ADDENDUM

MIS 4.27

Introducing Version 4.27

Since the release of Mastering Interface System (MIS) version 4.26, several changes have been made to the program, particularly due to the addition of the LMS CM-206 drive.

The problems that users encountered with the 206 drive had to do with the way MIS handled information received from the drive and the lack of any distinct industry specification in certain areas, which was solved with the release of the Multisession Read-Only CD Specification V0.9 in March 1995.

Providing these changes was deemed important enough to create a new release — version 4.27 — of MIS.

This document explains in detail:

- How to install MIS 4.27. See the section *Installing MIS 4.27* on page E-2 for this information.
- A description of the new features of MIS 4.27 and the problems found in MIS 4.26 and how MIS 4.27 solves those problems. See the section *Understanding MIS 4.27* beginning on page E-3 for this information.
- How to configure the MIS.INI file for MIS 4.27 in comparison with previous versions of MIS V4 you have been using. See the section *Configuring MIS.INI* beginning on page E-12 for this information.
- How to find tables, figures and error messages in the *MIS 4.26 Manual*. See the sections *Tables* on page E-18, *Figures* on page E-19 and *Error messages* beginning on page E-20.
- How to find information in the *MIS 4.26 Manual* and *MIS 4.27 Addendum*. See the section *Index* beginning on page E-25 for a comprehensive index.

Installing MIS

1. Print the existing MIS.INI file for the version that you are currently using in production. The MIS.INI file shipped with MIS 4.27 must be changed to reflect your specific requirements. Files from previous versions, including 4.26, should not be used.

2. Place the MIS 4.27 distribution floppy diskette in Drive A:.

3. Type A: and press the Enter key.

Note: If your 3½" floppy drive is B: then change A: to B:.

4. Type INSTALL and press the Enter key.

5. The installation routine lets you customize the files being transferred to the hard drive. Use the space bar to select the correct options for your system and the Tab key to move between areas. Press the F10 key after all entries have been made.

Note: MIS should be installed to a new directory and not allowed to overwrite the existing production copy of MIS.

Note: The MIS Program files are compressed and the installation routine must be used. The program will not run if simply copied from the floppy to the hard drive.

6. Use a DOS editor to customize the MIS.INI file for your system. The file as shipped will not run and must be changed to reflect your operation. The chart *Configuring MIS.INI*, which begins on page E-12, lets you compare each line of the 4.27 MIS.INI file to previous versions.

7. After completing the installation process, several master copies should be produced to certify the new software and configuration before beginning to run production on this version.

Note: DCA has done extensive testing on this version, but because customization in the MIS.INI file can causing differing results, it is important that you qualify your exact settings.

Understanding MIS 4.27

This section includes information on differences between MIS 4.27 and the previous version. *New features* describes features that have been added to MIS V4. *Hardware changes and additions* describes new hardware and changes to existing hardware you will use with MIS V4. *Changes due to problems with previous version* describes changes to MIS V4 as the result of problems that were discovered in previous versions. *Errata* describes corrections to the *MIS V4 Manual*.

New features

Proper Sony DMR-4000 cueing assured

When cueing the Sony DMR-4000 for input, MIS verifies that the DMR-4000 is cued to the correct SMPTE time. If a miscue is detected, MIS retries the cue command up to three times. Each miscue is logged for the SMPTE time that was expected and the time that was actually read. MIS also logs the actual SMPTE time at which data capture begins. If the command fails, the message "DMR CUE command failed four times" is displayed and logged.

Link area transitions handled according to R-O specification

When creating replicates from Orange Book discs, link area transitions are now handled according to the Multisession Read-Only CD Specification V0.9, released in March 1995.

The following line entries were added to the MIS.INI file in the [MISCONFIG] section:

Entry	Default MIS.INI value
LastSessionRemoveMode5_C0	yes
LastSessionRemoveMode5_B0	yes
LastSessionRemoveMode5_D1	no
LastSessionRemoveMode5_B1_B4	no
LastSessionRemoveMode5_01_40	no

If these entries are missing in the MIS.INI file, the default MIS.INI value is also the default condition. Note that the Multisession Read-Only CD Specification V0.9 requires that points B1-B4 and 01-40 should be removed. Enter YES for LastSessionRemoveMode5_B1_B4 and LastSessionRemoveMode5_01_40 to properly conform to the specification.

The default MIS.INI values remove the appendability of an Orange Book disc and turns it into a non-appendable disc, as is called for in the new R-O specification.

Note: MIS no longer attempts to clone discs, but now follows the Multisession Read-Only CD Specification V0.9.

Multisession replicates now follow Yellow Book rules for lead-out

Multisession replicates will now follow Yellow Book rules for the P subchannel of all sessions. Previously, it followed Yellow Book rules for the P subchannel of only the last session. Specifically:

- The PFlag will be high for the last 150 sectors of program area of any session.
- After the start of lead-out of any session, the PFlag will go low for two seconds and then begin to toggle at a 2 Hz rate.

EFM frame synchronization added

A new configuration setting was added to the MIS.INI file in the [MISCONFIG] section called EfmFrameSync. It specifies the number of EFM frames to adjust.

Append Postgap entries added for Digital Audio and ROM

Separate Append Postgap entries were added for CD-Digital Audio and CD-ROM, replacing Append_Postgap_From_TOC in version 4.25.

The following line entries were added to the MIS.INI file in the [MISCONFIG] section:

Entry	Default MIS.INI value
Append_CDDA_Postgap_From_TOC	no
Append_ROM_Postgap_From_TOC	yes

If these entries are missing in the MIS.INI file, the default condition is NO for both Append_CDDA_Postgap_From_TOC and Append_ROM_Postgap_From_TOC.

Ability to set the number of lead-out blocks to pass through added

The LoPassThru setting was added to the 206 [DEVICE] section, letting the user set the number of lead-out blocks to pass through from the source disc to the replicate.

System controller can now exit MIS

MIS now checks the system controller for an Abort message to exit the program when the "Press any key to exit" message occurs.

Hardware changes and additions

206 CD reader replaces older drives

The LMS CM-206 CD reader is DCA's compact disc drive of choice due to its superior tracking, compared to earlier drives. Features of this drive include:

- 1x and 2x mastering of the following modes: CD-Digital Audio, CD+G, CD-ROM Mode 1, CD-ROM Mode 2, mixed mode, CD-I single track, two track and multitrack, CD-I Ready, CD-XA, Photo CD, Video CD (including CD-I FMV), multisession, ROM-Ready (first track audio followed by ROM), SCMS data transferred.
- Streaming read vs. block read. Data is read in a continuous stream, like a tape player, instead of having to issue a read command for each read.
- CU errors are monitored and logged for both audio and ROM.

• No EDC/ECC correction is performed on CD-ROM data. A non-transitional CU error is treated as fatal on ROM data.

Support added with 206 CD reader

Support has been added in many areas with the addition of the LMS CM-206 CD reader. All of the following require the 206 drive:

• Multisession CD-R direct mastering to read-only multisession master.
• Atari Jaguar multisession CD-R mastering.
• 2x CD direct mastering from CD-ROM, CD-Digital Audio, CD+G and mixed mode.
• Multiple indexes on ROM tracks.
• R-W subchannel from DOS file, 8mm tape and CD.
• ROM-Ready format.
• Audio-ROM-Audio direct mastering (also supported by the Sony CDU-561 CD reader).

Other CD reader issues

• Support added for audio first track followed by ROM track using the Sony CDU-561 CD reader.
• Support removed for audio from the LMS CM-212 and Toshiba 3401 CD readers.
• On discs with TOC and subchannel mismatches, the emphasis bit is now set correctly. On the Sony CDU-561 CD reader, TOC matches input, subchannel Index 0 matches TOC and subchannel Index 1 matches input subchannel. On the LMS CM-206 CD reader, both TOC and subchannel match the input CD.
• CU errors on the Sony CDU-561 CD reader can be monitored via the AES I/O or CUD boards, in addition to the Encoder board.
• Occasional "Noise at end_of_disc" problem identified with Sony CDU-561 CD reader and fixed.
• The job is reset correctly when a CDU-561 reader with 1.8t firmware 2x ROM master follows a 1x audio master.
• A user-selectable option has been added to the MIS.INI file to open and close the CD tray on the LMS CM-206 CD reader.

Digital Tape Analyzer checks for non-linear time code

Non-linear time code due to crash edits can lead to a shifting of main channel data on a compact disc. This has the potential of leaving noise on the disc.

You can now check for non-linear time code on an RDAT tape by using the Sony Digital Tape Analyzer DTA-2000 in conjunction with the Sony PCM-7030 or 7050 RDAT device.

To use the Sony DTA-2000, connect it to a printer and the Sony PCM-7030 or 7050. Note that the PCM-7030 or 7050 must have the time code option. Next, perform one of the next three choices:

1. Play a tape in its entirety before the PQ stage. Check the DTA printout for errors before running RDAT Cue Code Editor.

2. Run with Audio Transfer System (ATS) and check the printout after the transfer to confirm that the 8mm tape is good.
3. Run with Mastering Interface System (MIS) and check the printout after the transfer to confirm that the master is good.
Because of the time and resources involved in choices 2 and 3, we recommend you use choice No. 1. A sample printout from the DTA-2000 is displayed in Figure 28.

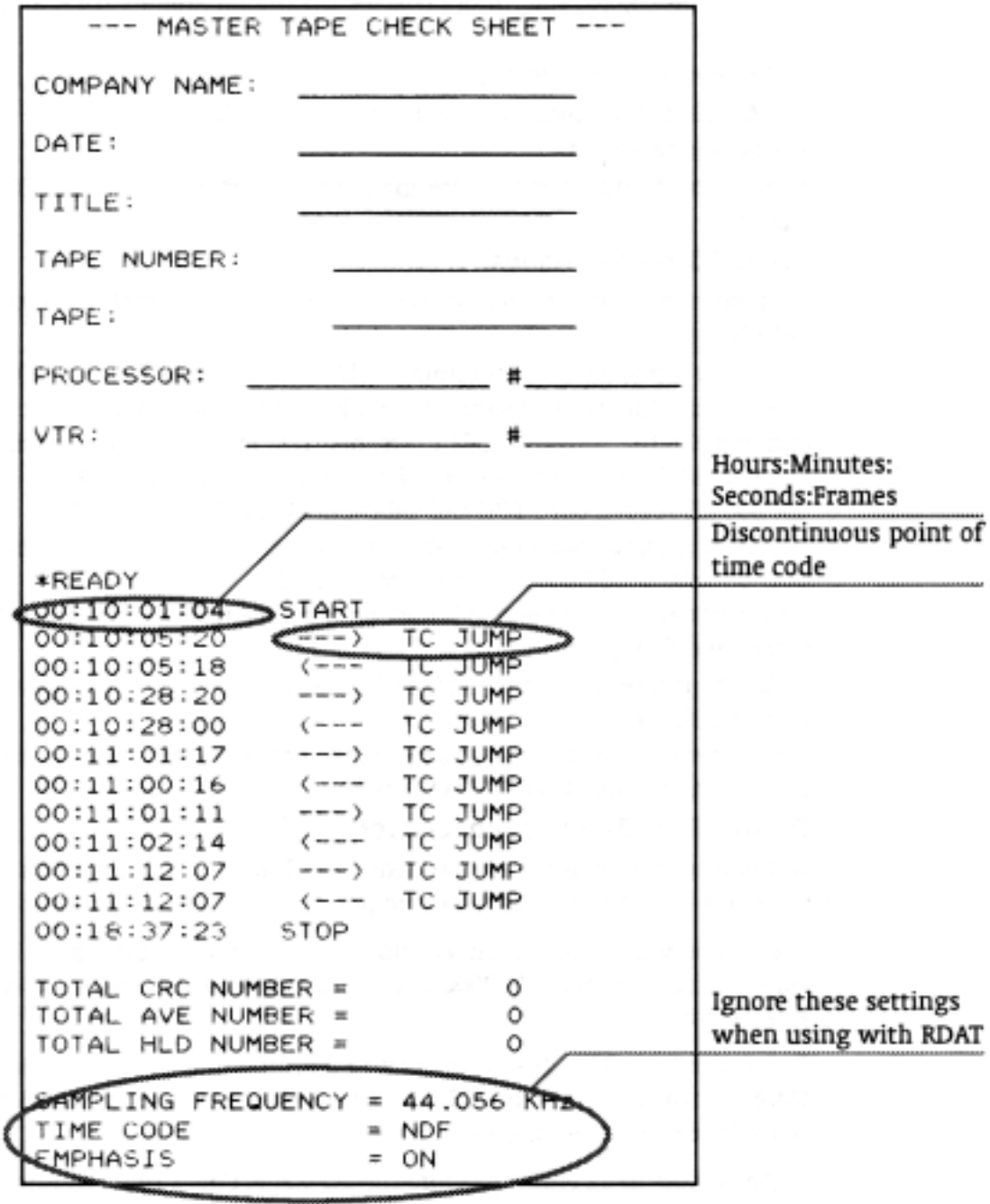

Figure 28. Sample printout from the DTA-2000

Changes due to problems with previous version

Problem causing partial disc mastering corrected

Problem: A D1 point in the final lead-out of a multisession disc listed an incorrect number of sessions, causing only partial mastering of the disc.

Change made: MIS scans the disc to determine the number of sessions and alerts the user if the number is different than the D1 point in the final lead-out. MIS masters the higher number of sessions.

Problem with dropped audio data fixed

Problem: When mastering from the Sony CDU-561 CD reader, MIS did not properly transfer the last few frames of audio data when the total number of frames was not a perfect multiple of the CDDA_read_cnt entry in the MIS.INI file. For example, with a CDDA_read_cnt of 13, if there were 750 sectors, MIS would properly transfer the first 57 reads (a total of 741 sectors), but drop the last nine frames and turn the main channel data into digital silence.

Change made: When there are fewer frames remaining than the CDDA_read_cnt parameter, MIS reads the data one sector at a time until it completes transferring the remaining data.

Data mistaken as lead-out properly transferred

Problem: If R-W subchannel data was remaining when program area switched to lead-out, the remaining data was not transferred.

Change made: If there is any data remaining, it will be properly transferred.

Improperly recorded CD-R causing noise

Problem: Some CD writers produce a link transition at Track 1 Index 1. The link areas from Track 1 Index 1 were passed through from the 206 CD player to the master, causing noise.

Change made: This problem was fixed.

Lock-up during CD-I mastering fixed

Problem: MIS locked up during the initial prescan of a disc when mastering a CD-I disc using the CDU-561 CD reader.

Change made: This problem was fixed.

"Subchannel FIFO empty" problem fixed

Problem: Mastering multisession discs at 2X speed resulted in the error message "Subchannel FIFO empty."

Change made: This problem was fixed.

Performance optimized to avert queue problem

Problem: Some multisession compact discs mastered from the LMS CM-206 CD reader could not transfer data quickly enough, allowing the queue to fall to zero.

Change made: The program was optimized to avert this problem.

Lead-in length setting problem solved

Problem: When the lead-in length was supplied by the system controller interface, using the DCA command set, MIS improperly computed the length of lead-in on multi-session read-only discs.

Change made: This problem was fixed. However, anyone running MIS with a dual pulse start will not be able to produce a proper multisession read-only disc.

One-sector Index 0 points generated correctly

Problem: Any transition from Index 0 to Index 1 of one sector caused MIS to drop the Index 0 point.

Change made: This problem was fixed.

206 communication problem discovered

Problem: A communication problem with the 206 CD reader can occur while prescanning Orange Book transition errors before mastering begins, causing one of the following error messages: "Data overrun error while commanding," "Data parity error while commanding," "Data framing error while commanding," "Data break interrupt error while commanding" or "Drive not responding."

Change made: A solution to this problem has not been determined. If this problem occurs, rerun the job.

Skew due to commanding problem fixed

Problem: A checksum being returned from the Panasonic SV-3900 RDAT player at the end of each response caused communication problems between the RDAT driver and the RDAT player. The resultant skew was due to a commanding problem.

Change made: This problem was fixed.

Program length properly calculated

Problem: Program length was being calculated incorrectly when using the LMS CM-206 CD reader, leading to errors in the start of lead-out. This also caused the lead-out type not to follow the format specified in the MIS.INI file.

Change made: These problems were fixed by basing the lead-out start on TOC.

Other MIS.INI file related issues

- MIS did not make a distinction between RW=YES and RW=NO in the MIS.INI file, causing the program to potentially hang up. When RW=NO was specified, data was sent to an invalid location, causing the program to hang up. This has been fixed so that no R-W subcode data is sent when RW=NO is specified.
- Two MIS.INI line entries added in 4.26.1 have been deleted. They were AppendableRemoveMode5 and AppendableModeType.
- The configuration setting called MINLOOUTPUT in the *MIS V4 Manual* should be called MinLoOutPort.

• Prompt_MID=No now overrides the SystCntrl setting and MID prompt is not displayed.
• For graphic bands, IRGOrientation set to LabelInner is now supported.
• Trailing spaces are now ignored in the MIS.INI file.

PQ shift problem fixed

Problem: A PQ shift occurred on the DDP built in MIS from reading TOC during the prescan of the disc when read from a SCSI-based CD reader.

Change made: This problem was fixed.

Notification given on 561 Mode 0 problem

Problem: When mastering from the Sony CDU-561 CD reader, MIS occasionally misidentified a track as Mode 0.

Change made: MIS now notifies the operator and fails the job.

Menu selection problem fixed

Problem: When the user selected RDAT from the MIS input menu, the DDP location menu behaved abnormally.

Change made: This problem was fixed.

Incorrect queue display fixed

Problem: When using system controller or pulse start, the queue showed 38 frames at start-up, before MIS began filling the queue.

Change made: This problem was fixed.

ISRC's read correctly from 561 data tracks

Problem: The International Standard Recording Code (ISRC) was not read from data tracks on the Sony CDU-561 CD reader.

Change made: This problem was fixed.

Queue properly falls to zero

Problem: When mastering was completed on the LMS CM-206 CD reader, the display of queue blocks would not fall to zero.

Change made: This problem was fixed.

CU errors properly detected from 561

Problem: When mastering from the Sony CDU-561 CD reader and monitoring CU errors on the AES I/O or CUD boards using MIS 4.25 Final, CU errors were not detected and no warning message was given that the errors would not be detected. MIS was not correctly initializing the CU detect circuit on these boards.

Change made: This problem was fixed.

Small mastering jobs no longer cause lockup

Problem: When mastering a disc using a SCSI-based CD reader on which the first track has fewer blocks than the size of the queue, MIS displays the message "Searching for file on input media," then locks up.

Change made: This problem was fixed.

Installation procedures have changed

Problem: The combined size of the MIS program files has increased to the point that the files must be compressed to fit on one diskette.

Change made: You must run the installation program INSTALL.EXE in order to properly load MIS 4.27 on your computer. See the section *Installing MIS* on page E-2 for more information.

Negative skew stopped

Problem: On Orange Book discs mastered from the LMS CM-206 CD reader, the first link block following lead-in of the first session caused one sector of main channel to be dropped, resulting in a negative skew. Subchannel remained unaffected.

Change made: This problem was fixed by making sure sync occurs every 2,352 bytes.

CD-I detection changed on 561

Problem: Some CD-I discs were incorrectly detected as Mode 2 discs when using the Sony CDU-561 CD reader, resulting in faulty mastering.

Change made: This problem was fixed.

Mastering from DOS file changed

Mastering from a DOS file using DDP is handled as follows:

- If file length equals or is greater than DDP, the master is OK and matches DDP;
- If file length is less than DDP, the master aborts at the end of the file.

Other problems solved

- International characters in the MID via the U-matic drive are now passed to the system controller.
- Corrections are now allowed during "RunTime" for IRG and MID prompts.
- Problem with MIS reporting "Drive not ready" on the Sony CDU-561 with 1.8t firmware was fixed.

Errata

Following are changes and corrections to the *MIS V4 Manual*:

Page 3-34: In the table *Features Pertinent to Mastering*, the CD format CD+G works with the Sony CDU-561 CD reader with 1.8t firmware only at 1X speed.

Pages 3-44 to 3-45: The DB connector on the back of the PC206 board can also be used by MIS 4.26 as an additional TTL I/O. Pins 4-11 are input TTL and pins 12-19 are output TTL. For example, CM206DB37-13 is output.

Page 3-54: The second Device line in the Example CONFIG.SYS is incorrect. It should read:

> Device=c:\dos\emm386.exe frame=e000 2048 ram x=d000-d5ff x=DC00-DCFF

This makes the note underneath the Example CONFIG.SYS incorrect. It should read:

> NOTE: On the Value Point computers, the frame in the device statement should be set to frame=c000 instead of frame=e000.

Page 3-59: The configuration setting called MINLOOUTPUT should be called MinLoOutPort.

Also, the description of SpeedOutPort is incorrect. It specifies the last, not the first, of four consecutive TTL output ports that MIS uses to indicate the current mastering speed. For example, SpeedOutPort=ENCDB-15H uses pins 12-15.

Page 3-72: The configuration setting for Skew has no effect on the DCA 206 drive.

Page 3-73: When using the DCA 206 drive, the configuration setting for RW must be set to NO in MIS 4.26. It has no effect in MIS 4.27.

Page 3-75: The configuration setting for Mode has three options, not just one. The options are:

Option	**Description**
CW	Continuous Wave generation mode
High	Turns the signal on
Low	Turns the signal off