TCG Storage Application Note: Encrypting Storage Devices Compliant with Enterprise SSC

Specification Version 1.00 Final Revision 1.00

December 21, 2009

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Version 1.00 Revision 1.00 Final

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1 Introduction

This section summarizes the purpose, scope, and intended audience for this document. The contents of this document are informative.

1.1 Purpose and Scope

The purpose of this document is to provide examples of the communication between a host and a storage device implementing the TCG Enterprise SSC [2] and TCG Storage Architecture Core Specification (Core Spec) [1] to perform the use scenarios listed in section 2.

1.2 Intended Audience

The intended audience for this document is implementors of storage subsystems using TCG Enterprise SSC storage devices.

1.3 Normative References

- [1] Trusted Computing Group (TCG), 2007, "TCG Storage Architecture Core Specification", Version 1.0, Revision 0.9 Draft
- [2] Trusted Computing Group (TCG), "TCG Storage Security Subsystem Class: Enterprise", Version 1.00
- [3] Trusted Computing Group (TCG), "TCG Storage Storage Interface Interactions Specification", Version 1.00

2 Use Scenario: Enterprise Disk Encryption using Locking SP

This document provides example communications with a device that supports the use scenarios as defined in [2]. These scenarios are:

- Deploy Storage Device and Take Ownership
- Activate or Enroll the Device
- Lock and Unlock the Device
- Repurpose and End of Life

3 Recommended Implementation

This section describes an example of the communications utilized in implementation of the use scenario, using commands described by the TCG Storage Architecture Core Specification [1] and the Enterprise SSC [2].

3.1 Brief Description of the Sessions and Commands

3.1.1 Discovery

3.1.1.1 Discovering whether a device supports Enterprise SSC

This includes the sequence of operations that a host application should go through to ascertain whether a device supports the TCG Enterprise SSC [2].

3.1.1.1.1 Level 0 Discovery Request

IF_RECV with Protocol 01: Level 0 discovery (ComID 0x0001)

- TPer, Locking, and Enterprise SSC features are returned
- A device compliant with the Enterprise SSC has LockingSupported and MediaEncryption set to TRUE.

3.1.1.2 Retrieving Device Communications Capabiliites

This section introduces the steps the host follows to retrieve communications information from the TPer. The host:

- Invokes the Properties method
 - a. Properties
 - b. Properties Response

3.1.2 Taking Ownership of the SD

This section introduces the steps the host follows in order to take ownership of the SD (see 3.2.3). The host:

- 1. Opens a session to the Admin SP.
 - a. StartSession
 - b. SyncSession
- 2. Invokes the Get method to retrieve the Storage Device's MSID.
 - a. Get
 - b. Get Result
- 3. Authenticates as the SID authority using the MSID.
 - a. Authenticate
 - b. Authenticate Result
- 4. Set the SID authority's password to a new value.

- a. Set
- b. Set Result
- 5. Close the Session
 - a. End of Session
 - b. End of Session Response

3.1.3 Activate or Enroll the SD

This section introduces the steps the host follows in order to take ownership of the Locking SP and enroll the device into the system.

3.1.3.1 Authority Setup

In order to set up the authorities necessary to manage the LBA ranges' locking states and other configurations (see 3.2.4), the host:

- 1. Opens a session to the Locking SP.
 - a. StartSession
 - b. SyncSession
- 2. Authenticates as the BandMaster0 authority using the MSID.
 - a. Authenticate
 - b. Authenticate Result
- 3. Set the BandMaster0 authority's password to a new value.
 - a. Set
 - b. Set Result
- 4. Optionally authenticates as additional BandMaster authorities using the MSID.
 - a. Authenticate
 - b. Authenticate Result
- 5. Optionally sets the additional BandMaster authorities' passwords to new values.
 - a. Set
 - b. Set Result
- 6. Authenticates as the EraseMaster authority using the MSID.
 - a. Authenticate
 - b. Authenticate Result
- 7. Sets the EraseMaster authority's password to a new value.
 - a. Set
 - b. Set Result
- 8. Close the Session
 - a. End of Session
 - b. End of Session Response

3.1.3.2 Locking Range Setup

Each LBA range is configured by the host after authentication of the associated authority (see 3.2.5)). In order to configure LBA Ranges, the host:

- 1. Opens a session to the Locking SP
 - a. StartSession
 - b. SyncSession
- 2. Authenticates as the BandMaster0 authority, which enables management of the Global Range.
 - a. Authenticate
 - b. Authenticate Result
- 3. Optionally retrieves the current Global Range settings
 - a. Get
 - b. Get Result
- 4. Enables and Locks the Global Range
 - a. Set
 - b. Set Result
- 5. Optionally retrieves the new Global Range settings
 - a. Get
 - b. Get Result
- 6. Authenticates as the BandMaster1 authority, which enables management of Band1
 - a. Authenticate
 - b. Authenticate Result
- 7. Sets the configurations for Band1
 - a. Set
 - b. Set Result
- 8. Closes the Session
 - a. End of Session
 - b. End of Session Response

3.1.4 Locking and Unlocking the Device

This section introduces the steps the host follows to manage the locking state of the SD's LBA Ranges (see 3.2.6). The host:

- Opens a session to the Locking SP
 - a. StartSession
 - b. SyncSession
- 2. Authenticates as the BandMaster authority associated with the LBA Range to be managed
 - a. Authenticate

- b. Authenticate Result
- 3. Optionally retrieves the LBA Range's current settings
 - a. Get
 - b. Get Result
- 4. Sets the LBA Range's locking state
 - a. Set
 - b. Set Result
- 5. Closes the Session
 - a. End of Session
 - b. End of Session Response

3.1.5 Repurposing and End of Life

This section introduces the steps necessary to securely erase encrypted LBA ranges (see 3.2.7). The host:

- 1. Opens a session to the Locking SP
 - a. StartSession
 - b. SyncSession
- 2. Authenticates as the EraseMaster authority
 - a. Authenticate
 - b. Authenticate Result
- 3. Invokes Erase on each LBA Range to be securely erased
 - a. Erase
 - b. Erase Result
- 4. Closes the Session
 - a. End of Session
 - b. End of Session Response

3.1.6 Additional Capabilities

The Enterprise SSC provides additional capabilities, including a host-writable raw data storage table, and the ability to retrieve device-generated random numbers. The operations necessary to utilize these capabilities are introduced in this section.

3.1.6.1 Using the DataStore Table

The DataStore table provides a place for the host to store raw bytes within the Locking SP (see 3.2.8). In order to use the DataStore table, the host:

- 1. Opens a session to the Locking SP
 - a. StartSession
 - b. SyncSession

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- 2. Retrieves the contents of the DataStore table (authentication is not required to perform this operation)
 - a. Get
 - b. Get Result
- Modifies the content of the DataStore table by first authenticating any of the BandMaster authorities
 - a. Authenticate
 - b. Authenticate Result
- 4. Changes the content of the DataStore table
 - a. Set
 - b. Set Result
- 5. Optionally retrieves the table content to verify the modifications
 - a. Get
 - b. Get Result
- 6. Closes the Session
 - a. End of Session
 - b. End of Session Response

3.1.6.2 Retrieving a Random Number

This section introduces the steps the host follows to retrieve a random number from the SD (see 3.2.9). The host:

- Opens a session to the Locking SP or the Admin SP
 - a. StartSession
 - b. SyncSession
- 2. Invokes the Random method
 - a. Random
 - b. Random Result

3.2 Command Tokenization

This section provides the additional details regarding the commands described in section 3.1, as well as the tokenization of each command and the packaging of those commands in Subpackets, Packets and ComPackets.

The following details are common to all relevant commands as defined in this document, but may vary between implementations. In this document:

- 1. All commands use a reserved Extended ComID value of 0x07FF0000
- 2. The host always uses the HSN 0x00012E13.
- 3. The TPer always uses the TSN 0xfffffDE0.
- 4. Communications sent from the host to the TPer have a Packet.SeqNumber of 0's.

5. Communications sent from the TPer to the Host have a Packet.SeqNumber of 0's.

All transfers between the host and storage device are in 512 byte blocks. If the ComPacket does not end at a 512-byte boundary, bytes of 0×00 are appended after the ComPacket as pad up to the end of the block.

3.2.1 Discovery

3.2.1.1 Level 0 Discovery

The values in the Level 0 Discovery Response reported in this section are examples and vary between implementations and LBA Range locking states.

3.2.1.1.1 Response

0000	00	00	00	60	00	00	00	01	00	00	00	00	00	00	00	00
0010	VU															
0020	VU															
0030	00	01	10	0C	51	00	00	00	00	00	00	00	00	00	00	00
0040	00	02	10	0C	0B	00	00	00	00	00	00	00	00	00	00	00
0050	01	00	10	10	07	FE	00	02	00	00	00	00	00	00	00	00
0060	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
0070	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
01E0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
01F0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00

Table 01 Level 0 Discovery Response

	Table 01 Level 0 Discovery Response										
Bytes	Purpose	Value	Notes								
Header											
00 00 00 60	Length of Parameter Data	96									
00 00 00 01	Data Structure Revision	1									
00 00 00 00 00 00)										
00	Reserved	0's									
VU VU VU VU VU VU	J										
VU VU VU VU VU VU											
VU VU VU VU VU VL											
VU VU VU VU VU VL											
VU VU VU VU VU VL											
VU VU	Vendor Specific	0's									
TPer Feature											
00 01	Feature Code	1									
10	Version + Reserved										
0C	Length	12									
51	Foatures	0101 0001	Reserved=0, ComID Mgmnt=Yes, Reserved=0, Streaming Supported = No, Buffer Mgmt=No, ACK/NAK=No, Asynch=No,								
51	Features	0101 0001	Sync=Yes								
00 00 00 00 00 00 00		Ole									
00 00 00 00	Reserved	0's									

Locking Feature			
00 02	Feature Code		
10	Version + Reserved		
0C	Length	12	
0B	Features	0000 1011	Reserved=0, Reserved=0, MBRDone=No, MBREnabled=No, MediaEncryption=Yes, Locked=No, LockingEnabled=Yes, LockingSupported=Yes
00 00 00 00 00 00 00 00 00 00 00	Reserved	0's	
Enterprise SSC Featu		0.5	
01 00	Feature Code	0100	
10	Version + Reserved	0100	
10	Length		
07 FE	Base ComID		
00 02	Number of ComIDs		
00	Reserved + Range Crossing		Range Crossing = VU
00 00 00 00 00 00 00 00 00 00 00	Reserved	0's	

3.2.1.2 Retrieving TPer Properties

3.2.1.2.1 Properties

				-														
SMI	JID	.Pr	oper	rtie	s []												
00	00	00	00	00	00	07	FF	00	00	00	00	00	00	00	00	00	00	
00	10	00	00	00	40	00	00	00	00	00	00	00	00	00	00	00	00	
00	20	00	00	00	00	00	00	00	00	00	00	00	28	00	00	00	00	
00	30	00	00	00	00	00	00	00	1B	F8	A8	00	00	00	00	00	00	
00	40	00	FF	A8	00	00	00	00	00	00	FF	01	F0	F1	F9	F0	00	
00	50	00	00	F1	00	00	00	00	00	00	00	00	00	00	00	00	00	
00	60	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	
00	70	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	
01	ΕO	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	
0.1	F0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	

Table 02 Properties

		1 and 0 = 1 1 op 0 1 10 0											
Bytes	Purpose	Value	Notes										
ComPacket	•		·										
00 00 00 00	Reserved	0's	uinteger_4										
07 FF 00 00	Extended ComID	07FF 0000	uinteger_4										
00 00 00 00	OutstandingData	0's	uinteger_4										
00 00 00 00	MinTransfer	0's	uinteger_4										

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---------	------	----------	------	-------

00 00 00 40	Length	64	uinteger_4		
Packet		•			
00 00 00 00	Session	0's	uinteger_8		
00 00 00 00					
00 00 00 00	SeqNumber	0	uinteger_4		
00 00	Reserved	0's	uinteger_2		
00 00	AckType	0's	uinteger_2		
00 00 00 00	Acknowledgement	0's	uinteger_4		
00 00 00 28	Length	40	uinteger_4		
Data SubPacket					
00 00 00 00 00 00	Reserved	0's	uinteger_6		
00 00	Kind	0's	uinteger_2		
00 00 00 1B	Length	27	uinteger_4		
Data Payload					
F8	Call Token		Begins method		
A8	Short Atom Token Header	Byte sequence, length = 8			
00 00 00 00 00 00 00 FF	Invoking UID	Session Manager Reserved UID			
A8	Short Atom Token Header	Byte sequence, length = 8			
00 00 00 00 00 00 FF 01	Method UID	Properties Method UID			
F0	Start List Token		Begins parameter list		
F1	End List Token		Ends parameter list		
F9	End of Data Token		Ends method		
F0 00 00 00 F1	Method Status List				
00			Pad		

3.2.1.2.2 Properties Response

```
SMUID.Properties [ [ "MaxPacketSize" = 2028, "MaxComPacketSize" = 2048,
"MaxResponseComPacketSize" = 2048, "MaxSessions" = 1, "MaxIndTokenSize" =
1024, "MaxAuthentications" = 20, "MaxTransactionLimit" = 1 ] ]
0000 00 00 00 00 07 FF 00 00 00 00 00 00 00 00 00 00
0020 00 00 00 00 00 00 00 00 00 00 00 C8 00 00 00
0030 00 00 00 00 00 00 00 B9 F8 A8 00 00 00 00 00
0040 00 FF A8 00 00 00 00 00 FF 01 F0 F0 F2 AD 4D
0050 61 78 50 61 63 6B 65 74 53 69 7A 65 82 07 EC F3
0060 F2 D0 10 4D 61 78 43 6F 6D 50 61 63 6B 65 74 53
0070 69 7A 65 82 08 00 F3 F2 D0 18 4D 61 78 52 65 73
0080 70 6F 6E 73 65 43 6F 6D 50 61 63 6B 65 74 53 69
0090 7A 65 82 08 00 F3 F2 AB 4D 61 78 53 65 73 73 69
00A0 6F 6E 73 01 F3 F2 AF 4D 61 78 49 6E 64 54 6F 6B
00B0 65 6E 53 69 7A 65 82 04 00 F3 F2 D0 12 4D 61 78
00C0 41 75 74 68 65 6E 74 69 63 61 74 69 6F 6E 73 14
00D0 F3 F2 D0 13 4D 61 78 54 72 61 6E 73 61 63 74 69
00E0 6F 6E 4C 69 6D 69 74 01 F3 F1 F1 F9 F0 00 00 00
```

0110	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
0120	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
0130	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00

Table 03 Properties Response

Bytes	Purpose	Value	Notes		
ComPacket	Пирозс	Value	110103		
00 00 00 00	Reserved	0's	uintogor 4		
07 FF 00 00	Extended ComID	07FF 0000	uinteger_4 uinteger_4		
00 00 00 00		0's	uinteger_4 uinteger_4		
00 00 00 00	OutstandingData MinTransfer	0's	uinteger_4 uinteger_4		
00 00 00 00 00 00 00 E0		224	<u> </u>		
	Length	224	uinteger_4		
Packet 00 00 00 00	Consists	lois	into man. O		
00 00 00 00	Session	0's	uinteger_8		
00 00 00 00	SeqNumber	0	uinteger_4		
00 00	Reserved	0's	uinteger_2		
00 00	AckType	0's	uinteger_2		
00 00 00 00	Acknowledgement	0's	uinteger_4		
00 00 00 C8	Length	200	uinteger_4		
Data SubPacket	Lengui	200	diritegei_4		
00 00 00 00 00 00	Reserved	0's	uinteger_6		
00 00 00 00 00	Kind	0's	uinteger_2		
00 00 00 B9	Length	185	uinteger_4		
Data Payload	Lengui	103	unitegei_4		
F8	Call Token	T	Begins method		
A8	Short Atom Token Header	Byte sequence, length = 8	begins memod		
00 00 00 00 00 00 00	Invoking UID	Session Manager Reserved			
FF	Invoking Oid	UID			
A8	Short Atom Token Header	Byte sequence, length = 8			
00 00 00 00 00 00 FF	Method UID	Properties Method UID			
01					
F0	Start List Token		Begins		
			parameter list		
F0	Start List Token				
F2	Start Name Token				
AD	Short Atom Token Header	Byte Sequence, Length = 13			
4D 61 78 50 61 63 6B					
65 74 53 69 7A 65		MaxPacketSize			
82		Uinteger, Length = 2			
07 EC	E. IN Tal	2028			
F3	End Name Token				
F2	Start Name Token				
D0 10	Medium Atom Token Header	Byte Sequence, Length = 16			
4D 61 78 43 6F 6D 50 61 63 6B 65 74 53 69					
7A 65		MaxComPacketSize			
82	<u> </u>	Uinteger, Length = 2			
08 00	<u> </u>	2048			
00 00		2040			

F3	End Name Token		1
F2	Start Name Token		
D0 18	Medium Atom Token Header	Puto Coguenos Longth 24	
4D 61 78 52 65 73 70 6F 6E 73 65 43 6F 6D 50 61 63 6B 65 74 53	Medium Atom Token Fleader	Byte Sequence, Length = 24	
69 7A 65		MaxResponseComPacketSize	<u> </u>
82		Uinteger, Length = 2	
08 00		2048	
F3	End Name Token		
F2	Start Name Token		
AB	Short Atom Token Header	Byte Sequence, Length = 11	
4D 61 78 53 65 73 73 69 6F 6E 73		MaxSessions	
01		1	
F3	End Name Token		
F2	Start Name Token		
AF	Short Atom Token Header	Byte Sequence, Length = 15	
4D 61 78 49 6E 64 54 6F 6B 65 6E 53 69 7A			
65		MaxIndTokenSize	
82		Uinteger, Length = 2	
04 00		1024	
F3	End Name Token		
F2	Start Name Token		
D0 12	Medium Atom Token Header	Byte Sequence, Length = 18	
4D 61 78 41 75 74 68 65 6E 74 69 63 61 74 69 6F 6E 73		MaxAuthentications	
14		20	
F3	End Name Token		
F2	Start Name Token		
D0 13	Medium Atom Token Header	Byte Sequence, Length = 19	
4D 61 78 54 72 61 6E 73 61 63 74 69 6F 6E 4C 69 6D 69 74			
		MaxTransactionLimit	
01 F3	End Name Token		
	End List Token		
F1 F1	End List Token		Ends parameter
F0	E. L. (D. (. T.)		list
F9	End of Data Token		Ends method
F0 00 00 00 F1	Method Status List		
00 00 00			Pad

3.2.2 Common Commands and Responses

The commands and responses defined in this section are commonly used, and occur in most communications between the host and the TPer. The commands and responses defined here are referenced from relevant sections, rather than repeated in each instance. The ability to reference a

single source for these commands and responses are based on the common elements described in 3.2.

3.2.2.1 Open a Session to the Admin SP

3.2.2.1.1 StartSession - Admin SP

Table 04 Start Session - Admin SP

Bytes	Purpose	Value	Notes
ComPacket	r ui pose	value	140163
		Ta.	T
00 00 00 00	Reserved	0's	uinteger_4
07 FF 00 00	Extended ComID	07FF 0000	uinteger_4
00 00 00 00	OutstandingData	0's	uinteger_4
00 00 00 00	MinTransfer	0's	uinteger_4
00 00 00 50	Length	80	uinteger_4
Packet			
00 00 00 00	Session	0's	uinteger_8
00 00 00 00			
00 00 00 00	SeqNumber	0	uinteger_4
00 00	Reserved	0's	uinteger_2
00 00	AckType	0's	uinteger_2
00 00 00 00	Acknowledgement	0's	uinteger_4
00 00 00 38	Length	56	uinteger_4
Data SubPacket			
00 00 00 00 00 00	Reserved	0's	uinteger_6
00 00	Kind	0's	uinteger_2
00 00 00 29	Length	41	uinteger_4
Data Payload			
F8	Call Token		Begins method
A8	Short Atom Token Header	Byte sequence, length = 8	
00 00 00 00 00 00 00 FF	Invoking UID	Session Manager	
		Reserved UID	
A8	Short Atom Token Header	Byte sequence, length = 8	
00 00 00 00 00 00 FF 02	Method UID	StartSession Method UID	
F0	Start List Token		Begins parameter list

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83	Short Atom Token Header	Uinteger, length = 3	
01 2E 13	Required Parameter: HostSessionID	<12E13>	Host Supplied Number
A8	Short Atom Token Header	Byte sequence, length = 8	
00 00 02 05 00 00 00 01	Required Parameter: SPID	<admin sp="" uid=""></admin>	UID of SP to which session is being opened
01	Tiny Atom Token, Required Parameter: Write	<1>	Read/Write Session
F1	End List Token		Ends parameter list
F9	End of Data Token		Ends method
F0 00 00 00 F1	Method Status List		
00 00 00	Pad		Included in Packet and ComPacket lengths

3.2.2.1.2 SyncSession – Admin SP

Table 05 SyncSession - Admin SP

Datas	Table 05 Syncsession - Admin SP						
•	Purpose	Value	Notes				
ComPacket							
00 00 00 00	Reserved	0's	uinteger_4				
07 FF 00 00	Extended ComID	07FF 0000	uinteger_4				
00 00 00 00	OutstandingData	0's	uinteger_4				
00 00 00 00	MinTransfer	0's	uinteger_4				
00 00 00 48	Length	72	uinteger_4				
Packet		•					
00 00 00 00	Session	0's	uinteger_8				
00 00 00 00							
00 00 00 00	SeqNumber	0	uinteger_4				
00 00	Reserved	0's	uinteger_2				
00 00	AckType	0's	uinteger_2				
00 00 00 00	Acknowledgement	0's	uinteger_4				
00 00 00 30	Length	48	uinteger_4				
Data SubPacket		•					
00 00 00 00 00 00	Reserved	0's	uinteger_6				
00 00	Kind	0's	uinteger_2				
00 00 00 24	Length	36	uinteger_4				
Data Payload							
F8	Call Token		Begins method				
A8	Short Atom Token Header	Byte sequence, length = 8					
00 00 00 00 00 00 00 FF	Invoking UID	Session Manager Reserved UID					
A8	Short Atom Token Header	Byte sequence, length = 8					
00 00 00 00 00 00 FF 03	Method UID	SyncSession Method UID					
F0	Start List Token		Begins parameter list				
83	Short Atom Token Header	Uinteger, length = 3					
	l		1				

01 2E 13	Required Parameter: HostSessionID	<12E13>	Echo Host Number
84	Short Atom Token Header	Uinteger, length = 4	
FF FF FD E0	Required Parameter: SPSessionID	<ffffde0></ffffde0>	Number assigned by storage device
F1	End List Token		Ends parameter list
F9	End of Data Token		Ends method
F0 00 00 00 F1	Method Status List		
			No Pad

3.2.2.2 Open a Session to the Locking SP

3.2.2.2.1 StartSession to Locking SP

Table 06 Start Session - Locking SP

Bytes	Purpose	Value	Notes	
ComPacket			·	
00 00 00 00	Reserved	0's	uinteger_4	
07 FF 00 00	Extended ComID	07FF 0000	uinteger_4	
00 00 00 00	OutstandingData	0's	uinteger_4	
00 00 00 00	MinTransfer	0's	uinteger_4	
00 00 00 50	Length	80	uinteger_4	
Packet				
00 00 00 00				
00 00 00 00	Session	0's	uinteger_8	
00 00 00 00	SeqNumber	0	uinteger_4	
00 00	Reserved	0's	uinteger_2	
00 00	AckType	0's	uinteger_2	
	Acknowledgeme			
00 00 00 00	nt	0's	uinteger_4	
00 00 00 38	Length	56	uinteger_4	
Data SubPacket	_			
00 00 00 00 00 00	Reserved	0's	uinteger_6	

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00 00	Kind	0's	uinteger_2
00 00 00 29	Length	41	uinteger_4
Data Payload			
F8	Call Token		Begins method
A8	Short Atom Token Header	Byte sequence, length = 8	
00 00 00 00 00 00 00 FF	Invoking UID	Session Manager Reserved UID	
A8	Short Atom Token Header	Byte sequence, length = 8	
00 00 00 00 00 00 FF 02	Method UID	StartSession Method UID	
F0	Start List Token		Begins parameter list
83	Short Atom Token Header	Uinteger, length = 3	
01 2E 13	Required Parameter: HostSessionID	<012E13>	Host supplied Session Number
A8	Short Atom Token Header	Byte sequence, length = 8	
00 00 02 05 00 01 00 01	Required Parameter: SPID	<locking sp_uid=""></locking>	UID of SP to which session is being opened
	Tiny Atom Token, Required Parameter:		
01	Write	<true></true>	Write Session
F1	End List Token		Ends parameter list
F9	End of Data Token		Ends method
F0 00 00 00 F1	Status List		
00 00 00	Pad		Included in Packet and ComPacket lengths

3.2.2.2.2 SyncSession from Locking SP

SMUID	.Syı	ncSe	essi	on	[12	2E13	, F	FFFF	DE 0	J						
0000	00	00	00	00	07	FF	00	00	00	00	00	00	00	00	00	00
0010	00	00	00	48	00	00	00	00	00	00	00	00	00	00	00	00
0020	00	00	00	00	00	00	00	00	00	00	00	30	00	00	00	00
0030	00	00	00	00	00	00	00	24	F8	A8	00	00	00	00	00	00
0040	00	FF	A8	00	00	00	00	00	00	FF	03	F0	83	01	2E	13
0050	84	FF	FF	FD	ΕO	F1	F9	FΟ	00	00	00	F1	00	00	00	00
0060	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
0070	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
01E0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
01F0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00

Table 07 SyncSession - Locking SP

Bytes	Purpose	Value	Notes
ComPacket		•	
00 00 00 00	Reserved	0's	uinteger_4
07 FF 00 00	Extended ComID	07FF 0000	uinteger_4
00 00 00 00	OutstandingData	0's	uinteger_4
00 00 00 00	MinTransfer	0's	uinteger_4
00 00 00 48	Length	72	uinteger_4
Packet			
00 00 00 00 00 00 00 00	Session	0's	uinteger_8
00 00 00 00	SeqNumber	0	uinteger_4
00 00	Reserved	0's	uinteger_2
00 00	AckType	0's	uinteger_2
00 00 00 00	Acknowledgement	0's	uinteger_4
00 00 00 30	Length	48	uinteger_4
Data SubPacket		•	
00 00 00 00 00	Reserved	0's	uinteger_6
00 00	Kind	0's	uinteger_2
00 00 00 24	Length	36	uinteger_4
Data Payload			
F8	Call Token		Begins method
A8	Short Atom Token Header	Byte sequence, length = 8	
		Session Manager	
00 00 00 00 00 00 00 FF	Invoking UID	Reserved UID	
A8	Short Atom Token Header	Byte sequence, length = 8	
00 00 00 00 00 00 FF 03	Method UID	SyncSession Method UID	
			Begins parameter
F0	Start List Token		list
83	Short Atom Token Header	Uinteger, length = 3	
04.05.40	Required Parameter:	10510	EchoHost Session
01 2E 13	HostSessionID	<12E13>	Number

84	Short Atom Token Header	Uinteger, length = 4	
			SP Session
	Required Parameter:		Number assigned
FF FF FD E0	SPSessionID	<ffffde0></ffffde0>	by storage device
			Ends parameter
F1	End List Token		list
F9	End of Data Token		Ends method
F0 00 00 00 F1	Status List		
			No Pad

3.2.2.3 Authentication Results

3.2.2.3.1 Authenticate Method Result

Table 08 Authenticate Method Results

Bytes	Purpose	Value	Notes
ComPacket	•		
00 00 00 00	Reserved	0's	uinteger_4
07 FF 00 00	Extended ComID	07FF 0000	uinteger_4
00 00 00 00	OutstandingData	0's	uinteger_4
00 00 00 00	MinTransfer	0's	uinteger_4
00 00 00 30	Length	48	uinteger_4
Packet			
		FFFFDDF	
FF FF FD DF 00 01 2E 12	Session	00012E12	uinteger_8
00 00 00 00	SeqNumber	0	uinteger_4
00 00	Reserved	0's	uinteger_2
00 00	AckType	0's	uinteger_2
00 00 00 00	Acknowledgement	0's	uinteger_4
00 00 00 18	Length	24	uinteger_4
Data SubPacket			
00 00 00 00 00	Reserved	0's	uinteger_6
00 00	Kind	0's	uinteger_2
00 00 00 09	Length	9	uinteger_4
Data Payload			

F0	Start List Token		
01	Tiny Atom Token, Status	<true></true>	
F1	End List Token		Ends parameter list
	End of Data		
F9	Token		Ends method
F0 00 00 00 F1	Status List		
00 00 00	Pad		Included in Packet and ComPacket lengths

3.2.2.4 Set Results

3.2.2.4.1 Set Method Result

Table 09 Set Method Results

Bytes	Purpose	Value	Notes
ComPacket			
00 00 00 00	Reserved	0's	uinteger_4
07 FF 00 00	Extended ComID	07FF 0000	uinteger_4
00 00 00 00	OutstandingData	0's	uinteger_4
00 00 00 00	MinTransfer	0's	uinteger_4
00 00 00 30	Length	48	uinteger_4
Packet			
		FFFFDDF	
FFFFDDF 00012E12	Session	00012E12	uinteger_8
00 00 00 00	SeqNumber	0	uinteger_4
00 00	Reserved	0's	uinteger_2
00 00	AckType	0's	uinteger_2
00 00 00 00	Acknowledgement	0's	uinteger_4
00 00 00 18	Length	24	uinteger_4
Data SubPacket			
00 00 00 00 00 00	Reserved	0's	uinteger_6
00 00	Kind	0's	uinteger_2
00 00 00 09	Length	9	uinteger_4

Data Payload		
F0	Start List Token	
	Tiny Atom Token,	
01	Set Response <true></true>	
F1	End List Token	Ends parameter list
	End of Data	
F9	Token	Ends method
F0 00 00 00 F1	Status List	
		Included in Packet and
00 00 00	Pad	ComPacket lengths

3.2.2.5 Ending the Session

3.2.2.5.1 Send End of Session Token

0000	00	00	00	00	07	FF	00	00	00	00	00	00	00	00	00	00
0010	00	00	00	28	FF	FF	FD	DF	00	01	2E	12	00	00	00	00
0020	00	00	00	00	00	00	00	00	00	00	00	10	00	00	00	00
0030	00	00	00	00	00	00	00	01	FΑ	00	00	00	00	00	00	00
0040	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
0050	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
01E0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
01F0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00

Table 10 End of Session

	Table 10 Lift of Session							
Bytes	Purpose	Value	Notes					
ComPacket								
00 00 00 00	Reserved	0's	uinteger_4					
07 FF 00 00	Extended ComID	07FF 0000	uinteger_4					
00 00 00 00	OutstandingData	0's	uinteger_4					
00 00 00 00	MinTransfer	0's	uinteger_4					
00 00 00 28	Length	40	uinteger_4					
Packet								
FF FF FD DF 00 01 2E 12	Session	FFFFDDF 00012E12	uinteger_8					
00 00 00 00	SeqNumber	0	uinteger_4					
00 00	Reserved	0's	uinteger_2					
00 00	AckType	0's	uinteger_2					
00 00 00 00	Acknowledgement	0's	uinteger_4					
00 00 00 10	Length	16	uinteger_4					
Data SubPacket								
00 00 00 00 00 00	Reserved	0's	uinteger_6					
00 00	Kind	0's	uinteger_2					
00 00 00 01	Length	1	uinteger_4					
Data Payload								
FA	End of Session Token		Signals TPer has ended session					
00 00 00	Pad		Included in Packet and ComPacket lengths					

3.2.2.5.2 End of Session Response

0000	00	00	00	00	07	FF	00	00	00	00	00	00	00	00	00	00
0010	00	00	00	28	FF	FF	FD	DF	00	01	2E	12	00	00	00	00
0020	00	00	00	00	00	00	00	00	00	00	00	10	00	00	00	00
0030	00	00	00	00	00	00	00	01	FΑ	00	00	00	00	00	00	00
0040	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
0050	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
01E0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
01F0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00

Table 11 End of Session Reponse

Bytes	Purpose	Value	Notes
ComPacket			•
00 00 00 00	Reserved	0's	uinteger_4
07 FF 00 00	Extended ComID	07FF 0000	uinteger_4
00 00 00 00	OutstandingData	0's	uinteger_4
00 00 00 00	MinTransfer	0's	uinteger_4
00 00 00 28	Length	40	uinteger_4
Packet			
FF FF FD DF 00 01 2E 12	Session	FFFFDDF 00012E12	uinteger_8
00 00 00 00	SeqNumber	0	uinteger_4
00 00	Reserved	0's	uinteger_2
00 00	AckType	0's	uinteger_2
00 00 00 00	Acknowledgement	:0's	uinteger_4
00 00 00 10	Length	16	uinteger_4
Data SubPacket			
00 00 00 00 00 00	Reserved	0's	uinteger_6
00 00	Kind	0's	uinteger_2
00 00 00 01	Length	1	uinteger_4
Data Payload			
	End of Session		Signals TPer has ended
FA	Token		session
00 00 00	Pad		Included in Packet and ComPacket lengths

3.2.3 Taking Ownership of the SD

3.2.3.1 Open a Session to Admin SP

3.2.3.1.1 StartSession - Admin SP

See 3.2.2.1.1.

Version 1.00 Revision 1.00 Final 3.2.3.1.2 SyncSession – Admin SP See 3.2.2.1.2.

3.2.3.2 Retrieve MSID PIN Value

The host retrieves the value of the MSID PIN from the Admin SP.

3.2.3.2.1 Get MSID PIN Value

Table 12 Get MSID PIN

.	<u> </u>		.
Bytes	Purpose	Value	Notes
ComPacket			
00 00 00 00	Reserved	0's	uinteger_4
07 FF 00 00	Extended ComID	07FF 0000	uinteger_4
00 00 00 00	OutstandingData	0's	uinteger_4
00 00 00 00	MinTransfer	0's	uinteger_4
00 00 00 64	Length	100	uinteger_4
Packet			
		FFFFFDDF	
FF FF FD DF 00 01 2E 12	Session	00012E12	uinteger_8
00 00 00 00	SeqNumber	0	uinteger_4
00 00	Reserved	0's	uinteger_2
00 00	AckType	0's	uinteger_2
00 00 00 00	Acknowledgement	0's	uinteger_4
00 00 00 4C	Length	76	uinteger_4
Data SubPacket			
00 00 00 00 00 00	Reserved	0's	uinteger_6
00 00	Kind	0's	uinteger_2
00 00 00 3F	Length	63	uinteger_4
Data Payload	<u> </u>		
F8	Call Token		Begins method
A8	Short Atom Token		
	Header	length = 8	
00 00 00 0B 00 00 84 02	Invoking UID	MSID C_Pin UID	

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A8	Short Atom Token		
	Header	length = 8	
00 00 00 06 00 00 00 06	Method UID	Get Method UID	
F0	Start List Token		Begins parameter list
			Begins cell block for Where
F0	Start List Token		parameter
F2	Start Name Token		
A.D.	Short Atom Token Header	-	
AB	пеацеі	Length = 8	
73 74 61 72 74 43 6F 6C 75 6D 6E		"startColumn"	
	Short Atom Token	Byte Sequence,	
A3	Header	Length = 3	
50 49 4E		"PIN"	
F3	End Name Token		
F2	Start Name Token		
	Short Atom Token	Byte Sequence,	
A9	Header	length = 9	
65 6E 64 43 6F 6C 75 6D 6E		"endColumn"	
	Short Atom Token		
A3	Header	Length = 3	
50 49 4E		"PIN"	
F3	End Name Token		
			Ends cell block for Where
F1	End List Token		parameter
F1	End List Token		Ends parameter list
	End of Data		
F9	Token		Ends method
F0 00 00 00 F1	Status List		
00	Pad		Included in Packet and ComPacket lengths

3.2.3.2.2 Get MSID PIN Results

[[["PIN"= MSID_Value]]]

Table 13 Get MSID PIN Results

Bytes	Purpose	Value	Notes
ComPacket			1
00 00 00 00	Reserved	0's	uinteger_4
07 FF 00 00	Extended ComID	07FF 0000	uinteger_4
00 00 00 00	OutstandingData	0's	uinteger_4
00 00 00 00	MinTransfer	0's	uinteger_4
00 00 00 58	Length	88	uinteger_4
Packet	·		
FF FF FD DF 00 01 2E 12	Session	FFFFDDF 00012E12	uinteger_8
00 00 00 00	SeqNumber	0	uinteger_4
00 00	Reserved	0's	uinteger_2
00 00	AckType	0's	uinteger_2
00 00 00 00	Acknowledgement	0's	uinteger_4
00 00 00 40	Length	64	uinteger_4
Data SubPacket	·		
00 00 00 00 00 00	Reserved	0's	uinteger_6
00 00	Kind	0's	uinteger_2
00 00 00 34	Length	52	uinteger_4
Data Payload			
F0	Start List token		Start of results list
F0	Start List token		Start list of row results
F0	Start List token		Start of first row of results
F2	Start Name Token		
A3	Short Atom Token Header	Byte sequence, length = 3	=
50 49 4E		"PIN"	
D0 20	Medium Atom Token Header	Byte sequence, length = 32	=

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30 31 32 33 34 35 36 37 38 39 41 42 43 44 45 46 47 48 49 4A 4B 4C 4D 4E 4F 50 51 52 53 54 55 56		<msid_value></msid_value>	
F3	End Name Token		
F1	End List token		End of first row of results
F1	End List token		End of row results
F1	End List token		End of results list
F9			
F0 00 00 00 F1			
			No Pad

3.2.3.3 Authenticate SID Authority

The host authenticates with the SP as the SID authority using the default PIN value, MSID_PIN value.

3.2.3.3.1 SID Authentication

ThisSP.Authenticate [SID_Authority_object _UID, "Challenge"="MSID_PIN_Value"]

Table 14 Authenticate as SID

Bytes	Purpose	Value	Notes
ComPacket			
00 00 00 00	Reserved	0's	uinteger_4
07 FF 00 00	Extended ComID	07FF 0000	uinteger_4
00 00 00 00	OutstandingData	0's	uinteger_4
00 00 00 00	MinTransfer	0's	uinteger_4
00 00 00 78	Length	120	uinteger_4
Packet			
FF FF FD DF 00 01 2E 12	Session	FFFFDDF 00012E12	uinteger_8
00 00 00 00	SeqNumber	0	uinteger_4
00 00	Reserved	0's	uinteger_2
00 00	AckType	0's	uinteger_2
00 00 00 00	Acknowledgement	t0's	uinteger_4
00 00 00 60	Length	96	uinteger_4
Data SubPacket			
00 00 00 00 00 00	Reserved	0's	uinteger_6
00 00	Kind	0's	uinteger_2
00 00 00 52	Length	82	uinteger_4
Data Payload			
F8	Call Token		Begins method
A8	Short Atom Token Header	Byte sequence, length = 8	
00 00 00 00 00 00 00 01	Invoking UID	SP UID	
A8	Short Atom Token Header	Byte sequence, length = 8	

00 00 00 06 00 00 00 0C	Method UID	Authenticate Method UID	
F0	Start List Token		Begins Method Parameters
A8	Short Atom Token Header	Byte sequence, length = 8	
00 00 00 09 00 00 00 06		SID_Authority_object _UID	
F2	Start Name Token		
A9	Short Atom Token Header	Byte sequence, length = 9	
43 68 61 6C 6C 65 6E 67 65		"Challenge"	
D0 20	Medium Atom Token Header	Byte sequence, length = 32	
30 31 32 33 34 35 36 37 38 39 41 42 43 44 45 46 47 48 49 4A 4B 4C 4D 4E 4F 50 51 52 53 54 55 56		<current (msid)="" pin=""></current>	
F3	End Name Token		
F1	End List Token		Ends parameter list
F9	End of Data Token		Ends method
F0 00 00 00 F1	Status List		
00 00	Pad		Included in Packet and ComPacket lengths

3.2.3.3.2 Authenticate as SID Results

See 3.2.2.3.

3.2.3.4 Set New SID PIN Value

The host enters a custom PIN value for SID authority.

3.2.3.4.1 Set New SID PIN Value

Table 15 Set New SID PIN

Bytes		Value	Notes
ComPacket			
00 00 00 00	Reserved	0's	uinteger_4
07 FF 00 00	Extended ComID	07FF 0000	uinteger_4
00 00 00 00	OutstandingData	0's	uinteger_4
00 00 00 00	MinTransfer	0's	uinteger_4
00 00 00 70	Length	112	uinteger_4
Packet			-
FF FF FD DF 00 01 2E 12	Session	FFFFDDF 00012E12	uinteger_8
00 00 00 00	SeqNumber	0	uinteger_4
00 00	Reserved	0's	uinteger_2
00 00	AckType	0's	uinteger_2
00 00 00 00	Acknowledgement	0's	uinteger_4
00 00 00 58	Length	88	uinteger_4
Data SubPacket			
00 00 00 00 00 00	Reserved	0's	uinteger_6
00 00	Kind	0's	uinteger_2
00 00 00 49	Length	73	uinteger_4
Data Payload			
F8	Call Token		Begins method
A8	Short Atom Token Header	Byte sequence, length = 8	
00 00 00 0B 00 00 00 01	Invoking UID	SID_PIN_UID	
A8	Short Atom Token Header	Byte sequence, length = 8	
00 00 00 06 00 00 00 07	Method UID	Set Method UID	
F0	Start List Token		
F0	Start List Token		Start cell block for Where parameter Begin Where parameter
F1	End List Token		Ends cell block for Where parameter
F0	Start List Token		
F0	Start List Token		
F2	Start Name Token		
A3	Short Atom Token Header	Byte sequence, length = 3	
50 49 4E		"PIN"	
D0 20	Medium Atom Token Header	Byte sequence, length = 32	
6E 52 77 36 FB 8C 13 F3 B3 A9 FB BF 90 DA D2 6C 59 E7 3C 2D 68 26 05 8E C1 9B 93 6E 22 7A 27 69		<custom pin=""></custom>	This PIN value is specified by the host. The host may use the Random method to obtain a random nuber from the storage device.
F3	End Name Token		
F1	End List Token		
F1	End List Token		
F1	End List Token		

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F9	End of Data Token	Ends method
F0 00 00 00 F1	Status List	
00 00 00	Pad	None

3.2.3.4.2 Set New SID PIN Results

See 3.2.2.4.

3.2.3.5 Ending the Session

3.2.3.5.1 Send End of Session Token

See 3.2.2.5.1.

3.2.3.5.2 End of Session Response

See 3.2.2.5.2.

3.2.4 Activate and Enroll the SD

3.2.4.1 Open a Session to the Locking SP

The host starts a session with the Locking SP in order to set custom PIN values.

3.2.4.1.1 StartSession to Locking SP

See 3.2.2.2.1.

3.2.4.1.2 SyncSession from Locking SP

See 3.2.2.2.2.

3.2.4.2 BandMaster0 Authentication

The host authenticates with the SP as the BandMaster0 authority using the default PIN value, MSID_PIN value.

3.2.4.2.1 Authenticate BandMaster0

```
ThisSP.Authenticate [ BandMaster0_Authority_object _UID, "Challenge" =
"MSID_PIN_Value" ]
```

0000	00	00	00	00	07	FF	00	00	00	00	00	00	00	00	00	00
0010	00	00	00	78	FF	FF	FD	ΕO	00	01	2E	13	00	00	00	00
0020	00	00	00	00	00	00	00	00	00	00	00	60	00	00	00	00
0030	00	00	00	00	00	00	00	52	F8	A8	00	00	00	00	00	00
0040	00	01	A8	00	00	00	06	00	00	00	0C	F0	A8	00	00	00
0050	09	00	00	80	01	F2	Α9	43	68	61	6C	6C	65	бE	67	65
0060	D0	20	30	31	32	33	34	35	36	37	38	39	41	42	43	44
0070	45	46	47	48	49	4A	4B	4C	4D	4E	4F	50	51	52	53	54
0800	55	56	F3	F1	F9	F0	00	00	00	F1	00	00	00	00	00	00
0090	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00

Table 16 Authenticate as BandMaster0

	Table to Authenti				
Bytes	Purpose	Value	Notes		
ComPacket					
00 00 00 00	Reserved	0's	uinteger_4		
07 FF 00 00	Extended ComID	07FF 0000	uinteger_4		
00 00 00 00	OutstandingData	0's	uinteger_4		
00 00 00 00	MinTransfer	0's	uinteger_4		
00 00 00 78	Length	120	uinteger_4		
Packet					
FF FF FD E0 00 01 2E 13	Session	FFFFDE0 00012E13	uinteger_8		
00 00 00 00	SeqNumber	0	uinteger_4		
00 00	Reserved	0's	uinteger_2		
00 00	AckType	0's	uinteger_2		
00 00 00 00	Acknowledgement	0's	uinteger_4		
00 00 00 60	Length	96	uinteger_4		
Data SubPacket					
00 00 00 00 00 00	Reserved	0's	uinteger_6		
00 00	Kind	0's	uinteger_2		
00 00 00 52	Length	82	uinteger_4		
Data Payload					
F8	Call Token		Begins method		
A8	Short Atom Token Header	Byte sequence, length = 8			
00 00 00 00 00 00 00 01	Invoking UID	SP UID			
A8	Short Atom Token Header	Byte sequence, length = 8			
00 00 00 06 00 00 00 0C	Method UID	Authenticate Method UID			
F0	Start List Token		Begins Method Parameters		
A8	Short Atom Token Header	Byte sequence, length = 8			
00 00 00 09 00 00 80 01		Authority object – Bandmaster0_UID			
F2	Start Name Token				
A9	Short Atom Token Header	Byte sequence, length = 9			
43 68 61 6C 6C 65 6E 67 65		"Challenge"			
D0 20	Medium Atom Token Header	Byte sequence, length = 32			
30 31 32 33 34 35 36 37 38 39 41 42 43 44 45 46 47 48 49 4A 4B 4C 4D 4E 4F 50 51 52 53 54 55 56		<msid_pin_value></msid_pin_value>	Current MSID_PIN		

F3	End Name Token	
F1	End List Token	Ends parameter list
F9	End of Data Token	Ends method
F0 00 00 00 F1	Status List	
00 00	Pad	Included in Packet and ComPacket lengths

3.2.4.2.2 Authenticate BandMaster0 Results

See 3.2.2.3.

3.2.4.3 Set New BandMaster0 PIN Value

The host enters a custom PIN value for BandMaster0 authority.

3.2.4.3.1 Set BandMaster0 PIN

Table 17 Set New BandMaster0 PIN

Bytes	Purpose	Value	Notes
ComPacket			
00 00 00 00	Reserved	0's	uinteger_4
07 FF 00 00	Extended ComID	07FF 0000	uinteger_4
00 00 00 00	OutstandingData	0's	uinteger_4
00 00 00 00	MinTransfer	0's	uinteger_4
00 00 00 70	Length	112	uinteger_4
Packet			
FF FF FD DF 00 01 2E 13	Session	FFFFDE0 00012E13	uinteger_8
00 00 00 00	SeqNumber	0	uinteger_4
00 00	Reserved	0's	uinteger_2
00 00	AckType	0's	uinteger_2
00 00 00 00	Acknowledgement	t0's	uinteger_4
00 00 00 58	Length	88	uinteger_4
Data SubPacket			

VEISIOIT 1.00 INEVISIOIT 1.00 I II	iai		
00 00 00 00 00 00	Reserved	0's	uinteger_6
00 00	Kind	0's	uinteger_2
00 00 00 49	Length	73	uinteger_4
Data Payload			
F8	Call Token		Begins method
A8	Short Atom Token Header	Byte sequence, length = 8	
00 00 00 0B 00 00 80 01	Invoking UID	BandMaster0_PIN_UID	
A8	Short Atom Token Header	Byte sequence, length = 8	
00 00 00 06 00 00 00 07	Method UID	Set Method UID	
F0	Start List Token		
F0	Start List Token		Starts cell block for Where parameter
F1	End List Token		Ends cell block for Where parameter
F0	Start List Token		
F0	Start List Token		
F2	Start Name Token		
A3	Short Atom Token Header	Byte sequence, length = 3	
50 49 4E		"PIN"	
D0 20	Medium Atom Token Header	Byte sequence, length = 32	
48 86 AB 86 FF D3 D8 AA B5 B8 D7 F0 B5 14 50 15 98 13 82 EF 80 30 8E 8F 3F 05 39 B6 2C 73 76 98		<custom pin=""></custom>	This PIN value is specified by the host. The host may use the Random method to obtain a random number from the storage device.
F3	End Name Token		
F1	End List Token		
F1	End List Token		
F1	End List Token		
F9	End of Data Token		Ends method
F0 00 00 00 F1	Status List		
00 00 00	Pad		

3.2.4.3.2 Set new BandMaster0 PIN Results

See 3.2.2.4.

3.2.4.4 BandMaster1 Authentication

The host authenticates with the SP as the BandMaster1 authority using the default PIN value, MSID_PIN value.

3.2.4.4.1 Authenticate as BandMaster1

Table 18 Authenticate as BandMaster1

Bytes	Purpose	Value	Notes
ComPacket			
00 00 00 00	Reserved	0's	uinteger_4
07 FF 00 00	Extended ComID	07FF 0000	uinteger_4
00 00 00 00	OutstandingData	0's	uinteger_4
00 00 00 00	MinTransfer	0's	uinteger_4
00 00 00 78	Length	120	uinteger_4
Packet			
FF FF FD E0 00 01 2E 13	Session	FFFFDE0 00012E13	uinteger_8
00 00 00 00	SeqNumber	0	uinteger_4
00 00	Reserved	0's	uinteger_2
00 00	AckType	0's	uinteger_2
00 00 00 00	Acknowledgement	0's	uinteger_4
00 00 00 60	Length	96	uinteger_4
Data SubPacket			
00 00 00 00 00 00	Reserved	0's	uinteger_6
00 00	Kind	0's	uinteger_2
00 00 00 52	Length	82	uinteger_4
Data Payload			
F8	Call Token		Begins method
A8	Short Atom Token Header	Byte sequence, length = 8	
00 00 00 00 00 00 00 01	Invoking UID	SP UID	
A8	Short Atom Token Header	Byte sequence, A8 length = 8	
00 00 00 06 00 00 00 0C	Method UID	Authenticate Metho UID	d
F0	Start List Token		Begins Parameters
A8	Short Atom Token Header	Byte sequence, length = 8	

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00 00 00 09 00 00 80 02		Authority object – Bandmaster1_UID	
F2	Start Name Token		
A9	Short Atom Token Header	Byte sequence, length = 9	
43 68 61 6C 6C 65 6E 67 65		"Challenge"	
D0 20	Medium Atom Token Header	Byte sequence, length = 32	
30 31 32 33 34 35 36 37 38 39 41 42 43 44 45 46 47 48 49 4A 4B 4C 4D 4E 4F 50 51 52 53 54 55 56		<msid_pin_value></msid_pin_value>	Current MSID_PIN
F3	End Name Token		
F1	End List Token		Ends parameter list
F9	End of Data Token		Ends method
F0 00 00 00 F1	Status List		
00 00	Pad		Included in Packet and ComPacket lengths

3.2.4.4.2 Authenticate as BandMaster1 Results

See 3.2.2.3.

3.2.4.5 Set New BandMaster1 PIN Value

The host enters a custom PIN value for BandMaster1 authority's credential.

3.2.4.5.1 Set BandMaster1 PIN

Table 19 Set New BandMaster1 PIN

Bytes	Purpose	Value	Notes
ComPacket			
00 00 00 00	Reserved	0's	uinteger_4

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07 FF 00 00	Extended ComID	07FF 0000	uinteger_4
00 00 00 00	OutstandingData	0's	uinteger_4
00 00 00 00	MinTransfer	0's	uinteger_4
00 00 00 70	Length	112	uinteger_4
Packet			
FF FF FD E0 00 01 2E 13	Session	FFFFDE0 00012E13	uinteger_8
00 00 00 00	SeqNumber	0	uinteger_4
00 00	Reserved	0's	uinteger_2
00 00	AckType	0's	uinteger_2
00 00 00 00	Acknowledgement	0's	uinteger_4
00 00 00 58	Length	88	uinteger_4
Data SubPacket		l	-
00 00 00 00 00 00	Reserved	0's	uinteger_6
00 00	Kind	0's	uinteger_2
00 00 00 49	Length	73	uinteger_4
Data Payload	<u>. </u>	<u>I</u>	
F8	Call Token		Begins method
A8		Byte sequence, length	
	Header	= 8	
00 00 00 0B 00 00 80 02	Invoking UID	BandMaster1_PIN_UID	
A8	Short Atom Token Header	Byte sequence, length = 8	
00 00 00 06 00 00 00 07	Method UID	Set Method UID	
F0	Start List Token		Begins Parameters
F0	Start List Token		Starts cell block for Where parameter
F1	End List Token		Ends cell block for Where parameter
F0	Start List Token		
F0	Start List Token		
F2	Start Name Token		
A3	Short Atom Token Header	Byte sequence, length = 3	
A3 50 49 4E		"PIN"	
D0 20	Medium Atom Token Header	Byte sequence, length = 32	
4F 64 AC 3D 8A 66 5D F1 F4 69 B5 CC 2A 39 AA 68 4D 3D DE E8 C8 81 16 9F 6F 4B 51 54 9F 67 2B 98		<custom pin=""></custom>	This PIN value is specified by the host. The host may use the Random method to obtain a random number from the storage device.
F3	End Name Token		
F1	End List Token		
F1	End List Token		
F1	End List Token		Ends Method Parameters
F9	End of Data		Ends method
	Token		
F0 00 00 00 F1	Status List		
00 00 00	Pad		Included in Packet and ComPacket lengths

3.2.4.5.2 Set new BandMaster1 PIN Results

See 3.2.2.4.

3.2.4.6 EraseMaster Authentication

The host authenticates with the SP as the EraseMaster authority using its default credential, the MSID PIN value.

3.2.4.6.1 Authenticate as EraseMaster

Table 20 Authenticate as EraseMaster

Bytes	Purpose	Value	Notes				
ComPacket							
00 00 00 00	Reserved	0's	uinteger_4				
07 FF 00 00	Extended ComID	07FF 0000	uinteger_4				
00 00 00 00	OutstandingData	0's	uinteger_4				
00 00 00 00	MinTransfer	0's	uinteger_4				
00 00 00 78	Length	120	uinteger_4				
Packet							
FF FF FD E0 00 01 2E 13	Session	FFFFFDE0 00012E13	uinteger_8				
00 00 00 00	SeqNumber	0	uinteger_4				
00 00	Reserved	0's	uinteger_2				
00 00	AckType	0's	uinteger_2				
00 00 00 00	Acknowledgement	:0's	uinteger_4				
00 00 00 60	Length	96	uinteger_4				
Data SubPacket							
00 00 00 00 00	Reserved	0's	uinteger_6				
00 00	Kind	0's	uinteger_2				
00 00 00 52	Length	82	uinteger_4				
Data Payload		_					

F8	Call Token		Begins method
A8	Short Atom Token Header	Byte sequence, length = 8	
00 00 00 00 00 00 01	Invoking UID	ThisSP UID	
A8	Short Atom Token Header	Byte sequence, length = 8	
00 00 00 06 00 00 00 0C	Method UID	Authenticate Method UID	
F0	Start List Token		Begins Parameter list
A8	Short Atom Token Header	Byte sequence, length = 8	
00 00 00 09 00 00 84 01		Authority object – EraseMaster_UID	
F2	Start Name Token		
A9	Short Atom Token Header	Byte sequence, length = 9	
43 68 61 6C 6C 65 6E 67 65		"Challenge"	
D0 20	Medium Atom Token Header	Byte sequence, length = 32	
30 31 32 33 34 35 36 37 38 39 41 42 43 44 45 46 47 48 49 4A 4B 4C 4D 4E 4F 50 51 52 53 54 55 56		<msid_pin_value></msid_pin_value>	Current MSID_ PIN
F3	End Name Token		
F1	End List Token		Ends parameter list
F9	End of Data Token		Ends method
F0 00 00 00 F1	Status List		
00 00	Pad		Included in Packet and ComPacket lengths

3.2.4.6.2 Authenticate as EraseMaster Results

See 3.2.2.3.

3.2.4.7 Set New EraseMaster PIN

The host enters a custom PIN value for EraseMaster authority's credential.

3.2.4.7.1 Set EraseMaster PIN

Table 21 Set New EraseMaster PIN

Bytes	Purpose	Value	Notes
ComPacket	•		
00 00 00 00	Reserved	0's	uinteger_4
07 FF 00 00	Extended ComID	07FF 0000	uinteger_4
00 00 00 00	OutstandingData	0's	uinteger_4
00 00 00 00	MinTransfer	0's	uinteger_4
00 00 00 70	Length	112	uinteger_4
Packet	<u> </u>		
FF FF FD E0 00 01 2E 13	Session	FFFFDE0 00012E13	uinteger_8
00 00 00 00	SeqNumber	0	uinteger_4
00 00	Reserved	0's	uinteger_2
00 00	AckType	0's	uinteger_2
00 00 00 00	Acknowledgement	0's	uinteger_4
00 00 00 58	Length	88	uinteger_4
Data SubPacket			
00 00 00 00 00	Reserved	0's	uinteger_6
00 00	Kind	0's	uinteger_2
00 00 00 49	Length	73	uinteger_4
Data Payload			
F8	Call Token		Begins method
A8	Short Atom Token Header	Byte sequence, length = 8	
00 00 00 0B 00 00 84 01	Invoking UID	EraseMaster_PIN_UID	
A8	Short Atom Token Header	Byte sequence, length = 8	
00 00 00 06 00 00 00 07	Method UID	Set Method UID	
F0	Start List Token		Starts parameter list
F0	Start List Token		Starts cell block for Where parameter
F1	End List Token		Ends cell block for Where parameter
F0	Start List Token		
F0	Start List Token		
F2	Start Name Token		
A3	Short Atom Token Header	Byte sequence, length = 3	
50 49 4E		"PIN"	
D0 20	Medium Atom Token Header	Byte sequence, length = 32	

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D5 3C 18 4F AC 3F 3E 49 05 53 BA 97 59 CB C0 6B 22 5C 2B A3 7F DB FF 90 1C CF EB 54 F2 9C F9 53		<custom pin="" value=""></custom>	This PIN value is specified by the host. The host may use the Random method to obtain a random nuber from the storage device.
F3	End Name Token		
F1	End List Token		
F1	End List Token		
F1	End List Token		Ends parameter list
F9	End of Data Token		Ends method
F0 00 00 00 F1	Status List		
00 00 00	Pad		None

3.2.4.7.2 Set new EraseMaster PIN Results See 3.2.2.4.

3.2.4.8 Ending the Session

3.2.4.8.1 Send End of Session Token

See 3.2.2.5.1.

3.2.4.8.2 End of Session Response

See 3.2.2.5.2.

3.2.5 Configure the Locking Ranges

The operations in this section customize the locking range settings to host assigned values. These operations could have been completed in the previous session, but are in a new session to illustrate the new passwords required for authentication.

3.2.5.1 Open a Session to the Locking SP

3.2.5.1.1 StartSession to Locking SP

See 3.2.2.2.1.

3.2.5.1.2 SyncSession from Locking SP

See 3.2.2.2.2.

3.2.5.2 BandMaster0 Authentication

The host authenticates with the SP as the BandMaster0 authority using the newly set PIN value.

3.2.5.2.1 Authenticate BandMaster0

Table 22 Authenticate as BandMaster0

Bytes	Purpose	Value	Notes
ComPacket			<u> </u>
00 00 00 00	Reserved	0's	uinteger_4
07 FF 00 00	Extended ComID	07FF 0000	uinteger_4
00 00 00 00	OutstandingData	0's	uinteger_4
00 00 00 00	MinTransfer	0's	uinteger_4
00 00 00 78	Length	120	uinteger_4
Packet	·		
FF FF FD E0 00 01 2E 13	Session	FFFFFDE0 00012E13	uinteger_8
00 00 00 00	SeqNumber	0	uinteger_4
00 00	Reserved	0's	uinteger_2
00 00	AckType	0's	uinteger_2
00 00 00 00	Acknowledgement	0's	uinteger_4
00 00 00 60	Length	96	uinteger_4
Data SubPacket			
00 00 00 00 00 00	Reserved	0's	uinteger_6
00 00	Kind	0's	uinteger_2
00 00 00 52	Length	82	uinteger_4
Data Payload			

F8	Call Token		Begins method
A8	Short Atom Token Header	Byte sequence, length = 8	
00 00 00 00 00 00 01	Invoking UID	SP UID	
A8	Short Atom Token Header	Byte sequence, length = 8	
00 00 00 06 00 00 00 0C	Method UID	Authenticate Method UID	
F0	Start List Token		
A8	Short Atom Token Header	Byte sequence, length = 8	
00 00 00 09 00 00 80 01		Authority object – Bandmaster0_UID	
F2	Start Name Token		
A9	Short Atom Token Header	Byte sequence, length = 9	
43 68 61 6C 6C 65 6E 67 65		"Challenge"	
D0 20	Medium Atom Token Header	Byte sequence, length = 32	
48 86 AB 86 FF D3 D8 AA B5 B8 D7 F0 B5 14 50 15 98 13 82 EF 80 30 8E 8F 3F 05 39 B6 2C 73 76 98		<custom pin="" value=""></custom>	PIN set in 3.2.4.3
F3	End Name Token		
F1	End List Token		Ends parameter list
F9	End of Data Token		Ends method
F0 00 00 00 F1	Status List		
00 00	Pad		Included in Packet and ComPacket lengths

3.2.5.2.2 Authenticate BandMaster0 Results

See 3.2.2.3.

3.2.5.3 Get Current Global_Range settings

The host retrieves the current Global_Range locking object settings. This is an optional operation. The host may proceed directly to setting the locking object settings.

3.2.5.3.1 Get Global_Range

..

Table 23 Get Global_Range Settings

Bytes	able 23 Get Glob Purpose	Value	Notes
ComPacket	r u. peee	74.44	1.10100
00 00 00 00	Reserved	0's	uinteger_4
07 FF 00 00	Extended ComID	07FF 0000	uinteger_4
00 00 00 00	OutstandingData	0/11 0000 0's	uinteger_4
00 00 00 00	MinTransfer	0's	uinteger_4 uinteger_4
00 00 00 00		68	9 =
Packet	Length	00	uinteger_4
	0	FEFFERRE	I total or o
FF FF FD DF 00 01 2E 13	Session	FFFFFDDF 00012E13	uinteger_8
00 00 00 00	SeqNumber	0	uinteger_4
00 00	Reserved	0's	uinteger_2
00 00	AckType	0's	uinteger_2
00 00 00 00	Acknowledgement	0's	uinteger_4
00 00 00 2C	Length	44	uinteger_4
Data SubPacket	<u> </u>		
00 00 00 00 00 00	Reserved	0's	uinteger_6
00 00	Kind	0's	uinteger_2
00 00 00 1D	Length	29	uinteger_4
Data Payload		•	
F8	Call Token		Begins method
A8	Short Atom Token	Byte sequence,	
	Header	length = 8	
00 00 08 02 00 00 00 01	Invoking UID	Global_Range locking object UID	
A8	Short Atom Token		
	Header	length = 8	
00 00 00 06 00 00 00 06	Method UID	Get Method UID	
F0	Start List Token		Begins parameter list
F0	Start List Token		Begins cell block for Where parameter
F1	End List Token		Ends cell block for Where parameter
F1	End List Token		Ends parameter list
F9	End of Data Token		Ends method
F0 00 00 00 F1	Status List		
00 00 00	Pad		Included in Packet and ComPacket lengths

3.2.5.3.2 Get current Global_Range settings Results

Depending on implementation, the "ActiveKey" column value could be a uidref to a K_AES_256 object.

```
[ [ "UID" = 00 00 08 02 00 00 01, "Name" = "Global_Range", "CommonName "=
"Locking", "RangeStart" = <0x00>, "RangeLength" = <0x00>, "ReadLockEnabled" =
<False>, "WriteLockEnabled" = <False>, "ReadLocked" = <False>, "WriteLocked" =
<False>, "LockOnReset" = [ <Power Cycle> ], "ActiveKey" = <Global_Range-</pre>
_AES_128_UID> ] ]
0000 00 00 00 00 07 FF 00 00 00 00 00 00 00 00 00 00
0010 00 00 00 F0 FF FF FD E0 00 01 2E 13 00 00 00
0030 00 00 00 00 00 00 00 CC F0 F0 F0 F2 A3 55 49 44
0040 A8 00 00 08 02 00 00 00 01 F3 F2 A4 4E 61 6D 65
0050 AC 47 6C 6F 62 61 6C 5F 52 61 6E 67 65 F3 F2 AA
0060 43 6F 6D 6D 6F 6E 4E 61 6D 65 A7 4C 6F 63 6B 69
0070 6E 67 F3 F2 AA 52 61 6E 67 65 53 74 61 72 74 00
0080 F3 F2 AB 52 61 6E 67 65 4C 65 6E 67 74 68 00 F3
0090 F2 AF 52 65 61 64 4C 6F 63 6B 45 6E 61 62 6C 65
00A0 64 00 F3 F2 D0 10 57 72 69 74 65 4C 6F 63 6B 45
00B0 6E 61 62 6C 65 64 00 F3 F2 AA 52 65 61 64 4C 6F
00C0 63 6B 65 64 00 F3 F2 AB 57 72 69 74 65 4C 6F 63
00D0 6B 65 64 00 F3 F2 AB 4C 6F 63 6B 4F 6E 52 65 73
00E0 65 74 F0 00 F1 F3 F2 A9 41 63 74 69 76 65 4B 65
00F0 79 A8 00 00 08 05 00 00 00 01 F3 F1 F1 F1 F9 F0
0100 00 00 00 F1 00 00 00 00 00 00 00 00 00 00 00
```

Table 24 Get Global Range Results

Bytes	Purpose	Value	Notes
ComPacket			
00 00 00 00	Reserved	0's	uinteger_4
	Extended		
07 FF 00 00	ComID	07FF 0000	uinteger_4
	Outstanding		
00 00 00 00	Data	0's	uinteger_4
00 00 00 00	MinTransfer	0's	uinteger_4
00 00 00 F0	Length	240	uinteger_4
Packet			
FF FF FD E0 00 01 2E 13	Session	FFFFDE0 00012E13	uinteger_8
00 00 00 00	SeqNumber	0	uinteger_4
00 00	Reserved	0's	uinteger_2
00 00	AckType	0's	uinteger_2
	Acknowledge		
00 00 00 00	ment	0's	uinteger_4
00 00 00 D8	Length	216	uinteger_4
Data SubPacket			

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00 00 00 00 00 00	Reserved	0's	uinteger_6
00 00	Kind	0's	uinteger_2
00 00 00 CC	Length	204	uinteger_4
Data Payload	Longui	207	Junitogor_+
Data Fayload	Start List	1	
F0	Token		Begins results
F0	Start List		Degins results
	Token		
F0	Start List		
	Token		
	Start Name		
F2	Token		
A3	Short Atom	Byte sequence, length = 3	
	Token Header		
55 49 44	Name	"UID"	
A8	Short Atom	Byte sequence, length = 8	
	Token Header		
00 00 08 02 00 00 00 01	Value	<global_range_uid></global_range_uid>	
	End Name		
F3	Token		
	Start Name		
F2	Token		
A4	Short Atom	Byte sequence, length = 4	
	Token Header		
4E 61 6D 65	Name	"Name"	
AC	Short Atom	Byte sequence, length = 12	
	Token Header		
47 6C 6F 62 61 6C 5F 52			
61 6E 67 65	Value	"Global_Range"	
F3	End Name		
	Token		
	Start Name		
F2	Token		
AA	Short Atom	Byte sequence, length = 10	
	Token Header		
43 6F 6D 6D 6F 6E 4E 61			
6D 65		"CommonName"	
A7	Short Atom	Byte sequence, length = 7	
	Token Header		
4C 6F 63 6B 69 6E 67		"Locking"	
	End Name		
F3	Token		
	Start Name		
F2	Token		
AA	Short Atom Token Header	Byte sequence, length = 10	
52 61 6E 67 65 53 74 61			
72 74		"RangeStart"	
	Tiny Atom	J =	
00	Token, Value	<0x00>	
		1	1

Version 1.00 Nevision 1.0	End Name	I	I
F3	Token		
13			
F2	Start Name Token		
AB	Short Atom	Byte sequence, length = 11	
Ab	Token Header	byte sequence, length = 11	
	Tokommoador		
52 61 6E 67 65 4C 65 6E		"Dengal angth"	
67 74 68	Time Atom	"RangeLength"	
00	Tiny Atom Token, Value	<0x00>	
00		<0x00>	
F3	End Name Token		
F3			
F0	Start Name		
F2 AF	Token	Dista consistence longth 45	
AF	Short Atom	Byte sequence, length = 15	
52 65 61 64 4C 6F 63 6B	Token Header		
45 6E 61 62 6C 65 64		"ReadLockEnabled"	
43 02 01 02 00 03 04	Tiny Atom	ReadLockLilabled	
00	Token, Value	<false></false>	
00	End Name	N disc>	
F3	Token		
	Start Name		
F2	Token		
1 2			
D0 10	Medium Atom	Byte sequence, Length 16	
	Token neader	byte sequence, Length 16	
57 72 69 74 65 4C 6F 63		"\\/\"ital a als [a abla d"	
6B 45 6E 61 62 6C 65 64	Time Atoms	"WriteLockEnabled"	
00	Tiny Atom Token, Value	<false></false>	
00	End Name	< raise >	
F3	Token		
0	Start Name		
F2	Token		
AA	Short Atom	Byte sequence, length = 10	
	Token Header		
52 65 61 64 4C 6F 63 6B			
65 64	Name	"ReadLocked"	
	Tiny Atom		
00	Token, Value	<false></false>	
	End Name		
F3	Token		
	Start Name		
F2	Token		
AB	Short Atom	Byte sequence, length = 12	
	Token Header		
57 72 69 74 65 4C 6F 63		"WriteLocked"	
6B 65 64	Name		
	Tiny Atom		
00	Token, Value	<false></false>	
F3	End Name		
	Token		

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version 1.00 Revision 1.0	o i iiiai	1	ı
	Start Name		
F2	Token		
AB	Short Atom Token Header	Byte sequence, length = 12	
4C 6F 63 6B 4F 6E 52 65			
73 65 74		"LockOnReset"	
F0	Start List Token		
00	Tiny Atom Token, Value	<power cycle=""></power>	
F1	End List Token		
F3	End Name Token		
F2	Start Name Token		
A9	Short Atom Token Header	Byte sequence, length = 9	
41 63 74 69 76 65 4B 65 79		"ActiveKey"	
A8	Short Atom Token Header	Byte sequence, length = 8	
00 00 08 05 00 00 00 01	Value	<global_range- _AES_128_UID></global_range- 	
F3	End Name Token		
F1	End List Token		
F1	End List Token		
F1	End List Token		
F9	End of Data Token		Ends results
F0 00 00 00 F1	Status List		LIIGO ICOUIG

3.2.5.4 Modify Global_Range Locks

The host modifies the Global_Range lock settings.

3.2.5.4.1 Set Global_Range

```
Global_Range_locking_object_UID.Set[ [ ], [ [ "ReadLockEnabled" = <True>,
"WriteLockEnabled" = <True>, "ReadLocked" = <True>, "WriteLocked" = <True>"]]]
0000 00 00 00 00 07 FF 00 00 00 00 00 00 00 00 00
0010 00 00 00 8C FF FF FD E0 00 01 2E 13 00 00 00
0020 00 00 00 00 00 00 00 00 00 00 00 74 00 00 00
0030 00 00 00 00 00 00 00 66 F8 A8 00 00 08 02 00 00
0040 00 01 A8 00 00 00 06 00 00 00 07 F0 F0 F1 F0 F0
0050 F2 AF 52 65 61 64 4C 6F 63 6B 45 6E 61 62 6C 65
0060 64 01 F3 F2 D0 10 57 72 69 74 65 4C 6F 63 6B 45
0070 6E 61 62 6C 65 64 01 F3 F2 AA 52 65 61 64 4C 6F
0080 63 6B 65 64 01 F3 F2 AB 57 72 69 74 65 4C 6F 63
0090 6B 65 64 01 F3 F1 F1 F1 F9 F0 00 00 00 F1 00 00
```

Table 25 Set Global_Range Locks

Bytes	Purpose	Value	Notes
ComPacket	-		
00 00 00 00	Reserved	0's	uinteger_4
07 FF 00 00	Extended ComID	07FF 0000	uinteger_4
00 00 00 00	OutstandingData	0's	uinteger_4
00 00 00 00	MinTransfer	0's	uinteger_4
00 00 00 8C	Length	140	uinteger_4
Packet	·		
FF FF FD E0 00 01 2E 13	Session	FFFFFDE0 00012E13	uinteger_8
00 00 00 00	SeqNumber	0	uinteger_4
00 00	Reserved	0's	uinteger_2
00 00	AckType	0's	uinteger_2
00 00 00 00	Acknowledgement	0's	uinteger_4
00 00 00 74	Length	116	uinteger_4
Data SubPacket			
00 00 00 00 00 00	Reserved	0's	uinteger_6
00 00	Kind	0's	uinteger_2
00 00 00 66	Length	102	uinteger_4
Data Payload	·		
F8	Call Token		Begins method
A8	Short Atom Token Header	Byte sequence, length = 8	
00 00 08 02 00 00 00 01	Invoking UID	Global_Range_ locking_object_UID	
A8	Short Atom Token Header		

00 00 00 06 00 00 00 07		Set Method UID	
F0	Start List Token		Begins parameter list
- 0	Start List Token		Begins cell block for Where parameter
- 1	End List Token		Ends cell block
-0	Start List Token		
F0	Start List Token		
F2	Start Name Token		F2
AF	Short Atom Token Header	Byte sequence, length = 15	
52 65 61 64 4C 6F 63 6B 45 6E		, conguir	
61 62 6C 65 64		"ReadLockEnabled"	
	Tiny Atom Token,		
01	Value	<true></true>	
F3	End Name Token		F3
F2	Start Name Token		
D0 10	Medium Atom Token	Byte sequence, length = 16	
57 72 69 74 65 4C 6F 63 6B 45 6E 61 62 6C 65 64		"WriteLockEnabled"	
01	Tiny Atom Token, value	<true></true>	
F3	End Name Token		
F2	Start Name Token		
AA	Short Atom Token		
		length = 10	
52 65 61 64 4C 6F 63 6B 65 64	Name	"ReadLocked"	
01	Tiny Atom Token, Value	<true></true>	
F3	End Name Token		
F2	Start Name Token		
AB	Short Atom Token		
57 72 69 74 65 4C 6F 63.6B 65 64		'WriteLocked"	
	Tiny Atom Token, Value	<true></true>	
F3	End Name Token		
F1	End List Token		
F1	End List Token		
F1	End List Token		
F9	End of Data Token		Ends results
F0 00 00 00 F1	Status List		
00 00	Pad		Included in Packet and ComPacket lengths

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3.2.5.5 Get Global_Range settings

The host retrieves the current Global_Range locking object settings. This operation is optional and is included to illustrate that changes were made. The success status to the Set Global_Range locks operation indicates the requested changes were made and committed.

3.2.5.5.1 Get Global_Range

Table 26 Get Global_Range Settings

Bytes	Purpose	Value	Notes
ComPacket			·
00 00 00 00	Reserved	0's	uinteger_4
07 FF 00 00	Extended ComID	07FF 0000	uinteger_4
00 00 00 00	OutstandingData	0's	uinteger_4
00 00 00 00	MinTransfer	0's	uinteger_4
00 00 00 44	Length	68	uinteger_4
Packet			
FF FF FD E0 00 01 2E 13	Session	FFFFFDE0 00012E13	uinteger_8
00 00 00 00	SeqNumber	0	uinteger_4
00 00	Reserved	0's	uinteger_2
00 00	AckType	0's	uinteger_2
00 00 00 00	Acknowledgement	0's	uinteger_4
00 00 00 2C	Length	44	uinteger_4
Data SubPacket			
00 00 00 00 00	Reserved	0's	uinteger_6
00 00	Kind	0's	uinteger_2
00 00 00 1D	Length	29	uinteger_4
Data Payload			
F8	Call Token		Begins method
A8	Short Atom Token Header	Byte sequence, length = 8	

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00 00 08 02 00 00 00 01	Invoking UID	Global_Range_ locking_ object_UID	
A8	Short Atom Token Header	Byte sequence, length = 8	
00 00 00 06 00 00 00 06	Method UID	Get Method UID	
F0	Start List Token		Begins parameter list
F0	Start List Token		Begins cell block for Where parameter
F1	End List Token		Ends cell block
F1	End List Token		Ends parameter list
F9	End of Data Token		Ends method
F0 00 00 00 F1	Status List		
00 00 00	Pad		Included in Packet and ComPacket lengths

3.2.5.5.2 Get Global_Range settings results

Depending on implementation, the "ActiveKey" column value could be a uidref to a K_AES_256 object.

```
[ [ "UID" = 00 00 08 02 00 00 01, "Name" = "Global_Range", "CommonName "=
"Locking", "RangeStart" = <0x00>, "RangeLength" = <0x00>, "ReadLockEnabled" =
<True>, "WriteLockEnabled" = <True>, "ReadLocked" = <True>, "WriteLocked" = <True>,
"LockOnReset" = [ <Power Cycle> ], "ActiveKey" = <Global_Range-_AES_128_UID> ] ]
0000 00 00 00 00 07 FF 00 00 00 00 00 00 00 00 00
0010 00 00 00 F0 FF FF FD E0 00 01 2E 13 00 00 00 00
0020 00 00 00 00 00 00 00 00 00 00 D8 00 00 00
0030 00 00 00 00 00 00 00 CC F0 F0 F0 F2 A3 55 49 44
0040 A8 00 00 08 02 00 00 00 01 F3 F2 A4 4E 61 6D 65
0050 AC 47 6C 6F 62 61 6C 5F 52 61 6E 67 65 F3 F2 AA
0060 43 6F 6D 6D 6F 6E 4E 61 6D 65 A7 4C 6F 63 6B 69
0070 6E 67 F3 F2 AA 52 61 6E 67 65 53 74 61 72 74 00
0080 F3 F2 AB 52 61 6E 67 65 4C 65 6E 67 74 68 00 F3
0090 F2 AF 52 65 61 64 4C 6F 63 6B 45 6E 61 62 6C 65
00A0 64 01 F3 F2 D0 10 57 72 69 74 65 4C 6F 63 6B 45
00B0 6E 61 62 6C 65 64 01 F3 F2 AA 52 65 61 64 4C 6F
00C0 63 6B 65 64 01 F3 F2 AB 57 72 69 74 65 4C 6F 63
00D0 6B 65 64 01 F3 F2 AB 4C 6F 63 6B 4F 6E 52 65 73
00E0 65 74 F0 00 F1 F3 F2 A9 41 63 74 69 76 65 4B 65
00F0 79 A8 00 00 08 05 00 00 00 01 F3 F1 F1 F1 F9 F0
0100 00 00 00 F1 00 00 00 00 00 00 00 00 00 00 00
```

Table 27 Get Global_Range Results

Bytes	Purpose	Value	Notes
ComPacket			
00 00 00 00	Reserved	0's	uinteger_4
07 FF 00 00	Extended ComID	07FF 0000	uinteger_4
00 00 00 00	OutstandingData	0's	uinteger_4
00 00 00 00	MinTransfer	0's	uinteger_4
00 00 00 F0	Length	240	uinteger_4
Packet			
FF FF FD E0 00 01 2E 13	Session	FFFFDE0 00012E13	uinteger_8
00 00 00 00	SeqNumber	0	uinteger_4
00 00	Reserved	0's	uinteger_2
00 00	AckType	0's	uinteger_2
00 00 00 00	Acknowledgement	0's	uinteger_4
00 00 00 D8	Length	216	uinteger_4
Data SubPacket			
00 00 00 00 00	Reserved	0's	uinteger_6
00 00	Kind	0's	uinteger_2

00 00 00 CC	Length	204	uinteger_4
Data Payload			
F0	Start List Token		Begins results
F0	Start List Token		
F0	Start List Token		
F2	Start Name Token		
A3	Short Atom Token Header	Byte sequence, length = 3	
55 49 44	Name	UID	
A8	Short Atom Token Header	Byte sequence, length = 8	
00 00 08 02 00 00 00 01	Value		
F3	End Name Token		
F2	Start Name Token		
A4	Short Atom Token Header	Byte sequence, length = 4	
4E 61 6D 65	Name	"Name"	
AC	Short Atom Token Header	Byte sequence, length = 12	
47 6C 6F 62 61 6C 5F 52			
61 6E 67 65	Value	"Global_Range"	
F3	End Name Token		
F2	Start Name Token		
AA	Short Atom Token Header	Byte sequence, length = 10	
43 6F 6D 6D 6F 6E 4E 61 6D 65		"CommonName"	
A7	Short Atom Token Header	Byte sequence, length = 7	
4C 6F 63 6B 69 6E 67		"Locking"	
F3	End Name Token		
F2	Start Name Token		
AA	Short Atom Token Header	Byte sequence, length = 10	
52 61 6E 67 65 53 74 61 72 74		"RangeStart"	
	Tiny Atom Token,		
00	Value	<0x00>	
F3	End Name Token		
F2	Start Name Token		
AB	Short Atom Token Header	Byte sequence, length = 12	
52 61 6E 67 65 4C 65 6E 67 74 68		"RangeLength"	

1	Tiny Atom Token,	1	1
00	Value	<0x00>	
F3	End Name Token		
F2	Start Name Token		
AF	Short Atom Token Header	Byte sequence, length = 15	
52 65 61 64 4C 6F 63 6B			
45 6E 61 62 6C 65 64	T: A: T I	"ReadLockEnabled"	
01	Tiny Atom Token,	-True	
01	Value	<true></true>	
F3	End Name Token		
F2	Start Name Token		
	Medium Atom		
D0 10	Token Header	Byte sequence, length = 16	
57 72 69 74 65 4C 6F 63 6B 45 6E 61 62 6C 65 64		"WriteLockEnabled"	
01		<true></true>	
F3	End Name Token		
F2	Start Name Token		
ĀĀ	Short Atom Token Header	Byte sequence, length = 10	
52 65 61 64 4C 6F 63 6B			
65 64	Name	"ReadLocked"	
01	Value	<true></true>	
F3	End Name Token		
F2	Start Name Token		
AB	Short Atom Token Header	Byte sequence, length = 11	
57 72 69 74 65 4C 6F 63		"WriteLocked"	
6B 65 64	Name		
01	Value	<true></true>	
F3			
	End Name Token		
F0	Otant Name - Tel		
F2	Start Name Token	Dute coguence length 44	
AB	Short Atom Token Header	Byte sequence, length = 11	
4C 6F 63 6B 4F 6E 52 65			
73 65 74		"LockOnReset"	
F0	Start List Token		
00		<power cycle=""></power>	
F1	End List Token		
F3			
	End Name Token		

Í			
F2	Start Name Token		
A9	Short Atom Token Header	Byte sequence, length = 9	
41 63 74 69 76 65 4B 65 79			
		"ActiveKey"	
A8	Short Atom Token Header	Byte sequence, length = 8	
		<global_range-< td=""><td></td></global_range-<>	
00 00 08 05 00 00 00 01	Value	_AES_128_UID>	
F3	End Name Token		
F1	End List Token		
F1	End List Token		
F1	End List Token		
F9	End of Data Token		Ends results
F0 00 00 00 F1	Status List		
			No Pad

3.2.5.6 BandMaster1 Authentication

The host authenticates with the SP as the BandMaster1 authority using the custom PIN value set in 3.2.4.5.

3.2.5.6.1 Authenticate BandMaster1

Table 28 Authenticate as BandMaster1

ytes Purpose		Value	Notes		
ComPacket					
00 00 00 00	Reserved	0's	uinteger_4		
07 FF 00 00	Extended ComID	07FF 0000	uinteger_4		
00 00 00 00	OutstandingData	0's	uinteger_4		

00 00 00 00	MinTransfer	0's	uinteger_4			
00 00 00 78	Length	120	uinteger_4			
Packet	-					
FF FF FD E0 00 01 2E 13	Session	FFFFFDE0 00012E13	uinteger_8			
00 00 00 00	SeqNumber	0	uinteger_4			
00 00	Reserved	0's	uinteger_2			
00 00	AckType	0's	uinteger_2			
00 00 00 00	Acknowledgement	0's	uinteger_4			
00 00 00 60	Length	96	uinteger_4			
Data SubPacket						
00 00 00 00 00 00	Reserved	0's	uinteger_6			
00 00	Kind	0's	uinteger_2			
00 00 00 52	Length	82	uinteger_4			
Data Payload	-		-			
F8	Call Token		Begins method			
A8	Short Atom Token Header	Byte sequence, length = 8				
00 00 00 00 00 00 00 01	Invoking UID	SP UID				
A8	Short Atom Token Header	Byte sequence, length = 8				
00 00 00 06 00 00 00 0C	Method UID	Authenticate Method UID				
F0	Start List Token					
A8	Short Atom Token Header	Byte sequence, length = 8				
00 00 00 09 00 00 80 02		Authority object – Bandmaster1_UID				
F2	Start Name Token					
A9	Short Atom Token Header	length = 9				
43 68 61 6C 6C 65 6E 67 65		"Challenge"				
D0 20		Bute sequence, length = 32				
4F 64 AC 3D 8A 66 5D F1 F4 69 B5 CC 2A 39 AA 68 4D 3D DE E8 C8 81 16 9F 6F 4B 51 54 9F 67 2B 98		<current BandMaster1_PIN></current 				
F3	End Name Token					
F1	End List Token		Ends parameter list			
F9	End of Data Token		Ends method			
F0 00 00 00 F1	Status List					
00 00	Pad		Included in Packet and ComPacket lengths			

3.2.5.6.2 Authenticate as BandMaster1 Results

See 3.2.2.3.

3.2.5.7 Set Band1 Start and Size

The host configures Band1.

3.2.5.7.1 Set Band1

```
Band1_locking_object_UID.Set [ [ ] , [ [ "RangeStart" = <0xBAAD>, "RangeLength" =
<0xBEEF>, "ReadLockEnabled" = <True>, "WriteLockEnabled" = <True> ] ] ]
0000 00 00 00 00 07 FF 00 00 00 00 00 00 00 00 00
0010 00 00 00 90 FF FF FD E0 00 01 2E 13 00 00 00
0020 00 00 00 00 00 00 00 00 00 00 78 00 00 00
0030 00 00 00 00 00 00 00 6A F8 A8 00 00 08 02 00 00
0040 00 02 A8 00 00 00 06 00 00 00 07 F0 F0 F1 F0 F0
0050 F2 AA 52 61 6E 67 65 53 74 61 72 74 82 BA AD F3
0060 F2 AB 52 61 6E 67 65 4C 65 6E 67 74 68 82 BE EF
0070 F3 F2 AF 52 65 61 64 4C 6F 63 6B 45 6E 61 62 6C
0080 65 64 01 F3 F2 D0 10 57 72 69 74 65 4C 6F 63 6B
0090 45 6E 61 62 6C 65 64 01 F3 F1 F1 F9 F0 00 00
```

Table 29 Set Band1 Range

Dutas		Value	Nata
Bytes	Purpose	Value	Notes
ComPacket	T	T	I
00 00 00 00	Reserved	0's	uinteger_4
07 FF 00 00	Extended ComID	07FF 0000	uinteger_4
00 00 00 00	OutstandingData	0's	uinteger_4
00 00 00 00	MinTransfer	0's	uinteger_4
00 00 00 90	Length	144	uinteger_4
Packet			
		FFFFDE0	
FF FF FD E0 00 01 2E 13	Session	00012E13	uinteger_8
00 00 00 00	SeqNumber	0	uinteger_4
00 00	Reserved	0's	uinteger_2
00 00	AckType	0's	uinteger_2
00 00 00 00	Acknowledgement	0's	uinteger_4
00 00 00 78	Length	120	uinteger_4
Data SubPacket		•	
00 00 00 00 00 00	Reserved	0's	uinteger_6
00 00	Kind	0's	uinteger_2
00 00 00 6A	Length	106	uinteger_4
Data Payload	Longar	1100	Jan 10 goi _ 1
F8	Call Token		Begins method
A8	Short Atom Token	Ryte seguence	Degins method
		length = 8	
00 00 08 02 00 00 00 02		Band1 UID	
A8	Short Atom Token		
		length = 8	
00 00 00 06 00 00 00 07	Method UID	Set Method UID	
F0	Start List Token		Begins Parameters
F0	Start List Token		Begins Where Parameter
F1	End List Token		Ends Where Parameter
F0	Start List Token		
F0	Start List Token		
F2	Start Name Token		
AA	Short Atom Token		
	Header	length = 10	
52 61 6E 67 65 53 74 61 72 74			
		"RangeStart"	
82		Uinteger, length = 2	
	Header		
BA AD		<0xBAAD>	
F3	End Name Token		
F2	Start name Token		
AB	Short Atom Token	Byte sequence,	
	Header	length = 11	

Version 1.00 Revision 1.00 Fina			
52 61 6E 67 65 4C 65 6E 67 74 68		"RangeLength"	
82		Uinteger, length = 2	
BE EF		<0xBEEF>	
F3	End Name Token		
F2	Start Name Token		
AF	Short Atom Token Header	Byte sequence, length = 15	
52 65 61 64 4C 6F 63 6B 45 6E 61 62 6C 65 64		"ReadLockEnabled"	
01		<true></true>	
F3	End Name Token		
F2	Start Name Token		
D0 10	Medium Atom Token Header	Byte Sequence, length = 16	
57 72 69 74 65 4C 6F 63 6B 45 6E 61 62 6C 65 64		"WriteLockEnabled"	
01		<true></true>	
F3	End Name Token		
F1	End List Token		
F1	End List Token		
F1	End List Token		Ends parameter list
F9	End of Data Token		Ends method
F0 00 00 00 F1	Status List		
00 00	Pad		

3.2.5.7.2 Set Band1 range Results See 3.2.2.4.

3.2.5.8 Ending the Session

3.2.5.8.1 Send End of Session Token See 3.2.2.5.1.

3.2.5.8.2 End of Session Response See 3.2.2.5.2.

3.2.6 Lock and Unlock the Device

This section contains an example of the operations required to change an LBA range's locking state.

3.2.6.1 Open a Session to the Locking SP

3.2.6.1.1 StartSession with Locking SP

See 3.2.2.2.1.

3.2.6.1.2 SyncSession from Locking SP

See 3.2.2.2.2.

3.2.6.2 BandMaster1 Authentication

3.2.6.2.1 Authenticate BandMaster1

The host authenticates with the SP as the BandMaster1 authority using the custom PIN value set in 3.2.4.5.

3.2.6.2.2 Authenticate BandMaster1

Table 30 Authenticate as BandMaster1

Bytes	Purpose	Value	Notes
ComPacket		•	
00 00 00 00	Reserved	0's	uinteger_4
07 FF 00 00	Extended ComID	07FF 0000	uinteger_4
00 00 00 00	OutstandingData	0's	uinteger_4
00 00 00 00	MinTransfer	0's	uinteger_4
00 00 00 78 Length		120	uinteger_4
Packet			
FF FF FD E0 00 01 2E 13	Session	FFFFFDE0 00012E13	uinteger_8
00 00 00 00	SeqNumber	0	uinteger_4
00 00	Reserved	0's	uinteger_2
00 00	AckType	0's	uinteger_2
00 00 00 00	Acknowledgemen	t0's	uinteger_4
00 00 00 60	Length	96	uinteger_4

Data SubPacket			
00 00 00 00 00 00	Reserved	0's	uinteger_6
00 00	Kind	0's	uinteger_2
00 00 00 52	Length	82	uinteger_4
Data Payload	•		
F8	Call Token		Begins method
A8	Short Atom Token Header	Byte sequence, length = 8	
00 00 00 00 00 00 01	Invoking UID	SP UID	
A8	Short Atom Token Header	Byte sequence, length = 8	
00 00 00 06 00 00 00 0C	Method UID	Authenticate Method UID	
F0	Start List Token		
A8	Short Atom Token Header	Byte sequence, length = 8	
00 00 00 09 00 00 80 02		Authority object – Bandmaster1_UID	
F2	Start Name Token		
A9	Short Atom Token Header	Byte sequence, length = 9	
43 68 61 6C 6C 65 6E 67 65		"Challenge"	
D0 20		Bute sequence, length = 32	
4F 64 AC 3D 8A 66 5D F1 F4 69 B5 CC 2A 39 AA 68 4D 3D DE E8 C8 81 16 9F 6F 4B 51 54 9F 67 2B 98		<current BandMaster1_PIN></current 	
F3	End Name Token		
F1	End List Token		Ends parameter list
F9	End of Data Token		Ends method
F0 00 00 00 F1	Status List		
00 00	Pad		Included in Packet and ComPacket lengths

3.2.6.2.3 Authenticate BandMaster1 Results

See 3.2.2.3.

3.2.6.3 Retrieve Band1 Settings

3.2.6.3.1 Get Band1

Versio	n 1.	00 F	Revi	sion	1.00) Fin	al									
0040	00	02	A8	00	00	00	06	00	00	00	06	F0	F0	F1	F1	F9
0050	F0	00	00	00	F1	00	00	00	00	00	00	00	00	00	00	00
0060	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
0070	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
01E0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00

Table 31 Get Band1 Settings

	Table 31 Get E		
Bytes	Purpose	Value	Notes
ComPacket			_
00 00 00 00	Reserved	0's	uinteger_4
07 FF 00 00	Extended ComID	07FF 0000	uinteger_4
00 00 00 00	OutstandingData	0's	uinteger_4
00 00 00 00	MinTransfer	0's	uinteger_4
00 00 00 44	Length	68	uinteger_4
Packet			
FF FF FD E0 00 01 2E 13	Session	FFFFFDE0 00012E13	uinteger_8
00 00 00 00	SeqNumber	0	uinteger_4
00 00	Reserved	0's	uinteger_2
00 00	AckType	0's	uinteger_2
00 00 00 00	Acknowledgement	0's	uinteger_4
00 00 00 2C	Length	44	uinteger_4
Data SubPacket			
00 00 00 00 00 00	Reserved	0's	uinteger_6
00 00	Kind	0's	uinteger_2
00 00 00 1D	Length	29	uinteger_4
Data Payload		•	
F8	Call Token		Begins method
A8	Short Atom Token Header	Byte sequence, length = 8	
00 00 08 02 00 00 00 02	Invoking UID	Band1_ locking_ object_UID	
A8	Short Atom Token		
	Header	length = 8	
00 00 00 06 00 00 00 06	Method UID	Get Method UID	
F0	Start List Token		Begins parameter list
F0	Start List Token		Begins cell block for Where parameter
F1	End List Token		Ends cell block
F1	End List Token		Ends parameter list
F9	End of Data Token		Ends method
F0 00 00 00 F1	Status List		
00 00 00	Pad		Included in Packet and ComPacket lengths

3.2.6.3.2 Get Band1 Results

Depending on implementation, the "ActiveKey" column value could be a uidref to a K_AES_256 object.

```
[ [ "UID" = 00 00 08 02 00 00 00 02, "Name" = "Band1", "CommonName" = "Locking",
"RangeStart" = <0xBAAD>, "RangeLength" = <0xBEEF>, "ReadLockEnabled" = <True>,
"WriteLockEnabled" = <True>, "ReadLocked" = <False>, "WriteLocked" = <False>,
"LockOnReset" = [ <Power Cycle> ], "ActiveKey" = <Band1-_AES_128_UID> ] ]
0000 00 00 00 00 07 FF 00 00 00 00 00 00 00 00 00
0010 00 00 00 F0 FF FF FD 4E 00 01 2E 13 00 00 00
0020 00 00 00 00 00 00 00 00 00 00 D8 00 00 00
0030 00 00 00 00 00 00 00 C9 F0 F0 F0 F2 A3 55 49 44
0040 A8 00 00 08 02 00 00 00 02 F3 F2 A4 4E 61 6D 65
0050 A5 42 61 6E 64 31 F3 F2 AA 43 6F 6D 6D 6F 6E 4E
0060 61 6D 65 A7 4C 6F 63 6B 69 6E 67 F3 F2 AA 52 61
0070 6E 67 65 53 74 61 72 74 82 BA AD F3 F2 AB 52 61
0080 6E 67 65 4C 65 6E 67 74 68 82 BE EF F3 F2 AF 52
0090 65 61 64 4C 6F 63 6B 45 6E 61 62 6C 65 64 01 F3
00A0 F2 D0 10 57 72 69 74 65 4C 6F 63 6B 45 6E 61 62
00B0 6C 65 64 01 F3 F2 AA 52 65 61 64 4C 6F 63 6B 65
00C0 64 00 F3 F2 AB 57 72 69 74 65 4C 6F 63 6B 65 64
00D0 00 F3 F2 AB 4C 6F 63 6B 4F 6E 52 65 73 65 74 F0
00E0 00 F1 F3 F2 A9 41 63 74 69 76 65 4B 65 79 A8 00
00F0 00 08 05 00 00 00 02 F3 F1 F1 F1 F9 F0 00 00 00
```

Table 32 Get Band1 Results

Purpose	Value	Notes		
ComPacket				
Reserved	0's	uinteger_4		
Extended ComID	07FF 0000	uinteger_4		
OutstandingData	0's	uinteger_4		
MinTransfer	0's	uinteger_4		
Length	240	uinteger_4		
Session	FFFFDE0 00012E13	uinteger_8		
SeqNumber	0	uinteger_4		
Reserved	0's	uinteger_2		
AckType	0's	uinteger_2		
Acknowledgement	0's	uinteger_4		
Length	216	uinteger_4		
Data SubPacket				
Reserved	0's	uinteger_6		
	Reserved Extended ComID OutstandingData MinTransfer Length Session SeqNumber Reserved AckType Acknowledgement Length	Reserved 0's Extended ComID 07FF 0000 OutstandingData 0's MinTransfer 0's Length 240 Session FFFFFDE0 00012E13 SeqNumber 0 Reserved 0's AckType 0's Acknowledgement 0's Length 216		

Version	1 00	Revision	1	00 F	-inal

00 00	Kind	0's	uinteger_2
00 00 00 C9	Length	201	uinteger_4
Data Payload		•	
F0	Start List Token		Begins results
F0	Start List Token		
F0	Start List Token		
F2	Start Name Token		
A3	Short Atom Token Header	Byte sequence, length = 3	
55 49 44	Name	"UID"	
A8	Short Atom Token Header	Byte sequence, length = 8	
00 00 08 02 00 00 00 02	Value		
F3	End Name Token		
F2	Start Name Token		
A4	Short Atom Token Header	Byte sequence, length = 4	
4E 61 6D 65	Name	"Name"	
A5	Short Atom Token Header	Byte sequence, length = 5	
42 61 6E 64 31	Value	"Band1"	
F3	End Name Token		
F2	Start Name Token		
AA	Short Atom Token Header	Byte sequence, length = 10	
43 6F 6D 6D 6F 6E 4E 61 6D 65		"CommonName"	
A7	Short Atom Token Header	Byte sequence, length = 7	
4C 6F 63 6B 69 6E 67		"Locking"	
F3	End Name Token		
F2	Start Name Token		
AA	Short Atom Token Header	Byte sequence, length = 10	
52 61 6E 67 65 53 74 61 72 74		"RangeStart"	
82		Uinteger, length = 2	
BA AD		0xBAAD	
F3	End Name Token		
F2	Start Name Token		
AB	Short Atom Token Header	Byte sequence, length = 12	

Version 1.00 Revision 1.0	U Final		
52 61 6E 67 65 4C 65 6E			
67 74 68		"RangeLength"	
82		Uinteger, length = 2	
BE EF		0xBEEF	
52 2.		OXBEET	
F3	End Name Token		
F-3	End Name Token		
F0	Ota d Name Taller		
F2 AF	Start Name Token	Dita assurance length 45	
AF	Short Atom Token Header	Byte sequence, length = 15	
52 65 61 64 4C 6F 63 6B	rieauei		
45 6E 61 62 6C 65 64		"ReadLockEnabled"	
43 02 01 02 00 03 04	Tiny Atom Token,	ReadLockLilabled	
01	Value	<true></true>	
F3	End Name Token	~11dC>	
F3	End Name Token		
F0	Ota (Name Talles		
F2	Start Name Token		
	Medium Atom		
D0 10	Token Header	Byte sequence, length = 16	
57 72 69 74 65 4C 6F 63			
6B 45 6E 61 62 6C 65 64		"WriteLockEnabled"	
01		<true></true>	
F3	End Name Token		
F2	Start Name Token		
AA	Short Atom Token	Byte sequence, length = 10	
	Header	,	
52 65 61 64 4C 6F 63 6B			
65 64	Name	"ReadLocked"	
00	Value	<false></false>	
		1, 5	
F3	End Name Token		
	Zila italiio i okoli		
F2	Start Name Token		
AB	Short Atom Token	Byte sequence, length = 11	
75	Header	byte sequence, length = 11	
57 72 69 74 65 4C 6F 63	ricador	"WriteLocked"	
6B 65 64	Name	WINCEGORCA	
00	Value	<false></false>	
F3	value	\ alsc>	
F3	End Nama Takan		
	End Name Token		
F0	Ctart Name - Tale :		
F2	Start Name Token	Dute converse lawath 44	
AB	Short Atom Token	Byte sequence, length = 11	
	Header		
4C 6F 63 6B 4F 6E 52 65			
73 65 74		"LockOnReset"	
F0	Start List Token		
00		<power cycle=""></power>	
F1	End List Token		

F3			
	End Name Token		
F2	Start Name Token		
A9	Short Atom Token Header	Byte sequence, length = 9	
41 63 74 69 76 65 4B 65 79			
		"ActiveKey"	
A8	Short Atom Token Header	Byte sequence, length = 8	
		<band1-< td=""><td></td></band1-<>	
00 00 08 05 00 00 00 02	Value	_AES_128_UID>	
F3	End Name Token		
F1	End List Token		
F1	End List Token		
F1	End List Token		
F9	End of Data Token		Ends results
F0 00 00 00 F1	Status List		
00 00 00	Pad		Included in Packet and ComPacket lengths

3.2.6.4 Lock Band1

3.2.6.4.1 Set Band1

Table 33 Set Band1 Locks

Bytes	Purpose	Value	Notes
ComPacket			
00 00 00 00	Reserved	0's	uinteger_4

Version	1 00	Revision	1	00 F	-inal

version 1.00 Nevision 1.00 mia		1	1
07 FF 00 00		07FF 0000	uinteger_4
00 00 00 00	3	0's	uinteger_4
00 00 00 00	MinTransfer	0's	uinteger_4
00 00 00 64	Length	100	uinteger_4
Packet			
FF FF FD E0 00 01 2E 13	Session	FFFFFDE0 00012E13	uinteger_8
00 00 00 00	SeqNumber	0	uinteger_4
00 00	Reserved	0's	uinteger_2
00 00	AckType	0's	uinteger_2
00 00 00 00	Acknowledgement	0's	uinteger_4
00 00 00 4C	Length	76	uinteger_4
Data SubPacket			-
00 00 00 00 00 00	Reserved	0's	uinteger_6
00 00	Kind	0's	uinteger_2
00 00 00 3E	Length	62	uinteger_4
Data Payload	1 9	I] 3- =
F8	Call Token		Begins method
A8	Short Atom Token	Byte sequence, length = 8	
00 00 08 02 00 00 00 02	Invoking UID	Band1_ locking_object_UID	
A8	Short Atom Token Header		
00 00 00 06 00 00 00 07	Method UID	Set Method UID	
F0	Start List Token		Begins parameter list
F0	Start List Token		Begins cell block for Where parameter
F1	End List Token		Ends cell block
F0	Start List Token		
F0	Start List Token		
F2	Start Name Token		
AA	Short Atom Token	Byte sequence.	
		length = 10	
52 65 61 64 4C 6F 63 6B 65 64		"ReadLocked"	
01	Tiny Atom Token, Value	<true></true>	
F3	End Name Token		
F2	Start Name Token		
AB	Short Atom Token Header	Byte sequence, length = 11	
57 72 69 74 65 4C 6F 63.6B 65 64	Name	'WriteLocked"	
01	Tiny Atom Token, Value	<true></true>	
F3	End Name Token		
F1	End List Token		
F1	End List Token		
F1	End List Token		
l	L	l	II

F9	End of Data Token	Ends results
F0 00 00 00 F1	Status List	
00 00	Pad	Included in Packet and ComPacket lengths

3.2.6.4.2 Set Band1 Results

See 3.2.2.4.

3.2.6.5 Unlock Band1

3.2.6.5.1 Set Band1

Table 34 Set Band1 Locks

Bytes	Purpose	Value	Notes
ComPacket			·
00 00 00 00	Reserved	0's	uinteger_4
07 FF 00 00	Extended ComID	07FF 0000	uinteger_4
00 00 00 00	OutstandingData	0's	uinteger_4
00 00 00 00	MinTransfer	0's	uinteger_4
00 00 00 64	Length	100	uinteger_4
Packet			•
FF FF FD E0 00 01 2E 13	Session	FFFFDE0 00012E13	uinteger_8
00 00 00 00	SeqNumber	0	uinteger_4
00 00	Reserved	0's	uinteger_2
00 00	AckType	0's	uinteger_2
00 00 00 00	Acknowledgemen	t 0's	uinteger_4
00 00 00 4C	Length	76	uinteger_4
Data SubPacket			
00 00 00 00 00 00	Reserved	0's	uinteger_6

00 00	Kind	0's	uinteger_2
00 00 00 3E	Length	62	uinteger_4
Data Payload			
F8	Call Token		Begins method
A8	Short Atom Token Header	Byte sequence, length = 8	
00 00 08 02 00 00 00 02	Invoking UID	Band1_ locking_object_UID	
A8	Short Atom Token Header	length = 8	
00 00 00 06 00 00 00 07	Method UID	Set Method UID	
F0	Start List Token		Begins parameter list
F0	Start List Token		Begins cell block for Where parameter
F1	End List Token		Ends cell block
F0	Start List Token		
F0	Start List Token		
F2	Start Name Token		
AA	Short Atom Token Header	Byte sequence, length = 10	
52 65 61 64 4C 6F 63 6B 65 64		"ReadLocked"	
00	Tiny Atom Token, Value	<false></false>	
F3	End Name Token		
F2	Start Name Token		
АВ	Short Atom Token Header	Byte sequence, length = 11	
57 72 69 74 65 4C 6F 63.6B 65 64	Name	'WriteLocked"	
00	Tiny Atom Token, Value	<false></false>	
F3	End Name Token		
F1	End List Token		
F1	End List Token		
F1	End List Token		
F9	End of Data Token		Ends results
F0 00 00 00 F1	Status List		
00 00	Pad		Included in Packet and ComPacket lengths

3.2.6.5.2 Set Band1 Results

See 3.2.2.4.

3.2.6.6 Ending the Session

3.2.6.6.1 Send End of Session Token

See 3.2.2.5.1.

3.2.6.6.2 End of Session Response

See 3.2.2.5.2.

3.2.7 Repurpose and End of Life

This section contains an example of the operations to erase a LBA range.

3.2.7.1 Open a Session to the Locking SP

3.2.7.1.1 StartSession to Locking SP

See 3.2.2.2.1.

3.2.7.1.2 SyncSession from Locking SP

See 3.2.2.2.2.

3.2.7.2 EraseMaster Authentication

3.2.7.2.1 Authenticate as EraseMaster

Table 35 Authenticate as EraseMaster

Bytes	Purpose	Value	Notes
ComPacket			•
00 00 00 00	Reserved	0's	uinteger_4
07 FF 00 00	Extended ComID	07FF 0000	uinteger_4
00 00 00 00	OutstandingData	0's	uinteger_4
00 00 00 00	MinTransfer	0's	uinteger_4
00 00 00 78	Length	120	uinteger_4
Packet	•		•
FF FF FD E0 00 01 2E 13	Session	FFFFDE0 00012E13	uinteger_8

00 00 00 00	SeqNumber	0	uinteger_4
00 00	Reserved	0's	uinteger_2
00 00	AckType	0's	uinteger_2
00 00 00 00	Acknowledgement	0's	uinteger_4
00 00 00 60	Length	96	uinteger_4
Data SubPacket			
00 00 00 00 00 00	Reserved	0's	uinteger_6
00 00	Kind	0's	uinteger_2
00 00 00 52	Length	82	uinteger_4
Data Payload			
F8	Call Token		Begins method
A8	Short Atom Token Header	Byte sequence, length = 8	
00 00 00 00 00 00 00 01	Invoking UID	ThisSP UID	
A8	Short Atom Token Header	Byte sequence, length = 8	
00 00 00 06 00 00 00 0C	Method UID	Authenticate Method UID	
F0	Start List Token		Begins Parameter list
A8	Short Atom Token Header	Byte sequence, length = 8	
00 00 00 09 00 00 84 01		Authority object – EraseMaster_UID	
F2	Start Name Token		
A9	Short Atom Token Header	Byte sequence, length = 9	
4368 616C 6C65 6E67 65		"Challenge"	
D0 20	Medium Atom Token Header	Byte sequence, length = 32	
D5 3C 18 4F AC 3F 3E 49 05 53 BA 97 59 CB C0 6B 22 5C 2B A3 7F DB FF 90 1C CF EB 54 F2 9C F9 53		<custom_pin_value></custom_pin_value>	
F3	End Name Token		
F1	End List Token		Ends parameter list
F9	End of Data Token		Ends method
F0 00 00 00 F1	Status List		
00 00	Pad		Included in Packet and ComPacket lengths

3.2.7.2.2 Authenticate as EraseMaster Results

See 3.2.2.3.

3.2.7.3 Erasing an LBA Range

3.2.7.3.1 Erase Band1

Band1_UID.Erase []

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Versio	n 1.	00 F	Revi	sion	1.00) Fir	al										
0000	00	00	00	00	07	FF	00	00	00	00	00	00	00	00	00	00	
0010	00	00	00	40	FF	FF	FD	ΕO	00	01	2E	13	00	00	00	00	
0020	00	00	00	00	00	00	00	00	00	00	00	28	00	00	00	00	
0030	00	00	00	00	00	00	00	1B	F8	A8	00	00	80	02	00	00	
0040	00	02	A8	00	00	00	06	00	00	80	03	F0	F1	F9	F0	00	
0050	00	00	F1	00	00	00	00	00	00	00	00	00	00	00	00	00	
0060	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	
0070	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	
01E0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	
01F0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	

Table 36 Erase Band1

Purtos		Value	Notes
Bytes	Purpose	value	Notes
ComPacket		T _a .	
00 00 00 00	Reserved	0's	uinteger_4
07 FF 00 00	Extended ComID	07FF 0000	uinteger_4
00 00 00 00	OutstandingData	0's	uinteger_4
00 00 00 00	MinTransfer	0's	uinteger_4
00 00 00 40	Length	64	uinteger_4
Packet			
		FFFFDE0	
FF FF FD E0 00 01 2E 13	Session	00012E13	uinteger_8
00 00 00 00	SeqNumber	0	uinteger_4
00 00	Reserved	0's	uinteger_2
00 00	AckType	0's	uinteger_2
00 00 00 00	Acknowledgement	0's	uinteger_4
00 00 00 28	Length	40	uinteger_4
Data SubPacket			
00 00 00 00 00 00	Reserved	0's	uinteger_2
00 00	Kind	0's	uinteger_6
00 00 00 1B	Length	27	uinteger_4
Data Payload			
F8	Call Token		Begins method
A8	Short Atom Token		
	Header	length = 8	
00 00 08 02 00 00 00 02	Invoking UID	Band1_UID	
A8	Short Atom Token		
	Header	length = 8	
00 00 00 06 00 00 08 03	Method UID	Erase Method UID	
F0	Start List Token		Starts parameter list
F1	End List Token		Ends parameter list
	End of Data		
F9	Token		Ends method
F0 00 00 00 F1	Status List		
00	Dod		Included in Packet and
00	Pad		ComPacket lengths

3.2.7.3.2 Erase Band1 Results

[]

Table 37 Erase Band1 Results

Table 37 Liase Balla I Nesults							
Bytes	Purpose	Value	Notes				
ComPacket							
00 00 00 00	Reserved	0's	uinteger_4				
07 FF 00 00	Extended ComID	07FF 0000	uinteger_4				
00 00 00 00	OutstandingData	0's	uinteger_4				
00 00 00 00	MinTransfer	0's	uinteger_4				
00 00 00 2C	Length	44	uinteger_4				
Packet							
FF FF FD E0 00 01 2E 13	Session	FFFFFDE0 00012E13	uinteger_8				
00 00 00 00	SeqNumber	0	uinteger_4				
00 00	Reserved	0's	uinteger_2				
00 00	AckType	0's	uinteger_2				
00 00 00 00	Acknowledgement	0's	uinteger_4				
00 00 00 14	Length	20	uinteger_4				
Data SubPacket							
00 00 00 00 00	Reserved	0's	uinteger_2				
00 00	Kind	0's	uinteger_6				
00 00 00 08	Length	8	uinteger_4				
Data Payload							
F0	Start List Token						
F1	End List Token		Ends parameter list				
F9	End of Data Token		Ends method				
F0 00 00 00 F1	Status List						
			No Pad				

3.2.7.4 Ending the Session

3.2.7.4.1 Send End of Session Token

See 3.2.2.5.1.

3.2.7.4.2 End of Session Response

See 3.2.2.5.2.

3.2.8 Using the DataStore table

3.2.8.1 Open a Session to the Locking SP

3.2.8.1.1 StartSession – Locking SP

See 3.2.2.2.1.

3.2.8.1.2 SyncSession - Locking SP

See 3.2.2.2.2.

3.2.8.2 Retrieve DataStore Table Contents

The host retrieves the contents of the DataStore table.

3.2.8.2.1 Get DataStore

Table 38 Get DataStore Table Contents

Bytes	Purpose	Value	Notes
ComPacket			
00 00 00 00	Reserved	0's	uinteger_4
07 FF 00 00	Extended ComID	07FF 0000	uinteger_4
00 00 00 00	OutstandingData	0's	uinteger_4
00 00 00 00	MinTransfer	0's	uinteger_4
00 00 00 44	Length	68	uinteger_4
Packet			
FF FF FD E0 00 01 2E 13	Session	FFFFDDE0 00012E13	uinteger_8
00 00 00 00	SeqNumber	0	uinteger_4
00 00	Reserved	0's	uinteger_2

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00 00	AckType	0's	uinteger_2
00 00 00 00	Acknowledgement	0's	uinteger_4
00 00 00 2C	Length	44	uinteger_4
Data SubPacket			
00 00 00 00 00 00	Reserved	0's	uinteger_6
00 00	Kind	0's	uinteger_2
00 00 00 1D	Length	29	uinteger_4
Data Payload			
F8	Call Token		Begins method
A8	Short Atom Token Header	Byte sequence, length = 8	
00 00 80 01 00 00 00 00	Invoking UID	DataStore table_UID	
A8	Short Atom Token Header	Byte sequence, length = 8	
00 00 00 06 00 00 00 06	Method UID	Get Method UID	
F0	Start List Token		Begins parameter list
F0	Start List Token		Begins cell block for Where parameter
F1	End List Token		Ends cell block for Where parameter
F1	End List Token		Ends parameter list
F9	End of Data Token		Ends method
F0 00 00 00 F1	Status List		
00 00 00	Pad		Included in Packet and ComPacket lengths

3.2.8.2.2 Get DataStore table contents Results

Table 39 Get DataStore Table Contents Results

Bytes	Purpose	Valu	ue	Notes
ComPacket				,
00 00 00 00	Reserved	0's		uinteger_4
07 FF 00 00	Extended ComID	07F	F 0000	uinteger_4
00 00 00 00	OutstandingData	0's		uinteger_4
00 00 00 00	MinTransfer	0's		uinteger_4
00 00 04 30	Length	107	2	uinteger_4
Packet				
FF FF FD E0 00 01 2E 13	Session		FFFFDE0 00012E13	uinteger_8
00 00 00 00	SeqNumber		0	uinteger_4
00 00	Reserved		0's	uinteger_2
00 00	AckType		0's	uinteger_2
00 00 00 00	Acknowledgement		0's	uinteger_4
00 00 04 18	Length		1048	uinteger_4
Data SubPacket				
00 00 00 00 00 00	Reserved	0's		uinteger_2
00 00	Kind	0's		uinteger_6
00 00 04 0A	Length	103	4	uinteger_4
Data Payload				
F0	Start List Token			Begins results
D4 00				
00 00 00 00 00 00 00				
00 00 00 00 00 00 00 00				
00 00 00 00 00 00 00 00				
00 00 00 00 00 00 00 00				
00 00 00 00 00 00 00 00				
00 00 00 00 00 00 00 00				
00 00 00 00 00 00 00 00				
00 00 00 00 00 00 00 00				
00 00 00 00 00 00 00 00		<0x	400 (1024 bytes) of	
00 00 00 00 00 00 00 00		0x0	,	Default value
F1	End List Token			
F9	End of Data Token			Ends results
F0 00 00 00 F1	Status List			
				Included in Packet and
00 00	Pad			ComPacket lengths

3.2.8.3 BandMaster Authentication

The host authenticates to the SP as the BandMaster0 authority using the custom PIN value set in 3.2.4.5. Authentication of any of the BandMaster authorities provides authorization to modify the DataStore table.

3.2.8.3.1 Authenticate as BandMaster0

ThisSP.Authenticate [BandMaster0_Authority_object _UID, "Challenge" =
"Custom_PIN_Value"]

0000	00	00	00	00	07	FF	00	00	00	00	00	00	00	00	00	00
0010	00	00	00	78	FF	FF	FD	ΕO	00	01	2E	13	00	00	00	00
0020	00	00	00	00	00	00	00	00	00	00	00	60	00	00	00	00
0030	00	00	00	00	00	00	00	52	F8	A8	00	00	00	00	00	00
0040	00	01	A8	00	00	00	06	00	00	00	0C	F0	A8	00	00	00
0050	09	00	00	80	01	F2	Α9	43	68	61	6C	6C	65	бE	67	65
0060	D0	20	48	86	AB	86	FF	D3	D8	AA	В5	В8	D7	F0	В5	14
0070	50	15	98	13	82	EF	80	30	8E	8F	3F	05	39	Вб	2C	73
0800	76	98	F3	F1	F9	F0	00	00	00	F1	00	00	00	00	00	00
0090	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
0A0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
01E0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
01F0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00

Table 40 Authenticate as BandMaster0

Bytes	Purpose	Value	Notes
ComPacket	-	1	
00 00 00 00	Reserved	0's	uinteger_4
07 FF 00 00	Extended ComID	07FF 0000	uinteger_4
00 00 00 00	OutstandingData	0's	uinteger_4
00 00 00 00	MinTransfer	0's	uinteger_4
00 00 00 78	Length	120	uinteger_4
Packet			
FF FF FD E0 00 01 2E 13	Session	FFFFFDE0 00012E13	uinteger_8
00 00 00 00	SeqNumber	0	uinteger_4
00 00	Reserved	0's	uinteger_2
00 00	AckType	0's	uinteger_2
00 00 00 00	Acknowledgement	0's	uinteger_4
00 00 00 60	Length	96	uinteger_4
Data SubPacket			
00 00 00 00 00 00	Reserved	0's	uinteger_6
00 00	Kind	0's	uinteger_2
00 00 00 52	Length	82	uinteger_4
Data Payload			
F8	Call Token		Begins method
A8	Short Atom Token Header	Byte sequence, length = 8	
00 00 00 00 00 00 00 01	Invoking UID	SP UID	
A8	Short Atom Token Header	Byte sequence, length = 8	
00 00 00 06 00 00 00 0C	Method UID	Authenticate Method UID	
F0	Start List Token		
A8	Short Atom Token Header	Byte sequence, length = 8	
00 00 00 09 00 00 80 01		Authority object – Bandmaster0_UID	

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F2	Start Name Token		
A9	Short Atom Token Header	Byte sequence, length = 9	
43 68 61 6C 6C 65 6E 67 65		"Challenge"	
D0 20	Medium Atom Token Header	Byte sequence, length = 32	
48 86 AB 86 FF D3 D8 AA B5 B8 D7 F0B5 14 50 15 98 13 82 EF 80 30 8E 8F 3F 05 39 B6 2C 73 76 98		<custom pin="" value=""></custom>	PIN set in 3.2.4.3
F3	End Name Token		
F1	End List Token		Ends parameter list
F9	End of Data Token		Ends method
F0 00 00 00 F1	Status List		
00 00	Pad		Included in Packet and ComPacket lengths

3.2.8.3.2 Authenticate as BandMaster1 Results

See 3.2.2.3.

3.2.8.4 Modify DataStore Table Contents

3.2.8.4.1 Set DataStore Table

DataStore_table_UID.**Set** [["startRow" = 0x10] 0x41 0x6E 0xD9 0xF3 0x0E 0xE6 0x83 0x93 0xBB 0xD6 0x52 0xE6 0xEA 0x5D 0x68 0xEE]

Table 41 Set Values in DataStore table

Bytes	Purpose	Value	Notes			
ComPacket	<u> </u>					
00 00 00 00	Reserved	0's	uinteger_4			
07 FF 00 00	Extended ComID	07FF 0000	uinteger_4			
00 00 00 00	OutstandingData	0's	uinteger_4			
00 00 00 00	MinTransfer	0's	uinteger_4			
00 00 00 60	Length	96	uinteger_4			
Packet						
FF FF FD E0 00 01 2E 13	Session	FFFFFDE0 00012E13	uinteger_8			
00 00 00 00	SeqNumber	0	uinteger_4			
00 00	Reserved	0's	uinteger_2			
00 00	AckType	0's	uinteger_2			
00 00 00 00	Acknowledgement	0's	uinteger_4			
00 00 00 48	Length	72	uinteger_4			
Data SubPacket						
00 00 00 00 00 00	Reserved	0's	uinteger_6			
00 00	Kind	0's	uinteger_2			
00 00 00 3B	Length	59	uinteger_4			
Data Payload						
F8	Call Token		Begins method			
A8	Short Atom Token Header	Byte sequence, length = 8				
00 00 80 01 00 00 00 00	Invoking UID	DataStore table_UID				
A8	Short Atom Token Header	Byte sequence, length = 8				
00 00 00 06 00 00 00 07	Method UID	Set Method UID				

F0	Start List Token		
F0	Start List Token		Start cell block for Where parameter Begin Where parameter
F2	Start Name Token		
A8	Short Atom Token Header	Byte sequence, length = 8	
73 74 61 72 74 52 6F 77		"startRow"	
10		<16>	
F3	End Name Token		
F1	End List Token		Ends cell block for Where parameter
D0 10	Medium Token Header	Byte Sequence, Length = 16	
41 6E D9 F3 0E E6 83 93 BB D6 52 E6 EA 5D 68 EE			
F1	End List Token		
F9	End of Data Token		Ends method
F0 00 00 00 F1	Status List		
00	Pad		Included in Packet and ComPacket lengths

3.2.8.4.2 Set DataStore Table Results

See 3.2.2.4.

3.2.8.5 Retrieve DataStore Table Contents

3.2.8.5.1 Get DataStore Table

Table 42 Get DataStore Table Contents

Bytes		Value	Notes
ComPacket			
00 00 00 00	Reserved	0's	uinteger_4
07 FF 00 00	Extended ComID	07FF 0000	uinteger_4
00 00 00 00	OutstandingData	0's	uinteger_4
00 00 00 00	MinTransfer	0's	uinteger_4
00 00 00 58	Length	88	uinteger_4
Packet			, -
FF FF FD E0 00 01 2E 13	Session	FFFFFDDE0 00012E13	uinteger_8
00 00 00 00	SeqNumber	0	uinteger_4
00 00	Reserved	0's	uinteger_2
00 00	AckType	0's	uinteger_2
00 00 00 00	Acknowledgement	0's	uinteger_4
00 00 00 40	Length	64	uinteger_4
Data SubPacket			
00 00 00 00 00 00	Reserved	0's	uinteger_6
00 00	Kind	0's	uinteger_2
00 00 00 33	Length	51	uinteger_4
Data Payload			
F8	Call Token		Begins method
A8	Short Atom Token Header	Byte sequence, length = 8	
00 00 80 01 00 00 00 00	Invoking UID	DataStore_table_UID	
A8	Short Atom Token Header	Byte sequence, length = 8	
00 00 00 06 00 00 00 06	Method UID	Get Method UID	
F0	Start List Token		Begins parameter list
F0	Start List Token		Begins cell block for Where parameter
F2	Start Name Token		
A8	Short Atom Token		
	Header	length = 8	
	Name	"startRow"	
10	Value	<16>	
F3	End Name Token		
F2	Start Name Token		
A6		length = 6	
	Name	"endRow"	
1F	Value	<31>	
F3	End Name Token		
F1	End List Token		Ends cell block for Where parameter
F1	End List Token		Ends parameter list
F9	End of Data Token		Ends method
F0 00 00 00 F1	Status List		

00	Pad	Included in Packet and
		ComPacket lengths

3.2.8.5.2 Get DataStore Table Results

Table 43 Get DataStore Table Contents Results

1 4010 40 001	DataCtore rabi	e Contents Nesults	
Bytes	Purpose	Value	Notes
ComPacket			
00 00 00 00	Reserved	0's	uinteger_4
07 FF 00 00	Extended ComID	07FE 0000	uinteger_4
00 00 00 00	OutstandingData	0's	uinteger_4
00 00 00 00	MinTransfer	0's	uinteger_4
00 00 00 40	Length	64	uinteger_4
Packet			
FF FF FD E0 00 01 2E 13	Session	FFFFDE0 00012E13	uinteger_8
00 00 00 00	SeqNumber	00	uinteger_4
00 00	Reserved	0's	uinteger_2
00 00	AckType	0's	uinteger_2
00 00 00 00	Acknowledgement	0's	uinteger_4
00 00 00 28	Length	40	uinteger_4
Data SubPacket			
00 00 00 00 00 00	Reserved	0's	uinteger_2
00 00	Kind	0's	uinteger_6
00 00 00 1A	Length	26	uinteger_4
Data Payload			
F0	Start List Token		Begins results
	Medium Token	Byte Sequence, Length	
D0 10	Header	= 16	
41 6E D9 F3 0E E6 83 93 BB D6 52 E6 EA 5D 68 EE			
F1	End List Token		
F9	End of Data Token		Ends results

F0 00 00 00 F1	Status List	
		Included in Packet and ComPacket
00 00	Pad	lengths

3.2.8.6 Ending the Session

3.2.8.6.1 Send End of Session Token See 3.2.2.5.1.

3.2.8.6.2 End of Session Response See 3.2.2.5.2.

3.2.9 Random method

The host invokes the Random method in an open session to an SP that supports the method, in order to obtain a random number of the specified length. Only the Anybody authority is required.

The host starts a session to an SP prior to invocation of the method (see 3.2.2.1 and 3.2.2.2).

3.2.9.1 Request a Random Number

3.2.9.1.1 Random

Table 44 Random

Bytes	Purpose	Value	Notes
ComPacket	, -		1
00 00 00 00	Reserved	0's	uinteger_4
07 FF 00 00	Extended ComID	07FF 0000	uinteger_4
00 00 00 00	OutstandingData	0's	uinteger_4
00 00 00 00	MinTransfer	0's	uinteger_4
00 00 00 40	Length	64	uinteger_4
Packet	·	•	•

FF FF FD E0 00 01 2E 13	Session	FFFFFE28 00012E12	uinteger_8
00 00 00 00	SeqNumber	0	uinteger_4
00 00	Reserved	0's	uinteger_2
00 00	AckType	0's	uinteger_2
00 00 00 00	Acknowledgement	0's	uinteger_4
00 00 00 28	Length	40	uinteger_4
Data SubPacket			
00 00 00 00 00 00	Reserved	0's	uinteger_6
00 00	Kind	0's	uinteger_2
00 00 00 1C	Length	28	uinteger_4
Data Payload			•
F8	Call Token		Begins method
A8	Short Atom Token Header	Byte sequence, length = 8	
00 00 00 00 00 00 00 01	Invoking UID	ThisSP	
A8	Short Atom Token Header	Byte sequence, length = 8	
00 00 00 06 00 00 06 01	Method UID	Random Method UID	
F0	Start List Token		
20	Required Parameter: Count	<0x20>	
F1	End List Token		Ends parameter list
F9	End of Data Token		Ends method
F0 00 00 00 F1	Status List		
			No Pad

3.2.9.1.2 Random – Results

[0x0E 0x2C 0x7B 0x0C 0x44 0x6A 0x50 0xB7 0xC9 0xE6 0xA9 0x83 0x36 0xD0 0x98 0xB9 0x92 0x7B 0x56 0xA6 0x4F 0x5D 0xE7 0x1C 0xFA 0x70 0x53 0x07 0x56 0xFE 0x20 0x43]

0000	00	00	00	00	07	FE	00	00	00	00	00	00	00	00	00	00	
0010	00	00	00	50	FF	FF	FE	28	00	01	2E	12	00	00	00	00	
0020	00	00	00	00	00	00	00	00	00	00	00	38	00	00	00	00	
0030	00	00	00	00	00	00	00	2A	F0	D0	20	ΟE	2C	7В	0C	44	
0040	бΑ	50	В7	C9	Еб	Α9	83	36	D0	98	В9	92	7В	56	Аб	4F	
0050	5D	E7	1C	FA	70	53	07	56	FE	20	43	F1	F9	F0	00	00	
0060	00	F1	00	00	00	00	00	00	00	00	00	00	00	00	00	00	
0070	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	
0800	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	
01E0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	
01F0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	

Table 45 Random Results

Bytes	Purpose	Value	Notes
ComPacket			
00 00 00 00	Reserved	0's	uinteger_4

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07 FF 00 00	Extended ComID	07FE 0000	uinteger_4
00 00 00 00	OutstandingData	0's	uinteger_4
00 00 00 00	MinTransfer	0's	uinteger_4
00 00 00 50	Length	80	uinteger_4
Packet			
FF FF FD E0 00 01 2E 13	Session	FFFFFE28 00012E12	uinteger_8
00 00 00 00	SeqNumber	00	uinteger_4
00 00	Reserved	0's	uinteger_2
00 00	AckType	0's	uinteger_2
00 00 00 00	Acknowledgement	0's	uinteger_4
00 00 00 38	Length	56	uinteger_4
Data SubPacket			
00 00 00 00 00 00	Reserved	0's	uinteger_6
00 00	Kind	0's	uinteger_2
00 00 00 2A	Length	42	uinteger_4
Data Payload			
F0	Start List Token		Begins results
D0 20	Medium Token Header	Byte Sequence, Length = 32	
0E 2C 7B 0C 44 6A 50 B7 C9 E6 A9 83 36 D0 98 B9 92 7B 56 A6 4F 5D E7 1C FA 70 53 07 56 FE 20 43	random number		This value is only an example. The storage device supplies the random number.
F1	End List Token		
F9	End of Data Token		Ends results
F0 00 00 00 F1	Status List		
00 00	Pad		Included in Packet and ComPacket lengths