't boot-up or fail to upgrade BIOS.

A: Contact your dealer to solve the problem. Please note you may be charged for this.
B: Check the BIOS program is correct since normally customer will download wrong program or simply write the zipped file to CD that should be first unzipped before writing.
C: Failed upgrade might cause boot failure, returning the control cards to agent or factory directly to solve the problem.

9. Appendix

CONTACT THE DISTRIBUTOR IF TROUBLE OR PROBLEM ARISES.   FOR PROMPT FEEDBACK & IMMEDIATE SERVICE, PLEASE ADVISE FULL DETAILS OF THE SYMPTOMS.

Please provide necessary information listed below when requesting the BIOS program from Wytron to make the technique support efficiently:

1. Model number of controller card used.
2. Current BIOS version on controller which can be checked from booting.
3. Brand and model of Installed writers.
4. Target number of installed writers.
5. Brand and model of installed CD/DVD-ROM reader.
6. Brand and model of installed HDD, if existed.
7. Drive connection situation on controller.
8. Information of the master disc you intend to copy.
9. Whether or not have changed the brand of blank disc before trouble.
10. Any detailed explanation for trouble, if any.