PIONEER
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Optical Drive Summary

There have been five (5) series of Pioneer optical drives: 5000, 5100, 7000, 7100 and 9100. The 5000, 5100 and 7000 series were all SCSI-1 type devices and are no longer in production. The 7100 and 9100 series are switchable SCSI-1 and SCSI-2 devices and are still being produced.

NOTE: SCSI-2 is the current prevalent industry standard.

DE-7001 Series

The DE-7001 series includes the DE-S7001 and DE-U7001 models. The DE-S7001 is an external subsytem including drive unit, SCSI controller and DC power supply. The DE-U7001 is an internal full height drive unit with SCSI controller. Both models use the DEC-702 rewritable (MO) magneto-optical disk media and the DC-502_A WORM (Write Once Read Many) optical disk media.

The 7001 series drives must be set to Mode 0 when using Rewritable media and to Mode 1 when using WORM media. The settings of the dip switch bits 7 and 8 determine which mode the drive is set to. The dip switch is located on the rear of the DE-S7001 and on the controller board of the DE-U7001.

The bit settings are read by the controller at Power ON and RESET. If the settings of the bits have changed, the unit must be reset or turned OFF and then ON before the new setting will take place. IMPORTANT: You should only change the bit settings when power to the device is OFF.

NOTE: The Mode setting may also be changed by sending the SCSI command CHANGE MODE. Refer to the SCSI specifications for the corresponding drive for more details.

The Modes are set as described in the table below:

Mode	Bit 7	Bit 8	Name	Description
0	OFF	OFF	Rewritable Mode	Read and write operations are enabled only with ISO standard (sampled servo format) rewritable disks. Read and write operations with WORM disks are disabled.
1	OFF	ON	WORM Mode	Read and write operations are enabled only with ISO standard (sampled servo (SS) format WORM disks. Read and write operations with rewritable disks are disabled.

The 7000 series drives have two BUSY LEDs. One is labeled RW for Rewritable and the other is labeled WO for WORM.

When the drive is in Mode 0 (Rewritable), WO is OFF and RW blinks when no disk in inserted. If WO is blinking, the drive detects the presence of a WORM disk. If RW is ON, the disk detects a rewritable disk.

When the drive is in Mode 1 (WORM), RW is OFF and WO blinks when no disk in inserted. If RW is blinking, the drive detects a rewritable disk. If WO is ON, the drive detects a WORM disk.

DE-H7101 Series

The DE-H7101 series includes the DE-UH7101 and DE-SH7101 models. The DE-UH7101 is an internal 5.25-inch half-height multifunction optical disk drive. The DE-SH7101 is an external half-height multifunction optical disk drive subsystem. Both use the media types DEC-702 magneto-optical disk and DEC-502_A WORM optical disk.

The DE-H7101 series optical drives fit into industry standard 5.25-inch half-height drive bays. They conform to ISO 9171 and ISO 10089 (Format B) standards for true Write Once and Rewritable media and are compatible with DE-7001 series multifunction drives. The DE-H7101 series support SCSI-2.

The 7101 series drives must be set to Mode 0 or Mode 2 when using Rewritable media and to Mode 1 or Mode 2 when using WORM media. The drives must be set to Mode 2 when used as a SCSI-2 device. The drive mode is determined by the settings of the dip switch bits 4 and 5. The dip switch is located on the rear of the drives.

NOTE: The DE-UH7101 has jumper settings instead of a dip switch. The jumper is set by shorting the pins. Pins 7 and 8 correspond to bits 4 and 5, respectively.

NOTE: The bit settings are read by the controller at Power ON and RESET. If the settings of the bits have changed, the unit must be reset or turned OFF and then ON before the new setting will take place. IMPORTANT: You should only change the bit settings when power to the device is OFF.

The Modes are set as described in the table below (factory default is Mode 0):

Mode	Bit 4	Bit 5	Name	Description
0	OFF	OFF	Rewritable	Read and write operations are enabled only with ISO standard (sampled servo format) rewritable disks. Read and write operations with WORM disks are disabled. (DE-C7001)
1	ON	OFF	WORM	Read and write operations are enabled only with ISO standard (sampled servo (SS) format WORM disks. Read and write operations with rewritable disks are disabled. SCSI specifications are same as that of DD-5101 series except DE-SH7101 enables RDBC (Read Blank Check) as default. (DD-C5001)
2	OFF	ON	SCSI-2	Read and write operations are enabled with both ISO standard (sampled servo (SS) format) rewritable and WORM disks. SCSI specifications are based on SCSI-2. (DE-C7101)

IMPORTANT: Because Mode 2 supports both WORM and MO type media as well as SCSI-2 command set, it is recommended that the user use the drive in Mode 2.

The 7101 series has a dual-color BUSY LED. The meaning of the light indications of the LED is listed in the table below.

Drive Status	Rewritable Mode	WORM Mode
no disk inserted	flashing green	flashing yellow
MO disk present	dim	flashing yellow
WORM media present	flashing green	dim
BUSY	steady green	steady yellow
overheat	orange	orange

Note: The two colors of the LED are yellow and green. When both colors are lit, the result is orange.

DE-SH9101

The DE-SH9101 is a half-height external multifunction optical disk drive subsystem that can handle large capacity (1.7 GB) utilizing the sampled servo format *Multiplexed Address Sampled Servo (MASS)*. MASS is a high density data recording system.

The DE-SH9101 uses both MASS format optical disks and ISO standardized Type-B format (SS) optical disks (MO and WORM). It is upward compatible with the DE-SH7101 optical drive.

The media types used by the DE-SH9101 are the DEC-17GMO rewritable (MO) 1.7GB capacity magneto-optical disk, DC-17GWO 1.7 GB capacity WORM (write once read many) optical disk, DEC-702 654 MB capacity MO disk, and DC-502_A 654 MB capacity WORM disk.

The SCSI command set for the 9101 conforms to the 7101 series SCSI specifications (upward compatible Mode 0, Mode 1 and Mode 2). It has plug-in compatibility with DE-7001 or DD-5101 (Mode 0 and Mode 1).

The 9101 supports both synchronous and asynchronous data transfers.

The DE-SH9101 drive must be set to Mode 0 or Mode 2 when using Rewritable media and to Mode 1 or Mode 2 when using WORM media. The drive must be set to Mode 2 when used as a SCSI-2 device. The drive mode is determined by the settings of the dip switch bits 4 and 5. The dip switch is located on the rear of the drive.

IMPORTANT: Because Mode 2 supports both WORM and MO type media as well as SCSI-2 command set, it is recommended that the user use the drive in Mode 2.

NOTE: The bit settings are read by the controller at Power ON and RESET. If the settings of the bits have changed, the unit must be reset or turned OFF and then ON before the new setting will take place. IMPORTANT: You should only change the bit settings when power to the device is OFF.

The Modes are set as described in the table on the next page (factory default is Mode 0):

Mode	Bit 4	Bit 5	Name	Description
0	OFF	OFF	Rewritable	Read and write operations are enabled only with ISO standard (sampled servo format) rewritable disks. Read and write operations with WORM disks are disabled. (DE-C7001)
1	ON	OFF	WORM	Read and write operations are enabled only with ISO standard (sampled servo (SS) format WORM disks. Read and write operations with rewritable disks are disabled. SCSI specifications are same as that of DD-5101 series except DE-SH7101 enables RDBC (Read Blank Check) as default. (DD-C5001)
2	OFF	ON	SCSI-2	Read and write operations are enabled with both ISO standard (sampled servo (SS) format) rewritable and WORM disks. SCSI specifications are based on SCSI-2. (DE-C7101)

The DE-SH9101 series has a dual-color BUSY LED. The meaning of the light indications of the LED is listed in the table below.

Drive Status	Mode 0	Mode 1
no disk inserted	flashing green	flashing yellow
MO disk present	dim	flashing yellow
WORM media present	flashing green	dim
BUSY	steady green	steady yellow
overheat	orange	orange

Note: The two colors of the LED are yellow and green. When both colors are lit, the result is orange.