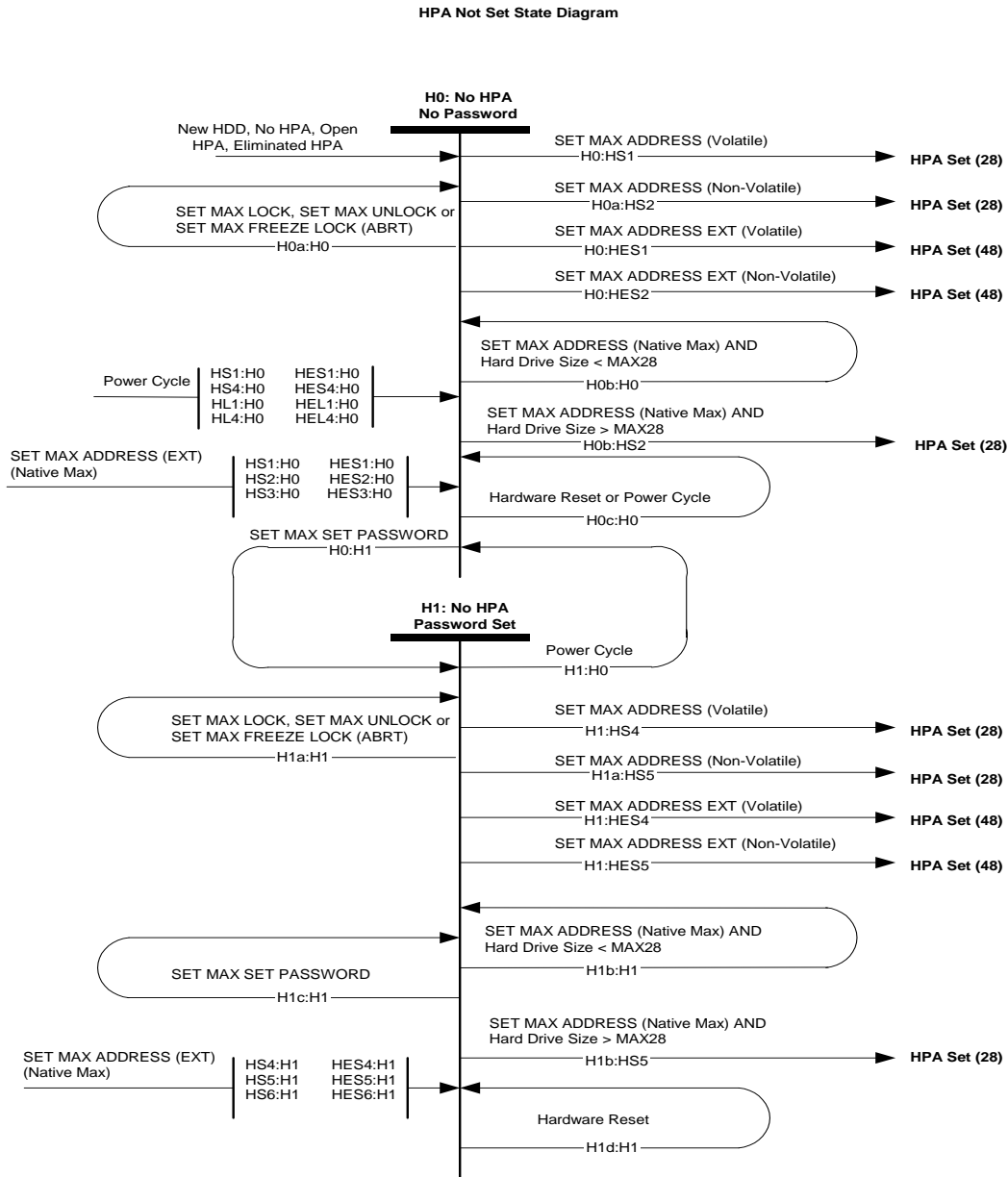


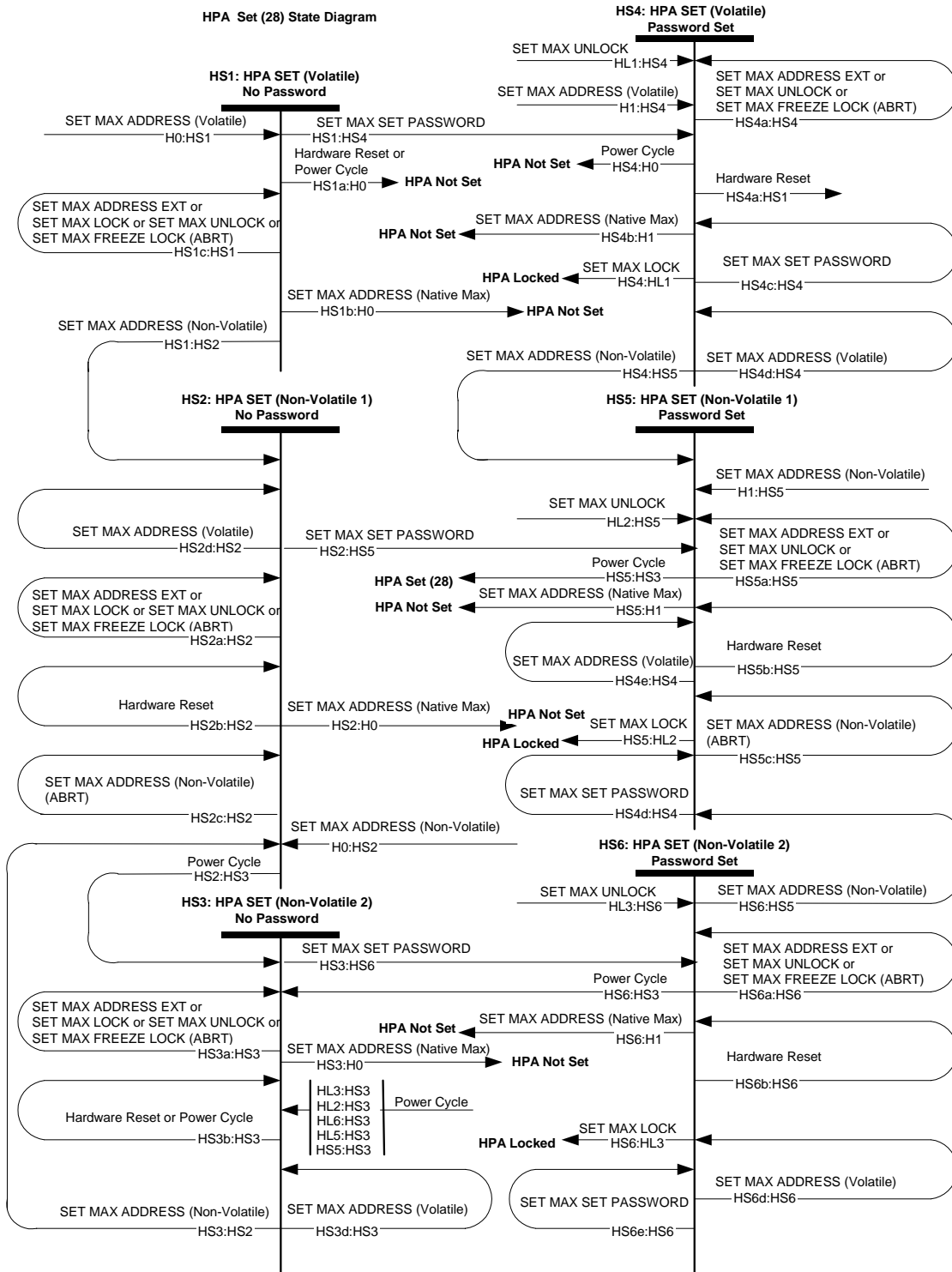
HPA Commands State Diagram

1. HPA Not Set State Diagram

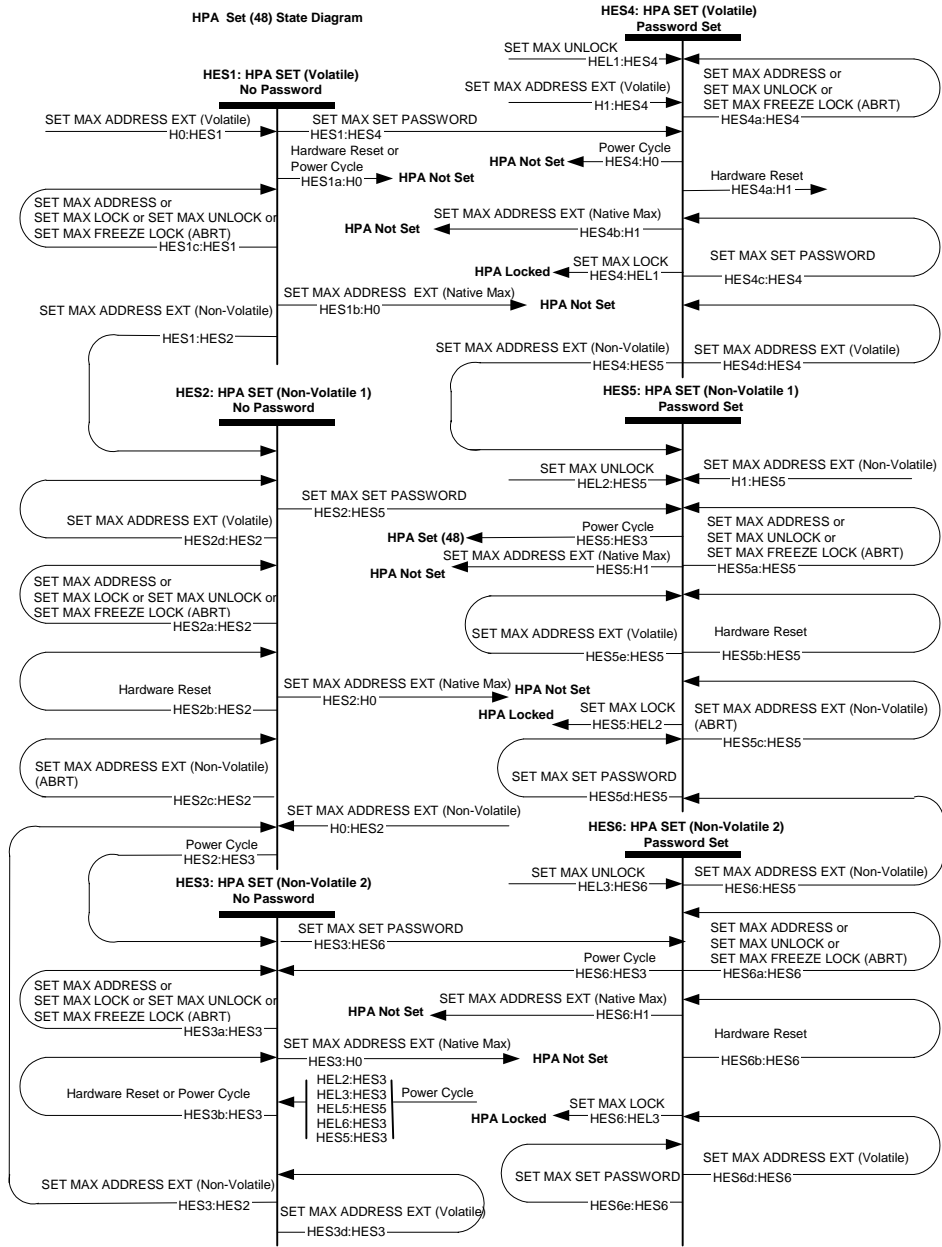


1. HPA is said to be *Open* or *Eliminated* when a SET MAX ADDRESS (EXT) is done at NATIVE MAX (EXT)
2. To redefine maximum address SET MAX ADDRESS (EXT) command shall be immediately preceded by a READ NATIVE MAX (EXT) command. If these commands are not immediately preceded by a READ NATIVE MAX (EXT) command, they will be aborted (ABRT).
3. To provide optional security extensions SET MAX SET PASSWORD, SET MAX LOCK, SET MAX UNLOCK, SET MAX FREEZE LOCK commands shall not be immediately preceded by a READ NATIVE MAX (EXT) command. If these commands are immediately preceded by a READ NATIVE MAX (EXT) command, they shall be interpreted as a SET MAX ADDRESS (EXT) command.
4. Only one SET MAX ADDRESS non-volatile allowed per power cycle
5. Volatile state means no non-volatile SET MAX ADDRESS (EXT) command has been issued after a volatile one.
6. Non-Volatile 1 state means a non-volatile SET MAX ADDRESS (EXT) command was issued after power cycle.
7. Non-Volatile 2 state means no non-volatile SET MAX ADDRESS (EXT) command was issued after power cycle
8. Maximum device capacity addressable by 28 bit commands is defined by MAX28 (268,435,455 sectors)
9. Maximum number of failed password attempts is defined by MAX_BAD (3 attempts)

2. HPA Set (28) State Diagram

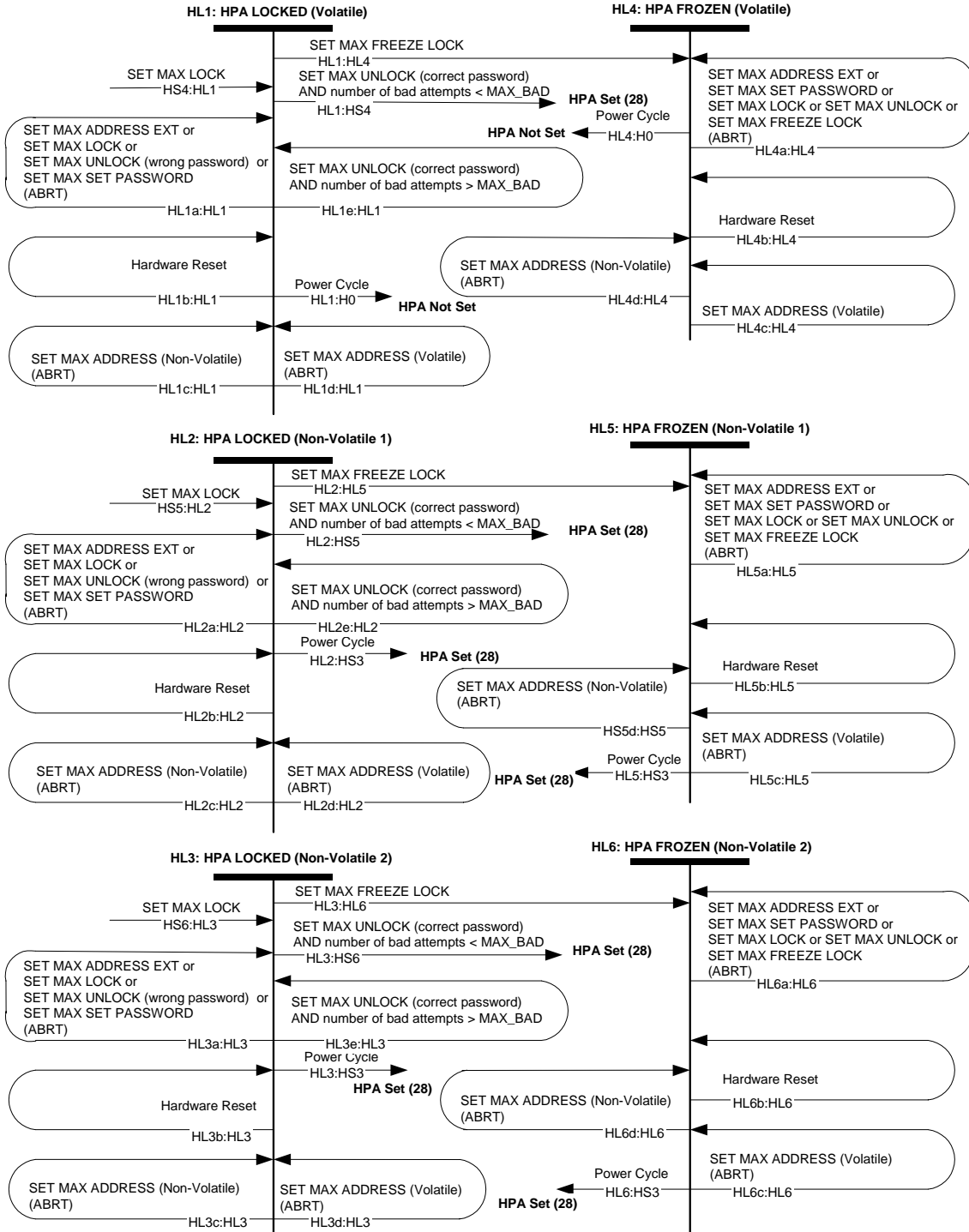


3. HPA Set (48) State Diagram

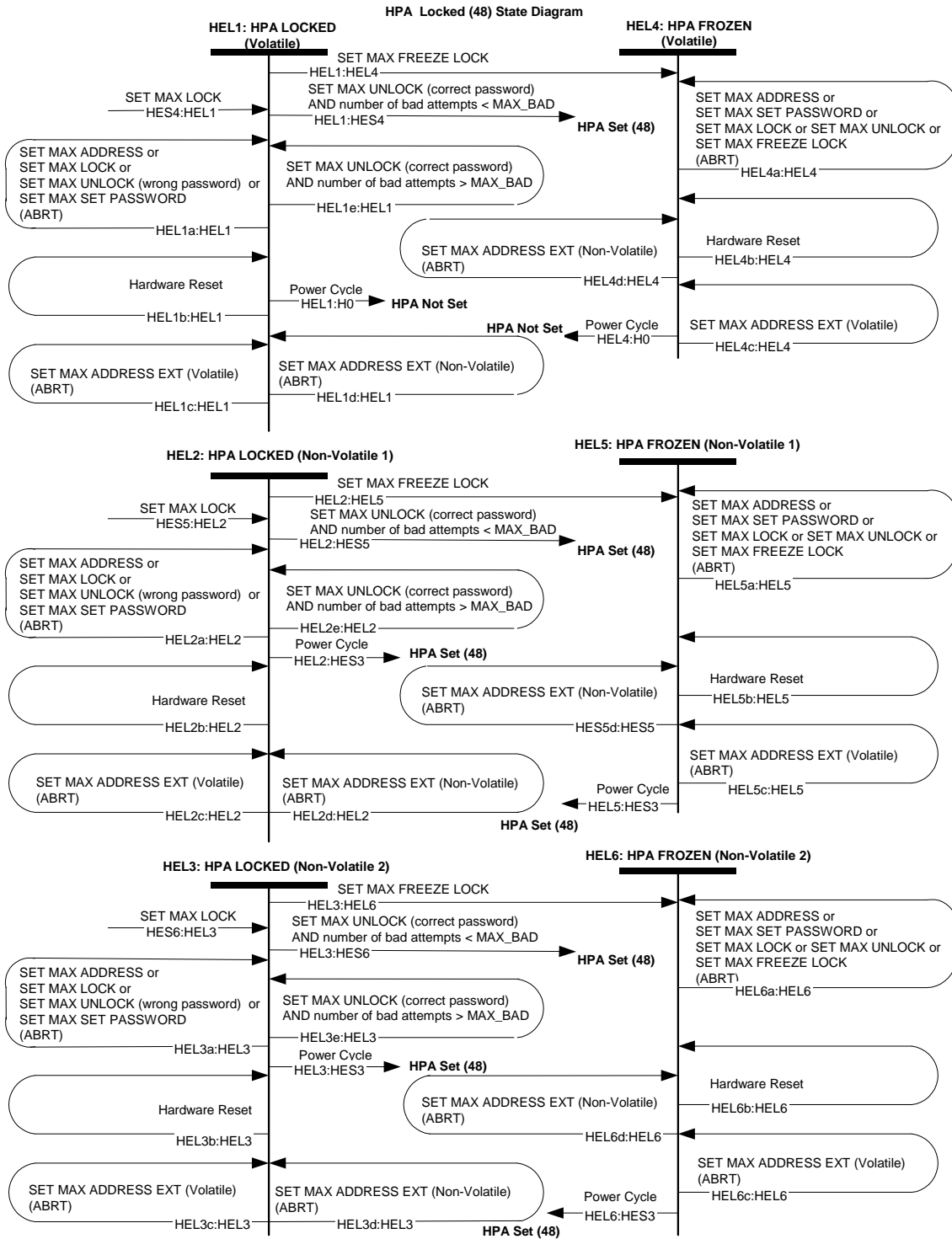


4. HPA Locked (28) State Diagram

HPA Locked (28) State Diagram



5. HPA Locked (48) State Diagram



HPA Not Set State Diagram

H0:No HPA No Password: This state shall be entered when the device is powered on and when any of the following conditions is true:

- New Hard Disk Drive (HDD) without HPA
- Hard Disk Drive without HPA
- Open HPA
- Eliminated HPA

Transition H0:H1—When SET MAX SET PASSWORD command is received, the device shall make a transition to H1:No HPA state.

Transition H0:HS1—When SET MAX ADDRESS command is received in a volatile state (non-volatile bit set to 0), this command shall be executed and the device shall make a transition to the HS1: HPA SET (Volatile) No Password state.

Transition H0:HES1—When SET MAX ADDRESS EXT command is received in a volatile state (non-volatile bit set to 0), this command shall be executed and the device shall make a transition to the HES1: HPA SET (Volatile) No Password state.

Transition H0:HES2—When SET MAX ADDRESS EXT command is received in a non-volatile state (non-volatile bit set to 1), this command shall be executed and the device shall make a transition to the HES2: HPA SET (Non-Volatile 1) No Password state.

Transition H0a:HS2—When SET MAX ADDRESS command is received in a non-volatile state (non-volatile bit set to 1), this command shall be executed and the device shall make a transition to the HS2: HPA SET (Non-Volatile 1) No Password state.

Transition H0a:H0—When SET MAX LOCK, SET MAX UNLOCK or SET MAX FREEZE LOCK command is received, the device will abort the commands and the device shall remain in the same state.

Transition H0b:H0—When SET MAX ADDRESS (Native Max) command is received and if the HDD size is less than MAX28, the device shall remain in the same state.

Transition H0b:HS2—When SET MAX ADDRESS (Native Max) command is received and if the HDD size is greater than MAX28, the device shall make a transition to the HS2: HPA LOCKED (Non-Volatile 1) state.

Transition H0c:H0—When the hardware is reset or power cycled, the device shall remain in the same state.

H1:No HPA Password Set When SET MAX SET PASSWORD is received in the H0 state, the device transitions to the H1: No HPA Password state.

Transition H1:H0—When the system is power cycled, the device shall make a transition to the H0: No HPA No Password state.

Transition H1:HS4—When SET MAX ADDRESS command is received in a volatile state, the device shall make a transition to the HS4:HPA SET (Volatile) Password Set state.

Transition H1:HES4—When SET MAX ADDRESS EXT command is received in the volatile state, the device shall make a transition to the HES4:HPA Set (Volatile) Password Set state.

Transition H1:HES5—When the SET MAX ADDRESS EXT command is received in the non-volatile state, the device shall make a transition to the HES5:HPA SET (Non-Volatile 1) Password Set state.

Transition H1a:H1— When SET MAX LOCK, SET MAX UNLOCK or SET MAX FREEZE LOCK command is received, the device will abort the commands and the device shall remain in the same state.

Transition H1a:HS5—When SET MAX ADDRESS command is received in a non-volatile state, the device shall make a transition to the HS5:HPA SET (Non-Volatile 1) Password Set state.

Transition H1b:H1—When SET MAX ADDRESS (Native Max) command is received and the HDD size is less than MAX 28, the device shall remain in the same state.

Transition H1b:HS5—If the SET MAX ADDRESS (Native Max) command is received and the HDD size is greater than MAX 28, the device shall make a transition to the HS5: HPA SET (Non-Volatile 1) Password Set state.

Transition H1c:H1—When SET MAX PASSWORD command is received, the device shall remain in the same state.

Transition H1d:H1—If the hardware is reset, the device shall remain in the same state.

HPA Set (28) State Diagram

HS1:HPA SET (Volatile) No Password: This state shall be entered when the device receives SET MAX ADDRESS (Volatile) command.

Transition HS1:HS2—When SET MAX ADDRESS command is received in non-volatile state, the device shall make a transition to HS2: HPA SET (Non-Volatile 1) No Password state.

Transition HS1:HS4—When SET MAX SET PASSWORD command is received, the device transitions to the HS4:HPA SET (Volatile) Password Set state.

Transition HS1a:H0—When the hardware is reset or if the system is power cycled, the device shall make a transition to the H0: No HPA No Password state.

Transition HS1b:H0—When SET MAX ADDRESS (Native Max) command is received, the device shall make a transition to H0: No HPA No Password state.

Transition HS1c:HS1—When SET MAX ADDRESS EXT, SET MAX LOCK, SET MAX UNLOCK or SET MAX FREEZE LOCK command is received, the device will abort the command and the device will remain in the same state.

HS2:HPA SET (Non-Volatile 1) No Password: This state shall be entered when the device receives SET MAX ADDRESS (Non-Volatile) command.

Transition H0:HS2—When SET MAX ADDRESS command is received in the non-volatile state, the device shall make a transition to HS2: HPA SET (Non-Volatile 1) No Password state.

Transition HS2:H0—When SET MAX ADDRESS (Native Max) command is received, the device shall make a transition to H0: No HPA No Password state.

Transition HS2:HS5—When SET MAX PASSWORD command is received, the device shall make a transition to HS5:HPA SET (Non-Volatile 1) Password Set state.

Transition HS2a:HS2— When SET MAX ADDRESS EXT, SET MAX LOCK, SET MAX UNLOCK or SET MAX FREEZE LOCK command is received, the device will abort the commands and the device shall remain in the same state.

Transition HS2b:HS2— If the hardware is reset, the device shall remain in the same state.

Transition HS2c:HS2—When SET MAX ADDRESS command is received in non-volatile state, the device will abort the commands and the device shall remain in the same state.

Transition HS2d:HS2—When SET MAX ADDRESS command is received in volatile state, the device shall make a transition to HS2: HPA SET (Non-Volatile 1) No Password state.

HS3:HPA SET (Non-Volatile 2) No Password: Device shall enter this state when the device is power cycled from HS2 or HS6 states.

Transition HS3:HS0—When SET MAX ADDRESS (Native Max) command is received, the device will transition to H0: No HPA No Password state.

Transition HS3:H2—When SET MAX ADDRESS command is received in a non-volatile state, the device shall transition to HS2: HPA LOCKED (Non-Volatile 1) state.

Transition HS3:HS6—When SET MAX SET PASSWORD command is received, the device shall make a transition to HS6:HPA SET (Non-Volatile 2) Password Set state.

Transition HS3a:HS3—When SET MAX ADDRESS EXT, SET MAX LOCK, SET MAX UNLOCK or SET MAX FREEZE LOCK command is received, the device will abort the commands and the device shall remain in the same state.

Transition HS3b:HS3—When the hardware is reset or when the system is power cycled, the device shall transition to HS3: HPA SET (Non-Volatile 2) No Password state.

Transition HS3d:HS3—When SET MAX ADDRESS command is received in a volatile state, the device shall transition to HS3: HPA SET (Non-Volatile 2) No Password state.

HS4: HPA SET (Volatile) Password Set—When SET MAX ADDRESS SET PASSWORD (Volatile) command is received, the device shall enter this state.

Transition H1:HS4—When SET MAX ADDRESS command is received, the device shall transition to HS4: HPA SET (Volatile) Password Set state.

Transition HL1:HS4—When SET MAX UNLOCK command is received, the device shall transition to HS4: HPA SET (Volatile) Password Set state.

Transition HS4:H0—When the system is power cycled, the device shall transition to H0: No HPA No Password state.

Transition HS4:HS5—When SET MAX ADDRESS command is received in non-volatile state, the device shall transition to HS5:HPA SET (Non-Volatile 1) Password Set state.

Transition HS4a:HS1—When the hardware is reset, the device shall transition to HS1: HPA SET (Volatile) No Password state.

Transition HS4a:HS4— When SET MAX ADDRESS EXT, SET MAX UNLOCK or SET MAX FREEZE LOCK command is received, the device will abort the commands and the device shall remain in the same state.

Transition HS4b:H1—When SET MAX ADDRESS (Native Max) command is received, the device shall transition to H1:No HPA state.

Transition HS4c:HS4—When SET MAX SET PASSWORD command is received, the device shall transition to HS4:HPA SET (Volatile) Password Set state.

Transition HS4d:HS4—When SET MAX ADDRESS command is received in volatile state, the device shall transition to HS4:HPA SET (Volatile) Password Set state.

HS5: HPA SET (Non-Volatile 1) Password Set— When SET MAX ADDRESS SET PASSWORD (Non-Volatile) command is received, the device shall enter this state..

Transition H1:HS5—When SET MAX ADDRESS command is received in non-volatile state, the device shall transition to HS5:HPA SET (non-volatile 1) Password Set state.

Transition HL2:HS5—When SET MAX UNLOCK command is received, the device shall transition to HS5:HPA SET (Non-Volatile 1) Password Set state.

Transition HS5:H1—When SET MAX ADDRESS (Native Max) command is received, the device shall transition to H1:No HPA state.

Transition HS5:HL2—When SET MAX LOCK command is received, the device shall transition to HL2:HPA LOCKED (Non-Volatile 1).

Transition HS5:HS3—When the system is power cycled, the device shall transition to HS3: HPA SET (Non-Volatile 2) No Password state.

Transition HS4dHS4—When SET MAX PASSWORD command is received, the device shall remain in the same state.

Transition HS4e:HS4—When SET MAX ADDRESS command is received in volatile state, the device shall transition to HS4:HPA SET (Volatile) Password Set state.

Transition HS5a:HS5—When SET MAX ADDRESS EXT, SET MAX UNLOCK or SET MAX FREEZE LOCK command is received, the device will abort the commands and the device shall remain in the same state.

Transition HS5b:HS5—When the hardware is reset, the device shall transition to the HS5:HPA SET (Non-Volatile 1) Password Set state.

Transition HS5c:HS5—When SET MAX ADDRESS command is received in non-volatile state, the device aborts the command and the device shall remain in the same state.

HS6: HPA SET (Non-Volatile 2) Password Set—When SET MAX UNLOCK command is received in the HL3 state or when SET MAX SET PASSWORD is received in HS3 state, the device enters this state.

Transition HL3:HS6—When SET MAX UNLOCK command is received, the device transitions to HS6:HPA SET (Non-Volatile 2 Password Set state.

Transition HS6:H5—When SET MAX ADDRESS command is received in non-volatile state, the device transitions to HS5:HPASET (Non-Volatile 1) Password Set state.

Transition HS6:H1—When SET MAX ADDRESS (Native Max) command is received, the device shall transition to H1: No HPA state.

Transition HS6:HL3—When SET MAX LOCK command is received, the device shall transition to HL3:HPA LOCKED (non-volatile 2) state.

Transition HS6a:HS6—When SET MAX ADDRESS EXT, SET MAX UNLOCK, or SET MAX FREEZE LOCK command is received, the device will abort the commands and the device shall remain in the same state.

Transition HS6b:HS3—When the system is power cycled, the device shall transition to HS3: HPA SET (Non-Volatile 2) No Password state.

Transition HS6b:HS6—When the hardware is reset, the device shall remain in the same state.

Transition HS6d:HS6—When SET MAX ADDRESS command is received in the volatile state, the device shall remain in the same state.

Transition HS6e:HS6—When SET MAX SET PASSWORD command is received, the device shall remain in the same state.

HPA Set (48) State Diagram

HES1:HPA SET (Volatile) No Password: This state shall be entered when the device receives SET MAX ADDRESS EXT (Volatile) command.

Transition HES1:HES2—When SET MAX ADDRESS command is received in non-volatile state, the device shall make a transition to HES2: HPA SET (Non-Volatile 1) No Password state.

Transition HES1:HES4—When SET MAX SET PASSWORD command is received, the device transitions to the HES4:HPA SET (Volatile) Password Set state.

Transition HES1a:H0—When the hardware is reset or if the system is power cycled, the device shall make a transition to the H0: No HPA No Password state.

Transition HES1b:H0—When SET MAX ADDRESS (Native Max) command is received, the device shall make a transition to H0: No HPA No Password state.

Transition HES1c:HES1—When SET MAX ADDRESS EXT, SET MAX LOCK, SET MAX UNLOCK or SET MAX FREEZE LOCK command is received, the device will abort the command and the device will remain in the same state.

HES2:HPA SET (Non-Volatile 1) No Password: This state shall be entered when the device receives SET MAX ADDRESS EXT (Non-Volatile) command.

Transition HES2:H0—When SET MAX ADDRESS (Native Max) command is received, the device shall make a transition to H0: No HPA No Password state.

Transition HES2:HES5—When SET MAX PASSWORD command is received, the device shall make a transition to HES5:HPA SET (Non-Volatile 1) Password Set state.

Transition HES2a:HES2— When SET MAX ADDRESS EXT, SET MAX LOCK, SET MAX UNLOCK or SET MAX FREEZE LOCK command is received, the device will abort the commands and the device shall remain in the same state.

Transition HES2b:HES2— If the hardware is reset, the device shall remain in the same state.

Transition HES2c:HES2—When SET MAX ADDRESS command is received in non-volatile state, the device will abort the commands and the device shall remain in the same state.

Transition HES2d:HES2—When SET MAX ADDRESS command is received in volatile state, the device shall remain in the same state.

HES3:HPA SET (Non-Volatile 2) No Password: Device shall enter this state when the device is power cycled from HES2 or HES6 states.

Transition HES3:H0—When SET MAX ADDRESS (Native Max) command is received, the device will transition to H0: No HPA No Password state.

Transition HES3:HES2—When SET MAX ADDRESS EXT (Non-Volatile) command is received in a non-volatile state, the device shall transition to HES2: HPA SET (Non-Volatile 1) state.

Transition HES3:HES6—When SET MAX SET PASSWORD command is received, the device shall make a transition to HES6:HPA SET (Non-Volatile 2) Password Set state.

Transition HES3a:HES3—When SET MAX ADDRESS EXT, SET MAX LOCK, SET MAX UNLOCK or SET MAX FREEZE LOCK command is received, the device will abort the commands and the device shall remain in the same state.

Transition HES3b:HES3—When the hardware is reset or when the system is power cycled, the device shall remain in the same state.

Transition HES3d:HES3—When SET MAX ADDRESS EXT (Volatile) command is received in a volatile state, the device shall remain in the same state.

HES4: HPA SET (Volatile) Password Set— When SET MAX ADDRESS EXT SET PASSWORD (Volatile) command is received, the device shall enter this state.

Transition HES4:H0—When the system is power cycled, the device shall transition to H0: No HPA No Password state.

Transition HES4:HES5—When SET MAX ADDRESS command is received in non-volatile state, the device shall transition to HES5:HPA SET (Non-Volatile 1) Password Set state.

Transition HES4a:H1—When the hardware is reset, the device shall transition to H1: No HPA Password SET state.

Transition HES4a:HES4— When SET MAX ADDRESS EXT, SET MAX UNLOCK or SET MAX FREEZE LOCK command is received, the device will abort the commands and the device shall remain in the same state.

Transition HES4b:H1—When SET MAX ADDRESS (Native Max) command is received, the device shall transition to H1:No HPA Password SET state.

Transition HES4c:HES4—When SET MAX SET PASSWORD command is received, the device shall remain in the same state.

Transition HES4d:HES4—When SET MAX ADDRESS command is received in volatile state, the device shall remain in the same state.

HES5: HPA SET (Non-Volatile 1) Password Set— When SET MAX ADDRESS EXT SET PASSWORD (Non-Volatile) command is received, the device shall enter this state.

Transition H1:HES5—When SET MAX ADDRESS command is received in non-volatile state, the device shall transition to HES5:HPA SET (non-volatile 1) Password Set state.

Transition HES5:H1—When SET MAX ADDRESS EXT (Native Max) command is received, the device shall transition to H1:No HPA state.

Transition HES5:HEL2—When SET MAX LOCK command is received, the device shall transition to HEL2:HPA LOCKED (Non-Volatile 1).

Transition HES5:HES3—When the system is power cycled, the device shall transition to HES3: HPA SET (Non-Volatile 2) No Password state.

Transition HES5a:HES5—When SET MAX ADDRESS EXT, SET MAX UNLOCK or SET MAX FREEZE LOCK command is received, the device will abort the commands and the device shall remain in the same state.

Transition HES5b:HES5—When the hardware is reset, the device shall remain in the same state.

Transition HES5c:HES5—When SET MAX ADDRESS command is received in non-volatile state, the device aborts the command and the device shall remain in the same state.

Transition HES5d:HES5—When SET MAX PASSWORD command is received, the device shall remain in the same state.

Transition HES5e:HES5—When SET MAX ADDRESS command is received in volatile state, the device shall remain in the same state.

HES6: HPA SET (Non-Volatile 2) Password Set— When SET MAX UNLOCK command is received in the HEL3 state or when SET MAX SET PASSWORD is received in HES3 state, the device enters this state.

Transition HES6:HES5—When SET MAX ADDRESS EXT command is received in non-volatile state, the device transitions to HES5:HPA SET (Non-Volatile 1) Password Set state.

Transition HES6:H1—When SET MAX ADDRESS EXT (Native Max) command is received, the device shall transition to H1: No HPA state.

Transition HES6:HEL3—When SET MAX LOCK command is received, the device shall transition to HEL3:HPA LOCKED (non-volatile 2) state.

Transition HES6:HES3—When the system is power cycled, the device shall transition to HES3: HPA SET (Non-Volatile 2) No Password state.

Transition HES6a:HES6—When SET MAX ADDRESS EXT, SET MAX UNLOCK, or SET MAX FREEZE LOCK command is received, the device will abort the commands and the device shall remain in the same state.

Transition HES6b:HES6—When the hardware is reset, the device shall remain in the same state.

Transition HES6d:HES6—When SET MAX ADDRESS EXT command is received in the volatile state, the device shall remain in the same state.

Transition HES6e:HES6—When SET MAX SET PASSWORD command is received, the device shall remain in the same state.

HPA Locked (28) State Diagram

HL1:HPA LOCKED (Volatile): This state shall be entered when the device receives SET MAX LOCK (Volatile) command in HS4 state.

Transition HL1:H0—When the system is power cycled, the device shall transition to H0:No HPA. No Password state.

Transition HL1:HL4—When SET MAX FREEZE LOCK command is received, the device shall transition to HL4:HPA FROZEN (Volatile).

Transition HL1:HS4—When the SET MAX UNLOCK (correct password) command is received and the number of bad attempts is less than MAX_BAD, the device shall transition to HS4:HPA SET (Volatile) Password Set.

Transition HL1a:HL1—When the SET MAX ADDRESS EXT, SET MAX LOCK, SET MAX UNLOCK (wrong password) or SET MAX SET PASSWORD command is received, the device will abort the command and the device will remain in the same state.

Transition HL1b:HL1—When the hardware is reset, the device shall remain in the same state.

Transition HL1c:HL1—When SET MAX ADDRESS (non-volatile) command is received, the device will abort the command and the device shall remain in the same state.

Transition HL1d:HL1—When SET MAX ADDRESS (volatile) command is received, the device will abort the command and the device shall remain in the same state.

Transition HL1e:HL1—When SET MAX UNLOCK (correct password) and the number of bad attempts is greater than MAX_BAD, the device shall remain in the same state.

HL2: HPA LOCKED (Non-volatile 1): This state shall be entered when the device receives SET MAX LOCK (Non-Volatile) command in HS5 state.

Transition HL2:HL5—When SET MAX FREEZE LOCK command is received, the device shall transition to HL5:HPA FROZEN (Non-Volatile 1) state.

Transition HL2:HS3—When the system is power cycled, the device shall transition to HL3:HPA LOCKED (non-volatile 1).

Transition HL2:HS5—When SET MAX UNLOCK (correct password) command is received and the number of bad attempts is less than MAX_BAD, the device shall transition to HS5: HPA SET (Non-volatile 1) Password Set state.

Transition HL2a:HL2—When SET MAX ADDRESS EXT, SET MAX LOCK, SET MAX UNLOCK (wrong password) or SET MAX SET PASSWORD command is received, the device shall abort the command and the device shall remain in the same state.

Transition HL2b:HL2—When the hardware is reset, the device shall transition to HL2:HPA LOCKED (non-volatile 1).

Transition HL2c:HL2—When SET MAX ADDRESS command is received in the non-volatile state, the device shall abort the command and the device shall remain in the same state.

Transition HL2d:HL2— When SET MAX ADDRESS command is received in the volatile state, the device shall abort the command and the device shall remain in the same state.

Transition HL2e:HL2—When SET MAX UNLOCK (correct password) command is received and the number of bad attempts is greater than MAX_BAD, the device shall remain in the same state.

HL3:HPA LOCKED (Non-volatile 2): This state shall be entered when the device receives SET MAX LOCK (Non-Volatile) command in HS6 state.

Transition HL3:HL6—When SET MAX FREEZE LOCK command is received, the device shall transition to HL6:HPA FROZEN (Non-Volatile 2) state.

Transition HL3:HS3—When the device is power cycled, the device shall transition to HS3:HPA SET (Non-Volatile 2) No Password.

Transition HL3:HS6—When SET MAX UNLOCK command is received with the correct password and the number of bad attempts is less than MAX_BAD, the device shall transition to HS6:HPA SET (Non-Volatile 2) Password Set.

Transition HL3a:HL3— When SET MAX ADDRESS EXT, SET MAX LOCK, SET MAX UNLOCK (wrong password) or SET MAX SET PASSWORD command is received, the device shall abort the command and the device shall remain in the same state.

Transition HL3b:HL3— When the device receives Hardware Reset, the device shall remain in the same state.

Transition HL3c:HL3—When SET MAX ADDRESS command is received in a non-volatile state, the device shall abort the command and the device shall remain in the same state.

Transition HL3d:HL3—When SET MAX ADDRESS command is received in the volatile state, the device shall abort the command and the device shall remain in the same state.

Transition HL3e:HL3—When SET MAX UNLOCK (correct password) command is given and the number of bad attempts is greater than MAX_BAD, the device shall remain in the same state.

HL4:HPA FROZEN (Volatile): This state shall be entered when the device receives SET MAX FREEZE LOCK command in HL1:HPA LOCKED (Volatile) state.

Transition HL4:H0—When the system is power cycled, the device shall transition to H0: No HPA No Password state.

Transition HL4a:HL4—When SET MAX ADDRESS EXT, SET MAX LOCK, SET MAX UNLOCK or SET MAX SET PASSWORD command is received, the device shall abort the command and the device shall remain in the same state.

Transition HL4b:HL4— When the hardware is reset, the device shall remain in the same state.

Transition HL4c:HL4—When SET MAX ADDRESS is received in the volatile state, the device shall remain in the same state.

Transition HL4d:HL4—When SET MAX ADDRESS is received in the non-volatile state, the device shall abort the command and the device shall remain in the same state.

HL5: HPA FROZEN (Non-Volatile 1): This state shall be entered when the device receives SET MAX FREEZE LOCK command in HL2:HPA LOCKED (Non-Volatile 1) state.

Transition HL5a:HL5— When SET MAX ADDRESS EXT, SET MAX LOCK, SET MAX UNLOCK, SET MAX FREEZE LOCK or SET MAX SET PASSWORD command is received, the device shall abort the commands and the device shall remain in the same state.

Transition HL5b:HL5— When the device receives hardware reset, the device shall remain in the same state.

Transition HL5c:HL5—When SET MAX ADDRESS is received in the volatile state, the device will abort the command and the device shall remain in the same state.

Transition HS5d:HS5—When SET MAX ADDRESS is in non-volatile state, the device shall abort the commands and the device shall remain in the same state.

Transition HL5:HS3—When the system is power cycled, the device shall transition to HS3: HPA SET (Non-Volatile 2) No Password state.

HL6: HPA FROZEN (Non-Volatile 2): This state shall be entered when the device receives SET MAX FREEZE LOCK command in HL3:HPA LOCKED (Non-Volatile 2) state.

Transition HL6:HS3—When the system is power cycled, the device shall transition to HS3: HPA SET (Non-Volatile 2) No Password state.

Transition HL6a:HL6— When SET MAX ADDRESS EXT, SET MAX LOCK, SET MAX UNLOCK, SET MAX FREEZE LOCK or SET MAX SET PASSWORD command is received, the device shall abort the commands and the device shall remain in the same state.

Transition HL6b:HL6—When the hardware is reset, the device shall remain in the same state.

Transition HL6c:HL6—When SET MAX ADDRESS command is received in the volatile state, the device shall abort the commands and the device shall remain in the same state.

Transition HL6d:HL6—When SET MAX ADDRESS command is received in non-volatile state, the device shall abort the commands and the device shall remain in the same state.

HPA Locked (48) State Diagram

HEL1:HPA LOCKED (Volatile): This state shall be entered when the device receives SET MAX LOCK (Volatile) command in HES4 state.

Transition HEL1:H0—When the system is power cycled, the device shall transition to H0:No HPA. No Password state.

Transition HEL1:HEL4—When SET MAX FREEZE LOCK command is received, the device shall transition to HL4:HPA FROZEN (Volatile).

Transition HEL1:HES4—When the SET MAX UNLOCK (correct password) command is received and the number of bad attempts is less than MAX_BAD, the device shall transition to HS4:HPA SET (Volatile) Password Set.

Transition HEL1a:HEL1—When the SET MAX ADDRESS, SET MAX LOCK, SET MAX UNLOCK (wrong password) or SET MAX SET PASSWORD command is received, the device will abort the command and the device will remain in the same state.

Transition HEL1b:HEL1—When the hardware is reset, the device shall remain in the same state.

Transition HEL1c:HEL1—When SET MAX ADDRESS EXT (non-volatile) command is received, the device will abort the command and the device shall remain in the same state.

Transition HEL1d:HEL1—When SET MAX ADDRESS EXT (volatile) command is received, the device will abort the command and the device shall remain in the same state.

Transition HEL1e:HEL1—When SET MAX UNLOCK (correct password) and the number of bad attempts is greater than MAX_BAD, the device shall remain in the same state.

HEL2: HPA LOCKED (Non-volatile 1): This state shall be entered when the device receives SET MAX LOCK (Non-Volatile) command in HS5 state.

Transition HES5:HEL2—When SET MAX LOCK command is received, the device shall transition to HL2:HPA LOCKED (Non-Volatile 1) state.

Transition HEL2:HEL5—When SET MAX FREEZE LOCK command is received, the device shall transition to HL5:HPA FROZEN (Non-Volatile 1) state.

Transition HEL2:HES3—When the system is power cycled, the device shall transition to HL3:HPA LOCKED (non-volatile 1).

Transition HEL2:HES5—When SET MAX UNLOCK (correct password) command is received and the number of bad attempts is less than MAX_BAD, the device shall transition to HS5: HPA SET (Non-volatile 1) Password Set state.

Transition HEL2a:HEL2—When SET MAX ADDRESS, SET MAX LOCK, SET MAX UNLOCK (wrong password) or SET MAX SET PASSWORD command is received, the device shall abort the command and the device shall remain in the same state.

Transition HEL2b:HEL2—When the hardware is reset, the device shall transition to HL2:HPA LOCKED (non-volatile 1).

Transition HEL2c:HEL2—When SET MAX ADDRESS EXT command is received in the non-volatile state, the device shall abort the command and the device shall remain in the same state.

Transition HEL2d:HEL2— When SET MAX ADDRESS EXT command is received in the volatile state, the device shall abort the command and the device shall remain in the same state.

Transition HEL2e:HEL2—When SET MAX UNLOCK (correct password) command is received and the number of bad attempts is greater than MAX_BAD, the device shall remain in the same state.

HEL3:HPA LOCKED (Non-volatile 2): This state shall be entered when the device receives SET MAX LOCK (Non-Volatile) command in HES6 state

Transition HEL3:HEL6— When SET MAX FREEZE LOCK command is received, the device shall transition to HEL6:HPA FROZEN (Non-Volatile 2) state.

Transition HEL3:HES3—When the system is power cycled, the device shall transition to HS3:HPA SET (Non-Volatile 2) No Password.

Transition HEL3:HES6—When SET MAX UNLOCK command is received with the correct password and the number of bad attempts is less than MAX_BAD, the device shall transition to HS6:HPA SET (Non-Volatile 2) Password Set.

Transition HEL3a:HEL3— When SET MAX ADDRESS, SET MAX LOCK, SET MAX UNLOCK (wrong password) or SET MAX SET PASSWORD command is received, the device shall abort the command and the device shall remain in the same state.

Transition HEL3b:HEL3— When the device receives Hardware Reset, the device shall remain in the same state.~~When the system is power cycled, the device shall transition to HS3:HPA SET (Non-Volatile 2) No Password.~~

Transition HEL3c:HEL3—When SET MAX ADDRESS EXT command is received in a non-volatile state, the device shall abort the command and the device shall remain in the same state.

Transition HEL3d:HEL3—When SET MAX ADDRESS EXT command is received in the volatile state, the device shall abort the command and the device shall remain in the same state.

Transition HEL3e:HEL3—When SET MAX UNLOCK (correct password) command is given and the number of bad attempts is greater than MAX_BAD, the device shall remain in the same state.

HEL4:HPA FROZEN (Volatile): This state shall be entered when the device receives SET MAX FREEZE LOCK command in HEL1:HPA LOCKED (Volatile) state.

Transition HEL4:H0—When the system is power cycled, the device shall transition to H0: No HPA No Password state.

Transition HEL4a:HEL4—When SET MAX ADDRESS, SET MAX LOCK, SET MAX UNLOCK or SET MAX SET PASSWORD command is received, the device shall abort the command and the device shall remain in the same state.

Transition HEL4b:HEL4— When the hardware is reset, the device shall remain in the same state.

Transition HL4c:HL4—When SET MAX ADDRESS EXT is received in the volatile state, the device shall remain in the same state.

Transition HEL4d:HEL4—When SET MAX ADDRESS EXT is received in the non-volatile state, the device shall abort the command and the device shall remain in the same state.

HEL5: HPA FROZEN (Non-Volatile 1): This state shall be entered when the device receives SET MAX FREEZE LOCK command in HEL2:HPA LOCKED (Non-Volatile 1) state.

Transition HEL5a:HEL5— When SET MAX ADDRESS, SET MAX LOCK, SET MAX UNLOCK, SET MAX FREEZE LOCK or SET MAX SET PASSWORD

command is received, the device shall abort the commands and the device shall remain in the same state.

Transition HEL5b:HEL5—When the hardware is reset, the device shall remain in the same state.

Transition HEL5c:HEL5—When SET MAX ADDRESS EXT is received in the volatile state, the device will abort the command and the device shall remain in the same state.

Transition HES5d:HES5—When SET MAX ADDRESS EXT is in non-volatile state, the device shall abort the commands and the device shall remain in the same state.

Transition HEL5:HES3—When the system is power cycled, the device shall transition to HS3: HPA SET (Non-Volatile 2) No Password state.

Transition HES6:HEL3—When SET MAX LOCK command is received, the device shall transition to HL3: HPA LOCKED (Non-Volatile 2) state.

HEL6: HPA FROZEN (Non-Volatile 2): This state shall be entered when the device receives SET MAX FREEZE LOCK command in HEL3:HPA LOCKED (Non-Volatile 2) state.

Transition HEL6:HES3—When the system is power cycled, the device shall transition to HS3: HPA SET (Non-Volatile 2) No Password state.

Transition HEL6a:HEL6— When SET MAX ADDRESS, SET MAX LOCK, SET MAX UNLOCK, SET MAX FREEZE LOCK or SET MAX SET PASSWORD command is received, the device shall abort the commands and the device shall remain in the same state.

Transition HEL6b:HEL6—When the hardware is reset, the device shall remain in the same state.

Transition HEL6c:HEL6—When SET MAX ADDRESS EXT command is received in the volatile state, the device shall abort the commands and the device shall remain in the same state.

Transition HEL6d:HEL6—When SET MAX ADDRESS EXT command is received in non-volatile state, the device shall abort the commands and the device shall remain in the same state.