



OneStor USM

USM_ONESTOR_V5_R1.6c

Release Notes

Version 1.1

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Table of Contents

1	Introduction	3
1.1	What is GEM USM?	3
1.2	Scope	3
1.3	Terms and Abbreviations	3
1.4	Important Notes	3
2	Version Information.....	4
2.1	GEM Subsystem Firmware	4
2.2	Controllers	4
2.2.1	Pimlico - E12EBD	4
2.2.2	Gallium3	4
2.2.3	Titan 12G Sideplanes	5
2.3	Midplanes	6
2.3.1	HB1235	6
2.3.2	EB2425	6
2.3.3	HB2435	6
2.3.4	SP3212A	6
2.3.5	SP3224A	6
2.3.6	SP3584	7
2.4	PCMs / PSUs	7
2.4.1	HE580W - Gen2	7
2.4.2	HE764W	7
2.4.3	2200W	7
2.5	Fan Modules	7
2.5.1	Titan 12G	7
3	GEM Upgrade Procedure	8
3.1	Enclosure Upgrade Steps	8
3.1.1	Canister Upgrade	8
3.1.2	Enclosure Upgrade	8
3.1.3	PCM/PSU Upgrade	8
4	GEM Subsystem Upgrade Filenames	9
4.1	Controllers	9
4.1.1	Pimlico - E12EBD	9
4.1.2	Gallium3	9
4.1.3	Titan 12G Sideplanes	9
4.2	Midplanes	10
4.2.1	HB1235	10
4.2.2	EB2425	10
4.2.3	HB2435	10
4.2.4	SP3212A	10
4.2.5	SP3224A	11
4.2.6	SP3584	11
4.3	PCMs / PSUs	11
4.3.1	HE580W - Gen2	11
4.3.2	HE764W	11
4.3.3	2200W	11
4.4	Fan Modules	12
4.4.1	Titan 12G	12
5	Change History.....	13
5.1	Issues addressed in USM_SBB-ONESTOR-V5_R1.6 (GEM 5.0.0.19)	13
5.2	Issues addressed in USM_SBB-ONESTOR-V5_R1.5 (GEM 5.0.0.18)	14
6	Revision History	15

1 Introduction

1.1 What is GEM USM?

GEM Unified System Management (USM) combines the firmware from the GEM subsystem found in a traditional SBB Canister (GEM FW running on SAS expander, GEM Main CPLD, GEM Power CPLD) with firmware from other enclosure components, such as x86 subsystems (primarily BIOS, BMC and FPGA/CPLD components), to provide a coherent system management solution for a range of OneStor platform solutions.

1.2 Scope

This release note covers the USM_ONESTOR_V5_R1.6c firmware package for OneStor enclosures running Gallium3 & 12G EBOD SBB modules. It contains all required SBB module level, enclosure level, and PCM level firmware components.

1.3 Terms and Abbreviations

BBU:	Battery Backup Unit
GEM:	Generic Enclosure Management (Firmware)
PCM:	Power Cooling Module
SBB	Storage Bridge Bay
USM:	Unified System Management
VPD:	Vital Product Data
WWN:	World Wide Name

1.4 Important Notes

The canister FW for all SBB canister types must be downloaded before the VPD is downloaded.

When downloading FAN FW if a download fails then the way to recover it is:

1. Power Cycle the enclosure
2. run the GEM CLI command: fan_set speed 8000
3. Re-download the Fan Firmware.

When downloading FAN FW the download must be executed from the Master Canister.

2 Version Information

This section shows the firmware component versions contained in this package and highlights in yellow the items which have changed since the previous GEM USM package.

2.1 GEM Subsystem Firmware

2.2 Controllers

2.2.1 Pimlico - E12EBD

USM Package	USM_ONESTOR_V5_R1.6c	USM_ONESTOR_V5_R1.5
Bootloader	1.03	1.03
Firmware	5.0.0.20 (0x5014)	5.0.0.18 (0x5012)
VPD Structure	0x06	0x06
VPD CRC	0x8eb959a1	0x8eb959a1
Config CRC	0x2e14979b	0x2e14979b
GEM CPLD	0x0a.00	0x0a.00

2.2.2 Gallium3

USM Package	USM_ONESTOR_V5_R1.6c	USM_ONESTOR_V5_R1.5
Bootloader	1.07	1.07
Firmware	5.0.0.20 (0x5014)	5.0.0.18 (0x5012)
VPD Structure	0x06	0x06
VPD CRC	0x4c7d0269	0x4c7d0269
Gallium3 NX - Config CRC	0x754a2ae4	0x754a2ae4
Gallium3 PX - Config CRC	0x9ae7efb6	0x9ae7efb6

2.2.3 Titan 12G Sideplanes

USM Package	USM_ONESTOR_V5_R1.6c	USM_ONESTOR_V5_R1.5
Bootloader	1.02	1.02
Firmware	5.0.0.20 (0x5014)	5.0.0.18 (0x5012)
Left Hand CPLD	0x07	0x07
Right Hand CPLD	0x07	0x07
Left Hand 36 - VPD Structure	0x06	0x06
Left Hand 36 - VPD CRC	0x312d0eda	0x312d0eda
Left Hand 36 - Config CRC	0xf785d568	0x2ce4b3f0
Left Hand 24 - VPD Structure	0x06	0x06
Left Hand 24 - VPD CRC	0x651380a5	0x651380a5
Left Hand 24 - Config CRC	0x6238c066	0x6238c066
Right Hand 36 - VPD Structure	0x06	0x06
Right Hand 36 - VPD CRC	0xfaeff0da	0xfaeff0da
Right Hand 36 - Config CRC	0xdd5c2c36	0xdd5c2c36
Right Hand 24 - VPD Structure	0x06	0x06
Right Hand 24 - VPD CRC	0xb226d976	0xb226d976
Right Hand 24 - Config CRC	0x5e516818	0x5e516818

2.3 Midplanes

2.3.1 HB1235

USM Package	USM_ONESTOR_V5_R1.6c	USM_ONESTOR_V5_R1.5
CPLD	0x14	0x14
VPD Structure	0x13	0x13
VPD CRC	0x14d0b84b	0x14d0b84b

2.3.2 EB2425

USM Package	USM_ONESTOR_V5_R1.6c	USM_ONESTOR_V5_R1.5
CPLD	0x14	0x14
VPD Structure	0x13	0x13
VPD CRC	0x0c5d067e	0x0c5d067e

2.3.3 HB2435

USM Package	USM_ONESTOR_V5_R1.6c	USM_ONESTOR_V5_R1.5
CPLD	0x14	0x14
VPD Structure	0x13	0x13
VPD CRC	0xc937cf63	0xc937cf63

2.3.4 SP3212A

USM Package	USM_ONESTOR_V5_R1.6c	USM_ONESTOR_V5_R1.5
CPLD	0x14	0x14
VPD Structure	0x13	0x13
VPD CRC	0xf43e95db	0xf43e95db

2.3.5 SP3224A

USM Package	USM_ONESTOR_V5_R1.6c	USM_ONESTOR_V5_R1.5
CPLD	0x14	0x14
VPD Structure	0x13	0x13
VPD CRC	0xeae32b6b	0xeae32b6b

2.3.6 SP3584

USM Package	USM_ONESTOR_V5_R1.6c	USM_ONESTOR_V5_R1.5
CPLD	0x03	0x03
VPD Structure	0x10	0x10
VPD CRC	0x7acda08a	0x7acda08a

2.4 PCMs / PSUs

2.4.1 HE580W - Gen2

USM Package	USM_ONESTOR_V5_R1.6c	USM_ONESTOR_V5_R1.5
Main Firmware	3.3d	3.3d
DSP Firmware	3.0a	3.0a
VPD Version	5	5
VPD CRC	0x3cfce593	0x3cfce593

2.4.2 HE764W

USM Package	USM_ONESTOR_V5_R1.6c	USM_ONESTOR_V5_R1.5
Main Firmware	1.00	1.00
DSP Firmware	1.05	1.05
VPD Version	5	5
VPD CRC	0xb672a592	0xb672a592

2.4.3 2200W

USM Package	USM_ONESTOR_V5_R1.6c	USM_ONESTOR_V5_R1.5
Main Firmware	3.06	3.06
DSP Firmware	3.03	3.03
VPD Version	5	5
VPD CRC	0x37a5d171	0x37a5d171

2.5 Fan Modules

2.5.1 Titan 12G

USM Package	USM_ONESTOR_V5_R1.6c	USM_ONESTOR_V5_R1.5
Firmware	1.0F	1.0F
VPD Version	5	5
VPD CRC	0x636b4986	0x636b4986

3 GEM Upgrade Procedure

The following section defines the process for upgrading the GEM subsystem FW components. The exact filenames used in each step can be found in section 4.

3.1 Enclosure Upgrade Steps

The GEM subsystem refers to the following enclosure components:

1. Canister GEM Firmware: Bootloader and main GEM image.
2. Canister flash config and VPD.
3. Canister GEM CPLD and Power CPLD.
4. Midplane VPD and CPLD.
5. PCM/PSU Firmware and VPDs.

SES Page 0Eh is the firmware download mechanism used to upgrade the GEM subsystem. The details for this are covered in the GEM 5.0 ANSI SES Specification and the T-10 ANSI SCSI Enclosure Services - 3(SES-3) documentation.

3.1.1 Canister Upgrade

- 1 Using a page 0Eh upgrade utility, download the appropriate combined canister update GFF for the canister.
GEM will automatically reboot to activate the firmware once the update is complete.
- 2 Repeat step 1 for canister B.

3.1.2 Enclosure Upgrade

- 1 Using a page 0Eh upgrade utility, download the appropriate midplane VPD update GFF.
- 2 Using a page 0Eh upgrade utility, download the midplane CPLD update GFF.
- 3 Simultaneously reboot both canister A and B.

3.1.3 PCM\PSU Upgrade

- 1 Using a page 0Eh upgrade utility, download the appropriate VPD file for the installed PCM/PSU.
- 2 Using a page 0Eh upgrade utility, download the appropriate individual firmware files for the installed PCM/PSU.

4 GEM Subsystem Upgrade Filenames

4.1 Controllers

4.1.1 Pimlico - E12EBD

Component	File Name	Reboot Action
Local Combined ¹	1025119_e12ebd_canister_local_combined_r1.6c.gff	Hard
Bootloader	0990558_e12ebd_bootloader_v1.03.gff	Soft
Firmware Local	0990556_e12ebd_firmware_local_v5.0.0.20.gff	Soft
Firmware Remote	0990557_e12ebd_firmware_remote_v5.0.0.20.gff	Soft
VPD	0990560_e12ebd_vpd_v6_crc_8eb959a1.gff	Hard
Flash Config	0990559_e12ebd-config_crc_2e14979b.gff	Soft
CPLD	0990561_e12ebd_main_cpld_v0a.00.gff	Hard

¹ The combined canister images contain the canister bootloader, firmware, VPD, flash config and CPLDs.

4.1.2 Gallium3

Component	File Name	Reboot Action
Local Combined ²	1025120_gallium_canister_local_combined_r1.6c.gff	Hard
Bootloader	1025123_gallium_bootloader_v1.07.gff	Soft
Firmware Local	1025124_gallium_firmware_local_v5.0.0.20.gff	Soft
Firmware Remote	1025125_gallium_firmware_remote_v5.0.0.20.gff	Soft
VPD	1025128_gallium_lx_vpd_v6_crc_4c7d0269.gff	Hard
Flash Config - NX/LX	1025127_gallium_lx_low_density-config_crc_754a2ae4.gff	Soft
Flash Config - PX	ppppppp_gallium_px-config_crc_9ae7efb6.gff	Soft

² The combined canister images contain the canister bootloader, firmware, VPD and flash config.

4.1.3 Titan 12G Sideplanes

Component	File Name	Reboot Action
LHS Combined ³	1022399_titan12g_sp3584_inband_left_sideplane_combined_r1.6c.gff	Hard
RHS Combined ³	1022400_titan12g_sp3584_inband_right_sideplane_combined_r1.6c.gff	Hard
Firmware	1022397_titan12g_usmv4_sp3584_inband_gemlite8m_v5.0.0.20.gff	Soft
Bootloader	1022398_titan12g_usmv4_sp3584_inband_gemlitebootloader_v1.02.gff	Soft
LHS CPLD	1022401_sp3584_inband_lhs_sideplane_cpld_v07.gff	Hard
RHS CPLD	1022402_sp3584_inband_rhs_sideplane_cpld_v07.gff	Hard
LHS 36 Config	1022414_titan12g_sp3584_inband_l36-config_crc_f785d568.gff	Soft

LHS 24 Config	1022413_titan12g_sp3584_inband_l24-config_crc_6238c066.gff	Soft
RHS 36 Config	1022416_titan12g_sp3584_inband_r36-config_crc_dd5c2c36.gff	Soft
RHS 24 Config	1022415_titan12g_sp3584_inband_r24-config_crc_5e516818.gff	Soft
LHS 36 VPD	1022420_titan12g_sp3584_inband_lhs36_vpd_v06_crc_312d0eda.gff	Hard
LHS 24 VPD	1022419_titan12g_sp3584_inband_lhs24_vpd_v06_crc_651380a5.gff	Hard
RHS 36 VPD	1022424_titan12g_sp3584_inband_rhs36_vpd_v06_crc_faeff0da.gff	Hard
RHS 24 VPD	1022423_titan12g_sp3584_inband_rhs24_vpd_v06_crc_b226d976.gff	Hard

³The combined canister images contain the canister bootloader, firmware, VPD, flash config and CPLDs.

4.2 Midplanes

4.2.1 HB1235

Component	File Name	Reboot Action
CPLD	0995276_gen2_midplane_cpld_v14.gff	None
VPD	0994935_hb1235_12g_vpd_v13_crc_14d0b84b.gff	None

4.2.2 EB2425

Component	File Name	Reboot Action
CPLD	0995276_gen2_midplane_cpld_v14.gff	None
VPD	0994936_eb2425_12g_vpd_v13_crc_0c5d067e.gff	None

4.2.3 HB2435

Component	File Name	Reboot Action
CPLD	0995276_gen2_midplane_cpld_v14.gff	None
VPD	0994937_hb2435_12g_vpd_v13_crc_c937cf63.gff	None

4.2.4 SP3212A

Component	File Name	Reboot Action
CPLD	0995276_gen2_midplane_cpld_v14.gff	None
VPD	1026617_sp3212a_12g_vpd_v13_crc_f43e95db.gff	None

4.2.5 SP3224A

Component	File Name	Reboot Action
CPLD	0995276_gen2_midplane_cpld_v14.gff	None
VPD	1026619_sp3224a_12g_vpd_v13_crc_eae32b6b.gff	None

4.2.6 SP3584

Component	File Name	Reboot Action
CPLD	1022425_titan12g_sp3584_midplane_cpld_v03.gff	None
VPD	1022426_titan12g_sp3584_midplane_vpd_v10_crc_7acda08a.gff	None

4.3 PCMs / PSUs

4.3.1 HE580W - Gen2

Component	File Name	Reboot Action
Main Firmware	099536X_gen2_he580w_pcm_main_code_v3.3d_slotX.gff	None
DSP Firmware	09953XX_gen2_he580w_pcm_dsp_code_v3.0a_slotX.gff	None
VPD	099537X_gen2_he580w_pcm_vpd_v05_crc_3cfce593_slotX.gff	None

4.3.2 HE764W

Component	File Name	Reboot Action
Main Firmware	09782XX_he764w_pcm_main_code_v1.00_slotX.gff	None
DSP Firmware	097820X_he764w_pcm_dsp_code_v1.05_slotX.gff	None
VPD	098412X_he764w_pcm_vpd_v05_crc_b672a592_slotX.gff	None

4.3.3 2200W

Component	File Name	Reboot Action
Main Firmware	09957XX_2200w_psu_code_main_v3.06_slotX.gff	None
DSP Firmware	099574X_2200w_psu_code_dsp_v3.03_slotX.gff	None
VPD	09925XX_2200w_psu_vpd_v05_crc_37a5d171_slotX.gff	None

4.4 Fan Modules

4.4.1 Titan 12G

Component	File Name	Reboot Action
Firmware	099987X_sp3584_fan_controller_fw_v01.0f_slot_X.gff	None
VPD	0999881_sp3584_fan_vpd_v5_crc_636b4986_slot_X.gff	None

5 Change History

This section documents the changes made since the previous USM release.

5.1 Issues addressed in USM_SBB-ONESTOR-V5_R1.6c (GEM 5.0.0.20)

Issue ID	Synopsis	Component	Product
FMW-22029	Enable DD-SATA support	GEM	E12EBD

5.2 Issues addressed in USM_SBB-ONESTOR-V5_R1.6 (GEM 5.0.0.19)

Issue ID	Synopsis	Component	Product
FMW-18659	Muted alarm S3 state is not working on slave canister	GEM	All
FMW-19968	FW update tool - create config file dynamically	Tools	Granite
FMW-19993	Sati Controller SWAP bit for Enc Electronics is not synced with master canister.	GEM	SATI
FMW-20026	Password Security Updates	GEM	Granite
FMW-20051	Serial Number field too short for driveinv	GEM	Granite
FMW-20071	LH Sideplane VPD Update	GEMLite	Titan 12G

5.3 Issues addressed in USM_SBB-ONESTOR-V5_R1.5 (GEM 5.0.0.18)

Issue ID	Synopsis	Component	Product
FMW-19494	SAS Connector link LED behaviour not as expected	GEM	Gallium
FMW-19634	Resolve I2C Slave assert	GEM	Gallium
FMW-19734	SAS port phys are still enabled after disabling all prots	GEM	All
FMW-19825	ddump_hid and ddump_drvmgr report incorrect LED states	GEM	All
FMW-19855	Backend PHYs down following a PPUK	GEM	Gallium
FMW-19901	PCM FW Download failed with status 7 (UNSUCCESSFUL)	GEM	All
FMW-19975	Suppress Host Temperature Sensor Page 2 control Log Message	GEM	All
FMW-19979	Bulk sync GEM4 into GEM 5	GEM	All

6 Revision History

Version	Date	Author
1.1	24 th Aug 2017	Nick Dance
Updates for final release		
1.0	18 th Aug 2017	Mukund Pote
Initial version		