

EclipseSuite 5.0

Release Notes

Below are the fixes and enhancements implemented since the release of EclipseSuite 4.1 software.

Enhancements

Improved Detection Of User Data Length In DVD Recordable Media

Some recordable media do not have the capability of maintaining record of how much user data is recorded on the media. For this reason, the EclipseSuite tools must use different methods for determining the correct length. Since this is only a problem in recordable media, the EclipseSuite tools first identify the media type. If it is recordable, the drive is queried to see if it can read the information from the media that identifies the last sector of user data. Most of the time the value returned by the drive is incorrect. Historically, the value returned by different drives has been the same across different media. Therefore, when the EclipseSuite tools detect this specific value, they know to discard it and find another way to determine the user data length.

Recently, some recordable media is returning a different length value. This caused previous versions of EclipseSuite to think the length returned by the drive was correct. When the media is analyzed, it results in unreadable sectors when the EclipseSuite tools got to the actual end of user data. This problem has now been corrected.

ImageCopy Outputs Correct Region Code When Loading From DVD Disc/Recordable

When a DVD-Video is recorded on recordable media, there is no support for setting the proper region code in the media's Control data information. This causes the EclipseSuite tools to trigger an error identifying the difference in region code between the Control data and the region code of the DVD-Video movie.

There are certain conditions under which ImageCopy can automatically correct the region code. Unfortunately, loading from a disc was not one of them. EclipseSuite 5.0 has now been enhanced to automatically save the proper region code in the control data when copying to tape or hard disk. However, it will only do this if the region code in the Control data is 00h, C0h or 40h.

Region Code Is Now Saved In The Layer_Info File

When analyzing, copying or verifying layer 0 of a DVD-Video image, the EclipseSuite tools generate a temporary layer information file in the temporary directory of the local computer. If copying to a hard disk, ImageCopy creates a copy of this file in the image directory. The layer information file is later used when layer 1 of the same is being analyzed, copied or verified.

Previously, the EclipseSuite tools did not identify the region code of a layer 1 DVD-Video image since the region code is only available in layer 0. EclipseSuite 5.0 has been enhanced so that the region code is saved in the layer information file. When layer 1 is analyzed and the layer information file is available, the region code is reported in the analysis.

Plug-In Manager and Copy Protection Plug-In Enhancements

- **Incompatible Plug-In No Longer Causes Programs To Hang**

All versions of EclipseSuite are compatible with specific versions of copy protection Plug-Ins. In older versions, if an incompatible Plug-In was configured; it would cause the program to hang during startup. The only way to recover was to manually remove the Plug-In from the registry. This was later enhanced by detecting that the Plug-In was incompatible and automatically removing it from the registry. While this did not hang the application, it caused problems for users who were switching between versions of EclipseSuite. For example, if a user temporarily switched from a production version of EclipseSuite to a new version and it was not compatible with an existing Plug-In, the new version would automatically remove the Plug-In from the configuration. This allowed the user to run the application without problems. Unfortunately, when the user returned to the original (production) version of EclipseSuite, it

no longer was configured with the Plug-In. This could cause problems where some copy-protected images may pass undetected.

EclipseSuite 5.0 has been enhanced to ignore any incompatible Plug-Ins and still be able continue running.

- **EclipseSuite 5.0 Includes New Macrovision RipGuard Plug-In**

The Macrovision RipGuard Plug-In version 3.01.00.616 is distributed with EclipseSuite 5.0. Older versions of the Plug-In are not compatible and will be ignored by EclipseSuite 5.0.

- **Support For PTP Images**

The RipGuard Plug-In 3.0.0.590 distributed earlier this year for the EclipseSuite 4.1 did not support PTP images. Support for PTP images has been restored in the RipGuard Plug-In version 3.01.00.616, which is distributed with EclipseSuite 5.0.

Macrovision will also be releasing a new version of the RipGuard authoring software. The new version of RipGuard authoring software along with the new version of the RipGuard Plug-In restore support for Parallel Track Path DVD-Video images protected with RipGuard. Therefore, it is important that users that are currently running with the RipGuard Plug-In upgrade to this new version.

- **New ImageSignature Calculation In EclipseSuite 5.0**

With the introduction of the new RipGuard Plug-In, a different method of calculating ImageSignatures was also introduced. To differentiate between signatures created with a previous version of EclipseSuite, the signature version in the ImageSignature file has been changed to version 1.01. This will allow backward compatibility with archived images that already include an ImageSignature generated with a previous version of EclipseSuite.

ImageSignatures Are Now Supported For CD-ROM Mode 1 Images

Previous versions of EclipseSuite only supported ImageSignatures for DVD images. In EclipseSuite 5.0, this has been enhanced to include CD-ROM Mode 1 images.

CD-TEXT Enhancements

The following are several fixes and enhancements to handling of images that include CD-TEXT.

- **New CD-TEXT Editor**

EclipseSuite 5.0 has been enhanced with a CD-TEXT editor. The editor allows users to create or edit CD-TEXT information. Recently there have been many reports of masters that contain corrupt CD-TEXT information or CD-TEXT information that is not properly formatted. While some of these problems did not prevent a drive from reading the CD-TEXT information, the CD-TEXT information in the resulting copies/replicas would sometimes not be displayed properly or not displayed at all. This new editor allows users in pre-mastering and mastering areas to correct some of these problems.

The CD-TEXT editor is designed to work with ImageCopy and can be activated in the General Behaviors (File | Behaviors | CDText Editor). When this behavior is selected, the editor will appear when copying an audio image.

- **Fixed Map Stream Length To Be Compatible To The CD-TEXT Padding**

Some CD-TEXT editors append an extra byte at the end of a CD-TEXT file. When support for CD-TEXT was added to the DDP 2.00 specifications, the EclipseSuite applications did not take this extra byte into account when specifying the CD-TEXT file length in the DDPMS file. This is now corrected in EclipseSuite 5.0.

- **Correct The CDTEXT Subcode Descriptor Filename In The DDPMS File**

Support for CD-TEXT in DDP is implemented by adding a subcode map stream packet into the DDPMS file. The map stream packet includes an 8-byte field called "Subcode Descriptor", which is used to identify the type of data it is describing. In the case of CD-TEXT, this field should be set to "CDTEXT " (padded with two spaces). Some authoring utilities were not writing the Subcode Descriptor correctly and caused problems in the identification of CD-TEXT data.

For example: " CDTEXT" instead of "CDTEXT "

EclipseSuite 5.0 has been enhanced to recognize either as valid Subcode Descriptors. When copying an image with this problem, ImageCopy is also able to correct it.

- **Correctly Output CD-TEXT When The SIZEINFO Pack Is Missing**

One common problem with audio images that include CD-TEXT is a missing SIZEINFO pack. In CD-TEXT, the SIZEINFO pack specifies the number of packs of CD-TEXT information included. Without this information, CD-TEXT display systems and applications are not able to determine how much CD-TEXT information exists. Some may not be able to display any of the CD-TEXT information.

EclipseSuite 5.0 has been enhanced with the ability to correct this problem. If the SIZEINFO pack is missing from an image, ImageCopy is able to generate the missing pack and output properly formatted CD-TEXT information. This enhancement is implemented as a behavior in ImageCopy. It can be enabled in the General Behaviors (File | Behaviors | Auto Correct Size Info).

- **Changed The Severity Of The Rule "CRC Error In CD-Text Pack" From Warning To An Error**

The rule "CRC error in CD-Text pack" has been upgraded in severity from WARNING to ERROR since it is known to cause problems in the detection and display of CD-TEXT data.

Books Tab Is Now Replaced With UDF Tab

EclipseSuite 5.0 replaces the Books tab with the UDF tab. The Books tab displayed a graphical icon identifying the type of image. Since images are also identified in the Analysis tab via rule messages, the Books tab has been removed to make room for the new UDF analysis tab.

Advanced UDF Analysis

EclipseSuite 5.0 has been enhanced with the ability to perform a full analysis of the UDF file system. This is required for the analysis of Blu-ray and HD DVD images. However, it has been implemented to support CD and DVD as well. This also introduces over 150 new rules that check the file system. The UDF file structure can be viewed in the new UDF tab.

Output Control Data And Layer_Info To The ImageSignature Directory

When copying an image to hard disk and the Signature behavior is selected, ImageCopy automatically generates an ImageSignature for the image and stores it in a file in the same directory as the image. ImageCopy also allows users to specify if a backup copy of the ImageSignature should be made to a different location. This is done by specifying a path in the ImageCopy Preferences in the field labeled "Signature Directory". This feature has been available since EclipseSuite 4.0.

ImageCopy 5.0 has been enhanced to also copy the Control data and layer_info files to the same directory as the ImageSignature. These files can later be referenced when analyzing, copying or verifying layer 1. This feature is only available if the ImageSignature behavior is selected (File | Behaviors | Signature).

Exporting Of Analysis Information To HTML And XML

The EclipseSuite tools allow customers the ability to export some of the analysis information from a job to in HTML or

XML format. HTML files can be used to view the analysis results without requiring the EclipseSuite software to be installed on a computer. The XML file can be used for extracting and importing image information onto a database.

Support For Network Browsing

When selecting a folder location for an image that exists on a remote computer, previous versions of EclipseSuite required that users map a drive to the remote computer in where the image resides. The EclipseSuite tools now give customers the ability to browse a network for image directories without having to map a drive.

ImageVerify Support In ImageNet Configurations

ImageVerify 5.0 has been enhanced so that it can be launched from the ImageNet Scheduler to perform verifications to the image on the server.

Improved Layer Matching For PTP Images

When analyzing layer 0 of a dual-layer image, the EclipseSuite tools save information about the image into a temporary file (layer0.layer_info). Later when layer 1 is analyzed, the EclipseSuite tools look for this file. If found, the tools check the information in the file to see if it matches the layer 1 image being analyzed. If it matches, the information in the file is used in the analysis of layer 1.

There are times in which different images may have similar file structure and causes the EclipseSuite tools to match a layer 1 image to the wrong layer_info. This typically results in false errors in the analysis.

In EclipseSuite 5.0, the layer info file includes additional information about layer 1 that will aid in the matching of the layer 1 information. However, this extra information is included in the layer_info file only if the layer 1 image is available when the layer_info file is created. For example, this extra information is included when analyzing a disc. It can also be included if a Partner Layer has been specified when loading both layer 0 and layer 1 of the same image.

When analyzing layer 1 of a disc, automatically create the layer_info from layer 0

In order to perform a full analysis of a layer 1 image, the EclipseSuite tools require information from layer 0. If this information is not available, the job can continue but there are several checks that are not performed. Therefore, in order to perform a full analysis, users have to analyze the layers in sequence starting with layer 0 and in the same device. The other option is to specify a Partner Location (location of Layer 0) when loading layer 1. This process is the same regardless of where the image is stored.

In EclipseSuite 5.0, this has been further enhanced so that when analyzing layer 1 of a disc, the EclipseSuite tools automatically build the layer_info from layer 0 since it is already available on the disc.

Improved Detection Of Multisession DVDs

The specifications for a DVD read-only disc (i.e. a replicated disc) do not support the concept of multisession. However, since it is becoming more common for customer to deliver their masters on DVD-Recordable media, we have seen more and more media that has been written as Multisession. The problem with this type of media as a master disc is that once the data is copied from the recordable disc and is mastered, it is no longer considered Multisession. Data that was recorded in sessions after the first session is not accessible although it is still on the replicated disc. The reason for this is that on a replicated disc, there is nothing that links one session to the next as on a recordable disc.

Previous versions of EclipseSuite queried the drive to identify the type of media the user had inserted into a drive. If the drive identified the media as Multisession, the EclipseSuite software aborted the job. Unfortunately, some authoring applications open a second session but don't copy any data to it. This causes some drives to identify the media as Multisession and others identifying it as a single session. Since such media can be considered single session, it was being rejected in certain drives identified it as Multisession.

Previous versions of EclipseSuite also introduced two other rules that also helped in the identification of Multisession media: "Multiple ISO9660 sessions" and "Multiple UDF sessions". When a true Multisession media is analyzed, one or both of these rules will always be triggered. Therefore, in EclipseSuite 5.0, these rules have been upgraded in severity

level from WARNING to ERROR since they are more accurate in the detection of a Multisession DVD.

Fixes

Temporary Layer Information Is No Longer Saved To Floppy

When analyzing a layer 0 DVD image, the EclipseSuite tools normally generate a layer_info file. By default, this file is saved in the TEMP folder of the local computer. In previous versions of EclipseSuite, a problem occurred in which the file was also being saved to the floppy drive. This problem has been corrected in EclipseSuite 5.0.

Missing CSS And Checksum Information

In previous versions of EclipseSuite, the CSS and Checksum information was sometimes missing from the Info tab. The problem has been identified and corrected in EclipseSuite 5.0.

Rule "Title Set Files Not In Correct Physical Order" Is No Longer Triggered Incorrectly

Previous versions of EclipseSuite would sometimes trigger this rule when building the layer_info file for a dual-layer image. This is now corrected.

Prevent ImageCopy From Writing A Dual-Layer Image To Recordable Media

Currently, ImageCopy does not support writing of dual layer images to recordable media. Since the use of dual-layer media is relatively new, previous versions of EclipseSuite did not check the image type before writing to recordable media. Resulting copies were incorrect. Since support for output of a dual-layer image has not yet been implemented, ImageCopy has been enhanced to abort when attempting to output a dual layer image to recordable media.

Note that this does not affect ImageArchive copies.

Do Not Trigger The Rules "Multiple ISO9660 Sessions" And "Multiple UDF Sessions" For CD Images

Previous versions of EclipseSuite triggered these rules if it detected a Multisession image with multiple file systems. These rules are not valid for CD images since the CD specifications do support Multisession.

TapeCopy Saves The Analysis Information To A Log File

Previous versions of the TapeCopy utility had a problem in which it did not save log file information. This has been corrected.

New Device Support

The following new devices are supported in EclipseSuite 5.0.

Plextor PX-760A/SA & PX-755A/SA (ATAPI/SATA)

EclipseSuite 5.0 adds support for these drives to replace the discontinued models PX-712 & PX-716. Note that these may also be available in USB interfaces.

These drives require at least firmware version 1.05 and 1.06, respectively (firmware v1.06 for the 755 and v1.05 for the 760).

The following devices have also been added to the list of supported devices. However, be aware that Eclipse has not tested any of these devices. Testing was performed by customers who requested these specific devices. No problems have been reported.

- **Pioneer DVD-RW DVR-1 Writer** - This device is to be used as an output (writer) device.
- **LG HL DVD-ROM (LG GSA-4160B)** - This device is to be used as a read-only device.
- **Sony DVD RW DRU** - This device is to be used as an output (writer) device.
- **LITE-ON DVD-ROM (DVD COMBO)** -This device is to be used as a read-only device.
- **Quantum DLT-V4** - This DLT tape drive may not be compatible with all tape media. Check Quantum's web site for more information.

New Rules

The following is a list of all the new rules that have been added to EclipseSuite 5.0.

Rule Title	Severity	Category	ID	Type
3X-Speed DVD-ROM	Flag	Exclude	753	New
AACS	Info	Exclude	833	New
AACS XML Formatting Error	Error	DDP	845	New
Anchor Point	Info	Exclude	1427	New
Anchor Volume Descriptor Pointer expected at Logical Sector	Warning	UDF	706	New
Anchor Volume Descriptor Pointer in rewritable or overwritable partition	Error	UDF	695	New
AV Stream File not recorded as Real-Time	Error	UDF	806	New
Available Space not zero	Warning	UDF	754	New
Bad (Extended) File Entry	Error	UDF	788	New
Bad Allocation Descriptor(s)	Error	UDF	759	New
Bad Extended Attribute	Error	UDF	745	New
Bad File Identifier Descriptor	Error	UDF	819	New
Bad Metadata Partition	Error	UDF	741	New
Bad Parent Directory	Error	UDF	773	New
Bad Tag Checksum	Error	UDF	777	New
Bad Tag CRC	Error	UDF	778	New
Bad Timestamp field	Error	UDF	779	New
Bad Volume Structure Descriptor	Error	UDF	698	New
BD CMF level 0.XX	Info	Exclude	681	New
BD-R File System	Info	Exclude	825	New
BD-RE File System	Info	Exclude	826	New
BD-ROM File System	Info	Exclude	794	New
Blu-ray Recordable (BD-R)	Flag	Exclude	869	New
Blu-ray Rewritable (BD-RE)	Flag	Exclude	870	New
Cannot copy AACS encrypted disc	Error	Other	848	New
Cannot copy AACS encrypted disc	Error	Other	848	New
CDText MSL Adjusted	Info	SubChannel	846	New
CDText SequenceID count mismatch	Error	SubChannel	1409	New
CDText SIZEINFO Packets Regenerated	Abort	SubChannel	849	New
CDText unknown character code	Error	SubChannel	1426	New
Character Set is not CS0	Error	UDF	731	New
Clip Stream not aligned at layer break	Error	MainChannel	880	New
CMF level 2.00	Info	Exclude	832	New
Common Volume Set Identification Flag set	Warning	UDF	748	New
Control data & CMF/DDP sector size disagree	Warning	DVD	175	Renamed
CRC error in CD-Text pack	Error	SubChannel	358	Severity
D1 Pointer Omitted	Flag	Plug-In	671	New
DDP level 3.00	Info	Exclude	820	New
Descriptor location and Tag location field disagree	Error	UDF	707	New
Descriptor not found	Error	UDF	686	New
Different amount of Titles	Warning	Blu-ray	840	New
Different Metadata Partitions	Error	UDF	843	New
Different sector size	Warning	UDF	725	New
Directory not found	Error	UDF	829	New
Duplicate sectors found, removing extra sectors	Error	Decoder	648	New

DVD / HD DVD (twin)	Flag	Exclude	838	New
DVD+R Dual Layer	Info	Exclude	827	New
DVD-R File System	Info	Exclude	821	New
DVD-RAM	Info	Exclude	674	New
DVD-ROM File System	Info	Exclude	756	New
DVD-RW File System	Info	Exclude	822	New
E32	Warning	Decoder	676	New
ECMA 167 Volume	Info	Exclude	685	New
Extent length is not a multiple of Logical Block size	Warning	UDF	703	New
Extent length is not a multiple of Logical Sector size	Error	UDF	792	New
Field not set to zero	Warning	UDF	758	New
File comparison error	Error	UDF	866	New
File data not in physical space	Warning	UDF	763	New
File extents not allocated with ascending order	Error	UDF	835	New
File Link count is not zero	Warning	UDF	755	New
File Link Count mismatch	Warning	UDF	809	New
File not allocated at the inner radius area	Warning	UDF	810	New
File not allocated at the outer radius area	Warning	UDF	811	New
File not allocated contiguously	Warning	UDF	807	New
File not found	Error	UDF	830	New
File write error	Error	DDP	842	New
First Partition number is not 0	Warning	UDF	704	New
First Volume Sequence Number is not 1	Error	UDF	690	New
Flag not set	Error	UDF	772	New
Freed Space Bitmap is recorded	Error	UDF	800	New
Freed Space Table is recorded	Error	UDF	799	New
Hard Links are not allowed	Error	UDF	808	New
HD DVD	Flag	Exclude	656	New
HD DVD Video	Info	Exclude	828	New
HD DVD-R	Info	Exclude	672	New
HD DVD-R	Info	Exclude	771	New
HD DVD-R File System	Info	Exclude	823	New
HD DVD-Rewritable	Info	Exclude	770	New
HD DVD-ROM	Info	Exclude	769	New
HD DVD-ROM File System	Info	Exclude	757	New
HD DVD-RW File System	Info	Exclude	824	New
Illegal use of OS reserved area	Warning	UDF	711	New
Incorrect CC Digest Value	Error	MainChannel	585	New
Incorrect CHT Value	Error	MainChannel	859	New
Incorrect Descriptor CRC length	Error	UDF	818	New
Incorrect Map/Data Stream Length in DDP/CMF	Warning	DDP	133	Renamed
Integrity Sequence Extent length is less than 8 KBytes	Warning	UDF	732	New
Invalid Descriptor length	Warning	UDF	774	New
Invalid Dstring	Error	UDF	816	New
Invalid ECMA Tag Identifier found in Sequence	Error	UDF	693	New
Invalid Entity Identifier revision	Error	UDF	727	New
Invalid Free Space Table entry	Warning	UDF	734	New
Invalid ICB File Type used	Error	UDF	765	New
Invalid ICB Strategy type for File Entry	Warning	UDF	760	New
Invalid incrementing sector number in leadout	Warning	Decoder	679	New
Invalid Logical Block Number	Error	UDF	751	New
Invalid Logical Volume Integrity Descriptor	Error	UDF	813	New
Invalid Media Length	Warning	UDF	793	New
Invalid Medium Interchange Level	Error	UDF	746	New
Invalid Metadata Mirror file extent	Error	UDF	742	New
Invalid Partition combination	Warning	UDF	718	New
Invalid Partition Contents	Warning	UDF	726	New
Invalid Partition Descriptor	Error	UDF	805	New
Invalid Partition Map	Error	UDF	699	New
Invalid Path	Error	UDF	837	New

Invalid Size Table entry	Warning	UDF	735	New
Invalid Time Map file	Error	DVD	862	New
Invalid UDF Entity Identifier	Error	UDF	728	New
Invalid UDF version	Warning	UDF	780	New
Invalid Unallocated Space Entry length	Warning	UDF	764	New
Invalid Virtual Allocation Table	Error	UDF	798	New
Largest logical sector number of volume is less than 257	Error	UDF	812	New
LBR lost focus	Abort	Encoder	666	New
Less than 2 Anchor Volume Descriptor Pointers	Warning	UDF	687	New
Logical block size for Logical Volume not a multiple of 512	Error	UDF	700	New
Logical Block Size is not 2048 bytes	Error	UDF	743	New
Metadata bit not set correctly	Error	UDF	787	New
Metadata File and Metadata Mirror File are not equivalent	Warning	UDF	766	New
Metadata not recorded in Metadata Partition	Warning	UDF	761	New
Missing Volume Descriptor Sequence	Error	UDF	688	New
MKB Process Error	Error	Other	847	New
More than 1 NSR descriptors in Volume Recognition Sequence	Warning	UDF	729	New
More than 1 Primary Volume Descriptor numbered 0	Error	UDF	694	New
More than 1 Volume Set ID marked as common	Error	UDF	692	New
More than 2 physical partitions included in Volume	Warning	UDF	716	New
Multiple Extents allocated for Metadata	Warning	UDF	789	New
Multiple Extents are not allowed	Error	UDF	834	New
Multiple ISO9660 sessions	Error	MainChannel	786	Severity
Multiple UDF sessions	Error	MainChannel	784	Severity
No File Set Descriptor found	Error	UDF	814	New
No File Set Descriptor Sequence	Error	UDF	750	New
No File Set Descriptor with file set number 0	Error	UDF	815	New
No Identifier specified	Warning	UDF	720	New
No matching LVInfo found in Implementation Use Volume Descriptor	Warning	UDF	749	New
No Partition Descriptor associated with Metadata Partition Map	Error	UDF	736	New
No Root Directory	Error	UDF	768	New
Non zero Unallocated Space Allocation Descriptors	Warning	UDF	752	New
Non-Allocatable Space Stream is recorded	Error	UDF	804	New
Non-standard Reference Code Zone values	Error	Decoder	651	New
Non-zero bytes in Buffer Zone area	Error	Decoder	652	New
Not a multiple of ECC block size	Warning	UDF	737	New
Not a single Descriptor	Warning	UDF	767	New
Not a single Partition	Error	UDF	744	New
Not compared RW data	Warning	Verification	782	New
Not one prevailing Partition Descriptor in Volume	Error	UDF	715	New
Not one Volume Set ID marked as common	Error	UDF	692	New
Number of partitions disagree	Error	UDF	702	New
Number of prevailing Logical Volume Descriptors in Volume Set is not one	Error	UDF	713	New
Number of prevailing Primary Volume Descriptors in Volume is not one	Error	UDF	712	New
Number of prevailing Unallocated Space Descriptors in Volume is not one	Error	UDF	722	New
ODME LBR Aborted:	Abort	Encoder	668	New
ODME LBR Error:	Error	Encoder	644	New
ODME LBR Info:	Info	Encoder	645	New
ODME LBR Warning:	Warning	Encoder	667	New
Only 1 Logical Volume Integrity Descriptor is allowed	Warning	UDF	747	New
Only one Volume is allowed	Warning	UDF	710	New
Only Type 1 Partition Maps allowed	Warning	UDF	709	New
Open Logical Volume	Warning	UDF	701	New
Parity Outer failure	Warning	Decoder	615	New
Parity Outer failure in Reference Code Zone area	Warning	Decoder	649	New
Parity Outer failure outside program area	Warning	Decoder	790	New
Parity Outer uncorrectable	Error	Decoder	675	New
Parity Outer uncorrectable in Reference Code Zone area	Error	Decoder	677	New
Parity Outer uncorrectable outside program area	Error	Decoder	791	New
Partition Integrity Table is recorded	Error	UDF	803	New

Partition not allocated	Warning	UDF	740	New
Partition not included in Logical Volume	Warning	UDF	719	New
Partition numbers not in consecutive order	Warning	UDF	705	New
Partitions overlap	Warning	UDF	717	New
PES Scrambling value reserved for commercial use	Warning	DVD-Audio	436	Renamed
PIC Content Error	Error	MainChannel	860	New
Pulse Profiling Applied	Info	Exclude	868	New
Pulse Shaping Amplitude adjusted	Warning	Encoder	613	New
Pulse Shaping illegal timing	Abort	Encoder	614	New
Pulse Shaping Timing adjusted	Warning	Encoder	612	New
PWM (Pulse Width Modulation) Applied	Info	Exclude	867	New
ROM Mark	Info	Exclude	861	New
Rom Mark Send Failure	Error	Exclude	881	New
RW shifted	Warning	Verification	781	New
Sector after Volume Recognition Sequence contains data	Error	UDF	730	New
Sector out of sequence at input, padding missing sectors	Error	Decoder	647	New
Source CC File Hash Data Incorrect	Warning	MainChannel	879	New
Subchannel error	Warning	Decoder	876	New
Time stamp not in Local Time	Warning	UDF	738	New
Title assigned to a CPS Unit	Warning	DVD	841	New
Title Key File replaced	Info	Exclude	883	New
Title Key File replacement failure	Error	MainChannel	882	New
UDF Analysis Error	Error	UDF	785	New
UDF OS Class	Info	Exclude	775	New
UDF Volume	Info	Exclude	739	New
Unallocated Space Allocation Descriptor exceeds logical sector size	Warning	UDF	723	New
Unallocated Space Bitmap is recorded	Error	UDF	802	New
Unallocated Space Table is recorded	Error	UDF	801	New
Unknown File System	Warning	UDF	721	New
Unknown file version number	Warning	UDF	762	New
Unknown Partition type	Error	UDF	697	New
Use of reserved value for Next Unique ID	Warning	UDF	733	New
Volume 1 not included in prevailing Logical Volume	Error	UDF	714	New
Volume Descriptor Sequence Extent contains less than 16 Logical Sectors	Error	UDF	724	New
Volume Descriptor Sequence has multiple extents	Warning	UDF	708	New
Volume Descriptor Sequence in rewritable or overwritable partition	Error	UDF	696	New
Volume Descriptor Sequences are not equivalent	Error	UDF	689	New
Volume Sequence Numbers not in a consecutive ascending order	Error	UDF	691	New
Volume Set Identifier has less than 16 characters	Warning	UDF	817	New